OFFICIAL GAZETTE
UNITED STATES PATENT OFFICE

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MICRO PHOTO DIVISION
BELL & HOWELL COMPANY

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 7, 1967 Volume 844 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of September 1967

Examiner affirmed	186
Examiner affirmed in part	18
Examiner reversed	47
Total	251

Veterans Day Holiday

Since Veterans Day falls this year on a Saturday, the preceding day, Friday, November 10, is considered to be a holiday within the District of Columbia and the Patent Office will be closed for business on that day. Accordingly, any action due on November 10, or November 11, 1967, is to be considered timely if taken on November 13, 1967.

By direction of the Acting Commissioner.

JOSEPH SCHIMMEL,
Solicitor.

Oct. 11, 1967.

Notice of Tentative Recordation of a Trade Name

[T.D. 67-234]

Tentative recordation of trade name under section 1124, title 15, United States Code, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS
Washington, D.C., October 2, 1967

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 1124, title 15, United States Code, and section 11.16, Customs Regulations:

> "BEAUNIT CORPORATION," is a trade name used by Beaunit Corporation (also doing business as Beaunit Fibers and Beaunit Textiles), a corporation organized under the laws of the State of New York, located at 261 Madison Avenue, New York, New York, 10016. The trade name is used in connection with man-made fibers, knitted and woven fabrics and garments, manufactured in the United States.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C., 20226, before the expiration of 30 days after October 31, 1967, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after October 31, 1967, of any opposition proceedings.

Until 45 days after October 31, 1967, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized. If a notice is received that an opposition has been filed, such articles shall continue to be detained until a final determination is made concerning the right of the applicant of the trade name. Articles detained either before or after any such notice is received shall receive the treatment provided for in section 11.17(b), Customs Regulations, which permits removal or obliteration of the offending mark or name prior to release, or exportation or destruction of the merchandise.

LESTER D. JOHNSON,
Commissioner of Customs.

New Search Room Hours

Effective Friday, October 20, 1967, the Public Search Room will be open from 7:30 a.m. to 6:00 p.m. on workdays.

The discontinuance of the additional night and Saturday hours is due to budgetary and other operating considerations.

RICHARD A. WAHL,
Assistant Commissioner.

Oct. 18, 1967.

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 3,024,008, R. D. Blum, THREE-PIPE AIR CONDITIONING SYSTEMS, decided Feb. 3, 1967, Interference No. 95,082, claim 9.

Patent No. 3,031,650, R. J. Koerner, MEMORY ARRAY SEARCHING SYSTEM, decided Sept. 6, 1967, Interference No. 95,743, claim 2.

Patent No. 3,056,860, J. F. Wood, PHONOGRAPH PICK-UP, decided Mar. 31, 1967, Interference No. 93,801, claims 6 and 7.

Patent No. 3,193,327, R. W. Roe, RETRACTING DEVICE, decided Sept. 27, 1967, Interference No. 95,346, claims 1, 4, 6 and 7.

Adjudicated Patents

(D.C. Mass.) Grim Patent No. 2,673,194 (260—93.5), for SUSPENSION POLYMERIZATION, *Held* invalid. *Koppers Co. v. Foster Grant Co.*, 269 F. Supp. 342; 154 USPQ 149.

(D.C. Mass.) Grim Patent No. 2,687,408 (260—93.5), for AQUEOUS POLYMERIZATION, *Held* invalid. *Id.*

(D.C. Fla.) Puckett Patent No. 2,704,876 (249—19), for MEANS FOR CASTING CONCRETE WINDOW FRAMES. Claim 1 *Held* valid and infringed. *Cutler Ridge Corp. v. Wind-O-Form Corp.*, 270 F. Supp. 111; 153 USPQ 395.

New Applications Received During September 1967

Patents	6995
Designs	347
Plant Patents	17
Reissues	19
Total	7378

Issue—November 7, 1967

Patents	1236	—No. 3,350,718 to No. 3,351,953, incl.
Designs	60	—No. 209,129 to No. 209,188, incl.
Plant Patents	1	—No. 2,775
Reissues	4	—No. 26,294 to No. 26,297, incl.
Total	1301	

(D.C.S.C.) Karnofsky Patent No. 2,840,459 (23—310), for METHOD AND APPARATUS FOR CONTINUOUSLY EXTRACTING OIL AND OTHER SOLUBLE MATERIAL FROM SOLID MATERIAL BY USE OF LIQUID SOLVENT, *Held* valid and infringed. *Blaw-Knox Co.* v. *Hartsville Oil Mill*, 269 F. Supp. 205; — USPQ —.

(D.C.N.Y.) Crosby Patent No. 2,851,532 (179—15), for MULTIPLE COMMUNICATION SYSTEM. Claims 10, 12, 16, 18, 24, and 25 *Held* valid and infringed. *Preuss* v. *General Electric Co.*; 269 F. Supp. 992; 152 USPQ 153.

(D.C.N.Y.) Peterson Patent No. 3,003,436 (105—454), for METHOD AND APPARATUS FOR PROTECTING VEHICLE LOADS. Claims 1, 7 to 9, 12, 15 to 18, 20, 21, 26 and 27 *Held* invalid. *Pullman Inc.* v. *ACF Industries, Inc.*, 269 F. Supp. 279; 153 USPQ 523.

(D.C.N.J.) Rains Design Patent No. 201,793 (13—1), for SWIMMING POOL, *Held* invalid. *Rains* v. *Cascade Industries, Inc.*, 269 F. Supp. 688; 154 USPQ 435.

Patents Available for Licensing or Sale

2,594,298. REDUCTION AND REFINING OF FERROUS ORES IN ONE CONTINUOUS OPERATION. Marjorie Dudley, Hotel Palomar, 1344 Pacific Ave., Santa Cruz, Calif., 95060.

2,958,149. APPLICATION OF METAL LEAF. Max Wenig, 2520 Bouck Ave., Bronx, N.Y., 10469.

3,262,669. ADJUSTABLE SURFACE CONDITIONER FOR INGOT MOLDS. Robert S. Hosmer, 1512 Panorama Drive, Birmingham, Ala., 35216.

3,330,021. PIPE ALIGNING TOOL. Helmuth Jacobsen, Bonn, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,331,903. METHOD AND APPARATUS FOR CONTINUOUSLY SPINNING A PLASTIC NET. Sigeta Mine, Zusi, Japan. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,333,301. FASTENING DEVICE FOR SKI BOOTS. Claudio Lubian. Correspondence to: Woodhams, Blanchard and Flynn, 2026 Rambling Road, Kalamazoo, Mich., 49001.

3,341,030. METHOD AND APPARATUS FOR POSITIONING AND ORIENTING ARTICLES. Eugene L. Engels, Philadelphia, Pa. Correspondence to: Allen D. Brufsky, 729 15th St. NW., Washington, D.C., 20005.

3,342,228. NAILING DEVICE. Earl Reid, 4566 Freeway Circle, Sacramento, Calif., 95841.

3,342,535. HOLDER AND CARRIER. Wilson P. Ashley, Sr., 3648 E. Stratford Road, Ocean Park, Bayside Borough, Virginia Beach, Va., 23455.

The Ansul Company offers to grant non-exclusive licenses on reasonable terms and conditions under the following patent.

Inquiries respecting licenses should be addressed to: The Ansul Company, Corporate Legal Department, 1 Stanton St., Marinette, Wis., 54143.

3,342,584. METHOD FOR KILLING BROADLEAF AND GRASSY WEEDS IN COTTON.

Borg-Warner Corporation is prepared to grant non-exclusive licenses at reasonable rates, under the following patent.

Applications for license may be addressed to: C. G. Stallings, Western Patent Counsel, P.O. Box 2017, Terminal Annex, Los Angeles, Calif., 90054.

3,257,957. MECHANICAL SEAL AND CYCLONE.

The General Electric Company is prepared to grant non-exclusive licenses under the following 13 patents upon reasonable terms to domestic manufacturers.

Applications for licenses under the following patent may be addressed to: Division Patent Counsel, Missile and Space Division, General Electric Company, P.O. Box 8555, Philadelphia, Pa., 19101.

3,336,359. DICYANOACETYLENE SYNTHESIS.

Applications for license under the following patent may be addressed to: Patent Counsel, Research and Development Center, General Electric Company, Bldg. 5, P.O. Box 8, Schenectady, N.Y., 12301.

3,133,285. SPHERICAL LUNEBERG LENS COMPOSED OF A PLURALITY OF PYRAMIDAL SECTORS EACH HAVING A GRADED DIELECTRIC CONSTANT.

Applications for license under the following 3 patents may be addressed to: General Electric Company, Patent Counsel, Silicone Products Department, Chemical and Metallurgical Division, Waterford, N.Y., 12188.

3,038,000. FLUORINE CONTAINING COMPOSITION.

3,047,497. GREASES THICKENED WITH METAL SALTS OF CARBOXYALKYLPOLYSILOXANES.

3,334,066. TRIALKOXY VANADATE CURING AGENTS FOR SILANOL-CONTAINING POLYSILOXANES.

Applications for license under the following 8 patents may be addressed to: Patent Counsel, Power Generation Division, General Electric Company, 1 River Road, Bldg. #53, Shenectady 5, N.Y.

3,128,381. WEAR MEASUREMENT WITHOUT INTRODUCING RADIO-ACTIVE MATERIAL INTO THE SYSTEM.

3,147,821. EMERGENCY BEARING OIL SUPPLY FOR A DECELERATING SHAFT.

3,149,250. MAGNETOHYDRODYNAMIC INDUCTION DEVICE.

3,155,395. SHAFT PACKING ASSEMBLY.

3,304,906. PROPULSION POWER SYSTEM.

3,309,866. COMBUSTION PROCESS AND APPARATUS.

3,340,883. ACCELERATION, SPEED AND LOAD CONTROL SYSTEM WITH REDUNDANT CONTROL MEANS.

3,344,297. WINDING SUPPORT SYSTEM FOR A DYNAMOELECTRIC MACHINE.

Patent Withdrawn From Register

General Electric Company hereby withdraws the following patent from the Register of Patents Available for Licensing or Sale. The patent was listed as being available, in the OFFICIAL GAZETTE as indicated below:

2,858,360. SUPPORT OF TRANSMISSION LINES HAVING MULTIPLE CONDUCTORS PER PHASE. Sept. 19, 1967.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 11, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager	4-3-64	5-31-62
Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.		
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager	3-6-64	3-5-62
Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.		
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Manager	12-22-64	4-9-62
Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.		
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager	7-31-64	6-12-62
Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.		
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager	4-3-64	4-16-62
Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.		
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager	5-13-64	7-5-63
Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.		
SECURITY, GROUP 220—S. BOYD, Manager	3-7-66	2-17-64
Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.		
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager	1-6-64	11-29-61
Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.		
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager	2-10-64	1-8-62
Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.		
PHYSICS, GROUP 280—R. L. EVANS, Manager	10-16-64	6-24-63
Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.		
DESIGNS, GROUP 290—S. BOYD, Manager	1-14-66	9-3-65
Industrial Arts; Household, Personal and Fine Arts.		

Total number of pending applications (excluding Designs)	183, 116
Total number of Design applications pending	4, 136
Total number of applications awaiting action (excluding Designs)	132, 541
Total number of Design applications awaiting action	2, 243
Date of oldest new application awaiting action	Jan. 6, 1964
Date of oldest amended application awaiting action	Nov. 29, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during November 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1953.*

Patents .... Numbers 2,528,483 to 2,532,275, inclusive

Plant Patents .... Numbers 986 to 995, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	1-20-66	9-22-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	7-6-65	2-7-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	3-19-65	4-11-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	2-1-66	12-18-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports: Cabinet Structures.	10-15-65	4-30-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, Including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	9-9-65	10-18-62

DECISIONS IN PATENT AND TRADEMARK CASES

United States District Court
District of Columbia

MONSANTO COMPANY, JULES PINSKY, ALBERT E. ADAKONIS, AND ALVIN R. NIELSEN
v.
ERNST KAMP, KARL JAHN, AND EDWARD J. BRENNER, COMMISSIONER OF PATENTS

Civil Action No. 2372—64. Decided June 15, 1967

1. CIVIL ACTION—INTERFERENCE—PATENT NOT TO ISSUE UNTIL SUIT FINALLY DETERMINED.

"A motion was made by the plaintiffs [the losing party in a Patent Office interference proceeding] in this court for a preliminary injunction to restrain the Commissioner of Patents from issuing a patent to the defendants during the pendency of this action [to set aside an award of priority to the defendants]. Another judge of this court denied the application. The Court of Appeals reversed his order and held that the Commissioner of Patents was without authority to issue a patent to the defendants until the final outcome of this suit, in effect, staying the issuance of a patent in the meantime, *Monsanto Co.* v. *Kamp*, 360 F.2d 499."

2. SAME—"TRIALS DE NOVO"—NEW EVIDENCE—35 U.S.C. 145 AND 146.

"At the outset, it seems appropriate to recapitulate the principles that govern the scope of judicial review in this instance. Actions in the District Court under 35 U.S.C. § 145 against the Commissioner of Patents, to secure an adjudication that the plaintiff is entitled to a patent on an application that has been rejected by the Commissioner; and actions under 35 U.S.C. 146, between two or more claimants to a patent, to set aside a decision of the Board of Patent Interferences on the quesiton of priority, are *sui generis*. They are proceedings of a hybrid nature. They are sometimes denominated 'trials *de novo*,' but such use of this term is somewhat loose. Proceedings in this court in actions of these two types are not true or genuine trials *de novo*. The administrative record of the Patent Office forms the nucleus of the evidence before the District Court. Unlike, however, the customary judicial review of administrative decisions where the administrative agency acts on a record, the court does not confine itself to that record in these cases. Additional evidence is admissible in support of contentions advanced by the parties in the Patent Office. It is this feature that has led to the inaccurate use of the appellation 'trials *de novo*' in these actions. There is a limitation on the admissibility of supplementary evidence. Such evidence as was available to the parties, but was withheld from the Patent Office as a result of fraud, bad faith, or gross negligence, may be excluded at the trial, *Minnesota Mining & Mfg. Co.* v. *General Electric Co.*, 167 F. Supp. 37, 40; *Polaroid Corp.* v. *Horner*, 197 F. Supp. 950, 957."

3. SAME—SAME—SAME—SAME.

"The applicable statutes do not contain any provision authorizing the court to remand the matter to the Patent Office for a consideration of the additional evidence tendered at the trial. In this regard sections 145 and 146 differ from many of the recent statutes governing judicial review of administrative action. It is not unlikely that this omission is due to the fact that the original precursors of sections 145 and 146 were enacted long before the origin and development of modern administrative law, and although the patent laws have been amended and codified subsequently, there has been no emphatic demand or pressing proposal for a change in this respect."

4. SAME—SAME—PRESUMPTION OF REGULARITY ATTACHES TO DECISIONS OF THE PATENT OFFICE.

"There is another significant feature in which these actions differ from true trials *de novo*. A presumption of regularity attaches to the decision of the Patent Office. The burden is on the party challenging the administrative ruling to demonstrate that it was erroneous. This doctrine applies to interference proceedings as well as to reviews of denials of applications for patents by the Patent Office."

5. **INVENTOR—EVIDENCE—APPLICANTS ARE PRIMA FACIE INVENTORS.**

"An application for a patent made by two or more persons claiming to be joint inventors is *prima facie* evidence that they are such. The Patent Office may act on such a representation. * * * No reason for overturning this action of the Patent Office on the basis of its record is perceived. The burden is on the plaintiff to show affirmatively by extrinsic proof that the ruling of the Patent Office was erroneous."

6. **SAME—SAME—SAME.**

"The plaintiffs introduced in evidence at the trial before this court a Canadian patent issued on the basis of the same parent German application as supports for the application in the case at bar. The Canadian application was filed on April 19, 1956 and purports to be presented solely in behalf of Ernst Kamp as the inventor. The Canadian patent was granted on June 11, 1963, to him individually and bears number 664,553. It is urged in behalf of the plaintiffs that the Canadian application constitutes a representation by Kamp that he was the sole inventor, and contradicts the assertion in the American application that Kamp and Jahn were joint inventors. This inconsistency appears on its face, but its mere presence is not sufficient to constitute adequate proof to justify a conclusion that the Patent Office erred in accepting Kamp and Jahn as joint inventors."

7. **SAME—SAME—BURDEN OF PROOF.**

"The argument advanced by the plaintiffs that this conflict between the two applications [American and Canadian, as to inventorship] shifts the burden of proof to the defendants is not well founded. The burden of proof to establish an error in the ruling of the Patent Office remains on the plaintiffs throughout, as has been already discussed. It may well be that there was an inconsistency between the American and Canadian application, or a misrepresentation in one or the other. The onus is on the plaintiffs to demonstrate which representation was incorrect. A misstatement in Canada may bear on the validity of the Canadian patent, and vice versa, *S. H. Kress & Co.* v. *Aghnides*, 4th Cir. 246 F.2d 718, 725. This court concludes that while proof of inconsistent statements was admissible, it is not alone sufficient to justify a reversal of the ruling of the Patent Office."

8. **SAME—MISJOINDER OF NONJOINDER OF INVENTORS—35 U.S.C. 116 AND 256.**

"* * * it should be observed that the patent law does not regard as crucial the question whether an invention is the product of several joint inventors, or of a sole inventor. A misjoinder or nonjoinder of joint inventors, does not invalidate a patent. An error in that respect may be corrected, either by the Commissioner of Patents or by the court, by an amendment striking out or adding the name of an inventor, 35 U.S.C. §§ 116, 256."

9. **SAME—JOINT INVENTION.**

"The next contention of the plaintiffs is that the defendants Kamp and Jahn were not joint inventors in fact. This brings us to a consideration of the pertinent principles. A joint invention is the product of collaboration of the inventive endeavors of two or more persons working toward the same end and producing an invention by their aggregate efforts. To constitute a joint invention, it is necessary that each of the inventors work on the same subject matter and make some contribution to the inventive thought and to the final result. Each needs to perform but a part of the task if an invention emerges from all of the steps taken together. It is not necessary that the entire inventive concept should occur to each of the joint inventors, or that the two should physically work on the project together. One may take a step at one time, the other an approach at different times. One may do more of the experimental work while the other makes suggestions from time to time. The fact that each of the inventors plays a different role and that the contribution of one may not be as great as that of another, does not detract from the fact that the invention is joint, if each makes some original contribution, though partial, to the final solution of the problem."

Wayne L. Benedict, *Herbert B. Roberts*, and *Platon Mandros* for plaintiffs.

Paul M. Griag, Jr. and *Donald Antonelli*, for defendants Kamp and Jahn.

Joseph Schimmel, for the defendant Brenner.

HOLTZOFF, *J.*

This is an action under 35 U.S.C. § 146, to set aside a determination by the Patent Office, in an interference proceeding, awarding to the defendants Kamp and Jahn, rights of priority to a patent. At this time the case was before this court on a separate trial as to one of the issues.

The invention involved in this controversy relates to plastic bottles, such as are used for pharmaceutical products. Specifically it consists of coating or lining bottles of this type with a resin compound to prevent the loss of liquid contents by permeation or evaporation. The kind of plastic used is known as polyethylene. The resin employed is known as an epoxy resin. There are two counts in the interference. Each of them covers a coated container as an article of manufacture, one of the counts being somewhat broader than the other.

The plaintiffs, Pinsky, Adakonis and Nielsen, filed an application for a patent on March 28, 1956. Patent No. 2,830,721 was granted to them on April 15, 1958, and was eventually assigned to the plaintiff Monsanto Company.

The defendants, Kamp and Jahn, filed an application for a patent on April 17, 1956, No. 578,846. They had filed a parent application in Germany on April 22, 1955 and were accorded in the United States the benefit of that earlier date. The application submitted in the United States was claimed to be for the same invention and made in behalf of the same inventors as that previously filed in Germany.

An interference was declared between the plaintiffs' patent and the defendants' application, on March 27, 1961. That proceeding terminated on June 29, 1964 by an award of priority to the defendants, on the basis of their earlier German filing date. The plaintiffs then brought this action to set aside that decision. They contend that they are entitled to priority and, therefore, should be permitted to retain their patent and that none should issue to the defendants.

[1] A motion was made by the plaintiffs in this court for a preliminary injunction to restrain the Commissioner of Patents from issuing a patent to the defendants during the pendency of this action. Another judge of this court denied the application. The Court of Appeals reversed his order and held that the Commissioner of Patents was without authority to issue a patent to the defendants until the final outcome of this suit, in effect, staying the issuance of a patent in the meantime, *Monsanto Co.* v. *Kamp*, 360 F.2d 499.

On the plaintiffs' motion this court ordered a separate trial of the issue whether defendants, Kamp and Jahn, were entitled to rely on the German application as joint inventors. It was urged by plaintiffs' counsel that if they prevailed on this point, they would be entitled to final judgment in their favor, without a trial of the remaining questions. This trial has been had. Its scope has been somewhat broader than the narrow issue defined by the order of this court as will appear hereafter. This opinion deals with the issues that were the subject matter of the separate trial.

[2] At the outset, it seems appropriate to recapitulate the principles that govern the scope of judicial review in this instance. Actions in the District Court under 35 U.S.C. § 145 against the Commissioner of Patents, to secure an adjudication that the plaintiff is entitled to a patent on an application that has been rejected by the Commissioner; and actions under 35 U.S.C. 146, between two or more claimants to a patent, to set aside a decision of the Board of Patent Interferences on the question of priority, are *sui generis*. They are

proceedings of a hybrid nature. They are sometimes denominated "trials *de novo*," but such use of this term is somewhat loose. Proceedings in this court in actions of these two types are not true or genuine trials *de novo*. The administrative record of the Patent Office forms the nucleus of the evidence before the District Court. Unlike, however, the cutsomary judicial review of administrative decisions where the administrative agency acts on a record, the court does not confine itself to that record in these cases. Additional evidence is admissible in support of contentions advanced by the parties in the Patent Office. It is this feature that has led to the inaccurate use of the appellation "trials *de novo*" in these actions. There is a limitation on the admissibility of supplementary evidence. Such evidence as was available to the parties, but was withheld from the Patent Office as a result of fraud, bad faith, or gross negligence, may be excluded at the trial, *Minnesota Mining & Mfg. Co.* v. *General Electric Co.*, 167 F. Supp. 37, 40; *Polariod Corp.* v. *Horner*, 197 F. Supp. 950, 957.

[3] The applicable statutes do not contain any provision authorizing the court to remand the matter to the Patent Office for a consideration of the additional evidence tendered at the trial. In this regard sections 145 and 146 differ from many of the recent statutes governing judicial review of administrative action. It is not unlikely that this omission is due to the fact that the original precursors of sections 145 and 146 were enacted long before the origin and development of modern administrative law, and although the patent laws have been amended and codified subsequently, there has been no emphatic demand or pressing proposal for a change in this respect.

[4] There is another significant feature in which these actions differ from true trials *de novo*. A presumption of regularity attaches to the decisions of the Patent Office. The burden is on the party challenging the administrative ruling to demonstrate that it was erroneous. This doctrine applies to interference proceedings as well as to reviews of denials of applications for patents by the Patent Office. The principle was enunciated in the leading case of *Morgan* v. *Daniels*, 153 U.S. 121, 125, in the following language:

> "Upon principle and authority, . . . it must be laid down as a rule that where the question decided in the Patent Office is one between contesting parties as to priority of invention, the decision there made must be accepted as controlling upon that question of fact in any subsequent suit between the same parties, unless the contrary is established by testimony which in character and amount carries thorough conviction."

This doctrine has been applied in numerous cases. Among them are the following: *United States* v. *Szuecs*, 100 U.S.App.D.C. 24, 25, 240 F.2d 886, 887; *Shell Development Co.* v. *Pure Oil Co.*, 111 F. Supp. 197, 201; *Minnesota Mining & Mfg. Co.* v. *General Electric Co.*, 167 F. Supp. 37, 40; and *Polaroid Corp.* v. *Horner*, 197 F. Supp. 950, 957.

We shall now take up the various contentions advanced by the plaintiffs as a basis for overruling the decision of the Patent Office tribunals. It is claimed, first, that defendants Kamp and Jahn, are not entitled to the benefit of the filing date of the German application, because that application was filed not by them but by Alex Kamp and Company. The oath attached to the American application, however, recites that the German application was filed in their behalf. Subsequently each of the two applicants presented an affidavit to the Patent Office to the effect that Alex Kamp and Company filed the German application in their behalf. It is a well known practice under the German patent law to prosecute applications for patents in the name of an assignee or representative of the inventor. The Patent Office of the United States in this instance accepted the showing made by the defendants, Kamp and Jahn, as sufficient to establish the fact that the German application was submitted in their behalf and that they are entitled to the benefit of its filing date.

[5] An application for a patent made by two or more persons claiming to be joint inventors is *prima facie* evidence that they are such. The Patent Office may act on such a representation. *Lemp* v. *Randall*, 33 App. D.C. 430, 433; *Beidler* v. *Caps* (CCPA) 36 F.2d 122; *Brown* v. *Edeler* (CCPA) 110 F.2d 858, 861; *Van Otteren* v. *Hafner* (CCPA) 278 F.2d 738, 741; and *Cheshire* v. *Cox Multi-Mailer Co.* (7th Cir.) 229 Fed. 415, 419. No reason for overturning this action of the Patent Office on the basis of its record is perceived. The burden is on the plaintiff to show affirmatively by extrinsic proof that the ruling of the Patent Office was erroneous.

[6] The plaintiffs introduced in evidence at the trial before this court a Canadian patent issued on the basis of the same parent German application as supports for the application in the case at bar. The Canadian application was filed on April 19, 1956 and purports to be presented solely in behalf of Ernst Kamp as the inventor. The Canadian patent was granted on June 11, 1963, to him individually and bears number 664,553. It is urged in behalf of the plaintiffs that the Canadian application constitutes a representation by Kamp that he was the sole inventor, and contradicts the assertion in the American application that Kamp and Jahn were joint inventors. This inconsistency appears on its face, but its mere presence is not sufficient to constitute adequate proof to justify a conclusion that the Patent Office erred in accepting Kamp and Jahn as joint inventors.

[7] The argument advanced by the plaintiffs that this conflict between the two applications shifts the burden of proof to the defendants is not well founded. The burden of proof to establish an error in the ruling of the Patent Office remains on the plaintiffs throughout, as has been already discussed. It may well be that there was an inconsistency between the American and Canadian application, or a misrepresentation in one or the other. The onus is on the plaintiffs to demonstrate which representation was incorrect. A misstatement in Canada may bear on the validity of the Canadian patent, and vice versa, *S. H. Kress & Co.* v. *Aghnides*, 4th Cir. 246 F.2d 718, 725. This court concludes that while proof of inconsistent statements was admissible, it is not alone sufficient to justify a reversal of the ruling of the Patent Office.

[8] In this connection it should be observed that the patent law does not regard as crucial the question whether an invention is the product of several joint inventors, or of a sole inventor. A misjoinder or nonjoinder of joint inventors, does not invalidate a patent. An error in that respect may be corrected, either by the Commissioner of Patents or by the court, by an amendment striking out or adding the name of an inventor, 35 U.S.C. §§ 116, 256.

[9] The next contention of the plaintiffs is that the defendants Kamp and Jahn were not joint inventors in fact. This brings us to a consideration of the pertinent principles. A joint invention is the product of collaboration of the inventive endeavors of two or more persons working toward the same end and producing an invention by their aggregate efforts. To constitute a joint invention, it is necessary that each of the inventors work on the same subject matter and make some contribution to the inventive thought and to the final

result. Each needs to perform but a part of the task if an invention emerges from all of the steps taken together. It is not necessary that the entire inventive concept should occur to each of the joint inventors, or that the two should physically work on the project together. One may take a step at one time, the other an approach at different times. One may do more of the experimental work while the other makes suggestions from time to time. The fact that each of the inventors plays a different role and that the contribution of one may not be as great as that of another, does not detract from the fact that the invention is joint, if each makes some original contribution, though partial, to the final solution of the problem.

A pertinent discussion of this subject is found in *De Laski & Thropp C.W.T. Co.* v. *Wm. R. Thropp & Sons Co.*, 218 Fed. 458, 464, and reads as follows:

> "In order to constitute two persons joint inventors, it is not necessary that exactly the same idea should have occurred to each at the same time, and that they should work out together the embodiment of that idea in a perfected machine. The conception of the entire device may be due to one, but if the other makes suggestions of practical value, which assisted in working out the main idea and making it operative, or contributes an independent part of the entire invention, which is united with the parts produced by the other and creates the whole, he is a joint inventor, even though his contribution be of comparatively minor importance and merely the application of an old idea."

The decision of the District Court in that case was affirmed by the Court of Appeals for the Third Circuit, in an opinion by Judge Woolley, who was a leading authority in this field. He stated in *Wm. R. Thropp & Sons Co.* v. *De Laski & Thropp C.W.T. Co.*, 226 Fed. 941, 949:

> "In a machine containing as many elements as this one, it is not to be thought nor by the law required, that the inventive conceptions of two inventors shall develop simultaneously. One may conceive a general or imperfect outline of an entirely novel thing, which, without the conception of another developing it and giving it body, might never amount to invention; but if the conceptions of one supplement and complement the conceptions of the other, the result might be invention and therefore joint invention."

In *Vrooman* v. *Penhollow*, 6th Cir. 179 Fed. 296, 308, the court stated:

> "It would constantly be happening in the case of joint inventions that the illuminating idea was seen by one before it was seen by the other. But between that and the issuing of the patent there is in many instances a long stretch of time devoted to experiments and the consideration of the form or forms in which it may best be used. The law contemplates this and gives time for it."

With a view to establishing affirmatively that Kamp and Jahn were not in fact joint inventors, counsel for the plaintiffs took their depositions in Germany. The depositions are lengthy. The two defendants were subjected to a thorough and searching interrogation. They had retired from active business and apparently their recollection as to some details was somewhat faded and dim. It was brought out that Alex Kamp and Company was a German manufacturer of various types of chemicals and similar products. The defendant Kamp was the principal proprietor of the business and actively managed it. The defendant Jahn was a chemist in the employ of the concern. Each of the two defendants had his own laboratory. Apparently most of the detailed experimental work was done by Jahn. Some of it, however, was conducted by Kamp. The two co-workers were in frequent consultation with each other concerning various aspects of the project. Jahn reported to Kamp from time to time concerning his laboratory operations and Kamp made suggestions to him. There was an interchange of ideas between the two, until finally a consummation was reached. Each of the two gave credit to the participation of his colleague in the development of the invention. Obviously this evidence not only fails to disprove the position of the defendants Kamp and Jahn that they were joint inventors, but on the contrary it supports their contention.

Finally the plaintiffs claim that Kamp and Jahn were not in fact inventors at all, but merely borrowed and utilized the ideas of other persons. To be sure, the evidence does show that they investigated and studied the literature bearing on the subject in which they were working. This was an intelligent approach. They also visited several manufacturers of similar products, and in conferences and conversations with them, derived some useful ideas that they pursued. This evidence does not disprove the fact that the final concept and its reduction to practice, were their own invention. Intelligent and successful inventors do not ordinarily work in a vacuum. It is natural for them to commence their endeavors by studying and analyzing what had been done by their predecessors and to begin their own operations at that point.

The objections to the award of priority to the defendants Kamp and Jahn are overruled. The court finds and concludes that the defendants Kamp and Jahn were joint inventors of the invention in suit; that the German application on which they relied was filed in their behalf by Alex Kamp and Company; that they are entitled to the benefit of the filing date of the German application; and that the American application was properly filed by them as joint inventors.

The merits of the controversy still remain to be tried and determined. The plaintiffs' patent was issued to them as far back as April 15, 1958. The interference proceeding was declared by the Patent Office on March 27, 1961 and terminated on June 29, 1964 in an award of priority to the defendants Kamp and Jahn. The present action was filed on September 25, 1964. A final trial is yet to be had.

It should be noted that the civil non-jury calendar of this court has been practically current and that this action could have been tried a long time ago. The court is cognizant of the fact that some of the delay was due to the taking of depositions abroad and pursuing other discovery remedies. Nevertheless, since the defendants, who were awarded a patent on June 29, 1964, have been laboring under an injunction and have not received their patent as yet, the parties are entitled to some degree of expedition. The court will fix an early date for trial if an application is made by any of the parties for that purpose.

This opinion will constitute findings of fact and conclusions of law. Any party may, however, present any supplemental or additional proposed findings or conclusions.

U.S. Court of Customs and Patent Appeals

In re Morris Mindick and Lewis E. Reven

No. 7731. Decided February 9, 1967

[54 CCPA —; 371 F.2d 892; 152 USPQ 566]

1. Patentability—Statutory Basis for Rejection—35 U.S.C. 102 and 103.

"The sole reference relied upon is Wolter Canadian Patent No. 521,741, issued February 14, 1956. Initially, we observe that the precise statutory basis for the prior art rejection has not been expressed by either the Examiner or the Board, both holding merely that the product claims are 'unpatentable over Wolter' since, in the words of the Board, 'the claims, as broadly as defined, fail to patentably distinguish over the products of Wolter.' We generally view such rejections with disfavor, since neither appellants nor the court is informed as to whether the prior art rejection is for anticipation under 35 U.S.C. 102 or obviousness under 35 U.S.C. 103. As a general rule, we think Examiners and the Board have an obligation to state with precision the statutory basis for a rejection, unless the basis is otherwise clear from the terms used. While the words 'anticipate' and 'fully met by' connote a section 102 rejection, and such words as 'render obvious,' or even 'unpatentable over' (when a combination of references, as distinguished from a single reference, is used) connote a section 103 rejection, the statutory basis for a prior art rejection cannot be ascertained readily when only a single reference is used and terms such as 'unpatentable over' and 'patentably distinguish' are employed to state the rejection."

2. CLAIM—CONSTRUCTION OF CLAIMS—WORDS AND PHRASES—"SUBSTANTIALLY."

Held, with respect to the claimed limitation "maintaining a substantially constant pH over a one month storage period." "The use of the word 'substantially' also permits some limited variation in pH during storage * * *"

3. PATENTABILITY—COMPOSITION—CLAIMS—BROAD LANGUAGE READING ON PRIOR ART.

"It may well be that the products disclosed by appellants [silica sols] are stable almost permanently, or for several years, while the Wolter products are stable only for 'several months,' but not several years. However, even assuming, without deciding, that this is so, the present claims read on products such as those of Wolter which are stable for storage periods of at least one month, during which time a substantially constant pH is maintained. The product claims before us are so broad that we are unable to perceive any differences at all between the claimed subject matter and the prior art silica sols of Wolter."

4. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—REFUSAL TO ENTER AMENDMENT.

"* * * we note from the record that appellants offered to cancel claim 14 and to amend claim 13 by insertion of limitations to the allowed process, which would convert claim 13 into a product-by-process claim. However, the Examiner refused to enter an amendment embodying these proposals, which refusal appellants assign as error in their reasons of appeal. The refusal of an Examiner to enter an amendment after final rejection of claims is a matter of discretion. If there is an abuse of discretion, the matter may be remedied by a Rule 181 petition to the Commissioner of Patents. Ultimate judicial review of such matters of practice and procedure may be had in District Court. This court, like the Board of Appeals, does not consider the issue of whether the Examiner's refusal to enter the proposed amendment after final rejection constituted an abuse of discretion on his part."

5. PATENTABILITY—ANTICIPATION—STATUTORY BASIS FOR REJECTION—35 U.S.C. 102(b).

"In summary, appellants have not pointed out, and we have been unable to find, any differences between the *claimed* subject matter of broad product claims 13 and 14 and the prior art silica sols of Wolter, especially that of the reference patentee's Example 6. Consequently, we regard the prior art rejection in this case as one of anticipation under 35 U.S.C. 102(b), and we *affirm* the Board's decision that claims 13 and 14 are unpatentable over Wolter."

6. SAME—PARTICULAR SUBJECT MATTER—"METHOD OF STABILIZING SILICA SOLS."

The refusal of certain claims in an application entitled "Method of Stabilizing Silica Sols," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 103,425.

AFFIRMED.

Herbert B. Keil, *Richard L. Johnston* for appellants.
Joseph Schimmel for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 13 and 14 of application Serial No. 103,425, filed April 17, 1961, entitled "Method of Stabilizing Silica Sols."

The invention relates to a process for stabilizing acidic aqueous silica sols and the improved products produced thereby. The process consists of a double deionization treatment with an aging period between the successive deionization steps, which involve treatment with ion exchange resins. Process claims 16 to 26 have been allowed by the Examiner. Product claims 13 and 14, which contain no process limitations, are on appeal and read as follows:

13. An acidic stable salt-free silica sol consisting essentially of an aqueous liquid having colloidally dispersed therein from 3% to 50% by weight of substantially discrete, dense, non-agglomerated particles of silica, which particles have a specific surface area of from 50–800 $m.^2/g.$, said silica sol having a pH ranging between 2.6 to 3.8 and a specific conductivity not greater than 1,000 micromhos/cm. at 77° C., with the pH and conductivity being derived primarily from the dissociation of the acidic groups on the surfaces of the silica particles, said sol being further characterized by maintaining a substantially constant pH over a one month storage period.

14. A silica sol as in claim 13 wherein the pH of the sol is between about 2.9 and 3.5.

[1] The sole reference relied upon is Wolter Canadian Patent No. 521,741, issued February 14, 1956. Initially, we observe that the precise statutory basis for the prior art rejection has not been expressed by either the Examiner or the Board, both holding merely that the product claims are "unpatentable over Wolter" since, in the words of the Board, "the claims, as broadly as defined, fail to patentably distinguish over the products of Wolter." We generally view such rejections with disfavor, since neither appellants nor the court is informed as to whether the prior art rejection is for anticipation under 35 U.S.C. 102 or obviousness under 35 U.S.C. 103. As a general rule, we think Examiners and the Board have an obligation to state with precision the statutory basis for a rejection, unless the basis is otherwise clear from the terms used. While the words "anticipate" and "fully met by" connote a section 102 rejection, and such words as "render obvious," or even "unpatentable over" (when a combination of references, as distinguished from a single reference, is used) connote a section 103 rejection, the statutory basis for a prior art rejection cannot be ascertained readily when only a single reference is used and terms such as "unpatentable over" and "patentably distinguish" are employed to state the rejection.

On the other hand, we recognize that in exceptional cases doubts may exist as to whether there are in fact *any* differences between a *claimed* invention and the disclosures of a single reference. This case presents such a situation. Regardless of whatever differences may exist between appellants' *disclosed* products and those of Wolter, we think that the appealed claims are so broad as to read on the products of both appellants and Wolter, as shown by the following analysis.

Wolter expressly discloses his stable aqueous silica sols to be "salt-free." The 20 to 35 percent silica concentration of the patentee's products lies wholly within the 3% to 50% range expressed in appellants' claims. The specific surface area of Wolter's sols is stated to be 80 to 200 $m.^2/g.$, well within the 50 to 800 $m.^2/g.$ range recited in the claims before us. The conductance of the "completely deionized" Wolter sols is stated to be "less than 4 times 10^{-4} mho/cm.," i.e. less than 400 micromhos/cm., which fully meets the claim limitation that the conductivity be not greater than 1,000 micromhos/cm.

Wolter discloses in Example 6 an acidic final product which had been "completely deionized by passing it first through a cation-exchanger, then an anion-exchanger, followed by a cation-exchanger and an anion-exchanger." The acidic sol resulting from this double deionization treatment had a pH of 3.2; and Wolter states that "a sample of this sol had not gelled after one month storage at room temperature," i.e. it remained stable for at least one month at room temperature. The pH of 3.2 for the final product of Wolter's Example 6 lies exactly at the midpoint of both the pH range of 2.6 to 3.8 set forth in appellants' claim 13 and the preferred range of 2.9 to 3.5 expressed in claim 14. The claim limitation to the effect that appellants' sol is "further characterized by maintaining a substantially constant pH over a one month storage period" is merely another way of saying that the sol remained stable and did not gel over a one month storage period.[2] [2] The use of the word "substantially" also permits some limited variation in pH during storage of a sol.

In addition to his disclosure that the doubly deionized sol of Example 6 is stable for at least one month, which is all that is required by the terms of the broad product claims before us. Wolter also teaches that:

> * * * a 30% sol may be stable for as much as several months or more at room temperature and for longer periods at temperatures below room temperature. * * * At a concentration of 20% SiO_2 the sol will be stable for comparatively longer times.

[3] It may well be that the products disclosed by appellants are stable almost permanently, or for several years, while the Wolter products are stable only for "several months," but not several years. However, even assuming, without deciding, that this is so, the present claims read on products such as those of Wolter which are stable for storage periods of at least one month, during which time a substantially constant pH is maintained. The product claims before us are so broad that we are unable to perceive any differences at all between the claimed subject matter and the prior art silica sols of Wolter.

[4] With regard to the breadth of the appealed claims, we note from the record that appellants offered to cancel claim 14 and to amend claim 13 by insertion of limitations to the allowed process, which would convert claim 13 into a product-by-process claim. However, the Examiner refused to enter an amendment embodying these proposals, which refusal appellants assign as error in their reasons of appeal. The refusal of an examiner to enter an amendment after final rejection of claims is a matter of discretion. If there is an abuse of discretion, the matter may be remedied by a Rule 181 petition to the Commissioner of Patents. Ultimate judicial review of such matters of practice and procedure may be had in District Court. This court, like the Board of Appeals, does not consider the issue of whether the Examiner's refusal to enter the proposed amendment after final rejection constituted an abuse of discretion on his part.

[5] In summary, appellants have not pointed out, and we have been unable to find, any differences between the *claimed* subject matter of broad product claims 13 and 14 and the prior art silica sols of Wolter, especially that of the reference patentee's Example 6. Consequently,

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[2] The prior art-recognized correlation between pH changes and sol instability is acknowledged in appellants' specification.

we regard the prior art rejection in this case as one of anticipation under 35 U.S.C. 102(b), and we *affirm* the Board's decision that claims 13 and 14 are unpatentable over Wolter.

[6] AFFIRMED.

SMITH, *J.*, concurring.

The record shows that the Board of Appeals here consisted of an examiner-in-chief and two acting examiners-in-chief. Appellants do not challenge the legality of that Board. For the reasons expressed in my dissenting opinion in *In re Wiechert*, 54 CCPA —, — F.2d —, 152 USPQ 247, the decision of such a Board in my view is a legal nullity. However, I must accept the majority's view on this issue in the *Wiechert* case, i.e., the legality of the Board is not an issue here. I therefore participate in the merits of this appeal and in so doing, agree with the conclusion of the majority.

U.S. Court of Customs and Patent Appeals

IN RE KIRK H. LOW, JOHN A. GRAHAM, LAVERT F. SNEED, AND CLAUD W. SMITH

No. 7694. Decided February 9, 1967

[54 CCPA —; 371 F.2d 1019; 152 USPQ 561]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—WORK HANDLING SYSTEM.
The decision of the Board of Appeals, refusing certain claims to a work handling system as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 81,518.

AFFIRMED.

John H. Sutherland for appellants.

Joseph Schimmel (*J. F. Nakamura*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

KIRKPATRICK, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the Examiner's rejection under section 103 of claims 19, 20, 24 and 25, the only claims now in application Serial No. 81,518, filed January 9, 1961.

The application concerns a work handling system for transferring trays of small parts from one work station to another as in the manufacture of articles such as shoes. The system includes a main conveyor loop having driven endless belt portions for carrying trays placed thereon. At each of a plurality of transfer points along the endless belt portions there is a take-off conveyor for transferring trays from the main conveyor to a work station, a return conveyor adjacent thereto for carrying trays from the work station back to the main conveyor, and an automatic take-off device for diverting trays from the main conveyor onto the take-off conveyor.

The take-off conveyors are gravity-operated roller conveyors extending downwardly from the main conveyor and the return conveyors are similar but extend downwardly to the main conveyor. Thus the take-off conveyors deliver the trays to locations at the work stations which are lower than the locations at which the return conveyors must receive the trays to be returned. A pair of vertically spaced turntables may be provided at each work station with the lower turntable provided to receive trays from the take-off conveyor and the upper turntable adapted to load trays placed thereon by a worker onto the starting end of the return conveyor.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

The take-off devices positioned along the main conveyor are in the form of vertically movable hooks which are automatically controlled. If a passing tray is destined for a work station associated with a particular take-off conveyor the hook at that position is brought into engagement with the tray so that continued movement of the main conveyor causes the tray to swing about the hook onto the take-off conveyor.

Claim 24, treated as illustrative in appellants' brief, reads:

> 24. In a work handling system for moving material to and from a work station located in spaced relationship with a main conveyor, the improvement which comprises, a gravity conveyor sloping downwardly from the main conveyor and extending to a position adjacent the work station, and another gravity conveyor extending from a position adjacent the work station and sloping downwardly toward said main conveyor, there being a substantial difference in the elevation of said gravity conveyors at their position adjacent said work station.

Claim 25 is dependent on claim 24, adding a recitation of the vertically spaced turntables. The combination of the main conveyor with the take-off and return conveyors is recited in claim 19, while claim 20, which is dependent thereon, adds a recitation of the hook-type device for diverting trays from the main conveyor to the take-off conveyor.

The Examiner and the Board relied on the following prior art:

Mabee, 1,710,779, April 30, 1929.
Marsh, 2,818,161, December 31, 1957.
Burt, 3,018,873, January 30, 1962 (filed Apr. 7, 1959).
Wales et al. (Wales), 3,075,653, January 29, 1963 (filed Dec. 12, 1958).

Mabee discloses package handling apparatus wherein a vertical spiral chute delivers packages to a wrapping station from various floors of a store. At the station is a lower, motor-driven turntable for distributing packages to be wrapped to workers stationed thereabout, a downwardly inclined chute for conveying packages by gravity from the vertical spiral chute to the turntable, a second motor-driven turntable for receiving wrapped packages from the workers disposed above the first turntable, and a second downwardly inclined chute for conveying wrapped packages from the second turntable to a label-pasting table therebelow.

Marsh discloses a tray-conveying system for delivering meals to customers in a restaurant. It includes a continuously driven main conveyor of the endless belt type for conveying filled trays from the kitchen and mechanism for diverting trays automatically from the main conveyor to selected ones of a plurality of supplemental conveyors extending to delivery tables at the customers' tables. The supplemental conveyors incline downwardly from the main conveyors and are made up of parallel anti-friction rolls acting through gravity. The automatic tray diverting mechanism includes hooks positioned at the main conveyor ahead of the supplemental conveyors to engage arms extending from trays so that the main conveyor causes a selected tray to swing about the hook and onto the adjacent discharging conveyor.

The Burt patent discloses a conveyor system including a main roller conveyor and several branch conveyors, which latter are of the gravity-operated roller type for removing articles diverted from the main conveyor.

Wales relates to a system for distributing material-carrying sleds to a plurality of stations in a warehouse. The system includes a main conveyor loop for transporting ~~the~~ sleds from a receiving department to one of a plurality of stations along the loop and a secondary conveyor loop with several sidings connected to the main loop at each station to receive sleds diverted from the main conveyor and return empty sleds thereto, and automatic sled diverters "of a known type" at each station for selectively transferring sleds from the main conveyor to the secondary conveyor. Each secondary conveyor also includes an order pickup siding which may accumulate sleds until it is "about half full."

The Examiner specifically rejected claims 19 and 24 as obvious over Wales in view of Burt, claim 20 with claim 19 further in view of Marsh, and claim 25 over Wales in view of Mabee. The Board specifically recognized the rejection as being on those grounds and expressly affirmed the Examiner's decision.

As is stated by the Board, the "concept of transporting articles along a main conveyor, diverting the articles to branch conveyor means and returning the articles from the branch conveyor means to the main conveyor at the position of diversion is disclosed by Wales et al." Appellants do not appear to argue to the contrary. Rather, they urge that "the heart of the case" lies in the failure of the Patent Office tribunals "to give cognizance to" the novelty of "the *concept* of harnessing gravity to move materials in *opposite* directions *both from and to* a main conveyor *and a given work station*."

That the Patent Office did recognize the presence of novelty over the art of record is plain from the fact that the rejection is based only on obviousness of the claimed structure over that art. We are convinced that the holding of obviousness is correct. Burt's showing of gravity operated branch conveyors suggests to one skilled in the art that such gravity conveyors be used in place of the branch conveyors of Wales to convey articles back and forth between the Wales main conveyor and a work station.[2] It would be obvious to such a person contemplating use of gravity conveyors that the work station end of the take-off conveyor would have to be lower than the main conveyor and that the loading end of the return conveyor at the work station would have to be higher. With regard to a statement in claim 19 that diverted trays accumulate on the take-off conveyors, such feature is disclosed in Wales. Thus, the rejection of claims 19 and 24 will be affirmed.

As to claim 20, appellants do not appear to urge that the additional recitation of the hook means for diverting the articles from the belt conveyor onto the take-off conveyor of claim 19 constitutes a limitation imparting patentability to the claim. In any event, it would clearly be obvious to employ the hook means of Marsh as the diverter "of known type" described in Wales to perform the same function required by both Wales and appellants.

In rejecting claim 25 on Wales in view of Mabee, the Examiner stated it would be obvious to a person skilled in the art to use work tables and vertically spaced turntables as employed by Mabee at the work stations in the branch conveyor loops of Wales. In affirming, the Board held that Mabee's use of gravity chutes from a main conveyor to a lower work station turntable and from an upper turntable to another station would suggest to the "routineer in the art" that Wales be modified to provide the claimed structure with its gravity conveyors for take-off and return of articles to and from vertically spaced turntables at the work stations. We agree with both the Examiner and the Board, further noting that this claim merely adds to its base claim 24 the spaced turntables clearly taught for use in corresponding surroundings by Mabee.

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[2] That it is obvious to interchange power driven and gravity type conveyors is evidenced by a statement in Burt that his main conveyor may be of either type.

Appellants take the position that the Board emphasized the Mabee patent and apparently regard its reference to the gravity channels therein as suggesting the use of gravity branches in the same relationship to the main conveyor as amounting to a new rejection of claims 19, 20 and 24. However, we are satisfied that the Board affirmed the rejection of those claims as made by the Examiner and are convinced that it properly did so. Hence, it is unnecessary to consider whether additional valid grounds of rejection may be apparent from the Board's comments.

[1] The decision of the Board is affirmed.

AFFIRMED.

SMITH, J., took no part in the decision of this case.

U.S. Court of Customs and Patent Appeals

IN RE MARTIN N. ORNITZ AND RAY H. ENGLISH

No. 7727. Decided May 4, 1967

[54 CCPA —; 376 F.2d 330; 153 USPQ 453]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—REASONS OF APPEAL—STATUTORY BASIS FOR REJECTION—35 U.S.C. 132.

"While both appellants and the Board could and should have been more helpful in identifying the statutory basis for the rejection, appellants' interpretation of the Board's opinion is *not* unreasonable. The assignment of reasons of appeal from an ambiguous opinion should not be made a game, 35 U.S.C. 132, with the appellant the loser should he ultimately be proven incorrect as to the statutory basis for the Board's decision. Accordingly, we do not find appellants' reasons of appeal inadequate."

2. PATENTABILITY—REFERENCE—OVERLAPPING INVENTORSHIP—35 U.S.C. 102(e).

"In establishing Ornitz as a proper reference, the Solicitor first argues 'Ornitz' is 'another' to 'Ornitz and English,' citing 35 U.S.C. 102(e). We agree and add as authority *In re Land*, 54 CCPA 806, 368 F.2d 866, 151 USPQ 621; *In re Bowers*, 53 CCPA 1590, 359 F.2d 886, 149 USPQ 570. Moreover, the point is hardly debatable where, as here, appellants and the patentee are different persons."

3. SAME—SAME—EFFECTIVE DATE OF REFERENCE PATENT IS FILING DATE OF ABANDONED PARENT APPLICATION AS TO COMMON SUBJECT MATTER—35 U.S.C. 102(e), 103 AND 120.

In connection with the Solicitor's contention that "the subject matter described in the Ornitz patent, which is also found in the abandoned Ornitz application, is entitled to the filing date of that abandoned application, 35 U.S.C. 120," which date antedates appellants' filing date, and that therefore that subject matter is described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent and is prior art under 35 U.S.C. 102(e) and 103 *Held* that "We agree with the above reasoning insofar as it is consistent with our opinion in *Land* * * *."

4. SAME—SAME—COPENDING REFERENCE PATENT—35 U.S.C. 102(e).

"The requirements of section 102(e) are as follows. While the reference relied on need not 'describe' the claimed invention to be otherwise available as a reference, *Hazeltine*, supra, there must be (1) an application for a patent (2) which issues as a patent, (3) filed by *another* (4) before the invention thereof by the applicant."

5. SAME—SAME—COMMON SUBJECT MATTER IN REFERENCE PATENT AND EARLIER FILED ABANDONED PARENT APPLICATION IS PRIOR ART—35 U.S.C. 102(e), 103 AND 120.

"We now return to the issue of whether the Ornitz reference (patent) is 'prior art.' There is nothing of record contradicting the Solicitor's argument that appellants had Ornitz' work available 'as their starting point.' Appellants' application, filed over 41 months after the Ornitz parent application, expressly states that 'suitable compositions' for their sleeve member are disclosed in Ornitz. We think that the Patent Office has established that the subject matter relied on in Ornitz was contained 'in a patent granted on an application for patent by another filed in the United States *before the invention thereof by the* (appellants),' 35 U.S.C. 102(e), 120. *In re Land*, supra. This subject matter is therefore prior art, 35 U.S.C. 103, see *In re Harry*, supra."

6. SAME—DOUBLE PATENTING—COMMON ASSIGNEE—WHERE REFERENCE PATENT IS PRIOR ART, REJECTION SHOULD BE SO BASED—35 U.S.C. 102(e) AND 103.

"While 'double patenting' rejections are made by the Patent Office when there is a common assignee and different inventors, this is done because the reference relied on is not 'prior art' as explained in *Coleman*, supra, cited by appellants. Where the terms of section 102(e) are satisfied, as here, we think the Patent Office should apply the statutes as the basis for refusing a patent. Where it is possible to conduct the broader inquiry permitted by sections 102(e) and 103 because the references are 'prior art,' it does not make sense to resort to the narrower inquiry which underlies a 'double patenting' rejection. See *In re Bowers*, supra, 149 USPQ at 575, fn. 7."

7. SAME—COMPOSITION—OBVIOUSNESS—OMISSION OF NON-CRITICAL COMPONENT.

"As to item (5), appellants' specification states 'metals which form stable oxides and which have a preferential affinity to oxygen with respect to carbon' may be used in the rolls in order to 'overcome' the aluminum 'pick-up' problem. The roll sleeve is comprised of 'a mass of carbonaceous particles, preferably mixed with particles of additions such as certain metals' and the rolls disclosed in Ornitz are 'suitable' according to appellants' specification. The fact that certain metals may be omitted was not urged as being critical in the specification nor was this stated to be a preferred embodiment. The absence of these metals is not deemed conclusive of nonobviousness."

8. SAME—OBVIOUSNESS—35 U.S.C. 103.

"We agree with the Solicitor that common ownership 'has no significance' concerning issues arising under section 103, citing *In re LoPresti*, supra. See also *In re Land*, supra. Precisely because the issue arises under section 103, we think the result reached by the Board, while correct, would have been better reached by applying the terms of section 103. Ascertaining the 'scope' of the *claims* in the prior art and comparing the 'scope' of the appealed *claims* finds no basis under section 103 and leads to unnecessary confusion. It is basic patent law that claims of a patent may dominate those of an application yet that is not necessarily determinative of whether the invention defined in the application is *obvious* in view of the teachings set forth in the prior art patent. Thus whether the invention defined by the appealed claims is within the 'scope' of the claims of Ornitz is of little moment. Similarly, whether the appealed claims are not limited to the rolls defined in Ornitz, item (6), supra, is not determinative of obviousness."

9. SAME—SAME—GENUS AND SPECIES—35 U.S.C. 103.

"Whether the appealed claims define a 'species' and Ornitz defines a 'genus' claim also is of no moment under section 103. The labels of 'species' and 'genus' often depend on hindsight, forbidden as a test under section 103, and it is not uncommon that a 'species' may be patentable, that is, satisfy sections 101–103, notwithstanding a prior art 'genus.'"

10. SAME—PROCESS—OBVIOUSNESS—OBVIOUSNESS DOES NOT REQUIRE EXPRESS SUGGESTION—35 U.S.C. 103.

"We think that one of ordinary skill in the art having the teachings of Ornitz before him, in absence of any evidence supporting appellants' allegations, would find the claimed subject matter obvious. Ornitz teaches the handling of copper and brass with the specific rolls disclosed therein. In view of section 103, there is no patentable invention in claiming the use of Ornitz' rolls to handle aluminum. Section 103 does not require that Ornitz expressly suggest the handling of aluminum, in item 2, supra."

11. SAME—PARTICULAR SUBJECT MATTER—"METHODS OF CONTINUOUSLY CONVEYING ALUMINUM."

The refusal of certain claims in an application entitled "Methods of Continuously Conveying Aluminum," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 836,517.

AFFIRMED.

Hoopes, Leonard & Buell, Eugene F. Buell, Edward Hoopes III for appellants.

Joseph Schimmel (*J. F. Nakamura*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

This is an appeal from a decision of the Board of Appeals affirming the Examiner's rejection of claims 1–9 in an application [1] entitled "Methods of Continuously Conveying Aluminum," filed August 27, 1959. The following reference is relied on:

Nathaniel B. Ornitz, 3,037,756, June 5, 1962 (filed Sept. 22, 1959). This reference is a continuation-in-part of Serial No. 571,474, filed March 14, 1956. The rejection is based on subject matter first disclosed in the now abandoned application and carried forward in the reference patent.

The statutory basis for the rejection is unclear. However, before proceeding to the merits of this appeal, the Solicitor questions whether appellants' reasons of appeal "are legally adequate to bring the merits [of this case] * * * within the jurisdiction of this court."

Appellants stated in their reasons of appeal that the Board erred:

> I.
>
> * * * in affirming the Examiner.
>
> II.
>
> * * * in holding claims 1 through 9 to be *precisely disclosed* in Ornitz Patent 3,037,756. [Emphasis added.]

The Solicitor argues that appellants' language infers the claims were rejected on the basis of an anticipation under section 102. He argues that as the Board used the term "obviousness" in its opinion, the "manifest basis for the rejection is 35 U.S.C. 103." Consequently, according to the Solicitor, the reasons of appeal fail to encompass the ground of rejection.

However, the Board *also* stated in its opinion that appellants claimed a "species" while the patent claims defined a "genus" and that the appealed claims were within the "scope" of the patent claims; further, the claimed process was "precisely the same" as that disclosed in the reference, "except for the work being aluminum." Apparently appellants assign as error the conclusion that the reference or the "genus" claims therein *disclose* their invention. While we shall return to an examination of the Board's reasoning, we will state at this point that it is not clear whether the rejection is based on section 102 or section 103, or even "double patenting," discussed infra. [1] While both appellants and the Board could and should have been more helpful in identifying the statutory basis for the rejection, appellants' interpretation of the Board's opinion is *not* unreasonable. The assignment of reasons of appeal from an ambiguous opinion should not be made a game, 35 U.S.C. 132, with the appellant the loser should he ultimately be proven incorrect as to the statutory basis for the Board's decision. Accordingly, we do not find appellants' reasons of appeal inadequate.

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[1] Serial No. 836,517.

Before considering the claimed subject matter in view of the teachings of Ornitz, there is a dispute as to whether it is a valid reference, 35 U.S.C. 102(e), 103. Appellants argue:

> The Ornitz Patent No. 3,037,756 issued on an application which was copending with the instant Ornitz and English application and assigned to the same assignee. Such a patent can be used only for purposes of double patenting. It cannot properly be used for the purpose of showing unpatentability generally. *Ex parte Cummings and Carroll*, 55 USPQ 428; *In re Horneman*, 92 USPQ 316; *In re Coleman*, 90 USPQ 100. It is clear from these decisions that where two applications of the same party or the same assignee are copending and one issues before the other, the issued patent may be used only for the purpose of showing double patenting. * * *

We will point out at this time that the "Ornitz" disclosed as patentee and the "Ornitz" disclosed as an appellant are different persons, admitted to be father and son during oral argument.[2] The Ornitz patent is assigned to Blaw-Knox Co., which apparently is the common assignee referred to by appellants.

[2] In establishing Ornitz as a proper reference, the Solicitor first argues "Ornitz" is "another" to "Ornitz and English," citing 35 U.S.C. 102(e). We agree and add as authority *In re Land*, 54 CCPA 806, 368 F.2d 866, 151 USPQ 621; *In re Bowers*, 53 CCPA 1590, 359 F.2d 886, 149 USPQ 570. Moreover, the point is hardly debatable where, as here, appellants and the patentee are different persons. In view of the argument made below,[3] this fact may not have been made clear to the Solicitor.

[3] The Solicitor then argues the subject matter described in the Ornitz patent, which is also found in the abandoned Ornitz application, is entitled to the filing date of that abandoned application, 35 U.S.C. 120. This date antedates appellants' filing date. Consequently, according to the Solicitor, that subject matter is:

> * * * described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent. Such subject matter is prior art under 35 U.S.C. 102(e) and 103. *Hazeltine v. Brenner*, 382 U.S. 252, 147 USPQ 429; *In re Harry*, 51 CCPA 1541, 333 F.2d 920.

We agree with the above reasoning insofar as it is consistent with our opinion in *Land*, supra. [4] The requirements of section 102(e) are as follows. While the reference relied on need not "describe" the claimed invention to be otherwise available as a reference, *Hazeltine*, supra, there must be (1) an application for a patent (2) which issues as a patent, (3) filed by *another* (4) before the invention thereof by the applicant. In *Land* we considered requirement (4).

The Solicitor, in support of his conclusion that the subject matter relied on is "prior art," does not rest his conclusion solely on the fact that the subject matter in the Ornitz patent is entitled to an earlier filing date. The Solicitor argues that an examination of the subject matter relied on in the Ornitz patent and that claimed by appellants demonstrates that appellants had the Ornitz subject matter "available as their starting point." See *In re LoPresti*. 52 CCPA 755, 333 F.2d 932, 142 USPQ 176.

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[2] The completely inconsistent argument presented to the Board by appellants, according to the Examiner's answer, that "Mr. Ornitz," appellant, was the same person as "N. B. Ornitz," patentee, was not presented here.

[3] See supra, fn. 2.

At this point we will examine the subject matter disclosed by Ornitz and that claimed by appellants.

Appellants' specification states:

> * * * Attempts have been made to handle aluminum strip in heat-treating furnaces at 900° F. to 1100° F. in the continuous form as is done in the steel industry. These attempts have met with failure because the surfaces of the conveyor rolls in contact with the strip pick up accretions of material from the strip, which accretions make the roll surface rough (instead of smooth as installed) and deform the portions of the strip thereafter passing over the rolls. This has been particularly accentuated because of the softness of the aluminum being treated.
>
> In the past, ceramic rolls, chrome iron rolls, chrome plated rolls and Meehanite rolls, both bare and coated with various refractory oxides or porcelain, have all been tried without success.
>
> We have discovered that this undesirable pickup may be eliminated by carrying the strip over furnace conveyor rolls, having, at their work-engaging surfaces, a high proportion of carbonaceous material, such as graphite or carbon. Preferably, we provide a metal body having a sleeve fitted thereon, which sleeve has a high proportion of carbonaceous material in its composition. * * * The roll sleeve comprises a mass of carbonaceous particles, preferably mixed with particles of additions such as certain metals and compounds of those metals and a suitable binder. * * *

After setting forth ten examples, the specification states:

> As illustrated by the foregoing examples, our invention resides in a new process of continuous heat-treating of aluminum strip characterized by freedom from damage to the strip due to roughening of the rolls by pickup which has occurred in all previously suggested processes. This problem is overcome by supporting the aluminum in contact with the heat-treating gases upon solid supporting surfaces comprising at least 20% carbon particles, with which other generally refractory material including metals which form stable oxides and which have a preferential affinity to oxygen with respect to carbon (e.g., silicon, titanium, zirconium), may be combined as illustrated by the examples. Some suitable compositions for such sleeves and supporting surfaces are disclosed in the Nathaniel B. Ornitz Patent No. 2,772,872 and later application Serial No. 571,474, filed March 14, 1956.

Appealed claim 1, referred to by the Board as representative, is as follows:

> 1. In the handling of aluminum strip at elevated temperatures the step of conveying the strip on a roll whose surface contains in excess of 20% carbonaceous matter.

Turning now to the Ornitz patent it will be seen that he was also concerned with "the so-called 'pick-up' phenomenon." Ornitz discloses that the metal sheet or strip conveyed may be "ferrous sheets," "silicon steels," "stainless steels" and also "non-ferrous metals," including "brass, copper and Monel metal." Ornitz discloses a sleeve member which is "made essentially of an admixture of carbon and metal." The sleeve may be prepared

> * * * by mixing carbon particles in the amorphous or graphitic state with particles of a metal like silicon, titanium, zirconium, chromium and/or aluminum, which metals form stable solid predominantly non-alkaline oxides, and have an affinity for oxygen higher than carbon does at the heat-treating temperatures which will prevail in such furnaces. * * *

[5] We now return to the issue of whether the Ornitz reference is "prior art." There is nothing of record contradicting the Solicitor's argument that appellants had Ornitz' work available "as their starting point." Appellants' application, filed over 41 months after the Ornitz parent application, expressly states that "suitable compositions" for their sleeve member are disclosed in Ornitz. We think that the Patent Office has established that the subject matter relied on in Ornitz was contained "in a patent granted on an application for patent by another filed in the United States *before the invention thereof by the* [appellants]," 35 U.S.C. 102(e), 120. *In re Land*, supra. This subject matter is therefore prior art, 35 U.S.C. 103, see *In re Harry*, supra.

The authorities relied on by appellants, supra, are not contrary. [6] While "double patenting" rejections are made by the Patent Office when there is a common assignee and different inventors, this is done because the reference relied on is not "prior art" as explained in *Coleman*, supra, cited by appellants. Where the terms of section 102(e) are satisfied, as here, we think the Patent Office should apply the statutes as the basis for refusing a patent. Where it is possible to conduct the broader inquiry permitted by sections 102(e) and 103 because the references are "prior art," it does not make sense to resort to the narrower inquiry which underlies a "double patenting" rejection. See *In re Bowers*, supra, 149 USPQ at 575, fn. 7.

The determinative issue is thus whether appellants' claimed invention is obvious in view of Ornitz. The Board was of the view that the process disclosed in Ornitz and appellants' process were "precisely the same." Ornitz applied the process to "ferrous" and "non-ferrous" metals while appellants apply the process to aluminum. Ornitz admittedly does not disclose applying this process specifically to aluminum.

Appellants argue in substance that (1) Ornitz "significantly" omitted any reference to aluminum; (2) there is no suggestion in Ornitz of handling aluminum continuously in any form; (3) those of ordinary skill in the aluminum handling art would not be taught a solution to aluminum pick-up from Ornitz' teachings in view of it being a "long standing, well recognized problem which existed in that industry"; (4) teachings in the steel industry cannot be "equated" to the aluminum industry; (5) Ornitz teaches that the oxidizable metal described and claimed is essential whereas in appellants' invention it is not; and (6) the invention defined by the appealed claims is not limited to the rolls defined in Ornitz.

As to (1) there is no evidence that it is somehow "significant" that Ornitz omitted reference to aluminum. Similarly, as to the alleged long standing problem in the aluminum industry, item (3), no evidence has been submitted. As to item (4), the Solicitor points out:

> * * * except for reference in appellants' specification * * * to unsuccessful attempts to handle aluminum by methods used in the *steel industry*, the record provides no factual basis tending to indicate that one could not reasonably expect success in equating a teaching applicable to other areas of non-ferrous industries to the aluminum industry. * * *

In view of the *fact* that Ornitz teaches the same solution to the pick-up problem in non-ferrous and ferrous industries the Solicitor's arguments are persuasive. Item (4) is thus at best argumentative and unsupported by evidence of record.

[7] As to item (5), appellants' specification states "metals which form stable oxides and which have a preferential affinity to oxygen with respect to carbon" may be used in the rolls in order to "overcome" the aluminum "pick-up" problem. The roll sleeve is comprised of "a mass of carbonaceous particles, preferably mixed with particles of additions such as certain metals" and the rolls disclosed in Ornitz are "suitable" according to appellants' specification. The fact that

certain metals may be omitted was not urged as being critical in the specification nor was this stated to be a preferred embodiment. The absence of these metals is not deemed conclusive of nonobviousness.

It is now apparent that the dispositive question in this appeal is whether it would have been obvious to one of ordinary skill in the art to utilize Ornitz' rolls for the continuous handling of aluminum. In this regard, the Board reasoned:

> It is our opinion that since the patentee predicated that it was useful with non-ferrous metals (without limitation) and since claims were allowed of such scope, to try the process to treat aluminum (a metal that is embraced within the patent claims) and to find that the patent was correctly issued with claims of such scope because the process is in fact operative with aluminum, would be no more than doing that which is made obvious by the patented subject matter. It is to be expected of a person of ordinary skill to test the various species within a patented genus and where, as here, the tested species within the genus is found to be both operative and that the only result derived is that taught by the patent, nothing of patentable moment has been accomplished.

The Solicitor adds:

> * * * The process claimed by Ornitz in the patent is clearly generic to the treatment of any metal, including aluminum, and therefore embraces the process claimed by appellants in the application on appeal. * * *

[8] We agree with the Solicitor that common ownership "has no significance" concerning issues arising under section 103, citing *In re LoPresti*, supra. See also *In re Land*, supra. Precisely because the issue arises under section 103, we think the result reached by the Board, while correct, would have been better reached by applying the terms of section 103. Ascertaining the "scope" of the *claims* in the prior art and comparing the "scope" of the appealed *claims* finds no basis under section 103 and leads to unnecessary confusion. It is basic patent law that claims of a patent may dominate those of an application yet that is not necessarily determinative of whether the invention defined in the application is *obvious* in view of the teachings set forth in the prior art patent. Thus whether the invention defined by the appealed claims is within the "scope" of the claims of Ornitz is of little moment. Similarly, whether the appealed claims are not limited to the rolls defined in Ornitz, item (6), supra, is not determinative of obviousness.

[9] Whether the appealed claims define a "species" and Ornitz defines a "genus" claim also is of no moment under section 103. The labels of "species" and "genus" often depend on hindsight, forbidden as a test under section 103, and it is not uncommon that a "species" may be patentable, that is, satisfy sections 101–103, notwithstanding a prior art "genus."

Lastly, the Board reasoned it would be "obvious to try" Ornitz' rolls to handle aluminum because of the "scope" of Ornitz' claims. The Solicitor points out:

> While the phrasing of the rejection is similar to the "obvious to try" statement criticized by the court in *In re Tomlinson et al.*, 53 CCPA 1421, 363 F.2d 928, 150 USPQ 623; *In re Henderson*, 52 CCPA 1656, 348 F.2d 550, 146 USPQ 372; and *In re Huellmantel*, 51 CCPA 845, 324 F.2d 998, 139 USPQ 496; those decisions do not suggest that such phrasing of a rejection is *inherently* improper. In both *Henderson* and *Huellmantel* the objection was that unexpected properties or results had been ignored. * * * [Emphasis added.]

The Solicitor's brief continues:

> The Board of Appeals in this case used the criterion "obvious to try" in the same sense that this court did in *In re Pantzer et al.*, 52 CCPA 1135, 341 F.2d 121, and *In re Ruscetta et al.*, 45 CCPA 968, 255 F.2d 687. * * *

Appellants argue Ornitz does not "suggest" handling aluminum, item (2).

[10] We think that one of ordinary skill in the art having the teachings of Ornitz before him, in absence of any evidence supporting appellants' allegations, would find the claimed subject matter obvious. Ornitz teaches the handling of copper and brass with the specific rolls disclosed therein. In view of section 103, there is no patentable invention in claiming the use of Ornitz' rolls to handle aluminum. Section 103 does not require that Ornitz expressly suggest the handling of aluminum, item 2, supra [11] The decision of the Board is therefore affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,771,956, G. D. Johnson, WELL HEAD CONTROL; **Re. 24,609**, same, **filed** July 10, 1967, D.C., S.D. Tex. (Houston), Doc. 67–H–532, *Joy Manufacturing Company* v. *FMC Corporation.*

2,824,315, G. D. McKenny, RELEASABLE COUPLING DEVICE, **filed** July 28, 1967, D.C., W.D. Wash. (Seattle), Doc. 7294, *C. J. Hendry Company* v. *Manolides, Inc.*

2,882,940. (See Re. 24,163.)

2,894,551, F. Otto, MEAT CUTTER; **2,918,956**, same; **3,286,993**, same, KNEADING APPARATUS, **filed** July 7, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–963–IH, *Belder Trust Reg. and Unimaco Inc.* v. *Gilbert Motis.*

2,905,260, P. B. Williams, LOUD SPEAKER DIAPHRAGM, **filed** July 31, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1312, *Yamaha International Corp.* v. *The Muter Co.*

2,918,956. (See 2,894,551.)

2,974,432, Warnock and Hubener, PRESS-FREE CREASE RETAINED GARMENTS AND METHOD OF MANUFACTURE THEREOF; **3,268,915**, same, PROCESS OF MANUFACTURING PRESS-FREE GARMENT WITH RETAINED CREASES, **filed** June 20, 1967, D.C., S.D.N.Y., Doc. 67–C–2383, *Deering Milliken Inc.* v. *Koratron Co. Inc.*

3,085,601. (See Re. 24,163.)

3,117,373, J. Wallace, DRUM OPENING TOOL; **Reg. No. 813,919** (JET DRUM DE-HEADER AND DESIGN), Fort Wayne Truck Parts and Equipment Inc., Hand tool for opening metal drums, **filed** July 21, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1272, *Fort Wayne Truck Parts and Equipment Inc.* v. *Indus-Tool Corp. et al.*

3,178,788, M. F. Johns, SLIDE FASTENER ELEMENTS, **filed** Dec. 23, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–1284, *General Zipper Corp.* v. *Serval Slide Fasteners Inc.* Stipulation of dismissal July 21, 1967.

3,268,915. (See 2,974,432.)

3,286,993. (See 2,894,551.)

3,322,127, C. M. Sachs, ANTI-CREEP BRASSIERE; **Reg. No. 203,981** (KILLARNEY), Killarney Inc., Face powders, **filed** July 28, 1967, D.C., N.D. Ga. (Atlanta), Doc. 11097, *International Playtex Corporation* v. *The Lovable Company.*

Re. 24,163, C. Zellweger, VALVES FOR FILLING PYROPHORIC LIGHTERS FOR LIQUIFIED GAS; **2,882,940**, same, FILLING VALVES FOR LIQUIFIED GAS LIGHTERS; **3,085,601**, same, GAS FUELED LIGHTER VALVE, **filed** July 28, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1082–JWC, *Ronson Corp. and La Nationale* v. *Royal Oaks Enterprises Inc.*

Re. 24,609. (See 2,771,956.)

Reg. No. 203,981. (See 3,322,127.)

Reg. No. 813,919. (See 3,117,373.)

REISSUES

NOVEMBER 7, 1967

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,294

CRYSTALLINE SPHERULES

Harold G. Sowman, Maplewood, and James R. Johnson, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Original No. 3,129,188, dated Apr. 14, 1964, Ser. No. 96,081, Mar. 16, 1961. Application for reissue June 23, 1966, Ser. No. 562,978

11 Claims. (Cl. 176—67)

8. An improved metal carbide particle having a diameter in the range of about 10 microns to 125 mils, said particle comprising a body of metal carbide of the highest carbide form from the class consisting of uranium carbide, thorium carbide and uranium (thorium) carbide, said body having a smooth, substantially spherical outer surface formed from the molten state by surface tension forces, and characterized by substantially void-free crystalline internal structure, and containing carbon in excess of the amount of carbon combined in the form of metal carbide; and an outer protective coating of carbon enclosing said body.

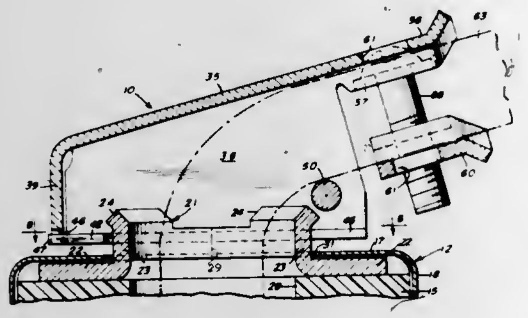
26,295

ANGLE TYPE SWIVELLING CORD GRIP

Gunther S. Grieshaber, Camilus, Robert J. O'Mara, Liverpool, and Henry George, Syracuse, N.Y., assignors to Pass & Seymour, Inc., Syracuse, N.Y., a corporation of New York

Original No. 3,209,306, dated Sept. 28, 1965, Ser. No. 314,762, Oct. 8, 1963. Application for reissue Sept. 30, 1966, Ser. No. 589,164

10 Claims. (Cl. 339—103)



5. An angle type swivelling cord grip for use with a neck having an external groove and [extending] *surrounding* a cord hole in an electric fitting, in combination, a one-piece [sheet metal] unit including a cord deflecting cover, a pair of side walls depending from opposite edges of said cover, a half wall extending at right angles from the bottom of each side wall so as to substantially meet midway between said bottoms, said half [walls] *walls* having facing edges and cooperating substantially half circular notches extending inwardly from said edges sized to jointly fit over and swivel in said neck groove, means connecting said side walls for moving the half walls toward each other to draw the notch edges against the neck to clamp the unit [non-rotatively] thereto, and a separate clamp strap mounted beneath said deflecting cover for clamping movement toward the same to grip a cord entering the unit and passing through the neck.

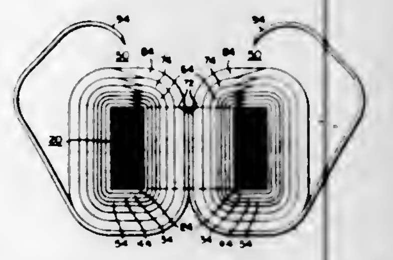
26,296

PLURAL PART TRANSFORMER CORE HAVING JOINTS DIVIDED BETWEEN THE SIDES OF THE CORE

Belvin B. Ellis, Pulaski, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Original No. 3,154,758, dated Oct. 27, 1964, Ser. No. 702,096, Dec. 11, 1957. Application for reissue July 30, 1965, Ser. No. 476,221

5 Claims. (Cl. 336—211)



1. A wound type magnetic core having a yoke and legs comprising a predetermined number of turns of oriented magnetic material, the turns of said magnetic material being each cut at a single predetermined place and arranged in groups, each group comprising a number of turns arranged in step relation, the ends of each turn being substantially aligned with one another forming a joint, the joint of each turn being displaced from the joint of the next adjacent turn to form a series of stepped-lap joints in each group, the joints of at least one of the outer groups being displaced relative to the joints of the rest of said groups, the joints of said groups being divided between the yoke and legs of said core.

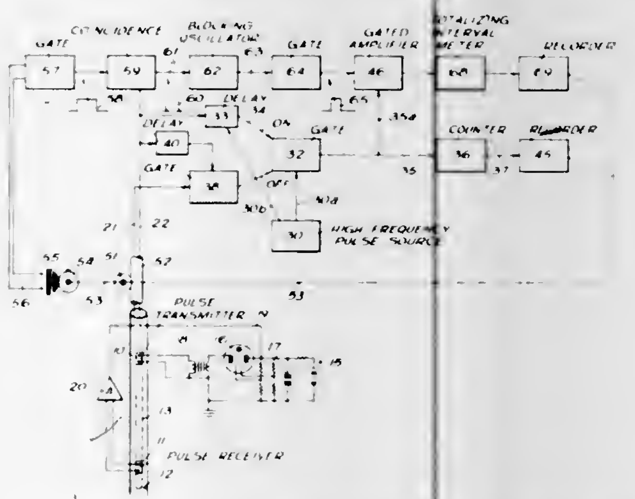
26,297

METHODS OF AND MEANS FOR MEASURING TRAVEL TIMES THROUGH EARTH FORMATIONS

Robert A. Broding, Tulsa, Okla., Gerald C. Summers, Dallas, Tex., and John O. Ely, deceased, late of Lexington, Mass., by La Verne B. Ely, executrix, Lexington, Mass., assignors, by mesne assignments, to Mobil Oil Corporation, a corporation of New York

Original No. 2,949,973, dated Aug. 23, 1960, Ser. No. 370,376, July 27, 1953. Application for reissue Oct. 4, 1961, Ser. No. 143,278

18 Claims. (Cl. 181—5)



12. Seismic apparatus comprising counting means, means for feeding a constant frequency signal to said counting means when seismic vibrations are present at one locus, and means for discontinuing the feeding of said constant frequency signal to said counting means upon the receipt of said seismic vibrations at a different locus, whereby said counting means will register a total count representative of the time taken by said seismic vibrations in travelling between said loci.

PLANT PATENTS

GRANTED NOVEMBER 7, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,775

NECTARINE TREE

Walter D. Krause, Fresno, Calif., assignor to Stribling's Nurseries, Inc., Merced, Calif., a corporation of California

Filed Sept. 12, 1966, Ser. No. 578,898

1 Claim. (Cl. Plt.—41)

A new and distinct variety of nectarine tree, substantially as illustrated and described, characterized by its uniform vigor and regular, productive bearing of early ripening, firm yellow-flesh fruit having yellow skin substantially completely overspread with red; and further characterized by fruit which, while having the general appearance and same harvest period as the Red June nectarine, has firmer flesh, a more brilliant red exterior color, large average size, and better eating quality.

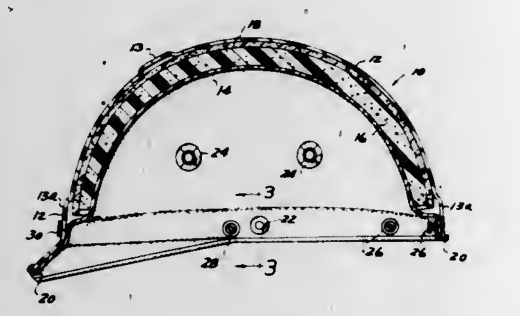
PATENTS

GRANTED NOVEMBER 7, 1967

GENERAL AND MECHANICAL

3,350,718
SAFETY HELMET

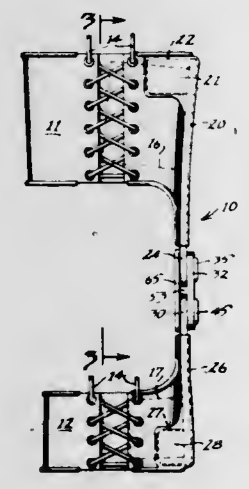
Daniel D. Webb, Birmingham, Mich., assignor to American Safety Equipment Corporation of Michigan, Southfield, Mich.
Filed Feb. 10, 1966, Ser. No. 526,510
4 Claims. (Cl. 2—3)



1. A safety helmet comprising:
a thin lightweight, semi-flexible, substantially hemispherical, outer shell;
a thin lightweight, semi-flexible inner shell, substantially concentric with said outer shell;
a resiliently compressible, shock absorbing liner sandwiched between said inner shell and outer shell;
a stiff reinforcing shell sandwiched between said outer shell and said shock absorbing liner;
means securing said outer shell and said inner shell together adjacent their lower rims and being otherwise free to float relative to each other;
said shock absorber liner and said reinforcing shell being free of positive securement and being frictionally clamped in place.

3,350,719
KNEE BRACE

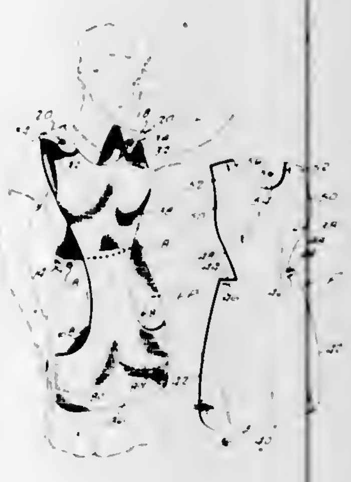
Christopher C. McClure, Jr., 1903 Hayes St., Nashville, Tenn. 37203
Filed Sept. 20, 1965, Ser. No. 488,388
2 Claims. (Cl. 2—22)



1. A knee brace comprising:
(a) a single flat upper brace bar having an inside and an outside, and a lower end and a free upper end,
(b) a single flat lower brace bar having an inside and an outside, and an upper end and a free lower end,
(c) a flat link bar having first and second ends,
(d) an upper pin pivotally connecting the first end of said link bar against the outside of the lower end of said upper brace bar,
(e) a lower pivot pin pivotally connecting the second end of said link bar against the outside of the upper end of said lower brace bar, so that said upper and lower brace bars will pivot in substantially the same plane and said link bar overlaps the outside only of both said brace bars,
(f) stop means on the inside of said link bar between said brace bars to limit the pivotal movement of said brace bars in one direction to an angle of approximately 180° apart,
(g) said upper end of said upper brace bar comprising an arcuate transverse bar, concave inward, and terminating in free extremities,
(h) an upper cuff fixed to said upper brace bar and said upper transverse bar, said upper cuff being adapted to be secured about the thigh of a wearer so that said upper brace bar fits on the outside of said thigh,
(i) said lower end of said lower brace bar comprising an arcuate transverse bar, concave inward, and terminating in free extremities,
(j) a lower cuff fixed to said lower brace bar and said lower transverse bar, said lower cuff being adapted to be secured about the calf of a wearer so that said lower brace bar fits on the outside of said calf.

3,350,720
APRONS

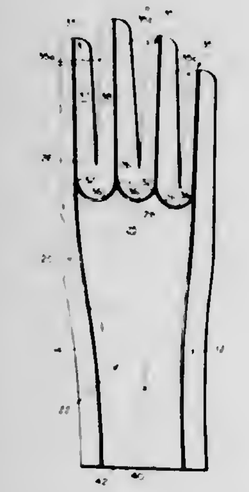
Betty M. Freund, 104 W. Monroe St., Monroeville, Ohio 44847
Filed Aug. 13, 1965, Ser. No. 479,370
9 Claims. (Cl. 2—48)



1. An apron comprising a back panel having a lower edge adapted to be located at the waistline of a wearer, relatively widely spaced shoulder straps on the upper end of the back panel, a front panel having an upper bib portion having a lower edge adapted to be located at the waistline of the wearer, said front panel having a lower apron portion extending below the lower edge of the bib portion, said bib portion having relatively widely spaced tabs on its upper end, button and button hole means for securing the tabs to the shoulder straps, said apron portion having an upper edge adapted to be located at the waistline of the wearer, said apron portion being formed with button holes located at the corners between the meetings of the upper edge of the apron portion and the side edges of the apron portion, said back panel having lateral tabs adjacent to its lower edge, said lateral tabs extending outwardly beyond the side edges of the back panel, said lateral tabs having transversely aligned buttons secured to opposite sides of the tabs, the material of the back panel adjacent to the tabs being formed with rows of button holes spaced inwardly from the aligned buttons and from each other, the lateral tabs being adapted to be folded inwardly onto the back panel and one of the aligned buttons engaged through a selected one of the row of button holes, the selected buttons being adapted to be engaged through button holes of the front panel apron portion.

3,350,721
GLOVE

Thomas L. Cullinan, Jr., 2152 S. 1st St., San Jose, Calif. 95112
Filed June 27, 1966, Ser. No. 560,736
1 Claim. (Cl. 2—169)

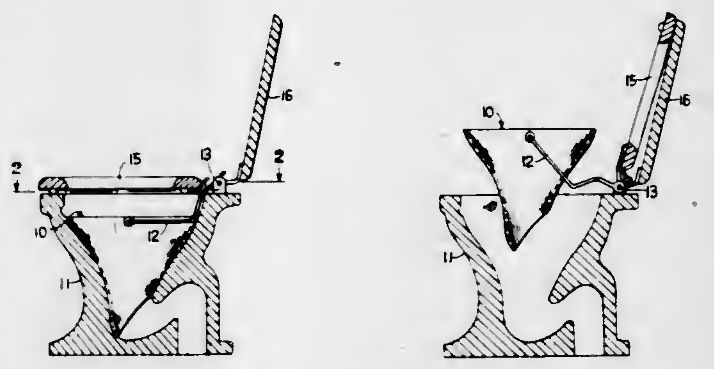


A glove comprising a palm trank having a bottom edge and including parts forming the palm areas of the stalls for the individual fingers, said palm trank having lateral extensions at either side reaching from said bottom edge to the tips of the stalls for little and index fingers, respectively, and folded backwards to form the flanks and the adjoining halves of the back areas of said stalls for the little finger and the index finger, and the flanks of the glove and marginal areas of the back of the glove, a back section connected between said marginal areas and having below the crotches of the finger stalls an upper edge in the form of three juxtaposed concavely arched recesses spanning said crotch areas from center line to center line of the back areas of said stalls, and three two-bladed fourchettes having round base edges fitted into the arched recesses of said back section and being of such width as to form the confronted inner flanks and substantially half of the rear areas of the finger stalls.

3,350,722
SPLASH GUARD FOR TOILET BOWLS

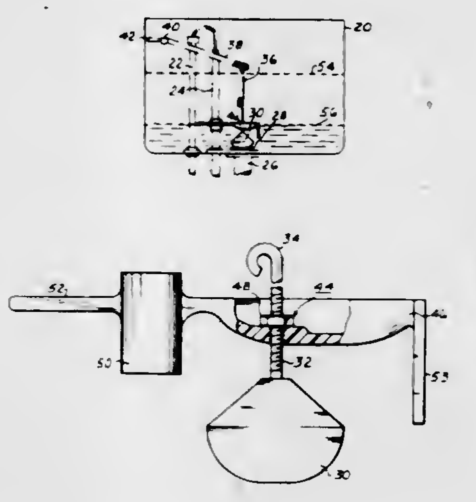
Ronald Moreschini, 2929 7th Ave., Pueblo, Colo. 81003
Filed Oct. 29, 1965, Ser. No. 505,614
3 Claims. (Cl. 4—1)

1. A splash guard for toilet bowls comprising a funnel like member having the same basic configuration as that of the inside of a toilet bowl in which the said member is slidably placed, and means of supporting the said member within the said toilet bowl which is provided with a toilet seat and lid, said splash guard further characterized by a swingably hinged arm that supports and vertically raises the said member when the said toilet seat is raised in a verticla position to thereby serve as a urinal.



3,350,723
WATER VOLUME CONTROL FOR WATER CLOSET

Arthur M. Dyer, 423 N. Graves, El Cajon, Calif. 92020
Filed Apr. 27, 1965, Ser. No. 451,221
2 Claims. (Cl. 4—57)

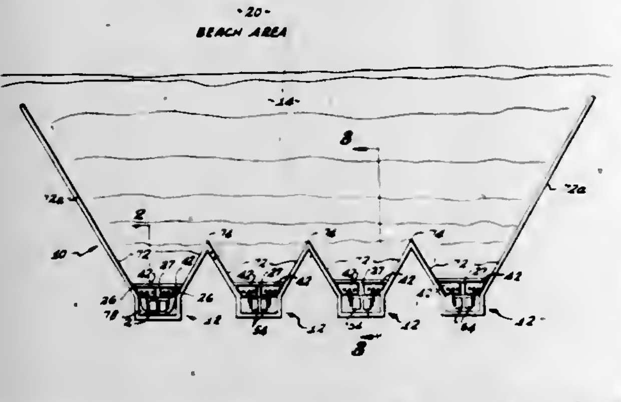


1. In a water closet, the combination of:
(A) a tank for the storage of water, said tank having a drain opening,
  (1) a valve seat about the drain opening;
(B) a vertically extending pipe within the tank;
(C) a mechanism floatable in water, including:
  (1) an element including a sleeve surrounding the pipe, said sleeve providing for unrestricted horizontal swinging movement of the said mechanism about the pipe, said element also including an arm extending horizontally from the sleeve and engageable with parts of the interior of the tank for limiting horizontal swinging movement of the element about the pipe, said sleeve providing the sole means for vertical guiding of the said mechanism,
  (2) means forming a buoyant valve for closing upon said seat, said means being disposed below and connected with the element, the buoyancy of the means having a value substantially equal to that necessary to buoy itself and said element in water;
(D) and means for lifting the valve from the seat including a chain connected with said mechanism.

3,350,724

METHOD AND APPARATUS FOR GENERATING ARTIFICIAL WAVES IN A BODY OF WATER

Walter J. Leigh, 8020 Birchcrest,
Downey, Calif. 90240
Filed July 7, 1964, Ser. No. 380,809
9 Claims. (Cl. 4—171)

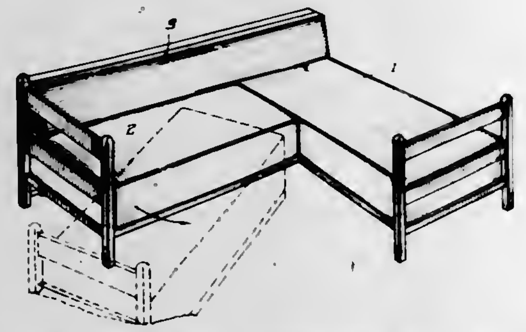


1. Apparatus for generating waves in a body of water, comprising:
  a pair of spaced, normally upright walls to be placed in said body of water, said walls being vertically dimensioned to project a distance above the water surface,
  a wave-generating unit including wave-generating means between said walls adjacent one end thereof for generating in said water a wave motion which travels outwardly from said generating means between said walls, whereby said walls confine said wave motion in the lengthwise direction of the waves thereof, and
  said walls being flat and diverging at a constant angle in the direction of travel of said wave motion.

3,350,725

CONVERTIBLE COUCH

George S. Fasanella, Chicago, Ill., assignor to The Englander Company, Inc., a corporation of New York
Filed Oct. 21, 1965, Ser. No. 499,317
4 Claims. (Cl. 5—12)

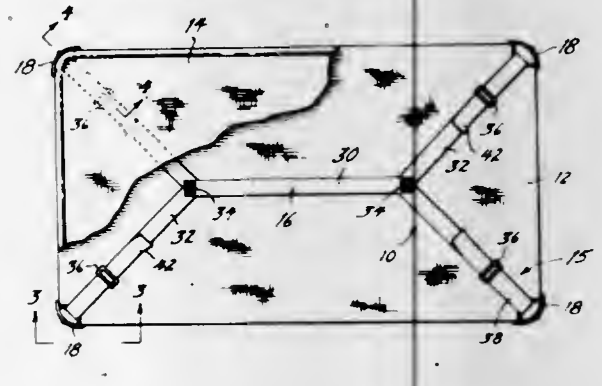


1. A convertible couch comprising first and second sectional members, rollable means supporting said members, base means, and means operatively connecting said sectional members to said base means so that said sectional members are movable relative to each other in the sleep mode while remaining operatively connected to said base means, said means for connecting said first sectional member to said base means comprising pivot means for directing said first sectional member in a fixed arc of movement between a sleep mode position and a sleep mode position and said means for connecting said second sectional member to said base means comprising first track means fixed to one of said base means and said second member, first roller means mounted on the other of said base means and second member rollably to engage said first track means in a continuous manner, second track means fixed to one of said second member, said first track means and said base means, and second roller means fixed to a different one of said second member, said first track means and said base means and positioned to be selectively engaged with said second track means for cooperating with said first track and roller means in directing swinging movement of said second member and to be selectively disengaged from said second roller means to permit substantially rectilinear movement of said second sectional member relative said first sectional member in the sleep mode.

3,350,726

MATTRESS RETAINER

Orville N. Gardner, 1406 Stewart Ave.,
Levittown, Pa. 19057
Filed May 23, 1966, Ser. No. 551,969
6 Claims. (Cl. 5—317)

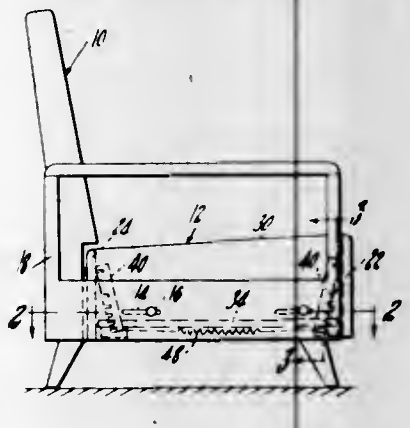


1. Apparatus for retaining a mattress in a desired position on a support therebelow having a planar upper surface, comprising a plurality of elongated upstanding retainer guards of channel-shaped cross-section, means adjacent the lower ends of said retainer guards for coupling said retainer guards to the support, said retainer guards having harness engaging means at medial portions thereof, said harness engaging means being adjacent the plane defined by the upper surface of the support when said retainer guards are in their operative disposition, said means for coupling said retainer guards to the support being distal from the plane defined by the upper surface of the support when said retainer guards are in their operative disposition, a harness coupled to said harness engaging means and interconnecting said retainer guards whereby said harness overlies the planar upper surface of the support when in its operative disposition and urges said retainer guards inwardly toward a mattress, said retainer guards including upper end portions extending above said harness engaging means for engaging portions of the mattress, whereby said retainer guards act as third-class levers to retain the mattress in a desired position on the support.

3,350,727

ADJUSTABLE CUSHION

Donald Herbert Mitchell, S. Main St.,
Pittsfield, N.H. 03263
Filed Dec. 13, 1965, Ser. No. 513,329
7 Claims. (Cl. 5—345)

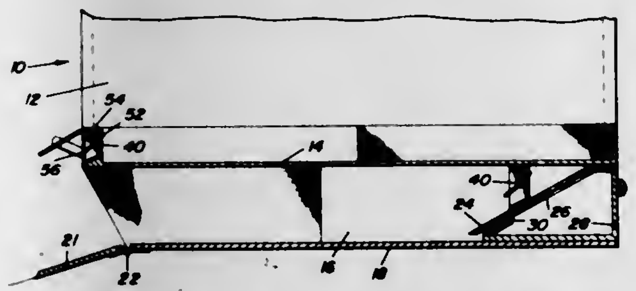


1. An adjustable cushion comprising:
a frame;
a flexible cover fastened across said frame;
a support extending across said frame movable relative thereto;
cushioning material in said frame between said cover and said support;
bracket means in said frame extending away from said cover and having a plurality of recessed support positions therealong;
hanger means extending from said support to said bracket means adapted for positioning in said support positions and for selectively retaining said support at a predetermined level of said support positions;
whereby on movement of said hanger means and support to another level of said support positions, the compression and hence the firmness of said cushioning material may be adjusted as desired.

3,350,728

COMBINED POLLEN COLLECTOR AND ENTRANCE RESTRICTION FOR BEE HIVES

Viotti E. Root, Cadis Stage Road,
Owego, N.Y. 13827
Filed Aug. 16, 1965, Ser. No. 479,761
8 Claims. (Cl. 6—4)

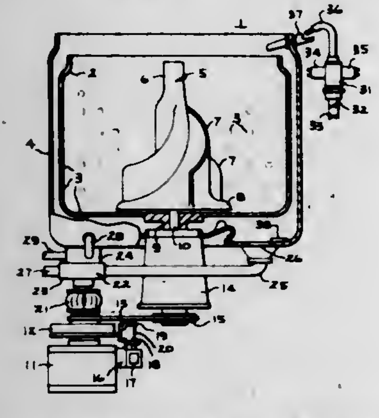


1. A pollen collecting means for use in bee hives comprising a ramp over which bees are compelled to pass during their entrance into a hive, said ramp including opening forming means therein through which pollen is adapted to drop, and means disposed above said ramp through which the bees must pass during their entrance into a hive, said last named means including spaced projections, the spatial relationship of the projections being such that pollen carried by bees entering the hive will be removed by the projections, said projections being disposed adjacent the opening forming means whereby the removed pollen will be discharged by gravity through the opening forming means.

3,350,729

METHOD OF WASHING CLOTHES

Joseph C. Worst, 3602 Hycliffe Ave.,
Louisville, Ky. 40207
Filed Mar. 7, 1966, Ser. No. 532,459
3 Claims. (Cl. 8—159)

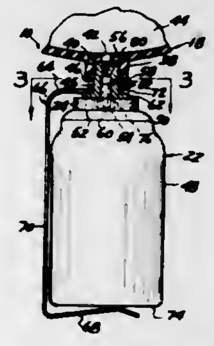


1. A method of washing soiled fabrics in a washing machine having a receptacle for fabrics and cleaning fluid, containing a detergent, and multi-speed agitation means for agitating the fabrics in the fluid; including the steps of first operating the agitation means at a low speed for a period of time to gently agitate the fabrics and thoroughly mix the cleaning fluid and fabrics so that bonds may form between the detergent and particles soiling the fabrics, and then operating the agitation means at a high speed for a period of time to vigorously agitate the fabrics so that the detergent-soil bonds are removed from the fabrics.

3,350,730

AUTOMATICALLY-INFLATING LIFE PRESERVER

Ted J. Kubit, 29950 Highmeadow, Farmington, Mich. 48024, and William S. Stanton, 3643 Wakefield, Berkley, Mich. 48072
Filed Apr. 11, 1966, Ser. No. 541,706
4 Claims. (Cl. 9—317)



1. An automatically-inflatable life preserver for attachment to a conventional compressed gas container having a gas outlet equipped with a gas release valve opened by the depression of a movable valve-actuating member, said life preserver comprising
  a water-penetrable case having a cup-shaped bottom part and closure cap disposed in longitudinally-telescoping sliding engagement with one another,
  an inflatable gas-tight envelope of flexible material folded compactly within said case in zigzag folds and having a coupling portion adapted to engage and grip the gas container outlet in a gas-tight connection,
  a resilient gas release valve member depressor disposed in engagement with said valve-actuating member,
  and means responsive to the presence of a water-soluble body adjacent said gas release valve member for restraining said valve member from depression by said depressor and responsive to the dissolution of the water-soluble body for releasing said valve member for depression by said depressor with consequent inflation of said envelope by the gas escaping from the container expanding said envelope longitudinally and slidably pushing said closure cap lengthwise off said bottom part of said case whereby to release said envelope from said case even though said case is held tightly in the user's pocket.

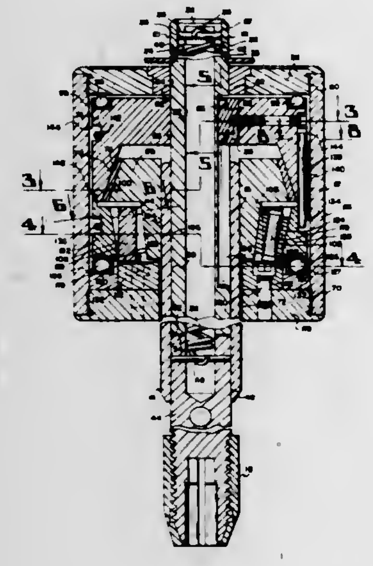
3,350,731

TAPPING DEVICE

Allen Benjamin, 3018 N. 53rd Place,
Phoenix, Ariz. 85018
Filed Apr. 15, 1965, Ser. No. 448,526
7 Claims. (Cl. 10—136)

1. In a tapping device the combination of: a power input shaft adapted to be supported and rotated by a power tool; a tap supporting shaft connected with said power input shaft and telescopically and slidably extendably and rotatably mounted relative thereto; resilient means tending telescopically to retract said tap supporting shaft relative to said power input shaft; first and second clutch members engageable with each other and concentrically mounted on said power input shaft and said tap supporting shaft, respectively; key means axially slidably coupling

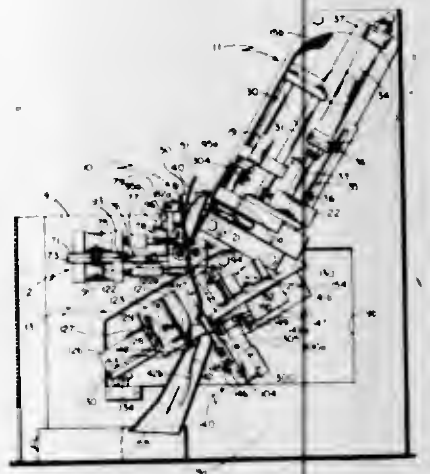
said power input shaft and said first clutch member positively to rotatably drive said first friction clutch member by said power input shaft; said second clutch member drivingly coupled to said tap supporting shaft; a cylindrical housing surrounding said clutch members and concentrically rotatably mounted relative to said power input shaft and said tap supporting shaft; an engageable portion of said housing for restraining it against rotation; first axial thrust bearing means engageable between said housing and said first clutch member, said first axial thrust bearing means disposed and adapted to force said first clutch member in one direction longitudinally of the axes of said shafts and into engagement with said second clutch member in response to manual force applied to said housing in said one direction and during rotation of said power input shaft and during restraint of said housing against rotation; first and second roller races disposed concentrically relative to said shafts; said first roller race coupled in rotary driving relation to said power input shaft; said second roller race coupled in rotary driving relation to said tap supporting shaft; first and second annular roller engaging surfaces of said first and second roller races, respectively; said roller engaging surfaces radially spaced apart to form a roller receiving annulus therebetween, said roller engaging surfaces converging toward each other longitudinally of the axis of said shafts; an annular roller cage disposed to support rollers between said roller engaging surfaces of said first and second races; a plurality of tapered rollers conformingly disposed between said roller engaging surfaces and carried by said cage; said roller cage coupled to said housing and restrained against rotation relative thereto; and second axial thrust bearing means engageable between said housing and said first roller race, said second axial thrust bearing means disposed and adapted to force said first roller race in a direction of said roller engaging surfaces to cause rotary locking of said rollers and said second and first roller races to thereby drive said tap supporting shaft in a direction opposite to that of said power input shaft in response to manual force applied to said housing in a direction opposite to said one direction while said housing is restrained from torque reaction rotation.



3,350,732
SEMI-AUTOMATIC SHANK TAPING MACHINE

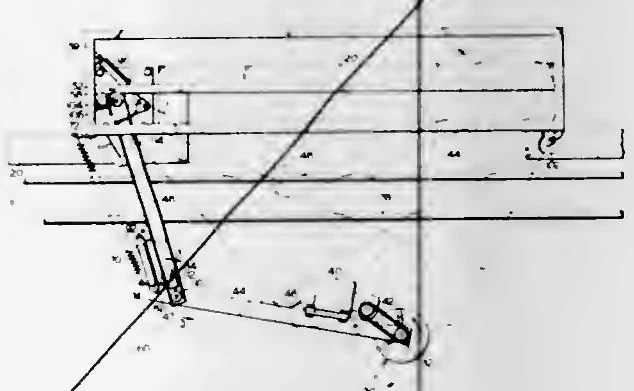
Harold R. Shurtleff, 67 Canal Road,
Sagamore, Mass. 02561
Filed Mar. 1, 1965, Ser. No. 436,237
15 Claims. (Cl. 12—40.5)

1. A method of wrapping an object with flexible sheet material, comprising: moving a strip of such material to a pre-determined location where said strip is supported, pushing one end of said object and one end of said strip against one another, joining said object and strip together along one surface of the object so as to form two sides of said strip extending beyond the sides of said object, moving one of said strip's extended sides over onto another surface of the object and then moving the other of said strip's extended sides over onto said other surface.



3,350,733
CAR WASHING DEVICES

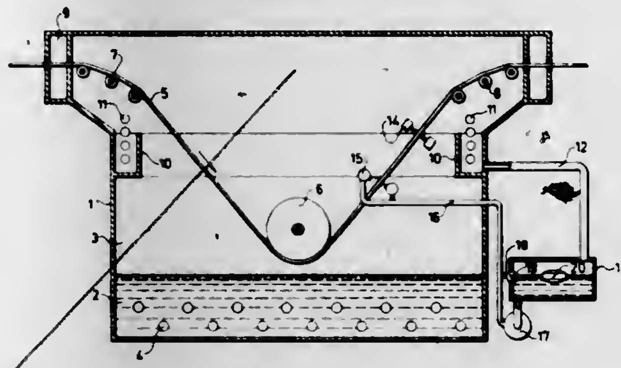
Daniel C. Hanna, 2020 SE. 82nd Ave.,
Portland, Oreg. 97215
Filed Aug. 5, 1966, Ser. No. 570,491
23 Claims. (Cl. 15—21)



2. In an apparatus for washing cars,
a rotary brush,
means for rotating the brush,
an inner arm pivoted at one end about a fixed axis and
  having a free end,
an outer arm pivotally mounted at one end thereof on
  the free end of the inner arm, and having a free end,
means suspending the rotary brush from the free end of
  the outer arm,
and means normally holding the inner arm in a normal position above and extending primarily transversely of a path of an automobile moved forwardly along said path and the outer arm in a normal position above and extending primarily along said path and permitting the inner arm to swing forwardly relative to said path from its normal position and the outer arm to move between its normal position and a folded position extending back along the inner arm and primarily transversely of said path.

3,350,734
DEGREASING OF STRIP MATERIAL BY SOLVENT VAPOUR

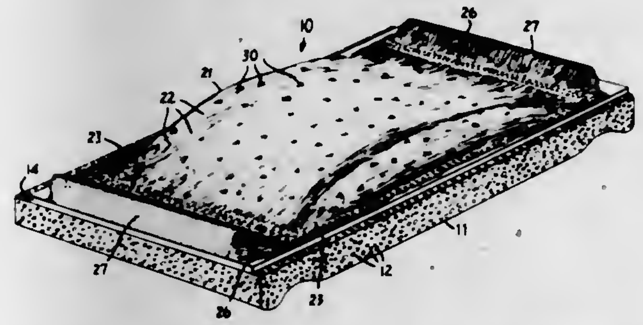
Kurt Anders Holm, Skoghall, Sweden, assignor to Uddeholms Aktiebolag, Uddeholm, Sweden, a company of Sweden
Filed Mar. 3, 1965, Ser. No. 436,806
Claims priority, application Sweden, Mar. 6, 1964, 2,878/64
2 Claims. (Cl. 15—102)



1. An apparatus for degreasing strip material, comprising a container, a first, lower zone in said container for a liquid solvent, heating means in said first zone for boiling the solvent, a second, middle zone in said container for the vapour of said boiling solvent, cooling means in said second zone for defining a highest level of the vapour, a tank for receiving the solvent condensed on said cooling means a third, higher zone in said container, an inlet opening and an outlet opening for the strip in said third zone, means for conveying the strip from said inlet opening down into said second zone and up into said third zone and out through said outlet opening, wipers adjacent both sides of the path of said strip and adjacent the boundary between said third and second zones to rub off any remaining solvent from the strip passing from the second to the third zone, spraying means adjacent both sides of the path of the strip between said first zone and said wipers and means for pumping solvent from said tank to said spraying means.

3,350,735
SCOURING PAD

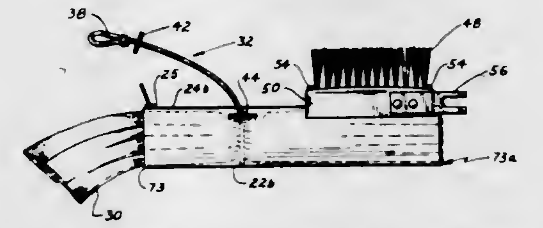
James S. Pratt, Brooklyn, N.Y., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
Filed July 19, 1965, Ser. No. 472,939
6 Claims. (Cl. 15—104.94)



1. A scouring pad comprising a flexible backing sheet of foamed polyurethane, a layer of non-porous waterproof adhesive covering one face of said backing sheet, and a mass of intertwined strands of a metal wool generally coextensive with and covering said layer of adhesive, said mass being characterized by having a soft lofty main body of metal wool enclosed by compressed bands of said metal wool which are embedded in said layer of adhesive adjacent the marginal extremities of said backing sheet, the intertwined strands in said mass extending outwardly of at least a portion of said bands and upwardly therefrom in soft lofty bundles which terminate at marginal extremities of said backing sheet, the strands at the bottom of said main body and at the bottom of said bundles being in surface adhesive contact with said layer of adhesive.

3,350,736
COMBINED GOLFER'S TOWEL, BRUSH AND CLEAT CLEANER

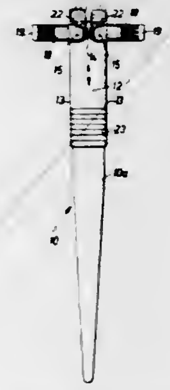
Jay B. Frazelle and Robert F. Williams, both of
345 Crest Drive, San Jose, Calif. 95127
Filed Nov. 23, 1964, Ser. No. 413,005
6 Claims. (Cl. 15—113)



4. A towel holder comprising an elongated tubular body, a brush mounted at one end and on the outer periphery of said body, a plastic zipper extending from the other end of said body to the base of said brush, a towel slidably mounted in said body and having a length substantially greater than said body, a thong secured to an intermediate portion of said towel and extending through an opening formed in the wall of said body, means on the portion of the thong exterior of said body for preventing withdrawal of said thong from said body, said thong being of sufficient length to allow a selected moistened portion of said towel to be withdrawn from the interior of said body.

3,350,737
TOOTHBRUSH WITH A DIVIDED PIVOTABLE BRUSH

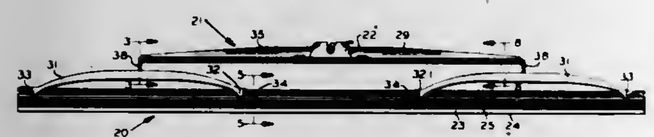
Herbert Makowsky, 25 Wielandstrasse,
Bremen, Germany
Filed May 12, 1967, Ser. No. 638,023
Claims priority, application Germany, May 18, 1966, M 55,215, M 69,537
4 Claims. (Cl. 15—172)



1. In a toothbrush with a divided brush consisting of two curved bristle holders having their adjacent inner ends pivotably mounted on the forward end of a handle for common actuation by a slider the combination of the following features:
  (a) each bristle holder is formed at its end adjacent the other bristle holder with a toothed segment and on its back, which carries no bristles, with a headed square-section stud,
  (b) the handle is formed at its forward end, carrying the bristle holders, with two bearing recesses with dovetailed entries for the resilient reception therein of the two headed square-section studs,
  (c) the slider is positively slidably mounted on the handle and formed with a forwardly projecting two-sided rack for engaging in the toothed segments of

both bristle holders in such a manner that sliding displacement of the slider on the handle produces a 90° snap action deflection in contrary directions of the two bristle holders by virtue of the headed square-section studs being forced to rotate between the resiliently yielding sides of the bearing recesses.

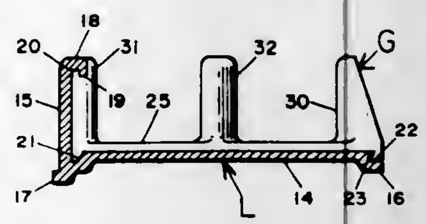
3,350,738
WINDSHIELD WIPER BLADE ASSEMBLY
John W. Anderson, 405 S. Huntington St.,
Gary, Ind. 46403
Filed Dec. 23, 1964, Ser. No. 420,632
11 Claims. (Cl. 15—250.42)



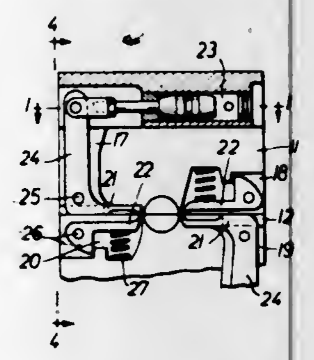
1. A windshield wiper assembly comprising a resilient flexible wiping blade element adapted to wipe a windshield, an arm-pressure distributing assembly adapted to receive pressure from a windshield wiper arm and transmit such pressure to said blade at a plurality of positions along its length, said pressure-distributing assembly comprising a plurality of elongate members pivotally connected to form an articulated structure with an outermost portion of an upper member overlying a portion of a lower member of less width than said upper member, said upper member being formed to constitute an airfoil shaped and disposed so that air currents exert aerodynamic pressure on said upper member downwardly toward the windshield, the upper face of said upper member defining a concave surface and the lower face of said upper member defining a convex surface, spacer means in fixed relation to one of said members and in pivotal relation to the other of said members to provide a pivotal connection between said upper and lower members and adapted to space apart said upper and lower members in a vertical plane common to the longitudinal axes of both of said members, the part of said spacer means between said upper and lower members having a sheet-like form lying substantially in a second plane approximately perpendicular to said vertical plane so as to present an edge to air flowing perpendicularly to said vertical plane and to provide a straight through passage for said air between the lower surface of said overlying portion and the top surface of said underlying portion during normal operation of the wiper assembly, said part of said spacer means between said upper and lower members having a width which is less than that of said upper member and not less than that of said lower member, and the intersection of said second plane with said convex surface being non-linear.

3,350,739
PANEL GUIDE STRUCTURE FOR TUB ENCLOSURES AND THE LIKE
Morton S. Rifkin, 6261 SW. 26th St.,
Miami, Fla. 33155
Filed May 2, 1966, Ser. No. 546,923
4 Claims. (Cl. 16—90)

1. A panel guide structure comprising an elongated base member having a slot along one edge portion, a front wall extending upwardly along said one edge portion of said base member adjacent said slot, a flange portion mounted at the free edge of said front wall and extending in the same direction as said base member, a second slot, on said flange portion extending substantially its full length and facing downwardly in alignment with said first named slot, foot portions mounted along each edge portion of said elongated base member for elevating said base member, a third slot, on said base member extending along the other of said edge portion and panel guide insert means removably mounted on said elongated base member forming a plurality of channel means for receiving and guiding panels therealong.



3,350,740
DEVICE FOR MAKING HOLLOW BODIES FROM THERMOPLASTIC MATERIAL
Stefan Fischer, Lohmar, Cologne, Germany
Filed Mar. 18, 1965, Ser. No. 440,809
Claims priority, application Germany, Mar. 20, 1964,
F 42,373
4 Claims. (Cl. 18—5)



1. In an apparatus for forming hollow objects from heat-formable thermoplastic material which includes, a split mold, means for ejecting a heated parison of the thermoplastic material between the open halves of the said mold, means for closing the mold about said parison and to squeeze excess material, the combination comprising; tear-off means for removing said excess material; said tear-off means including at least one spring-biased flap associated with one of said mold halves and at least one actuable flap associated with the other of said mold halves, said actuable flap being positioned for movement toward and against said spring-biased flaps, whereby the actuable flaps will be actuated upon the closing of the said split mold to effect clamping of the excess material between said spring-biased flaps and said actuable flaps so that the excess material will be displaced in a direction substantially perpendicular to the parting line of the said split mold thus effecting a tearing-off of the said excess material from the finished molded object.

3,350,741
SPINNERET DEVICE FOR SPINNING SIDE-BY-SIDE TYPE OF COMPOSITE FIBERS
Masatoshi Yoshida, Kamitokari, Sunta-gun, and Keisuke Tanouchi, Mishima, Japan, assignors to Toho Beslon Kabushiki Kaisha, Chuo-ku, Tokyo, Japan, a corporation of Japan
Filed Apr. 18, 1966, Ser. No. 543,204
Claims priority, application Japan, Apr. 22, 1965,
40/23,806
7 Claims. (Cl. 18—8)

1. In a spinneret device for use in spinning a plurality of side-by-side composite fibers, the combination including

an introduction block having first and second longitudinal passages for supplying respectively first and second spinning dopes,

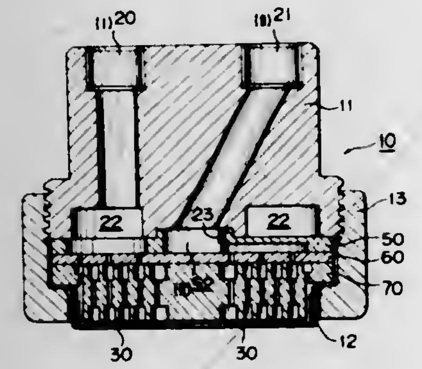
an annular recess in the surface of said introduction block communicating with the second longitudinal passage,

a distribution block adjacent said introduction block comprising a first disc member having means defining a central opening communicating with the first longitudinal passage,

a plurality of radially extended recesses in the under surface of said first disc member, each of said radially extended recesses communicating with said means defining a central opening so as to distribute said first spinning dope in a radial direction,

means defining a plurality of radially extended openings in said first disc member arranged alternately between said recesses and communicating with said annular recess,

a second disc member having a plurality of perforations being arranged along a plurality of concentric circumferences such that perforations along alternate concentric circumferences communicate with said means defining radially extended openings while the perforations along the other concentric circumferences communicate with said radially extended recesses,



a third disc member having a plurality of concentric annular grooves correspondingly located in the upper and lower surfaces thereof,

means connecting said grooves in the upper surface with correspondingly located grooves in the lower surface,

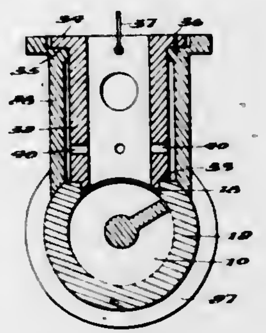
said concentric annular grooves being arranged to communicate with the perforations along the corresponding concentric circumferences of said second disc,

concentric annular partition means between adjacent grooves in the lower surface of said third disc member,

an orifice block being adjacent to said third disc, said orifice block having a plurality of spinneret orifices arranged along concentric circumferences adjacent said partition means, said orifices being in communication with and intermediate to adjacent concentric annular grooves whereby said first and second dopes appear in concentric annular falls alternately at said grooves in the lower surface and are extruded from the spinneret orifices intermediate said grooves as side-by-side composite fibers.

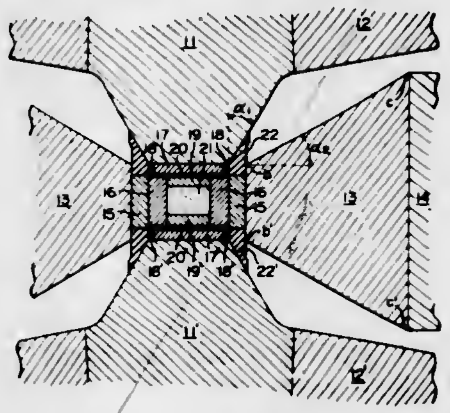
3,350,742
REMOVABLE LINER FOR A VENT PORT HOUSING
Stanley David Wood, Kingston, Ontario, Canada, assignor, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 4, 1966, Ser. No. 531,912
5 Claims. (Cl. 18—12)

1. In a screw extruder including a barrel provided with a vent port and a vent port housing projecting from the barrel,



a removable tubular liner positioned in said housing with one of its ends seated in said port.

3,350,743
HIGH TEMPERATURE AND HIGH PRESSURE APPARATUS
Hiroshi Ishizuka, 19–2 Ebara 6-chome,
Shinagawa-ku, Tokyo, Japan
Filed Oct. 29, 1965, Ser. No. 505,644
Claims priority, application Japan, Nov. 4, 1964,
39/62,364; Feb. 18, 1965, 40/9,239; May 4,
1965, 40/26,087
3 Claims. (Cl. 18—16.5)

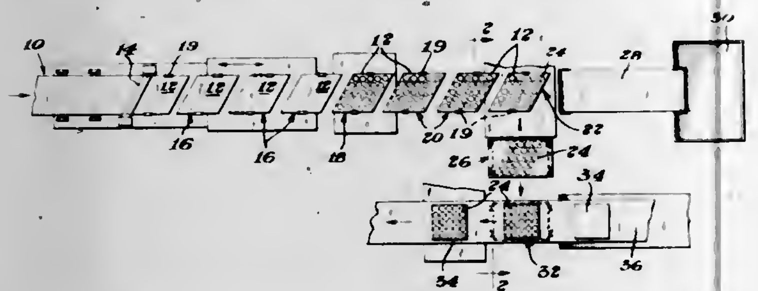


1. A high temperature high pressure apparatus comprising a pair of opposed tapered pistons respectively having a truncated flat end surface, an annular die member having a straight cylindrical inner wall, said wall defining an aperture into which said pistons converge, a rigid hollow cylindrical body made of material having a relatively lower compressibility coefficient than that of the material of the die member, said body being coaxially placed in said aperture, a reaction chamber formed by the piston ends and the inner wall of the body, and gaskets placed respectively upon the ends of said cylindrical body and, sealing the gaps between said pistons and die inner cylindrical wall, the temperature and pressure caused in the reaction chamber being damped by said cylindrical body thereby lowering the pressure and temperature transmitted to said die member, said gaskets deforming upon lengthening of the body whereby the body walls are prevented from rupturing at a pressure higher than that induced by the material of the body per se.

3,350,744
APPARATUS FOR FORMING CUPS, TUBS, LIDS AND THE LIKE
Edward R. Sederlund, Saginaw, Mich., and Grant W. Cheney, Lakewood, Ohio, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 497,254
6 Claims. (Cl. 18—19)

1. An apparatus for forming cups, tubs, lids and like articles, comprising a plurality of in-line stations performing sequential handling and forming operation; means for

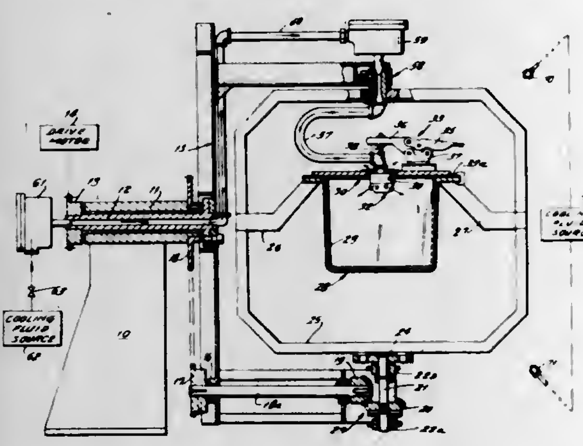
supplying a stock of sheet material into said apparatus adjacent one of its ends; a shearing means for separating said sheet material into a plurality of sections each having a skewed parallelogram configuration; a heating station; a molding station including means for forming articles in each said section such that the centers of the articles are at vertices of imaginary equilateral triangles and define a skewed parallelogram configuration; a trimming station; all of the aforesaid stations located in-line one after the other; a first means for moving each section sequentially from one station to the next in order; a rim-forming station and an unloading station located in-



line with and beyond said trimming station; a second means for moving the articles after they are separated from their respective section to the rim-forming station and unloading station; said unloading station including a pickup rod for each article and means in combination with said pickup rods for removing each said article from said second means in the skewed arrangement thereof and for shifting said pickup rods to a rectangular arrangement of a length and width substantially that of a shipping carton in which such articles are to be placed and for lowering said pickup rods with the articles thereon into such carton.

3,350,745
ROTATIONAL MOLDING

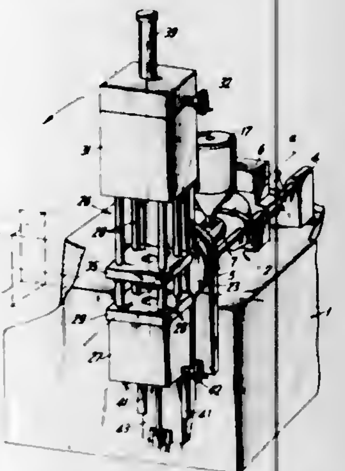
Stuart Schott, Cincinnati, Ohio, and Leroy J. Memering, Covington, Ky., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed May 26, 1966, Ser. No. 553,177
4 Claims. (Cl. 18—26)



1. A rotational molding apparatus for molding an open-end article comprising a mold, a lid for said mold, said lid being lined with an insulating panel, said lid being provided with a centrally located opening, a cooling head receivable within said opening and depending therethrough, rotation mean connected to said mold for rotating said mold about orthogonal axes, connection means for connecting said lid and cooling head to said mold for enclosing said mold, a said cooling head including channel means extending between the exterior of said mold and the interior of said mold, and a source of cooling fluid connected to said channel for introducing cooling fluid into the interior of said mold while said mold is rotating about its said orthogonal axes.

3,350,746
APPARATUS FOR MOUNTING AN INJECTION MOLD FOR ANGULAR MOVEMENT

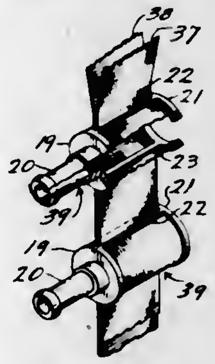
Armin Blumer, Schwanden, Switzerland, assignor to Maschinenfabrik und Giesserei Netstal AG, Netstal, Switzerland
Filed Sept. 1, 1964, Ser. No. 393,525
Claims priority, application Switzerland, Sept. 3, 1963, 10,915/63
12 Claims. (Cl. 18—30)



1. Injection molding apparatus comprising, in combination, a machine frame; a heating and injection unit supported on said frame and having a longitudinal axis; a molding unit operatively associated with said injection unit and having a longitudinal axis; means mounting said molding unit on said frame, independently of said injection unit, for adjustment, relative to said frame, in a plane perpendicular to the axis of said injection unit, longitudinally of its own axis, and angularly about the axis of said injection unit; said means further providing for adjustment of said molding unit radially of the axis of said injection unit.

3,350,747
MOLDING MACHINE AND PROCESS

Robert H. Campbell, Findlay, Ohio, assignor to R. L. Kuss & Company, Inc., Findlay, Ohio, a corporation of Ohio
Filed May 17, 1965, Ser. No. 456,178
4 Claims. (Cl. 18—30)

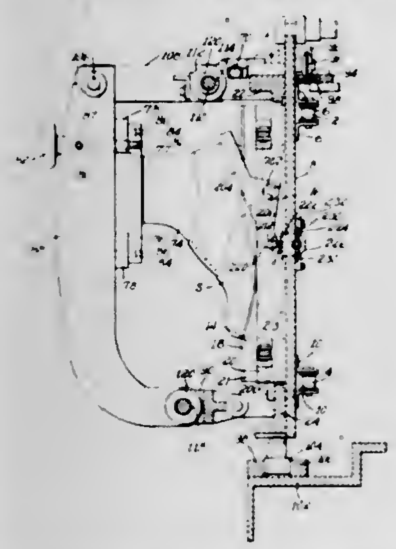


1. An apparatus for molding a plurality of articles upon a pair of parallel continuous strips of material, said apparatus comprising a pair of opposed movable die platens on either side of a parting line, means for positioning said pair of strips along said parting line between said platens, a plurality of mold cores positioned at intervals along said parting line between said strips, and a plurality of matching, opposed die halves on each of said platens which, when said platens are closed, form a die around each of said mold cores and grip said strips of material therebetween, said die halves mounted in opposed rows on each of said platens at varying distances from said parting line whereby said die sections, when said platens are closed, will sequentially grip said strips of material starting at the innermost mold core and progressing outwardly toward the end die halves of each row

such that said strips are free to assume a non-linear configuration on each side of said core within each pair of die halves.

3,350,748
QUICK CHANGE MOLD ASSEMBLIES

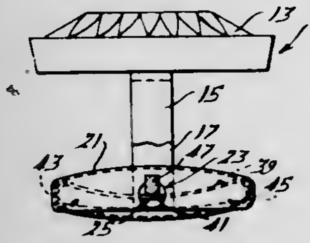
Donald B. McIlvin, Danvers, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed July 27, 1965, Ser. No. 475,083
3 Claims. (Cl. 18—34)



3. A mold assembly for injection molding comprising a base plate, a bottom mold member having a sprue member extending therefrom, and means for releasably connecting said bottom mold member to said base plate, said releasable connecting means comprising means attached to said base plate and engageable with said sprue member whereby to secure the sprue member to the base plate.

3,350,749
SAFETY LOCK FOR CUFF LINKS

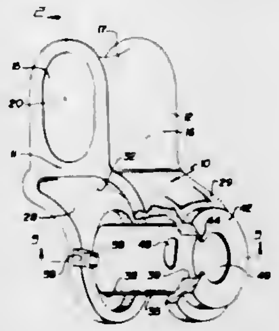
Brouwer D. McIntyre, Monroe, Mich., assignor to Monroe Auto Equipment Company, Monroe, Mich., a corporation of Michigan
Filed Oct. 21, 1965, Ser. No. 499,678
5 Claims. (Cl. 24—97)



1. In a cuff link, a head, an arm depending from said head, a pivot pin having at least a portion of non-circular cross section fixed to the outer end of said arm, an integrally constructed bar having a central opening pivotally disposed on said pivot pin and rotatable thereon between a first position substantially parallel to said arm and a second position at right angles to said arm, there being a slot of non-circular cross section complementary to that of said pivot pin portion extending radially from said central bar opening in a direction at right angles to the extent of said bar, said slot interfitting with and receiving said pivot pin portion only when said bar is in said second position, and a spring having one portion engageable directly with said bar and another portion engageable directly with said pivot pin, said spring constantly urging said bar slot and said pivot pin portion toward each other in a direction at right angles to the extent of said bar but being yieldable in response to manual pressure on said bar to permit withdrawal of said pivot pin portion from said bar slot.

3,350,750
CABLE SHACKLE

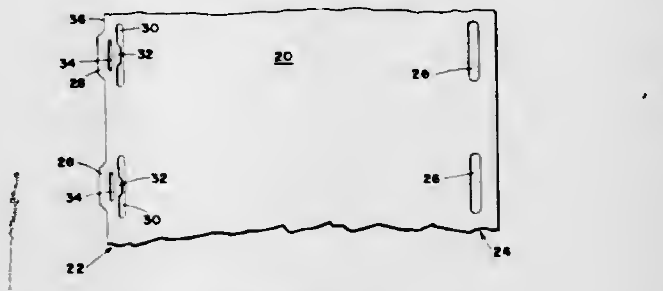
George E. Scarr, Vancouver, British Columbia, and Dennis R. Binstead, South Burnaby, British Columbia, Canada, assignors to D & B Rigging Supplies Ltd., Vancouver, British Columbia, Canada, a corporation of Great Britain
Filed June 4, 1965, Ser. No. 461,332
25 Claims. (Cl. 24—126)



1. A cable shackle comprising a bridge, a pair of spaced arms projecting outwardly from one side of the bridge and forming a gap therebetween, a pin extending across the gap between and movably connected to the arms spaced outwardly thereof from the bridge, said pin being movable relative to the arms to clear the gap, a loop connected to the bridge on the opposite side thereof from the arms, said loop having sides near and extending away from said arms and a bore extending substantially normal to the pin, whereby a cable having an eye formed on an end thereof can extend through the loop bore and have said eye positioned in the gap with the pin extending therebetween, and a wedge extending through the loop bore, said wedge being adapted to jam the cable in the loop.

3,350,751
ERECTILE MEMBER

George F. Groschke, Broomall, Pa., assignor to General Electric Company, a corporation of New York
Filed Nov. 23, 1964, Ser. No. 413,240
6 Claims. (Cl. 24—201)



1. Fastening means comprising:
female means comprising a first portion of material of given thickness
perforated with first perforations whose length is greater than their width,
both the said length and said width being much larger than the said thickness of the first portion of material;
male means comprising a second portion of material
having an edge from which protrude first tapered tongues whose distal end is shorter than the length of the said first perforations
perforated within the region adjacent to the said edge with second perforations having at their edges closer to the said first tongues
second tapered tongues extending into the apertures of the said second perforations in a direction opposite from that in which the said first tongues extend,

the distance between the base of a first tongue and the base of an opposed second tongue being not greater than the width of a first perforation,

the spacing and orientation of the said perforations and tongues being such that

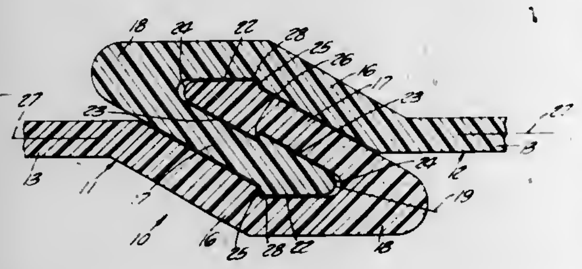
the lengths of the said first and second tongues and the said second perforations are parallel to each other,

a first tongue and a second tongue lie between the lines tangent to the opposite ends of a second perforation and normal to its length, and

the said first tongues may, by relative motion of the said first portion of material and the said second portion of material, be caused to enter into the said first perforations, each of the said second tongues being positioned medially of an associated said second aperture and having a length such as to provide sufficient space thereabove and therebelow to enable use of roller type tongue tucking means therewith.

3,350,752
LATERALLY-ENGAGING SELF-LOCKING PLASTIC SEAM ASSEMBLY

Walter A. Plummer, 3546 Crownridge Drive,
Sherman Oaks, Calif. 91403
Filed Aug. 2, 1966, Ser. No. 569,705
11 Claims. (Cl. 24—201)



1. A self-locking thermoplastic seam assembly comprising a pair of elongated tapes of subtsantially the same cross-sectional configuration having mounting webs extending along their remote edges and the adjacent edges being so shaped as to be interlockable by overlapping the same and then drawing said tapes laterally into nesting interlocked relation, the adjacent edges of said overlapped tapes each having oppositely facing deep V-shaped portions extending lengthwise thereof with the major portion thereof offset in opposite directions from a median plane through said mounting webs, said V-shaped portions including a free leg having a pair of locking shoulders projecting outwardly from the opposite sides of said free leg, the other leg of said V-shaped portions having a shoulder projecting inwardly from its inner surface, and all three shoulders being positioned to interlock with an adjacent shoulder of the other tape when said V-shaped portions are properly internested in the closed position of said seam assembly.

3,350,753
NECKLACE CLASP

Wesley W. Hester, 4749 Lorraine Drive,
San Diego, Calif. 92115
Filed Dec. 29, 1965, Ser. No. 517,224
1 Claim. (Cl. 24—239)

A necklace clasp, comprising:

a catch element and a link;

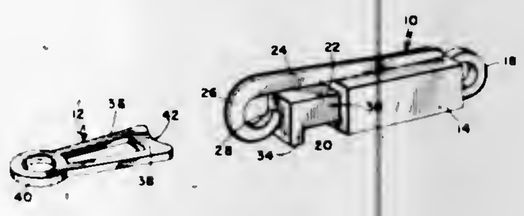
said catch element having a body with means at one end for attachment to a necklace;

a plunger slidably mounted in the other end of said body and having an end extended outwardly from the body;

a hook member fixed on said body with the open portion of the hook toward said plunger;

said plunger being biased to move toward said hook member and to bear against and to close said hook member;

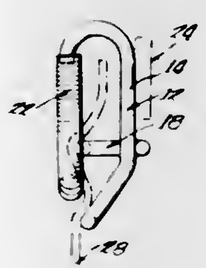
said link having a portion at one end for attachment to a necklace, and a loop portion at the other end for engagement on said hook;



said loop portion having a concave end face for engagement with the extended end of said plunger, said extended end having a disc-like annular flange projecting laterally from the plunger beyond said hook for engagement with said concave end face, whereby pressure of said link against the plunger retracts the plunger to admit said loop portion into the hook member.

3,350,754
FLEXIBLE CLOTHING CLAMP STRUCTURE

Robert J. Ballenger and Robert G. Schaefer, Highland Park, Ill., assignors to Central Specialties Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 25, 1966, Ser. No. 537,531
22 Claims. (Cl. 24—255)



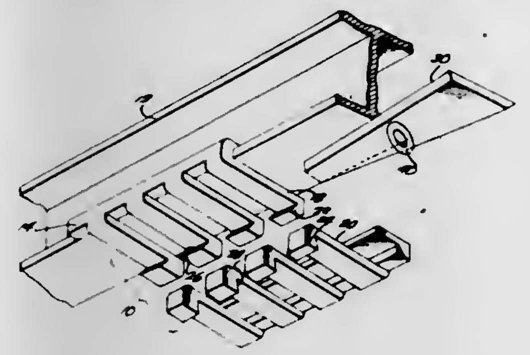
1. A clamp for retaining material such as fabric, articles of clothing and the like comprising: a clamp body which is generally U-shaped and having arms which when viewed from the side generally resemble an inverted J; a flexible bendable clamping member having its ends affixed to respective ones of said arms and of a length so as to form a loop; and a locking bar having at least one offset substantially pointed tip formed therein affixed to sail clamp body and positioned so that said tip projects substantially between said loop of said clamping member.

3,350,755
WEDGE LOCK CLAMP AND FASTENER DEVICE

John R. Hanner 2630 Michigan Ave.,
Dallas, Tex. 75216
Filed May 19, 1965, Ser. No. 457,110
1 Claim. (Cl. 24—263)

A wedge lock clamp and fastener device comprising a set of supporting bodies adapted to be mounted on a flange of an I-beam, a set of interfitting fingers mutually engaging each other and extending integrally from the respective support bodies, each of said fingers having a backward extending inclined surface providing a wedge-receiving portion, a wedge having a pointed contoured and an inclined leading edge on each side thereof, said

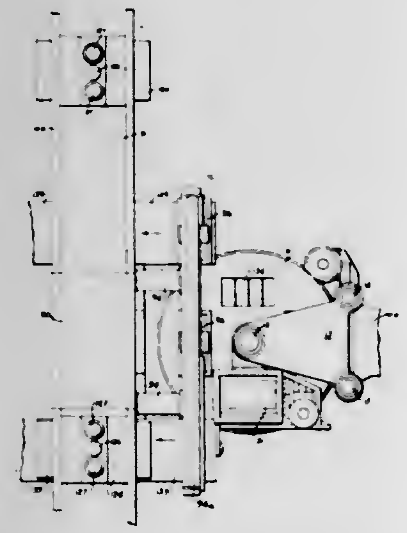
wedge adapted to fit within said wedge-receiving portions formed by said fingers, so that the backward extending inclined surface of said finger extensions is adapted to over-wrap the leading and inclined edges of said wedge to form a wedge lock clamp and fastener device said



wedge having article supporting means secured to a non-engaging surface thereof, said supporting bodies having their fingers joined together by spines, and said spines each having means thereon forming with the fingers channels for snugly receiving edge portions of said flange.

3,350,756
BRICK MANUFACTURING APPARATUS

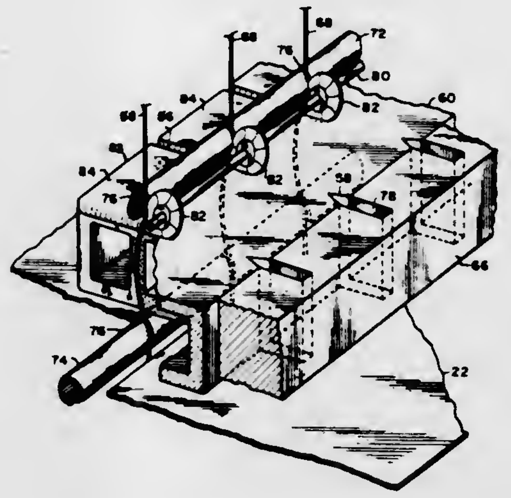
Heinz Brand, Dorsten, Westphalia, Germany, assignor to Dorstener Eisengiesserei Maschinfabric, AG, Dorsten, Westphalia, Germany, a corporation of Germany
Filed Sept. 21, 1964, Ser. No. 397,836
8 Claims. (Cl. 25—2)



2. A brick manufacturing apparatus for use with a press having an unloading station, comprising:
- (a) a first horizontal track passing over the unloading station and extending substantial distances in both directions away from the station,
- (b) two transport belts one lying under each end of the track and extending at a right angle to the track,
- (c) two gripper carriers each movable along the track alternately from a position over the station for grasping finished brick to a position over a transport belt for the deposit thereon of the brick,
- (d) two second horizontal tracks each lying at a right angle to a transport belt and extending a substantial distance away from the press, and
- (e) two stacking carriers each movable along one of the second horizontal tracks from a position over the transport belt for grasping finished brick to a position substantially removed for stacking of the brick.

3,350,757
APPARATUS FOR THE MANUFACTURE OF BRICK AND TILE

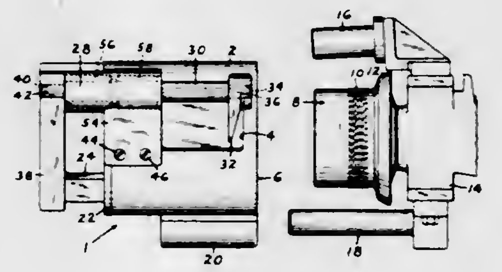
Arnold G. Bowles, 431 W. Main St.,
Brookville, Pa. 15825
Filed Mar. 19, 1964, Ser. No. 354,498
14 Claims. (Cl. 25—112)



1. An apparatus for cutting transverse segments from an elongated rectangular pliable bar comprising:
- (a) means for forming a plurality of spaced parallel grooves across the short dimension of at least one of the elongated surfaces of said bar corresponding to said segments, and
- (b) a plurality of parallel stationary cutting wires for cutting said bar into said segments, said cutting wires being spaced apart substantially the same distance as the center lines of said grooves, each of said wires having a cutting surface smaller than the largest lateral dimension of said grooves whereby said wires cut said bar into segments along said grooves and the cut edges of each segment located along a groove are recessed.

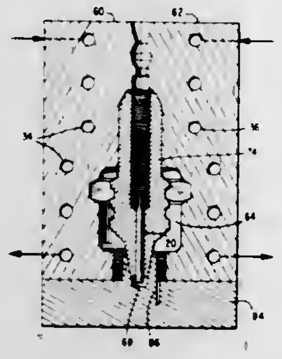
3,350,758
WRAP REMOVER

Beryl A. Boggs, Chester, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Feb. 23, 1966, Ser. No. 529,555
2 Claims. (Cl. 28—20)



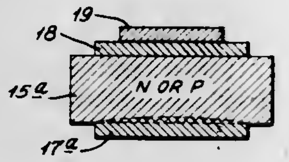
1. An apparatus for removing wraps from a revolving roll comprising a cylinder open at at least one end and adaptable to envelop a roll, said cylinder defining a window on its side, a scraping means longitudinally slidably positioned on said cylinder and rotatable about its own longitudinal axis, said means having a protruding element adaptable to pass through said window and remove said wraps from said roll into said cylinder and guide means disposed on the surface of said cylinder for positively positioning said cylinder against rotation due to movement of said roll.

3,350,759
PROCESS FOR MAKING A SPARK PLUG
Manoel José Antunes, Rua Felix Pacheco 93,
Rio de Janeiro, Brazil
Filed Aug. 15, 1963, Ser. No. 302,385
2 Claims. (Cl. 29—25.12)



1. A method of making a spark plug having a terminal at its upper end, comprising the steps of:
- fabricating an insulator having a central bore that is smooth at its lower end and having a spiral channel in its wall for a substantial portion of its length and terminating at its upper end,
- placing an electrode in the unchanneled portion of the bore, and
- injecting molten material under high pressure into said bore to form an inner conductor, through a set of dies including a mold cavity which forms the terminal protruding from the upper end of said bore.

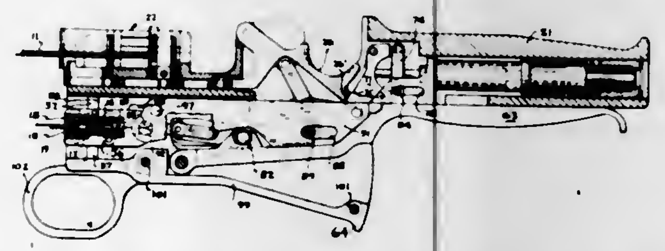
3,350,760
CAPACITOR FOR MINIATURE ELECTRONIC CIRCUITS OR THE LIKE
Jack S. Kilby, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application Feb. 6, 1959, Ser. No. 791,602, now Patent No. 3,138,743, dated June 23, 1964. Divided and this application Mar. 16, 1964, Ser. No. 352,389
4 Claims. (Cl. 29—25.42)



1. In a method of manufacturing an integrated circuit of the type having a plurality of active and passive circuit components in a body of semiconductor material, the steps of forming a layer of oxide on a semiconductor wafer, applying a layer of highly conductive material over at least part of said layer of oxide to provide one plate of a capacitor which employs said oxide as its dielectric, and providing a nonrectifying contact to the semiconductor material subjacent the oxide which immediately underlies said layer of conductive material.

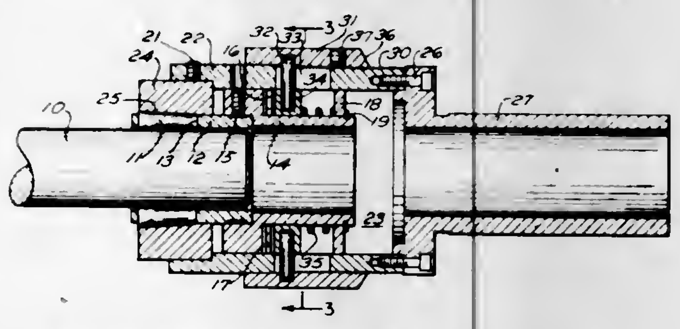
3,350,761
COLD-FLOW SPLICES AND TOOLS THEREFOR
Eugene H. Souter, 721 Simpson St.,
Evanston, Ill. 60201
Filed May 13, 1965, Ser. No. 455,544
27 Claims. (Cl. 29—34)

1. A tool for clipping, stripping and splicing wires having a handle by which the tool may be carried in one hand, and first and second actuating levers arranged for actuation by said hand;
- said tool having a clipping and stripping unit, adapted to receive a plurality of wires, clip them to desired length with even ends, and strip them, and having a cavity for receiving a splicing unit into which the stripped and clipped wires are to be fed;
- retention jaws operable by the first lever to close upon the inserted splicing unit for retaining the same, without obstructing the insertion of wires into the splicing unit;
- latch means for holding the retention jaws in actuated position;
- said clipping and stripping unit including clamping means, clipping means and piercing means operable by a laterally movable section actuated by the first lever to grip and clip wires which have been inserted in the clipping and stripping unit, and to penetrate the insulation at an appropriate distance from the clipped ends for the desired stripping, and means operable by further actuation of the first lever for separating the clamping means and the piercing means longitudinally of the wires to strip the end portions of the wires;



- the total actuation of the first lever causing the clamping means to open to release the wires, and effectuating the latch to hold the retention jaws in retaining position;
- a plunger shiftably carried by the tool and actuated by the second lever for movement into the space occupied by the splicing unit for producing a cold-flow coining thereof about the wires after the clipped and stripped wires have been inserted into the splicing unit for forming a permanent splice of said wires with substantlally zero splice resistance;
- and means actuated by the second lever at the end of the stroke for releasing the latch means, whereby absortion of the splicing stroke and removal of an inadequately formed splice is impossible.

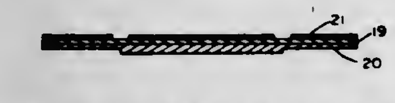
3,350,762
ROLLER BURNISHING TOOL
Eldo K. Koppelmann, Cumberland, R.I., assignor to Madison Industries, Inc., a corporation of Rhode Island
Filed Sept. 10, 1965, Ser. No. 486,391
4 Claims. (Cl. 29—90)



1. A burnishing tool comprising:
(a) a thrust bearing,
(b) cage means equipped with tapered rollers engaging one side of said bearing;
(c) mandrel means having a tapered surface to engage said rolls with a collar engaging the other side of said bearing;
(d) a micrometer ring threadedly embracing said mandrel means and connected to said collar by a plurality of radially disposed slots and pins through said mandrel means which act as a key to prevent relative rotative movement while permitting relative axial movement of said collar and mandrel;

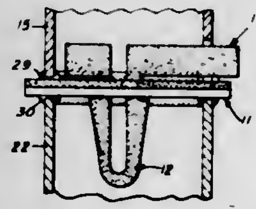
(e) and resilient means urging said cage means and mandrel means in opposite directions toward said bearing.

3,350,763
METHOD OF MAKING DUAL-MATERIAL FLANGE BEARINGS
George R. Kingsbury, Mayfield, Charles H. Junge, University Heights, William A. Weinkamer, Mentor, and Raymond L. Slater, Novelty, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Oct. 21, 1965, Ser. No. 500,065
9 Claims. (Cl. 29—149.5)



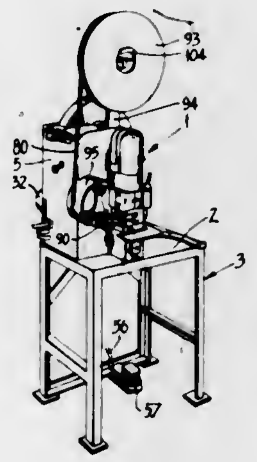
1. The method of producing a thin-walled, steel-backed, dual-material, flange sleeve bearing from a strip of steel which comprises the steps of: applying to the surface of said steel strip a layer of strong, fatigue-resistant, relatively hard bearing material to cause said strong bearing material to adhere thereto; in the strip form, working the strong bearing material to form barrel area means and flange area means of substantially the same thickness; in the strip form, casting white metal bearing material which is conformable and relatively softer than the strong, fatigue-resistant bearing material to form a composite tri-metal strip having barrel area means and flange area means of substantially the same thickness; working the steel at the flange area means to a substantially lesser thickness than the steel at the barrel area means; forming a flange sleeve bearing with the barrel area means of said strip forming the barrel of said bearing and with the flange area means of the strip forming the flange means of the bearing; and removing at least a substantial portion of the conformable cast white metal bearing material from the barrel portion of the bearing whereby the barrel portion of the formed bearing is formed essentially of strong bearing material, and the surface of the flange means is formed of said conformable white metal bearing material.

3,350,764
METHOD AND APPARATUS FOR ATTACHING A CLASP TO A BRACELET
Simon Geldwerth, 1434 57th St.,
Brooklyn, N.Y. 11219
Filed June 18, 1965, Ser. No. 465,091
18 Claims. (Cl. 29—160.6)



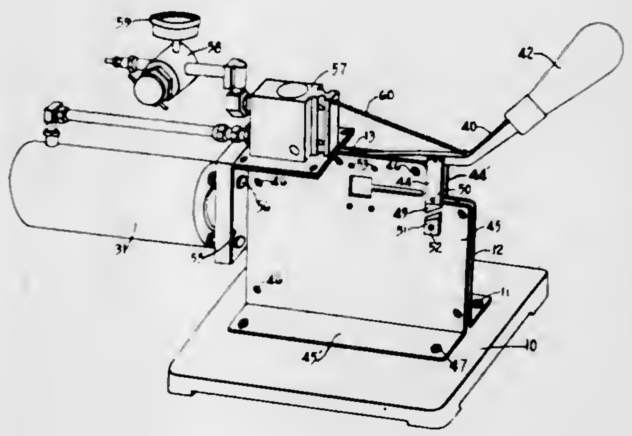
1. The method of securing a two part metal clasp to a metal bracelet having separable abutting end portions, said clasp being of the type wherein one of said two parts includes keeper means, the other of said two parts including spring means for releasable locking engagement with the keeper means, and each of said two parts are also provided respectively with complementary separable abutting surfaces, comprising the steps of interposing a layer of material inert to solder flux between said separable surfaces, assembling said clasp with said two parts in said locking engagement in association with the end portions of a bracelet with said surfaces in abutting relationship, and applying flux, heat and solder to join the two parts of the clasp with the respective end portions of the bracelet.

3,350,765
TERMINAL APPLYING MACHINE
Walter Karl, Riverwood, New South Wales, Australia, assignor to Utilux Proprietary Limited, Kingsgrove, New South Wales, Australia
Filed July 29, 1965, Ser. No. 475,823
Claims priority, application Australia, July 29, 1964, 47,518/64
18 Claims. (Cl. 29—203)



1. A power driven terminal applying machine comprising a normally retracted vertically reciprocal slide adapted to have an upper die attached to its lower end to coact with a fixed die on the frame of the machine, means operable on actuation of the machine to cause the slide to undergo one forward and return stroke, a reciprocal feed pawl spaced outwardly from one side of the dies and adapted to feed a terminal strip substantially horizontally thereto, means operable to actuate the pawl in timed relation with the slide, and means adapted to transmit movement from said last mentioned means to actuate a similar driving pawl arranged or capable of being arranged in a similar position on the other side of the coacting dies.

3,350,766
CASING FASTENING MACHINE
Paul G. K. Schroeder, 28 Island Trail,
Sparta, N.J. 07871
Filed Dec. 2, 1965, Ser. No. 511,089
5 Claims. (Cl. 29—211)



1. A machine, of the type described, for fastening the end of a casing by crimping a fastener therearound, comprising, in combination,
- a base,
- a vertical mounting plate attachable to said base, said plate having, at its upper end, a throat into which a casing may be gathered,

pressing means attached to the upper portion of said plate and serving to compress a casing in said throat prior to crimping of a fastener therearound,

a slide arm mounted on said plate in limited laterally-movable relation, and having a laterally-directed slide channel therein and a side opening in said channel, designed to accept a fastener therein,

said slide arm also having an end designed to project to near the bottom of said throat and to align and support a staple just prior to and during crimping thereof,

a die attached to said plate adjacent the forward edge of said throat and having a die face in line with said channel and shaped to enable crimping of a fastener, the forward end of which is to be pressed thereagainst for crimping,

spring means attached to said arm and said plate and designed to urge said plate toward said die,

a driver designed to ride in said channel and having a forward end shaped to serve as a pushing die for a staple head disposable thereahead,

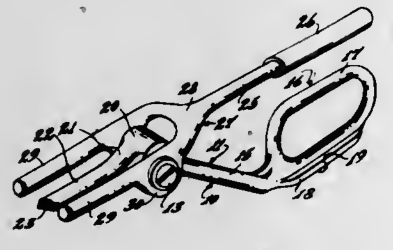
a driving motor attached to said plate or base and having a plunger attached to and designed to move said driver in said channel,

a feeder for feeding fasteners into said channel side opening,

limited engaging means attached at its one end to said arm and at the other end to said plunger or driver, and designed to allow said arm end to move into fastener-aligning and-supporting position just prior to arrival there of said fastener, and to withdraw said arm end upon withdrawal of said plunger, and

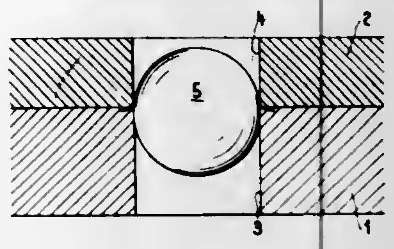
switching means for switching said motor for effecting pushing and withdrawal of said plunger.

3,350,767
GASKET-INSERTION TOOL
John J. Yannuzzi, 124 E. Holly St., Hazleton, Pa. 18201
Filed June 22, 1966, Ser. No. 559,484
2 Claims. (Cl. 29—235)



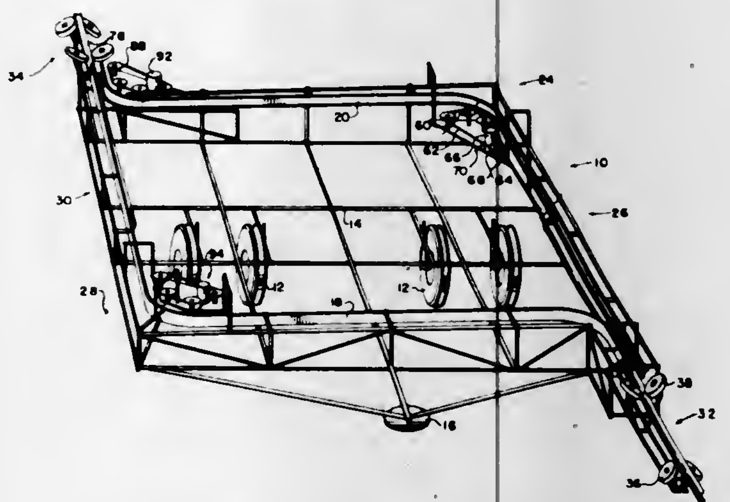
1. A gasket-insertion tool comprising a first shank, a first handgrip extending longitudinally outwardly from one end of said first shank, a yoke extending longitudinally outwardly from the other end of said first shank, a pair of spaced tines extending from said yoke in general parallelism with each other and longitudinally outwardly from said first shank, a second shank having one end pivotally connected between said pair of tines adjacent to said yoke for relative swinging movement of said shanks, a second handgrip on the other end of said second shank and movable therewith toward and away from said first handgrip, and an additional tine on said one end of said second shank and movable therewith through the space between said pair of tines, said additional tine being bent to locate its outer portion generally parallel to and offset from the plane of said pair of tines upon movement through said space, whereby the outer portion of said additional tine folds a gasket extending about said pair of tines with minimum effort and the inner portion of said additional tine retains the gasket on said pair of tines.

3,350,768
DEVICE FOR FITTING TOGETHER TWO PIECES
André Meylan, Moutier, and Hans Haidegger, Solothurn, Switzerland, assignors to Felsa S.A., Grenchen, Switzerland
Filed Jan. 10, 1966, Ser. No. 519,506
Claims priority, application Switzerland, Feb. 5, 1965, 1,608/65
4 Claims. (Cl. 29—271)



1. In combination with two work pieces, a device for fitting the work pieces together in alignment, the work pieces having recesses on at least facing surfaces, said device being a ball, a portion of which engages without side-play a recess of one of the pieces, the other portion of said ball engaging without side-play a recess of the other piece, so as to render both recesses coaxial with each other.

3,350,769
IRRIGATION PIPE MOVING APPARATUS AND METHOD
Johnnie R. Berry, 3414 59th St., Lubbock, Tex. 79413
Filed Dec. 23, 1964, Ser. No. 420,509
11 Claims. (Cl. 29—431)

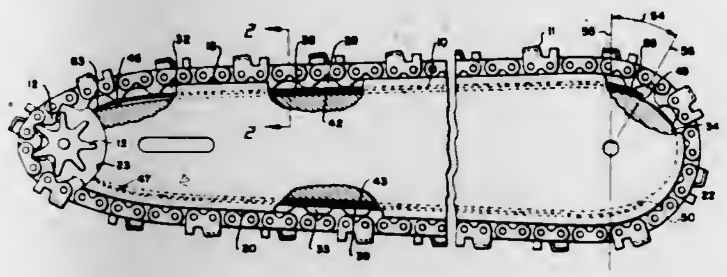


1. The method of moving coupled agricultural irrigation pipe comprising:

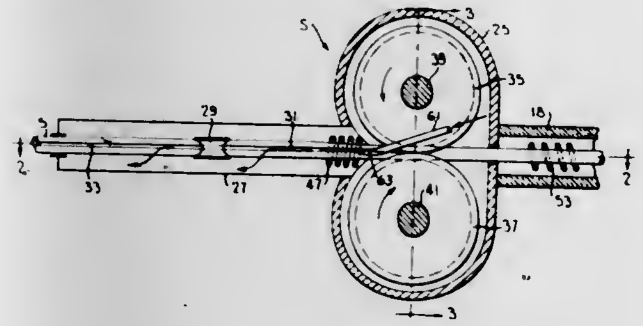
(a) advancing a vehicle along a line of coupled pipe,
(b) guiding the line of pipe over rollers on the vehicle thus
(c) lifting the line of pipe as the vehicle advances,
(d) uncoupling each joint of the line of pipe after the joint is lifted on the vehicle, and
(e) moving the uncoupled joints laterally on the vehicle.

3,350,770
METHOD OF MANUFACTURING CHAIN SAW CUTTER BARS
Emil A. Olsen, 7510 Aubrey St., North Burnaby, British Columbia, Canada
Original application July 16, 1962, Ser. No. 210,003, now Patent No. 3,185,191, dated May 25, 1965. Divided and this application Apr. 6, 1965, Ser. No. 445,908
11 Claims. (Cl. 29—475)

1. The method of manufacturing a chain saw cutter bar from a solid bar plate having an inner end, two longitudinal edges and a curved outer end with a curved edge extending between the longitudinal edges, which comprises forming a continuous peripheral groove in said edges and opening outwardly therefrom adapted to receive driving lugs of a saw chain when mounted on the bar plate in the standard manner, making the groove in at least one of the longitudinal edges deeper than necessary for the chain lugs, said deepened groove extending from near the inner end of the plate to near the curved end thereof, fitting a wall in the deepened groove spaced from the groove bottom to form an oil passage within the bar plate, and forming an entrance through the plate to the oil passage at the end thereof near the inner end of said plate, the other end of said passage opening into the peripheral groove near the curved end of the plate.

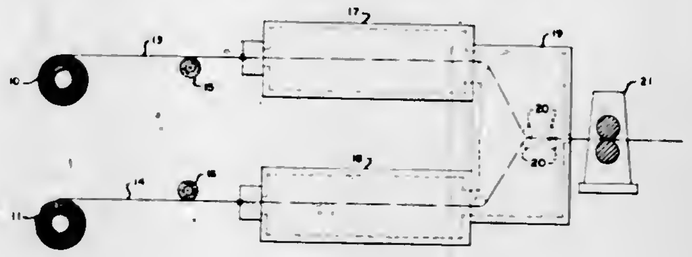


3,350,771
MANUFACTURE OF SEAMED METALLIC TUBING
George Durst, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed July 1, 1964, Ser. No. 379,614
4 Claims. (Cl. 29—477)



2. The process of manufacturing a seamed metal tube, comprising cleaning and curling a metal strip to form a tube having an open slit therein, moving the slit in one direction past a lateral seam-guiding member in the slit and laterally into the bite formed by conjugate grooves in the margins of squeeze rolls, said rolls having at least one pair of lateral shoulders flanking their grooves, the guiding member directing the open slit into the grooves adjacently to said shoulders, squeezing the tube within the bite to force together the edges of the slit to green-bond them in the grooves adjacent said pair of shoulders, directing a flow of scavenging protective gas into the slit at the point at which its edges contact one another immediately before laterally entering the bite, the general direction of said flow of gas at said point being opposite to the direction of the movement of the tube toward the bite, thereby to sweep away from the bite and the contacting edges of the slit any cloud of contaminating gases diffusing from the metal of the tube that might otherwise contaminate said edges as they engage.

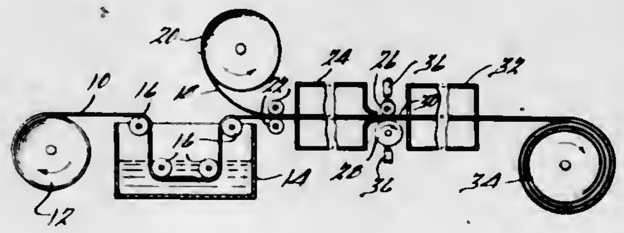
3,350,772
METHODS OF CLADDING STAINLESS STEEL TO ALUMINUM
John B. Ulam and William C. Camp, Canonsburg, Pa., assignors to Composite Metal Products, Inc., a corporation of Pennsylvania
Filed Aug. 15, 1962, Ser. No. 217,036
3 Claims. (Cl. 29—488)



1. A method of forming a composite stainless steel and aluminum metal of at least one strip of each of aluminum and stainless steel comprising the steps of heating the strip of stainless steel above its stress relieving temperature but below its fusion temperature while maintaining the aluminum stress relieving temperatures, immediately bringing the surfaces of the heated stainless steel and the aluminum together and exerting pressure on the metals simultaneously to effect reduction and to form a bond between them.

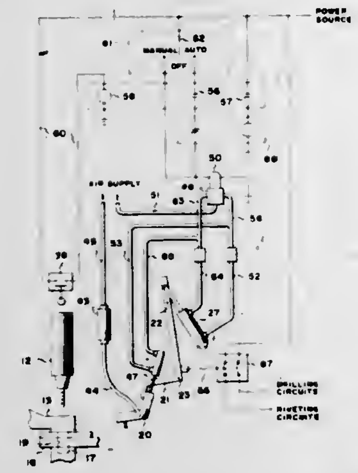
2. A method of forming a composite stainless steel and aluminum metal of at least one strip of each of aluminum and stainless steel comprising the steps of separately and differentially heating each of the stainless steel and aluminum to a temperature above its own individual recrystallization temperature but below its fusion point and immediately bringing the differentially heated strips together while maintaining a temperature differential between them proportional to the difference of their minimum stress relieving temperatures and exerting pressure on the metals simultaneously to reduce and bond them.

3,350,773
METHOD OF MAKING BEARINGS
Austin H. Beebe, Jr., and Victor Gallatin, Ann Arbor, Mich., assignors to Federal-Mogul-Bower Bearings, Inc., Detroit, Mich., a corporation of Michigan
Filed Sept. 11, 1963, Ser. No. 308,268
2 Claims. (Cl. 29—492)



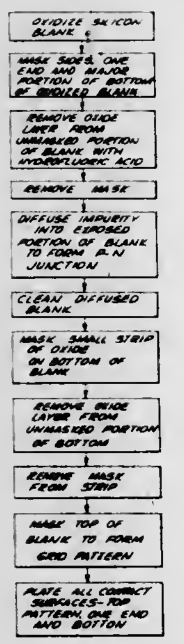
1. The method of forming a composite aluminum and steel strip suitable for the manufacture of bearings which comprises the steps of depositing an integral coating selected from the group consisting of cobalt and cobalt phosphorus on the face surface of the steel strip in a thickness of from about 0.000025 to about 0.0005 inch, preheating said steel strip and an aluminum strip to be bonded to said face surface thereof in a reducing atmosphere to a temperature between about 800° F. up to about 950° F., and thereafter roll bonding said aluminum strip to said steel strip by passing the strips in superimposed relationship through a pair of rolls and effecting a reduction of at least 40% in the thickness of said aluminum strip.

3,350,774
SEALANT APPLYING APPARATUS
Thomas Nelson Bridges, Sr., Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Apr. 25, 1966, Ser. No. 545,101
8 Claims. (Cl. 29—564)



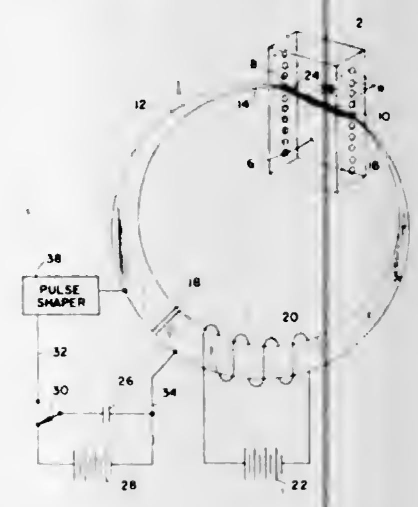
1. A sealant applying apparatus adapted to be operatively connected to an automatic fastener machine having drilling and fastener installing attachments and a control system for the coordinated operation thereof whereby parts delivered to the machine are sequentially provided with at least one set of aligned holes, a fastener inserted in each set of said holes and tightened securing the parts one to another, comprising a sealant ejector operative to release predetermined amounts of sealant, a mount for said ejector, power means connected to said mount and operative to move it to and from extreme positions locating said ejector proximate and remote from said holes, a control for said power means responsive to movement of said drilling attachment whereby said power means operates upon the completion of operation of said drilling attachment and prior to the operation of said fastener installing attachment, and an actuator for the operation of said ejector when disposed in the position proximate said holes.

3,350,775
PROCESS OF MAKING SOLAR CELLS OR THE LIKE
Peter Albert Iles, Arcadia, Calif., assignor to Hoffman Electronics Corporation, El Monte, Calif., a corporation of California
Filed Oct. 3, 1963, Ser. No. 313,478
3 Claims. (Cl. 29—572)


OXIDIZE SILICON BLANK
MASK SIDES, ONE END AND MAJOR PORTION OF BOTTOM OF OXIDIZED BLANK
REMOVE OXIDE LAYER FROM UNMASKED PORTION OF BLANK WITH HYDROFLUORIC ACID
REMOVE MASK
DIFFUSE IMPURITY INTO EXPOSED PORTION OF BLANK TO FORM P-N JUNCTION
CLEAN DIFFUSED BLANK
MASK SMALL STRIP OF OXIDE ON BOTTOM OF BLANK
REMOVE OXIDE LAYER FROM UNMASKED PORTION OF BOTTOM
REMOVE MASK FROM STRIP
MASK TOP OF BLANK TO FORM GRID PATTERN
PLATE ALL CONTACT SURFACES—TOP PATTERN, ONE END AND BOTTOM

1. A process of forming a photovoltaic device, comprising: forming an oxide layer on all surfaces of a blank of semi-conductor material of a first conductivity type, removing the oxide layer from the top, one end and a minor portion of the bottom of said blank to form an exposed area, diffusing an impurity of the opposite conductivity type into said exposed area to form a junction in said blank, masking a strip of the remaining oxide layer adjacent said diffused area and overlying the area where said junction comes to the surface of said blank, removing the oxide layer from the remainder of the bottom of said blank to form an exposed area, and plating metallic contacts on the diffused end and bottom areas of said blank and on said exposed area, said contacts being separated and prevented from shorting said junction by the remaining oxide strip.

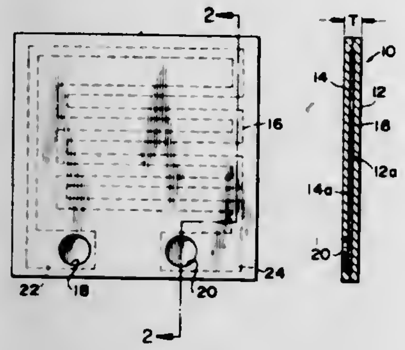
3,350,776
METHOD OF MAKING AN ELECTRICAL CONNECTION
Albert B. Welch, Dallas, Tex., assignor to LTV Aerospace Corporation, Dallas, Tex., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,604
3 Claims. (Cl. 29—592)



1. The method of making electrical connections through a coherer containing powdered, paramagnetic, electrically conductive material; said method comprising the steps of:
applying a magnetic field across said coherer between a selected pair of electrodes to cause particles of said material to become aligned between said electrodes; and subsequently applying an electrical charge across said coherer between said electrodes to weld said aligned particles into an electrically conductive path joining said electrodes.

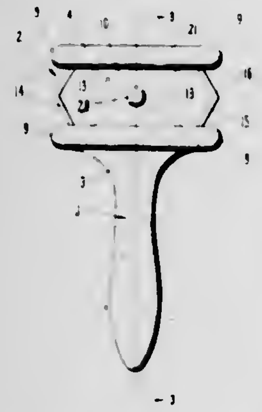
3,350,777
METHOD OF FABRICATION OF ELECTRICAL HEATER
Charles Mendelsohn, Monsey, N.Y., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Original application Jan. 7, 1963, Ser. No. 249,624. Divided and this application Feb. 19, 1965, Ser. No. 440,052
3 Claims. (Cl. 29—620)

1. A method of fabricating an electrical resistance heater comprising:
providing a sheet of aluminum foil hard anodized on at least one major surface;
bonding a sheet of Nichrome foil to the anodized surface of the aluminum foil;
chemically etching away selected regions of said Nichrome foil sheet to form a pattern made up of at least one continuous, highly-convoluted narrow strip of Nichrome traversing substantially the entire anodized surface of said aluminum foil; and
bonding a sheet of material having at least one electrically non-conductive surface to said aluminum foil



with said non-conductive surface confronting the anodized surface of the aluminum foil and covering said Nichrome strip.

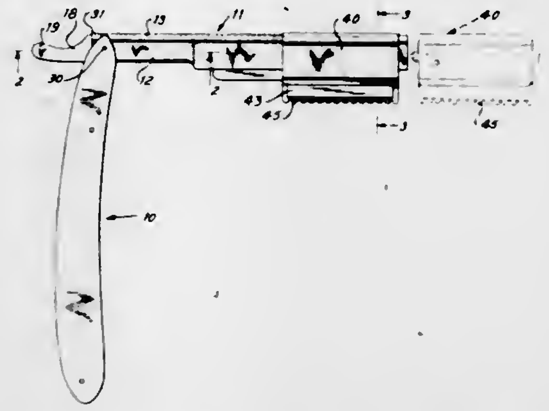
3,350,778
ONION PEELER
Joseph F. Perry, 114 York St., Stoughton, Mass. 02072, and Kenneth A. Stevens, 84 Dexter St., Milton, Mass. 02186
Filed May 4, 1966, Ser. No. 547,641
7 Claims. (Cl. 30—24)



1. A peeler comprising a holder and blade,
said holder having a handle and head integral with one another, said head having spaced depending marginal edges defining a channel extending transverse to said handle, and said blade having a cutting edge with an engaging portion extending transverse to said channel and with its ends extending generally longitudinally of said handle,
and means securing said blade to said head with the blade spanning said channel and with said blade cutting edge extending to one end of said channel.

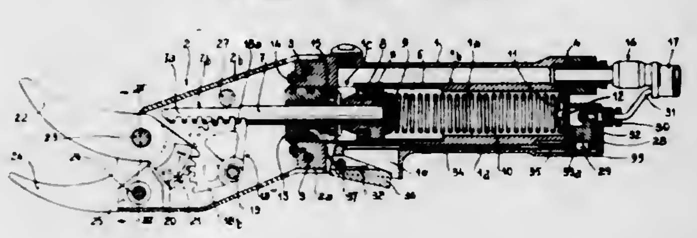
3,350,779
BARBER RAZOR FOR DOUBLE EDGE BLADES
Michael Guarino, 8 Wilshire Lane, Plainview, N.Y. 11803
Filed Jan. 6, 1966, Ser. No. 519,078
1 Claim. (Cl. 30—55)

A barber type razor for use with conventional thin flexible centrally apertured double edge blades comprising a first flat blade holder plate having an angularly pointed rear end and a blade holding front end having a plurality of apertures therein to mate with the apertures of said blade; a second flat blade holder plate also having an angularly pointed rear end and a blade holding front end having a plurality of protuberances adapted to pass through said apertured blade and to mate with the walls of said first blade holder; an apertured pivot plate having a rear finger operable portion, secured rigidly at the front end portion to said first and second blade holder pointed ends intermediate thereof; an apertured longitudinal substantially U-shaped cover having a semi-circular bead at the U-bend disposed over the blade holders and with its aperture in line with the aperture of said pivot plate; an apertured razor handle disposed over said pivot plate and cover plate in aligned relationship of apertures; a pin disposed through said aligned apertures



of said handle and said pivot plate and said cover; and a guide of substantially U-configuration slidably disposed over said cover adjacent said blade, whereby restricted angular movement of said cover relative to said pivot plate and blade holders permits replacement of blades.

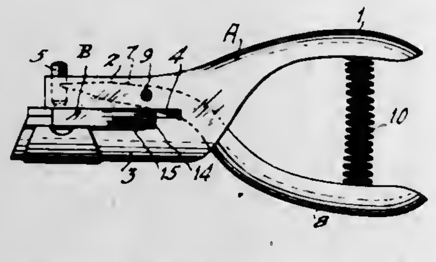
3,350,780
PORTABLE SHEARS
Jean Artru and Edmond Vignal, both of Route de Peyrus, Chabeuil, France
Filed May 13, 1966, Ser. No. 549,855
2 Claims. (Cl. 30—228)



1. Portable shears comprising an elongated body forming a handle for said shears, said body having a first end and a second end and having a longitudinal bore extending therethrough, said bore also having a first end and a second end respectively corresponding to said first and second ends of said body; means to close said first end of said bore; a piston slidable within said bore; a rod axially disposed with respect to said bore, said rod having one end secured to said piston and slidably extending beyond said first end of said bore through said means, the portion of said rod remote from said piston and exterior to said bore being formed as a rack; duct means extending through said body from said first end of said bore to said second end of said body to be connected with an appropriate fluid distributor; a compression spring disposed within said bore between said piston and said second end of said bore to urge said piston towards said first end of said bore; means at said second end of said bore to form a rest for said compression spring; a substantially flat casing secured to said first end of said body and housing said rack portion of said rod; a double segmental gear embodying a first toothed segment in mesh with said rack portion of said rod and a second toothed segment of smaller radius than said first segment and angularly solid therewith, said double segmental gear being rotatably carried within said casing; means carried by said casing to guide said rod and to maintain the rack portion thereof in mesh with said first toothed segment of said double segmental gear; a movable cutting blade rotatably carried by said casing and projecting outwardly therefrom; a toothed sector secured to said movable cutting blade co-axially thereto to mesh with said second toothed segment of said double segmental gear; a fixed

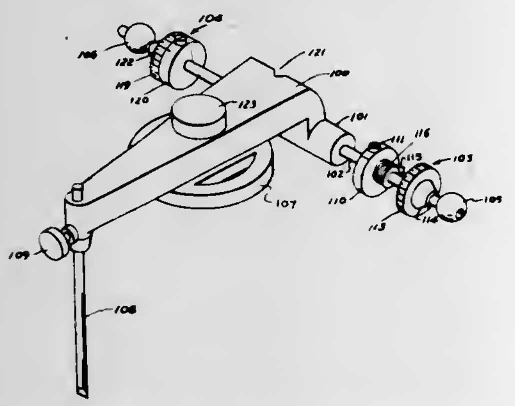
cutting blade secured within said casing and projecting outwardly therefrom for cooperation with said movable cutting blade; a switch carried by said body at said second end thereof; a rod longitudinally carried by said body to actuate said switch; and a spring-loaded trigger pivoted to said body near said first end thereof to actuate said rod.

3,350,781
CARD INDEXING PUNCH
Arthur V. Bender, 29 Woodland Road,
Maplewood, N.J. 07040
Filed July 8, 1966, Ser. No. 563,883
2 Claims. (Cl. 30—358)



1. A card indexing punch comprising a first jaw having a punching pin mounted therein and a second jaw having a plate portion provided with a flat face which forms between itself and the first jaw a slot open at one end to receive a polyedged card to be punched, said second jaw also having a die opening extending through said flat face cooperative with said punching pin, means for actuating said pin into and out of coactive relation to said die opening, and a gauge formed of sheet material having a flat main portion set on said flat face of the second jaw, one edge of said main portion extending transversely of the second jaw and extending upwardly from said flat face providing a gauging edge at the side of said die opening opposite said open end of the slot between said jaws, said main portion also having an arm in the plane of said flat main portion and extending toward said open end of said slot between the jaws and formed with an edge in angular relation to the first-mentioned edge, said flat face of the second jaw providing a support for said card to be punched and said gauging edges being adapted to be abutted by two meeting edges of said card, and the first-mentioned gauging edge having a notch to provide clearance for said punching pin.

3,350,782
DENTAL APPARATUS AND METHOD
Niles F. Guichet, 320 Olympia Place,
Anaheim, Calif. 92805
Filed Aug. 9, 1963, Ser. No. 301,039
10 Claims. (Cl. 32—32)



1. In a dental articulator useful for the reproduction of jaw movements and having upper and lower frame members adjustably hinged together along a hinge axis, the improvement comprising means permitting an immediate side shift of said members in a direction parallel to said hinge axis without protrusive movement and a stop to limit said immediate side shift, said means having adjustment means to set and precisely reset, in repeated remountings, the degree of said immediate side shift and means to register said degree of immediate side shift

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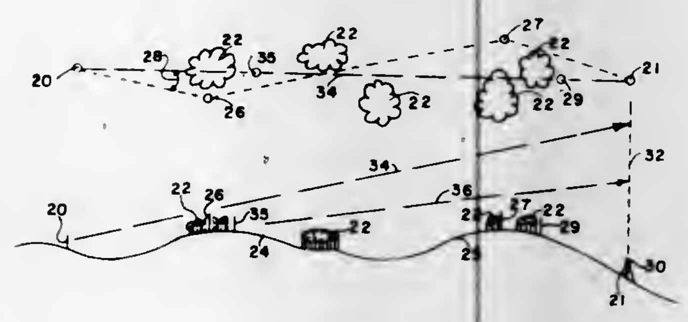
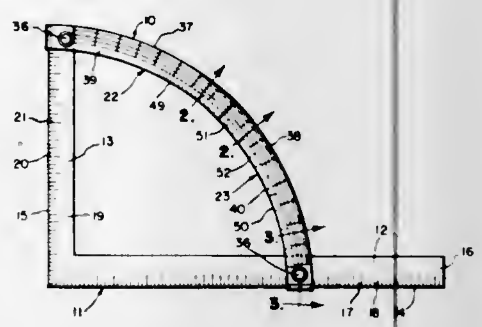
3,350,783
METHOD OF SURVEYING AND DEVICE FOR USE IN CONNECTION THEREWITH
Albert Leigh Whitehead, Arvada, Colo.
(2477 San Carlos Circle, Colorado Springs, Colo. 80909)
Filed Feb. 4, 1965, Ser. No. 430,421
7 Claims. (Cl. 33—74)



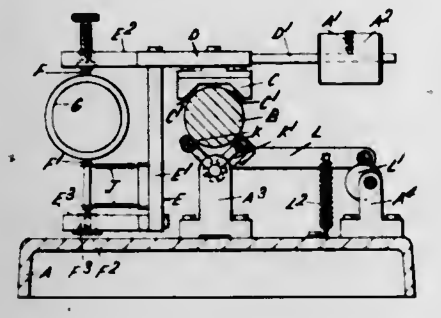
1. A method of surveying a straight line between two points comprising the steps of positioning a launching device along a precisely determined vertical axis through one of said points, ballistically projecting a visible moving target along said axis directly above said one of said points, sighting said vertically moving target from the other of said points and establishing the bearing of a straight line between said points in accordance with said sighting between said other point and said vertically moving target.

3,350,784
TOOL ATTACHMENT
Harry J. Schabel, 691 Washington St.,
Elmhurst, Ill. 60126
Filed Aug. 5, 1965, Ser. No. 477,451
5 Claims. (Cl. 33—75)



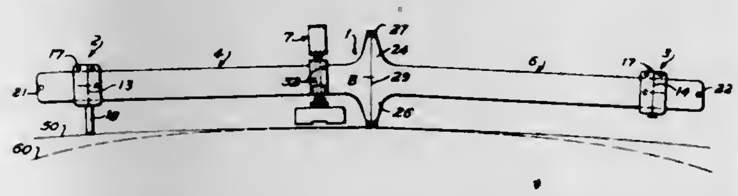
1. The combination with a carpenter's square of the type having an elongated blade and an elongated tongue extending at right angles to said blade, of an arcuately shaped instrument having a pair of substantially flat faces, at least one of said faces provided with angular measurement scale means thereon, said instrument comprising a pair of arcuately shaped segments arranged end-to-end, said segments having respective ends hingedly connected together whereby said segments are foldable so as to be arranged back-to-back with a flat face of one segment substantially overlying and abutting a flat face of the other segment, the outermost edge of said instrument having a radius of curvature of substantially sixteen inches, and means for detachably securing said instrument to said square when said segments are arranged end-to-end.

3,350,785
APPARATUS FOR TESTING THE DIAMETER OF A CYLINDRICAL SURFACE
George Omerod Rawstron, Desford, and Michael John Foster, Melton Mowbray, England, assignors to The Rank Organisation Limited, London, England, a British company
Filed May 28, 1965, Ser. No. 459,747
Claims priority, application Great Britain, May 28, 1964, 22,090/64
13 Claims. (Cl. 33—178)



1. Apparatus for measuring or indicating variation in the diameter of a cylindrical test surface on a workpiece along the length thereof, comprising an at least generally straight guide, a workpiece support for positioning the workpiece with the axis of said surface generally parallel to said guide, a carriage mounted for traversing movement along such guide, a pair of oppositely directed feelers carried by such carriage and for simultaneous engagement with diametrically opposite points of the test surface throughout traversing, whereby such feelers simultaneously traverse diametrically opposite paths along such test surface, at least one of the feelers being mounted for movement relative to the carriage in a plane generally through the axis of the test surface, whereby the distance between the operative tips of the feelers varies during traversing in accordance with variation in diameter of the test surface along the length thereof, detecting means responsive during traversing to the variation in the distance between the operative tips of the feelers and for operating a measuring or indicating instrument, and testing means operable at will for imparting a reciprocating motion to the carriage, generally in a direction transverse to the direction of traversing and to the line between the feelers, to test that the feelers will, when the testing means is rendered inoperative, engage the test surface throughout traversing at diametrically opposite points on such surface.

3,350,786
APPARATUS FOR DETERMINING CIRCULARITY OF LARGE DIAMETER OBJECTS
Lawrence S. Jue, San Francisco, and Robert Batman, Cupertino, Calif., and Dean A. Horn, Portsmouth, N.H., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 4, 1965, Ser. No. 506,909
4 Claims. (Cl. 33—178)



1. A bridge gauge for use in determining circularity of large diameter objects comprising;

an elongate bar formed of a pair of longitudinally-extending wing portions meeting medially of the bar at a common junction and having longitudinal axes which are inclined from each other at a particular predetermined angle,

a hind foot member slidingly adjustable longitudinal along one of said wings,

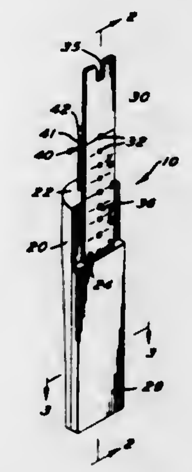
a chin member slidingly adjustable longitudinal along the other wing,

a fore foot member having an object-contacting projecting portion extending outwardly from said bar at said common junction of said wings,

said hind foot member also having an object-contacting projecting portion co-extensive with said fore foot projection, and

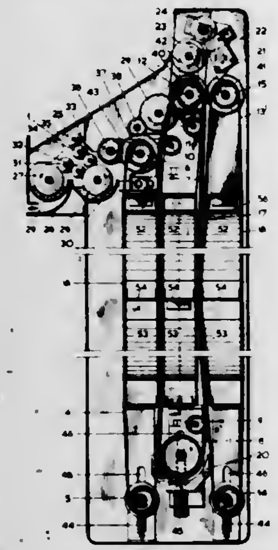
said members each bearing measurement indicia providing reference points for determinging the distance between said hind foot and fore foot members and between the fore foot and chin members respectively and, when said bar is placed on said object, the offset distance between said chin member and the surface of the object, said indicia on each said member comprising a line through said reference point and disposed at an angle equal to the complement of one-half said predetermined angle with respect to the longitudinal axes of said wing portions.

3,350,787
PLACEMENT IMPLEMENT FOR DRAPERY HOOKS
Ralph Romano, Levittown, Pa., assignor of ten percent to Harold B. Lipsius and ten percent to Arthur H. Seidel, both of Philadelphia, Pa.
Filed July 8, 1965, Ser. No. 470,518
4 Claims. (Cl. 33—180)



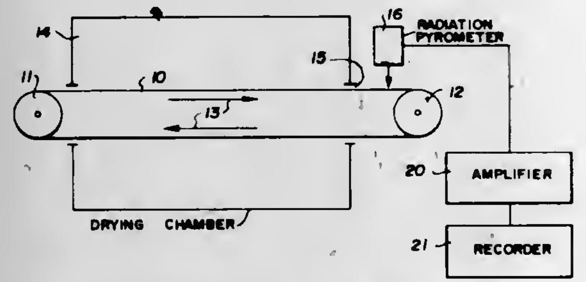
1. An implement for placement of a hook in a pleated drapery, comprising: a longitudinal handle member with one end thereof providing a flat reference surface thereon for abutment on a top edge of said drapery, said handle member including a slideway part way therealong which is spaced from said one end; a longitudinal measuring element within said slideway, said measuring element extending from said slideway beyond said one end of said reference surface at one side thereof for placement over said drapery, said element having a row of spaced perforations therealong and a notch at one end which overlies the drapery defining an exact placement of said hook in the drapery, said slideway holding said element against said handle, said element being a sheet of resilient material enabling a slight flexing of said material away from said handle proximate said end; a peg extending from said handle proximate said end to engage within one of said perforations and lock said element at a length representing a desired placement of said hook at a predetermined distance from said reference surface; and alignment means extending from said surface for engagement with a pleat of said drapery to align said measuring element with a seam of said pleat.

3,350,788
PROCESS AND APPARATUS FOR DRYING DAMP SHEET MATERIAL
Theo Pierre Chretien Breuers, Venlo, and Peter Antoon Friesen, Tegelen, Netherlands, assignors to Chemische Fabriek L. van der Grinten N.V., Venlo, Netherlands, a Dutch corporation
Filed Mar. 22, 1966, Ser. No. 536,381
Claims priority, application Netherlands, Mar. 24, 1965, 65—3,753
10 Claims. (Cl. 34—23)



1. A process for drying damp sheet material which comprises, after applying liquid to sheet material to dampen the same, passing the damp material between two walls which face one another, are moving together in the same direction and will hold the material between their confronting surfaces so as to transport it through a drying zone, and heating said damp material between said walls to evaporate moisture from it in said zone, said walls being formed of material substantially non-absorptive to moisture and at least one of their confronting surfaces being a soft hairy surface engaging said sheet material through limp hairs which will keep evaporated moisture in contact with said sheet material yet enable said sheet material to expand or shrink freely as it is dried.

3,350,789
METHOD OF DETERMINING THE MOISTURE CONTENT OF THIN POROUS MATERIALS
Raymond D. Davies, White Rock, British Columbia, Canada, assignor to Crown Zellerbach Canada Limited, Vancouver, British Columbia, Canada, a corporation of Canada
Continuation of application Ser. No. 355,875, Mar. 30, 1964. This application Nov. 23, 1966, Ser. No. 596,730
9 Claims. (Cl. 34—30)

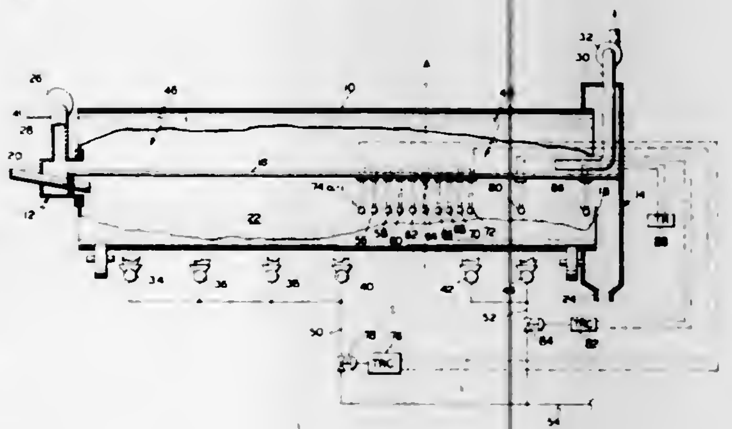


1. In the processing of a thin porous material having a consistent surface temperature-moisture content relationship wherein said processing is subject to conditions causing said material to dry, and the moisture content of the material to decrease, a method comprising the steps of establishing the surface temperature-moisture content of said material by the formula

$$T=\frac{a}{b^m}$$

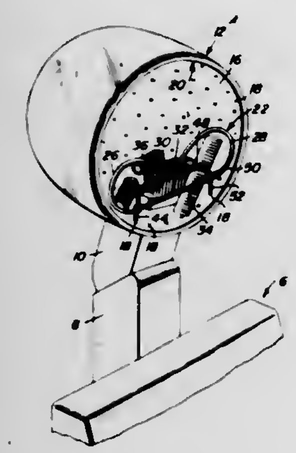
in which T is the surface temperature of the material, a and b are constants dependent upon the conditions causing the thin porous material to dry and m is the moisture content of the material expressed in percent, exposing said material to moisture evaporation conditions to cause evaporation of moisture therefrom, absorbing thermal radiation from the surface of said material, transforming said absorbed thermal radiation into an electrical signal, and utilizing said electrical signal in the determination of the moisture content of the material in conjunction with the above-mentioned constants.

3,350,790
TEMPERATURE CONTROL SYSTEM FOR ROTARY DRYERS
Travis S. Whitsel, Jr., Houston, Tex., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky
Filed July 12, 1965, Ser. No. 470,962
19 Claims. (Cl. 34—31)



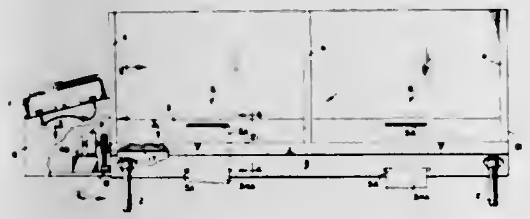
1. A method of controlling the rate of evaporation of moisture from a particle-form carbon black comprising: continuously flowing an elongated bed of said carbon black along a substantially horizontal path; heating substantially the entire length of said bed to evaporate moisture from said bed; measuring the temperature of said bed at a plurality of first points in said bed, spaced along said bed and spanning a predetermined first location along said bed at which a constant rate of evaporation from said bed changes to a falling rate of evaporation; adding the measured temperatures at said plurality of first points to obtain a first sum of said measured temperatures; measuring the temperature at an equal number of second points, at a second substantially single-point location adjacent the most upstream one of said plurality of first points; adding the measured temperatures at said plurality of second points to obtain a second sum of said measured temperatures; subtracting said second sum of said measured temperatures from said first sum of said measured temperatures to obtain a differential value of temperature; comparing said differential value of temperature with a first predetermined value of temperature; adjusting the heat to the portion of said bed upstream of said predetermined first location in accordance with the variance of said differential value of temperature from said first predetermined value of temperature; measuring the temperature in said bed at a third location, longitudinally displaced downstream from said first location and from the most downstream one of said plurality of first points; comparing the temperature measured at said third location with a second predetermined value of temperature; and adjusting the heat to the portion of said bed downstream of said first location in accordance with the variance of the temperature measured at said third location from said second predetermined value of temperature.

3,350,791
DRYING ATTACHMENT FOR HAIR DRYER
Salvatore J. Catania, 2531 S. 90th St., Omaha, Nebr. 68134
Filed Apr. 14, 1965, Ser. No. 448,165
5 Claims. (Cl. 34—90)



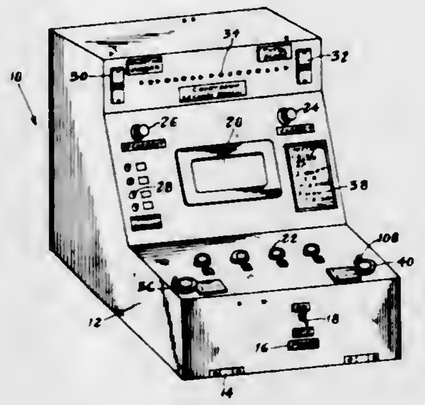
1. An attachment for a hollow open front hair drying hood comprising an elongated generally flat guard of a length to fit within the confines of the hollow chamber of the open-front mouth-portion of said hood, said guard comprising a main frame embodying resilient loop-like end members, and an auxiliary frame oriented and located within the marginal confines of the main frame and having yieldable attaching and retaining fingers, the latter slidingly fastened on a coordinated component part of said main frame.

3,350,792
AUDIO VISUAL TEACHING DEVICE
Ralph V. Andersen, 200 SW. 138th Ave., Beaverton, Oreg. 97005
Filed Apr. 23, 1965, Ser. No. 450,442
7 Claims. (Cl. 35—8)



1. A teaching device for simultaneously providing different aural and visual impressions to a student in a successive manner comprising,
- a table-like structure having a plurality of student stations each having a display area associated therewith,
- rotatable drums carried by said structure subjacent said display areas,
- drive means for actuating said drums including an electric motor,
- lesson-programming means carried by said structure and capable of momentarily energizing said motor and of energizing speaker means,
- speaker means in circuit with said lesson programming means, and
- indicia bearing means removably carried by said drums.

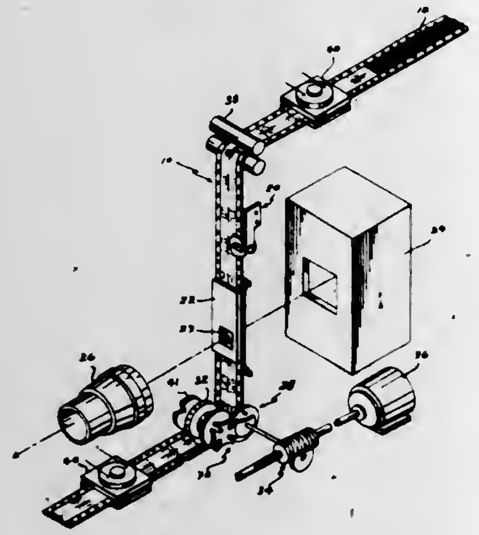
3,350,793
AUTOMATIC CARD RATING AND TEACHING MACHINE
Russell S. Bushnell, 42 Riverside Drive, New York, N.Y. 10024
Filed Dec. 20, 1965, Ser. No. 515,258
3 Claims. (Cl. 35—9)



1. A tutor device comprising:
- storage means to retain a plurality of stacked quiz cards;
- first transfer means comprising first and second endless, movable belts and motor means for driving said belts, said first belt having a portion engageable by the lowermost of said stacked cards for frictionally withdrawing said lowermost card from said storage means, said first belt having a vertically extending portion;
- a retarding strip disposed between said first belt and said storage means and frictionally opposing withdrawal of more than one of said cards at a time;
- said second movable belt having a vertically extending portion disposed in contiguous relation to said vertically extending portion of said first belt, said vertically extending portions both moving upwardly and cooperating to grip and move upwardly a withdrawn card;
- second transfer means comprising a pair of oppositely rotating rollers disposed above said vertical, contiguous portions of said first and second belts so as to receive and grip cards moved upwardly by said belts, and means for driving said rollers at a speed greater than the speed of said belts, whereby said rollers cooperate to accelerate and space said cards in their upward movement;
- a sloping stop member disposed above said second transfer means and in the path of accelerated, upwardly moving cards, said sloping stop member being operative to tilt each card and stop the upward movement thereof so that each tilted card will thereafter fall downwardly under the influence of gravity;
- a card slide member having an inclined surface, the upper end of which is adjacent one of said rollers in a position to slidingly receive each card as it falls downwardly from said stop member;
- first retractable holding means on said card slide member for interrupting sliding movement of a card down said slide member and holding that card in a waiting position;
- second retractable holding means below said first holding means on said slide member for interrupting sliding movement of a card and holding that card in a viewing position below said waiting position;
- means for momentarily retracting said second holding means to permit a card to slide from said viewing position to said storage means, and for subsequently momentarily retracting said first holding means to permit a card to slide from said waiting position to said viewing position; and

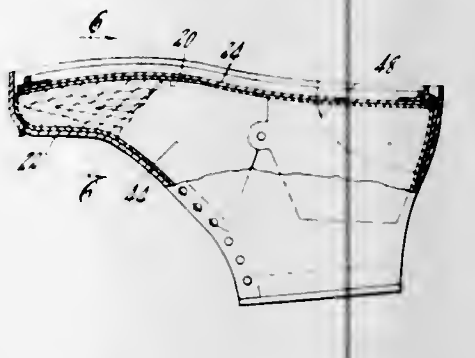
photocell means responsive to presence of a card at said waiting position to interrupt operation of said motor means for driving said first and second belts.

3,350,794
AUTOMATIC VISUAL SCORING TEST APPARATUS AND FILM
Eric M. Glenapp, 418 Park Place, Yellow Springs, Ohio 45387; Victor H. Thaler, 5714 Tomberg St., Dayton, Ohio 45424; George Potor, Jr., Rte. 3, Xenia, Ohio 45385; and Adolf R. Marko, 252 W. Garland Ave., Fairborn, Ohio 45324
Filed July 14, 1965, Ser. No. 472,068
2 Claims. (Cl. 35—48)



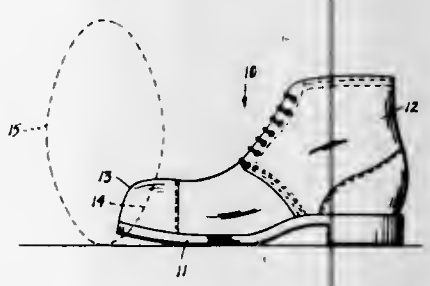
1. An automatic visual scoring test apparatus and film comprising: a strip film projector having a film gate with a projection aperture on an optical axis and a reversible impulse film transport mechanism; an elongated film strip comprising an elongated central section having a plurality of frames sequentially arranged to be longitudinal, each of said frames being substantially divided into laterally adjacent half-areas having at least one image thereon and with the image on one half-area of a portion of the frames matching the image on the adjacent half-area of the same frame, each matched frame having at least one nonmatched frame on each end thereof and each matched frame being coded to indicate the matched condition of the images on the laterally adjacent half-areas of the frame, a first coded leader at one end of said elongated central section, and a second coded leader at the opposite end of said elongated central section, said elongated film strip engaging the reversible impulse film transport mechanism in said projector for sequential transport of the frames on said film strip through the film gate in said projector; two film reversing means one each of which is mounted on said projector at opposite sides of the film gate and communicating with the reversible impulse film transport mechanism in said projector, each of said film reversing means engaging the coded leader on one end of the central section on said film strip when the final frame to be projected in one direction has been transported beyond the projection aperture in the film gate of said projector and to reverse the direction of the reversible impulse film transport mechanism of said projector; a first digital counter means; detector means joined to said projector for detecting each coded frame on said film strip when the coded frame is in projection position in the film gate of said projection and communicating with said first counter means for automatically advancing said first counter means one digit; a second digital counter means, a manually acuatable response means joined to said detector means and said second counter means for advancing said second counter means one digit when said response means is actuated during the time a coded frame is in the projection position in said projector; a third digital counter means; and connecting means joining said detector means and said response means to said third counter means for advancing said third counter means one digit when said response means is actuated when said detector means is out of engagement with a coded frame on said film strip.

3,350,795
STITCHED SHOE WITH INNER LINING
Frederick J. Schlecht, Worcester, Mass., assignor of one-half to H. H. Brown Shoe Company, Worcester, and one-half to George H. Rosen Shoe Mfg. Co., Inc., Cambridge, Mass., both corporations of Massachusetts
Filed Aug. 18, 1965, Ser. No. 480,583
5 Claims. (Cl. 36—2.5)



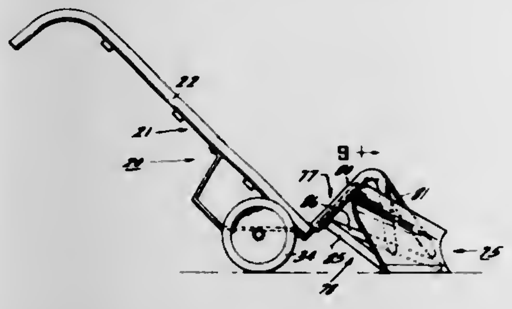
1. In a welt boot or shoe having an upper including a lacing slot and tongue, insole, and welt, and a line of inseam stitching connecting the insole, upper and welt, the combination of a combined upper and sole lining comprising a slipper shaped liner enveloping the foot including the toe and instep and having an ankle opening, and lines of stitching connecting said slipper shaped liner with the shoe upper only across the base of the tongue above the instep remote from the toe, and about said ankle opening of said slipper shaped liner adjacent its edge, thereby supporting said combined lining, including the entire toe and instep enveloping portion thereof, in floating relation to said inseam stitching and to the sole and upper other than at said lines of stitching.

3,350,796
FOOTBALL PLACE-KICKING SHOE
Morris A. Bealle, 939 N. Kenmore St., Arlington, Va. 22201
Filed Jan. 26, 1967, Ser. No. 611,885
2 Claims. (Cl. 36—2.5)



1. A shoe for place-kicking a football, said shoe having a toe especially formed to provide a concavity which presents a ball contacting surface substantially complemental to the curvature of a football to be placed-kicked, said toe having an underlying sole portion, and said concavity being oriented forwardly and slightly upwardly of the toe and opening downwardly through the front of said sole portion.

3,350,797
SET OF INTERCHANGEABLE UTILITY APPARATUSES
Carl C. Dassinger, Green Township, Hamilton County, Ohio (4347 Hutchinson Road, Cincinnati, Ohio 45211), and Richard L. Hageny, 3913 Smith Road, Cheviot, Cincinnati, Ohio 45211
Filed Nov. 25, 1964, Ser. No. 413,692
6 Claims. (Cl. 37—53)



4. A mobile utility set of apparatuses comprising in combination,

a frame having a base,

means for making mobile said frame mounted to said frame,

a set of units for said frame, said units comprising a fork lift truck unit and a snowplow unit,

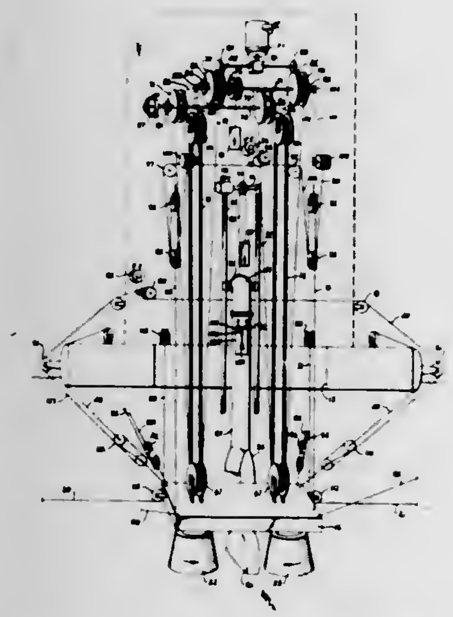
said fork lift truck unit mounted on said frame at its base,

said snowplow unit optionally mountable to said frame by cooperative association with said fork lift truck unit,

said truck unit including at least one pair of tines,

said snowplow unit including a pair of hollow sleeve members slideably receivable on said tines thereby securely mounting said snow-plow unit to said frame through the cooperative action of said tines and sleeve members.

3,350,798
CONDITION RESPONSIVE ELEVATOR DREDGE
Arthur J. Nelson, 611 Las Palmas Drive, Santa Barbara, Calif. 93105
Filed Jan. 13, 1965, Ser. No. 425,256
10 Claims. (Cl. 37—65)



1. In an apparatus for working on the floor of a body of water comprising:

(a) a buoyant hull;

(b) a submersible platform having floor working means disposed thereon; and,

(c) guy lines secured between said platform and hull to suspend said platform from said hull and maintain said hull stably above said platform;

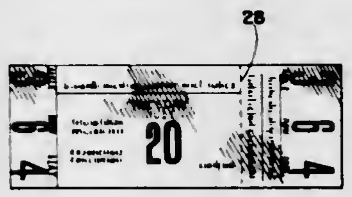
the improvement comprising:

(1) guy line adjustment means to vary the length of said guy lines;

(2) elevation monitoring means to continuously sense fluctuations in the instantaneous elevation of said hull relative to an area to be worked on the floor of a body of water on which said hull is floating; and,

(3) means controllably associating said monitoring means with said adjustment means to vary the length of said guy lines responsive to said fluctuations and maintain said guy lines in a condition maintaining said hull stably above said platform during said fluctuations, said controllably associating means functioning to maintain said working means in operative engagement with said area as said instantaneous elevation fluctuates.

3,350,799
TICKETING STRUCTURE AND PROCEDURE
John R. Japs, San Gabriel, Calif., assignor to Dillingham Ticket Company, Los Angeles, Calif., a corporation of California
Filed Oct. 13, 1965, Ser. No. 495,500
6 Claims. (Cl. 40—2)



1. The method of making a multiple group of separate or separable pressure-sensitive labels, comprising essentially the following steps:

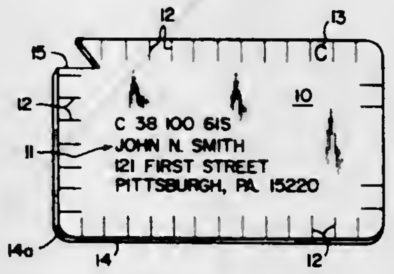
providing a continuous web of stock;

coating a surface of said web with pressure-sensitive adhesive material;

covering said pressure-sensitive material with a sheet of protective parting material to join said web and sheet; and

thereafter dividing only said web along a number of transverse separation lines defining therebetween a number of separable labels which remain united by said protective parting material.

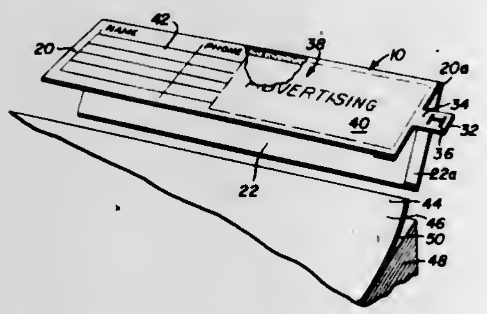
3,350,800
CREDIT CARD IDENTIFICATION
Edward A. Witt, 142 W. Prospect Ave., Pittsburgh, Pa. 15205, and Harry C. Herbig, 242 Hays Road, Bridgeville, Pa. 15017
Filed Sept. 15, 1965, Ser. No. 487,421
13 Claims. (Cl. 40—2.2)



5. An improved identifying credit card for placement in an edgewise-aligned relation with a matching receiver having indicator compartments provided with code indicia in alignment along at least one edge thereof and having an offset edge portion which comprises, a card

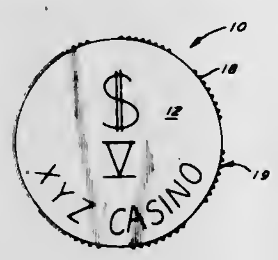
body having opposed upper and lower substantially planar wide side faces and polygonal surrounding narrow edge faces, indicator compartments on the upper side face adjacent to and open along at least one edge face of said card body providing a group of compartments within at least one of which a code indicium may be placed on said upper side face, said card body having at least one offset edge portion constructed and adapted to interfit in a complementary manner with the offset edge portion of the matching receiver for accurately-aligning the compartments of said card body with the indicator compartments of the matching receiver when said card body is placed in an edgewise-aligned position with respect thereto.

3,350,801
BOOK INDEX UNIT
Edmund Berard, 4444 S. Mission Road, Tucson, Ariz. 85714
Filed June 17, 1966, Ser. No. 558,461
5 Claims. (Cl. 40—23)



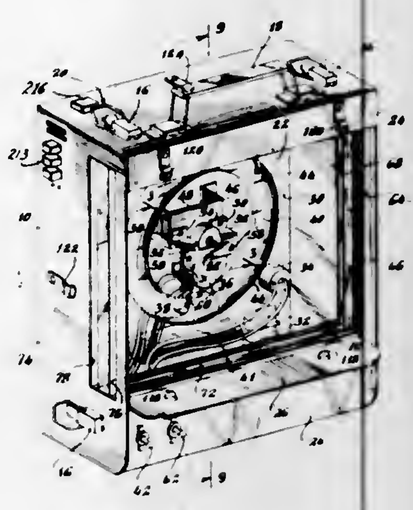
1. An index unit for a book with a page having opposing faces and provided with a top edge and an outer marginal edge adjoining the top edge and forming therewith an upper corner of the page; said index unit comprising a strip folded upon itself to provide opposing sections, said strip being positioned over the top edge of the page with the fold substantially in contact with the top edge and the sections overlying the faces of the portion of the page at the top edge in contact therewith and extending up to the marginal edge at the upper corner of the page, means carried by the strip for securing it to the page and an index tab carried by one of the sections and adapted to project laterally beyond the marginal edge of the page.

3,350,802
METAL GAMING TOKENS
Joseph M. Segel, Merion, Pa., assignor to General Numismatics Corporation, Yeadon, Pa., a corporation of Pennsylvania
Filed June 24, 1965, Ser. No. 466,627
4 Claims. (Cl. 40—27.5)



2. A disk-shaped imperforate metal token comprising a substantially flat planar upper surface, a substantially flat planar lower surface parallel to said upper surface, a circular edge surface extending between said planar surfaces, and a plurality of spaced apart groups of elongated projections extending radially from said edge surface at positions spaced around the entire token.

3,350,803
DISPLAY DEVICE
Jane C. Stockwell, Hartford, Conn., assignor to Dyna-Lite, Incorporated, Brookline, Mass., a corporation of Connecticut
Filed Feb. 16, 1965, Ser. No. 433,143
9 Claims. (Cl. 40—106.53)

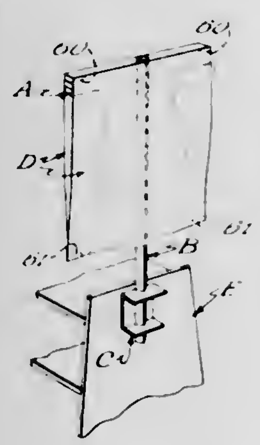


7. A display device comprising:
a housing having a rear wall and an open front end;
illuminating means disposed in said housing for directing light through said open end;
means for holding transparency means in said open end;
a polarized member between said illuminating means and said open end;
a motor mounted on said housing;
a shaft, driven by said motor, extending towards said open end, and including means for detachably holding said polarized member;
a second shaft driven by said motor extending oppositely said first shaft;
normally disengaged means for coupling said second shaft to said first shaft; and
means extending from said housing for manually coupling said two shafts and for manually driving said first shaft.

3,350,804
DISPLAYS
Reynolds W. Guyer, Jr., White Bear, and William J. Robinson, St. Paul, Minn., assignors to Reynolds Guyer Agency of Design, St. Paul, Minn., a corporation of Minnesota
Filed June 28, 1965, Ser. No. 467,777
1 Claim. (Cl. 40—124.1)

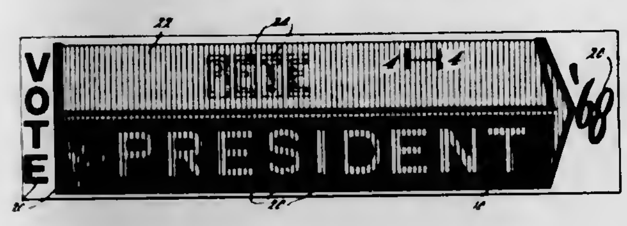
A display including:
an elongated rectangular container including four rectangularly arranged wall panels secured in tubular relation, and end closure flaps secured to the ends thereof and foldable to close the ends of the tubularly arranged walls,
a triangular potentially removable area in one wall panel of said container substantially midway between the ends of said container defined by weakened lines of separation,
an elongated substantially rectangular sheet of paperboard of a length greater than the length of said container and less than twice the length thereof,
said sheet being creased along three longitudinally extending fold lines into four panels which may be folded to provide a triangular tubular standard, said sheet being foldable substantially centrally to provide two sheet sections in face contact, said sections being narrower in width than said container,

said sections being provided with a transverse fold line along which said sections may be folded to provide section ends shorter in length than said container, whereby said sheet, when folded along the longitudinal fold line and said transverse fold line may be inserted into said container,
said sheet, when folded into tubular form being insertable into said potentially removable area after removal thereof to hold said container at substantially right angles to said tubularly folded sheet, and
an attaching bracket comprising a generally rectangular sheet of paperboard having a central fold line dividing said sheet into two areas which are narrower in width than said container and shorter than said container,



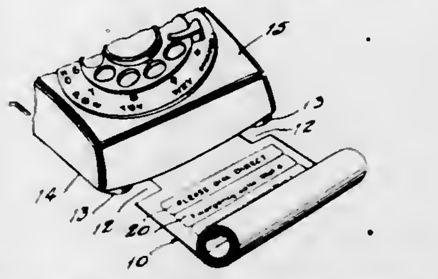
said last named rectangular sheet having a pair of parallel fold lines thereacross intersecting said first mentioned fold line therein at right angles and dividing said last named sheet into a central base portion and a pair of similar end portions foldable into parallel relation and including opposed triangular apertures adapted to accommodate said post when folded into triangular tubular form with the outer panels of said first named sheet in face contact, and
a generally rectangular display panel of flexible material adapted to be rolled up, one dimension of said panel being shorter than said container to permit the rolled panel to be enclosed within the container.

3,350,805
DISPLAY DEVICE
Irving W. Jorgensen, 800 River Bend Drive, R.R. 3, Owosso, Mich. 48867
Filed May 20, 1965, Ser. No. 457,319
2 Claims. (Cl. 40—125)



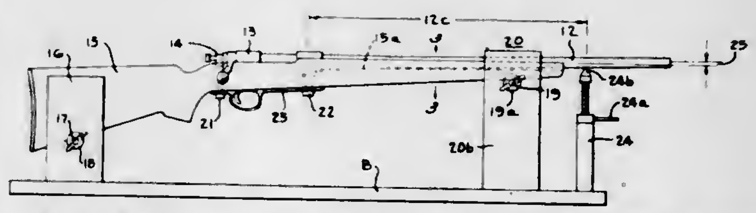
1. A display device including a base sheet having a plastic mounting surface, said mounting surface having a first area bearing permanent printing and a second area of a given color which does not bear printing, a second sheet having one side of said given color with indicia printed thereon and an opposite side provided with a pressure sensitive adhesive, said second sheet being of a material that is readily cut whereby it may be cut into sections each of which contains a separate indicia and said sections mounted on said second area so as to lie wholly within said second area and give the visual impression that said indicia are printed on said second area.

3,350,806
SCROLL TYPE REFERENCE GUIDE
Edward D. Davenport, 3471 Golfing Green Drive, Dallas, Tex. 75234
Filed Aug. 30, 1965, Ser. No. 483,405
3 Claims. (Cl. 40—336)



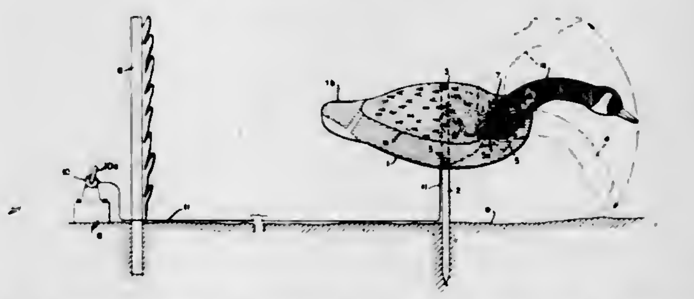
1. In an indexed guide for listing reference data, a resilient strip formed of relatively thin material and having the inherent characteristic of retaining itself in a roll and self-retractible when extended from its rolled position, the said strip having adhesive means on its free end for attachment to a telephone instrument, and having indicia applied to its inner surface exposable when said strip is unrolled against its inherent tension.

3,350,807
METHOD AND MEANS OF IMPROVING FIREARM ACCURACY
James H. Monroe, 4513 Westchester Drive, Chester, Pa. 19014
Filed May 26, 1966, Ser. No. 553,100
3 Claims. (Cl. 42—75)



1. A firearm including an elongated barrel and a gun stock having a supporting portion for the rear portion of said barrel and a flexure-producing portion coextensive with a major length of said barrel, said flexure-producing portion having a surface complementary to that of the gun barrel when placed under cantilever flexing forces of magnitude sufficient to produce slight flexure thereof in a direction away from said gun stock, and fastening means connecting the rear portion of said barrel to said gun stock for flexing said barrel to conform with said surface and for securing said barrel to said gun stock.

3,350,808
GOOSE DECOY
Edward C. Mitchell, R.D. 4, Little Creek, Del. 19961
Filed July 14, 1965, Ser. No. 471,905
8 Claims. (Cl. 43—3)

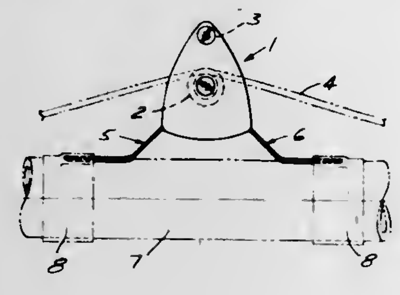


1. A mechanical silhouette decoy comprising, a body portion having the profile of the body portion of a bird; means for mounting the body portion above the surface of the ground, a neck portion separate from the body portion having the profile of the neck and head portion of said bird; an oscillating motor mounted on the body

portion adjacent the base of the neck portion, said motor having an oscillating shaft carrying the neck portion to simulate a feeding bird; and a battery and a switch connected in series with said motor for controlling the oscillatory movement of the neck portion.

3,350,809
ROLLER GUIDE FOR A FISHING ROD

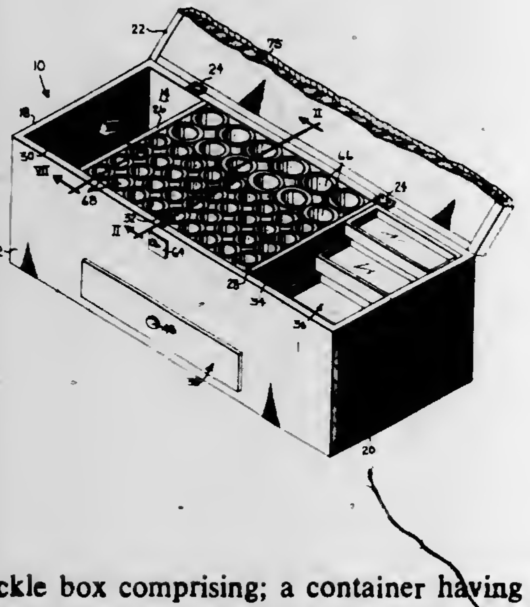
Christ Chion, Plainview, N.Y., assignor to Allan Manufacturing Co., Hicksville, N.Y.
Filed May 10, 1965, Ser. No. 454,463
9 Claims. (Cl. 43—24)



1. A roller guide for a fishing rod, said guide comprising a support member composed of two substantially parallel disposed plates, a pair of legs at one end between said plates and protruding therefrom at two spaced apart edges of the plates, said legs being adapted to be fixedly secured to the fishing rod and detachably secured to said plates, said plates defining therebetween a space, a roller detachably supported in said space between said plates, said roller being rotatable about an axis transverse of said plates and said space, a guide pin detachably supported by said plates, and extending across the space therebetween parallel to the rotational axis of said roller, mounting means for said roller, mounting means for said guide pin, and releasable fastening means extending through said plates into engagement with the roller and guide pin mounting means and releasably securing said plates in said mutual parallel position thereby holding the legs, the roller and the guide pin in the aforesaid positions between the plates.

3,350,810
FISHING TACKLE BOX

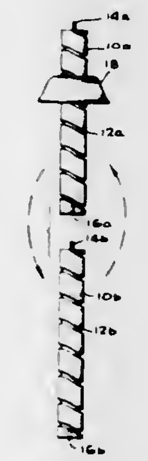
Roger J. Warner, 3 W. George St., and Roland E. Gilbert, 402 N. Main St., both of Arcanum, Ohio 45304
Filed Apr. 20, 1965, Ser. No. 449,410
5 Claims. (Cl. 43—57.5)



2. A tackle box comprising; a container having a bottom wall and front and back and side walls and having an open top, a closure hingedly joined to said container at the top of said back wall adapted to cover said top, a plurality of cylindrical tubes positioned substantially vertically in said container in side by side relation and each said tube having an upper end adapted to engage a hook portion on the end of tackle means hanging in the said tube, the upper ends of said tubes terminating near the top of said container and being coplanar, retaining means mounted on said closure and adapted to engage said upper ends of said tubes and hold the hook portions of said tackle means in position on said upper ends, at least some of said tubes adjacent said front terminating in spaced relation to said bottom wall, said front wall having an opening near the bottom, and a drawer extending through said opening and into the space beneath said some of said tubes.

3,350,811
ROTATABLE TOY ON A SECTIONAL SHAFT

Martin Bender, 162 N. Alta Vista Blvd., Los Angeles, Calif. 90036
Filed Aug. 30, 1965, Ser. No. 483,492
20 Claims. (Cl. 46—51)

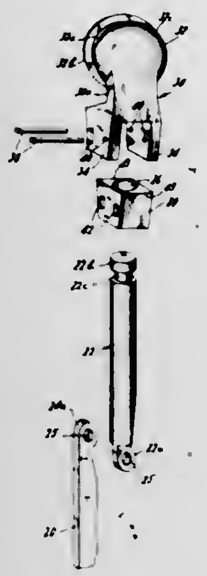


8. A toy comprising: a plurality of rods having generally helical-shaped tracks thereon; a rotor adapted to ride on said tracks for rotating along at least a portion of the length of said rods; and means for temporarily mating said rods to one another for forming a continuous track whereby said rotor may rotate from one rod to another.

3,350,812
LIMB MEMBER FOR A DOLL

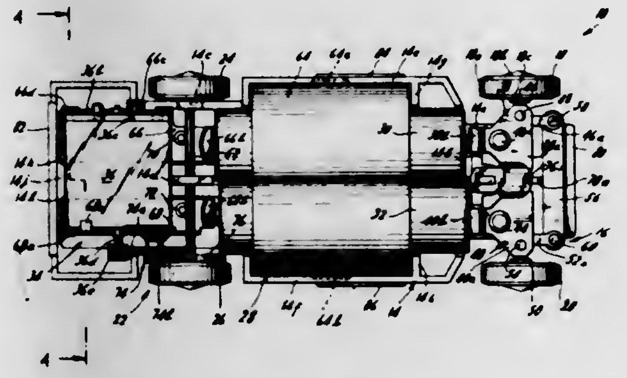
Kenneth W. Lindsay, Great Neck, Ralph Bornn, South Farmingdale, and Burt Wayne Ensmann, Jamaica, N.Y., assignors to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed Apr. 7, 1965, Ser. No. 446,230
4 Claims. (Cl. 46—161)

1. In a limb construction for a doll, a generally elongated limb member having a generally cylindrical shape at one end thereof, a section of reduced diameter in said cylindrical end of said limb member spaced inwardly of the end thereof and about which said limb member is rotatable about its longitudinal axis, and means connecting said limb member to said doll including a member pivotally mounted at one end to said doll and having bifurcated extensions at its other end, a block having a cylindrical bore rotatably receiving therein said cylindrical end of said limb member, and spaced transversely disposed retaining means mounting said block between said bifurcated extensions and extending on opposite sides of said reduced diameter section for retaining said limb member within said block while permitting rocking movement of said limb member and block between said bifurcated extensions about said spaced apart retaining means.



3,350,813
ELECTRICALLY POWERED WHEELED TOY VEHICLE

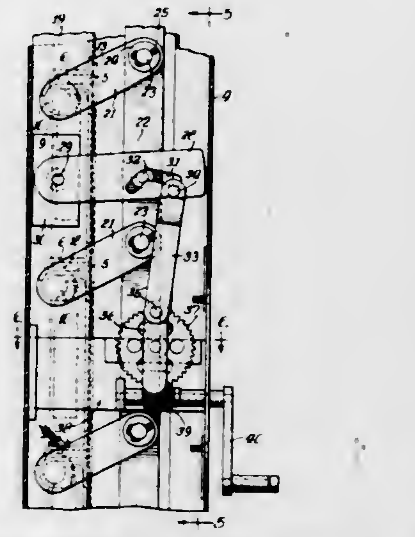
Anson Isaacson, Great Neck, N.Y., assignor to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Continuation of application Ser. No. 343,321, Feb. 7, 1964. This application Sept. 12, 1966, Ser. No. 578,889
3 Claims. (Cl. 46—243)



2. A toy comprising a driven wheeled chassis adapted for interchangeable assembly with one of a plurality of vehicle bodies comprising an elongated chassis body, a front wheel assembly including a left and a right wheel mounted adjacent the front end of said chassis body, a rear wheel assembly mounted rearwardly of said front wheel assembly on said chassis body, means on said chassis body intermediate said front and rear wheel assemblies defining a battery cradle for two dry cell batteries, means on said chassis body rearwardly of said rear wheel assembly defining a motor cradle, a battery-operated motor removably mounted in said motor cradle and including a motor shaft, means operatively connecting said motor shaft to said rear wheel assembly, and means for completing an energization circuit for said motor including a pair of spaced battery contacts secured to said chassis body and positioned in relation to said battery cradle to engage the said batteries, said front wheel assembly including means defining a pivot axis for each said wheel, each said wheel being operatively mounted on said pivot axis defining means such that said wheel is pivotally movable thereabout relative to said chassis body, and each said battery contact has means cooperating with each said pivot axis defining means to prevent inadvertent disengagement of said wheel from said pivot axis defining means.

3,350,814
LOUVER TYPE WINDOW OPERATING MEANS

Donald E. Dufrene, St. Paul, Minn., assignor to Interoceanic Commodities Corporation, Minneapolis, Minn., a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 529,056
6 Claims. (Cl. 49—82)



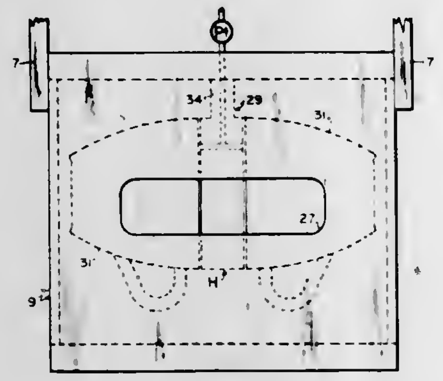
1. In louver type window operating means, a window frame having top and bottom members and hollow side jambs, a plurality of louvers extending between said jambs and pivoted thereon for turning movement to open and closed positions, an operating bar mounted in one of said jambs for vertical movement, operating connections between said bar and said louvers, an operating lever in said one jamb pivoted thereto at one end for vertical swinging movement and extending inwards of said one jamb across said bar, said lever having in its inner portion a slot of approximately flattened inverted V-shape and said bar having a pin secured thereto and extending through said slot, a gear mounted on said frame for rotation about a horizontal axis, means for rotating said gear, and operating connections between said gear and said operating lever comprising a link pivoted at its upper end to said lever adjacent the inner end of said slot and having pivotal connection at its lower end to said gear effective for reciprocating said link incident to rotation of said gear, said pin and slot being so related that when said gear is in one rotary position the louvers are fully closed with said pin in the outer arm of said slot adjacent the vertex thereof, when said gear is turned from said one position in one direction through approximately one half of a revolution to a second rotary position said pin passes over the vertex of said slot into the inner arm thereof and said louvers are fully opened, and when said gear is turned in said one direction from said second position through approximately one half of a revolution it is returned to its said one position and the louvers are again fully closed.

3,350,815
SEAM FINISHING

John P. Dunn, Elmira, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 4, 1964, Ser. No. 416,087
2 Claims. (Cl. 51—7)

1. Improved vibratory finishing apparatus for smoothly grinding outer surfaces of cup-shaped articles and the like comprising; a contoured chamber having rounded inner wall portions to complementarily enclose a cup-like article

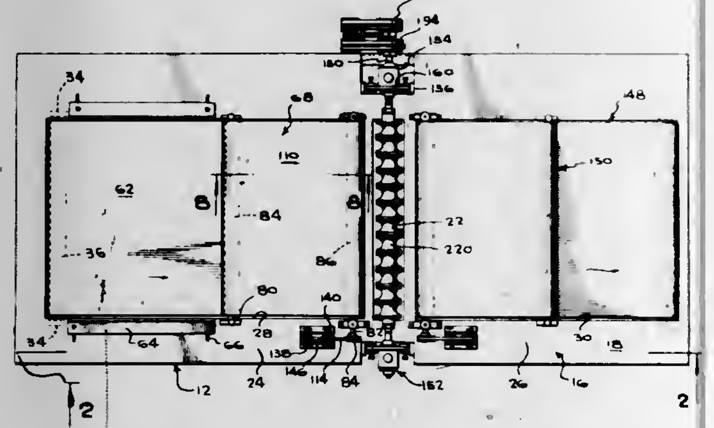
to be finished, an upper cover member closing said contoured chamber having rounded wall portions which complementarily continue said rounded inner wall portions of said contoured chamber, retaining means within said chamber for operably retaining ware articles; abrasive means within said chamber; a rigid connecting beam attached to said chamber in a perpendicular relationship to



a longitudinal axis of the chamber and said retaining means; vibrator means coupled with said connecting beam for vibrating said chamber and operatively inducing said abrasive means to orbit about the article; and flexible shaft means connecting said retaining means to said chamber wall for transmitting vibration from said chamber to said retaining means to cause said ware to resonate relative to the chamber and thereby improve the finishing rate.

3,350,816
SHAPING DEVICE

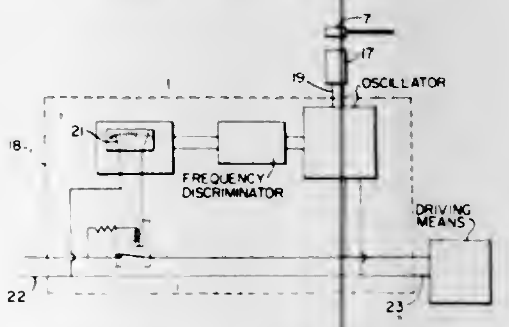
Dillard Breeding, P.O. Box 9446, Nashville, Tenn. 37204
Filed Jan. 25, 1965, Ser. No. 427,614
3 Claims. (Cl. 51—80)



1. A device for the formation of plural, elongated pipe insulation halves from elongated blanks of insulation material, the device comprising:
a frame including an elongated bed having input and removal sides and having an opening formed therein;
upper and lower input conveyor assemblies arranged for movement of the blanks of insulating material along the bed of one side of the opening;
upper and lower removal conveyor assemblies arranged for movement of the insulation halves along the bed on the other side of the opening;
the conveyor assemblies each including brackets secured to the bed, rollers mounted in the brackets, and belts trained about the rollers;
the upper conveyor assemblies each including pressure plate assemblies adapted to bias the material downwardly;
a shaping assembly comprising brackets secured to the bed and transversely aligned with the opening thereof, a pair of shafts mounted in the brackets, and shaping members carried by the shaft:
the shaping members including vertically opposed concave and convex abrading wheels; and
means for rotating the belts and the abrading wheels.

3,350,817
AUTOMATIC STOPPING DEVICE FOR PLANE LAPPING MACHINE

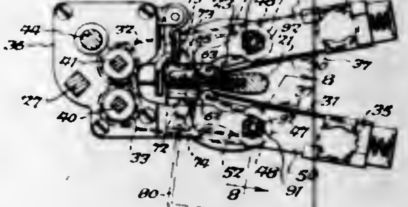
Seiji Kiso, Tokyo, and Naoto Nakamura, Yokohama, Japan, assignors to Kabushiki-Kaisha Nihon Seiko-sho, Tokyo, Japan
Filed June 11, 1964, Ser. No. 374,494
Claims priority, application Japan, June 20, 1963, 38/46,184
1 Claim. (Cl. 51—165)



A device for automatically stopping the operation of a plane lapping machine which has an upper surface plate and a lower surface plate between which a workpiece is lapped and driving means for driving the machine, said device including a probe element rigidly secured to said upper surface plate, detector coil means adjustably supported on a machine frame and disposed directly below said probe element and spaced from said probe element, means for controlling the height of said detector coil means relative to the lower surface plate, and electrical means including an oscillation circuit operatively coupled to said detector coil means to detect a separation of said probe element from said detector coil means as a change in electrical quantity while said probe element remains spaced from said detector coil means, said circuit means including an electric meter including a pointer and an adjustable contact to indicate said change in electrical quantity, said electrical means including control means responsive to said control signal and coupled to the driving means to stop the operation of the machine when the control signal reaches a predetermined value.

3,350,818
KNIFE SHARPENING MECHANISM

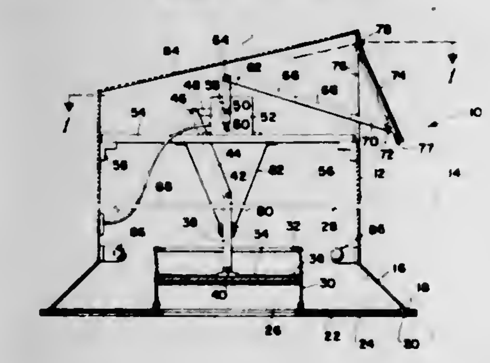
Frederick G. Clark, Buffalo, N.Y., assignor to Eastman Machine Company, Buffalo, N.Y.
Filed July 6, 1964, Ser. No. 380,496
5 Claims. (Cl. 51—246)



1. In a knife sharpening mechanism for cutting machines having a knife with a cutting edge guided for reciprocal motion,
(a) a grinder carriage movable to and fro along the knife edge and having sharpening abrasive belts mounted thereon for movement into and out of engagement with the cutting edge,
(b) arms pivoted on said carriage at opposite sides of said knife and having their free ends spring-urged toward said knife, means on said arms for pressing said abrasive belts against the cutting edge,
(c) a bracket on each pivoted arm and having an extension projecting upwardly into close proximity to the knife, and
(d) a part on said extension adjustable toward and from said knife to compensate for variations in thickness of said belt.

3,350,819
VENTILATING SKYLIGHT WITH TWO SIMULTANEOUSLY OPERATED CLOSURES

John E. Polidoro, 10813 Pedrick Road, Philadelphia, Pa. 19154, and Edward C. Kelly, 7909 Michener Ave., Philadelphia, Pa. 19150
Filed Mar. 11, 1965, Ser. No. 439,044
11 Claims. (Cl. 52—1)

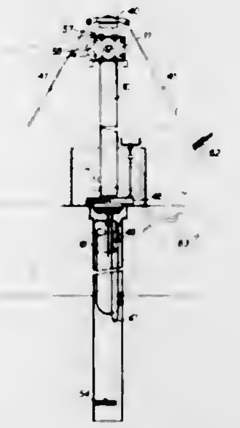


11. A skylight construction comprising a duct having a closed upper end and a closed lower end, an upper aperture in said upper end and a lower aperture in said lower end, an upper closure member movable into and out of closed position against said upper aperture, a lower closure member movable in a straight vertical direction into and out of closed position against said lower aperture, means to move said upper and lower closure members simultaneously into corresponding open and closed positions, said means comprising an electric motor fixedly mounted within said duct, a vertical rod having a lower end pivotally connected to said lower closure member and having its upper end pivotally connected to a first link, said first link being operatively connected to the drive shaft of said motor, a second link operatively connected to the drive shaft of said motor for synchronous operation with said first link, an operating arm having one end pivotally connected to said second link and an opposite end pivotally connected to said upper closure member, and means operatively connecting said motor to a source of electrical energy, and a screen provided around the lower aperture, said screen having a vertical portion extending upwardly from the lower aperture and a horizontal portion extending radially inward from the upper edge of the vertical portion, said horizontal portion forming a stop means for the opening movement of said lower closure member.

3,350,820
HIGH-LINE TRANSFER SYSTEMS

Donald R. Stonely, Chateauguay, Quebec, Canada, assignor to Peacock Brothers Limited, Montreal, Quebec, Canada
Filed Mar. 2, 1965, Ser. No. 436,472
Claims priority, application Great Britain, May 15, 1964, 20,470
10 Claims. (Cl. 52—29)

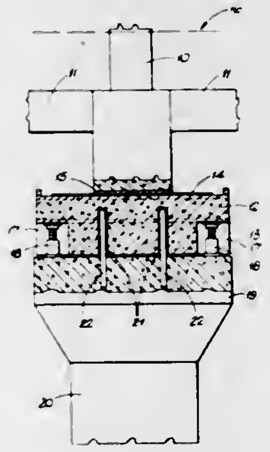
1. A post unit for a high-line transfer system for use in the transfer of material from one sea going vessel to another, said post unit comprising:
(a) a post,
(b) a cable attachment member mounted for vertical reciprocation on the post,



(c) means for adjusting the vertical position of the attachment member on the post comprising a vertical screw, a nut non-rotatably mounted on the screw, and means connecting the nut to the attachment member so that vertical movement of the nut resulting from rotation of the screw causes vertical movement of the attachment member, said connecting means also including guide wheels and flexible connectors and wherein said nut is connected to the attachment member by said flexible connectors passing round said guide wheels,
(d) a drive system for said unit, said drive system comprising a motor coupled to the adjusting means.

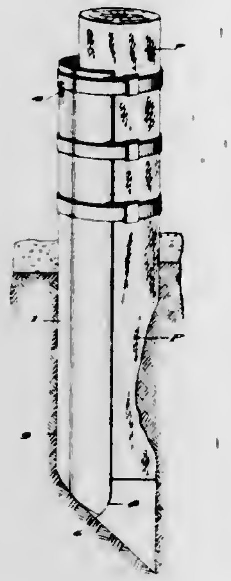
3,350,821
BUILDING CONSTRUCTION RESPONSIVE TO CHANGING SUPPORT CONDITION

Ronald Charles Lester Jones, Trentham, Stoke-on-Trent, England, assignor to The Potteries Motor Traction Company Limited, Stoke-on-Trent, England
Filed Jan. 11, 1965, Ser. No. 440,043
2 Claims. (Cl. 52—122)



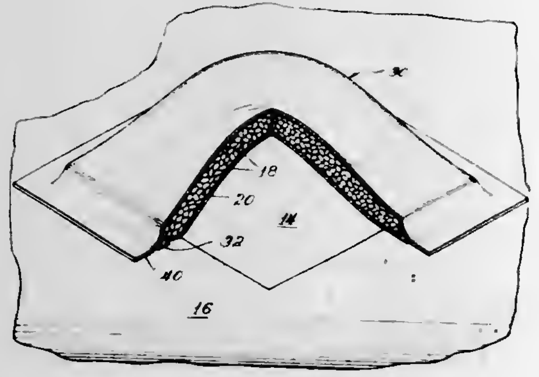
1. A building including a main base, a plurality of intermediate bases being supported by the main base, a plurality of columns with each column mounted on an associated intermediate base, means tying the columns together for preventing relative lateral movement therebetween, vertically movable elevating means operably related with each intermediate base and the main base whereby each intermediate base can be displaced vertically relative to the main base, guide means for each intermediate base and main base for guiding the vertical movement of each intermediate base relative to the main base, and anti-friction means located between the interengaging surfaces of each intermediate base and the column mounted thereon for permitting each intermediate base to slide in a horizontal plane with respect to the associated column.

3,350,822
STEEL REINFORCER FOR WOODEN POLES
John Stanley Nachazel, Englewood, Colo., assignor to CF&I Steel Corporation, a corporation of Colorado
Filed Sept. 20, 1965, Ser. No. 488,643
5 Claims. (Cl. 52—170)



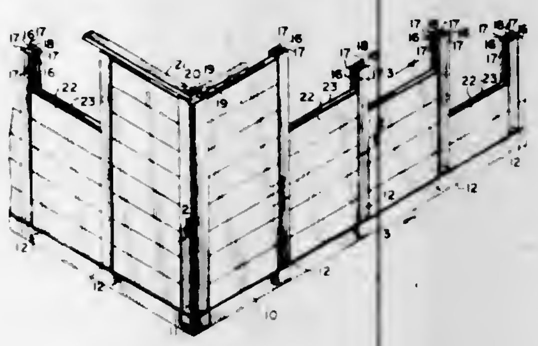
1. A steel reinforcing member adapted to be driven into the ground adjacent a utility pole, said reinforcing member being semi-cylindrical and elongated, the upper portion of said member forming a driving area, the lower portion of said reinforcing member being cut to define a major angular surface tapered downwardly toward the longitudinal edges of the member and minor angular surfaces tapered downwardly away from said longitudinal edges thereby forming two points, and riding surfaces formed in the area of the intersection of the minor angular surfaces and the longitudinal edges.

3,350,823
INSULATED SKYLIGHT
George E. Murray, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 30, 1963, Ser. No. 320,172
1 Claim. (Cl. 52—200)



In a roof construction having an opening, a plastic skylight comprising an outer sheet of light transmitting plastic material, an inner sheet of light transmitting plastic material, and a light transmitting plastic foam material fixedly disposed between said outer and inner sheets of plastic material which is characterized as a conglomerate of large polyhedral cells which are heterogeneously arranged and have common walls extending at various angles, the peripheral edge of said inner sheet being affixed to the interior surface of said outer sheet and said outer sheet being extended to provide a skirt for overlapping and for securing said skylight to the roof about the opening, the interior periphery of said inner sheet further being adapted to be bonded to a gasket affixed to the roof about the periphery of the opening for said skylight and said skirt on said outer sheet further being bonded to said gasket and secured to the roof about the opening in a fashion such as to be covered with roofing material.

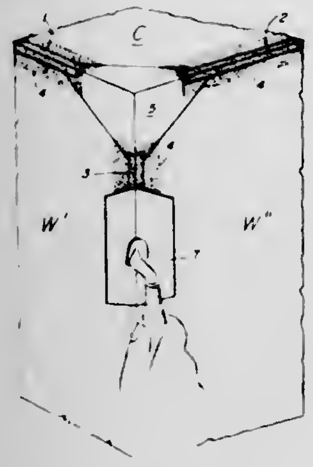
3,350,824
BUILDING CONSTRUCTION
Walter Wiebusch, Rte. 2, Wahpeton, N. Dak. 58075
Filed June 15, 1964, Ser. No. 374,960
1 Claim. (Cl. 52—251)



Building construction comprising a foundation, an elongated generally vertical corner post at each corner of said foundation and having one end imbedded therein, a plurality of elongated generally vertical intermediate posts equally spaced at predetermined intervals between said corner posts, one end of each of said intermediate posts being imbedded in said foundation, each of said corner and intermediate posts having at least one groove of a constant width and with a bottom spaced inwardly from the surface of said post, said groove extending substantially the full length of the post and facing the groove of an adjacent post, a series of relatively thick filler members of a length greater than the distance between adjacent posts and less than the distance between the bottoms of the facing grooves, each of said filler members having an offset portion at each end receivable within said facing grooves and having an intermediate portion of a thickness greater than the width of said grooves, each of said filler members having a solid generally concave bottom surface extending substantially the full length and width of said filler member and having a solid generally convex upper surface complementary to said bottom surface, the convex upper surface of one filler member being received within and in direct engagement with the concave bottom surface of the next higher filler member, each of said posts having a reinforcing member imbedded therein generally along its longitudinal axis, cross bar means extending across the tops of said posts, and fastening means connecting said cross bar means to said posts, whereby said filler members can be inserted in the facing groves at the top of the posts and moved downwardly until the area between the posts is completely filled.

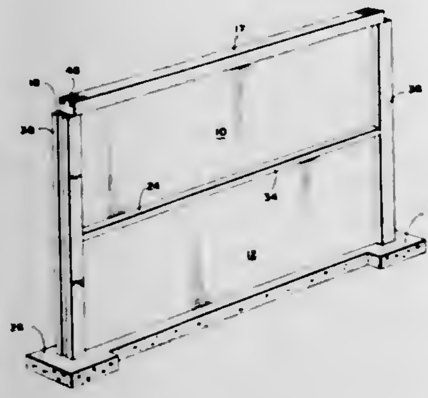
3,350,825
WALLBOARD CORNER CONSTRUCTION AND METHOD
Nicholas J. Rillo, 10 Lenape Lane, Berkeley Heights, N.J. 07922
Filed Aug. 7, 1964, Ser. No. 388,082
4 Claims. (Cl. 52—288)

1. A wallboard corner construction comprising three intersecting wallboard surfaces, a prefabricated trihedral unitary corner piece of thin sheet material having the free edges thereof feathered fitting the intersection of said surfaces and adhesively secured thereto, a sealing tape adhesively secured along at least one joint between intersecting wallboard surfaces, said tape extending over



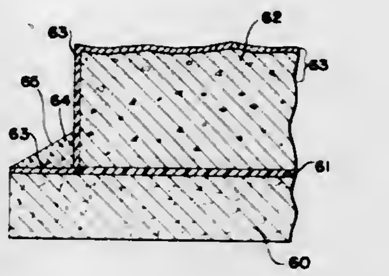
a portion of the feathered edge of the corner piece and terminating at a point spaced from the apex thereof, and a coating material covering said tape and adjoining areas of the corner piece.

3,350,826
WALL WITH A FOOTING AND METHOD FOR CONSTRUCTING SAME
William L. Hughes, Norfolk, Va., assignor to Monowall Corporation, Norfolk, Va., a corporation of Virginia
Filed July 28, 1966, Ser. No. 568,439
10 Claims. (Cl. 52—293)



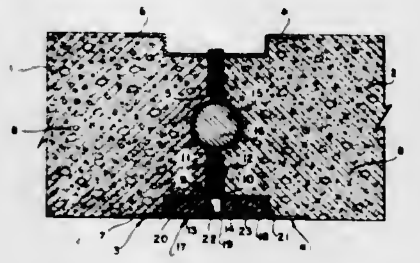
8. A building wall comprising:
(A) a reinforced footing extending beneath the building wall area and defining an upwardly disposed building wall receiving slot;
(B) a pre-cast reinforced bond beam adapted to extend along the top of the building wall and defining a downwardly extending building wall receiving slot;
(C) at least two pre-cast reinforced pilasters adapted to extend along the side ends of the building wall intermediate said bond beam and said footing, defined at their inner opposed faces a building wall receiving slot and adapted at their ends for interlocking with said reinforced footing and said bond beam;
(D) a pre-cast reinforced building wall sheet adapted for mounting in said footing, bond beam and pilaster receiving slots and having reinforcing bars extending from said building wall top and bottom and side ends into said pilaster, bond beam and footing; and
(E) a pre-cast stiffener bar adapted for interlocking with opposed pilasters at either end and defining at least one building wall engaging slots secured to said building wall.

3,350,827
BUILDING PANELS AND METHOD OF MOUNTING THE PANELS
Ben L. Sugar, Akron, Ohio, assignors to Ridge Rock Industries, Inc., Sebring, Ohio, a corporation of Ohio
Filed Jan. 2, 1964, Ser. No. 335,174
6 Claims. (Cl. 52—309)



1. A pre-fabricated, elongated, rectangular building panel composed of a backing, rectangular building elements adhered to one face of the backing with mortar covering the surface of the backing between and around the elements to only a part of the depth of the building elements, with the mortar beveled downwardly at the perimeter of the panel so as to be thinner at the edge of the panel than adjacent the elements.

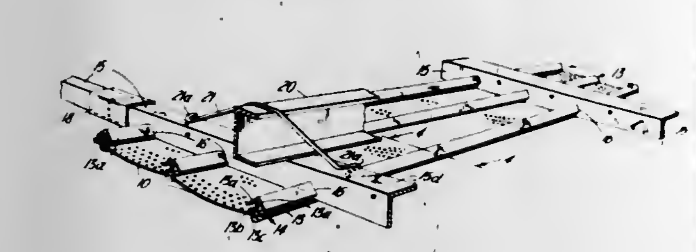
3,350,828
ABUTTING WALL PANELS AND SEALING STRUCTURE THEREFOR
Gordon C. Russell, Studio City, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Apr. 12, 1965, Ser. No. 447,192
4 Claims. (Cl. 52—395)



1. The combination of abutting wall panels and sealing structure, said wall panels comprising:
rectangular frames defining faces and edges on said wall panels, said frames having recesses adjacent said faces and edges, said edges of said wall panels being adapted to be engaged in edgewise abutting relationship, the frames having openings adjacent said edges;
said sealing structure comprising a channel having a web and having flanges extending away from said web, said web having an outside surface and an inside surface, said outside surface extending across the entire width of the recess and being substantially coplanar with the outer surfaces of the abutting wall panels, said flanges extending away from said outside surface thereof intermediate said flanges thereon, sealant positioned on said inside surface of said web and extending away from said inside of said web at least as far as said flanges; and
locking clips positioned within said openings adjacent said edges of said wall panels, and said channel being positioned within said recesses in said wall panels so that said sealant engages with said frames so as to seal the butt joint therebetween and so that said locking clips retain said wall panels together.

3,350,829
SUSPENDED CEILINGS

Eric Dalby, 8 Oakmead Gardens, Edgware, Middlesex, England
Filed Dec. 21, 1964, Ser. No. 420,077
Claims priority, application Great Britain, Apr. 9, 1964, 14,815/64
3 Claims. (Cl. 52—495)

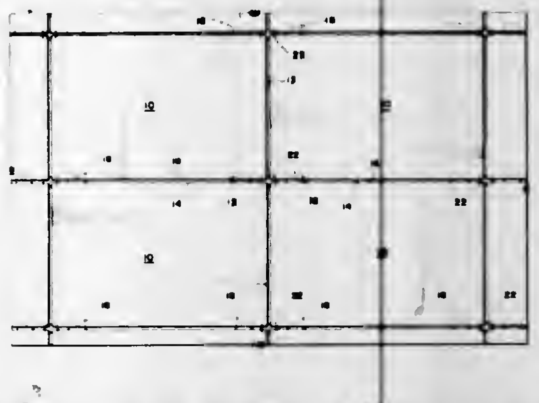


1. A ceiling structure comprising
- (a) a plurality of rail members arranged in parallel rows;
- (b) a plurality of elongated support members arranged end to end in parallel rows;
- (c) the rows of support members being disposed substantially at right angles to the rail members;
- (d) connections between the support members and rail members at the locations where they cross so that the members form a grid structure;
- (e) each said connection comprising a web on one member having at one longitudinal edge thereof a pair of oppositely directed resilient flanges extending outwardly from the web and terminating in a plane which intersects the web intermediate of the longitudinal edges of the web;
- (f) the other member being formed, at the locations where the members cross, with notches having sides which converge from their mouths and which correspond in size and shape with the outer contour of said resilient flanges;
- (g) there being provided at the mouths of the notches projections past which the flanges must be snapped in order to enter the notches;
- (h) each said support member having a flange projecting downwardly below the rail members, said flange having at its lower edge features defining on each face thereof a laterally facing channel;
- (i) a plurality of visible-surface-forming strips, each said strip extending along the length of, and being held in a bowed condition between the flanges of an adjacent pair of the rows of support members by having its edges resiliently engaged in the laterally facing channels of said members.

3,350,830
BUILDING STRUCTURE HAVING FACING SLABS AND REMOVABLE SECURING MEANS THEREFOR

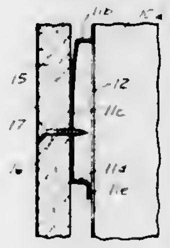
Walter K. Smith, Jr., 787 Ocean Shore Blvd., Ormond Beach, Fla. 32074, and Charles T. Phillips, 1347 Continental Drive, Daytona Beach, Fla. 32017
Filed May 5, 1965, Ser. No. 453,272
10 Claims. (Cl. 52—509)

1. In a building structure having an upright wall and a facing thereon comprised of a plurality of rectangular slabs arranged in adjacent horizontal and vertical rows, upper and lower edges of said slabs having longitudinal grooves extending from end to end, hanger brackets secured to said wall and each having an upstanding flange engaged in the groove in the lower edge of a slab to support the slab in an upright position, and means disposed at the corner junction of four adjacent slabs positioned to engage in the grooves in all four slabs at said junction, said means comprising a substantially rigid member of spring metal and of C-shaped cross section, the legs of said member being parallel and greater in length than the distance between a groove and the rear face of a slab, the free ends of the legs of said member having flanges thereon engaged in the opposed grooves of all four of said facing slabs at said corner junction.



3,350,831
MOUNTING DEVICE WITH FLEXIBLE TAB FOR WALLBOARD

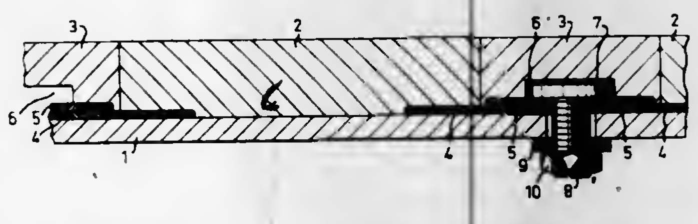
Peter H. Miller, 175 W. 79th St., New York, N.Y. 10024
Filed July 1, 1965, Ser. No. 468,855
7 Claims. (Cl. 52—573)



1. A sound-damping device for securing wallboard to a structural support member, said device comprising a base plate including an elongated lengthwise widening cut-out, a first web extending from said base plate adjacent to the narrow end of said cut-out at an angle in reference to the plane of said base, a flexible second web of generally increasing width extending from the free edge of said first web toward the wide end of the cut-out substantially parallel to the plane of the base plate but spaced apart therefrom and a third web extending from the free end of said second web toward said base plate, said third web overlying a portion of said cut-out and having a terminal edge bridging a portion of the cut-out.

3,350,832
WALLS EXPOSED TO WEAR

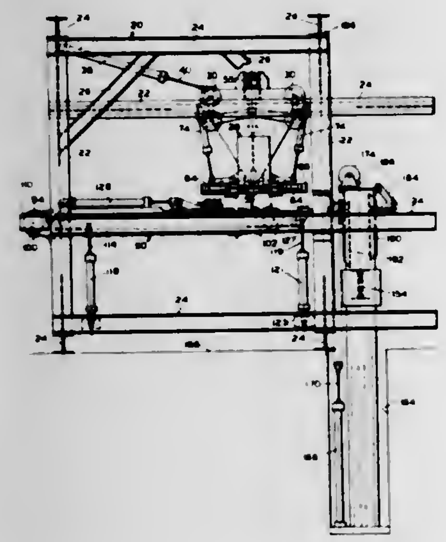
Bo Klas Gerhard Persson, Trelleborg, Sweden, assignor to Trelleborgs Gummifabriks Aktiebolag, Trelleborg, Sweden
Filed Aug. 27, 1965, Ser. No. 483,042
Claims priority, application Sweden, Nov. 5, 1964, 13,338/64
2 Claims. (Cl. 52—622)



1. A lining for a wall exposed to wear, comprising panels of elastomeric wear-resistant material extending in spaced relationship in parallel along the wall, metal plate means anchored to said panels and protruding from each of said panels along and in contact with the wall towards each of two adjacent ones of said panels, strips of elastomeric wear-resistant material, each of said strips extending between two adjacent ones of said panels, metal abutment means anchored to said strips and overlying and contacting said metal plate means, and clamping means engaging the wall and said abutment means for clamping said metal plate means between the wall and said abutment means.

3,350,833
BRICK LAYING APPARATUS

George K. Larger, 2744 Gantz Road, Grove City, Ohio 43123
Filed Feb. 3, 1966, Ser. No. 524,892
11 Claims. (Cl. 52—749)

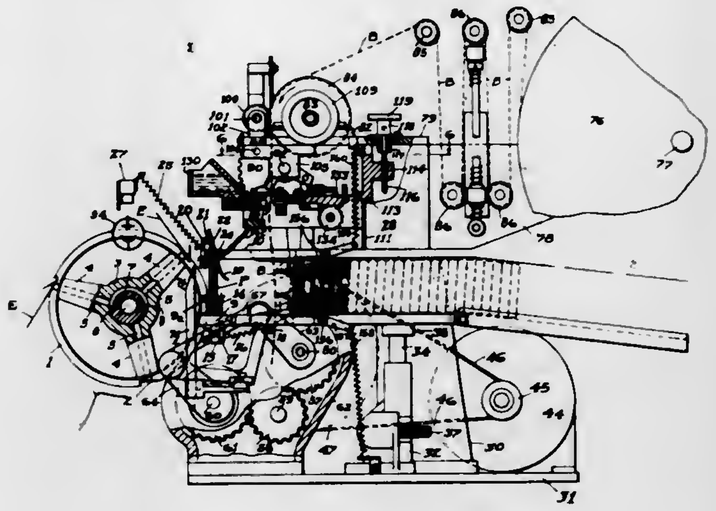


1. An apparatus for laying masonry units comprising, in combination, frame means; a vertically movable platform disposed adjacent to one end of said frame for receiving the units to be laid; conveyor means disposed adjacent to the other end of said frame means for delivering said units to be laid to a predetermined loading position; a hopper for holding a supply of mortar, said hopper being movably mounted on said frame means for travel between said loading position and said platform and including an outlet and means for delivering a predetermined amount of mortar from said outlet; and engagement means attached to said hopper and being releasably engageable with the units on said conveyor means for transporting said units from said conveyor means to said platform.

3,350,834
HIGH-SPEED BANDING OF ENVELOPES AND THE LIKE

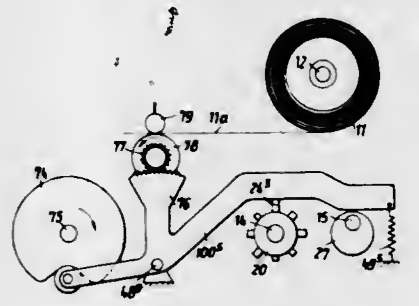
Vincent E. Heywood, Worcester, Mass., and Albert H. Johnson, Hazardville, Conn., assignors to United States Envelope Company, Springfield, Mass., a corporation of Maine
Continuation of application Ser. No. 777,337, Dec. 1, 1958. This application Dec. 12, 1961, Ser. No. 164,637
48 Claims. (Cl. 53—3)

1. In high speed banding of successively-collected packs of envelopes or the like, wherein a limited translatory movement of each pack is used for its front face pick-up and transport of an adhesive-tipped band disposed across the pack path, such that opposite band extensions beyond said face, from encounter with opposed surfaces closely flanking said path, are folded back over opposite front edges of the moving pack, the improvement which consists in procuring by and during each pack's said movement the inward deflection of both ends of its so-folded band extensions into overlapped but unstuck relation behind said pack's rear face, leaving each so-conditioned pack in the line of pack movement, and procuring the completion of its banding by pressures thereafter exerted against said band ends by the ensuing band pick-up movements of the next and following packs.



3,350,835
COIN COUNTING AND WRAPPING DEVICE

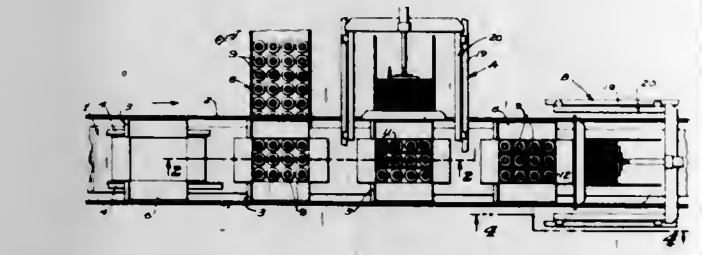
Kurt Becker, Berlin-Wilmersdorf, Germany, assignor to F. Zimmermann & Co., Berlin, Germany, a German firm
Filed Apr. 20, 1965, Ser. No. 449,475
Claims priority, application Germany, Apr. 24, 1964, Z 10,793
11 Claims. (Cl. 53—66)



1. A coin counting device comprising means for sorting coins in accordance with size denomination, a drop shaft having movable wall means located below said sorting means for receiving selected coins from said sorting means, movable coin size selection means associated with said sorting means including an adjustable member movable to permit passage of a coin of selected size to said selection passage, first actuating means connected to said size selection means to adjust said size selection means in accordance with the coin selected, second actuating means connected to said drop shaft wall means to move said wall means to accommodate the denomination size of the coin selected, coin roll forming means including a pair of rollers, means for adjustably mounting said rollers in spaced relationship, third actuating means connected to said mounting means to adjust the spacing of said rollers for accommodating a selected coin size, a paper wrapping feeding mechanism including means to feed a wrapping of paper to said pair of rollers for wrapping around said coins as they are rotated on said rollers, fourth actuating means connected to said paper feeding means for varying the length of paper fed in accordance with the coin selected, and central adjusting means connected to each of said first, second, third and fourth actuating means to move said actuating means by an amount corresponding to the adjustment required for the denomination of coin selected.

3,350,836
CARTON DIVIDER INSERTING APPARATUS

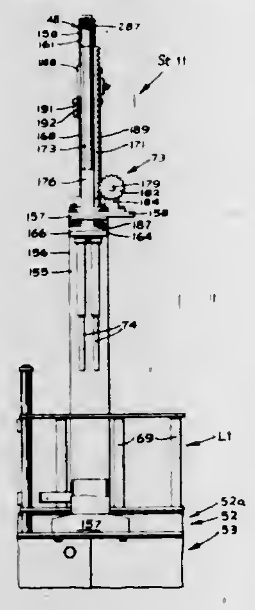
Chadburn L. Dillon and Phillip W. Robinson, both of P.O. Box 71707, Downey, Calif. 90241
Filed Oct. 20, 1964, Ser. No. 405,112
8 Claims. (Cl. 53—67)



8. A carton loading means, comprising:
(a) a conveyor arranged to carry a series of cartons with at least their upper sets of flaps extending outwardly from said cartons, whereby at least the upper end of each carton is open;
(b) means for inserting into each carton a load of contatiners disposed in rows and defining right angularly related sets of vertical planes therebetween extending longitudinally and transversely with respect to said carton;
(c) a first and a second divider feeding mechanism;
(d) each mechanism including a magazine for receiving a horizontally extending stack of carton dividers and defining a slot at one end for discharge of dividers in sequence through said slot, a template having indexing means thereon spaced in correspondence with the spacing of the planes in a set of said planes, means sensing the positions of said indexing means for sequentially disposing said slot in registry with said planes, and means for feeding said dividers through said slot thereby to insert said dividers between said containers.

3,350,837
TOOL ACTUATING MECHANISM

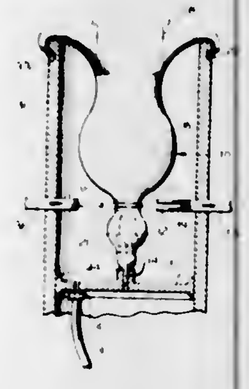
John G. Hagerborg, St. Niklaas-Waas, Belgium, assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application Aug. 10, 1962, Ser. No. 216,248, now Patent No. 3,248,841, dated May 3, 1966. Divided and this application Feb. 11, 1966, Ser. No. 526,729
2 Claims. (Cl. 53—77)



2. A tool actuating mechanism comprising support means, a hydraulically operated ram carried by said support means and having a projecting reciprocable piston rod, a tool carrier connected to said piston rod, a pair of arms secured to said carrier, a follower secured to each arm, a guide slidably receiving each follower and secured to said support means, a rack secured to each of said arms, a shaft supported for rotation by said support means and extending transversely of said racks, a pinion engaged with each rack and keyed to said shaft, a conveyor disposed below said tool carrier for supporting a plurality of cartons, power means for intermittently driving said conveyor to index successive cartons below said tool carrier, a tool carried by said tool carrier, means operatively associated with said ram and said power means for causing said ram to reciprocate said tool a predetermined distance relative to a carton indexed therewith, means for controlling the operating speed of said ram, and means for deactivating said power means in the event said tool is reciprocated a distance less than said predetermined distance.

3,350,838
APPARATUS FOR CLOSING A PACKAGE

Anthony F. Rodrigues, Los Gatos, Calif., assignor, by mesne assignments, to Becton, Dickinson of California, Inc., a corporation of California
Filed Jan. 8, 1965, Ser. No. 424,275
7 Claims. (Cl. 53—86)

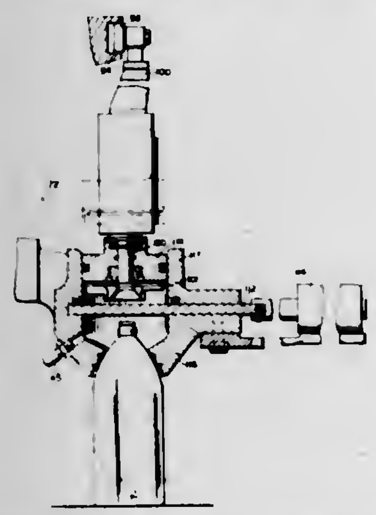


4. In apparatus for closing a package for a fragile article which package comprises a body of resilient flexible material having in its initial unfolded condition an intermediate article-engaging wall means and two end portions, and in the folded condition of said body said end portions being engaged and secured together, and in said folded condition said article-engaging wall means encompassing an article therein, and said article-engaging wall means with the article therein being encompassed by a flexible wall providing a shock absorbing chamber around said article; said apparatus comprising a cylinder, a first relatively movable member and a second relatively movable member respectively engaging said body adjacent the respective ends thereof to hold it in an extended position, means supported by said cylinder for closing said body immediately adjacent the article therein so the article is effectively encompassed in said article engaging wall means, said members being relatively movable to each other to turn one end portion of said body inside out and to place the article-engaging wall means of said body inside of said inside out portion, and to place said other end portion in overlapping relation with the said one end portion to enable securing of said end portions together to complete the package.

3,350,839
APPARATUS FOR PACKAGING FRUIT JUICES AND SIMILAR PRODUCTS

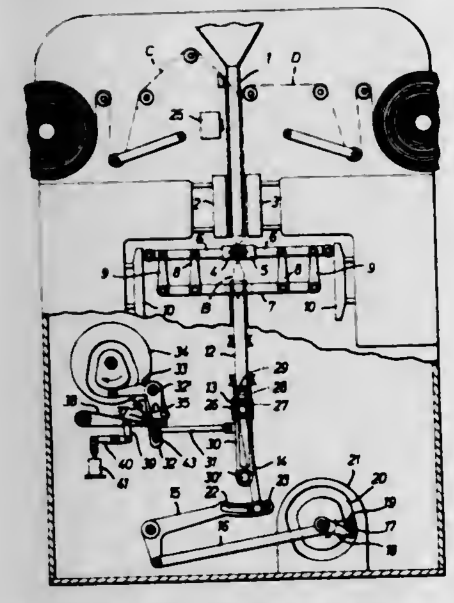
James S. F. Carter, Oceanside, N.Y., assignor of one-half to Kenneth B. Ray, Greenwich, Conn.
Filed July 24, 1963, Ser. No. 297,314
5 Claims. (Cl. 53—88)

1. In an apparatus, provided with heating, filling and sterilizing means, for vacuum sealing a liquid within a container comprising a cylindrical member open at the top and bottom, the lower portion of said cylindrical member extending inwardly, and having a tapered inner surface, vertically spaced gasket ring members disposed on said surface, said ring members having different size diameters to sealingly engage containers of different sizes, an axially moveable member slidably disposed in said cylindrical member and sealing off the top opening of said cylindrical member, a container cap holding member disposed within said cylindrical member and axially movable relative thereto and to said axially moveable member, axially moveable mandrel means disposed within said cap holding means for securing a cap on a container, and conduit means in communication with the space within said cylindrical member for pulling a vacuum thereon.



3,350,840
PACKAGING MACHINE

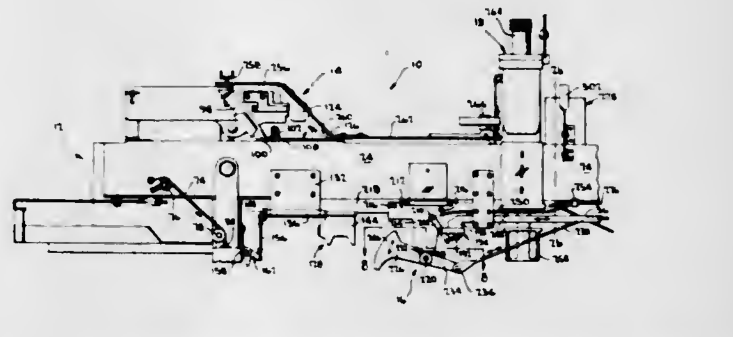
Alfred Gräfingholt, Stuttgart-Bad Cannstatt, and Rudolf Branstner, Fellbach, Wurttemberg, Germany, assignors to Fr. Hesser Maschinenfabrik-Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany, a corporation of Germany
Filed Feb. 3, 1964, Ser. No. 341,955
Claims priority, application Germany, Feb. 18, 1963, H 48,281
3 Claims. (Cl. 53—180)



1. In a packaging machine, draw means for engaging packaging material, an oscillatory system coupled to said draw means to reciprocally move the same between end positions to advance said material, said oscillatory system including a draw bar pivotally connected to said draw means, a pivotal rocker member connected to said draw bar and driving means for pivotally moving said rocker member, an eccentrically-adjustable coupling between said draw bar and said draw means for modifying their point of connection and adjustable regulating means for acting on said coupling for varying at least one of the end positions of said draw means, said coupling comprising a rotatable member in said draw means, and an eccentric pin on the rotatable member, said draw bar being pivotally mounted on the eccentric pin to change the end positions of the draw means when the rotatable member is rotated in the draw means.

3,350,841
CARTON FOLDING AND FILLING MACHINE

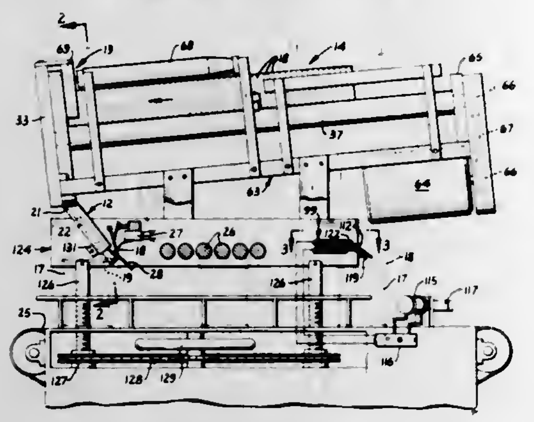
George W. McDonald, New York, N.Y., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,450
11 Claims. (Cl. 53—186)



1. In a packaging apparatus for automatically setting up, filling and closing the flaps of a carton supplied initially flat and having four side wall panels and an upper and lower pair of inner and outer closure flaps hinged at the end of each side wall, said apparatus comprising way members supported on a base and defining a longitudinal path of travel having an upstream inlet portion and a downstream outlet portion, a pusher plate reciprocably supported on each of said way members, said pusher plates including portions spaced longitudinally therealong and projecting into said longitudinal path of travel for engaging and moving cartons step-by-step through said longitudinal path of travel as said pusher plates are reciprocated, hopper means on said base for supporting vertically disposed, folded-flat cartons on edge and feeding them one-by-one into said inlet, means on said way members for engaging a folded-flat carton and orienting the side walls as a rectangular tube between said way members, lower flap-folding means on said way members below said longitudinal path of travel and operatively connected to said pusher plates for closing the lower flaps in sequence at the lower edges of said lower carton side wall panels, and closing the bottom of said tube, carton filling means downstream of said lower flap-folding means for filling said carton with a predetermined amount of material to be packaged, and upper flap-folding means downstream of said carton filling means and above said longitudinal path of travel for closing the upper carton flaps in sequence; the improvement wherein said lower flap-folding means comprises lower inner closure flap-folding members displaceably mounted on said way members at opposite sides of said longitudinal path of travel for folding the lower inner closure flaps into overlying relationship, first outer closure flap-folding means reciprocably supported beneath said longitudinal path of travel for engaging the leading, lower outer closure flap and folding it over the lower inner closure flaps and traveling downstream with said carton and retaining said inner closure flaps and leading outer closure flap in folded relationship, and second outer closure flap-folding means pivotally supported beneath said longitudinal path of travel for engaging the trailing outer closure flap and folding the same in overlying relationship with respect to said previously folded inner closure flaps.

3,350,842
CAPPING MACHINE

Robert L. Renish, 35176 Cardiff St.,
Newark, Calif. 94560
Filed Mar. 22, 1965, Ser. No. 441,668
15 Claims. (Cl. 53—316)



1. A machine for capping cylindrical objects with skirted lids, comprising:

(a) capping means formed for releasably supporting a generally disk-shaped skirted lid with at least a portion of the skirt exposed in position to be intercepted by a cylindrical object moving therepast;

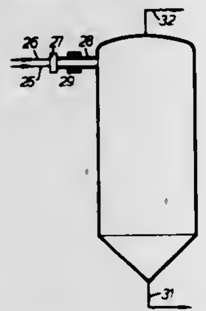
(b) a dispenser communicating with said capping means and formed for supplying lids in one at a time order thereto for replacing lids on demand;

(c) supply means communicating with said dispenser and formed for supporting a plurality of lids and continuously supplying lids to said dispenser, with the supply means including first means formed for engaging and freely supporting a column of lids along a generally horizontally extending axis inclined toward said dispenser, said axis being inclined such that a major portion of the weight of each lid in said column is supported by said first means, and second means for rotating said lids about said inclined axis whereby the rotating lids will move down the incline toward the dispenser;

(d) and magazine means adapted for supporting a plurality of groups of lids and formed for inserting said groups intermittently into said supply means.

3,350,843
METHOD AND APPARATUS FOR DEODORIZING OIL

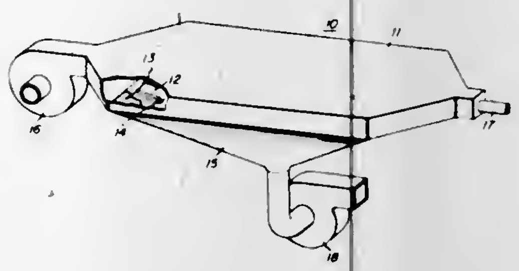
Anthony Michael Lloyd, Walkington, near Beverley, England, assignor to Rose, Downs & Thompson Limited, Kingston-upon-Hull, Yorkshire, England
Filed Oct. 2, 1964, Ser. No. 401,202
4 Claims. (Cl. 55—15)



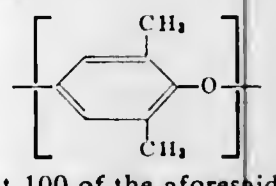
1. A method of processing oil with a substance in the gaseous state in which said substance in the gaseous state and the oil in an atomized state are intermixed during concurrent flow, the mixture is subjected to vibratory action to rapidly change the interfaces between the oil and substance while the oil is atomized, and the mixture is subsequently separated in a separating device, said substance in the gaseous state and said oil being passed through an ultrasonic atomizer located upstream of the separating device.

3,350,844
PROCESS FOR THE SEPARATION OR ENRICHMENT OF GASES

Walter L. Robb, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 21, 1964, Ser. No. 397,687
8 Claims. (Cl. 55—16)



1. In a process for the separation of a gas selected from the class consisting of helium, hydrogen and oxygen from a mixture of gases containing at least one of the recited gases, wherein the mixture of gases is brought into contact with one side of a thin, non-porous polymeric membrane, while a reduced partial pressure in the gas to be separated is maintained on the opposite side of said membrane as compared to the partial pressure thereof on said one side, the improvement comprising the use of a solid polyarylene oxide film as the membrane, the solid polyarylene oxide film being composed of recurring structural units of the formula



there being at least 100 of the aforesaid units in the polymer, thereby to obtain a gaseous product enriched in one of the said recited gases.

3,350,845
METAL ALLOY FOR HYDROGEN SEPARATION AND PURIFICATION

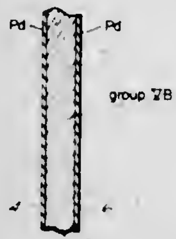
David L. McKinley, Nitro, W. Va., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Nov. 18, 1965, Ser. No. 508,548
4 Claims. (Cl. 55—16)

1. A method for separating hydrogen from a gas mixture containing hydrogen and sulfurous constituents which method comprises the steps of directing a stream of the gas mixture to a proximal side of a gas diffusion barrier having a foil layer consisting essentially of an alloy of from about 5 to about 55 weight percent gold and the rest palladium, diffusing the hydrogen of the mixture through the foil layer of the barrier to a distal side thereof, and collecting the hydrogen after its diffusion while maintaining at the barrier a pressure differential of at least 75 p.s.i.g. and a temperature at which it is known hydrogen diffusion takes place.

3,350,846
SEPARATION OF HYDROGEN BY PERMEATION

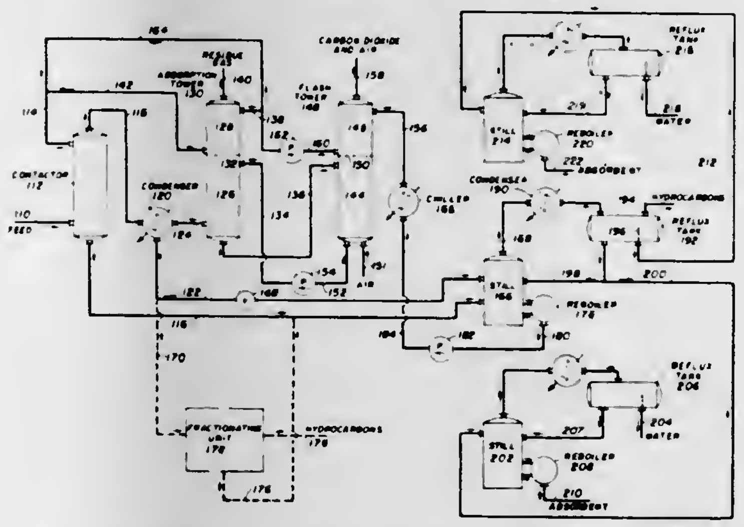
Alkis C. Makrides, Newton, Maurice A. Wright, Holliston, and David N. Jewett, Harvard, Mass., assignors to Tyco Laboratories, Inc., Waltham, Mass., a corporation of Massachusetts
Filed Dec. 29, 1964, Ser. No. 421,850
22 Claims. (Cl. 55—16)

1. A process for the recovery of hydrogen from a gaseous mixture comprising the steps of contacting such gaseous mixture with one side of a nonporous metallic membrane comprising a layer of a Group V–B metal coated on both sides with a continuous nonporous film comprising palladium; permeating the hydrogen through said membrane and removing such permeated hydrogen from the opposite side of said membrane.



3,350,847
GAS PURIFICATION USING DINITRILE

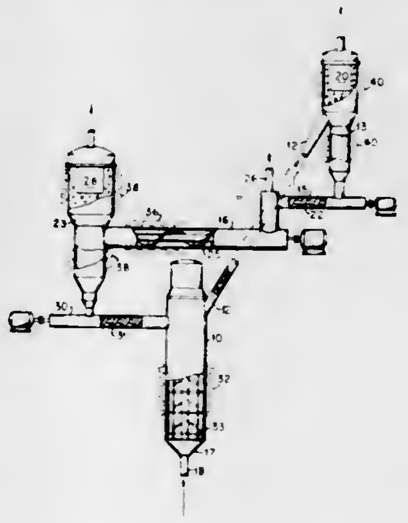
Byron B. Woertz, Crystal Lake, Ill., and Orrin C. Holbrook, Andrews, Tex., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Dec. 31, 1962, Ser. No. 248,771
11 Claims. (Cl. 55—48)



8. The process of removing gaseous acid gas selected from the group consisting of carbon dioxide and hydrogen sulfide from admixture with gaseous C_1—C_3 alkane hydrocarbons which comprises contacting said gaseous admixture in a first contacting zone with a mixture of a first solvent consisting essentially of at least one low-molecular-weight dinitrile of the formula, NC—R—CN, wherein R is a lower alkylene group, and a second higher boiling solvent adapted to selectively absorb said first solvent; separately withdrawing a liquid stream and a gaseous stream comprising vaporized first solvent and unabsorbed components of said gaseous admixture fed to said first contacting zone from said first contacting zone; passing said gaseous stream through a cooling zone whereby part of said gaseous stream is condensed; separately withdrawing condensate and uncondensed components of said gaseous stream from said first cooling zone; combining said condensate with said liquid stream from said first contacting zone, and separating said second solvent from the combined solution; contacting the uncondensed components of said gaseous stream in a second contacting zone with said first solvent, under conditions resulting in partial vaporization of said first solvent and absorption of said acid gas in the unvaporized first solvent; separately withdrawing a liquid stream of spent first solvent and a gaseous stream from said second contacting zone; contacting the gaseous stream from said second contacting zone in a third contacting zone with said second solvent, under conditions resulting in absorption of vaporized first solvent; separately withdrawing from said third contacting zone the unabsorbed components of the gaseous stream from said second contacting zone and said second solvent containing absorbed first solvent; recycling said second solvent from said third contacting zone to said first contacting zone; and separating the absorbed acid gas from said spent first solvent.

3,350,848
CONTINUOUS SORPTION-DESORPTION SYSTEM AND METHOD

Donald C. Brater and Joseph Dykstra, Jr., Oak Ridge, Harry L. Kaufman, Kingston, and Seymour H. Smiley, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 26, 1966, Ser. No. 546,144
3 Claims. (Cl. 55—71)



1. A process for essentially completely sorbing and desorbing gaseous UF_6 from a stream of mixed gases including the UF_6 and at least one nonsorptive gas, comprising the steps of continuously flowing the stream of mixed gases into a bed of particulate sodium fluoride for fluidizing at least a portion of the bed and for exposing the UF_6 to the sodium fluoride for sorption thereby, continuously conveying fluidized particulate sodium fluoride from the bed for subsequent discharge into a region maintained at a temperature sufficient to desorb UF_6 from the sodium fluoride, separating at least a substantial portion of said at least one nonsorptive gas from the flow of fluidized sodium fluoride, and thereafter introducing into the sodium fluoride at least one of the gases selected from the group consisting of gases containing fluorine and nitrogen prior to discharging the sodium fluoride into said region, recovering the UF_6, and thereafter discharging the desorbed sodium fluoride into the bed for further sorption of UF_6.

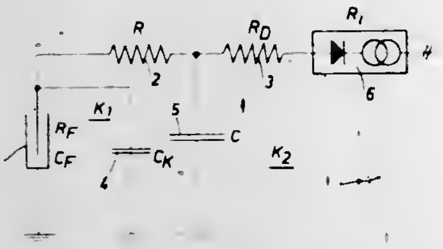
3,350,849
SYSTEM FOR PREVENTING ARC RE-IGNITION IN ELECTROSTATIC DUST SEPARATORS

Horst-Gunter Eisbold, Frankfurt, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed Mar. 2, 1967, Ser. No. 620,150
Claims priority, application Germany, Mar. 8, 1966, M 68,679
1 Claim. (Cl. 55—105)

A system for preventing the re-ignition of electric arcs in an electrostatic dust precipitator in which a condenser is coupled parallel the emitting electrode in the precipitator so that when the current to the electrode is decreased to extinguish an arc it is then increased to again energize the electrode, further comprising a discharge condenser (**5**) coupled in parallel with said electrode, a source of electricity (**6**) for said electrode, an ohmic resistance (**3**) connected between said discharge condenser and source of electricity, said discharge condenser having a capacity C which is equal to or less than the quotient of the time t_1 required for the de-ionizing of the gas in the precipitator after an arc has been extinguished divided by five times the sum of the interior resistance R_i and the ohmic resistance R_D as stated in the formula

$$C \leq \frac{t_1}{5(R_i + R_D)}$$

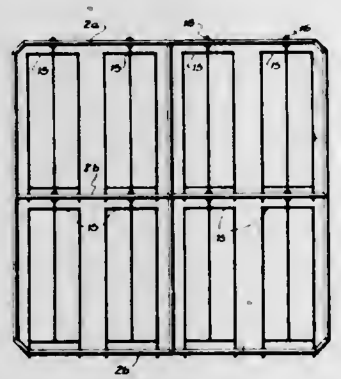
and that the capacity C is equal to or smaller than the quotient of the current duration time T divided by twenty times the sum of the precipitator interior resistance R_F plus the combined smaller resistances R in the dust precipitator partial circuit K_1, and minus the sum of the dust removal capacity C plus the cable capacity C_K as stated in the formula



$$C \leq \frac{T}{20(R_F + R)} - (C_F + C_K)$$

3,350,850
ATTACHMENT MEANS FOR SPARK ELECTRODES

Walter Steuernagel, Frankfurt am Main, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed Apr. 15, 1965, Ser. No. 448,381
Claims priority, application Germany, Apr. 25, 1964, M 60,799
2 Claims. (Cl. 55—148)

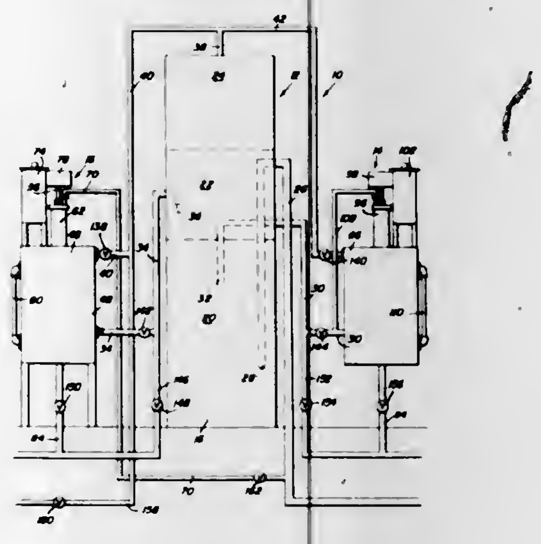


1. An electrostatic filter comprising a vertical support frame having vertically spaced apart upper and lower sides, a plurality of grates each containing at least two spark electrodes, bolt means fastening one end of each grate to the upper side of said frame, vertical bores in the lower side of said frame, and spring means attached to the lower end of at least two of said electrodes in each of said grates and frictionally engaging the inner surface of each respective bore to secure the other end of each grate to the lower side of the frame while permitting movement in a vertical plane during thermal expansion of said frame and electrodes.

3,350,851
DUMP POT SYSTEM WITH ADDITIVE PUMP

Darris R. Crooks, 1506 E. 6th, Big Spring, Tex. 79720
Filed Sept. 2, 1965, Ser. No. 484,654
10 Claims. (Cl. 55—166)

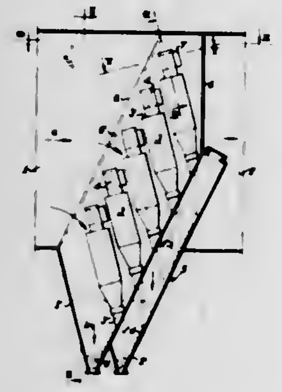
1. A crude oil separator and a dump pot system comprising a separating tank having a substantial vertical dimension, inlet means for crude oil communicated with said tank whereby the crude oil may be separated into a water zone, oil zone and gas zone from bottom to top of the separating tank, an oil dump pot, an oil line communicating the oil zone of the separating tank with the oil dump pot, a water dump pot, means communicating the water dump pot with the water zone of the separating tank, means communicating the oil dump pot with the gas zone of the separating tank, means communicating the water dump pot with the gas zone of the separating tank, said oil dump pot having a discharge line communicated with the bottom thereof, said water dump pot having a discharge line communicated with the bottom thereof, said oil dump pot including float operated valve means for retaining the discharge line closed until a predetermined quantity of oil is discharged into the oil dump pot. said water dump pot including float controlled valve means for discharging water from the water dump pot when a predetermined quantity of water is discharged into the water dump pot, said means communicating the gas zone with the oil dump pot and water dump pot discharging gas into the top of each dump pot for pressurizing liquid therein, each of said float operating means including an elongated rod extending upwardly through the top of the dump pot, a chemical additive pump assembly operatively connected to said rod exteriorly of the dump pot for pumping a predetermined quantity of additive each time the rod is operated.



3,350,852
MULTI-CELL CENTRIFUGAL DUST SEPARATOR

Josef Schindling, Frankfurt am Main, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed July 27, 1965, Ser. No. 475,136
Claims priority, application Germany, Aug. 4, 1964, M 61,974
6 Claims. (Cl. 55—348)

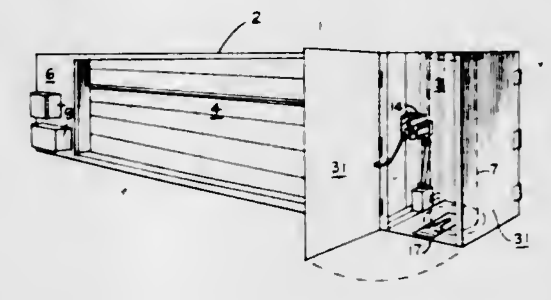
1. In a multi-cell centrifugal dust separator having a raw gas feed chamber, a purified gas recovery chamber adjacent said feed chamber, a dust collector chamber at least partially below said feed chamber, all said chambers being sealed off from direct flow communication therebetween and said feed and recovery chambers being separated at least in part by a partition interposed therebetween which is provided with means defining a plurality of separate apertures therethrough, a corresponding plurality of centrifugal separator means each including a lower centrifugal separator dust tube and an upper purified gas tube, each said gas tube possessing a smaller diameter than that of the corresponding dust tube and being in substantially vertical partial telescoping relation therewith such that the lower end of said gas tube extends downwardly into the upper end of said dust tube sufficiently to define an annular inlet means thereat, said inlet means flow communicating the particular separator means with said feed chamber, a corresponding dust outlet means flow communicating the lower end of each said dust tube with said collector chamber, the upper end of each said gas tube being closed, a corresponding gas outlet means defined radially through the upper portion of each said gas tube, and a corresponding generally radially outwardly arranged gas outlet conduit interposed between each said gas outlet means and a corresponding aperture means of said partition and flow communicating said gas tube with said recovery chamber through said partition, whereby raw gas passing through said feed chamber enters said separator means through said inlet means and dust centrifugally separated therein passes via said dust outlet means to said collector chamber while resulting purified gas free from such dust passes via said gas outlet means through the corresponding gas outlet conduit and aperture means to said recovery chamber, the improvement which comprises corresponding retaining means removably attaching each said gas tube and the corresponding gas outlet conduit therefor in the form of a composite arrangement to the corresponding portion of said partition at the particular aperture means, each said retaining means including a pair of substantially vertical angle bar retaining tracks positioned on said partition adjacent the lateral sides of the particular aperture means and coperating flange means provided on the adjacent peripheral portion of the corresponding gas outlet conduit for removable retaining engagement with said tracks to attach the corresponding gas tube and gas outlet conduit to said partition in alignment with the particular aperture means thereat such that corresponding lateral portions of said flange means are interposed between said partition and said angle bar retaining tracks, peripheral sealing means being interposed between the marginal area of the particular aperture means on said partition and the peripheral portion of the corresponding gas outlet conduit, and removable wedge means operatively substantially downwardly inserted between each said angle bar retaining track and each such flange means corresponding lateral portion to secure sealing contact between the corresponding gas outlet conduit peripheral portion and aperture means marginal area via said sealing material interposed therebetween.



3,350,853
ROLL-TYPE AIR FILTER

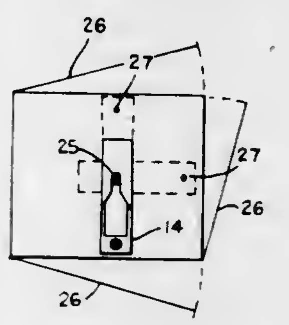
Alan E. Revell, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Jan. 21, 1965, Ser. No. 426,865
4 Claims. (Cl. 55—354)

1. A filter assembly including a housing having filter medium storage sections at opposite ends thereof and a flow-through gas treating section intermediate said storage sections with at least one of said sections serving as a roll storage section receiving and supporting a roll of filter material wound upon a mandrel having projecting spindles; an improved construction of said roll storage section of said housing comprising: a pair of spaced, oppositely disposed end walls; at least two side walls extending between said end walls, the inner faces of said side walls being in spaced relation from each other to define with said end walls a roll support zone therebetween, each of said side walls being individually pivotally mounted to said housing to provide upon pivotal movement of both of said side walls away from said roll support zone two roll insertion openings providing alternative roll insertion paths through which said roll of filter material wound upon a mandrel having projecting spindles can be selectively inserted; roll support bearing means mounted on said opposed end walls receiving and supporting said spindle therebetween when said roll is in operative position; filter roll manipulating means pivotably mounted to said housing in said roll support zone at a preselected position to be selectively removable from either of said roll insertion path through either of said openings during filter roll loading operations; and spring means connected to said filter roll manipulating means to urge said manipulating means into abutting engagement against said filter roll when said roll has been inserted into operative position in said roll support zone through one of said openings, said spring means including a longitudinally extending spring member, one end of which is fixed to said housing and the other to said manipulating means; and means to permit the longitudinal axis of said spring to shift over the pivot axis of said manipulating means to urge said manipulating means away from said openings.



3,350,854
ROLL-TYPE AIR FILTER

Alan E. Revell, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Jan. 21, 1965, Ser. No. 426,954
6 Claims. (Cl. 55—354)

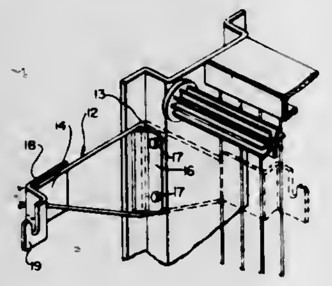


1. A filter assembly including a housing having filter medium storage sections at opposite ends thereof and a flow-through gas treating section intermediate said storage sections with at least one one of said sections serving as a roll storage section and receiving and supporting a

roll of filter material wound upon a mandrel having projecting spindles; an improved construction for said roll storage section of said housing comprising: a pair of spaced, oppositely disposed end walls; at least two side walls extending between said end walls, the inner faces of said side walls being in spaced relation from each other to define with said end walls a roll support zone therebetween, each of said side walls being individually pivotally mounted to said housing to provide upon pivotal movement away from said roll support zone two roll insertion openings through which said roll of filter material wound upon a mandrel having projecting spindles can be selectively inserted; and a pair of roll support bearing assemblies projecting inwardly from the inner faces of said end walls and receiving and supporting said spindles with the roll therebetween when said roll is in operative position, at least one of said roll support bearing assemblies being pivotally mounted as a unit on said end wall and having slot means into which one of said projecting spindles of said mandrel can nest, said assembly being movable to a position wherein said slot means can be properly aligned with either of said roll insertion openings through which said roll is to be selectively mounted, said slot means affording an open-ended U-shaped channel to receive and support a projecting spindle of said roll.

3,350,855
ROLL-TYPE FILTER CONSTRUCTION

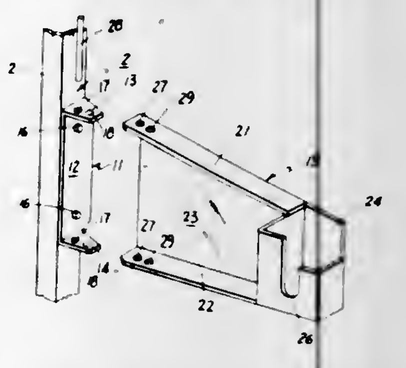
Alan E. Revell, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Oct. 5, 1965, Ser. No. 493,031
4 Claims. (Cl. 55—354)



1. A filter assembly including a housing having spaced opposed peripheral side walls providing filter medium support sections at opposite ends thereof and defining a flow-through gas treating section intermediate said support sections having inlet and outlet faces with at least one of said sections being a roll support section receiving and supporting a roll of filter material wound upon a mandrel having projecting spindles; an improved construction of said roll support section of said housing comprising: support plate means mounted to at least one of said peripheral side walls in said roll support section to cooperate therewith to define a support bracket; substantially straight longitudinally extending bearing arm means a bearing bracket member fastened at one end of said bearing arm means, said bearing bracket member including an inwardly offset slotted portion receiving said projecting spindle of said mandrel whereby said spindle does not extend beyond a plane determining said corresponding wall of said housing, said bearing arm means having its opposite end pivotally mounted to said support bracket to permit said bearing arm means to be positioned in an extended position normal to said inlet face of said flow-through section for roll support during gas treating operations and to be pivoted to a collapse position against said housing for shipment and storage; and restraining means operatively associated with said housing to limit the pivotal movement of said bearing arm means to said extended normal position.

3,350,856
MEDIA SUPPORT ARRANGEMENT FOR ROLL-TYPE FILTER APPARATUS

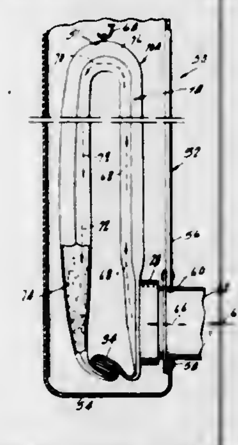
Alan E. Revell, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 544,937
3 Claims. (Cl. 55—354)



1. A filter assembly including a housing having spaced opposed peripheral side walls providing filter medium support sections at opposite ends thereof and defining a flow-through gas-treating section intermediate said support sections with at least one of said sections being a roll support section receiving and supporting a roll of filter material wound upon a mandrel having projecting spindles; an improved construction of said roll support section of said housing comprising: a pair of support brackets mounted to said peripheral side walls in spaced aligned relationship in said roll support section; a pair of substantially straight longitudinally extending bearing arms, each having slot means at one end thereof into which one of said projecting spindles of said mandrel nests and having its opposite end pivotally mounted to said support bracket means to permit said bearing arm to be positioned in an extended position normal to said side wall for roll support during gas treating operations and to be pivoted to a collapse position against said housing for shipment and storage; and opposed detent lock members integral with and cooperable between each of said support brackets and the bearing arm pivotally mounted thereon and automatically responsive to the relative pivotal position between said support bracket and said bearing arm and assuring that said detent lock members are positively engaged in resiliently urged fashion when said bearing arm is in extended position and fully disengaged when said bearing arm is in collapsed position.

3,350,857
VACUUM CLEANER FILTER BAG

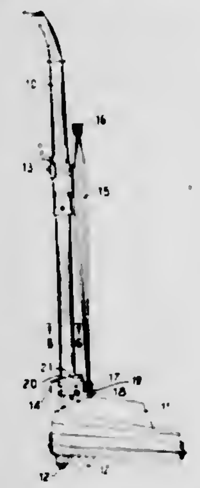
John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., a corporation of New York
Filed June 26, 1964, Ser. No. 378,186
4 Claims. (Cl. 55—363)



1. A vacuum cleaner filter bag comprising an elongated tubular member formed of filter sheet material, the opposite ends of said member being secured together to form said tubular member into substantially elliptical conformation, said tubular member being folded upon itself at said ends and said end folds being secured together to define an air-impermeable seal, and an air inlet aperture defined in said tubular member, said mutually secured ends being disposed adjacent to said aperture, and a hanger element provided on said member, said hanger element being disposed remotely from said mutually secured ends.

3,350,858
UPRIGHT VACUUM CLEANER BAG HOLDER

Edward L. Verhagen, Rahway, N.J., assignor to The Regina Corporation, Rahway, N.J., a corporation of Delaware
Filed Nov. 1, 1966, Ser. No. 591,335
4 Claims. (Cl. 55—376)

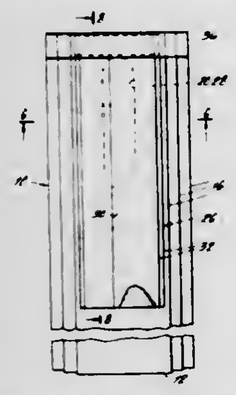


1. In a vacuum cleaner of the class described, means for detachably securing a dust collecting bag thereto comprising

- a handle having a lateral exhaust pipe,
- a shoulder extending upward above the exhaust pipe,
- a dust collecting bag closed at both ends with an intake opening in its side framed by a rigid collar adapted to fit on the exhaust pipe,
- an overhanging and downwardly extending rim on the said rigid collar adapted to interengage with the shoulder on the exhaust pipe,
- a hole in the rigid collar, and
- a spring loaded pin extending outward from the handle and into the hole in the rigid collar.

3,350,859
VACUUM CLEANER FILTER BAG

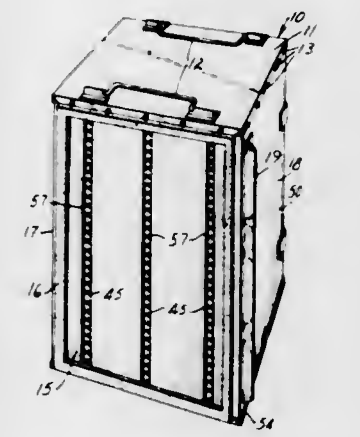
John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., a corporation of New York
Filed Oct. 4, 1965, Ser. No. 492,756
4 Claims. (Cl. 55—380)



1. A vacuum cleaner filter bag comprising in combination a receptacle and a connecting tube, said receptacle being formed of a single sheet of porous paper folded substantially in half along a fold line and adhesively joined along mating abutting edges in face-to-face relationship extending from said fold line to define a receptacle structure having a top defined by a pair of juxtaposed edges of said sheet opposite said fold line, a pair of face walls having sides said sides being defined by said joined edges and a seamless bottom defined by said fold line, said receptacle comprising a plurality of knife pleats adjacent each of said sides, each of said knife pleats extending down one face wall of said receptacle, under said bottom, and up the opposed face wall of said receptacle, one of said face walls being perforated to define an aperture therein; said connecting tube being an elongated paper tube having an open lower end adapted to embrace a vacuum cleaner discharge fitting and an upper end adjacent the top of said receptacle, said connecting tube being perforated to define an aperture registering with said receptacle aperture, said connecting tube being joined to said receptacle by a layer of adhesive interposed between said connecting tube and said receptacle and surrounding said registered apertures, the upper end of said tube and the top of said receptacle being folded together along at least two fold lines generally parallel with the top of said receptacle forming at least a double fold and held in said double-folded configuration.

3,350,860
GAS FILTER

Eugene E. Grassel, Minneapolis, and Donald W. Schoen, St. Paul, Minn., assignors to Donaldson Company, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 15, 1965, Ser. No. 513,956
3 Claims. (Cl. 55—387)



1. A gas filter comprising:

(a) a generally box-like housing having an inlet in at least one side thereof and an outlet in at least a second side thereof and adapted to have a gas flow therethrough;

(b) a plurality of individually removable elements each having side walls with a plurality of perforations through at least a portion thereof, a closed end and an oppositely disposed open end for the movement of relatively large quantities of gas therethrough, said ends and side walls being fixedly connected together in a unitary element to form a gas duct;

(c) means mounting said elements within said housing in parallel spaced apart relationship with a portion thereof having said open ends in communication with said housing inlet and the remainder having said open ends in communication with said housing outlet;

(d) granular filter material filling said housing around said elements so that all gas flowing from said housing inlet to said housing outlet passes through at least a minimum desirable path length of filter material;

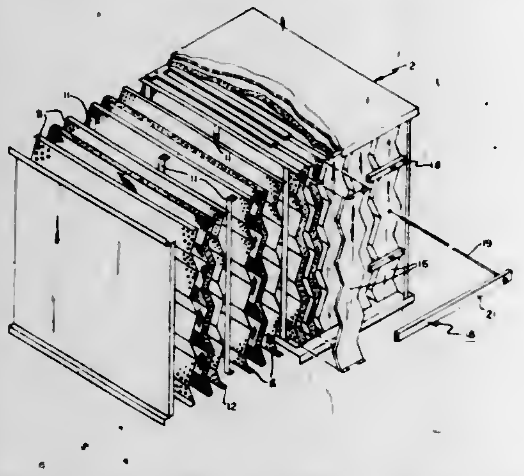
(e) said housing further having an opening with a removable cover thereon in a side other than the sides containing said inlet and said outlet and perpendicular to the plane of the perforated sides of said elements, said opening being adapted for the removal and replacement of said elements and said granular filter material; and

(f) means in juxtaposition to the inner surface of the removable cover for applying a light pressure to said granular filter material to prevent said material from producing voids therein when settling.

3,350,861
PARTICULATE FLUID TREATING FILTER ASSEMBLY

David J. Murphy, Jr., Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

Filed Mar. 30, 1966, Ser. No. 538,700
5 Claims. (Cl. 55—484)



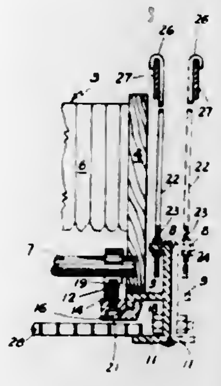
1. A fluid treating filter apparatus comprising: a housing defining a gas treating plenum, said housing having an upstream dirty gas inlet and downstream clean gas outlet; a plurality of spaces substantially rigid perforated plates disposed within said housing to extend substantially thereacross between said dirty gas inlet and clean gas outlet substantially parallel the direction of gas flow through said housing, said plates being of corresponding zig-zag cross section to provide a plurality of side-by-side, nesting, zig-zag chambers extending longitudinally along the direction of gas flow; particulate filter means disposed in and filling alternate ones of said side-by-side chambers to provide a set of particulate filled chambers alternating with a set of unfilled chambers; spaced apart thin spacer-support strips extending substantially thereacross and transverse said chambers to abut against the crests of the plates defining said chambers to maintain said plates in spaced relationship; and means to selectively cover opposite extremities of said side-by-side chambers so that said particulate filled chambers are closed at both ends and said unfilled chambers are successively open and closed along the upstream inlet and downstream outlet respectively in offset relation to permit the gas to be treated to pass through said dirty gas inlet, through said particulate filled chambers, and out said clean gas outlet.

3,350,862
MODULAR SUPPORT FRAME AND FILTER MEDIA ASSEMBLY

Arthur Nutting, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

Filed July 22, 1965, Ser. No. 473,971
9 Claims. (Cl. 55—493)

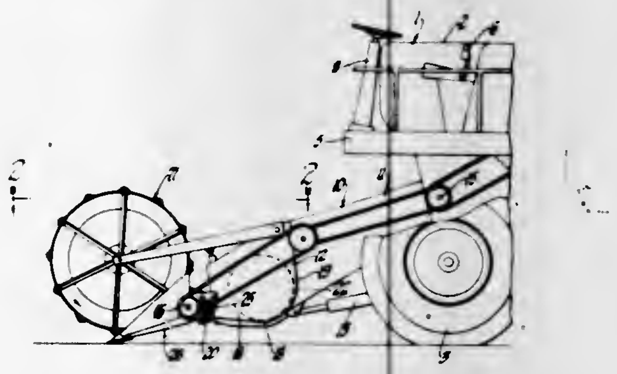
1. An improved gas filter structure comprising: a modular open-ended outer support frame including side walls having extending in a direction substantially normal therefrom an inwardly-turned peripheral ledge; an open-ended filter unit including a filter media supporting border frame having surrounding side walls with filter media means disposed therein, said border frame being of corresponding geometric configuration to said outer support frame and sized to be disposed within said outer support frame so that one edge face of said border frame side walls engages in faced relation against said normally extending inwardly-turned peripheral ledge of said outer support frame; rod suspension means connected at one end to said outer support frame and having connection means at its opposite end for mounting to a superstructure, said rod suspension means including adjusting means to align the position of said outer support frame relative the superstructure to which it is to be connected; said border frame including a hook-receiving member and hook-shaped filter unit retention means cooperable with said hook-receiving member on said border frame holding said edge face of said border frame side walls of said filter unit in fast engagement against said inwardly-turned peripheral ledge of said outer support frame.



3,350,863
CORN HARVESTER

Robert Ashton and James G. Butler, Islington, Ontario, and Myron Leroy Gullickson, Albion Township, Ontario, Canada, assignors to Massey-Ferguson Limited, Toronto, Ontario, Canada

Filed Nov. 5, 1964, Ser. No. 409,135
16 Claims. (Cl. 56—18)

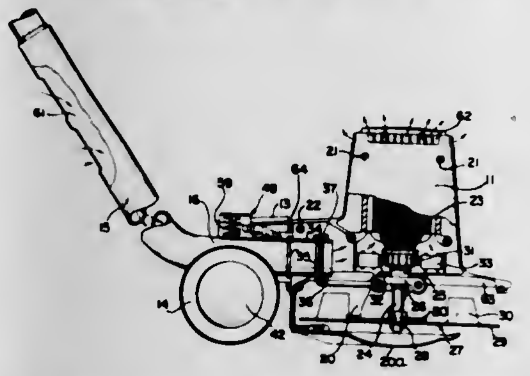


1. A self-propelled corn harvester movable along the axis of a row of corn stalks including a picking unit for removing ears of corn from the standing stalks; gathering means for guiding and feeding the standing stalks into said picking unit, said picking unit including means defining a stripping slot and stalk feeding and snapping means for feeding the stalks from said gathering means into said stripping slot and pulling the stalks through said stripping slot to remove the ears of corn thereform, said stripping slot and snapping means being disposed transversely of the rows of corn and the direction of travel of the harvester, said snapping means including a screw conveyor for feeding the stalks into said stripping slot, at least one radial blade on said screw conveyor extending axially between the conveyor screw flights for engaging the stalks in the stripping slot and pulling them downwardly through the stripping slot, said snapping means further including a stationary plate member extending parallel to the axis of said screw conveyor and having a concave surface substantially concentric with the outer periphery of said screw conveyor for cooperating with said radial blades for pulling the stalks through said stripping slot.

3,350,864
POWER-OPERATED LAWN TRIMMER-EDGER

Martin I. Sheps and Millard C. Fitzgerald, Jr., Baltimore County, Md., and Clyde W. Shuman, Jr., State College, Pa., assignors to The Black & Decker Manufacturing Company, Towson, Md., a corporation of Maryland

Filed Mar. 26, 1965, Ser. No. 442,908
4 Claims. (Cl. 56—25.4)



1. In a power-operated lawn trimmer-edger having a motor housing and further having an elongated handle formed with a cylindrical handle portion received within the motor housing, the improvement in means to rotatably journal the handle portion within the motor housing, which comprises:

(a) said motor housing including a pair of complementary mating halves joined together along a common longitudinal midplane;

(b) each of said mating halves having a pair of spaced-apart semi-annular grooves formed therein;

(c) the grooves in one half cooperating with those in the other half to form a pair of spaced-apart alined annular seats, the axis of which is substantially within the common longitudinal midplane;

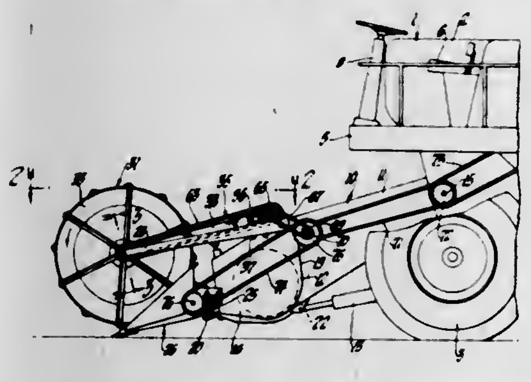
(d) a ring of anti-friction material received in each of said seats, radially between the handle portion and the motor housing, thereby journaling the handle portion in the motor housing; and

(e) means selectively indexing the motor housing in at least two predetermined circumferential positions relative to the handle.

3,350,865
GATHERING UNIT FOR CORN HARVESTERS

Robert Ashton and James G. Butler, Islington, Ontario, and Myron Leroy Gullickson, Albion Township, Ontario, Canada, assignors to Massey-Ferguson Limited, Toronto, Ontario, Canada

Filed Nov. 5, 1964, Ser. No. 409,134
6 Claims. (Cl. 56—119)

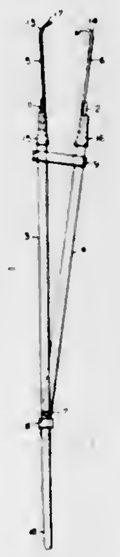


1. A corn harvester including means defining a stripping slot, snapping means for pulling standing corn stalks through said stripping slot for removing the ears therefrom, and gathering means projecting forwardly of said stripping slot and snapping means for directing standing corn stalks into the stripping slot as the harvester advances axially along a row of standing corn characterized by said gathering means comprising a pair of opposed wheels and a plurality of inwardly projecting fingers near the periphery of each of said wheels, the fingers on the opposed wheels moving in circular paths about axes of their respective wheels, said wheels being simultaneously rotatable in a direction to cause the fingers to move toward the stripping slot in the lower portion of their respective paths, and to move away from the stripping slot in the upper portions of their respective paths, said wheels being disposed in converging planes to cause the fingers on the opposed wheels to converge toward each other as they move toward the stripping slot and engage the corn stalks and feed them into the stripping slot.

3,350,866
AUTOMATIC LAWN TONGS

Thomas A. Spencer, 337 Manhattan Ave., Daytona Beach, Fla. 32018

Filed Jan. 18, 1965, Ser. No. 426,033
2 Claims. (Cl. 56—400.12)

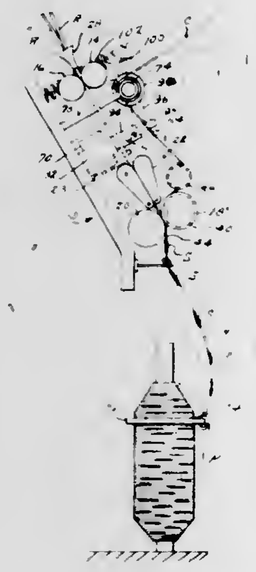


1. A light and inexpensive automatic lawn tong comprising an upper rake-head provided with a socket at one end thereof, an upper group of about one dozen resilient tines extending from the other end of said upper rake-head, said upper group of tines having a slight curvature at their free ends directed downward, a long straight handle attached to the socket of said upper rake-head; a lower rake-head normally aligned and substantially parallel with the upper rake-head and provided with a socket at one end thereof, a lower group of about one dozen resilient tines extending from the other end of said lower rake-head, said lower group of tines also having a curvature at their free ends but directed upward and which intermesh with the upper group of tines, the curvature of said lower group of tines being appreciably greater than the curvature of said upper group of tines so that the effective length of the lower group of tines is appreciably less than that of the upper group of tines, a short straight shaft attached to the socket of said lower rake-head; pivot means joining said handle and said shaft, said pivot being purposely located at a distance from the rake-heads to provide not only for the normal aligned parallel proximity of the two rake-heads previously mentioned, but also to provide for maintaining a proper relationship between the two rake-heads as they automatically separate while raking, and in addition to provide for the user's convenience in the manual separation of the two rake-heads; a restoring spring means interconnecting the handle and the shaft, said spring being of the wrap-around type made from spring tempered

sheet metal, rigidly attached at its two ends to the handle, fitting closely around the shaft, and located near the pivot; and an alignment means of the encompassing type made from sheet metal and rigidly attached at its two ends to the shaft near the rake-head, and providing on its left and right sides a guide for the handle and closed at its top to limit movement.

3,350,867
PROCESS AND APPARATUS FOR MAKING A NOVELTY YARN

Elbert F. Morrison and Raymond D. Joy, Clarksville, Va., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Aug. 24, 1965, Ser. No. 482,221
16 Claims. (Cl. 57—12)

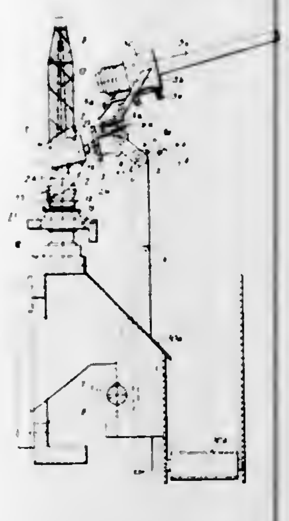


10. Apparatus for producing a novelty yarn having bunches of slub-like formations of staple fibers on a core yarn comprising in combination: a spinning frame having a roving creel, a pair of rear and a pair of front drawing rolls for continuously drafting staple fibers of a roving, a spindle, and a ring and traveler; means for feeding a core yarn from a supply package behind the front rolls and through the same to the spindle; means for selectively stopping the feed of the core yarn intermediate the front rolls and the supply package and while staple fibers of the roving are being continuously drafted between rear and front rolls of the spinning frame; and means operable after said last-mentioned means selectively stops the feed of core yarn for engaging the core yarn and pulling a predetermined length in a reverse direction through the front rolls.

3,350,868
AUTOMATIC DOFFING APPARATUS

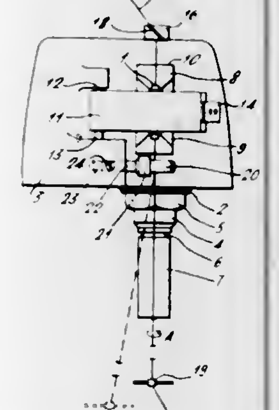
Nikolaus Winter, Bavaria, Germany, assignor to Mechanische Baumwollspinnerei und Weberei, Augsburg, Germany, a corporation of Germany
Continuation of application Ser. No. 309,575, Sept. 17, 1963. This application Sept. 15, 1966, Ser. No. 579,787
Claims priority, application Germany, Feb. 9, 1963, M 55,737
10 Claims. (Cl. 57—52)

1. A doffing apparatus for doffing a cop from a spindle, comprising, in combination, a doffing means having diametrically disposed engaging portions spaced from each other in longitudinal and transverse directions in relation to said spindle and consisting of a flexible resilient material, said engagng portions beng spaced in said transverse direction a distance greater than the diameter of said cop to form an opening for said cop on said spindle; operating means for moving said doffing means between a first position spaced from the end of said spindle and a second position in which said engaging portions are located on opposite sides of said cop spaced from the same in said transverse direction; and means for causing tilting of said doffing means in said second position to a tilted position in which said engaging portions engage and slightly tilt the cop to press the same against said spindle whereby the cop is gripped by said engaging portions of said doffing means, and doffed from said spindle when said doffing means is moved to said first position by said operating means so that the cop releases said spindle whereby the counterpressure exerted by the cop against the gripping pressure of said engaging portions ceases and the cop is released by said doffing means.



3,350,869
APPARATUS RELATING TO FALSE TWISTING

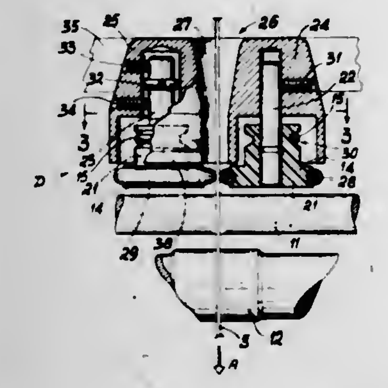
Reginald Selby Gilchrist, London, England, assignor to The Klinger Manufacturing Company Limited, London, England, a British company
Filed July 8, 1965, Ser. No. 470,633
Claims priority, application Great Britain, July 9, 1964, 28,332/64
22 Claims. (Cl. 57—77.3)



1. Apparatus for false twisting yarn including a false twisting device and guide means having at least two guiding portions in contact with which the yarn is caused to pass as it leaves the false twist device, said guiding portions being spaced apart and disposed so that at least one of the guiding portions is offset from the path of the yarn from the false twist device to the first guiding portion whereby the yarn path between the two guiding portions is inclined with respect to the path of the yarn from the false twist device to the first guiding portion and to the path of the yarn as it leaves the second guiding portion.

3,350,870
TEXTILE DRAFTING APPARATUS

Pietro Giuiuzza, Milan, Italy, assignor to Officine Meccaniche Cigardi S.p.A.—O.M.C.S.A., Milan, Italy, a corporation of Italy
Filed July 15, 1964, Ser. No. 382,752
Claims priority, application Italy, July 18, 1963, 14,960/63
3 Claims. (Cl. 57—77.4)



1. A false twisting device for use in combination with a drafting apparatus, said false twisting device comprising a pair of rollers turnably about substantially parallel axes so that the peripheral surface of said rollers define a narrow gap in which a roving is adapted to move in direction parallel to said axes contacted at opposite sides thereof by said peripheral surfaces; drive means cooperating with said rollers for rotating the latter in the same direction about the axes thereof; support means for supporting said pair of rollers turnably about said axes and at least one roller adjustable for changing the width of said gap, said support means including a pair of axles, a stationary member mounting each roller in the region of one end of the respective axle turnably about the latter while preventing said roller from shifting in axial direction, means securing one of said axles in the region of the other end thereof in fixed position to said stationary member, means mounting the other of said axles tiltable about a tilting axis adjacent the other end of said other axle, and a pair of adjustable means engaging said other axle at points spaced from and to opposite sides of said tilting axis to adjust the inclination of said other axle and thereby the width of said gap.

3.350,871
YARN BLEND

Norwin Caley Pierce, Greenville, and Cecil Everett Reese, Kinston, N.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 3, 1964, Ser. No. 387,209
11 Claims. (Cl. 57—140)

1. An improved composite yarn comprising a physical blend of at least two species of filaments having different shrinkabilities, at least one species being a polyester partly crystalline in stable conformation not greater than 90% of the length of its fully extended molecular conformation, and at least one other species being one which is more extended in its crystalline conformation than the first species in the resulting composite yarn.

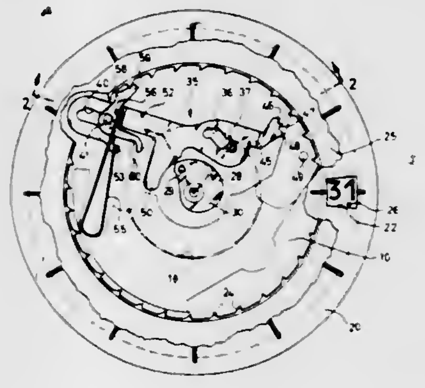
3,350,872
PROCESS FOR YARN PRODUCTION FROM ACRYLIC FIBERS

Adly Abdel-Moniem Gorrafa, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 8, 1965, Ser. No. 512,522
4 Claims. (Cl. 57—157)

1. In the process of making yarn from fiber blends of staple length fibers of at least two different species of fibers, in which the species of fibers are thoroughly blended and then processed by being spun into a yarn, the method of providing relatively higher strength in the yarn produced comprising forming the blend from about 30 to 75 percent by weight of an essentially straight monocomponent acrylic fiber, and about 70 to 25 weight percent of a helically crimpable bicomponent acrylic fiber having a tenacity at least equal to the tenacity of the straight fiber, the length of the helically crimpable fiber being 105 to 125 percent of the length of the straight fiber when measured under a tension just sufficient to remove crimp, heating the blend of fibers sufficiently to crimp the bicomponent fibers to 10 to 18 crimps per inch, and spinning the resulting blend of fibers to a yarn.

3,350,873
DATE INDEXING

Josef Egger and Heinz Meltinger, Pforzheim, Germany, assignors to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Filed July 12, 1966, Ser. No. 565,359
Claims priority, application Germany, Aug. 25, 1964, U 10,981
14 Claims. (Cl. 58—4)



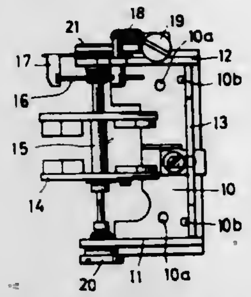
1. In a watch having a frame plate, a calendar mechanism comprising: a rotatable flat date ring journaled in the frame plate and having consecutive figures 1–31 printed on its top face, a plurality of teeth on its circumference, and at least one printed mark to indicate A.M. or P.M. between each of the said figures; a rotatable cam adapted to be driven by the wheels of the watch; a lever journaled on the frame plate and having two teeth to act upon each tooth of the date ring; a spring pushing the lever against the cam and compressed by rotation of the cam against the lever; wherein the spring acts upon a locking lever, the locking lever is journaled on the frame plate, and the locking lever has a first tooth holding portion, a second tooth holding portion and a third tooth holding portion, the distance between the first and second portions being greater than the distance between the second and third, whereby alternate advances of the date ring for the same time period are relatively long and short distances.

3,350,874
MOVEMENT REGULATING ASSEMBLY FOR TIMEPIECES

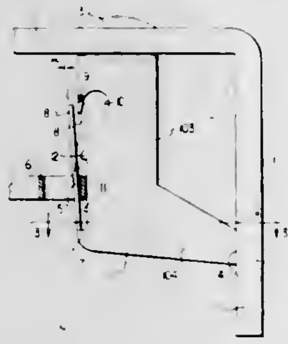
Robert Wolber, Lauterbach, Holzle, Germany, assignor to Gebruder Junghans Aktiengesellschaft, Schrambeig, Wurttemberg, Germany, a corporation of Germany
Filed Nov. 10, 1964, Ser. No. 410,072
Claims priority, application Germany, Nov. 29, 1963, J 12,197
3 Claims. (Cl. 58—52)

1. Balance structure particularly for electric clock works comprising an independent bearing frame, and a

balance shaft mounted vertically in the bearing frame, said bearing frame with its balance shaft being independently separable as a unit from the clock works and adapted to be secured to the clockworks.



3,350,875
TIMEPIECE REGULATOR
Roland Siefert, Bad Durrheim, and Norbert Knauer, Trossingen, Germany, assignors to Kienzle Uhrenfabriken G.m.b.H., Schwenningen am Neckar, Germany, a limited-liability company of Germany
Filed Sept. 8, 1965, Ser. No. 485,696
5 Claims. (Cl. 58—109)



1. A regulator for a timepiece or clock work having a hair-spring comprising a regulator arm extending radially outwardly past portions of the hair-spring for adjustment turning and a key fast on the arm, said key being comprised of plastic and including a relatively massive body portion fast on the arm having a shallow groove opening inwardly toward the hair-spring to receive a portion of the hair-spring, the key having a springy thin narrow strip fast on the body at a portion adjacent the groove and extending over the latter and normally slightly inwardly in the direction of the arm to have a free end slightly remote from the body, said body being provided with a detent means adjacent said free end for holding the latter radially outward from its normal position to hold the strip in a bent position to curb the hair-spring, whereby when the strip is in normal position the hair-spring may be inserted between the strip and body and into the slot and the strip be bent and detained in bent and curbing position by the detent means.

3,350,876
INTERNAL COMBUSTION ENGINE PLANT
Roy W. P. Johnson, 382 Riversville Road, Greenwich, Conn. 06830
Filed Jan. 19, 1966, Ser. No. 521,585
6 Claims. (Cl. 60—11)

1. An improved internal combustion engine plant cooled by liquid, comprising in combination,

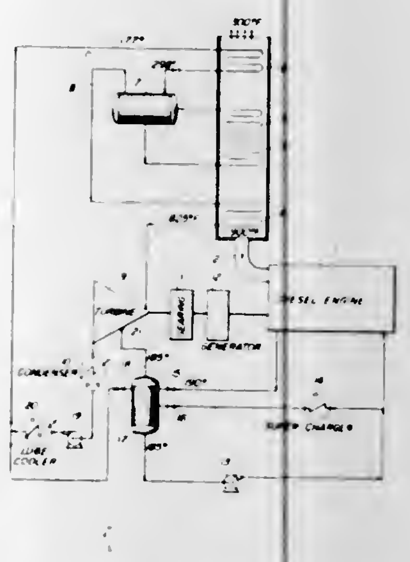
(a) a waste heat boiler, vapor superheater, and boiler feed liquid heater,

(b) means for passing exhaust gases from the internal combustion engine counter-currently over the superheating, boiling, and liquid heating elements whereby vapor under pressure is produced and superheated,

(c) means for transforming a portion of the engine cooling liquid into vapor,

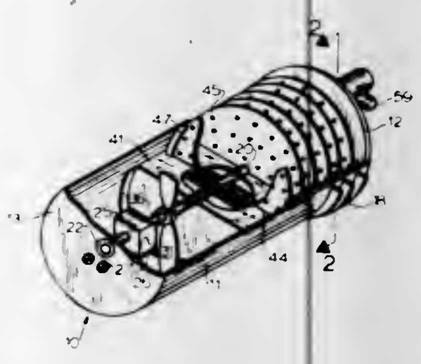
(d) a vapor turbine with a high pressure inlet connected to the exhaust generated and superheated vapor,

(e) means for introducing at an intermediate point in the turbine the vapor produced, the point of introduction being chosen so that the vapor when admixed with the partially expanded superheated vapor in the turbine will result in a vapor superheat sufficient so that at normal, low pressure exhaust of the turbine, no substantial condensation of liquid takes place, and



(f) means for condensing turbine exhaust vapor to liquid at a temperature to produce turbine exhaust pressures and means for recirculating a part of said condensate through the liquid feed heating elements of the exhaust gas heated vapor generator and then into the vapor generating portion thereof.

3,350,877
FILTER MUFFLER
Hyman D. Bowman, Box 735, Raleigh, N.C. 27602
Filed Oct. 6, 1965, Ser. No. 493,453
3 Claims. (Cl. 60—30)



1. In combination with an exhaust pipe for expelling exhaust gases from an internal combustion engine into the atmosphere, an exhaust filter muffler comprising:

(a) an elongated cylindrical housing having an inlet end joined to said exhaust pipe for delivering exhaust gases into said housing and an outlet end disposed from said inlet end and connected to said exhaust pipe for conveying said exhaust gases from said housing to said atmosphere;

(b) partition means mounted in said housing and effective to divide said housing into a first chamber being partially defined by said inlet end and into a second chamber being partially defined by said outlet end, said partition means having an opening for allowing said exhaust gases to pass from said first chamber to said second chamber;

(c) baffle plate means perpendicularly mounted in the lower portions of said housing between said partition means and said inlet end, said baffle plate means effective to divide said first chamber into a first compartment being partially defined by said baffle plate means and said inlet end and a second compartment being partially defined by said partition means and said baffle plate means;

(d) a liquid partially filling said first compartment;

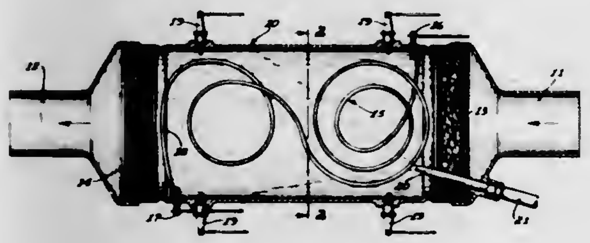
(e) a shaft rotatably mounted in said inlet and said outlet ends and having a common axis with said cylindrical housing;

(f) a plurality of perforated discs perpendicularly and rigidly mounted on said shaft for rotation therewith on said shaft to extend in said first and second compartments of said first chamber with the selected ones of said discs associated with said first compartment being partially submerged in said liquid, said discs having a diameter substantially equal to the diameter of said cylindrical housing;

(g) a propeller securely mounted on said shaft for rotation therewith in said second chamber, said propeller being substantially adjacent said partition means whereby upon the rotation of said propeller a pressure differential between said first and second chambers is created which causes said gases to flow through said housing; and

(h) a motor securely mounted in said second chamber and adapted to drive said shaft upon the energization thereof whereby the lower portions of said perforated discs are continuously bathed in said liquid while the wetted upper portions thereof are in continuous association with said incoming exhaust gases.

3,350,878
CARBON MONOXIDE BURNER FOR AUTOMOBILE EXHAUST
Eunice F. Lambert, 65 W. Encanto Blvd., Phoenix, Ariz. 85003
Filed Mar. 21, 1966, Ser. No. 535,772
2 Claims. (Cl. 60—30)



1. A carbon monoxide burner for the exhaust of an internal combustion engine comprising in combination:

(a) an enlarged cylindrical housing,

(b) a reduced intake opening at one end of said housing,

(c) a reduced outlet opening at the other end of said housing,

(d) a check baffle within said housing adjacent said intake opening,

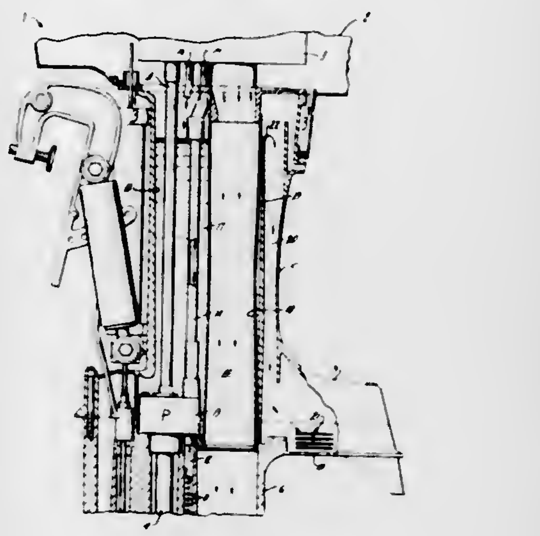
(e) a heat exchange baffle within said housing adjacent said outlet opening,

(f) a heating coil in said housing located between said baffles,

(g) a plurality of spark plugs having their active points within said housing between said baffles, and

(h) air jet means on said housing discharging downstream within the area between said baffles.

3,350,879
INSULATED OUTBOARD MOTOR HOUSING
Robert A. Boda and Delhardt K. Kollman, Oshkosh, Wis., assignors to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Delaware
Filed Sept. 1, 1964, Ser. No. 393,602
4 Claims. (Cl. 60—31)



4. In an outboard motor having a power head with a water-cooled internal combustion engine therein:

(a) a lower unit including a hollow housing extending downwardly from said power head and forming a closed-bottom chamber,

(b) means for introducing cooling water into said engine and for circulating said water therethrough,

(c) means for discharging said water from said engine downwardly into said chamber to fill the same,

(d) water outlet means disposed in said lower unit below the top of said chamber,

(e) overflow means disposed between top of said hollow housing and said outlet means,

(f) passage means disposed in said housing and connecting said overflow means with said outlet means for conducting water which has overflowed from said chamber downwardly to said outlet means,

(g) and an exhaust passageway extending downwardly from said engine through said chamber, with said passageway being spaced from said water outlet means and from said overflow means and said passage means.

3,350,880
GAS TURBINE COMBUSTION ENGINE FUEL CONTROL
Howard L. McCombs, Jr., South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 484,896
13 Claims. (Cl. 60—39.28)

1. Fuel control apparatus for a combustion engine having a combustion chamber, said fuel control apparatus comprising:

a control lever for controlling the operation of the engine;

a source of pressurized fuel;

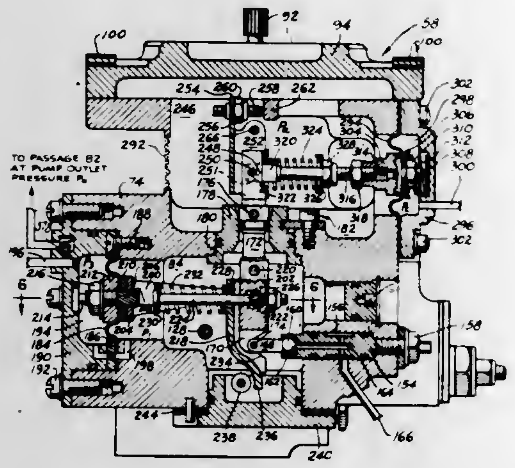
a fuel conduit connected to supply pressurized fuel from said source to the combustion chamber;

governor means including a valve in said conduit responsive to the position of said control lever and engine speed for controlling fuel flow to maintain a selected engine speed;

first valve means operatively connected to said fuel conduit for controlling the fuel pressure in said conduit and thus the flow of fuel therethrough;

second valve means responsive to a first variable condition of engine operation affecting engine power output operatively connected to said fuel conduit downstream from said governor valve for controlling fuel flow as a function of said variable condition;

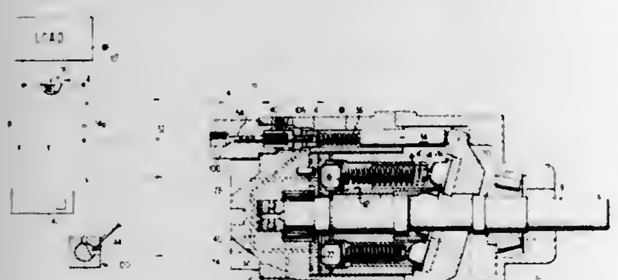
control means including fluid pressure responsive means responsive to the fuel pressure differential across said governor valve and said second valve means operatively connected to said first valve means for actuating the same, means responsive to a second variable condition of engine operation affecting engine power output operatively connected to said first valve means for actuating same in opposition to said fluid pressure responsive means, and means responsive to a third variable condition of engine operation affecting engine power output operatively connected to said first valve means for modifying the effect of said secohd condition responsive means on said first valve means;



said fuel flow through said fuel conduit being controlled by said first valve means, respectively, as a function of said first and second variable conditions of engine operation during governing operation at a selected engine speed as well as an acceleration to a selected higher speed.

3,350,881
CONSTANT DELIVERY PUMP SYSTEM

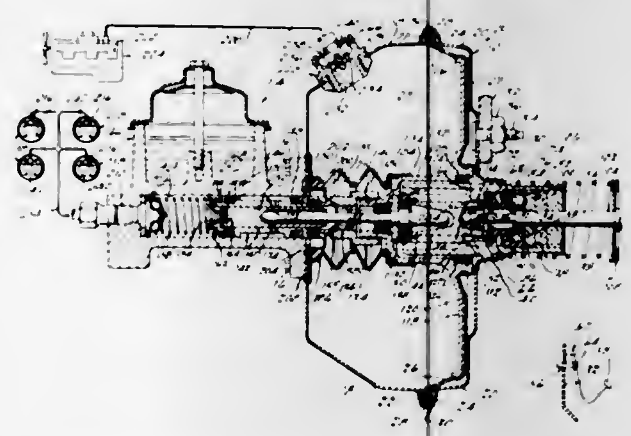
Michael A. D'Amato, West Des Moines, Iowa, assignor to Delavan Manufacturing Company, West Des Moines, Iowa, a corporation of Iowa
Filed Jan. 13, 1966, Ser. No. 520,336
5 Claims. (Cl. 60—52)



1. In combination, a variable delivery pump adapted to be connected through an output delivery line to a work load and adapted to receive fluid from a reservoir, orifice means in the output delivery line establishing a pressure drop therein, said pump being of the type having control plunger means responsive to fluid pressure in a cylinder therefor of greater than a predetermined force for adjusting said delivery in a direction tending to increase output of said pump and being responsive to fluid pressure in said cylinder of less than said predetermined force for moving said control plunger means in a direction tending to decrease delivery of said pump, casing, conduit and control valve means, said control valve means being movable between first and second positions respectively for alternatively connecting said cylinder to the output delivery line upstream of said orifice means and for venting said cylinder to said reservoir, said control valve means including first piston surface means and a first chamber therefor, said first piston surface means facing in a direction such that pressure of fluid in said first chamber tends to move said control valve towards said second position, conduit means establishing a permanent fluid connection between said output delivery line upstream of said orifice means and said first chamber, second piston surface means and a second chamber therefor, said second piston surface means facing in a direction such that pressure of fluid in said second chamber tends to move said control valve means towards said first position, and conduit means establishing a fluid connection between said second chamber and said output delivery line downstream of said orifice means.

3,350,882
VEHICLE BRAKING SYSTEM

Maurice B. Leising, Clawson, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Oct. 6, 1964, Ser. No. 401,773
11 Claims. (Cl. 60—54.6)

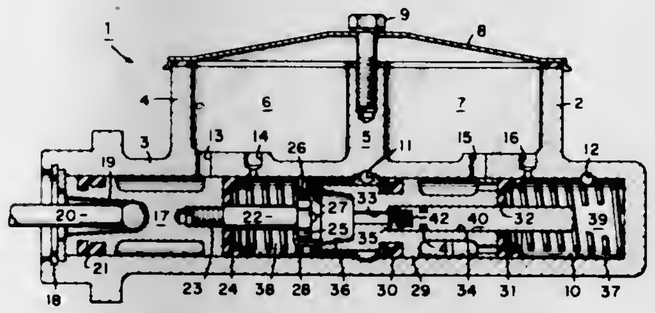


1. In a hydraulic power brake system including power means operative in response to operator depression of a manual control device to develop hydraulic line pressure and means for applying a force to said control device in a direction to oppose said depression, the improvement wherein said applying means comprises:

(A) means generating a reaction force which increases with increasing line pressure; and
(B) means receiving said reaction force and operative
  (1) up to a first predetermined value of the reaction force, to transmit no reaction force to said control device,
  (2) between said first predetermined value and a second, higher, predetermined value, to transmit to said control device a given finite percentage of each received increase in the reaction force, and
  (3) beyond said predetermined value, to transmit to said control device a higher percentage of each received increase in the reaction force;
(C) said braking system further including a rigid frame structure mounting said power means for movement relative thereto; and
(D) said operative means is further operative between said predetermined values to transmit to said frame structure the percentage of each increase in the reaction force not transmitted to said control device.

3,350,883
TANDEM MASTER CYLINDER

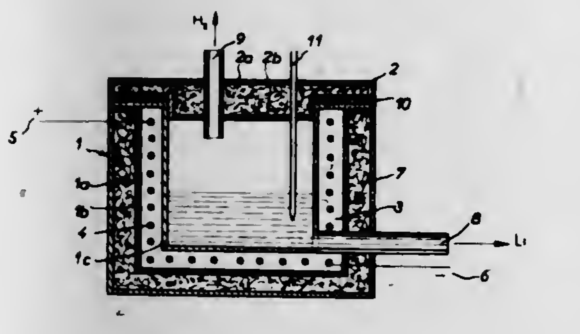
John H. Rohlfs, Berkeley, Mo., assignor, by mesne assignments, to Wagner Electric Corporation, a corporation of Delaware
Filed Jan. 26, 1966, Ser. No. 523,212
9 Claims. (Cl. 60—54.6)



1. A tandem master cylinder comprising a housing, a pair of fluid pressure generating means movable in said housing and defining therewith a pair of fluid pressure chambers, one of said fluid pressure generating means being movable in response to an applied force to establish fluid pressure in one of said chambers, the other of said fluid pressure generating means being movable in response to the established fluid pressure in said one chamber to establish another fluid pressure in the other of said chambers, and equalizing means movable in said other fluid pressure generating means between said one and other chambers in response to the first named and other established fluid pressures to substantially equalize the magnitudes thereof.

3,350,884
PROPELLENT SUPPLY TO ELECTRO-THERMIC EJECTORS

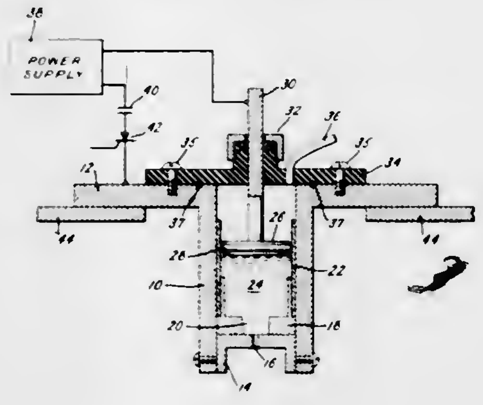
Don Pierre Louis Jean Colombani, Versailles, and Franck Guillaume Michel Ferrie, Cachan, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Aug. 5, 1964, Ser. No. 387,702
Claims priority, application France, Aug. 19, 1963, 945,032
11 Claims. (Cl. 60—203)



1. A method of supplying propellent to an electrothermic ejector, said method comprising the steps of: storing a nongaseous fluid substance of relatively high specific mass and capable of decomposing into at least one constituent of low molecular weight in the liquid state and one constituent of low molecular weight in the gaseous state; effecting the decomposition of said substance into said constituents; separating the constituent in the liquid state from the constituent in the gaseous state; and introducing separately as propellent into said electro-thermic ejector, the constituent in the liquid state on the one hand and the constituent in the gaseous state on the other.

3,350,885
FLUID METAL VAPORIZER

Harold E. Hall, King of Prussia, and Thomas W. Karras, Devon, Pa., assignors to General Electric Company, a corporation of New York
Filed Mar. 8, 1966, Ser. No. 532,737
2 Claims. (Cl. 60—203)



1. A controllable metering source of vapor of a metal stored in a liquid condition comprising:

(1) a storage chamber for containing a bulk store of liquid metal;
(2) pressure means connected to the storage chamber for maintaining pressure in liquid metal stored therein;
(3) a metering chamber connected to the storage chamber for receiving under pressure a volume of liquid metal to be vaporized;
(4) capillary exit means leading from the metering chamber, sufficiently narrow to restrain by virtue of surface tension from passage therethrough liquid metal from the storage chamber, under pressure provided by said pressure means;
(5) controllable electrical energy means for applying electrical energy to liquid metal stored in the said storage chamber to vaporize the same and expel it through the capillary exit means.

2. A device as claimed in claim 1, in which:

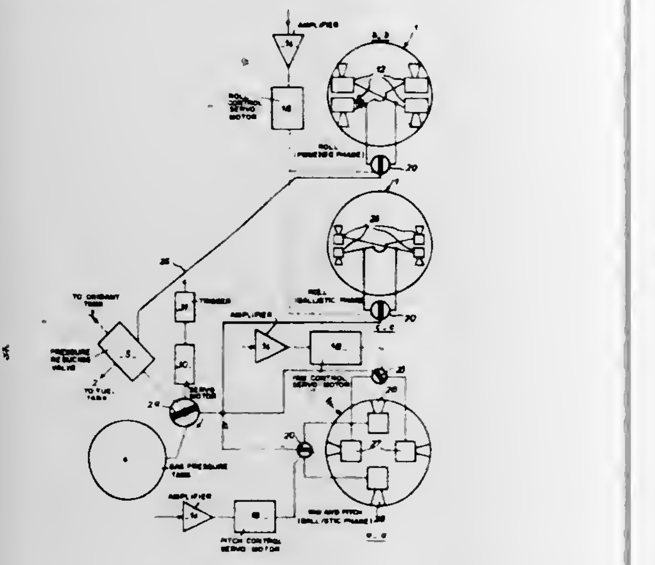
(6) the therein said capillary exit means comprises a first electrical connection to the therein said controllable electrical energy means, and
(7) the therein said metering chamber is connected with a second electrical connection to the therein said controllable electrical energy means.

3,350,886
PROCESS AND DEVICE FOR STABILIZING AND GUIDING A ROCKET-PROPELLED BALLISTIC VEHICLE

Roger Adrien Feraud, Bourg-la-Reine, and Jean Paul Joseph Jardinier, Vitry-sur-Seine, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Paris, France
Filed Oct. 21, 1965, Ser. No. 500,078
Claims priority, application France, Oct. 22, 1964, 992,324
9 Claims. (Cl. 60—204)

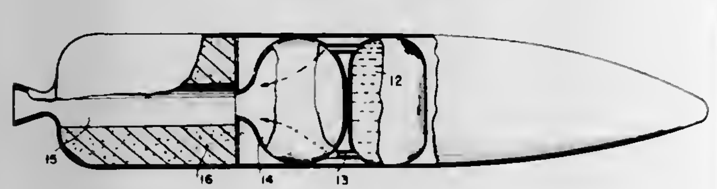
1. A method for controlling and stabilizing a sounding rocket or like missile having a jet propulsion nozzle designed to produce a propelling jet for said missile, a first set of a plurality of nozzle means designed to produce reaction torques about the roll, pitch and yaw axes of said missile, and a second set of a plurality of nozzle means separate and distinct from the nozzle means of said first set but also designed to produce reaction torques about said axes, said method comprising the steps of activating said jet propulsion nozzle to cause said missile to travel along a powered course, leaving inactive said jet pro-

pulsion nozzle to cause said missile to travel along an unpowered course, selectively activating the nozzle means belonging to said first set while leaving inactive the nozzle means belonging to said second set during said powered course of said missile, and selectively activating the nozzle means belonging to said second set while leaving inactive the nozzle means belonging to said first set during said unpowered course.



3,350,887
TWO-STAGE ROCKET PROPULSION SYSTEM

Heimbert Leunig, Essen-Bredeney, Rudolf Meyer, Essen, and Eberhard Buchner, Walkdraiburg, Germany, assignors to Wasag-Chemie, A.G., Essen, Germany, a corporation of Germany
Filed Mar. 6, 1964, Ser. No. 350,050
Claims priority, application Germany, Mar. 9, 1963, W 34,077
3 Claims. (Cl. 60—251)

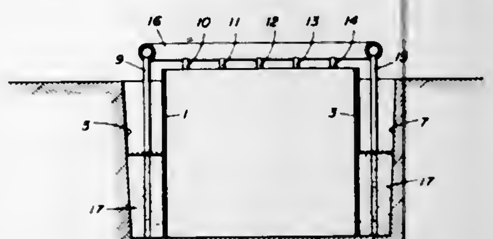


2. A two-stage propulsion system in combination comprising a source of substantially oxygen-free, thermally decomposable aluminum borohydride propellant, a thermal decomposition chamber and means to provide the activation energy for decomposition of the propellant wherein the said propellant is thermally decomposed to generate a propulsion gas, means connecting the source of said propellant and the thermal decomposition chamber, means for passing the propulsion gas from the thermal decomposition chamber to a combustion chamber, said combustion chamber provided with solid nitrosyl perchlorate as an oxidizer which reacts with the propulsion gases and a nozzle means connected to the combustion chamber to discharge and expand the oxidized propulsion gas.

3,350,888
METHOD OF INCREASING STRENGTH OF FROZEN SOIL

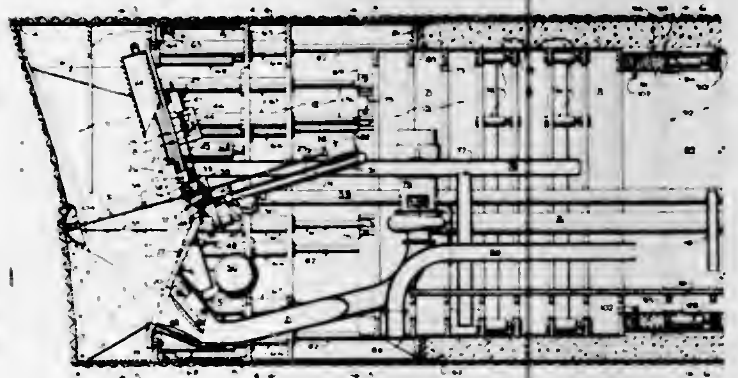
Adam L. Shrier, Orange, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed July 20, 1965, Ser. No. 473,427
5 Claims. (Cl. 61—36)

1. A method of increasing the strength of a frozen soil composition comprising mixing soil with a fibrous filler in a ratio of soil to filler in the range of from about 100:1 to 1:20 to increase the strength of the resulting composition, adding a liquid to the soil-filler admixture in an amount at least sufficient to saturate said admixture, and freezing the saturated admixture.



3,350,889
APPARATUS FOR DRIVING AND LINING TUNNELS IN UNSTABLE SOIL

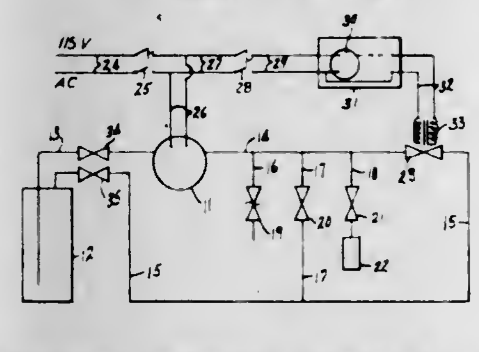
Karl Sturm, 499 Ventura Crescent, North Vancouver, British Columbia, Canada
Filed Mar. 25, 1965, Ser. No. 442,677
Claims priority, application Canada, Apr. 15, 1964, 900,389, Patent 715,426
18 Claims. (Cl. 61—85)



1. A tunnelling machine adapted to cut and remove soil or soft rock, support the surrounding soil or soft rock of the unlined bore hole, airtightly isolate the face of the bore hole from the rear of the bore hole and provide forms and curing facilities for the permanent concrete lining as the tunnelling machine moves forward, the said tunnelling machine comprising a rigid leading tube shaped to the outside dimensions of the permanent concrete tunnel lining and furnished with a cutting edge at its front end, a second rigid tube shaped to the same dimensions slidably overlapped at its forward end by the tail end of the said leading tube and extending rearwardly beyond the front face of the permanent concrete tunnel lining providing temporary support for the surrounding soil or soft rock of the bore hole, a third rigid tube shaped to and constituting a slipform for the permanent concrete tunnel lining projecting forwardly from the front face of the said concrete tunnel lining and extending rearwardly into the finished lined tunnel at which the rearward portion is slightly smaller in its cross-sectional area thus providing a space between the inner face of the said concrete tunnel lining and the said slip-form for injecting high pressure steam as a curing agent, a rigid bulkhead ring slidably located between the rear end of the second tube and the forward end of the third tube constituting a form for the front face of the permanent concrete tunnel lining and providing a bearing surface for the jacking mechanisms after the said space is filled with concrete, a plurality of jacking mechanisms for the advancement of the second tube mounted peripherically thereon and detachably connected to and bearing on the said bulkhead ring, another plurality of jacking mechanisms for the advancement of the leading tube peripherically mounted thereon and bearing on the second tube while the latter is held in place by the first mentioned jacking mechanisms, a further plurality of jacking mechanisms for the advancement of the third tube, detachably connected thereon and supported by the second tube, a closed airtight shield detachably mounted near the tail end of the leading tube isolating the face of the bore hole from the rearward portion of the tunnel, a variety of mining equipment mounted to and penetrating the said shield to cut soil and soft rock in front of the said shield, a hydraulic dredging mechanism, connected to a rigid pipe penetrating and advancing with the said shield, a collecting hopper attached to a second pump located rearwardly from the tail end of the third tube receiving the effluent from the first pump the second pump being connected with a stationary discharge line leading to the disposal facilities, a water supply pipe rigidly connected to the leading tube and flexibly connected to a stationary water supply pipe rearwards of the third tube supplying water to the bore hole forward of the said shield for hydraulic removal of the excavated material, and a concrete supply line connected to the front end of the third tube for conveying concrete to the space behind the said bulkhead ring.

3,350,890
PROCESS FOR TRANSFERRING LIQUEFIED GASES

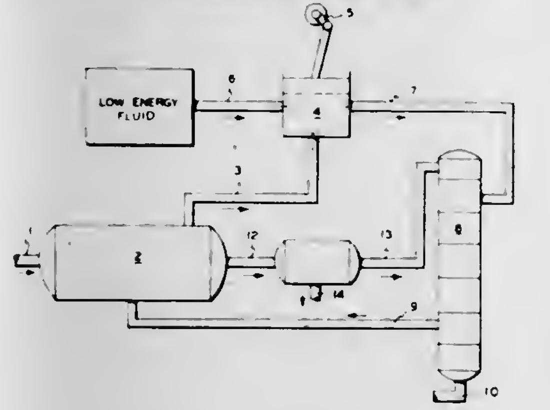
Louis T. Cope, Atlanta, Ga., assignor to Olin Mathieson Chemical Corporation
Filed Jan. 5, 1966, Ser. No. 518,920
3 Claims. (Cl. 62—45)



1. Method for transferring liquefied gas from a storage container to a receiving container by (1) pumping said liquefied gas at a pressure exceeding the pressure in said storage container into said receiving container for a period of from 1 to 30 seconds, (2) discharging vaporized gas from said receiving container into said storage container for a period of from 1 to 30 seconds and repeating said (1) pumping and said (2) discharging until said receiving container is filled wtih liquefied gas.

3,350,891
FREEZE CONCENTRATION PROCESS

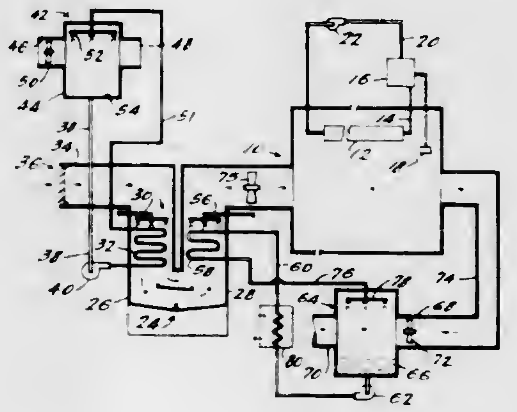
John W. Pike, New Rochelle, N.Y., assignor to Struthers Scientific and International Corporation, a corporation of Delaware
Filed June 5, 1964, Ser. No. 372,784
9 Claims. (Cl. 62—58)



1. In a continuous freeze concentration process wherein an aqueous solution is intimately contacted with a vaporizing, water-immiscible, liquid refrigerant causing a portion of the water in the solution to freeze and the said refrigerant to vaporize, and wherein the vaporized refrigerant is compressed, condensed and reused as the said refrigerant liquid, the improvement which comprises raising the energy of said refrigerant vapor by injecting into said refrigerant vapor just prior to being compressed a minor amount of a fluid selected from the group consisting of steam and water at at temperature of at least about 80° F.

3,350,892
TWO-STAGE AIR CONDITIONING SYSTEM

Gilbert A. Kelley, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed Apr. 4, 1966, Ser. No. 539,869
12 Claims. (Cl. 62—94)



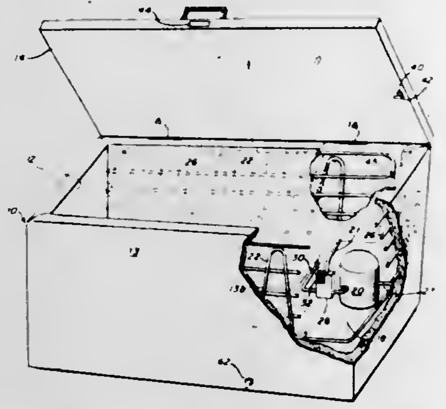
1. A method of conditioning air for a space which is to be cooled by artificially-cooled surfaces therein, said method comprising cooling water outside the space by spraying the water through outside air, passing the water through a first coil, spraying hygroscopic liquid over said coil, directing air to be conditioned past said coil, collecting the hygroscopic liquid in a first sump below the coil, exhausting air from the space, cooling additional water by spraying the additional water through the exhausted air, passing the additional water through a second coil, spraying hygroscopic liquid over said second coil, directing the air to be conditioned past the second coil after passing said first coil, collecting the hygroscopic liquid from the second coil in a second sump, collecting some of the hygroscopic liquid from the first coil and supplying it to said second sump, regenerating the hygroscopic liquid, and directing the air to be conditioned to the space after passing said second coil.

3,350,893
CONTROL FOR HOT GAS DEFROST SYSTEM

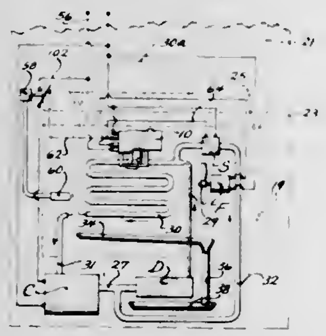
John F. Cable, Galesburg, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 17, 1966, Ser. No. 520,997
4 Claims. (Cl. 62—126)

1. In combination with a refrigerator cabinet having walls defining a food storage compartment provided with an access opening therein, a movable door for opening and closing said access opening, a cooling element in thermal contact with said walls, refrigerating apparatus for normally maintaining said walls at a temperature substantially below the freezing point of water; defrost valve means integral with said refrigerating apparatus for modifying said apparatus to heat said walls; control means actuating said defrost valve means for selectively initiating or terminating modification of said refrigerating apparatus; said control means mounted in said door in a position for manual operation when said door is open, and in a position of interference with one of said cabinet

walls upon closing said door, said position of interference terminating modification of said refrigerating apparatus; means indicating the operational mode of said refrigerating apparatus, and temperature responsive means automatically deactuating said defrost valve means for terminating modification of said refrigerating apparatus upon the temperature of said walls rising above the freezing point of water.

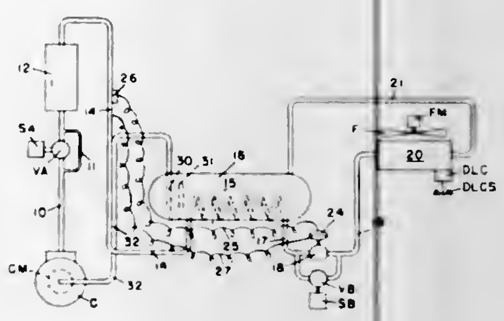


3,350,894
CONTROL DEVICE FOR REFRIGERATION SYSTEM
Robert Henry Thorner, 8750 W. Chicago Blvd.,
Office "F", Detroit, Mich. 48204
Filed June 9, 1964, Ser. No. 373,762
44 Claims. (Cl. 62—140)



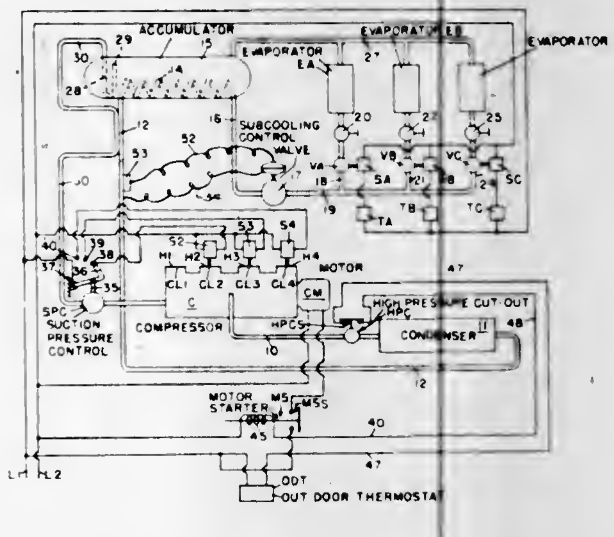
1. In a control device for a mechanism having a surface subject to the formation thereon of a solid but meltable material said mechanism including a source of energy supplied thereto in normal operation thereof, the combination of; control means for effecting a change in the quantity of said material forming on said surface, initiating means to periodically cause operation of said control means when said material has formed to an undesirable quantity on said surface, said intiating means including, power means having a movable element affected by said energy source to provide a small pulsating input power force, force-amplifying means operated by said input force of said power means to integrate and store said energy over a period of time for providing an amplified output force substantially larger than said input power force available to cause operation of said control means, and said amplifying integrating means including means to release said stored energy after said period of time to produce said amplified output force for operating said control means, said power means including energizing means mounted near said movable element and supplied by said source of energy for causing reciprocating movements of said movable element and simultaneously said pulsating input forces, means to regulate the amount of said energy to said energizing means and operated by said element to reduce said energy to said energizing means after same has been energized and to increase said energy to said energizing means after same has been de-energized for producing said reciprocating movements of said element and said input forces to operate said integrating means.

3,350,895
DEFROST MEANS FOR NON-REVERSIBLE REFRIGERATION SYSTEMS
James R. Harnish, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 11, 1966, Ser. No. 519,878
7 Claims. (Cl. 62—197)



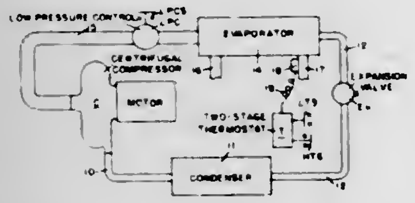
1. In a refrigeration system including a refrigerant compressor, a condenser connected to the discharge side of said compressor, accumulator means, a heat exchange coil arranged to heat liquid within said accumulator means connected to said condenser, an expansion valve connected to said coil, an evaporator connected to said expansion valve and to said accumulator means, and a suction gas tube connecting said accumulator means to the suction side of said compressor, the combination of a normally closed valve connected across said expansion valve, and means for opening said normally closed valve when defrosting of said evaporator is required.

3,350,896
MULTIPLE EVAPORATOR REFRIGERATION SYSTEMS
James R. Harnish, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 11, 1966, Ser. No. 519,877
7 Claims. (Cl. 62—200)



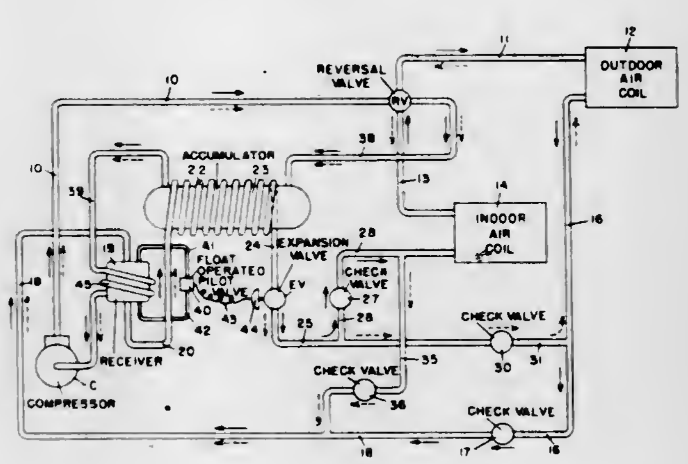
1. A refrigeration system comprising a refrigerant compressor, a condenser, accumulator means, a heat exchange coil arranged to heat liquid within said accumulator means, an expansion valve, a discharge gas tube, connecting the discharge side of said compressor to said condenser, a liquid tube connecting said condenser to said coil, a third tube connecting said coil to the inlet of said expansion valve, a fourth tube connected to the outlet of said expansion valve, a fifth tube connected to said accumulator means, first and second fluid cooling evaporators connected at their outlet ends to said fifth tube, a suction gas tube connecting said accumulator means to the inlet of said compressor, a tube containing a first valve connecting the inlet end of said first evaporator to said fourth tube, a tube containing a second valve connecting the inlet end of said second evaporator to said fourth tube, a first thermostat responsive to the temperature of the fluid cooled by said first evaporator, means including said thermostat for opening said first valve when said first thermostat calls for cooling, a second thermostat responsive to the temperature of the fluid cooled by said second evaporator, means including said second thermostat for opening said second valve when said second thermostat calls for cooling, and means for adjusting said expansion valve to supply refrigerant from said coil into said fourth tube at the rate at which refrigerant is condensed in said condenser.

3,350,897
CONTROLS FOR CENTRIFUGAL COMPRESSORS HAVING SPIN VANES IN THEIR INLETS
Robert L. Plaster, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 11, 1966, Ser. No. 519,876
10 Claims. (Cl. 62—209)



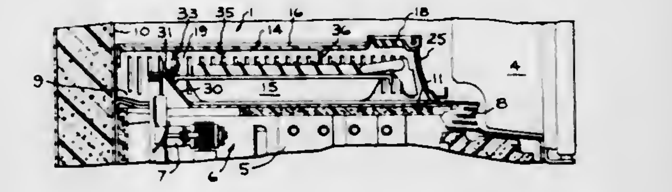
1. A refrigeration system comprising a centrifugal refrigerant compressor, a condenser, an expansion valve and an evaporator connected in a refrigeration circuit, said compressor having an axial suction gas inlet, spin vanes in said inlet, means forming a cylinder passage, means including a piston slidable in said passage for rotating said vanes towards open or closed positions, said passage having a first portion into which fluid under pressure is applied to move said piston in one direction to rotate said vanes towards open positions, said passage having a second portion into which fluid under pressure is applied to move said piston in the opposite direction to rotate said vanes towards closed positions, a compressed fluid supply tube, a fluid return tube, a first two-way valve connected to said tubes and to said first passage portion, a second two-way valve connected to said tubes and to said second passage portion, said first valve in a first position routing fluid from said supply tube into said first passage portion, and in a second position routing fluid from said first passage portion into said return tube, said second valve in a first position routing fluid from said supply tube into said second passage portion, and in a second position routing fluid from said second passage portion into said return tube, means including a first solenoid coil for adjusting, when energized, said first valve to its said second position, and for adjusting when deenergized, said first valve to its said first position, means including a second solenoid coil for adjusting, when energized, said second valve to its said second position, and for adjusting, when deenergized, said second valve to its said first position, said coils being normally deenergized, a thermostat having a low temperature switch and having a high temperature switch with a dead-band between said switches, means including said low temperature switch for energizing said second coil, and means including said high temperature switch for energizing said first coil.

3,350,898
REFRIGERATION SYSTEMS USING HIGH PRESSURE RECEIVERS
James R. Harnish, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 23, 1966, Ser. No. 552,133
6 Claims. (Cl. 62—218)



1. A refrigeration system comprising a refrigerant compressor, a condenser, a receiver, a heat exchange coil, an expansion valve, an evaporator, and a suction line accumulator connected in the order named in a refrigeration circuit, said heat exchange coil being arranged to heat liquid within said accumulator, and means including means responsive to changes in the level of refrigerant liquid within said receiver connected to said expansion valve for adjusting said expansion valve towards open position on an increase in liquid level, and towards closed position on a decrease in liquid level, said system being overcharged with refrigerant so that there is always a quantity of refrigerant liquid within said accumulator, said expansion valve overfeeding said evaporator so that unevaporated liquid flows from the latter into said accumulator, said heat exchange coil being arranged to evaporate refrigerant liquid within said accumulator at substantially the same rate at which unevaporated refrigerant liquid flows from said evaporator into said accumulator.

3,350,899
HOUSEHOLD REFRIGERATOR
Gary D. Jones and Guillermo J. Vanegas, Louisville, and Howard D. F. True, Jr., Fern Creek, Ky., assignors to General Electric Company, a corporation of New York
Filed May 12, 1965, Ser. No. 455,230
8 Claims. (Cl. 62—414)



1. A refrigerator comprising top, rear and bottom and opposed side walls defining a freezer compartment having an access opening at the front thereof,

an evaporator chamber separate from said compartment and including an evaporator,

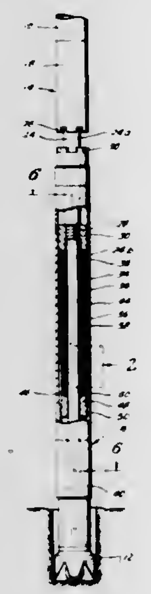
air circulating means for circulating air from said compartment through said evaporator chamber comprising:

a first air passage connecting the front portion of said compartment to said chamber,

- a second air passage connecting said chamber to said compartment and having its outlet adjacent the intersection of the rear and bottom walls of said compartment,
- a tunnel member defining an enclosure for at least one freezing tray and including a top wall and opposed slanting side walls supported on said bottom wall of said compartment in spaced relation with the side walls of said compartment with a portion of said tunnel positioned to receive the air from said second air passage,
- said compartment bottom wall including a sloping stop portion within said tunnel forwardly from the outlet from said second passage for preventing movement of the freezing tray over said second passage outlet,
- said tunnel member including a plurality of openings spaced along the side walls thereof and in the front portion of the top wall thereof for respectively directing air from said tunnel outwardly towards said compartment side walls and upwardly and rearwardly away from said compartment access opening and toward said compartment top wall.

3,350,900
SHOCK CUSHIONING ROTARY DRIVING WELL TOOL

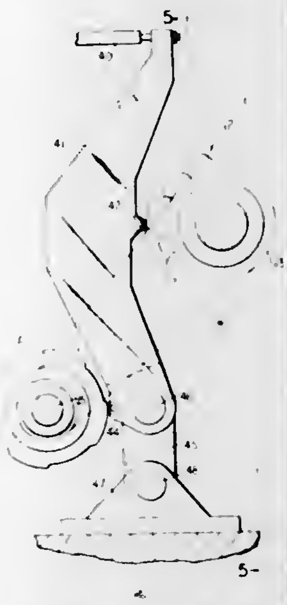
Harry W. Harrison, Houston, Tex., assignor of one-fourth each to D. Art Britton and Ellis B. Colvin
Filed Oct. 21, 1965, Ser. No. 499,138
7 Claims. (Cl. 64—23)



1. A shock cushioning rotary driving well tool comprising telescopically engaged relatively axially movable and relatively rotatable tubular driving and driven members having an annular space between them and a plurality of sealing means, each sealing means being on one of said members and rotatably and slidably sealingly engaging the other, and said sealing means closing the opposite ends of said annular space to form a closed chamber of volume variable upon relative axial movement of said members, said respective members having opposed closely spaced surfaces both exposed and facing each other within said chamber, and a liquid filling said chamber including the space between said surfaces, the viscosity of said liquid and the spacing between said surfaces being so related that said liquid will provide a fluid coupling between said members whereby rotation of one of said members will impart a torque to the other through said fluid coupling and relative axial movement of said members will vary the pressure in said liquid and the torque capacity of said fluid coupling.

3,350,901
GUIDE BAR LAPPING MECHANISM FOR WARP KNITTING MACHINES

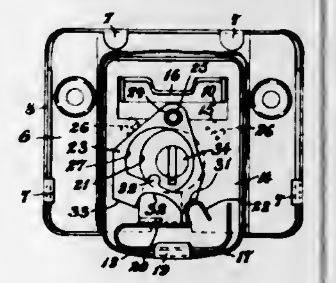
Harold C. Noe, Upper Montclair, N.J., assignor to Haggar Mills, Division of I. Zendman Inc., Paterson, N.J., a corporation of New York
Filed Sept. 2, 1965, Ser. No. 484,532
3 Claims. (Cl. 66—86)



1. Mechanism for shogging the guide bars of a warp knitting machine comprising rotary pattern cam means, rotary lapping cam means, a link pivotally mounted at one end to a fixed supporting surface, a guide bar operating rod, a lever having one end connected to said rod, the other end pivotally connected to the other end of said link, a follower at said last mentioned end of said lever engaged by said lapping cam means, and a follower between the ends of said lever engaged by said patterning cam means, whereby a lapping motion is superimposed on the patterning motion of said lever.

3,350,902
KEY-OPERATED LOCKS FOR ARTICLES OF LUGGAGE

William Ernest Chance, Sutton Coldfield, England, assignor to C. W. Cheney & Son Limited, Birmingham, England, a British company
Filed Sept. 14, 1965, Ser. No. 487,145
2 Claims. (Cl. 70—74)

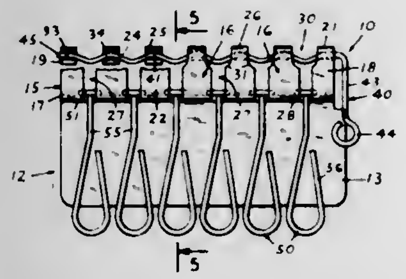


1. A key-operated lock for articles of luggage, comprising:

- (i) a casing provided with an aperture for the reception of a hasp loop;
- (ii) a bolt slidable in said casing and having an aperture formed in said bolt, with a catch portion integral with the bolt and projecting into said aperture;
- (iii) said catch portion being located so as to normally extend across said aperture in the casing, but being adapted to be withdrawn from the said aperture for insertion and removal of the hasp loop;
- (iv) a hairpin spring carried in said bolt for movement therewith;
- (v) a flat locking plate pivotally mounted on said casing and having a central aperture, said locking plate being provided on its end edge remote from its pivot with a pair of arcuate recesses either of which cooperates with said spring depending upon the angular position of said plate, said edge including an abutment edge adapted to co-operate with and abut the bolt in one of said angular positions of the plate, and said plate having a key-engageable projection lying in the plane of the plate and provided remote from the pivot and extending inwardly of the said central aperture of the plate, so that in one key-turned angular position of the plate the bolt is locked against sliding by the abutment edge, and the plate is locked against accidental displacement by one of said arcuate recesses co-operating with the spring, and in the other key-turned angular position of the plate the plate is again locked against accidental displacement by co-operation of the other said arcuate recess with the spring but the bolt is free for sliding accompanied by loading of the spring between the bolt and said recess.

3,350,903
KEY RETAINER

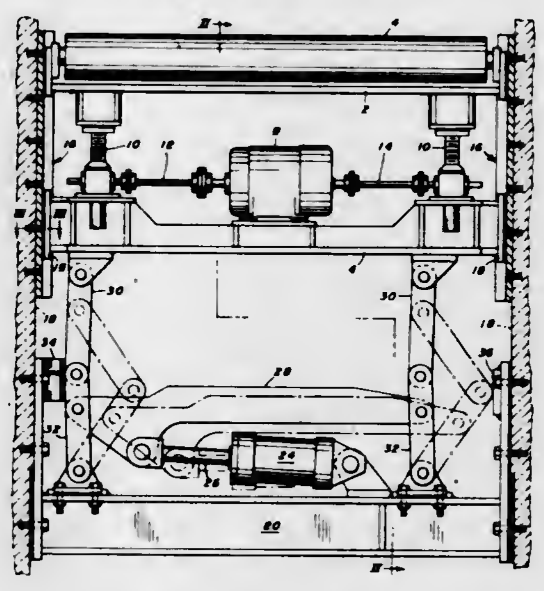
Hyman R. Segal, 355 Riverside Drive, New York, N.Y. 10025
Filed Aug. 26, 1965, Ser. No. 482,772
3 Claims. (Cl. 70—456)



1. A key holder comprising a plurality of key loops, each loop being provided with a shank having a bead positioned at the end of the latter, support means removably suspending said key loops therefrom, said support means including a plurality of spaced fingers integrally joined together at one end and terminating in a substantially closed ear at the opposite end to define an aperture, the aperture of said ears being in substantial longitudinal alignment with each other, said fingers being spaced apart to define a plurality of transversely extending slots, each slot being of a width to pass the shank of the key loop but to retain the head thereof, each of said slots being provided with a release aperture, said release aperture being large enough to pass the head of the key loop, and closure means extending lengthwise through the apertures defined by said ears and rotatably therein from a normally closed position to block said release apertures to an open position to permit the release of said loop heads through said release apertures, said closure means including a series of curved sections connected to each other and terminating at one end thereof in a handle portion, said curved sections being provided with contacting surfaces for frictionally engaging the surface of at least one of the apertures defined by said ears to thereby require a positive force to be applied to said closure means for rotation thereof, a locking means for securing said support means to said closure means when the latter is in its closed position to prevent accidental manipulation of the closure means to its open position, said locking means including a raised projection having a bearing surface, said raised projection extending from said support means and adapted to frictionally engage the handle portion of the closure means with its bearing surface, said handle portion being formed with an eyelet section adapted to fit around said projection.

3,350,904
DEFLECTOR ROLL REPOSITIONING ASSEMBLY

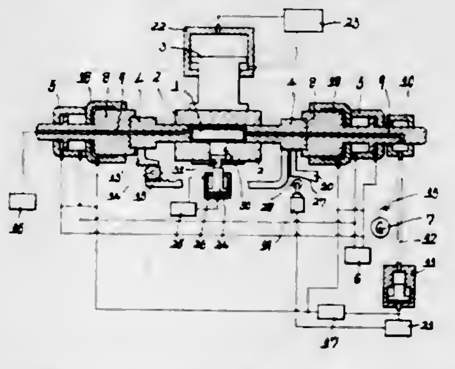
Karl F. Arnold, Gary, Ind., assignor to United States Steel Corporation, a corporation of Delaware
Filed Jan. 21, 1965, Ser. No. 426,929
3 Claims. (Cl. 72—17)



1. In a processing line for rolling coils of strip including at least one pair of work rolls supported in a housing, means to feed strip thereto, means to coil said strip, and shearing means disposed on the exit side of said rolling mill and before said coiling means, the improvement comprising in combination therewith a deflector roll assembly adapted to be moved above and below the pass line of said rolling mill which comprises a deflector roll mounted so that it may be raised and lowered above and below the pass line of said processing line, means to adjust the positioning of said deflector roll with respect to said pass line and to support said deflector roll in the adjusted position, means to lower and raise said deflector roll and deflector roll adjusting means so that said deflector roll can be lowered below the pass line without altering the adjustment of said deflector roll adjusting means to facilitate shearing of the strip by said shearing means and, after shearing, to raise said deflector roll into position above the pass line without the need of readjusting the deflector roll position with respect to the pass line.

3,350,905
LIQUID PRESSURE BULGE FORMING APPARATUS

Takashi Ogura and Terumori Ueda, Nagoya, and Keiichi Yasuda, Numazu-shi, Shizuoka-ken, Japan, assignors to Agency of Industrial Science and Technology, Tokyo, Japan, a corporation of Japan
Filed Sept. 4, 1964, Ser. No. 394,489
Claims priority, application Japan, Dec. 21, 1963, 38/68,606, 38/68,607
11 Claims. (Cl. 72—28)

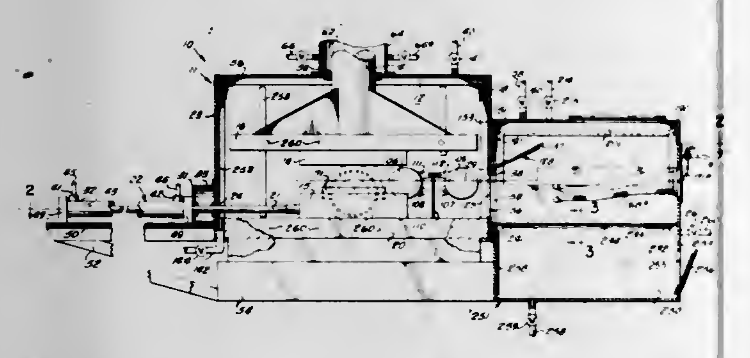


1. A liquid bulge forming device comprising
- a split die comprising at least two separate members and forming a die cavity complementary to and holding an open ended pipe therein and defining a

recess complementary to the bulge to be produced in said pipe,
piston rods aligned adjacent the ends of the pipe within said die cavity and adapted to seal compressively the open ends of said pipe,
means for supplying a liquid pressure to said piston rods for causing said piston rods to press against said pipe sealingly,
means for causing said piston rods to move synchronously at the same speed,
said piston rods formed with a passage therein communicating with the ends of said pipe,
pump means for supplying a high pressure liquid to said passage and into said pipe causing said pipe to expand adjacent and into said recess in said split die, in a bulge expanding step,
a pressure regulating means for controlling said pump means in response to the distance of travel of said piston rods during said bulge expanding step for preventing an excessive bulge forming pressure,
a pressure balancing means for providing a second liquid pressure on said piston rods opposing the force on said piston rods caused by said high pressure liquid in said pipe and responsive to and controlled by said pump means for maintaining said piston rods sealingly against the ends of said pipe during the bulge expanding step, and
a limit means adjacent said recess for preventing rupture of the bulge being formed on said pipe during said bulge expanding step.

3,350,906
FORMING APPARATUS AND METHODS

Louis E. Levinson, Dallas, and Raymond H. Shape, Garland, Tex., assignors to Intercontinental Manufacturing Company, Inc., Garland, Tex., a corporation of Texas
Filed Oct. 26, 1964, Ser. No. 406,513
11 Claims. (Cl. 72—37)

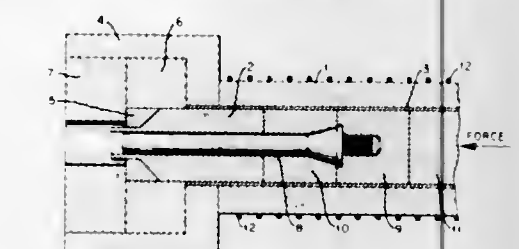


1. An apparatus including: housing means providing a work chamber, a transfer chamber, a storage chamber and a treatment chamber, said housing means having apertures communicating said transfer chamber with each of said work chamber, storage chamber and treatment chamber; means for individually closing said apertures, said housing means having access apertures providing access to said storage and treatment chambers; means for closing said access apertures; and means in said work chamber operable from exteriorly of said housing means for changing the form of work pieces.

3,350,907
METHOD FOR EXTRUDING MOLYBDENUM AND TUNGSTEN

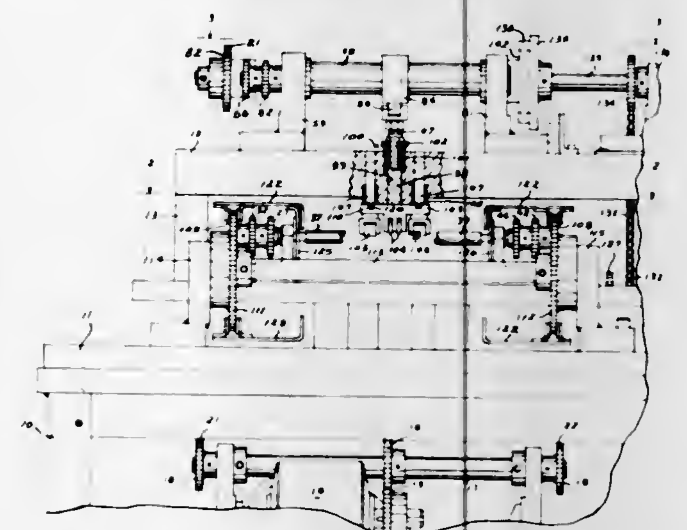
Robert E. McDonald and Carl F. Leitten, Jr., Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 6, 1964, Ser. No. 409,620
6 Claims. (Cl. 72—38)

1. An improved method for extruding a metal selected from the class consisting of molybdenum, tungsten, and alloys thereof which comprises the steps of heating said metal to an extrusion temperature within the range of 2850°–3700° F., exposing said heated metal to an oxidizing atmosphere immediately preceding the extrusion operation thereby forming a volatile oxide bearing surface and thereafter extruding said metal.



3,350,908
TUBE BEADING MACHINE

Julian N. Andrews, Los Angeles, Calif., and Harry C. Gersbacher, Dayton, Ohio, assignors to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio
Filed Apr. 19, 1965, Ser. No. 448,970
15 Claims. (Cl. 72—102)



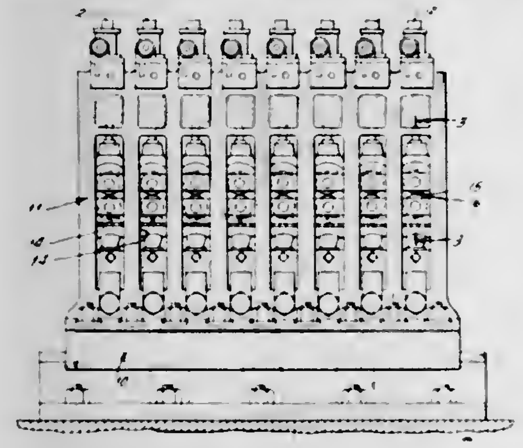
1. A machine for forming longitudinally spaced apart circumferential beads in a cylindrical tube, including means defining a series of tube beading stations, conveyor means for advancing tubes seriatim to successive stations, and means operable simultaneously in all said stations for forming at least one continuous circumferential groove in a tube at each of said stations, each station grooving a tube at locations longitudinally spaced from grooves formed in said tube at preceding and succeeding stations.

3,350,909
ROLLING MILL

Ernest De Masi, 9108 Colonial Road, Brooklyn, N.Y. 11209
Filed Aug. 26, 1964, Ser. No. 392,174
4 Claims. (Cl. 72—242)

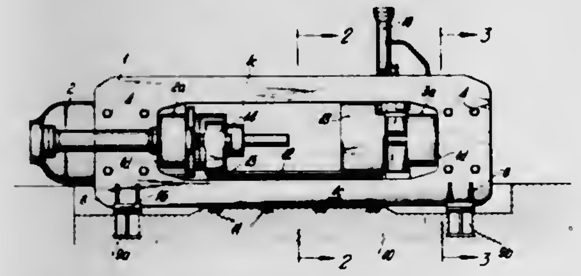
1. In a rolling mill, the combination of a mill stand for a rolling station including a pair of upright side frames each having an upright slideway, therein facing the other, an upper work roll, a lower work roll, an upper chuck slidably mounted in each of said slideways, each of said chucks having one end of said upper work roll journalled for rotation therein, means at the upper side of said chucks each having upright slides thereon with corresponding slides facing each other, a block slidably mounted in each of said slides, upper back-up rolls engaging said upper work roll and journalled for rotation in corresponding opposite blocks, said upper back-up rolls being co-extensive with said upper work roll, a pressure chuck slidably mounted in said slideways having bearing surfaces co-extensive with and for engaging each of said upper

back-up rolls, means for applying downward pressure on said pressure chuck, intermediate the ends of said pressure chuck to cause said pressure chuck to apply downward pressure uniformly along the length of said back-up rolls and in turn along the length of said upper work roll, a lower chuck slidably mounted in each of said slideways each having one end of said lower work roll journalled for rotation therein, means at the lower side of said last mentioned chucks each having upright slides thereon with corresponding slides facing each other, a block slidably mounted in each of said last mentioned slides, lower back-up rolls engaging said lower work roll and journalled for rotation in corresponding opposite last mentioned blocks, a supporting chuck at the lower end of said slideway having bearing surfaces co-extensive with and for engaging each of said lower back-up rolls, and means for applying upward pressure on said supporting chuck intermediate the ends of said supporting chuck to cause said supporting chuck to apply upward pressure uniformly along the length of said lower back-up rolls and in turn along the length of said lower work roll.



3,350,910
HYDRAULIC EXTRUSION PRESS WITH IMPROVED SUPPORTING FRAME STRUCTURE

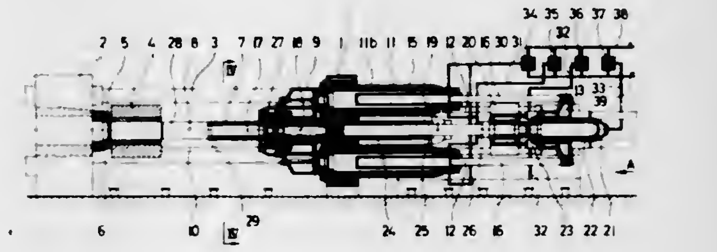
Ernst Müller, Duisburg, Germany, assignor to Hydraulik G.m.b.H., Duisburg, Germany
Filed Nov. 18, 1964, Ser. No. 412,068
11 Claims. (Cl. 72—253)



1. A hydraulic extrusion press comprising first and second laterally spaced longitudinally elongated side frame members, each of said side frame members comprising a plurality of plate members, means for securing said plate members together, said frame members having an opening defined in the vicinity of the central portion thereof, a plurality of cross members extending between said side frame members, said side frame members having projecting adapters which project into corresponding recesses formed on said cross plate members for supporting said cross plate members in a manner permitting movement thereof, a foundation, bracket means for mounting said side plate members on said foundation, said press including a receiver and a moving cross head carried by said cross members, and guide means mounted on said foundation independently of said bracket means for separately guiding said extrusion press receiver and said moving cross head for relative movement thereof.

3,350,911
HYDRAULIC TUBE EXTRUSION PRESS

Horst Hans Groos, Metzkausen, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a company of Germany
Filed Apr. 26, 1967, Ser. No. 633,983
Claims priority, application Germany, Dec. 6, 1962, Sch 32,434
5 Claims. (Cl. 72—265)



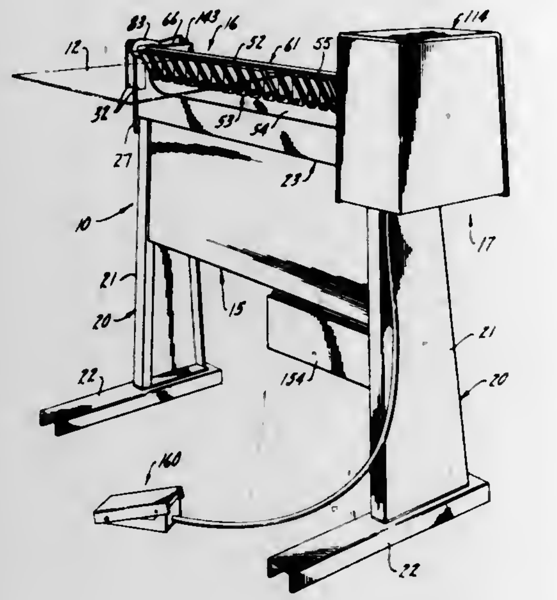
1. A hydraulic tube extrusion press including a stationary bolster, a stationary main cylinder cross-beam, rigid columns connecting said main cylinder cross-beam with said bolster, a billet container arranged on the side of said bolster facing said main cylinder cross-beam, a die holder and a die adapted to be clamped between the billet container and the bolster, a hollow extrusion ram coaxial with said die and said billet container with said ram being movable axially relatively to said die, a longitudinally movable platen secured to said ram, stationary press cylinders mounted in said main cylinder cross-beam, press pistons slidable in said press cylinders and adapted upon admission of liquid under pressure into said cylinders to force said platen and ram forwardly thereby extruding a billet from said container through said die, and means for piercing a billet prior to extrusion thereof and said piercing means comprising, a mandrel slidably mounted in said extrusion die, a longitudinally slidable piercing mandrel traverse cross-head, a longitudinally slidable piercing cylinder traverse cross-head, columns rigidly connecting said piercing cylinder traverse cross-head with said platen, a piercing cylinder mounted in said piercing cylinder traverse cross-head behind said press cylinder, a piercing piston slidably mounted in said piercing cylinder and secured to said piercing mandrel traverse cross-head, means for transmitting a thrust from said piercing piston to said mandrel, mandrel returning means for causing relative motion between said piercing cylinder traverse cross-head, and at least one hydraulic means including piston and cylinder components, one of which components is attached to said main cylinder cross-beam and the other of said components to said piercing cylinder traverse cross-head for retraction of said piercing cylinder traverse cross-head and said platen jointly.

3,350,912
BENDING MACHINE

Raymond E. Smith, Jr., 385 Greenwood Ave., Lake Forest, Ill. 60045
Filed May 21, 1965, Ser. No. 457,761
20 Claims. (Cl. 72—310)

1. A machine for bending a cleat in the edge of a sheet member, comprising: bed means, a bending head assembly mounted on said bed means for pivotal movement about a bending axis, power means connected to said head assembly for pivoting said assembly about said axis, support surface means on said bed means for supporting the sheet member with its edge extending into operative relationship with said bending head assembly, platen means

fixed on said head assembly for underlying the edge of the sheet member, blade means movably mounted on said head assembly for movement between a first position in which said blade means overlies the sheet member edge and a second position wherein said blade means is retracted from said sheet member edge, and means for



moving said blade means from said first position to said second position when the platen means has pivoted through a predetermined arc of less than 180 degrees in bending travel, said platen means being movable through a continuing arc in excess of 180 degrees whereby a cleat with a bend in excess of 180 degrees is formed in the sheet member edge without interference by said blade means.

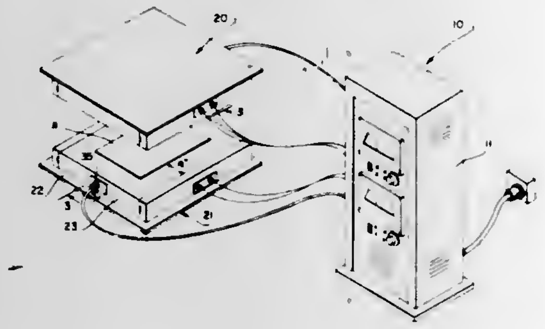
3,350,913

METHOD OF AND APPARATUS FOR FLATTENING SHEET BERYLLIUM

William Bergholdt and Edward W. Bauer, Los Altos, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Oct. 14, 1965, Ser. No. 495,870

3 Claims. (Cl. 72—342)



1. A method of flattening beryllium comprising the step of,

positioning a sheet of beryllium between confronting flat faces of dies, heating said dies to maintain a uniform temperature of the confronting faces thereof in the range between 1350° F. and 1400° F., applying a die pressure to the opposing surfaces of said sheet of beryllium, and permitting said dies and die faces to cool while remaining in contact with said sheet for cooling said sheet of beryllium to room temperature, said cooling of said sheet of beryllium being arranged so that the temperature thereof remains substantially uniform from side-to-side and edge-to-edge.

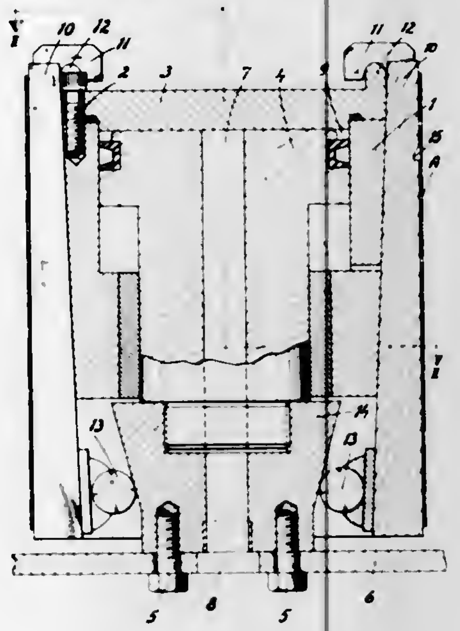
3,350,914

DEVICE FOR PRODUCTION OF SHEET METAL OBJECTS OF TRUNCATED CONE SHAPE

Olof Bertil Ohlsson, 2 Sommarvadersgatan, Goteborg, Sweden

Filed Aug. 10, 1964, Ser. No. 388,398

3 Claims. (Cl. 72—393)



1. Device for the production from cylindrical blanks of sheet metal objects of a truncated cone configuration comprising a fixed piston having a fluid passageway therein and oblique faces at one end, a cylinder slideably mounted on said piston, a series of jaws each forming a segment of a cylinder, surrounding said cylinder and pivotally connected at one end to said cylinder, said series of jaws having their other ends in slideable contact with said piston oblique faces whereby a cylindrical blank mounted concentric with said jaws will be given a truncated cone configuration upon the introduction of fluid under pressure into said piston passageway.

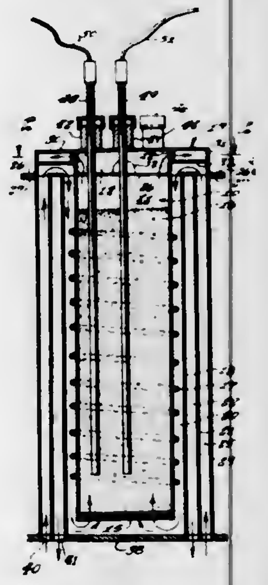
3,350,915

THERMOMETRIC CALIBRATION APPARATUS UTILIZING A FLUIDIZED BED OF SOLID PARTICLES

Herbert Kenneth Staffin, New Brunswick, N.J., assignor to Procedyne Corp., New Brunswick, N.J., a corporation of New York

Filed May 27, 1965, Ser. No. 459,313

14 Claims. (Cl. 73—1)



1. Temperature calibration apparatus comprising: means defining a calibration chamber, said defining means comprising first gas-permeable separator means positioned

for introducing a gas into said chamber at the bottom portion thereof and second gas-permeable separator means positioned for permitting said gas to leave said chamber at the top portion thereof; a quantity of inert particles in said chamber, said particles being too large to pass through either of said separator means and sufficiently small to become fluidized by the upward flow of said gas through said chamber; temperature adjusting means for adjusting the temperature of said fluidized particles; and means for introducing at least one temperature sensitive instrument into said chamber for contact with said fluidized particles.

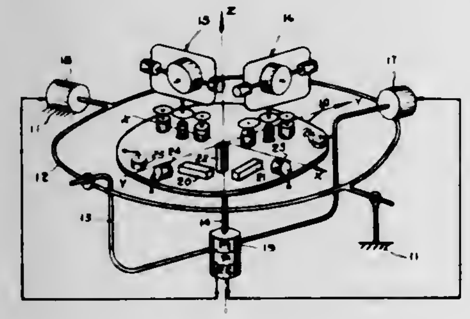
3,350,916

ACCELEROMETER CALIBRATION ON INERTIAL PLATFORMS

Charles D. Bock, Floral Park, N.Y., assignor to American Bosch Arma Corporation, a corporation of New York

Filed June 1, 1961, Ser. No. 114,265

2 Claims. (Cl. 73—1)



1. In a method for zero-setting and calibrating first, second, and third linear accelerometers mounted on a platform and oriented respectively in fixed alignment with three mutually-orthogonal directional axes X, Y and Z on said platform, the steps of:

mounting four pendulums on said platform, a first one of said pendulums being responsive to tilts of said platform about said X axis, a second one of said pendulums being responsive to tilts of said platform about said Y axis, a third one of said pendulums being responsive to tilts of said platform about said Z axis when said X axis is vertical and directed upward, and a fourth one of said pendulums being responsive to tilts of said platform about said Z axis when said X axis is vertical and directed downward;

leveling the X–Y plane of said platform, with said Z axis directed upward, according to the outputs of said first and second pendulums to establish a first position for said platform, and then setting the zero readings of said first and said second accelerometers while said platform is in said first position;

leveling the Z–Y plane of the platform, with said X axis directed upward, according to the outputs of said second accelerometer and said third pendulum to establish a second position for said platform, and then setting the zero reading of said third accelerometer and detecting the output of said first accelerometer while said platform is in said second position;

leveling the Z–Y plane of said platform, with said X axis directed downward, according to the outputs of said fourth pendulum and said second accelerometer to establish a third position for said platform, and detecting the output of said first accelerometer while said platform is in said third position;

leveling the X–Z plane of said platform, with said Y axis directed upward, according to the outputs of said first and said third accelerometers to establish a fourth position for said platform, and detecting the output of said second accelerometer while said platform is in said fourth position;

leveling the X–Z plane of said platform, with said Y axis directed downward, according to the outputs of said first and third accelerometers to establish a fifth position for said platform, and detecting the output of said second accelerometer while said platform is in said fifth position;

leveling the X–Y plane of said platform, with said Z axis directed downward, according to the outputs of said first and second accelerometers to establish a sixth position for said platform, and detecting the output of said third accelerometer while said platform is in said sixth position; and

returning said platform to said first position and then detecting the output of said third accelerometer while said platform is in said first position.

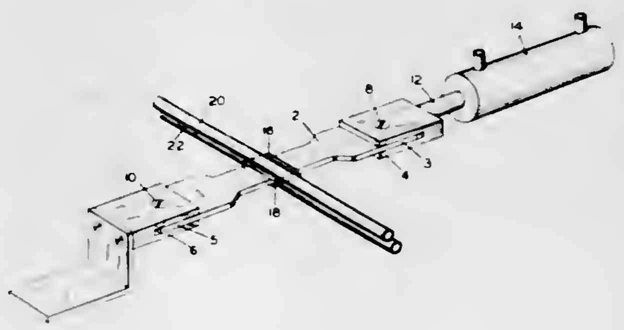
3,350,917

ENVIRONMENTAL STRESS RUPTURE APPARATUS

Robert C. Winckelhofer, Whippany, and Mahendra Bhuta, Mendham, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Nov. 12, 1964, Ser. No. 410,607

3 Claims. (Cl. 73—15.6)



1. In an environmental stress apparatus provided with means for maintaining a constant stress upon the sample being tested, the improvement of at least 2 tubes constructed of heat conductive material at least one of said tubes located on one side of the sample being tested and at least another of said tubes being located on the opposite side of the sample; means for circulating a heat exchange medium through said tubes; between said tubes and in contact therewith and with the respective sides of the sample an absorbent material containing the stress environment.

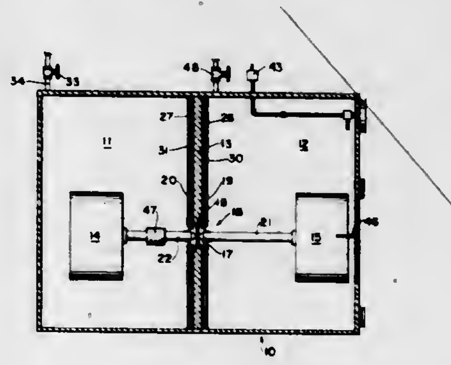
3,350,918

GAS MIXTURE ANALYZER

Eckart Berling, New York, N.Y., assignor to Anaconda Wire and Cable Company, New York, N.Y., a corporation of Delaware

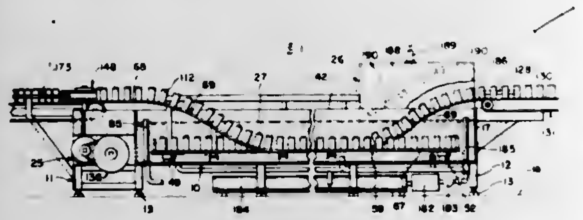
Filed June 17, 1964, Ser. No. 375,771

1 Claim. (Cl. 73—30)



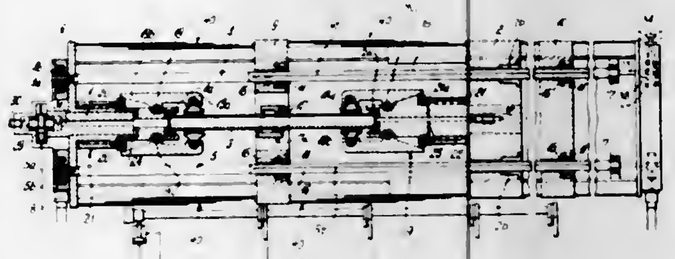
An automatic gas mixture stabilizer for continuously measuring the gas composition in a gas filled electrical system and automatically replenishing a proper gas component to said system to maintain the gas composition at a predetermined value, said stabilizer comprises a first gas chamber for receiving a pure gas component of the gas mixture, an adjoining second gas chamber for receiving the gas mixture, a bleeding line connecting the gas filled electrical system to the second chamber, a gas impermeable wall separating said first and second chambers, a first buoyant cylinder in the first chamber and in buoyant relationship with the pure gas, a second buoyant cylinder in the second chamber and in buoyant relationship with the gas therein, the second buoyant cylinder having the same volume and weight as the first element, a balance arm connecting said first and second cylinders through an opening on said wall and pivotally supported on a knife ring mounted therein, sealing means in the form of corrugated rubber disks covering each side of said opening to eliminate leakage of the gases from one chamber to the other, means for maintaining equal temperature and pressure in the two chambers whereby the pivotal movement of said cylinders corresponds to the difference in gas densities between said gas mixture and the pure gas, and switch means for activating and deactivating valves controlling the delivery of pure component gases to said system for maintaining the predetermined composition of the gas mixture according to the pivotal movement of said second buoyant cylinder.

3,350,919
TESTING APPARATUS
Ralph L. Mucci, Elmhurst, and Arthur Y. Anderson, Cicero, Ill., assignors to John R. Nalbach Engineering Co., Chicago, Ill., a corporation of Illinois
Filed July 24, 1964, Ser. No. 384,949
6 Claims. (Cl. 73—41.2)



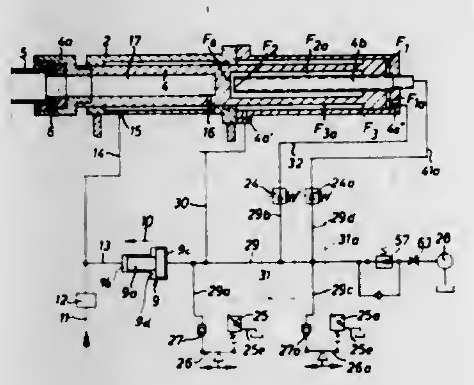
1. An apparatus for testing generally cylindrical containers for leakage, comprising, a liquid-filled tank having an open top; conveyor means for supporting the containers and carrying them above and below the surface of the liquid in said tank, said conveyor means including an endless chain means having certain runs thereof disposed entirely above the level of the liquid in said tank, and a plurality of carrier means connected to said endless chain means at spaced points along the length thereof, each of said carrier means including a substantially flat plate-like disk, each of said disks being capable of supporting a container thereof in an upright position whereby the longitudinal axis thereof is substantially normal to the flat disk, each of said carrier means including releasable clamping means operable to frictionally grip a container and resist displacement thereof with respect to a respective flat disk, each of said releasable clamping means of each of said carrier means including a pair of spaced abutment means carried by and fixed with respect to the flat disk thereof, said fixed abutment means being frictionally engageable with the outer surface of the cylindrical container supported on said flat disk at circumferentially spaced points, each of said clamping means further including a lever having an intermediate portion pivotally connected to the flat disk, abutment means carried by one end of said lever whereby said abutment means is movable toward and away from a first plane containing the longitudinal axis of the container and parallel to a second plane containing said fixed abutment means, said movable abutment means being movable upon pivoting of said lever into frictional engagement with a container supported on said flat disk at a point spaced from and disposed on an opposite side of said first plane from said second plane, and each of said clamping means further including biasing means for pivoting said lever in one direction and for yieldably urging said movable abutment means toward said first plane; and discharge means for removing containers from said conveyor along one of said runs of said endless chain means disposed entirely above the level of the liquid in said tank including a cam follower carried by the end of each of said levers opposite the end carrying the abutment means and a cam fixedly positioned along said one run of said endless chain means and engageable by said cam followers as the carrier means move along said one run, said cam being effective to pivot said levers against the resilient action of said biasing means and move said movable abutment means away from said first plane as the carrier means move along said one run biasing means being effective to pivot said levers in a direction to cause said movable abutment means to move toward said first plane upon movement of said cam followers out of engagement with said cam by said endless chain means near one end of said one run.

3,350,920
APPARATUS FOR TESTING TUBULAR WORKPIECES
Hans Brauer, Solingen, Germany, assignor to Th. Kieserling and Albrecht, Solingen, Germany
Filed May 12, 1965, Ser. No. 455,164
Claims priority, application Germany, May 16, 1964, K 52,982
14 Claims. (Cl. 73—49.1)



1. An apparatus for detecting leakage leaks in tubular workpieces by means of a testing fluid, comprising a first carrier and a movable carrier; a hollow sealing member on each carrier and each adapted to sealingly engage one end of a workpiece which is placed between said carriers; means for reciprocating said movable carrier toward and away from said first carrier so that the sealing members engage the workpiece when the movable carrier is advanced sufficiently close to said first carrier; jaw means provided on each carrier and each movable into and out of clamping engagement with a portion of the workpiece adjacent the respective sealing member; a source of pressurized testing fluid; means for admitting such fluid through one of said sealing members and into the workpiece; means for selectively preventing escape of fluid through the other sealing member so that the fluid pressure in a satisfactory workpiece rises; actuating means operatively connected with said source for moving said jaw means against the workpiece with a force which is proportional to the fluid pressure in the workpiece; gripping means disposed between said carriers for engaging an intermediate portion of that workpiece whose ends are engaged by said sealing members; and means responsive to movements of said movable carrier for moving said gripping means toward and away from said first carrier proportional to movement of said movable carrier, but at a speed which is less than the speed of said movable carrier.

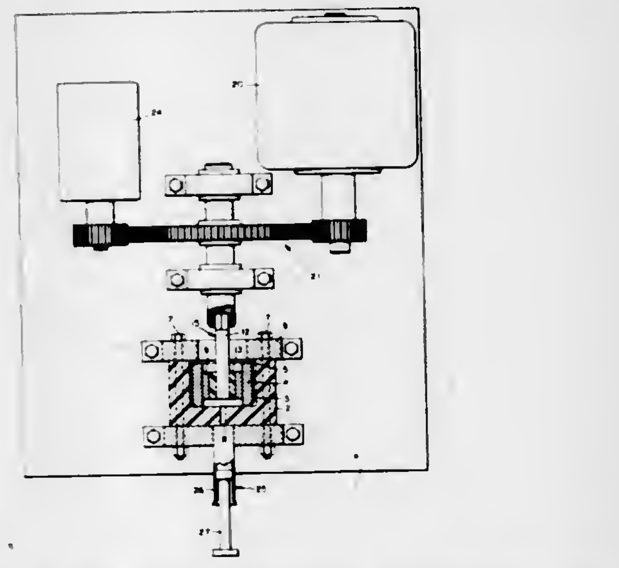
3,350,921
APPARATUS FOR TESTING TUBES
Hans Brauer and Alfons Goeke, Solingen, Germany, assignors to Th. Kieserling & Albrecht, Solingen, Germany
Filed Jan. 22, 1965, Ser. No. 427,390
Claims priority, application Germany, Jan. 22, 1964, K 51,904
8 Claims. (Cl. 73—49.6)



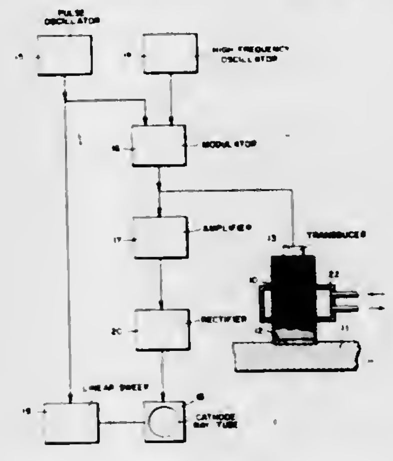
1. An apparatus for testing the integrity of open-ended tubes and similar hollow tubular objects having different diameters by a hydraulic testing fluid, comprising a sealing unit including a pair of axially spaced outer cylinders each having three separate chambers, a pair of differential pistons each having a portion reciprocable in one of said cylinders and each having three surfaces each of which is located in a different chamber of the corresponding cylinder, and a sealing member secured to the reciprocable portion of each of said pistons and having means for sealingly engaging one end of a tube which is placed between said cylinders; conduit means for admitting testing fluid through one of said cylinders and the corresponding sealing member so that such testing fluid fills the interior of the tube; and a hydraulic circuit including first pressure generating means for compressing the testing fluid in said conduit means by means of a hydraulic fluid so that testing fluid escapes from a leaky tube and the pressure of such testing fluid drops accordingly, said first pressure generating means comprising means for admitting hydraulic fluid into one chamber of each cylinder at a pressure which is proportional to the pressure of testing fluid so that hydraulic fluid exerts against the surfaces of said pistons a pressure tending to move the pistons away from sealing engagement with the tube, second pressure generating means for admitting compressed hydraulic fluid into the remaining chambers of each cylinder so that such hydraulic fluid bears against the corresponding surfaces of said pistons and produces a sealing pressure which maintains said sealing members in engagement with the tube in opposition to fluid pressure in said one chamber of each cylinder, and valve means for regulating the pressure in said remaining chambers in response to changes in the pressure of testing fluid so that the ratio between said sealing pressure and the pressure of testing fluid remains constant during the buildup, retention and reduction of pressure of testing fluid.

3,350,922
ENGINE VISCOSITY SIMULATOR
Dae Sik Kim, Jersey City, and Gerald K. Vick, Plainfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed May 17, 1965, Ser. No. 456,343
6 Claims. (Cl. 73—60)

1. An engine viscosity simulator comprising a sample holder provided with a cavity; a sleeve, fixed within said cavity; a spindle adapted to rotate within said sleeve, said spindle including in combination a shaft, an insulator, and a drum, said drum being provided with a pair of substantially symmetrical flats; a series wound motor; a tachometer; and a gear train responsive to said motor, said gear train being adapted to drive said spindle and said tachometer.



3,350,923
ULTRASONIC PULSE ECHO TESTING METHOD AND APPARATUS
Newbold O. Cross, Berkeley Heights, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,399
8 Claims. (Cl. 73—67.8)

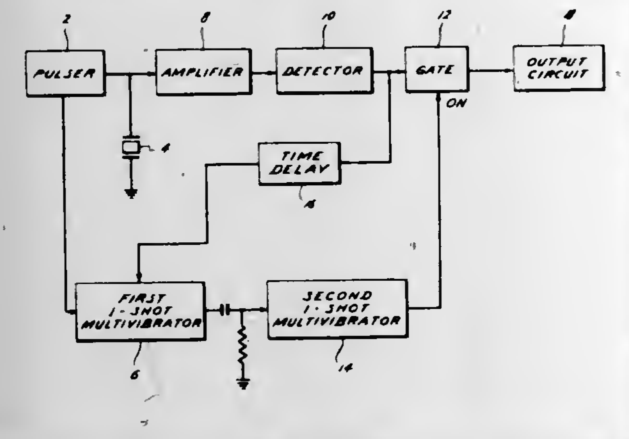


5. A method for determining the thickness and integrity of metallic articles which comprises welding not more than 50% of the surface area of one end of a metallic delay line to said metallic article to be tested, the remaining surface area of said welded delay line being in contact with said metallic article, transmitting supersonic signals in pulses from a transducer located at the opposite end of the delay line through said delay line to said metallic article, and producing a graphic signal representative of the supersonic pulses that are reflected back to said transducer from the welded end of said delay line and the back surface of said metallic article.

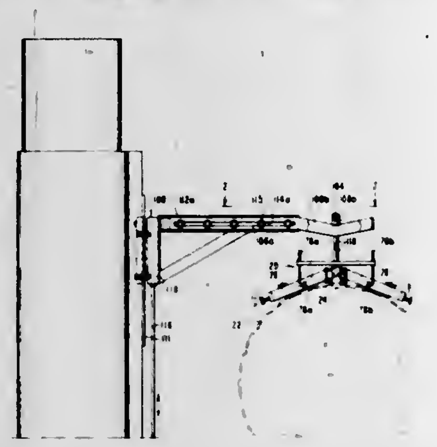
3,350,924
APPARATUS FOR ULTRASONIC INSPECTION
James D. King, San Antonio, Tex., assignor to Southwest Research Institute, San Antonio, Tex., a trust estate of Texas
Filed Sept. 26, 1966, Ser. No. 581,825
5 Claims. (Cl. 73—67.9)

5. Apparatus for ultrasonic inspection comprising a source of pulses, transducer means connected to said source and for applying acoustic pulses to an article to be inspected through a liquid column and for detecting pulses reflected from said article through such liquid column,

an output circuit for utilizing pulses detected by said transducer means, gate means connected between said transducer means and said output circuit, said gate means having an open position for passing signals from said transducer means to said output circuit and a closed position for blocking passage of signals from said transducer means to said output circuit, a one-shot multivibrator having a stable position and an unstable position and capable of emitting a control pulse during transition from said unstable position to said stable position, said multivibrator including means responsive to a pulse from said source of pulses for switching said multivibrator from said stable position to said unstable position and for maintaining said multivibrator in said unstable position for a first predetermined time interval, means responsive to the entrant surface signal for switching said multivibrator from said unstable position to said stable position following receipt of the entrant surface signal, and means responsive to said control pulse for opening said gate means for a predetermined time interval.

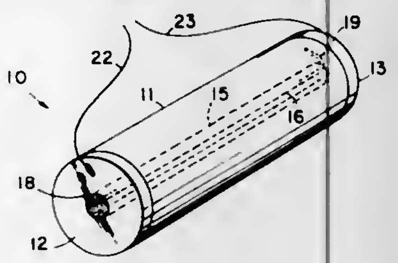


3,350,925
TESTING ASSEMBLY FOR TESTING A WELD BEAD OR THE LIKE
Gerald R. Coy, Chagrin Falls, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Filed June 30, 1964, Ser. No. 379,255
17 Claims. (Cl. 73—71.5)



1. In apparatus for positioning a testing member with respect to a weld bead on an article, the combination comprising a carriage assembly including a shaft and rollers mounting the shaft, and a frame member mounted upon the shaft and carrying the testing member, the rollers being positioned on opposite sides of the weld bead to accurately position the shaft with respect to the weld bead, whereby the testing member is positioned accurately with respect to the weld bead as relative movement is occasioned between the carriage assembly and the article, wherein the frame member comprises first and second inner frames and an outer frame, the outer frame being mounted for pivotal movement about the shaft, the first inner frame carrying the testing member and being pivotally coupled to the second inner frame about a first axis, and the second inner frame being pivotally coupled to the outer frame about a second axis, the first and second axes being substantially perpendicular to each other to provide a gimbal self-aligned mounting for the testing member.

3,350,926
MINIATURE STRESS TRANSDUCER
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Anthony San Miguel, Canoga Park, and Robert H. Silver, Los Angeles, Calif.
Filed Oct. 29, 1964, Ser. No. 407,599
4 Claims. (Cl. 73—88.5)



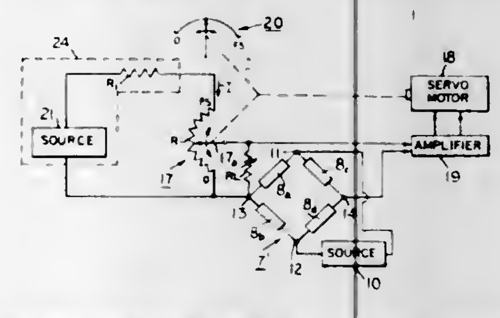
1. The method of determining the change in stress in a particular direction in a block of matter which is adapted to undergo a known change in dimension in said direction in the stress range to be determined the steps comprising:

embedding an element having piezoresistive characteristics along a sensitive axis in a protective rigid housing which is adapted to undergo a smaller change in dimension than said block of matter in the stress range to be determined to protect the element therein;

connecting a pair of output leads to ends of the said element through which to sense change in resistivity of the element as a function of changes in stress along said sensitive axis; and

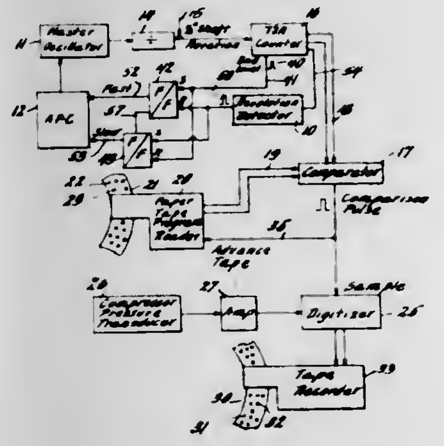
embedding the housing in said block of matter with the stress sensitive axis of the element substantially coincident with said particular direction in which the stress is to be measured, with the pair of output leads extending from said block, whereby the change of stress in said particular axis is determined as a function of a change in the resistivity across said pair of output leads.

3,350,927
NON-LINEARITY-COMPENSATED STRAIN GAGE INSTRUMENTATION
Donald A. Senour, Carlisle, Mass., assignor to BLH Electronics, Inc., Waltham, Mass., a corporation of Delaware
Filed May 19, 1965, Ser. No. 457,116
6 Claims. (Cl. 73—88.5)



1. Strain gage measurement apparatus comprising electrical resistance strain gage means exhibiting electrical characteristics varying non-linearly with loadings of a force-responsive member, potentiometer means having fixed and relatively movable connections between which electrical characteristics of said potentiometer means are exhibited, electrical impedance means of predetermined value connected between said fixed and relatively movable connections of said potentiometer means, said value of said impedance means being in a relation to impedance of said potentiometer means which produces a non-linearity in the electrical characteristics appearing between said fixed and movable connections with movements of said movable connection, and means for comparing said electrical characteristics of said strain gage means with said electrical characteristics appearing between said connections, whereby the positions of said movable connection are in predetermined relationship with the loadings of said force-responsive member when said electrical characteristics of said strain gage means are the same as the electrical characteristics appearing between said connections.

3,350,928
COMPRESSOR TESTING APPARATUS AND METHOD
Paul A. Fedde, Owensboro, Ky., assignor to Texas Gas Transmission Corporation, Owensboro, Ky., a corporation of Kentucky
Filed May 6, 1965, Ser. No. 453,581
4 Claims. (Cl. 73—116)



1. In an automatic testing device for a cyclic compressor the combination comprising a master oscillator, means synchronizing the oscillator with the compressor cycles, a counter of oscillator pulses cycling through its total count once per compressor cycle, means establishing a program of a sequence of predetermined counts, means comparing the count on said counter with the count of the program steps in sequence to produce a comparison signal, means responsive to the comparison signal to sample and record a pressure reading from said compressor, and means sequencing said program to a successive count step in response to said comparison signal.

3,350,929
METHOD FOR TESTING PAVING MATERIALS
John W. Axelson, Plainfield, and Gaillard R. Russum, Somerville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Sept. 9, 1964, Ser. No. 395,124
1 Claim. (Cl. 73—146)

Method for testing the rutting characteristics of asphalt paving mixes comprising:

(a) preparing a specimen comprising an asphalt paving mix having characteristics representative of such asphalt paving mix in its applied condition as part of a road,

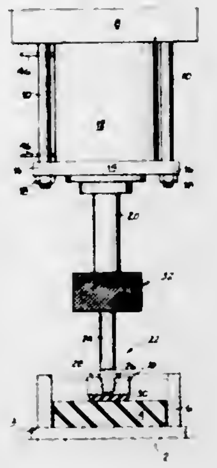
(b) inserting said specimen within a holder,

(c) contacting a portion of a surface of said specimen with a load applying means having an area in contact with said surface,

(d) applying to said portion of said specimen through said load applying means a load similar to a normal load to be applied to said asphalt paving mix when in its applied condition,

(e) increasing said area of contact of said load applying means as the amount of said load is being increased,

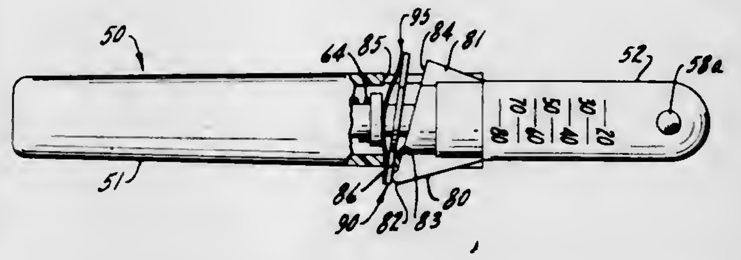
(f) releasing said load,



(g) repeating said load applying and releasing steps at periodic intervals to the same portion of said specimen for a predetermined period of time while maintaining contact between said specimen and said load applying means, and

(h) measuring the deformation of said portion of said specimen before and after each application of said load to determine the rutting characteristics of said asphalt paving mix.

3,350,930
PRESSURE GAUGE
Robert A. McKirnan, Winnetka, Ill., assignor to Rambar Corp., Chicago, Ill., a corporation of Illinois
Filed Aug. 13, 1965, Ser. No. 479,483
5 Claims. (Cl. 73—146.3)



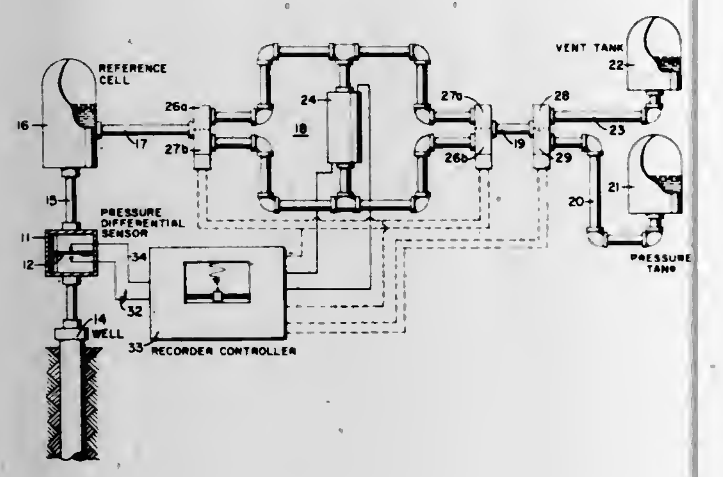
3. In a gauge a housing formed of first and second housing parts, diametrically opposed slots in one of said parts, said slots being substantially equal in length and penetrating one edge of said last-named part, diametrically opposed abutments on the other of said parts, said abutments extending in opposite directions and dimensioned to be received in said slots, one of said abutments being rearwardly disposed with relation to the other of said abutments, a locking means having oppositely directed extensions thereon, a compression member having oppositely directed extensions thereon, said locking means and compression member each having one of their extensions clamped between one of said abutments and the base of its associated slot and the other of their extensions movable between the other of said abutments and the base of its associated slot when said housing parts are joined and a plunger slidable in said housing for engagement with said locking means when said locking means is in locking position.

3,350,931
SYSTEM FOR MEASURING CHANGES IN FLUID PRESSURE

Carlton R. Johnson, Tulsa, and Ray Raynor, Claremore, Okla., assignors to Esso Production Research Company, a corporation of Delaware

Filed May 12, 1965, Ser. No. 455,146

7 Claims. (Cl. 73—152)



3. An apparatus for measuring small differential pressure changes in a well having a wellhead which comprises:

- (a) a differential pressure transducer at the surface of the earth and connected on one side to the wellhead, including means for generating a first signal indicative of rising pressure and a second signal indicative of falling pressure;
- (b) a reference pressure cell having a pressure substantially the same as the wellhead pressure;
- (c) a conduit providing pressure communication between the other side of the differential pressure transducer and the reference cell;
- (d) an auxiliary pressure source having a substantially higher absolute pressure than the wellhead pressure;
- (e) means interconnecting the auxiliary pressure source and the reference cell for transferring an accurately metered volume of liquid from the auxiliary source to the reference cell in response to said first signal; and
- (f) means connected to the reference cell for venting an accurately metered volume of liquid from the reference cell in response to said second signal.

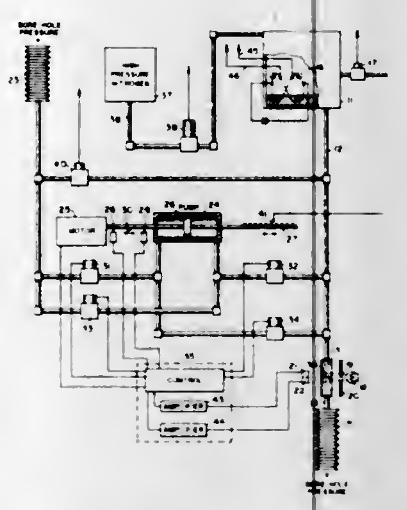
3,350,932
SYSTEM FOR MEASURING CHANGES IN FLUID PRESSURE

Robert A. Kirby and Laurence K. Shallenberger, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware

Filed Mar. 20, 1967, Ser. No. 624,390

10 Claims. (Cl. 73—152)

1. An apparatus adapted to be lowered within a well to detect pressure changes at a selected depth within the well which comprises a reference cell adapted to be at least partially filled with a gas at said selected depth; a hollow member which is changeable in internal volume in response to differences between internal and external pressures; a small diameter conduit interconnecting and arranged relative to the said reference cell and said hollow member to define a fluid-containing system wherein a first liquid can fill said hollow member and a portion of said conduit to a preselected liquid level within said conduit; liquid interface detection means to detect changes in the level of said first liquid; a reservoir cell adapted to be filled with a second liquid; liquid transfer means responsive to said liquid interface detection means to transfer said second liquid between said reservoir cell and said fluid-containing system so as to maintain the level of said first liquid in said small diameter conduit and means responsive to said liquid transfer means to record the volumes and directions of flow of liquid transferred by said liquid transfer means.

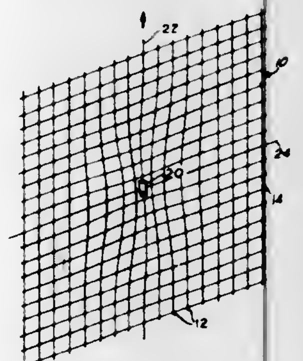


3,350,933
WEFT-DETECTING METHOD AND APPARATUS

Leo J. Smith, Cornelius, N.C., assignor to Mount Hope Machine Company, Incorporated, Taunton, Mass., a corporation of Massachusetts

Filed June 29, 1965, Ser. No. 468,083

12 Claims. (Cl. 73—159)



7. Apparatus for detecting the angular relationship between transverse and longitudinal elements of a web travelling under longitudinal tension, comprising a depressing member, means for depressing said member into a region of the web normal to its surface to produce a local distortion pattern, and means constructed and arranged for detecting the direction of travel of longitudinal elements of the web engaged by said member, relative to the longitudinal direction of travel of the web, as a measure of the undistorted relationship between transverse and longitudinal elements passing through said region.

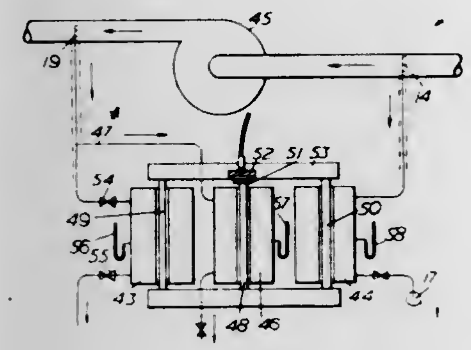
3,350,934
APPARATUS FOR USE IN MEASURING THE HYDRAULIC EFFICIENCY OF FLUID MACHINES, SUCH AS PUMPS

John C. Orkney, Jr., The Coach House, Drummond Place Lane, Stirling, Scotland, and John C. Orkney, 92 Switchback Road, Bearsden, Glasgow, Scotland

Filed Oct. 22, 1965, Ser. No. 501,286

2 Claims. (Cl. 73—168)

1. Apparatus for use in measuring the hydraulic efficiency of fluid machines such as pumps having entry and discharge passages, first and second sampling members located respectively in said inlet and discharge passages for removal of sample liquid from said passages, low and high pressure end containers in connection with said first and second sampling members respectively and through which flow liquid samples from the machine, a high pressure intermediate container in connection with said second sampling member and through which flow liquid samples from the machine, a plurality of thermally expansible elongated elements extending within said containers so as to receive heat from the liquid samples, measuring means operatively connected to said elements so as to indicate changes in the dimension of the elements and to give a null balance indication when the lengths of the elements are the same, inlet and outlet throttle valves for the high pressure end container to enable adjustment of the liquid temperature therein for null balance, and pressure gauges for measuring the liquid pressure in each of said containers, the hydraulic efficiency of the machine being calculated from the pressures sensed by said pressure gauges.



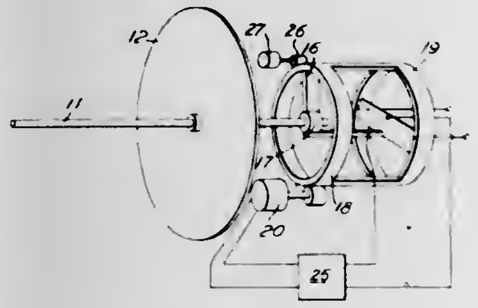
3,350,935
AIRFLOW DIRECTION INDICATORS

Brian Edward Pitches, Balerno, and Donald Hope, Edinburgh, Scotland, assignors to Ferranti, Limited, Lancashire, England, a company of Great Britain and Northern Ireland

Filed May 12, 1965, Ser. No. 455,127

Claims priority, application Great Britain, May 13, 1964, 19,873/64

7 Claims. (Cl. 73—188)



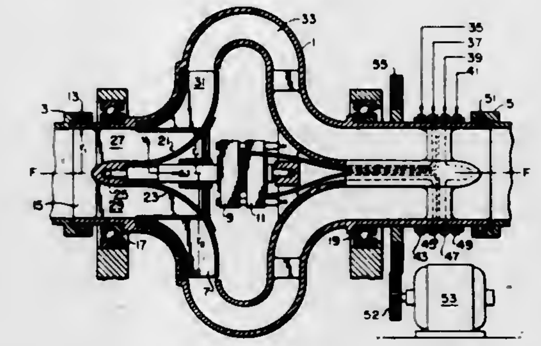
1. An airflow direction indicator comprising a probe member, means for resiliently mounting said probe member such that one end of said probe member extends into the airstream substantially perpendicular thereto, said probe member being capable of limited deflectional movement under the influence of the drag force of the airstream, means for restraining the other end of said probe member to restrict the deflection of the probe member to a single plane containing a component of the drag force, control means for rotating said restraining means in response to deflection of the probe member to a position such that the deflection of the probe member is nullified and means for measuring the angle between the restraining means in the null position and a datum direction so as to indicate the direction of flow of the airstream.

3,350,936
MASS FLOW METER

Yao-Tzu Li, Huckleberry Hill, R.F.D. 1, South Lincoln, Mass. 01773

Filed Dec. 30, 1964, Ser. No. 422,243

4 Claims. (Cl. 73—194)



1. A mass flow meter comprising a first member rotatable about a first axis, said first member having inlet and outlet portions, a second member positioned within said first member, said second member having inlet and outlet portions, said second member being free to rotate with respect to said first member about said axis, said second member being positioned within the flow path so that flow from the inlet portion of said first member passes through said second member before passing through the outlet portion of said first member, the inlet portion of said second member having a first mean radius with respect to said first axis, the outlet portion of said second member having a second mean radius with respect to said first axis, said first and second mean radii having different values, means to rotate said first member, the Coriolis effect produced by the mass flow through said second member producing an angular displacement between said first and second members, means to sense the angular relationship between said first and second members with respect to said first axis, a gyroscope attached through gimbals to said first rotatable member, said gyroscope having a second axis of rotation, rotation of said first member causing said gyroscope to produce a precessional torque, said precessional torque being perpendicular to a plane including said first and second axes, means to apply said precessional torque to said second member to maintain said angular relationship at a constant value, the torque so applied serving as an indication of the mass rate flow.

3,350,937
APPARATUS FOR MEASURING TANKFULS AND COUNTING THE SAME

David R. Brewer, 2345 Loma Vista St., Pasadena, Calif. 91104

Filed Jan. 8, 1965, Ser. No. 424,243

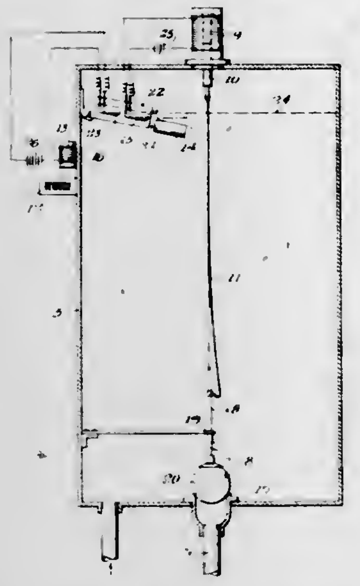
2 Claims. (Cl. 73—224)

1. Apparatus for measuring a quantity of liquid flowing through a tank having a bottom inlet that continues to conduct additional fluid at a constant rate to the tank while the tank is discharging the liquid therein, said apparatus comprising:

- (a) a tank having a bottom outlet larger than the mentioned inlet and, when fully open, discharging liquid at a faster rate than liquid enters the tank from the inlet,
- (b) a buoyant ball normally seated upon and closing said outlet, said ball, when raised off the outlet, being buoyed by the liquid in the tank and retained unseated thereby,
- (c) a float near the top of the tank buoyed upwardly by the liquid in the tank when the same is at a high level, and gravitationally moving to a lowered position upon lowering of the liquid level,

(d) two mercury switches mounted on said float, the same being open when the float is in lowered position,

(e) a solenoid having a movable armature conncted to the ball and electrically connected in circuit with one of said switches to energize and cause the armature to retract and unseat the ball from the outlet when the float is raised by the level of liquid in the tank to cause said switch to close, and

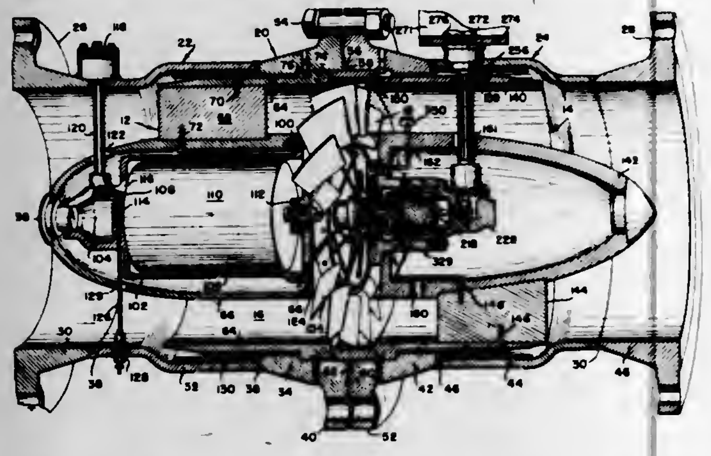


(f) means provided with an operating solenoid electrically connected in circuit with the other of said switches and operated upon energization of its solenoid when said second switch is closed upon raising of the float as mentioned to record the total number of opening operations of the ball valve for unloading of the fluid in said tank,

(g) the inlet being directly open to the tank and continuing to conduct its flow at a constant rate to the tank during the time that the ball is unseated, thereby providing a simultaneous liquid discharge from and liquid fed to the tank.

3,350,938
TURBINE FLOWMETER

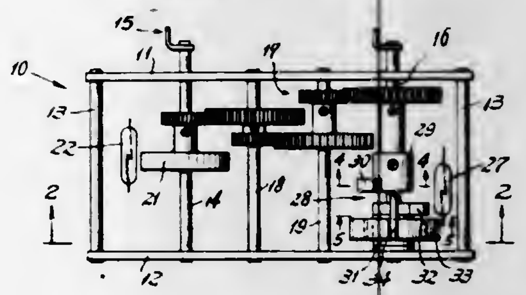
Howard E. Rittenhouse and Sherman L. Wood, Statesboro, Ga., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application May 3, 1960, Ser. No. 26,502, now Patent No. 3,182,504, dated May 11, 1965. Divided and this application Apr. 1, 1965, Ser. No. 444,700
10 Claims. (Cl. 73—231)



1. A fluid flow meter comprising a pair of axially aligned, tubular axially spaced apart housing sections, means rigidly joining said housing sections together comprising a pair of matching flanges formed separately of and rigidly fixed to respective ones of said housing sections, said flanges extending axially between opposed ends of said housing sections to define therewith a continuous, tubular shaped housing, a liner coaxially received in said housing and seated only on the internal periphery of at least one of said flanges to be supported thereby, a core coaxially mounted within and supported from said liner, said core and said liner defining a fluid flow channel of annular cross section, and a rotor rotatably supported on said core to be driven by fluid flow through said channel, the diameter of the internal periphery of said at least one flange remaining constant regardless of variations in the wall thickness of said at least one flange to accommodate different fluid pressures for a given nominal pipe size.

3,350,939
COMPENSATING INDEX DRIVE MEANS

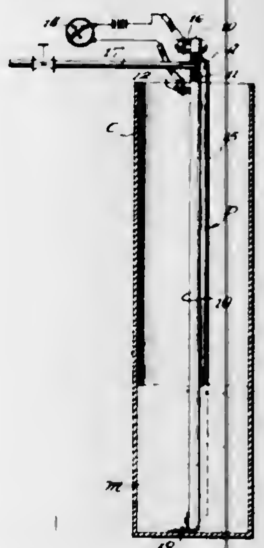
Theodore A. St. Clair, Fairfield, Conn., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Oct. 15, 1965, Ser. No. 496,332
5 Claims. (Cl. 73—272)



1. An index drive means for a meter or the like comprising an input shaft driven by said meter and having means cooperating therewith to produce a predetermined number of pulses per rotation of said input shaft, an output shaft connected to said input shaft to be rotated thereby at a predetermined relative lower speed, and control means actuated by said output shaft for transmitting said pulses to a pulse counting index means, said control means including means responsive to a condition in said meter for varying the number of pulses transmitted in accordance with the variations in said conditions in the meter.

3,350,940
LEVEL MEASURING DEVICE

Leslie F. Stone, Bellwood, Ill. (% The Richardson Co., Melrose Park, Ill. 60160)
Filed May 12, 1965, Ser. No. 455,176
2 Claims. (Cl. 73—301)



1. A measuring device for finely divided solid material, said device comprising a conductive element forming a part of a support extending substantially the height of said container, a flexible covering for said conductive element and secured to the wall, said flexible covering containing a carbon filler as a resistive means for conducting

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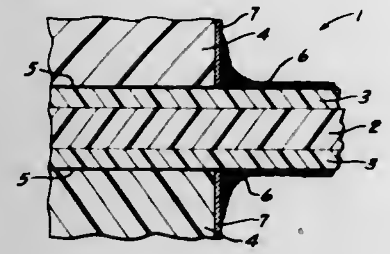
an electrical current, and means for normally maintaining said flexible covering in spaced relationship with respect to said conductive element.

3,350,941
HUMIDITY SENSING ELEMENT

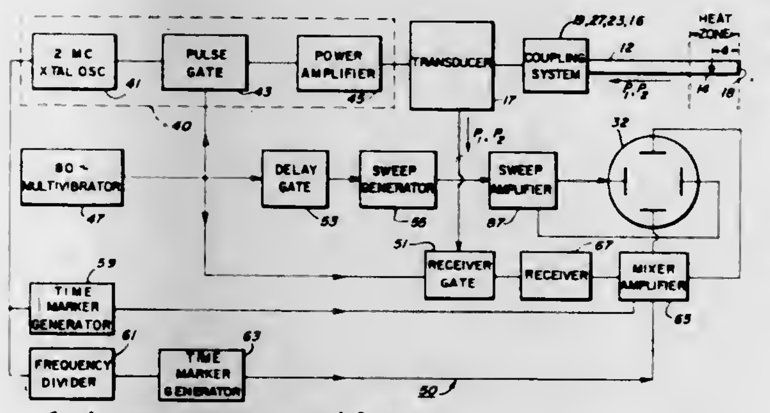
Kenneth W. Misevich and Harris M. Sullivan, Milwaukee, Wis., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed May 20, 1965, Ser. No. 457,371
16 Claims. (Cl. 73—336.5)



5. A capacitance, synthetic, humidity sensing element, comprising a thin, sheet-like core having a high electrical resistivity and a dielectric constant in the range of 2 to 6, a layer of moisture sensitive dielectric material applied to opposite surfaces of the core, said moisture sensitive material being characterized by the ability to adsorb at least 10% by weight of water when saturated and each of said moisture sensitive layers comprising at least 5% of the overall thickness of the core and said layers; and a coating of interconnected finely divided metallic particles applied to the outer surface of each moisture sensitive layer, said coating being porous to the diffusion of water vapor.

3,350,942
ULTRASONIC PYROMETER

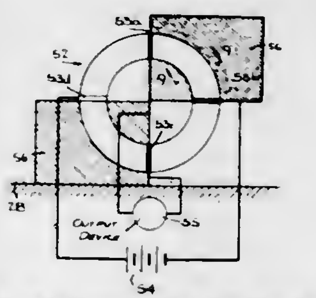
Veikko K. Peltola, Chicago, Ill., assignor to Alnor Instruments, Division, Illinois Testing Laboratories, Chicago, Ill., a corporation of Illinois
Filed Sept. 15, 1964, Ser. No. 396,596
4 Claims. (Cl. 73—339)



1. A pyrometer comprising:
a solid heat sensing and responding element,
said solid element having predetermined acoustic propagation properties which are a function of the temperature of said solid element,
said solid element having a heating zone to be immersed in a region for monitoring temperature of the region,
at least one pair of discontinuities contained in said heating zone and spaced apart a predetermined distance,
a source of electric energy coupled to said solid element at a position remote from said heating zone,
a transducer interposed between said energy source and said solid element and adapted to convert electric energy from said source to pulsed acoustic signals and vice versa,
said solid element channeling each pulsed acoustic signal from said transducer to said discontinuities and conveying back to said transducer a pair of reflected signals,
electronic temperature indicating means coupled to said transducer for receiving the transduced electrical energy result of said pair of reflected signals and deriving therefrom for temperature data readout the time separation therebetween,
the time receipt of said reflected signals being indicative of the temperature of the region being monitored, and gating means for coupling said transducer to said energy source and for simultaneously inhibiting said temperature indicating means from being influenced by said energy source.

3,350,943
JET STREAM INDICATOR

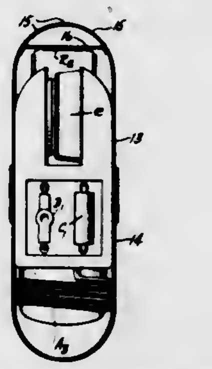
Stanley J. Smith, Southbury, Conn., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York
Original application July 10, 1962, Ser. No. 208,820. Divided and this application Nov. 15, 1965, Ser. No. 517,198
5 Claims. (Cl. 73—362)



1. A device for sensing a change in temperature comprising a ring-shaped member of substantially homogeneous thermistor material, said thermistor material being temperature responsive, means for dividing said ring-shaped member into an electrical bridge network adapted to be balanced, and means for retarding the response of a portion of said ring-shaped member to a change in temperature, the retarding of the response of said portion being sufficient to unbalance said electrical bridge network, whereby the difference in response between the retarded portion and the other portion of said ring-shaped member senses a temperature change.

3,350,944
STRAIN GAUGE PRESSURE TRANSDUCER

Dominick J. De Michele, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 17, 1963, Ser. No. 316,895
4 Claims. (Cl. 73—398)

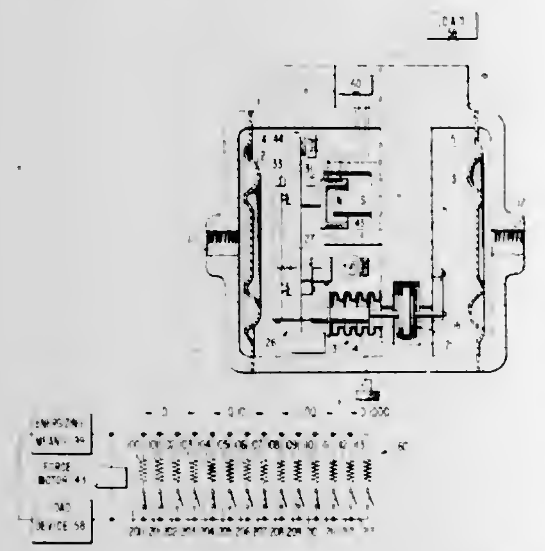


1. A gage for measuring pressures comprising a capsule; said capsule having a deformable diaphragm mounted within it, said diaphragm being mounted so that a predetermined pressure from said capsule will be exerted against one side thereof and being subject to a

variable pressure against the other side; a strain sensor mounted on said diaphragm for measuring strains; an F.M. oscillator circuit having a tunnel diode and an inductance in series to form a series element arranged in said capsule; input means for connecting a source of electrical energy to said oscillator circuit; said strain sensor being electrically connected to said input means on one side and to said series of element of said oscillator at its other side for varying the frequency of said oscillator circuit in response to the variable pressure on the diaphragm.

3,350,945
DIGITAL SPAN ADJUSTER FOR DIFFERENTIAL PRESSURE MEASURING DEVICE

David A. Bristol, Lynnfield, Mass., assignor to General Electric Company, a corporation of New York
Filed June 13, 1966, Ser. No. 557,214
3 Claims. (Cl. 73—398)

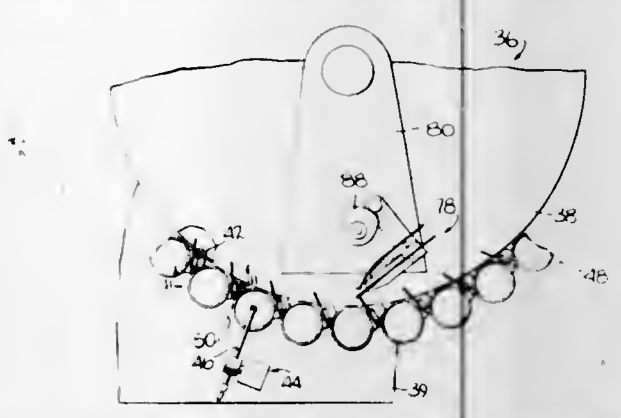


1. In a pressure measuring device including a force balance transmitter including a force motor, current means to energize the force motor, the force motor maintaining the transmitter in a balanced condition and the current required for energization of the force motor indicating the pressure and means for measuring the current, the improvement of a span adjustment means including:
  (a) a plurality of shunt groups, each of said shunt groups representing a decimal decade, each of said shunt groups being constituted by a plurality of shunt impedance means having admittances in a binary relationship, and
  (b) a plurality of switching means, each of said switching means selectively connecting one of said impedance means in parallel with the force motor to thereby adjust the current span which energizes the current measuring means for a given span of applied pressures.

3,350,946
SAMPLE CONTAINERS FOR ANALYSIS APPARATUS

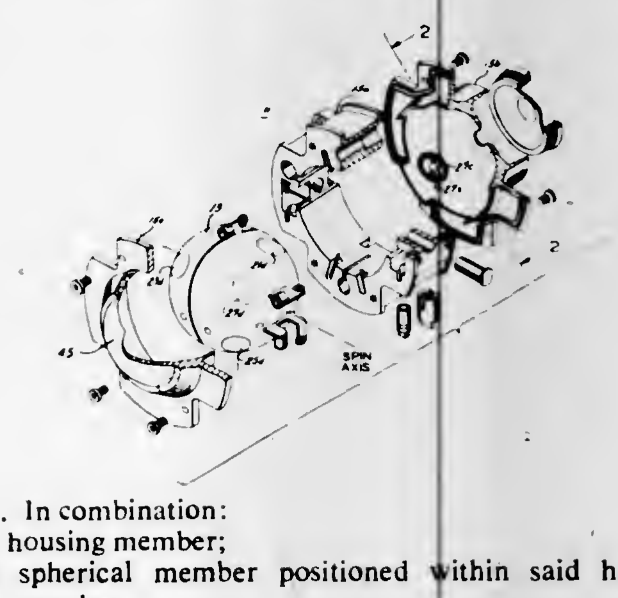
Jack Isreeli, Mamaroneck, N.Y., assignor to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York
Filed Dec. 29, 1964, Ser. No. 421,816
7 Claims. (Cl. 73—423)

7. A sampler assembly comprising a rotary support, a plurality of sample receptacles on said support, said receptacles being provided with identification means and arranged on said support with said identification means of each receptacle disposed partly between adjacent receptacles and partly laterally beyond the adjacent receptacles to a position to be read by a read-out means, wherein said identification means of each receptacle is secured to a companion boss from which said projection means projects outwardly beyond said identification means, and in that said boss engages a part on the support for vertically positioning the top of each receptacle in the same horizontal plane as the tops of the other receptacles on the support at which a cover is positioned.



3,350,947
DENSITY CONTROLLED FLOATED GYRO

Bruce A. Sawyer, Los Angeles, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Continuation of application Ser. No. 221,203, Sept. 4, 1962. This application Mar. 11, 1965, Ser. No. 440,070
14 Claims. (Cl. 74—5.41)

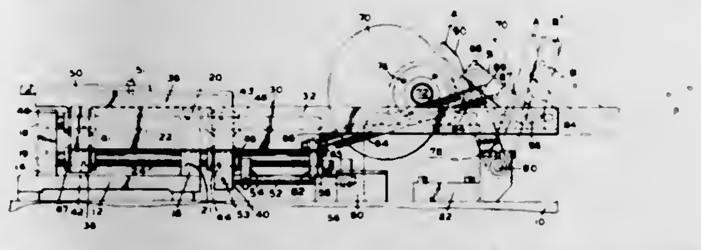


1. In combination:
a housing member;
a spherical member positioned within said housing member;
a flotation fluid filling said housing member and surrounding said spherical member, the mass of the flotation fluid displaced by said spherical member being substantially equal to the mass of said spherical member and varying with the temperature of the flotation fluid;
signal generating means positioned between said housing member and said spherical member for generating a signal which is a measure of the displacement of said spherical member relative to said housing member;
means for applying heat to said flotation fluid, connected to be directly responsive to said signal generating means to apply heat in direct proportion to said displacement to vary the buoyancy of said flotation fluid in a sense to cause said member to be placed in neutral buoyancy.

3,350,948
LINEAR MOTION TRANSMITTING DEVICE

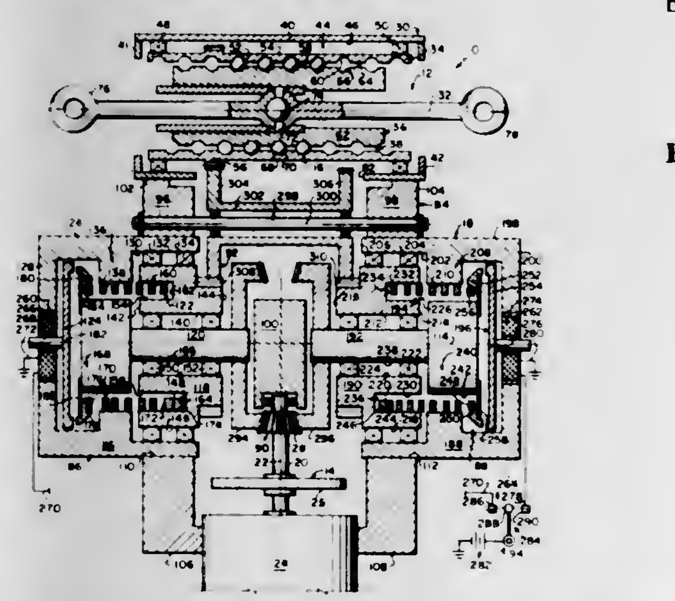
Albin S. Czubak, Detroit, Mich., assignor to Micromatic Hone Corporation
Filed June 4, 1965, Ser. No. 461,466
2 Claims. (Cl. 74—53)

1. A motion transmitting mechanism for moving a slide assembly comprising: a base; a shaft; a first means mounted on said base for supporting said shaft; a second means supported on said shaft for longitudinal movement thereon; a cam mounted on said base adapted for rotation; a cam follower arm means for coacting with said cam to effect movement of said second means; said cam follower arm means includes a pair of cam follower arms, one of said pair of cam follower arms adapted for pivotal movement and having a fulcrum point connected to said base, the other of said pair of cam follower arms having its pivot point connected to said second means, whereby movement of said second means in a longitudinal direction is effected by pivotal movement of said one of said pair of cam arms against said other of said pair of cam arms.



3,350,949
ELECTROMECHANICAL ACTUATION APPARATUS

Edward J. Rapoza, Butler, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed July 28, 1965, Ser. No. 475,605
10 Claims. (Cl. 74—127)

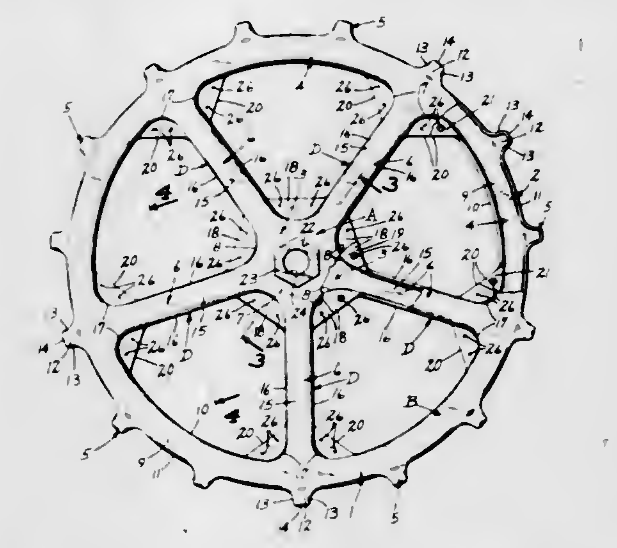


1. An electromechanical actuation apparatus comprising: a uni-directional drive means; a reciprocating axial-displaceable driven means; and a fast-response forward-reverse shiftable coupling means interconnecting said drive means to said driven means in which said drive means includes an electric motor with a continuously-rotating drive shaft, and a flywheel connected coaxially thereto in order to minimize speed variations.

3,350,950
SPROCKET WHEEL

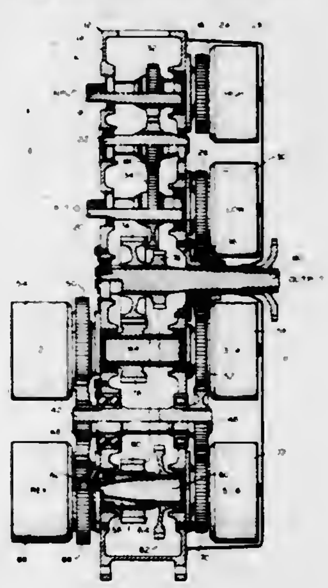
Ebenhard S. Gandrud, P.O. Box 528, Owatonna, Minn. 55060
Filed Mar. 11, 1966, Ser. No. 533,495
7 Claims. (Cl. 74—243)

1. A sprocket wheel including a hub, a rim concentric with said hub, circumferentially spaced teeth on said rim, and circumferentially spaced radial spokes having opposite ends connected to said hub and rim; characterized by a pair of sheet metal blanks formed to provide opposed sprocket wheel members each having hub, rim, tooth and spoke portions; each of said portions comprising an axially outer wall generally transverse to the axis of said sprocket wheel, and generally axially projecting side walls having axially inner edges disposed in a common plane transverse to the sprocket wheel axis; said inner edges of the side walls of one of said members abutting corresponding inner edges of the other of said members; said members having web portions adjacent said hub and rim portions at the opposite ends of said spoke portions; said web portions having flat surfaces coplanar with the inner edges of their respective member portions and each disposed in face-to-face engagement with a corresponding web portion of the opposite member and rigidly anchored thereto.



3,350,951
TRANSMISSION

Barry L. Frost, Jackson, and Burton S. Zeller, Parma, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Dec. 6, 1965, Ser. No. 511,799
5 Claims. (Cl. 74—360)

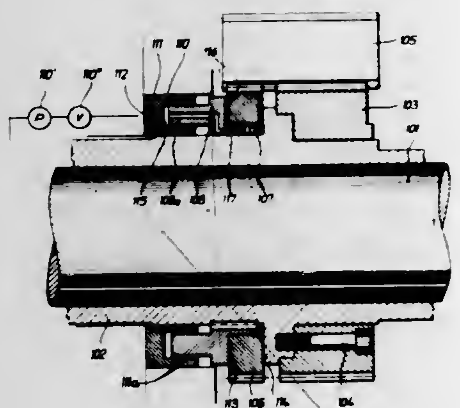


1. A transmission comprising:
(a) first, second, third, fourth and fifth rotatable shafts,
  (1) the said shafts being disposed to be substantially parallel to each other,
(b) first and second gears connected to the said first shaft for conjoint rotation therewith,
(c) third and fourth gears mounted for rotation on the said second shaft,
  (1) the said third and fourth gears meshing with the said first and second gears, respectively,
(d) first and second clutches for connecting the said third and fourth gears, respectively, to the said second shaft for conjoint rotation therewith,

- (e) a fifth gear connected to the said second shaft for conjoint rotation therewith,
- (f) a sixth gear connected to the said third shaft for conjoint rotation therewith,
- (g) a seventh gear mounted for rotation on the said third shaft,
    - (1) the said seventh gear meshing with the said third gear,
- (h) a third clutch for connecting the said seventh gear to the said third shaft for conjoint rotation therewith,
- (i) an eighth gear connected to the said fourth shaft for conjoint rotation therewith,
- (j) a ninth gear mounted for rotation on the said fourth shaft,
    - (1) the said ninth gear meshing with the said second gear,
- (k) a fourth clutch for connecting the said ninth gear to the said fourth shaft for conjoint rotation therewith, and
- (l) tenth and eleventh gears connected to the said fifth shaft for conjoint rotation therewith,
    - (1) the said tenth gear meshing with the said fifth and sixth gears and
    - (2) the said eleventh gear meshing with the said eighth gear.

3,350,952
ARRANGEMENT FOR CONVEYING POWER IN A PLAY-FREE MANNER FROM THE MAIN DRIVE OF CHIP-REMOVING MACHINE TOOLS

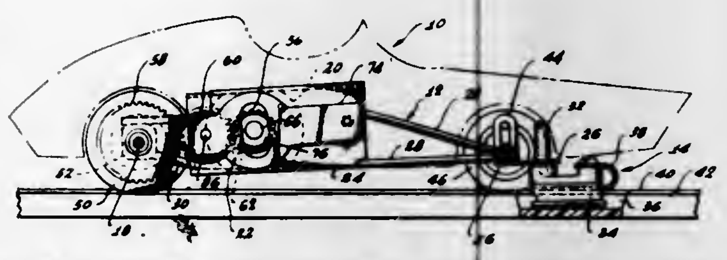
Werner Wostbrock, Remscheid, Germany, assignor to Fritz Hurxthal K.G. Maschinenfabrik, Remscheid, Germany
Filed Aug. 10, 1964, Ser. No. 388,387
Claims priority, application Germany, May 8, 1964, H 52,623
10 Claims. (Cl. 74—409)



1. In a backlash free drive arrangement for a machine tool, especially a machine tool for cutting hard metals and ceramics, said machine tool having a spindle, drive means, and two gear trains leading from said drive means to said spindle and having slightly different transmission ratios whereby the play in the respective gear trains is taken up in respectively opposite directions, one of said gear trains forming a positive driving connection from said drive means to said spindle and the other of said gear trains including slip clutch means between said drive means and said spindle whereby to eliminate backlash or play between the drive means and the spindle, each said gear train including a main gear on the spindle, said main gears being concentrically arranged on said spindle, one of said main gears being fixedly connected to the spindle and the other of said main gears having a slip connection with the spindle forming the said clip clutch means, and pinion means meshing with said concentrically arranged main gears.

3,350,953
BRAKE-DRIVE ASSEMBLY FOR MINIATURE RACING CARS

Edward R. Stewart, 8522 Beverly Blvd.,
Los Angeles, Calif. 90048
Filed Dec. 20, 1965, Ser. No. 514,983
9 Claims. (Cl. 74—411.5)

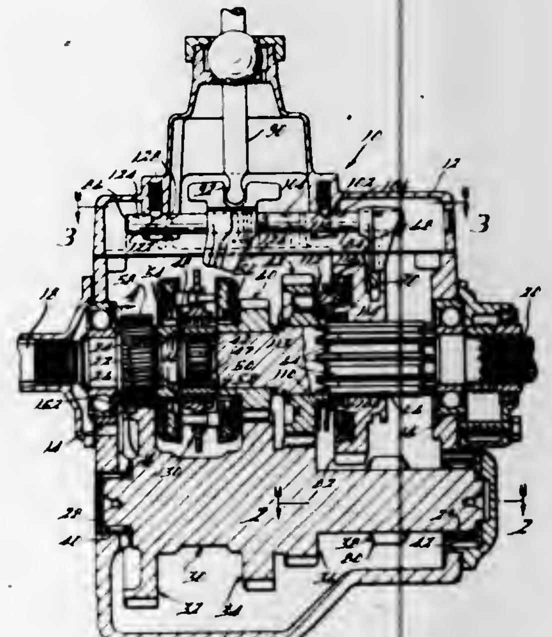


1. A brake-drive assembly particularly suited for miniature racing cars, comprising:

a first gear member connected to a drive motor for turning about a first axis;
a second gear member for turning about a second axis;
a floating idler gear member between and mating with said first and second gear members for turning about a third axis and moving in directions transverse to said axes upon rotation of said first and second gear members;
and brake means for preventing driven rotation of said first gear member by said second gear member and automatically operable to release said first gear member in response to movement of said idler gear member transverse to said axes with driving rotation of said first gear member.

3,350,954
VIBRATION ISOLATION ARRANGEMENT

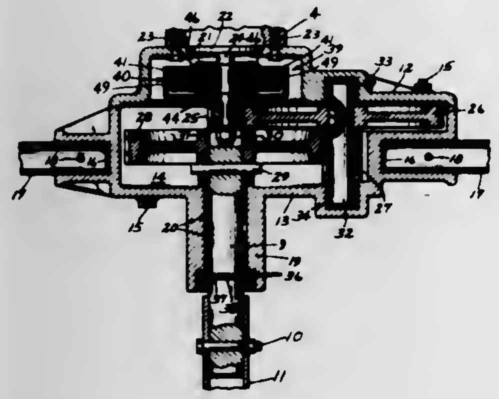
Thurman O. Ruettinger, Skaneateles, N.Y., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Nov. 22, 1965, Ser. No. 508,967
13 Claims. (Cl. 74—333)



1. An anti-rattle arrangement for damping oscillating vibrations between a first rotatable driving member and a second rotatable driven member wherein said members are rotatable one within the other with one of said members being journalled about the other, said anti-rattle arrangement comprising a first plurality of grooves formed in and circumferentially spaced about one of said members with each of said first plurality of grooves having at least a portion of arcuate cross-section conforming to a first radius, a second plurality of grooves formed in and circumferentially spaced about the other of said members with each of said second plurality of grooves having at least a portion of arcuate cross-section conforming to a second radius different from said first radius, said first and second plurality of grooves being spaced so as to be in radial juxtaposition with respect to each other, a plurality of coupling members, each of said first and second plurality of grooves being adapted to cooperatively receive one of said coupling members therebetween, said coupling members being of a dimension so as to limit relative rotation between said driving and driven members, and restraining means in contact with said coupling members for urging said coupling members toward engagement with the plurality of grooves in one of said rotatable members.

3,350,955
POWER TRANSMISSION MECHANISM FOR ROTARY POWER TOOLS

Raymond E. Von Ruden, % General Equipment Co.,
P.O. Box 334, Owatonna, Minn. 55060
Filed Nov. 26, 1965, Ser. No. 509,906
4 Claims. (Cl. 74—421)



1. Power transmission mechanism for rotary power tools comprising:

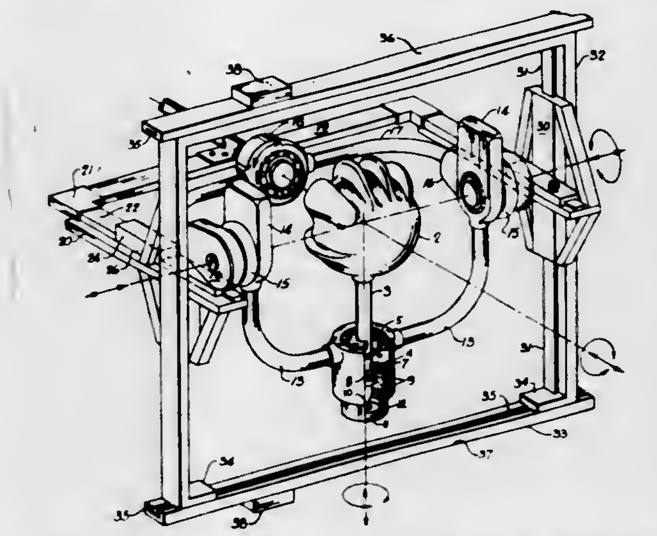
- (a) a housing defining a gear and lubricant chamber,
- (b) an input shaft journalled for rotation in said chamber,
- (c) a rotary drive element mounted on the input shaft for common rotation therewith in said chamber,
- (d) a rotary power transfer element journalled on said input shaft within said chamber in axially spaced relation to said rotary drive element,
- (e) centrifugal clutch means in said chamber and having cooperating clutch portions operatively connected to said drive element and said power transfer element and disposed to be bathed by lubricant in said chamber,
- (f) an output shaft journalled in said housing on an axis extending in a direction axially of said input shaft, and
- (g) speed reduction mechanism in said chamber and operatively connecting said power transfer element with said output shaft.

3,350,956
SIX-DEGREE OF FREEDOM INTEGRATED CONTROLLER

Anton Barton Monge, Garden Grove, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed July 6, 1965, Ser. No. 469,464
16 Claims. (Cl. 74—471)

4. A six-degree freedom control grip for a vehicle comprising in combination:

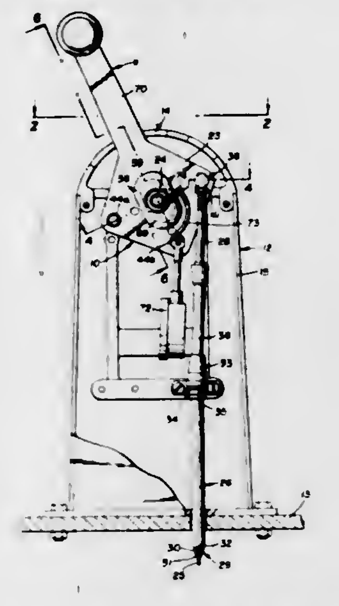
- (a) a control grip rotationally mounted on gimbal means;
- (b) said gimbal means rotationally mounted on a frame means;
- (c) said frame means having frames slidably mounted along three orthogonal axes; and



- (d) said gimbal means positioned within said frame means for rotation along said three orthogonal axes and having the same origin.

3,350,957
TRANSMISSION CONTROL LEVER MOUNT

John F. Morse, Hudson, Ohio, assignor to Morse Controls Inc., Hudson, Ohio, a corporation of Ohio
Filed Jan. 28, 1966, Ser. No. 523,759
10 Claims. (Cl. 74—473)



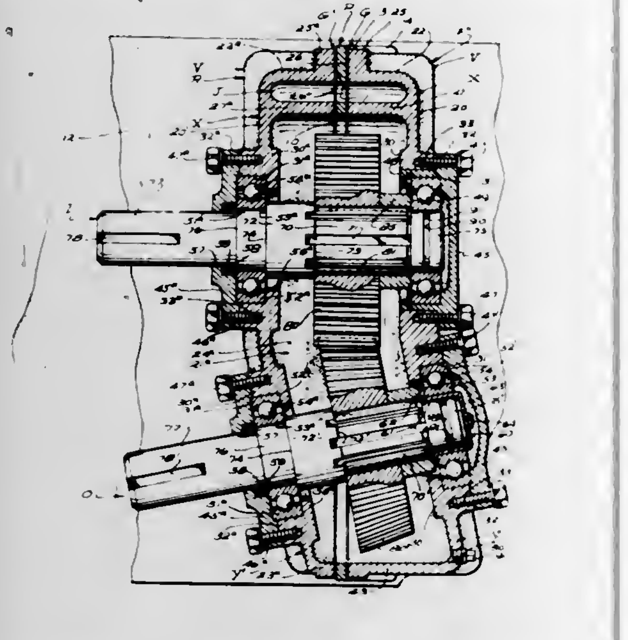
1. A control lever mount comprising an arm extending through a slotted quadrant plate with a hub portion operably connected to a motion transfer means, opposed side walls and opposed end walls forming an elongate slot through said hub portion, a journal means received transversely of said slot, said side walls passing in close proximity to said journal means, said end walls spaced outwardly a greater distance from said journal means than are said side walls, and a resilient bushing between and secured to said journal means and said elongate slot.

3,350,958
V-DRIVE TRANSMISSION

Ernest R. Casale, Whittier, Calif.
(161 8th Ave., City of Industry, Calif. 94597)
Filed Jan. 10, 1966, Ser. No. 519,484
10 Claims. (Cl. 74—417)

1. A V-drive transmission of the character referred to including, an elongate transversely extending vertical mounting plate having flat front and rear surfaces, an

axially forwardly and rearwardly opening aperture, a plurality of axially extending bolt-receiving openings through the plate and about the aperture, a forwardly opening shell-like rear housing section arranged adjacent the rear surface of the plate in register with said aperture and having bolt-receiving openings to register with the openings in the plate, and having a rear end wall with a vertical top portion and a downwardly and forwardly inclined lower portion, a rearwardly opening shell-like front housing section arranged adjacent the front surface of the plate in register with said aperture and having bolt-receiving openings to register with the openings in the plate and having a front end wall with vertical top portion and a downwardly and forwardly inclined lower portion, pairs of axially aligned openings in the top portions of the front and rear end walls and in the lower portions of the front and rear end walls, bearings fixed in the openings in the rear end wall, an upper, horizontal in-put shaft carried by and extending through the bearing in the opening in the top section of the rear end wall and terminating at the opening in the top portion of the front end wall, a lower upwardly and forwardly inclined output shaft carried by and extending through the bearing in the lower portion of the rear end wall and terminating at the opening in the lower portion of the front end wall, a drive gear slidably engaged on the in-put shaft against axial rearward shifting and rotation, a gear slidably engaged on the out-put shaft against axial rearward shifting, said drive and driven gears being meshed with each other, front bearing means engaged in the openings in the front end wall and slidably receiving and rotatably supporting the forward ends of the shafts related thereto, spacer sleeves on the shafts between the gears and the front bearing means, screw fastener means releasably securing one of said front bearing means to the front housing section, and screw fastener means engaged through the registering openings in the sections and the mounting plate and releasably holding the front section on the the plate and holding the plate and rear section in tight clamped engagement with each other.



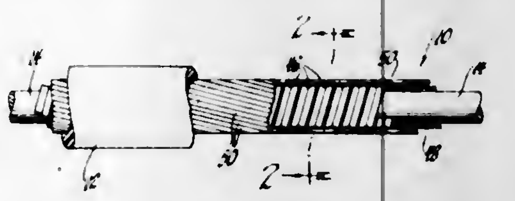
3,350,959
CABLE OR CONDUIT ASSEMBLY

Fred Machate, Lansdale, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware

Filed Apr. 29, 1965, Ser. No. 451,805

27 Claims. (Cl. 74—501)

4. A flexible member of the type utilized as a cable and a conduit comprising; a strip having a substantially V-shaped cross section including an apex and edges and wound with a relatively short lead to form a plurality of convolutions defining a longitudinally-extending central passageway into which the apex of the V-shaped cross section extends, and means at least partially surrounding said convolutions, said edges being inwardly displaced by said means.



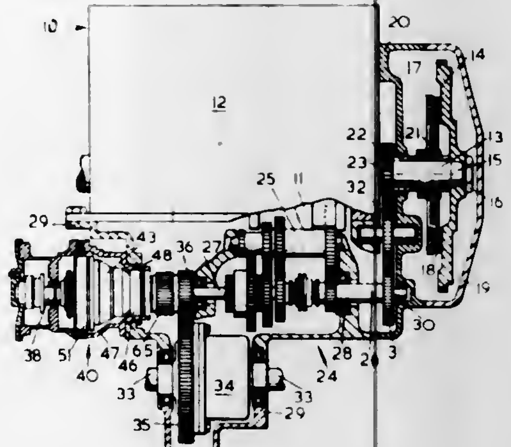
3,350,960
POWER TRANSMISSION SYSTEM

Alan S. Lamburn, Kencott, Via Lechlade, and Randle L. Abbott, Leamington Spa, England, assignors to Axel Wickman Transmissions Limited, Coventry, England

Filed Mar. 19, 1965, Ser. No. 441,023

Claims priority, application Great Britain, Mar. 25, 1964, 12,520/64

12 Claims. (Cl. 74—701)



1. A power transmission system, for a motor road vehicle, including a main change-speed gearing, a two-speed auxiliary gearing, a power input member connected to drive said auxiliary gearing, a power output shaft connected to be driven by said main change-speed gearing and extending from said main gearing and connected to drive said auxiliary gearing power input member, a transfer gear train arranged intermediate said main gearing and said auxiliary gearing, a first gear forming part of said transfer gear train, said first gear defining a coaxial bore, said main gearing power output shaft extending coaxially through said coaxial bore, a power output member connected to be driven by said auxiliary gearing and connected to drive said first gear, a further gear driven by said first gear and forming part of said transfer gear train, the axis of said further gear being parallely spaced from said main gearing power output shaft, two oppositely-extending drive shafts coaxial with said further gear, and means connecting said further gear to drive said two drive shafts.

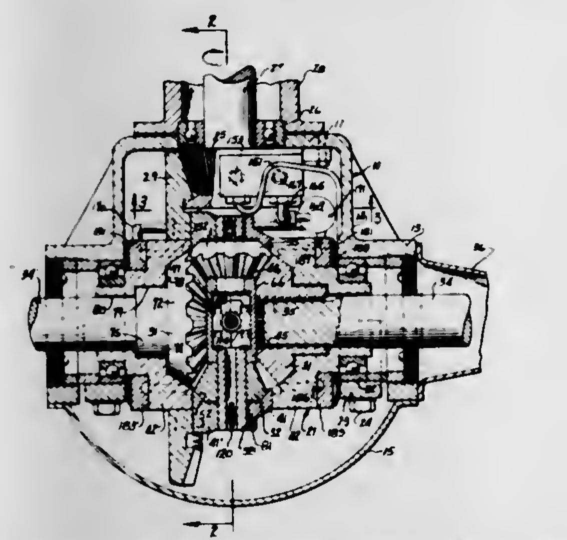
3,350,961
LOCKING DIFFERENTIAL

Adiel Y. Dodge, Rockford, Ill.
(Lake Park, 1850 Alice St., Oakland, Calif. 94612)

Filed Aug. 9, 1965, Ser. No. 478,180

21 Claims. (Cl. 74—711)

1. A differential mechanism comprising, a differential housing defining a fluid reservoir, a differential case rotatably mounted in the housing, a pair of differential sun gears rotatably mounted in the case and differential planet gears rotatably mounted in the case and in mesh with the sun gears, said case including means extending into close running fit with the sun and planet gears in the region adjacent the mesh points thereof to produce a pumping action, inlet passage means communicating with the intertooth spaces at each side of the mesh points of the sun and planet gears for passing fluid from the reservoir to the intertooth spaces, inlet check valve means controlling flow through the inlet passage means operative to open for flow to the tooth spaces and to close to block return flow, outlet passage means communicating with the intertooth spaces at each side of the mesh points of the sun and planet gears and extending to a point externally of said differential case for passing fluid back to the reservoir, outlet check valve means in said outlet passage means operative to open for flow from the intertooth spaces and to close to prevent return flow, and flow restrictor means for throttling flow through said outlet passage means back to the reservoir to retard relative rotation of the planet and sun gears.



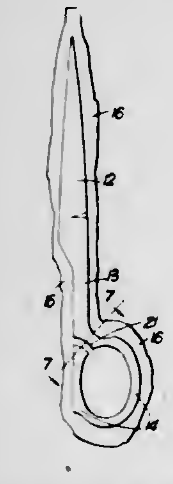
3,350,962
METHOD FOR MANUFACTURING SCISSORS AND THE LIKE

Wilhelm Muller, Sheffield, England, assignor to Richards Bros. & Sons Limited, Sheffield, England, a British company

Filed Sept. 10, 1965, Ser. No. 486,394

Claims priority, application Great Britain, Mar. 11, 1965, 10,435/65

5 Claims. (Cl. 76—104)



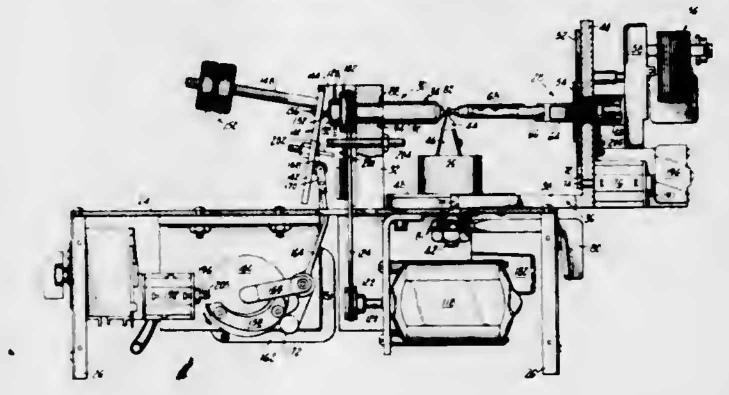
1. A method of forming each of two pivoted parts for a bladed instrument having looped handles comprising bending one end of a rod to form a loop so that the extremity of that end is disposed adjacent to a shank portion extending away from the loop, placing the blank so formed between shaped parts of a die in a press which die parts are so shaped that when brought together pressure is imparted by them both to the loop part and to the part which is to form the blade and so that the metal at the extremity of the rod is prevented from uniting with the metal of the shank portion whereby the blade, shank and loop are brought substantially to the required shape for the finished article with a gap in the loop adjacent the shank whereafter the resulting flash is removed.

3,350,963
NOZZLE DRILLING MACHINE

Vernon D. Roosa, % Hartford Machine Screw Co., Hartford, Conn. 06101

Filed May 14, 1965, Ser. No. 455,913

15 Claims. (Cl. 77—32.2)



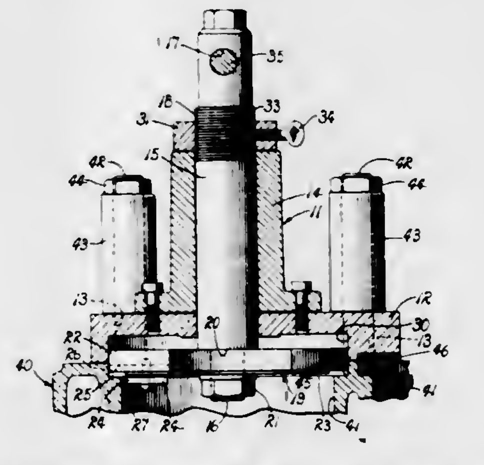
1. An apparatus for drilling discharge orifices in the tip of a fuel injection nozzle and comprising a frame, a drill mechanism mounted to the frame having a fixed drilling axis, a workpiece positioning device supported on the frame having a power operated index plate mounted for rotation, means for adjustably positioning the index plate with the rotational axis thereof intersecting the drilling axis in a predetermined angular relationship, and a chuck attachable to the index plate for holding the nozzle tip at the intersection of the rotational axis of the index plate and the drilling axis with the longitudinal axis of the nozzle tip offset at a preselected angle to the rotational axis of the index plate for selective drilling of the discharge orifices.

3,350,964
COUNTERBORE FACING TOOL

Daryl G. Brooks, 3332 E. Sierra Madre Ave., Fresno, Calif. 93726

Filed Dec. 23, 1966, Ser. No. 604,310

9 Claims. (Cl. 82—4)



1. A tool for facing the radial surface of a cylindrical counterbore, comprising:

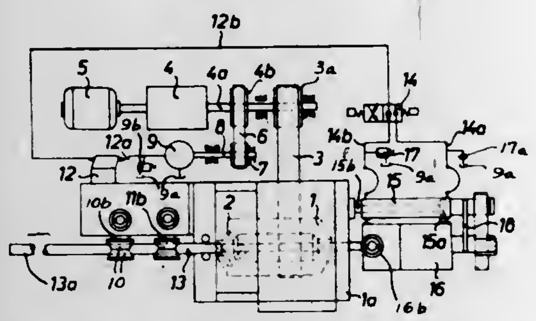
tool carriage means having a longitudinal axis and including a cutting tool disposed for movement rotationally about and linearly in alignment with said longitudinal axis;

mounting means mounting said tool carriage means to the work containing said cylindrical counterbore for simultaneous movement linearly along and rotationally about said longitudinal axis; and

alignment means operatively associated with said mounting means and said tool carriage means and disposed to align said longitudinal axis of said tool carriage means with the longitudinal axis of said cylindrical counterbore.

3,350,965
APPARATUS FOR SHAVING ELONGATED WORKPIECES OF CIRCULAR CROSS SECTION

Hans Brauer and Horst Lorenz, Solingen, Germany, assignors to Th. Kieserling & Albrecht, Solingen, Nordrhein-Westfalen, Germany
Filed June 8, 1965, Ser. No. 462,228
Claims priority, application Germany, June 9, 1964, K 53,175
12 Claims. (Cl. 82—20)

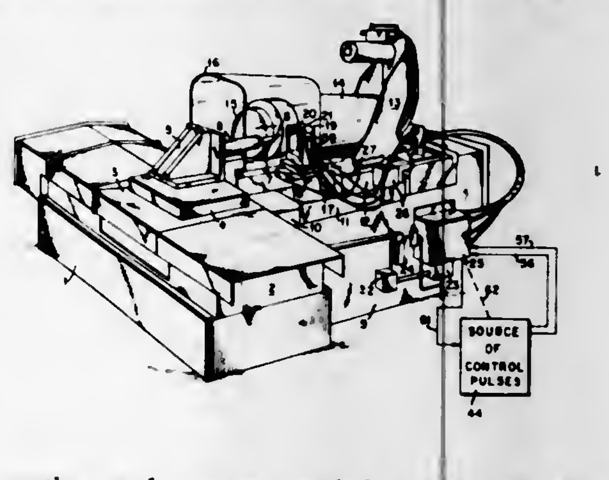


1. In an apparatus for removing material from the exterior of elongated workpieces of circular cross-sectional outline, a first feed unit including two serially arranged sets of feed rolls for advancing the workpieces lengthwise and for holding such workpieces against turning; a second feed unit constituted by a single carriage spaced from and located past said feed rolls and reciprocable in the axial direction of the workpieces; clamping means provided on said carriage for engaging a portion of a workpiece which is advanced by said feeds rolls; hydraulic drive means for operating said feed rolls and for reciprocating said carriage, said hydraulic drive means comprising a drive motor, hydraulic pump means driven by said drive motor, a hydraulic motor in circuit with said hydraulic pump means and connected to said feed rolls for driving the same, a double acting cylinder member, a piston member in said cylinder member and dividing the latter into a pair of chambers, one of said members being fixed and the other member being connected to and reciprocating with said carriage, conduit means connecting said pump means with said chambers, and valve means in said conduit means for regulating flow of fluid into and out of said chambers to move thereby said carriage relative to said fixed member; and rotary material removing means provided between said feed units and comprising at least one orbiting cutter for removing material from a workpiece which advances between said feed units.

3,350,966
AUTOMATIC DIGITAL TOOL-SETTING SYSTEM

Charles L. Moulton, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed June 2, 1966, Ser. No. 554,911
5 Claims. (Cl. 82—21)

1. In a tape-controlled cutting machine including a cutting tool, slidable means for supporting said cutting tool, a slidable workpiece holder means for holding a part to be machined, means for effecting movement of said slidable means and the cutting tool affixed thereto in one direction or the opposite direction along a first axis, means for effecting movement of said slidable workpiece holder means in one direction or the opposite direction along a second axis perpendicular to said first axis, a source of control pulses comprising a programmed tape to provide a first drive signal and a first sign signal, and to provide a second drive signal and a second sign signal, means for coupling said first drive and first sign signals to said means for moving said cutting tool along said first axis, means for coupling said second drive and second sign signals to said means for moving said workpiece holder along said second axis, said signals provided by said programmed tape to said respective movement means effecting a predetermined machining operation on said part to be machined, the improvement comprising means for automatically positioning said cutting tool to a predetermined reference position prior to said machining operation, said tape being programmed with respect to such reference position to effect a desired machining operation after tool positioning, said tool positioning means comprising a pair of tool position gauging devices mounted on said machine at right angles to each other and in respective alignment with said axes, and said devices adapted to be engaged by said cutting tool, each of said gauging devices providing a maximum output signal therefrom prior to engagement therewith by said cutting tool and providing a variable output signal as a function of tool position after engagement by said cutting tool, means coupled to each of said output signals from said devices for providing respective third and fourth drive and third and fourth sign signals therefrom, switch means for selectively connecting said source of tape control pulses to said respective movement means during said machining operation, or connecting said third drive and third sign signals and said fourth drive and fourth sign signals to said respective movement means during said tool positioning, said signals provided by said means coupled to said gauge devices providing control to said respective tool movement means and workpiece holder movement means to effect movement of said tool and holder to cause said cutting tool to engage each of said respective gauging devices and vary the outputs therefrom until such outputs become zero at which time each of said movement means is inactivated and the cutting tool has reached said reference position, and means responsive to zero output signals from said gauging devices to cause said switch means to switch control of said movement means back to said source of control pulses whereby said desired machining operation on said part to be machined, as programmed by said tape, is effected.

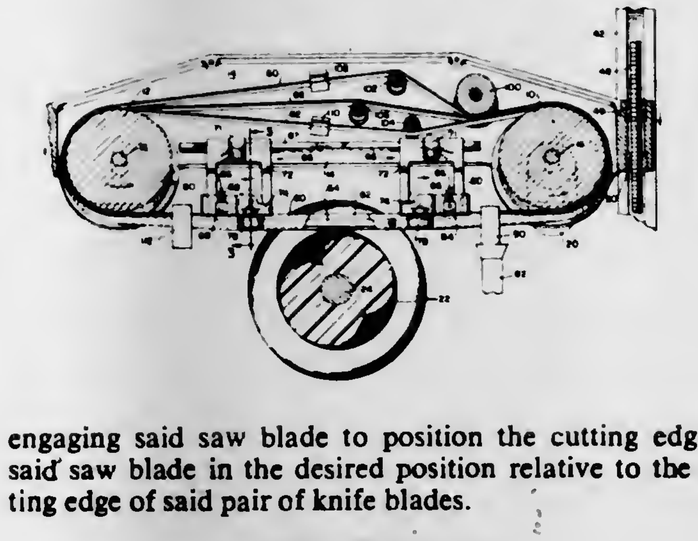


3,350,967
SLITTING MECHANISM

David E. Gerstein, 63—33 98th Place, Forest Hills, N.Y. 11375
Filed Mar. 16, 1967, Ser. No. 629,054
10 Claims. (Cl. 82—46)

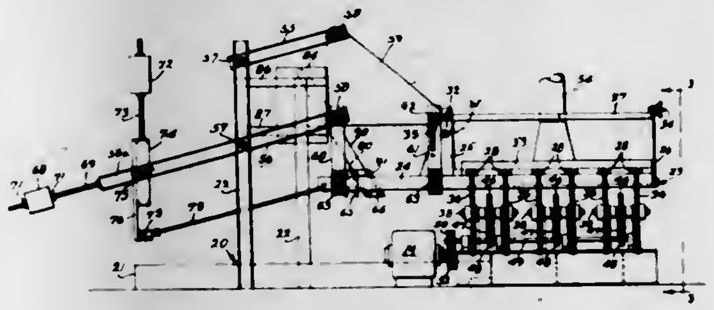
1. A slitting mechanism: support means; at least a pair of drums rotatably mounted on said support means in spaced aligned relationship; a pair of continuous knife blades mounted on said drums; a continuous saw blade mounted on said drums and disposed between said pair of knife blades; power means connected to one of said drums for driving said blades; and a blade guide on

said support means engaging said pair of knife blades to keep said knife blades in abutting relationship with said saw blade, said guide having an adjustable member engaging said saw blade to position the cutting edge of said saw blade in the desired position relative to the cutting edge of said pair of knife blades.



3,350,968
CUTTING APPARATUS

Jack A. Melander, Ballston Spa, N.Y., assignor, by direct and mesne assignments, to Baldwin-Ehret-Hill, Inc., Trenton, N.J., a corporation of Pennsylvania
Filed Oct. 31, 1963, Ser. No. 320,490
3 Claims. (Cl. 83—1)

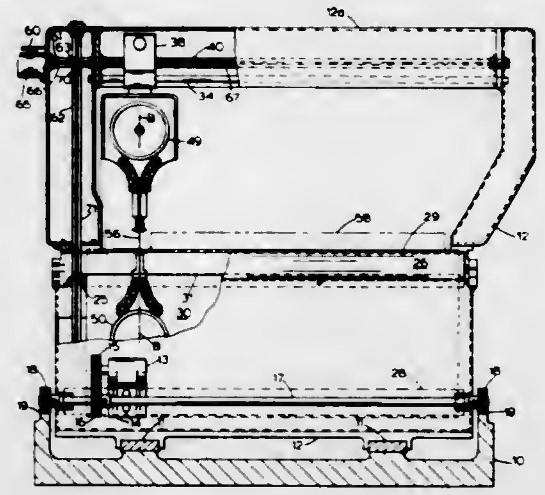


1. Cutting apparatus comprising, in combination, a plurality of band cutting members each having an upper cutting strand spaced apart laterally, a workpiece holder for supporting a workpiece having upper and lower workpiece holding elements located above and below said upper cutting strands, swing support means for said holder providing vertical and horizontal movement of said workpiece holder relative to said upper cutting strands, templet means having a peripheral outline defining a predetermined pattern, a follower carried by said workpiece holder adapted to be guided along the peripheral outline of said templet means thereby to cause the cutting strands to engage the workpiece in adjacent cutting zones to form therein a design conforming to the peripheral outline of said templet means, and limit means in the form of a member having an inner edge spaced from and of a different configuration than said peripheral outline of said templet means operable to confine movement of said follower to thereby prevent a cutting strand in one cutting zone from entering a cutting zone of an adjacent cutting strand.

3,350,969
MACHINE FOR CUTTING MATERIAL

James G. Wiatt and Edward C. Bruns, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 12, 1965, Ser. No. 455,269
13 Claims. (Cl. 83—201.07)

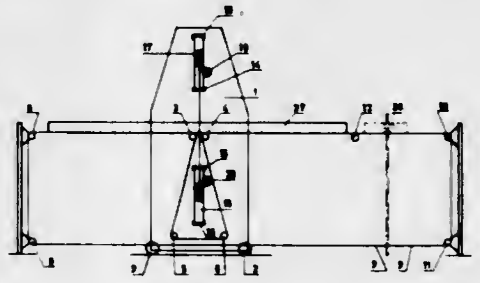
6. A cutting machine comprising in combination:
(a) two spaced pulleys,
(b) an endless blade carried by said pulleys and extending between the pulleys in two paths of travel,
(c) a plurality of rollers positioned adjacent each pulley and adjacent each of said paths of travel of said blade, said rollers guiding said blade to bring said paths of travel close together at a point between the pulleys, and



(d) means to turn both of said pulleys in unison through 360° about an axis passing through said point.

3,350,970
APPARATUS FOR CUTTING SHEET MATERIAL

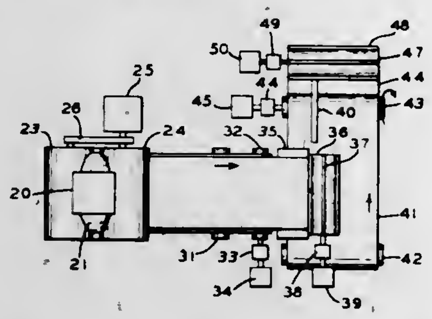
Hendrik Glastra, Enschede, Netherlands, assignor to N.V. Maatschappij voor Industriële Research en Ontwikkeling, Enschede, Netherlands, a corporation of the Netherlands
Filed June 11, 1965, Ser. No. 463,113
Claims priority, application Netherlands, June 17, 1964, 64—6,916
7 Claims. (Cl. 83—201.07)



1. Apparatus for cutting sheet material, especially the cutting of the constituent parts of articles of dress and the like from textile or such like flexible material, the said apparatus comprising a platform supporting surface for supporting the material to be cut and a cutting element which is substantially perpendicular to the supporting surface and which can be moved along its own axis, wherein the platform is formed by a flexible band, which is guided over two mutually parallel deflection elements, which are mounted close to one another on either side of the cutting element and over at least one deflection element mounted thereunder, the said cutting element being carried by slides movably mounted over and under the platform, which slides can be simultaneously subjected to like shifts parallel to the deflection elements by means of two operationally connected conveying mechanisms, the cutting element being an endless cutting wire which is guided over two guiding wheels mounted on the upper and lower slides and the course of which wire runs from the guiding wheels in opposite directions parallel to the direction in which the slides can be shifted and which course is closed by means of guiding wheels mounted on the frame the said deflection element being carried by a frame, which can be moved perpendicularly to the longitudinal direction of the deflection elements, which

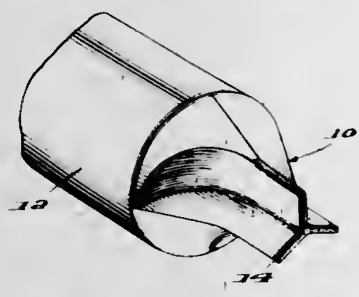
frame also carries the cutting element and the said slides and the said guide wheels on which the cutting element is mounted.

3,350,971
CHIP FORMING APPARATUS
Charles F. Schneider, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed June 24, 1965, Ser. No. 466,669
9 Claims. (Cl. 83—354)



1. Chip forming apparatus comprising first sheet material supply means, means for separating said sheet material into strips, means for separating said strips into chips, means for controlling said sheet material supply means, said sheet material separating means, and said strip separating means, said controlling means including means for varying continuously during the operation of said apparatus the sheet material supply means, said sheet material separating means, and said strip separating means whereby size of said chips may be varied during operation of said apparatus.

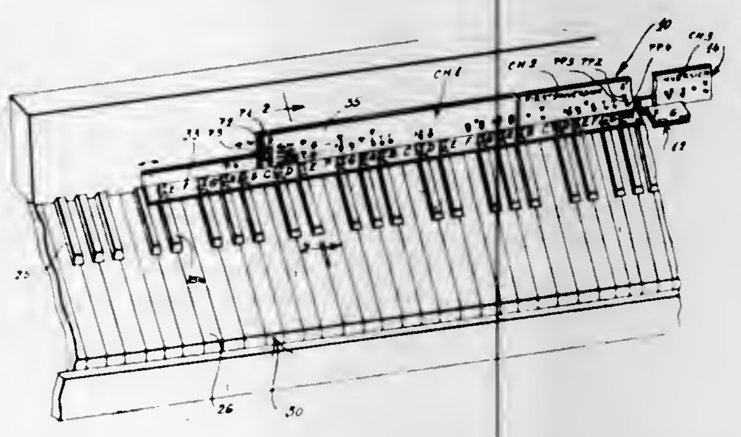
3,350,972
LOW FRICTION PUNCH TOOL
Paul William McKee, Jr., Martinsville, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 18, 1964, Ser. No. 419,366
4 Claims. (Cl. 83—686)



1. A tool comprising a shank terminating in a punch with a flat end surface and a rounded leading edge, said punch also being provided with a matte finish on all of its working surfaces.

3,350,973
MUSIC CHORD FINDER DEVICE
Andrew J. Weis and Anne B. Weis, both of 137 Summit Ave., Mount Vernon, N.Y. 10550
Filed Feb. 5, 1965, Ser. No. 430,587
1 Claim. (Cl. 84—478)

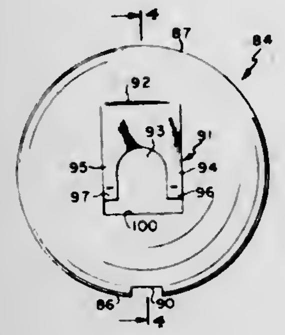
A music chord finder device adapted for locating notes of chords on a music keyboard having a multiplicity of playable keys in side-by-side relationship with abutments formed on rear portions of the keys, and having a vertical panel spaced slightly from said abutments; comprising a base member made of folded, flexible sheet material, said base member having a wider imperforate rear wall and a narrower imperforate front wall, both walls being integrally joined at a bottom folded edge defining a groove with open top therebetween, said folded edge being insertable between said panel and said abutments, an imperforate lip integrally formed with the upper edge of the front wall and extending forwardly thereof the full length of said member for overlaying rear ends of the keys, said front wall having a width substantially equal to depths of said abutment so that the lip lies on and is supported by the keys, and a flat slide plate slidably disposed in said groove between said walls, said plate being removable from said groove and insertable into said groove through the open top thereof, said plate holding the walls apart to abut said panel and abutments respectively, said plate being movable along the base member while remaining in said groove, said slide plate having an upper portion extending above said lip to facilitate grasping the slide plate for removable and replacement of the same, said lip being divided into designated areas corresponding to respective keys of the keyboard, said upper portion of the slide plate having a plurality of chord location sections, a plurality of horizontal rows of differently colored pointers in each section, the pointers in a first one of the sections being spaced apart at distances corresponding to locations of notes of chord in root positions of keys designated on said lip, the pointers in a second one of said sections being spaced apart at distances corresponding to locations of notes of the first inversion of chords of the keys designated on said lip, the pointers in a third one of the sections being spaced apart at distances corresponding to locations of notes of the second inversion of chords of the keys designated on said lip, the pointers of the three chord location sections all being located on one side of the slide plate, the pointers in the three sections being arranged to locate notes in major, minor, augmented and diminished chords and enlargements of elementary chords.



3,350,974
UNITARY SPRING CLIP
Richard W. Brown, Excelsior, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Original application Dec. 3, 1964, Ser. No. 415,614. Divided and this application July 25, 1966, Ser. No. 590,122
3 Claims. (Cl. 85—8.8)

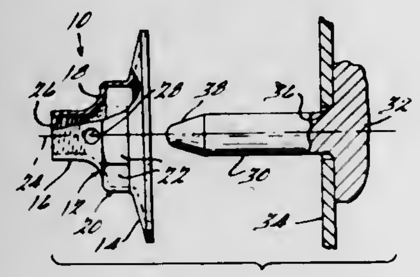
1. A unitary spring clip for connecting an assembly of the type including a base member having a surface with an upstanding post extending therefrom, the post having a transversely extending abutment flange adjacent the free end thereof, and a member to be secured to the post with the post extending through an aperture therein and with a first surface thereof abutting the surface of the base member and a second surface thereof transverse to the post and disposed intermediate the first surface and the abutment flange, the clip comprising:

a relatively thin resilient clip member having a concave side disposed toward the assembly and an opposite convex side, said clip member having forward and rear edges on opposite sides of a crest portion, said member having a base portion, including said front and rear edges, adapted to bear upon the second surface of the member to be secured to the post;



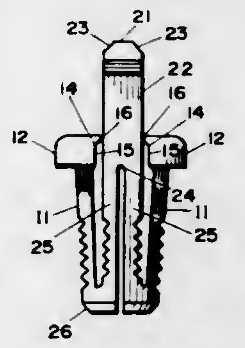
and a resilient yoke formed by a portion of the clip and having a forward portion severed from the clip and a rear portion integral with said clip at a point intermediate said crest and said rear edge, said yoke having a portion removed to define a pair of spaced, forwardly extending fingers adapted to be forwardly slid into position straddling the post between the retaining flange on the post and the second surface of the member being secured, the forward portion of said yoke being depressable to render said fingers slidable under the retaining flange and to allow the flange to pass between the forward portion of the yoke and the concave side to the clip, the opening left in said clip when the yoke is depressed being sufficiently large so that the free end of the post, including the retaining flange, extends therethrough to lock the clip with respect to the post when the clip is slid into position on the post.

3,350,975
SELF-THREADING NUT
Alfred A. Bien, Birmingham, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Dec. 23, 1965, Ser. No. 515,932
7 Claims. (Cl. 85—32)



1. A one piece sheet metal self-threading nut comprising a generally tubular portion, a radially outwardly flaring joining portion joined to said tubular portion and flaring radially outwardly therefrom, a continuous thread formed in said tubular portion internally thereof, at least one aperture formed generally transversely through said nut in a manner so as to extend through said thread, said aperture also being formed as to pass through said outwardly flaring joining portion, a first internal cutting edge having a projected profile of a configuration closely approximating an axial cross-section of said internal thread formed by the intersection of said aperture and said internal thread, a second internal cutting edge having a projected profile of a configuration closely approximating an axial cross section of said radially outwardly flaring portion formed by the intersection of said aperture and said outwardly flaring joining portion, said second cutting edge being effective for engaging an unthreaded member having an outer diameter greater than the major diameter of said internal thread and being further effective upon rotation thereagainst to cut said unthreaded member in order to reduce said outer diameter to a size at least closely approaching the said major diameter of said internal thread, said first cutting edge being effective upon further rotation of said nut against said unthreaded member for further cutting that portion of said unthreaded member previously cut by said second cutting edge in order to cut into said unthreaded member an external thread form which will threadably mate with said internal thread, and a tool engaging surface carried by said nut adapted to be engaged by a suitable tool for drivingly rotating said nut against said unthreaded member.

3,350,976
ONE PIECE PLASTIC EXPANSION FASTENER
Sam B. Topf, Coral Gables, Fla., assignor of one-half to Louis Rolnick, Miami Beach, Fla.
Filed Oct. 18, 1965, Ser. No. 496,950
2 Claims. (Cl. 85—37)



1. A reusable anchor of stiff resilient plastic material for fastening a plurality of members together having a longitudinally disposed axis comprising a pair of leg portions mounted in spaced and substantially parallel relation about said axis and received by a bore in said members, a cap portion mounted on the outer end of each of said leg portions, said cap portions being positioned on each side of said axis for engaging the outer surface of the outermost one of said members, an elongated member disposed along said axis spaced between said leg portions and terminating at its outer end in a head portion normally above said cap portions when the anchor is not in use, said elongated member normally having an axially disposed slot extending from the inner end of said elongated member and terminating intermediate said ends, said slot forming a pair of further leg portions in normally spaced parallel relation between said first leg portions, the inner end of each of said first leg portions being joined to the inner end of the adjacent further leg portion, shoulder means formed on said cap portions, and bevelled edges formed on the side edges of said head portion adapted to cooperatively engage said shoulders for locking said head portion when said head portion is received between said cap portions, to said cap portions after said elongated member has been forced slidably inwardly with relation to said first main leg portions while mounted in said bore, until the bevelled edges of said head portion have been engaged by the shoulder means on said cap portions and said leg portions being adapted to be bent outwardly along their full length as a result of the force applied to slide said elongated member inwardly, into intimate relation to the opposite sides of said bore and around the inner edges thereof, and to return to their original axially extended form upon application of force to said head of said elongated member for sliding it out to its normally extended position.

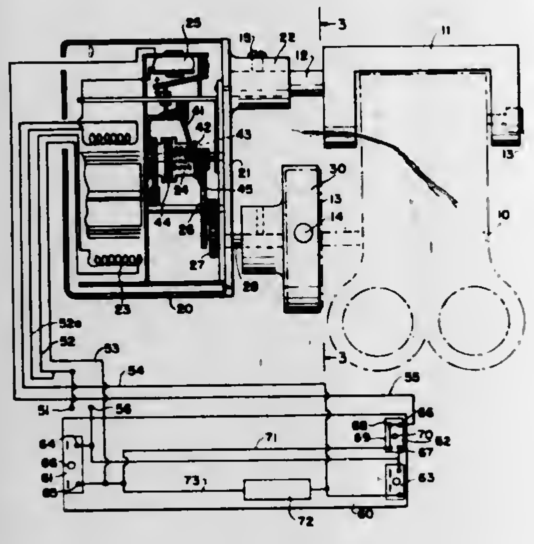
3,350,977

REMOTE CONTROL FOCUSING ATTACHMENT FOR A MICROSCOPE

Carl Gans, 17 Pelham Drive, Buffalo, N.Y. 14214, and William Tanski, Jr., Buffalo, N.Y.; said Tanski, Jr., assignor to said Gans

Filed July 19, 1963, Ser. No. 296,228

1 Claim. (Cl. 88—1)



As an attachment for a microscope a remote control device for manipulating the focusing knob of the microscope which can be controlled by parts of the body other than the hands of the operator comprising in combination,

means including an inflexible rotatable shaft and clamping ring for attaching to the focusing knob of the microscope,

motor means including a reversible motor and an electrically operated clutch-brake mechanism coupled to the reversible motor, said clutch-brake mechanism in turn being directly coupled to said inflexible rotatable shaft and adapted to rotate the latter at a relatively low angular speed,

clamping means for holding the motor means and the rotatable shaft and for attaching the same directly to the microscope,

a switch assembly comprising three switches connected to said reversible motor and said clutch-brake mechanism, the first of said switches when activated, energizing the said clutch-brake mechanism and causing said motor to rotate in one direction, the second of said switches when activated, causing the motor to rotate in the other direction, and the third switch connected in series with said second switch energizing said clutch-brake mechanism when said second and third switches are activated, and mechanical means for operating said switch assembly comprising two levers pivotably mounted on said switch assembly the first of said levers adapted when pressed to activate said first switch, the second of said levers adapted when pressed to activate said second and third switches.

3,350,978

OPTICAL ROTATION MEASURING INSTRUMENT

Perry B. Alers, 2914 W St. SE., Washington, D.C. 20021

Filed Feb. 21, 1963, Ser. No. 260,966

7 Claims. (Cl. 88—14)

1. A measuring instrument which comprises:

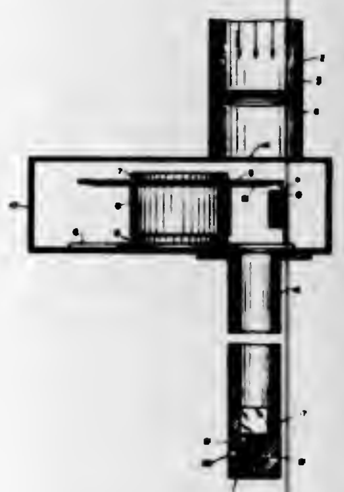
means for plane polarizing monochromatic light and for rotating the plane of the polarized light at a predetermined constant rate,

means for producing from said monochromatic light a pair of sequential discrete light pulses for each cycle of rotation of said plane polarizing means, said means producing said pair of discrete light pulses being correlated to said cycle of rotation in such a manner that the first pulse of said pair is spaced one-fourth of said cycle from the second pulse of said pair and the second pulse of said pair is spaced three-fourths of said cycle from the first pulse of the next following cycle of rotation,

an optically-active body arranged to receive rotating plants polarized light from said polarizing and plane rotating means,

optical analyzing means arranged to receive rotating plane polarized light from said optically active body to select therefrom plane polarized light which varies sinusoidally in intensity,

means arranged to receive sinusoidal plane polarized light from said optical analyzing means for conversion of said light to voltage which varies sinusoidally in intensity,



means arranged to receive said pair of light pulses from said light-pulse producing means for conversion of light pulses to a corresponding pair of voltage pulses,

and electronic means arranged to receive said sinusoidal voltage and said pair of voltage pulses and to visually display said voltage pulses with the distance between said displayed pulses varying with the phase relationship between said sinusoidal voltage and said pair of voltage pulses, said electronic means receiving said sinusoidal voltage on a first deflecting means for scanning in a first direction and receiving said voltage pulses on a second deflecting means for scanning in a second direction orthogonal to said first direction.

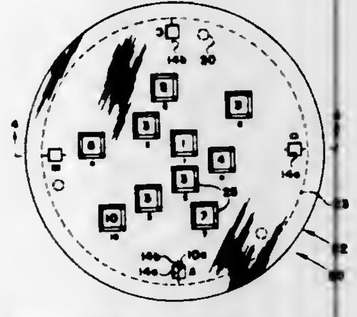
3,350,979

CONTAMINATION FILTER MASK

James I. Detweiler, Burbank, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed June 22, 1964, Ser. No. 376,729

14 Claims. (Cl. 88—14)



1. A fluid filter mask comprising:

a cover member at least substantially coextensive with the area of a filter membrane adapted for exposure to fluid flow; and

window means in said cover member for exposing only predetermined restricted regions of the filter substantially representative of the total filter membrane area.

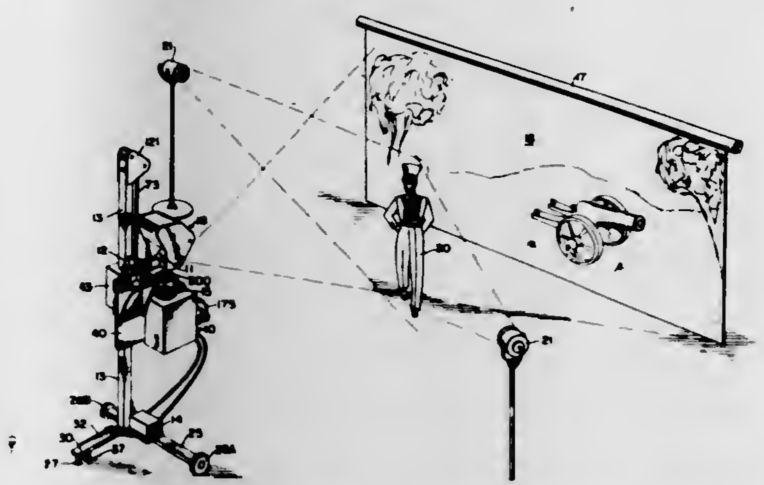
3,350,980

PHOTOGRAPHIC APPARATUS

George D. Margolin, New York, N.Y., assignor to Front Projection Corporation, New York, N.Y., a corporation of New York

Filed Jan. 8, 1965, Ser. No. 424,337

12 Claims. (Cl. 88—24)



1. An integrated camera projector apparatus comprising in combination:

(a) a camera and associated camera lens,

(b) a projector and associated projector lens for projecting a transparency image,

(c) a semi-reflective beam splitter operatively associated with said camera and projector for reflecting such image from said projector to a screen and for transmitting such image back from the screen through the splitter to said camera on an axis coaxial to the optical axis of said camera lens, and

(d) means for varying the optical path distance between said camera lens and said projector lens along said axis.

3,350,981

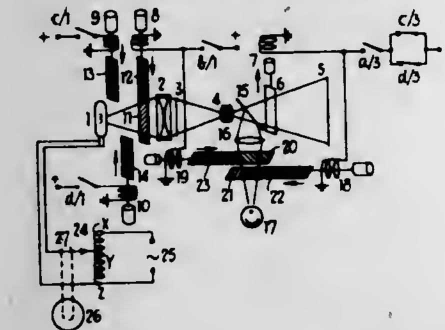
PHOTOGRAPHIC MULTICOLOUR PRINTING

Denis Manktelow Neale, Ilford, Essex, England, assignor to Ilford Limited, Ilford, Essex, England, a British company

Filed July 9, 1965, Ser. No. 470,854

Claims priority, application Great Britain, July 17, 1964, 29,360/64

9 Claims. (Cl. 88—24)



1. A method of printing multicolour transparencies onto a photosensitive print material having emulsions sensitive to first, second and third bands of the spectrum, the said first and second bands being adjacent and overlapping in a common band, the third band not overlapping either the first or second band, which comprises exposing print material to light passing a first colour selective filter which filter is chosen to absorb light in the first spectral band but to pass freely light in the third spectral band and that part of the second spectral band excluding the said common band, further exposing said print material to light passing a second filter which second filter is chosen to absorb light in the second spectral band but to pass freely light in the third spectral band and that part of the first spectral band excluding the said common band, further exposing said print material to light passing a third colour selective filter for such additional time as may be necessary to complete exposure of the print material to said third band after completion of exposure to said first and second bands, said third filter passing light in only the third of the three said bands.

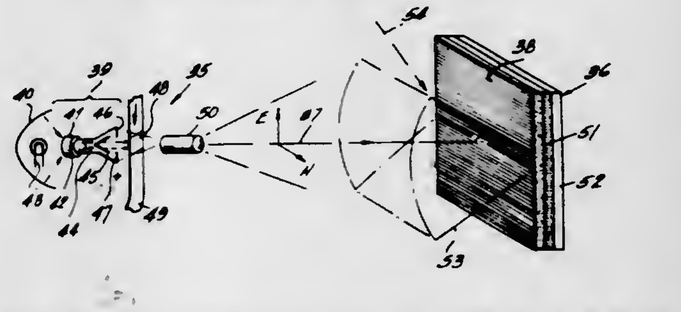
3,350,982

LIGHT POLARIZING STRUCTURES

Alvin M. Marks, 166—35 9th Ave., Whitestone, N.Y. 11357

Filed July 21, 1965, Ser. No. 473,579

10 Claims. (Cl. 88—24)



4. A light polarizing structure comprising spaced sheets of transparent materials, a fluid suspension containing a plurality of elongated light polarizing particles disposed therein, and a linear light polarizer on at least one side thereof and means to apply an electrical field across the suspension whereby said particles are brought into parallel alignment with respect to each other and disposed in a direction normal to the plane of the sheets.

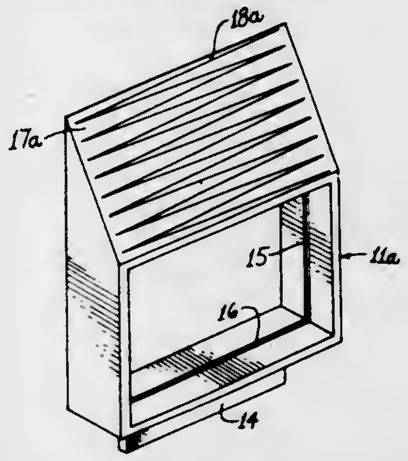
3,350,983

SLIDE RETAINER AND SOUND TRACK FRAME

Martin E. Gerry, 13452 Winthrope St., Santa Ana, Calif. 92705

Filed Aug. 18, 1965, Ser. No. 480,599

2 Claims. (Cl. 88—28)



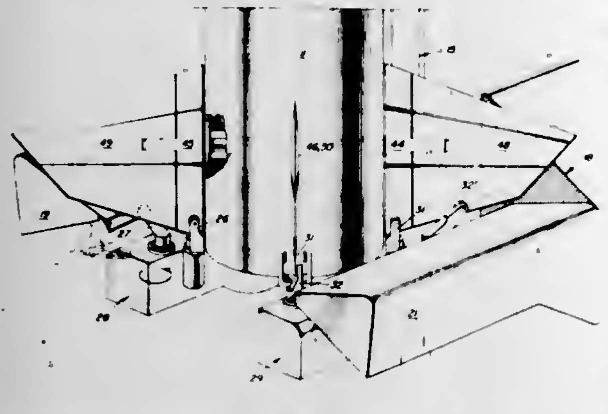
1. A frame of shadow box configuration retaining a visual information slide aligned in the window of said frame,

a portion of said frame being angularly pitched at an acute angle with respect to the plane of the said visual information slide,

a sound track being superimposed on the surface of said angularly pitched portion of said frame, and

grooves orthogonal to each other disposed within said frame holding said slide in secure alignment in said window.

3,350,984
FIN OPENERS FOR MISSILE LAUNCHER SYSTEM
Milton C. Neuman, Minneapolis, and Roger H. Wiethoff, Wayzata, Minn., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 25, 1966, Ser. No. 538,483
1 Claim. (Cl. 89—1.8)

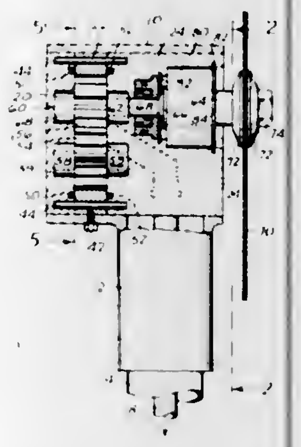


In a missile launching system, having a magazine housing vertically stored missiles with rotatable fins having folding blades, the combination of a launcher arm having a guard rail with a fin opener and contactor assembly comprising:

- means carried on the launcher arm and located at each side of the guide rail, said means housing and supporting the fin openers and contactor assembly, on the lower end of the launcher arm and out of the path of the missile;
- a pair of shafts located on opposite sides of the guide rail and mounted for rotation, said shafts supporting the fin openers and contact assembly and adapted upon rotation to swing the fin openers and contact assembly into operating position, at points on opposite sides of the guide rail and into the path and rearward of the missile after it is received on the guide rail of the launcher arm;
- pairs of yokes rotatably mounted on the contactor assembly and adapted to engage the base position of the fins to limit any rotational movement of the fins during the fin opening operation;
- pairs of arms carried on the contactor assembly for rotation, the end of the arms engaging the blades of the fins when the fins are in yoke restraint to swing the blades of the fins into operating position;
- the shafts supporting the fin openers and contact assembly being adapted to swing the fin openers and contactor assembly being also adapted to return the fin openers and contactor assembly to initial position, after the fin blade opening operation is completed, to remove the fin openers and contactor assembly from the path of the succeeding missile.

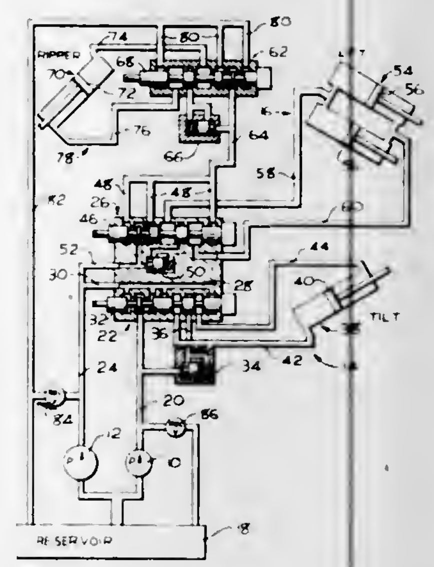
3,350,985
HIGH SPEED ROTARY HYDRAULIC MOTOR
Edward L. Ackley, 1916 SE. 50th,
Portland, Oreg. 97215
Filed Feb. 26, 1965, Ser. No. 435,471
2 Claims. (Cl. 91—87)

1. A high speed rotary hydraulic motor comprising
(a) a cylindrical case open at both ends,
(b) a handle mounting the case,
(c) hydraulic fluid input and exhaust conduits mounted on the handle,
(d) in the case a transversely segmental core comprising recessed front, back and central segments, the front segment having hydraulic fluid input and exhaust passageways communicating the input and exhaust conduits with the recessed central segment,
(e) securing means securing the core segments together and securing the core in the case,
(f) a pair of meshing hydraulic motor gears journaled in the core and arranged in the recessed central segment to be driven by hydraulic fluid under pressure circulating in the input and exhaust conduits and passageways,
(g) a motor drive shaft extending in the axial direction of the case and having an outer end portion extending outward from the front core segment and having tool mounting means thereon and an inner end portion secured to one of the gears,



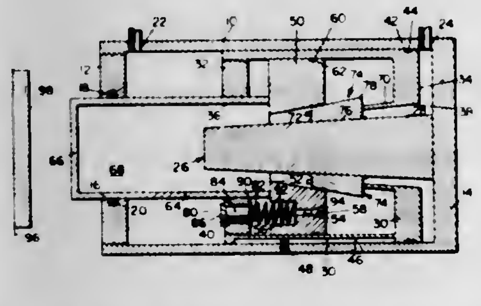
(h) a bearing mounting the outer end portion of the drive shaft in the front core segment,
(i) a pair of bearings mounting the inner end portion of the drive shaft in the front and back core segments, respectively, and
(j) hydraulic fluid seal means between the core segments and between the inner portion of the drive shaft and front core segment.

3,350,986
TWO-PUMP SUPPLY FOR HYDRAULIC CIRCUITS HAVING DIFFERENT FLOW REQUIREMENTS
James J. Berta, Braidwood, and James E. Scheldt, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Mar. 17, 1966, Ser. No. 535,096
10 Claims. (Cl. 91—414)



1. A hydraulic control circuit for operating a plurality of hydraulic motors of different capacities, including a first relatively low capacity hydraulic pump means for supplying at least one relatively low capacity motor, a second relatively high capacity pump means for supplying at least one subsequent relatively high capacity motor, and a fluid reservoir in communication with the pump means, the improvement comprising; valve means intercommunicating the pump means and the motors to combine substantially the full volume of the first pump means with the second pump means with volume being directed to a subsequent motor regardless of the operating condition of a first motor operated by the output volume of said first pump, said valve means further adapted to direct said resulting combined volume to the subsequent motor to selectively actuate same prior to returning the combined volume to the fluid reservoir.

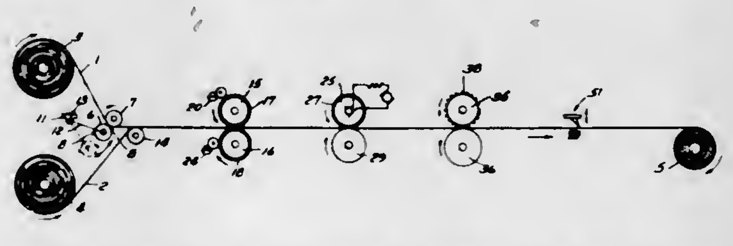
3,350,987
HYDRAULIC CYLINDER
Dell A. Johnson, Nibley, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Jan. 12, 1966, Ser. No. 520,153
2 Claims. (Cl. 92—24)



1. A fluid pressure actuator and locking device comprising:

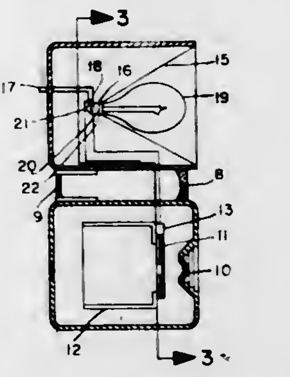
- a tubular casing having first and second end closures respectively attached to opposite ends thereof, said first end closure having an aperture formed therein, said casing having a fluid pressure port at each end thereof;
- a projection disposed within said casing and connected at one end to said second end closure, at least one surface of said projection being convergent with respect to the longitudinal axis of said casing in the direction of said first end closure;
- a tubular shell slidably disposed within said casing, said shell having first and second end walls which are respectively attached to opposite ends thereof and each of which is provided with an aperture through which said projection extends, said first end wall facing said first end closure and having a vent passage formed therein;
- a piston slidably disposed within said shell, said piston having an opening formed therein which is substantially coaxial with said casing and through which said projection extends, the portion of the wall of said opening that faces said convergent surface of said projection also being convergent with respect to the longitudinal axis of said casing in the direction of said first end closure, said piston having a vent passage formed therein;
- a tubular shaft slidably disposed in said apertures in said first end wall and said first end closure respectively, said shaft being closed at one end and connected at the other end to said piston so that the interior thereof communicates with said opening in said piston;
- at least one locking wedge disposed within said shell, said locking wedge having an inner surface which is disposed adjacent said convergent surface of said projection and an outer surface which is convergent with respect to the longitudinal axis of said casing in the direction of said first end closure;
- means connected to said shell and adapted to maintain said locking wedge a predetermined distance from said second end wall while permitting it to move in a direction substantially perpendicular to the longitudinal axis of said casing;
- first valve means mounted on said first end wall and adapted to close said vent passage therein when fluid pressure is admitted into said casing between said first end wall and said first end closure; and
- second valve means mounted on said piston and adapted to close said vent passage therein when fluid pressure is admitted into said casing between said piston and said second end closure.

3,350,988
METHOD OF MAKING CONTINUOUS FORM ENVELOPES
Frank L. Schultz, P.O. Box 253,
Alamo, Tex. 75119
Original application June 23, 1961, Ser. No. 119,176, now Patent No. 3,140,816, dated July 14, 1964. Divided and this application June 30, 1964, Ser. No. 379,127
20 Claims. (Cl. 93—61)



1. The method of forming an assembly of series-connected detachable mailing envelopes comprising: bringing together into superimposed contacting relationship two initially transparent webs of thermoplastic material; coating an exterior portion of at least one of said webs with a substance that is adherent to said thermoplastic material and that is suitable to receive printed or typed indicia to render said portion at least translucent; heat-sealing said webs together in appropriate places to define a succession of individual envelopes; and providing a line of weakening between adjacent envelopes whereby said envelopes may be readily detached from each other.

3,350,989
PHOTOGRAPHIC CAMERA
John B. Toomey, Jr., Alexandria, Va., assignor to Value Engineering Company, Alexandria, Va., a corporation of Virginia
Filed May 13, 1965, Ser. No. 455,386
4 Claims. (Cl. 95—11.5)



1. In a photographic flash camera, a housing having a shutter mechanism therein, a shutter switch responsive to the operation of said shutter mechanism to be actuated in synchronism therewith, a flash bulb socket carried by said housing, a flash bulb having a self-contained source of electrical energy therein received within said socket, means within said housing for retaining a source of potential and having terminal means electrically engageable with the electrodes of the potential source, electrical circuit means connecting said shutter switch, said terminal means and said socket, and removable means positioned between said terminal means to provide an

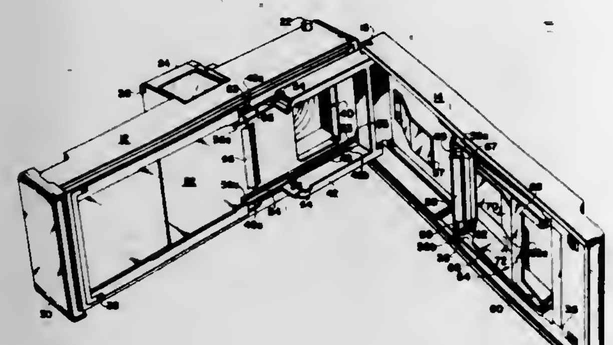
electrical connection therebetween without a source of potential in said retaining means whereby the closing of said shutter switch in response to said shutter mechanism will close the electrical circuit and cause the ignition of said flash bulb.

3,350,990
CAMERA APPARATUS

Patrick L. Finelli, Sudbury, and Herbert A. Bing, Wellesley, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Apr. 16, 1965, Ser. No. 448,630

21 Claims. (Cl. 95—13)



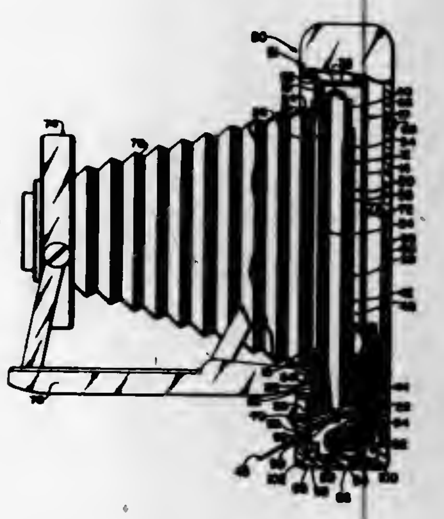
1. A miniature camera for use with a plurality of film assemblies releasably carried in a magazine adapted to be mounted in said camera, each of which film assemblies includes, respectively, a photosensitive emulsion, means providing an image-receiving layer, a substantially rigid slide-mount, and a releasably-confined processing liquid, the camera, in conjunction with a film assembly of said category, being adapted through a diffusion transfer process to produce a finished transparency, ready-mounted for projection, said camera comprising a frontal housing and a rear housing, the latter providing a closure for the open back of said frontal housing, said frontal housing including, adjacent to its front surface, film-assembly exposure means comprising a lens, shutter and diaphragm assembly with actuating means therefor, and, adjacent to its rear surface, a substantially planar longitudinally-extending platform for supporting and permitting slidable movement of said film assemblies thereacross, an exposure aperture formed in said planar platform adjacent to one end thereof and leading forwardly to said lens, shutter and diaphragm assembly, a plurality of rearwardly-projecting wall-like members disposed around said exposure aperture including a plurality of further rearwardly-extending flange portions for engaging portions of said magazine adapted to mate therewith and position and lock said magazine in the camera in a manner such that a foremost film assembly is located at a focal plane in readiness for a photographic exposure and a narrow slot-like aperture is formed between said magazine and platform through which said foremost film assembly can be withdrawn sideways from said magazine after said exposure, a transverse elongated recess formed in said planar platform adjacent to said slot-like aperture, an elongated compression-applying member mounted in said recess so that its bearing surface projects rearwardly slightly beyond the plane of said planar platform, said compression-applying member acting in conjunction with a second elongated compression-applying member of said camera positionable adjacent thereto to bear against each film assembly and effect the release and spreading of said processing liquid therewithin during its movement between said compression-applying members, one of said compression-applying members being mounted for translational movement and being biased toward the other, and mechanism for transporting each film assembly while concurrently alternately widening and reestablishing a functional compressive spacing between said compression-applying members in a programmed operation, said mechanism comprising elongated arm means mounted for longitudinal slidable movement in channel means formed in said planar platform so as to extend longitudinally thereof, lug means integral with and projecting rearwardly from an extremity of said arm means adapted to engage the slide-mount component of each said film assembly for slidably withdrawing an exposed film assembly from said magazine and for drawing it between said compression-applying members to a location permitting its removal from the camera, camming means integral with said arm means for predeterminedly bearing against a surface associated with said compression-applying member which is mounted for translational movement for widening said spacing between said compression-applying members at predetermined stages of movement of said film assembly, and means for actuating said film-assembly transport mechanism.

3,350,991
PHOTOGRAPHIC APPARATUS

John B. Murphy, West Roxbury, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Apr. 21, 1965, Ser. No. 449,797

6 Claims. (Cl. 95—13)



1. In photographic apparatus including a wall formed with an elongated opening through which film assemblies are advanced from the apparatus, in combination:

- a closure device for said opening movable into an open position in response to movement of the leading edge of a film assembly into engagement with said closure;
- said opening being defined by elongated lateral surfaces at least one of which is inclined outwardly and away from the path of movement of said film assembly toward said opening;
- said closure device including a closure member substantially equal in length to said opening and including a first portion extending adjacent said wall across said opening toward said one surface and a second section extending into said opening adjacent to and generally parallel with said one surface; and
- support means including a resilient member for mounting said closure member and biasing said second section into contact with said one surface, said resilient member being deformable in response to engagement of said leading edge of said film assembly with said second section of said closure member allowing said closure member to be displaced sufficiently to permit withdrawal of said film assembly through said opening.

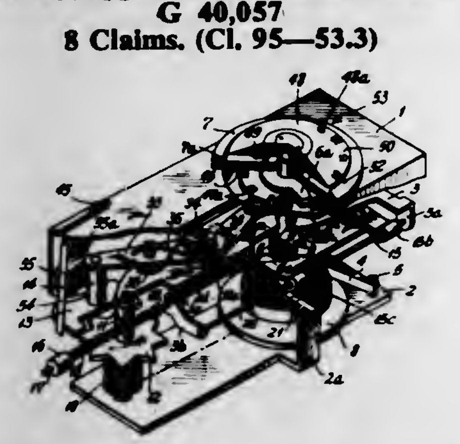
3,350,992
DELAYED ACTION TIMING DEVICE

Franz W. R. Starp and Vladimir Racki, Calmbach (Enz), Germany, assignors to Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany

Filed Mar. 8, 1965, Ser. No. 437,842

Claims priority, application Germany, Mar. 10, 1964, G 40,057

8 Claims. (Cl. 95—53.3)



1. A delayed action timing device attachable to a camera and comprising:

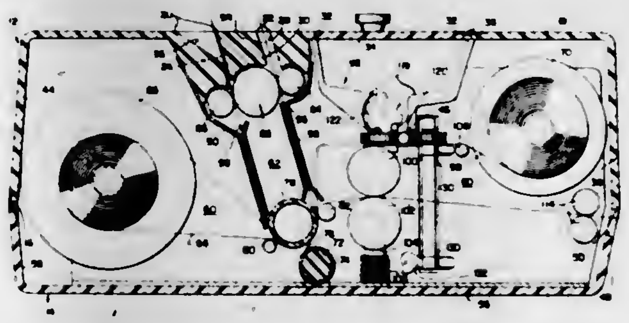
- a push-rod for actuating the shutter release of said camera;
- a rack against which said push-rod abuts for imparting a longitudinal motion to said push-rod to actuate said shutter release when said rack reaches a predetermined release position;
- means for imparting a longitudinal motion to said rack to drive said push-rod;
- means for rotating said rack to disengage it from said push-rod when said rack reaches said predetermined release position;
- and a restoring spring for returning said push-rod to its starting position after disengagement of said rack from said push-rod.

3,350,993
PHOTOGRAPHIC APPARATUS FOR TREATING LIGHT-SENSITIVE MATERIALS WITH A LIQUID

Paul B. Mason, Magnolia, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Apr. 30, 1965, Ser. No. 452,280

19 Claims. (Cl. 95—89)



1. In photographic apparatus including means for dispensing a quantity of processing liquid from each of a plurality of elongated containers onto an exposed section of a photographic sheet within said apparatus comprising, in combination:

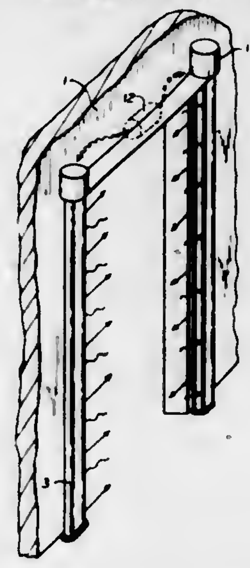
- first and second members mounted for rotation adjacent each other and a lateral edge of said sheet within said apparatus, one of said members being mounted for rotation in position for engaging said container adjacent said lateral edge and the other of said members being mounted for movement toward and away from said one member between a first position in which the distance between said members is greater than the thickness of said container, a second position in which said distance is substantially equal to said thickness and said members frictionally engage said container and a third position in which said distance is significantly less than said thickness and said members compressively engage said container;
- guide means for locating each of a plurality of said containers adjacent and transverse said photographic sheet within said apparatus and with an end section of said container positioned between said members; and
- means for moving said other member toward and away from said one member and for rotating one of said members in engagement with said container to advance said container lengthwise relative to said sheet and to progressively compress said container to dispense a quantity of said liquid onto said sheet as a uniformly distributed mass.

3,350,994
AIR CURTAIN, VENTILATING SYSTEM AND AIR PUMP THEREFOR

Raul Guibert, 10 East End Ave., New York, N.Y. 10021

Filed Oct. 23, 1965, Ser. No. 503,071

11 Claims. (Cl. 98—36)



1. A method for forming an air curtain in an opening in a structure by provding a transverse, high velocity jet of air from one side of the opening to the other side, collecting in a casing a large volume of air through a relatively large opening extending uninterruptedly throughout substantially the entire height of the casing structure opening at the opposite side thereof, moving said large volume of air by an air pump inside the casing and having arms extending continuously throughout substantially the length of the casing, compressing the volume of air, and passing said compressed air at high jet velocity through a relatively narrow opening extending uninterruptedly throughout the entire height of the casing and structure opening toward said opposite side of the structure in a separate path spaced from, but substantially parallel to, a path taken by the incoming air to said relatively large opening.

3,350,995
SILO HAVING A PLURALITY OF BINS THEREIN

Henri Jéru, La Trait, France, assignor to S.A. des Ateliers et Chantiers de la Seine-Maritime, Paris, France, a corporation of France

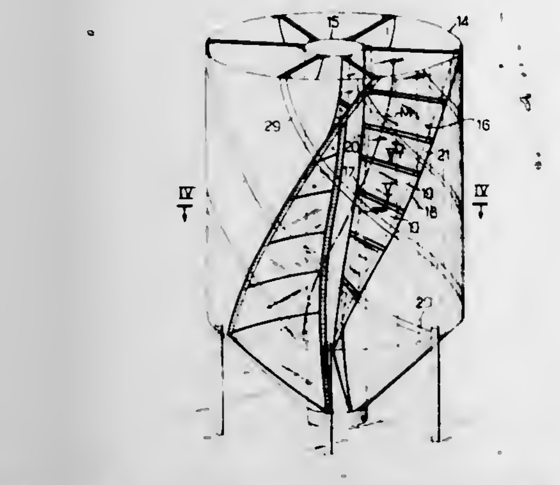
Filed Oct. 22, 1965, Ser. No. 501,709

Claims priority, application France, Oct. 27, 1964, 992,801

5 Claims. (Cl. 98—55)

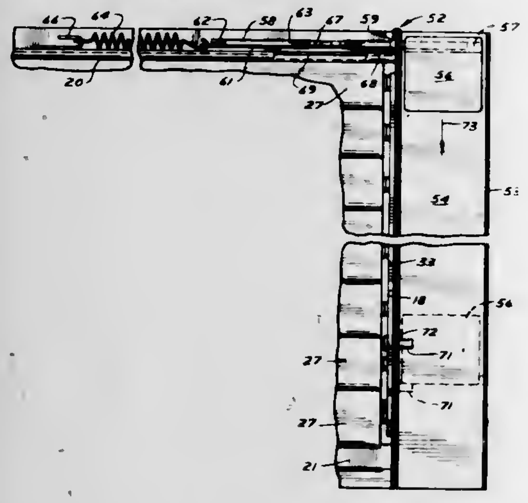
1. A silo having a plurality of bins, the silo consisting of one outer vertical cylindrical wall, one inner cy-

lindrical wall disposed inside said outer wall coaxially thereto, said inner wall defining within itself one service shaft, said inner and outer walls defining between them an annular space, a hopper wall fitted to the bottom of said outer wall and converging downwardly toward and



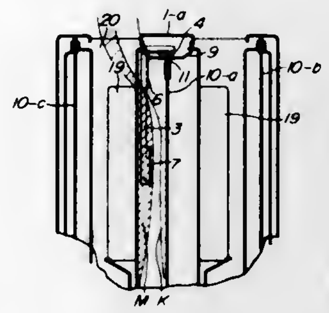
extending to said inner wall and closing said annular space and leading by gravity to said service shaft a material ensilaged in said annular space for removal of said material from the silo, and helically shaped partitions dividing said annular space into bins.

3,350,996
ADJUSTABLE FIRE LOUVRE
Fred L. Rose, Williamstown, W. Va., assignor to The Airolite Company, Marietta, Ohio, a corporation of Ohio
Filed Jan. 17, 1966, Ser. No. 520,992
6 Claims. (Cl. 98—86)



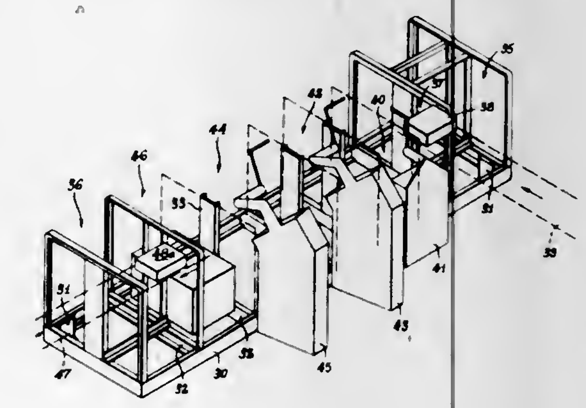
1. In a louvre having a frame, a plurality of louvre blades pivotally mounted on the frame for movement to open positions and to closed positions to control movement of air through the louvre, and a control member connected to each louvre blade for simultaneously controlling the open and closed positions of the louvre blades, the improvement of: pin means secured to and projected from the control member, a weight normally spaced above the pin means, release means constituted as a pin movably mounted on the frame between a first weight supporting position where it holds the weight spaced above the pin means and a second position clear of said weight, means biasing the release means toward said second position to be out of engagement with said weight and means including a fusible means for holding the release means in said first position in engagement with the weight thereby holding the weight spaced above the pin means, said biasing means on destruction of said fusible means disengages the release means from the weight whereupon the weight falls by gravity striking the pin means moving the control member which in turn moves the louvre blades to their closed positions.

3,350,997
ELECTRIC TOASTER
Shinzo Kimura, Fuse-shi, and Hiroo Hosono, Osaka, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Dec. 17, 1965, Ser. No. 514,542
Claims priority, application Japan, Dec. 21, 1964, 39/72,757; Mar. 30, 1965, 40/19,334; Nov. 4, 1965, 40/89,986
6 Claims. (Cl. 99—329)



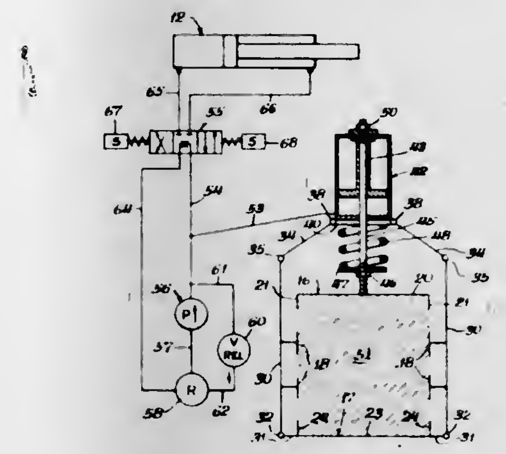
1. In combination with an electric toaster, a thermostat device comprising heating means vertically arranged in the toasting space of the toaster, support means for holding at least one bread slice between said heating means substantially parallel thereto, a primary bimetal element held suspended in a space between said heating means and the bread slice in a position relatively close to the top of said space and operable primarily in response to the surface temperature of the adjacent bread slice and the heat of steam rising therefrom, and a compensatory bimetal member arranged immediately over said heating means to detect the temperature of the atmosphere in the toasting space.

3,350,998
TILTED BUNDLE TYING MACHINE AND CONVEYOR FEED THEREFOR
Robert G. Brown and Harold J. Rosenberg, Washington, D.C., assignors to B. H. Bunn Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 15, 1965, Ser. No. 507,915
29 Claims. (Cl. 100—4)



1. Apparatus for automatically tying substantially flat articles together with first and second ties disposed transversely with respect to one another, said apparatus comprising a frame, an article-receiving station on the frame, an article-removing station on the frame, first and second tying machines on the frame intermediate the said stations, and a conveyor for moving the articles from the loading station to the article-removing station past said tying machines, each said tying machine having a plane reference surface on which a substantially flat article normally rests while the tying machine is in operation, and means on the conveyor for presenting an article to be tied to one of said tying machines on a plane other than that of said plane reference surface.

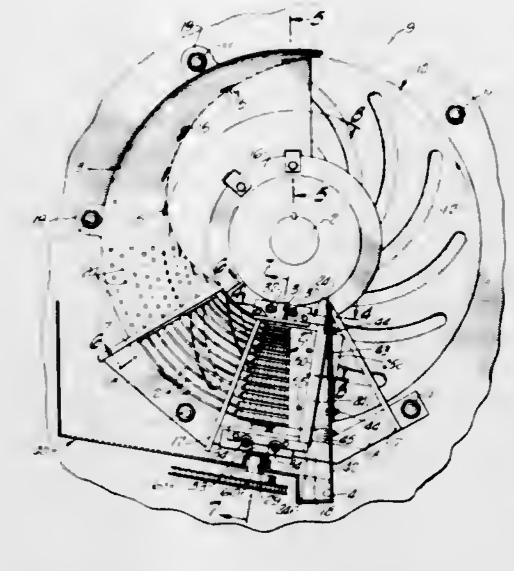
3,350,999
MEANS FOR RESTRICTING AND RELEASING THE OUTLET OF A BALER
Stanley A. Morse, Hammond, Ind., assignor to Arlo Manufacturing Corp., Hammond, Ind., a corporation of Indiana
Filed May 23, 1966, Ser. No. 552,015
4 Claims. (Cl. 100—43)



1. In a bailing machine, a hydraulically operated bale compacting cylinder, a hydraulic circuit for operating said compacting cylinder, a baling chamber having an inlet into which material is compacted by said compacting cylinder, said baling chamber terminating in a baler outlet, said baler outlet comprising spaced apart relatively movable bottom, top and side walls, a spring assembly, means mounting said spring assembly to relatively urge said walls together to restrict the size of said outlet, hydraulic cylinder means arranged in cooperation with said spring assembly so that said spring assembly is relieved to release said relative urging of said walls together responsive to an operation of said hydraulic cylinder means, and a second hydraulic circuit for operation of said hydraulic cylinder means, said second hydraulic circuit being formed and connected into said first hydraulic circuit so that said hydraulic cylinder means is operated during a period before completion of a compaction stroke of said compacting cylinder when the hydraulic fluid pressure in said compacting cylinder reaches a pre-determined value substantially above that hydraulic fluid pressure necessary to operate said compacting cylinder during the period of a compaction stroke prior to said period before completion of a compaction stroke.

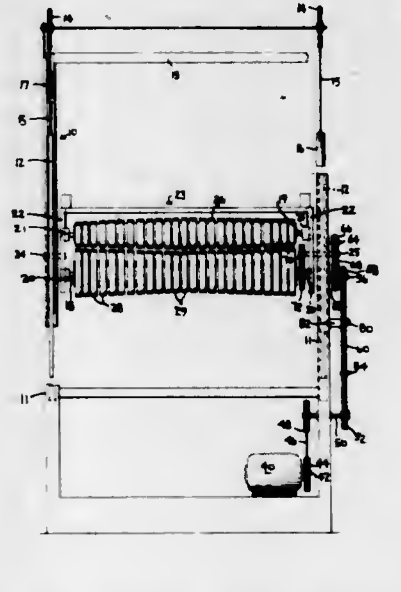
3,351,000
JUICE EXTRACTION APPARATUS WITH PULP-PEEL SEPARATOR
L. Bruce Alexander, San Marino, Calif., assignor, by mesne assignments, to Automatic Machinery and Electronics, Inc., a corporation of California
Filed Oct. 23, 1965, Ser. No. 503,090
20 Claims. (Cl. 100—98)

1. Citrus fruit juice extraction apparatus, comprising:
means providing a pair of opposing walls defining a path having an inlet for reception of cut fruit sections and a discharge end at which said cut fruit sections are discharged,
said walls converging along said path for applying progressive pressure to said cut frruit sections as said cut fruit sections move along said path toward said discharge end;
means for effecting such movement of said cut fruit sections;
means at said discharge end for separating the juice-bearing pulp from the peel of said cut fruit sections including:
  grid means having grid rails extending along said path in spaced relation transversely of the direction of travel of said cut fruit sections;
a rotor having fruit pulp engaging portions thereon extending into the spaces between said grid rails;
means for rotating said rotor to move said pulp engaging portions in the direction of movement of said cut fruit sections;



knife means including a knife blade having a cutting edge adjacent said rotor and extended transversely of said grid bars for separating said juice-bearing pulp from the peel of said cut fruit sections as said cut fruit sections are driven by the rotor along said rails past said cutting edge; and
means for separately directing the discharge of said separated juice-bearing pulp and peel.

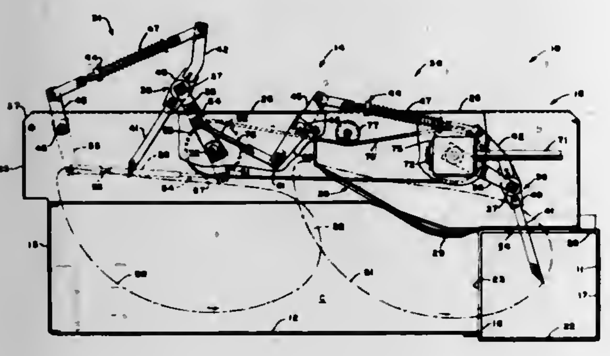
3,351,001
PRELIMINARY PRESSING OF BENT GLASS LAMINATED ASSEMBLIES
Anthony A. Achkio, Natrona Heights, Harrison Township, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 5, 1965, Ser. No. 445,338
6 Claims. (Cl. 100—176)



1. Apparatus for pressing a bent laminate comprising two matched compoundly curved glass sheets and a thermoplastic interlayer, said apparatus comprising a pair of roll support members, a pair of radially spaced parallel shafts rotatably mounted between said roll support mem-

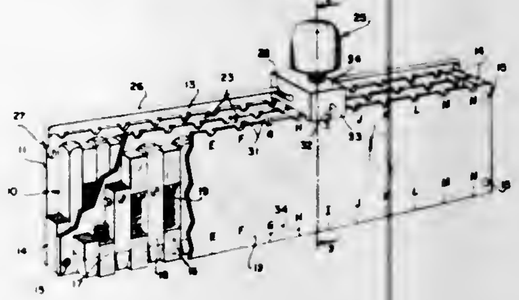
bers in spaced relation to one another, a set of rings having resilient peripheral surfaces mounted along each said shaft in closely spaced relation along its length, the diameter of the rings disposed along one of said pair of shafts being larger at the ends of said one of said shafts and smaller toward the center thereof, the diameter of the rings disposed along the other of said pair of shafts being smaller at the ends of said other of said shafts and larger toward the center thereof, said opposed rings disposed about the central portion of said shafts being harder than the rings disposed about the end portions of said shafts, means for directly driving at least one of said harder rings mounted centrally of one of said shafts, said softer rings being freely rotatable about said shafts, the space between said shafts being so related to the sum of the diameters of opposing rings as to produce a curved line of nipping between opposed sets of rings corresponding to the curvature of a bent laminate transverse to its path of movement, the distance between the outer peripheries of said opposed rings disposed centrally of said shafts being less than the distance between the outer peripheries of said opposed rings mounted at the ends of the shafts.

3,351,002
HAY BALER
James W. McDuffie, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Sept. 15, 1965, Ser. No. 487,382
11 Claims. (Cl. 100—189)



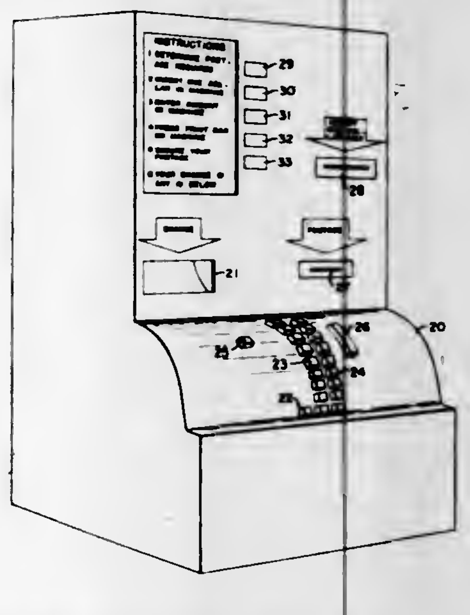
9. An automatic hay baler comprising a fore-and-aft extending bale chamber having a feed opening in a vertical side wall thereof, a generally horizontal hay receiving platform extending laterally from adjacent a lower end of said opening, a feeder operable over said platform for conveying crop material through said opening and into said bale chamber, a feeder housing projecting vertically upward from said platform, said feeder comprising at least one elongated feed finger assembly having a lower end extending into the direction of said platform and an upper end spaced therefrom, means pivotally supporting said assembly intermediate its ends, said supporting means being independently revoluble about an axis extending generally in the direction of said bale chamber to move the assembly in a closed path over at least a portion of said platform, control means for regulating the attitude of said assembly and the path of travel of said assembly lower end, said control means comprising a first link extending generally in the direction of travel of said crop material and connected to said upper end of the finger assembly, a second link connected to said first link at a point remote from said connection to the feed finger assembly, a control shaft journalled adjacent said second link and connected thereto, and drive means for turning said control shaft through a predetermined arc of less than 360° to control the attitude of said feed finger assembly.

3,351,003
STAMPING TOOL DIE MATRIX WITH MOVABLE ACTUATING HEAD
Artice C. McCoy, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Jan. 14, 1966, Ser. No. 520,612
3 Claims. (Cl. 101—18)



1. A stamping tool comprising multiple rows of parallelly disposed punches, each punch mounted for independent axial reciprocation and having a die face of selected marking on one end thereof, resilient means operative on said punches to maintain them normally in coextensive alignment, a striker mounted adjacent the other ends of said punches for movement longitudinally and transversely of said rows and for reciprocation in a plane substantially parallel to said punches, and reference and guide means to locate said striker in coaxial alignment with any selected one of said punches, said reference and guide means including a relatively stationary guide rail parallelly disposed with respect to said rows, a slide block carrying said striker, a slot in said slide block for the passage of said rail therethrough, and one recess in said block in communication with said slot for each said row conforming to the transverse configuration of said rail and located to receive and engage said rail when said striker is in alignment with the transverse center of each of said rows.

3,351,004
DETENT CONTROL MECHANISM FOR KEYBOARDS IN VALUE PRINTING MACHINES
John C. F. Walker III, Kettering, and Carl V. Booher, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Apr. 20, 1966, Ser. No. 543,946
6 Claims. (Cl. 101—69)



1. In a self-service postage meter system comprising a currency-accepting device, a change dispenser, and an apparatus for issuing printed labels, said apparatus including a first and a second bank of amount key members, and means for disabling the operation of said apparatus when keys in both of said key banks are depressed, comprising

(a) a first control member slidably mounted in each of said key banks and movable to an actuating position upon depression of any key member in said banks;

(b) a switch-actuating member engaged by said first control member and moved to a switch-actuating position upon movement of said first control member to said actuating position;

(c) a first double-acting switch member having first and second closing contacts, said switch member normally having the first contact in a closed condition and engaged by said switch-actuating member of said first key bank to switch contacts upon movement of said first control member of said bank to an actuating position;

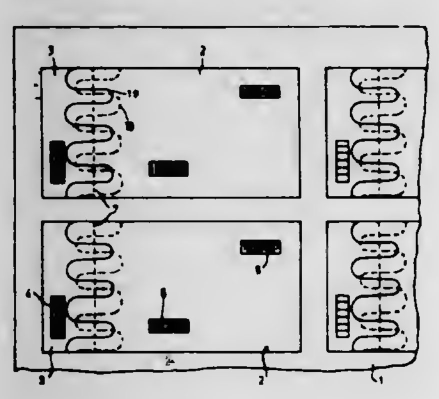
(d) a second double-acting switch member having first and second closing contacts, said switch member normally having the first contact in an open condition and engaged by said switch-actuating member of said second key bank to switch contacts upon movement of said first control member of said bank to an actuating position;

(e) means for initiating a machine operation when operated;

(f) first circuit means for enabling said initiating means to be operated including the first contacts of said first and second double-acting switch members;

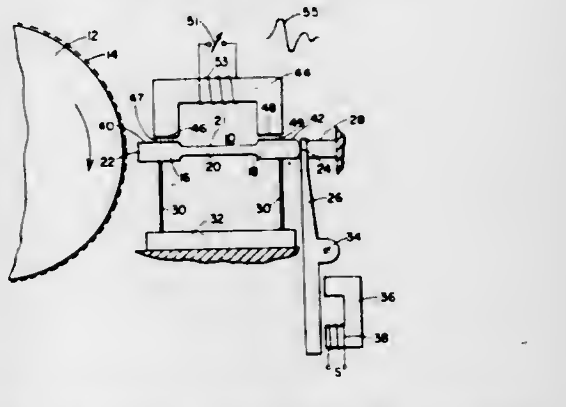
(g) and a second circuit means for enabling said initiating means to be operated including the second contacts of said first and second double-acting switch members, whereby both of said circuits are disabled from enabling said initiating means to be operated upon key members in both first and second amount key banks being depressed.

3,351,005
ROTARY TICKET PRINTING AND NUMBERING MACHINE WITH FRAUD PREVENTING MEANS
Gualtiero Giori, 4 Rue de la Paix, Lausanne, Switzerland
Filed May 25, 1965, Ser. No. 458,584
Claims priority, application Germany, June 8, 1964, G 40,790
6 Claims. (Cl. 101—77)



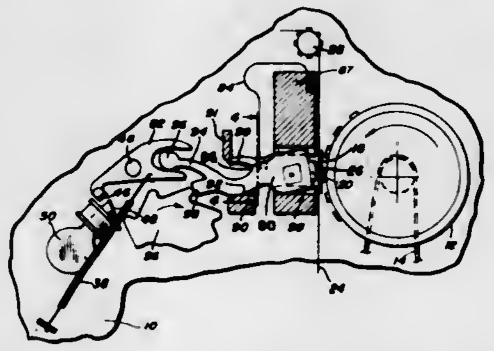
1. A printing unit for a rotary press producing a sheet of consecutive tickets consisting of a stub and a coupon separated from the stub by a tearable dividing line and having coinciding front and rear edges and safety marks overlapping said line, comprising: a pressure cylinder, at least one rotatable shaft, a fixed carrier on said shaft, an annular support on said carrier, a plate for printing said safety marks carried by said annular support, said sheet being urged against said plate by said pressure cylinder, said annular support being rotatably mounted on said carrier, said carrier having stepping means operable at the completion of the rotation of said shaft for rotating said annular support and plate relative to said shaft, whereby said safety marks are displaced successively from ticket to ticket with respect to said front and rear edges thereof.

3,351,006
PRINT HAMMER HAVING BRAKING MEANS
Ross A. Belson, Framingham, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed June 11, 1964, Ser. No. 374,339
19 Claims. (Cl. 101—93)



1. A damping mechanism comprising a component movable between two extreme positions, means for resiliently urging said component to one extreme position, means for selectively driving said component to said other extreme position, and means for damping out the oscillations of said component upon its return to said one extreme position, said damping means comprising a magnetically passive projection of relatively high permeability on said component, and magnet means external to said component adapted to provide a magnetic field, said magnet means having at least one magnetic pole positioned opposite said projection and spaced therefrom in said one extreme position to provide a variable reluctance flux path, including said projection, which has its minimum reluctance in said one extreme position.

3,351,007
PRINT HAMMER RAPID RESET MEANS IN HIGH SPEED PRINTERS
William L. Poland, Rochester, Mich., assignor to Control Data Corporation, Rockville, Md.
Filed Oct. 18, 1965, Ser. No. 496,990
9 Claims. (Cl. 101—93)



1. In a printer of the type which uses a movable hammer for forming print impressions, and movable resettable means to address the hammer by displacing the hammer from a rest position to an addressed position, and means to drive the addressed hammer to perform the print impression function, the improvement comprising means for constraining the movement of said hammer to a nonrectilinear path, at least a part of said hammer being elastic and engaging said resettable addressing means, said path being so constrained relative to said resettable means that the elastic part of said hammer bears against said resettable means and deflects during a portion of the hammer movement, and the deflection of said elastic part of the hammer having a reaction against said resettable addressing means directed to reset said addressing means.

3,351,008
COMPOSITION FOR TREATMENT OF IMAGED LITHOGRAPHIC MASTERS AND METHOD OF USE

Seamon A. Lincoln, Wheaton, and George M. Ort, Chicago, Ill., assignors to A. B. Dick Company, Niles, Ill., a corporation of Illinois

No Drawing. Filed Dec. 6, 1965, Ser. No. 512,017
7 Claims. (Cl. 101—465)

1. In the preparation of an imaged lithographic master in which an oleophilic, ink-receptive, water-repellent image is provided on a water-receptive, lithographic surface, the improvement of treating the surface of the imaged master with an aqueous dispersion in which the dispersed phase (A) contains as essential ingredients (1) an essentially water immiscible organic solvent, (2) a tinctorial agent, (3) hydrophobic colloidal silica, and (4) a resinous material dissolved in the organic solvent, and in which the continuous phase (B) contains as essential ingredients (1) water, (2) a water-soluble hydrophilic colloid, (3) a surface active agent, and (4) hydrophilic colloidal silica.

3,351,009
PRINTING PLATE BLANK WITH ELASTOMERIC BACKING

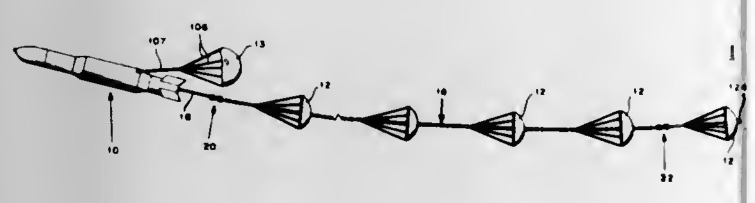
Edward M. Plank, 22—24 E. Utica St.,
Oswego, N.Y. 13126
Filed Mar. 24, 1966, Ser. No. 543,482
4 Claims. (Cl. 101—401.1)

1. A printing plate blank of the class described, for use in making direct and indirect printing plates, comprising a metallic body having a printing surface on which images can be applied wholly within the limit of the thickness of the metallic body, said body having inseparably bonded to the opposite face thereof an elastomeric backing in the form of a relatively hard but flexible thermo-set plastic layer, comprising a blend of polymerized rigid and flexible unsaturated alkyd polyester resins, with the hardness of said backing being inversely proportional to the thickness of the blank in a thickness range from about .017 inch to about .375 inch.

3,351,010
AIR-DROPPED SEGMENTAL LINE EXPLOSIVE CHARGE

Robert E. Ainslie, Glenside, Paul Comisarow, Dresher, and Blanchard S. Hutchins, Warrington, Pa., assignors to the United States of America as represented by the Secretary of the Navy

Original application Aug. 15, 1956, Ser. No. 604,292, now Patent No. 3,064,568, dated Nov. 20, 1962. Divided and this application Sept. 16, 1959, Ser. No. 840,478
1 Claim. (Cl. 102—4)

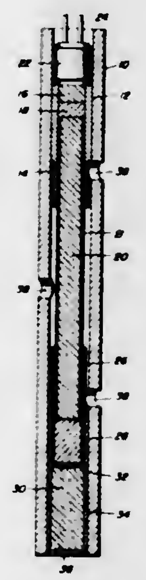


An air-dropped mine detonating device for clearing a path along the surface of a mined field, comprising: a plurality of segments of explosive composition, means connecting said segments in tandem arrangement to form a flexible line charge and forming by the separation of each pair of adjacent segments a plurality of annular grooves at spaced intervals along its length, a plurality of parachutes each having shroud lines and a canopy, said shroud lines being drawn respectively into selected ones of said grooves and sewed into loops, a tie rope in said selected ones slipped through said loops for fixing said shroud lines to said line charge, each of said canopies having a central opening through which said line charge passes, means fixing said parachute at said central opening to selected others of said grooves using a plurality of loops and a tie rope, and weight means connected at the end of said line charge opposite the concave portions of said parachute; whereby when said device is launched from an aircraft in substantially horizontal flight said device will remain in a substantially extended and horizontal attitude throughout its descent to the mined field.

3,351,011
DETONATOR

Louis J. Montesi, Adelphi, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Sept. 7, 1966, Ser. No. 578,423
5 Claims. (Cl. 102—27)



1. A detonating device for an explosive ordnance device comprising an ignition charge,

a base charge, said base charge including a first portion and a second portion,

a transmission charge interconnecting said ignition charge and said base charge, said transmission charge having a cross sectional configuration insufficient to propagate a detonation wave when surrounded by a gas medium but sufficient to propagate a detonation wave when surrounded by a liquid medium, and

a metallic barrier separating said first portion of said base charge from said second portion of said base charge sufficient to deter propagation of detonation waves through said base charge when said detonating device is surrounded by a gas medium.

3,351,012
EXPLOSIVE BRIDGEWIRE INITIATORS

Robert E. Wilson, Boulder Creek, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 30, 1966, Ser. No. 562,967
1 Claim. (Cl. 102—28)

A squib of the exploding bridgewire type comprising:

an electrically conductive housing of generally tubular form having an axial passage therein adapted to receive an electrically conductive container and a dielectric plug;

an electrically conducting container having pyrotechnic material therein disposed in one end of said housing and making electrical contact therewith;

said container being metallically sealed to shield said pyrotechnic material from spurious electroenergy;

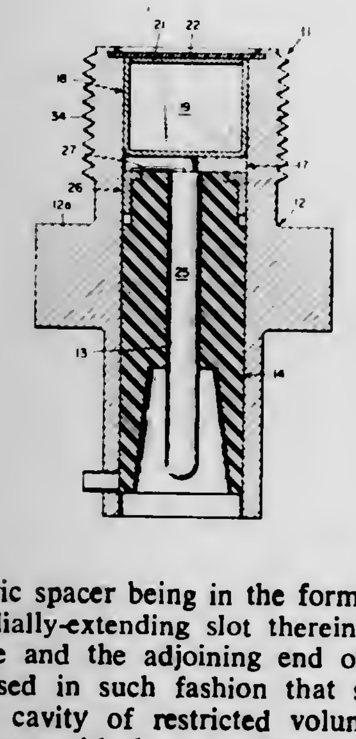
a dielectric plug disposed in said housing and axially spaced from said container;

an elongated terminal axially disposed in said plug and extending from the end thereof adjacent said container to the end remote therefrom;

a bridgewire electrically connecting said terminal at the end adjacent said container to said housing;

electrically-conductive sleeve means disposed about the periphery of said plug and in contact with said housing, said bridgewire being connected between said terminal and said sleeve means; and

a non-explosive dielectric spacer composed of ceramic material disposed between said container and said plug;



said dielectric spacer being in the form of a disc having a radially-extending slot therein in which said bridgewire and the adjoining end of said terminal are disposed in such fashion that said bridgewire lies in a cavity of restricted volume and out of direct contact with the material of which said spacer is composed, said slot acting to permit closely-spaced exposure of said bridgewire and the adjoining end of said terminal to the adjacent conductive surface of said container;

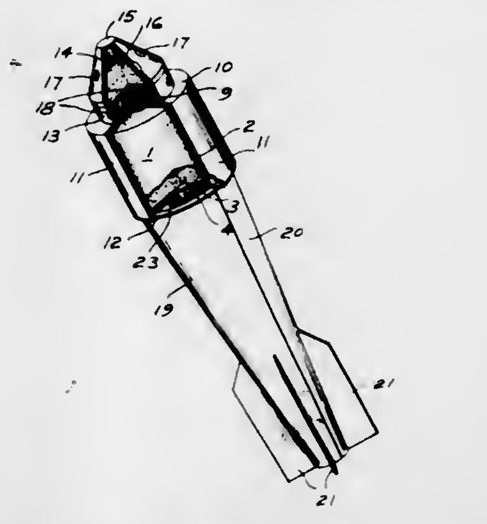
whereby spurious electroenergy is caused to flow through the material of which said conductive container is composed to said housing thereby protecting said pyrotechnic material from unintentional ignition.

3,351,013
ILLUMINATING MORTAR SHELL

Bjorn Herman Olof Simmons, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a Swedish corporation

Filed Apr. 15, 1966, Ser. No. 542,774
Claims priority, application Sweden, Apr. 20, 1965, 5,219/65
5 Claims. (Cl. 102—35.6)

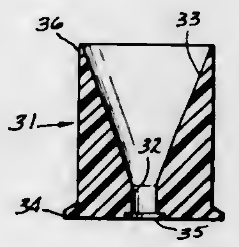
1. An illuminating mortar shell comprising a casing having a hollow nose portion and a hollow tail portion, of lighter weight than the nose portion so that the center of gravity of the shell is in the nose portion thereof, a propellant charge and a percussion type detonating means disposed in the tip of the nose portion for igniting said charge upon activation of the detonating means, a frangible joint securing said nose portion to said tail portion, a container containing combustible flare material loosely fitted in the part of the nose portion adjacent to the tail portion, a folded parachute disposed in the tail portion and secured to sail container, and ejecting means including time delay means in said nose portion, said ejecting means being activated by ignition of said propellant charge and when activated igniting said flare material at the end of a delay period controlled by said time delay means, ignition of the flare material developing a directional force breaking said frangible joint thereby separating the tail portion from the nose portion and ejecting the container with the parachute attached thereto out of the nose portion.



3,351,014
BIAXIALLY ORIENTED PLASTIC SHOT SHELL

John S. Metcalf, New Haven, Charles E. Miller, Hamden, and Roy C. Olney, North Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Original application Feb. 7, 1962, Ser. No. 171,729. Divided and this application Mar. 31, 1964, Ser. No. 359,817
3 Claims. (Cl. 102—43)



1. A blank formed of a crystalline plastic material adapted to be deformed into a one piece shotshell casing having a tubular sidewall and greatly increased tensile strength relative to the tensile strength of said blank and an integral base at one end, said blank comprising a cylindrical body having an outside diameter substantially the same as the diameter of the shotshell casing to be formed, one end of said body having a concavity formed therein concentric with the longitudinal axis of said body, said concavity converging inwardly from adjacent said one end to form an angle with the outer surface of said blank of from about 15° to 25°.

3,351,015
EXPLOSIVE ACTIVATOR

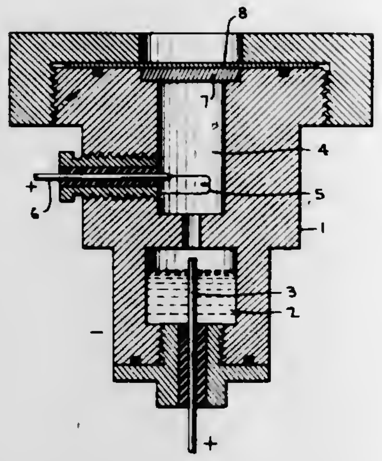
Stanley Wallack, Jackson Heights, Laurence R. Alexander, Armonk, and James E. Oxley, New York, N.Y., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Filed Feb. 9, 1965, Ser. No. 431,367
7 Claims. (Cl. 102—70.2)

7. The method of detonating a primary explosive comprising the steps of:

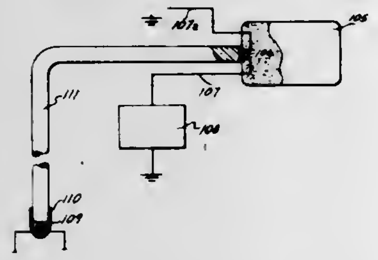
(1) reacting a conductive material electrochemically to produce a secondary explosive,

(2) collecting said secondary explosive in a confined area, and



(3) igniting said secondary explosive in said confined area to detonate said primary explosive.

3,351,016
EXPLOSIVE ARMING AND FIRING SYSTEM
Clarence E. Simpson, Glendale, Ariz., assignor to Universal Match Corporation, a corporation of Delaware
Filed Dec. 10, 1965, Ser. No. 512,876
7 Claims. (Cl. 102—70.2)



7. A system for igniting a heat-sensitive explosive composition comprising:
- (a) a heat-sensitive explosive charge;
- (b) a photo-resistive resistance heating element in contact with said heat-sensitive charge responsive to a predetermined amount of light for igniting said composition;
- (c) means for controlling the amount of light falling upon said photo-resistive heating element; and
- (d) an electrical circuit including a power supply and said photo-resistive heating element.

3,351,017
AIR-ARMING IMPACT FUZE
Jack A. Myers, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Continuation of application Ser. No. 415,840, Dec. 3, 1964. This application Jan. 17, 1967, Ser. No. 617,749
7 Claims. (Cl. 102—76)

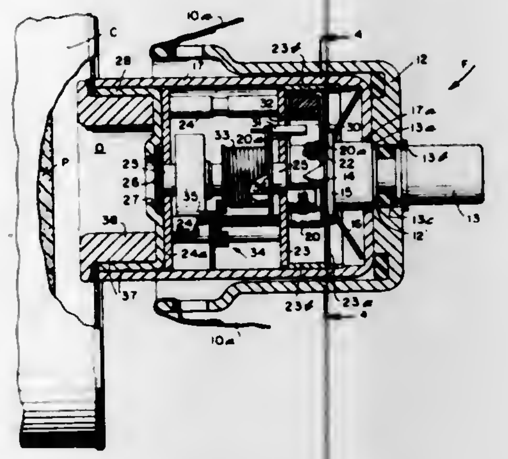
7. Apparatus for arming and firing an ordnance member subject to acceleration and deceleration forces comprising:

an inertia member carried by said ordnance member adapted to move between a safe and arm position;

a deformable frusto-conical washer, engaging said inertia member and restraining said inertia member against movement from the safe position;

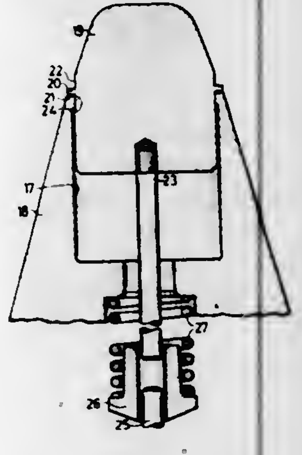
said washer having freely slideable abutment edges at opposite ends thereof, the smaller edge adapted to decrease in diameter and the larger edge adapted to increase in diameter when the washer is deformed toward a flattened position;

said inertia member being adapted to move relative to the washer upon application of a force on said inertia member sufficient to deform said frusto-conical member;



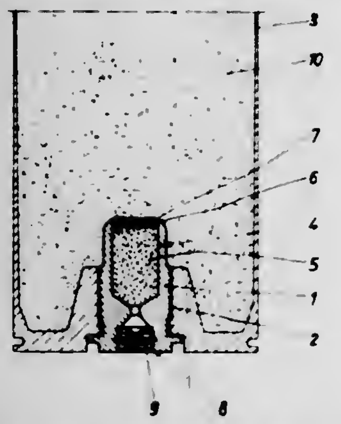
said inertia member being in an armed position when the washer is deformed.

3,351,018
PERCUSSION FUZE
Hans Bedall, Nurnberg, Germany, assignor to Diehl, Nurnberg, Germany
Filed Mar. 22, 1965, Ser. No. 441,760
Claims priority, application Germany, Mar. 26, 1964, D 44,002; Aug. 7, 1964, D 45,126
3 Claims. (Cl. 102—77)



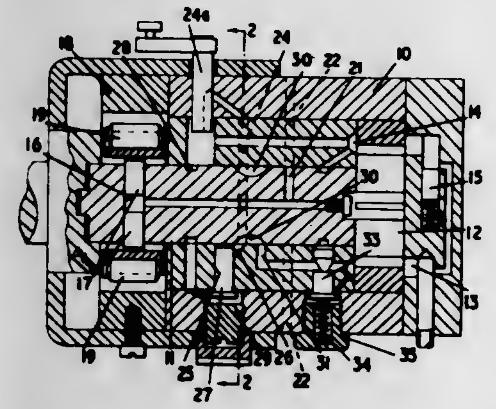
1. A percussion fuze which includes: a first member forming a cone-shaped percussion body having an axial bore therein, a second member having a first portion arranged with circumferential play in and substantially coaxial with said bore, said second member also having a second portion integral with said first portion and protruding from the latter beyond the narrower end of said cone-shaped percussion body while tapering in the direction away from said first member, said second member being provided with groove means adjacent said narrower end of said first member, said narrower end portion of said first member having radially inwardly directed collar means integral with said first member and extending into said groove means to interconnect said first and second members, said radially inwardly directed collar means being yieldable radially outwardly in response to a selected minimum impact upon the front end of said second member, one of said members having connected thereto radially outwardly extending flange means adapted to be sheared off by the other member in response to an axial minimum movement of said second member relative to said first member, and striker pin means arranged within and in axial direction of said members and spaced from said second member and movable into effective position for detonating a charge on engagement by said second member upon movement of said second member relative to said first member in excess of said first-mentioned movement of said second member relative to said first member while making said interconnection of said first and second members ineffective.

3,351,019
PRIMER CHARGE
Franz Schaadt and Theodor Weber, Dusseldorf, Germany, assignors to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed Feb. 23, 1965, Ser. No. 434,349
Claims priority, application Germany, Apr. 27, 1960, R 27,843
1 Claim. (Cl. 102—86.5)



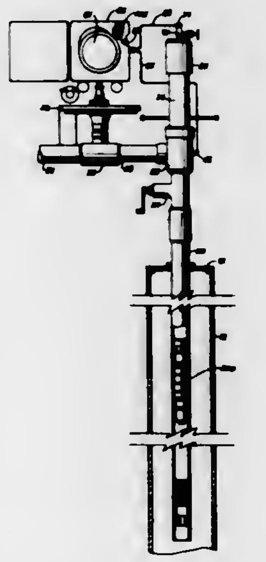
A percussion primer for igniting the propellent charge of automatic weapon ammunitions having a primer charge containing a smokeless charge of porous nitrocellulose powder, said primer charge having an inner end and an outer end, a foil of nitroglycerine powder covering said inner end, in which the proportion, by weight, of porous nitrocellulose powder is 2 to 7.5 times the nitroglycerine powder content.

3,351,020
LIQUID FUEL INJECTION PUMPS FOR INTERNAL COMBUSTION ENGINES
Kenneth Albert Walters Kemp, London, England, assignor to C.A.V. Limited, London, England
Filed Jan. 19, 1966, Ser. No. 521,621
Claims priority, application Great Britain, Jan. 20, 1965, 2,439/65
7 Claims. (Cl. 103—2)



1. A liquid fuel injection pump for supplying fuel to an internal combustion engine having a plurality of cylinders comprises in combination, a body part, a rotary distributor mounted in the body part and arranged to be driven in timed relationship to an engine with which the pump is associated, a bore formed in the distributor, a plunger slidable in said bore, a first passage formed in the distributor in communication with said bore, a plurality of outwardly extending angularly spaced inlet passages formed in the distributor in communication with said first passage, a fuel inlet port formed in the body part and with which said inlet passages register in turn as the distributor rotates, said inlet port communicating with a source of fuel under pressure so that as an inlet passage communicates therewith fuel will flow to said bore to move the plunger outwardly, an outwardly extending delivery passage formed in the distributor in communication with said first passage, a plurality of angularly spaced outlet ports formed in the body part and with which the delivery passage can register, in turn as the distributor rotates and during the time when the inlet port is out of register with an inlet passage, a cam for imparting inward movement to the plunger during the time when the delivery passage is in register with an outlet port, a cylinder formed in the body part, a shuttle slidable in said cylinder, a stop for limiting the movement of the shuttle away from one end of the cylinder, means urging the shuttle towards said one end of the cylinder, a spill port in communication with said one end of the cylinder, said spill port being positioned so that the inlet passages in turn, can register therewith as the distributor rotates and during the time when the plunger is being moved inwardly by the cam, a valve for controlling the flow of fuel through the spill port, the setting of which is dependent upon the speed at which the distributor is driven, and further ways in the distributor through which the spill port can communicate with a drain during the time when the spill port is not in communication with an inlet passage.

3,351,021
FREE PISTON PNEUMATIC ARRESTOR AND CONTROL SYSTEM
Earl K. Moore, Jr., P.O. Box 2486, Odessa, Tex. 79760
Filed Feb. 28, 1966, Ser. No. 530,514
14 Claims. (Cl. 103—52)



1. A well pumping apparatus comprising a well tubing having an inlet and an outlet above the inlet;

a flow valve for controlling the flow of fluid through said outlet;

a free piston in said tubing;

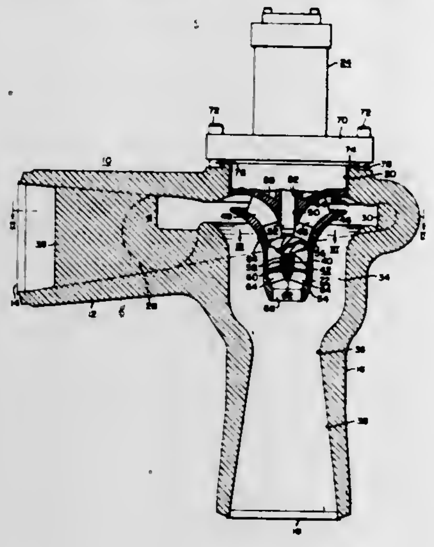
first means for periodically opening and closing said flow valve;

pneumatic shock adsorber means located above said outlet and positioned with respect to said tubing so as to pneumatically decelerate said piston;

and second means responsive to said pneumatic shock adsorber means and adapted to cooperate with said first means to cause the valve to close upon said free piston engaging and being decelerated by said pneumatic shock adsorber means.

3,351,022
FLUID PUMP

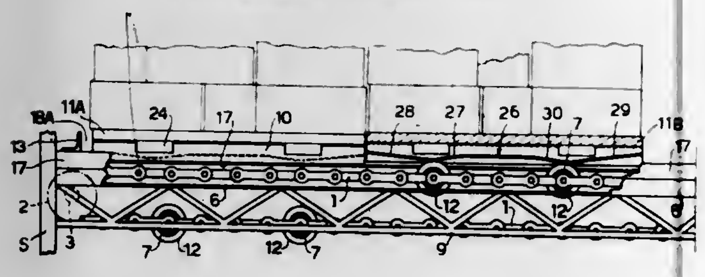
Harvey G. Allen, Franklin Township, Murrysville, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 29, 1964, Ser. No. 407,342
9 Claims. (Cl. 103—89)



1. A fluid pump comprising a pump casing having a flow passageway formed therein, said casing having a suction port and a discharge nozzle at opposite ends of said flow passageway, a fluid energizer having an annular housing means disposed in said casing and extending into said passageway, said energizer having impeller means disposed in said housing means for imparting energy to fluid flowing through said passageway, said housing means being mounted in spaced relationship with the walls of said casing to form a bypass fluid flow path in parallel with said housing means, a flow splitter mounted in said pump casing adjacent said suction port for splitting the flow passing through said suction port, said casing forming a pair of suction volutes of decreasing cross sectional area disposed between said suction port and said energizer housing means, and said flow splitter being positioned to direct fluid entering said suction port to each of said suction volutes.

3,351,023
TRANSPORTING AND STORING DEVICE

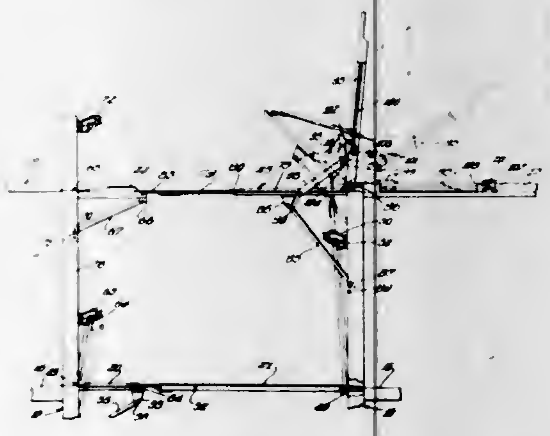
Augusto Fava, Milan, Italy, assignor to Essiccatoi Fava S.p.A., Cento, Italy, a company of Italy
Filed Jan. 21, 1965, Ser. No. 427,044
Claims priority, application Italy, Jan. 25, 1964, I/448/64, Patent 713,642; Aug, 6, 1964, 50,054/64, Patent 17,111
8 Claims. (Cl. 104—172)



1. A transporting and storing device for products transportable on platform cars, comprising a pair of parallel chains, spaced apart and movable in a closed path in vertical planes between a loading and an unloading end, at least one carriage supported by said pair of chains for transport therewith, said carriage including two parallel transverse shafts, a first pair of rollers on each shaft between the pairs of chains, guide means for guidably supporting said rollers, a second pair of rollers on said shaft between the first said pair, said rollers of the second pair having a larger diameter than those of the first pair, means on each platform car defining feet bounded by inclined planes for being engaged by the second pair of rollers of the traveling chains such that the platform car is lifted and advanced, said guide means including guide supports for feet of the platform cars when the latter are not raised by the second pair of rollers, and abutment means at the unloading end of the pair of chains for stopping the platform cars at the end of their advance.

3,351,024
AUTOMOBILE BRIDGE PLATE

Keith W. Broling, Homewood, Ill., assignor to Brandon Equipment Company Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 23, 1965, Ser. No. 503,065
9 Claims. (Cl. 105—458)



1. In a flat car, a bridge construction on the deck portion of at least one end of the car bridging the gap between the deck portion of a next adjacent coupled flat car, comprising,

a bridge plate transversely pivoted to an end of the car on the deck portion thereof for cooperation with a bridge plate extending from the deck portion of the end of a next adjacent coupled car, on one side of the center of the car,

said bridge plate being foldable over itself when not in use,

a lever transversely pivoted to the deck of the car for moving said bridge plate into its inoperative transit position and into its horizontally extending bridging position,

a link slidably connected with said lever and connected to said bridge plate intermediate the ends thereof,

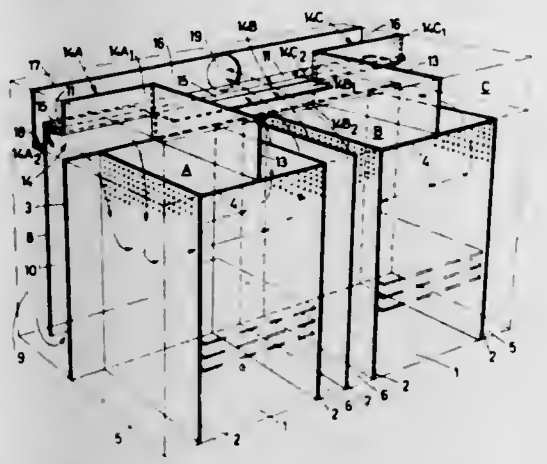
releasable means for locking the link from slidable movement along the lever and releasable to accommodate movement of the link along the lever and folding of the bridge plate over the deck,

and locking means on the deck of the car locking said bridge plate to the deck of the car and holding the folded bridge plate in an upright transit position.

3,351,025
BAKING OVEN

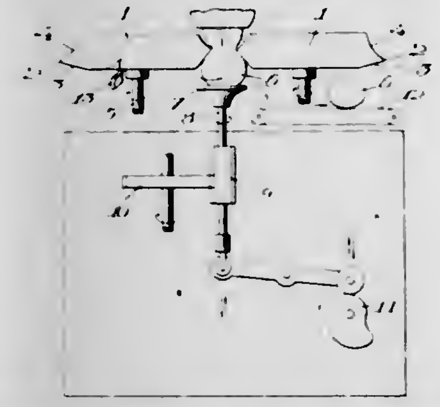
Magnus Emanuel Tillander and Ake Bernhard Persson, Vallingby, and Arve Tore Johansson, Huddinge, Sweden, assignors to Ti-Pe Elmeko, Stockholm, Sweden, a partnership of Sweden
Filed Sept. 27, 1965, Ser. No. 490,259
Claims priority, application Sweden, Oct. 5, 1964, 11,951/64
3 Claims. (Cl. 107—55)

1. A baking oven heated by circulating hot air and having one or more parallelepipedal baking chambers disposed side by side, in which oven the air is circulated in a closed path comprising a heater, a plenum chamber, a side chamber outside the one sidewall of the or each baking chamber, the or each baking chamber, a side chamber outside the other sidewall of the or each baking chamber, and a suction chamber, the communication of the plenum chamber and the suction chamber with the side chambers being controlled by means of a two-position valve, which in its one position communicates the plenum chamber with the one side chamber and communicates the other side chamber with the suction chamber and in its other position communicates the plenum chamber with the said other side chamber and communicates the said one side chamber with the suction chamber, the valve comprising for each baking chamber two valve sections which are secured to a common rotatable shaft extending along the rear wall of the baking chamber or chambers and are mutually alike but angularly displaced with respect to each other.



3,351,026
DEVICE FOR CONTINUOUSLY MAKING SPHERICAL FILLED ENCRUSTATIONS WITH DOUGH

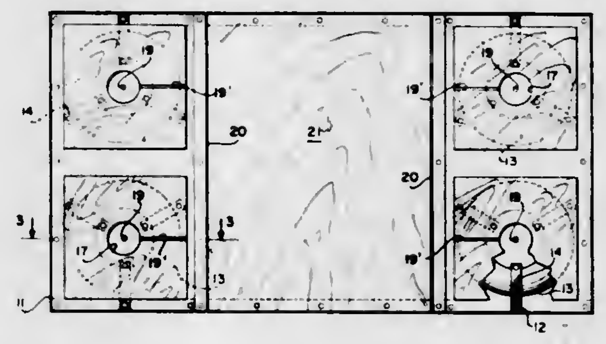
Torahiko Hayashi, 2–3 Nozawa-cho, Tochigi-ken, Utsunomiya-shi, Japan
Filed Mar. 24, 1965, Ser. No. 442,277
2 Claims. (Cl. 107—68)



1. A device for making uniformly sized spherical encrustations out of a dough enclosing a filling such as is used in the making of cakes or buns, in which a pair of identical rotary circular cutters, complete with spiral and helical cutting edges formed on the cutter periphery and also with shafts disposed parallel to each other, are arranged in the same positions and close to each other with a small separating clearance and made to rotate with the same speed in such a way that the cutting edges meeting in opposition to each other at the said clearance are always at the same but varying elevation; the said cutting edge on each cutter being so shaped that the rate of increase in radius of the spiral decreases, the straight side line in cross section of the lower level of the cutting edge decreases its angle of inclination from vertical to horizontal, and the sharpness of the edge increases, from the beginning or uppper end toward the terminating or lower end of the helical cutting edge; the upper side of the cutting edge being concaved; the said edge being generally blunted at the point with a maximum inclination of the summit area given to the upper end portion; and the said dough in continuous bar shape being supplied downward and into the clearance between the two cutters, where the dough is acted on by the cutting edges to be shaped into one ball after another in endless succession.

3,351,027
SHOCK RESISTANT, VIBRATION ISOLATING PLATFORM

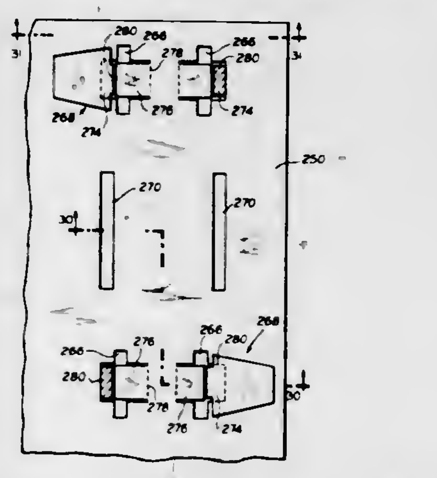
James Shelby Ellard, Jr., and Bruce A. Paige, Atlanta, Ga., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Mar. 23, 1966, Ser. No. 536,768
8 Claims. (Cl. 108—51)



1. A shock resistant, vibration isolated platform comprising a rigid load-bearing surface, a plurality of discrete, annular, airtight, inflatable and deflatable members underlying said surface and disposed in a predetermined localized area thereof, a rigid base plate individual to and underlying each said member, a plurality of bands associated with each of said members, said bands being disposed in pairs each secured at opposite ends to said surface and adjacent base plate with the medial portions of each said pair coacting one with the other by extending around opposite sides of and substantially encircling said associated member when inflated and disposed as aforesaid to thereby maintain the otherwise unconnected surface, plates and members in a unitary assembly, and a valve individual to each of said members to facilitate the adjustment thereof and establish the load-resisting forces of localized areas of said surface.

3,351,028
LOAD-BEARING INDUSTRIAL PALLET

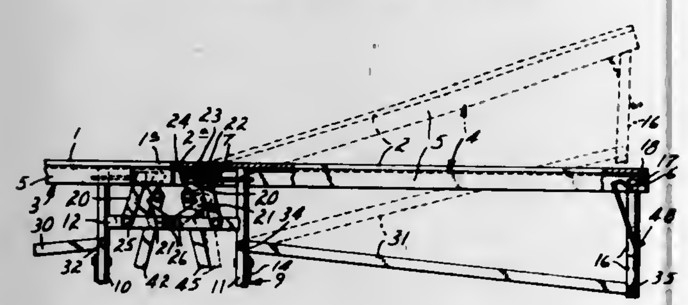
Louis Davidson, 24 Waterview Road, Oceanside, N.Y. 11572
Filed July 9, 1963, Ser. No. 293,782
11 Claims. (Cl. 108—56)



1. An industrial pallet comprising a platform, legs constructed of material other than material displaced from the platform and supporting the platform and each of which comprises two panels hinged together at their lower ends along a hinge region that contacts with an

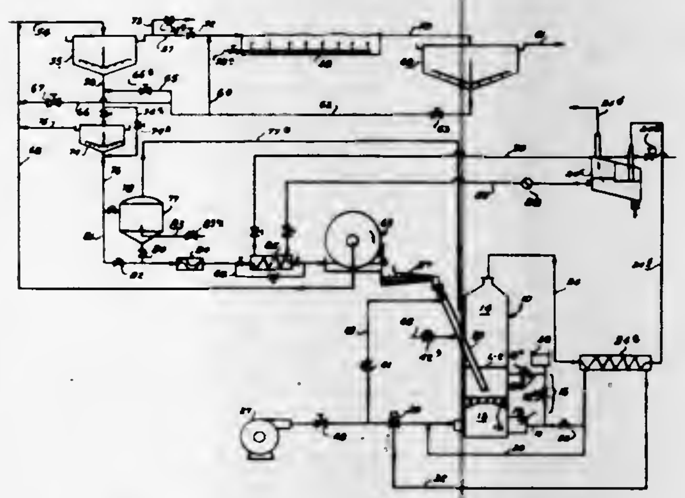
underlying supporting surface, each of the leg panels having a top edge with one portion along a first portion of the length of the edge extending above the rest of the edge by a distance equal to the thickness of the platform, there being an opening in the platform of substantial width and in position to receive the extending portion of the top edge whereby said first portion can contact with a load which is on the pallet and which spans said opening, a second, portion of the top edge of each panel along a short length of the top edge extending above the rest of the edge by a distance substantially greater than the thickness of the platform and forming a tab at the top of the leg panel, said tab being bent along its connection to the leg panel and extending across an area of the platform in a direction transverse of the direction of extent of the top edge of the leg panel, and each of the leg panels having a third portion of less height than the first and second portions for contact with the under surface of the pallet between openings.

3,351,029
FOLDING STAGE CONSTRUCTION
Richard C. Bue, Minneapolis, Minn., assignor to Sico Incorporated, Minneapolis, Minn.
Filed Nov. 22, 1965, Ser. No. 509,138
1 Claim. (Cl. 108—112)



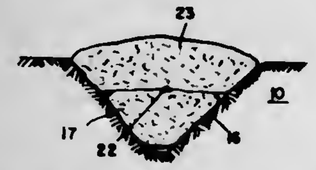
A folding stage comprising:
(a) a top including a pair of normally horizontally disposed flat top elements having substantially abutting inner ends and having a pair of reinforcing frames one each underlying a different one of said top elements and secured thereto,
(b) a supporting structure including a pair of spaced inner leg structures each underlying a different one of said top elements adjacent their inner ends in the horizontal positions of said top elements and each having lower ground-engaging ends, and a generally horizontal cross member connecting said leg structure,
(c) support means for the outer ends of said top elements, and
(d) means mounting said top elements adjacent their inner ends on said supporting structure for independent swinging movement between their normal generally horizontal operative positions overlying said supporting structure and a generally vertical folded position, said means comprising:
  (1) a pair of primary straight links each pivotally secured to said cross member below the inner end portion of a different one of said top elements on an axis parallel to the inner ends of said top elements,
  (2) a pair of secondary angular links pivotally secured to said cross member on closely adjacent axes under the ends of the respective top elements and each in horizontally spaced parallel relation to the axis of the pivotal connection of an adjacent one of said primary links to said cross member,
  (3) and primary and secondary pivot means pivotally securing said primary and secondary links respectively each to the frame structure of a respective one of said top elements below the top thereof and on axes parallel to the axes of the pivotal connection of said links to said cross member and spaced closer than the spacing of their axes on the cross member,
  (4) said primary pivot means defining the axes of said swinging movement of their respective top elements,
  (5) said primary and secondary links and the pivotal connections thereof to the top element frames and said cross member being so arranged that, during upward swinging movement of either top element away from said operative position thereof the respective secondary link imparts movement to its top element to move its cooperating primary pivot means initially in a direction toward the outer end of said top element, whereby the inner end of its respective top element at the top thereof moves away from the inner end of the other top element in an outward and downward generally S-shaped path.

3,351,030
TREATMENT AND INCINERATION OF WASTE SLUDGES
Orris E. Albertson, Norwalk, and William E. Budd, Ridgefield, Conn., assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Continuation of application Ser. No. 429,975, Feb. 3, 1965, which is a division of application Ser. No. 131,455, July 10, 1961, now Patent No. 3,319,586. This application May 18, 1966, Ser. No. 556,533
5 Claims. (Cl. 110—8)



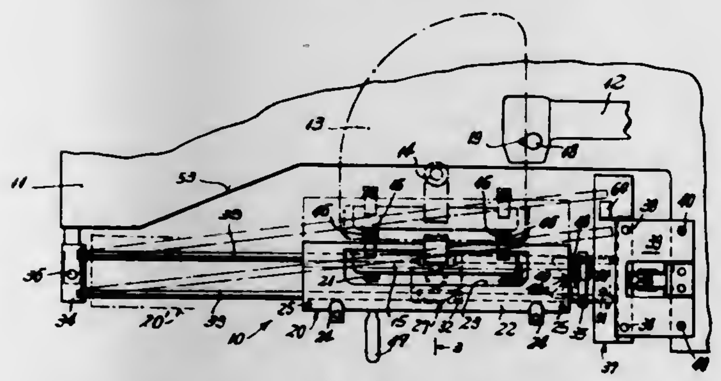
2. In a sewage disposal system, the combination of
a combustion chamber having air permeable support means therein;
a permanent fluidizable body of inert granular material supported in said chamber by said support means, said granular material having heat storing and heat radiating characteristics;
means connected to said chamber and operatively arranged to pass air upwardly through said support means at a veloocity sufficient to fluidize said body, whereby said body is rendered turbulent and ash material, when present, is stripped upwardly therefrom;
sedimentation equipment for subjecting raw sewage to sedimentation to produce sewage sludge;
sludge handling means comprising
  continuous flow mechanical dewatering means arranged to receive said sludge and dewater the same to a total waste solids content of 20–50%, of which solids content over 50% is organic material, and to deliver the dewatered sludge in the form of a wet cake material, and
  compacting and feeding means arranged to receive said cake material, to compact the same into a cohesive heterogeneous continuously flowing mass having said total waste solids content, and to force said compacted mass into said fluidized body in sealed relation against the escape of gases therefrom and to a point below the surface thereof; and
means operatively connected to said chamber and arranged to introduce fuel and burn said fuel at least to bring said body of granular material to an operative temperature,
the introduction and burning of said fuel and the passage of air upwardly through said support means as said compacted cake material is within said body of granular material allowing said body to attain and remain at a temperature in the range of 1200–1800° F., the action of said fluidized body at said temperature being effective to disintegrate said compacted cake material, dry the disintegrated material, and effect at least the major proportion of the complete combustion of said organic material while said cake material remains within said fluidized body, and strip the resulting ash from said body.

3,351,031
PLANTING METHOD
Irvine L. Phillips and David B. Scott, Salinas, Calif., assignors to Soilserv, Inc., Salinas, Calif.
Filed Dec. 1, 1965, Ser. No. 510,747
13 Claims. (Cl. 111—1)



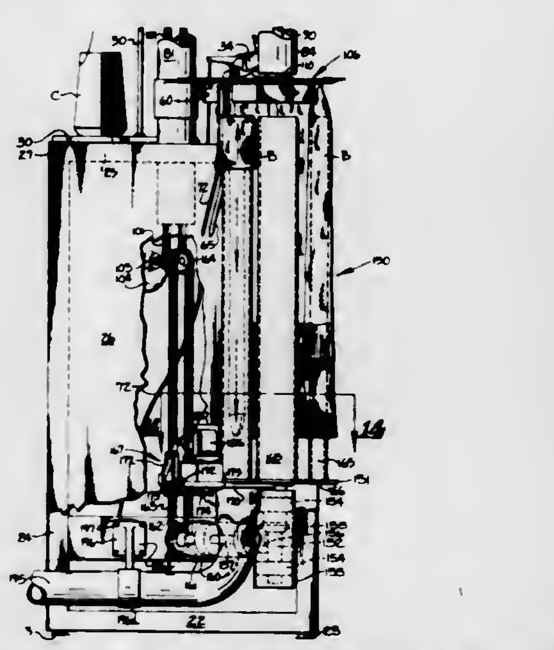
1. In the planting of seeds in a seed bed, the improved method comprising: extruding a viscous solution of a plant growth media through a die directly onto said seed bed, depositing seeds on said extruded media, and enclosing said seeds by covering the seeds with a mulch material; said media being sufficiently viscous to substantially retain its extruded shape on the seed bed.

3,351,032
WORK HOLDING AND TRANSFERRING DEVICE
Ernest M. Junkins, Wheeler Road, Monroe, Conn. 06468
Filed Feb. 8, 1965, Ser. No. 431,121
13 Claims. (Cl. 112—2)



1. In combination with a sewing machine having a needle and an automatic guiding apparatus for guiding work in a predetermined path past the needle of said sewing machine, said apparatus including a foot for carrying the work and means for moving the foot along a predetermined path and for pivoting the foot about a point in alignment with said needle upon a deviation of the movement of the foot from its predetermined path; a work holding and transfering device comprising a work holder adapted to hold work, means mounting the work holder for free movement, aligning means mounted on said holder, cooperating aligning means mounted on said foot, means for relatively moving the work holder and foot to effect engagement between the aligning means and the cooperating aligning means to cause said foot and holder to become aligned and means for transferring the work from the holder to the foot.

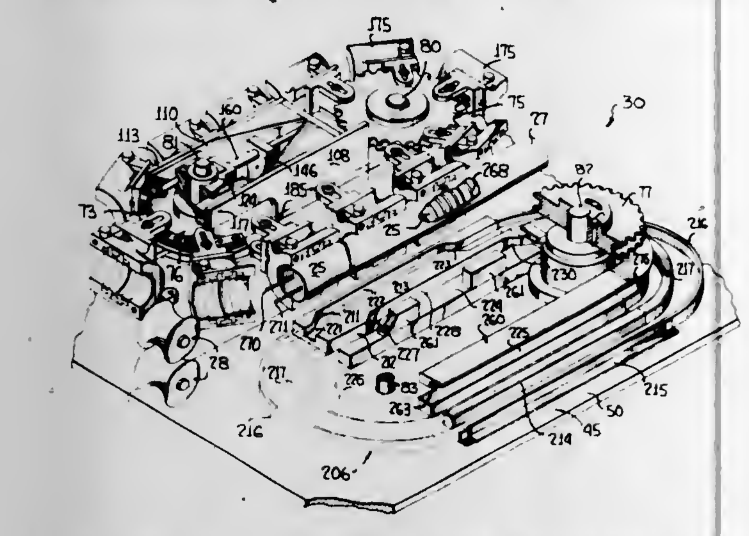
3,351,033
APPARATUS AND METHOD FOR SEAMING HOSIERY BLANKS
Joseph E. Kienel, Acworth, Ga. 30101
Continuation of application Ser. No. 275,956, Apr. 26, 1963. This application Dec. 23, 1966, Ser. No. 604,490
34 Claims. (Cl. 112—2)



15. Apparatus for the seaming and eversion of tubular hosiery blanks having a welt at one open end thereof and a toe forming portion at the other open end thereof adapted to be closed by seaming to form the toe of the hosiery, said apparatus comprising
(a) seaming means for feeding the toe forming portion of the tubular hosiery blank along a predetermined line and for seaming and closing this toe forming portion,
(b) means operatively associated with said seaming means for supporting the tubular hosiery blank with the toe forming portion disposed with its longitudinal extent generally perpendicular to the predetermined line of feed of said seaming means, said supporting means including at least one elongate form having a free end over which the tubular hosiery blank is adapted to be drawn welt first and having a generally axially extending opening therein communicating at one end thereof with the free end of said form, and
(c) means communicating with the opening in said form for creating a pressure differential therein to draw the seamed tubular hosiery blank through the form, seamed end first, to evert the hosiery blank.

3,351,034
TOWING AND CUTTING DEVICE
John W. Grek, Lisle, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 29, 1964, Ser. No. 400,044
23 Claims. (Cl. 113—1)

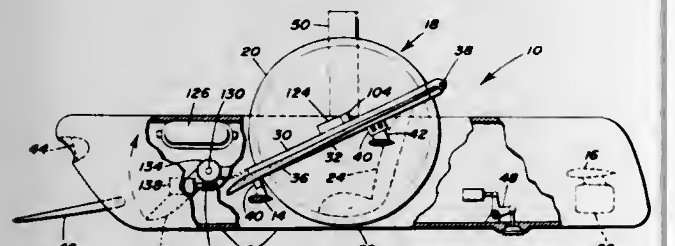
1. An apparatus for the continuous forming of can bodies from a strip comprising a first apparatus having means for shaping the strip into tubular form and means



for forming a longitudinal seam therein to define a continuous tube, and a second apparatus cooperating with said first apparatus for separating the tube into can bodies, said second apparatus including a towing mechanism for towing the tube and controlling the rate of tube forming by said first apparatus, and tube cut-off means incorporated in said towing mechanism for cutting the tube into predetermined lengths.

3,351,035
CONTROLLED UNDERSEA VESSEL

William B. McLean, China Lake, Calif., assignor to Walter G. Finch, Baltimore, Md.
Filed Apr. 4, 1966, Ser. No. 539,712
25 Claims. (Cl. 114—16)

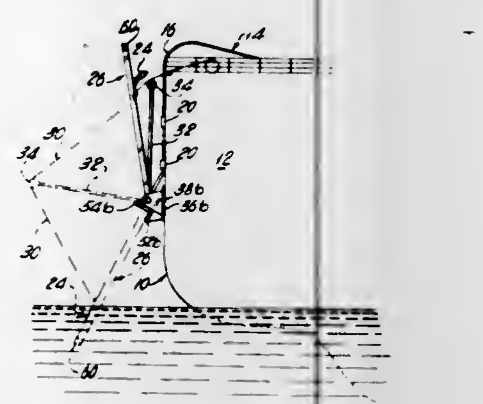


1. An undersea vessel, comprising, a floodable hull structure, an electromagnetic energy permeable capsule mounted to said hull structure, and electromagnetic energy means positioned within said capsule for signaling through the walls of said capsule and controlling external equipment without the need for apertures of any kind for this purpose in the walls of said capsule.

3,351,036
JETTISON SYSTEM FOR DISCHARGING FLUID FROM A SHIP AT SEA

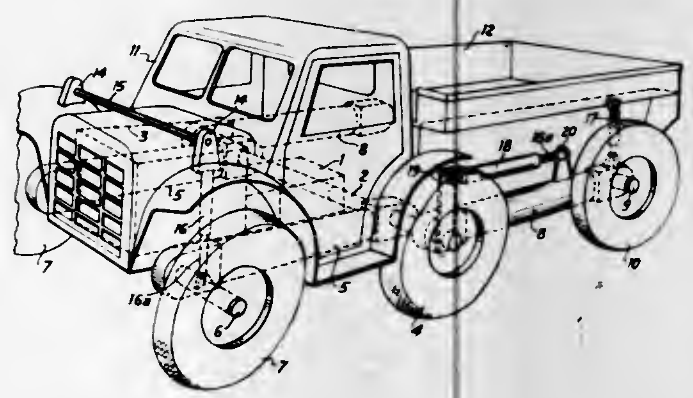
Alexander Delli Paoli, Huntington Station, N.Y., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Mar. 18, 1966, Ser. No. 535,513
4 Claims. (Cl. 114—183)

1. For use with a ship carrying a fluid which may have to be discharged at sea, a jettison system comprising a pair of exterior brackets adapted to be fixed to the ship at the exterior thereof, a pair of pivots carried by said brackets and having a common substantially horizontal axis, an A-frame having a pair of free ends turnably mounted on said pivots, so that said A-frame is swingable about said pivots from an upper stowed position where said A-frame extends upwardly from said axis to a lower operative position where said A-frame extends at least up to the waterline, said brackets respectively carrying frame stops engaged by said A-frame when the latter is in said lower operative position thereof to determine the lower position of said A-frame, a cable connected to said A-frame for turning the latter between said positions thereof, discharge conduit means communicating with the fluid and having an exterior portion carried by said A-frame for movement therewith and terminating in a discharge nozzle which is situated at an elevation no higher than the waterline when said A-frame is in said lower operative position thereof and foil means secured to said A-frame arranged to be situated beneath the waterline when said A-frame is in said operative position thereof and deriving from the movement of the ship a force acting on said A-frame to urge the latter against said frame stops.



3,351,037
CROSS-COUNTRY MOTOR DRIVEN VEHICLES

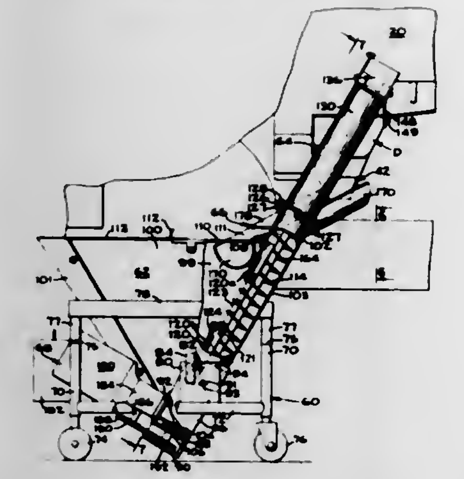
Ernst Meili, Hochstrasse 129, Schaffhausen, Switzerland
Filed July 6, 1962, Ser. No. 207,994
Claims priority, application Switzerland, July 16, 1957, 48,460; Oct. 17, 1957, 51,698; Germany, June 18, 1959, M 41,865
30 Claims. (Cl. 115—1)



1. In a cross-country vehicle; driven center axle means, at least two relatively tiltable body sections each having one end connected to said center axle means, wheel means at the ends of said center axle means driven thereby, wheel supporting arm means located both forwardly and rearwardly of said center axle means and disposed at the lower sides of pertaining body sections, wheel means supported at the one ends of said arm means, said arm means being pivotally supported at their other ends for pivotal movement in a vertical plane relative to said center axle means and independently of each other, means connected between said arm means and the pertaining body sections and selectively operable for causing the said pivotal movement of said arm means and means operatively connected between one of said body sections and the said arm means pertaining to the other body section and selectively operable for adjusting the angularity of said one body section relative to the said arm means pertaining to the other body section.

3,351,038
CONFECTION COATING APPARATUS

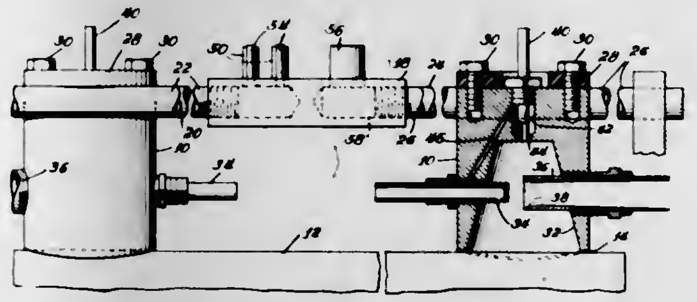
Phillip A. Miller, Tujunga, and Robert J. Betschart, Sacramento, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Aug. 24, 1965, Ser. No. 482,230
13 Claims. (Cl. 118—24)



1. A coating material return system for an article coating machine which utilizes only a portion of the material received and discharges the remainder comprising, a bin for holding the coating material, a conveyor for moving the material from the bin into the coating machine, a discharge chute positioned for receiving the non-utilized material from the coating machine and for directing the material back into said conveyor, said conveyor and said discharge chute being positioned in said bin such that excessive discharge from the coating machine will be free to fall into said bin when said conveyor is filled.

3,351,039
NON-CONTACTING ROLL CLEANING DEVICE

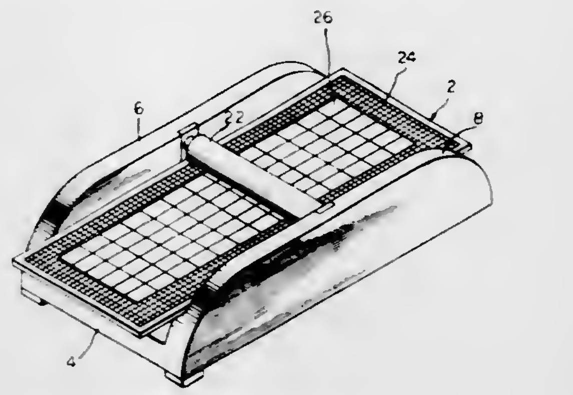
Herbert W. Heisterkamp, Cleveland, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 26, 1963, Ser. No. 333,523
4 Claims. (Cl. 118—70)



1. In combination with web coating apparatus including a roll over which a web is passed after having a coating material applied thereto and means cooperating with said roll to provide a uniform thickness of the coating material across the width of the web, the improvement comprising a non-contacting roll cleaning device for removing residual coating material on the roll on each edge of the web, said roll cleaning device including a pair of cup elements, each having an open end in uniform peripheral spaced relation to the surface of said roll, a liquid inlet means for admitting a liquid into the cup, an air inlet nozzle projecting into the cup, an air receiving pipe in spaced relation to said nozzle and in axial alignment therewith, passageway means arranged to conduct air from the nozzle to the liquid inlet means for mixing with liquid delivered into the cup to create fog conditions in the cup, and means for conducting fluid material from within said cup elements to a drain.

3,351,040
MOISTENING OR WETTING APPARATUS

Hannon L. McCall, 302 Circle Drive, Fairacres, Bristol, Tenn. 37620
Filed Dec. 3, 1965, Ser. No. 511,524
2 Claims. (Cl. 118—249)



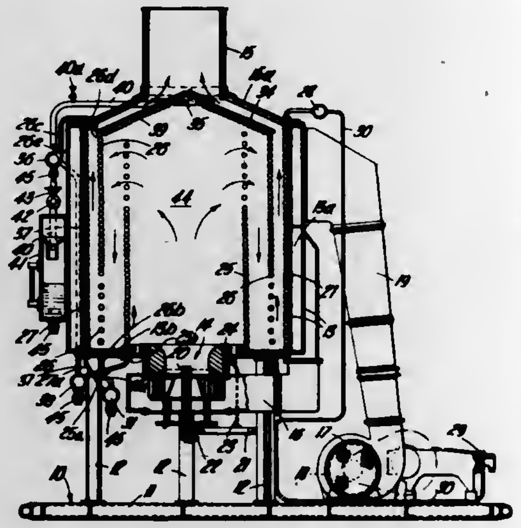
1. An apparatus for use in applying a liquid to strips of paper such as stamps and labels comprising the combination of (a) a tray-like body structure having substantially parallel side walls and a reservoir therebetween, said side walls extending above said reservoir and being relieved along the inner sides thereof above said reservoir to form a shelf on each wall, a first cylindrical roller, a sleeve of absorbent material tightly but removably fitted around said first roller forming a liquid applying roller, a second cylindrical roller having a smooth non-absorptive surface, said second cylinder acting as a pressure roller, and journal means holding the two rollers in freely rotatable horizontal positions at the body sides with the liquid applying roller extending across and situated partially within the reservoir and with the pressure roller superimposed above the applying roller, and in touching contact therewith, with its shaft parallel to the shaft of the liquid applying roller to form a nip aligned with the shelf, the journal for the pressure roller permitting vertical movement of said pressure roller with (b) a self supporting, rigid rectangular transporting screen of uniform thickness adapted to be supported on said shelf, to fit between the parallel side walls and to pass completely between the rollers and through the nip in both directions, said screen being sufficiently rigid to be pushed from its end rectilinearly between the rollers, to drive the rollers, and to convey a strip therebetween at the nip, the apparatus thereby being operated by the transporting screen which brings about the rotation of both rollers while permitting the pressure roller to maintain the screen and strip carried thereby against the liquid applying roller which liquid applying roller distributes liquid from the reservoir to the transporting screen, and through the voids thereof to the surface of the strip being transported by the transporting screen when it is passed forward and backward through the nip.

3,351,041
WATER TUBE BOILER

Henry Daniel Watson, Chorley Wood, and Edward Cecil Richardson, London, England, assignors to Mitchell Engineering Limited, London, England, a company of Great Britain
Filed May 21, 1965, Ser. No. 458,839
19 Claims. (Cl. 122—250)

1. A water tube boiler comprising,
(a) a furnace casing mounted on a base and having an air inlet at one end and an outlet for products of combustion at the other end,
(b) means adapted to deliver fuel and air for combustion through the inlet,

(c) at least three nested and spaced helical tube coils connected together in series and disposed within the casing with their axes extending between said inlet and outlet, and each of which coils is wound as a helix, the outermost coil having all its convolutions in contact and the other coils having certain convolutions in contact throughout their circumferences and others spaced apart throughout their circumferences, the coil next to the outermost coil having spaced convolutions at the end adjacent the inlet of the furnace, and the next coil having spaced convolutions at the end adjacent the outlet of the furnace,

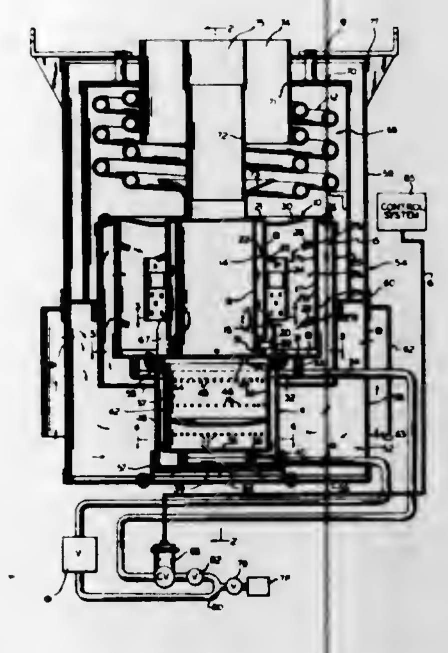


(d) a deflector means mounted within the furnace casing, opposite the outlet end thereof, and adapted to overlie the end convolutions of the helical coils other than the outermost coil to prevent a direct flow of the products of combustion through the outlet and to deflect the products of combustion between the helical coils, so that they pass from the space between the two outer coils, over the outside of the deflector means and through the outlet.

3,351,042
HEATER

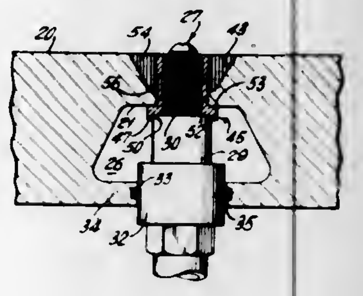
John A. MacDonald, Beaconsfield, Quebec, Canada, assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 8, 1966, Ser. No. 541,359
14 Claims. (Cl. 122—250)

1. A heater comprising a main burner, a pilot burner and a heating coil, said main burner including an annular combustion chamber defined by upstanding inner and outer concentric walls and an annular bottom wall extending between said concentric walls, inner and outer annular combustion air chambers adjacent the inner and outer concentric walls defined respectively by said concentric walls and inner and outer circular combustion air chamber walls, openings in said concentric walls providing intercommunication between said air chambers and said combustion chamber, said pilot burner being arranged below said main burner and including a combustion chamber defined by an upstanding circular wall and a bottom wall across the lower end of the circular wall, a combustion air chamber encircling said pilot burner combustion chamber, openings in said circular wall providing intercommunication between said pilot burner combustion air chamber and combustion chamber, the inner main burner combustion air chamber wall defining a flue for said pilot burner wherein the upper open end of said pilot burner combustion chamber registers with said flue and also slightly underlies an inner part of the main burner bottom wall, openings at the lower end of the main burner combustion chamber providing intercommunication between said main burner combustion chamber and the pilot burner flue, means for feeding fuel to said burners, a plenum chamber surrounding said pilot burner and the lower portion of said main burner and having an opening to the atmosphere, means intercommunicating each of said combustion air chambers with said plenum chamber, a flue gas collection chamber above said main burner combustion chamber, and said heating coil in said collection chamber.



3,351,043
RECONSTRUCTED INTERNAL COMBUSTION ENGINE CYLINDER HEADS AND METHOD OF MAKING SAME

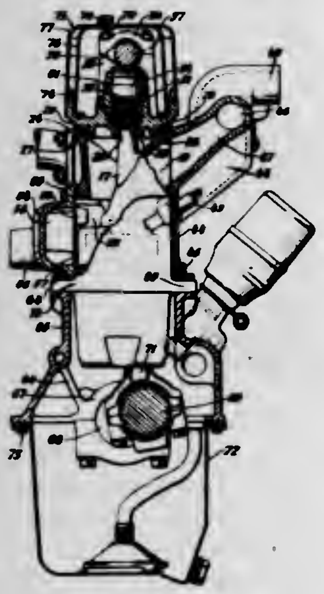
Edward Morrison, 176 Oxford Road,
New Rochelle, N.Y. 10804
Filed Dec. 29, 1966, Ser. No. 605,662
12 Claims. (Cl. 123—32)



1. In a repaired internal combustion engine cylinder head casting having a water jacket and being adapted for operatively receiving a fuel injector unit, said head having an inner wall adjacent said jacket and defined by a firing deck surface and a water jacket surface, the combination of a portion of said inner wall having an aperture therein extending therethrough between said surfaces, said aperture comprising an open-ended laterally enclosed cavity extending from said firing deck surface partly through said inner wall and a cylindrical opening of lesser transverse proportions than that of said cavity and extending from said cavity to said water jacket surface, a hollow plug of said compact material disposed within said aperture, a part of the outer surface of said plug being in threaded engagement with the cylindrical wall defining said cylindrical opening, and sealing means within said cavity and in sealing engagement with the adjacent part of said plug, said sealing means being weld material operatively joined to the adjacent portions of said plug and the apertured portion of said inner wall, said plug having an internal apertured portion adapted for operative supporting engagement with said fuel injector unit.

3,351,044
INTERNAL COMBUSTION ENGINES

Laurence Evelyn Wood Pomeroy, London, England, assignor of one-half to The British Aluminium Company Limited, London, England, a British company, and one-fourth to Technical Relations Limited, London, England, a British company
Filed Apr. 5, 1965, Ser. No. 445,532
Claims priority, application Great Britain, Apr. 10, 1964, 14,952/64
3 Claims. (Cl. 123—41.28)

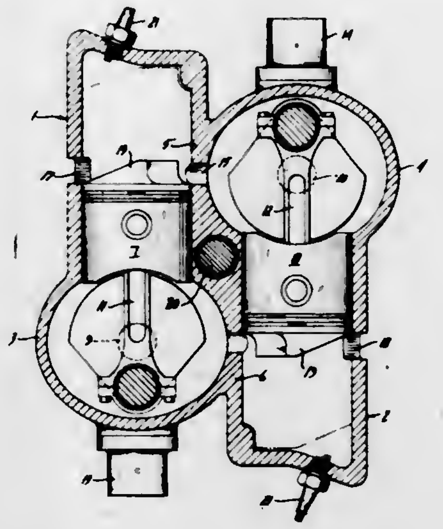


1. A cylinder block and head unit for use in an internal combustion engine, said unit comprising an integral head and cylinder casting having a plurality of aligned cylinder bores, a plurality of cooling liquid cavities extending through the top and both sides of said casting, and a plurality of oppositely directed inlet and exhaust passages in addition to the cylinder bores, and a plurality of cover members extending the length of the engine, having flat mounting surfaces, and covering said cavities and said inlet passages, said cover members including a top plate and two side plates, said top plate enclosing the cavities in the top of said casting and carrying the valve tappet means for said engine, the first of said side plates enclosing and interconnecting the cavities opening adjacent the corresponding side surface of said unit, said first side plate being provided with an inlet manifold integral therewith, said manifold having a plurality of passages registering with said inlet passages, and the other of said side plates providing a channel interconnecting the cavities on the other side of said unit, said first side plate including outlet means for said liquid, and said other side plate including inlet means for said liquid.

3,351,045
TWO-CYCLE INTERNAL COMBUSTION ENGINE

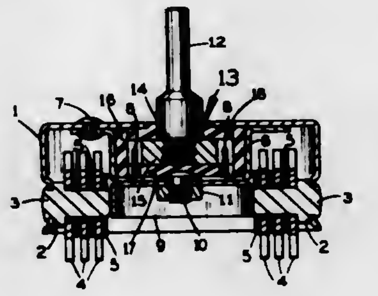
Carl Knuth, Fond du Lac, Wis., assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 627,211
1 Claim. (Cl. 123—52)

A two-cycle internal combustion engine utilizing crankcase compression of fuel-air mixture and comprising a pair of cylinders disposed in a parallel siamese arrangement with the separate crankcase for each cylinder adjacent to and having a common wall with the opposite cylinder, one or more exhaust ports for each cylinder in a wall other than the corresponding common wall, one or more transfer intake ports for each cylinder directly through the corresponding common wall, a piston in each cylinder adapted to uncover and cover said ports in the cycle of operation of the engine, and means driven by said pistons and connecting the same whereby the reciprocal cycle of said pistons are correlated to provide for substantially simultaneous firing of the cylinders.



3,351,046
POWER ROTATED ABRADING TOOL

Robert C. Collins, 76 NE. 67th St.,
Miami, Fla. 33138
Filed May 14, 1965, Ser. No. 455,727
3 Claims. (Cl. 125—5)



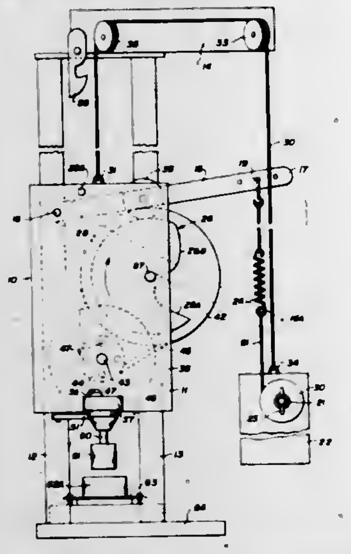
1. In an abrading tool of the character described a cup shaped body having a cylindrical wall and an aperture therethrough coaxial with the axis thereof,
- a plurality of coplanar equispaced axles secured in said wall extending inward in radial relation with the axes thereof normal to the said axis,
- a coupling cup coaxial with said axis secured in inverse relation to the inner side of said body and having an aperture therethrough coaxial with said axis,
- a predetermined plurality of abrading discs of like diameter journalled on each of said axles,
- a second cylindrical cup of uniform thickness with the upper end thereof positioned coaxial and adjacent said coupling cup and including a coaxial aperture therethrough with the outer periphery of the wall thereof positioned in close proximity with the inner ends of each of said axles for retaining said discs on their respective said axles,

screw means positioned through said cups for securing the latter in coaxial relation with said body.

3,351,047

APPARATUS FOR REPETITIVE APPLICATION OF A CONTROLLED FORCE

Charles E. Barker, 202 29th Ave. SE.,
Calgary, Alberta, Canada
Filed Mar. 9, 1965, Ser. No. 438,309
20 Claims. (Cl. 125—20)



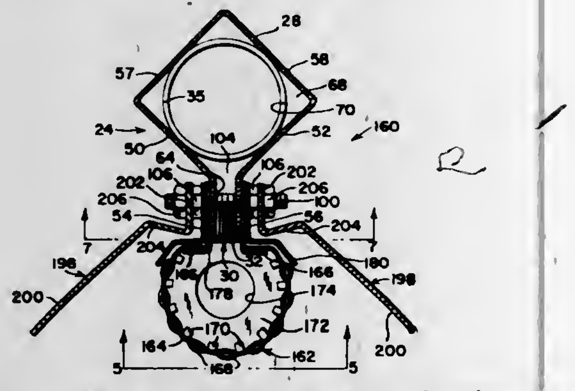
1. An apparatus for repetitive application of a controlled force, which apparatus is characterized by a combination having:

(a) a vertically moving element having a weight W, the said element being constrained to lineal motion,
(b) a counterweight of weight C where C is greater than W,
(c) pull up moving means operatively connecting the counterweight to the vertically moving element to tend to move the latter upwards,
(d) pull down moving means operatively connecting the counterweight to the vertically moving element to tend to move the latter downwards,
(e) means periodically to alter the effective length of one said moving means,
(f) and resilient regulating means forming an operative part of a said moving means.

3,351,048

INFRA-RED GAS BURNER STRUCTURE

John J. Fannon, Jr., Grosse Pointe Park, Mich., assignor, by mesne assignments, to Fostoria-Fannon, Inc., a corporation of Ohio
Filed Sept. 11, 1964, Ser. No. 395,839
6 Claims. (Cl. 126—92)



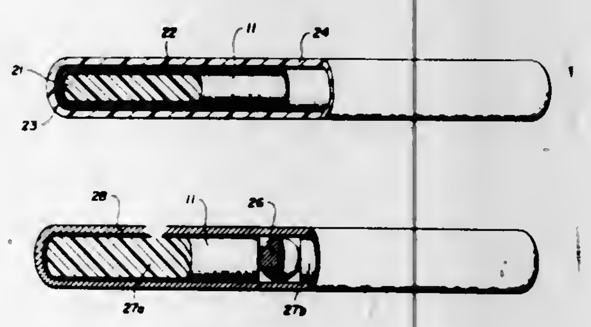
3. In an infrared generator of the combustion type:

(a) a fuel-air mixture distribution tube having opposed flanges forming a passage communicating with the interior of said tube;
(b) an orifice structure in said passage between said flanges;
(c) a radiant grid of sheet metal formed into a tubular configuration extending substantially the length of said distribution tube, said grid having an apertured infrared radiation emitting front wall portion, a nonapertured angular side and back wall portions, and integral flanges extending toward each other from opposite edges of said back wall and forming a slot therebetween substantially equal to the width of said passage between the distribution tube flanges; and
(d) fastening means attaching one of said grid flanges to each of said distribution tube flanges with the grid flange free to move longitudinally of the tube flange but restrained against movement toward and away from the latter and with the interior of said grid communicating with the passage between said distribution tube flanges.

3,351,049

THERAPEUTIC METAL SEED CONTAINING WITHIN A RADIOACTIVE ISOTOPE DISPOSED ON A CARRIER AND METHOD OF MANUFACTURE

Donald C. Lawrence, Fremont, Calif., assignor to Hazleton-Nuclear Science Corporation, Palo Alto, Calif., a corporation of California
Filed Apr. 12, 1965, Ser. No. 447,251
16 Claims. (Cl. 128—1.2)



1. A radioactive seed for use in radiation therapy of tissue comprising a sealed container having an elongate cavity therein and constructed with walls of substantially uniform thickness, a therapeutic amount of soft X-ray emanating radioisotope disposed within said cavity, said soft X-ray emanating isotope having a characteristic radiation substantially all of which lies between about 20 kev. and 100 kev. and being essentially free from alpha and beta radiations and higher energy X-ray and gamma radiations, said isotope having a half-life from about 8 to 100 days, and means disposed within said cavity for maintaining said radioisotope in a substantially uniform distribution along the length of said cavity, said last named means being made of a material selected to have low absorption for soft X-rays to thereby minimize internal absorption, said container including walls being made of a metal selected to have a relatively low atomic number to thereby minimize the absorption of soft X-rays while completely containing the isotope, said metal being further selected to be nontoxic and nonsoluble in the tissue being treated.

16. A method for making a therapeutically radioactive seed comprising soaking a nylon carrier body of an organic polymer in a solution containing the radioactive iodine isotope I_{125} so that said body contains a therapeutic amount of the I_{125}, then placing said body axially inside of a stainless steel tube, and fusing the ends of said tube to seal the same.

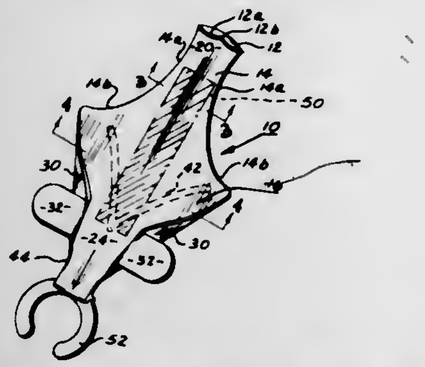
3,351,050

DEVICE FOR COLLECTING URINE FROM FEMALES

Frederick Naftolin, 2746½ S. Sepulveda,
Los Angeles, Calif. 90064
Filed Nov. 12, 1964, Ser. No. 410,493
11 Claims. (Cl. 128—2)

1. A urine collection device, which comprises:

an intermediate throat member having a normally upper and a normally lower end, and having at said upper end thereof, a hooked member angled upwardly with respect to said throat member, said throat member flaring arcuately and outwardly into a main body member affixed at said lower end thereof, the arcuate surfaces thereby formed generally conforming in shape to the thighs of a user of said urine collection device, said body member having a section thereof substantially wider than said throat member and said main body tapering inwardly to a lowermost end;



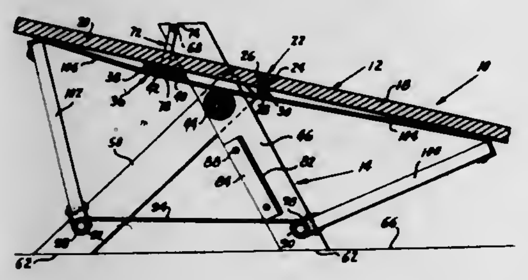
side members, affixed to and acutely angled upwardly with respect to said main body member; and

means for receiving a receptacle for urine attached to said lowermost end of said main body.

3,351,051

TREATMENT TABLE WITH ROCKING MEANS

Jesse A. Jennings, 1735 Freeman Mill Court,
Greensboro, N.C. 27406
Filed June 3, 1965, Ser. No. 461,105
8 Claims. (Cl. 128—24)



1. A treatment table comprising

a planar platform having a longitudinal axis, a transverse axis, at least two transverse edges, an upper surface and a lower surface;

means pivotally supporting said planar platform for movement in a vertical plane about a horizontal axis; and

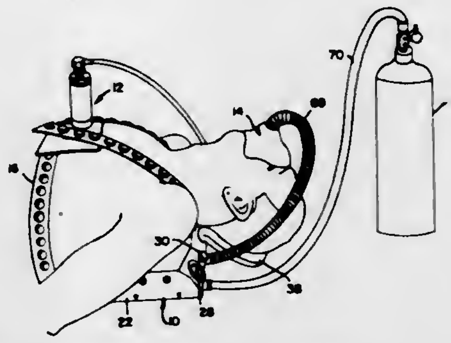
operating means for pivoting said platform about said axis, said operating means comprising

- a first arm pivotally mounted on said support means engaging said platform in load supporting relation on one side of said horizontal pivot axis,
- a second arm pivotally mounted on said support means engaging said platform in load supporting relation on a side opposite from said one side of said horizontal pivot axis,
- means connecting said first and second arms for selectively pivoting said arms, said connecting means comprising a transverse shaft rotatably mounted on said support means, crank means fixedly secured to one end of said transverse shaft,
- and an elongated flexible means connected to each of said first and second arms and being wound about said transverse shaft, said flexible means having portions thereof payed from said transverse shaft at substantially the same side of said shaft when said shaft is rotated.

3,351,052

HEART AND LUNG RESUSCITATOR

Carl E. Hewson, Marshfield, Mass.
(90 Myrtle St., North Quincy, Mass. 02171)
Filed Oct. 18, 1965, Ser. No. 497,211
6 Claims. (Cl. 128—53)



1. A heart lung resuscitator comprising

a source of compressed gas,

a pneumatically controlled valve having an inlet connected to the source of compressed gas and having a pulse and second outlet,

means biasing the valve to a first condition wherein the inlet is connected to the pulse outlet to allow the compressed gas to discharge through said pulse outlet,

a pilot line connected from the source to the pneumatic valve and when open placing the valve in a second condition wherein the inlet is connected to the second outlet and is disconnected from the pulse outlet,

means connected to the pilot line operated in response to the second outlet being connected to the inlet for closing the pilot line,

a cylinder having a piston biased to a retracted position within the cylinder,

a passage connecting the pulse outlet to the cylinder for moving the piston to an extended position when compressed gas is discharged from said outlet,

a pad carried by the end of the piston for applying compressive forces to the chest of a patient when the piston is in the extended position,

a pneumatic counter connected to the pulse outlet and actuated with each discharge from the pulse outlet,

a tank for storing lung ventilating gas,

a fitting for introducing the gas to the lungs of a patient,

means including a valve connecting the tank to the fitting,

and control means for opening the last named valve in response to selected actuations of the counter.

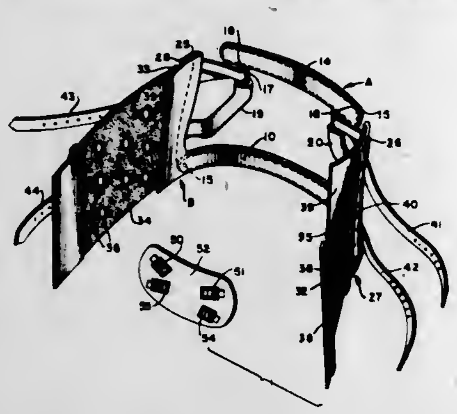
3,351,053

FLEXION BACK BRACE

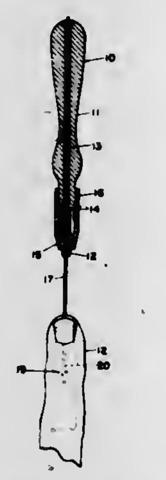
Fred L. Stuttle, Peoria, Ill., assignor to Florida Brace Corporation, Winter Park, Fla., a corporation of Florida
Filed Nov. 13, 1962, Ser. No. 236,924
7 Claims. (Cl. 128—78)

1. A flexion back brace for treating the lumbosacral area to change a lordotic back to an active flat back comprising a semi-rigid rear brace portion and front adjustable corset portion secured at the rear to said rear brace portion and having strap securing means on the front thereof, said rear brace portion comprising an upper contoured band adapted to provide a rest across the upper lumbosacral area, said upper band having pivoted lever means at each end, a lower contoured band adapted to provide a rest across the lower lumbosacral area, upright arms from said bottom band, said lever means being offset at their respective lower ends and extending angularly upward from the lower portion of each of the said upright arms, said lever means having pivot means secured to each of said upright arms adjacent their respective lower

ends and secured to each opposite end of the said upper band, and a flexible strap means operatively associated with each of said pivoted lever means adjacent each end of the said upper band, said straps being secured at one end to a side of said corset portion and at the other end to said strap securing means on the front of said corset portion.



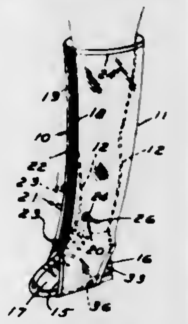
3,351,054
TOOL AND METHOD FOR INSERTING PINS
Florian F. Florek, 27 Market St., Edinboro, Pa. 15412
Filed Feb. 23, 1965, Ser. No. 434,212
2 Claims. (Cl. 128—83)



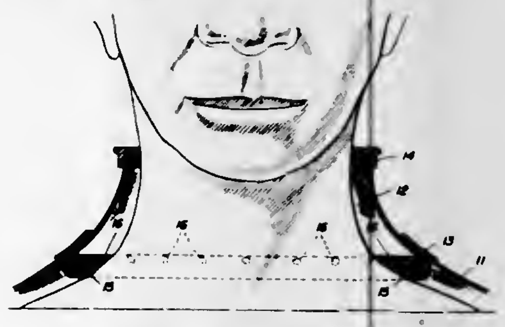
1. An instrument comprising an elongated generally cylindrical handle extending completely in a longitudinal direction adapted to be received completely and in its entirety in a hand and held in said hand, a threaded member on said handle, a reduced size neck portion fixed to said threaded member, a conical member longitudinally split on said neck portion, said handle, threaded member, neck portion, and conical member all being integrally connected together, a sleeve having an internal surface engaging said conical member, a hole through said conical member, said neck portion, said threaded member, and said handle, a surgical pin in said hole, said sleeve being adapted to be tightened to clamp said conical member to said surgical pin in said handle, said handle and said pin and all parts thereof being disposed coaxially of each other.

3,351,055
PRESSURE BANDAGE-SPLINT AND METHOD OF FORMING SAME
Max Gottfried, Rossford, Ohio, assignor to Jobst Institute, Inc., Toledo, Ohio, a corporation of Ohio
Filed Nov. 26, 1963, Ser. No. 326,108
9 Claims. (Cl. 128—87)

1. An air pressure splint to at least partially encase an injured, boot clad human leg, said splint comprising an outer flexible and relatively nonstretchable wall, an inner flexible wall connected by seaming about its perimeter in air-tight sealed relation to said outer wall to coact with the latter in defining double-walled and sealed inflatable envelope means, said envelope means including an air chamber portion in position to surround at least a major portion of the leg and instep, along which chamber portion said envelope means has separable, air-tight margins adapted to be releasably connected together to hold said chamber portion in said surrounding position, releasable, self-locking slide fastener connecting means on longitudinal zones of said respective separable margins extending from adjacent corresponding ends of the latter to termini spaced from the opposite margin ends thereof at a toe portion of the splint, thus to releasably connect the margins together, with the chamber portion of the splint so surrounding the injured leg at the ankle and instep and with a toe receiving opening from the interior to the exterior of the splint between said termini and said opposite margin ends, said envelope means and its chamber portion also providing a heel receiving opening opposite said toe receiving opening and said slide fastener connecting means, said outer and inner splint walls extending continuously and integrally about said injured leg in the area of the splint directly adjacent said opening and said connecting means, and valved inflation means in sealed communication with said envelope means for the inflation of said chamber portion on opposite sides of said connecting means to enable the splint to grip the injured leg.



3,351,056
SHOULDER SEAL BETWEEN A PROTECTIVE SUIT AND HELMET
George P. Durney, Dover, Del., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 19, 1965, Ser. No. 434,151
8 Claims. (Cl. 128—142.5)



1. In a physiological protective system the combination of

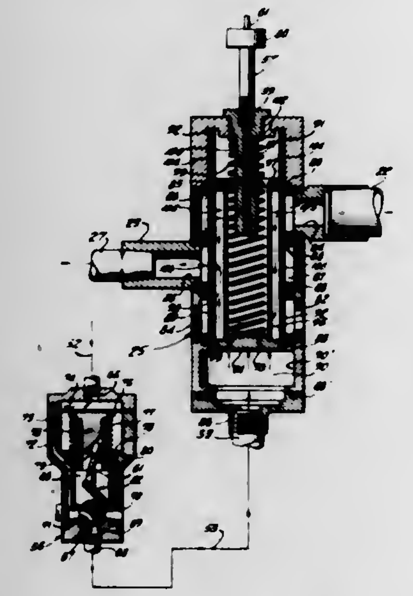
a protective coverall which covers the torso of the wearer's body and which terminates at the wearer's neck in a reinforced collar;

a helmet having a neck ring, means for supplying breathing oxygen into the helmet;

a neck section attached to said neck ring, said neck section terminating in a shoulder seal means, said shoulder seal means fitting inside said reinforced collar and arranged to expand outwardly against the reinforced collar, said shoulder seal being adapted to rest on the wearer's shoulders;

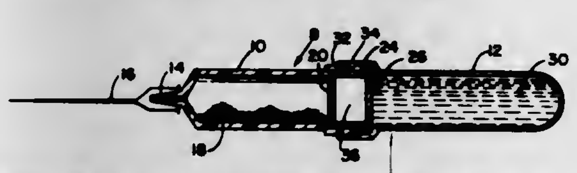
whereby the coaction of said shoulder seal means, said reinforced collar, and the wearer's shoulders provides gas sealing means for said helmet and said neck section.

3,351,057
PATIENT SAFEGUARDING ANESTHESIA APPARATUS
Chalmers Goodyear, Huntington, Edward A. Connolly, West Islip, and Frederick Caparrelli, Westbury, N.Y., assignors to The Foregger Company, Inc., Roslyn Heights, Long Island, N.Y., a corporation of New York
Filed May 28, 1964, Ser. No. 370,768
11 Claims. (Cl. 128—188)



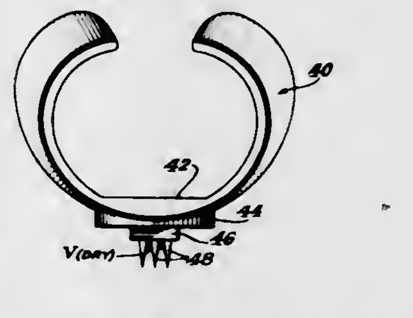
1. In a gas anesthesia machine provided with a source of oxygen under pressure, a source of anesthetizing gas under pressure, means for controlling and mixing the oxygen and anesthetizing gas, a breathing circuit for a patient, and means for delivering the gas-oxygen mixture to the breathing circuit, the improvement which comprises means responsive to a drop in pressure of the source of oxygen below a predetermined value to disable the means for delivering the gas-oxygen mixture to the breathing circuit thereby to shut off the flow of all gas to the breathing circuit, and means thereupon to connect the breathing circuit to a source of a further oxygen-containing gas.

3,351,058
TWO COMPARTMENT MEDICAL INJECTOR
John C. Webb, San Francisco, Calif., assignor to Amco Capital Corporation and Maryland Capital Corporation, both of San Francisco, Calif., both corporations of California
Filed July 12, 1965, Ser. No. 471,357
6 Claims. (Cl. 128—216)



1. A medical injector, for segregated storage of ingredients combinable as a therapeutic preparation, comprising:
- (a) a tubular member defining a first chamber;
- (b) a hypodermic needle connected to a first end of said first tubular member for fluid communication with said first chamber;
- (c) a second tubular member defining a second chamber having flexible walls and being closed at its first end;
- (d) said second tubular member having a second end removably connected to the second end of said first tubular member;
- (e) said connection between said first and second tubular members being provided by
  - (1) external thread means formed on said second end of one of said tubular members; and
  - (2) internal thread means formed on said second end of said other tubular member at a diameter slightly greater than the external diameter of the second end of said tubular member having said external thread means so that the two tubular members may be threadably connected to each other; and
- (f) frangible means situated between first and second members at the juncture therebetween for normally preventing communication between said first and second chamber, said frangible means being breakable by transmission of sufficient hydraulic pressure through inward distortion of the walls of said second chamber when a fluid is confined in said second chamber wherein said frangible means comprises two circular frangible discs spaced apart from each other by a ring shaped collar, whereby said discs and collar defined a third chamber.

3,351,059
SINGLE STABLE DOSE VACCINATOR
Harvey Kravitz, Skokie, Ill., assignor of one-half to Norman Lettvin, Highland Park, Ill.
Filed June 2, 1964, Ser. No. 371,918
2 Claims. (Cl. 128—253)



1. In a biological applicator of the type that includes a plurality of at least two scarifying needles projecting from a common support and a solid residue of dried biological substance carried by all said scarifying needles, the improvement comprising:

the plurality of needles and the common support cooperating to define an elongated crotch space extending longitudinally between each pair of needles with one end of the crotch space adjacent the common support and with all the needles of the applicator clustered together, the length of the needles from their common support being in the order of 0.21 cm. and the spacing between the tips of the needles being in the range of 0.08 to 0.12 cm., each needle providing at least one side that bounds said crotch space and which side is inclined along the length of the needle from the tip thereof to said common support so that the width dimension of the crotch space is smaller adjacent the common support than at the tips of the needles,

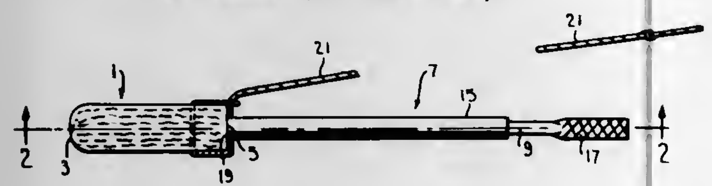
a dried residue of a single liquid dose of biological substance carried at the common-support end of each crotch space and with the tip end of each needle distal from both the dried residue and the common support and being substantially free of such solid residue,

the combined portions of each crotch space that is free of said dried residue providing a diluent-receiving-and-holding space adapted to receive and hold therein an amount of liquid diluent that is retained therein by surface tension between the liquid diluent and the adjacent needles and is sufficient to precisely reconstitute the dried residue located at the other end of the crotch space, thereby providing an applicator that is required to be reconstituted before usage by an amount of liquid diluent to yield an effective and precise liquid dose of biological that is to be administered simultaneously with scarification by all the needles of the applicator.

3,351,060

TAMPONS

Irvin S. De Woskin, St. Louis, Mo., assignor to Beltx Corporation, St. Louis, Mo., a corporation of Missouri
Filed May 17, 1965, Ser. No. 456,095
6 Claims. (Cl. 128—263)

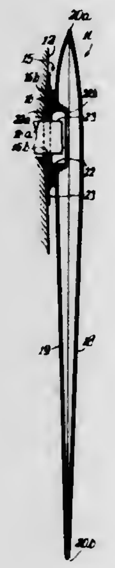


1. A tampon and inserter assembly comprising
a tampon formed with a hole at one end,
a rod having one end slidably and removably inserted in said hole,
a sleeve slidably telescoped on the rod,
the end of said sleeve toward the tampon being engageable by said one end of the tampon,
the other end of the rod projecting from the other end of the sleeve and constituting a handle for withdrawal of the rod from the tampon by pulling the rod out of the sleeve.

3,351,061

DRAINAGE POUCH FOR POST-SURGICAL USE

John L. Nolan, Glenview, Ill., assignor to Hollister Incorporated, a corporation of Illinois
Filed Mar. 8, 1965, Ser. No. 437,828
1 Claim. (Cl. 128—283)

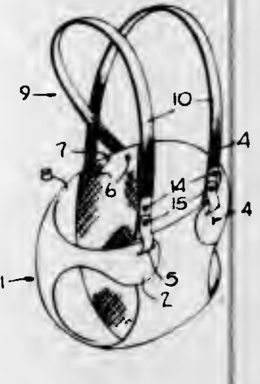


A post-surgical pouch for receiving discharge from the stoma of a patient, comprising: an enclosed waterproof bag having an outer and inner wall with a stoma opening in said inner wall for receiving the stoma of a patient; a backing member on the inner wall of said pouch about said stoma opening; a first ring of adhesive coated material on said backing member about said opening, said first ring having an adhesive thereon which adheres rapidly to the human skin; a second ring of medicinal adhesive material secured to said backing member about said opening and spaced concentrically inwardly from said first ring; and a first protective covering means of one material provided for said medicinal ring and a second protective covering means of another material provided for said adhesive ring.

3,351,062

INFANT GARMENT

Evelyn M. Ferguson, 557 E. Grant Ave., Roselle Park, N.J. 07204
Filed Nov. 17, 1964, Ser. No. 411,801
5 Claims. (Cl. 128—284)

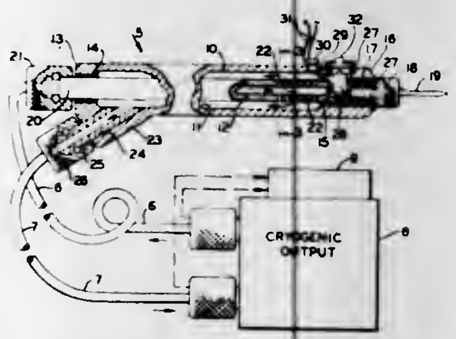


1. A garment comprising:
a body portion and a holder portion connected to said body portion;
said body portion comprising a generally rectangular piece of fabric having a front portion, a reduced central portion and an enlarged rear portion; each corner of said rectangular piece of fabric having a transverse slit therein;
the longitudinal mid-portion of said rectangular piece of fabric being of extra thickness absorbent gauze and the longitudinal side portions of said fabric being stretch-knit fabric; said rear portion corners overlying said front portion corners so that said rear portion slits overlie said front portion slits;
said holder portion comprising a pair of fabric strips secured at one end thereof to said rear portion of said body portion, the other end of said fabric strips passing through said overlying slits and adjustably secured to an intermediate portion of said fabric strips.

3,351,063

CRYOSURGICAL PROBE

Stephen F. Malaker, 330 Short Drive, Mountainside, N.J. 07092, and John G. Daunt, 4725 Olentangy Blvd., Columbus, Ohio 43214
Filed Dec. 8, 1964, Ser. No. 416,781
2 Claims. (Cl. 128—303.1)



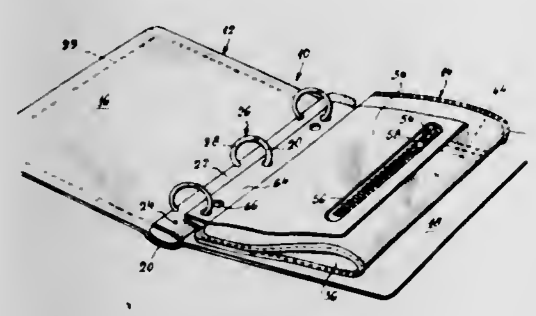
1. A cryosurgical probe, comprising:
a tubular body made of insulating material, and having closed ends,
a tube open at one end and penetrating the rearward end of said body in outside sealing relation and passing through said body in spaced relation so as to leave an annular space therebetween, and having its other end closed within said body, said closed end being made of highly heat conductive material and penetrating the forward end of said body in outside sealing relation,

a series of radial holes in said tube adjacent said closed end,
a hollow arm made of insulating material connecting the rear wall of said body with the said annular space therein and in outside sealing relation,
connecting means for connecting a refrigerant feed line to the open end of said tube for feeding a refrigerant therethrough,
connecting means for connecting a discharge refrigerant line to the end of said hollow arm for leading away a refrigerant which had passed through said tube holes and said annular space,
a conductive probe tip designed to be cooled by the tube end which, in turn, is cooled by a refrigerant,
a zener diode heating means mounted through the wall of said body in outside sealing relation therewith and into the closed end of said tube immediately above and adjacent to said tip and designed to provide instantaneous heat to said probe end, and
a switch on said body for energizing said heating means.

3,351,064

COMBINED NOTEBOOK AND FLEXIBLE BAG CLOSURE

Adolph E. Cohn, Bronx, N.Y. (Adolco Trading Co., 1123 Broadway, New York, N.Y. 10010)
Filed Jan. 18, 1966, Ser. No. 521,263
1 Claim. (Cl. 129—1)

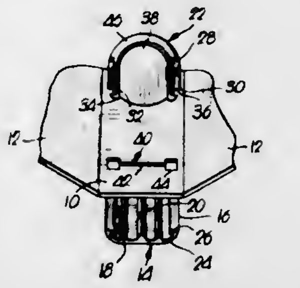


In a combined notebook and protective flexible bag therefor, a notebook including a pair of covers connected by a back portion, an elongated metal plate secured to the inner surface of the back portion, sectional rings supported on the plate, the sections of the ring being swingable to and away from each other, a plastic foldable flexible bag detachably attached to the rings, said bag having a rectangular shaped body with bottom wall, sectional top wall, front wall, rear wall and end walls, a zipper device for connecting the sections of the top wall, means for detachably connecting the body of the bag when folded to the rings, the means for detachably connecting the body of the bag to the rings consisting of plastic tapes secured along the end walls of the body at the juncture thereof with the front wall, said tapes having spaced holes, said body being folded transversely midway the ends thereof for aligning the tapes and holes for receiving one section of the rings, said end walls being of less length than said back portion but longer than the width of each cover, and the width of each cover being greater than one-half the length of the top and bottom walls and the length of the top and bottom walls being greater than the length of each cover, whereby said bag when folded and mounted on the rings of the notebook and fully disposed within the perimeter of the closed notebook and when unfolded the bag is larger than the notebook so that when the bag is detached from the notebook, the latter may be placed into the bag and protected thereby.

3,351,065

LOOSE LEAF BINDER STRUCTURE

John Herbert Roush, 2909 Hermosa Ave., Hermosa Beach, Calif. 90254
Filed Apr. 21, 1966, Ser. No. 552,359
1 Claim. (Cl. 129—18)



A binder for a sheaf of flexible loose leaves of the kind having a plurality of spaced, marginal edge slots, each defining an inner, open portion and an outer, relatively narrow notch providing an access to said inner portion, said binder comprising:
an elongated back portion having a pair of cover portions hingedly mounted on the longitudinal edges of said back portion, said portions each presenting normally inner and outer surfaces;
an elongated base extending along the outer surface of one of said portions in parallel relationship to said edges;
a plurality of arch elements overlying said inner surface of said one portion;
joinder means connecting the elements with said base including hook means on the elements and hook-receiving means on said base releasably interlocked with said hook means; and
abutments on the elements adjacent said hook means,
said elements being substantially U-shaped to present parallel sides terminating in opposed free ends having said hook means thereon, said abutment being spaced from said ends and engaging the inner surface of said one portion when said ends are interconnected with the base,
said one portion having spaced apertures formed therein and clearing the joinder means,
each of said apertures including a transverse neck communicating with openings at the opposed ends thereof, there being a rib extending parallel between said channel legs and having notches therein aligned with said necks, each of said elements having a vertical web secured centrally thereof and extending below said ends whereby the latter are inserted through a respective opening, and said web is inserted through a corresponding neck into a notch when said barbs and projections are interlocked to thereby preclude relative longitudinal movement of the base and elements,
said abutments engaging the inner surface of said one portion whereby the latter is releasably clamped between the base and elements.

3,351,066

CHEMICAL COMPOSITION ALTERATION OF TOBACCO

Harry R. Colgate, 4868 Browndeer Lane, Palos Verdes, Calif. 92266
No Drawing. Filed July 20, 1965, Ser. No. 473,500
6 Claims. (Cl. 131—140)

1. The process of treating smoking tobacco to remove undesirable fractions thereof, comprising the following steps:
subjecting the tobacco to reduced pressure in a vacuum chamber within a range of 500 microns down to 1×10^{-7} mm. Hg;

after the pressure on the tobacco has been reduced to at least 500 microns, applying heat to bring the tobacco to a desired temperature range;

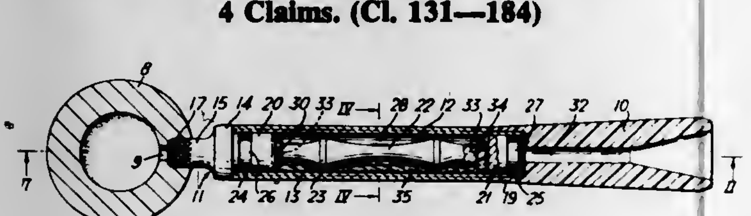
maintaining the heat and reduced pressure for a period of time within a range of 15 minutes to 1 hour;

after the lapse of time necessary within said range, allowing the tobacco to cool while being held at said reduced pressure until the tobacco is not over 125° F.; and

returning the pressure to atmospheric and removing the treated tobacco.

3,351,067
SMOKERS' UTENSILS

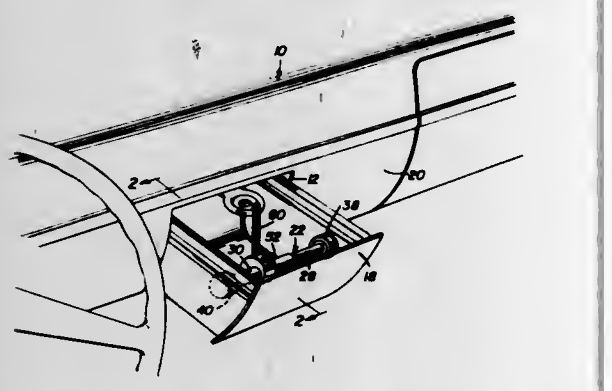
Hans Lowenthal, Kensington, London, England, assignor to Colibri Lighters Limited, London, England, a British company
Filed Apr. 12, 1965, Ser. No. 447,397
Claims priority, application Great Britain, May 21, 1964, 21,077/64
4 Claims. (Cl. 131—184)



1. A stem for a smoking device comprising an outer tubular member and an inner member mounted within said outer member and extending longitudinally thereof, said inner member having at least a portion thereof radially spaced from the inner wall of said outer member and defining with said inner wall an annular smoke-cooling chamber, and an elongated absorbent cleaner extending longitudinally of said annular chamber in contact with said inner wall, said inner member being provided with longitudinally spaced transverse holes and said cleaner having bent ends inserted in said holes to hold it in place on said inner member.

3,351,068
AUTOMOBILE ASHTRAY PIPE CLEANER

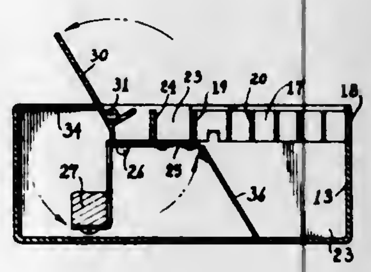
Manuel A. Sequeira, 1072 Welch Ave., San Jose, Calif. 95117
Filed Jan. 13, 1966, Ser. No. 520,522
13 Claims. (Cl. 131—232)



1. In combination, an ashtray including upstanding opposite sides, an elongated pipe bowl cleaning shank, means pivotally supporting one end portion of said shank in said tray for rotation about an axis extending between said sides and transversely of said shank and movement of said shank between an operative upright position with the other end portion of said shank projecting above said sides and an inoperative generally horizontal position with said shank disposed below the uppermost extremities of said tray, said means pivotally supporting said shank in said tray including means operative to releasably retain said shank in said operative position and said first-mentioned means also including means operative to axially adjust said shank relative to said axis.

3,351,069
ASH TRAY

Harold R. Carper, 3643 Park Ave., Indianapolis, Ind. 46205
Filed Sept. 27, 1965, Ser. No. 490,236
9 Claims. (Cl. 131—235)



5. An ash tray, comprising

a hollow body adapted to serve as a receptacle for tobacco ashes and cigarette stubs and having a bottom wall,

means near the top of said body providing a relatively air-tight extinguishing compartment, said means including

a lid movable from a closed position in which it closes the top of the compartment to a fully open position in which it exposes the compartment for reception of a cigarette stub, and

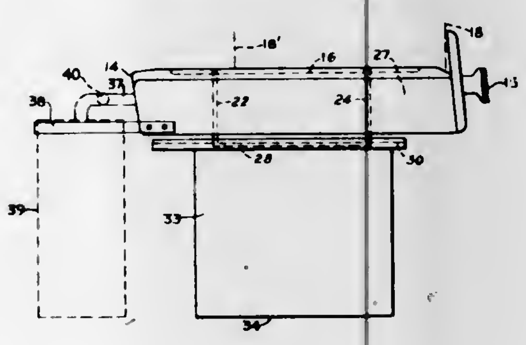
a closure controlling communication between said compartment and the hollow body and operable to permit the contents of the compartment to pass into the hollow body,

means biasing said closure to a closed position, and

means operable as said lid is moved from said closed position to said fully open position for momentarily moving said closure from, and then permitting its return to, its closed position, said last named means permitting the lid to be closed while the closure is in closed position.

3,351,070
AUTOMOBILE ASH TRAY

Julie Cooper, Roselle, N.J. 07203
Filed Aug. 5, 1965, Ser. No. 477,483
3 Claims. (Cl. 131—236)



1. An automobile ash tray mountable under a dashboard in horizontally sliding relation thereto, comprising,

means providing a chamber having a bottom, back, sides and a front, and having a hole in the center portion of its bottom;

engaging means attached to the sides of said chamber means designed to enable sliding out of said chamber means from under a dashboard provided with coacting engaging means,

a water-absorptive spongy material disposed in said chamber means around said opening therein,

engaging means attached to the bottom of said chamber means,

a hollow container having a body and a bottom and having engaging means at its top designed to engage and be held by said engaging means in the bottom of said chamber means, and

conduit means leading into a wall of said chamber means and designed to convey water thereinto to be absorbed by said spongy material.

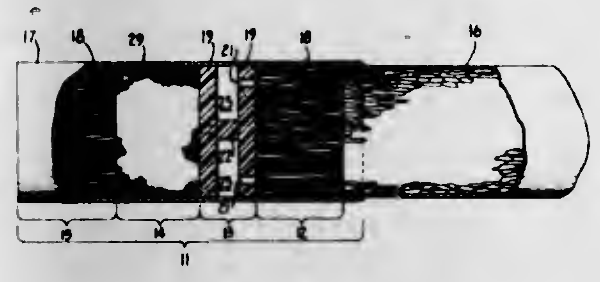
3,351,071
CARBON FILTER MATERIAL AND PROCESS FOR PREPARING IT

Alan M. Belfort, Devon, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Dec. 23, 1964, Ser. No. 420,815
3 Claims. (Cl. 131—265)

1. An article of manufacture comprising a shaped particle of a homogeneous mixture of from 5 to 95% by weight of cellulose crystallite aggregates having a particle size ranging from about 0.1 to 375 microns, and from 95 to 5% by weight of carbon having particle size ranging from about 1 to 65 microns, said shaped particle having an average diameter ranging from about 0.1 to 25 mm.

3,351,072
TOBACCO SMOKE FILTER

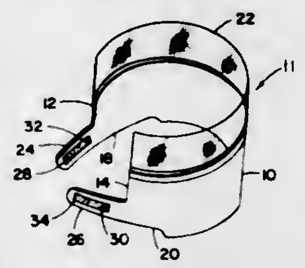
Leo Baum, Oakland, and Douglas W. Watkins, Hayward, Calif., assignors to Esco Corporation, Portland, Oreg., a corporation of Oregon
Filed Nov. 16, 1965, Ser. No. 508,060
6 Claims. (Cl. 131—266)



1. In a filter for tobacco smoke having an outer tubular jacket defining a smoke inlet and smoke outlet portion and a cylindrical smoke conduit extending therebetween, a filter section disposed in said cylindrical smoke conduit, said filter section comprising at least two spaced discoidal partitions of relatively non-porous material extending transversely across said smoke conduit coextensive with the cross-sectional area thereof; each of said partitions having tubular smoke passages extending therethrough in the generally axial direction of said filter section; said tubular smoke passages being between about .029 inch and .038 inch in diameter and at least about .03 inch in length; said discoidal partitions being disposed at a distance between about .01 and .03 inch from each other, successive partitions being disposed to provide a staggered orientation of the smoke passages through adjacent partitions; a first cylindrical filter means comprising a compacted sorptive material, said filter means being disposed in the smoke inlet portion of said smoke conduit and in contiguous relation with one of said partitions; a second cylindrical terminal filter means comprising sorptive materials disposed in the smoke outlet portion of said smoke conduit and in contiguous relation with the other of said partitions.

3,351,073
COIFFURE PROTECTORS

Richard G. Gregg, Highway 231, Meridianville, Ala. 35759
Filed Nov. 25, 1966, Ser. No. 597,122
3 Claims. (Cl. 132—46)



1. A coiffure protector for encirclement around the front, sides and back of a person's head to maintain a hair style in place comprising:

(A) A basic support member including:

(1) an elongated lower band member for fitting around said head for supporting said protector on said head and for providing lateral retaining support to the back and sides of the lower portion of said hair style to maintain said lower portion of said hair style in place without applying compression to a lower portion of the front portion of said hair style,

(a) said lower band member having an end region at one end and another end region at its other end, said end regions being of reduced width compared to the width of the portion of said lower band member between said end regions to prevent compression of a lower portion of the front portion of said hair style and said end regions being of a configuration defined by the removal at each said end of an area of the upper portion of said lower band member,

(b) the portion of said lower band member extending between said end regions being constructed of a porous elastic material to provide retaining support to the lower portions of the back and sides of said hair style,

(c) said end regions including fastening means for adjustably fastening said end regions together to provide a variable dimension of head encirclement by said protector and a variable width opening for said front portion of said hair style to minimize compression of said front portion of said hair style by said lower band member, and

(B) a secondary support member including:

(1) an elongated flexible self-supporting upper band member having a predetermined width dimension for providing lateral, non-compressive, retaining support to the back and sides of the upper portion of said hair style,

(a) a lower portion of said upper band member being secured to the upper edge of said lower band at the portion of the lower band defined between said end regions to prevent compression of the upper portion of the front portion of said hair style,

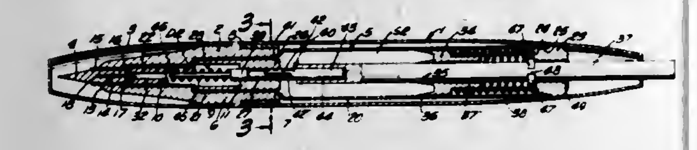
(b) said upper band member also defining a non-compressive, open-top, hair-retaining enclosure for receiving the top portion of said hair style, and

(c) said upper band member being substantially thinner in cross sectional dimension than said lower band member and being constructed of soft, flexible, but self-supporting, open weave material.

3,351,074

APPLICATOR FOR COSMETICS AND THE LIKE

Bruno D. Aston, 14421 Autumn Moon Drive, Hacienda Heights, Calif. 91745
Filed July 6, 1964, Ser. No. 380,588
11 Claims. (Cl. 132—79)

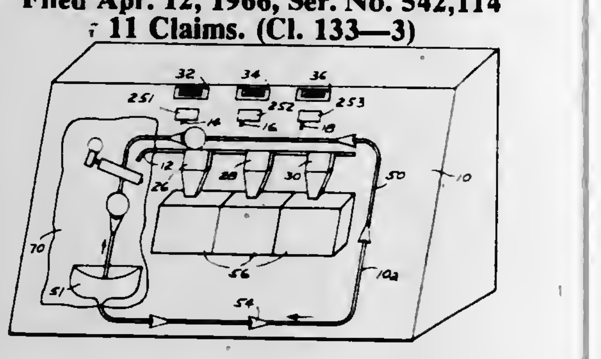


1. A cosmetic or like fluent material applicator comprising: an elongated assemblage of a nose and a case removably carried by said nose; applicator means projecting from said nose; a separate cartridge assembly having one end removably engaged in said nose and the other end projecting from said case; a body of fluent material in said cartridge; said one end of said cartridge having means openable upon engagement with said nose to permit the flow of said fluent material to said applicator means; and means in said cartridge operable from said other end thereof to control flow of said fluent material from said cartridge into said applicator means.

3,351,075

COIN-SORTING AND COUNTING MACHINE

Ernst Weisskopf, Philippsburg uber Bruchsal, Germany, assignor to Standardwerk Eugen Reis G.m.b.H., Bruchsal, Baden, Germany, a firm of Germany
Filed Apr. 12, 1966, Ser. No. 542,114
11 Claims. (Cl. 133—3)

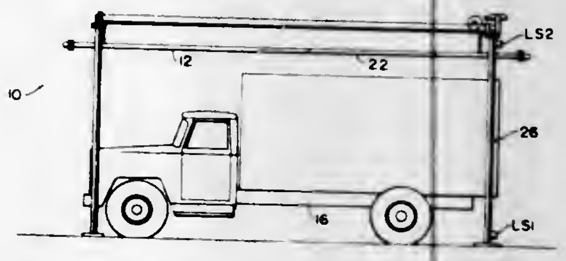


1. A coin-sorting and counting machine for sorting and counting coins of different diameters, said machine comprising, in combination, a substantially horizontally mounted guide rail, a receptacle open at its top and disposed below the level of said rail for a supply of intermingled coins to be sorted and counted, an endless conveyor guided along a path including a first portion extending through the supply receptacle substantially vertically upward therefrom, a second portion extending past and above said guide rail parallel thereto and a third portion extending back to the bottom side of the receptacle, at least two gripper plates supported on said conveyor for travel in unison therewith, said plates being spaced lengthwise by a distance at least equal to the diameter of the largest coin to be sorted and counted in the machine, the minimal distance of the gripper plates from the guide rail being less than the diameter of the smallest coin to be sorted and counted, each of said gripper plates having at its leading end two gripper points for seating a gripped coin therebetween, one of the gripper points adjacent to the guide rail being at said minimal distance from the guide rail, said gripper plates gripping coins which pass through said receptacle, one by one, and guiding the same in an edgewise position along said guide rail, coin-counting means for counting the number of coins, coin-ejecting means, one for each diameter of the coins to be sorted, for ejecting coins from the guide rail, coin diameter-detecting means disposed along the guide rail above the same, each of said detecting means being associated with one of said counting means and one of said ejecting means, each of said detecting means being activated by engagement with a coin of a predetermined diameter and in response to such activation operating the respective counting means and ejecting means for counting and ejecting, respectively, of the coins.

3,351,076

VEHICLE WASHER

Norman R. Haines, Ann Arbor, Mich., assignor to Canomac Corporation, Ann Arbor, Mich., a corporation of Michigan
Filed July 26, 1965, Ser. No. 474,889
6 Claims. (Cl. 134—58)

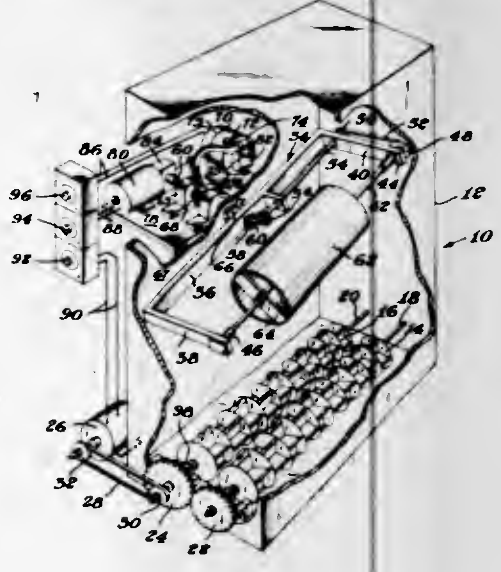


1. A vehicle washer comprising a spray device, power means for reciprocating said spray device in opposite directions between limits to spray a vehicle, first means for supplying a first liquid to said spray device during a first portion of its movement toward one limit, second means for supplying a second liquid to said spray device during the remaining portion of its movement toward said one limit and during its subsequent movement from said one limit, and means for automatically deactuating said first supply means and actuating said second supply means at an intermediate point in the movement of said spray device toward said one limit.

3,351,077

CURVED PLATE ETCHING APPARATUS

Clayton W. Hoornstra, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 445,209
2 Claims. (Cl. 134—147)

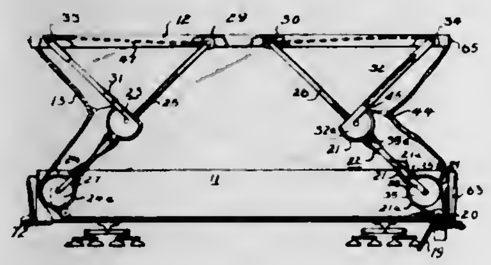


1. An etching machine which is useful for etching plates having arcuate surfaces, comprising means for holding a supply of etching bath material, means for applying said etching bath material against the surfaces to be etched, said means for holding a supply of etching bath material and means for applying etching bath material being enclosed in a chamber having a top and side walls, said means for applying etching bath material including a first array of paddles which contact said supply of etching bath material and a second array of paddles disposed above said first array of paddles, a plate holder having a longitudinal axis, said plate holder being mechanically transversely coupled to a drive shaft, said drive shaft extending through one of said side walls, means disposed externally of said chamber for rotating said shaft back and forth in a repetitive manner, and means for rotating said plate holder about its longitudinal axis as said drive shaft is rotated back and forth.

3,351,078

CAR TOP CAMPER

Floyd R. Kleiman, Lincoln, Nebr.
(5398 Peacock Lane, Riverside, Calif. 92505)
Filed June 1, 1965, Ser. No. 465,244
8 Claims. (Cl. 135—1)



1. In a car top sleeper, a roof section, a base section, a pair of lever members pivotally mounted at opposite ends of said base section and adapted to move in a 90 degree arc from the horizontal to the vertical, a canvas wall member mounted on the base and roof section and adapted to extend therebetween, and a cable member fixedly attached to the upper end of each said lever members and threaded outwardly in the same plane as the roof section to the edge thereof, then extending downwardly towards the midsection of said lever member, thence outwardly through a plurality of eyelets in said canvas wall member all around the wall to a point of fixed attachment to the canvas wall member so as to pull in all four sides, whereby the movement of said lever members downwardly through the aforesaid 90 degree arc will cause the cables to be pulled inwardly parallel to the roof section, thereby causing the canvas wall member connected to the other end of said cables to be pulled inwardly on all four sides with the levers to the interior area of said car top sleeper.

3,351,079

LOW FLUID LOSS COMPOSITIONS

Daniel L. Gibson, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 28, 1962, Ser. No. 227,032
1 Claim. (Cl. 137—13)

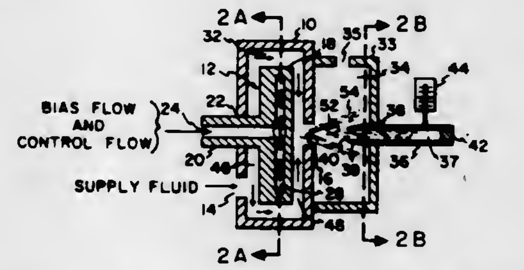
A process for reducing the fluid flow friction loss in the transfer of a hydrocarbon fluid of the group consisting of hydrocarbon liquids and slurries thereof through a pipe at high velocity which consists essentially of intermixing with the hydrocarbon fluid from 0.01 to 0.3 wt. percent of an amorphous, high molecular weight copolymer of ethylene and at least one other C_3 to C_6 α-olefin and transferring the resulting fluid through a pipe at high velocity.

3,351,080

FLUID DEVICE

Walter F. Datwyler, Jr., Royal Oak, Endre A. Mayer, Birmingham, and Lael B. Taplin, Livonia, Mich., assignors to The Bendix Corporation, Southfield, Mich., a corporation of Delaware
Filed June 24, 1965, Ser. No. 468,186
16 Claims. (Cl. 137—81.5)

1. A fluid device comprising
a housing,
means for introducing fluid into the housing,
an outlet opening in the housing for exhausting supply fluid therefrom,
means for introducing a biasing fluid flow into the housing for imparting a biasing rotational velocity to the supply fluid in the housing,
means separate from said supply means for imparting a control rotational velocity to the supply fluid in the housing superimposed on said biasing rotational velocity and to produce at the outlet opening a conical fluid flow pattern rotating about an axis passing through said outlet opening having a dispersion angle in accordance with the control rotational velocity imparted,

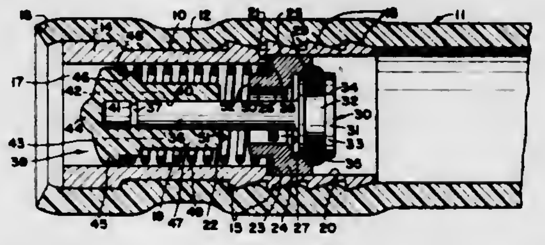


means defining a fluid line for measuring dispersion angle having an inlet opening positioned substantially coaxially with said outlet opening at a preselected distance downstream of said outlet opening in the housing,
and means defining a fluid chamber encompassing the inlet opening of the fluid line for receiving any fluid from the outlet opening which is not received by the inlet opening of the fluid line,
the amount of fluid received by the inlet opening of the fluid line and the pressure produced therein being dependent upon the dispersion angle of the conical flow pattern of the fluid emerging from the outlet opening and thus being in turn dependent upon control pressure.

3,351,081

ORAL INFLATION VALVE

Armen Bogossian, Teaneck, N.J., and Henry H. Mackal, Fort Lauderdale, Fla., assignors to Halkey-Roberts Corporation, Paramus, N.J., a corporation of New Jersey
Filed Feb. 4, 1964, Ser. No. 342,425
5 Claims. (Cl. 137—223)

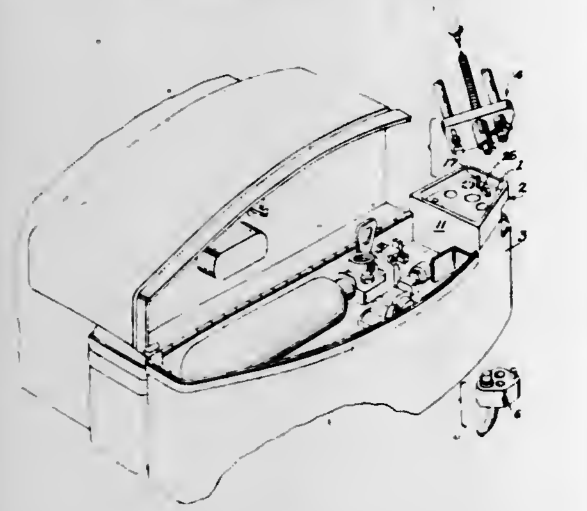


1. A manually releasable fluid check valve having an outer body, a longitudinally disposed passage extending through the valve body, said body having an annular radially inwardly extending flange therein, said flange having a central opening therethrough which forms a part of the longitudinal passage through the body, said flange having an annular valve seat at its rear end, an axially reciprocable valve element having a stem of smaller diameter than the opening through the flange extending centrally therethrough, sealing means on the rear end of the stem forming an enlarged head thereon overlying and adapted sealingly to cooperate with the seat in the flange, means on the forward end of the stem forwardly of the flange for guiding and locating the forward end of the stem axially with respect to the passage through the valve body, the means for locating and guiding the forward end of the stem of the valve element comprising axially extending angularly spaced radial wings on the stem, the outer ends of the wings in one transverse zone thereof slidably engaging the wall of the passage in the valve

body, the portions of the wings in said transverse zone thereof forming a plurality of generally sector-shaped fluid conducting passages therebetween, the rear ends of the wings having a radial height which somewhat exceeds the radius of that of the forward end of the central opening through the flange a coil compression spring interposed between the flange and the stem guiding means, whereby the valve is normally closed but may be opened by thrusting the valve element rearwardly to remove the sealing means on the rear of the stem from the seat in the flange, means on the flange and the stem for stopping the travel of the reciprocable valve element in a rearward direction, said last named means comprising an annular surface on the forward end of the flange and a surface at the rear end of each of the wings, said surfaces confronting each other and extending transversely to the axial extent of the stem and the passage through the body, parts being so constructed and arranged that said confronting surfaces abut each other with appreciable spacing between successive turns of the spring when the valve element lies in its rearmost, fully open position.

3,351,082
DISCONNECT DEVICE FOR SURVIVAL KITS WITH SAFETY DEVICES

John A. Gaylord, San Rafael, Calif., assignor to H. Koch & Sons, Corte Madera, Calif., a corporation of California
Filed Jan. 28, 1964, Ser. No. 340,714
19 Claims. (Cl. 137—315)

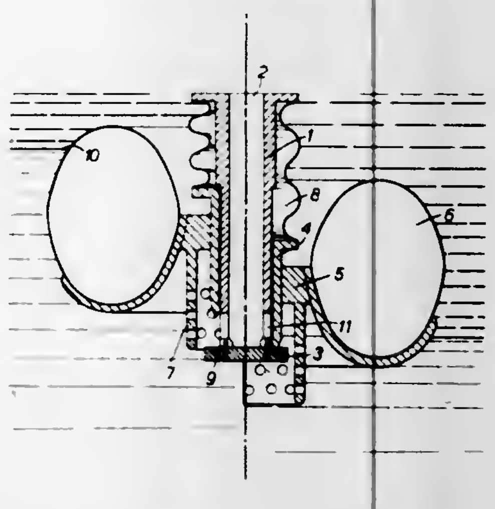


1. In a disconnect device on survival kits for detachable connections for supplies and devices for oxygen, air and electricity from ship to kit and from kit to person,
- (a) a connector body mounted on the kit,
- (b) a kit to man socket on said body,
- (c) a ship to kit socket on said body spaced from said kit to man socket,
- (d) transmission means in said body between said sockets to conduct said oxygen, air and electricity respectively from one socket to the other,
- (e) a kit to man plug fitting into said kit to man socket,
- (f) conducting means on said kit to man plug to conduct said oxygen, air and electricity from said plug to devices worn by a person, said kit to man plug fitting the respective transmission means in said body at said ship to kit socket,
- (g) a ship to kit plug fitting into said ship to kit socket,
- (h) conducting means on said ship to kit plug connectable to supplies and devices for oxygen, air and electricity, in said kit respectively, said ship to kit plug fitting the respective transmission means in said body at said ship to kit socket,
- (i) obstructing means between said kit to man socket and said kit to man plug normally to obstruct the insertion of said kit to man plug into said kit to man socket,

and means extending from one socket to the other actuated by the insertion of the ship to kit plug for coacting with said obstructing means to permit insertion of said kit to man plug into said kit to man socket wherever said ship to kit plug is inserted within the ship to kit socket.

3,351,083
FLOAT VALVE

Peter Alfred Sait, Twickenham, Middlesex, England, assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Mar. 24, 1965, Ser. No. 442,442
Claims priority, application Great Britain, Mar. 26, 1964, 12,920/64
1 Claim. (Cl. 137—399)



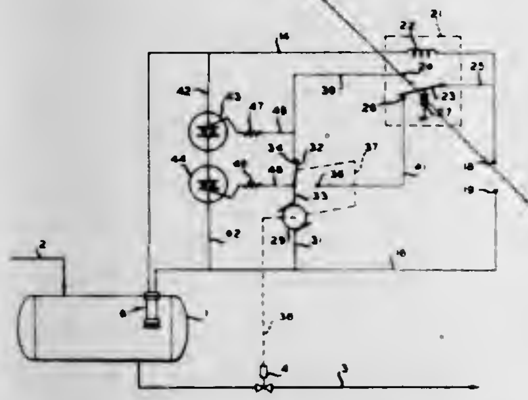
A float valve for maintaining a liquid in a container at a predetermined level comprising, a tubular member arranged to be located in a substantially vertical position with a lower end submerged in the liquid at or slightly below said predetermined level, fluid inlet means adjacent the lower end of said tubular member, plate means closing the lower end of said tubular member and extending outwardly beyond the outside diameter thereof to form a circular valve seat thereabout, a sleeve surrounding said tubular member and arranged to be axially slidable thereon, said sleeve including a lower annular portion for contacting said valve seat, annular float means having an elliptical cross-section responsive to the level of the liquid in said container secured by an annular flange to and surrounding said sleeve, and an annular skirt secured to said flange between the float and sleeve and having a plurality of apertures therethrough, said skirt being of a diameter larger than said plate means for permitting said skirt to surround and depend below said plate means when said float valve is in a closed position and for acting as a strainer and turbulence reducer for fluid entering said fluid inlet means when said float valve is in an open position, and a tubular bellows secured at one end to the upper portion of said tubular member and at the opposite to said sleeve for preventing leakage of liquid between said sleeve and tubular member.

3,351,084
FLUID LEVEL CONTROLLER

George Halkiades, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 4, 1964, Ser. No. 416,068
9 Claims. (Cl. 137—416)

1. In a system for controlling the level of a liquid within a vessel including first means operatively connected to said vessel for removing liquid therefrom, liquid level sensing means operatively connected to said vessel for sensing the level of liquid therein, electric circuit means operatively connected to said liquid level sensing means

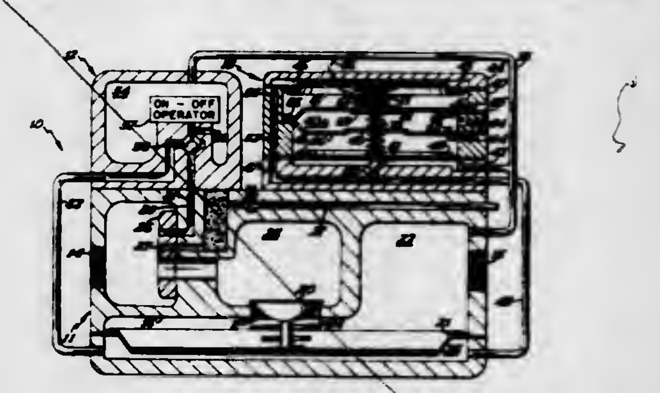
for transmitting electric current responsive to a sensed level of liquid within said vessel, and an electric motor operatively connected to said electric circuit means and said first means for moving said first means responsive to current flow to allow liquid to be removed from said vessel, apparatus comprising current conductor means operatively connected to said electric circuit means across said liquid level sensing means for allowing continued current flow to said electric motor to insure that said first means will move to a fully open position after said sensed level of liquid within said vessel has dropped below said liquid level sensing means.



3,351,085
CONTROL APPARATUS

Walter F. Allingham, Torrance, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,347
17 Claims. (Cl. 137—495)

1. A pressure responsive exhaust valve for use in controlling a main valve of the type having a main closure member biased to a closed position, a control chamber including a movable wall operably connected to the main closure member and responsive to pressure in the control chamber to open the closure member, and control valve means operable to a first position to connect the control chamber to pressure at the inlet of the main valve to cause opening of the main closure member, and operable to a second position to connect the control chamber to the outlet of the main valve to cause closure of the main closure member, the exhaust valve comprising: a body having a void therein; a pair of spaced, generally parallel diaphragms disposed in said void and dividing it into an operating chamber between the first of said diaphragms and said body and a timing chamber between the second of said diaphragms and said body, and a central chamber intermediate said diaphragms; first fluid passage means including a flow restriction and connecting said central chamber to atmosphere; second fluid passage means adapted to connect said operating chamber to the outlet of the main valve; third fluid passage means adapted to connect said operating chamber to the control chamber; an exhaust valve closure means cooperable with said third fluid passage to control fluid flow therethrough, said closure member being operably engaged by said first diaphragm and normally urged thereby to a position to close said third passage means, said first diaphragm being responsive to fluid pressure in said operating chamber for movement toward said central chamber to allow said closure member to open said third passage means; a pair of spaced generally parallel lever members cantilevered on said body in said central chamber and extending generally parallel to said diaphragms, said levers having a pair of aligned apertures therethrough, each of said levers having a calibration tab extending therefrom at an acute angle to said levers; a first adjustment member threaded into said body and extending into said central chamber generally parallel to said levers and engaging the calibration tab on the first of said levers so that said adjustment member may be selectively manipulated to deflect said first lever toward or away from the second of said levers; a second adjustment member, similar to said first adjustment member and engaging the calibration tab on said second lever so that said second adjustment member may be selectively manipulated to deflect said second lever toward or away from said first lever; a generally cup-shaped member having an annular flange around its exterior, said member being entrapped between said lever members with the closed end of the cup extending through said second lever toward said second diaphragm; a first loading spring disposed between said cup-shaped member and said first diaphragm and urging said first diaphragm to a position to close said closure member with respect to said third passage and urging said cup-shaped member toward a position wherein the flange thereon engages said second lever; a second, substantially lighter spring intermediate said cup-shaped member and said second diaphragm and normally urging said second diaphragm away from the cup-shaped member; and a restricted fluid passage adapted to connect said timing chamber to an area supplied with fluid pressure only during operation of the main valve in an open position so that, upon initial opening of the main valve, the exhaust valves opens in response to outlet pressure effective to overcome the loading on said first diaphragm which is determined by the setting of said first adjustment member to cause outlet pressure regulation at a first pressure level and, after a time delay determined by the size of the restriction in said restricted passage means, the pressure in said timing chamber becomes sufficient to overcome said second spring and moves said second diaphragm into engagement with said cup-shaped member and thereby moves said cup-shaped member so that said flange thereon abuts said first lever and additionally loads said first diaphragm so that said exhaust valve opens only in response to a second relatively greater outlet pressure determined by the position of said second adjustment member and causes a step operation by the main valve and regulation at said second pressure.

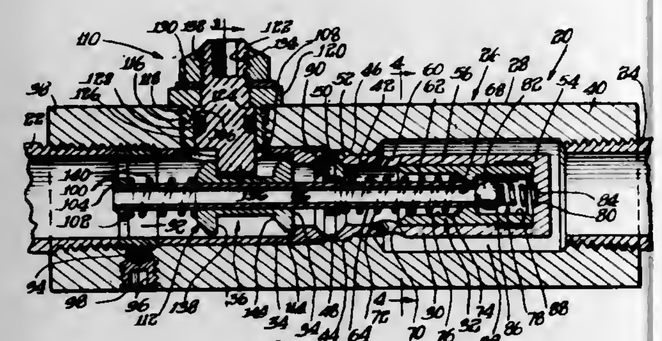


3,351,086
ADJUSTABLE STRAIGHT-THROUGH FLOW REGULATOR

Stephen C. Baker, Hinsdale, Ill. (% Ste-Art Co., 1611 S. Newberry Ave., Chicago, Ill. 60608)
Filed June 8, 1965, Ser. No. 462,332
6 Claims. (Cl. 137—501)

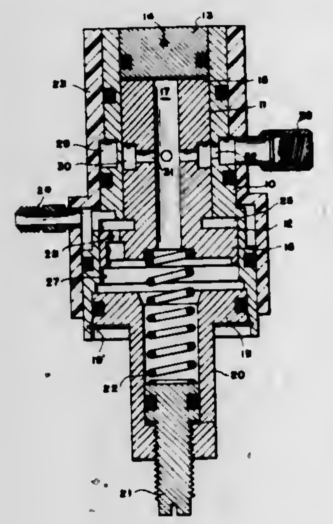
1. A flow regulating valve comprising: housing means having an inlet, an outlet and a lateral aperture; cylinder means arranged to define an axial support in said housing means; mounting means for fixing one end of said cylinder means with respect to said housing means; sleeve means in said housing means including a lateral hole aligned with said lateral aperture to cooperate therewith in defining a lateral recess, said sleeve means further including a poppet valve seat; poppet valve means slidably disposed on said cylinder means to coact with said seat in establishing a normal rate of flow and including follower surface means; means for biasing said

poppet valve means toward said seat; and cam means in said recess including eccentric cam surface means engageable with said follower surface means to select a position of said poppet valve means relative to said poppet valve seat, said poppet valve means including stop surface means spaced axially from said follower surface means to permit free movement of said poppet valve means for unvalved reverse flow through said housing means.



3,351,087
DEVICE FOR CONTROLLING THE RATE OF FLOW OF FLUIDS

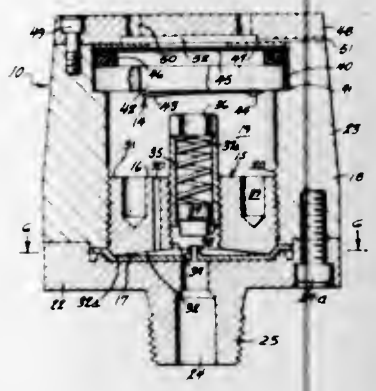
Frank Welty, 4962 Lockwood Blvd.,
Youngstown, Ohio 44512
Filed Mar. 23, 1965, Ser. No. 442,054
5 Claims. (Cl. 137—504)



1. A device for passing a predetermined quantity of fluid per unit of time regardless of variations in the pressure of the fluid source comprising: a housing having coaxial and adjacent bores therein of different diameters, a combined valve plunger and piston slideably received in said bores with the piston in the larger of said bores, means to conduct fluid from the source to the side of said piston which is toward said plunger, means closing off the outer open ends of said bores, an orifice in said combined valve plunger and piston operative to conduct fluid from said source to a thru-bore in said piston and plunger whereby fluid coming through said orifice is conducted to the outer end of said plunger as well as to the other side of said piston, a valve having a discharge port in the side wall of said housing and a cooperating recess in said plunger communicating with said thru-bore, and resilient yieldable means biasing said piston and plunger assembly against the axial force exerted by said piston by reason of the pressure drop through said orifice.

3,351,088
LOW PRESSURE ALARM VALVE

Nathan Kenneth Jensen, 202 Peninsula Road,
Minneapolis, Minn. 5[illegible]427
Filed July 20, 1965, Ser. No. 473,353
5 Claims. (Cl. 137—5[illegible]7)



1. A pressure sensing valve responsive to diminishing fluid pressures to open when said pressure has reduced to a predetermined magnitude,

comprising a valve body including a rear end and a front end having a front end annular face slightly conically tapered and convergent in a rearward direction, said end face having an outer periphery and an inner periphery, said body having a fluid escape port therethrough and through said front and rear ends and between the inner and outer peripheries of said end face,

a forwardly facing valve seat within said inner periphery of said end face,

a metallic, resilient, flexible and circular disc confronting the end face of said valve body in concentric relation therewith and lying against said outer periphery, said disc being adapted to flex and lie flush against said end face under influence of fluid pressure thereagainst and said disc having a central portion with a valve port therethrough and said central portion being engageable with said valve seat for closing said valve port, said circular metal disc normally lying substantially in a plane and being tensioned in the direction of said plane and radially outward in multiple directions over the outer periphery of said end face whereby the resiliency of said tensioned disc opposes the disc-flexing fluid pressure holding the disc against the valve seat and conically tapered end face and said resiliency returns the central portion of said disc away from the valve seat at uniform and predetermined pressure in sequential instances to permit fluid flow through said valve port and escape port,

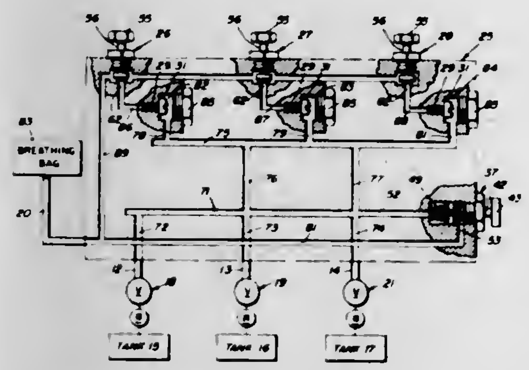
and means mounting the disc and applying and retaining tension on the disc in said directions and applying fluid pressure against the disc for flexing toward said end face.

3,351,089
CONTROL VALVE FOR DIVING APPARATUS

Richard Garrahan, 1 Lookout Green SW.,
Washington, D.C. 20[illegible]32
Filed June 30, 1964, Ser. No. 379,421
1 Claim. (Cl. 137—59[illegible])

A manually operated control valve for scuba diving apparatus comprising:

a rectangular box shaped valve body formed to include a plurality of transverse inlet passages along one side thereof, each adapted to be connected to a valve controlled specific gas container, a first longitudinal passageway connected to each of the transverse inlet passageways and terminating in a single recess extending through one end of the valve body, an inner second longitudinal passageway connected to the first longitudinal passageway through transverse passageways, said inner second longitudinal passageway being also connected to a plurality of recesses and arranged in pairs of one chamber connected to one recess, an outer third longitudinal passageway connecting the plurality of recesses, an outer transverse passageway connecting the outer third longitudinal passageway with an emergency fourth longitudinal passageway, said emergency fourth longitudinal passageway being connected to the single recess and an outlet port;



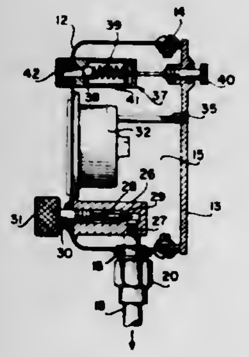
an orifice element mounted in each of the chambers for limiting the flow of gas through each chamber;

a manually operated valve in series flow with each orifice element mounted in each of the recesses connected to the third longitudinal passageway for controlling the flow of gas into that passageway from its associated orifice element to the outlet port; and

an emergency valve mounted in the single recess for controlling an emergency flow of gas direct from the inlet first longitudinal passageway to the emergency fourth longitudinal passageway into the outlet port, by-passing the limiting orifice elements and the manually operated valves.

3,351,090
ASPIRATOR APPARATUS

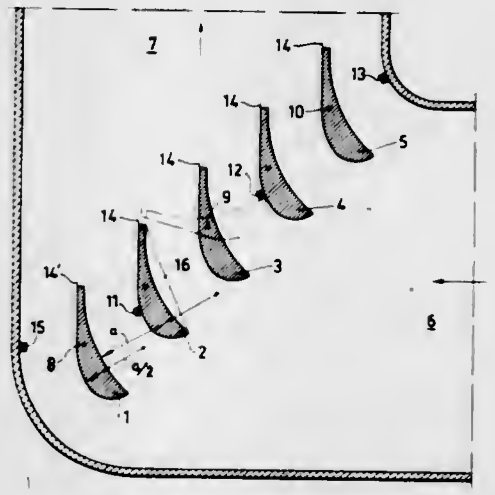
Albert D. Brown, Atlanta, and Terry B. Franklin, Sr., Woodstock, Ga., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed June 25, 1965, Ser. No. 467,058
6 Claims. (Cl. 137—557)



1. An aspirator apparatus comprising a vacuum chamber, a connector carried by said chamber and connectable to a source of negative pressure to establish communication therebetween, an adjustment on said chamber operative on said connector to regulate the fluid pressure therein, a pressure indicator mounted within said chamber and viewable externally of said chamber to designate the fluid pressure within the chamber, and a suction tube extending from said chamber.

3,351,091
VALVE STRUCTURE ADAPTED TO BE ARRANGED IN A FLUE BEND

Lars Axel Andreas Chambert, Kallhall, Sweden, assignor to Aktiebolaget Svenska Maskinverken, a Swedish joint-stock company
Filed Apr. 14, 1964, Ser. No. 359,660
Claims priority, application Sweden, June 17, 1963, 6,680/63
3 Claims. (Cl. 137—601)



1. In combination with a duct along which fluid is adapted to flow, valve structure for controlling flow of fluid along said duct, said valve structure requiring substantially small forces for actuation to open and closed positions and when in its open position producing negligible resistance to flow of fluid along said duct, said valve structure comprising:

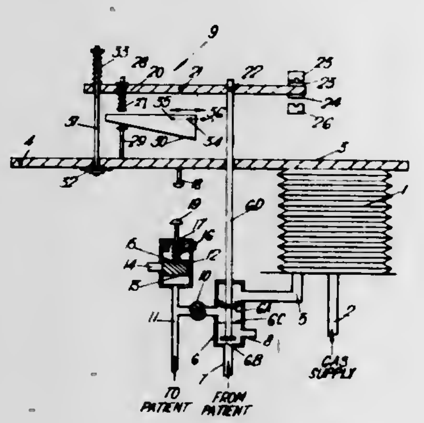
(A) means defining an abrupt bend in the duct, substantially straight portions of the duct being upstream and downstream from said bend defining means and a portion of the bend defining means intermediate its connections with said substantially straight portions having a cross section area greater than that of said upstream and downstream straight portions of the duct;

(B) a plurality of elongated vanes, each having a concave surface and a generally opposite convex surface, the radius of curvature of said concave surface being on the order of twice that of the convex surface so that each vane has substantial thickness, and said surfaces of each vane being convergent towards parallel lengthwise extending leading and trailing edges of the vane, the portion of the convex surface that is near the leading edge of the vane having a substantially smaller radius of curvature than the remainder thereof; and

(C) means mounting said vanes in spaced apart parallel relation in said bend defining means and providing for rotation of certain of the vanes about axes which are parallel to their leading and trailing edges and intermediate them and which are located in said bend defining means slightly downstream from the portion thereof of largest cross sectional area, said mounting means disposing the vanes, when the valve structure is open, with their concave surfaces facing the bend and their leading edges upstream relative to the direction of fluid flow through the duct, and providing for rotation of said vanes toward their closed positions in the direction to dispose their convex surfaces upstream.

3,351,092
VOLUME CYCLED MEDICAL VENTILATORS

Maurice Ernest Ingerfield, Croydon, and Thomas Hilary Howells, Whetstone, England, assignors to Pye Limited, Cambridge, England
Filed Oct. 13, 1964, Ser. No. 403,666
Claims priority, application Great Britain, Oct. 15, 1963, 40,548/63
4 Claims. (Cl. 137—624.14)

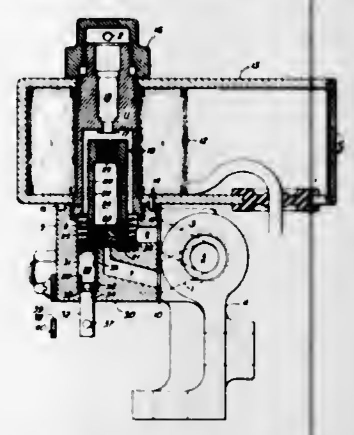


1. A volume cycled respirator comprising a bellows operatively connected with a lever, an inlet port connecting the interior of the bellows with a continuous pressure gas supply, an outlet duct for said bellows communicating with a valve chamber, in said chamber a valve which in a first position blocks an outlet duct from a patient while permitting the passage of pressure gas through the chamber to an inlet duct to the patient, whereas in a second and alternative position said valve permits the said outlet duct to have free access to atmosphere while blocking the passage of gas through the chamber to the inlet duct, a valve controlling mechanism which at the end of the inspiratory period is operated by said lever to move the said valve from said first position to said second position and comprising means which, on the volume of gas in said bellows having reached a predetermined upper magnitude, cause said lever to operate the valve control mechanism to return the valve to the first said position and comprising spring means adapted to urge said valve towards the second position and a magnetic circuit including a portion movable with said valve and adapted to hold said valve in the first position against the pressure of said spring means when the spring pressure is less than a predetermined magnitude, and means associated with the contraction of the bellows of said ventilator, mechanically to increase said spring pressure to a magnitude greater than said predetermined magnitude whereupon said spring breaks the magnetic circuit and urges said valve to the second position.

3,351,093
MANUALLY OPERABLE SOLENOID VALVE

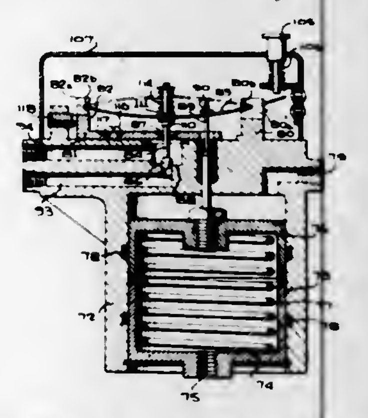
Virgil L. Frantz, Roanoke, Va., assignor to Graham-White Sales Corporation, Salem, Va., a corporation of Virginia
Filed Dec. 27, 1963, Ser. No. 333,994
4 Claims. (Cl. 137—625.27)

1. A manually operable solenoid valve comprising a body mounting a solenoid, a valve chamber in said body, valve seats at opposite ends of said chamber, a plunger in said chamber and shiftable axially thereof for alternately closing said seats, spring means acting between said body and plunger for normally holding said plunger in a position to close one of said seats and yieldably resisting shifting thereof on energizing of said solenoid to another position to close said other seat, manually operable override means in said body and shiftable therein axially of said chamber, said override means on manual operation projecting into said chamber against an end of said plunger for shifting said plunger to said other position, and cam means rigid with said body and frictionally engageable in any of a plurality of positions along a surface thereof by means on said override means for releasably holding said plunger in said other position.



3,351,094
EXCESS FLOW SHUT-OFF SERVO VALVE

James S. Elbogen, Encino, and Paul A. de Graaf, Los Angeles, Calif., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Original application Oct. 9, 1961, Ser. No. 143,677, now Patent No. 3,221,764, dated Dec. 7, 1965. Divided and this application Oct. 21, 1965, Ser. No. 499,170
11 Claims. (Cl. 137—625.66)



1. A servo valve comprising a body having inlet and outlet ports, a valve member, a spring connected to the valve member, said spring having a first over-center position for normally holding the valve member in a first position for communicating the inlet port with the outlet port and having a second over-center position for holding the valve member in a second position for closing off communication between the inlet and outlet ports, said spring having a fixed distance between its ends and being oppositely sprung in its over-center positions, fluid pressure operated means for directly contacting and moving said spring from said first over-center position to said second over-center position, and reset means for moving said spring from said second over-center position to said first over-center position.

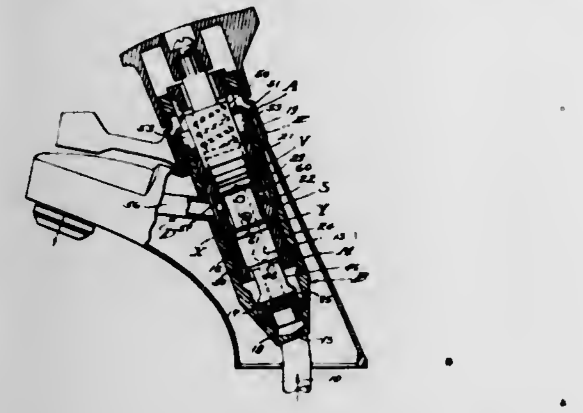
3,351,095
MIXING AND VOLUME CONTROL FAUCET

Homer M. Harvey, Los Angeles, and Dale H. Hart, Long Beach, Calif., assignors to Harvey Aluminum (Incorporated), Torrance, Calif., a corporation of California
Filed Apr. 26, 1965, Ser. No. 450,841
9 Claims. (Cl. 137—637.4)

1. A faucet wherein two independently and separately actuable means govern mixing and volume of fluid from at least two inlets, and including:

(a) an elongated body with a cylindrical bore therein;
(b) means revolubly engaged within the cylindrical bore in the body and selectively opening the two inlets, said means having seals frictionally engaged

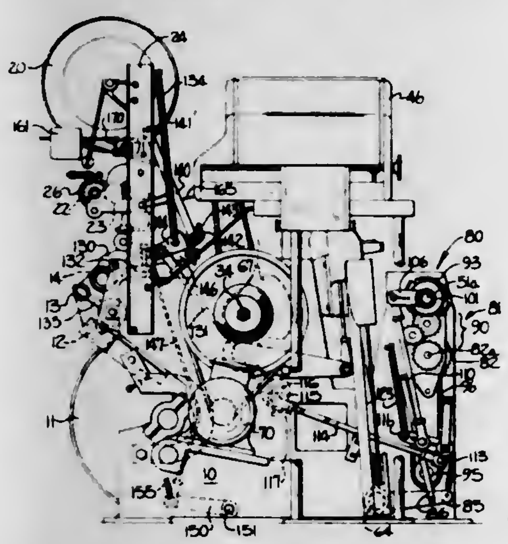
within the cylindrical bore in the body, and with a cylindrical bore therein;
(c) means revolubly engaged with the body to shift reciprocably within the second mentioned cylindrical bore in the first mentioned means and controlling flow from said two inlets respectively, said second mentioned means having seals frictionally engaged within the cylindrical bore in the first mentioned means;



(d) and friction means intermediate the body and said second mentioned means, affording greater friction than that afforded by the combined frictional engagement of the second mentioned means and seals therefor operable within the said second mentioned bore.

3,351,096
TERRY LOOM WITH FELL SHIFTING MEANS

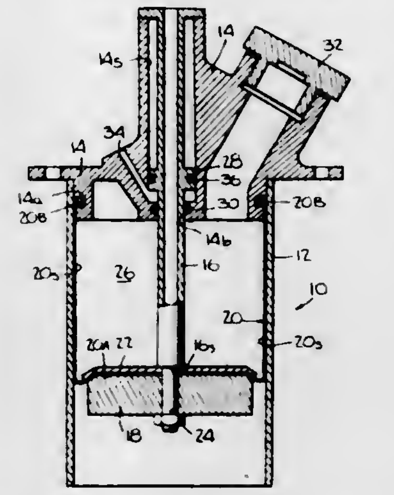
Douglas P. Burgess, Woodleaf, Gilmer A. Williams, Kannapolis, and John D. Harkey, Concord, N.C., assignors to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Mar. 20, 1967, Ser. No. 624,365
10 Claims. (Cl. 139—25)



1. In a terry loom for weaving terry cloth from ground warps, terry warps and filling yarns, said loom having a main drive means, an oscillatable reed, a cloth take-up roll, a main cloth take-up means for imparting successive normal increments of take-up motion to said roll during operation of the loom, and means for shifting the ground warps forwardly and rearwardly relative to the beat-up point of the reed in the weaving of terry loops in the cloth; the improvement comprising a take-up roll rocking device operable in conjunction with said main take-up means and including means for positively rotating said take-up roll forwardly and rearwardly in repeated alternation relative to said main take-up means and in timed relation with said ground warp shifting means to shift the fell of the cloth forwardly and rearwardly relative to the beat-up point during terry weaving.

3,351,097
HYDRAULIC RESERVOIR

James R. Moran, Fort Worth, Tex., assignor to Bell Aerospace Corporation, Wheatfield, N.Y., a corporation of Delaware
Filed July 27, 1964, Ser. No. 385,199
2 Claims. (Cl. 138—30)



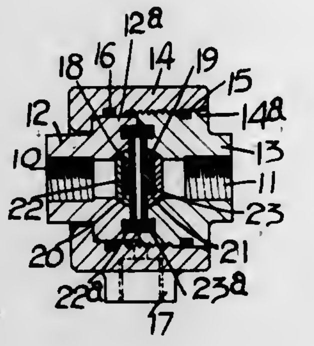
1. In a hydraulic system, a pressurized hydraulic reservoir adapted to operate at all attitudes comprising:

a cylindrical housing wall,
an end cap at one end of said housing wall,
a piston having a piston head and piston rod, said piston head being mounted for reciprocal axial movement within said housing wall,
a flexible bladder having an open end, a closed end and a cylindrical side wall, said open end of said bladder being sealed to said end cap, said cylindrical side wall of said bladder being disposed flush along said inner surface of said cylindrical housing wall, said closed end being attached to one surface of said piston head whereby said closed end will reciprocate with said piston head,
the diameter of said piston head being sufficiently smaller than the inside diameter of said housing wall so as to permit axial movement of said piston head and said closed end of said bladder without developing appreciable friction with said housing wall,
a flange on said piston rod, said flange having a diameter substantially less than the diameter of said piston head,
a cylindrical side wall in sealing relation with said flange, said flange being movable axially within said side wall, and
means for applying system pressure to one side of said flange,
whereby the only significant friction impeding movement of said piston head within said housing wall is the friction between said flange and said side wall.

3,351,098
HYDRAULIC ACCUMULATOR

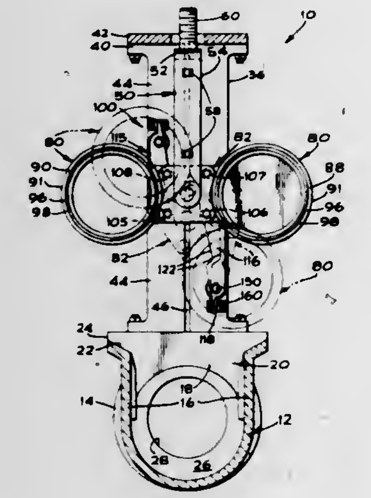
Frank George Freeman, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Nov. 23, 1965, Ser. No. 509,324
Claims priority, application Great Britain, Nov. 30, 1964, 48,490/64
1 Claim. (Cl. 138—30)

An hydraulic accumulator of the kind comprising a body defining a pair of fluid inlet passages, a deformable bag disposed within the body between closed ends of the pair of inlet passages, said bag being, in use, filled with a gas, the deformable bag having an inlet through which a gas under pressure can be introduced, the body being provided with two parts which are capable of being relatively separated to a limited extent, the parts when in respective predetermined relatively separated positions, permitting access of gas to the inlet of the bag, and when in respective clamping positions precluding such access by closing said inlet, there being sealing means on said parts



of the body respectively for preventing escape of gas other than into said bag when the parts are in said predetermined relatively separated positions.

3,351,099
FLUID CONTROLLING APPARATUS
George R. Shindler, Houston, Tex., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,019
6 Claims. (Cl. 138—94.5)

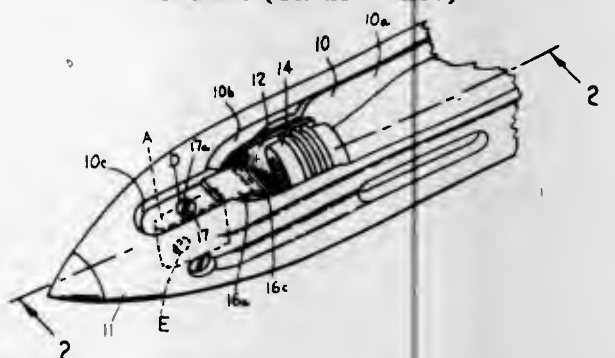


1. In a line blind including a valve body having a valve seat, a carriage, and a valve member having an intermediate portion pivoted on the carriage and a plurality of flow controlling portions projecting away from the intermediate portion in predetermined angular relation to each other, and means mounting the carriage for cyclical movement along a path toward and away from the seat with each cycle including a stroke of the carriage away from the seat followed by a stroke of the carriage toward the seat; an apparatus for pivoting the valve member comprising means operable during each cycle of movement of the carriage for pivoting said valve member through said predetermined angle to successively direct said flow controlling portions toward said seat, said means including first and second pawls mounted on opposite sides and spaced lengthwise of said path and projections on the intermediate portion of the valve member, one of said projections being in alignment with said first pawl during movement of the carriage away from the seat so that engagement of said one projection with the first pawl causes said valve member to pivot through half of said angle, and another of said projections being aligned with said second pawl during movement of the carriage toward said seat so that engagement of said other projection with said second pawl causes said valve member to pivot through the remaining half of said angle.

ERRATUM

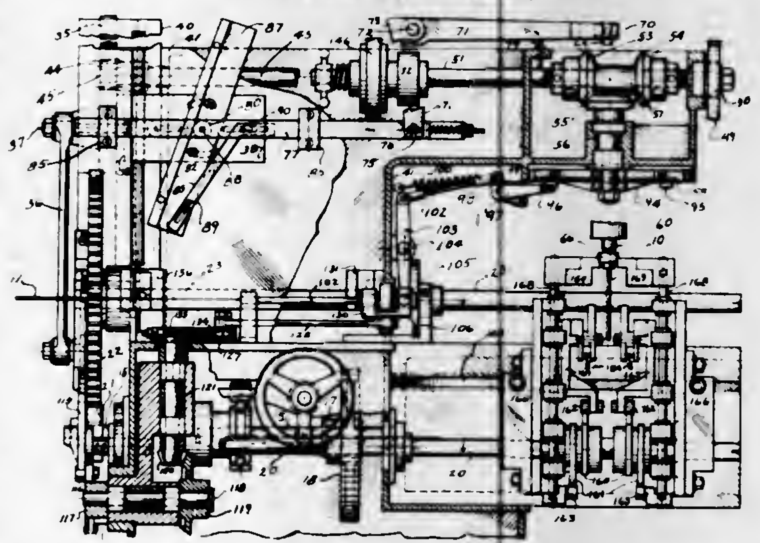
For Class 139—25 see:
Patent No. 3,351,096

3,351,100
SHUTTLE GRIP AND STRAP ASSEMBLY
James B. Bowen and Pickens W. Miller, Jr., Greenville, S.C., assignors to Steel Heddle Manufacturing Company, Paris, S.C., a corporation of South Carolina
Filed Mar. 24, 1966, Ser. No. 537,085
2 Claims. (Cl. 139—207)



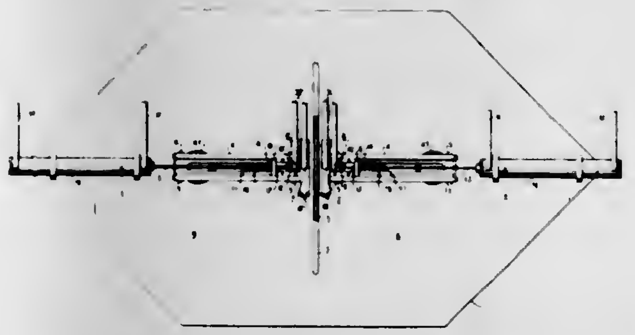
1. In a shuttle grip and strap assembly having, a grip including a substantially U-shaped shank portion and a strap having a substantially horizontal cover portion overlying said U-shaped shank portion, an insert constructed of relatively rigid incompressible synthetic polymeric material having plastic set as to be capable of exerting a tight locking action upon an element passing therethrough with a tight fit, said insert substantially filling the space within said U-shaped shank portion as to insure proper grip opening, an elongated vertical fastening member having an elongated shank portion passing through an intermediate portion of said insert and having a tight fit therein so that the insert lockingly grips the elongated shank portion of the fastening member, and enlarged members carried by the terminal portions of said elongated shank portion of the vertical fastening member securing the cover and grip portions together, whereby shock is absorbed by the insert which also positively retains the elongated shank portion of the fastening member against working its way up to cause damage to the warp while maintaining a proper grip opening even after extensive use.

3,351,101
WIRE FORMING MACHINE
Elmer W. Halvorsen, Palmer, and Frank S. Russell, Holden, Mass., assignors to Sleeper and Hartley, Inc., Worcester, Mass., a corporation of Massachusetts
Filed Dec. 3, 1964, Ser. No. 415,661
12 Claims. (Cl. 140—1)



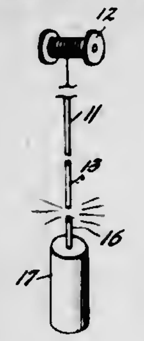
1. A wire forming machine comprising a rotatable and reciprocable arbor, mechanism for reciprocating the arbor axially in a forward direction while wire is coiled thereon as a helix and in the opposite direction while the wire helix recoils, mechanism for rotating the arbor at a controlled rate in one direction for coiling the wire as a helix thereon, an associated mechanism for rotating the arbor in the opposite direction at a controlled and slower rate and thereby controlling the rate of recoil of the helix and a cam controlled forming tool operated in a timed relation with the recoil rotation of the arbor.

3,351,102
WIRING MACHINE FOR MAGNETIC CORE BOARDS
Walter Logan, Somerset, and Edmunde E. Newhall, Brookside, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 7, 1965, Ser. No. 461,896
13 Claims. (Cl. 140—93)



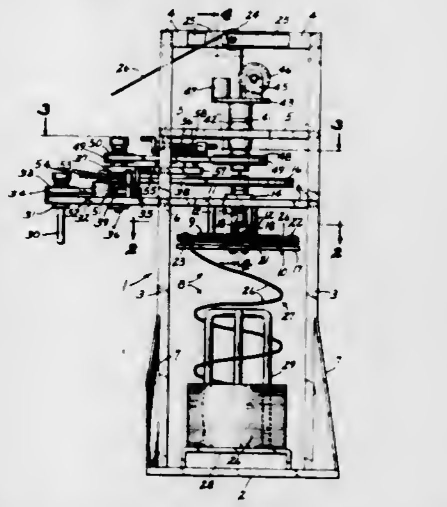
1. Apparatus for passing a strand alternately back and forth through a freely positionable compliant element comprising, in combination, a pair of opposed headsets, each set being guidably mounted on an opposite side of said element for movement toward and away therefrom, each said headset comprising retractable and separately controlled inner and outer jaw means, each said inner jaw means being also rotatable, and means for alternately withdrawing and advancing each said headset with respect to said element, said strand being held in said inner and outer jaw means of a respective headset during withdrawal, said strand being released first by the respective outer jaw means, thereafter said strand end being rotated in said inner jaw during advance thereby forming a loop in said strand and pointing said end toward said element, said end advancing through said element and into said inner and outer jaws of the opposed headset.

3,351,103
APPARATUS FOR SEVERING, FEEDING, AND WELDING A PREDETERMINED LENGTH OF WIRE
William G. Grainger, Winston-Salem, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 20, 1965, Ser. No. 481,326
8 Claims. (Cl. 140—112)



1. In an apparatus for welding a wire onto an article;
a collet for gripping the wire;
a vertical support sleeve having an inwardly extending flange for slidably supporting said collet within said sleeve;
means for advancing downwardly said support sleeve to move said collet to abut the end of the wire against said article whereupon the collet moves upwardly within and relative to said sleeve to bias the wire against said article by the weight of said collet; and
means for applying welding current through said wire and article whereupon downward movement of said collet within and relative to said sleeve compensates for the melting back of the wire.

3,351,104
METHOD AND APPARATUS FOR COILING RESILIENT WIRE
Harry L. Kitselman, Minneapolis, Minn., assignor, by mesne assignments, to Acrometal Products, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 3, 1964, Ser. No. 387,054
14 Claims. (Cl. 140—149)

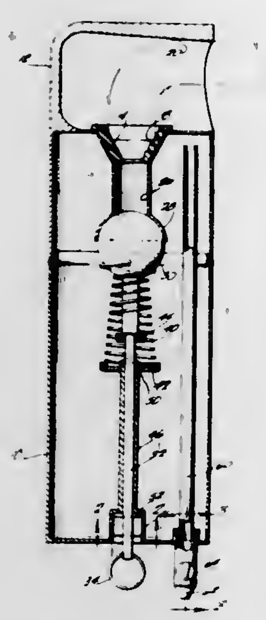


1. The method of continuously twisting a moving single filament of resilient wire on its axis during travel of the wire from a source thereof to a point of delivery, said method comprising:
(a) engaging said wire at spaced areas intermediate said source and point of delivery,
(b) and imparting rotation to said wire on its axis at one of said areas relative to the other of said areas and at a speed relative to the speed of wire travel to twist the wire between said areas beyond the torsional elastic limit of the wire.

3,351,105
RECHARGEABLE DISPENSER
Mario S. Di Perna, 115 College Ave., Arlington, Mass. 02174
Filed Apr. 21, 1965, Ser. No. 449,727
2 Claims. (Cl. 141—18)

1. A rechargeable dispenser comprising a closed cylinder dispensing container having an inlet at one end and a nozzle at the other end, said inlet adapted to receive a connection from a water hose or faucet, a ball valve mounted in communication with said inlet and being spring biased for closing said inlet to allow water from said hose to enter when under sufficient pressure to overcome said spring bias until the pressure in said container is equalized with the applied water pressure whence the spring bias replaces the ball to close the ball valve, a release rod extending through a shaft mounted on the nozzle end of said cylindrical container and said rod having one end thereof connected to the ball of said ball valve for causing the ball valve to open preliminary to applying water to said inlet for introducing into said cylinder container the fluid to be mixed and dispensed

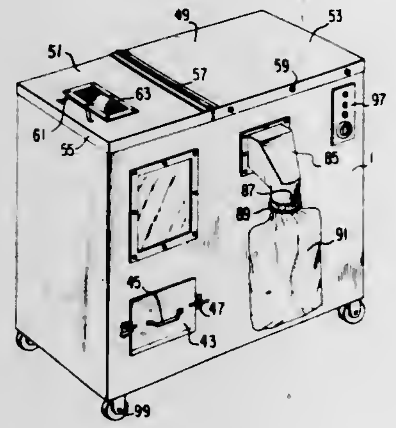
from said container, a handle disposed on the other end of said release rod, a nozzle pipe extending from said nozzle to a distal point of said cylindrical container, a ball check release valve in said nozzle to release the liquid contents of said cylindrical container upon excess build-up of pressure therein, said ball check release valve being disposed and mounted within a stop cock for said nozzle and said nozzle pipe, and collars being provided to eliminate leakage about said release rod and said inlet, said stop cock being adapted to be turned to an OPEN and a CLOSED position, said ball check release valve being disposed for releasing any build-up of pressure when the stop cock is in the CLOSED position.



3,351,106
TICK-FILLING MACHINE

Le Roy E. Moulthrop, Lynwood, Calif., assignor of twenty-five percent to Robert J. Patch, Chevy Chase, Md.

Filed Sept. 30, 1966, Ser. No. 583,170
4 Claims. (Cl. 141—67)

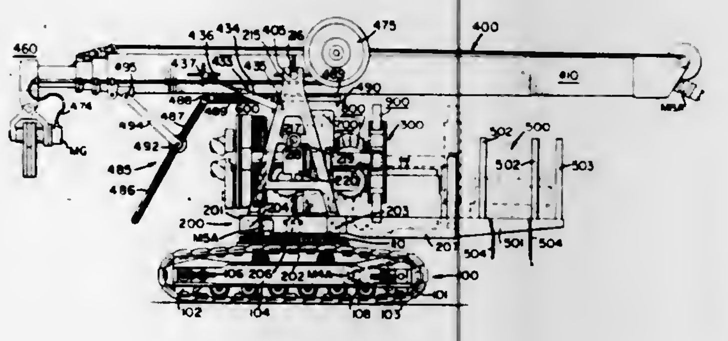


1. A machine for filling ticks with feathers, which comprises in combination a chamber having side walls and a cylindrical bottom wall, means for introducing feathers into the chamber, a rotor rotatable in the chamber coaxially with said bottom wall for agitating feathers in the chamber, a nozzle communicating with the chamber for discharging feathers into a tick, conduit means communicating between the chamber and the nozzle, a blower in said conduit means between the chamber and the nozzle for removing feathers from the chamber and impelling them through the blower and out of the nozzle, said conduit means communicating with the chamber through an opening through one of said side walls, and means for preventing large bodies from passing through said opening and for retaining said large bodies in the chamber, said preventing means comprising at least one detent of a width substantially less than the width of the opening and extending from said one side wall at the top of the opening downwardly across the opening and being inclined downwardly away from the chamber and away from said one side wall and having a free lower end spaced from but adjacent to the bottom of the opening.

3,351,107
TREE PROCESSING MACHINE

Douglas D. Hamilton, Mount Royal, Quebec, Canada, assignor of one-third to Canadian International Paper Company, Montreal, Quebec, Canada, one-third to Quebec North Shore Paper Company, Montreal, Quebec, Canada, and one-third to Abitibi St. Anne Paper Limited, Beaupre, Quebec, Canada, all corporations of Canada

Filed Sept. 8, 1965, Ser. No. 485,807
Claims priority, application Great Britain, Sept. 17, 1964, 38,069/64
229 Claims. (Cl. 144—3)



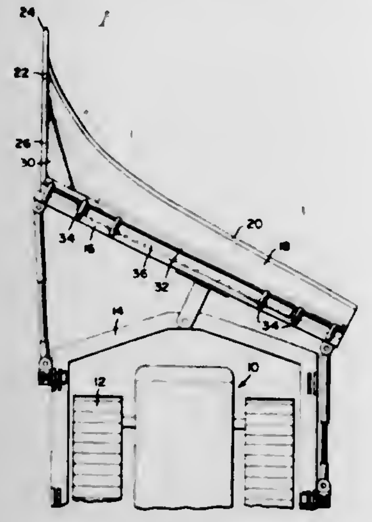
1. A machine for processing felled trees, said machine comprising:
- (a) a frame;
- (b) a telescopic boom mounted directly upon said machine;
- (c) article engaging means mounted on said boom means;
- (d) a predetermined feed path adjacent to said frame;
- (e) at least one processing unit mounted on said frame and in said feed path and operative to delimb or debark said tree;
- (f) means for extending said boom outwardly from said frame;
- (g) means for operating said article engaging means to engage a selected pre-felled tree from a plurality of pre-felled trees;
- (h) means for operating said boom to elevate at least one end of said selected tree; and,
- (i) means for retracting said boom to introduce said one end of said selected tree directly into said processing unit, and to introduce said tree along said predetermined feed path.

3,351,108
LAND CLEARING BLADE

Eddie R. Hammonds, Marksville, La., assignor to Owens-Johnson Shearing Blade Corporation, a corporation of Louisiana

Filed July 8, 1965, Ser. No. 470,356
8 Claims. (Cl. 144—34)

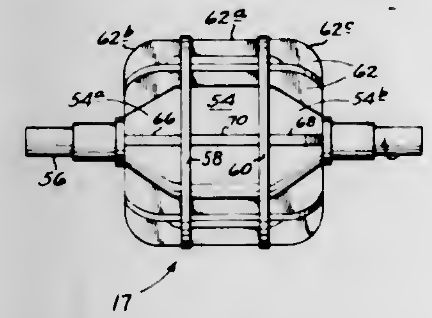
1. A dozer head comprising, in combination, a tree cutting blade mounted horizontally on the front of said head, a leading cutting edge for said blade, the major portion of said cutting edge curving laterally and forwardly of the width of said head, and a pusher mounted on said head for felling trees cut by said cutting blade.



3,351,109
LOG DEBARKING APPARATUS

Clyde L. Schurman, Woodland, Wash., assignor to Schurman Machine Works, Inc., Woodland, Wash., a corporation of Washington

Filed July 12, 1965, Ser. No. 471,203
5 Claims. (Cl. 144—208)



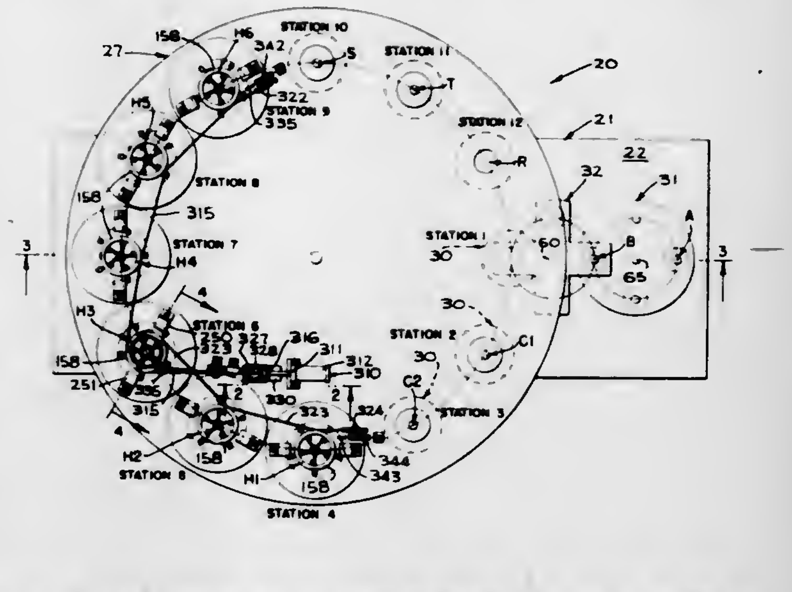
1. A cutterhead for removing peripheral growth from a log comprising
- a body with means adjacent opposite extremities thereof for rotating the body about an axis extending through the body,
- at least a pair of axially spaced annular shoulders concentric with said axis joined to said body and extending about the outside of said body, said annular shoulders having substantially equal outer diameters,
- elongated cutter portions joined to said body, substantially paralleling the axis of said body and circumferentially disturbuted about the outside of said body, in a region located between said annular shoulders,
- said cutter portions having axially extending cutting edges on radially outer portions thereof located on the cutterhead radially inwardly of radially outer extremities of said shoulders.

3,351,110
APPARATUS FOR CONTROLLING THE BLADES OF A CITRUS FRUIT SECTIONIZING MACHINE

Beuford N. Willis and Wilber C. Belk, Lakeland, Fla., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 501,621
10 Claims. (Cl. 146—3)

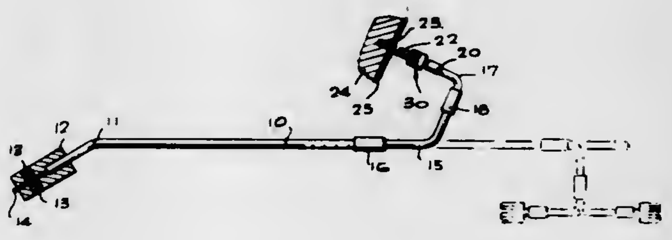
1. In a sectionizing machine, a support structure, a plurality of sectionizing heads mounted in said support, each of said heads being provided with a support member defining a vertical axis, blade support means mounting a plurality of rods in upright position around said axis; a sectionizing blade mounted on the lower end of each rod and extending outwardly from said axis; and a blade-actuating mechanism comprising a spider mounted for rotation in said support structure adjacent the rods of each head and having a web adjacent each of said rods, a flexible drive member encircling said spider in driving engagement, and power means for exerting a pull on said drive member in a particular linear direction to rotate said spider in a predetermined rotary direction and move the webs of the spider into engagement with said rods.



3,351,111
HARDWARE LOCATING AND STARTING TOOL

James A. Biddle, Los Angeles, Calif.
(16355 Vintage St., Sepulveda, Calif. 91343)

Filed Aug. 23, 1965, Ser. No. 481,460
8 Claims. (Cl. 145—52)



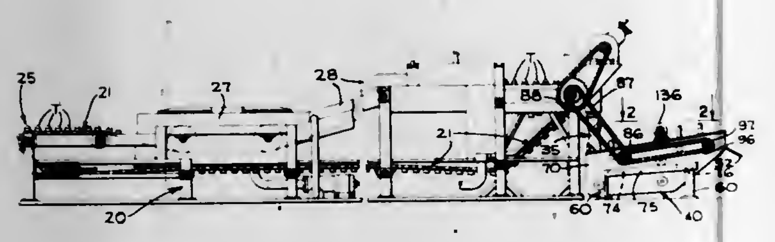
1. A locating and starting tool for hardware items comprising:
- a preformed and shaped rigid tubular member;
- an extension tubular segment having a preformed and shaped angular configuration detachably secured to a selected end of said tubular member;
- a flexible means disposed within said member and said segment along the full combined length thereof;
- a hardware item holding means secured to one end of said flexible means; and
- a knob releasably secured to the other end of said flexible means whereby rotary movement of said knob effects rotary movement of said holding means via said flexible means when said knob is secured and said knob having a through bore and being slidable on said cable when released whereby the effective length of said flexible means may be increased to accommodate the combined length of said tubular member and said tubular segment when said knob is released.

ERRATUM

For Class 146—3 see:
Patent No. 3,351,110

3,351,112
REMOVING SKIN FROM FRUIT

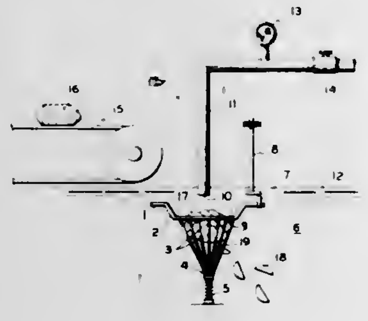
Sherman H. Creed, San Jose, and Robert C. Luhdorff, Campbell, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,160
6 Claims. (Cl. 146—226)



5. The method of removing loosened skins and pieces of skins from partially peeled produce comprising the steps of preliminarily contacting produce which have been subjected to a skin loosening treatment to partially remove the skins therefrom but in so contacting leaving pieces of skins still adhering to the bodies of the produce, immersing the produce in a liquid bath, and agitating the liquid while the produce are immersed in the bath to cause frictional contact by the agitated liquid against the loosened pieces of skins to remove them from the bodies of the produce.

3,351,113
HYDRAULIC DIVISION OF FRUITS

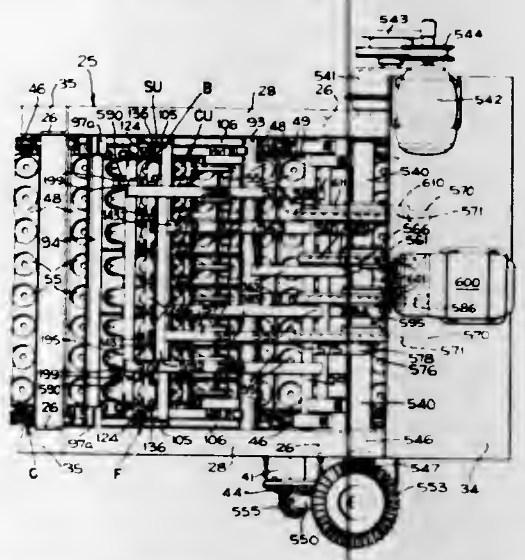
Noboru Suzuki, Shizuoka-shi, and Takamitsu Yoshino, Shimizu-shi, Japan, assignors to Shimizu Suisan Kabushiki Kaisha, Shimizu-shi, Japan, a corporation of Japan
Filed Jan. 25, 1965, Ser. No. 427,596
Claims priority, application Japan, Jan. 27, 1964, 39/3,682
14 Claims. (Cl. 146—230)



11. A method of separating fruit such as oranges into their individual segments using a basket for the fruit having at least one opening therein, the basket being located in the liquid of a liquid tank comprising positioning a peeled segmental fruit in the basket at a location in which at least a major portion thereof is submerged below the liquid level, and directing a fluid jet against the fruit to cause the fruit to separate into the individual segments and to move the segments as they are broken away through the opening of the basket into the liquid of the liquid tank.

3,351,114
METHOD AND APPARATUS FOR PROCESSING FRUIT

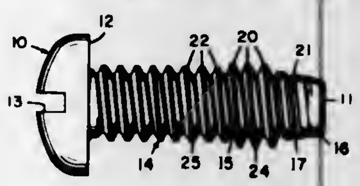
Gerald R. Anderson, Campbell, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application July 2, 1962, Ser. No. 206,955, now Patent No. 3,246,676, dated Apr. 19, 1966. Divided and this application Mar. 26, 1965, Ser. No. 452,432
6 Claims. (Cl. 146—238)



1. A method of providing a hole in fruit which hole opens outward from the fruit through first and second surface portions spaced from each other on the periphery of the fruit comprising the steps of cutting an annulus in said fruit from said first portion to said second portion which annulus separates an elongated segment of the fruit from the remainder of the fruit therearound, said cutting being initiated in said first portion and advancing in the fruit toward and through said second portion, and applying a pulling force to the end of said segment adjacent said first surface portion in a direction opposite to the direction of advance of said cutting action while so cutting through said second portion to maintain integrity of the fruit about said second portion until said annulus is entirely cut through said fruit at said second portion.

3,351,115
THREAD-FORMING AND FASTENING SCREW

Roger W. Boehlow, 7115 St. Charles Rock Road, St. Louis, Mo. 63133
Filed Nov. 22, 1965, Ser. No. 508,980
1 Claim. (Cl. 151—22)



A combination thread-forming and fastening screw, comprising:

(a) a shank, and

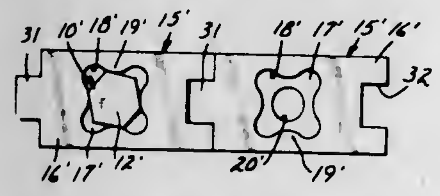
(b) a continuous external thread of constant pitch on the shank including a helical thread-forming portion which operates by plastic deformation of a preformed, unthreaded hole, and

(c) a plurality of helical thread-holding turns having a constant crest diameter smaller than the crest diameter of the thread-forming portion,

(d) the thread-forming portion including one or more thread-forming turns of constant crest diameter on the shank forwardly of and adjacent the thread-holding turns as determined by the constant driving torque required to deform the unthreaded hole, the thread having a substantially constant root diameter throughout the thread-forming and thread-holding turns, the leading end of the screw forwardly of and adjacent the thread-forming portion being tapered away from the thread-forming portion and having a continuation of the thread thereon which gradually increases in depth in the direction of the thread-forming portion to merge therewith.

3,351,116
LOCK WASHER

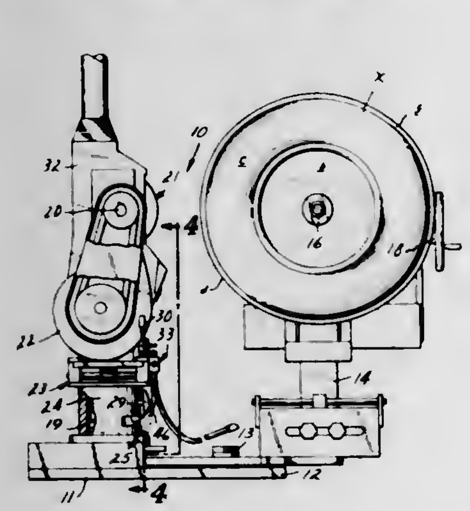
Marvin J. Madsen, Rte. 1, Truman, Minn. 56088
Filed Dec. 20, 1965, Ser. No. 514,910
1 Claim. (Cl. 151—34)



Means for securing from axial rotation the enlarged end portion of a bolt or the like comprising upper and lower plate members rigidly secured together in a flat, overlying state, said upper plate member having an opening therethrough, said opening being shaped to receive therein polygonal shaped enlarged ends of bolts and substantially preventing rotational movement of a received bolt about the axis thereof, said lower plate member having an opening therein substantially axially aligned with said opening through said upper member and adapted to receive therethrough the shank of said bolt, the opening in said lower plate member having smaller radial dimensions than the opening in said upper plate member to provide an axial shoulder against which the enlarged end of the received bolt abuts, said secured together members having in addition a tongue portion of less width than said members protruding outwardly from one edge thereof in the plane of the secured together members and an opposed edge having a mating recess therein adapted to receive the tongue portion on a second securing means for locking a plurality of said means together in relative nonrotational positions.

3,351,117
AIR ATTACHMENT FOR BUFFING MACHINES AND THE LIKE

Raymond P. Hawkinson, Minneapolis, and Rudolph E. Olson, St. Louis Park, Minn., assignors to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota
Filed June 13, 1966, Ser. No. 557,067
2 Claims. (Cl. 157—13)



1. An improvement for tire buffing and truing machines having:

(a) a horizontal base member,

(b) a standard mounted on said base for swinging movements about a vertical axis,

(c) a power head including a horizontal power output shaft,

(d) means mounting said power head on said standard for horizontal movements in directions normal to and axially of said power output shaft,

(e) means for mounting a rim equipped pneumatic tire casing on said shaft for common rotation therewith,

(f) a second standard,

(g) means mounting said second standard on said base laterally of said first mentioned standard for horizontal movements toward and away from the pivot axis of said first mentioned standard,

(h) a power operated buffing wheel disposed for rotation on a horizontal axis,

(i) means mounting said buffing wheel on said second standard for pivotal movements on the axis of said second standard and horizontal movements axially of said buffing wheel,

(j) means including a horizontally disposed operating lever for locking said buffing wheel in a selected position of pivotal movement on the axis of said second standard,

(k) means for indicating the degree of rotation of said buffing wheel relative to said second standard,

(l) the improvement comprising:

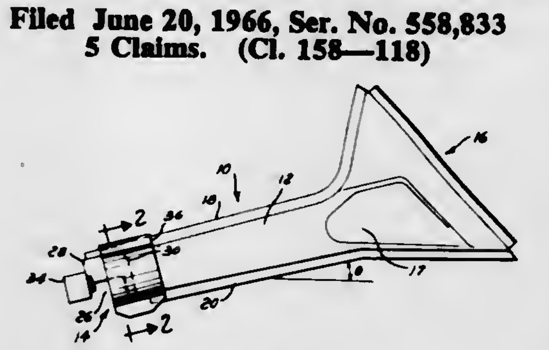
  (1) a valve element having an air inlet for connection to a source of air supply under pressure, and an air outlet,

  (2) an air conduit having one end connected to said air outlet and the other end terminating adjacent said indicating means,

  (3) said valve element operable responsive to unlocking movements of said horizontally disposed operating lever to automatically direct a jet of air against said indicating means during said pivotal movements of said buffing wheel on the axis of said second standard.

3,351,118
MEANS FOR SUPPLYING AIR TO A GAS BURNER

Mark E. Ward, Columbus, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed June 20, 1966, Ser. No. 558,833
5 Claims. (Cl. 158—118)

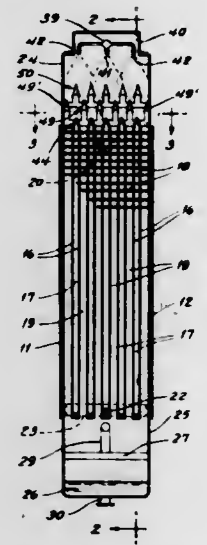


1. The combination of a gas burner and an air sleeve comprising, a venturi tube having an inlet end and a discharge end, an axially extending tube opening in the proximity of said inlet end, said opening including a substantial portion of the tube circumference at said proximity, a generally cylindrical air sleeve disposed about said tube for reciprocating movement relative thereto, said sleeve having an opening extending the length thereof, said sleeve opening being confluent with said tube opening, a pair of flanges attached to and extending radially from said sleeve, and said flanges being disposed one on each side of said sleeve opening, wherein one end of said air sleeve has an elliptical cross section with a first minor axis and the opposite end of said air shutter has an elliptical cross section with a second minor axis that is rotated at an angle relative to said first

minor axis, whereby the portions of the sleeve intersected by said axes press against said venturi tube and form a means for holding the sleeve in position on said venturi tube.

3,351,119
FALLING FILM TYPE HEAT EXCHANGER

Curt F. Rosenblad, % Rosenblad Corp., P.O. Box 585, Princeton, N.J. 08540
Filed Jan. 5, 1965, Ser. No. 423,492
9 Claims. (Cl. 159—13)

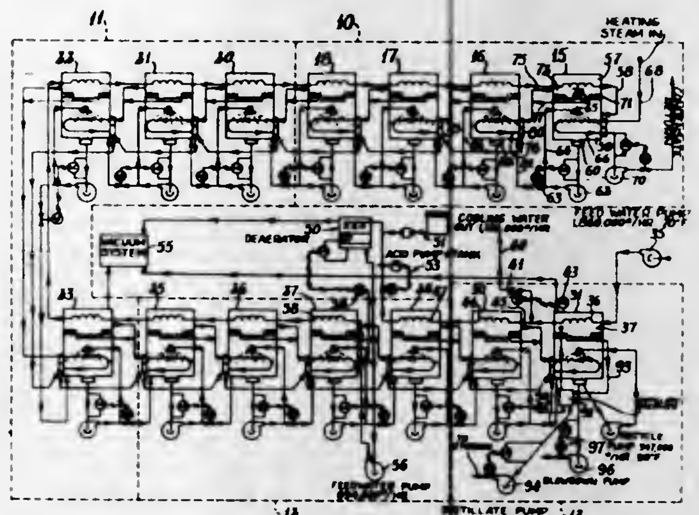


1. In a falling film heat exchanger and vaporizer having a plurality of generally vertical, parallel, aligned and substantially equi-spaced plates forming in part two sets of alternating interdigitated channels, the upper edges of the plates lying substantially in a horizontal plane, the first set of channels being open at the top to receive liquid to be heated and vaporized on its interior surfaces while the second set of channels receives a heating medium interiorly, the improved means for distributing liquid to be heated over the heating surfaces of the heat exchanger plates in the first channels, which comprises an upwardly convex hood disposed above and closing each of the second channels and extending along the upper edges of the heat exchanger plates, the lower edges of the hoods being substantially coextensive and coplanar with the upper edges of the heat exchanger plates at the heating surfaces thereof, a liquid conducting means having at least one discharge opening therethrough disposed centrally above the plates at the top thereof, and liquid distributing means interposed between the liquid discharging opening and the hoods for intercepting substantially all of the liquid directly discharged from the opening and distributing it to fall substantially uniformly onto the hoods, whereby the thus intercepted liquid flows down the sides of the hoods to form substantially uniform films flowing down the entire area of the heating surfaces of the heat exchanger plates, the fluid distributing means comprising at least one set of baffle members offset laterally with respect to the hoods and disposed in a generally horizontal row located above the hoods, each of the baffle members horizontally overlapping two successive hoods.

3,351,120
MULTIPLE EFFECT, MULTI-STAGE FLASH AND FILM EVAPORATOR

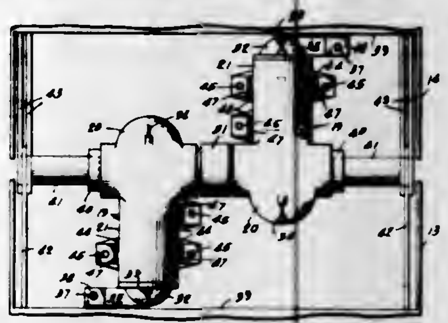
Richard W. Goeldner, Brookfield, and Armando B. Steinbruchel, Waukesha, Wis., assignors to Aqua-Chem, Inc., a corporation of Wisconsin
Filed Apr. 30, 1965, Ser. No. 452,205
14 Claims. (Cl. 159—13)

1. A multiple effect evaporator, comprising: an enclosing housing member; a plurality of evaporation chambers in said housing provided by generally vertical, parallel partitions extending within said housing, a plurality of heat exchange tubes in each of said chambers for evaporating liquid; a plurality of vapor chambers in said housing associated with said evaporation chambers. condenser tubes within each of said vapor chambers, said condenser tubes being in heat exchange relation with the vapor in their respective vapor chambers to condenser tubes within each of said vapor chambers, distillate, means for conveying incoming liquid serially through said condensing tubes to preheat the incoming liquid, means for conveying the preheated liquid serially through the evaporation chambers; and vapor ducts within said housing, one each adjacent each vapor chamber but separated therefrom, each said duct communicating with said vapor chamber of the upstream effect and the inside of said heat exchange tubes of the next downstream effect so that a portion of the vapor in each effect is directed into said heat exchange tubes to evaporate a portion of the preheated liquid in the respective evaporation chambers.



3,351,121
HATCH COVER WITH PISTON-LEVER ROTARY ACTUATORS

Rollin Douglas Rumsey, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Sept. 1, 1965, Ser. No. 484,334
13 Claims. (Cl. 160—188)



1. A cover assembly of the character described comprising a pair of panels in side-by-side relation and means enabling movement of said panels between a substantially coplanar position and a jackknifed position about a hinge axis and comprising:

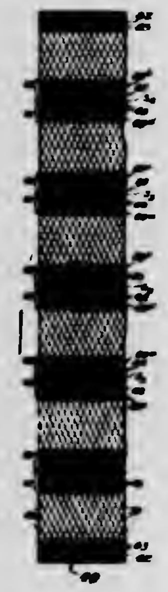
at least a pair of rotary hydraulic actuators one of which is rigidly mounted on one of said panels and the other of which is rigidly mounted on the other of said panels,

and common rigid shaft structure mounted on and coaxial with said actuators and on said hinge axis and about which said actuators are rotatably operble in opposite rotary directions to move said panels between said positions;

said actuators comprising piston-lever actuators each of which has a head portion rotatably mounted on and about said shaft structure and a torque lever portion projecting away from said shaft structure and attached rigidly to the associated panel, and said torque lever portions being operative about said shaft structure between oppositely extending and generally jackknifed relation and thereby effecting corresponding movements of said panels.

3,351,122
CAR DOOR BARRICADE

George T. Murphy, deceased, late of Waukegan, Ill., by Irene M. Murphy, executrix, 312 Grand Ave., Waukegan, Ill. 60085
Filed Apr. 1, 1964, Ser. No. 356,674
13 Claims. (160—368)



1. In a barricade for railway cars and the like having doorways of relatively uniform transverse dimensions but in which the space between door post structures may vary in different cars, the combination of a retaining strip of relatively flexible sheet material, said relatively flexible sheet material comprising a kraft reinforcing paper with a woven diagonal mesh of glass fibers arranged at an angle to the opposite edges of and extending across the flexible sheet material forming the restraining strip, and an overlay of longitudinally extending strands of glass fibers, said reinforcing paper being laminated with asphalt and the glass fibers embedded therein, said overlay being arranged in bands of strands which are relatively closely spaced as compared with the spacing between bands of strands, a band of strands of predetermined width being disposed adjacent each corresponding edge of the strip, and at least one intermediate band of substantially twice the width as said first mentioned bands, whereby the sheet can be utilized in its full size or severed at such an intermediate group to divide the latter into two like bands, forming corresponding edge portions of the respective individual barricades so formed.

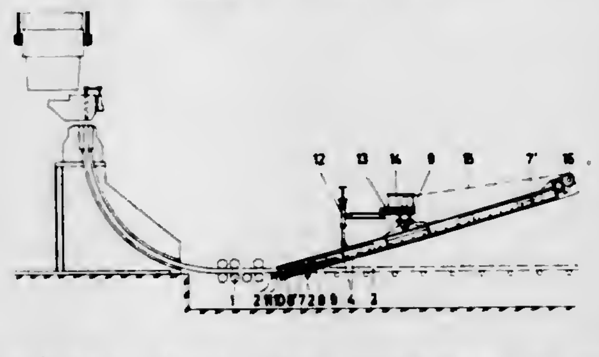
3,351,123
MOLD AND PROCESS OF COATING FOAMED PATTERN WITH REFRACTORY FILLER AND SILICON-CONTAINING BINDER

John Payne, Pink Lane, Burnham, England, assignor to Monsanto Chemicals Limited, London, England, a British company
No Drawing. Filed Oct. 9, 1964, Ser. No. 402,948
Claims priority, application Great Britain, Oct. 23, 1963, 42,248/63
10 Claims. (Cl. 164—34)

7. A process for casting a metal in a mold which process comprises coating a foamed thermoplastic synthetic resin pattern with a refractory coating which coating comprises a single mixture of a particulate refractory filler and a silicon-containing binding agent, hardening the refractory coating to a temperature resistant, form-retaining shape, embedding said coated pattern in a support material and pouring molten metal on to the foamed thermoplastic synthetic resin pattern so as to volatilize the pattern and fill the mold.

3,351,124
CONTINUOUS CASTING PLANT

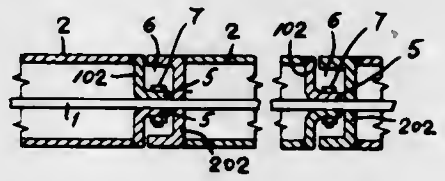
Walter Hess, Dusseldorf, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany
Filed Jan. 26, 1965, Ser. No. 428,139
Claims priority, application Germany, Jan. 28, 1964, Sch 34,533
12 Claims. (Cl. 164—274)



1. Continuous casting plant, comprising: a curved guide, a roller bed for the removal of the casting, a flexible starting bar, a starting-bar receiving and supplying device, and a set of driving rollers for impelling the starting bar and the casting, said receiving and supplying device including a depositing surface which is movable into and out of alinement with said roller bed.

3,351,125
FLEXIBLE SEGMENTAL STARTING BAR FOR CONTINUOUS METAL CASTING MACHINES

Enzo Colombo, 56—3 Via Gianelli, Genoa, Italy
Filed Apr. 27, 1965, Ser. No. 451,114
11 Claims. (Cl. 164—274)



1. A flexible segmental starting bar for continuous casting machines, comprising a plurality of independent bar sections, continuous tie means extending the length of the bar, and through said bar sections, said tie means being flexible in one plane only to accommodate bending of the bar in a single plane and prevent angular deviation of said bar sections about the longitudinal axis of the bar, and means securing each of said bar sections individually to said tie means.

3,351,126
CASTING WHEEL APPARATUS

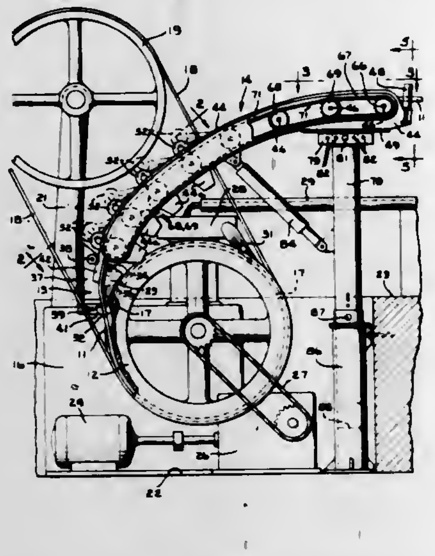
Roy Richards, Carrollton, Ga., Arthur M. Wagner, Clarendon Hills, Ill., and George C. Ward, Carrollton, Ga.; said Wagner assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York, and said Richards and said Ward assignors to Southwire Company Incorporated, Carrollton, Ga., a corporation of Georgia
Filed Sept. 25, 1964, Ser. No. 399,145
8 Claims. (164—278)

3. Apparatus for the continuous casting of molten copper into a continuous bar, which comprises:

a rotatable casting wheel mounted for rotation about a horizontal axis and having a peripheral groove therein, the groove having a substantially smooth continuous bottom and sides;

a continuous band engaged about a portion of the periphery of said casting wheel and movable with said casting wheele, said band being cooperable with a portion of the groove in said casting wheel to define a cavity into which the molten copper is introduced and in which the molten copper cools to a solidified state to form the continuous bar;

stripping means for causing the bar to exit from the groove in said casting wheel at a preselected point;



power driven conveyor means extending from a point closely adjacent said stripping means and upward along a uniform arcuate path above the upper level of said casting wheel and in the general direction of the curvature of said wheel, for limiting lateral movement of the bar after the bar has advanced beyond said stripping means; and

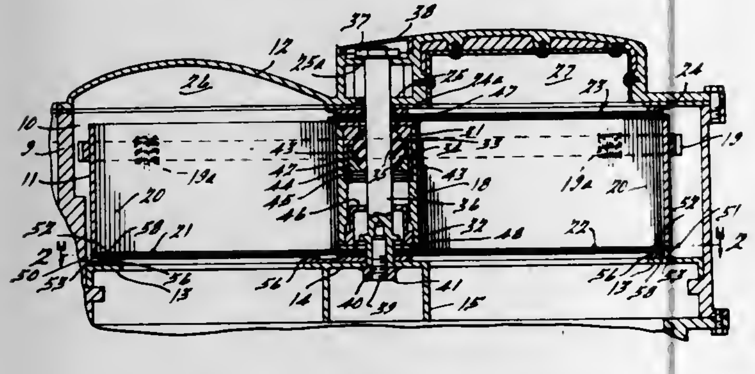
means, including said stripping means and said conveyor means, for controlling the advancement of the continuous bar so that the solidified portion of the bar which is in the groove of said casting wheel travels in a uniform path in the groove in said casting wheel until the bar exits from the groove at the preselected point, to facilitate uniform cooling of the bar.

3,351,127
REGENERATOR SEAL

Robert A. Mendelsohn, Detroit, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed June 20, 1966, Ser. No. 558,956

10 Claims. (Cl. 165—9)



1. In a seal, first and second sealing plates having spaced coextensive surfaces confronting each other and extending around the periphery of a predetermined area, the surface of the first plate confronting the second plate having an inclined portion converging toward the second plate in the direction into said area from said periphery, means adapted to be wedged into the space between said inclined surface portion and the confronting surface of said second plate comprising a flexible sealing element extending from one end thereof in said space around said periphery and terminating at its opposite end adjacent said one end, means for securing each of said ends of said sealing element to one of each of said plates, and means for pulling said ends in opposite directions relative to each other to constrict said element around said periphery in a wedge action between said inclined surface portion and the confronting surface of said second plate to effect a seal between the latter two surfaces comprising means for effecting relative peripheral movement of one of said plates with respect to the other at the region adjacent said ends and in the direction of extension of the end of the sealing element secured to said one plate.

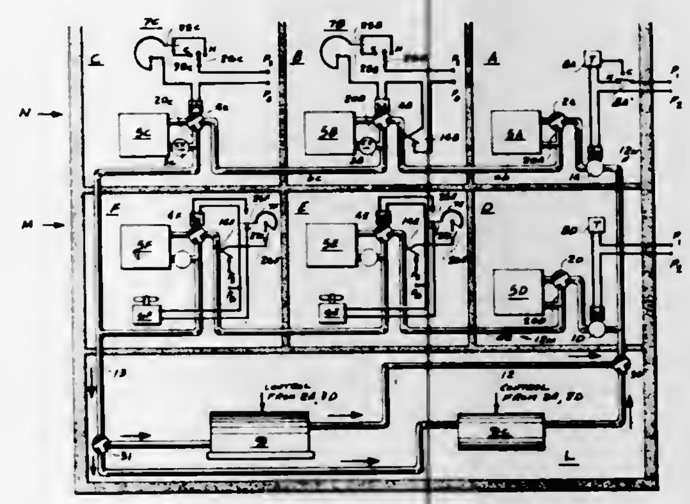
7. In the combination according to claim 1, a gas turbine engine having a supporting frame, a regenerator rotatably mounted on said supporting frame and having means for passage of comparatively high and low pressure gases therethrough, partitioning means carried by said frame for separating said high and low pressure gases, said partitioning means including said first and and second sealing plates and said sealing element, the surface of said second sealing plate opposite the surface thereof which confronts said inclined surface portion being in sliding and sealing engagement with a rotating surface of said regenerator, the last named engagement urging said second sealing plate in the direction of rotation of said regenerator and comprising said means for effecting said relative peripheral movement, said sealing element extending in said direction of rotation toward its end secured to said second sealing plate.

3,351,128
MULTI-ZONE TEMPERATURE CONTROL

John W. Barnd, 32 Hollybrook Road, Paramus, N.J. 07652

Filed Mar. 10, 1964, Ser. No. 350,791

15 Claims. (Cl. 165—22)



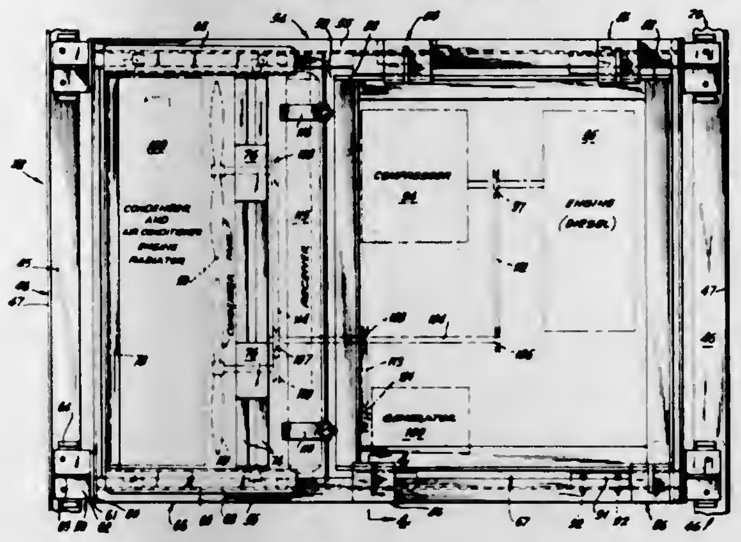
1. A temperature control system for individually controlling the temperature in each of a plurality of thermal zones comprising heat exchange means in each of said zones, distribution means serially connecting said heat exchange means for passing all of the heat transfer fluid successivey through said exchange means, one of said zones including temperature responsive control means for controlling flow throughout said distribution means in accordance with temperature conditions in said one zone, and another of said zones including temperature responsive by-pass means for by-passing said fluid around its associated exchange means when the temperature in its zone reaches a predetermined point.

3,351,129
AIR CONDITIONING SYSTEMS FOR VEHICLES SUCH AS BUSES

Milton E. Spatt, 135 Eastern Parkway, Brooklyn, N.Y. 11238

Filed Sept. 17, 1965, Ser. No. 488,197

8 Claims. (Cl. 165—30)



1. In combination, a passenger vehicle having a body provided with a floor, a power drive for said vehicle, including an engine, and a vehicle electrical system comprising means, driven by said engine, to generate electric current, an airconditioning system for the body of said vehicle, comprising a separate engine, a compressor, drive means connecting the separate engine to the compressor for driving the latter, a condenser, blower means for said condenser, separate means to generate electric current, drive means connecting said separate engine to said separate means to generate electric current, an evaporator, evaporator blower means for said evaporator, electric motor means for operating said evaporator blower means, means to selectively supply electric current to said evaporator blower motor means from the vehicle electrical system, and produce a relatively lesser volume of air for heating or ventilating, or from said air-conditioning system separate means to generate electric current, and produce a relatively greater volume of air for air conditioning, a receiver for refrigerant, conduit means connecting the outlet of the receiver to the inlet of the evaporator, and expansion valve in said conduit means, conduit means connecting the outlet of the evaporator to the inlet of said compressor, conduit means connecting the outlet of the compressor to the inlet of said condenser, and conduit means connecting the outlet of the condenser to the inlet of the receiver; and means supported by the body of the vehicle to mount said separate engine, said compressor, said drive means connecting said separate engine and compressor, said condenser, said condenser blower means, said separate means to generate electric current, said drive means connecting said separate engine and electric current generating means, said evaporator, said evaporator blower means, and said electric motor means, beneath the floor of the vehicle.

3,351,130
DUAL TEMPERATURE WATER HEATING AND SUPPLY SYSTEM

Leonard F. Lowe, East Stroudsburg, Pa., assignor to The Patterson-Kelley Co., Inc., East Stroudsburg, Pa.

Filed Dec. 22, 1965, Ser. No. 515,794

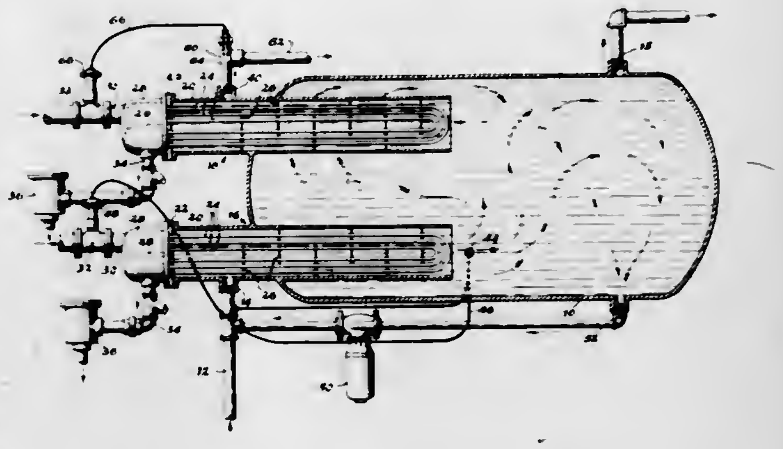
8 Claims. (Cl. 165—39)

7. A water heating and storage device for holding warm water at a predetermined temperature and adapted to supply such warm water immediately upon demand which may be intermittent and to supply also hot water of a higher temperature immediately upon demand which may be intermittent, the demands for warm water and hot water not necessarily being related, said device comprising, in combination,

a container for storage of heated water,

a warm water outlet connected to said container,

a water inlet heater for discharging freshly heated warm water into the interior of said container, said water inlet heater including a housing extending into said container and terminating therewithin a discharge mouth, a fresh water inlet connected to said housing remote from said discharge mouth, and heater means within said housing between said fresh water inlet and said discharge mouth whereby fresh water entering said container through said housing is heated by said heater means,



means for controlling said heater means to maintain a uniform warm water temperature within said container and including means for continuously recirculating warm water from said container through said housing and back into said container through said discharge mouth,

a second water heater for withdrawing hot water from the interior of said container, said second water heater including a second housing extending into said container and terminating in an inlet mouth, a hot water outlet connected to said second housing remote from said inlet mouth, and second heater means within said second housing between said inlet mouth and said hot water outlet whereby warm water withdrawn from said container through said inlet mouth is heated by said second heater means,

and means adjacent said hot water outlet for controlling said second heater means to maintain a uniform temperature for hot water discharged through said hot water outlet.

3,351,131
HEAT EXCHANGERS

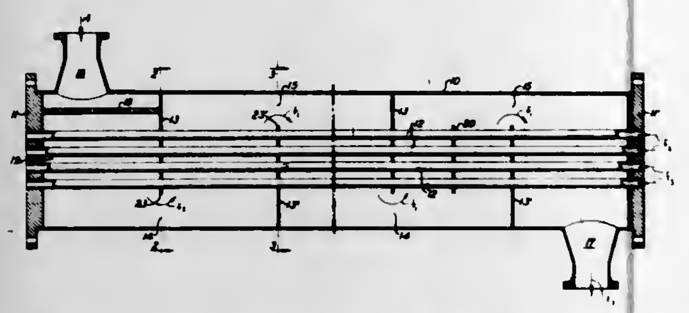
Louis Berthold, Grenoble, France, assignor to Societe Grenobloise d'Etudes et d'Applications Hydrauliques, Grenoble, France, a corporation of France

Filed Apr. 8, 1965, Ser. No. 446,614

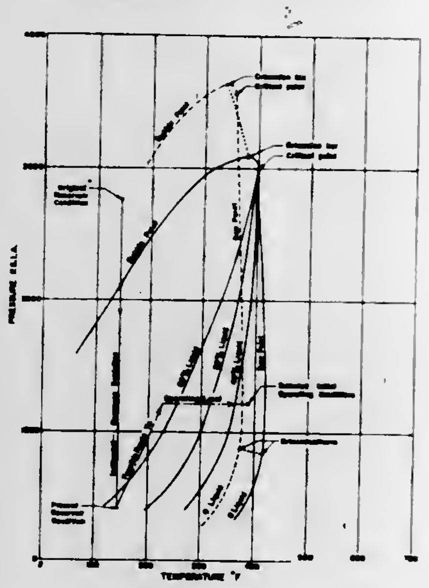
Claims priority, application France, Apr. 9, 1964, 4,672/64

1 Claim. (Cl. 165—159)

A heat exchanger for fluids comprising two passageways arranged in heat exchange relation, one of said passageways being composed of a cluster of tubes extending longitudinally of the exchanger, and the other of said passageways being composed of a longitudinal tubular wall of said exchanger, tube plates at the ends of said tubular wall, and a plurality of spaced, transverse baffles arranged within said tubular wall between said tube plates to cause a fluid to flow repeatedly across the tubes in a series of transverse passageway sections, said baffles being equally spaced from each other and being spaced from said tube plates a distance equal to the distance between adjacent baffles and together with said tube plates defining transverse passageway sections of equal cross-sectional area, said baffles providing in alternate relation at their ends fluid openings connecting the ends of adjacent transverse passageway sections and each having a cross-sectional area substantially equal to the cross-sectional area of one of said transverse passageway sections to prevent the occurrence of appreciable velocity variations at any point along the fluid circulation path, and all of the tubes in said cluster thereof extending through and being supported by all of said baffles to minimize vibration thereof and so that said fluid openings are clear and unoccupied by said tubes, thereby enabling the fluid circulation flow to be directed through said transverse passageway sections perpendicularly to the tubes' therein to ensure efficient heat exchange, and with little loss of head in said flow, the clear space at the entry end of the first transverse passageway section in the series thereof having provided therein a flow distribution device extending across the entire uniform width of such pasasgeway in such space and capable of directing the incoming fluid so that it enters into such section at a practically uniformly distributed pressure and perpendicularly to the tube portions in such section.

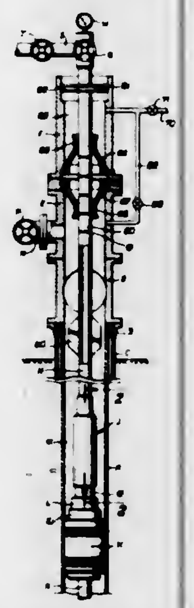


3,351,132
POST-PRIMARY THERMAL METHOD OF RECOVERING OIL FROM OIL WELLS AND THE LIKE
John Lynn Dougan, Salt Lake City, Utah, and Fred Samuel Reynolds, Fort Worth, Tex., assignors to Equity Oil Company, Salt Lake City, Utah, a corporation of Colorado
Filed July 16, 1965, Ser. No. 472,649
6 Claims. (Cl. 166—11)



1. A method of stimulating recovery of hydrocarbon liquids from natural oil and gas reservoirs underground, comprising circulating heated gas consisting essentially of natural gas under pressure, not exceeding overburden pressure, through at least a portion of such a reservoir from an injunction well to a recovery well, the temperature of said gas being high enough to vaporize hydrocarbon liquids in said reservoir and maintain such vaporized liquids above the dew point, and above the cricondentherm when the pressure is as high as the cricondentherm pressure, so said natural gas is substantially completely miscible with said vaporized liquids.

3,351,133
TUBING WEIGHT-CONTROLLED SAFETY VALVE APPARATUS
Ernest H. Clark, Jr., Downey, Calif., and George M. Raulins, Houston, Tex., assignors to Baker Oil Tools, Inc., City of Commerce, Calif., a corporation of California
Filed June 14, 1965, Ser. No. 463,810
26 Claims. (Cl. 166—53)



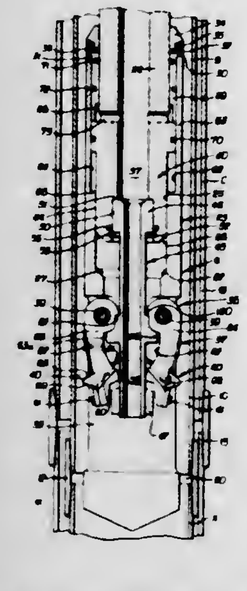
1. In a valve apparatus adapted to be disposed in a well bore: upper and lower tubular members telescoped one within the other; said upper member having means for connecting said upper member to a tubular string extending to the top of the well bore; said members having a first passage through which fluid can flow between the tubuluar string and the lower tubular member; said members having a second passage through which fluid can flow between the interior of said members and the exterior of said members; means on said members for closing said first and second passages when said upper member is in a lower position along said lower member; said passages being open when said upper member is in an upper position along said lower member.

3,351,134
CASING SEVERING TOOL WITH CENTERING PADS AND TAPERED CUTTERS
Archer W. Kammerer, Jr., Fullerton, Calif., assignor of one-fifth to Jean K. Lamphere, and three-fifths to Archer W. Kammerer, both of Fullerton, Calif.
Filed May 3, 1965, Ser. No. 452,558
9 Claims. (Cl. 166—55.8)

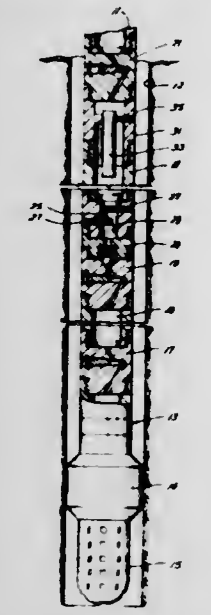
1. In apparatus for cutting a tubular conduit disposed in a well bore: a body; a plurality of circumferentially spaced supporting members mounted on said body for expansion laterally of said body, each supporting member having a cutter thereon; means for expanding said supporting members and cutters laterally to penetrate said cutters into the conduit; and means on said supporting members longitudinally spaced from said cutters and having smooth outer surfaces simultaneously slidably engageable with the conduit to limit the extent of lateral movement of said cutters beyond the periphery of the conduit and to center said apparatus in the tubular conduit.

4. In apparatus for cutting a tubular conduit disposed in a well bore: a rotatable body; a supporting member mounted on said body for expansion laterally of said body and rotatable therewith, said member having a groove

therein, said groove having side walls tapering toward each other from the leading side of said member to its trailing side; a cutter in said groove having sides conforming to and engaging said tapered side walls; and means for expanding said supporting member and cutter laterally to penetrate said cutter in the conduit upon rotation of said body, supporting member and cutter.

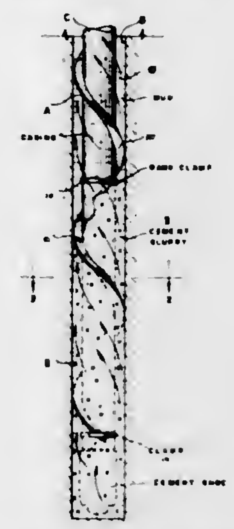


3,351,135
DRILL STEM TESTING APPARATUS
Lloyd I. Jensen, Calgary, Alberta, Canada, assignor to Johnston-Testers, Ltd., Calgary, Alberta, Canada, a corporation of Canada
Filed June 21, 1965, Ser. No. 465,482
6 Claims. (Cl. 166—149)



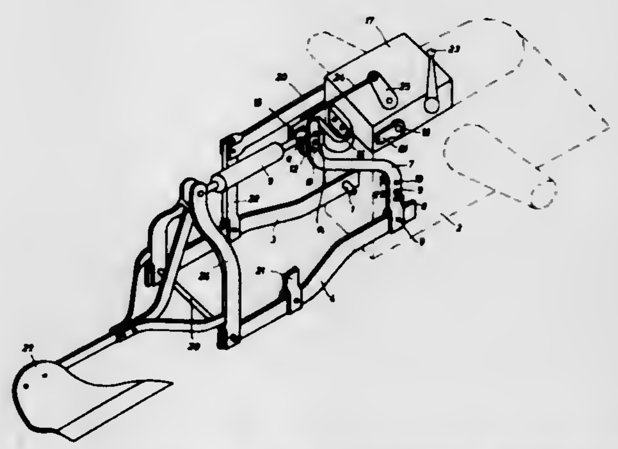
1. In a string of tools for testing a well bore including a test valve for selectively permitting the flow of formation fluid into the interior of said string of tools, the combination of means for selectively maintaining such formation fluids enclosed in said string of tools, which means comprises: means forming a first chamber in the string of tools, including valve means at its upper end, the upper end of said first chamber and associated valve means being arranged to be positioned below the upper end of the well bore when the string of tools is in position for testing the well bore; means forming a second chamber in the string of tools, including valve means at its lower end; valve means positioned intermediate of said first and second chamber, each of said valve means having control portions exposed to the exterior of said string of tools; selectively operable reversing valve means in said first chamber, and means operable from the exterior of said string of tools for selectively operating said latter valve means.

3,351,136
CASING CENTRALIZER AND WELL BORE WIPER
Fred B. Nelson, Lafayette Parish, La., assignor to Norman A. Nelson
Filed Sept. 14, 1964, Ser. No. 396,222
2 Claims. (Cl. 166—173)



1. In combination with a well casing rotatably extended into a well bore a centralizing and bore wiping element comprising a strip of resilient material extending longitudinally of the casing having a base portion positioned in contact with the external surface of the casing and a wiper portion of reduced thickness extending away from the casing for wiping contact with the surrounding wall of the bore, said element having an external longitudinal groove formed therein, an elongated metallic reinforcing element located in said groove and means surrounding the casing and extending over said element over said groove to secure the element and member to the casing.

3,351,137
ARRANGEMENT FOR CONTROLLING THE WORKING DEPTH OF A SOIL WORKING IMPLEMENT LINKED TO A TRACTOR
Horst Schulz, Hennef (Sieg), and Herbert Knepper, Bruhl, near Cologne, Germany, assignors to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne, Germany
Filed Aug. 17, 1964, Ser. No. 389,843
Claims priority, application Germany, Aug. 20, 1963, K 50,581
4 Claims. (Cl. 172—7)



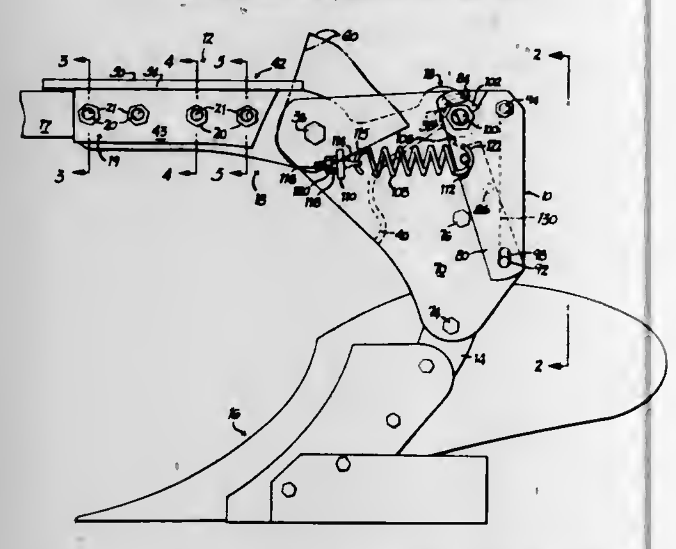
1. In combination; a draft implement having a hitch arrangement comprising a pair of substantially horizontal laterally spaced lower links and an upper link substantially parallel to the lower links, a ground working implement

having a three point hitch frame connected thereto with the hitch points distributed in a vertical plane and with the lower points thereof pivoted to the rear ends of said lower links and the upper point thereof pivoted to the rear end of said upper link, a first pivot on the draft implement connecting the front end one of said lower links thereto, a second pivot on the draft implement located at a higher level than said first pivot, a vertically extending two arm lever pivoted between its ends to said second pivot, means pivotally connecting the lower one of said arms of the lever to the front end of the other lower link, a resilient element between the draft implement and the upper arm of said two arm lever opposing movement of said upper arm due to the force exerted on said lower arm by said other lower link when said draft implement exerts draft on said ground working implement, means pivotally connecting the front end of said upper link to said other arm of said lever, a power operated lift mechanism on the draft implement connected to said hitch arrangement for lifting and lowering said ground working implement, control means operable for actuating said lift mechanism for adjusting the depth of the ground working implement in the ground, said control means comprising a control element moveable in one direction from a neutral position to cause said lift mechanism to lower the ground working implement and moveable in the other direction from a neutral position to cause said lift mechanism to raise the ground working implement, and means connecting said control element with said upper arm of said two arm lever for movement of said element by said upper arm when the latter moves due to the opposed influences of the force exerted on said upper arm by said resilient element and the force exerted on the lower arm by the draft exerted on the ground working implement by said draft implement via said other lower link.

3,351,138

TRIP MECHANISM FOR PLOW BOTTOM

Richard W. Bushmeyer, Rockford, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Sept. 16, 1965, Ser. No. 487,730
8 Claims. (Cl. 172—269)

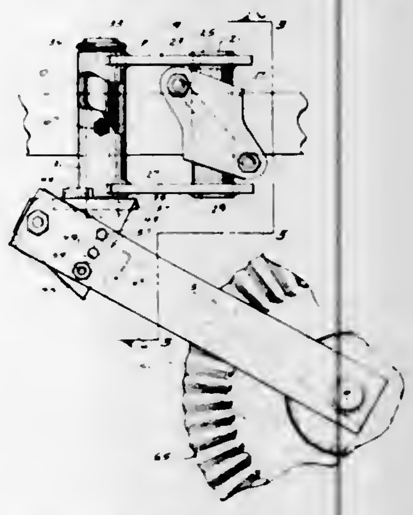


1. In a trip mechanism for an earth-working tool such as a plow or the like having a plow beam and a plow bottom assembly connected to said beam by a main pivot for pivotal movement relative to said beam between a normal earth-working position and an elevated idle position; a link mounted at one end upon a second pivot on said bottom assembly, roller means rotatably mounted on the other end of said link, means defining a concave detent recess in said beam for receiving said roller means in overcenter seated engagement when said plow bottom assembly is in said earth-working position, said link member being oriented to urge said roller means more firmly into said recess upon pivoting movement of said bottom assembly about said main pivot induced by earth-working load applied to said plow bottom, a leaf spring coupled at its opposite ends to said link and to said plow bottom assembly to be bowed in proportional response to earth-working load applied to said bottom assembly, and means operable upon a predetermined bowing of said spring to swing said link about said second pivot in a direction moving said roller means out of engagement with said recess.

3,351,139

PLOW COLTER

Vincent O. Schmitz and James E. Schmitz, both of Rte. 1, Clear Lake, Iowa 50428
Filed May 11, 1966, Ser. No. 549,208
6 Claims. (Cl. 172—602)



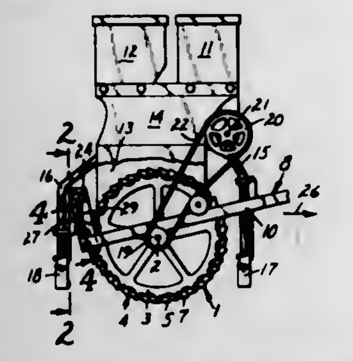
1. In a colter for a plow having a horizontal beam and a clamp means detachably secured to said beam,
- a vertically disposed first shaft adapted to be received by the clamp means and being selectively rotatably mounted therein,
- a vertically disposed hollow bearing means operatively secured to said shaft and spaced therefrom,
- a vertically disposed second shaft rotatably mounted in said bearing means and having its lower end extending from the lower end thereof,
- a plate member operatively secured to said second shaft,
- a disc support arm selectively pivotally secured to said plate and extending downwardly and laterally therefrom,
- the upper end of said disc support arm terminating closely adjacent the beam of the plow thereby preventing foreign material from becoming entangled with the colter,
- said disc support arm having a rotatable hub means secured to its lower end adapted to receive a disc means thereon,
- said first shaft and hollow bearing means being interconnected by first and second spaced bars extending therebetween.

3,351,140

ATTACHMENT FOR ROW WHEEL FOR AGRICULTURAL IMPLEMENTS

Ebenhard S. Gandrud, P.O. Box 528, Owatonna, Minn. 55060
Filed Jan. 27, 1965, Ser. No. 428,420
9 Claims. (Cl. 172—606)

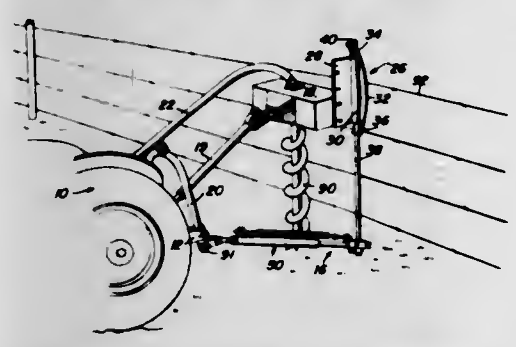
1. An attachment for an earth-treating roller having a generally horizontal axis and an earth-engaging generally cylindrical portion defining radial openings, said attachment comprising, an elongated normally generally horizontally disposed rigid tubular bar having a relatively large inner diameter, and means including an elongated relatively small diameter shaft extending longitudinally through said tubular bar for loosely mounting said bar in radially outwardly spaced relation to said earth-treating roller rearwardly thereof relative to the direction of travel of the roller, said shaft normally supporting said tubular bar in generally parallel relation to the axis of said roller for limited free bodily movements generally toward and away from said roller.



3,351,141

POSTHOLE AUGER STABILIZER

Roy J. Fowler, Rte. 2, Elk City, Okla. 73644
Filed Apr. 20, 1965, Ser. No. 449,579
6 Claims. (Cl. 173—38)



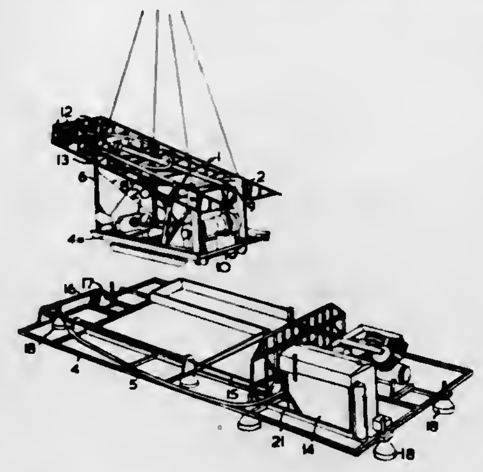
1. In combination a posthole auger stabilizer and fence guard attachment for a tractor mounted power-take-off operated earth boring device provided with a tractor carried support means, said attachment comprising a means carried by the earth boring device to displace the wires of a fence while guiding the earth boring device to permit the boring of a substantially vertical fence posthole in generally straight line alignment with the existing fence posts in the fence row, and a resilient stabilizing means operatively associated with and extending between said fence wire displacing-auger guiding means and the tractor carried support means for the earth boring device to stabilize the path of travel of the auger during the boring of a fence posthole in an existing fence row.

3,351,142

DRILLING RIG

Giles Hamilton Wilderman, Calgary, Alberta, Canada, assignor to Wilderman Drilling Limited, Calgary, Alberta, Canada, a corporation of Canada
Filed Oct. 21, 1964, Ser. No. 405,426
Claims priority, application Canada, June 11, 1964, 904,874
2 Claims. (Cl. 173—147)

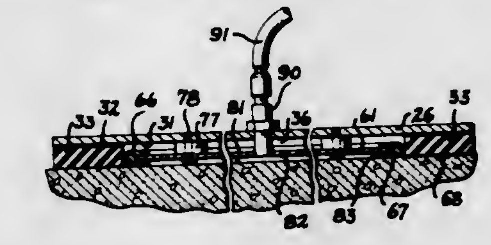
2. A portable rotary drilling apparatus comprising a drill base, a power base, said drill base comprising frame means for detachably mounting said drill base on said power base, a drilling mast pivotally mounted on said drill base and adapted to swing from a working vertical position to an inclined position on said drill base, a drill rod slidably mounted within said drill mast, a vertically positioned transmission turntable mounted on said drill base, draw down means mounted on said drill base and operatively attached to said drilling rod and said drilling mast, said drilling mast, drill rod and transmission turntable being so positioned that the drilling axis defined thereby corresponds to and is substantially parallel to the center of gravity of said drilling apparatus such that a major portion of the weight of the drilling apparatus is available to produce downward thrust, said power base comprising power means operatively connected to said drill base to operate said drilling apparatus, said drill base and said power base adapted to be transported readily by helicopter.



3,351,143

CONCRETE DRILL BIT GUIDE AND DUST REMOVER

Alvin V. Seibold, 2412 Cava Court No. 4, Sacramento, Calif. 95825, and Horace E. Shirley, 2515 Altos Ave., Sacramento, Calif. 95815
Filed June 1, 1965, Ser. No. 460,312
2 Claims. (Cl. 175—209)

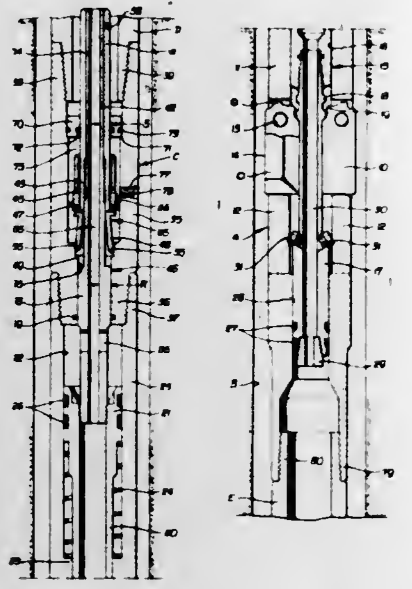


1. A concrete drill bit guide and dust remover for use on a substantially planar concrete surface comprising:
- (a) a flat, rigid, base plate;
- (b) a resilient gasket mounted on the bottom periphery of said base plate defining a central recess;
- (c) a flat vacuum plate disposed within said recess and below said base plate in substantially parallel spaced relation;
- (d) a resilient seal carried on the bottom periphery of said vacuum plate substantially coplanar with said gasket, said seal defining a vacuum chamber;
- (e) resilient members connecting said base plate and said vacuum plate, said resilient members being capable of flexing to permit said vacuum plate to conform to the contour of the underlying surface of the concrete;
- (f) vacuum means connected at one end of a vacuum source and at the other end to said vacuum chamber for inducing a sub-atmospheric pressure within said chamber;
- (g) a hollow cylindrical guide sleeve mounted on said base plate at right angles thereto in offset relation to said central recess, the bottom opening in said guide sleeve being in registry with a registering opening in said base plate to guide a drill bit therethrough; and,
- (h) a dust withdrawal pipe connected at one end to a vacuum source and at the other end to said guide sleeve.

3,351,144
ROTARY EXPANSIBLE DRILLING APPARATUS WITH CENTRIFUGALLY OPERATED LATCH

Robert O. Park, Lakewood, Calif., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California

Filed Apr. 5, 1965, Ser. No. 445,328
17 Claims. (Cl. 175—269)



1. In rotary expansible drill bit apparatus adapted to be lowered in a well bore: a rotary drill bit having normally retracted cutter means shiftable laterally outwardly; actuating means movable in one direction for shifting said cutter means laterally outwardly; means connected to said actuating means to prevent said actuating means from shifting said cutter means laterally outwardly; means for releasing said preventing means independently of actuation of said actuating means in shifting said cutter means laterally outwardly; means engaging said actuating means for moving said actuating means in the opposite direction to shift said cutter means from its laterally outward position to retracted position while said apparatus is in the well bore; and means for replacing said preventing means in its position preventing actuation of said actuating means while said apparatus is in the well bore and after shifting of said cutter means to retracted position.

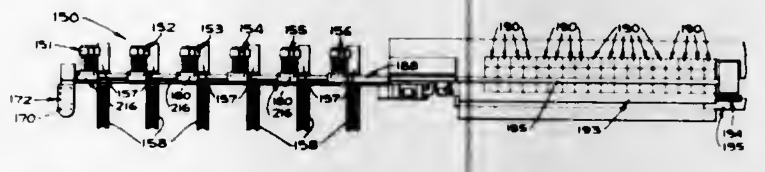
14. In a control unit for an expansible rotary drill bit having cutter means and shiftable means for expanding the cutter means: a body having a connection for securing said body to the drill bit; an extension member slidable longitudinally in said body and having means for connecting said extension member to the expanding means; a lock member carried by said extension member and engageable with said body to prevent said extension member from shifting longitudinally in said body; and centrifugally operated means responsive to rotation of said body for shifting said lock member from said body to a released position.

3,351,145
MACHINE FOR WEIGHING EGGS

Harold J. Mumma, Riverside, Calif., assignor to FMC Corporation, a corporation of Delaware

Application July 15, 1959, Ser. No. 827,256, now Patent No. 3,187,827, dated June 8, 1965, which is a division of application Ser. No. 400,466, Dec. 28, 1953. Divided and this application Dec. 16, 1963, Ser. No. 388,968
7 Claims. (Cl. 177—12)

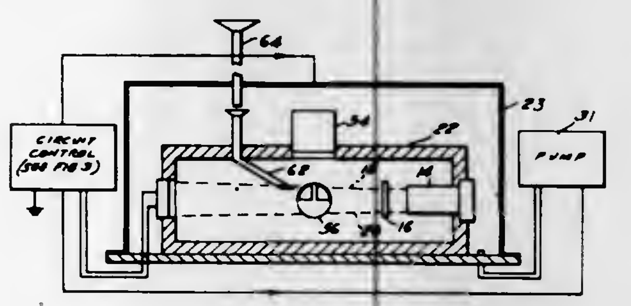
1. A weighing mechanism especially for eggs comprising a platform, means resiliently maintaining said platform in an elevated position in a manner permitting it to yield to lower levels, a plurality of switch actuating discs positioned at different relative levels and mounted for movement in unison with said platform, said discs having concave lower surfaces, an equal number of normally open switches adapted upon closure to activate different weight indicating elements and having operating arms opposite said discs, actuating fingers rotatably mounted intermediately of said discs and said arms, actuating noses formed on a common horizontal level upon the edges of said fingers confronting said discs, said noses having concave upper edges, means for delivering an egg onto said platform, and means operable upon deposit of an egg onto said platform to relatively approach said discs and said switches so as to cause contact of one of said noses by its corresponding disc, and consequent actuation of the respective switch arm by the opposite edge of the finger mounting the contacted nose.



3,351,146
AUTOMATIC ELECTRONIC MICROGRAM SCALE

Jorge G. Codina, 233 Secor Road, Hartsdale, N.Y. 10530

Filed May 16, 1967, Ser. No. 638,862
9 Claims. (Cl. 177—210)

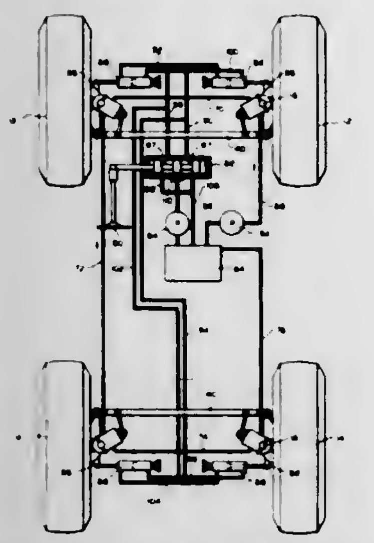


1. A scale comprising:
(a) an electromagnet adapted to produce a levitational magnetic field directed downward therefrom;
(b) first means coupled to said electromagnet to energize same and being responsive to a variable feedback signal to vary the magnetic field intensity, the intensity varying monotonically with variations of said feedback signal;
(c) a magnetic body having a material receiving cavity, said body being positioned below said magnet and being subject both to the levitational force of said field and to the downward pull of the total weight of the body including the weight of any material in the cavity;
(d) weight indication means rendered responsive when said body is positioned within a predetermined vertical zone spaced apart from and positioned below said electromagnet to generate an output signal varying with changes of vertical position of said body within said zone produced by changes of the total weight of the body;
(e) second means coupled between said indication means and said first means to obtain said feedback signal from said output signal and to supply said feedback signal to said first means, said feedback signal increasing said field intensity when said total weight increases and decreasing said field intensity when said total weight decreases to prevent said body from escaping from said zone, the magnetic field intensity being a monotonic function both of the total weight of the body as well as the weight of any material in the cavity.

3,351,147
HYDROSTATIC DRIVE FOR VEHICLES

William A. Williamson, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan

Filed Dec. 29, 1965, Ser. No. 517,254
10 Claims. (Cl. 180—6.3)

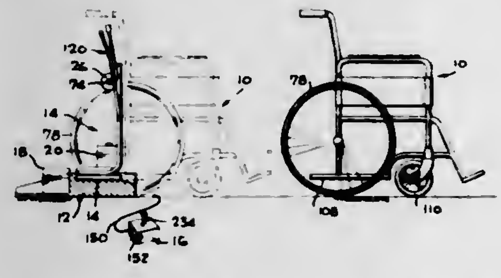


1. In a motor vehicle having at least one pair of laterally spaced dirigible drive wheels, a variable displacement hydraulic motor connected to each said wheel for driving said wheel, pump means connected hydraulically to said motors for driving the latter, conduit means connecting said pump means and motors in series flow relation, means interconnecting said wheels for coordinating dirigible movement of the latter, and motor compensating means connecting each of said motors to said wheel coordinating means for varying the displacement of said motors during turning operation of the vehicle such that differential speed is effected between the wheels as a function of the direction and angle of steer thereof.

3,351,148
SELF-OPERABLE DETACHABLE POWER UNIT ATTACHMENT FOR WHEEL CHAIRS AND POWER CONTROL UNIT THEREFOR

Shawn M. Solomon, Los Angeles County, Calif. (6640 Darby Ave., Reseda, Calif. 91335)

Filed Oct. 24, 1965, Ser. No. 504,316
24 Claims. (Cl. 180—6.5)

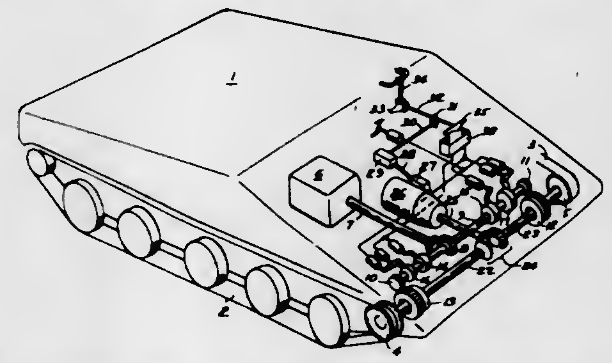


1. In the combination of a wheel chair and an electrical driving apparatus therefor, said wheel chair being of the type having a frame structure for supporting a person, a plurality of wheels at least two of which are disposed on opposite sides of the frame structure to constitute drive wheels, and a pair of tilting levers extending rearwardly from the frame structure and between the drive wheels, said electrical driving apparatus being of the type having a pair of reversible electric motors each having a drive means rotatable thereby and individually associated with the drive wheels, battery means for supplying current to the motors, control means connected between the motors and the battery means to selectively energize the motors to both drive and steer the wheel chair by the relative rotation of the drive means, and a frame means for supporting the motors and battery means on the rear of the wheel chair and between the drive wheels, apparatus for removably mounting and releasably connecting the frame means to the wheel chair comprising:
- a pair of horizontally spaced parallel support means secured to said frame means for receiving said tilting levers in telescoped engagement therewith; and
- a pair of connecting arm means individually connected to said frame means and adapted for releasably retained engagement with the frame structure of the wheel chair.

3,351,149
STEERING DEVICE FOR TRACK-LAYING VEHICLES

Lars Olof Lundin, Nils Olov Johansson, Claes Rune Svanström, and Per Olle Lennart Gustafsson, Karlskoga, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden

Filed Aug. 18, 1965, Ser. No. 480,661
Claims priority, application Sweden, Aug. 24, 1964, 10,171/64
10 Claims. (Cl. 180—6.7)

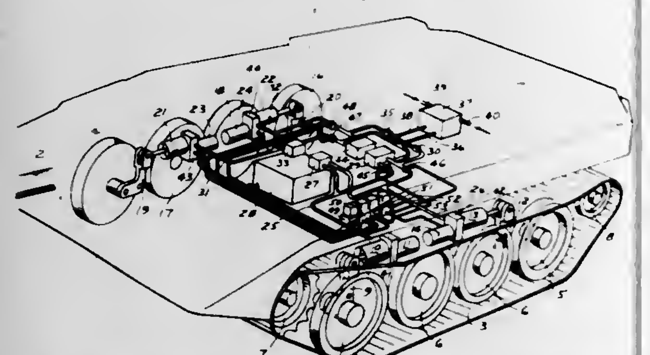


1. A steering device for a track-laying vehicle having two tracks, said device comprising:
- a main drive means drivingly coupled with both tracks of said vehicle for driving the tracks with a uniform main driving force;
- auxiliary drive means coacting with said main drive for superimposing to said main driving force an additive driving force at one track and a subtractive driving force at the other track to effect turning of the vehicle into a desired direction;
- main control means for each track, each of said main control means including a clutch means interposed between the respective track and said main drive means and a brake means interposed between the respective clutch means and said main drive means;
- auxiliary control means coacting with said auxiliary drive means for controlling the same; and
- common control means for controlling said auxiliary control means and said main control means, said common control means being settable into a selected one of several control positions and controlling the respective main control means in one selected control position and said auxiliary control means in another selected control position, said common control means including a control member movable into two directions, movement of said control member into either direction first placing said member into a first position controlling the auxiliary control means and then into a second position controlling one of said main control means, said control member including a two-armed control lever pivotal about a stationary pivot axis and biased toward a predetermined neutral position of the common control means, each of said main control means including a displaceable control element, each of said control elements controlling the respective clutch means during a first distance of displacement of the control element and the respective brake means during a second distance of displacement, said control elements being mounted in operational positions in reference to said

lever such that upon pivoting the lever in either direction of tilt through a first angle one arm thereof engages one of said control elements, upon pivoting the lever through a second angle displaces the engaged control element through said first distance and upon pivoting the lever through a third angle displaces the engaged control element through said second distance for the purposes aforesaid, and said auxiliary control means being operatively coupled with said lever for activating said control means during pivoting of the lever through said first angle in either direction of tilt.

3,351,150
YIELDABLE SUSPENSION DEVICE FOR A TRACK LAYING VEHICLE

Sten August Henström, Bofors, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden
Filed Oct. 18, 1965, Ser. No. 497,119
Claims priority, application Sweden, Dec. 4, 1964, 14,654/64
6 Claims. (Cl. 180—9.2)

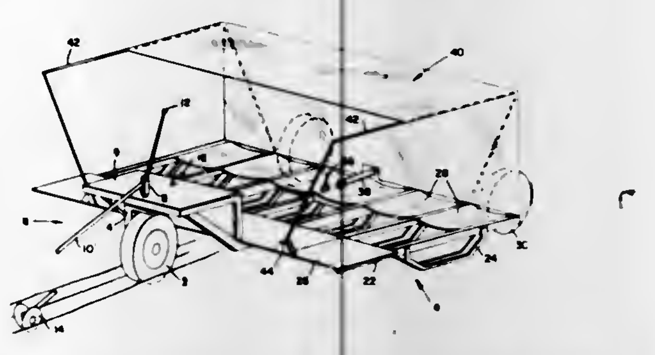


1. A yieldable suspension device for a track supporting wheel mounted on the chassis of a track laying vehicle, said device comprising in combination: a wheel; movable mounting means supporting said wheel variably positionable in reference to said chassis; a hydraulically operable control means (**10**) coupled to said mounting means to control the same for positioning said wheel and controllable by the pressure of fluid therein; pressure fluid storage means (**11**) for damping the action of said control means; a damping valve means (**41**) interconnecting said control means and said storage means, opening and closing of said damping valve means controlling the fluid pressure in said control means; a first conduit (**58**) connected to said damping valve means for feeding pressure fluid to said damping valve means to control the position thereof thereby correspondingly varying the fluid pressure in the control means; a second conduit (**25**) connected to said damping valve means for discharging pressure fluid therefrom; cooling means (**70**) interconnecting said first and second conduits for cooling pressure fluid prior to feeding the same to the damping valve means through said first conduit; control valve means (**51**) included in said first conduit for controlling the fluid flow therethrough; and actuating means (**80, 78, 79**) for selectively operating said control valve means.

3,351,151
HARVESTING VEHICLE FOR SUPPORTING WORKERS

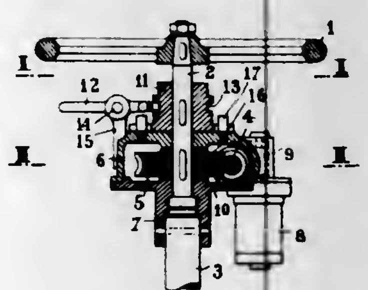
Clinton F. Miller, Jr., and Robert W. Johnson, Watsonville, Calif., assignors to Johnson Ranch, Watsonville, Calif., a partnership
Filed Oct. 18, 1965, Ser. No. 497,219
9 Claims. (Cl. 180—26)

1. A harvesting vehicle comprising: in combination, a main frame including a plurality of spaced-apart supporting members; at least one front wheel rotatably mounted on a first end of said main frame; a second frame pivotally connected to said main frame; rear wheels attached to said second frame; a double acting hydraulic ram connected to each of said frames to pivot the frames relative to each other to raise and lower the main frame with respect to the ground; means for imparting movement to said vehicle; seating means on said main frame between adjacent of said spaced-apart supporting members; and foot rests suspended from said supporting members.



3,351,152
STEERING GEARS FOR VEHICLES

René Turible, Nanterre, France, assignor to Societe des Engrenages Durand, Paris, France, a corporation
Filed Mar. 28, 1966, Ser. No. 537,760
Claims priority, application France, Mar. 31, 1965, 11,347
4 Claims. (Cl. 180—79.1)



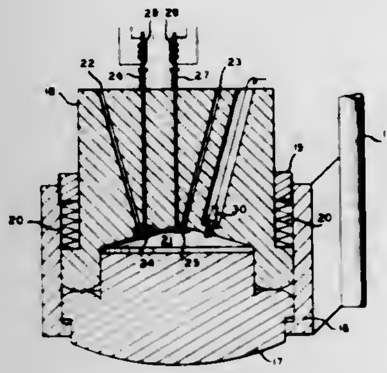
1. A steering gear for controlling the orientation of the wheels of a vehicle comprising, in combination, a steering column controlling the orientation of the wheels; a steering wheel; a rotary shaft rigid with said steering wheel but independent of said column; a non-reversible reducing gear comprising a worm, a worm wheel member meshing with said worm and a gear case member housing said worm and said wormwheel member, said worm rotatably mounted on said gear case member and one of said members being rigidly secured to said shaft rigid with said steering wheel and the other of said members being rigidly secured to said steering column; and a motor mounted on said gear case member and drivingly connected to said worm of said reducing gear.

3,351,153
SIGNAL GENERATOR

Ralph A. Doubt and Joe P. Lindsey, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,552
8 Claims. (Cl. 181—.5)

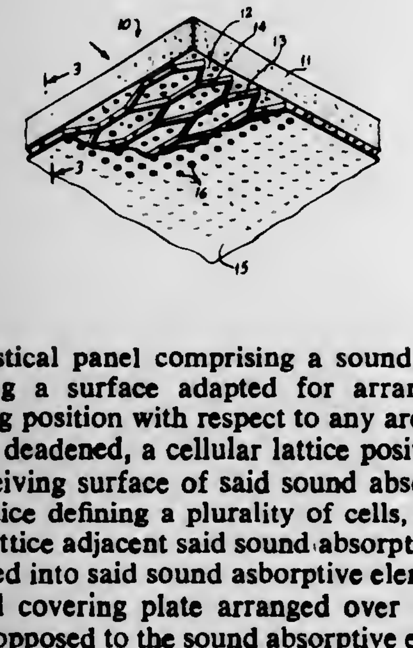
5. Signal generating apparatus comprising a housing having a lower inwardly extending lip; a first weight positioned within said housing, said first weight having an outwardly extending shoulder which is adapted to rest on said lip so that said first weight can be supported by said housing, the lower surface of said first weight extending below the bottom of said housing when said shoulder

rests on said lip; a second weight positioned within said housing so as to rest on said first weight; said first and second weights being of such configuration that a central chamber is formed therebetween; inlet passage means extending through said second weight to introduce an expansible material into said chamber; means to initiate expansion of said material within said chamber so that said second weight is moved away from said first weight; outlet passage means extending through said second weight to subsequently remove expanded material from said chamber; a retaining member secured to said housing to limit movement of said second weight away from said first weight; and a plurality of springs positioned between said second weight and said retaining member so that movement of said second weight away from said first weight compresses said springs, whereby gravity and the compressed springs subsequently move said second weight back into engagement with said first weight.



3,351,154
ACOUSTICAL PANEL WITH CELLULAR LATTICE EMBEDDED INTO SOUND ABSORPTIVE ELEMENT

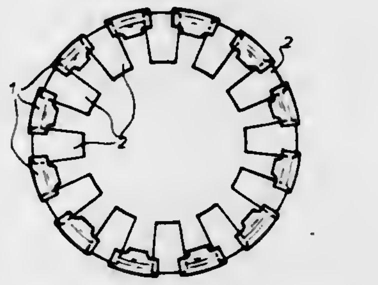
Michael J. Kodaras, Scarsdale, N.Y., assignor, by mesne assignments, to Baldwin-Ehret-Hill, Inc., Trenton, N.J., a corporation of Pennsylvania
Original application June 1, 1964, Ser. No. 371,310. Divided and this application Feb. 1, 1966, Ser. No. 524,069
4 Claims. (Cl. 181—33)



1. An acoustical panel comprising a sound absorptive element having a surface adapted for arrangement in sound receiving position with respect to any area in which sound is to be deadened, a cellular lattice positioned over the sound receiving surface of said sound absorptive element, said lattice defining a plurality of cells, an edge of said cellular lattice adjacent said sound absorptive element being embedded into said sound asborptive element, and a perforate rigid covering plate arranged over the surface of said lattice opposed to the sound absorptive element and secured to said lattice, the perforation of said covering plate permitting transmission of sound through said plate to the cells defined by said lattice.

3,351,155
ADJUSTABLE JET SILENCER NOZZLE WITH CONTROLLED FLAPS AND FOLLOWER FLAPS

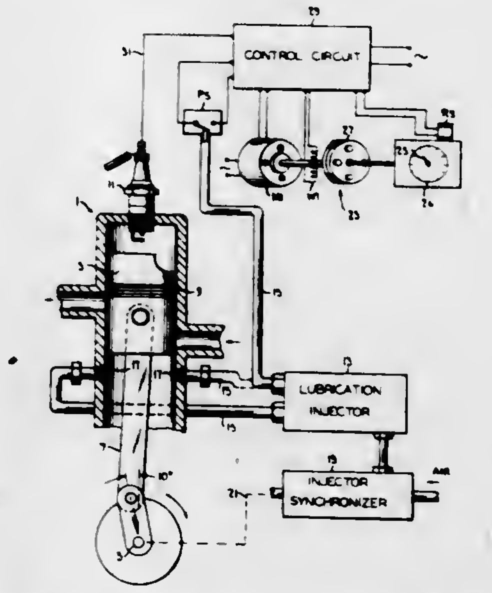
René Gérard Hoch, Dammarie-les-Lys, and Louis Francois Jumelle and Jean Marie Minos, Paris, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Oct. 20, 1965, Ser. No. 498,259
Claims priority, application France, Nov. 3, 1964, 993,637
4 Claims. (Cl. 181—51)



1. In an aircraft turbojet, the combination of a jet pipe with adjustable nozzle section appropriate for producing a jet stream, and having a jet pipe duct; a plurality of controlled flaps; a plurality of follower flaps equally spaced at an angle to the periphery of the duct and mounted to pivot on the nozzle edge of the duct about pivot axes tangential to said nozzle edge, each follower flap being arranged between two adjacent controlled flaps and being adapted to be maintained firmly against the inner surface of said two controlled flaps by the pressure of the jet stream; control means for the jet pipe adapted to pivot the controlled flaps together in dependence upon a regulating system operating as a function of parameters external to the nozzle section of the jet pipe; and silencer control means adapted to pivot the follower flaps together until they attain an active position in which each of said follower flaps is inclined towards the rear and towards the interior of the pipe at a fixed angle in relation to the duct, said fixed angle being sufficient for the follower flaps to penetrate the jet stream to provide a substantial silencer effect.

3,351,156
LUBRICATION APPARATUS

John F. Cook, St. Ann, and Jerome B. Wegmann, Florissant, Mo., assignors to McNeil Corporation, Akron, Ohio, a corporation of Ohio
Filed Oct. 21, 1965, Ser. No. 499,497
8 Claims. (Cl. 184—6)

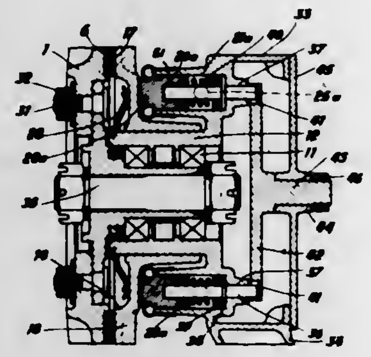


1. A system for timing the operation of lubricating apparatus for a piston and cylinder device, which ap-

paratus comprises an injector for periodically injecting lubricant into the cylinder through a port in the wall of the cylinder, to synchronize the injection of lubricant with the passage of the piston past said port, comprising a start-stop timer, means for starting the timer, and means for stopping the timer, one of said means being operable in response to delivery of lubricant by the injector, and the other of said means being operable in response to the piston reaching a predetermined point in its stroke.

3,351,157
BRAKE SYSTEMS FOR MOTOR VEHICLES

Emile Claveau, 11 Rue Christiani, Paris, Seine, France
Filed Dec. 23, 1965, Ser. No. 516,044
5 Claims. (Cl. 188—18)

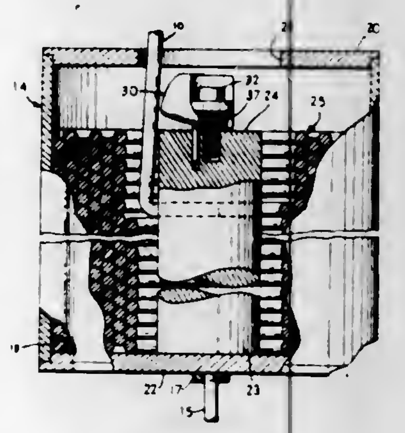


1. A wheel and brake assembly particularly for motor vehicles and of the type including a wheel having an inner and an outer face, a stationary supporting member rotatably supporting said wheel, a first annular friction surface on the inner face of said wheel, a pressure plate member non-rotatably but slidingly mounted on said stationary supporting member for movement towards and away from said inner face of said wheel, a second annular friction surface on said pressure plate member for frictional engagement with said first annular friction surface, spring means urging said pressure plate member away from said wheel, actuating means urging said pressure plate member towards said wheel against the force of said spring means for frictional engagement between said first and second friction surfaces, the improvement in said actuating means comprising,

(A) A plurality of cylinders carried by said supporting member, each cylinder having
  (1) a longitudinal axis substantially perpendicular to said plate member,
  (2) an open end facing said pressure plate member,
  (3) an opposite end axially spaced from said open end,
  (4) an axial open-ended bore contained in said opposite end and extending through said wheel supporting member,
(B) a plunger slidable in each of said cylinders and having
  (1) an outer bead portion protruding through said open end to abut against said pressure plate member,
  (2) a body portion disposed in said cylinder and provided with a blind bore extending in the direction of said longitudinal axis,
(C) a push rod slidable in said axial bore and having
  (1) one end nesting in said blind bore of said plunger and
  (2) an opposite end projecting through said axial bore,
(D) means for feeding pressure fluid to each of said cylinders,
(E) sealing means surrounding said push rod for preventing leakage of said pressure fluid through said axial bore, said plunger urging said pressure plate member towards said wheel into a braking position when a hydraulic pressure is applied to said cylinders through said means for feeding pressure fluid thereinto, and
(F) hand brake controlled mechanical means for applying a force through said push rod to said plunger for urging said pressure plate member towards said wheel into a braking position independently of said hydraulic pressure.

3,351,158
LOCKING DEVICE FOR FLEXIBLE MEMBER

Paul E. Kite, South Whitley, Ind., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 20, 1966, Ser. No. 558,777
5 Claims. (Cl. 188—65.4)

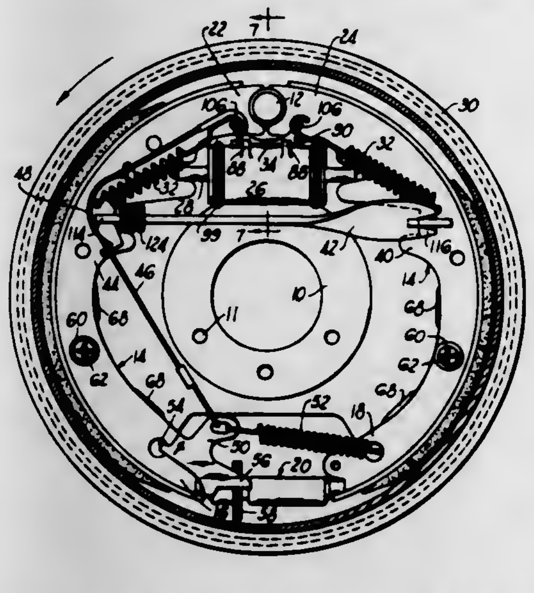


1. A device for stopping the withdrawal of a coiled flexible member from the interior thereof, comprising:
(a) a core mounted on said device and positioned within interior of said coiled flexible member;
(b) an elbow shaped stop arm;
(c) means pivotally fastening said stop arm to the end of said core past which said flexible member is withdrawn, said stop arm being dimensioned so that when in a first position said flexible member can be withdrawn without obstruction, and so that when in a second position said stop arm engages and causes said flexible member to be withdrawn along said core and wind itself about said core until its withdrawal is stopped by friction between said flexible member and said core; and
(d) means fastened to said stop arm for causing said stop arm to move from said first position to said second position.

3,351,159
BACKING PLATE, ANCHOR CONSTRUCTION

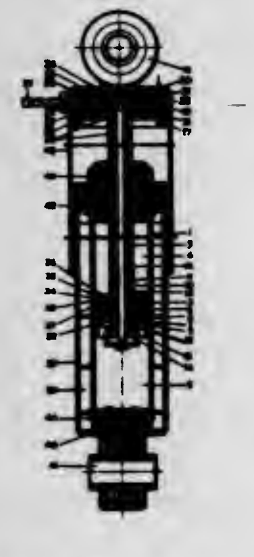
Richard T. Burnett, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Original application Nov. 8, 1961, Ser. No. 150,929, now Patent No. 3,232,391, dated Feb. 1, 1966. Divided and this application Oct. 22, 1965, Ser. No. 501,486
6 Claims. (Cl. 188—78)

1. A backing plate for a brake assembly including brake shoes arranged in end-to-end relationship, said backing plate having portions raised axially relative to its outer periphery and spaced therefrom for supporting brake shoes by their webs, the axial depth of the raised portions above the outer peripheral portion being greater than half the width of the said brake shoes, and an integral anchor projection intermediately located with respect to one of said raised portions so as to be between the ends of said brake shoes, said integral anchor projection extending axially substantially above all said raised portions.



3,351,160
REMOTELY CONTROLLED, ADJUSTABLE VALVE MEANS FOR SHOCK ABSORBERS

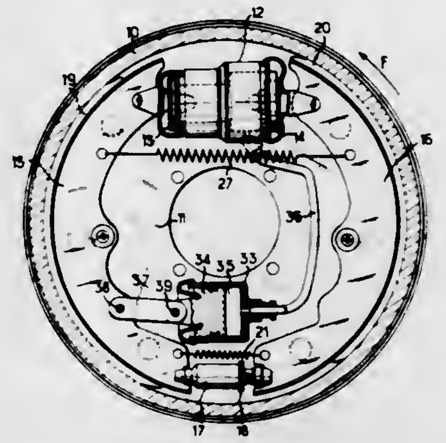
Arie Adrianus de Koning, Paradijs, and Kornelis Korstiaan Karel de Koning, Kwakseweg 1, both of Oud Beijerland, Netherlands
Filed Apr. 30, 1965, Ser. No. 452,079
Claims priority, application Netherlands, May 6, 1964, 64—5,036
4 Claims. (Cl. 188—88)



1. A telescopic shock damper compressing a cylinder and a piston mounted on a piston rod, dividing said cylinder into two portions and having provided first passage means in said piston interconnecting the two cylinder portions, said first passage means being sealed by a valve in the inoperative position of the shock damper, said piston rod being adapted to have second passage means interconnecting the two cylinder portions and capable of being at least partially opened or closed by a member movable along the piston rod, wherein said valve is formed by a rigid spring loaded disc, said member being designed as a spring disc for the valve spring and connected to a second piston disposed outside said piston rod, the position of said second piston being adjustable in response to pressure of a medium fed from outside the shock damper, wherein said piston rod is hollow and the connection between said member and said second piston is formed by a rod axially movable in the hollow of said piston rod, the attachment of the rod movable in the hollow piston rod to said member or to the second piston is adjustable, and the second piston, in the inoperative position, acts as an abutment so that the pretension of the valve spring is adjustable as circumstances require.

3,351,161
SELF-ENERGIZING BRAKE SYSTEM

Pierre André Georges Lepelletier, Chatou, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France, a corporation of France
Filed Dec. 20, 1965, Ser. No. 514,877
Claims priority, application France, Jan. 4, 1965, 727
5 Claims. (Cl. 188—152)



1. In a hydraulically operated drum brake comprising a rotating drum, a fixed plate, main cylinder means carried by the fixed plate and having at least two adjacent and oppositely directed pistons, a first shoe supported by one of its ends on a first of said pistons, a second shoe supported by one of its ends on a second of said pistons, a free strap by which the opposite ends of said shoes are interconnected, the shoes being positioned to bear against the drum under the urging of said first piston, an actuating hydraulic chamber that urges said first piston outwardly, and a hydraulic reaction chamber with which said second piston cooperates and that receives the pressure which results from the winding drive of the shoes due to rotation of the drum; the improvement comprising auxiliary cylinder means carried by said plate diametrically opposite said main cylinder means and having a third piston which is subjected to the pressure in the reaction chamber, said third piston acting against at least one of said shoes adjacent said free strap in a direction to impose a net force on said opposite ends of said shoes that has a substantial component in the same direction as the direction of outward movement of said first piston.

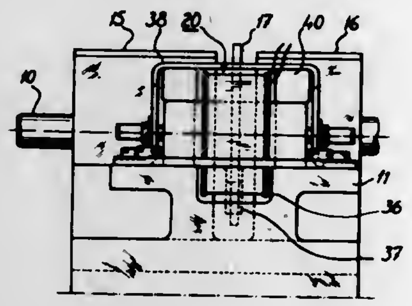
3,351,162
ELECTROMAGNETIC BRAKING MECHANISM

Michel Jacques Vadrot, Paris, France, assignor to Societe Industrielle Bull-General Electric (Societe Anonyme), Paris, France
Filed Feb. 14, 1966, Ser. No. 527,003
Claims priority, application France, Mar. 10, 1965, 8,614, Patent 1,436,002
8 Claims. (Cl. 188—164)

1. A braking mechanism for rapidly stopping a movable member which has a flat part made of a ferrous metal and with two parallel faces, comprising:
an electromagnet structure including an actuating coil and a two-element yoke, these two elements forming a flat and substantially closed ring and having each a solid pole piece, both of said pole pieces being displaceable toward each other on each side of the member to be stopped, at least one of the yoke elements being formed of stuck thin laminations and being engaged in said coil, both yoke elements being substantially similar and symmetrical, the extremities

of these elements being so shaped as to form an articulated junction lying inside said actuating coil,

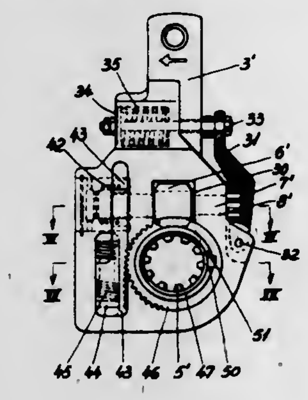
supporting and locating means adapted to locate said electromagnet structure so that the middle plane of said pole pieces is substantially perpendicular to the faces of said movable member and to receive the braking force from both of said pole pieces, and



urging means arranged for acting upon said pole pieces to maintain the latter in contact with the said member to be stopped.

3,351,163
AUTOMATIC SLACK ADJUSTER FOR VEHICLE BRAKES

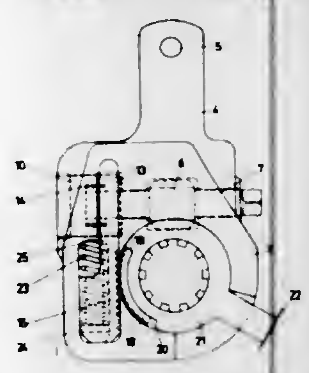
Nils Borje Lennart Sander, and Sten-Eric Svensson, Malmo, Sweden, assignors to Svenska Aktiebolaget Bromsregulator, Malmo, Sweden
Filed Feb. 16, 1965, Ser. No. 432,965
Claims priority, application Sweden, Feb. 27, 1964, 2,393/64
7 Claims. (Cl. 188—196)



7. An automatic slack adjuster for a vehicle brake system comprising a braking lever mounted for angular movement about an axis, said braking lever being connectable to brake operating means so as to be operable thereby for rotation about the said axis, a worm gear mounted in said lever for angular adjustment about said axis, said worm gear being connectable to brake actuating means in such a manner as to operate same, in response to rotation of said lever about said axis, a worm rotatably mounted in said lever, said worm meshing with said worm gear so as to be capable, when rotated, to adjust the angular position of said worm gear relative to said lever, and thereby to adjust the slack of the brake system, worm driving means movable forth and back in response to angular movement of said lever about said axis beyond a predetermined angular departure from the neutral position of said lever, and coupling means forming a coupling path between said worm driving means and said worm, said coupling means including one-way coupling means active only in the slack decreasing direction of rotation of said worm and means adapted to interrupt said coupling path in response to braking forces exceeding a predetermined value.

3,351,164
AUTOMATIC SLACK ADJUSTERS FOR VEHICLE BRAKES

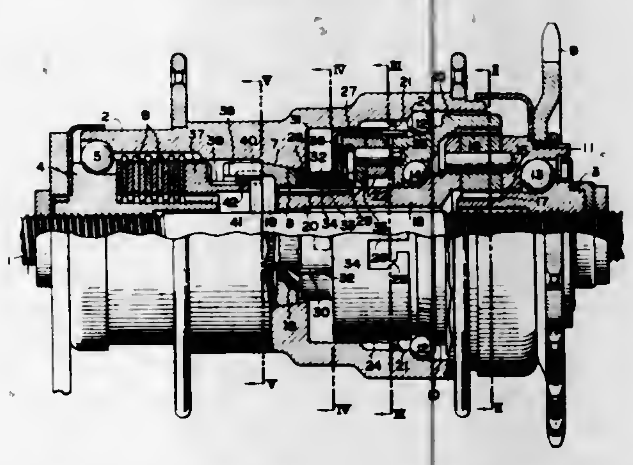
Sten-Eric Svensson, Docentgatan 5B, Malmo S, Sweden
Original application Feb. 16, 1965, Ser. No. 432,965. Divided and this application Mar. 14, 1967, Ser. No. 623,010
Claims priority, application Sweden, Feb. 27, 1964, 2,393/64
1 Claim. (Cl. 188—196)



An automatic slack adjuster for a vehicle brake system comprising a rotatably mounted braking lever constructed in the form of a housing, a braking shaft operable by said lever for rotation about the axis of rotation of said lever, said slack adjuster comprising a worm gear mounted in said housing to form an angularly adjustable connection between said braking lever and said braking shaft, a worm shaft mounted in said housing and carrying a worm engaging with said worm gear for the purpose of angularly adjusting same, a one-way coupling mounted in said lever co-axially with said worm shaft, said one-way coupling having two coupling parts one of which is rigidly connected with said worm shaft, a driving member mounted in said housing for rotation relative to said lever about the axis of rotation thereof, lost motion coupling means between said driving member and a stationary part of the vehicle, said lost motion coupling means extending into said housing, and transmission means in the form of a slidable member mounted in said housing and having rack teeth engaging with teeth of said driving member and the other one of said coupling parts.

3,351,165
BICYCLE HUB HAVING A BUILT-IN TWO-STAGE SPEED CHANGE MECHANISM

Keizo Shimano, Sakai, Japan, assignor to Shimano Kogyo Kabushiki Kaisha, Sakai, Japan, a corporation of Japan
Filed Aug. 17, 1965, Ser. No. 480,297
Claims priority, application Japan, Aug. 24, 1964, 39/48,257
1 Claim. (Cl. 192—6)

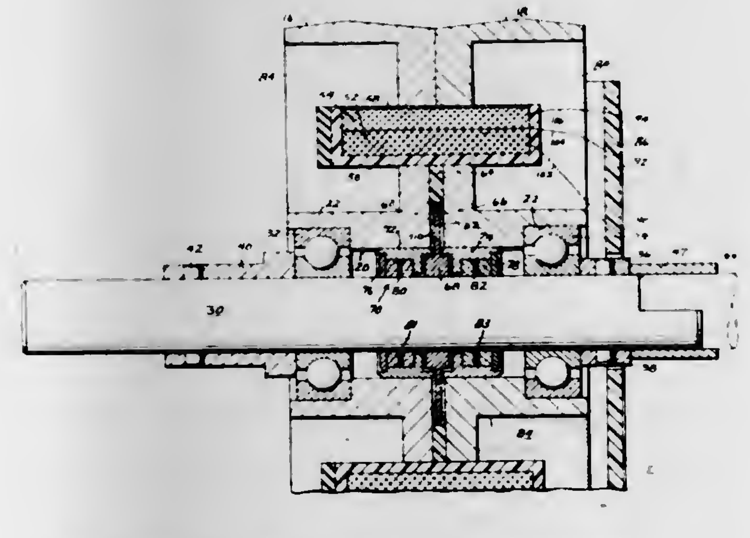


In a bicycle hub having a clutch actuated from a sprocket wheel through a power transmission mechanism by axial movement, a combination comprising a hub shell **2** having an internal tapered clutch face **8** and an internal ratchet wheel **21**, a stepped sleeve **10** supporting one

end of said hub shell **2** and having an internal gear **16**, a planetary pinion carrier sleeve **11** having a sprocket wheel **9** and a cylindrical extension **18** supporting said stepped sleeve **10** and said extension defining a clutch control sleeve, a fixed hub cone **3** having a sun gear **15**, a clutch cone **7** adapted to engage with said tapered clutch face **8**, a plurality of change-over pawls **22** pivotally mounted in said stepped sleeve **10** operable to engage with said internal ratchet wheel **21** on the hub shell **2**, a change-over shifter cage **27** mounted on said clutch cone sleeve **7** and having a plurality of first axial recesses **26** and a plurality of second axial recesses **24**, said first recesses being of greater circumferential width than said second recesses and said first and second recesses being alternately arranged circumferentially at intervals, each of said first recesses receiving a respective one of said change-over pawls allowing the latter to engage with the internal ratchet wheel **21** and each of said second recesses being operable to prevent the engagement of the change-over pawls with said internal ratchet wheel, said shifter cage **27** having a cylindrical neck portion **28** mounted on a circumferentially saw toothed extension **29** of the clutch cone sleeve **7** through an annular band **34** having a stop pawl **33** engaging with the saw teeth of said saw toothed extension **29** for preventing relative rotation of the shifter cage **27** in the reverse direction, a plurality of brake discs **6** which are actuable by axial movement of the clutch sleeve **7** through an actuator **37**, the actuator **37** having a saw toothed boss **39** upon which the clutch sleeve **7** is mounted with an annular band **42** having a stop pawl **41** inserted therebetween, the pawl **41** being in engagement with the saw toothed boss **39**.

3,351,166
HIGH SPEED INSTRUMENT CLUTCH

John T. Potter, Plainview, and Gerald D. Cohen, Massapequa, N.Y., assignors to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Feb. 9, 1965, Ser. No. 431,256
4 Claims. (Cl. 192—21.5)



1. A high speed instrument clutch comprising:

a housing having a central bore therethrough and a washer-shaped rotor chamber therein communicating with the central bore,

a shaft extending through said central bore in spaced relation to the portion of the wall thereof adjacent to said rotor chamber,

bearing means for rotatably journaling said housing on said shaft,

a disk-shaped rotor fixed to said shaft with the outer portion thereof extending within said chamber,

a pair of concentric coils mounted within said housing in position to encircle the outer periphery of said rotor,

means mounted on said housing and electrically connected to said coils in a manner to enable one of said coils to be energized independently of the other,

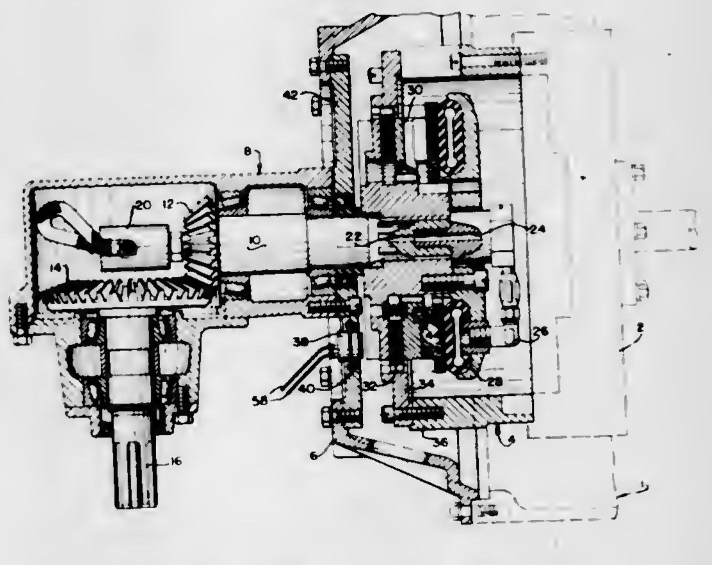
seal means mounted within said bore for preventing magnetic particles escaping from said rotor chamber including a seal housing fixed within said bore on each side of said rotor,

the inner ends of said seal housings cooperating with said rotor to provide a double labyrinth path on each side of the rotor, and

sealing material within each of said seal housings slidably sealing against said shaft outwardly of said labyrinth paths.

3,351,167
THERMOSTAT SAFETY CONTROL FOR AIR ACTUATED CLUTCHES

Jack W. Moss, Wichita Falls, Tex., assignor to Wichita Clutch Company, Wichita Falls, Tex., a corporation of Texas
Filed Aug. 9, 1965, Ser. No. 478,146
5 Claims. (Cl. 192—56)



1. In combination with a clutch housing;

a fluid actuated clutch, having friction members therein, within said clutch housing,

a conduit leading from a source of fluid pressure supply to said fluid actuated clutch,

a solenoid actuated valve within said conduit,

a solenoid associated with said valve,

a thermostat switch associated with said housing of said clutch in heat transfer relation,

an electric circuit associated with said thermostat switch, said solenoid actuated valve, and with a source of electricity,

said thermostat switch being responsive to the heat generated by the friction members of said clutch so as to effect said solenoid valve to render said clutch inoperative, when the temperature, which actuates said thermostat switch, reaches a predetermined degree.

3,351,168
AUTOMATIC FLUID TRANSMISSION

Walter H. Thorpe, 9403 Somerset Ave., Detroit, Mich. 48230
Filed Apr. 13, 1965, Ser. No. 447,750
4 Claims. (Cl. 192—61)

1. A drive transmission device for automatically gradually transferring drive from a driving member to a driven member comprising:

a sun gear;

planet gears meshing with said sun gear;

a planet carrier rotatably supporting and positioning said planet gears;

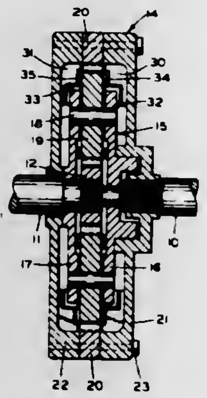
a ring gear surrounding and meshing with said planet gears;

a housing on said ring gear enclosing said ring gear and planet gears;

said planet carrier and planet gears being freely rotatably supported relative to said sun gear and ring gear with said planet gears dissipating drive reaction by free rotation between a driven member and a rotating driving member;

said housing being adapted to contain fluid for resisting the free rotation of said planet gears relative to said ring gear and said sun gear to develop drive reaction by resisting rotation of said planet gears;

said device being connectable in a drive with a shaft connected to said sun gear, and a shaft connected to said housing and ring gear with one said shaft being connectable to a driving member and the other said shaft being connectable to a driven member;



the fluid in said housing lying in the teeth of said ring gear and planet gears providing resistance to the rotation of the planet gears thereby providing the drive reaction necessary to turn the driven shaft with the required torque;

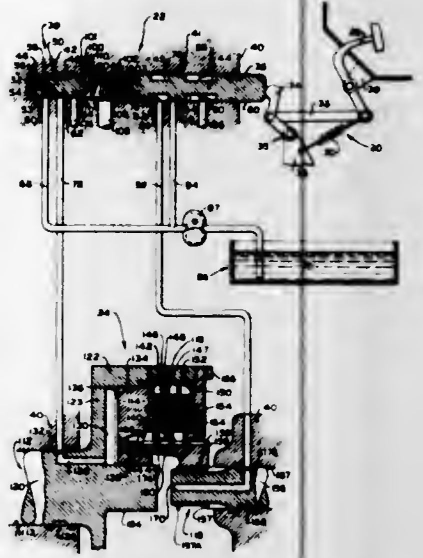
said device transmitting drive between said sun gear and said ring gear in either direction through said planet gears by the fluid resisting free rotation of said planet gears causing said planet gears to act as drive keys between said sun gear and said ring gear, initially to permit relative rotation between driving and driven members, subsequently to gradually and increasingly develop application of drive, and finally to prevent planet gear spinning resulting in direct drive, and

vanes on the interior of said housing extending to a point adjacent to said planet carrier and said planet gears to increase fluid reaction between said housing, planet gears, and sun gear to increase fluid impedance to relative rotation therebetween thereby augmenting transfer of drive between said driving and driven members by tending to prevent relative rotation of the planetary set.

3,351,169
CONTROL SYSTEM FOR HYDRAULICALLY ACTUATED FRICTION CLUTCHES

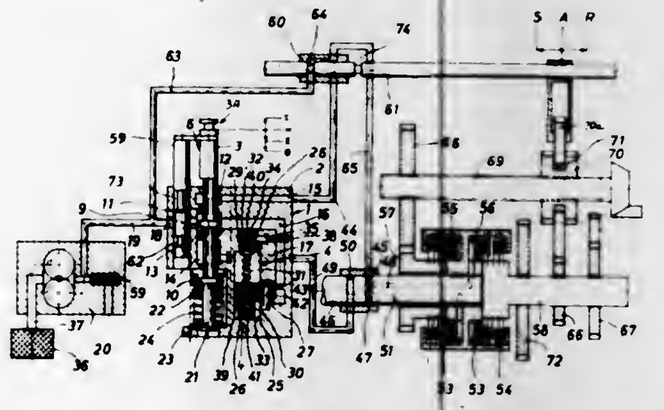
Ronald M. McIndoe, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed Apr. 12, 1965, Ser. No. 447,389
18 Claims. (Cl. 192—85)

1. A clutching system comprising in combination a driving shaft, a driven shaft, a hydraulically operated clutch for coupling said shafts in a driving relationship, source means of pressurized fluid, a first conducting means connecting said source means to said clutch for supplying engaging fluid thereto and including a first valve means, a second conducting means connecting said source means to said clutch for supplying cooling fluid thereto and including a second valve means, said first valve means being a manually variable pressure and flow regulator and operative to control the flow and pressure of the fluid passing through said first conducting means to said clutch, and said second valve means being an on/off valve and operatively connected to said first valve means by operating means for concomitant movement with said first valve means, said second valve means being moved by said operating means to position said second valve means, to allow fluid to flow in said second conducting means when fluid is flowing in said first conducting means and being moved by said operating means to a position to terminate the flow of fluid in said second conducting means when fluid ceases to flow through said first valve means in said first conducting means to said clutch.



3,351,170
APPARATUS FOR REGULATING THE OPERATION OF HYDRAULIC CLUTCHES

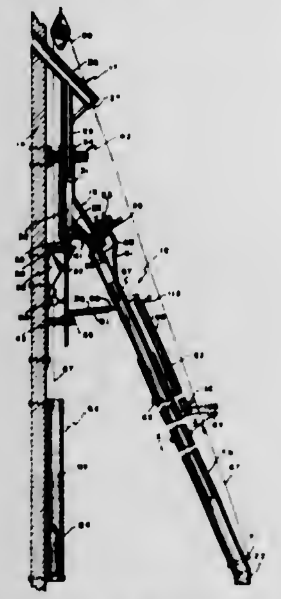
Erwin Hengstler, Waldstrasse 2, Schenkenzell, Black Forest, Germany
Filed Sept. 9, 1965, Ser. No. 485,983
Claims priority, application Germany, Sept. 11, 1964, H 53,757
12 Claims. (Cl. 192—87.15)



2. In a hydraulic regulating apparatus, in combination, a source of hydraulic fluid; a plurality of hydraulic clutches having driven elements and driving elements operative to transmit torque to driven elements in response to fluid pressure; conduit means connecting said source with said clutches; a control unit installed in said conduit means and comprising a housing provided with a bore, pressure regulating valve means in said housing for increasing the pressure which is admitted to said clutches so that such pressure rises gradually from a minimum to a maximum value within a predetermined interval of time, a second valve means in said housing for regulating the flow of fluid to said pressure regulating valve means and said clutches and comprising a valve member movable in said bore between a plurality of positions including a neutral position in which pressure fluid entering said housing from said source is free to escape from said housing without undergoing compression by said pressure regulating valve means; bypass conduit means connecting said source with said clutches; and adjustable distributor means in said bypass conduit means for regulating the flow of fluid to said clutches via said bypass conduit means.

3,351,171
ELEVATOR UNLOADING SPOUT

Benjamin H. Goodwin, 5130 N. Broadway, Wichita, Kans. 67219
Filed Aug. 1, 1966, Ser. No. 569,272
8 Claims. (Cl. 193—16)

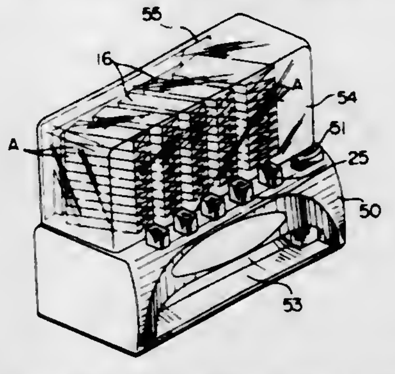


1. A spout apparatus adapted for unloading material from a reservoir and the like comprising:
- (a) discharge means secured to the reservoir and extended transversely thereof operable to convey the material therefrom,
- (b) directing means rotatably connected to said discharge means including an upright conduit having an exit section extended laterally therefrom,
- (c) spout means connected to said directing means being adapted to convey the material therethrough,
- (d) said upright conduit including a lower sump portion having a bleed conduit connected to said exit section adapted to convey material thereto,
- (e) power means connected to said directing means and said spout means operable to elevate, rotate, and horizontally position said discharge portion for directing material from the reservoir to a desired location.

3,351,172
COIN CONTROLLED MERCHANDISE EJECTING APPARATUS WITH RECIPROCATING MERCHANDISE EJECTING RACKS

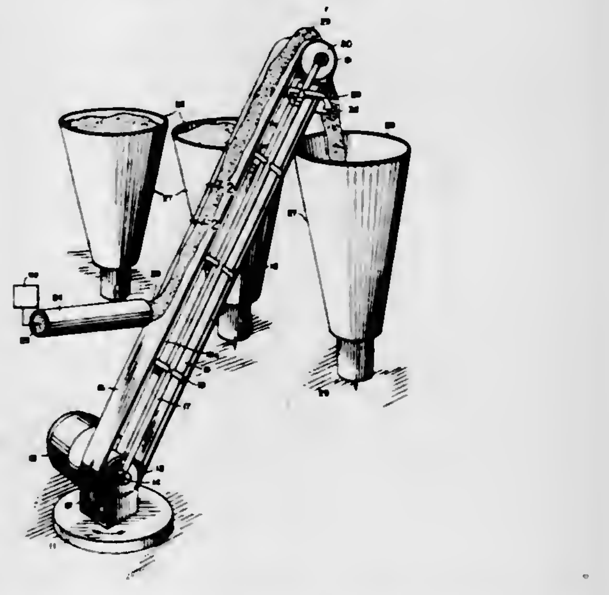
Yoshihiro Hatanaka and Yoshio Kinoshita, Himeji-shi, Japan, assignors to Kokuei Machinery Mfg. Co., Ltd., Himeji-shi, Japan
Filed Feb. 14, 1966, Ser. No. 527,004
Claims priority, application Japan, Feb. 26, 1965, 40/11,130; July 15, 1965, 40/42,934; July 29, 1965, 40/62,438
5 Claims. (Cl. 194—71)

1. A merchandise ejecting apparatus for a vending machine, said apparatus comprising a frame plate having a plurality of elongated holes therein for the downward passage of articles, a plurality of merchandise storing racks disposed above said frame plate and spaced therefrom, each of said merchandise storing racks being fixedly disposed in an angular position with respect to the elongated axis of said plurality of holes and such that centers of said racks fall substantially on a vertical axis through the respective holes, a plurality of merchandise ejecting racks interposed between said frame plate and said merchandise storing rack and having a size no larger than and a shape substantially the same as said holes and a peripheral shape and depth not exceeding to the shape and depth of the merchandise, each of said merchandise ejecting racks being pivotally mounted so as to be oscillatable about the axis of each said holes from an original and empty position in alignment with said holes to a receiving position in alignment with said merchandise storing racks, and thus being adapted to receive one of the articles merchandise stacked in the merchandise storing rack and return to the original position in alignment with the hole to discharge said received article of merchandise from said ejecting rack through said hole after the completion of a reciprocating cycle, a plurality of actuating means secured to said frame and adapted to oscillate the respective merchandise ejecting racks selectively from the original position to the receiving position and a housing having a case with a coin storage box therein and a cover, said housing having a single locking means for locking the cover to the housing and locking the coin storage box in the housing.



3,351,173
MEAT EMULSION TRANSPORTATION METHOD AND APPARATUS

Richard P. Nelson, Kansas City, Mo., and Everett Edwards, Chicago, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,487
2 Claims. (Cl. 198—1)

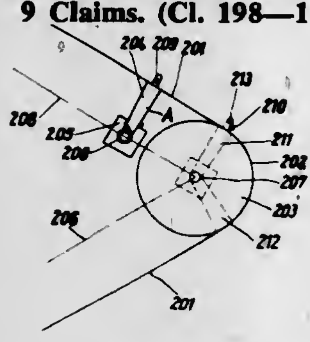


1. An apparatus for transporting a meat emulsion including a pipe, means to move said emulsion through said pipe, a downstream terminal opening in said pipe for extruding said mass, a conveyor means, a stainless steel apron forming a part of and movable about said conveyor means upon which said emulsion is extruded, a scraper

mounted on said conveyor to remove said extruded meat, and a base connected to said conveyor by pivotal means, said base being rotatable in a horizontal plane and said pivotal means being rotatable in a vertical plane.

3,351,174
CONVEYOR FOR TRANSPORTING WORKPIECES

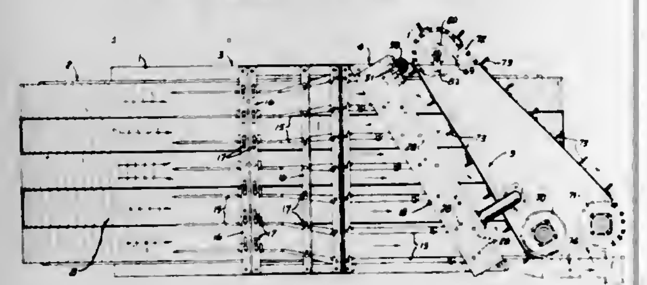
Fritz Wommelsdorf and Werner Schmidt, Hamburg, Germany, assignors to Maschinenfabrik Rissen G.m.b.H., Hamburg-Rissen, Germany
Filed Aug. 15, 1966, Ser. No. 572,476
9 Claims. (Cl. 198—19)



1. A conveyor for transporting workpieces subjected to operational steps during mass-production, comprising a chain continuously traveling along a path including at least one circular arc having a radius of predetermined length and a central axis positioned laterally of said path at one side thereof, at least one arm mounted at one of its ends on said chain and projecting laterally therefrom at said one side of the path, a workpiece holder turnable on said arm about a pivotal axis spaced from said path of the chain by a distance equal to the length of said radius of the circular arc so that said central and pivotal axes will coincide during travel of said one end of the arm connected to said chain along said circular arc, and control means for regulating movement of said workpiece holder about said pivotal axis in the region of said circular arc to facilitate performance of said operational steps, said control means including stop means for releasable engagement with said workpiece holder to prevent said holder temporarily from rotating about said pivotal axis while permitting rotation of said arm about said pivotal axis from an initial relative position of said arm and holder to a modified relative position.

3,351,175
CONTAINER ORIENTATION MECHANISM

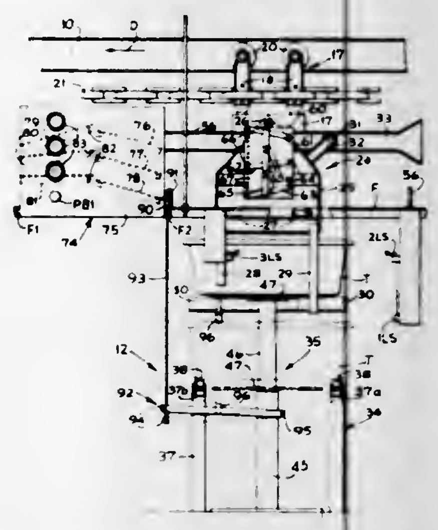
Warren E. Erickson, 200 E. 7th St., Muscatine, Iowa 52761, and Robert T. Meinen, 1127 S. 6th St., Pekin, Ill. 61554
Filed Oct. 22, 1965, Ser. No. 501,311
16 Claims. (Cl. 198—30)



1. A machine for handling containers comprising:
(a) a longitudinal conveyor,
(b) conveyor drive means for moving containers through the machine,
(c) channel means disposed above said conveyor for receiving a plurality of randomly positioned containers and for orienting them into a plurality of side-by-side rows,
(d) a separate gate disposed at the end of each channel and horizontally movable between open and closed positions above said conveyor and with the gates extending transversely at an acute angle to the conveyor,
(e) gate actuating means connected to and synchronous with said conveyor drive means and constructed to successively open and close said gates simultaneously so that batches of side-by-side containers are released successively for continued travel on said conveyor,
(f) a container discharge device disposed in the path of movement of said containers above said conveyor and extending at an acute angle to said conveyor and generally parallel to said gates for receiving containers therefrom and reorienting them into a single row of spaced side-by-side containers for discharge from the machine.
(g) and containers discharge device drive means connected to and synchronous with said conveyor drive means and said gate actuating means.

3,351,176
INTERMITTENTLY OPERABLE CODING MECHANISM FOR CONVEYOR SYSTEM

Mathew G. Boissevain, Los Altos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Dec. 21, 1966, Ser. No. 603,570
5 Claims. (Cl. 198—38)



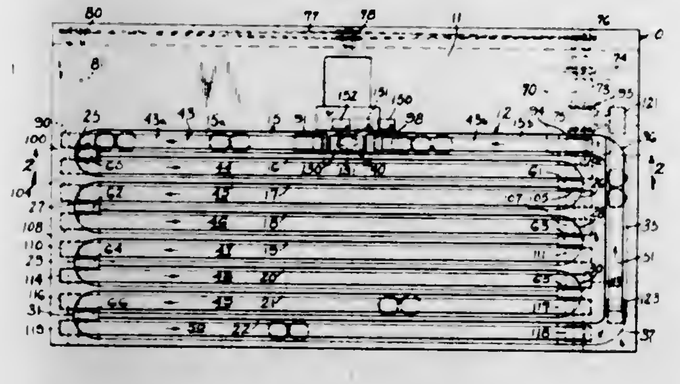
1. In a conveyor system, the combination comprising:
(a) a plurality of carriers movable along a path,
(b) a loading station adjacent said path having a loader and having a coding mechanism operable to code the carriers for a particular destination, and
(c) means operable in response to operation of the loader to control the operability of the coding mechanism.

3,351,177
SAMPLE CONVEYOR

Robert J. Mulligan, Westport, Conn., assignor to Ans, Inc., Wallingford, Conn., a corporation of Connecticut
Filed Apr. 12, 1965, Ser. No. 447,456
3 Claims. (Cl. 198—40)

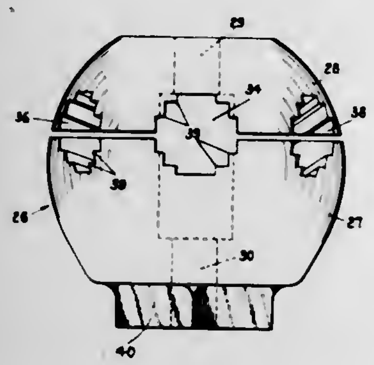
1. In combination, a housing, an elevator means supported by said housing for carrying an item from a first raised position into the interior of said housing, a guide means for conveying items to and from said elevator in its raised position, a plurality of item holders positioned in said guide means, a plurality of samples positioned in at least some of said holders, at least one dummy positioned in at least one of said holders, a first sensor means positioned adjacent said elevator and said guide

means and only responsive to the passage of said holders, a second sensor means positioned adjacent said elevator and said guide means and only responsive to the passage of said samples, a third sensor means positioned adjacent said elevator and said guide means and only responsive to the passage of said dummy, means for causing said elevator to position a sample in the interior of said housing in response to a signal from said second sensor, a counter means coupled to said first and third sensors, said first sensor providing a signal to cause said counter to determine the number of holders that have been sensed by said first sensor, and said third sensor providing a signal to cause said counter to be reset upon the sensing of a dummy by said third sensor.



3,351,178
ADJUSTABLE CONVEYOR IDLER

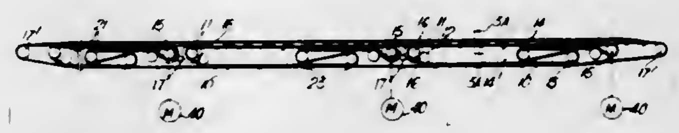
Guthrie B. Stone, Honeoye, and Ralph A. Folts, Dansville, N.Y., assignors to Stone Conveyor Company, Inc., Honeoye, N.Y., a corporation of New York
Filed Dec. 19, 1966, Ser. No. 602,904
8 Claims. (Cl. 198—192)



1. A belt support idler assembly for endless belt conveyors comprising
(a) opposed shaft members,
(b) belt supporting rollers rotatably assembled on said shaft members,
(c) an idler assembly support having a shaft positioning member assembled thereto,
(d) said shaft positioning member including at least two pairs of opposed openings therein for receiving and supporting said shaft members, the openings of one of said pairs being directed to support said shafts in an angular relationship different from that of the other of said pairs, one of said pair of openings is in a vertical plane which intersects another vertical plane in which the other pair of openings is located, and mounting means to permit selective rotation of the positioning member whereby shaft positions can be changed to effect flat and varied troughing configurations of the belt supported by said rollers.

3,351,179
CONVEYORS

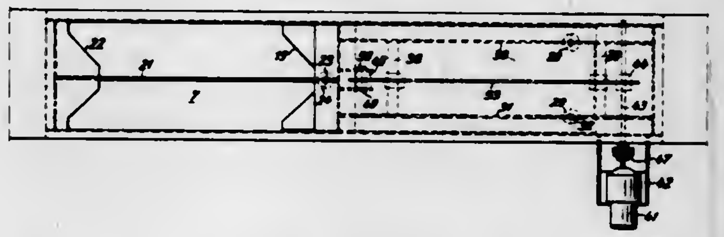
Charles Thomson, Esher, England, assignor to Solar Thomson Engineering Company Limited, Camberley, Surrey, England, a British company
Filed Sept. 28, 1966, Ser. No. 582,591
Claims priority, application Great Britain, Oct. 1, 1965, 41,884/65
21 Claims. (Cl. 198—203)



1. A conveyor system comprising at least one driving belt, an endless conveyor belt extending over and being driven by said driving belt, and means to drive said driving belt, the inner surface of said conveyor belt being provided with a longitudinal rib formation extending along the central longitudinal portion thereof and having a width substantially less than the width of the driving belt thereby reducing the variation in width of the rib formation on the conveyor belt in response to elongation of said belt, the outer surface of said driving belt being provided with a longitudinal rib formation extending over substantially the entire width thereof, one portion of the rib formation of said driving belt meshing in frictional engagement with the rib formation of said endless belt, and another portion of the rib formation of said driving belt frictionally engaging at least a portion of the unribbed portion of the inner surface of said conveyor belt.

3,351,180
CONVEYOR TROUGH GATE

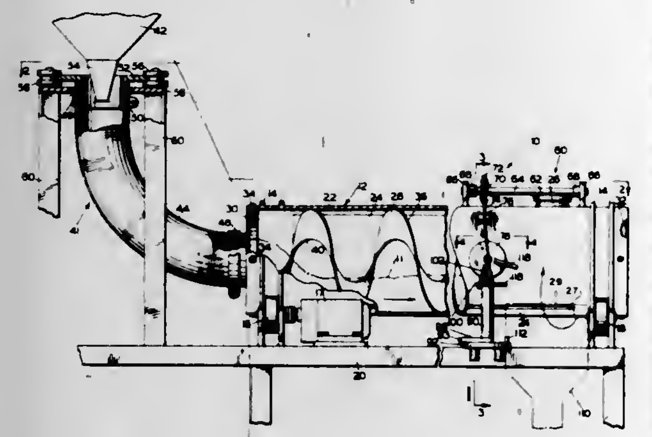
René Herzog, Niederuzwil, and Walter Landolf, Saint Gall, Switzerland, assignors to Gebruder Buhler, Uzwil, Switzerland
Continuation of application Ser. No. 453,976, May 7, 1965. This application June 28, 1966, Ser. No. 561,296
Claims priority, application Switzerland, May 13, 1964, 6,214/64
16 Claims. (Cl. 198—205)



1. A trough-type chain conveyor for bulk material comprising, in combination, a trough having a bottom wall formed with a discharge port therethrough; a chain conveyor having a run extending longitudinally of said bottom wall for moving bulk material to said discharge port; a sliding gate extending along the trough and arranged to close said port, and having a position beneath said bottom wall when said port is open; first track means extending longitudinally of the direction of gate movement adjacent said port beneath said trough; second track means extending longitudinally away from an end of said port beneath said trough; guiding means supporting said gate on said track means for movement between port opening and port closing positions; driving means operatively assouiated with said gate for such movement of the latter; and means operative between said track means and said gate lifting said gate into coplanar relation with said bottom wall as said gate is moved to the port closing position.

3,351,181
CONVEYORS OF GRANULAR MATERIAL

Kenneth M. Allen and Chester H. Harper, both of P.O. Box 352, Newberg, Oreg. 97132
Filed Dec. 23, 1965, Ser. No. 515,954
8 Claims. (Cl. 198—215)



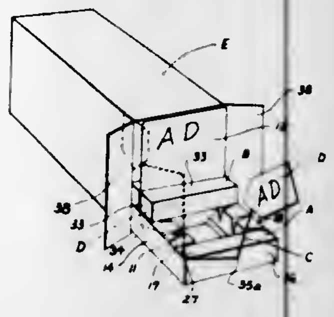
1. In a conveyor of granular material,
a plurality of cylinders,
mounting means mounting the cylinders in tandem and in non-vertical positions in which the cylinders are spaced longitudinally from each other and angularly relative to each other,
a plurality of helical ribbons in the cylinders and held against rotation relative to the cylinders,
flexible conduit means connecting the adjacent ends of the cylinders,
drive means for rotating the cylinders on the longitudinal axes in a direction in which the ribbons push granular material in the cylinders along the cylinders and through the flexible conduit means,
supply means for supplying granular material to an end one of the cylinders, and
a plurality of mechanisms carried by the cylinders for discharging granular material laterally from the cylinders.

5. The conveyor of claim 4 wherein the tripping means includes a forked member having a first arm and a second arm,
and the pivotal means includes a crank disc pivotal on the cylindrical means and driving the coupling means, a first radial plate thereon adapted to engage the first arm when the tripping means is in the first position and turn the crank disc to a position closing the door, and a second radial arm adapted to engage the second arm and turn the crank disc to a position permitting the door to open.

3,351,182
DISPLAY PACKAGE

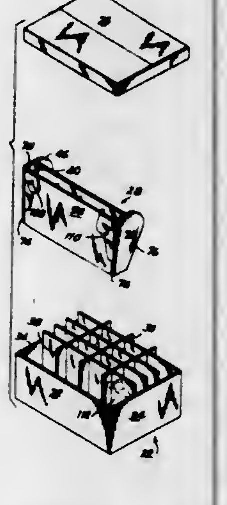
Tommy D. Greer, Mouldin, and Leonard D. Dunlap, Greenville, S.C., assignors to Texize Chemicals Inc., Greenville, S.C., a corporation of Delaware
Filed Sept. 10, 1965, Ser. No. 486,469
3 Claims. (Cl. 206—44)

1. A package for shipping including: a merchandise display assembly; merchandise carried on said display assembly in an upright position; a shipping carton closely receiving said merchandise display assembly with same merchandise carried thereon; a resiliently biased support member having one end attached to said merchandise display assembly extending outwardly from said display assembly; a sign having indicia thereon carried by the other end of said resiliently biased support member; said resiliently biased support member being normally urged into an extended position wherein the sign is remote from the merchandise display assembly for attracting attention to merchandise carried on said merchandise display assembly; and said support member and the sign carried thereby being received within said outer container closely adjacent said merchandise carried on said display assembly, whereby when the merchandise display assembly is removed from the outer container, the sign carrying an advertising medium and the like will pop-out automatically assuming its normally extended position.



3,351,183
COMBINATION SHIPPING AND DISPLAY CARTON

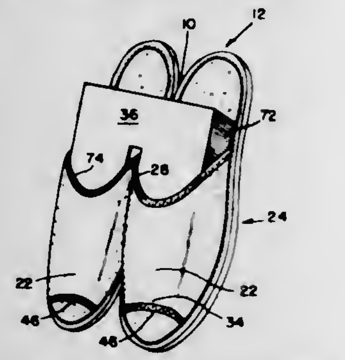
Alfred R. Sammarco, Yonkers, N.Y., assignor to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 511,576
20 Claims. (Cl. 206—44)



1. For use in the shipping of articles some of which are to be placed on display when the articles arrive at their destination, a shipping carton having a bottom wall and a plurality of side walls extending upwardly therefrom, partition means in said carton dividing the interior thereof into a plurality of compartments respectively adapted to receive articles, said partition means terminating short of one of said side walls and having at its end nearest to said one side wall a row of compartments which respectively have open ends directed toward said one side wall, said partition means extending substantially all the way across said carton between a pair of opposed side walls thereof which extend from said one side wall, so that said partition means defines in the interior of said carton a given space with said one side wall thereof, and display means situated in said space and supporting at least some of the articles in said space during shipment of the articles in said carton, said display means closing said open ends of said row of compartments of said partition means, and said display means together with the articles supported thereby being removable from said space in said carton for placing the articles supported by said display means on display when the carton arrives at its destination.

3,351,184
SLIPPER DISPLAY PACKAGE

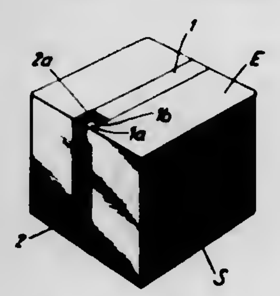
Sam Spinks, Dallas, and Frank C. Owenby, Marietta, Ga., assignors to Legion Manufacturing Co., Dallas, Ga., a partnership
Filed Aug. 11, 1965, Ser. No. 478,809
14 Claims. (Cl. 206—46)



1. In combination, a pair of shoes and an insert therefor for displaying said shoes in side by side relationship comprising: a single piece of stiff, sheet material having a pair of laterally spaced substantially symmetrical shoe-engaging panels, said material piece having a longitudinal diverging slot partially isolating said panels; each of said shoes having a front foot-engaging portion and being cooperatively received by one of said shoe-engaging panels with the front portion of each of said shoes slidably extending within said slot to stretch said shoe and assist in retaining said shoe in a stretched position for display.

3,351,185
PACKAGE TAPING

Hans Heinrich Blumer, Leutschenbachstrasse 43, Zurich-Oerlikon, Switzerland
Filed July 27, 1965, Ser. No. 475,099
Claims priority, application Switzerland, July 31, 1964, 10,081/64
12 Claims. (Cl. 206—60)

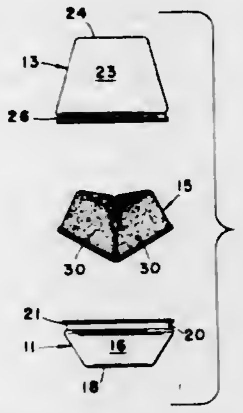


1. A snugly taped multi-faced package having a non-adhesive tape extending over a plurality of the faces and an adhesive tape extending over one of the faces and overlapping and adhering at its ends to the ends of the non-adhesive tape, wherein the package is rectangular in section at the taping location, and the non-adhesive tape extends over three consecutive faces of the package to the junction of the fourth face with the first and third faces, and the adhesive tape extends over the fourth face and overlaps and adheres at its ends to the ends of the non-adhesive tape on the first and third faces.

3,351,186
RING BOX

Dale C. Harris, Indianapolis, Ind., assignor to Creative Packaging Incorporated
Filed Apr. 24, 1967, Ser. No. 633,100
8 Claims. (Cl. 206—76)

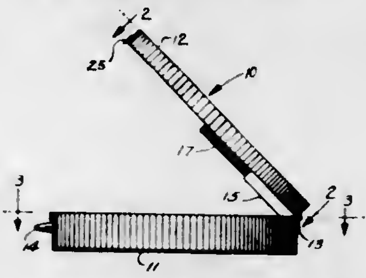
1. A ring box comprising:
an open end receptacle of self-supporting resilient sheet material with an inwardly extending ridge adjacent its open end;
a ring retainer with two integrally hinged halves of deformable self-supporting sheet material mounted in said receptacle with a portion of its bottom periphery seated underneath said receptacle's inwardly extending ridge and adjacent thereto, said halves having adjacent faces with depressions and raised areas adapted for removably retaining a ring therebetween;



and a cover of self-supporting sheet material with an inwardly extending ridge about the periphery of its open end in complementary engagement with the inwardly extending ridge of said receptacle and contacting said retainer at points adjacent the bottom periphery of said ring retainer.

3,351,187
COIN CASE

Donald W. Trumbley, Big Rapids, Mich.
(P.O. Box 418, Mexico, Mo. 65265)
Filed Oct. 20, 1965, Ser. No. 498,825
5 Claims. (Cl. 206—81)



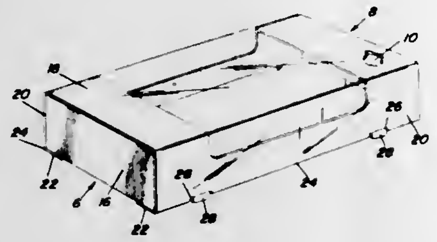
1. A coin case comprising a cylindrical main body, a cylindrical cover hingedly connected to said main body, a plurality of coin case hulls circularly disposed and spaced one from the other near the periphery of said main body, said main body having a circular opening therein for providing a storage space for rolls of coins and an auxiliary storage space for loose coins, locking means to secure said cylindrical cover to said main body, and a rack secured to the bottom portion of said cover for storing the coin collection catalog.

3,351,188
DISPLAY PACKAGE

Leslie Vajtay, Colonia, N.J.
(420 Park Ave., Perth Amboy, N.J. 08861)
Filed Aug. 25, 1965, Ser. No. 482,452
3 Claims. (Cl. 206—45.34)

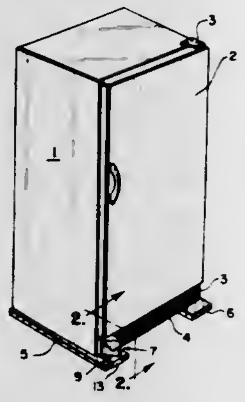
1. For use in containing, advertising and displaying goods and commodities, a merchandising package comprising, in combination, a container having at least one wall provided with window-type sight opening means permitting the prospective purchaser to view and examine the container's contents, readily applicable and removable overwrap cover means substantially but not wholly encompassing said container, that portion of the cover means oriented with said sight opening means permitting the latter to be viewed without blockage or obstruction, and readily accessible manually manipulatable means positioning and retaining said cover means in its container encompassing but bodily detachable and remov-

able position, said container comprising a box having top, bottom, side walls, and end walls, said cover means being characterized by an open-ended sleeve constructed of resilient flexible shape sustaining material, said sleeve embodying a top overlying the top wall of said box, side walls spanning the side walls of the box, and being substantially open at its bottom and exposing and uncovering the major portion of the bottom wall of said box, the lower edge of each of the respective side walls of the sleeve being provided with a turned-in laterally directed relatively narrow flange underlying and contacting respectively cooperable marginal edge portions only of the bottom wall of said box, said cover positioning and retaining means being cooperable with and interposed between said marginal edge portions and said flanges, said retaining means comprising a pair of tongue-like tabs on each marginal edge portion of the bottom of said box, each flange on the cover having a pair of keeper slots aligned with and receiving said tabs with the resiliency of the material retaining the tabs engaged with the slots.



3,351,189
SUPPORT BRACE

Robert C. Hoth, Elmhurst, Ill., assignor to General Electric Company, a corporation of New York
Filed Apr. 1, 1966, Ser. No. 539,408
1 Claim. (Cl. 206—46)

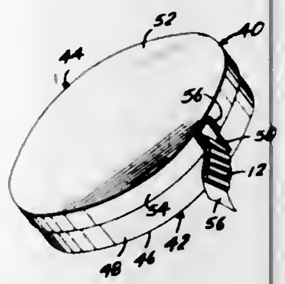


A package comprising a carton containing a refrigerator cabinet including a door hinged at one side to the cabinet, said cabinet having a removable skid secured to the bottom thereof, said skid including an edge surface adapted to contact a vertical wall of said carton, a brace for supporting said door in predetermined fixed location with respect to said skid and said carton,

said brace comprising:
- (a) a body portion juxtaposed between the bottom edge of said door and said skid member;
- (b) a flap extending from the bottom of said body portion, said flap having a crease thereacross so as to divide said flap into two sections;
  - (i) the first of said sections extending from said body portion to said edge surface of said skid;
  - (ii) the second of said sections being folded about said crease to provide a tab extending downwardly over said edge surface of said skid between said skid and said carton whereby said tab is interposed between said skid and said carton and is locked in position to thereby preclude movement of said body portion from between said door and skid.

3,351,190
PACKAGING OF SLEEVES

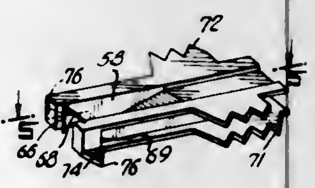
Sigmund J. McGuire, 15042 Bothell Way, Seattle, Wash. 98125
Filed May 17, 1965, Ser. No. 456,195
12 Claims. (Cl. 206—56)



9. A combination of a package of sleeves and a dispenser, said package comprising:
- (a) a flexible base material;
- (b) a plurality of hollow flexible sleeves lying adjacent one to another in a side-by-side relationship;
- (c) a bonding agent adhering together the base material and the sleeves;
- (d) said base material being a ribbon having a length many times its width;
- (e) said base material having a width about equal to the length of the sleeve;
- (f) said sleeve being arranged on the base material with its longitudinal axis at about right angles to the longitudinal axis of the base material;
- (g) said dispenser comprising two cups;
- (h) each cup having a base and a circumscribing wall; and
- ([illegible]) an opening in one of the walls through which the base material can project.

3,351,191
SURGICAL STAPLE CARTRIDGE

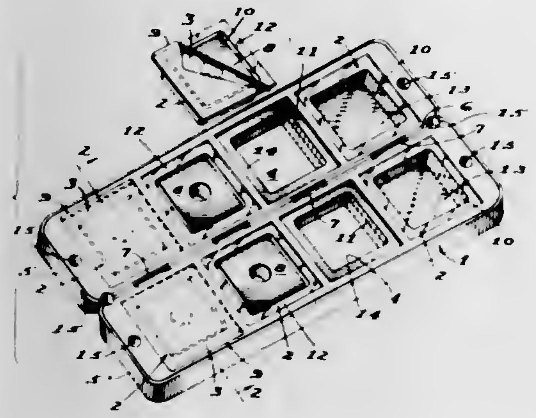
Rudolph F. Mallina, Hastings on Hudson, N.Y., assignor to Codman & Shurtleff, Inc., a corporation of Massachusetts
Filed Sept. 30, 1965, Ser. No. 491,534
4 Claims. (Cl. 206—56)



1. A cartridge containing a single miniature staple having two legs and a crown connecting the legs and adapted to be mounted on a holder between two arms of a medical stapler; said cartridge defining a rectangular opening at the forward end thereof having a single pair of opposite straight parallel grooves in the sidewalls defining said opening, each of said grooves being adapted to receive a leg of a staple pointing with its free end in a direction perpendicular to the longitudinal axis of the cartridge, the grooves being spaced apart from each other for a distance comparable with the width of the staple thereby engaging frictionally the legs of the staple and suspending the staple with the crown extending across said opening; and said cartridge being characterized by two opposite longitudinal grooves that extend substantially the entire length of the cartridge on opposite sides thereof bisecting the cartridge in a plane perpendicular to the legs of the staple.

3,351,192
PACKAGE AND RETAINER TRAY

Gordyn T. La Plante, Warren, Mich., assignor to General Electric Company, a corporation of New York
Filed Feb. 17, 1966, Ser. No. 528,109
6 Claims. (Cl. 206—56)



1. A package for containing a plurality of small metallic or ceramic high-density bodies comprising a rigid retainer tray having a plurality of holes therein extending completely through the tray and being slightly larger at the base thereof, a resilient capsule removably fitted within each of the holes, the depth of the tray being at least as great as the depth of the capsule, each of the capsules shaped to receive a high-density body through an opening therein, each of the capsules having external dimensions such that it forms an interference fit within the upper narrower portion of the hole in the retainer tray sufficient to retain the capsule and its contents within the hole in the tray, each of the capsules having an outwardly extending flange surrounding the perimeter of the opening in the capsule and adapted to seat upon the upper surface of the tray and a plurality of closure members, each of which removably closes an opening in one of said capsules.

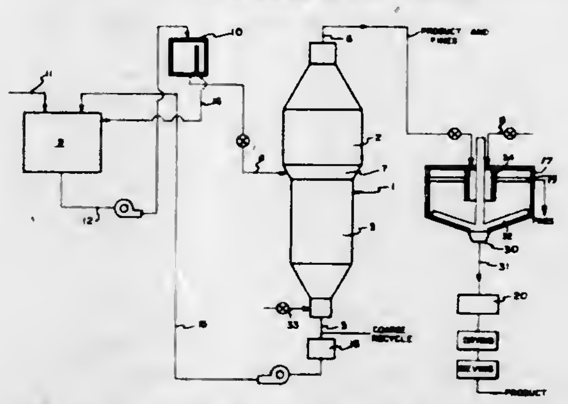
3,351,193
RECOVERY OF MOLYBDENITE FROM COPPER-BEARING ORES

Ricardo Maximo Martinez, Norwalk, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Oct. 12, 1964, Ser. No. 403,335
12 Claims. (Cl. 209—3)

1. A process for recovering molybdenite from an ore containing a relatively small amount of molybdenite and a relatively large amount of copper sulfide which comprises the steps of (1) desliming a member selected from the group consisting of (a) the crude ore per se in pulped form and (b) a rougher concentrate of the ore to give a split at between about 5 and about 40 microns, (2) repulping the sands fraction from step (1) to a solids content of from about 10 to about 50%, (3) conditioning the pulp from step (2) with (a) from about 0.05 to about 2.5 lbs. per ton of a cyanide compound selected from the group consisting of alkali metal cyanides and alkaline earth metal cyanides, and (b) sufficient lime to provide a pH therein of at least 9 and (4) subjecting the conditioned pulp from step (3) to froth flotation with a hydrocarbon oil to obtain a relatively high-concentration of molybdenite in the froth.

3,351,194
METHOD OF PROCESSING HALOPHOSPHATE PHOSPHORS

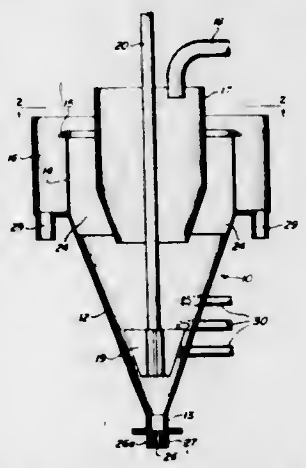
Keith H. Butler, Marblehead, Martha J. B. Thomas, Woburn, and Robert F. Quirk, Danvers, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 391,687
13 Claims. (Cl. 209—5)



1. A process for washing and classifying phosphors, the steps which comprise: forming a dispersed basic slurry of halophosphate phosphor with ammonia and a chelating agent; flowing said slurry into an elutriation column; introducing elutriating liquid into said elutriation column at a point below the introduction point of said slurry, said elutriating liquid being introduced at a predetermined velocity to cause the phosphor particles greater than a predetermined maximum particle size to drop downwardly in said column, the velocity of the liquid in said column at said point of introduction of said slurry being no more than the velocity of the liquid at a point below said point of introduction of said slurry, recovering at a point above said point of introduction of said slurry a washed phosphor having a particle size less than the predetermined maximum particle size.

3,351,195
METHOD AND APPARATUS FOR CONTINUOUS CLASSIFICATION OF SOLID PARTICLES DISPERSED IN A FLUID CARRIER

Risto Tapani Hukki, Otakallio, Otaniemi, Finland
Filed Mar. 18, 1964, Ser. No. 352,771
Claims priority, application Great Britain, Apr. 8, 1963, 13,847/63
24 Claims. (Cl. 209—39)



12. Apparatus for the continuous classification of discrete solid particles having various resistances to fall through a fluid medium, comprising

a containing vessel having walls which define about a vertical axis a particle-separation chamber having a lower portion establishing a zone of turbulence and an upper portion adapted to effect laminar flow, said lower portion being of substantially conical form with a downwardly directed apex open for the discharge of material, and said upper portion being provided with peripheral overflow means for the discharge of material;

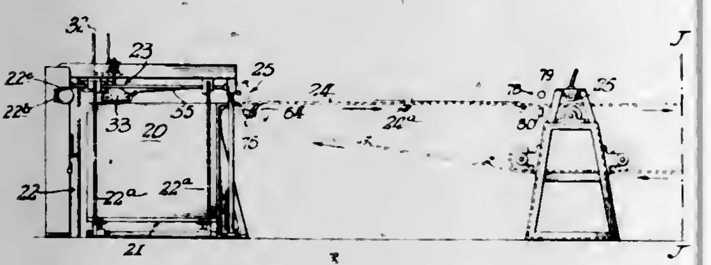
a neutral type of impeller mounted within said lower portion of the vessel for rotation about said vertical axis, so as to force said particles and said fluid medium substantially horizontally outwardly from said axis toward the walls of the vessel;

variable speed means for rotating said impeller;

means for continuously feeding additional particles and fluid medium directly to said zone of turbulence and adjacent to said vertical axis, so as to produce, together with the action of said impeller, a turbulent, spiraling, fluidized flow of material, wherein those particles having relatively slight resistance to fall are moved outwardly from said axis and those particles having relatively great resistance to fall are displaced toward said axis;

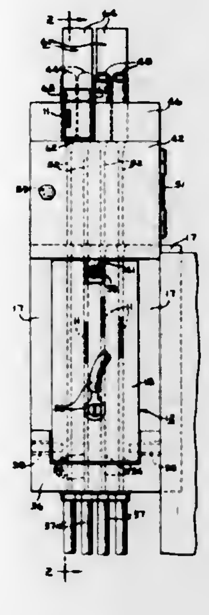
and a plurality of upwardly-directed conduit means in and arranged peripherally of the said upper portion of the vessel, said conduit means being respectively closed laterally at all sides to form mutually isolated flow channels for smoothing the turbulent flow of said mass to laminar flow as it rises toward said overflow means by reason of the continued introduction of material into said chamber.

3,351,196
DEFECTIVE SHEET SORTING APPARATUS
Dolph V. Van Laanen, 903 Fox River Drive, De Pere, Wis. 54115
Filed Nov. 22, 1965, Ser. No. 509,144
2 Claims. (Cl. 209—73)



1. In a sorting machine for separating acceptable from unacceptable paper sheets, an elevator for elevating a stack of horizontally disposed, generally rectangular paper sheets, a horizontally elongated frame about said elevator and equipped with a sheet shifter above said elevator for sequentially shifting the sheet uppermost on said stack to provide a sheet edge portion in overlapping relation with the rest of said stack, a horizontally disposed gripping conveyor on said frame adapted to grip the leading edge portion of said uppermost sheet to horizontally advance said sheet, feed wheel means on said frame interposed between one end of said conveyor and said sheet shifter for advancing and controlling said uppermost sheet toward and into said conveyor, sheet inspection means on said frame for simultaneously ascertaining the presence of defects in both sides of said sheet, a pair of receivers, one for acceptable sheets and one for unacceptable sheets, horizontally spaced adjacent the other end of said conveyor, and means responsive to a signal from said inspection means for conducting a given sheet to one of said receivers, said sheet shifter comprising a plurality of perforated belts reeved on pulleys, vacuum shoe means on said frame and contacting said belts, air blast means horizontally aligned with said uppermost sheet to urge said sheet into engagement with said belts, and pressure sensitive means operatively associated with said vacuum shoe means and said elevator for controlling the action of said elevator as a function of the position of said uppermost sheet relative to said perforated belts.

3,351,197
ARTICLE SORTING APPARATUS
Richard T. Smith, Logan, Utah, assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 7, 1965, Ser. No. 512,062
6 Claims. (Cl. 209—74)



1. Apparatus for sorting electrically conducting articles, which comprises:

a sensing circuit including a pair of electrically conducting members normally insulated from one another and defining a substantially tubular passageway of preselected dimensions representative of a desired characteristic of the electrically conducting articles, such that one of the articles which does not have the desired characteristic, upon being fed into the passageway, engages the members to form an electrical connection between the members to close said sensing circuit;

means for feeding the articles in spaced succession into one end of the substantially tubular passageway defined by the electrically conducting members; and

ejector means responsive to the closing of said sensing circuit by the article which does not have the desired characteristic, for ejecting the article from the substantially tubular passageway through the one end thereof before the next succeeding article is fed into the passageway by said feeding means.

3,351,198
GLASS CONTAINER SORTING
James H. Wyman, Santa Barbara, Calif., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Feb. 25, 1965, Ser. No. 435,186
2 Claims. (Cl. 209—111.6)

1. In the method of sorting articles wherein the articles are engaged by suction cups and moved in a predetermined path through a plurality of stations and the articles are inspected at each of said stations and released from said suction cups in the event that they do not meet predetermined standards, each of the types of articles to be sorted having light transmitting characteristics of different dominant wave lengths, the improvement comprising

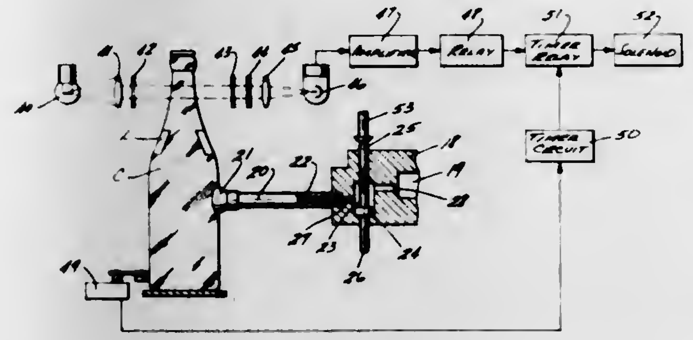
directing a beam of light through a portion of each article as it passes a first station,

said beam having a spectrum comprising wave lengths such that each of the types of articles to be sorted is transparent to at least some of the wave lengths,

directing the light transmitted by said article at said first station against a light sensitive cell having a sensitivity range with predetermined dominant wave length,

filtering the light so that light may pass to said cell only at substantially the same wave length as the dominant wave length of said cell,

and sorting an article from the remaining articles when the light transmitted therethrough has a dominant wave length that does not energize said cell,

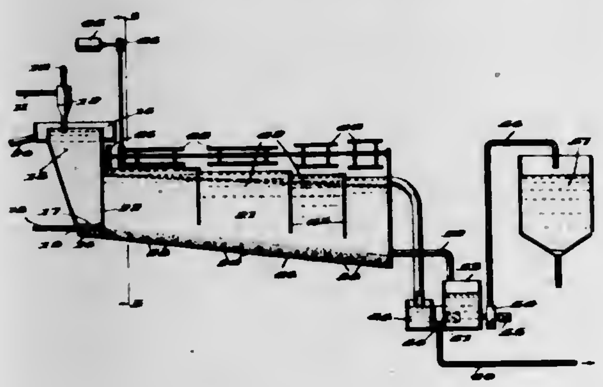


directing a plurality of light beams to which the articles to be sorted are transparent through another portion of the articles to be sorted as they pass another station,

sensing a diminution of predetermined magnitude of the light passing through said article due to the presence of a mark or label,

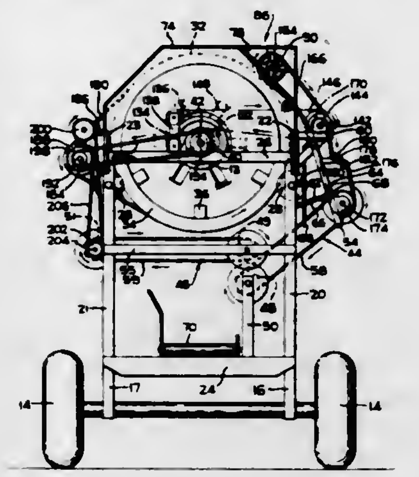
and sorting said article from the remaining articles when the diminution of predetermined magnitude occurs.

3,351,199
APPARATUS FOR FROTH FLOTATION
Andrejs Zvejnieks, Lakeland, Fla., assignor to A. Z. Products, Inc., Eaton Park, Fla., a corporation of Florida
Filed Sept. 21, 1964, Ser. No. 397,799
4 Claims. (Cl. 209—170)



1. A flotation apparatus comprising a sloping trough having a sloping inlayed bottom which is porous and contains embedded therein alternating channels for distribution of water, air and water-flotation reagent mixture through the surface said inlayed bottom; means for distributing water, air and water-flotation reagent mixture under positive pressure through the surface of said inlayed bottom by way of said embedded channels; means for introducing a water-flotation feed slurry at the higher end of the sloping trough; means for removing a froth product from the upper part of said trough; and means for removing a machine discharge product at a point located at the lower end and at the bottom of said trough said porous bottom inlay consisting essentially of uniformly sized granular material the particles of which are consolidated and cemented in place with a thermosetting resin.

3,351,200
SCREEN CLEANING APPARATUS
Thomas I. Burenga, Lansing, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed May 25, 1965, Ser. No. 458,633
3 Claims. (Cl. 209—299)



2. In an agricultural harvesting machine for frangible produce, such as lentils or the like, including a drum mounted for rotation about its longitudinal axis and including a peripheral screen providing openings for passing the shelled lentils or the like, and means for rotating said drum in a predetermined angular direction about said axis, the improvement comprising; a rotor mounted for rotation about an axis extending alongside the outside of said screen and substantially parallel with the drum axis, the axis of said rotor being normally spaced a predetermined distance from said screen, means mounting circumferentially spaced rows of relatively stiff, radially extending, bristle-like elements on said rotor, said rows of elements extending generally longitudinally of said rotor, means for rotating said rotor in a direction counter to said predetermined angular direction so that the outer ends of said bristle-like elements are moved in a circular path at substantially the peripheral speed of said screen, the thickness of the bristle-like elements in each row, when measured at the mounting of the elements, being less than the corresponding dimension of the individual screen openings, said bristle-like elements being many times longer than their thickness in a row, the circular path of the outer ends of said bristle-like elements intersecting a portion of the peripheral surface of said screen so that said outer portions of said elements are brought into engagement with said screen during rotation.

3,351,201
OSCILLATING SCREEN WITH HANGER SUPPORTS
Paul Eppenberger, Auenhofen, Amriswil, Thurgau, Switzerland, assignor to Gebruder Buhler, Uzwil, Saint Gall, Switzerland
Filed Oct. 26, 1965, Ser. No. 505,247
Claims priority, application Switzerland, May 24, 1961, 6,045/61
10 Claims. (Cl. 209—329)

5. A middlings cleaning machine comprising a frame, a sieve carrier, first and second hangers pivotally con-

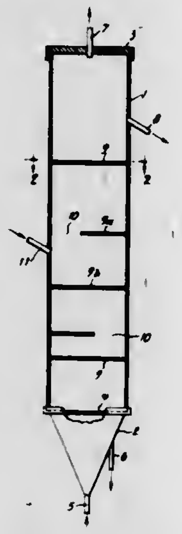
nected to said frame at their one ends and having respective opposite ends pivotally connected to respective oppostie sides of said carrier adjacent its one longitudinal end, a third hanger pivotally connected to said frame at its one end and pivotally connected to said sieve carrier substantially centrally between the sides thereof adjacent the opposite end of said carrier from the first and second hangers, and spring means biasing only said third hanger in one selected longitudinal direction, and a free swing drive mounted on said sieve carrier for producing an oscillatory movement thereof as said carrier is held by said hangers.

3,351,202
METHOD OF FRACTIONATING MIXTURES OF PARTICULATE SOLID MATERIALS

William Resnick, Haifa, and Mordechai Avriel, Kiryat Yam, Israel, assignors to Technion Research and Development Foundation, Ltd., Haifa, Israel, a corporation of Israel

Continuation of application Ser. No. 331,345, Dec. 16, 1963. This application Oct. 17, 1966, Ser. No. 587,346

8 Claims. (Cl. 209—474)



1. A method of fractionating mixtures of particulate solids having coarse and fine particles, which comprises providing means forming a plurality of at least three superposed zones in communication with each other and separated by a plurality of baffles therebetween defining an upward tortuous path from one side of a zone to another side of an adjacent zone, the space between said baffles increasing in an upward direction and said baffles having openings of limited size only at the sides thereof, introducing a mixture of particulate solids into one of said zones, introducing an inert gas at ambient temperatures into the lowermost zone at a sufficient velocity to fluidize fine particles of said mixture, said velocity being sufficiently low to cause the coarsest particles to fall down into the lowermost zone and to form a bed therein, periodically discharging said coarsest particles from the bottom of said lowermost zone, causing a mixture containing said gas and said fine particles to rise from said intermediate zone into the uppermost zone and discharging said fine particles laterally therefrom, and removing said gas from the uppermost zone.

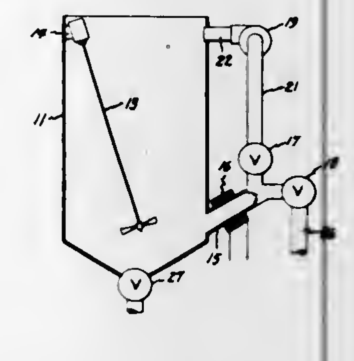
3,351,203
SEPARATION APPARATUS AND METHOD FOR ITS OPERATION

Walter L. Robb, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Aug. 17, 1965, Ser. No. 480,286

8 Claims. (Cl. 210—65)

5. In a process for filtering liquid to be discharged from a reaction vessel the steps comprising:
- (a) distributing a substantial quantity of particles of ferromagnetic material through the liquid in the reaction vessel,
- (b) establishing a magnetic field in an outlet from said vessel,
- (c) conducting liquid containing suspended magnetic particles from the interior of said vessel out said outlet and through the magnetic field, whereby the magnetic particles are held in the magnetic field,
- (d) returning the liquid so freed of magnetic particles to said vessel,



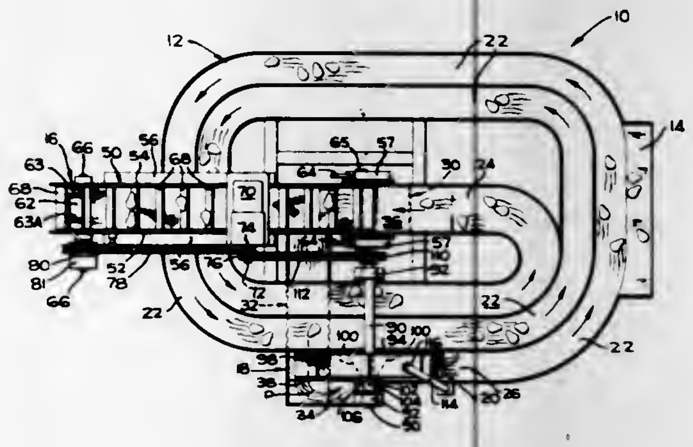
- (e) continuing the conduct and return of liquid until a sufficiently thick and dense concentration of magnetic particles has been formed to span the open area of said outlet forming a particulate filter and the returning liquid is cleaned, and
- (f) discontinuing the returning of the liquid and allowing the liquid to pass on after passage through the magnetic particle filter.

3,351,204
FILTERING DEVICE

Gerald R. Anderson, Campbell, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed July 20, 1965, Ser. No. 473,443

6 Claims. (Cl. 210—158)



2. A circulating and screening device for use in a food processing line comprising fluid guiding means including a flume having a discharge portion and an inlet portion adapted to receive a mixture of food particles, food and liquid, means for removing the food from the mixture, a rotary paddle element positioned in said fluid guiding means between said inlet portion and discharge portion for inducing said mixture to move through said fluid guiding means, said paddle element having a screening portion positioned to intercept the mixture after the food is removed to filter out the food particles, and means for removing the food particles from the screening portion whereby the fluid is substantially recirculated free of food and food particles.

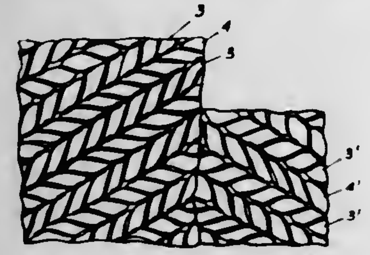
3,351,205
TWISTED STRANDS AND NON-WOVEN FILTERING MEDIA MADE OF SUCH STRANDS

Clarence A. Butler and Dominic Richard Lazzaro, Cleveland, Ohio, assignors to The Lindsay Wire Weaving Company, Cleveland, Ohio, a corporation of Ohio

Filed May 18, 1962, Ser. No. 197,168

The portion of the term of the patent subsequent to Dec. 1, 1981, has been disclaimed

5 Claims. (Cl. 210—400)



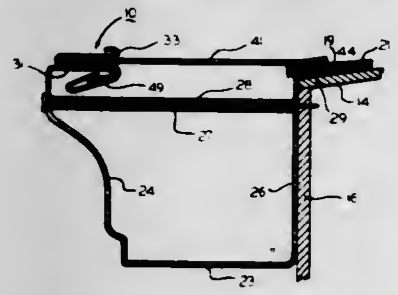
1. An endless, non-woven fabric belt for use with Fourdrinier type of paper making machines adapted for draining fluent material, such as paper stock, formed thereon, said fabric belt comprising a first substantially co-planar layer of polymeric mono-filament strands extending generally parallel to one another and longitudinally of the belt, a second substantially co-planar layer of polymeric mono-filament strands extending generally parallel to one another and transversely at an angle relative to said first layer, said first and second layers of strands being disposed in superimposed relationship and bonded together at their areas of contact between the respective strands in each of said layers, the strands in each of said layers having a non-circular transverse cross-section and being independently twisted a predetermined number of turns in a generally circular direction along their axes, and the strands in each of said layers being disposed in continuous side-by-side relationship and bonded to each other throughout their length at their areas of contact to form longitudinally extending rows of spaced openings between adjacent strands in each of the respective layers.

3,351,206
STRUCTURE FOR SECURING GUTTER SCREENING TO BUILDING GUTTERS

Carl H. Wennerstrom, 4039 N. Monitor Ave., Chicago, Ill. 60634

Filed Feb. 18, 1965, Ser. No. 433,703

1 Claim. (Cl. 210—474)



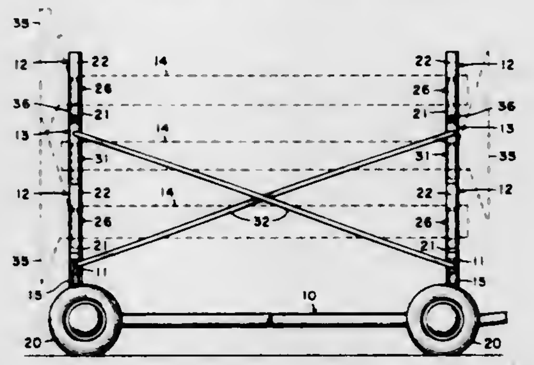
In combination with a gutter, a resilient locking device of the class described holding a gutter screen in position to a longitudinally extending eaves gutter having a front wall with an integral stiffening flange comprised of an upper flange element bent upon itself to form a lower flange element integral with said upper flange element so as to provide a step; said resilient locking device being unitary in construction and extending longitudinally of the gutter and comprised of relatively thin flat resilient material consisting of a central limb substantially overlying said upper flange element for substantially the total width thereof and extending lengthwise thereof and in contact therewith, an upper limb coterminous with said central limb and substantially overlying said central limb and resiliently connected thereto and presenting with said central limb an open elongated jaw opening receiving the gutter screen and resiliently gripping the same, a lower limb integral and coterminous with said central limb and presenting with said central limb an open elongated jaw receiving the gutter stiffening flange therein, said lower limb being turned back upon itself to form a detent latch, said detent latch engaging the step of the gutter thereby preventing unintended removal of the locking device from the gutter, said element yielding upon engagement of said central limb and said lower limb with the horizontal flange of said gutter and thereafter moving to locking position with the step of said gutter to prevent the unintended removal of said article of manufacture from said gutter.

3,351,207
SCAFFOLD TRAILER

Ralph L. Meek, 1441 Larkin Williams, Fenton, Mo. 63026

Filed Oct. 22, 1965, Ser. No. 501,406

9 Claims. (Cl. 211—13)



3. A trailer for the transportation and storage of elongate structural members and the like in multiple tiers, comprising:
- (a) a carrier,
- (b) a plurality of header units disposed in tiers one above the other in vertical alignment at each end of the carrier,
- (c) each header unit including laterally spaced, substantially upright posts,
- (d) means detachably interconnecting the posts of each header unit with the posts of the next adjacent header unit at the same end of the carrier,
- (e) support means between the substantially upright posts of each header unit,
- (f) each header unit at each end of the carrier having a cooperatnig header unit in the same tier at the opposite end of the carrier, the cooperatnig header units at opposite ends of the carrier adapted to support elongate structural members on the support means, in tiers, and
- (g) the support means for each header unit including a substantially serpentine seating strip between and supported by the posts of each header unit, the strip providing recesses adapted to receive the carried elongate structural members.

3,351,208
DISPLAY STAND FOR SUNGLASSES AND THE LIKE

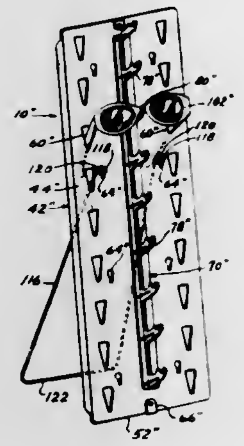
David Siegel, Yonkers, N.Y. (302 5th Ave., New York, N.Y. 10001)

Filed May 12, 1966, Ser. No. 549,511

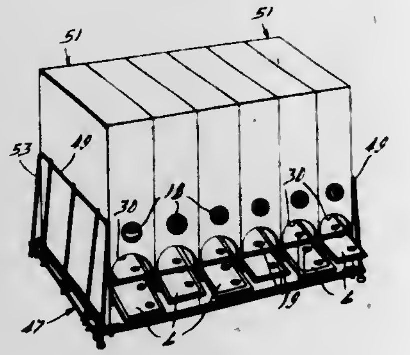
5 Claims. (Cl. 211—13)

1. A display stand for sunglasses and the like including at least one rectangular shaped panel and means for supporting said panel at a slight angle to the vertical, said panel having a transparent plate-like body with a series of spaced keyholes extending centrally of the longitudinal center of the body, with a series of triangular shaped slots

along each long side edge of the body, in opposed spaced relation and with a series of pairs of keyholes disposed angularly of the triangular shaped slots, said centrally disposed keyholes removably supporting a bracket device having forwardly extending arms for supporting the bridge portion of a sunglass frame, a pair of opposed triangular shaped slots adapted to receive the temples of said sunglass frame, with the edges of the temples seated in the ends of the triangular shaped slots and the bridge portion of the frame seated adjacent the upper end of the arm whereby the lens frame and the lenses are positioned at a slight angle to the vertical.

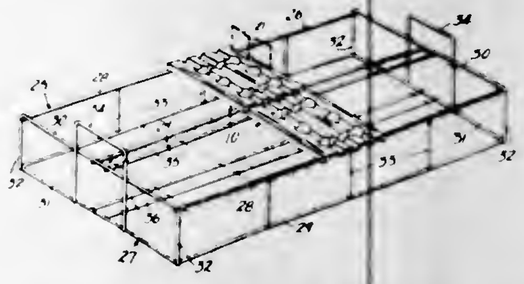


3,351,209
PACKET DISPENSER
Jack F. Kofoed and Fred F. Tilden, Lynnfield, Mass., assignors to Diamond Crystal Salt Company
Filed Aug. 10, 1965, Ser. No. 478,621
2 Claims. (Cl. 211—49)



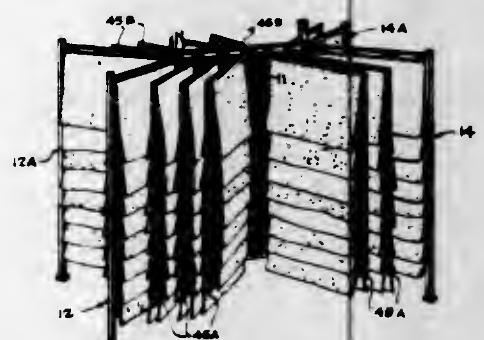
2. A diet kit dispenser combination comprising a plurality of dispensing cartons in side by side relationship and a plurality of substantially flat rectangular packets contained within each carton, means positioned on each said cartons securing same in side by side relationship and acting to hold the cartons together, each of which cartons are similar and comprise a pair of side panels, a pair of end panels, and top and bottom panels, means defining a dispensing aperture in at least one of said side and end panels, said aperture having a lower edge portion defining a lower extremity of said aperture which is upwardly spaced from the plane of the bottom panel on which said carton is supported, a particular name and color code identification markings proximate to said aperture on the exterior of the panel which contains the aperture of each said dispensing cartons, and corresponding name and color code identification markings on each of said packets within said cartons, with each carton and the packets contained therein having their own identification markings which are different from any other in the combination.

3,351,210
MEDICATION DISPENSING TRAY AND SUPPORT THEREFOR
Charles E. Murcott, Valley Drive, Bay Crest, Huntington, N.Y. 11743
Filed Mar. 14, 1966, Ser. No. 534,141
10 Claims. (Cl. 211—74)



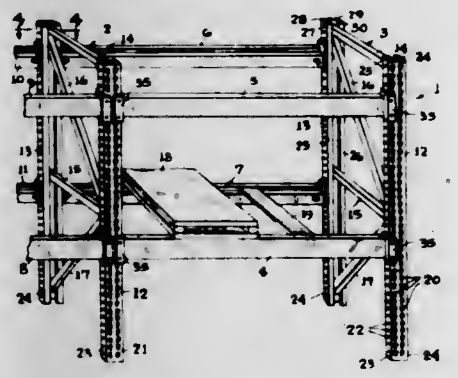
1. A medication dispensing assemblage comprising a plurality of trays, each tray having a predetermined number of cup receiving receptacles, the upper surface of each tray having channels for support of hypodermic syringes therein, means adjacent each of the receptacles and at least one of said channels for support of identification cards on the tray, a tray support frame comprising upper and lower rectangular members, ends of said support frame including upwardly projecting handgrips, the upper rectangular member having centrally and longitudinally thereof a pair of rods, said pair of rods, in combination with the sides of the upper rectangular member, being adapted to support pairs of trays in endwise arrangement to each other on said support frame, and means for bracing and spacing the upper and lower rectangular members of said support frame.

3,351,211
DISPLAY RACK
Leon H. Best, Galva, Ill., assignor to John H. Best & Sons, Inc., Galva, Ill., a corporation of Illinois
Filed Oct. 11, 1965, Ser. No. 494,318
1 Claim. (Cl. 211—169)



A floor-supported display rack for supporting rug samples or the like and comprising a center section formed from a pair of spaced uprights (**16, 17**) having lower ends for engagement with the floor and upper and lower spaced cross bars (**20, 21**) extending between and connected to the uprights, a pair of end sections each including a pair of rigid frames (**12, 14–12A, 14A**) extending at an angle from opposite ends of said center section, each of said end section frames including an upper and a lower cross bar (**31, 32**) joined to an inner upright (**37**), said upper and lower end section cross bars having inner ends provided with angled attaching plates (**35**) in turn rigidly joined to respective ones of the center section uprights and having an end section upright (**30**) joined to the outer ends of the end section cross bars, said end section uprights having lower ends for engagement with the floor, whereby the uprights (**16, 17**) serve to support in part the end sections which are supported in further part by the end section uprights, each of said rigid frames supporting a sheet of perforate metal (**39**) enabling rug samples to be hung thereon, the cross bars of the center section including a plurality of hinge support openings arranged in two rows (**21A, 21B**) on spaced predetermined vertical axes, a first set of swinging frames (**45A**) at one side of the center section and supporting sheets of perforate metal (**50**) for suspending other of such samples, said swinging frames each including an upright having hinge pins thereon hinged to respective ones of the hinge support openings in one row for free swinging movement between the related end sections, and a second set of swinging frames (**45B**) at the other side of the center section and each supporting sheets of perforate metal for suspending still other samples, the frames in the second set each including an upright having hinge pins thereon hinged to respective ones of the hinge support openings in the second row for free swinging movement between the related end sections, said swinging frames being nested within the rigid frames of the end sections.

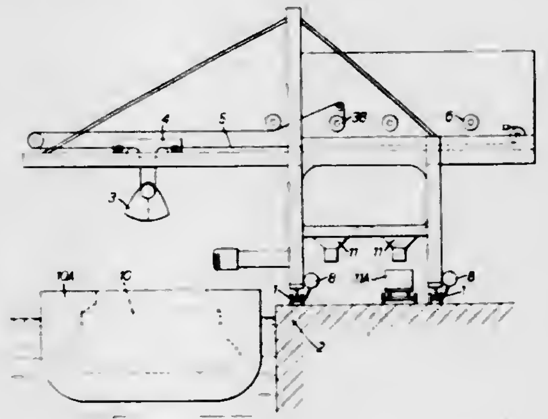
3,351,212
PALLET RACK CONSTRUCTION
Kennedy McConnell, Riverdale, Ill., assignor to Interlake Steel Corporation, Chicago, Ill., a corporation of New York
Filed Jan. 7, 1966, Ser. No. 519,278
3 Claims. (Cl. 211—177)



2. In a support structure of a type having vertical uprights and horizontal beams, the vertical uprights being provided with walls having keyhole openings therein, and the beams having flanged lugs thereon for engaging the keyhole openings to provide connections between the beams and the uprights comprising, each keyhole opening being partially bounded along its inner peripheral wall by a flat edge extending at an angle to its respective upright, and each flanged lug having a flat surface on its outer periphery extending at the same angle when a lug and keyhole opening are in connecting positions relative to each other, the flat surface of a lug flatly abutting the flat edge of a keyhole opening when the keyhole opening and the lug are engaged to form a connection between a beam and an upright, the flat surface on the outer periphery of the lug being one of a plurality of such flat surfaces on the outer periphery of the lug, each flat surface extending at a different angle so that the lug can be oriented to flatly abut different keyhole openings having inner peripheral flat edges extending at a corresponding different angle.

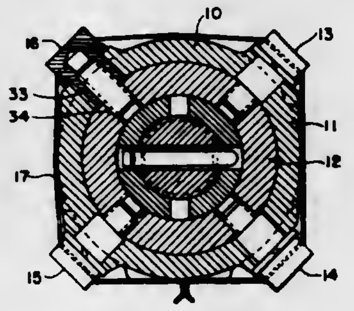
3,351,213
CONTROL SYSTEMS
William Maxwell Newman, London, and Graham Arthur Forster, Sheffield, England, assignors to Davy and United Instruments Limited, Sheffield, England
Filed Dec. 7, 1965, Ser. No. 512,120
Claims priority, application Great Britain, Dec. 8, 1964, 49,910/64
22 Claims. (Cl. 212—39)

1. In the combination of
a body,
a supporting carriage movable along a fixed path,
means by which said body is swingably suspended from said carriage so that its height may be changed relative to said carriage,
a control system comprising:
a first control means for moving said carriage along said path,
second control means for changing the height of said body relative to said carriage,
and automatic control means for regulating said first and second control means through a plurality of successive cycles to cause said carriage and body to come to rest at a predetermined point in each cycle substantially simultaneously without substantial swing of said body,
the improvement according to which said automatic control means comprises:



means for regulating said first and second control means to vary from cycle to cycle the speed and distance of travel of said carriage during a period in each cycle in which the height of said body relative to said carriage is kept constant and to simultaneously vary the height of said body relative to said carriage and the movement of said carriage through a predetermined distance and in a predetermined pattern of speed change, during another period in each cycle in which the curvature of the mean path of travel of said body is thereby kept constant from cycle to cycle.

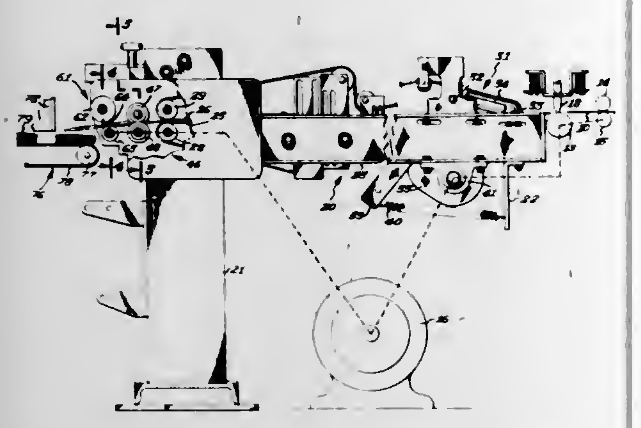
3,351,214
SHEAR BOLT
Donald L. Herbert, Mansfield, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed June 25, 1962, Ser. No. 204,902
11 Claims. (Cl. 213—9)



6. Railway draft rigging comprising a housing having a pocket containing cushioning means, means in said pocket forwardly of a rear end thereof for backing said cushioning means under buffing forces, and releasing means normally connecting said backing means to said housing against rearward movement in said pocket, said releasing means including internally threaded bushing means removably disposed in aperture means in said housing, and shear pin means threaded into said bushing means and extending therefrom into said backing means.

3,351,215
SHEET ARTICLE STACKER

Paul E. Kitch, Northfield, Minn., assignor to G. T. Schjeldahl Company, Northfield, Minn., a corporation of Minnesota
Filed Oct. 14, 1964, Ser. No. 403,790
4 Claims. (Cl. 214—6)



1. In combination with means for conveying discrete sheet film bags along a predetermined path at a first relatively high rate of speed; a fabricating station for delivering finished bags onto said conveyor at predetermined spaced intervals therealong; and speed attenuating means for decelerating said bags to a substantially lower rate of speed as they leave said conveyor path at the terminal delivery zone thereof, said speed attenuating means comprising:

(a) a cylindrical drum mounted for axial rotation and extending transversely of said path,

(b) means for rotating said drum, said means rotating said drum being in synchronism with said fabricating station, said drum having blade means extending substantially the length of said drum adapted to engage each of said bags at a predetermined point along the surface and adjacent to the rear edge thereof for substantially retarding said bag, and

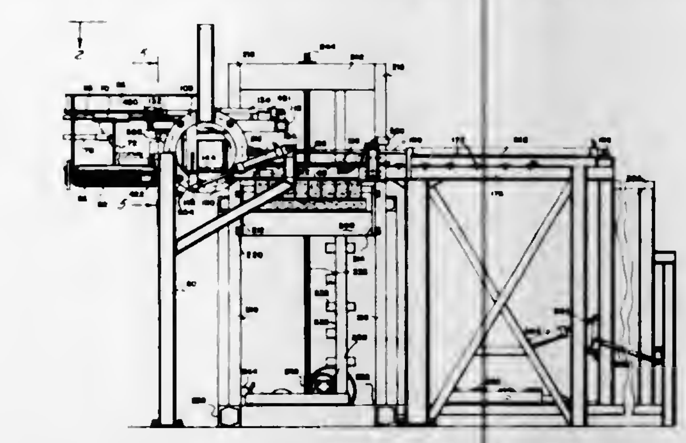
(c) a roller guide and support surface disposed transversely immediately below and across said path and having an axis of rotation located slightly forwardly but within the radius of the drum,

(d) said blade means including a radially disposed blade having a frictional surface and being mounted along the peripheral surface of said drum, said radially disposed blade being generally at a bottom dead center disposition at a point which is downstream along said conveyor from said guide and support surface thus the blade means will force downwardly the rear edge of said bag to thereby assist the flight of the bag to the stacking area.

3,351,216
CONCRETE BLOCK STACKING MACHINE

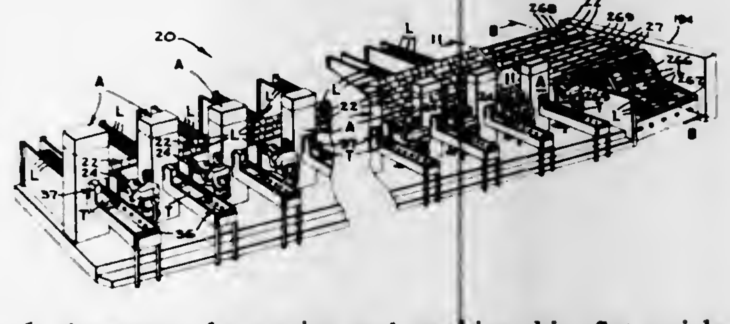
Paul M. Thomas, Phoenix, Lawrence W. Wright, Scottsdale, Russell W. Burge, Glendale, and Eugene E. Crile, Phoenix, Ariz., assignors, by direct and mesne assignments, to Builders Equipment Company, Glendale, Ariz., a corporation of Arizona
Filed Nov. 25, 1964, Ser. No. 413,710
9 Claims. (Cl. 214—6)

1. In a block stacking machine the combination of: a main frame; a vertically movable elevator thereon; a horizontally movable deck means movable over said elevator; first means for restraining blocks on said deck means to a position over said elevator; second means for retracting said deck from below blocks thereon to thereby deposit said blocks on said elevator; a depositing tapered edge means carried by said deck and disposed at an edge of said deck from which blocks are deposited from said deck and onto said elevator; and third means pivotally mounting said tapered edge means relative to said deck and on a substantially horizontal axis; deck loading means disposed at a level to load block onto said tapered edge means, said tapered edge means and said deck movable toward and away from said loading means; and operating means for holding said tapered edge means upwardly at said level, when adjacent said deck loading means, and to permit downward pivotal movement of said tapered edge means, when moved away from said deck loading means, said tapered edge means being thin and disposed substantially horizontally so that it may be pivoted downwardly into substantially contact disposition with upper surfaces of blocks carried by said elevator to minimize the vertical distance between blocks being deposited from said deck and those on said elevator.



3,351,217
APPARATUS FOR HANDLING ARTICLES

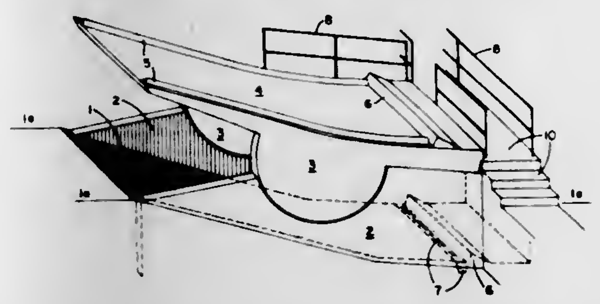
Bernard Sassen, Victoria, British Columbia, Canada, and Philip Nisenbaum and Harold J. Young, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Continuation of application Ser. No. 433,834, Jan. 25, 1965, which is a division of application Ser. No. 190,550, Apr. 27, 1962, now Patent No. 3,219,204, dated Nov. 23, 1965. This application Apr. 4, 1966, Ser. No. 552,993
9 Claims. (Cl. 214—7)



1. Apparatus for sorting and stacking thin, flat articles such as letters; comprising a plurality of article transport conveyors running side by side, an endless stacker conveyor having an article receiving run beneath said transport conveyors and a downwardly inclined discharge run, said stacker conveyor comprising a longitudinal row of articulated buckets, means for transferring articles from said transport conveyors to the buckets on said article receiving run, article receiving and stacking means comprising article receiving plate means diverging downwardly from said downwardly inclined stacker conveyor discharge run, means for discharging articles one by one from the buckets on said discharge run to said plate means, abutment means on said plate means and facing said buckets for initially restraining the leading lower edges of recently discharge articles, and receiving means for discharged and shingled articles including article stacking and restraining wall means downstream of said abutment means.

3,351,218
DOUBLE DECK AUTO PARK APPARATUS

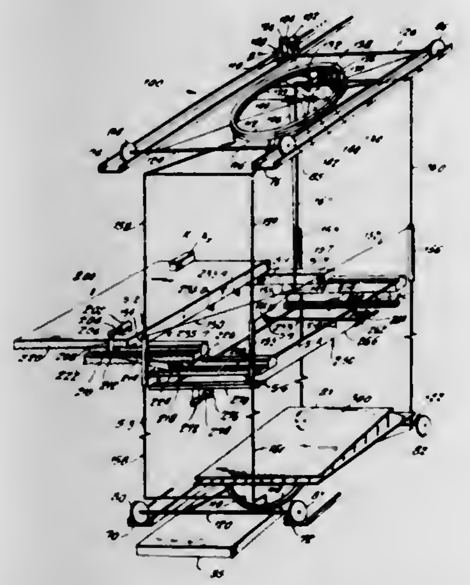
Hermann E. Garthoffner, 740 Paseo del Mar, San Pedro, Calif. 90731
Filed Jan. 4, 1965, Ser. No. 424,882
1 Claim. (Cl. 214—16.1)



A double deck car park apparatus comprising in combination with a floor, the floor constituting an entrance and a lower level deck parking space, said floor sloping downwardly away from the entrance, two supporting walls mounted on said floor on each side thereof, each of said walls having its top surface formed of a first portion downwardly inclined to intersect the lower floor at the entrance thereof, a second portion slightly inclined toward the rear thereof and an arcuate recess separating said two portions, a carrier deck constituting an upper parking space and having a downwardly projecting arcuate member at each side thereof for rotatably mounting the carrier deck in the arcuate recesses of said wall between a raised and lowered position, said carrier deck in its lowered position being supported on the first portion and in its raised position being supported on the second portion of the walls, front wheel stop means mounted on each of said floor and platform, an entrance-exit means to said upper level parking space for vehicle occupants at one end thereof, a safety fence located at said means and on said platform.

3,351,219
WAREHOUSING ORDER SELECTION SYSTEM

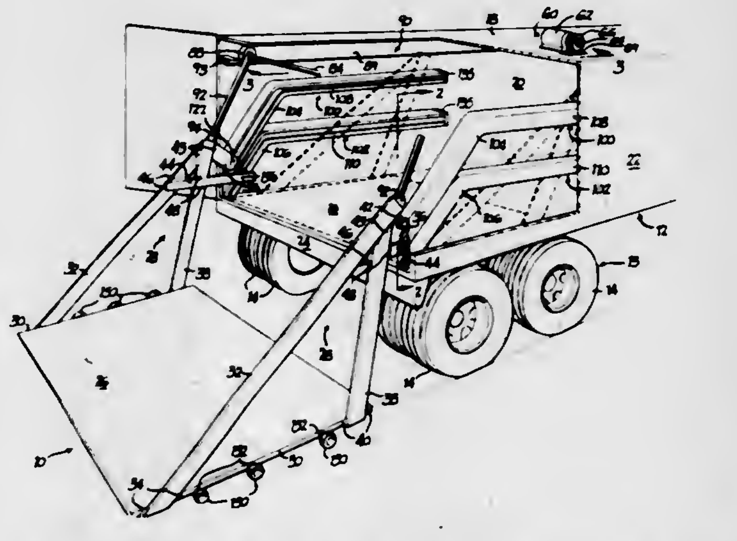
Walter A. Ruderfer, Mattapan, Mass.
(8748 Metcalf, Overland Park, Kans. 66212)
Filed Apr. 9, 1965, Ser. No. 446,926
24 Claims. (Cl. 214—16.4)



1. In an automatic article handling system for selectively removing individual articles from a location adapted to receive a grouped plurality of such articles, with said grouped plurality defining a unit load, the combination of searching means positionable at the location of said unit load, said searching means including means for determining the orientation of the articles actually present within said unit load, and establishing a unit load condition signal operatively related to the position within said unit load of the next article to be removed therefrom, said unit load condition signal generated in accordance with a predetermined sequence of removing individual articles from said unit load, picker means, means for presenting said unit load condition signal to said picker means such that said picker means is positionable at said position of the next article to be removed from the unit load, said picker means including article engaging means adapted to engage an individual article for removal from said position, while the other articles of said unit load immediately adjacent said individual article remain substantially intact.

3,351,220
POWER ELEVATOR SYSTEM

William W. Kirkbride, 14198 Syracuse, Taylor, Mich. 48180
Filed July 21, 1965, Ser. No. 473,757
4 Claims. (Cl. 214—75)



1. In a vehicle including a body having a floor, a pair of spaced side walls extending above said floor and a roof joining the upper edges of said side walls, said floor, side walls and roof having rear edges terminating in a substantially vertical plane to define a freight hauling space within said body, ground engaging means supporting said body above the ground, and a power lift elevator unit for transferring freight into and out of said space, the improvement of said elevator unit including a horizontal platform, a substantially vertical frame supporting said platform, a pair of guides respectively carried by the side walls inside said hauling space, follower means carried on said frame and received in said guides, said guides each having a first portion angularly disposed with respect to the upper surface of said floor to define a vertical component for guiding said platform to a height at least equal to the height of said floor above the ground and a second portion angularly related to said first portion and into which the frame follower means is received when the platform is above the floor to move the platform within the confines of said space and means for moving the frame follower means along said guides.

3,351,221
EXCAVATING AND/OR LOADING DEVICE

Richard Smalley, Osbournby, Sleaford, England, assignor to Richard Smalley (Engineering) Limited
Filed Sept. 16, 1965, Ser. No. 487,716
3 Claims. (Cl. 214—138)

1. An excavating device having a support frame,

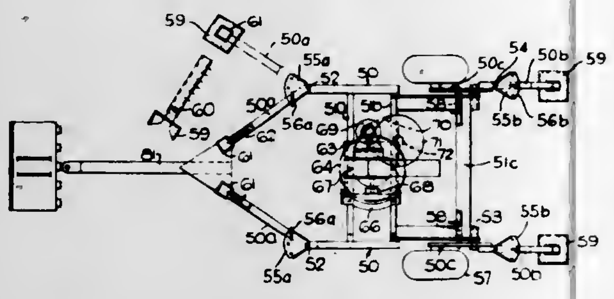
a pair of elongated, laterally spaced side members selectively adjustably pivotally mounted on said support frame for movement about a vertical axis and extending from one end of said frame;

ground support means selectively vertically adjustably mounted on free ends of said side members;

wheel means supporting another end of said support frame;

boom means pivotally mounted on said support frame;

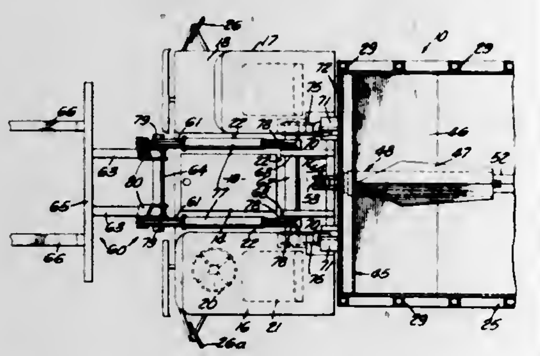
excavating means connected to a free end of said boom means;



power means for moving said boom means and said excavating means for excavating material adjacent said side members, and

tow bar means adapted to be alternatively connected to said free ends of said side members for transporting the device.

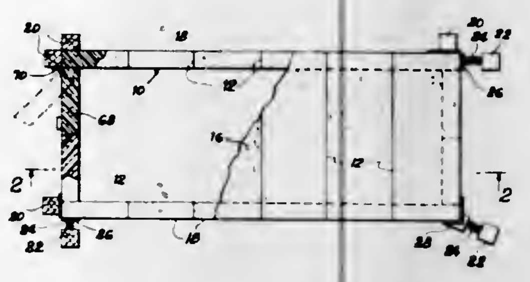
3,351,222
TRASH HAULING TRUCK
George W. Morrison, Inglewood, Calif., assignor to Western Body and Hoist Company, Inc., Los Angeles, Calif., a corporation of California
Filed Aug. 9, 1965, Ser. No. 478,124
14 Claims. (Cl. 214—302)



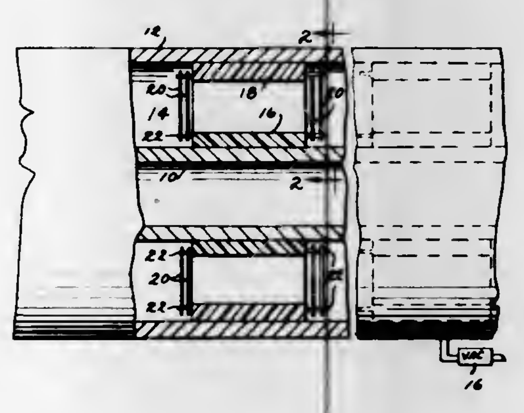
1. A trash hauling truck of the front loading type, said truck having an engine propelled chassis equipped with trash receiving means, enclosed crew compartments at either forward corner of said chassis, power operated loading means for transferring trash from street level forward of said truck to a dumping position overlying said engine and said crew compartments, said loading means including motor powered linkage means located between said crew compartments and pivotally connected to the front portion of said truck for arcuate movement in a vertical plane extending lengthwise of said truck, one of said crew compartments comprising a driver station for said truck located laterally of the path of movement of said linkage means whereby the driver may enter and leave said driving station without crossing said path movement.

3,351,223
INSULATED ENCLOSURE
Willard L. Morrison, Lake Forest, Ill., assignor to Union Stock Yard and Transit Company of Chicago, The Union Stock Yards, Chicago, Ill., a corporation of Illinois
Filed Dec. 30, 1963, Ser. No. 334,498
2 Claims. (Cl. 220—12)

1. A self-contained insulated, rectangular parallelepipedic shaped enclosure comprising a plurality of individual flat insulating panels, said panels defining at least the side walls and the top wall of said enclosure, each of said walls including a plurality of panels positioned in edge to edge relationship with the panels forming the top wall resting on the top edges of the panels forming the side walls, stationary vertical posts positioned to engage both of the exterior faces making up a corner portion betwen adjacent side walls, other vertical posts fixed in position to engage the other corner portions of the same side walls, posts fixed in position in spaced relation to the corner portions of the other two side walls and resilient means between said spaced posts and said adjacent corner portions of the other two side walls acting in a plane perpendicular to the first posts constantly to urge the side walls in the direction towards the fixed posts engaging the first side walls.

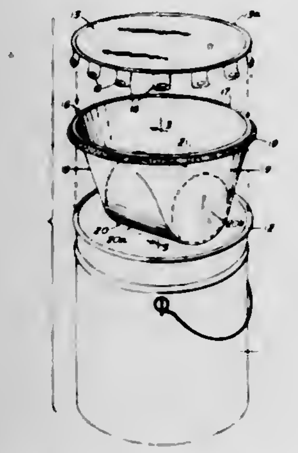


3,351,224
VACUUM JACKET CONSTRUCTION
James H. Anderson, 1615 Hillock Lane, York, Pa. 17403
Filed June 11, 1964, Ser. No. 374,448
15 Claims. (Cl. 220—15)



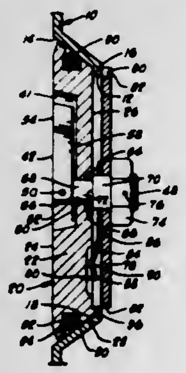
1. A double walled heat insulating vessel or the like comprising: an inner wall structure defining a space for containing material to be insulated from ambient temperatures; an outer wall structure at least partially surrounding said inner wall structure and spaced therefrom and defining therewith a space adapted to be evacuated in order to reduce heat transfer between the walls; supporting means between said inner wall and said outer wall, said supporting means including a plurality of mutually spaced spoke-like elements extending between and attached to the exterior surface of said inner wall structure and to the interior surface of said outer wall structure, said spoke-like elements being the sole suspending interconnection between said wall structures and being defined by at least one tensioned cable constructed of a material having high tensile strength and a heat conductivity lower than that of metal, said cable passing through a concentric tubular heat shield at a plurality of circumferentially spaced apart locations and being deflected by said heat shield thereby increasing the length of the cable between successive points of attachment and thereby providing a long heat conduction path between said wall structures.

3,351,225
PARTITION FOR DUAL CHAMBERED CONTAINER AND METHOD OF FORMING MOLD THEREFOR
Charles A. Speas, Towson, and Charles T. Jordan, Baltimore, Md., assignors to Hedwin Corporation, New York, N.Y., a corporation of Maryland
Filed Mar. 24, 1965, Ser. No. 442,410
1 Claim. (Cl. 220—22)



A partition for a dual chambered container having a removable rim-engaging top closure comprising a diaphragm of at least semi-rigid thermoplastic material, the boundary of which is permanently contoured to conform with and closely embrace the adjacent upper rim of said container between the latter and said top closure to form a seal, the bounded area of said diaphragm being preformed to define a concave partition depending within said container and providing the walls of an auxiliary chamber adapted to be covered by said closure, the boundary of said diaphragm being provided with a continuous, radially projecting flange of selectively colored plastic, said top closure being provided with a series of annularly spaced locking lugs engageable with the periphery of said container, the areas of said colored flange between respective lugs being visible to provide identification means.

3,351,226
REMOVABLE CLOSURE
Clark H. Hogan, and Harry R. Packard, Oklahoma City, Okla., assignors to H & E Aircraft Company, Oklahoma City, Okla., a corporation of Oklahoma
Filed Dec. 13, 1965, Ser. No. 514,169
9 Claims. (Cl. 220—25)



1. Closure means comprising:

a body member having first and second faces and including

spaced lugs on said first face,

radially spaced recesses in said first face, and

a central bore extending therethrough and intersecting said faces;

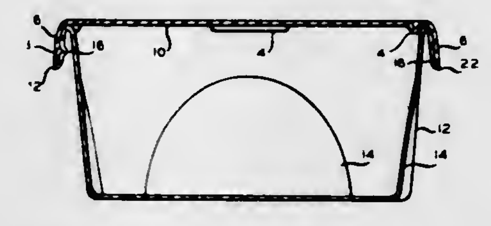
a shaft movably disposed in said bore;

a locking plate operably connected with said shaft, said locking plate having radially extending finger portions thereon arranged to be aligned with said lugs;

a spring member operably connected with said shaft in engagement with said locking plate and the first face on said body member, said spring having protuberances thereon engaging said body member in said recesses to determine the rotational position of said spring member and locking plate relative to said body member; and

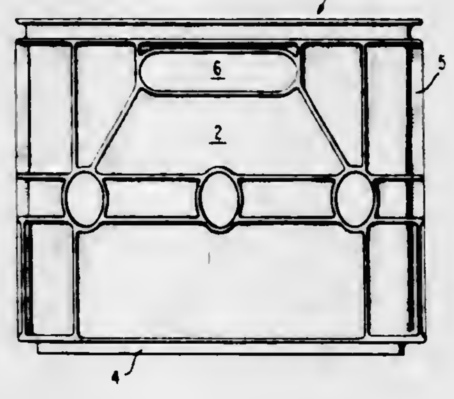
actuating means connected with said shaft adjacent said second face, said actuating means being rotatable with said shaft and pivotal relative thereto, said actuating means engaging said second face and, when in a first pivotal position, holding said locking plate away from said body member and, when in a second pivotal position, moving said locking plate relatively toward said body member.

3,351,227
CONTAINER AND COVER THEREFOR
Stafford D. Collie, Fulton, N.Y., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 496,991
11 Claims. (Cl. 220—60)



1. A container having a tight fitting snap-on cover, said container comprising an open top flexible shell having a depending flange with an outwardly extending lip on the bottom thereof to protect the cover from being accidentally removed, said cover having a depending flange adapted to interlockingly engage the said depending flange on said container, said lip extending outwardly to at least the outer periphery of the lower edge of said depending flange of said cover and being positioned closely adjacent to and below the lower edge of said depending flange of said cover when said cover is interlocked with said container.

3,351,228
BOTTOM STRUCTURE FOR MOLDED PLASTIC CONTAINER
George R. Huisman, Inglewood, Calif., assignor to Rehrig Pacific Company, Los Angeles, Calif., a corporation of California
Filed July 22, 1965, Ser. No. 474,062
3 Claims. (Cl. 220—66)

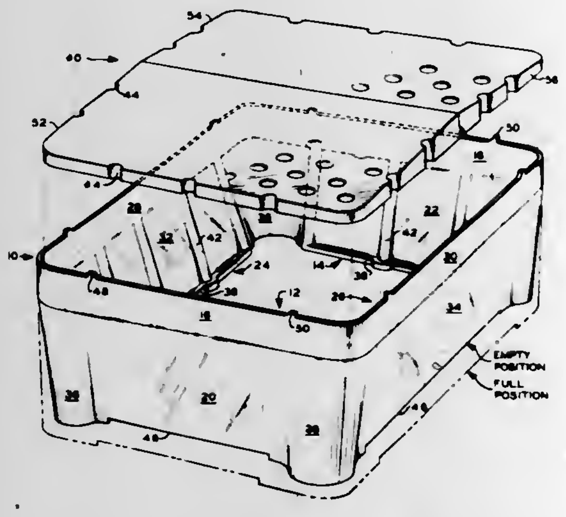


1. A material handling container comprising a substantially rigid generally rectangular bottom panel molded from a synthetic resin material, side panels spaced outwardly from said bottom panel one adjacent each side

edge thereof and extending upwardly therefrom, said side panels being joined along their side edges and having a segment of enlarged cross-section molded from synthetic resin material extending along the bottom portion thereof in outwardly spaced relation to said bottom panel, and means supporting said bottom panel for limited relative movement in the plane of said bottom panel with respect to said side panels, said means supporting said bottom panel including a plurality of gusset elements joining the peripheral edges of said bottom panel to said segment of enlarged cross-section, said gusset elements, said bottom panel, and said segment of enlarged cross-section being integrally molded from a single homogenous mass of synthetic resin material.

3,351,229
NESTING AND STACKING CONTAINER

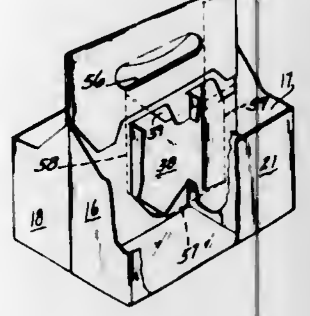
Orville J. Bridenstine, Caney, Kans., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 18, 1965, Ser. No. 508,436
9 Claims. (Cl. 220—97)



1. A container adapted to be nested and stacked vertically with a like container of identical shape, said container when empty comprising: a pair of opposed first walls, the top minor portion of each said first wall being essentially vertical and the remaining lower portion of each said first wall sloping inwardly toward the other first wall from the bottom of said vertical portion to the bottom of the wall; a pair of opposed transverse second walls, the top minor portion of each said second wall being essentially vertical and the remaining lower portion of each said second wall sloping inwardly toward the other first wall from the bottom of said vertical portion to the bottom of the wall; adjacent walls of said first and said second walls being integrally joined to each other along the vertical edges of said vertical portions thereof forming an essentially vertical rim extending continuously around the top portion of said walls; a rounded corner portion disposed between and integrally joining adjacent first and second walls along the vertical edges of said lower portions thereof, and integrally joined along its top edge to the bottom edge of said rim to form a generally tubular structure having an open top and an open bottom; a ledge extending inwardly from at least two of said opposed walls along the bottom edges thereof; and a floating pallet bottom disposed within the inner periphery of said open top in contact with said inwardly sloping lower portions of said walls, said bottom being adapted to move downward and expand said lower portions of said walls to an essentially vertical position when an increasing weight is placed on said bottom as during the filling of said container, and to come to rest on said ledges.

3,351,230
BASKET-STYLE ARTICLE CARRIER

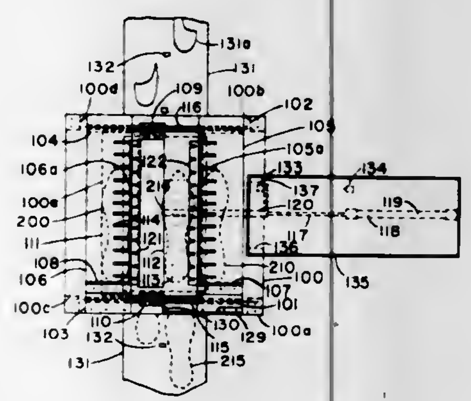
Richard L. Schuster, Monroe, La., assignor, by mesne assignments, to Olinkraft, Inc., West Monroe, La., a corporation of Delaware
Filed Apr. 26, 1966, Ser. No. 545,347
5 Claims. (Cl. 220—113)



1. In a basket-style article carrier of the type having a plurality of individual cells for receiving articles individual to each cell, said carrier having a four-ply handle structure including a pair of hinged outer panels and a connected pair of hinged inner panels, a central keel, a hinge panel hinged to said central keel and to one of said panels, said hinge panel being operative to extend within the handle panel and said central keel being operative when the carrier is in the erect condition to extend from within said four-ply handle structure downwardly a distance of at least two-thirds the depth of the carrier.

3,351,231
RECIPROCATING FEED PLATE

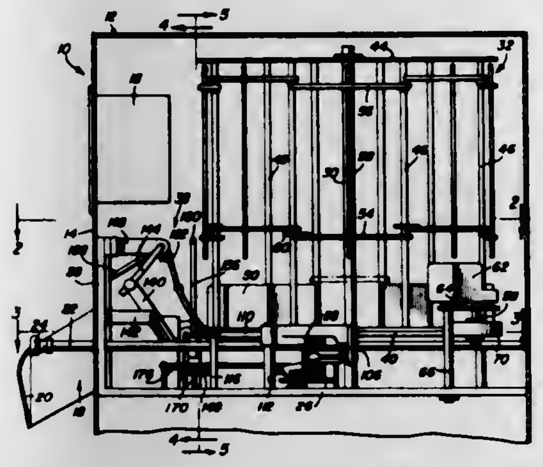
Harold R. Shurtleff, Rte. 1, Buzzard Bay, Bourne, Mass. 02532
Filed Oct. 22, 1965, Ser. No. 501,171
9 Claims. (Cl. 221—13)



1. An apparatus for delivering an object (**201**) from the end of a stack of objects (**200**) comprising: a reciprocating, moveable plate (**111**) having frictional means (**114**) for engaging the outer surface of the object (**201**) and a fixed plate (**121***a*) mounted above said moveable plate (**111**); said fixed plate (**121***a*) having a plurality of spaced slots (**121***b*) along one edge; a plurality of positioning fingers (**124**) of varying sizes being pivotally mounted above said slots (**121***b*); the direction of motion of said moveable plate (**111**) being transverse to said edge; at least one pair of said fingers (**124**) being spaced within a selected pair of said slots (**121***b*) so that motion of the moveable plate (**111**) away from the stack will cause said object (**201**) to lift said fingers (**124**) and then cause them to drop back into said slots (**121***b*) behind said object (**201**) so as to block reverse motion of said object (**201**) and hence cause said object (**201**) to drop in the desired position.

3,351,232
ARTICLE DISPENSER INCLUDING A ROTARY SUPPORT FOR A PLURALITY OF ARTICLE RETAINING MAGAZINES

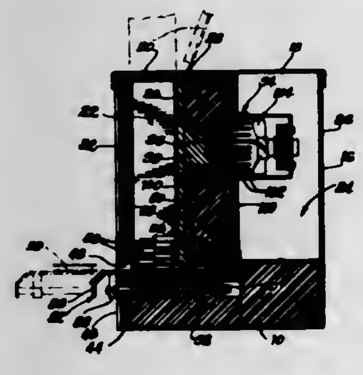
Olof O. Anderson, Rte. 1, Box 163, Solsberry, Ind. 47459
Filed Oct. 21, 1965, Ser. No. 499,960
10 Claims. (Cl. 221—113)



1. In a vending machine for articles stacked in a plurality of vertical columns, a rotatable support on which said articles are stored, a delivery chute operatively positioned in alignment with one of said columns, selectively actuated ejection means displaceable through a predetermined stroke for displacing a lowermost article radially outwardly of the support into the delivery chute, means responsive to displacement of said ejection means in one direction through said stroke for supporting the column of articles above the lowermost article independently of the support, and indexing means responsive to return movement of the ejection means through said stroke for successively moving said columns into alignment with the delivery chute, said supporting means comprising, a pair of lift fingers, means pivotally mounting the fingers for elevating movement thereof relative to the column of articles, and guide means engageable with said fingers for displacement thereof into gripping engagement with the column during said elevating movement.

3,351,233
REFRIGERATED FOOD DISPENSER HAVING A RECIPROCATING EJECTOR

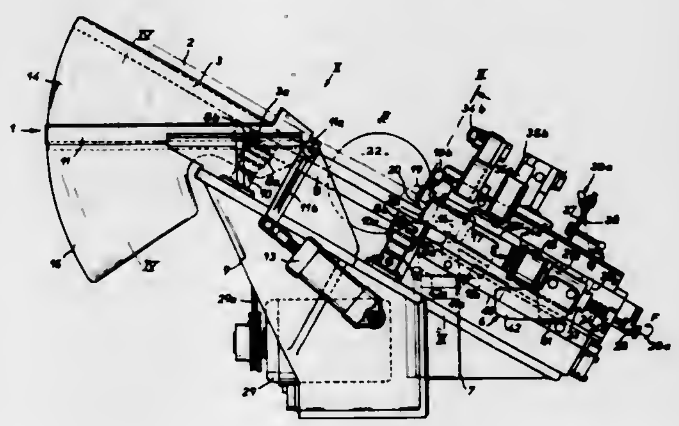
Lawrence H. Chanoch, 7641 Kilbourn Ave., Skokie, Ill. 60076, and Sidney Blumberg, 3440 N. Hollywood Ave., Chicago, Ill. 60645
Filed Feb. 21, 1966, Ser. No. 528,970
7 Claims. (Cl. 221—150)



1. In a refrigerated device for the display and dispensing of food products arranged in the form of flat pads, an elongate chute having a cross-sectional dimension slightly greater than the cross-sectional dimension of the pads for receiving a plurality of pads stacked one on the other therein, said chute being formed with front, side and back walls and portions extending horizontally inwardly from the lower ends of the side walls to define a bottom wall on which the lowermost pad of the stack rests with the inwardly extending portions terminating short of one another to provide a slot therebetween, a slot in the front wall dimensioned to have a width slightly greater than the width of the pads and extending upwardly from the bottom wall for a distance greater than the height of one pad but less than the height of two to enable a single lowermost pad in the stack to be displaced forwardly over the bottom wall for passage therethrough, another slot in the back wall in lengthwise alignment with the slot in the front wall and extending upwardly from the bottom wall, a housing, a front compartment in the housing dimensioned removably to receive a chute therein in vertical position, an elongate slide mounted in the housing for longitudinal movement between retracted and operated positions with an intermediate portion of the slide operative in the slot of the bottom wall substantially flush with the bottom wall, said slide being dimensioned to have a length greater than the depth of the chute to provide a forward handle portion extending forwardly of the housing and a trailing portion extending rearwardly of the chute when in retracted position, an abutment extending upwardly from the portion of the slide rearwardly of the chute dimensioned to have a width less than the width of the rear slot and a height less than the height of the rear slot to enable displacement of the abutment forwardly with the slide through the slot for engagement with the lowermost pad in the stack, an opening in the housing above the slide dimensioned to have a height greater than one pad to enable the pad to be displaced with the slide to the outside of the housing, means constantly urging the slide toward retracted position, and refrigeration means for cooling the front compartment comprising a wall formed of high heat conductive material in heat transfer relation with the back wall of the front compartment and a thermoelectric module mounted with its cold junction in heat conductive relationship with said heat conductive wall.

3,351,234
DEVICES FOR SEPARATING AND HANDLING STOPPERING OR CAPPING CAPSULES

Georges Duffau, Le Bouscat, France, assignor to Trefimetaux, Paris, France, a company of France
Claims priority, application France, Apr. 16, 1965, 13,615
Filed Apr. 15, 1966, Ser. No. 542,931
13 Claims. (Cl. 221—220)



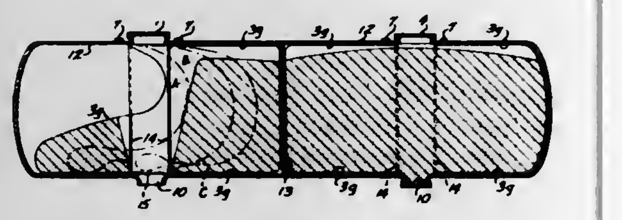
1. A device for separating a first capsule from an assembly of stoppering and capping capsules fitted in one another to form a stick, comprising a gripping head having deformable wall means including an elastic sleeve member adapted to be elastically expanded and constricted between a first position in which the deformable wall

means is adapted to freely engage over or into the first capsule in said stick of capsules, and a second position in which the elastic sleeve member is adapted to be applied with limited pressure against the first capsule; releasable clamping means for expanding and constricting the sleeve member between the said first and second positions; means for controlling the releasable clamping means and for moving the gripping head whereby the deformable wall means is freely engageable over or into the first capsule with the sleeve member in the first position; means for controlling the releasable clamping means in the second position of said sleeve member to apply the sleeve member against the first capsule; means for restraining the second capsule in the stick thereof; and means for moving the gripping head away from the stick of capsules.

3,351,235

INTERNAL MEMBRANE MECHANISM AND METHOD FOR UNLOADING MATERIAL FROM CONTAINERS

Hamilton Neil King Paton, 4603 118th SE.,
Bellevue, Wash. 98004
Filed Oct. 30, 1964, Ser. No. 408,467
39 Claims. (Cl. 222—1)



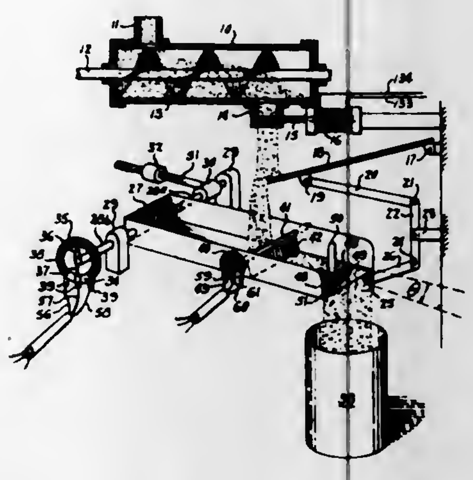
1. Unloading mechanism for a horizontally-elongated container to hold discrete particle material comprising a flexible cup-shaped membrane adapted to be disposed in container-lining relationship with an end wall and with portions of the top, bottom and side walls of the container and having an end wall in upright position when in such container-lining relationship and top and bottom side walls extending from said membrane end wall in generally horizontal position when in such container-lining relationship, said side walls of said membrane being of an axial extent less than one-half of the horizontal extent of the container, attaching means spaced from said upright membrane end wall when in such container-lining relationship and securing the edge portions of said side walls to the wall of the container substantially in an upright plane spaced from such container end wall, and discharge means located immediately at the side of said attaching means opposite said membrane end wall in container-lining relationship and including an outlet located at the bottom of the container for removal of material from the container by inversion of said membrane from wall-lining relationship into a position in which a portion of the bottom of said membrane is in overlying registry with said discharge means.

30. In the method of unloading discrete particle material from a container through a bottom discharge port, the steps which comprise providing a membrane in the container having a portion overlying and engageable with the upper surface of the discrete particle material in the container, and subjecting the side of the membrane engaged with the discrete particle material to a suction source for producing thereon a pressure less than that on the opposite side of the membrane and thereby progressively pressing the membrane against the discrete particle material and moving such overlying portion of the membrane downward to follow the discrete particle material in engagement therewith as the body of such material recedes during discharge.

3,351,236

WEIGHING DEVICE WITH ELECTRONIC COMPUTER

Theodore I. Sorenson, Dutton, Mont. 59433, and Folke C. Shovic, 3644 9th Ave. S., Great Falls, Mont. 59401
Filed Mar. 19, 1963, Ser. No. 266,321
21 Claims. (Cl. 222—20)



1. An apparatus for determining the quantity of a flowable material comprising an angularly adjustable chute down which the material travels, a transducer having an arm secured to said chute so as to be responsive to variations in its angular position due to material entering same, a computer circuit including an electronic discharge device having a current collecting electrode (anode) and a current emitting electrode (cathode), a relay, a circuit for delivering a response modifying voltage to the electronic release device comprising on one side a conductor from the transducer to one side of the winding of the relay and a conductor from the other side of the winding of the relay to the current collecting electrode of the electronic discharge device, a pulse shaping network for delivering a pulse to the electronic release device including branches with a variable resistor in one branch, a diode rectifier in a second branch, and a fixed resistor and a capacitor in series in another branch, and a circuit for delivering a pulse across the anode and cathode of the electronic release device including a battery, and series connections from the anode of the electronic release device, the pulse shaping network, the battery, the contacts of the relay, and to the cathode of the electronic release device, a source of electro-motive force for the heater of the electronic release device, an output circuit (counter) connected to the computer for producing a read-out signal perceptible to human senses which is indicative of the amount of fluent material which has flowed through the chute.

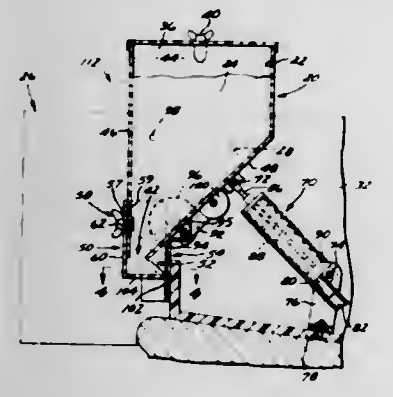
3,351,237

MEASURED-QUANTITY INTERMITTENT-ACTION DISPENSER FOR A PARTICULATE MATERIAL

Robert Ortega, Los Angeles, Calif.
(4171 Calhoun Drive, Huntington Harbour, Calif.)
Filed Feb. 28, 1966, Ser. No. 530,280
17 Claims. (Cl. 222—23)

1. A measured quantity intermittent-action dispenser for flowable material, comprising: supply hopper means having a hollow interior chamber defined therein adapted to contain therein a quantity of a flowable material which is to be intermittently dispensed in measured quantities; supporting framework means rotatably mounting said hopper means for rotation about a substantially horizontal axis of rotation between a first substantially vertically directed position and a second substantially horizontally directed position angularly displaced from each other around said axis of rotation; said hopper means having a lower discharge means at the bottom thereof provided with an underlying measuring container trough

means positioned to receive a measured quantity of flowable material discharged under the action of gravity downwardly through said discharge opening means thereinto, a rear portion of said container trough means being provided with dumping opening means, said dumping opening means including rotatably mounted gate means positioned for closure of said dumping opening means when said hopper means is in said first upright position thereof, and positioned for opening of said dumping opening means when said hopper means is moved through intermediate position between said first and second rotatably displaced positions whereby to dump the measured quantity of flowable material from said container trough means under the action of gravity through said dumping opening means into a desired receiving region; linear fluid-pressure-operated actuator means rotatably connected at one end to said hopper means at a location offset from said substantially horizontal axis of rotation of said hopper means and rotatably connected at the other end to a fixed mounting location relative to said supporting framework means and being provided with a high-pressure input duct means adapted for connection to a source of fluid under pressure adapted to be maintained below a predetermined pressure valve when the actuator is to be in unactuated condition and adapted to be maintained above a predetermined pressure when the actuator means is to be in fully actuated condition; and including gate-operating lever means connected to said gate means, and lever-operating means carried by said upstanding framework means in the rotative path of travel of said lever means for moving said lever means, and said gate means connected thereto, into gate-open relationship in response to abutment of said lever means and said lever-operating means.

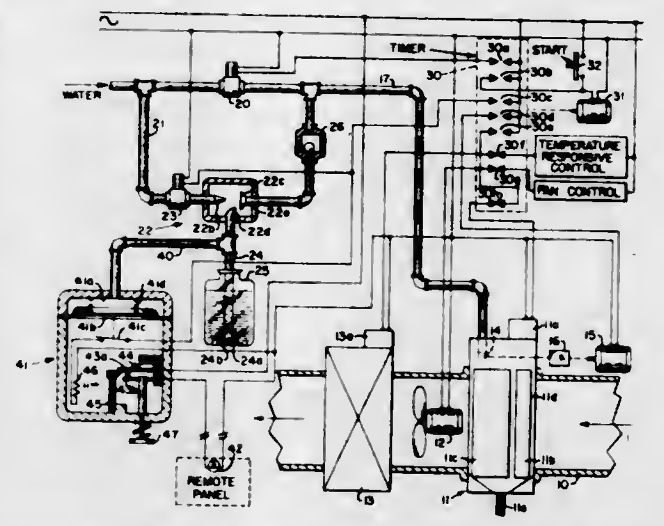


3,351,238

DISPENSER WITH LOW SUPPLY INDICATOR

Lynn A. Gilbertson, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Apr. 29, 1966, Ser. No. 546,309
10 Claims. (Cl. 222—23)

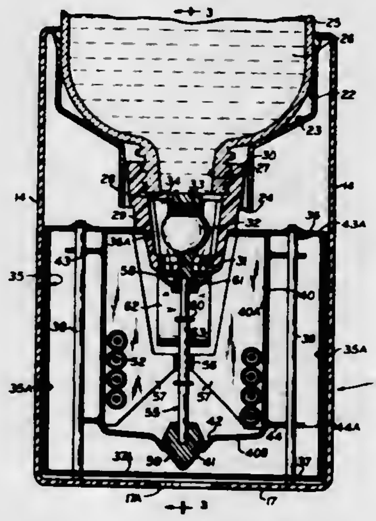
1. In an in-place treating apparatus for a gas cleaner wherein the treating apparatus includes treating manifold means, a container for holding a supply of treating liquid, liquid conduit means connecting the container to the manifold means, pump means in said conduit means operable to pump treating liquid from the container to the manifold means, and control means for the treating apparatus operable to sequence the apparatus through a treating cycle having only portions thereof during which the pump means is operated, the improvement comprising: said conduit means including a portion having an opening into said container at a level therein which is normally beneath the surface of the treating liquid therein; pressure responsive means connected to said conduit means and operable by pressure therein between said opening and said pump means; output means operable by said pressure responsive means upon the existence of predetermined pressure conditions sensed thereby; and means controlled by said control means, normally precluding operation of said output means by said pressure responsive means, and rendering said output means operable by said pressure responsive means only during portions of the treating cycle when said pump means is operated.



3,351,239

FLUID DISPENSING DEVICE

Truman Fontell Flock, Atlanta, Ga., assignor to Inst-O-Matic Corporation, Washington, D.C., a corporation of the District of Columbia
Filed June 18, 1962, Ser. No. 203,316
8 Claims. (Cl. 222—54)



8. In a machine of the class described, a cup having an inlet and an exit through which liquid passes into and out of said cup, means for selectively closing said inlet and exit, heat responsive means disposed within said cup and adapted to be submerged in said liquid when the liquid reaches a predetermined level in said cup, and detent means actuated by said heat responsive means for actuating said means for selectively closing said inlet and exit.

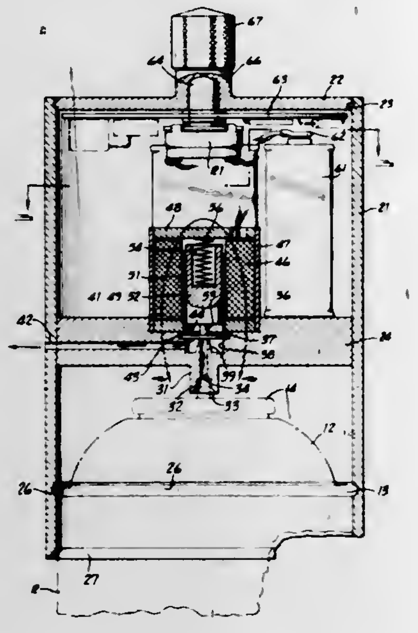
3,351,240

AUTOMATIC AEROSOL DISPENSER

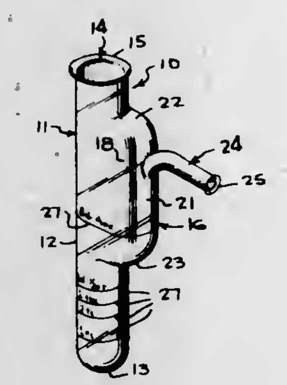
Robert L. Gray, San Carlos, Calif., assignor, by mesne assignments, to Chem-Spray Controls, Inc., San Francisco, Calif., a corporation of California
Filed Jan. 17, 1966, Ser. No. 521,010
3 Claims. (Cl. 222—70)

1. A combination of means for effecting timed, power-actuated, periodic dispensing of fluid from an aerosol container, said container having a movable valve stem-conduit and a spring urging said valve stem-conduit outwardly of said container to a valve-closed position, whereby the power required to effect such periodic dispensing is

minimized, comprising housing means having first conduit means adapted to interfit with and move said valve stem-conduit against the resistance of said spring inwardly of said container to a valve-open position; second conduit means adapted to effect communication between said first conduit means and the exterior of said housing means; movable valve means adapted in a first position to interrupt flow communication between said first and second conduit means and in a second position to effect flow communication between said first and second conduit means; power means adapted upon being activated to move said valve means from said first position to said second position and adapted upon being de-activated to move said valve means from said second position to said first position; timer means to activate and de-activate said power means; and means adapted to connect said housing means and said container together to effect, during the course of the making of such connection, the interfitting of said first conduit means with said valve stem-conduit and the movement of said valve stem-conduit against the resistance of said spring inwardly of said container to a valve-open position, thereby de-activating said spring and rendering the same non-opposing to activation of said power means.

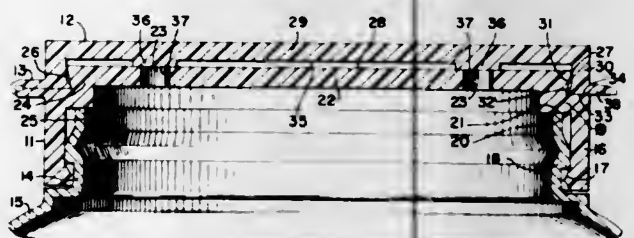


3,351,241
MEDICINE DISPENSER
Robert S. Wood, Aldie, Va. 22001
Filed Aug. 4, 1966, Ser. No. 570,370
3 Claims. (Cl. 222—158)



1. An apparatus for accurately measuring and dispensing fluids comprising a tubular member with walls of generally uniform diameter and having a closed rounded bottom at one end, the other end being open and terminating in an outwardly flared annular flange, an elongated protuberance extending outwardly from the walls of the tubular member, the protuberance being located intermediate of the ends of the tubular member and having generally parallel sidewalls intersecting at one end thereof with the walls of the tubular member in a tangential relationship, the other end of the protuberance sidewalls meeting in a rounded end wall, the protuberance having a rounded top and rounded bottom flaring into the walls of the tubular member thereby forming with the sidewalls and the end wall a dispensing reservoir, means for dispensing fluid from the protuberance, the end and rounded bottom of the tubular member forming a measuring reservoir, indicia upon the measuring reservoir to allow accurate measurement of fluid placed in the reservoir, whereby when the tubular member is lowered toward the horizontal in the direction of the protuberance the enclosed fluid flows into the dispensing reservoir and subsequently into the dispensing means.

3,351,242
DISPENSING CLOSURE
William F. Lodding, Wilmington, Del., and Mindaugas J. Klygis, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 9, 1966, Ser. No. 526,210
8 Claims. (Cl. 222—189)



1. An integral dispensing closure made of flexible, resilient material and comprising a sifter portion including means for securing said closure in sealing contact with the neck of a container, a cover portion in frictional sealing engagement with said sifter portion, and a relatively thin flexible connecting strap integrally connecting said sifter and cover portions, said sifter portion including a sifter plate of uniform thickness provided with a plurality of dispensing openings, said cover portion including a solid end panel overlying said sifter plate and in spaced relation thereto, said end panel being provided with a plurality of downwardly depending projections corresponding in number and arrangement to the dispensing openings in said sifter plate, the bottom surface of each of said projections being larger than the corresponding dispensing opening and overlying said dispensing opening in sealing contact with the immediately contiguous area of the sifter plate, said cover portion being readily separable from sealing engagement with said sifter portion by upward vertical movement away from said sifter plate.

3,351,243
RANGE FEEDER APPARATUS
Carl E. Kennedy, Box 2435, and Wiley E. Reynolds, Jr., Box 961, both of Pampa, Tex. 79065
Filed June 2, 1966, Ser. No. 554,724
8 Claims. (Cl. 222—189)

1. Apparatus for dispensing measured quantities of feed material onto a range for feeding livestock comprising:

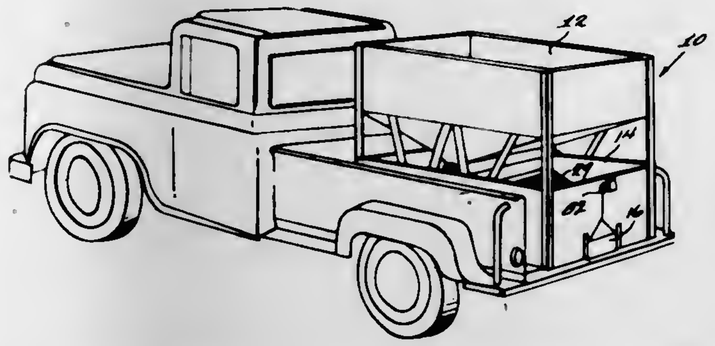
a storage bin for carrying a large quantity of feed material for dispensing at various points on a range, said storage bin having a bottom opening through which feed material may pass into two measurement cylinders rotatably mounted adjacent said bottom opening;

a receiving bin for receiving and holding a measured quantity of feed material which is discharged from the storage bin by a rotation of one or both of said two measurement cylinders, said receiving bin having a dispensing opening which is opened and closed by a gate means;

driving means for separately rotating said measurement cylinders;

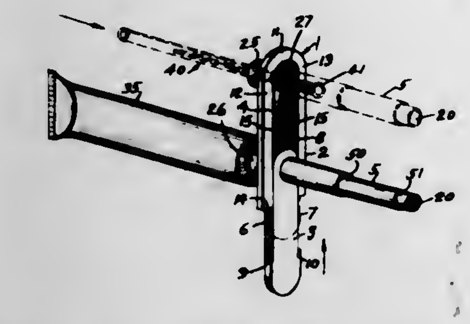
control means for actuating said driving means for rotating one or the other of said two measurement cylinders; and

a separate control means for operating said gate means, whereby a measured quantity of feed material can be dumped from the storage bin into the receiving bin and then dispensed from the receiving bin at a desired time by opening the gate means associated with the receiving bin.



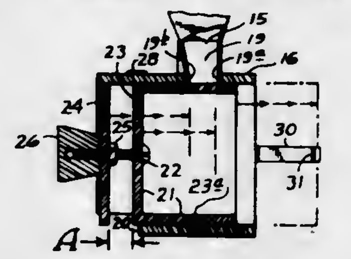
2. The apparatus of claim 1 wherein said receiving bin includes a floor portion having a plurality of small apertures therethrough for separating out undersized particles and crumbs from pellitized feed material being dispensed by said apparatus, and including a salvage bin in communication with said flood portion for receiving screened out particles and crumbs.

3,351,244
DISPENSER FOR IMPRESSION MATERIAL
Paul I. Zandberg, 8202 Romaine, Los Angeles, Calif. 90046, and Charles F. Taylor, 2160 El Cajonita St., La Habra, Calif. 90631
Filed Aug. 8, 1966, Ser. No. 571,957
7 Claims. (Cl. 222—216)



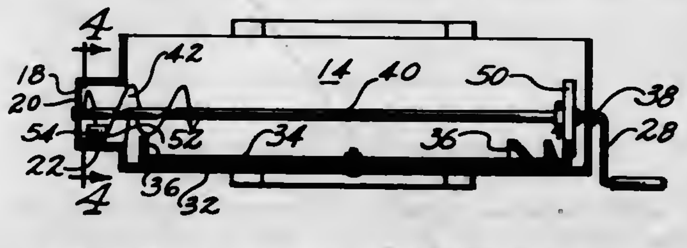
7. A dispenser, including: a base provided with an upper and a lower transverse opening, the lower opening of which is adapted to have a collapsible tube secured thereto, a slide carried by the base and a measuring tube projecting from the slide and adapted in one position of the slide to communicate with the lowermost opening of the base and in a second position to close the lowermost opening and align with the uppermost opening of the base, said collapsible tube adapted to eject into the measuring tube impression material and said measuring tube having measuring indications to indicate the volume of material received therein, and a plunger for moving the impression material in said measuring tube outwardly thereof.

3,351,245
DISPENSER FOR GROUND COFFEE AND THE LIKE
Rudolph W. Johnson, Troutdale, Oreg., assignor to Boyd Coffee Company, Portland, Oreg., a corporation of Oregon
Filed Aug. 15, 1966, Ser. No. 572,271
3 Claims. (Cl. 222—308)



1. A dispenser for ground coffee and the like comprising, in operative position, an upright hopper having an opening at the bottom end thereof; a hollow cylinder formed of a tubular wall and having openings at opposite ends mounted adjacent the base of the hopper; said cylinder also having an aperture in its top side communicating with the opening in the bottom end of the hopper, and a cutout area adjacent one end and in the bottom side thereof; a plunger assembly mounted for reciprocal movement within said cylinder; said plunger assembly comprising a piston with an end wall and cylindrical skirt, a circular cut-off plate axially aligned with said piston and spaced from said end wall thus to define a chamber between the cutoff plate and end wall, and means extending axially between the piston and cutoff plate mounting one on the other; and detachable harness means detachably secured to the cylinder and including stops adjacent each end of the cylinder projecting radially inwardly of the tubular wall of the cylinder limiting reciprocal movement of said plunger assembly between a pair of limit positions; said plunger assembly being removable through one of the open ends of the cylinder on removal of said harness means; said chamber registering with said aperture whereby it may receive coffee from the hopper with the plunger assembly in one limit position and registering with the cut-off area in the cylinder whereby coffee may dump from the chamber with the plunger assembly in its other limit position.

3,351,246
DISPENSER HAVING MEASURED DELIVERY FROM AN OUTLET
Lawrence E. McQuade, Fairview Park, Ohio, assignor to National Service Industries, Inc., Atlanta, Ga.
Filed Sept. 8, 1966, Ser. No. 577,977
2 Claims. (Cl. 222—380)



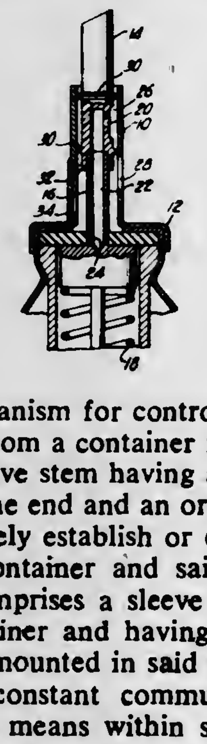
1. In a dispenser for dispensing a measured quantity of substance such as hand cleaner through a dispenser opening on said dispenser, said dispenser including a container having conveyor means manually operated therein to deliver the substance to the dispenser opening and said conveyor being movable and having a portion thereof moving adjacent the outlet, the improvement comprising:

(a) valve means on said dispenser operated by said manually operated means automatically to move out of position to open said dispensing opening when the manual means is moved and automatically moving into position after said manual operating means is moved,

- (b) said valve including a member attached to said conveyor and traveling therewith and moving into and out of position over said delivery opening,
- (c) and said dispenser outlet being located in a curved portion in which said conveyor operates, said valve closure plate being curved with substantially the same curvature of said outlet, wherein said conveyor is a screw conveyor mounted on a shaft having a handle thereon, and said dispenser plate is attached to one edge of said screw conveyor extending a limited amount therefrom to close said opening in a non-dispensing position but to move out of the way and to expose said opening to the interior when the conveyor is operated.

3,351,247
ANTI-CLOGGING DEVICE

John Frangos, Brooklyn, N.Y., assignor to Revlon, Inc., New York, N.Y., a corporation of Delaware
Filed June 15, 1966, Ser. No. 557,800
6 Claims. (Cl. 222—402.12)

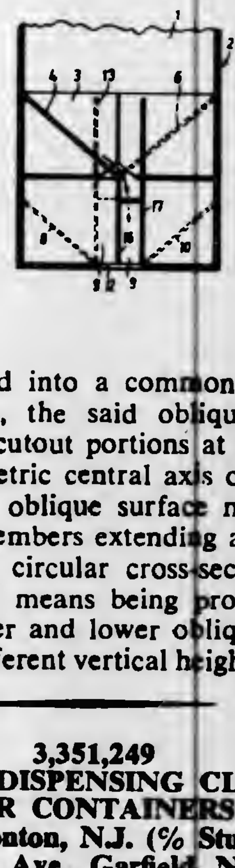


1. In a valve mechanism for controlling the dispensing of pressurized fluid from a container for such fluid which includes an outlet valve stem having a longitudinal channel therein open at one end and an orifice adjacent its opposite end to selectively establish or destroy communication between said container and said channel, the improvement which comprises a sleeve adapted to be supported on said container and having an outlet opening, an actuator slidably mounted in said sleeve and having a terminal orifice in constant communication with said channel, sealing ring means within said sleeve and surrounding said actuator on opposite sides of the terminal orifice thereof for sealing said orifice closed from the atmosphere when said channel in said valve stem is out of communication with said container, said terminal orifice in said actuator being adapted to align with said opening in said sleeve to establish communication between said channel in said valve stem and the atmosphere when said channel is in communication with said container.

3,351,248
OUTLET DEVICE FOR BUNKERS FOR BULK GOODS

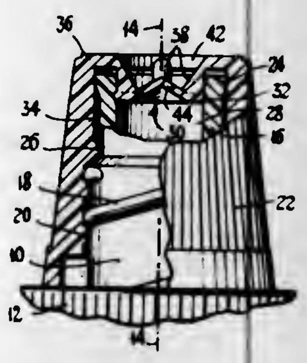
Hans-Dieter Baehr, Hamburg, Germany, assignor to Kommanditgesellschaft Industrie-Bau Nord G.m.b.H. & Co., Hamburg, Germany
Filed July 21, 1966, Ser. No. 566,930
Claims priority, application Germany, June 30, 1966, I 31,208
4 Claims. (Cl. 222—459)

1. An outlet device for bunkers for bulk goods, wherein upper oblique surface means are serially arranged about the inner periphery of the bunker and extend inwardly therefrom for directing material generally spirally to an outlet opening, the bunker outlet being divided in cross-section into a plurality of sectors by said upper oblique surface means, each said surface means having a leading edge and a trailing edge and wherein each said leading edge leads into a hollow space of a previous sector, below an edge of a previous upper oblique surface means, each oblique surface means covering the outlet opening of the previous oblique sector, each oblique sector opening into a shaft having at least one vertical wall, the lower oblique outlet surface being arranged in the shafts and being directed towards a common central outlet opening, the oblique outlet surface means terminating inwardly in an outlet opening having a contour generally similar to that of the bunker's cross-section, the oblique surface means further being directed into a common outlet funnel of circular cross-section, the said oblique surface means being provided with cutout portions at their surface portions nearest a geometric central axis of the bunker, the leading edges of the oblique surface means terminating on transverse wall members extending across the bunker, the bunker being of circular cross-section and at least three oblique surface means being provided at different heights, and the upper and lower oblique surface means being offset and at different vertical heights.



3,351,249
CAPTIVE DISPENSING CLOSURE FOR CONTAINERS

Morton B. Stull, Boonton, N.J. (% Stull Engraving Co., 221–223 Banta Ave., Garfield, N.J. 07026)
Filed Aug. 19, 1966, Ser. No. 573,717
8 Claims. (Cl. 222—520)

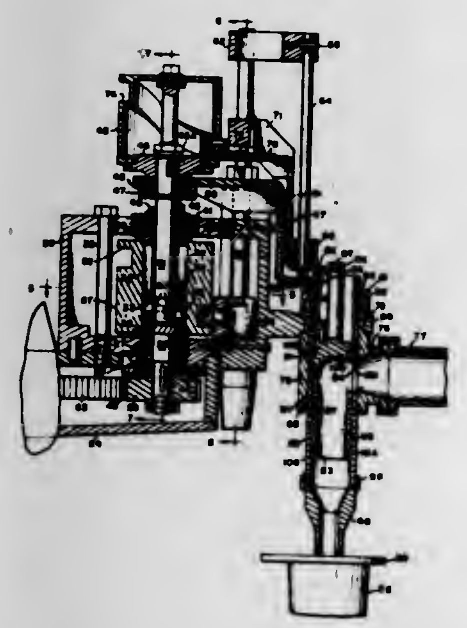


1. A captive closure construction for a container, comprising in combination:

- (a) a closure body member having a main axis and having a centrally disposed tubular portion extending along said axis and constituting a discharge passage, said tubular portion having an annular top rim provided with a smooth bore,
- (b) a screw cap turnably carried on said body member and movably axially thereon,
- (c) said screw cap having a peripheral top wall portion, and having at a level below said top wall portion a dished, hollow and imperforate sealing and liquid-blocking portion adapted to engage and be frictionally received in the annular top rim of the tubular discharge portion of the body member to seal against the same when the screw cap is in a lower position on the body member, said dished imperforate sealing portion having an annular, radially inwardly yielding free bottom rim surrounding a central space which is at all times in communication with the space defined by the bore of said annular top rim, said bottom rim being axially slidable in and along said annular top rim,
- (d) connector means joining said dished imperforate sealing portion and peripheral top wall portion of the screw cap, said connector means including a supporting wall extending between said portions and to which the sealing portion is joined, said connector means having at least one discharge passage extending through it, to carry substance for discharge from the container when the screw cap is in a raised position on the body member, with its sealing portion removed from the top rim of the body member.

3,351,250
VALVE FOR VISCOUS FLUIDS

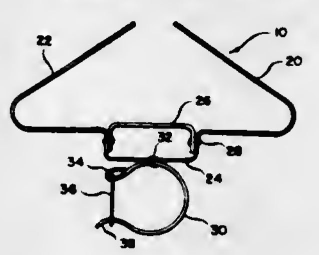
John B. West, Pikesville, Md., assignor to Maryland Cup Corporation, Owings Mills, Md., a corporation of Maryland
Filed Feb. 3, 1966, Ser. No. 524,673
9 Claims. (Cl. 222—532)



1. A valve for dispensing a highly viscous fluid material comprising a member having an inlet and an outlet for the material, a single means for opening and closing the inlet to permit the passage of a predetermined quantity of the fluid and for creating a suction against the fluid in the member after the inlet is closed to prevent discharge of excess amounts of fluid from the outlet, said means comprises a sleeve mounted for reciprocation in the passageway, said sleeve having an opening on one side adopted to register with said inlet in one position of its movement relative thereto, a piston mounted for reciprocation in said sleeve, said piston having an opening in the side thereof adapted to register with the said opening and sleeve in one position of its movement relative to the sleeve, said piston having a passageway extending through it from its said opening to its lower end, the lower end of said sleeve comprising an outlet apart from said inlet for material introduced through the inlet, sealing means between the piston and sleeve, and means for cyclicly reciprocating the sleeve and piston relative to the body and relative to each other so as to open the inlet for communication with the outlet for a period in each cycle of operation, then closing the inlet and, while the inlet is closed, move the piston upward relative to the sleeve to create a suction against the fluid material above the outlet.

3,351,251
UMBRELLA HOLDER FOR AUTOMOBILES

Charles G. Hinkle, 5 Roberta Drive, Greenville, S.C. 29607
Filed Nov. 23, 1965, Ser. No. 509,318
2 Claims. (Cl. 224—29)

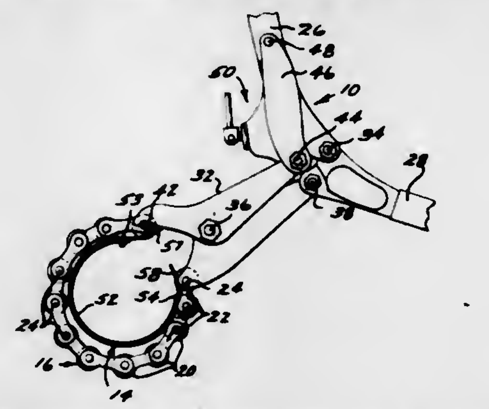


1. An umbrella holder for attachment to an automobile comprising:

- (A) a bracket assembly adapted to conform and be attached to a center post of said automobile and including a middle portion offset inwardly from said center post to define a support for said umbrella and bendable metal arm members adapted to conform to the configuration of a center post of said automobile, and
- (B) fastening means, including a holding ring spot welded to said bracket assembly together with catch means for releasably securing said umbrella therein.

3,351,252
ATTACHMENT FOR CHAIN-TYPE PIPE CUTTING TOOLS

Alfred D. Singley, 6819 E. San Carlos St., Paramount, Calif. 90723, and David J. Rawlins, Huntington Beach, Calif.; said Rawlins assignor to said Singley
Filed Oct. 23, 1965, Ser. No. 503,593
14 Claims. (Cl. 225—103)



2. An attachment for a chain-type pipe cutting tool having a pair of jaws one of which is releasably connected to a portion of the cutter chain of the tool, said attachment comprising:

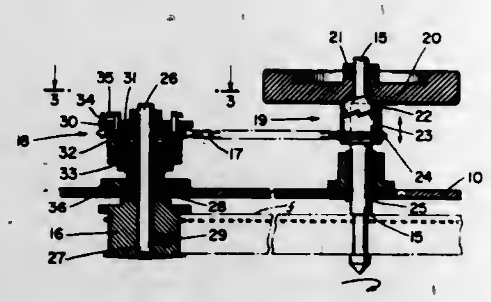
an open, generally loop-shaped band of substantially nonextendable, resilient material pierceable by the cutter elements of the cutter chain to connect said band to said chain and thereby maintain said chain in an open, loop-shaped configuration after severing a pipe; and means on said band for retaining said portion of said cutter chain connected to said one jaw after a severing of said pipe.

3,351,253
RESILIENT COUPLING FOR FLYWHEEL FILM DRIVE

Otto R. Nemeth, Los Angeles, Calif., assignor, by mesne assignments, to Photo Electronics Corporation, Los Angeles, Calif., a corporation of California
Filed Sept. 13, 1965, Ser. No. 486,628
5 Claims. (Cl. 226—13)

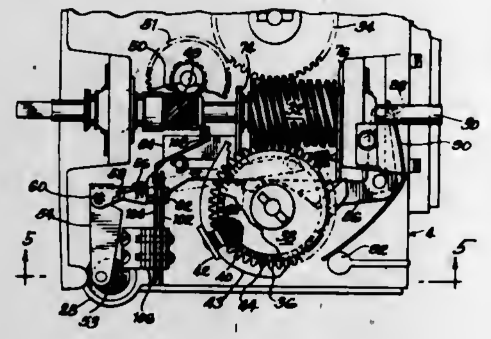
2. In a sound reproducing apparatus, including a motor and having a film fed from a feed reel to a take-up reel, the combination comprising; flywheel means designed to

be driven by said film; ratchet means associated with said flywheel means, said ratchet means being coupled for driving with said motor, and said ratchet means being designed to drive said flywheel independently of said film to a speed just lower than the normal film speed, said ratchet means being further designed such that when said film is moving at its normal speed the ratchet means will be disengaged; a film sprocket provided on said projector and coupled to be driven by said motor, and in which said film sprocket includes spring compliance means interposed therein, said spring compliance means enabling the motor coupled to said film sprocket to effect limited relative rotation of that part of said film sprocket coupled to said motor prior to motion being imparted to said film, whereby compensation is made for any change in movement of film as a result of the differential between said flywheel speed and said film spocket speed.



3,351,254
AUTOMATIC THREADER FOR MOTION PICTURE PROJECTOR

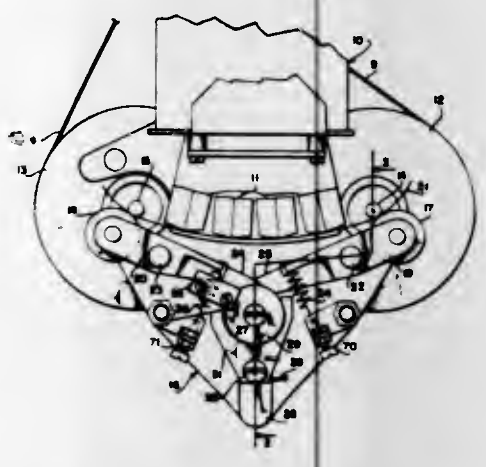
Frank C. Lustig and Charles H. Taylor, Chicago, Ill., assignors, by mesne assignments, to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Feb. 3, 1961, Ser. No. 86,971
15 Claims. (Cl. 226—91)



15. In motion picture apparatus including a film gate through which a filmstrip is to be intermittently advanced, a film supply, a film take-up, and means for feeding and guiding a filmstrip over a given path from said supply, through said gate and to said take-up, the combination comprising:
(a) a film feeding sprocket in advance of said gate;
(b) means for continuously rotating said sprocket in one direction to feed filmstrip from said supply to said gate;
(c) means contacted by the filmstrip in its travel between said sprocket and said gate during threading of the apparatus for guiding the filmstrip in a curved path from said sprocket to said gate;
(d) means for sensing the passage of said filmstrip from said gate; and
(e) means actuated by said means sensing the passage of filmstrip from said gate for momentarily changing the rate of operation of said film feeding sprocket to displace the filmstrip from engagement with said guiding means.

3,351,255
TAPE TRANSPORT PRESSURE ROLLER ACTUATOR

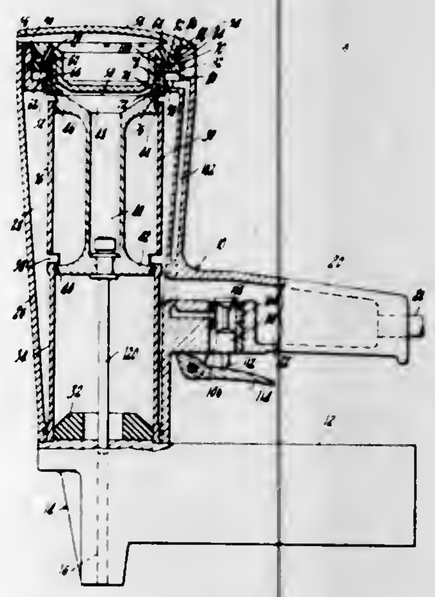
Alfred S. Gorawski, White House Station, and Henry A. Seesselberg, South Plainfield, N.J., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Sept. 15, 1965, Ser. No. 487,478
9 Claims. (Cl. 226—181)



1. A pressure roller actuator for tape recorders and the like having a capstan drive comprising, a frame, a pressure roller, arm means carrying said roller and hinged on said frame establishing a path of roller movement relative to said capstan, an eccentric cam rotatably carried on said frame for engaging said arm means and moving said roller away from said capstan, spring means urging said arm toward said capstan and in engagement with said cam means, said spring means being adjustable to regulate the force the roller may exert against the capstan, escapement means connecting with said cam and limiting retrograde movement thereof, ratchet drive means coupled to said cam, manual switch means for energizing said drive means, and automatic switch means deenergizing said drive means in response to arm movement to at least one extreme position.

3,351,256
FLUID ACTUATED DRIVING APPARATUS

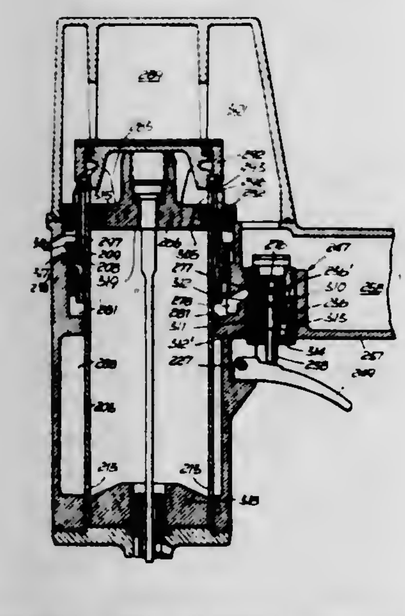
Peter A. Readyhough, Providence, R.I., assignor to Bostitch, Incorporated, East Greenwich, R.I., a corporation of Rhode Island
Filed Oct. 5, 1965, Ser. No. 493,017
15 Claims. (Cl. 227—130)



1. A pneumatic driving tool comprising a cylinder having an end, a piston disposed in said cylinder for axial movement away from said open end in a driving stroke, a fastener driving element secured to said piston at one end thereof, a shuttle, means for supporting said shuttle adjacent said open end of said cylinder for movement between a first position and a second position, said shuttle including a first surface portion for engaging the piston surface opposed to said one end to provide a seal between said shuttle and said piston, means defining an exhaust passage having an orifice disposed for communication with said opposed surface of said piston, said piston being normally urged into sealing engagement with said first surface portion of said shuttle, a reservoir chamber for supplying fluid pressure to said cylinder through the open end thereof in a piston driving stroke, a port adjacent said open end of said cylinder providing communication between said reservoir and said cylinder, said piston when in position engaging said first surface portion blocking communication between said reservoir chamber and said cylinder through said port, said port being fully opened during the driving stroke of the piston away from said shuttle, and control means for applying pressure fluid to said opposed piston surface to move said piston away from said shuttle in a driving stroke, said supporting means and said shuttle defining a control chamber, said control means including means for applying pressure fluid to said control chamber to control the movement of said shuttle between said first and second positions, and means for normally urging said shuttle towards said cylinder for closing said port between said cylinder and said reservoir, said urging means defining a passage connected to said reservoir, and a valve in said passage between said reservoir and said shuttle.

3,351,257
PNEUMATIC NAILING MACHINE

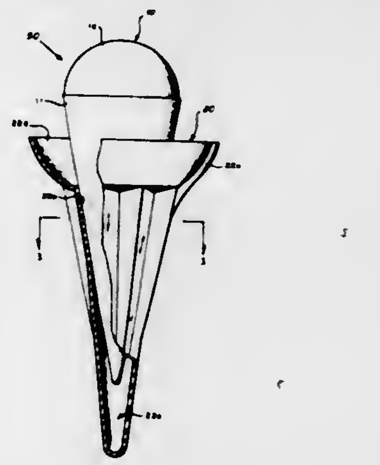
Kurt Reich, Nurtingen, Wurttemberg, and Adolf Cast, Oberlenningen, Wurttemberg, Germany, assignors to Karl M. Reich Maschinenfabrik Nurtingen, Wurttemberg, Germany
Filed Apr. 21, 1967, Ser. No. 634,048
Claims priority, application Germany, Apr. 25, 1964, R 37,776
14 Claims. (Cl. 227—130)



1. A pneumatic nailing machine comprising
a main cylinder defining a main chamber,
a percussion piston slidable within said main cylinder in the axial direction thereof,
said main cylinder having a pressure chamber behind said piston as a part of said main chamber,
at least one bore in the wall of said main cylinder opening into said pressure chamber,
a tubular slide valve surrounding said main cylinder,
a compressed air supply line controlled by said tubular slide valve,
means for communication between said compressed air supply line and said bore in response to the position of said tubular slide valve,
a vent line communicating said bore with the outer air for venting said pressure chamber,
said tubular slide valve being axially movable along said main cylinder between two positions, from a first position in which said tubular slide valve closes said vent line and compressed air passes into said pressure chamber, thereby acting upon the rear end of said percussion piston to carry out a forward power stroke, to a second position in which said tubular slide valve opens said vent line and interrupts the flow of compressed air to said pressure chamber, and
means for returning said percussion piston to its inactive position.

3,351,258
ICE CREAM CONE HOLDER

Leon Evantash, 855 Kent Lane, Philadelphia, Pa. 19115
Filed Oct. 19, 1966, Ser. No. 587,712
1 Claim. (Cl. 229—1.5)



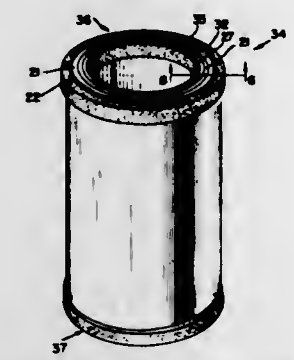
The combination of an edible ice cream cone and a non-edible ice cream cone holder, said ice cream cone being positioned within said holder and being gripping and supported thereby, said holder comprising a rigid molded synthetic plastic drip ring having a smooth inner and outer surface and a circular shape in a horizontal plane and, a smooth curvilinear shape in a vertical plane, and sloping inwardly and downwardly to join a major portion of said holder, said major portion being generally conical and comprising a plurality of downwardly extended mutually angled and intersecting straight sections, each tapering to a narrower width downwardly, said major portion terminating at the bottom end thereof in a closed narrow end, the intersections of said straight sections comprising longitudinal intersection lines, some of said lines being innermost intersection lines, said innermost intersection lines being so mutually spaced that said edible ice cream cone is supported thereon, the top of said edible ice cream cone being above the top of said drip ring with approximately one-sixth of said cone extending above said drip ring, but no more than one-half of the length of said ice cream cone being above said drip ring.

3,351,259
CYLINDRICAL CONTAINER CONSTRUCTION

Harry W. Lee, Jr., Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Mar. 26, 1965, Ser. No. 442,965
8 Claims. (Cl. 229—4.5)

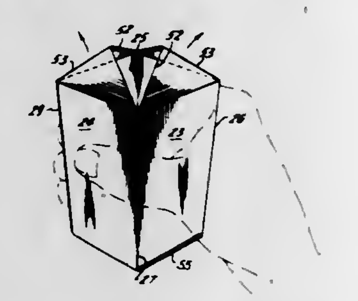
1. In combination, a single flat rectangular board means having opposed side means and being adapted to be convolutely and longitudinally wound to define a plurality of

container bodies each having opposed opened ends, and sealing means disposed on said side means of said board means and transverse, parallel and spaced relation to subsequently define annular band means at each end of each container body to be engaged by respective end closures subsequently closing said ends.



3,351,260
DISPENSING CONTAINER

Stanley R. Koolnis, New York, N.Y., assignor to Lee Drechsler, Palisades, and Fred Zandell, New York, N.Y.
Filed Dec. 23, 1965, Ser. No. 516,056
2 Claims. (Cl. 229—17)

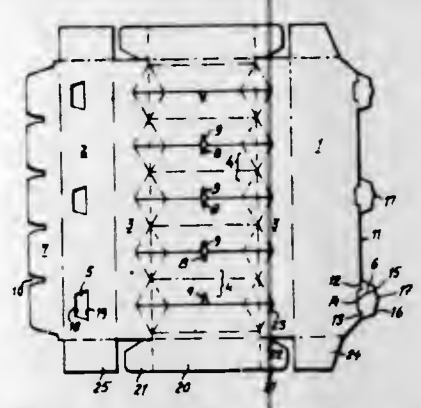


1. A dispensing container formed from a single sheet of bendable material, comprising: a bottom wall; side walls upstanding from said bottom wall and extending peripherally about said bottom wall, said side walls being resiliently deflectable to displace one pair of side wall portions toward each other and another pair of side wall portions away from each other; and a top wall extending between the upper edges of said side walls and secured thereto with the top wall undeflected, said top wall comprising at least four flaps extending inwardly from respective side walls, at least one of said flaps being co-extensive with said top wall, the remainder of said flaps being triangular sections thereof, co-planar and in edge to edge relationship; said one of said top wall flaps having a weakened portion extending diagonally across said one flap to bisect the latter, and a fold line extending diagonally across said one flap extending in opposite directions from and intersecting the line of said weakened portion; the said remaining triangular flaps being sized so as not to cross either of said weakened portion or said fold line.

3,351,261
MULTI-CELL TRAYS

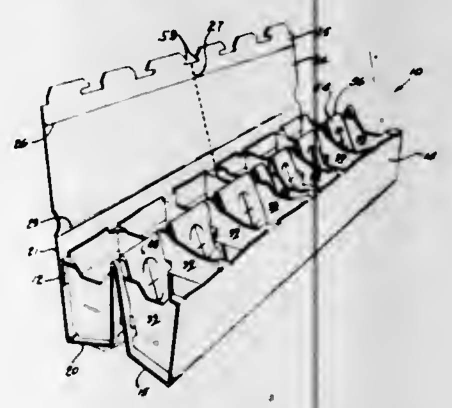
Karl Rune Persson, Halmstad, Sweden, assignor to Sprinter-Pack AB, Halmstad, Sweden
Filed May 16, 1966, Ser. No. 550,390
Claims priority, application Sweden, May 17, 1965, 6,431/65
4 Claims. (Cl. 229—28)

1. A multi-cell tray erected from a single blank of foldable sheet material, comprising two longitudinal side panels, a bottom and a number of transverse webs spaced to form walls of the cells of the tray and connected at their ends with the side panels, said panels being of double thickness by being substantially doubly folded upon themselves along a fold line forming the ridge of the respective web, said bottom being formed by two bottom panels hingedly connected to the lower edges of the side panels and secured to each other in overlapping relationship, the overlying bottom panel having a width substantially equal to half the distance between the side panels and being extended with a flap erected to a position at right angles to the bottom and forming a longitudinal partition wall to divide the cells, said partition flaps being maintained in position by engagement with vertical slots in the lower edges of said webs.



3,351,262
EGG CARTON

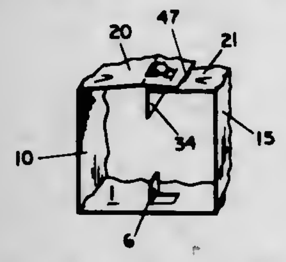
Charles E. Hook and Donald G. Coleman, Battle Creek, Mich., assignors to Michigan Carton Co., Battle Creek, Mich., a corporation of Michigan
Filed June 1, 1965, Ser. No. 460,378
12 Claims. (Cl. 229—29)



1. An egg carton having spaced wall members, bottom members, an inverted V-shaped ridge center partition open from the bottom to the top thereof and forming a longitudinal partition connecting together said bottom members with the bottom of said carton being elevated in its longitudinal partition edge joining portion, transverse partitions cooperating with said longitudinal partition to separate the interior of the egg carton into a multiplicity of egg receiving pockets, and a cover member normally closing said egg carton, which includes an egg cushioning cathedral for each of said egg receiving pockets, said cathedral being wholly located in said ridge side of said pocket and substantially centered lengthwise of same, said cathedral having a substantially central vertical slit of a length approximately equal to one-half to three-fourths the depth of the ridge side of said pocket and generally vertically centered on same, the upper end of said vertical slit having substantially centered thereon a deeply downturned cross slit while the lower end of said vertical slit has substantially centered thereon a deeply upturned cross slit, and a cross slit substantially midlength of said vertical slit, the ends of said cross slit being approximately centered between the corresponding ends of said deeply downturned and deeply upturned cross slits, and wherein said cathedrals in said egg receiving pockets on opposite sides of said longitudinal inverted V-shaped ridge center partition are offset approximately one-sixteenth to three-sixteenths of an inch from each other.

3,351,263
INTERLOCKING MEANS FOR A PAIR OF OVERLAPPING PANELS

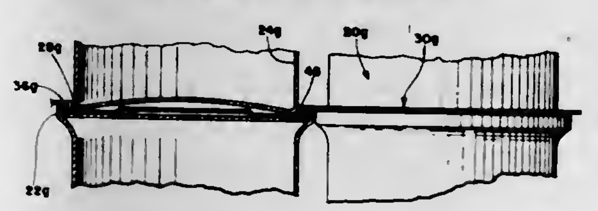
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Apr. 21, 1966, Ser. No. 544,206
9 Claims. (Cl. 229—40)



1. Interlocking means for a pair of overlapping panels comprising a locking strap struck out of one of said panels and foldably joined thereto along a hinge line, a pair of locking apertures formed in the other of said panels, said locking strap being arranged for insertion through one of said apertures in one direction and through the other of said apertures in the opposite direction to form therewith a buckled relation, and a positioning tab forming a part of said other panel and arranged for insertion into the opening defined in said one panel due to the formation of said locking strap, said panels, strap, and tab being disposed in generally flat face contacting relation when in locked condition.

3,351,264
PACKAGING DEVICE

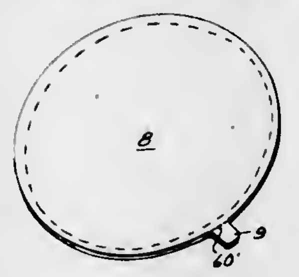
John Donald Bostrom, Niles, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 4, 1965, Ser. No. 492,534
3 Claims. (Cl. 229—42)



1. A packaging device for a plurality of pairs of superposed one-piece container bodies each having an axially and radially projecting bead adjacent its upper end connected to a top element, each of the radially projecting beads being of sufficient axial height and peripheral measurement to readily receive the lower end of a similarly configured container body therein, said device comprising an elongated substantially flat body member formed from thermoplastic sheet material adapted to be interposed between each pair of superposed container bodies and having container receiving means for accepting upper and lower ends of each pair of superposed container bodies, said container receiving means including a downwardly projecting pocket having a bottom wall portion to prevent engagement of the end wall surfaces of each pair of superposed container bodies, and a side wall portion extending between an outer wall surface adjacent the lower end of an uppermost container body and an inner peripheral surface of the axially and radially projecting bead on the lowermost container body in each pair of superposed container bodies, and cushioning means provided in the side wall portion which, together with the diametrical extent of the side wall portion of the downwardly projecting pocket, is sufficient to engage the outer wall surface adjacent the lower end of an uppermost container body and the inner peripheral surface of the axially and radially projecting bead on a lowermost container body in each pair of superposed container bodies while absorbing lateral shock imposed on said superposed container bodies in a direction substantially normal to the axes thereof.

3,351,265
CONTAINER AND CLOSURE

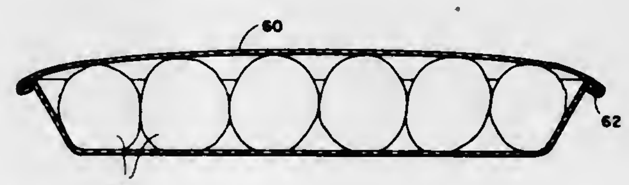
Harmon B. Miller, Atlanta, Ga., assignor, by mesne assignments, to Scientific-Atlanta, Inc., Dekalb County, Ga., a corporation of Georgia
Filed July 24, 1964, Ser. No. 384,846
3 Claims. (Cl. 229—43)



1. A container adapted for use in vacuum-gas packaging of sliced luncheon meats and like articles comprising a substantially rigid receptacle having a bottom, side members, a sealing flange projecting laterally outwardly from said side members and a lip projecting upwardly from said sealing flange, and a lid member having a laterally projecting tab, the lid member being of approximately the same size as the area within said lip, so that said tab will overlie said lip and raise a portion of said lid above said sealing flange to permit egress and ingress of air and gas while another portion of said tab is resting on said sealing flange, said tab being foldable with relation to said lid along the lines joining them so that the lid may be pressed down against said sealing flange, there being at least one notch through said lip to facilitate egress and ingress of air and gas into and from said container prior to closing said lid.

3,351,266
MOLDED PULP ARTICLE

Richard F. Reifers, New Canaan, Conn., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Original application June 16, 1964, Ser. No. 375,512, now Patent No. 3,306,813. Divided and this application Oct. 10, 1966, Ser. No. 585,579
7 Claims. (Cl. 229—43)



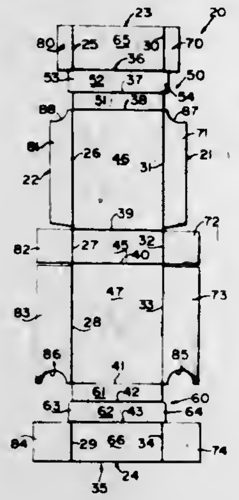
1. A pulp-molded article comprising:
a body portion;
an end portion peripheral to said body portion, said end portion having a plurality of projections extending outwardly therefrom and ending in an edge which forms the extreme edge of said peripheral end portion, said peripheral end portion being essentially free of flash without having been subjected to a distinct flash removal operation, each said outwardly extending projection having a variable thickness corresponding to a maximum at the location closest to said body portion and a minimum at said extreme edge to provide an essentially triangular cross section the apex of which corresponds to the extreme edge of said peripheral end portion.

3,351,267
FLIP-FLAP CARTON

Robert T. Jackson, Park Forest, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Oct. 21, 1965, Ser. No. 500,124

10 Claims. (Cl. 229—44)



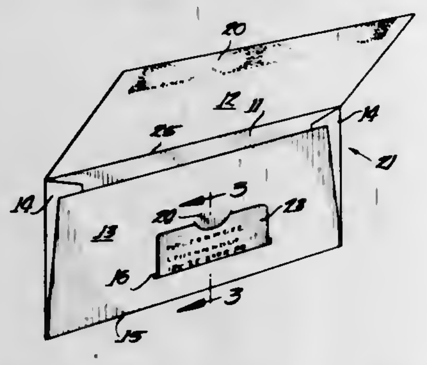
2. A container comprising a container body, said container body having an upper end portion, said upper end portion defining a mouth of the container, said mouth being set-off by longitudinal and transverse edges of predetermined length, a pair of top panels normally overlying and closing said container mouth in a first position thereof and being movable to a second position at which said mouth is open, each of said top panels having a length greater than the length of said longitudinal edges whereby opposite transverse edge portions of each of said pair of top panels project longitudinally beyond an associated underlying transverse edge of said mouth in said first position and means connected to said pair of top panels and slidable relative to said body for moving said pair of top panels between the first and second positions thereof.

3,351,268
ENVELOPE

Peter Wayne Schroeder, Houston, Tex., assignor to Gulf Envelope Company, Houston, Tex., a corporation of Texas

Filed June 9, 1966, Ser. No. 556,399

4 Claims. (Cl. 229—72)



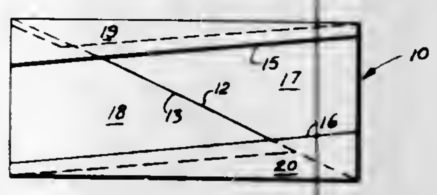
1. An envelope for use with an identification card, comprising a front panel, a back panel, side flaps and a sealing flap, said side flaps being adhesively joined to said back panel, and retaining means in the back panel adapted to receive and retain an identification card at the exterior of the back panel including an elongated slot formed in the back panel spaced above but adjacent and parallel to the lower edge of the back panel to receive and locate the lower edge of the identification card, and at least one thumb slot cut into the back panel spaced above the elongated slot to form a shallow flap engaging but the upper edge of the identification card, said sealing flap being of a size to completely cover the retaining means and exposed identification card when the flap is adhesively sealed onto the back panel.

3,351,269
ENVELOPE

Cecil Rezansoff, Benito, Manitoba, Canada

Filed Nov. 8, 1965, Ser. No. 506,757

1 Claim. (Cl. 229—75)



An envelope comprising a blank which includes a body portion, longitudinally positioned flaps extending from said body portion, laterally extending flaps extending from said body portion, said flaps adapted to fold towards said body portion, two of said flaps upon opposite sides partially overlapping one another, securing means for securing said flaps to one another and one of said laterally positioned flaps being left open to provide access into said envelope, said longitudinally positioned flaps being substantially triangular in configuration, and said laterally positioned flaps having their outer edges assume inclined angles in an opposite direction one from another, said securing means including gumming substance, one open flap being provided with gumming substance for sealing said envelope, and one side of one said longitudinally positioned flaps being in edge abutment with a corresponding edge of a side flap opposite the said longitudinally positioned flap to form an open slot between said longitudinally positioned flaps, said open slot being bounded at its ends by said laterally positioned flaps when said envelope is closed.

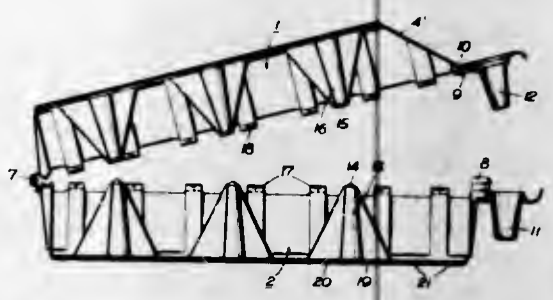
3,351,270
TWO-PART BOX

Zeljko Hohnjec, Gonzagagasse 17, Vienna I, Austria

Filed Feb. 2, 1966, Ser. No. 524,521

Claims priority, application Austria, Feb. 19, 1965, A 1,524/65

3 Claims. (Cl. 229—44)



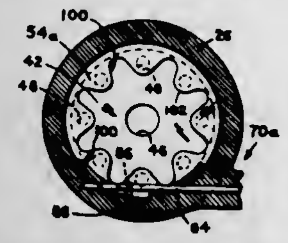
1. A two-part box of thermoplastic material comprising a lid part and a strap, and a bottom-part connected with said lid part at one rim by said strap acting as a hinge, there being provided on the rims of said bottom part and of said lid opposite said hinge closure elements cooperating with each other, and locking elements engaging each other to produce, respectively, transverse locking of said two box parts; said closure elements consisting of handles formed at said rims and provided with recesses fitting into each other for carryin the box, and said locking elements consisting at one rim of two projecting cylindrical pins, each having an undercut and both arranged on both sides of said handle recesses, and on the opposite rim, at two cylindrical lugs each provided with a circular-shaped sharp-edged aperture to receive said pins at their undercut.

3,351,271
UNLOADING DEVICE FOR RECIPROCATING COMPRESSORS

Friedrich O. Bellmer, East Orange, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Nov. 2, 1965, Ser. No. 506,073

2 Claims. (Cl. 230—24)



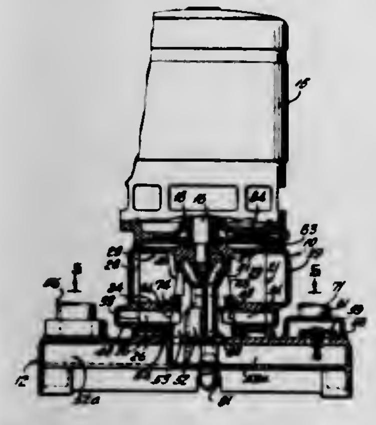
1. In a compressor the combination of:
(a) a cylinder and head therefor;
(b) a piston in the cylinder being reciprocally movable toward and away from the head;
(c) an inlet valve seat in the head having a series of annularly spaced inlet ports therein;
(d) an annular guide groove in the periphery of the cylinder for guiding a ring plate valve element;
(e) a ring plate valve element having its outer edge in the cylinder guide groove and being axially movable in the groove toward and away from the valve seat, the inside edge of the ring having a contour which forms inwardly projecting tabs which may be aligned with the inlet ports;
(f) an outlet valve in the center of the annular valve seat; and
(g) means for rotating the plate valve in the groove between a first position in which the tabs are aligned with the ports to provide an automatic valving action in response to the differential pressure across the valve as the piston reciprocates, and a second position in which the tabs are not aligned with the ports and the cylinder is unloaded.

3,351,272
VACUUM PUMP

Irving C. Jennings, % The Nash Engineering Co., South Norwalk, Conn. 06856

Filed Jan. 3, 1966, Ser. No. 518,178

8 Claims. (Cl. 230—79)



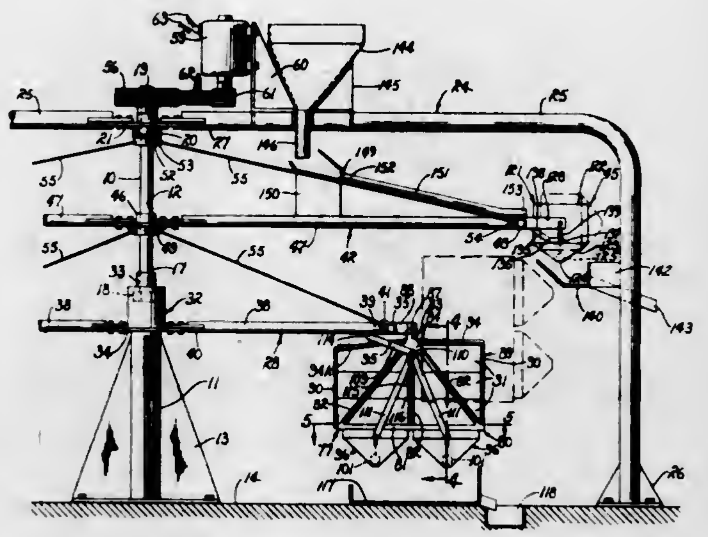
1. A multistage pump comprising a casing, a rotatable drive shaft projecting into said casing, said casing surrounding a plurality of stage lobes disposed progressively in the direction of the axis of said drive shaft, a centrally recessed rotor comprising a plurality of successive stage impeller means in communication with said recess, and a stationary member having an inlet and an outlet port for each stage, said member having internal inlet and outlet passages in communication with said ports, said member nested in and coaxial with said central recess in said rotor, said ports and passages placing each outlet passage in communication with an inlet passage of an axially successive stage.

3,351,273
HONEY EXTRACTING APPARATUS

Arthur S. Harrison, P.O. Box 602 Los Banos, Calif. 93635

Filed May 3, 1965, Ser. No. 452,782

5 Claims. (Cl. 233—20)



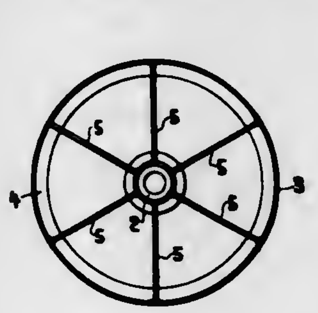
1. Apparatus for extracting honey from honey-impregnated honeycomb formations comprising a centrifuge adapted to be rotated about a substantially vertical axis, said centrifuge including support means spaced radially outwardly of said axis, said support means being adapted to rotate integrally with the centrifuge; means for rotating the centrifuge at a selected velocity; a frame adapted to contain honeycomb formations and to allow honey to flow from the formations outwardly of the frame; means mounting said frame on the support means for pivotal movement between a first position in which the frame is substantially gravitationally suspended from the support means and a second position in which the frame during rotation of the centrifuge is extended substantially centrifugally radially substantially outwardly of the support means; a funnel-shaped receiver mounted on said frame to receive honey flowing therefrom and having an opening adapted to pass honey; valve means connected to said frame for closing said opening when the frame is in the second position and opening said opening automatically when the frame is in the first position; and a collector disposed beneath the first position for collecting honey passing through said opening.

3,351,274
FIGURE DRUM

Rudolf Styner, Frauenkappelen, Switzerland, assignor to Styner & Bienz AG, Niederwangen, Switzerland

Filed Mar. 1, 1966, Ser. No. 530,962

2 Claims. (Cl. 235—1.3)



1. A figure drum for cash registers, calculating machines and the like, comprising:
a rim portion having figures thereon;
a hub portion;
spokes of flat cross section between said hub portion and said rim portion;

the spoke cross section including longer sides and small side edges;

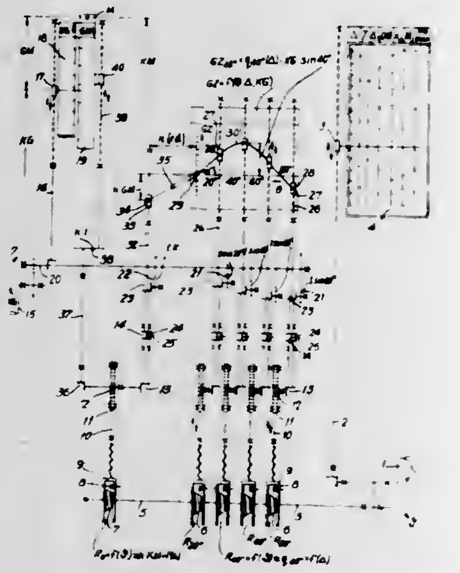
the longer sides of the cross section of the spokes extending in an axial direction, and the small side edges of the cross section extending in a circumferential direction, whereby substantial flexibility of the spokes in circumferential direction is obtained;

said hub portion, rim portion and spokes being made in one single piece of plastic material; and

an elastic coupling formed between the hub portion and rim portion by the flexibility in circumferential direction of said spokes.

3,351,275
ARRANGEMENT FOR DETERMINING AND ANALYSING SHIP'S STABILITY

Olgierd Jabłoński, ul. Politechniczna 3 m 5,
Gdansk 6, Poland
Filed Sept. 14, 1965, Ser. No. 487,275
Claims priority, application Poland, Sept. 14, 1964,
P 105,716
9 Claims. (Cl. 235—61)



1. Apparatus for establishing stability and loading relationships for a vessel, said apparatus comprising first and second input means for the entry of data respectively relating to vessel displacements and elevation of vessel center of gravity, means defining a graph for arms of static stability $GZ=f(\theta,\Delta,KG)$ wherein θ=angle of vessel's transverse list, Δ=vessel's displacement and KG= elevation of resultant center of gravity of loaded vessel in relation to keel point, said graph having an ordinate corresponding to GZ and an abscissa relating to θ, a series of indicator means distributed along said abscissa, a series of cam means related to said indicator means and to angle of list and actuated by said first input means, and a series of adder means coupled to said cam means and second input means to displace said indicator means relative to said ordinate.

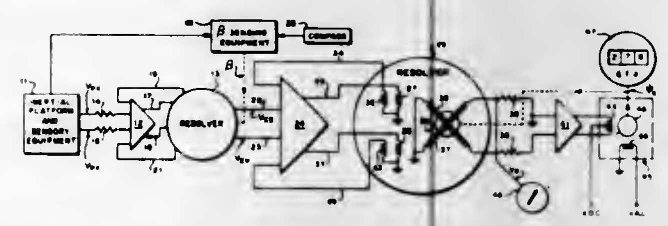
3,351,276
APPARATUS FOR INERTIALLY DERIVING GROUND TRACK ANGLE

James N. Weikert, Boston, Mass., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 27, 1966, Ser. No. 523,465
5 Claims. (Cl. 235—61)

1. A device for determining the ground track angle of an aircraft comprising:

an inertial guidance system having orthogonal velocity component outputs with respect to true North in a coordinate frame of reference;

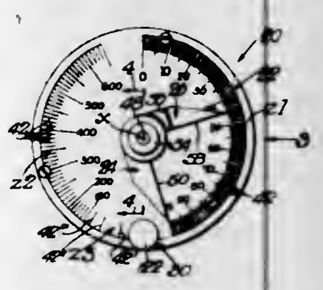
means for computing the angular deviation of said velocity components from true North; and



resolver means receiving said velocity component outputs and responsive to said angular deviation for providing said ground track angle.

3,351,277
PRESETTABLE AND RESETTABLE COUNTER

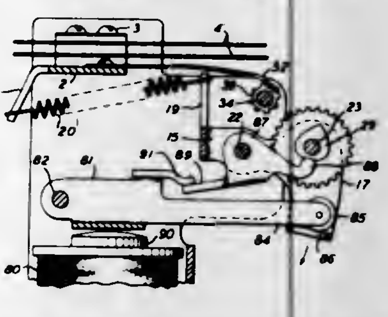
Walter Kohlhagen, 818 Oakley Ave., Elgin, Ill. 62552
Filed Jan. 16, 1967, Ser. No. 609,478
21 Claims. (Cl. 235—132)



1. In a counter, the combination of a count-set member and a count-off element movable to and from abutment with said member in reset and count-off directions, respectively; actuating mechanism for said element, having a one-way device with companion driving and driven sections of which said driven section is turnable only in one direction; and an operating connection between said driven section and element and including a normally engaged clutch for moving said element in said count-off direction on turning said driven section, with said driving section being cyclically operable and acting on each cyclic operation to turn said driven section one step; a preloaded spring operatively connected with said element to urge the latter in said reset direction and be reloaded on movement of said element in said count-off direction; and means operable to disengage said clutch, whereby on clutch disengagement said spring will force said element into abutment with said member.

3,351,278
COUNTER RESETTING MECHANISM

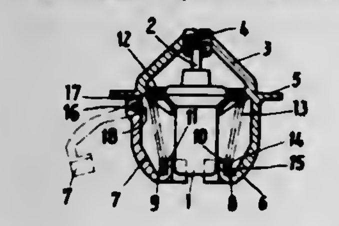
Thomas H. Barker, Westerville, Ohio, and Robert C. Nance, Wood-Ridge, and John R. Shine, Plainview, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Original application Jan. 4, 1963, Ser. No. 249,512, now Patent No. 3,309,506, dated Mar. 14, 1967. Divided and this application Aug. 31, 1966, Ser. No. 604,079
5 Claims. (Cl. 235—144)



3. In a register having a rotatable shaft, apparatus for setting said rotatable shaft to a predetermined rotational orientation comprising, in combination, a bracket mounting said rotatable shaft for rotation, a heart-shaped cam fixedly mounted on said rotatable shaft, a second shaft, said bracket being pivotally mounted on said second shaft, a claw element pivotally mounted on said second shaft, means for pivoting said bracket and said claw element toward each other concurrently about said second shaft in a scissoring motion, said claw element being axially positioned on said second shaft for engagement with said heart-shaped cam during at least part of said motion.

3,351,279
THERMOSTATIC VALVE

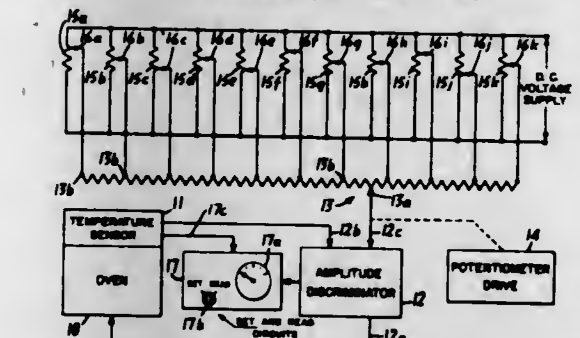
Roland Saur, Stuttgart, Germany, assignor to Behr-Thomson Dehnstoffregler GmbH, Stuttgart, Germany, a firm
Filed Sept. 15, 1965, Ser. No. 487,358
Claims priority, application Germany, May 31, 1965,
B 82,178
8 Claims. (Cl. 236—34)



1. Thermostatic valve for use in controlling the cooling agent in internal combustion engines or the like, said valve comprising, in combination, a valve seat ring, a valve disk, an expansible element associated with said valve disk and movable therewith relative to said valve seat ring, said expansible element having a piston, a closure spring biasing said valve disk and said expansible element against said valve seat ring, retaining means for said piston and for said spring comprising a shackle extending upwardly from said valve seat ring and adjustably receiving the upper end of said piston, and a plurality of arms extending downwardly from said ring, said arms having lower ends defining a support for said spring and a guiding aperture for said expansible element, at least one said arm being rigidly connected with said valve seat ring and at least another said arm having interengaging means at its upper end and being supported thereby proximate the lower side of said ring for movement outwardly relative thereto.

3,351,280
TEMPERATURE PROGRAM APPARATUS

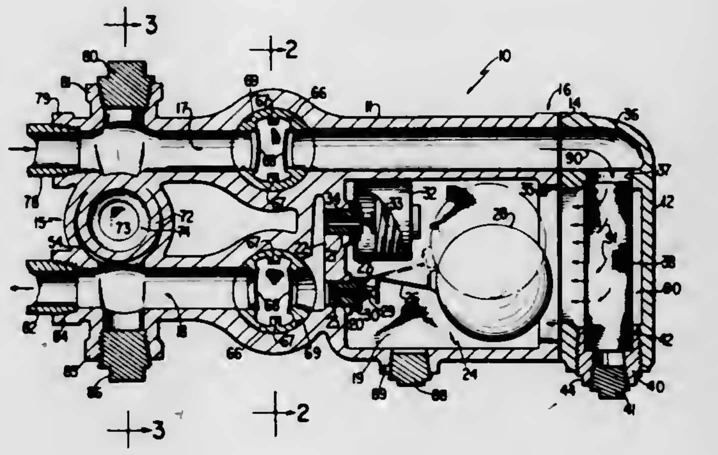
Holton E. Harris, Westport, Conn., assignor to Harrel Incorporated, East Norwalk, Conn., a corporation of Delaware
Filed July 7, 1965, Ser. No. 470,162
7 Claims. (Cl. 236—46)



1. Apparatus to program the temperature in an oven over a selected range of temperatures comprising a plurality of parallel connected setting potentiometers with adjustable contacts adapted to be connected across a D-C voltage source, a tapped potentiometer with a movable contact having taps connected to the adjustable contacts of the setting potentiometers, means driving the movable contact of the tapped potentiometer to provide at the movable contact a first signal representative of a selected temperature program, temperature sensitive means to generate a second signal representative of the oven temperature, and means responsive to the first and second signals to control the temperature of the oven.

3,351,281
UNITARY STEAM TRAP RIG

Howard W. Kell, 26 Steamboat Road,
Great Neck, N.Y. 11024
Filed Aug. 2, 1965, Ser. No. 476,531
3 Claims. (Cl. 236—56)



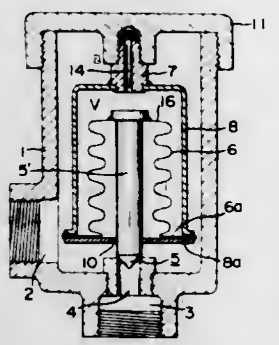
1. A unitary steam trap rig adapted for connection between a steam line and a condensate return line comprising a casing having a steam inlet passage and a condensate outlet passage entering and exiting, respectively, from the same end of the casing, said casing defining a generally U-shaped flow path therein extending from said inlet to said outlet, said casing having a strainer chamber therein at the opposite end from said inlet and outlet and including strainer means connected to said inlet passage, said casing having a trap chamber for receiving the output from said strainer chamber, said trap chamber including float means therein, float valve means defining an exit from said trap chamber for feeding condensate into said condensate outlet passage, said float valve means being controlled by said float means, an inlet shut-off valve in said inlet passage before said strainer chamber, an outlet shut-off valve in said outlet passage after said float valve means, said casing having a by-pass channel therein from said inlet passage to said condensate outlet passage, and valve means for closing said by-pass channel.

3,351,282
THERMOBELLOWS STEAM TRAP

Sentaro Miyawaki, 549 Midorigaoka, Oaza-Tarumi,
Suita, Osaka-fu, Japan
Filed May 6, 1966, Ser. No. 548,115
Claims priority, application Japan, June 19, 1965,
40/36,638, 40/36,639; July 9, 1965, 40/41,351
5 Claims. (Cl. 236—56)

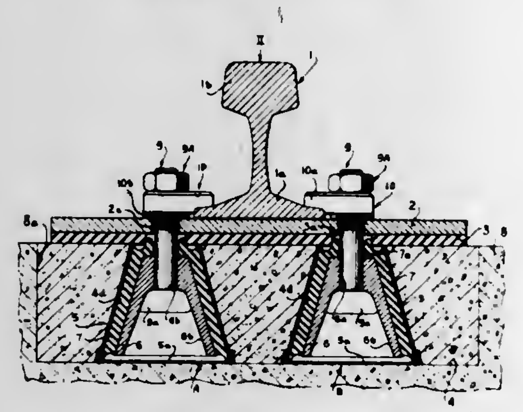
1. A shock-proof thermobellows steam trap comprising; a valve casing including an inlet opening, an outlet opening and a valve port, a temperature sensitive housing wall made of strong rigid metal plate having a high heat conductivity secured to said casing, a thermobellows secured to the inside surface of said housing wall at one end thereof and adapted to expand and contract responsive to temperature variation detected by and transmitted through said housing wall, an exhaust valve secured to a movable end of said thermobellows through a valve stem and disposed adjacent said valve port so as to close and open the valve port responsive to said expansion and con-

traction of said thermobellows, said valve stem extending through a hole in said housing wall, the hole and valve stem being of a size to provide a narrow sliding gap between said valve stem and the inner surface of said hole, and a buffer valve secured to said valve stem at the back of said exhaust valve so as to block said narrow sliding gap when a sudden pressure change occurs in the valve casing, so that the thermobellows is protected against sudden pressure changes in excess of a certain magnitude.



3,351,283
SOUND-ABSORBENT RAILWAY TRACK

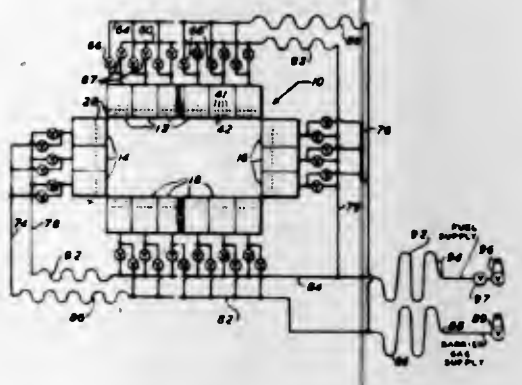
Fritz Paasche, Cologne-Nippes, Carl-Heinz Zlpf, Cologne-Muehlheim, and Robert Müller, Cologne-Bayenthal, Germany, assignors to Franz Clouth Rheinische Gummiwarenfabrik Aktiengesellschaft, Cologne-Nippes, Germany
Filed May 18, 1965, Ser. No. 456,679
10 Claims. (Cl. 238—283)



1. In a railway track, a rail having a flange; a rigid support located below said flange and having a pair of conical recesses whose diameters decrease in a direction downwardly from the upper side of said support, said recesses being located at the opposite sides of said flange; a rigid transversely extending tie plate disposed between said rail and said support and directly abutting against said flange; a layer of sound-absorbent elastomeric material interposed between said tie plate and said support; a pair of anchoring devices each comprising a hollow frustoconical shell fitted into one of said recesses; a hollow frustoconcial core received with clearance in the respective shell, and a frustoconical filler of sound-absorbent elastomeric material received between each shell and the respective core; a pair of clamping members disposed at the opposite side of said flange and each having a first portion overlying said flange and a second portion provided with an aperture registering with vertical bores extending through said tie plate, said layer and axially through one of said anchoring devices; and a pair of fasteners each comprising a bolt having a head received in one of said cores and a stem extending upwardly through the respective bore and through the aperture of the respective clamping member, and a nut meshing with the respective stem and located above the corresponding clamping member.

3,351,284
METHODS OF OPERATING BURNERS AND IMPROVED BURNERS

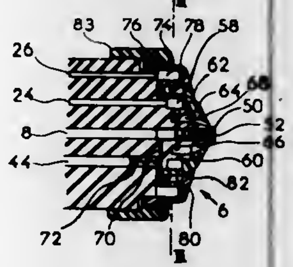
Harry T. Hutton, Somerville, N.J., Cleo R. Goetjen, Redondo Beach, Calif., and James M. Ogborn, Eregli, Turkey; said Hutton and said Goetjen assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 8, 1965, Ser. No. 470,634
15 Claims. (Cl. 239—11)



1. A scarfing burner system including a fuel jet port from which a combustible stream is projected against a workpiece, means operable selectively to supply and to shut off fuel to the upstream end of the port, other means for supplying noncombustible barrier gas to the upstream end of the port, said other means including a controller responsive to the operation of the first means to shut off the supply of barrier gas when the first means supplies fuel and to supply barrier gas when the first means shuts off the supply of fuel.

3,351,285
SPRAYING APPARATUS HAVING IMPROVED SPRAY CONTROLLING MEANS

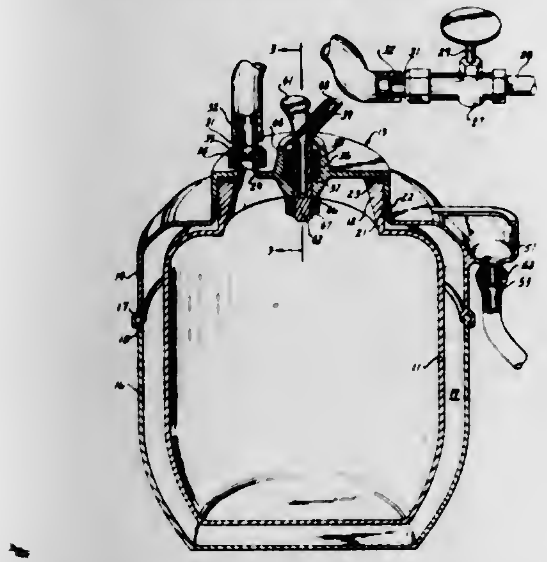
Roger Tholome, 23 Rue Jean Prevost, Grenoble, Isere, France
Filed June 22, 1965, Ser. No. 465,876
Claims priority, application France, June 23, 1964, 4,706, Patent 1,408,758
18 Claims. (Cl. 239—15)



1. In spraying apparatus, the combination comprising: spray-producing means including spray discharge orifice means connectable with a source of sprayable composition and with a source of gaseous fluid under pressure for discharging a spray of said composition through said orifice means; spray-controlling means including an annular discharge orifice surrounding said spray discharge orifice means and connectable with a source of gaseous fluid under pressure, including vortex means for imparting a revolving motion to said fluid to discharge a vortex of gaseous fluid through said annular orifice, said annular orifice being positioned to discharge said vortex externally of the apparatus; and selector means operable to a first condition in which no gaseous fluid is discharged through said annular orifice and said spray is discharged from said orifice means as a jet having a given angle of spray, and operable to a second condition in which said vortex of gaseous fluid is discharged through the annular orifice to increase the angle of spray.

3,351,286
PORTABLE DRINKING WATER FOUNTAIN

Franklin P. Abshire, 5333 W. Edgemont Ave., Phoenix, Ariz. 85035
Filed Sept. 7, 1965, Ser. No. 485,478
2 Claims. (Cl. 239—29.3)



1. In a drinking water fountain;

(a) an inner water container with a neck portion, and a top opening in said neck portion,

(b) an outer housing spaced from said container and including

  (1) an upper housing portion closely engaging said neck, said neck having an annular recess, and a gasket disposed in said recess and engaging said upper housing portion, and

  (2) a bottom housing portion,

  (3) annular tongue and groove portions on said said bottom and top housing portions respectfully being in pressed locking relation,

(c) space between said container and outer housing provided with heat insulation material,

(d) a cap releasably connected to the container to close said top opening,

(e) a recessed threaded boss on said cap for attachment of a fitting to deliver water under pressure to the container,

(f) a bubbler spout secured to said cap,

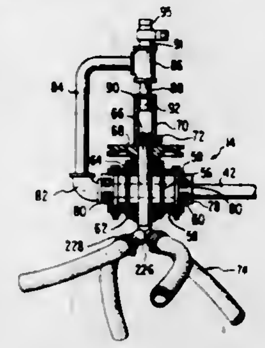
(g) a passageway between said container and spout, and

(h) spring-actuated valve means normally closing said passageway, said valve means being digitally compressible to deliver water to said bubbler spout.

3,351,287
SLURRY SLINGING APPARATUS FOR TREATING SOIL

William E. Funk, 504 E. Dunlop St., and Irvin H. Lehman, 310 E. Allen St., both of Kentland, Ind. 47951
Filed Mar. 28, 1966, Ser. No. 537,772
20 Claims. (Cl. 239—161)

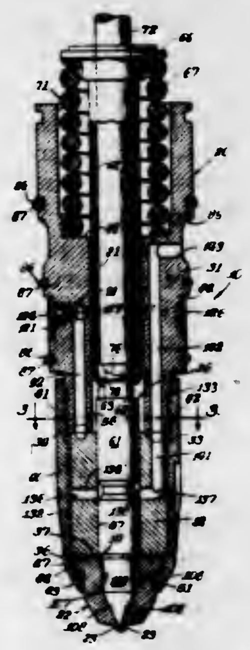
1. An apparatus for applying soil treating materials to soil comprising a vehicle, container means carried by said vehicle, means for forming a viscous substantially uniform slurry of soil treating materials in said container means, applicator means for applying said slurry to the soil, conduit means connected between said container means and said applicator means to supply said slurry to said applicator means, and means for applying pressure to said slurry in at least a portion of said conduit means to insure a flow in said conduit means at a rate greater than that which would be produced by gravity, said applicator means comprising at least one rotatable device having a substantially vertical conduit portion and a plurality of additional conduit portions connected to said vertical portion and extending in directions other than vertical, said additional conduit portions having ends extending in directions different to the portions thereof connected to said vertical portion, and power means for rotating said rotatable device to apply slurry delivered thereto by centrifugal force.



15. An apparatus for applying soil treating materials to soil and adapted to be carried by a vehicle and receive slurry fertilizer under pressure comprising a substantially vertical slurry receiving conduit, a plurality of tubular conduits adjustably connected to said substantially vertical conduit and having outer ends with terminal axes that are movable relative to the axis of said vertical conduit, said terminal axes being movable to positions lying approximately along portions of the conical surfaces of cones having axes which extend from apex to base downwardly relative to the axis of said substantially vertical conduit, each said cone being so disposed that a line drawn from the axis of said vertical conduit through the uppermost surface of the cone does not rise substantially above the horizontal, said vertical conduit and associated tubular conduits being rotatable about the axis of said substantially vertical conduit.

3,351,288
FUEL INJECTOR

Julius P. Perr, Columbus, Ind., assignor to Cummins Engine Company, Inc., Columbus, Ind., a corporation of Indiana
Filed Mar. 25, 1964, Ser. No. 354,572
18 Claims. (Cl. 239—89)

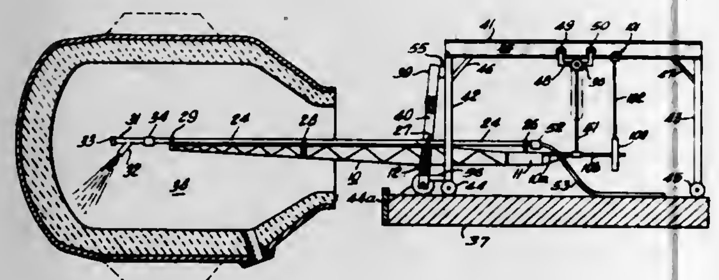


1. An injector for injecting fuel into a cylinder of an internal combustion engine, comprising an injector body having a plunger bore and a nozzle opening at one end of said plunger bore, said body also having a fuel passage adapted to be connected to a source of fuel under pressure and having a feed hole connecting said passage with said bore, and a plunger reciprocably mounted in said bore for opening and closing said feed hole and movable toward said nozzle opening to eject fuel through said

nozzle opening, said plunger being movable away from said nozzle opening to provide space within said bore communicating with said nozzle opening and said feed hole, said plunger and said bore being formed to provide a restricted conduit therebetween located between said nozzle opening and said feed hole, said space thereby having a portion adjacent said nozzle opening and another portion adjacent said feed hole, said conduit being located between said portions and having a smaller sectional area than either of said portions and thereby substantially preventing passage of combustion products from said one portion to said other portion.

3,351,289
APPARATUS FOR APPLYING A PROTECTIVE REFRACTORY COATING TO THE REFRACTORY LININGS OF BASIC OXYGEN FURNACES

Raymond J. Demaison, Bronx, N.Y., assignor to Quigley Company, Inc., a corporation of New York
Filed May 6, 1965, Ser. No. 453,688
19 Claims. (Cl. 239—132.3)



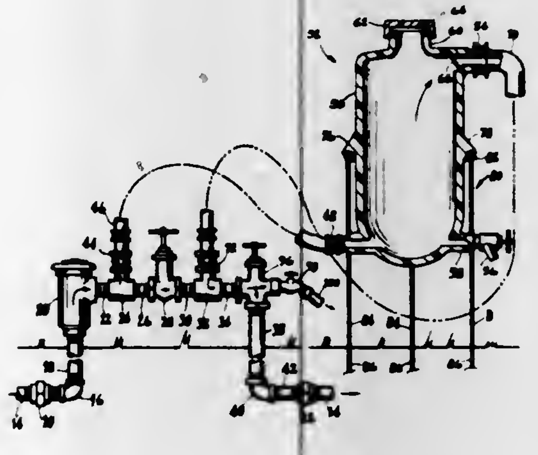
1. An apparatus for applying a protective refractory coating to the refractory lining of a basic oxygen furnace while it is at or near operating temperature in order to prolong the life of said lining, comprising in combination, a long rigid shooting pipe for the refractory coating material equipped with a suitable discharge nozzle, a long rigid support for the shooting pipe capable of withstanding the furnace heat and adapted to be moved endwise into and out of the furnace when the latter occupies a substantially horizontal position, the length of said support being substantially equal to the length of the furnace lining and a mobile frame carrying said support and located on a platform in proximity to the furnace, said support extending longitudinally of the mobile frame and when located out of the furnace projecting toward the furnace for a substantial distance from the furnace confronting end of the mobile frame, and said mobile frame being freely maneuverable on the platform to locate the shooting pipe support in position to enter the furnace at different angles and then movable toward and from the furnace in effecting the movements of the support into and out of the furnace.

3,351,290
LAWN TREATING SYSTEM

Edward K. Baldwin, 10371 Rossbury Place, Los Angeles, Calif. 90064
Filed Apr. 13, 1966, Ser. No. 542,295
2 Claims. (Cl. 239—276)

1. Lawn treating system adapted for use in combination with a lawn sprinkling system having a network shutoff valve, water sprinkling outlet means, and a sprinkler feedline interconnecting the valve and the sprinkling means, said lawn treating system comprising:
- throttling control valve means interconnected in series in said sprinkler feedline; and
- a series of mixer components interconnected in water flow communication in said feedline in shunt with said throttling control valve means,

said series of mixer components including, in order:
- mixer input valve means,
- a first length of flexible hose,
- a pressure supporting reservoir-gauge tank assembly,
- a second length of flexible hose, and output mixer valve means, said pressure supporting reservoir gauge tank assembly comprising
- an at least partially transparent body member having a capacity of the order of at least a few quarts and having reinforcing and ring stand engaging girth shoulder means formed integrally therewith about its periphery,
- water pressure supporting inlet fitting disposed near the bottom thereof for removable connection to said first length of flexible hose,
- water pressure supporting outlet fitting disposed near the top thereof for removable connection to said second length of flexible hose,



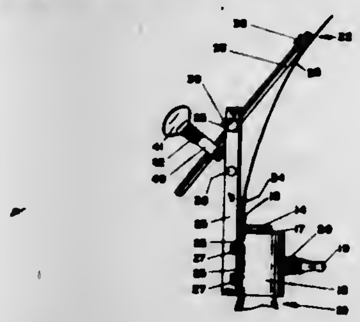
- filter means carried thereby disposed contiguously to said output fitting in water filtering relation with respect to water passing therethrough whereby solid residues of greater than a predetermined size are rejected from passing through said second length of flexible hose, and
- pressure supporting-wide mouth access fitting means removably disposed contiguously to the top portion of said body member for placing chemical substances therewithin; and
- ring stand support comprising ring portion adapted to be horizontally disposed and to engage supportingly and removably said girth shoulder means of said body member, and
- at least three supporting post members affixed to said ring portion and depending therefrom and having earth surface penetrable end portions for supporting said ring portion above said earth surface.

3,351,291
LIQUID DISCHARGING DEVICE HAVING MEANS FOR REDIRECTING AND DISPERSING THE EFFLUENT

Werner P. Pohle, Lynn, Mass., assignor to Spray Engineering Company, Burlington, Mass., a corporation of Massachusetts
Filed Apr. 28, 1965, Ser. No. 451,602
4 Claims. (Cl. 239—511)

2. In a liquid discharging device:
- (A) a nozzle;
- (B) a flexible deflector having an end portion rigidly mounted to locate the deflector in a position of disuse in which the deflector is unflexed and spaced from the axis of discharge of the nozzle;

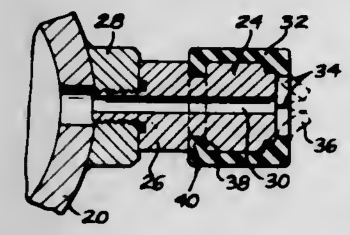
- (C) means for flexing the deflector into the path of dicharge of the nozzle; and



- (D) means carried by the deflector and engageable with the flexing means whereby the deflector is positively moved to deflexed condition during movement of the flexing means in a direction opposite to that in which it moves to cause the deflector to be flexed.

3,351,292
NOZZLE DISCHARGE CAP

Fred E. Stuart, Sr., Baltimore, Md.
(523 N. Grandview Ave., Daytona Beach, Fla. 32018)
Filed Jan. 26, 1966, Ser. No. 523,068
6 Claims. (Cl. 239—534)

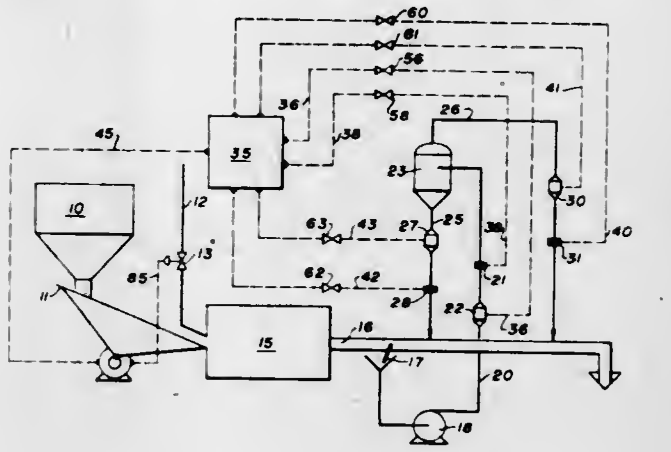


1. In combination; a nozzle having a body with a passage therethrough through which fluid is supplied in one direction to a body of flowable material surrounding the nozzle and which material is to be treated by the fluid, said passage being relatively small with respect to said body, and a rubber like cap mounted on said nozzle body and having a bottom wall extending over the discharge end of the nozzle body and provided with incision means so the lips formed by the incision means will yield outwardly from the end of the nozzle body in response to pressure within the nozzle passage to permit fluid to flow from the nozzle into said body of material while, upon interruption of said fluid flow from the nozzle passage, said lips will collapse against the end of the nozzle body and will close to prevent said flowable material from entering said nozzle passage, the entire inner surface of said cap except for the region exposed by the discharge end of said passage being in engagement with the exterior surface of the nozzle body when said lips are collapsed to support the lips against inward deflection, said incision, means extending across the discharge end of said passage and beyond at least one lateral limit of the passage a substantial distance for easy outward yielding of said lips due to pressure in said passage.

3,351,293
GRINDING MILL AND METHOD OF OPERATION

George M. Meisel, El Cerrito, Calif., assignor to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada
Filed Aug. 23, 1965, Ser. No. 481,474
4 Claims. (Cl. 241—21)

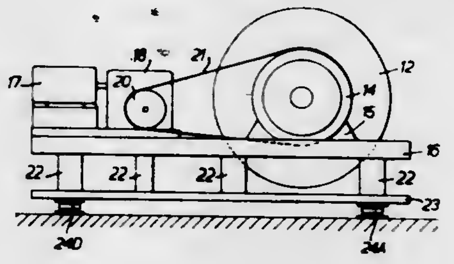
1. An open circuit device for grinding solids which comprises:
- (A) a mill for grinding solids,
- (B) means for feeding solids to the mill at a variable rate,
- (C) a classifier for separating a stream of solids entrained in a fluid into a stream of larger particles and stream of smaller particles,
- (D) means for passing a pilot stream of ground solids entrained in a fluid stream from the mill to the classifier,
- (E) means for measuring the solids content and flow rate of at least two of the pilot stream, the stream of larger particles and the stream of smaller particles,



- (F) means for transmitting signals proportionate to said measurements to control means for:
  - (i) determining the total quantity of particles in each of the measured streams,
  - (ii) comparing the relationship of particle quantity in the control streams with a predetermined standard, and
  - (iii) regulating the solid feeding means to maintain the relationship at the predetermined standard.

3,351,294
CONTROL SYSTEMS

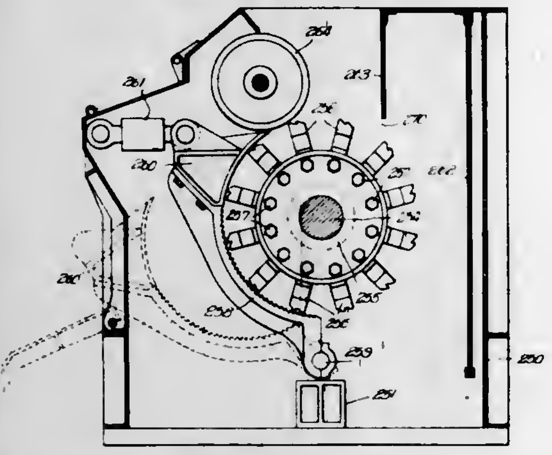
Eric Frederick John Hayes, Stockton-on-Tees, England, assignor to Milltronics Limited, Toronto, Ontario, Canada
Filed Dec. 17, 1964, Ser. No. 418,962
Claims priority, application Great Britain, Dec. 17, 1963, 49,691/63
5 Claims. (Cl. 241—34)



1. A grinding mill system comprising a rotary grinding mill, driving means for the mill, means for continuousy conveying material to be ground to the mill, means for continuously withdrawing ground material from the mill, force responsive means arranged to give a signal representing the force applied by the mill and the driving means to its support and control means operated by the signal from the force responsive means, said force responsive means being so arranged that the signal represents the torque applied by the driving means to the mill, the control means operating to maintain that signal substantially constant, for controlling the conveying means to maintain substantially constant the mass of material within the mill.

3,351,295
FIBERIZER

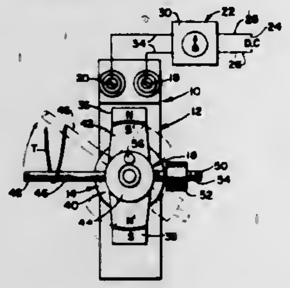
Harold F. Silver, Clarence R. Steele, and Frank B. Price, Denver, Colo., assignors to American Factors Associates, Limited, Honolulu, Hawaii, a corporation of Delaware
Filed Sept. 21, 1965, Ser. No. 489,009
5 Claims. (Cl. 241—187)



1. An apparatus for fiberizing sugar cane comprising a rotor having pivoted hammers mounted thereon, an anvil disposed adjacent one side of and below said rotor and in close fiberizing association with the hammers thereof, a housing for said rotor and anvil, a feed opening at the top of said apparatus through which broken cane is fed to the space between said anvil and rotor, a driven feeding roller mounted below said feed opening and adjacent to the top portion of said rotor and above said anvil for supporting the broken cane entering said feed opening and feeding same to said hammers, said housing providing a surface disposed to receive the fiberized material discharged from the anvil by the action of the hammers of said rotor, said anvil being mounted at one of its ends on a pivot which is adjustable toward and away from the axis of the rotor and said anvil being angularly adjustable on said pivot toward and away from said rotor, whereby the space between said anvil and rotor may be adjusted as to shape and magnitude.

3,351,296
ELECTROMAGNETIC THREAD-TENSION CONTROL ASSEMBLY

Karl Anton Frei, Onstmettingen, near Balingen, Germany, assignor to Gebruder Frei, Onstmettingen, Germany, a corporation of Germany
Filed June 24, 1966, Ser. No. 560,265
9 Claims. (Cl. 242—45)



1. A thread-tension control assembly for use on textile machines in which a predetermined tension is to be maintained on a continuously drawn thread or the like, comprising:

base means;

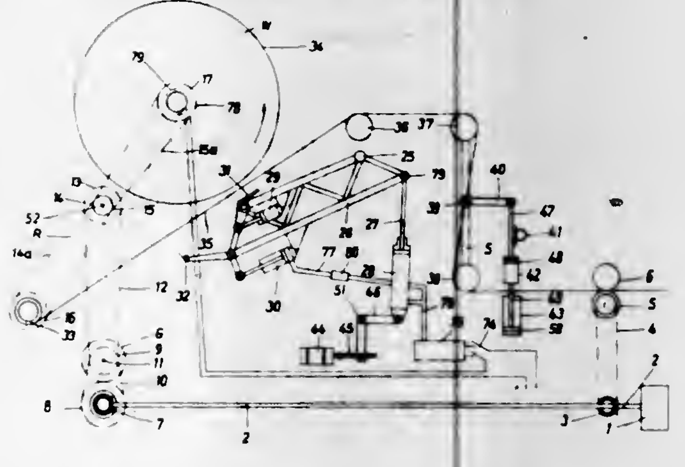
electromagnetic means on said base member for creating a magnetic field,

said electromagnetic means including spaced pole elements; and a magneticaly-attractive armature means journaled for rotation on said base member between said spaced pole elements and having end portions normally attracted to said pole elements when said electromagnetic means is energized;

said armature means including a radially projecting lever for receiving a tensioned thread thereon whereby excessive tension on said thread over a predetermined value will cause said armature means to rotate in one direction relative to said pole elements.

3,351,297
WEB SPLICING DEVICE

Hilmar Vits, Langenfeld, Germany, assignor to Maschinenfabrik Vits G.m.b.H., Langenfeld, Rhineland, Germany, a corporation of Germany
Filed Mar. 29, 1966, Ser. No. 538,356
Claims priority, application Germany, Mar. 30, 1965, M 64,707
12 Claims. (Cl. 242—58.2)

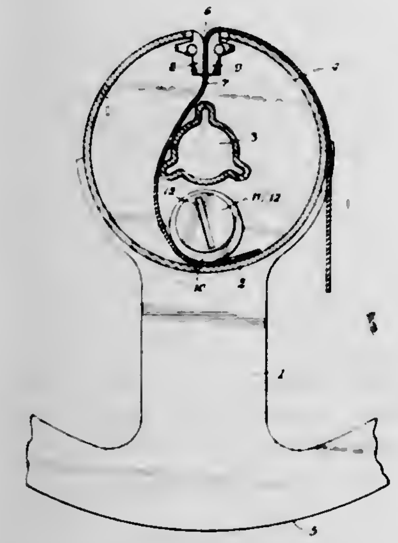


1. An apparatus for connecting the terminal end of a moving strip of material continuously drawn off a roll with the beginning of a new roll of the same material, said new roll being mounted with its periphery closely adjacent a point in the path of said strip and a beginning portion of said new roll having adhesive applied thereto for subsequent adhesion to said strip, comprising a main drive means for moving said strip, means for pressing the strip running off the old roll against the circumference of the new roll and adhering them together, and transmission means driven by said main drive means for rotating the new roll at a circumferential speed corresponding to the speed of the strip, said transmission means comprising a gearing which is infinitely adjustable to various transmission ratios, means for maintaining rigidly a chosen transmission ratio, and a slip coupling in series therewith.

3,351,298
FILM END SECURING DEVICE PARTICULARLY FOR MINIATURE FILM

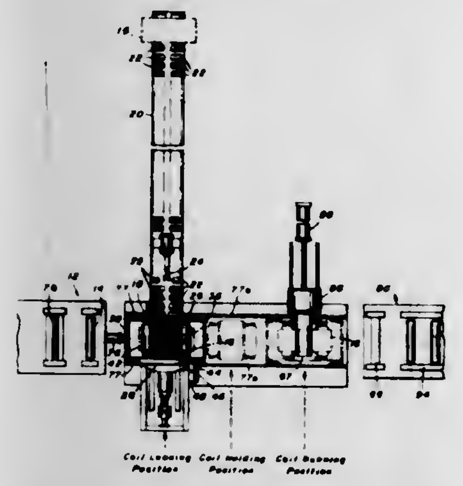
Rudolf Taesler, Stuttgart, Dietrich Becker, Stuttgart, Mohringen, and Gerhard Börner, Musberg, near Boblingen, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany, a corporation of Germany
Filed Feb. 8, 1966, Ser. No. 525,980
Claims priority, application Germany, Feb. 23, 1965, Z 11,355
9 Claims. (Cl. 242—74.1)

1. In a film reel for miniature film provided with a hollow cylindrical core having an internal peripheral surface and a slot in said core for the insertion of the end of a film strip, means for securing the end of the film strip to said internal peripheral surface of said reel, comprising a selectively operable clamping means arranged within said hollow cylindrical reel and optionally operable to engage the end of said film strip inserted through said slot for clamping it against the inner face of said hollow cylindrical core, said clamping device being mounted to frictionally clamp said film end to said internal peripheral surface at a point remote from said slot, and said clamping device being accessible when the film has been wound on the core of the reel, said clamping means being optionally disconnectable for securing the end of the film to the core of the reel and permitting free release of the film end from the rotating film reel at the end of the unwinding operation.



3,351,299
COIL CAR

Corey M. Fehr, McKeesport, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Aug. 10, 1966, Ser. No. 571,531
14 Claims. (Cl. 242—79)

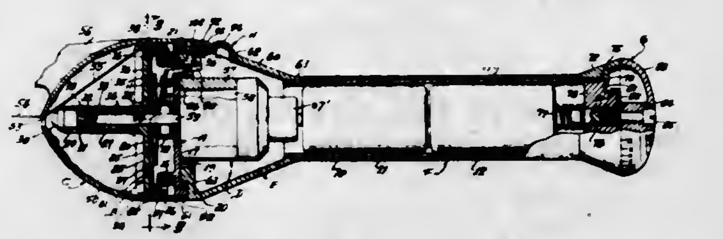


1. A coil transfer car for a coil processing line having an entry portion for receiving a coil having a free end from a conveyor having a first conveying means and for presenting said free end to said coil processing line, said coil transfer car comprising:

- (a) a main frame;
- (b) a first frame reciprocable with respect to said main frame;
- (c) a second conveyor means on said first frame adapted to receive said coil from said first conveying means, and
- (d) coil rotating means rotatable on said first frame;
  - (1) said second conveying means being operable to move said coil so that said coil rotating means supports said coil; and
  - (2) said coil rotating means being operable to rotate said free end into position with respect to said entry portion.

3,351,300
SPINNING TYPE FISHING REEL

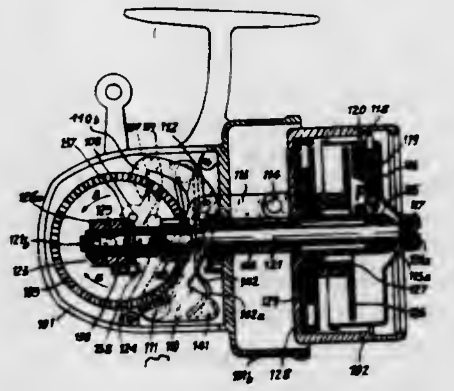
Michael John Nagy, 2216 Chapala St., Santa Barbara, Calif. 93105
Filed Dec. 31, 1963, Ser. No. 334,887
12 Claims. (Cl. 242—84.2)



4. In a fisherman's spinning reel: a housing including a forward portion having at its forward extremity a throat for ingress and egress of a fishing line; a spool fixed in said housing rearwardly of said forward end and having a peripheral annular channel for storage of said line; a spinner having a rim normally overhanging said channel; a motor mounted at the rear end of said spool and having a shaft extending through the spool on the axis of said throat, slidably mounting said spinner for axial projection toward said throat and for rotation around said spool, and drivingly connected thereto; said spinner including a pickup pin mounted therein for radial projection through its rim to engage a portion of said line extending across said rim between said spool and said throat and for spinning said line into said spool channel when driven by said motor; said housing including a skirt portion slightly spaced radially from said spinner rim to define a shallow annular passage through which said line may pass in crossing said rim, and having an inner wall with a generally conical taper narrowing forwardly toward said throat, said pickup pin being engageable against said tapering inner wall and thereby cammed inwardly in non-projecting relation to said spinner rim in response to forward projection of said spinner; and manually operable means for effecting said forward projection of the spinner.

3,351,301
FISHING REELS PROVIDED WITH A HOOD

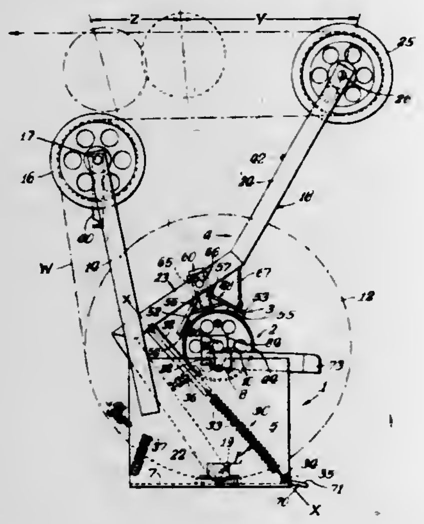
Georges Louis Bretton, 1 Rue Achille Benoit, Cluses, France
Filed Sept. 28, 1965, Ser. No. 490,827
Claims priority, application France, Oct. 10, 1964, 991,022
11 Claims. (Cl. 242—84.21)



1. In a fishing reel for casting and winding in axially a fishing line, the combination of a spool around which the fishing line is adapted to be wound and provided with a front flange and with a rear flange, an axially reciprocable hood surrounding the spool with an annular gap between said spool and hood through which gap the fishing line is adapted to pass off and onto the spool, means mounting said hood to be shifted between a forward and a rearward position, means for urging the hood axially of the spool between said forward winding in position for

which the hood extends beyond the front flange of the spool and means for moving the hood rearwardly into said rear casting position for which the front edge of the hood recedes to the rear of the front edge of the spool and an axially movable flyer means including radially projectable means adapted to lay the line on the spool when the hood is in its forward position.

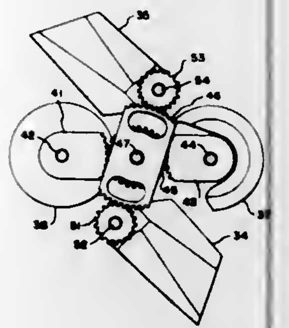
3,351,302
APPARATUS FOR PAYING OUT WIRE
Ernest U. Lang, Niles, Mich., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,290
5 Claims. (Cl. 242—156.2)



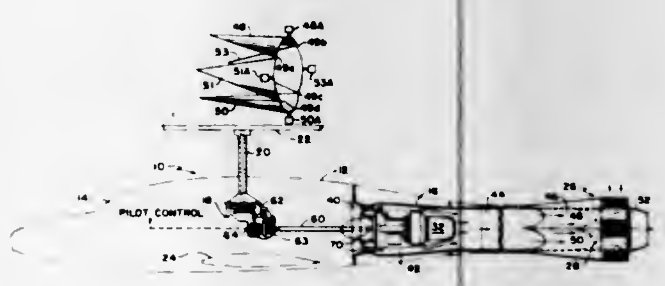
1. In an apparatus of the class described the combination of frame means, a reel having a coil of wire or the like wound thereon, means for rotatably supporting said reel on said frame means, festoon means comprising a first wire guide mounted on said frame means, a festoon arm pivotally mounted at one end thereof on said frame means, and a second wire guide mounted at the other end of said festoon arm and movable relative to said first wire guide by pivotal movement of said festoon arm about its pivot for storing wire drawn from said reel between said first and second wire guides, means extending between said festoon arm and said frame means for maintaining wire drawn off of said second wire guide under substantially constant tension over a predetermined range of pivotal movement of said festoon arm, a brake drum carried by said reel, brake shoe means for said brake drum, brake mounting means for mounting said brake shoe means on said festoon arm, brake spring means between said brake mounting means and said brake shoe means for yieldingly biasing said brake shoe means into engagement with said brake drum over a predetermined range of movement of said festoon arm, and said brake mounting means at a predetermined position of said festoon arm collapsing said brake spring means to dispose said brake shoe means in self-energizing and substantially non-yielding engagement with said brake drum.

3,351,303
MISSILE CONTROL SYSTEM
Herbert D. Depew, Jr., Claremont, Elmer A. Le Donne, Pomona, and Joe Benish, Upland, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Oct. 12, 1960, Ser. No. 62,240
8 Claims. (Cl. 244—3.16)

1. Rolling missile control means comprising first and second opposing retractable control surfaces, said first control surface retractable in a forward direction and said second control surface retractable in an aft direction, a torque producing electromagnetic solenoid including an accelerating coil and a holding coil, mechanical means connecting said torque producing solenoid to said first and second control surfaces, and a switch fastened to said mechanical means to disconnect said accelerating coil at a predetermined position of said control surfaces.



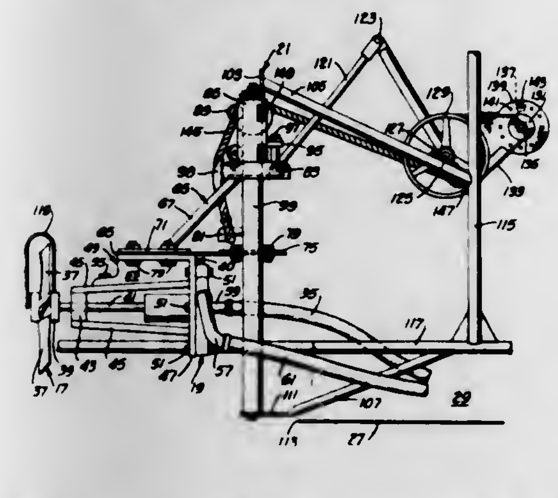
3,351,304
COMBINED VERTICAL-LIFT FORWARD-THRUST AIRCRAFT
Wolfgang J. Stein, Milford, and William O'Connor, Westport, Conn., assignors to Avco Corporation, Stratford, Conn., a corporation of Delaware
Filed Oct. 15, 1965, Ser. No. 496,611
4 Claims. (Cl. 244—17.19)



1. In a combined vertical-lift forward-thrust aircraft, the combination:
- a turbofan engine positioned for generation of forward-thrust longitudinally of the line of flight of said aircraft;
- a bypass-fan driven by said turbofan engine and positioned to move air rearwardly for generation of said forward thrust;
- a rearwardly directed nozzle to receive air from said turbofan;
- valve mechanism adjacent said nozzle so constructed and arranged as to provide for ejection of air vertically and laterally relative to the line of flight of said aircraft for control thereof;
- pilot operable connections from said valve mechanism to manually control said valve mechanism;
- vertical-lift rotor on said aircraft;
- a primary gear train serving as a gear reduction from said turbofan engine to said vertical-lift rotor constructed and arranged to provide rotation of said vertical-lift rotor in a helicopter mode while retaining turbofan operation of said engine to generate rearward air flow for control of said aircraft in said helicopter flight mode;
- a secondary gear reduction affording a lower relative r.p.m. said lift rotor corresponding to a speed of rotation effective to produce reduction in resistance when vertical-lift is not desired;
- a clutch operable to selectively actuate said primary or said secondary gear reductions;
- a pilot operable connection for actuating said clutch.

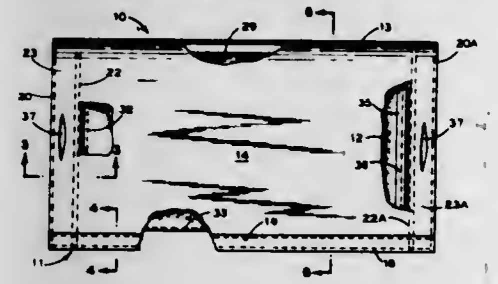
ERRATUM
For Class 244—77 see:
Patent No. 3,351,315

3,351,305
AIRBORNE DISTRIBUTION SYSTEM AND RETRACTION APPARATUS THEREFOR
Wayne E. Warner, 820 E. Orange,
Santa Maria, Calif. 93454
Filed Mar. 2, 1965, Ser. No. 436,496
16 Claims. (Cl. 244—136)



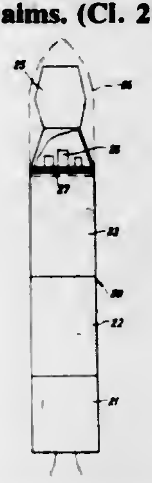
16. An airborne system for distributing flowable material over a field comprising:
- an airplane;
- a dispersion apparatus secured to said airplane for distributing the flowable material over the field;
- a pump secured to said airplane for pumping the flowable material through said dispersion apparatus;
- a wind-driven fan in the airstream adjacent said airplane and secured to said airplane, said wind-driven fan being driven by the airstream and drivingly connected to said pump; and
- means for varying the exposure of said wind-driven fan to the airstream to thereby vary the output of said pump while said airplane is in flight.

3,351,306
PORTABLE BALLAST BAGS
Anthony P. Marino, Brooklyn, N.Y., assignor to L. Marino Inc., a corporation of New York
Filed June 2, 1966, Ser. No. 554,783
9 Claims. (Cl. 244—93)



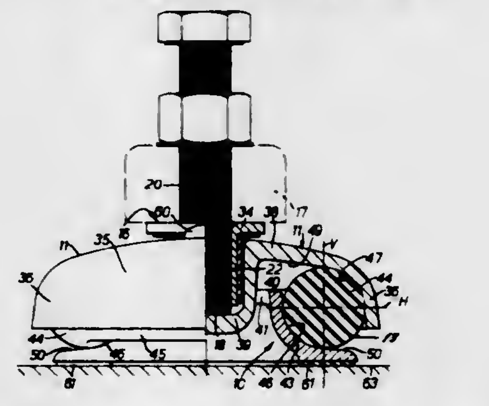
1. Portable ballast comprising flexible walled sealed container means and a body of material within said container means, said body of material comprising a major portion of heavy particulate material and a minor proportion of substantially flexible binder, all by weight; said binder bonding said particulate material to form a coherent aggregate, said container means having wall portions of high abrasion resistance and tearing strength, said wall portions including barrier means for resisting the passage therethrough of aggregate binder to the exterior of said container means, said aggregate being yieldable to allow said ballast to substantially conform to the contours of a surface with which said ballast is in contact.

3,351,307
DAMPED SUSPENSION SYSTEM
Louis Michel, Boulogne, Yves Poncel, Suresnes, and Raymond Patron, Meudon, France, assignors to Electronique Marcel Dassault, Paris, France, a corporation of France
Filed Mar. 29, 1965, Ser. No. 443,457
Claims priority, application France, May 6, 1964, 973,583
15 Claims. (Cl. 248—18)



1. A suspension system comprising a primary structure subject to severe stresses due to changes in velocity, a secondary structure to be protected from said stresses, said structures having confronting peripheral surfaces with perforated concentric flanges separated by an annular gap, and tie means interconnecting said structures, said tie means including at least one flexible web composed of lacing of tensioned monofilamentary polymeric thread of limited elasticity threaded through said surfaces with freedom of frictional sliding displacement relative thereto by traversing said perforations and passing back and forth between said flanges throughout said gap.

3,351,308
RESILIENT MOUNTING
Archie John Hirst, Leicester, England, assignor to Metalastik Limited, Leicester, England, a British company
Filed Oct. 5, 1965, Ser. No. 492,996
Claims priority, application Great Britain, Oct. 6, 1964, 40,657/64
9 Claims. (Cl. 248—22)

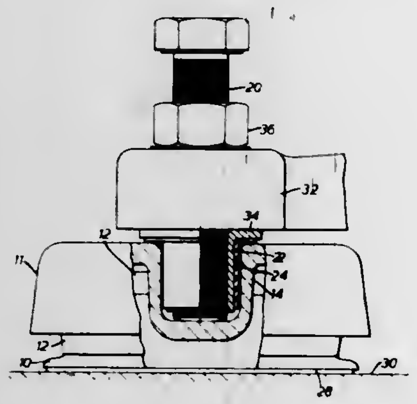


1. A resilient mounting comprising a rigid base part (10) adapted to be placed on a floor, a rigid upper part (11) adapted to carry a machine to be supported and rubber spring means (13) interposed between the base and the upper part to resiliently maintain said parts in spaced relation, confronting surfaces formed on said parts, said rubber spring means being arranged to be loaded between said confronting surfaces on the base and the upper part, said confronting surfaces having overlapping surface portions which are vertically spaced one directly above and overlying the other in use of the mounting, and non-overlapping surface portions which, in use of the mounting, are vertically spaced but hori-

zontally offset from one another, the rubber spring means, in the unloaded condition of the mounting, being engaged solely between such non-overlapping surface portions of said confronting surfaces, the rubber spring means being progressively deformed to carry additional loading between such overlapping surface portions of said confronting surfaces under the action of vertical load on the mounting, whereby the bearing area of the rubber spring means between such overlapping surface portions increases in proportion to the vertical load.

3,351,309
RESILIENT MOUNTING

Reginald Harrison, Oadby, England, assignor to Metalastik Limited, Leicester, England, a British company
Filed Oct. 5, 1965, Ser. No. 493,053
Claims priority, application Great Britain, Oct. 6, 1964, 40,656/64
13 Claims. (Cl. 248—22)

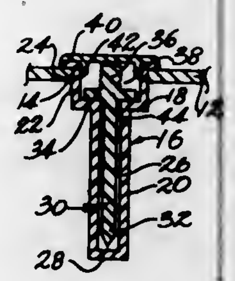


1. A resilient mounting comprising a rigid base part (**10**) adapted to stand upon a surface, a rigid upper part (**11**) to carry the object to be supported, resilient insert means (**12**) interposed between the base part (**10**) and the upper part (**11**) to maintain said parts in spaced relation, and screw jack means associated with the upper part of the mounting for raising and lowering a machine supported on the mounting, the screw jack means comprising cooperating threaded elements (**20, 22**), one of which is rotatable (**20**) and engages said upper part to transfer thereto the load from the other element (**22**); said other element (**22**) being arranged to support the machine, and an annular body of resilient deformable material (**24**) secured to said other element to locate said other element horizontally in relation to said upper part, the deformable body (**24**) permitting vertical displacement thereof in relation to said upper part when the first said element is rotated, the annular body of resilient material (**24**) is separate of said resilient insert means (**12**) and is removably carried, along with said other element (**22**), in a well (**15**) formed in the upper part (**11**) of the mounting and is engaged between inwardly directed vertically disposed wall surfaces on the upper part (**11**) defining said well and an outwardly directed surface on said other threaded element (**22**).

3,351,310
FLOWER HOLDER FOR CASKETS

Ralph S. Turner, P.O. Box 30, 2773 N. Decatur Road, Decatur, Ga. 30030
Filed May 12, 1965, Ser. No. 455,072
16 Claims. (Cl. 248—27.8)

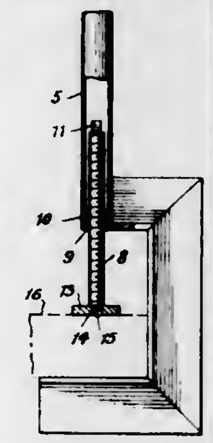
11. In a floral holder for a casket lid:
(a) a removable cap normally closing an opening in said casket lid, which opening extends beneath the lid and concealed therein,
(b) a removable floral holder member attached to said cap extending downwardly from said opening and being removable therefrom and invertible therein,
(c) an attachment portion on said floral holder member, and a cooperating means on the casket lid at the opening therein,



(d) said detachment means on said floral holder member being engageable with said casket lid means to retain said floral holder member in place in one position extending upwardly from the lid to hold flowers therein, and said cap being replaceable in the opening in the lid to conceal the holder and close the opening.

3,351,311
SUPPORT OF GUARD RAILS

Samuel T. Melfi, 1601 NW. 1st Court, Boca Raton, Fla. 33432
Filed Jan. 25, 1966, Ser. No. 536,228
2 Claims. (Cl. 248—226)



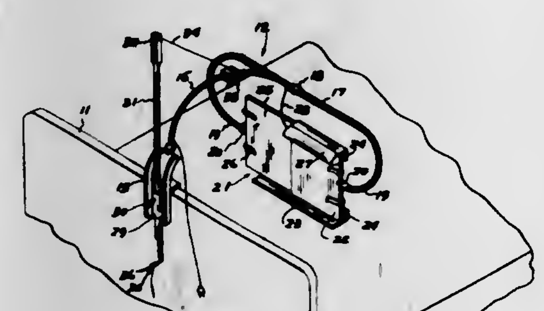
1. A clamp for guard rails comprising, a frame in substantially C-shape, said frame including spaced horizontal legs connected by a vertical leg, the uppermost of the horizontal legs carrying an attached upwardly-directed tube having an internally-threaded portion, the tube being stationarily attached to the frame and being thus non-rotative in respect thereto, a threaded rod adjustably extending through the uppermost leg and projecting upwardly within the tube and threadably engaging the internally-threaded portion of the tube, said rod being rotatively adjustable relatively to the tube, a clamping plate engaged by one end of the rod at a point between the horizontal legs of the frame, said plate clamping a building element between it and the lowermost horizontal leg of the frame, the rod having a non-round end located within the tube and located well below the upper end of the tube for engagement by a tool required to be extended down into the tube and engaged with said non-round end and turned to threadably adjust the rod axially in respect to the tube, the non-round end of the rod being accessible for the rotative adjustment of the rod only by a tool inserted down into the tube from the upper end of the same.

3,351,312
BOOKHOLDER

William E. Ballas, 8037 Winona Ave., Allen Park, Mich. 48101
Filed May 3, 1966, Ser. No. 547,220
4 Claims. (Cl. 248—448)

1. A bookholder comprising a clamp base adapted for securing to a bed headboard or other article of furniture;

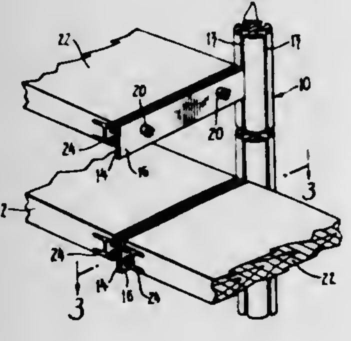
an elongated support of flexible tube material at one end universally mounted upon said clamp base;
an elongated cross-support of flexible tube material intermediate its ends connected to the other end of said tube support;
the ends of the cross-support being reverse-curved inwardly in opposed relation;
a book support assembly including a bottom ledge adjustably interposed between the ends of said cross-support;



means universally connecting side portions of said book support assembly to the ends of said cross-support;
said latter connections being sufficiently tight as to secure the book support at the desired angular position for convenient usage;
and flexible clips on the book support assembly adapted to retainingly engage a book or other reading material thereon.

3,351,313
ADJUSTABLE SHELF SUPPORT

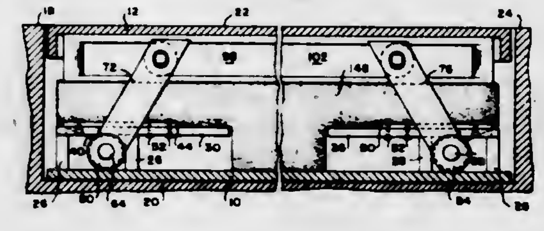
Jacques S. Guillon, Westmount, Quebec, Canada, assignor to Massey-Ferguson Industries Limited, Toronto, Ontario, Canada
Filed Feb. 15, 1966, Ser. No. 527,462
Claims priority, application Great Britain, Feb. 15, 1965, 6,469/65
11 Claims. (Cl. 248—246)



1. An adjustable shelf support comprising in combination, an upright post having vertical groove means with a narrow mouth leading inwardly from the surface of the post and opening into a main part of generally circular configuration, two bracket plates of rectangular shape, at one end of each of said plates being deformed into a vertical semi-cylindrical shell, said plates being in face-to-face contact with said juxtaposed shells firmly seated in said groove, and securing means pressing said plates together at the inner end portions of said shells, said end portions being seated inside said groove and forming fulcrum points upon pressing together said bracket plates, thereby exerting strong holding friction upon said shells in said groove.

3,351,314
SHOCK ISOLATION PLATFORM

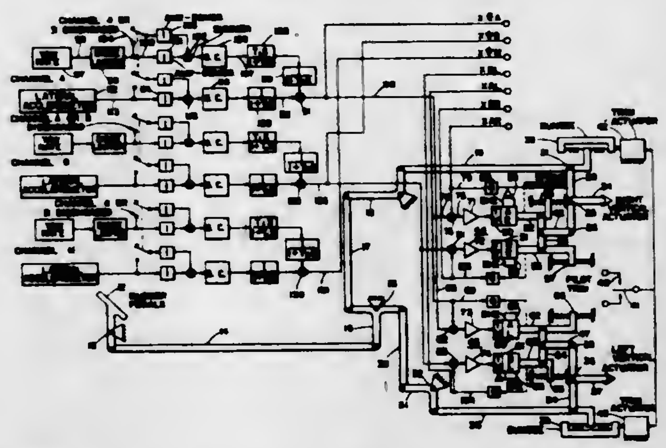
Arthur E. Hirsch and Frank I. Whitten, Montgomery County, Md., and Edward V. Pickford, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy
Filed Feb. 2, 1966, Ser. No. 524,981
11 Claims. (Cl. 248—358)



1. A shock isolation platform comprising:
first planar means;
second planar means opposed to said first planar means and spaced therefrom;
shaft means rotatably carried on said first planar means;
detent means carried by said first planar means and acting on said shaft means to hold said shaft means in a predetermined position on said first planar means;
dash-pot means carried by said second planar means;
arm means connecting said shaft means and said dash-pot means and being rotatably carried on said shaft means; and
resilient means carried between said planar means;
said first planar means when exposed to shock loads exceeding a predetermined magnitude being operable to move said shaft means beyond said detent means and move towards said second planar means;
said resilient means undergoing compression upon movement of said first planar means toward said second planar means and absorbing the shock loads applied to said first planar means;
said dash-pot means being operable to prevent the rapid rebounding of said planar means due to the stored energy in said resilient means after the compression thereof.

3,351,315
CONTROL APPARATUS

Earl W. Carson, Minneapolis, Richard E. Derr, St. Paul, and Marlowe W. Iverson, Minneapolis, Minn., assignors to Honeywell Inc., a corporation of Delaware
Filed Feb. 2, 1962, Ser. No. 170,695
15 Claims. (Cl. 244—77)



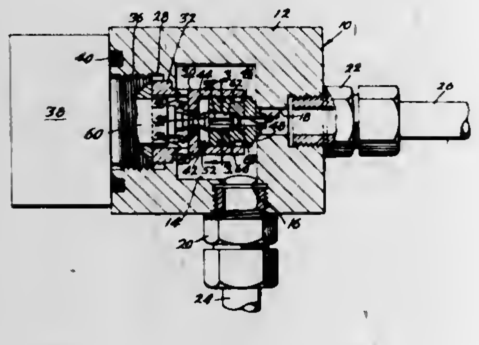
1. In an actuation system having a plurality of output members and a plurality of individually operative servomotors, arranged in pairs, the two servomotors in

each individual pair being further arranged in series relation whereby their respective operations are algebraically combined and applied to an output member; an individual control means for each servomotor; further means responsive to joint operation of a servomotor in each pair and thus to more than one servomotor and effective on dissimilarily in operation of the servomotors connected to the further means rendering only such servomotors inoperative on its output members.

3,351,316

PILOT OPERATED PISTON VALVE

Donald E. Lewis, 112 Gentilly Drive, and Douglas A. Biesecker, R.D. 2, both of Clarks Summit, Pa. 18411
Filed Jan. 15, 1965, Ser. No. 425,704
3 Claims. (Cl. 251—30)

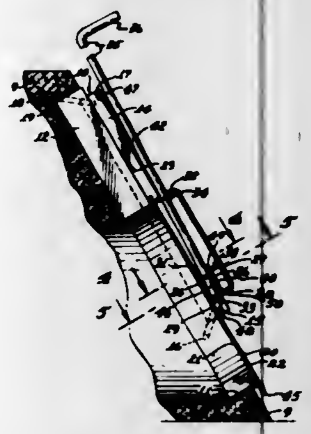


1. A pilot valve for controlling fluid flow through a fluid system comprising a valve body, a valve cavity within said valve body, inlet and outlet ports opening into said valve cavity, a main plunger slidably disposed in said valve cavity for movement between a closed position and an open position, said main plunger having front and rear faces with the front face of said main plunger in the closed position of said plunger coacting with said outlet port to close said port, a main plunger housing on said valve body extending into said valve cavity defining a main plunger chamber adjacent the rear face of said main plunger, an orifice in a wall of said main plunger housing opposed from the rear face of said main plunger, said orifice being axially aligned with said main plunger, said orifice providing fluid communication of said main plunger chamber with said valve cavity, a pilot plunger extending through said orifice into said main plunger chamber, an actuator for selectively positioning said pilot plunger in an extended or retracted position, said pilot plunger in a retracted position adapted to seal said orifice, a port in said main plunger axially aligned with said orifice extending from the front to the rear face thereof, said port in the extended position of said pilot plunger being sealed by said plunger, said port in the closed position of said main plunger opening at the front face of said plunger into said outlet port, whereby when said main plunger is in the closed position, upon retracting of said pilot plunger to close said orifice, said port in said main plunger is opened to reduce the pressure in said main plunger chamber to the low pressure of said outlet port, the pressure differential between the front face of said main plunger and the rear face thereof serving to move said plunger into said main plunger chamber thus opening said valve, the movement of said pilot plunger to the extended position closing said port in said main plunger and opening said orifice thereby providing a high pressure region in said main plunger chamber which because of a low pressure on the face of said main plunger due to fluid flow thereacross provides a pressure differential acting to move said main plunger into the closed position.

3,351,317

IRRIGATION DITCH GATE VALVE

Ellis F. Rothenberger, P.O. Box 2002
Fullerton, Calif. 92633
Filed May 20, 1965, Ser. No. 457,293
1 Claim. (Cl. 251—147)



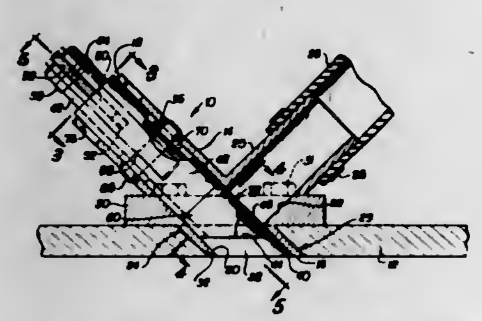
An irrigation ditch gate valve comprising in combination:

(A) a frame adapted to be secured in the lining of an irrigation ditch including,
(B) a valve seat ring having a valve seat,
(C) parallel spaced guide rails to receive said valve gate joined rigidly to diametrically opposite sides of said ring,
(D) and a guide leg fixed to and extending radially upwardly from said ring having a forward edge lying in the plane of said valve seat,
(E) a valve gate having a down stream surface slidingly engaging said valve ring seat and forward edge of said guide leg,
(F) a single handle control device having a manipulating rod rotatably journaled on said valve gate including a radially disposed handle fixed at its upper end,
(G) a control spring normally tensioned to apply pressure to said valve gate to maintain it in operative contact with said valve seat while allowing adjustment of the amount of opening of said valve ring,
(H) means on said valve gate adapted to support said control spring midway its ends so that its free outer ends lightly yieldingly slidingly engage said guide rails,
(I) a radially disposed cam piece fixed to said manipulating rod and disposed at right angles to said handle of said rod actuable by said single handle control device to increase the tension in said control spring to lock said valve gate in any desired position against relative movement on said frame,
(J) said cam piece on said handle being arranged to be moved by rotation of said manipulating rod by said handle to a first position of released normal lightly yielding sliding contact of said control spring with said guide rails, to a second position of increased tension to lock said valve against adjustment, and to a third position of partially increased tension for the axial withdrawal of said handle, rod and cam piece from said valve gate when the ends of said control spring free outer ends have been moved upwardly above the top ends of said guide rails to permit removal thereof from the gate assembly,
(K) said last mentioned position being controlled by a slot angularly disposed relative to the position of said cam piece when moved to said first or second position of said control rod and aligned with said cam piece when moved to said third position by said control rod in the valve assembly frame so as to receive and pass said cam piece when said rod is presented in said third position to or removed from said valve assembly.

3,351,318

VALVE

William T. Jones, 4299 Ristow Drive,
La Canada, Calif. 91011
Filed June 9, 1965, Ser. No. 462,545
13 Claims. (Cl. 251—188)

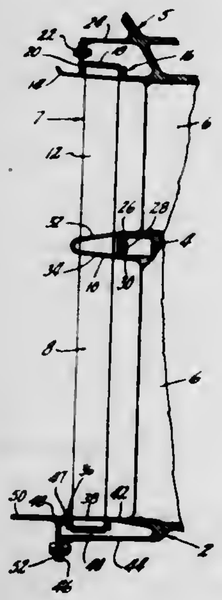


11. A valve for use in connection with a boat hull which comprises a tubular body having an open outer end defining an end port, said valve body being adapted to extend through an opening in the boat hull with said outer end disposed substantially flush with the outer surface of the hull, a side port in the wall of the body, and a generally cylindrical valve element axially slidably and rotatably mounted in the body, the valve element having an outer end surface extending across the inside of said tubular body, the element being movable axially inwardly and rotationally between a closed position wherein said outer end surface of the valve element is generally flush with said end surface of the body and said element blocks off said side port, and an open position wherein said element clears at least a substantial part of said side port, and means engageable between said body and element for guiding the element both rotationally and axially inwardly when the element is moved between its said closed and open positions, said end surface of the element defining a wall portion of a flow channel between said ports in said open position of the valve.

3,351,319

COMPRESSOR AND FAN EXIT GUIDE VANE ASSEMBLY

Lewis J. Frost, Vernon, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 1, 1966, Ser. No. 576,758
3 Claims. (Cl. 253—78)

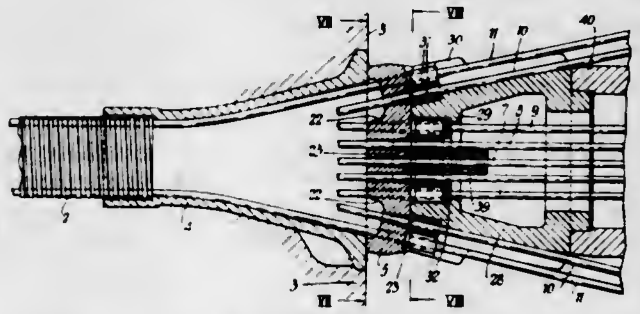


1. In a turbofan engine;
an outer wall,
a first shroud means connected to said outer wall,
an intermediate wall,
a flow splitter attached to the forward end of said intermediate wall, said flow splitter having inner and outer walls containing axially aligned slots so that a vane member may be inserted therethrough,
an inner wall,
a second shroud means removably connected to said inner wall,
a row of vanes, each vane consisting of an inner and outer section, said row of vanes extending from said first shroud means, through said slots in said flow splitter to said second shroud means,
an inwardly projecting interrupted flange on said flow splitter, said inwardly projecting interrupted flange being spaced axially from a radial surface on said flow splitter, and
a cooperating outwardly extending flange on said intermediate wall, said cooperating flanges permitting removable attachment of said first shroud, said second shroud, said flow splitter and said row of vanes to said intermediate wall as a unitary assembly.

3,351,320

SYSTEM FOR SECURING WIRES IN A STRESSED CONDITION

John T. C. Harvey, Beaconsfield, Buckinghamshire, England, assignor to P.S.C. Equipment Limited, Iver, Buckinghamshire, England, a British company
Filed Mar. 3, 1967, Ser. No. 620,440
Claims priority, application Great Britain, Mar. 31, 1966, 14,329/66
9 Claims. (Cl. 254—29)



1. Apparatus for securing a tendon of wires in a stressed condition within a structure, including a funnel-shaped anchorage guide cooperating with the structure; an anchorage block bearing on the anchorage guide, the tendon passing through the anchorage guide and each wire of the tendon passing through a hole in the anchorage block; permanent gripping devices associated with the anchorage block each for holding an associated wire in a stressed condition and a jack bearing against the anchorage; wherein the improvement comprises means within the jack which defines an inner aperture axial of the jack through which passes at least one central wire of the tendon and temporary gripping means disposed towards the rear of the inner aperture for gripping the central wire or wires; further means on the jack which defines outer apertures on the outer wall of the jack, each such outer aperture receiving one of a peripheral group of wires of the tendon and further temporary gripping means associated with each such outer aperture for gripping a wire of the peripheral group of wires.

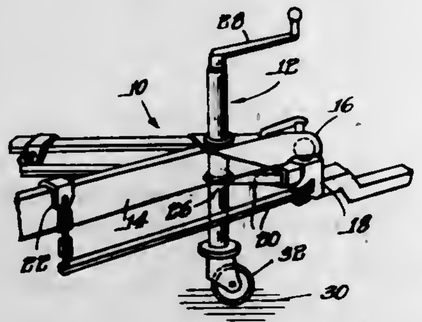
3,351,321

TRAILER TONGUE LIFTING DEVICE

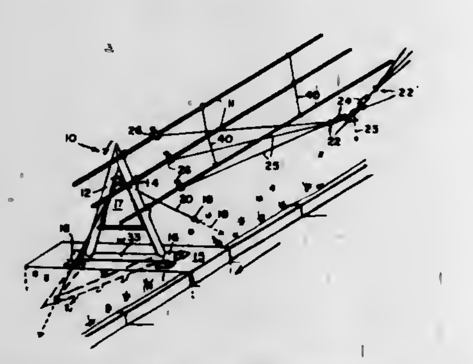
Ronald L. Grams, St. Joseph, and Richard Samuel Graafsma, Benton Harbor, Mich., assignors to Auto Specialties Manufacturing Company, St. Joseph, Mich., a corporation of Michigan
Filed July 21, 1966, Ser. No. 566,825
4 Claims. (Cl. 254—86)

1. An assembly for mounting on the tongue of a trailer comprising: an outer housing means including an upper end wall having upper and lower surfaces; mounting means secured to said outer housing means to attach the as-

sembly to the tongue of the trailer; a screw means rotatably fastened to said endwall of said outer housing means and having an upper end portion projecting above said upper surface of said end wall; an element fixed on said upper end portion and bearing on said upper surface of said end wall supporting said screw means; said element being engageable by a drive member such as a handle for actuating said screw means; a nut means mounted in mating engagement with said screw means; an inner housing means secured to said nut means in a telescopic relationship with said outer housing means; friction means rotatably mounted on said screw means to retard relative movement between said screw means and said outer housing means, in one direction and permitting free rotation of the screw means in the opposite direction, and an anti-friction thrust bearing between said friction means and said lower surface of said outer housing means end wall, said friction means including a friction disk supported by shoulder means on said screw means, said friction means including a ratchet disk means between said friction disk and said bearing, a flexure spring pawl element fixed to said outer housing means and engaging said ratchet disk and restraining said disk for unidirectional rotation relative to said outer housing means, said friction disk retarding relative rotation between said screw means and said ratchet disk means, wherein the telescopic relationship between said inner housing and said outer housing is increased by rotating said screw means relative to said ratchet disk.

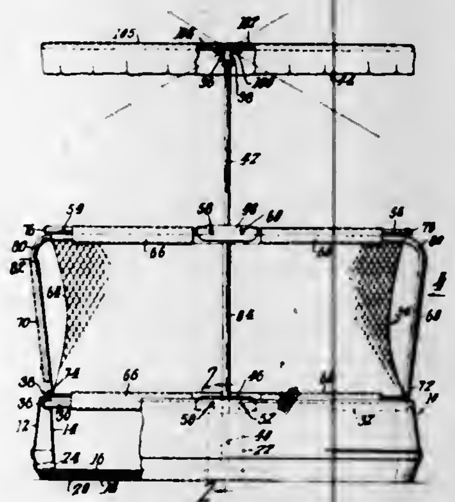


3,351,322
HIGHWAY GUARD FENCE
Ernst Mueller, Postfach 33, 7033 Herrenberg, Wurttemburg, Germany
Filed July 6, 1966, Ser. No. 563,136
Claims priority, application Germany, Jan. 8, 1963, M 63,339
2 Claims. (Cl. 256—13.1)



1. A guard fence for use on a highway, comprising: a plurality of foundations spaced along a curb of the highway; a plurality of two-dimensional frames; attachment means to mount one of said frames on each of said foundations tightly secured thereto in upright position to execute a rigid-body rotational movement about axes extending approximately perpendicular to the run of the highway at the points of mounting, when the torque exerted by an impacting vehicle about these axes reaches a minimum value; each of said frames attached to its foundation at two points lying on a line extending approximately perpendicular to the run of the highway; said points separated a distance sufficient to enable the frames to withstand large torques about axes approximately parallel to the run of the highway, said torques calculated upon the maximum expected weights and impact speeds of the vehicles using the highway; a plurality of cable holding means spaced on each of said frames for releasably holding cables to said frames; and a plurality of cables tautly stretched approximately parallel to the highway from frame to frame and each held at each of said frames by one of said holding means, said attachment means comprising: pairs of journal bearings, one for each frame; one pair rigidly mounted on each of said foundations; said frames being pivotable in said pairs of bearings; and rod means for each frame to hold each frame in the upright position and to release each frame for pivoting when struck by a vehicle.

3,351,323
MULTIPLE USE PLAY YARD CONSTRUCTION FOR CHILDREN
Aaron D. Spencer, 143 Shaker Road, East Longmeadow, Mass. 01106
Filed Feb. 1, 1967, Ser. No. 613,176
10 Claims. (Cl. 256—25)



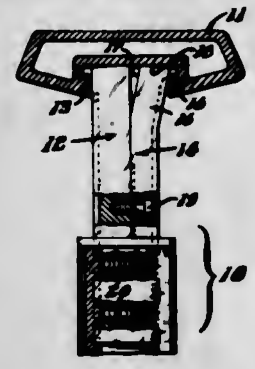
1. A child's enclosure comprising a pair of continuous frames, each frame being open and floorless, each frame including a pair of U-shaped members,

means pivoting the free ends of each pair of U-shaped members relatively to each other in each frame to provide for folding the frames, rigid center elements extending between the frames from pivot axes to pivot axis of the U-shaped members spacing the same, flexible material secured to and extending between the two frames and the frames being generally parallel and coextensive when extended, a U-shaped member of each frame having a counterpart U-shaped member in the other frame.

movable means located between each two counterpart U-shaped members at points remote from the pivot axes of the U-shaped members and selectively positioned for holding the frames extended in parallel, spaced relation, or selectively released from a frame to allow folding.

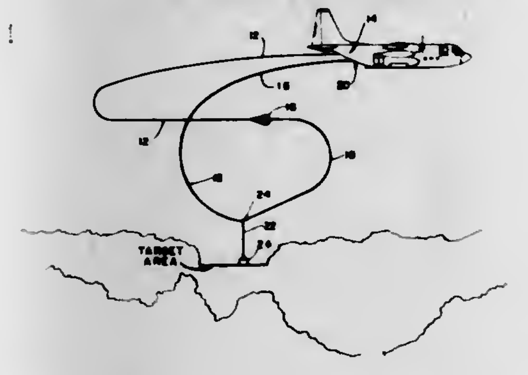
3,351,324
ORNAMENTAL RAILING
Louis Blum and William J. Horgan, Jr., Pittsburgh, Pa., assignors to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm
Filed Dec. 20, 1965, Ser. No. 515,008
3 Claims. (Cl. 256—68)

1. In an ornamental railing having a post and handrail connected thereto, the improvement comprising: connecting means disposed between said handrail and said post and coacting with said handrail to permit angular adjustment of the handrail and to rigidly fix the handrail in adjusted position with respect to the post, said connecting means comprising, a first connecting element attached to and extending upwardly from the post and having an elongated rounded upper terminal surface with a rounded projection extending from one side thereof; a second connecting element disposed beside said first connecting element, having an upwardly extending lower portion in complementary juxtaposition therewith and an upper portion angled away therefrom and having an elongated rounded upper terminal surface with a rounded projection extending from the side thereof remote from said first connecting element and in the opposite direction from the projection extending from the first connecting element;



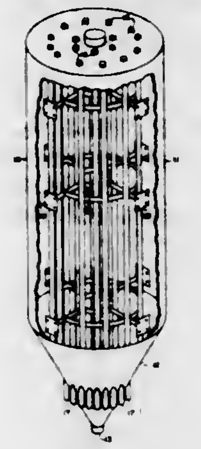
fastening means connecting the lower portion of said second connecting element with the adjacent portion of said first connecting element for rigidly fastening said elements together; and slot means in the underside of the handrail for receiving and retaining the upper terminal portions of the connecting elements, said slot means coacting with said terminal portions to permit angular adjustment of the handrail before said fastening means is tightened to rigidly fasten said elements together, said connecting elements coacting with said slot means and said fastening means to hold said handrail in its adjusted angular position in fixed engagement with said post when said fastening means are tightened to rigidly fasten the elements together.

3,351,325
AERIAL PICK-UP AND DELIVERY SYSTEM
Robert B. Cotton, 1503 Old Orchard Road, Media, Pa. 19065
Filed May 5, 1965, Ser. No. 453,436
28 Claims. (Cl. 258—1.4)



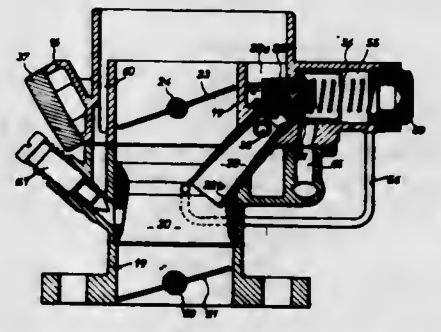
1. Means for transferring a cargo between an aircraft in flight and a ground target area comprising first tow means adapted to be connected at one end to and extended from an air aircraft, drag means connected at the other end of said first tow means, second tow means adapted to be extended from said aircraft to said drag means, and cargo carrying means connected to said second tow means intermediate the ends thereof, said first tow means having greater aerodynamic lift than said second tow means and being adapted to maintain said cargo airborne behind said aircraft, and said drag means being adapted to effect a predetermined orientation of said cargo carrying means and said tow means with respect to said aircraft; wherein said first tow means comprises elongated cable means and a plurality of regularly spaced lift devices affixed thereto; and further, wherein said drag means comprises a parachute.

3,351,326
PROCESS AND APPARATUS FOR SOLIDS BLENDING
James A. Alberts, San Marino, Calif., and Phillip W. Hawley, Odessa, Tex., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Oct. 7, 1964, Ser. No. 402,071
10 Claims. (Cl. 259—95)



1. A gravity-flow solids blender comprising an elevated vertical vessel having material inlet means in its upper portion and a material outlet port in its bottom portion, a plurality of spaced hollow vertical members positioned concentrically within said vessel, said members being arranged to form at least two concentric circles in substantially equiangular relation and adapted to extend through the bottom portion of said vessel, said members having outlet ports at their bottom extremities, each of said members having one material receiving opening in communication with the interior of said vessel, and each of said openings being spaced substantially immediately one below the other along the vertical length thereof to receive substantially equal portions of material simultaneously from all levels of the blender, and including means for the common collection of material passing through said vessel and member outlet ports.

3,351,327
VARIABLE AIR-INTAKE CARBURETTOR
Jocelyn Elie Louis Simonet and Jean Biver, Paris, France, assignors to Societe Du Carburateur Zenith, Lyon, Rhone, France, a company of France
Filed June 3, 1964, Ser. No. 372,235
Claims priority, application France, June 7, 1963, 937,463
8 Claims. (Cl. 261—48)

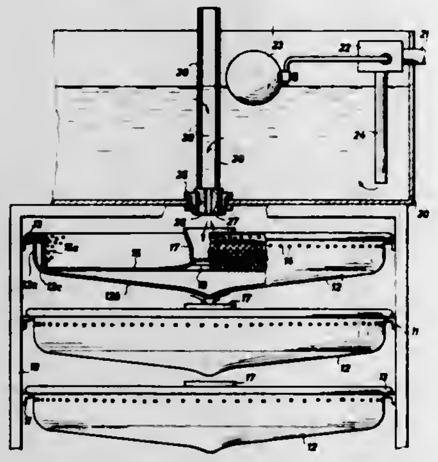


1. A variable air intake carburetor for internal combustion engines, comprising a carburetion chamber, main and secondary air ducts communicating with said carburetion chamber, a movable air control member in said main duct upstream of said carburetion chamber, a fuel

inlet orifice in said secondary air duct, a metering duct for the controlled supply of fuel to said secondary air duct through said orifice, a device operable to vary the available cross-section of said metering duct, to control the supply of fuel, pressure-sensitive means responsive to pressure variation in said carburetion chamber, to control operation of said air control member and said fuel control device, and an obturating device to open and close said secondary duct upstream of said fuel inlet orifice, in response to pressure variation in said carburetion chamber.

3,351,328
APPLIANCE FOR THE ENRICHMENT OF WATER WITH OXYGEN, PARTICULARLY IN FISH BREEDING

Peter Vetterli, Zurich, Switzerland, assignor to Robert Mayr, Winterthur, Switzerland
Filed June 26, 1964, Ser. No. 378,222
Claims priority, application Austria, July 2, 1963, A 5,234/63
5 Claims. (Cl. 261—112)

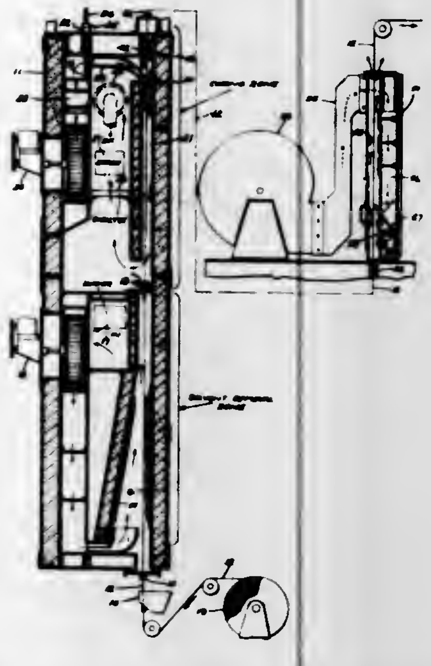


1. Fish hatchery and rearing appliance having means for the enrichment of water with oxygen comprising a frame, a plurality of bowl-shaped containers each with a bottom and spaced one above the other in the frame and having inclined bottom surfaces between the containers and a circumferential side wall terminating in a rim and along the sides of which overflow water flows into the next lower container, the containers being formed so as to be symmetrical rotation-wise with reference to a vertical axis and are disposed co-axially one above the other, the bottom of each container having a conical projection in the aproximate center and its underside forming directly an inclined conducting surface for the water flowing over and around the entire circumference of each container and then along the bottom of the container to the center, and means on the frame and over the topmost container to feed water thereto and a flow path for the water extending from the means to the center of the topmost container over the circumferential rim into the next lower container.

3,351,329
WIRE COATING OVEN APPARATUS

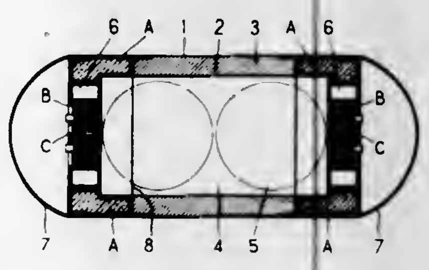
David W. Thomas, Indianapolis, Ind., assignor to General Electric Company, a corporation of New York
Filed Oct. 20, 1965, Ser. No. 498,822
9 Claims. (Cl. 263—3)

6. Wire coating oven comprising: a housing, said housing having a wire entrance opening to enable coated wire to enter said housing and a wire exit opening to allow said coated wire to pass from said housing; a solvent removal zone in said housing; means in said housing for producing a heated airflow within said solvent removal zone to evaporate solvents contained in the coating material of coated wire passing through said solvent removal zone; a curing zone in said housing adjacent said solvent removal zone; means in said housing for producing a heated curing airflow within said curing zone for curing the coating material on said coated wire as it passes from said solvent removal zone through said curing zone, flow control means within said housing for maintaining the internal pressure of said oven near said wire exit opening at a level below that of its external environment to cause external air to flow into said oven through said wire exit opening; and heating means within said curing zone between said wire exit opening and said flow control means for heating said external air flowing through said wire exit opening into said oven to thereby prevent said external air from adversely affecting the uniformity of cure of the coating material upon said coated wire.



3,351,330
GOLF BALL WARMER

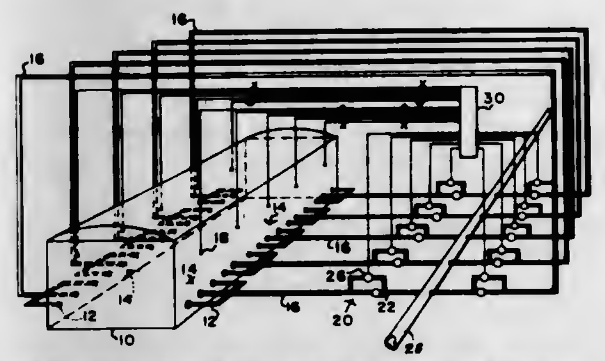
Iwao Kobayashi, 76, Sanjo-Cho, Ashiya, Japan
Filed Apr. 13, 1965, Ser. No. 447,637
Claims priority, application Japan, Jan. 29, 1965, 40/6,600
2 Claims. (Cl. 263—5)



1. A golf ball warmer comprising a cylindrical center casing having a hollow interior only slightly larger in diameter than the diameter of a golf ball and an insulated wall, and being long enough for at least one golf ball, end covers removably fitted on the ends of said center casing, at least one of said end covers having a disc-shaped combustion unit in the central portion thereof and an annular fuel tank around said combustion unit coupled to said combustion unit for supplying fuel to the combustion unit, said combustion unit including an ignition means, and end caps removably fitted over the end covers for covering the combustion units when they are not operating.

3,351,331
HEAT CONTROL FOR KILN

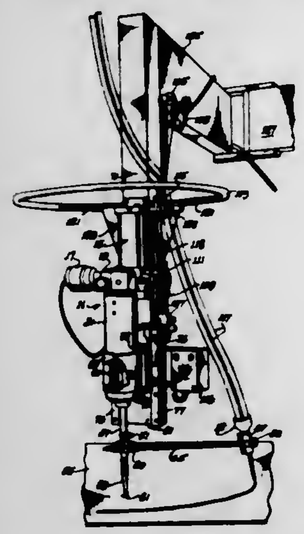
Albert Ray Martin, 2503 37th, Snyder, Tex. 79549
Filed Dec. 28, 1965, Ser. No. 516,951
10 Claims. (Cl. 263—40)



1. A heat control system for a kiln comprising:
(a) a plurality of spaced burner units,
(b) each burner unit heating an area of the kiln and
(c) each burner unit including at least one burner,
(d) a unit fuel pipe to each burner unit,
(e) a transmitting thermometer for each burner unit in the kiln in the area which the burner unit heats,
(f) a main fuel pipe supplying fuel to the burner units,
(g) a first fuel path for each burner unit from the main fuel pipe to each unit fuel pipe,
(h) a second fuel path for each burner unit from the main fuel pipe to each unit fuel pipe,
(j) means in the second fuel path for restricting the fuel flowing in the second fuel path to less than the fuel flowing in the first fuel path, and
(k) means in the second fuel path for opening and closing the second fuel path responsive to the transmitting thermometer for that burner unit.

3,351,332
CIRCLE CUTTING MACHINE

William Nowell, 10316 Walnut, South Gate, Calif. 90280, and Alfred C. England, 734 Freeman Ave., Long Beach, Calif. 90804
Filed Feb. 15, 1965, Ser. No. 432,609
11 Claims. (Cl. 266—23)



1. A machine for causing predetermined movement of a cutting torch comprising:

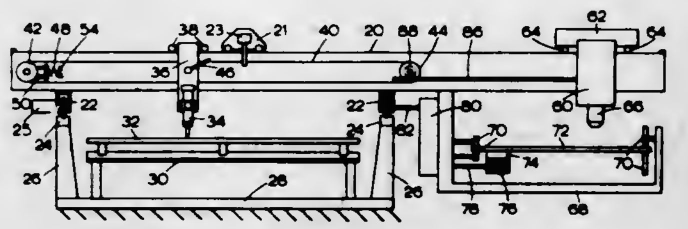
a first assembly for rotating the cutting torch, said assembly including mounting means for adjustably mounting the cutting torch for rotation in a first path about a rotational axis, first motor means for driving said mounting means and the cutting torch in rotation, and slip clutch means drivingly connected to said mounting means and said first motor means for allowing relative rotation therebetween in response to the application of a predetermined torque thereacross;

a second path assembly for mounting said first assembly, including second motor means for causing movement of said first assembly along a second path; and

means for moving said second assembly along a third path.

3,351,333
PROFILE CUTTING MACHINE

Bernard D. Owen, Harlow, Sydney W. Smith, Enfield, and Allan H. B. Swan, Rickmansworth, England, assignors to The British Oxygen Company Limited, London, England
Filed Aug. 25, 1965, Ser. No. 482,557
Claims priority, application Great Britain, Aug. 28, 1964, 35,342/64
29 Claims. (Cl. 266—23)



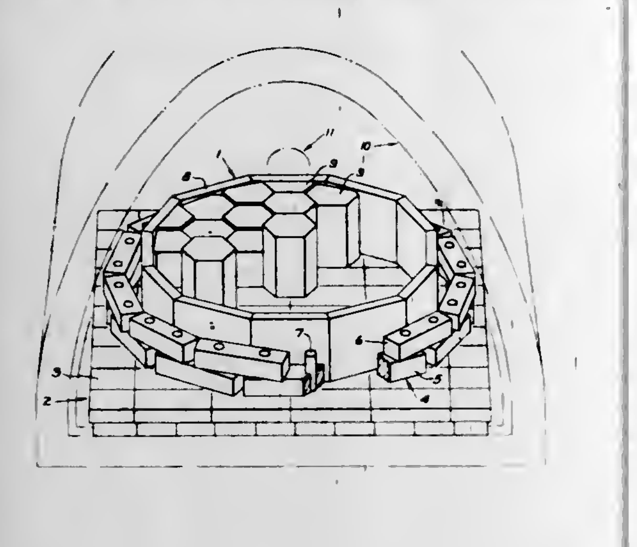
1. A profile cutting machine of the cross-carriage type comprising:
(a) a cross beam adapted to span the workpiece to be cut;
(b) drive means for driving the cross beam along a rectilinear axis tranverse to the beam;
(c) a cutting head mounted on the beam and movable thereon along the axis of the beam;
(d) two pulleys spaced apart along the axis of the beam;
(e) a flexible substantially inextensible endless element passing around said pulleys;
(f) a motor for driving said endless element around said pulleys;
(g) a clamping means whereby the cutting head may be clamped to the endless element so as to be moved along the beam thereby;
(h) a table for supporting a scale reproduction of the profile to be cut, said table being movable along an axis parallel to said rectilinear axis;
(i) a tracing head for following said reproduction and sending signals to operate said motor and said drive means to drive the cutting head along the required cutting path;
(j) a first mechanical connection between one of said pulleys and the tracing head effective to move the tracing head in a direction parallel to the axis of the cross beam over a distance proportional to the distance moved by the cutting head along the beam; and
(k) a second mechanical connection between the cross beam and the table effective to move the table along said parallel axis over a distance proportional to the distance moved by the beam along said rectilinear axis.

3,351,334
CONTAINER FOR MOLTEN FUSED SILICA

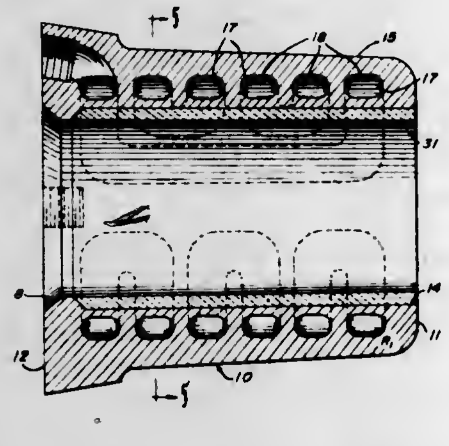
Gerald E. Reinker, South Euclid, Ohio, assignor to General Electric Company, a corporation of New York
Filed Mar. 1, 1965, Ser. No. 435,953
4 Claims. (Cl. 266—24)

1. A crucible for melting and reshaping fused silica ingots comprising walls consisting essentially of zirconium silicate reactive with molten fused silica and a non-reac-

tive friable coating consisting essentially of pure zirconia on the surface of said walls defining the fused silica accommodating cavity in said crucible for preserving the integrity of the reshaped ingots during separation of the crucible therefrom.

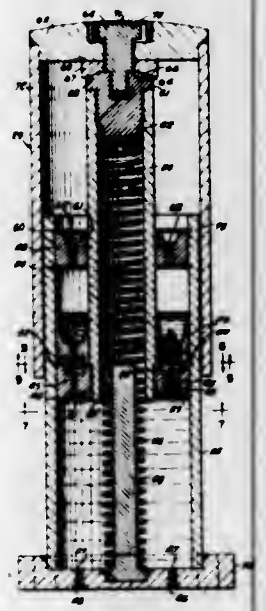


3,351,335
HIGH VELOCITY TUYERE WITH CONVOLUTE-SHAPED COOLING PASSAGEWAY
William E. Slagley, Crown Point, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed June 25, 1965, Ser. No. 467,031
7 Claims. (Cl. 266—41)



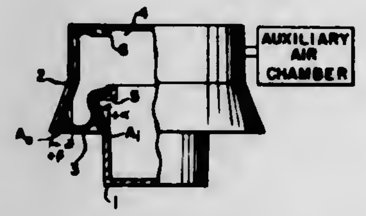
1. In a blast furnace tuyere having an outer wall, a nose end, a head end and an inner wall forming a central opening along the longitudinal axis of said tuyere, a cooling medium passage, disposed between said central opening and the outer surface of said tuyere, said cooling medium passage comprising:
- a first convolute-shaped section curved about said longitudinal axis in a substantially cylindrical shape, whereby the axis of said convolute-shaped section is substantially coaxial with said tuyere axis, said convolute-shaped section having an inlet end and an outlet end and two edges;
- said convolute-shaped section extending between said head end and said nose end of said tuyere and including means for progressively cooling from said head end toward said nose end of said tuyere;
- one of said edges being spaced from said remaining edge;
- a second inlet section having one end integral with said inlet end of said convolute-shaped section, and another end terminating at said head end of said tuyere;
- a third section having one end integral with said outlet end of said convolute-shaped section and extending from said nose end of said tuyere rearwardly toward said head end of said tuyere between said edges of said convolute-shaped section;
- and a fourth outlet section having one end integral with the remaining end of said third section and another end terminating at said head end of said tuyere;
- said cooling medium passage comprising said four sections all of which are positioned in a substantially cylindrical plane;
- the cross sectional area of said passage, transverse to the direction of flow of a cooling medium, being substantially uniform throughout said cooling medium passage;
- whereby said cooling medium passage is adapted to receive a cooling medium which moves progressively from said head end toward said nose end and passes through said inlet section, said convolute-shaped section and said third section prior to exiting from said tuyere through said outlet section.

3,351,336
RAILROAD CAR SHOCK ABSORBER
William T. Blake, 4424 Morris Court, Fort Worth, Tex. 76103
Filed Aug. 19, 1964, Ser. No. 390,562
5 Claims. (Cl. 267—3)



1. A single-acting, hydraulic, shock absorbing mechanism comprising: a cylinder, a cylinder head closing one end of said cylinder, a piston slidable in said cylinder, port means extending longitudinally through said piston, check valve means for said port means, said check valve means opening toward said cylinder head, metering port means for allowing fluid to pass through said piston when said check valve means is closed, a hollow piston shaft carried by said piston and extending away from said cylinder head, an annular piston slidably mounted on said piston shaft and slidable in said cylinder, second port means extending longitudinally through the latter said annular piston, second check valve means for said second port means, said second check valve means opening toward said first-mentioned piston, and resilient means biasing said first-mentioned piston away form said cylinder head, said resilient means comprising a coil compression spring mounted within the hollow piston shaft, the spring having one end engaging an element on the piston shaft, the other end engaging said cylinder head.

3,351,337
AIR SPRING
Kunio Nishioka, Kyoto, and Seitchi Nishimura and Seinosukeo Kato, Nishinomiya, Japan, assignors to Summimoto Metal Industries Ltd., Osaka, Japan
Filed Aug. 29, 1966, Ser. No. 575,658
Claims priority, application Japan, Sept. 10, 1962, 37/38,890
6 Claims. (Cl. 267—65)



1. An air spring, comprising: an inner cylinder having an opening end and a rim thereof; an outer cylinder having an opening end; the opening end of said inner cylinder having a tapered external surface; the opening end of said outer cylinder having a tapered internal surface; the opening end of the inner cylinder inserted within the opening end of the outer cylinder; a thin-walled circumferential member lying partly in contact with the tapered surfaces of the opening ends and hermetically sealed to the inner cylinder at said rim and to the outer cylinder in its interior away from said opening end, said tapered external surface being tapered at an angle α, said tapered internal surface being tapered at an angle β, said angles being substantially determined by a solution of the following equations:

$$K_L=\mu_2(\alpha,\beta)\frac{\pi^2}{4}R_eP_o$$

$$K_v=\gamma\pi^2R_e^4\frac{P_o+P_a}{V_o+V_T}-2\pi\mu_1(\alpha,\beta)P_oR_e$$

$$\mu_2(\alpha,\beta)=\frac{\pi\{\sin(\alpha+\beta)-(\pi+\alpha+\beta)\cos\alpha\cos\beta\}}{8\{1+\cos(\alpha+\beta)+\frac{1}{2}(\pi+\alpha+\beta)\sin(\alpha+\beta)\}}$$

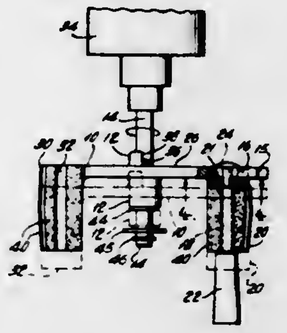
$$\mu_1(\alpha,\beta)=\frac{\sin(\alpha+\beta)+(\pi+\alpha+\beta)\sin\alpha\sin\beta}{2\{1+\cos(\alpha+\beta)+\frac{1}{2}(\pi+\alpha+\beta)\sin(\alpha+\beta)\}}$$

where

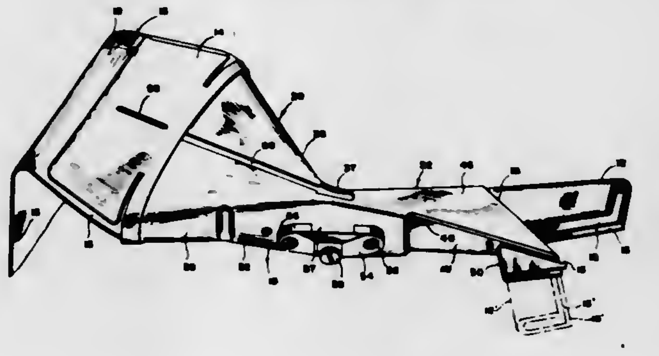
K_V=the desired spring constant in the vertical direction,
K_L=the desired spring constant in the lateral direction,
R_e=the radius of the effective area,
γ=the polytropic index,
P_o=the internal gage pressure of air,
P_a=atmospheric pressure,
V_o=the volume of the air spring, and
V_T=the volume of any auxiliary air chamber, and where α and β have different values.

3,351,338
APPARATUS FOR TRANSPORTING AND FOLDING A COLLAGEN CASING
Michael A. Petrozziello, Middlesex, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Aug. 18, 1965, Ser. No. 480,728
5 Claims. (Cl. 270—79)

1. Apparatus for transporting and folding a continuous length of extruded collagen casing comprising:
- a bar having a longitudinal slot in one end thereof mounted on a shaft;
- a first cylindrical member adapted to slide on said bar with the axis of the cylinder parallel to said shaft whereby the distance between the axis of the cylindrical member and the axis of the shaft may be varied;
- a second cylindrical member mounted on the other end of said bar with its axis parallel to the shaft, the radius of that end of each cylinder member most remote from said bar being the same as the diameter of said cylinder member at the end contacting said bar, and the diameter being the greatest at a point midway between said ends;
- means for releasably engaging the bar with the shaft; and,
- means for releasably holding the bar in engagement with the shaft.



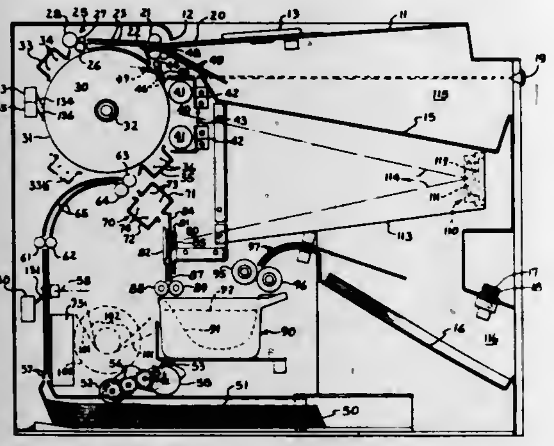
3,351,339
STRIP FOLDING DEVICE
Ralph L. Beard and James F. Hester, Winston-Salem, N.C., assignors to Hanes Corporation, Winston-Salem, N.C., a corporation of North Carolina
Filed Oct. 5, 1965, Ser. No. 493,060
3 Claims. (Cl. 270—94)



1. A device for forming a single-layer strip of material into a multilayer strip of material comprising, first and second guide channels, each channel having a receiving end and a delivery end spaced from the receiving end, and each channel having a generally U-shaped cross-section taken in a plane perpendicular to a longitudinal axis through the respective channel, each channel comprising side portions forming the legs of the U and a top portion forming the connection between the legs of the U, wherein the width of the top portion of the U of each of the first and second channels diminishes from an initial width at the receiving end of the channel to approximately zero at the delivery end of the channel and the length of the said side portions forming legs of the U each increased from approximately zero at the receiving end of the channel to approximately one-half of the said initial width of the top portion of that channel at the said delivery end of the channel, each said side portion of the first channel having an inner wall and an outer wall, said inner walls meeting at the said delivery end and said outer walls having extension members extending past the said delivery end, the receiving end of the said second channel connecting to the said delivery end of the first guide channel wherein the top portion of the U of the said second guide channel is formed by the said extension members of the said outer walls of the side portions of the first guide channel, and wherein the said top portion of the second channel is angularly displaced with respect to the plane bisecting the generally U-shaped first guide channel.

3,351,340
DOCUMENT TRANSPORT FOR PHOTOCOPY MACHINE

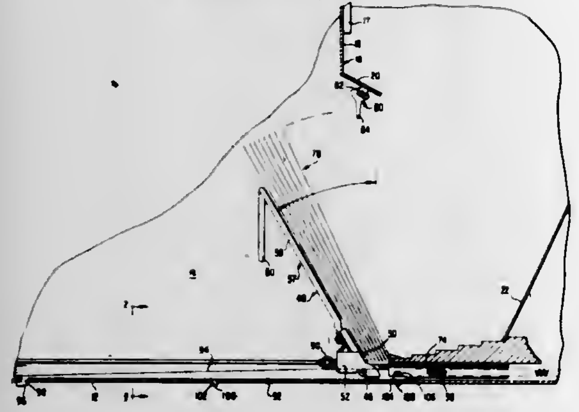
Franklin R. Levine, Elk Grove Village, Ill., assignor to American Photocopy Equipment Company, Evanston, Ill., a corporation of Illinois
Filed June 30, 1964, Ser. No. 379,205
9 Claims. (Cl. 271—51)



1. In an electrostatic photocopy machine or the like requiring transport of an original sheet along a curved path of transport, the combination comprising a frame, a cylindrical drum grounded to and journalled in the frame and having means for driving the same, an insulating blanket on the drum, means for feeding an original sheet to the drum for seated transport on the blanket, a first source of high charging voltage which is of first polarity with respect to ground, a second source of high charging voltage which is of second and opposite polarity with respect to ground, means for applying the voltages to the face of the original sheet for causing the latter to seatingly adhere to the drum, said voltages being applied in such sequence that a given area on the surface of the blanket is alternately subjected to charges of first and second polarity thereby to avoid any tendency toward accumulation on the surface of the blanket of a charge of one polarity incident to successive cycles of rotation of the drum.

3,351,341
VARIABLE ANGLE CARD DECK SUPPORT

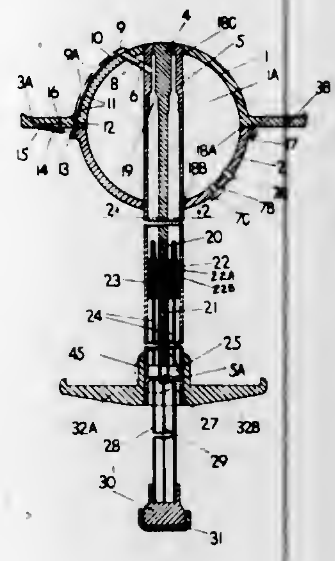
Blayne E. Maring, William J. Pendy, Jr., Charles H. Grimm, and Joel S. Johnson, Rochester, Minn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 21, 1965, Ser. No. 499,827
6 Claims. (Cl. 271—87)



1. In a stacking device for cards or the like including a receptacle having a vertical card receiving channel and a base member at the bottom thereof, and means within said receptacle for supporting said dropped cards vertically on edge on said base member at a slight angle away from the direction of card entry; the improvement comprising: means for increasing the angle of inclination of said card deck as said card deck increases in size.

3,351,342
HIGH PRESSURE JUMPING STICK

Joel B. Guin, 148 E. 48th St., New York, N.Y. 10017
Filed Feb. 10, 1965, Ser. No. 432,078
4 Claims. (Cl. 272—57)



1. A high pressure jumping stick having as its main parts a compressed air container means including a spherical chamber, mounted upon an upright cylindrical part whose base is adapted to reach a supporting surface, said spherical chamber comprising:

two hemispheres made of strong durable material and attached to one another;

two handles mounted on opposite sides of the upper hemisphere, one handle having along its lower side an indentation in which is disposed a lever having one end movably attached to the handle;

a roller movably attached to the chamber near the inner end of said one handle through which a hole runs upward;

a cylinder for a valve, hereafter called a valve cylinder, penetrating said upper hemisphere above the handle intersecting, and leading to and penetrating the upper wall of said upright cylindrical part, said valve cylinder enclosing a three-way valve and having passages through its walls communicating with passages in the valve; and

a wire channel attached to said upper hemisphere and running from said one handle to the outer opening of said valve cylinder;

a wire attached to the movable end of said lever, leading over the roller, then through said hole and said wire channel into said valve cylinder where it is attached in order to make possible manipulation of said valve by the depression of the lever into the indentation;

and said upright cylindrical part comprising:

an outer cylinder penetrating said spherical chamber and penetrating both of said hemispheres at the center of the peripheries thereof, and extending downward therefrom;

two pedals mounted on opposite sides of said outer cylinder and normal thereto near its bottom;

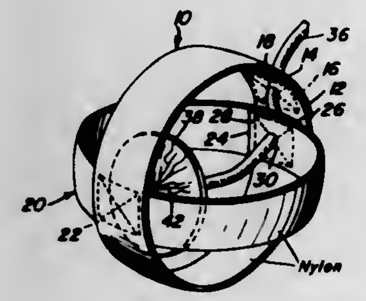
a shaft centrally disposed within and extending the length of said outer cylinder, and having its lower part hollowed lengthwise to contain a spring of the compression type whose upper end is attached within and its lower end is attached to a piston movably disposed within the hollowed part; and

a shaft fixedly mounted on the underside of said piston and extending downward to the base of the jumping stick; and

upper and lower annular pistons disposed within the annular chamber between the outer cylinder and the shaft and joined fixedly by an inner cylinder mounted to the underside of the upper and passing through the lower annular piston, extending downward to said base, said base being covered with a resilient material.

3,351,343
GAME BALL AND TETHERING MEANS THEREFOR

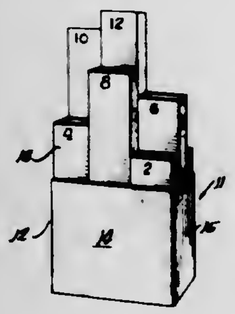
Stephen J. Papp, 5655 W. 2nd Ave., Denver, Colo. 80220
Filed Mar. 18, 1965, Ser. No. 440,726
5 Claims. (Cl. 273—26)



1. In combination, a game ball and ball holding and tether anchoring means, said means embodying at least two individual evenly spaced broad nylon bands snugly surrounding annular surface portions of said ball, said bands having first portions crossing each other in overlapping relationship and permanently secured together, second diametrically opposite portions of said bands being also overlapped in crossing relationship but not secured to each other, and an elongated flexible tethering element having a terminal end cooperatively associated with and connected to said diametrically opposite portions of said bands so as to retain said opposite portions in overlapping and crossing relationship when said ball is suspended by said element.

3,351,344
TARGET ASSEMBLY WITH REMOVABLE TARGET CHUTES OF VARYING HEIGHT

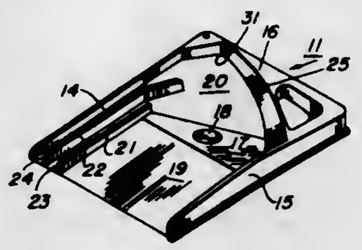
Charles Y. Dupuy, 458 Franklin Turnpike, Allendale, N.J. 07401
Filed July 10, 1964, Ser. No. 381,721
5 Claims. (Cl. 273—95)



5. A game apparatus, comprising, in combination, a ball, a base, and a plurality of longitudinal chute members of widely varying heights removably mounted in said base, said base having an open top and a plurality of compartments dimensioned to engage with the sides of said chutes for supporting said chutes in upright position, said chutes having open tops and being sized to selectively and separately receive said ball when thrown therein, said chute members including ones varying in height by at least 9 to 24 inches.

3,351,345
GOLF PUTTING PRACTICE DEVICE

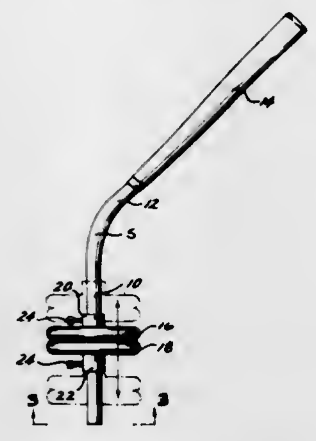
George H. Robinette, Deerfield, Ill., assignor to Pro-Putt, Inc., Deerfield, Ill., a corporation of Illinois
Filed Mar. 12, 1965, Ser. No. 439,183
6 Claims. (Cl. 273—176)



1. An indoor golf-game facility, comprising a cup element structured to rest flat on a floor with the body thereof defined by side rims and a rear end rim the bottom edges of which rims are adapted to support the element on a floor, a median portion of the body being disposed above the bottom edges of the rims and having a depressed ball-receiving pocket nearly centrally therein, and portions of the body forwardly and rearwardly of the pocket being inclined to form approach and regress surfaces, respectively, to and from the pocket, said median portion being generally horizontal and the approach surface extending forwardly and downwardly therefrom to terminate substantially flush with the floor, the regress portion being inclined laterally and forwardly downward relative to the plane of said median portion, and said cup element body having a channel means leading from the lowest part of said regress portion to open at the forward end of said body.

3,351,346
GOLF SWING TRAINING DEVICE

George M. Strahan, 3120 Pattiz Ave., Long Beach, Calif. 90808
Filed Oct. 12, 1965, Ser. No. 495,163
1 Claim. (Cl. 273—193)



A golf swing training device for developing an inside-out swing, comprising:

a shaft havng a vertical first portion and a straight second portion, said second portion extending upwardly and away from the top of said first portion at an angle of approximately 47½ degrees relative to the axis thereof and having a hand grip at the upper end thereof;

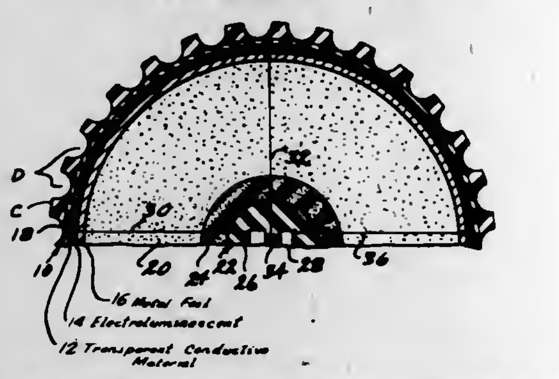
weight means slidably disposed on said first portion; and, means adjustably secured to said first portion for locking said weight means thereto.

3,351,347
ELECTROLUMINESCENT GAME BALL

Charles J. Smith, 11459 Bellagio Road, West Los Angeles, Calif. 90049, and Hugh W. Jamieson, 11522 Mulholland Drive, Los Angeles, Calif. 90024

Filed Apr. 10, 1964, Ser. No. 358,815

2 Claims. (Cl. 273—213)



1. A ball for sport use as under conditions of restricted ambient light, comprising:

an electrical oscillator circuit, including a semiconductor device;

battery means for energizing said oscillator circuit;

a ball structure including a resiliently-deformable section, said ball structure enclosing said battery means and said oscillator circuit;

an electroluminescent means contiguous the external surface of said ball structure, said electroluminescent means being energizable by said oscillator circuit to provide light energy; and

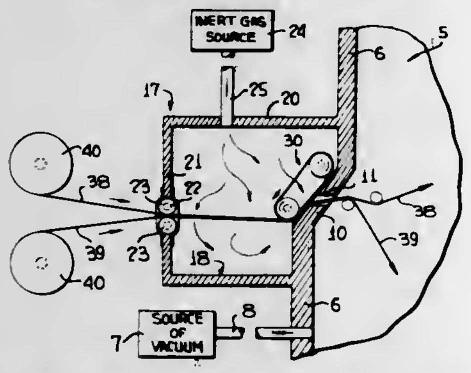
switch means contained in said ball structure, actuable to energize said electroluminescent means from said oscillator circuit, said switch means being magnetically actuatable by energy applied exteriorly of said ball.

3,351,348
VACUUM CHAMBER SEAL

Clyde F. Dupuis, Downers Grove, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Jan. 29, 1965, Ser. No. 429,072

2 Claims. (Cl. 277—32)



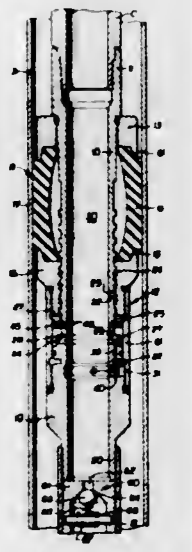
1. A seal structure comprising a plurality of chambers, a partition separating a first of said chambers from a second of said chambers, an opening in said partition establishing access between said first and second chambers, means for supplying fluid under pressure into said first chamber, mean for exhausting fluid from said second chamber and sealing means for closing the opening in said partition whereby said first and second chambers are maintained under a pressure differential, said sealing means including an endless sealing web entrained about a pair of rollers journalled in said first chamber at opposite sides of said opening, said endless sealing web including first and second sealing runs, and said first sealing run being parallel to said partition and in overlying relationship to said opening whereby the pressure differential between said chambers urges said first sealing run into intimate contact with said partition, means for feeding a web of sheet material toward said sealing means along a predetermined linear path, and said partition is disposed at an angle other than normal to said predetermined linear path whereby said sheet material web is fed through said opening without abrupt angular changes in the configuration thereof.

3,351,349
HYDRAULICALLY EXPANDABLE WELL PACKER

David V. Chenoweth, Houston, Tex., assignor to Baker Oil Tools, Inc., City of Commerce, Calif., a corporation of California

Filed Oct. 14, 1965, Ser. No. 495,853

8 Claims. (Cl. 277—34)



1. In a well packer adapted to be lowered in a well bore: body means adapted for connection to a tubular running-in string and having a fluid passage communicable with said tubular running-in string; a hydraulically expandable initially retracted packing structure on said body means; means providing a first fluid path from said passage of said body means to said packing structure through which fluid under pressure can be conducted to expand said packing structure; back pressure valve means in said path preventing return flow of fluid from said packing structure through said path to said passage; said body means having a fluid bleeder path from said passage to said first path on the packing structure side of said back pressure valve elements; said body means including relatively movable members; coengageable valve elements on said members closing said bleeder path; and means interconnecting said members whereby rotation of one of said members relative to said other member disengages said valve means and opens said bleeder path.

3,351,350
HIGH PRESSURE ROD SEAL

Paul R. Shepler, Towson, Md., assignor to Koppers Company, Inc., a corporation of Delaware

Filed June 22, 1966, Ser. No. 559,450

3 Claims. (Cl. 277—58)

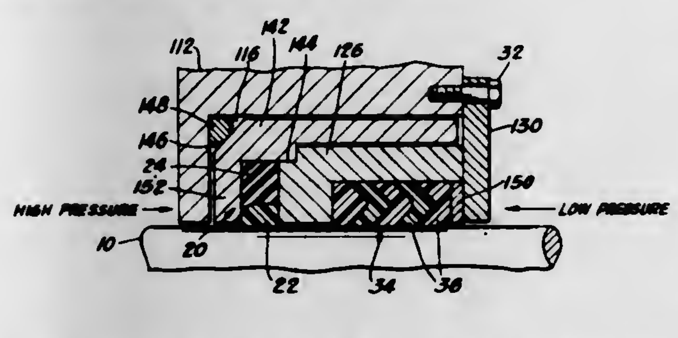
1. A dual stage high pressure seal assembly for a rod surrounded by a cavity defined by a housing having an end portion of reduced diameter, comprising:

a first stage that includes a seal ring having an inner portion of polytetrafluoroethylene surrounded by an outer portion of elastomeric material, said seal ring positioned around said rod and within said cavity and adjacent said housing end portion of reduced diameter;

an inner tubular casing having an end portion of reduced diameter secured within said cavity and around said rod and urging said seal ring toward said housing end portion to squeeze said elastomeric material whereby said inner portion of polytetrafluoroethylene is compressed into sealing engagement against said rod and said housing at one unit pressure;

a second stage having a plurality of V-shaped rings around said rod and within said tubular casing engaging said rod and said casing end portion of reduced diameter;

biasing means urging said casing towards said seal ring a predetermined amount and urging said V-shaped rings against said casing end portion another predetermined amount whereby said seal ring is pressed into sealing engagement with said rod at a first unit pressure and said V-shaped rings are pressed into sealing engagement with said rod at a second unit pressure less than said first unit pressure; and



an outer tubular casing within said cavity and surrounding said seal ring and said inner tubular casing to provide a unitary assembly,

said outer casing having an end portion of reduced diameter against which said seal ring is urged by said inner casing end portion and having an inner shoulder portion against which said inner casing is urged by said biasing means whereby said unitary assembly is urged into sealing engagement with said housing by said biasing means.

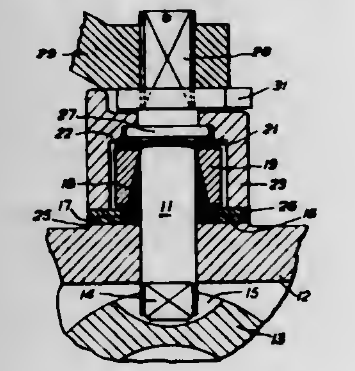
3,351,351
MEANS FOR SEALING A SPINDLE

Herbert Bentley-Leek, Herefordshire, England, assignor to Saunders Valve Company Limited, Cwmbran, Monmouthshire, England, a British company

Filed June 3, 1965, Ser. No. 461,086

Claims priority, application Great Britain, June 5, 1964, 23,471/64

9 Claims. (Cl. 277—115)



1. A seal for sealing to a casing a spindle which rotates intermittently through a small angle, comprising a tapered bushing of material selected from the group consisting of nylon and PTFE reinforced with a filler, which is a good working fit on the spindle, a flange integral with the larger diameter end of the taper, said flange being clamped and thereby sealed to the casing to which the spindle is to be sealed and the bushing being disposed with the flange at the high pressure end of the seal, a compressor of rigid material having a tapered bore which fits on the bushing, and spring means urging the compressor into closer contact with the bushing.

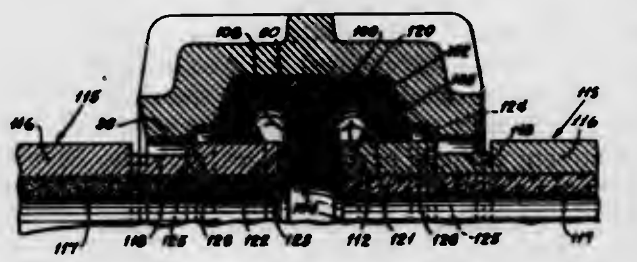
3,351,352
GASKET FOR PIPE JOINT

James Blakeley, Don Mills, Ontario, Canada, and Harry M. Sweet, East Hanover Township, Morris County, N.J., assignors to Victaulic Company of America, Union, N.J., a corporation of New Jersey

Original application Feb. 27, 1962, Ser. No. 177,137. Divided and this application July 7, 1965, Ser. No. 470,094

The portion of the term of the patent subsequent to Dec. 13, 1983, has been disclaimed

1 Claim. (Cl. 277—206)



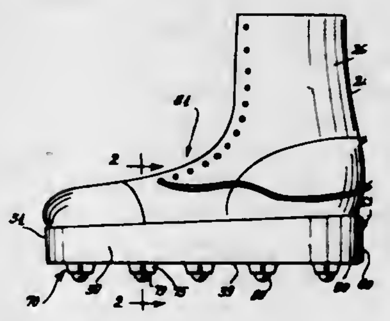
In gasket construction for the coupling of grooved end pipe, a continuous angular gasket member formed of resilient material and of E-shape when viewed in transverse section, said gasket having a base portion, radially inwardly extending side portions extending from the sides of said base portion, lip portions extending toward each other from the radially inner portion of said side portions, said lip portions terminating in spaced apart faces and an integral annular tongue portion extending radially inwardly from said base portion, the sides of said tongue portion being spaced from said side portions and from said lip portions thereby providing annular cavities within said gasket at either side of said tongue portion, said tongue portion when said gasket is in relaxed position extending radially inwardly between and beyond the inner ends of said lip portions, said lip portions when said gasket is in relaxed position being inclined inwardly toward the axis of the annulus of said gasket, and said lip portions, when said gasket is in compressed condition, being swung upwardly about said inner portions of said side portions and lying in a cylindrical zone concentric with respect to the axis of said gasket, with said tongue portion extending radially inwardly between and beyond the inner ends of said lip portions and said gasket cavities being materially reduced in volume.

3,351,353
RETRACTABLE ROLLER AND ICE SKATES FOR SHOES

Dorothea M. Weitzner, 8 E. 62nd St., New York, N.Y. 10021

Filed Mar. 12, 1965, Ser. No. 439,375

9 Claims. (Cl. 280—7.13)



1. A skate comprising a shoe having an upper, a thick sole, means attaching the sole and upper together, said sole having a longitudinally extending channel formed in its exposed bottom and extending substantially from one

end to the other end thereof, said channel having opposing walls formed with beveled portions, a closure plate having beveled opposing wall portions seating on the beveled wall portions of the channel so that the plate closes said channel at the bottom of the sole, said channel having an inner wall parallel to the bottom of the sole, and a plate member in said channel between said closure plate and inner wall of the channel and holding the closure plate in place in the channel, said plate member being adapted to hold skating members extending laterally of the plate member, said closure plate having a groove formed therein for receiving said skating members, said plate members having opposing beveled edges, whereby positions of said closure plate and plate member can be interchanged in said channel with said closure plate inverted in the channel and abutting the inner wall in the channel and with the plate member held in the channel by abutment of said beveled edges with the beveled opposing wall portions of the channel, and with the skating members extending outwardly of the bottom of the sole of the shoe.

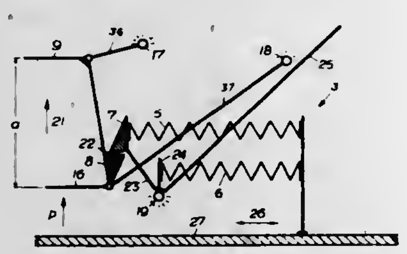
3,351,354
HEEL-SAFETY HOLDER FOR SKI BINDINGS

Thomas C. Smolka and Gottfried Schweizer, Vienna, Austria, assignors to Wiener Metallwarenfabrik Smolka & Co., Schwechat, Austria, a corporation of Austria

Filed Apr. 20, 1965, Ser. No. 449,488

Claims priority, application Austria, Apr. 23, 1964, A 3,613/64

7 Claims. (Cl. 280—11.35)



1. A heel-safety holder for ski binding, comprising jaw means for vertically clamping a heel portion of a ski boot therebetween,
adjustable means for vertically positioning said jaw means with respect to said ski,
means for releasing the engagement of said heel portion with said jaw means,
adjusting means for selectively presetting an infinite plurality of overload values applied by said jaw means against said heel portion,
a housing,
said jaw means including upper member means pivotally connected to said housing about a first pivot point and lower member means pivotally connected to said housing about a second pivot point,
detent means comprising two superposed detent members operatively connected to said housing and in engagement when said upper member means is in a downward heel clamping position,
said lower member means operatively cooperating with said upper member means upon pressing downwardly said lower member means in order to hold said upper member means in said downward heel clamping position, and
the upper of said detent members pivoted about a third pivot point disposed at a level lower than said first pivot point and lower than the level of the engaging faces of said detent members, said third point connected to said housing, and lever means formed integrally with said upper detent member and mounted on said third pivot.

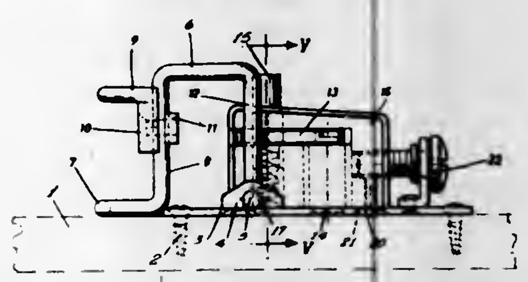
3,351,355
HEEL HOLDER FOR SAFETY SKI BINDINGS

Franz Xaver Brückl, Garmisch-Partenkirchen, Germany, assignor to Hannes Marker, Garmisch-Partenkirchen, Germany

Filed July 26, 1966, Ser. No. 567,978

Claims priority, application Germany, Oct. 5, 1965, M 66,857

6 Claims. (Cl. 280—11.35)



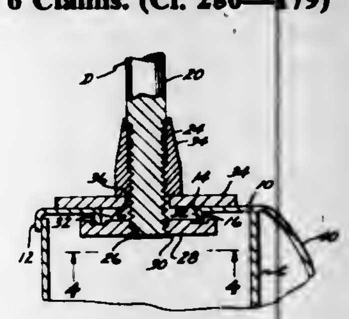
1. A heel holder for safety ski bindings of the type including a release member pivotally movable to the rear of the ski in response to an excessive tensile force having an approximate vertical, upward direction comprising a ski, a release member of inverted U configuration composed of spring steel with the legs of the U arranged spaced longitudinally of the ski, means pivotally mounting the end of the rear leg of the release member to the ski, the forward leg of the release member terminating in a pedal element which in position for use is horizontal and engages the surface of the ski, a sole-retaining element adjustably mounted on the forward leg of the release member, and detent means releasably engaging the rear leg of the release member which possesses selected resiliency so that the release member is pivotally movable past said detent means with elastic deformation in response to excessive tensile force.

3,351,356
TRUCK TIE-DOWN DEVICE

Bob R. Clark, 6641 Hammond Ave., Long Beach, Calif. 90805, and Glen W. Perry, Long Beach, Calif.; said Perry assignor to said Clark

Filed June 11, 1965, Ser. No. 463,082

6 Claims. (Cl. 280—179)



1. In combination with a truck vehicle having a bed from which side walls extend upwardly to develop into horizontal flanges in which at least one longitudinally extending opening is formed having a pair of lips depending from opposite sides thereof, a tie-down assembly including:

(a) a shank of circular transverse cross section having external threads formed on a second end portion thereof;
(b) engageable means on a first end of said shank;
(c) a rigid elongate member affixed in a transverse position to said second end portion, which member is shorter than the length of said opening but is longer than the width of said opening, with said member having two longitudinally spaced transverse recesses formed in that surface thereof most adjacent said engageable means, which recesses are engageable by said pair of lips when said member is disposed thereunder;

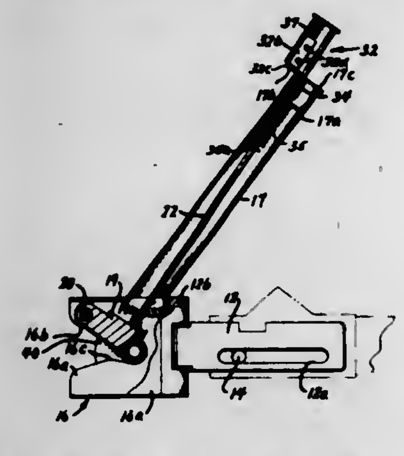
(d) a plate of greater length and width than said opening, which plate has a bore formed therein that is slidably engaged by said shank; and
(e) a nut that engages said threads, with said nut when rotated in a first direction contacting said plate to force the same into pressure contact with the surface of said flange opposite that from which said pair of lips project, and with that portion of said member defining said recesses being moved into engagement with said lips to support said assembly in a nonrotatable position from said flange, which nut when rotated in a second direction moves away from said plate to permit said assembly to be separated from said flange.

3,351,357
AGRICULTURAL IMPLEMENT COUPLER

**Ralph D. Van Eaton, 2704 Rose Drive,
Vincennes, Ind. 47591**

Filed Oct. 22, 1965, Ser. No. 501,015

10 Claims. (Cl. 280—415)



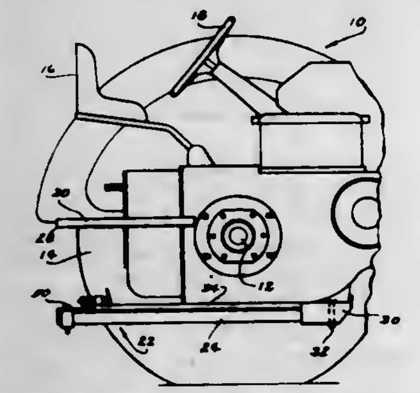
1. A coupler mechanism for use between a vehicle and an implement comprising means for mounting said coupler mechanism on said vehicle, receiving members pivotal laterally on said mounting means each having a mouth with a pivotal locking member, adjustable means retaining said receiving members in a preselected spaced-apart relationship, each of said receiving members adapted to receive a member forming part of said implement, a control assembly for said pivotal locking member, and means forming part of each control assembly selectively maintaining said pivotal locking member in latching and unlatching relationships with said member forming part of said implement.

3,351,358
TELESCOPING DRAWBAR

Alfred A. Wridt, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin

Filed Sept. 27, 1965, Ser. No. 490,408

10 Claims. (Cl. 280—478)



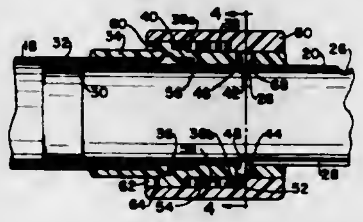
1. An improvement in a drawbar of the swingable type for a tractor, said improvement comprising a first drawbar member attached to said tractor, a second drawbar member slidable in said first drawbar member, a notched support on said tractor extending transverse to said first and second members, rolling means on said support, said rolling means being connected to said first member in position to provide for swinging said first member, and biased locking means on said rolling means, said locking means being adapted to engage with said notched support in one position of said locking means and being adapted to release said locking means in another position so that said rolling means may be swung on said support.

3,351,359
ADJUSTABLE LENGTH WAND

John T. Ferraris, Stamford, Conn., assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware

Filed Dec. 23, 1964, Ser. No. 420,565

2 Claims. (Cl. 285—7)



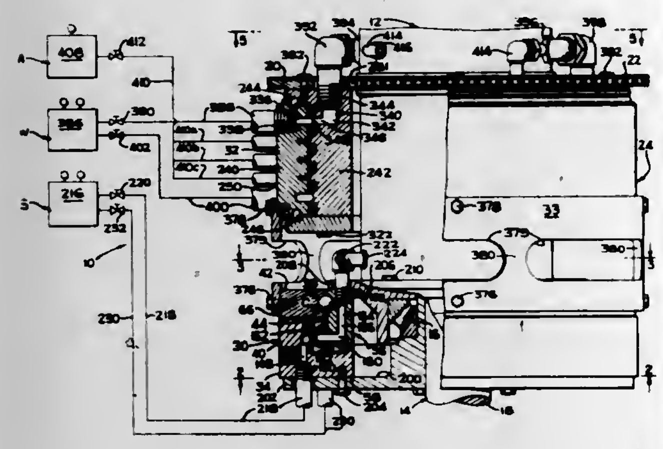
1. An adjustable length wand comprising an outer wand adapted to receive an inner wand for telescopic movement within said outer wand, said inner wand having a plurality of indentations serially arranged in a line parallel to the axes of said wands, a first member fixed against longitudinal and angular movement on one end of said outer wand, said first member having a portion extending axially beyond said outer wand, said axially extending portion of the first member defining a bearing portion for snugly receiving said inner wand and maintaining substantial axial alignment between said inner and outer wands, an opening extending transversely through said bearing portion communicating with the outside surface of said inner wand, a ball radially movable within said opening for engagement in one of said indentations, a second member rotatably connected on said first member, means for preventing relative axial movement between said first and second members, complementary annular recesses on said first and second members defining an annular space therebetween, a helical spring means having each of its ends connected with said first and second members, respectively, for normally biasing said second member into a predetermined position relative to said first member, a discrete arcuate recess in the outside surface of said first member remote from said bearing portion, a tab connected with said second member for projecting into said discrete arcuate recess for limiting the relative rotational movement of said first and second members, said second member having a radially outwardly extending recess therein for releasing said ball from an associated indentation upon movement of said second member from said predetermined position on the surface of said second member adjoining said recess engaging said ball positioned in an indentation in the predetermined position of said second member; whereby movement of said inner wand within said outer wand is effected by grasping said second member in one hand and said inner wand in the other hand and twisting the grasped parts followed by pushing or pulling said inner wand; and an axially extending continuous groove in said inner wand diametrically opposite said indentations and substantially coextensive with said indentations, a second transverse opening in said bearing portion, a second ball in said opening, said ball extending into said groove,

said second member having an inner surface for engaging said second ball for continuously maintaining it in said groove.

3,351,360
FLUID SUPPLY APPARATUS

Armand L. Faccou, Santa Ana, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed May 4, 1965, Ser, No. 453,003
8 Claims. (Cl. 285—41)



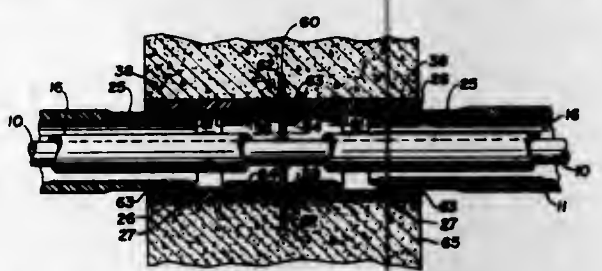
1. In combination, a roller die adapted to have different fluids supplied to different internal areas thereof through its periphery, said roller die being mounted for rotation in a support frame, a rotary coupling assembly comprising first and second annular multi-passage rotary couplings, each rotary coupling having an annular rotor and an annular stator interconnected for relative rotation, the annular stators of said rotary couplings being rigidly interconnected, means mounting said rotary coupling assembly in encircling relation to about said roller die with said stators fixed to said support frame to retain said stators against rotation, means connecting said rotors to said rotatable roller die for rotation therewith, a first stationary fluid source, means connecting said first fluid source to said first rotary coupling, said first rotary coupling having fluid conducting means interconnecting said first source to one interior area of said rotatable roller die through the periphery thereof by way of separate passages through said first annular multi-passage rotary coupling to uninterruptedly circulate fluid supplied by said first source between said first source said one area of said rotatable roller die, a second stationary fluid source, said second coupling having fluid conducting means interconnecting said second fluid source and a second interior area of said rotatable roller die through the periphery thereof by way of separate passages through said second annular multi-passage rotary coupling to uninterruptedly circulate fluid supplied by said second source between said second source and said second area of said rotatable roller die.

3,351,361
INSULATED PIPING SYSTEM

Joseph L. Martin, Wadsworth, Ohio, assignor to New England Realty Co., a corporation of Ohio

Filed Feb. 27, 1964, Ser. No. 347,824
14 Claims. (Cl. 285—47)

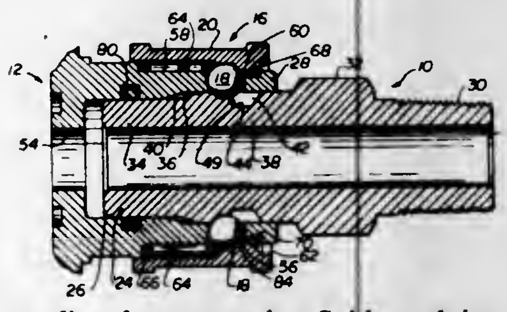
1. In a piping system of the type including conduit means and fluid conducting pipe means supported in spaced relation within said conduit means, said conduit means and said pipe means being formed by connected sections, the improvement comprising an anchor plate fixed to said pipe means transversely of its axis, a pair of tubular couplings disposed on and adjoining opposite sides of said plate, said plate extending outwardly of said couplings so that axial movement of said pipe means can be prevented by fixedly securing the extending portions of said plate, said conduit means having the ends of adjacent sections projecting into a different one of said couplings, fluid seal means between said couplings and the inner disposed ends of said adjacent conduit sections, and means in said couplings for trapping moisture entering at the junctures between said couplings and said anchor plate.



3,351,362
QUICK-DISCONNECTIVE COUPLING

Howard J. Hansen, Bay Village, Ohio, assignor to The Hansen Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

Filed Apr. 19, 1965, Ser. No. 449,005
9 Claims. (Cl. 285—83)



1. A coupling for connecting fluid conduits or the like comprising a socket member, a plug member to be received in said socket member, a coupling mechanism for connecting said members together when said plug member is received in said socket member and providing for relative movement between the plug and socket members to first and second relative positions while connected, said members moving in a direction toward each other when moving from said second position to said first position, said coupling mechanism being carried by one of said members and having a movable part cooperable with means on the other member to effect a connection between said plug and socket members when said plug member is received in said socket member, a control element axially movable relative to said one member and said movable part between a normal position in which it prevents movement of said movable part to release the connection and a release position in which said movable part may be moved to enable said members to be connected and disconnected, and means locking said control element against movement to its release position when said members are in said second position and freeing said control element for movement to said release position on relative movement of said members from said second position to said first position.

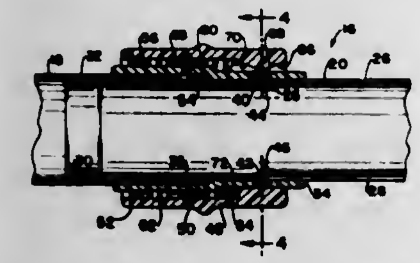
3,351,363
ADJUSTABLE LENGTH WAND

David F. Downey and John T. Ferraris, Stamford, Conn., assignors to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware

Filed Dec. 23, 1964, Ser. No. 420,501
3 Claims. (Cl. 285—303)

1. An adjustable length wand comprising an outer conduit adapted to receive an inner conduit for telescopic movement within said outer conduit, said inner conduit having a plurality of indentations serially arranged in a

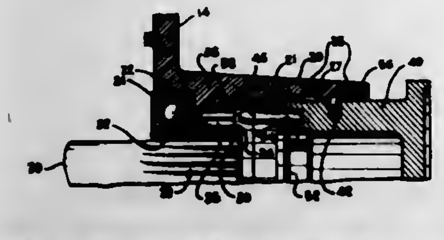
line parallel to the axes of said conduit, a first member fixed against longitudinal and angular movement on one end of said outer conduit, said first member having a portion extending axially beyond said outer conduit, said axially extending portion of the first member defining a bearing for snugly receiving said inner conduit and maintaining substantial axial alignment between said inner and outer conduits, an opening extending transversely through said first member communicating with the outside surface of said inner conduit, a ball radially movable within said opening for engagement in one of said indentations, a second member slidably connected on said first member, means for preventing relative rotational movement between said first and second members, complementary recesses on said first and second members defining a first and second space therebetween, first and second opposed spring means in said respective spaces, said spring means normally biasing said second member into a predetermined position relative to said first member, means connected with said first and second members for limiting the relative axial movement between said first and second members, said second member having a radially inwardly directed projection, the radial extent of said projection engaging said ball positioned in an indentation in said predetermined position of said first and second members, and a first and second radially outwardly extending recess in said second member adjacent each axial side of said projection for receiving a ball released from said indentation, said second member being axially slidable in a first axial direction against the bias of said first spring means and in the opposite direction against the bias of said second spring means for positioning one of said recesses over said ball, whereby the positioning of a recess over said ball is effected by grasping said second member and said inner conduit and axially pulling or pushing said inner conduit relative to said outer conduit.



3,351,364
LOCKABLE HUB

Arthur M. Warn, 9050 Empire Way S., Seattle, Wash. 98188, and Harry J. Hegar, 1530 SE. Oxford Lane, Milwaukie, Oreg. 97222

Filed Oct. 18, 1965, Ser. No. 497,093
3 Claims. (Cl. 287—53)

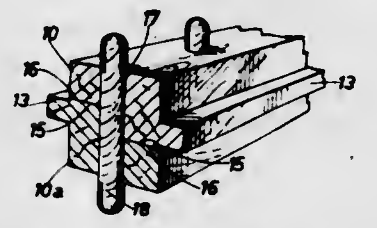


1. A lockable hub for use between a driven shaft and a wheel revolvable thereon, comprising:
a sleeve coupled to said shaft end and having an outstanding annular flange on its outer end;
a hub housing secured at the axis of the wheel and being journalled on said sleeve inward of said sleeve flange, said housing having an internal flange closely encircling said sleeve flange;
a collar and said housing extending longitudinally outward beyond said internal housing flange;
there being formed in said sleeve flange and the housing flange a plurality of opposed matching grooves; and
a push-pull member longitudinally slideable in said collar extension and carrying a plurality of instanding dowel members insertable in said opposed matching grooves whereby to lock together said hub housing and said sleeve;
said push-pull member having a separate socket to receive each of said respective dowel members and having an annular groove intersecting said sockets, said dowel members each having a notch registrable with said intersecting groove, and a resilient ring positioned in said intersecting groove and the registered notches of said dowel members.

3,351,365
FURNITURE JOINT

Joseph Bickl, 110 Lebeau, Montreal 9, Quebec, Canada

Filed June 9, 1965, Ser. No. 462,576
1 Claim. (Cl. 287—127)



A furniture joint comprising an upper and a lower elongate member each said member having one at surface and opposing stepped surface defining a flat step face perpendicular to said flat surface, said step face running longitudinally along each said member, said step face being located centrally of said opposite surface, said step faces being of equal depth in said two members thereby to provide that inversion of one said member permits said two members to be removably fitted together into a substantially rectangular combined unit by movement of said two members solely in a direction at right angles to said flat surfaces, a plurality of equally spaced holes located through each said members, perpendicular to said flat surfaces, said holes in one of said members matching exactly said holes in the other of said members, and pin means having a substantially close friction fit in said holes, said pin means permitting firm jointing together of said two members, said pin means having greater length than combined thickness of said two members, measured from one said flat surface to the other said flat surface, thereby permitting joining said two members together with other elements of a furniture structure having equally spaced holes corresponding to said holes in said members, both of said members being supplied with a flange extending outwardly from one side of each said member, said flange running longitudinally along each said member, said flange having a thickness equal to the height of said step, said flange having one surface common with said stepped surface at its thickest location, and additional furniture elements having grooves slidably locatable onto said flanges.

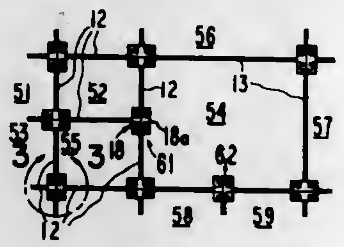
3,351,366
INTERLOCKING JOINT

Edward Page, Walnut Creek, Calif., assignor to M. Greenberg's Sons, San Francisco, Calif.

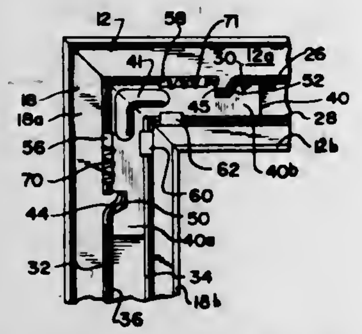
Filed Oct. 24, 1965, Ser. No. 504,577
6 Claims. (Cl. 287—189.36)

1. An interlocking joint to connect the ends of at least two members comprising in combination: a pair of T-shaped elements each comprising a stem portion with one end adapted for attachment to one end of one of said members, a crossbar secured at the mid-section thereof to the other end of the stem and perpendicular thereto,

first and second lobes each formed at an opposite end of said crossbar and extending in a direction parallel to said stem and toward the base thereof, and a notch defined on each side of said stem by said lobe and adjacent portions of said crossbar and stem; and a pair of C-shaped elements each comprising a spine having an interior surface and a posterior surface formed on opposite sides of said spine, said posterior surface adapted for attachment to one end of another of said members to be connected, first and second branches each secured to said interior surface at the opposite ends of said spine and extending in a direction generally normal to the interior surface, first and second nodes each formed at one ends of each of said branches in longitudinal alignment with each other, the free ends of said nodes facing each other and spaced apart a distance equal to about twice the thickness of the crossbar of said T-shaped element measured parallel to the longitudinal axis of said stem, and a recess defined at each end of said spine by each of said nodes, and adjacent portions of one of said branches and spine, a node of a C-shaped element shaped to fit in a notch formed in one of said T-shaped elements, and the lobe associated with said notch of the one T-shaped element shaped to fit in the recess associated with said node formed in such C-shaped element, said pair of T-shaped elements being positioned with crossbars touching and the longitudinal axes of said stems and lobes in co-axial alignment, and said pair of said C-shaped elements positioned with each node nested in a separate one of said notches.

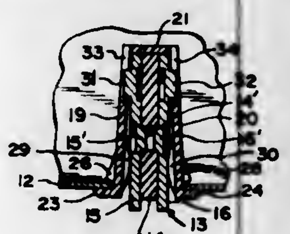


3,351,367
CORNER LOCK CONSTRUCTION
C. Lee Beckman, Elida, Ohio, assignor to Lennox Industries Inc., a corporation of Iowa
Filed Dec. 20, 1965, Ser. No. 515,110
4 Claims. (Cl. 287—189.36)



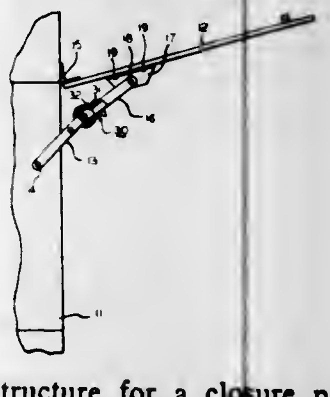
2. In a frame comprised of a plurality of frame sections generally L-shaped in transverse cross section, the frame sections being formed to define mitered joints, with adjacent ends of a pair of frame sections being interconnected by means of a corner lock, the improvement comprising an improved corner lock construction wherein each frame section has a pair of flanges extending outwardly from one leg thereof, said flanges being parallel to one another along the length of each frame section to define a channel therebetween, said corner lock being comprised of a pair of arms extending perpendicularly to one another, each arm being disposed in a channel of an adjacent frame section, said corner lock being provided with serrations along one side of each arm, means defining a recess in each arm of the corner lock, first lug means comprising a locking lug struck from the outermost one of the flanges on each frame section for engaging a wall of an associated recess in the corner lock for drawing adjacent ends of the frame sections toward one another to tightly join adjacent ends of the frame sections in abutting relationship, and second lug means formed from the flanges on each frame section for securing the corner lock in place in the channels, said second lug means comprising portions struck out from the outermost flange of each frame section and having complementary serrations for engagement with the serrations in said corner lock and other portions struck from the innermost flange and bent into clamping engagement with the corner lock.

3,351,368
MAGNETIC CATCH
Richard K. Sweet, 1533 William, River Forest, Ill. 60305
Filed Aug. 5, 1965, Ser. No. 477,415
11 Claims. (Cl. 292—251.5)



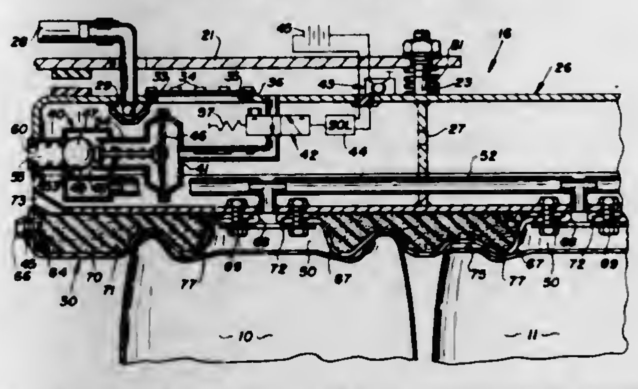
1. In a magnetic catch, a magnet assembly comprising a pair of pole pieces in the form of parallel flat plates, and a magnet sandwiched between said plates, a housing for said magnet assembly comprising a pair of spaced parallel walls having interconnecting means along one edge thereof with inner surfaces, facing the outer surfaces of said pole pieces, and a rib extending from the inner surface of each of said walls spaced from said interconnecting means and opposing each other, said ribs being of resilient plastic material and shaped for pressure engagement with said pole pieces to frictionally hold said magnet assembly in a fixed position in said housing.

3,351,369
LATCHING STRUCTURE FOR CLOSURE OPERATOR
Ralph H. Hogstrom, Chicago, Ill., assignor to Henro Manufacturing Co., a corporation of Illinois
Filed Aug. 5, 1966, Ser. No. 570,668
2 Claims. (Cl. 292—263)



1. A latching structure for a closure panel operator having a pair of arms hingedly connected and biased to a substantially straight-away position by a torsion spring supported at a hinge connection between said arms and constrained between said hinge connection and one of said arms, a strike extending from one of said arms, and a latching structure supported on the other of said arms adapted to be releasably engaged with said strike, said latching structure being supported on the other of said arms and comprising a body member having a cylindrical recess therein, a latching member supported in said cylindrical recess and having a hub complementary to said recess for free turning movement therein and adapted to transmit the loads on said latching member with good distribution of stress, a latch finger extending from said hub and having a notch therein adapted to engage with said strike, a latch actuator extending in the opposite direction from said hub for rocking said latch member to a position of release with said strike, a notch in said hub and a recess in said body member, and a spring supported in said recess and acting between said body member and said hub for biasing said latch finger to latching position.

3,351,370
VACUUM BARREL HANDLERS
John E. Olson, Portland, Oreg., assignor to Hyster Company, Portland, Oreg., a corporation of Nevada
Filed July 19, 1965, Ser. No. 472,768
20 Claims. (Cl. 294—64)



1. A vacuum head for picking up through sealing contact an article having a projecting, non-sealable outer rim, comprising:

a rigid back-up member with a periphery beyond the limits of the article to be picked up, and a hole within said limits,

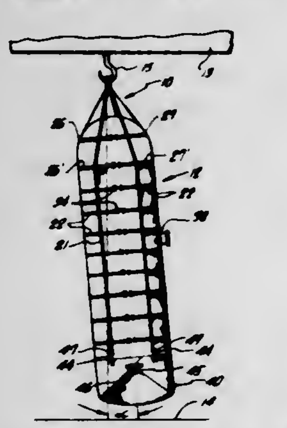
an impervious, flexible membrane sealingly fastened to said member adjacent said periphery and adjacent said hole,

a pervious pad substance between said back-up member and said membrane,

means creating a predetermined pressure on the face of said membrane adjacent said pad substance, and

means to create a pressure between said membrane and said article substantially lower than said predetermined pressure to cause said predetermined pressure to force said membrane into tight sealing contact with said article inside the said outer rim.

3,351,371
SLING FOR PILLOW TANKS
Richard T. Headrick, 916 Crestfield, Duarte, Calif. 91010
Filed Oct. 4, 1965, Ser. No. 492,579
7 Claims. (Cl. 294—77)



1. A sling for carrying an elongate flexible and collapsible liquid storage tank comprising:

(a) a plurality of flexible substantially inelastic straps interconnected to define an elongate net,

(b) the net including a plurality of transverse straps comprised of corresponding first and second groups of parallel straps disposed transversely of the length of the net at spaced locations between a first strap and a last strap spaced apart from each other along the net a distance substantially twice the length of the storage tank,

(c) the first group of transverse straps extending from the first strap toward the middle of the net and the second group of transverse straps extending from the last strap toward the middle of the net,

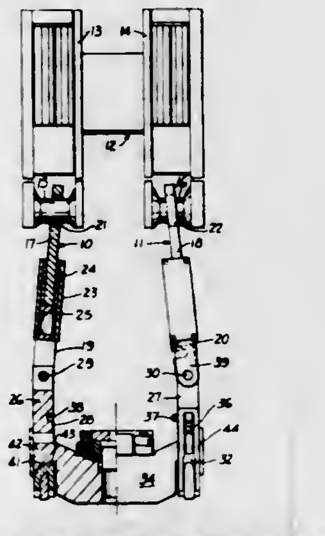
(d) a plurality of longitudinal straps extending lengthwise of the net in substantially parallel spaced relation between said first and last straps and beyond said first and last straps,

(e) ring means at each end of the net to which the opposite ends of the longitudinal straps are secured, the transverse straps having ends spaced laterally of the length of the net from the longitudinal straps,

(f) cooperating releasable coupling means carried by the transverse straps at each end thereof, the coupling means carried by the transverse straps of said first group being releasably engageable with the coupling means carried by the transverse straps of said second group, and

(g) a pair of closely spaced parallel median straps disposed transversely of the longitudinal straps equidistantly between the first and second groups of transverse straps and secured to the longitudinal straps, corresponding ones of the transverse straps in the first and second groups being spaced equidistantly from the median straps so that the ends of the corresponding straps are aligned with each other for interconnection by the coupling means where the net is folded upon itself about a line parallel to and midway between the median straps.

3,351,372
SPLIT HOOK HOISTING APPARATUS
William M. Marks and James E. Ashworth, Beaumont, Tex., assignors to Dresser Industries, Inc., a corporation of Delaware
Continuation of application Ser. No. 402,120, Oct. 7, 1964. This application May 2, 1966, Ser. No. 547,129
8 Claims. (Cl. 294—81)

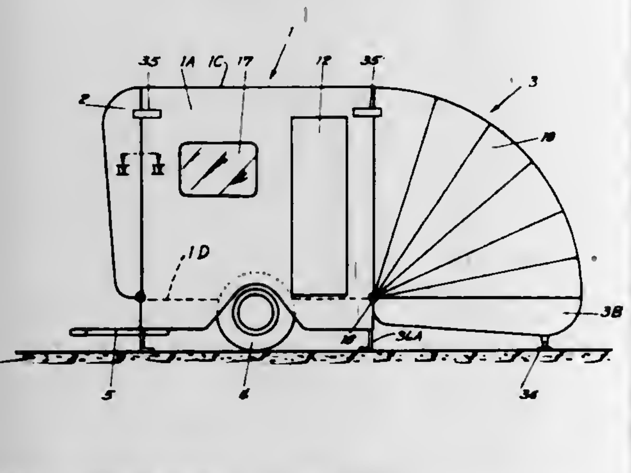


1. In a hoisting mechanism including a traveling block for handling pipe in well operations, the improvement which comprises; means adapted for alternately detachably supporting a mud swivel bail and a pipe elevator from the traveling block, said means including a pair of opposed members each having a lower portion and an upper portion including means for connecting the upper portion of each member to said traveling block for free swinging movement of the portions of said members below said connecting means toward and away from each other in one plane, each of said lower portions provid-

ing a hook in the form of an incomplete loop extending transversely of said plane and discontinuous along one side adapted when the members are swung toward each other, for the hook of each member to move laterally of said plane and through said discontinuous portion to engage a mud swivel bail and when swung apart, for the hook of each member to move laterally of said plane and through said discontinuous portion to engage opposite sides of a pipe elevator.

3,351,373
HABITABLE VEHICLE

Georges Etienne Christin, Marnes-la-Coquette, France, assignor to Etablissements Bertrand Faure, Puteaux, Seine, France, a corporation of France
Filed Nov. 10, 1965, Ser. No. 507,160
Claims priority, application France, Nov. 10, 1964, 994,509, Patent 1,422,283
10 Claims. (Cl. 296—23)

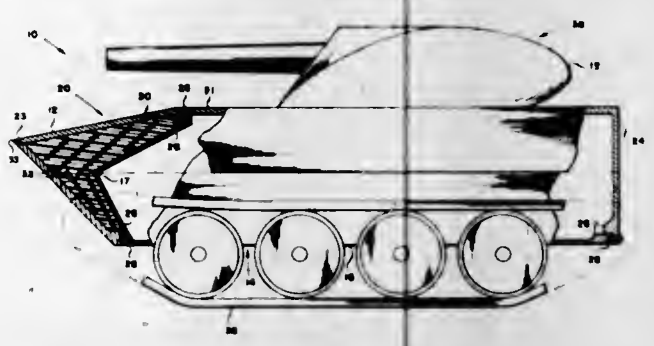


1. A habitable vehicle, comprising:
a tube-like central wall structure defining the roof, floor and two sides of an open-ended living space;
a wheeled undercarriage supporting said well structure;
draft mechanism connected to said wall structure;
transverse end wall units located at the forward and rearward ends of said wall structure, at least one wall unit comprising a rigid inner partition wall fixedly located within said wall structure near one end thereof and extending completely across the interior of the wall structure, said partition wall having a door opening therein, and an outside wall hingedly supported along one edge thereof upon said one end of said wall structure, said outside end wall being movable between a horizontal open position and an upright closed position adjacent to but spaced from the partition wall; and
collapsible hood means mounted upon said wall structure and adapted to enclose the space above said outside end wall and adjacent said partition wall when said outside end wall is in the open horizontal position, said hood means being located between said outside end wall and said partition wall when said outside end wall is in the upright closed position.

3,351,374
ARMOR CONSTRUCTION

Robert W. Forsyth and John P. Forsyth, Burbank, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed July 1, 1963, Ser. No. 291,768
1 Claim. (Cl. 296—31)

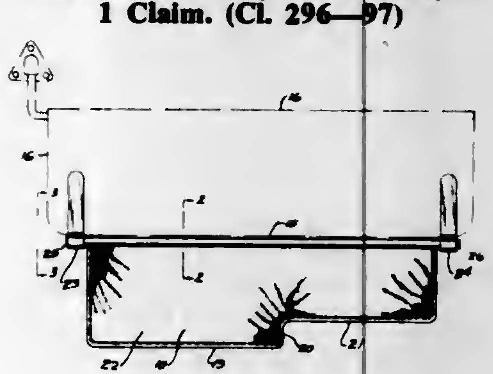
A light weight armor construction for use as protection against projectiles comprising:
means for securing said armor construction to a structure, said armor construction comprising;
first and second sheets of rigid projectile resisting armor material spaced from one another;
a plurality of discrete, freely positioned projectile resisting armor panel means disposed between said sheets and locating at an angle with respect thereto;
said panel means being spaced from one another and from said sheets and positioned successively so as to successively absorb the kinetic energy of projectiles;
a compressible, relatively easily deformable, plastic, filler material located so as to fill the space between said sheets and substantially surround said plurality of panel means with respect to one another and with respect to said sheets; and



said filler material being of the type which occupies a comparatively large amount of space per unit of weight and having a rigidity which in a normal state maintains said panel means in fixed position relative to said sheets;
said securing means including:
a plurality of interlocking projections formed on said structure and said armor construction;
inert sealant means located between said structure and said armor construction; and a plurality of bolt means connecting said structure and said armor construction.

3,351,375
GLARE SHIELD

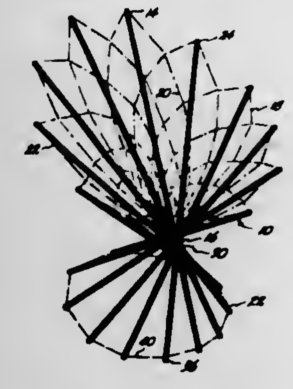
Ralph R. Wheeler, 4919 Gulfport Blvd., Gulfport, Fla. 33737
Filed Apr. 26, 1965, Ser. No. 450,943
1 Claim. (Cl. 296—97)



In a glare shield, the combination which comprises,
(a) a panel of woven translucent material, substantially rectangular-shaped in elevation and having an open area in the lower right and side for elevating the line of vision above a similar portion of said panel on the left hand side of the glare shield, for diffusing rays of light from headlights of an approaching vehicle,
(b) a transversely positioned split tubular rod extended across the upper edge of said panel, and in which a portion of said panel is frictionally held,
(c) a pair of spring clips each including a lower loop portion frictionally engaging an end of said rod for retaining said glare shield in adjusted position,
(d) and said spring clips further including gripping jaws adapted to frictionally engage a vehicle sun visor.

3,351,376
CHAIR

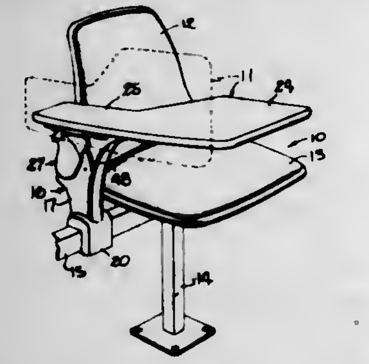
Patrick K. Shimizu, 4955 24th Ave. S., Seattle, Wash. 98108
Filed Aug. 12, 1966, Ser. No. 577,562
5 Claims. (Cl. 297—16)



1. A chair which is lightweight, portable and foldable, comprising: a chair frame having multiple, spaced minimum cross section structural frame members which are each held at one location along their length at a common elevation to all by a restraining means which grips and slightly spaces them and as so held each such respective location on the structural frame member divides its total length into different proportions above and below the common elevation location which also serves as the pivot location where each structural frame member changes over from one side to the other side of the chair, and these structural frame members are initially spaced apart at their top and bottom portions and held by respective top and bottom restraining means from increasing such initial spacing, and when so held at their top, common elevation and bottom portions, the said structural frame members substantially appear as modified elements of a hyperboloid creating the bottom and top forms of the chair; and a body support of web forming members which are suspended at their top portions from the top portions of the said structural frame members and which, from such top attachment, thereafter freely hang downwardly, clearing the remaining portions of the said structural frame members for comfortable seating.

3,351,377
FOLDABLE TABLET ASSEMBLY

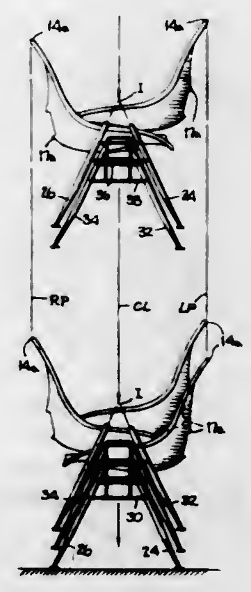
Lloyd L. Anderson, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed Sept. 26, 1966, Ser. No. 581,986
11 Claims. (Cl. 297—162)



1. A foldable tablet assembly for use with a chair unit having a substantially horizontally disposed seat, said assembly having, in combination, a support, an arm fulcrumed on said support for swinging about a horizontal axis between upper and lower positions, a tablet having a relatively wide writing portion and a narrower neck portion extending from said writing portion, a pivot member disposed in a substantially horizontal position when said arm is in said upper position and mounting said tablet on said arm for swinging about a second substantially horizontal axis transverse to said first axis between a substantially horizontal writing position in which aid writing portion overlies the seat and a raised position in which said writing portion is spaced laterally of and above one edge of the seat, said tablet and said pivot member being movable bodily with said arm as the latter is swung between said upper and lower positions whereby the tablet is swingable edgewise between said raised position and a lowered position in which said writing portion is spaced laterally of and below the seat, said pivot member being disposed in an upright position when said arm is in said lower position and mounting said tablet for turning relative to said arm between said lowered position and a stored position in which said writing portion underlies the seat, a guide rib on said support and arcuately curved about said first axis, a plate having the shape of a helix turnable with said tablet and engageable with said rib to restrict swinging of said arm between said upper and lower positions while said tablet is being turned toward and away from said writing and stored positions, said plate having one edge thereof alined with said rib when said tablet is in said raised and lowered positions to leave said arm free for swinging movement between said upper and lower positions, said edge overlying and being slidable along and engageable with said rib while said arm is being swung between said upper and lower positions to restrict turning of said tablet relative to said arm and to maintain the tablet spaced laterally from the one edge of the chair, and means on said support coacting with said plate and operable to cause said tablet to turn from said lowered position to said stored position automatically as an incident to said arm reaching said lower position.

3,351,378
CHAIR

Charles O. Bliss, Los Angeles, Calif.; Beatrice Bliss, executrix of said Charles O. Bliss, deceased, assignor to Blisscraft of Hollywood, Gardena, Calif.
Filed Nov. 9, 1965, Ser. No. 506,928
2 Claims. (Cl. 297—239)



1. A chair comprising:
a seat having a substantially horizontal part and a back part extending upwardly therefrom;
a support for said seat having two sets of front and rear legs, one set disposed at each side of said chair and secured to said horizontal part of said seat and extending and diverging apart downwardly;

a leg bracing means at each side of the chair secured to a front leg and to a rear leg of each of said sets of legs, respectively;

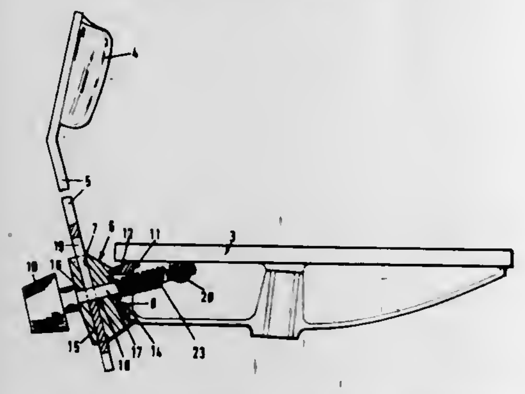
holding means at each side of the chair in fixed relation to each of said leg bracing means having a part disposed adjacent the companion pair of legs and extending laterally outwardly of the companion pair of legs and leg bracing means;

said outwardly extending part of said holding means at each side of the chair comprising an upwardly extending loop shaped member;

the loop shaped member at one side of the chair being wider than the loop shaped member at the opposite side of the chair and adapted to releasably interlock with the narrower loop shaped member of an identical chair when two such chairs are disposed in side by side relation and face in the same direction;

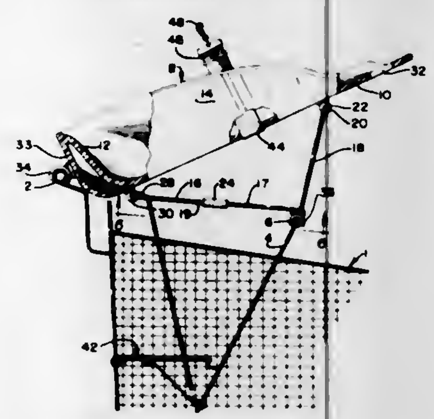
the plane bisecting the angle formed between said front and rear legs of each of said sets being closer to the forward edge of said horizontal part of said seat than to the inner surface of said back part, whereby said chair may be stacked on top of an identical chair with said back part of said seat of said chair either adjacent to or remote from the back part of the seat of the identical chair, with said legs of said chair overlying the respective legs of the identical chair therebelow, and with each of said bracing means of said chair disposed between the respective legs and holding means of the identical chair therebelow.

3,351,379
CHAIRS
Leslie John Street, Bristol, England, assignor to The Tan-Sad Chair Company (1931) Limited, Birmingham, England, a British company
Filed Feb. 1, 1966, Ser. No. 534,939
Claims priority, application Great Britain, Feb. 13, 1965, 6,342/65
10 Claims. (Cl. 297—358)



1. A chair for typists and the like comprising seat and back-rest assemblies secured together through adjusting means including a block, complementary surfaces on the block and seat assembly capable of selective locked engagement to determine the angular position of the block about a horizontal axis, a dependant stem of the seat assembly slidably connected to the block, a bolt passing through a vertically elongated slot in the stem and through the block in a direction substantially perpendicular to the complementary surfaces, and coacting means on said bolt and said seat assembly providing a combined pivotal and threaded connection therebetween whereby rotation of said bolt in one direction enables said complementary surfaces to be released and permits said block and bolt to swing together about said connection angularly relative to the seat assembly, and rotation of the bolt in the opposite direction serves simultaneously to clamp the block to the seat assembly in the selected angular position and to clamp the stem against the block at a selected height in relation to the seat assembly.

3,351,380
INFANT CARRIER FOR USE WITH SHOPPING CARTS
Robert Paul Sprague, 2916 Elmhurst, Oklahoma City, Okla. 73120
Filed May 26, 1966, Ser. No. 553,096
4 Claims. (Cl. 297—377)



1. An infant carrier for attachment to a shopping cart, which carrier comprises;

(a) a bottom portion,

(b) an up-turned end portion,

(c) sides connected to said bottom portion and to said up-turned end portion,

(d) at least one downwardly facing, open end clip secured on the outer side of the up-turned end portion, intermediate the height thereof, the horizontal axis of said clip being substantially parallel with the bottom portion of the infant carrier,

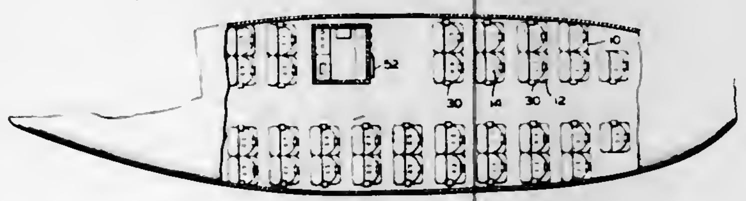
(e) a support member secured to the lower side of said bottom portion and extending therebelow,

  (1) at least one downwardly facing, open end clip associated with the lower side of said support member and being substantially parallel to said first mentioned, downwardly facing clip,

(f) linkage connected to the bottom portion of said infant carrier and to said support member to hold said support member in secure relation with respect to the bottom portion of said infant carrier, and

(g) said downwardly facing, open end clips adapted to engage spaced apart, transverse members on a shopping cart to hold the infant carrier in fixed relation with respect thereto.

3,351,381
AUTOMATIC SAFETY BELT DEVICES
Oliver W. Boblitz, 4607 Connecticut Ave. NW., Washington, D.C. 20008
Filed Aug. 4, 1966, Ser. No. 570,324
11 Claims. (Cl. 297—385)



1. In a vehicle safety seat belt system including seats having seat belts attached thereto and a first pressure-sensitive switch for each seat in the system positioned such that an occupant of a seat equipped with a seat belt will automatically operate said switch, and including electrical circuit means for automatically indicating the operative condition of all seat belts in said system, the improvement which comprises:

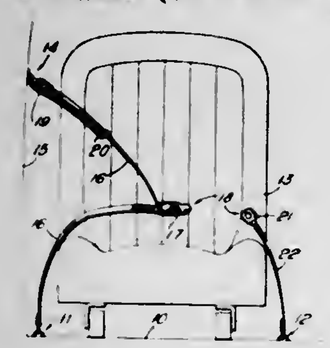
a seat belt;

a second pressure-sensitive switch operatively connected to said circuit means and having an operating lever;

means for mounting said operating lever of said switch and a face of said seat belt in operative relationship with each other such that tensile forces exerted on said seat belt are transmitted to said operating lever; and

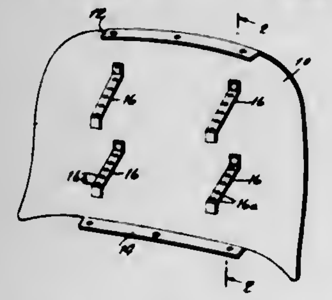
bias means separate from said lever operatively associated with said face of the seat belt for exerting a predetermined amount of force on said face in a direction opposed to the direction of any force exerted on said lever by said face of the seat belt.

3,351,382
SAFETY HARNESSES FOR VEHICLE OCCUPANTS
Ivor John Davies, Essex, England, assignor to Teleflex Products Limited, Essex, England, a British company
Filed Apr. 20, 1966, Ser. No. 543,943
Claims priority, application Great Britain, Apr. 21, 1965, 16,874/65
6 Claims. (Cl. 297—389)



1. A safety harness for a seat-occupant in a vehicle, comprising a lap strap extending between low level anchorage points on opposite sides of the seat and in two portions which can be joined and disconnected by a harness connector, and a diagonal or breast strap extending from the harness connector up to an elevated anchorage at one side of the seat, the breast strap being in one continuous length of strapping or webbing with the portion of the lap strap that extends to the low level anchorage on the same side as the elevated anchorage, characterised by the fact that the webbing forming the breast strap and one portion of the lap strap passes through a snubbing buckle on the harness connector, said snubbing buckle automatically locking the strap against movement through the buckle in either direction under tension in either length of the webbing.

3,351,383
UPHOLSTERY TECHNIQUE
Donald A. Richardson, Barto, Pa., assignor to Knoll Associates, Inc., New York, N.Y., a corporation of New York
Filed Aug. 3, 1966, Ser. No. 570,026
3 Claims. (Cl. 297—460)

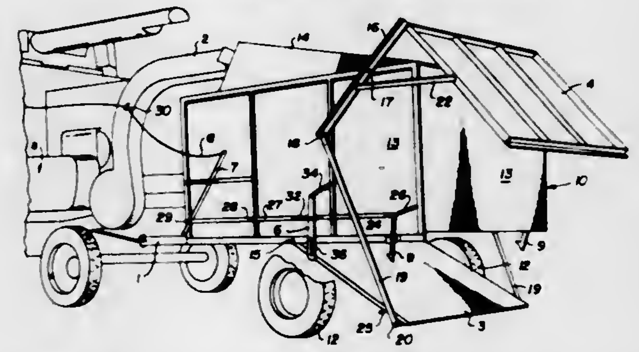


1. A cushion assembly for a chair or the like, comprising a combination of mating shells, a plurality of forwardly directed hooks affixed to the inner surface of one shell, the other shell being provided with a plurality of spaced wire rods for engaging, upon application of pressure, with teeth provided on said plurality of hooks;

said hooks comprising spring clips having said teeth projecting therefrom;

said other shell including a plurality of spaced ribs on the inner surface thereof, said plurality of spaced wire rods spanning and being arranged substantially perpendicular to said ribs for engaging said teeth.

3,351,384
CHAFF TRAILER
William Lee Huck, Box 940, Claresholm, Alberta, Canada
Filed Aug. 9, 1965, Ser. No. 478,089
1 Claim. (Cl. 298—26)



A chaff trailer, comprising, in combination:

a wheeled container having fixed sides and a front;

a rear end gate pivotally connected with the fixed sides;

a floor tiltable, about a transverse axis located between the front and rear end gate, between a lowered tilted position and a raised level position;

linkage means interconnecting the floor and the end gate whereby downward tilting of the floor will cause raising of the rear end gate about the pivot and lowering of the rear end gate about the pivot will cause upward movement of the floor;

the weight of the rear end gate being sufficient to raise the floor to the level position; and

locking means adapted to lock the floor in the raised and lowered positions, said raised position locking means comprising;

at least one catch, pivotally mounted on the container and adapted to engage with the floor to lock it in the raised position;

means for normally biasing the catches into the locking position; and

means, operable from the front of the container, for releasing the catches;

and said lower position locking means comprising;

an arm, pivotally connected at its lower end to one side of the floor, said arm defining a slot therein having an angular portion at its upper end;

a pin, projecting from the adjacent side of the container, engaging the slot;

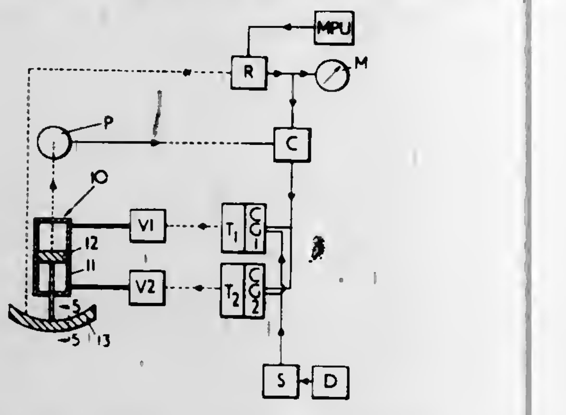
spring means, connected to the upper end of the arm, adapted to urge the pin into the angular portion of the slot when the floor is in the lowered position;

and means, connected to the arm, adapted to cause the pin to be moved out of the angular portion of the slot whereby the floor may move from the lowered to the raised position.

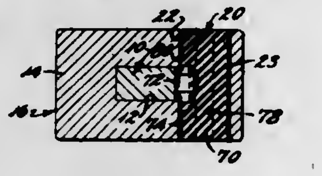
3,351,385
APPARATUS FOR STEERING MINERAL MINING MACHINES
Joseph Dowell, Coalville, England, assignor to Coal Industry (Patents) Limited, London, England, a company of Great Britain
Filed Aug. 29, 1963, Ser. No. 305,400
Claims priority, application Great Britain, Sept. 4, 1962, 33,864/62
5 Claims. (Cl. 299—1)

1. A system for automatically steering a mineral mining machine with respect to the boundary of a seam of mineral using back-scattering of gamma ray, X-ray, bremsstrahlung radiation and the like, comprising first circuit means

adapted to give an output in response to the amount of back-scattered radiation received by a detector on the machine, gating means adapted to pass said output when it is in error, namely, outside a given desired range, to a second circuit means adapted to control in response to said output the direction of travel of the machine relative to the boundary of the seam, said gating means including a distance sensing device adapted to sense movement of the machine along a mineral face and to produce in response to such movement a distance signal at spaced intervals of time corresponding to given incremental distances traveled by the machine along the mineral face, said gating means being further adapted to pass said output error signal to said second circuit means only if said distance signal is simultaneously present at said gating means.



3,351,386
RETAINER FOR COAL CUTTER BITS
Robert F. Prox, Jr., West Terre Haute, Ind., assignor to Frank Prox Company, Inc., Terre Haute, Ind., a corporation of Indiana
Filed Nov. 10, 1965, Ser. No. 507,094
10 Claims. (Cl. 299—92)



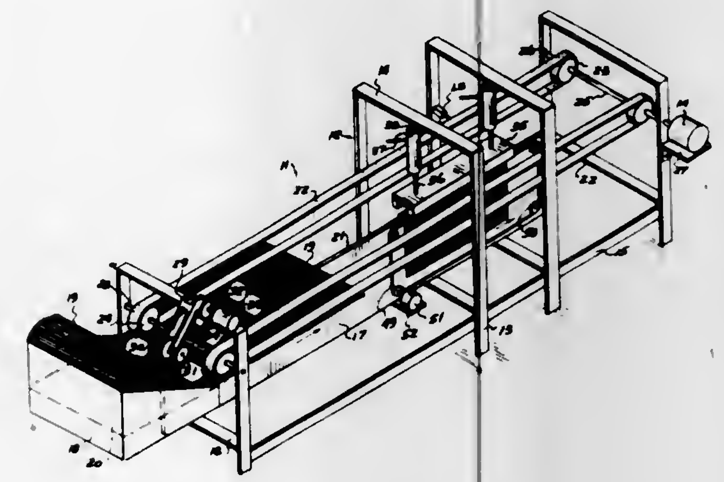
1. In combination, a socket member, first and second intersecting passageways each extending through said socket member, a cutter bit, said cutter bit having a head section and a shank section, said shank section being slidably fitted into said first passageway, a detent means in said second passageway for releasably securing said cutter bit in said first passageway, said detent means comprising an elongated substantially cylindrical elastomeric member having a longitudinal axis, a non-yielding abutting means said abutting means having a cylindrical body portion and at least one truncated conical portion extending from said body portion, the longitudinal axis of said body portion being parallel to and offset from the longitudinal axis of said elastomeric member, said abutting means being resiliently fixed to said elastomeric member and extending therefrom adjacent the intersection of said first and second passageways when the detent means is fixed in the second passageway to releasably secure the cutter bit shank in the first passageway.

3,351,387
PLASTIC BRISTLE MATS AND METHOD OF MAKING SAME
Leo L. Lechene, R.D. 1, Box 364, Patton, Pa. 16668
Filed May 17, 1966, Ser. No. 550,668
11 Claims. (Cl. 300—21)

1. The method of fabricating a bristle mat for application and securing to the spirally-grooved core of a broom comprising the following steps:

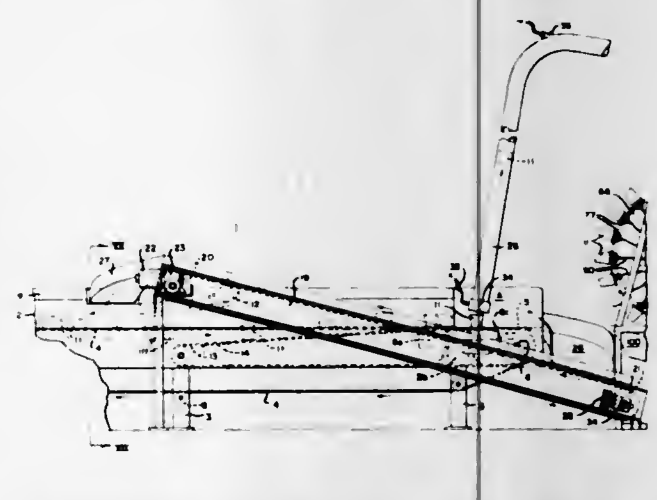
feeding successively from a hopper a plurality of elongated thermo-plastic bristles in side-by-side parallel engaging relation cross-wise onto the top edge of an elongated forming bar which extends in the direction of feed and supportably receives the central transverse portions of each bristle;

longitudinally feeding a group of said bristles as a unit upon and along said forming bar to a forming station;



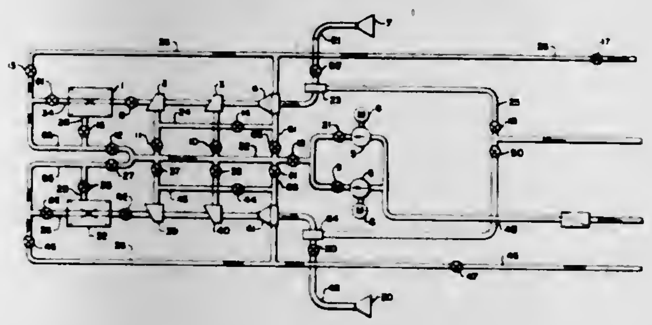
applying heat to the central areas of said bristles fusing them to each other at said central areas and simultaneously applying compressive pressure to said bristles at said areas and bending their end portions at substantially right angles to said central areas along opposite sides of said forming bar to provide an elongated fused mat of assembled bristles of general U-shape in cross-section with the legs of said U-shape partly diverging.

3,351,388
MECHANISM FOR HANDLING AND TESTING CONTAINERS
Alan I W Frank, Pittsburgh, Pa., assignor to The Alan I W Frank Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 29, 1965, Ser. No. 468,005
6 Claims. (Cl. 302—2)



1. Mechanism for handling containers having a greater external transverse dimension at one end than at the opposite end which are open at the larger end and closed at the smaller end, comprising at a conveying zone parallel generally horizontal spaced apart endless conveyor elements between which such containers are adapted to lodge with the closed smaller end down and with a portion near the open larger end engaged by the conveyor elements, means for driving the conveyor elements to advance the containers toward a container removing station, a container removing station having means including means engaging the containers and elevating them to a position out of contact with the parallel conveyor elements and suction means sucking up the thus elevated containers after they have moved out of contact with the parallel conveyor elements and thus are freed from any frictional drag thereon of the parallel conveyor elements for removing the containers from between the parallel conveyor elements and means separate from the last mentioned means for removing and returning to the conveying zone containers which are not sucked up by the suction means at the container removing station whereby such containers are recycled for removal upon a succeeding cycle.

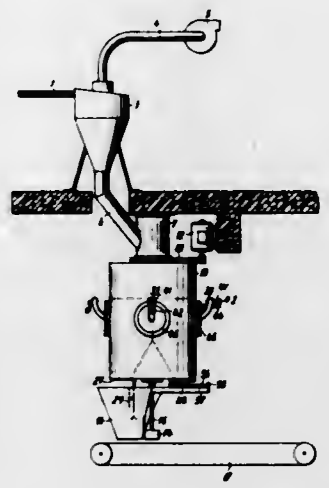
3,351,389
DEVICE FOR HYDRAULICALLY EMPTYING CONTAINERS FILLED WITH SOLID BODIES
Klaus Schneider, Rostock, Germany, assignor to Veb Peene-Werft Wolgast, Wolgast, Germany
Filed May 12, 1966, Ser. No. 549,724
9 Claims. (Cl. 302—14)



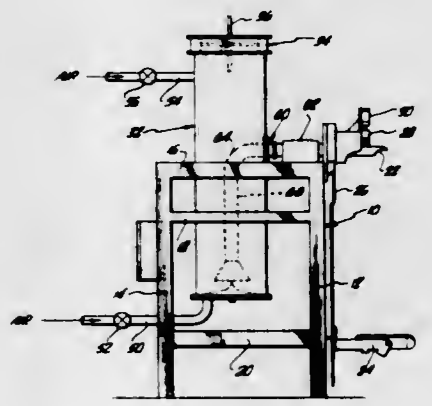
1. A device for hydraulically emptying containers filled with solid bodies, preferably fish, comprising at least a container adapted to store the solid bodies and having at least a rinsing inlet and an outlet disposed on a bottom portion of said container; a jet pump system having at least a jet pump with a suction inlet, a drive-water inlet, an outlet and being provided with at least a diffuser having an inlet, a waste-water means with outlets and a solid material outlet means; at least a drive-water pump having an inlet and an outlet; a plurality of conduit means provided with shut-off valves, wherein individual conduits connect, respectively, said suction inlet of said jet pump system to said container outlet; said drive-water pump outlet to a waste-water outlet of said diffuser, to the drive-water inlet of said jet pump system and to the rinsing inlet of said container; a waste-water outlet of said diffuser to said container rinsing inlet.

3,351,390
METHOD AND APPARATUS FOR TRANSFERRING BULK MATERIAL BETWEEN ZONES AT DIFFERENT RESPECTIVE PRESSURES
Fritz Dellsperger, Niederuzwil, Switzerland, assignor to Gebruder Buhler, Uzwil, Switzerland
Filed Mar. 24, 1965, Ser. No. 442,401
Claims priority, application Switzerland, Apr. 1, 1964, 4,140/64
25 Claims. (Cl. 302—49)

1. Apparatus for the transfer of bulk material between zones at different respective fluid pressures, said apparatus comprising, in combination, a material feed device; a drum operatively associated with said device; means subdividing said drum into individual sluice chambers each having respective filling and discharge apertures; a plurality of closures, each associated with a respective one of said apertures; means effecting relative rotation of said drum and said feed device; said drum extending axially beyond said sluice chambers into the region of said feed device to define a feed zone; means mounting said closures for movement bodily toward and away from the chamber surface having the respective associated aperture therein; and a plurality of operating means, each individual to a respective closure, said operating means cyclically opening and closing the respective closures in accordance with the relative rotation of said drum and said feed device and in accordance with the relative angular relation between the respective sluice chamber and said feed device.

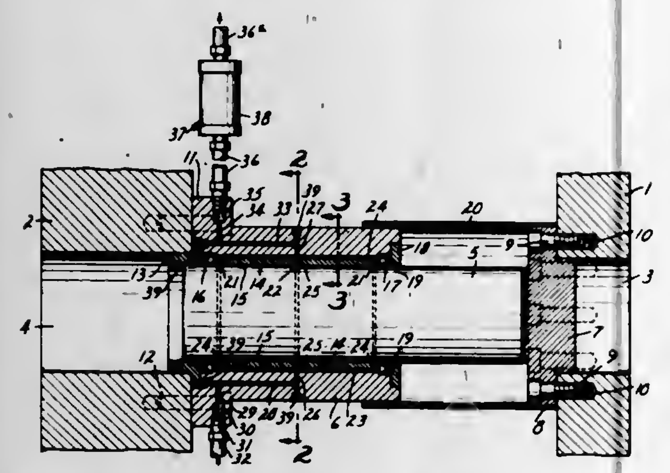


3,351,391
AIRTIGHT BAG PACKER
John F. Green, Montclair, Calif., assignor to Cherry-Burrell Corporation, Cedar Rapids, Iowa, a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 528,728
2 Claims. (Cl. 302—53)



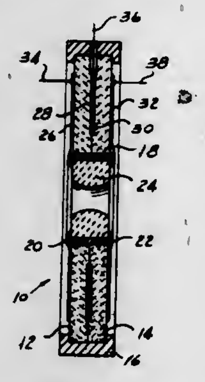
1. In a bag packer in which solid particulate material is delivered out of a horizontal spout into a bag, the combination comprising a fully enclosed hopper for receiving the material, a delivery conduit including a vertical section within the hopper curving into a horizontal section extending outwardly through the wall of the hopper, means coupling the horizontal section to the spout, the lower end of the vertical section flaring outwardly adjacent the bottom of the hopper, means for admitting air under pressure into the enclosed hopper including a porous fabric pad across the bottom of the hopper and means for applying air under pressure to the outside of the fabric pad to permit air to diffuse into the interior of the hopper, means defining a surface of revolution having a base mounted on the pad and having a tapered point projecting toward the flared lower end of the delivery conduit to form a nozzle, and adjustable means for deforming the pad to move the nozzle forming means toward and away from the lower end of the conduit to change the size of the nozzle orifice.

3,351,392
LEADER PIN ASSEMBLY FOR DIE SETS
Daniel R. Powell, 4111 York Ave. N., Minneapolis, Minn. 55422
Filed Jan. 19, 1966, Ser. No. 521,689
6 Claims. (Cl. 308—5)



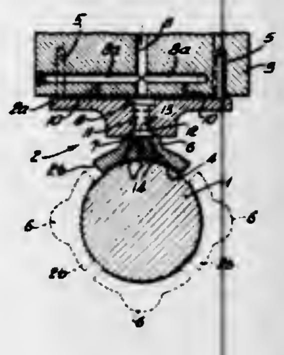
1. A leader pin assembly for the die sets comprising:
- (a) a leader pin element and a cooperating tubular guide element,
- (b) means for securing said elements in axial alignment each to a different one of a pair of cooperating punch and die holders,
- (c) an axially extended bearing sleeve mounted in said guide element and having an inner cylindrical surface for axial sliding engagement with said pin element,
- (d) said bearing sleeve having a plurality of axially spaced radially inwardly opening circumferential grooves in said inner cylindrical surface,
- (e) said guide element and sleeve defining fluid passage means communicating with said grooves,
- (f) said passage means including an inlet for reception of liquid lubricant under pressure and an outlet in spaced relation to said inlet,
- (g) and a pair of annular sealing rings mounted in said guide element one each at an opposite end of said sleeve and snugly encompassing said pin element.

3,351,393
PIEZOELECTRIC OSCILLATING BEARING
Claude L. Emmerich, Scarsdale, N.Y., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 10, 1963, Ser. No. 293,998
5 Claims. (Cl. 308—9)



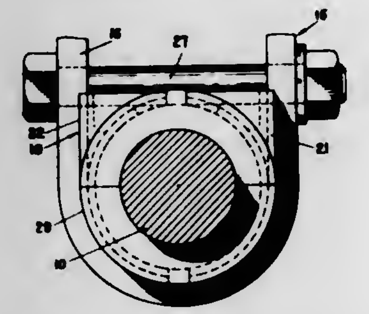
1. A bearing assembly including in combination a pair of plate-like elements of piezoelectric material, said elements being provided with central openings, means comprising a peripheral support for mounting said elements in contiguous relationships with said openings aligned, a bearing for supporting an element for rotary movement around an axis, resilient means disposed in said aligned openings and in contiguous relationship with said elements and said bearing for carrying said bearing in said aligned openings, a source of an alternating current signal, and means for coupling said signal to said elements respectively to cause said elements to oscillate in opposite senses to produce an amplified oscillating movement of said bearing in the direction of said axis.

3,351,394
HYDROSTATIC BEARINGS FOR A ROTATABLE ELEMENT
Ralph J. Hooker, Schenectady, N.Y., assignor to Mechanical Technology Incorporated, a corporation of New York
Filed Jan. 7, 1965, Ser. No. 424,070
18 Claims. (Cl. 308—9)



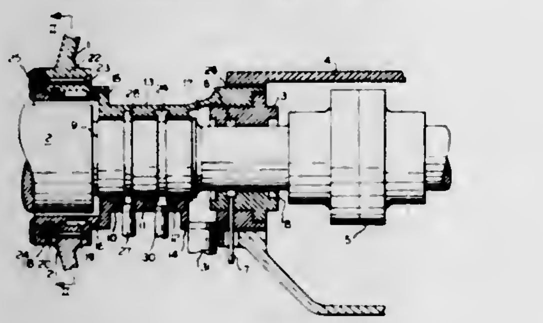
1. A hydrostatic bearing for a rotatable shaft which comprises:
- (a) a shaft,
- (b) a support,
- (c) a plurality of bearing units arranged in peripherally spaced sequence around the shaft, interposed between said shaft and said support, and together rotatably supporting said shaft,
- (d) each unit having
  - (1) a bearing pad fitting an arcuate portion of the circumference of the shaft,
  - (2) a member interposed between each pad and said support, and guided by said support for limited movement in directions toward and from and radially of said shaft.
  - (3) said member and pad having interfitting spherical segment faces, one of which faces is convex and the other of which is concave, and together forming a limited universal connection of said pad and said member,
  - (4) one of said pad member having a cavity in the interior area of its said interfitting face,
  - (5) said pad having a plurality of passages leading from its said face at said cavity to the interior area of the surface of said pad which fits said shaft and there terminating in a plurality of spaced apart restricted orifices,
  - (6) said member and support having between them a very thin but broad space of approximately uniform thickness,
  - (7) said support having a passage formed at one end for connection to a source of lubricating fluid under pressure and opening into the interior area of its face forming one side of said thin space in a plurality of spaced apart restricted orifices and one larger orfice,
  - (8) said member having a passage therethrough from said thin space to its opposite face where it communicates with said cavity,
- (e) whereby, when lubricating fluid under pressure from said source may pass into said thin space, it will form a squeeze film and when some passes into the space between the pad and the shaft it will form a lubricating film between them.

3,351,395
CONVEYOR BEARING
Guthrie B. Stone, Honeoye, N.Y., assignor to Stone Conveyor Company, Inc., Honeoye, N.Y.
Filed Sept. 8, 1966, Ser. No. 578,047
1 Claim. (Cl. 308—27)



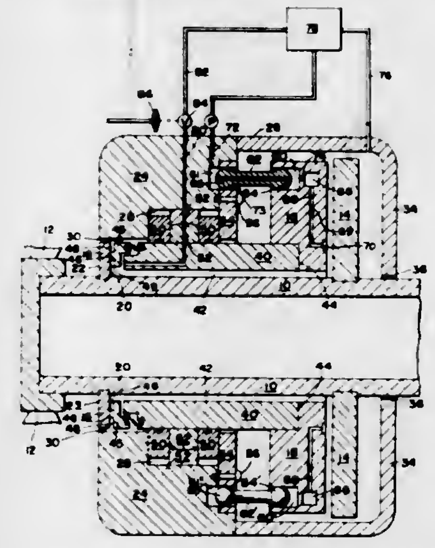
For a screw conveyor having U-shaped bearing hangers adapted to support opposed bearing inserts of identical configuration which comprises
- (a) a pair of opposed arcuated bearing retainers disposed in close proximity in said bearing hangers,
- (b) a cross bolt traversing the distance between the sides of said bearing hangers and extending through aligned recesses in the top of each of said bearing retainers for positioning the latter within the bearing hangers, and
- (c) integrally formed projections on each of said bearing inserts interposed between the ends of said pair of bearing retainers for fixedly positioning the bearing inserts therein.

3,351,396
SHAFT SEAL FOR A THERMAL MACHINE
Konrad Oechslin, Zurich, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed June 11, 1965, Ser. No. 463,299
Claims priority, application Switzerland, June 26, 1964, 8,405/64
6 Claims. (Cl. 308—36.3)



1. Between a hot end portion of the housing of a thermal turbomachine having a circular opening for the machine shaft travering said housing end portion, and a shaft bearing having a relatively cold bearing housing arranged outside of and remote from said machine housing; a sealing device comprising a substantially tubular intermediate housing arranged to encircle said shaft and having its one end mounted in said bearing housing so as to be radially fixed and axially shiftable therein and its other end mounted in said hot end portion of the machine housing so as to be axially fixed and centered with regard to the machine axis, an annular gap being left between the two so as to allow for different thermal expansion of the end portion of the machine housing and the end of the intermediate housing mounted therein; and an annular corrugated diaphragm fixed in fluid tight manner to said end portion of the machine housing and to said end of the intermediate housing mounted therein, so as to bridge said annular gap.

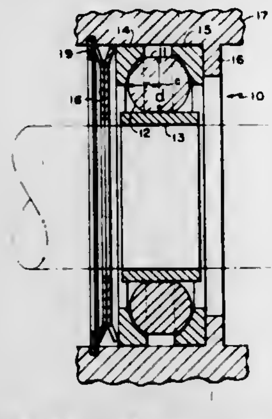
3,351,397
THRUST BEARING ASSEMBLY FOR ROTATABLE SHAFT
Wilbur Shapiro, Bethayres, Pa., and Carrol J. Hoffman, Westwood, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 29, 1965, Ser. No. 510,470
7 Claims. (Cl. 308—160)



1. A thrust bearing assembly for a rotatable shaft which is operative in a body of water under high pressure conditions and subjected to axial thrust comprising,
- (a) fixed cylindrical housing structure having front and rear end walls and a shaft extending axially through the end walls,
- (b) said housing structure providing a rear axial bore open to the body of water and a front space of relatively greater diameter sealed from the body of water,
- (c) a front rotatable transverse disk fixed to the shaft and positioned in the front space and a rear rotatable transverse disk fixed to the shaft and positioned in the rear bore,
- (d) a nonrotatable transverse disk having an axial bore and positioned about said shaft with its front face adjacent the rear face of said front rotatable disk providing a vertical thrust bearing zone therebetween,
- (e) a sleeve about said shaft having its front end secured to the nonrotatable disk and its rear end positioned adjacent said rear rotatable disk,
- (f) said rear end of the sleeve providing a seal ring and said sleeve mounting resilient means to maintain the seal ring in abutting relation with the front face of said rear rotatable disk,
- (g) coupling means having a first universal connection with said rear end wall of the housing and a second universal connection with said nonrotatable disk,
- (h) said coupling means supporting the nonrotatable disk and sleeve to provide an axial annulus with said shaft in communication with the thrust bearing zone and permitting relative axial, radial and angular movements between the shaft and the sleeve and nonrotatable disk assembly,
- (i) means in the rear axial bore providing a longitudinal space between the sleeve and housing and other means to prevent entry of water to the housing,
- (j) a sealing fluid circulating system including a reservoir, an inlet passageway for supplying sealing liquid to the vertical thrust bearing zone and an outlet passageway between the axial annulus and reservoir for removing sealing liquid and
- (k) valve means in the outlet passageway having means to maintain the pressure of liquid in the system at a greater value than the pressure of the body of water whereby entry of water between the seal ring and rear disk is prevented.

3,351,398
COMBINATION ROLLER AND BALL RADIAL BEARING

Jerald L. Park, Stratford, and Normand L. Lagasse, Bridgeport, Conn., assignors to Avco Corporation, Stratford, Conn., a corporation of Delaware
Filed Sept. 1, 1965, Ser. No. 484,176
4 Claims. (Cl. 308—177)



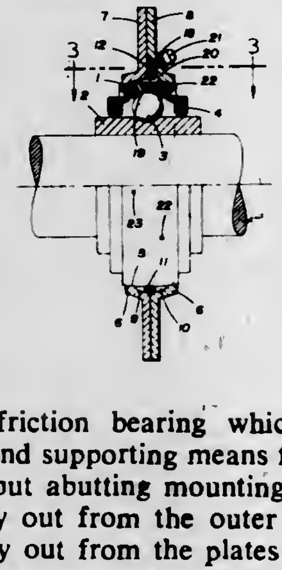
1. A bearing having inner and outer coaxial races, one of said races being a cylindrical roller bearing-type race, the other being a split toroidal ball bearing-type race;

a plurality of antifriction elements rotating between said races, said antifriction elements having a cylindrical surface the ends of which terminate in spherical surfaces, each of said spherical surfaces having its center located on the axis of said cylindrical surface, said cylindrical surface being in contact with said roller bearing-type race, and said spherical surfaces being in contact with and supported between said split ball bearing-type race;

and means for axially preloading said elements between the surfaces of said split race.

3,351,399
SEAL FOR FLANGE-SUPPORTED BEARINGS

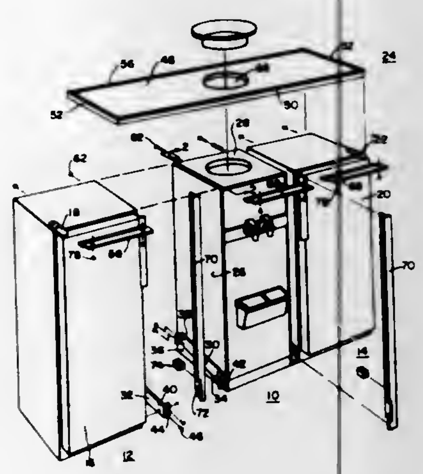
Lauren W. Gates, Stockton, Calif., assignor to Blackwelder Manufacturing Company, Rio Vista, Calif., a corporation of California
Filed Dec. 27, 1965, Ser. No. 516,426
5 Claims. (Cl. 308—187)



1. In an anti-friction bearing which includes outer and inner races, and supporting means for the bearing including separate but abutting mounting plates about and projecting radially out from the outer race, and flanges projecting laterally out from the plates and engaging the outer surface of the outer race, the plates and flanges providing a circumferential cavity about the outer race of the bearing; an elastic sealing ring seated under compression in the central portion of the cavity in engagement between the outer race and the juncture of the plates, a lug integral with and projecting radially out from the ring in engagement with and enclosed between the adjacent faces of the plates radially out from said cavity, the lug having a groove in one face terminating at its outer end short of the outer end of the lug and at its inner end communicating with the cavity on one side of the ring, and a lubricant fitting mounted in one of said plates and communicating with said groove; there being a lubricant passage through the outer race and communicating with the cavity on said one side of the ring.

3,351,400
CABINET ASSEMBLY

Carl E. Sholtes, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 21, 1966, Ser. No. 581,049
6 Claims. (Cl. 312—111)



1. An assembly arrangement for securing at least two rectangular, box-shaped, upright, floor-supported cabinets together in side-by-side relation:

a base bracket secured to each cabinet side which faces another cabinet side, each bracket extending in a front-to-rear direction along the cabinet side adjacent the bottom thereof, each bracket having an outwardly projecting right angle flange at each end adapted to lap the respective flange of the opposing bracket;

means to secure each pair of lapping flanges together to establish the spacing between the facing sides and to secure the lower end of the cabinets together;

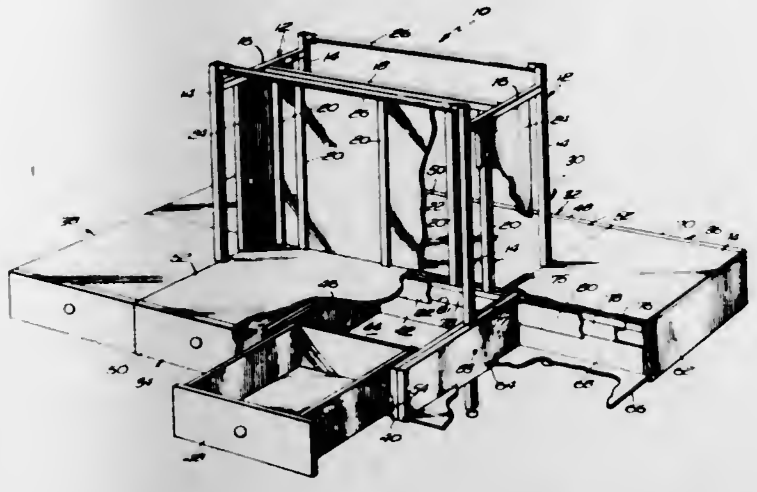
a unitary top section for said cabinets, said top section including perimetric frame means carrying a top wall panel insert; and

a vertical trim member for closing the front gap between each pair of adjacent cabinets, said trim member including means at its bottom end engaging said bracket flanges, and means carried by said top section for holding the top end of said trim member in place.

3,351,401
CABINET ASSEMBLY FOR USE WITH DISPLAY RACK

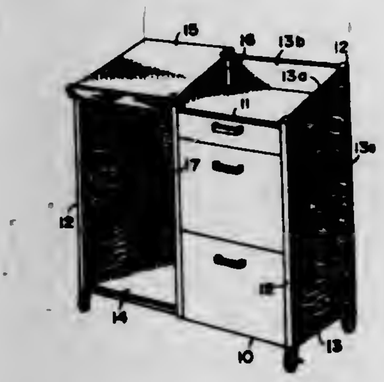
Maurice Cohen, 3580 NW. 52nd St., Miami, Fla. 33142
Filed Mar. 8, 1965, Ser. No. 437,764
10 Claims. (Cl. 312—201)

3. In a display rack, a frame including spaced end members, means interconnecting said end members, at least two cabinets mounted on said frame in opposed relation, the rear ends of said cabinets being located in adjacent relation and substantially along the longitudinal axis of said frame, elongated bars fixed in said opposed cabinets at the sides thereof and interconnecting said cabinets in balanced relation, said elongated bars extending laterally of said frame in perpendicular relation to the longitudinal axis thereof, means for securing said cabinets to said frame, drawers carried by said cabinets and being slidable therein in a direction that is perpendicular to the longitudinal axis of said frame, additional elongated bars joined to said cabinets and extending outwardly of at least one end thereof in a direction that is parallel to the longitudinal axis of said frame, an end cabinet mounted on said additional elongated bars in cantilevered relation, means for fixing said end cabinet to said frame, and opposed drawers mounted for slidable movement in said end cabinet in a direction that is parallel to the movement of the drawers located in said first named cabinets.



3,351,402
REVERSIBLE LECTERN STAND

Milton J. Miller, Bror W. Henrikson, and Chester J. Barecki, Grand Rapids, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Dec. 22, 1966, Ser. No. 603,898
4 Claims. (Cl. 312—233)



1. In a stand providing a horizontal top, supports midway of said stand including one relatively high support at the front of the stand, and a relatively low support at the rear of the stand, an inclined lectern panel overlying one-half of said stand and having its inner edge over said midway supports, side supports carried by said stand for supporting the outer end of said lectern panel, and inclined hinge means fixed to said midway supports and the inner edge of said lectern panel, and on which said panel may be swung selectively to the right to provide a lectern panel on the right flanked by a horizontal top stand on the left, or swung to the left to provide a lectern panel on the left flanked by a horizontal top stand on the right.

3,351,403
WALL MOUNTED SEMI-CONCEALED WARDROBE

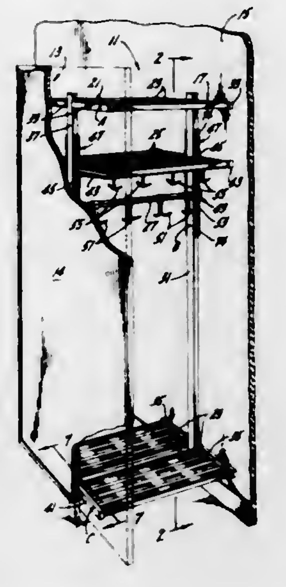
Raymond A. Magnuson, Hinsdale, Ill., assignor to Vogel-Peterson Co., Elmhurst, Ill., a corporation of Illinois
Filed Mar. 25, 1966, Ser. No. 537,375
9 Claims. (Cl. 312—245)

1. A wall and floor supported, space-defining structure comprising in combination

(a) top and bottom cross members for semi-permanent attachment to a wall;

(b) a frame positioned away from said wall, said frame including a post extending upright from the floor and also including top and bottom cross members;

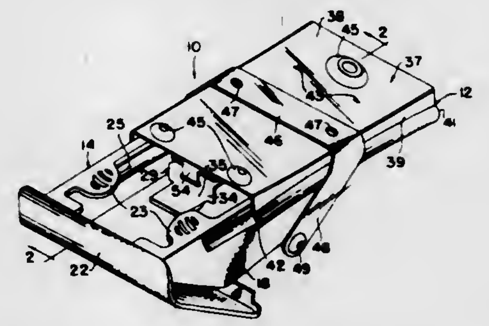
(c) an upright utility panel mounted on said frame clear of the floor to define a raised, concealed space between said wall and said panel; and



(d) a pair of shelves, each interposed between and fastened to a pair of said cross members to maintain said panel rigidly upright, at least one of said shelves being mounted near the floor for receiving footwear and being pivotably attached to said bottom cross members to permit it to be swung upward for access to the floor area between said wall and said panel.

3,351,404
ASH RECEPTACLE FOR AUTOMOBILES

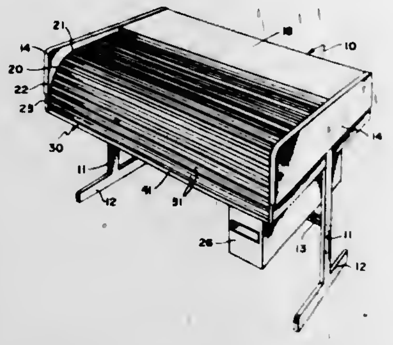
Jack W. Blake, Grand Rapids, Mich., assignor to F. L. Jacobs Co., Detroit, Mich., a corporation of Michigan
Filed Jan. 24, 1966, Ser. No. 522,665
7 Claims. (Cl. 312—246)



1. An ash receptacle or like structure, comprising a relatively fixed support member having elongated and parallel, transversely spaced guide tracks, a receptacle or like sliding member provided with elongated and parallel guide tracks paralleling those of said support member when said members are operatively assembled to one another, a bearing retaining unit having bearings at transversely spaced sides thereof in anti-friction engagement between the respective pairs of tracks of said support and sliding members, thus mounting the last named member for longitudinal sliding movement relative to the support member, said support member having means to limit said movement and prevent separation of said retaining unit from said support member, and means on said sliding member providing a releasable connection thereof to said support member through the agency of said retaining unit.

3,351,405
DESK TOP

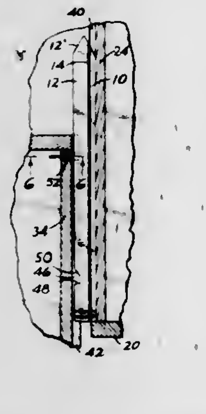
Irwin J. Ferdinand, Glencoe, and Dale R. Lopatka, Glenview, Ill., assignors to S. A. Hirsh Mfg. Co., Skokie, Ill., a corporation of Illinois
Filed Apr. 25, 1966, Ser. No. 544,962
13 Claims. (Cl. 312—297)



1. A slide top for closing an access opening to a work space comprising a plurality of elongated sectionally S-shaped elements of sheet material or finished side which include a single vertical control wall having upper and lower horizontal walls connected thereto and extending substantially equal distances in opposite directions therefrom, two vertical edge walls of less height than said control wall extending in opposite directions from the remote edges of said horizontal walls the edge extending away from the finished side being of less height than the other edge wall, a pair of parallel cooperating guideways slidably receiving the ends of said slats side by side with their adjacent edge walls overlapping in interfitting relationship and in engagement with one another when the top is extended with all finished sides disposed on the same side of the slide top.

3,351,406
DRAWER GUIDE

Richard L. Ropiequet and William C. Webber, Portland, Oreg., assignors to Alta Industries, Inc., Beaverton, Oreg., a corporation of Oregon
Filed July 23, 1965, Ser. No. 474,253
16 Claims. (Cl. 312—332)

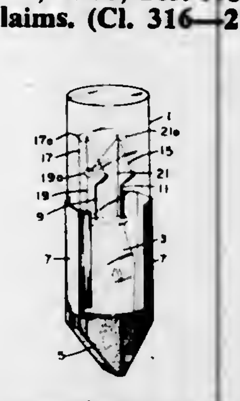


1. A supporting guide for mounting a drawer for reciprocative movement between spaced structural members of a cabinet or the like, comprising an elongated member having

- (a) an anchor flange section adapted to be secured to a structural member,
- (b) a support section extending laterally away from the flange section and adapted to be received freely in an elongated groove in a side wall of a drawer adjacent said structural member, and
- (c) spacer means on the elongated member arranged to engage the drawer side wall and space the latter from the adjacent structural member.

3,351,407
INCANDESCENT LAMP

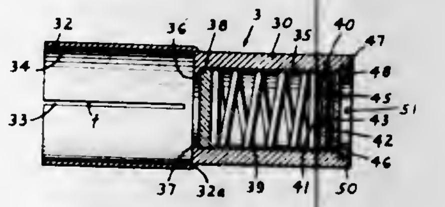
Karl T. Zarins, Boxford, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 576,423
6 Claims. (Cl. 316—25)



1. The method of manufacturing an incandescent electric lamp having a tungsten filament, said method comprising applying a getter to said filament, said getter including a small amount of iodine.

3,351,408
SUNLIGHT-FILTERING OCULAR ADAPTER FOR TELESCOPES

John J. Krewalk, 331 Church St.,
West Hartford, Conn. 06103
Filed Nov. 8, 1963, Ser. No. 322,404
10 Claims. (Cl. 350—69)

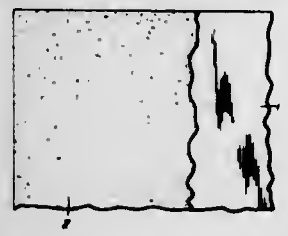


1. A sunlight-filtering ocular adapter for telescopes, said adapter comprising a tubular housing having a major axis, a planar green glass filter for filtering out harmful ultra-violet and infrared rays, said green glass filter being mounted within said housing with the optical axis of said filter extending in the direction of said major axis of said housing, a quartz lens having a concave surface and a planar surface, said planar surface being coated with a thin layer of a highly reflective metal which permits transmission of from about ½% to about 3½% light through said lens, said lens being mounted within said housing in spaced relation to said green glass filter with the optical axis of said lens also extending in the direction of said major axis of said housing and with said concave surface facing said green glass filter, said tubular housing having first means associated therewith for removably mounting said housing on a telescope so that said quartz lens is in advance of said green glass filter with respect to the normal direction of light passing through said housing, when said adapter is in use, and said tubular housing having second means associated therewith for having removably mounted thereon, an ocular, in back of said green glass filter with repect to said normal direction of light.

3,351,409
LIGHT DIFFUSION MATERIAL, METHOD OF MAKING AND USING SAME

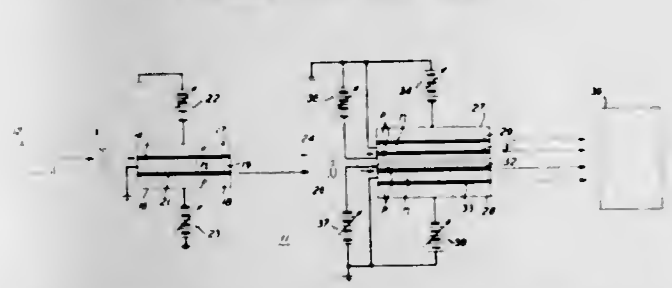
Irvin H. McGuire, Box 15, High Shoals, Ga. 30645
Filed June 12, 1963, Ser. No. 287,302
12 Claims. (Cl. 350—117)

1. A rear projection viewing screen consisting essentially of a substrate coated with a light-transmitting composition made by the process consisting essentially of the steps of heating and dehydrating kaolin, containing about 33% aluminum oxide, to a temperature from about 750° F. to about 1800° F., thereby raising the aluminum oxide content to about 47%, mixing about two parts said kaolin by volume with about one part organic solvent by volume to form a suspension, centrifuging said suspension, 99% or more of said kaolin having a particle size of 1.0 micron or less, agitating and mixing the kaolin with an equal volume of light transmitting organic binder, and adding 0 to 2% colored contrast material.



3,351,410
COUPLED JUNCTION SEMICONDUCTOR DEVICES FOR OPTICAL WAVELENGTHS

Arthur Ashkin, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 5, 1963, Ser. No. 328,227
4 Claims. (Cl. 350—161)

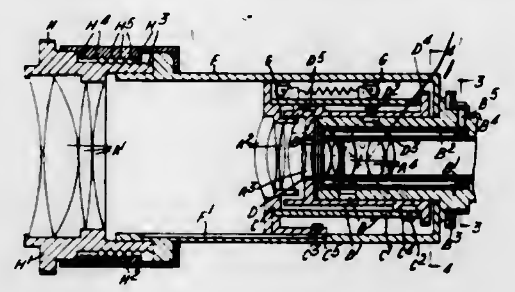


1. In combination, a plurality of semiconductor members, each member having first and second regions of material of one conductivity type separated by a third region of opposite conductivity type forming a pair of p-n junctions that are substantially parallel and co-extensive, said third region being sufficiently thin to permit transfer of optical energy between the two junctions, said members being arranged in an array of groups, each of the members of each group having one of its junctions axially aligned with one of the junctions of a member of the preceding stage in the array, means for directing optical energy longitudinally along at least one of the junctions in a member in the first stage of the array, and means for controlling the optical energy output from the last stage of the array comprising means for applying voltages in the reverse direction across each of the junctions of all of the members in the array, at least one of said last-mentioned means in each stage of the array being variable.

3,351,411
ZOOMING MECHANISMS FOR OPTICAL OBJECTIVES OF VARIABLE EQUIVALENT FOCAL LENGTH

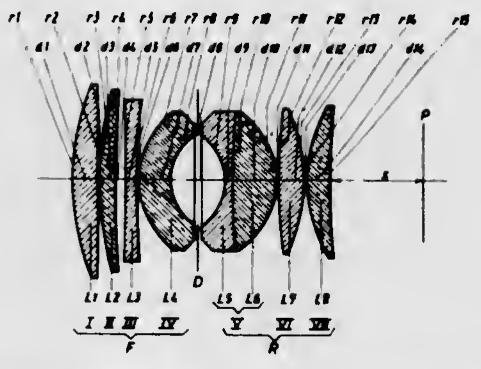
Alan Chapman, Leicester, England, assignor to Rank Precision Industries Limited, trading as The Rank Organisation Rank Taylor Hobson Division, Leicester, England, a British company
Filed Nov. 18, 1963, Ser. No. 324,449
Claims priority, application Great Britain, Nov. 16, 1962, 43,441/62
12 Claims. (Cl. 350—187)

1. In an optical objective of the zoom type, comprising a normally stationary rear assembly, a front assembly including two members axially movable relative to said rear assembly for continuously varying the equivalent focal length of the objective throughout a range whilst maintaining constant position of the image plane of the objective, and a zoom control element for controlling the axial movement of the said two members of the front assembly for zooming purposes, the improvement which comprises two concentric tubes respectively carrying the said two axially movable members of the front assembly, a cam-groove coupling interconnecting such two tubes, said coupling comprising a cam groove in one of said tubes and a protuberance carried by the other of said tubes, means for holding one of such two tubes against rotation, a stationary element, a cam-groove coupling comprising a cooperating protuberance and cam groove interconnecting the other of such tubes and the stationary element, and means driven by the zoom control element which rotates such other tube and thereby causes axial movement of the said two members of the front assembly the cam groove of said last mentioned coupling being shaped to impart to said other tube when rotated the axial movement required of the member carried by that tube for zooming purposes while the cam groove of the coupling interconnecting said tubes is shaped to impart to said one tube an axial movement relative to said other tube equal to the difference between the axial movements required of said two members for zooming purposes.



3,351,412
HIGH-SPEED SEVEN COMPONENT CAMERA OBJECTIVE

Rudolf Solisch, Kreuznach, and Werner Wagner, Odernheim an der Glan, Germany, assignors to Joseph Schneider & Co., Optische Werke, Bad Kreuznach, Germany, a corporation of Germany
Filed June 24, 1964, Ser. No. 377,744
Claims priority, application Germany, July 3, 1963, Sch 33,490
2 Claims. (Cl. 350—207)

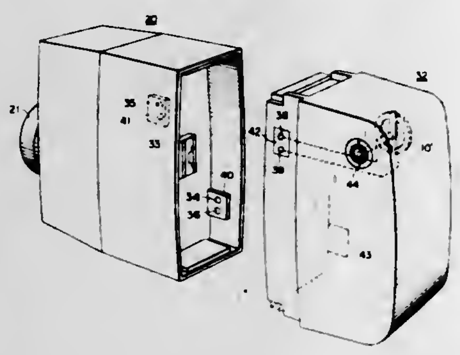


1. A high-speed camera objective composed of a front and a rear component whose elements consist, in order from the object side to the image side of the objective, of a first, a second and a third lens; a first meniscus; a second meniscus defining a large air space with said first meniscus, a penultimate lens member; and a rearmost lens member; the radii of curvature $r1$ to $r15$ and the axial thicknesses and separations $d1$ to $d14$ of said first, second and third lenses L1, L2, L3, said first meniscus L4, the elements L5, L6, of said second meniscus, said penultimate lens member L7 and said rearmost lens member L8 having numerical values, based upon a numerical value of 100 for said overall focal length, which together with their refractive indices n_e and dispersion constants

ν_e, based upon the *e* line of the spectrum, are substantially as given in the following table:

Lens	Radii	Thicknesses and Separations	n_e	ν_e
L1	$r1 = +159.55$ $r2 = +3{,}663.75$	$d1 = 16.35$	1.62287	60.1
		$d2 = 0.19$	Air space	
L2	$r3 = +229.09$ $r4 = +607.77$	$d3 = 10.32$	1.66104	57.1
		$d4 = 6.23$	Air space	
L3	$r5 = \infty$ $r6 = +597.26$	$d5 = 8.37$	1.58482	40.6
		$d6 = 0.19$	Air space	
L4	$r7 = +57.82$ $r8 = +39.05$	$d7 = 20.05$	1.79180	25.9
		$d8 = 36.21$	Air space (Diaphr.)	
L5	$r9 = -39.25$ $r10 = +478.43$	$d9 = 4.48$	1.76846	26.8
L6	$r11 = -57.62$	$d10 = 28.42$	1.71615	53.7
		$d11 = 0.19$	Air space	
L7	$r12 = +317.71$ $r13 = -116.06$	$d12 = 17.52$	1.59142	61.0
		$d13 = 0.19$	Air space	
L8	$r14 = +94.69$ $r15 = +509.65$	$d14 = 16.35$	1.69400	54.6

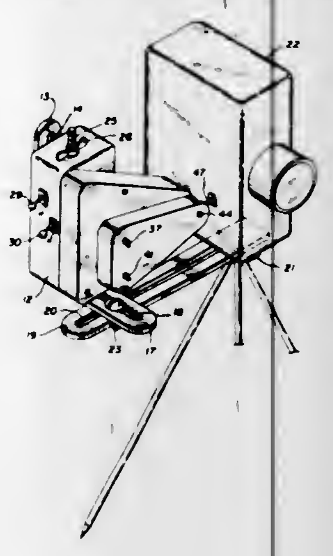
3,351,413
CINEMATOGRAPHIC CAMERA WITH MAGAZINE HAVING SENSITIVITY CONTROL
Seki Kono, Nagoya, Japan, assignor to Elmo Company Limited, Nagoya, Japan
Filed Mar. 30, 1965, Ser. No. 443,953
Claims priority, application Japan, Apr. 10, 1964, 39/27,705
2 Claims. (Cl. 352—72)



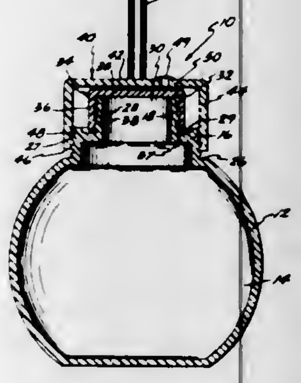
1. A sensitivity controlled change-over device for use with a small-sized cinematographic camera including a main body, a cinefilm chamber or magazine detachably secured to the main body, and an automatic exposure mechanism, characterized by a sensitivity set member on the magazine manually adjustable in accordance with a sensitivity of the particular cinefilm loaded in the magazine, said sensitivity set member being arranged such that when the magazine with the sensitivity set member adjusted to the sensitivity of the cinefilm loaded in the same is operatively coupled to the main body, an electric circuit within the main body to control the automatic exposure mechanism is electrically connected to an electric circuit with the sensitivity set member to set the automatic exposure mechanism to the sensitivity of the cinefilm in the magazine.

3,351,414
ANIMATORS FOR CAMERAS
Ellis N. Barker, 2670 S. Williams, Denver, Colo. 80210
Filed Jan. 21, 1965, Ser. No. 426,917
1 Claim. (Cl. 352—84)

A camera animator comprising a housing adapted to be mounted adjacent a motion picture camera having an activating trigger, a pair of driving pulleys mounted on said housing, reduction gears on said housing connected to said driving pulleys for rotating said pulleys in opposite directions at different speeds, an idler pulley mounted on said housing, a timing belt mounted on one of said driving pulleys and said idler pulley, projecting fingers on said belt positioned to engage said trigger, a motor on said housing connected to said gears and a switch connected to said motor for changing its direction of rotation when said timing belt is mounted on the other of said driving pulleys and said idler pulley.



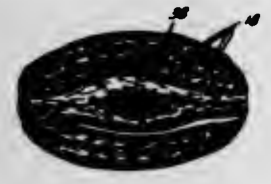
3,351,415
DISPENSING CONTAINER
Francis V. Hoffman, 1202 Sherman Ave., Madison, Wis. 53703
Filed Apr. 5, 1965, Ser. No. 445,513
9 Claims. (Cl. 401—137)



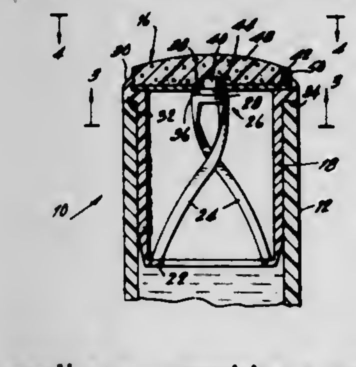
1. A dispensing container comprising a container body defining a cavity and an open end and including a first and a second neck portion, said second neck portion including said open end, an inner closure carried by said second neck portion and an outer closure having an undersurface and an aperture, and a depending shoulder on said undersurface for sealing said open end with respect to said outer closure to provide sealed communication through said aperture with said cavity when said inner closure is removed.

3,351,416
STEEL WOOL SOAP PAD AND METHOD OF MAKING SAME
Carl J. Demrick, 6375 Golfview Drive, Birmingham, Mich. 48009
Filed Mar. 10, 1965, Ser. No. 438,576
16 Claims. (Cl. 401—201)

2. A scouring pad comprising a body of fibrous scouring material having resilient characteristics enclosing a firm central core of soap and having additional soap dispersed in uniform gradients in said material so as to provide layers of the material with soap dispersed throughout each layer surrounding said central core.

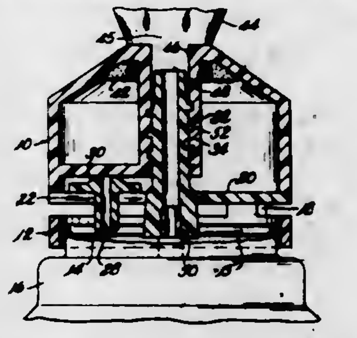


3,351,417
APPLICATOR WITH SPRING PRESSED COVER
Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, N.Y. 10583
Filed Feb. 16, 1966, Ser. No. 527,986
6 Claims. (Cl. 401—206)



1. A fluid applicator comprising a retainer ring having a projecting portion extending downwardly therefrom and a peripheral flange extending upwardly therefrom, a disc having an aperture therethrough defining a valve seat, a resilient porous body bonded to said disc and overlying said aperture, said disc being secured to said flange, and a valve assembly including a valve head extending through said aperture and being engageable with said valve seat to prevent fluid flow through said aperture, said valve assembly including helical coils integral with said projecting portion and said valve head.

3,351,418
BRUSH ATTACHMENT FOR SHAVING CREAM CANS
Delmar D. Karnuth, 1303 Nome Ave., Akron, Ohio 44320
Filed Apr. 18, 1966, Ser. No. 543,334
10 Claims. (Cl. 401—270)



1. In combination:

a can of shaving cream having a top metal ring member and cream dispensing nozzle thereon,

a plastic ring adapted to slide over and snap into engagement with the metal ring member of the can of shaving cream,

a substantially flat, circular shaped clip member integrally joined to said ring by an upwardly directed connecting arm holding said clip member substantially over said ring in spaced, parallel relation thereto, said clip member having a slot therein to allow the nozzle of the can of shaving cream to pass therethrough,

a brush body mounted on said clip member,

an axially directed tube mounted internally of said body adapted to receive therein the upwardly directed nozzle of the can of shaving cream,

a flange mounted to said body and extending outwardly therefrom, and

a brush mounted on said brush body substantially in alignment with said tube whereby depressing said flange causes actuation of said nozzle to effect a flow of shaving cream through said nozzle and said tube and into said brush.

CHEMICAL

3,351,419
PERMONOSULFURIC ACID-HYDROGEN PEROXIDE WOOL SHRINKPROOFING COMBINED WITH DYEING
Eric Tom Fell, Ambergate, and Scott Arthur Fox, Heage, England, assignors to Precision Processes (Textiles) Limited, London, England, a British company
No Drawing. Filed Feb. 20, 1964, Ser. No. 346,070
Claims priority, application Great Britain, Feb. 25, 1963, 7,426/63
14 Claims. (Cl. 8—17)

1. A process for reducing the tendency to felt of animal hair and materials comprising the same which comprises (a) first treating said animal hair with an aqueous solution of a permonosulphuric compound selected from the group consisting of permonosulphuric acid and water-soluble salts thereof, said aqueous solution having a pH value of less than 8 and (b) as the next essential step, treating said hair with a dilute aqueous solution of hydrogen peroxide having a pH value within the range of 6.5 to 10.5.

5. A process for the production of coloured shrink-resistant animal hair and materials comprising the same which comprises (a) first treating said animal hair at a temperature within the range of room temperature to 70° C. with an aqueous solution of a permonosulphuric compound selected from the group consisting of permonosulphuric acid and water-soluble salts thereof, said aqueous solution having a pH value within the range of 0.1 and 8.0, (b) as the next essential step, treating said hair with a dilute aqueous solution of hydrogen peroxide having a pH value within the range of 6.5 to 10.5 and a temperature within the range of room temperature to 60° C. and (c) then applying to at least selected areas of the thus treated animal hair a composition comprising water, a water-soluble form of a reactive dyestuff and an acid acceptor, said composition being maintained at a temperature within the range of room temperature to 60° C. during contact with said hair.

3,351,420
MODIFICATION OF CELLULOSE WITH EPICHLOROHYDRIN-AMMONIA REACTION PRODUCTS WHICH HAVE BEEN AGED IN METHANOLIC SOLUTIONS
John B. McKelvey, Ruth R. Benerito, and Ralph J. Berni, New Orleans, La., and Beverly G. Burgis, Clearwater, Fla., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Mar. 24, 1964, Ser. No. 354,479
1 Claim. (Cl. 8—116.2)

A process for crosslinking cellulose comprising,

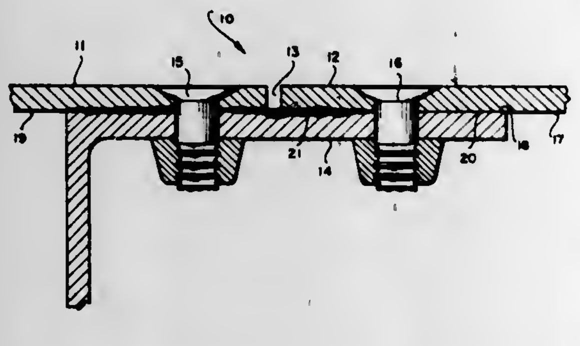
(a) wetting the cellulose with an aqueous solution containing about from ten to twenty weight percent based on ammonia and epichlorohydrin of the cross-linking reagent produced by aging a methanolic solution containing ammonia and epichlorohydrin in a mole ratio of one to three at room temperature for at least 1800 hours,

(b) heating the wetted cellulose for a period of about from three to ten minutes at a temperature of 95–150° C.,

(c) rewetting the thus heated cellulose with an aqueous solution containing caustic in an amount at least sufficient to displace the hydrogen chloride in a dehydrohalogenation process from the crosslinking reagent retained by the cellulose, and

(d) heat curing the cellulose for a period of about from five to ten minutes at a temperature of 100–110° C.

3,351,421
METHOD FOR TREATMENT OF CORROSION
Wilburn A. Boggs, Smyrna, and Abraham A. Esral and Samuel C. Jacobsen, Atlanta, Ga., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 14, 1965, Ser. No. 455,759
4 Claims. (Cl. 21—2.7)



1. The method of effecting corrosion inhibiting treatment between faying joint surfaces in an assembled joint comprising the steps of:

removing substantially all of any moisture which may be contained between the joint surfaces;

applying at a region of access to the joint surfaces a joint surface wettable corrosion inhibiting solution having a surface tension and viscosity chosen to accomplish the substantially complete penetration of the joint surfaces; and

dispersing the solution throughout a substantial portion of the joint surfaces at least in part by capillary action.

3,351,422
STERILIZER
Arthur L. Jones and Eugene J. Neal, Jr., Charlotte, N.C., assignors to The Pelton & Crane Company, Charlotte, N.C., a corporation of North Carolina
Filed Feb. 9, 1962, Ser. No. 172,208
5 Claims. (Cl. 21—94)

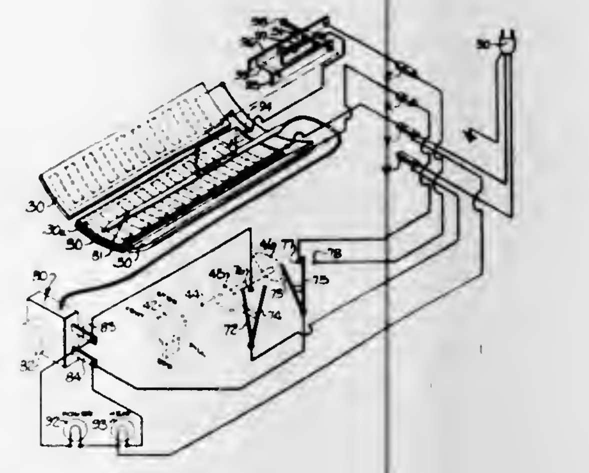
1. A dual purpose sterilizer for dental and medical articles and supplies or the like and adapted for selectively sterilizing by steam under pressure or by sustained dry heat at high temperatures; said sterilizer comprising:

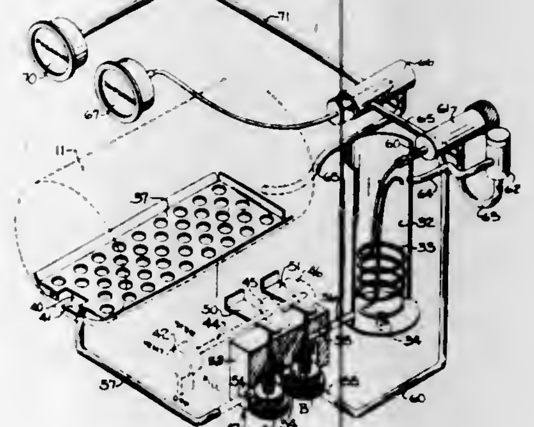
(a) enclosed sterilizing chamber means including means for permitting access thereto for receiving articles and supplies to be sterilized and adapted to contain water when sterilizing by steam and pressure is selected;

(b) electric heating means disposed in close proximity to said chamber means and adapted to be selectively energized to heat said chamber means under an increased power input for generating steam and pressure therein when sterilizing by same is selected or to heat said chamber means under a reduced power input for producing sustained dry heat at high temperatures when sterilizing by same is selected;

(c) discharge means communicating with said chamber means and adapted to be selectively opened for discharging steam, water or air therefrom and closed for preventing discharge therefrom; and

(d) control means operatively associated with said heating means and said discharge means, said control means being adapted to energize said electric heating means under the increased power input and to maintain said discharge means closed for generating steam and pressure in said chamber means when sterilizing by same is selected and being adapted to energize said electric heating means under the reduced power input and to open said discharge means for producing sustained dry heat at high temperatures in said chamber means when sterilizing by same is selected.





3,351,423
PROCESS FOR PRODUCING MOLYBDIC OXIDE FROM MOLYBDATE SOLUTIONS
Stuart R. Zimmerley and Martin E. Messner, Salt Lake City, Utah, assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed Dec. 9, 1963, Ser. No. 329,095
10 Claims. (Cl. 23—22)

1. A process for producing molybdic oxide from molybdate solutions, comprising the steps of

adding a mineral acid to such a solution in quantity sufficient to adjust its pH far enough below 3.5 to remain below 3.5 when a reducing agent for molybdenum is added;

introducing into the so-adjusted solution a reducing agent for molybdenum which is stronger, in an acid solution, than plus-three-valence molybdenum, in order to reduce the molybdenum ions to the plus three valence state;

thereafter adding to the solution a basic material in quantity sufficient to raise the pH to precipitate molybdenum hydroxide;

separating the precipitated molybdenum hydroxide from the spent solution while maintaining the pH of the solution at at least 3.5 but under about 6.5; and

drying and roasting the molybdenum hydroxide to produce molybdic oxide.

3,351,424
SEPARATION OF CERIUM FROM OTHER RARE EARTHS
Lane A. Bray and Francis P. Roberts, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Apr. 20, 1964, Ser. No. 361,629
5 Claims. (Cl. 23—22)

1. A process of recovering cerium from radioactive mixtures containing it together with other lanthanide rare earths, comprising providing an aqueous feed solution having a pH value between 1 and 4 from said mixture; contacting the feed solution with an organic solution of a substantially water-immiscible dialkyl phosphoric acid whereby the cerium and other lanthanide rare earths are coextracted; separating an organic phase from the depleted aqueous feed solution; contacting said organic phase with an aqueous oxidizing solution 1 to 2 M in mineral acid, 0.02 to 0.01 M in silver ion and about 0.2 M in persulfate anion, whereby cerium is oxidized to the tetravalent state and retained in said organic phase, while said other, trivalent, rare earths are back-extracted into the aqueous solution; separating the aqueous solution from the organic phase; allowing the tetravalent cerium in the organic phase to reconvert to trivalent cerium; contacting the organic phase with a dilute mineral acid stripping solution, whereby the cerium is stripped from the organic phase; and separating said stripped organic phase from the aqueous cerium solution.

3,351,425
METHOD OF RECOVERING ZIRCONIUM AND HAFNIUM
William H. Owens, Tullahoma, Tenn., assignor, by mesne assignments, to Pittsburgh, Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Continuation of application Ser. No. 93,872, Mar. 7, 1961. This application Mar. 17, 1966, Ser. No. 535,031
12 Claims. (Cl. 23—23)

1. A method of separating silica from zirconium in an alkali metal zirconate containing said silica which comprises adding alkali metal zirconate while the silica is in essentially unhydrated undissolved state to a pool of aqueous concentrated acid containing enough acid to dissolve the zirconium of the zirconate and form an aqueous solution thereof, maintaining the acid concentration in said pool high enough to maintain the pH of the pool below about 1 throughout substantially the entire period of alkali metal zirconate addition whereby to hold silica out of solution and produce a slurry of solid silica in said aqueous zirconium solution and separating the solid silica from the zirconium solution.

3,351,426
METHOD OF PREPARATION OF DIPERSULPHATES
John P. Leaver, Harpenden, and Anthony M. Hildon, Dunstable, England, assignors to Laporte Chemicals Limited, Kingsway, Luton, England, a British company
No Drawing. Continuation of application Ser. No. 220,040, Aug. 28, 1962. This application July 7, 1966, Ser. No. 563,615
Claims priority, application Great Britain, Aug. 31, 1961, 31,398/61
13 Claims. (Cl. 23—114)

1. A process for the preparation of a perdisulphate selected from the group consisting of lithium, sodium, potassium, rubidium, cesium, ammonium, beryllium, magnesium, calcium, strontium, and barium perdisulphate which comprises the steps of heating the corresponding permonosulphate at a temperature of from 75° C. to 300° C. in a reaction mixture which consists essentially of the permonosulphate, the corresponding bisulphate and hydrogen peroxide while maintaining a hydrogen peroxide vapor partial pressure of below 250 mm. Hg and recovering the perdisulphate so formed.

3,351,427
VAPOR PHASE PROCESS FOR PRODUCING METAL OXIDES
Charles B. Wendell, Canton, Clifford Le Roy Carpenter, Wellesley Hills, and Michael J. Greene, Lowell, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
Filed Nov. 1, 1963, Ser. No. 320,879
9 Claims. (Cl. 23—202)

1. In a process for producing finely divided solid oxides of metallic elements by reacting at temperatures above about 1000° F. a free-oxygen containing gas and vapors of a compound of such metallic element which compound vaporizes at temperatures below 1000° F., forming vapors which are stable to at least 1000° F. and reactive with free oxygen at temperatures above 1000° F. to form the corresponding solid oxide, the improvement which comprises introducing into a laterally enclosed frusto-conical reaction zone through the smaller end thereof a mixture of free-oxygen containing gas, a fuel gas and vapors of said compound of such metallic element while said mixture is spinning circumferentially about the central axis of said reaction zone at a linear velocity not below about 75 feet per second, the amount of said free-oxygen containing gas being at least sufficient to react stoichiometrically with said compound and burn said fuel gas completely, removing from said reaction zone through the larger end thereof the reacted mixture containing the finely divided solid oxide product suspended therein as the sole solid component and recovering the finely divided solid oxide.

6. In the process of producing pyrogenic metal oxides by reacting at temperatures above about 1000° F. a free-oxygen containing gas and vapors of a metal compound which vaporizes at temperatures below 1000° F., forming vapors which are stable to at least 1000° F. and reactive with free-oxygen at temperatures above 1000° F. to form the metal oxide desired, the improvement which comprises flowing a stream of a fuel gas and a completely separated stream of a free-oxygen-containing gas helically around the outside of a major portion of a laterally enclosed and internally substantially unobstructed frusto-conical reaction zone which is open at both ends, at least one of said streams containing said metal compound in vapor form, said free-oxygen-containing stream containing sufficient oxygen to react stoichiometrically with said metal compound and said fuel gas, thereafter commingling said streams in a confined space communicating directly with the smaller open end of said frusto-conical reaction zone with both streams spinning in the same direction, flowing the resulting spinning mix-

ture at a linear velocity not substantially below 75 feet per second into said reaction zone through the smaller end thereof, removing the reaction products including particulate metal oxide through the larger end of said zone, and recovering the particulate metal oxide from said products.

3,351,428
PROCESS FOR THE PRODUCTION OF REFRACTORY HARD METAL MATERIALS

Leslie Titus, Campbell, and John R. Thornberry and Richard G. Breuer, Los Gatos, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of California
No Drawing. Filed Jan. 29, 1962, Ser. No. 169,670
10 Claims. (Cl. 23—204)

1. In the process for the production of a high melting, refractory hard metal material consisting essentially of at least one of the compounds selected from the group consisting of the carbides of titanium, zirconium, tantalum, niobium, hafnium and boron, and the borides of titanium, zirconium, tantalum, niobium and hafnium, comprising preparing a reaction mass into a self-supporting body from a mixture of at least one oxide from the group consisting of the oxides of titanium, zirconium, tantalum, niobium, hafnium and boron, with carbon, passing the self-supporting body through a heating zone and removing reaction products from the heating zone, the improvement which comprises:

(a) forming the reaction mass into a self-supporting hollow-shaped body with a central passageway having a cross-sectional area of from 0.04 to 0.75 times the total cross-sectional area of the shaped solid body plus passageway, whereby CO gas formed during reaction may be readily exited through said central passageway.

3,351,429
PRODUCTION OF TITANIUM DIBORIDE

Peter Leslie Timms, Thornton Heath, Surrey, England, assignor to United States Borax and Chemical Corporation, Los Angeles, Calif.
No Drawing. Filed May 10, 1962, Ser. No. 194,216
Claims priority, application Great Britain, May 15, 1961, 17,686/61
6 Claims. (Cl. 23—204)

1. In the process for producing titanium diboride by heating at a temperature of at least 1350° C. a slug of reactants comprising an intimate mixture of boric oxide, titanium dioxide and carbon, the improvement which comprises employing a preformed slug of reactants having a density of at least 1.1 grams per cubic centimeter.

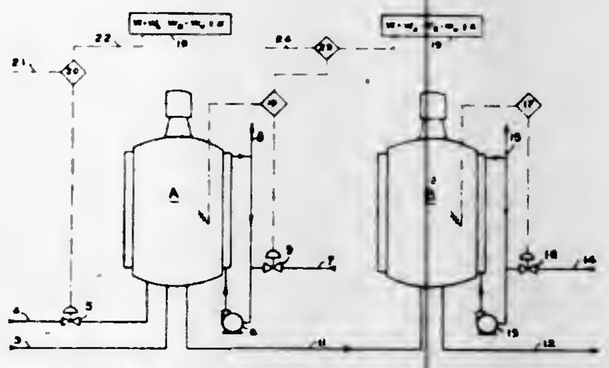
3,351,430
METHOD FOR THE AUTOMATIC CONTROL OF REACTIONS IN CONTINUOUS FLOW REACTION SERIES

Hermann Amrehn and Günther Beckmann, Marl, Paul Bornemann, Haltern, and Wilhelm Schänzer, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany
Filed Apr. 30, 1964, Ser. No. 363,807
Claims priority, application Germany, Sept. 20, 1963, C 30,937
1 Claim. (Cl. 23—230)

Method for the automatic control of the conversion distribution in a series of autoclaves having a continuous flow-through of reactants in an exothermic process wherein reaction heat is removed by a coolant passed in heat exchange relationship with the contents of said autoclaves and reaction heat W from each autoclave is measured by a known computer, according to the equation

$$W = W_A - W_R - W_U \pm W_E$$

wherein W_A is the dissipated heat, W_R and W_U are quantities of heat generated by the agitator and the pump circulating the cooling agent and W_E is the heat introduced by the materials entering and leaving the autoclave, and wherein the output signal of said computer which is directly proportional to the actual reaction heat W is fed as measurement signal into a controller of standard design, this controller being preset to the wanted rate of conversion for each autoclave by a set point signal which is proportional to the desired value of reaction heat and wherein the output signal of the controller of the first autoclave is connected to the valve in the catalyst flow and thus controls the flow of the catalyst into the first autoclave, wherein the output signal of the controller of the second autoclave is fed as a set point signal into the temperature controller of the first autoclave thus controlling the reaction temperature inside the first autoclave, wherein the output signal of the controller of each downstream autoclave is fed as set point signal into the temperature controller of the next upstream autoclave, and wherein the set point of the temperature controller of the last autoclave of the line which is equipped with said computer is set manually to such a reaction temperature that if this autoclave is the last autoclave of the line the set reaction temperature guarantees that all active catalyst is spent for the reaction in the last autoclave and if this autoclave is not the last autoclave of the line, the set reaction temperature guarantees that the active catalyst leaving this autoclave is sufficient for the final reaction, the value of this reaction temperature being evaluated by laboratory tests in which the reaction temperature is changed until an amount of catalyst leaves the autoclave that is sufficient for the signal reaction, said reaction heat controllers of downstream autoclaves automatically adjusting the set points of the temperature controllers of the corresponding upstream autoclaves in such a way that each autoclave receives that amount of catalyst which is necessary to guarantee the conversion in itself and the autoclaves downstream in the line and the reaction heat controller of the first autoclave controlling the flow of the catalyst into the first autoclave to an amount sufficient for the total conversion of the line, said method being used to control the conversion distribution of at least the first two autoclaves of the line.



3,351,431
FORMULA AND METHOD FOR DETERMINING THE PROPORTION OF FAT IN DAIRY PRODUCTS

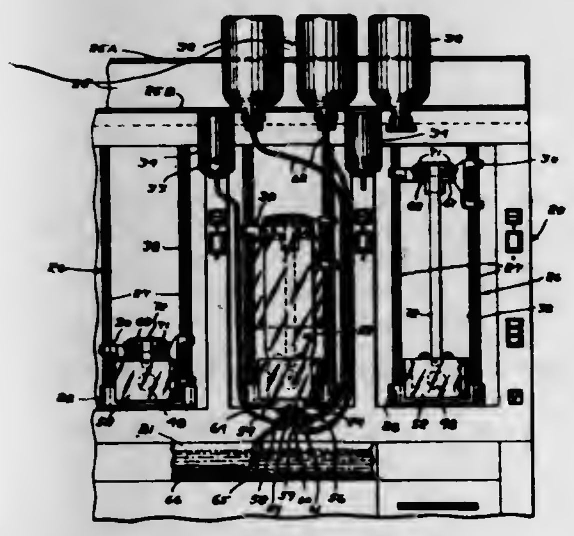
John H. Berry, 2512 W. 79th St., Inglewood, Calif. 90305
No Drawing. Filed Jan. 21, 1965, Ser. No. 427,123
12 Claims. (Cl. 23—231)

1. A solvent for the extraction of fat in milk or milk products in which acetone and petroleum ether together constitute between seventy-five and eighty percent by volume of the total, the proportions of these two varying inversely between forty-five and fifty-five percent of their combined volume, the balance of the solvent consisting of n-butyl alcohol.

2. The process of determining the proportion of fat in milk or milk products which comprises: placing 10 grams of milk or an adjusted sample of a milk product in a mixing vessel, adding approximately one milliliter of a 1.5% aqueous solution of sodium bicarbonate or a chemical equivalent to the milk, adding 40 milliliters of the solvent described in claim 1 to the contents of the vessel, tightly sealing the vessel, shaking the vessel vigorously until its contents have become thoroughly mixed, transferring the contents of the vessel to an open-end separatory funnel while the stopcock of the funnel is closed, leaving the contents of the funnel undisturbed therein for approximately four minutes, drawing off the substract from the bottom of the funnel to within approximately a quarter of an inch of the clear solvent above the substract, placing in the funnel one drop of an aqueous solution containing approximately 10% alcohol colored with methylene blue powder, carefully withdrawing the substract remaining in the funnel to the blue line of separation, transferring the contents of the funnel above the blue line to an evaporation container, separating the solvent and the fat in the container by evaporating the solvent, drying the remaining fat at approximately 100° centigrade, weighing the dried fat and determining the percent that the weight of the fat bears to the weight of the milk or of the calculated test sample of the dairy product originally placed in the mixing vessel.

3,351,432
APPARATUS FOR USE IN WASHING RED BLOOD CELLS IN RECONSTITUTING BLOOD BY ADDITION OF PLASMA TO THE WASHED RED BLOOD CELLS

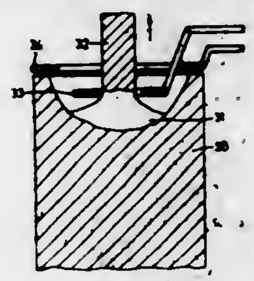
Kenneth Van Dyck, Westport, Conn., and Frederick J. Smith, Vestal, N.Y., assignors, by mesne assignments, to International Equipment Company, Needham Heights, Mass., a corporation of Massachusetts
Filed Nov. 4, 1963, Ser. No. 321,162
14 Claims. (Cl. 23—258.5)



1. In apparatus for use in washing red blood cells and reconstituting blood therefrom in an end of an elongated bag of flexible plastic stock ported to enable a predetermined volume of washing liquid to be added to the cells therein and from which the blood cells precipitate, said bag stock being sufficiently transparent to enable the line of demarcation between the precipitated cells and the used washing liquid to be seen, said apparatus including a base, means for attaching said bag end thereto, supporting means above said base over which the bag is draped with its other end depending, and means to effect relative movement between the base and the supporting means in a vertical direction between remote and proximate positions, the portion of the bag between the supporting means and the base in said remote position accommodating the blood cells and washing liquid whereby when the cells precipitate from the liquid, relative movement towards said proximate position decreases the length of the attached bag end and increases the length of the depending bag end with reference to the supporting means until the washing liquid stratum has flowed from the attached bag end.

3,351,433
METHOD OF PRODUCING MONOCRYSTALLINE SEMICONDUCTOR RODS

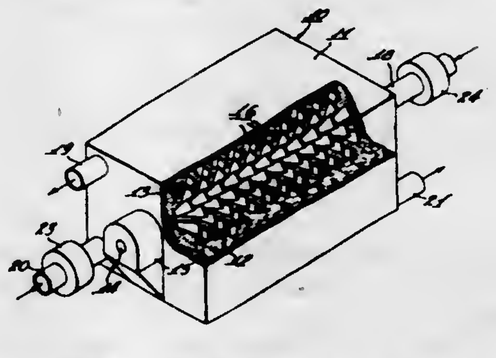
Wolfgang Keller, Pretzfeld, Germany, assignor to Siemens - Schuckertwerke Aktiengesellschaft, Berlin - Siemensstadt, Germany, a corporation of Germany
Continuation of application Ser. No. 326,969, Nov. 29, 1963. This application July 6, 1966, Ser. No. 563,301
Claims priority, application Germany, Dec. 12, 1962, S 82,820
8 Claims. (Cl. 23—301)



1. In a method of producing a monocrystalline semiconductor rod of more than 25 mm. diameter by pulling it from a melt with the aid of a crystal seed and a pair of induction heating coils, the steps of forming a downwardly extending recess from a solid rim in the upper end of a vertically disposed thick semiconductor rod which supports molten material created therein, inserting a first one of the said induction heating coils, having dimensions smaller than the horizontal cross section of that of the recess, into the recess for heating semiconductor material therein to the molten state, and placing the second induction heating coil at a location above the first coil and extending over the solid rim of the thick rod surrounding the recess so as to concentrate the heating action thereof on at least a portion of the rim to cause solid material located at said rim to become molten and drop into said recess.

3,351,434
LIQUID-LIQUID TWO-PHASE CONTACTOR

Patrick G. Grimes, Milwaukee, and Marvin C. Raether, Middleton, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed June 8, 1965, Ser. No. 462,294
3 Claims. (Cl. 23—310)



3. A liquid-liquid contacting process comprising the steps of flowing through an elongated vessel a first liquid having a component to be extracted, flowing through said vessel in contact with and countercurrent to said first liquid, a second liquid immiscible with and of different density from said first liquid and in which said component is more soluble than in said first liquid, and rotating within said vessel, about an axis generally parallel to the interface between said liquids, disks which are wettable by said first liquid and are not wettable by said

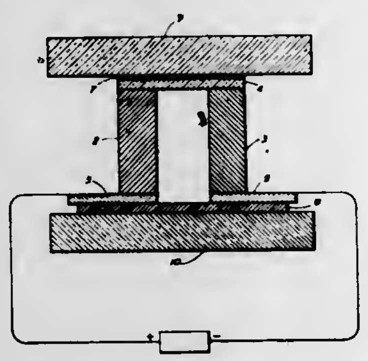
second liquid and having arcuately spaced, radially extending portions in planes perpendicular to said axis and radial slots therebetween of sufficient width to prevent said liquids from filming over between adjacent radially extending portions, said disks being rotated at a sufficiently slow speed to prevent formation of a stable emulsion of said first and second liquids.

3,351,435
SEMICONDUCTORS AND DEVICES EMPLOYING THE SAME

Fritz Hulliger, Uerikon, Zurich, Switzerland, assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Aug. 30, 1963, Ser. No. 305,600

10 Claims. (Cl. 23—315)



6. As a new composition of matter a semiconductor selected from the group consisting of RuPAs, RuAsSb, OsPAs and $CrFeAs_4$.

3,351,436
PREPARATION OF THORIUM PYROPHOSPHATE

James F. Sarver, Cleveland, Ohio, assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,587

6 Claims. (Cl. 23—345)

1. The method if preparing thorium pyrophosphate which comprises mixing stoichiometric quantities of methyl alcohol solutions of thorium nitrate and phosphoric acid, and recovering the resulting thorium pyrophosphate precipitate.

3,351,437
SUPERCONDUCTIVE BODY OF NIOBIUM-TIN

Paul S. Swartz and Carl H. Rosner, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed June 10, 1963, Ser. No. 287,739

1 Claim. (Cl. 29—182)

A high field superconductive body in bulk form which consists of 14.3 atomic percent tin, the balance being niobium, and said body containing a reaction product of Nb_3Sn.

3,351,438
TUNGSTEN INCANDESCENT BODY OF LARGE CRYSTALLINE STRUCTURE AND PROCESS FOR ITS PRODUCTION

Tivadar Millner, Jenö Neugebauer, and László Kerènyi, Budapest, Hungary, assignors to Egyesult Izzolampa és Villamossagi Reszvenytarsasag, Budapest, Hungary, a Hungarian enterprise

Filed Sept. 11, 1964, Ser. No. 395,797

Claims priority, application Hungary, Sept. 20, 1963, MA–1,282

4 Claims. (Cl. 29—182)

1. A sintered tungsten body of large crystalline tungsten structure effective for incandescence, said tungsten body containing gallium and in which the gallium to tungsten content expressed as the ratio of $Ga_2O_3:WO_3$ of the initial material from which the tungsten body is prepared, is between about 0.00001:1 and 0.05:1.

3. Method of producing sintered tungsten of large crystalline structure, which comprises mixing a gallium compound capable of forming an oxide with tungsten oxide in an amount such that the ratio of $Ga_2O_3:WO_3$ is between about 0.00001:1 and 0.05:1, reducing the resulting oxide mixture to metal powder, and pressing and sintering the resulting metal powder into a solid body.

3,351,439
ELECTRODES

Ernest M. Jost, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 24, 1965, Ser. No. 504,340

3 Claims. (Cl. 29—182.2)

1. A porous electrode comprising a mass of nickel flakes, permanent metallic connections between points of contact of the flakes to form a skeleton, the mass of connected flakes being in the form of a plaque, nickel particles distributed substantially over the surfaces of the connected flakes, metallic connections between said particles and the surfaces of said flakes, some of the connected flakes being located to form between them a substantial number of tabularly shaped pores, the pore volumes between other connected flakes being of other than tabular shapes, thereby to effect a good pore-size distribution in the plaque.

3,351,440
ELECTRICAL CONTACT MATERIALS

Francis J. Clauss, Atherton, Henry W. Lavendel, Palo Alto, and Edward Bruce, San Leandro, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,357

2 Claims. (Cl. 29—182.5)

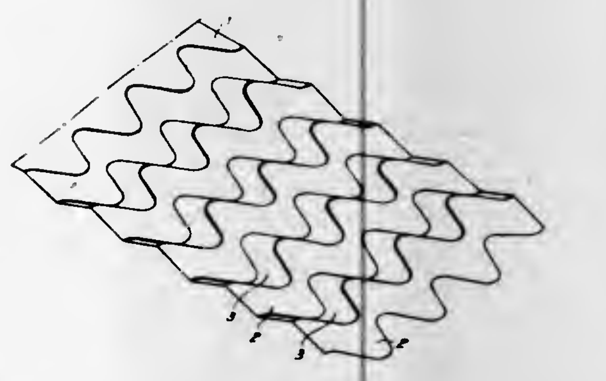
1. An electrical contact material exhibiting low wear and excellent noise characteristics in vacuums below 1×10^{-5} torr consisting essentially of a sintered mixture of 60 to 91.5 percent by weight silver, 1 to 15 percent by weight copper and 7.5 to 25 percent by weight molybdenum disulfide.

3,351,441
SHAPE, CONSTITUTION AND PROCESSES FOR MANUFACTURING MATERIALS DERIVED FROM DEVELOPABLE CHEVRONED CONFIGURATIONS

Lucien Victor Gewiss, Ville-d'Avray, France, assignor to Marc Wood Societe Anonyme pour la Promotion des Echanges Techniques Internationaux, Paris, France, a company of France

Filed Nov. 1, 1963, Ser. No. 320,752

27 Claims. (Cl. 29—183)



18. A chevroned structure containing a plurality of furrows in the material thereof at points coinciding with the ruled elementary surfaces located between the ridges of the structure; the ends of said furrows being located at points coinciding with said ridges.

3,351,442
TREATMENT OF ALUMINUM FOIL AND PRODUCT PRODUCED THEREBY

William K. Hooper, Brookfield, Conn., assignor to Republic Foil, Inc., Danbury, Conn., a corporation of Delaware

No Drawing. Filed Oct. 21, 1966, Ser. No. 592,962

7 Claims. (Cl. 29—183.5)

3. A foil suitable for use as an electrode in an electrolytic capacitor comprising a metal foil selected from the group consisting of aluminum and aluminum-based alloys containing in excess of 95% by weight of aluminum, said metal foil having been subjected to cold working, etching, annealing and anodic formation in sequence and having a thickness reduced by 50 to 99% from an original thickness to 0.0006 to 0.006 inch, a tensile strength of 15,000 to 22,000 p.s.i., and an increased capacitance of between 20 and 50% as compared to conventionally processed capacitor foils.

3,351,443
PACKAGED CHARCOAL FUEL

Walter Patrick Gramm, Winnetka, and Lowell E. Wills, Chicago, Ill., assignors to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 3, 1966, Ser. No. 547,162

5 Claims. (Cl. 44—40)

1. A package of charcoal fuel which is capable of ready ignition and continuous burning without the use of auxiliary starter fuel, consisting essentially of a plurality of pieces of charcoal impregnated with from about 10 to 20% by weight of an essentially paraffinic petroleum hydrocarbon fraction, the 5 to 95% volume portion having a boiling range of about 350 to 400° F., and said impregnated charcoal pieces being sealed in a plastic container consisting essentially of a 3 ply laminate of (1) coated cellophane film having a weight of from about 15,000 to 30,000 square inches per pound, (2) coated polypropylene film having a thickness of about 0.5 to 0.7 mil, and (3) nylon film having a thickness of about 0.5 mil, the cellophane film and the nylon film forming the inner and outer plys, respectively, of said laminate container, said cellophane and polypropylene films being coated on both sides with an adhesive polymer containing a residual amount of organic solvent to said films.

3,351,444
GRANULAR FIRE STARTING MATERIAL

Jack D. Ryan and James J. Nold, both of 451 Concord Ave., and Robert D. Hughes, 247 8th St., all of Elyria, Ohio 44035

No Drawing. Filed Mar. 28, 1966, Ser. No. 537,701

4 Claims. (Cl. 44—41)

1. A granular fire starting material comprising from 50 to 90% of a non-combustible particulate absorbent mineral, from 5 to 20% of an organic solvent having a flash point from 120° to 150° F., from 1 to 10% of a solvent soluble surface active agent and the remainder a fibrous textile material, said fibrous material serving as a binding agent for the particulate absorbent material to provide granules ranging in size from 4 to 300 mesh.

3,351,445
METHOD OF MAKING A BATTERY PLATE

William S. Fielder, Madison, Wis. (3453 La Salle St., Racine, Wis. 53402); Norman A. Rautiola, Dallas, Tex. (1000 Browns Lake, Jackson, Mich. 49203); and John M. Diehl, 5729 Elder Place, Madison, Wis. 53705

Original application Aug. 7, 1963, Ser. No. 300,451. Divided and this application May 18, 1966, Ser. No. 574,838

1 Claim. (Cl. 65—3)

The method of making a secondary battery plate comprising drawing siliceous fibers from a mass of molten siliceous material, coating said fibers with metal consisting of at least 87% lead while drawing them from said molten mass, forming masses of fibers into the form of a sheet, adding to said coated fibers from 12% to 33% by weight of said fibers of particles of metal consisting of at least 87% lead which pass a 90 mesh screen and do not pass a 400 mesh screen, heating the resultant mass to a temperature of from 120° C. to 170° C., applying a pressure of from 300 p.s.i. to 1200 p.s.i. to said mass while it is heated at said temperature and maintaining said pressure thereon for at least 30 seconds, then removing the article from the pressure and temperature applying means.

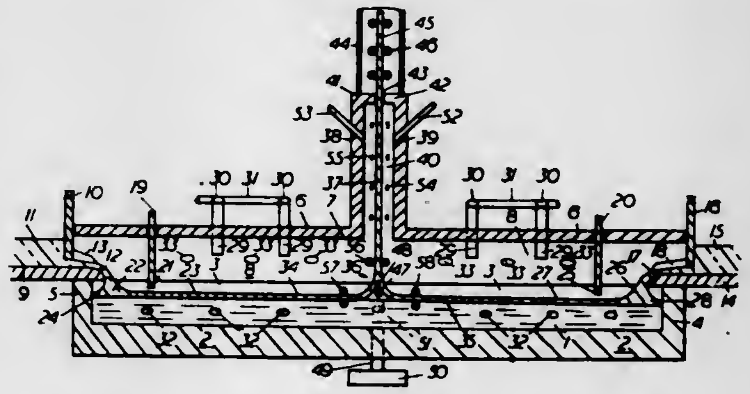
3,351,446
METHOD AND APPARATUS FOR VERTICALLY DRAWING GLASS FROM A MOLTEN METAL BATH

David Frost Pilkington, Aughton, near Ormskirk, and George Alfred Dickinson, St. Helens, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed Nov. 19, 1963, Ser. No. 324,677

Claims priority, application Great Britain, Nov. 20, 1962, 43,926/62

10 Claims. (Cl. 65—65)



1. A method of manufacturing flat glass in ribbon form, comprising the steps of individually feeding molten glass at a controlled rate to opposite ends of an elongated bath of molten metal, advancing the glass along the bath from either end under thermal conditions which ensure unhindered lateral flow of the advancing glass to form two oppositely moving buoyant layers of molten glass advancing towards each other in ribbon form, cooling the ribbons of glass until they are sufficiently viscous to be raised from the bath, bending the cooled ribbons away from the bath surface to a confluence above the bath surface, at which confluence the undersurfaces of the ribbons coalesce to form a single ribbon, and drawing said single ribbon of glass upwardly from said confluence.

8. Apparatus for manufacturing flat glass in ribbon form, comprising an elongated tank structure containing a bath of molten metal, inlets for glass at opposite, widely-spaced ends of the tank structure, means for delivering glass on to the bath through said inlets and for advancing the glass along the bath as two ribbons of glass moving towards a confluence of the ribbons spaced above the bath surface in a central region of the tank structure at which confluence the undersurfaces of the ribbons coalesce and for bending the ribbons away from the bath surface to said confluence, temperature regulators in the tank structure on either side of said central region for cooling the advancing glass ribbons, a drawing chamber extending upwardly above said central region of the tank structure, means for controlling the position of lift-off of the ribbons from the bath surface, and means associated with the drawing chamber for continuously drawing sheet glass upwardly through the drawing chamber from said confluence.

3,351,447

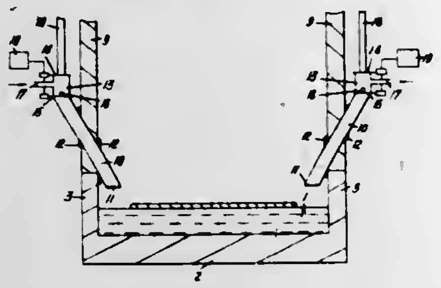
METHOD AND APPARATUS FOR THE MANUFACTURE OF FLAT GLASS ON A MOLTEN METAL BATH

Jack Lawrenson, St. Helens, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed Aug. 11, 1964, Ser. No. 388,810

Claims priority, application Great Britain, Aug. 15, 1963, 32,360/63

8 Claims. (Cl. 65—65)



1. Apparatus for use in the manufacture of flat glass during which glass is advanced in ribbon form along a bath of molten metal, comprising an elongated tank structure containing the bath of molten metal, means for feeding glass on to the bath and advancing the glass in ribbon form along the bath towards an outlet in the tank structure, and at least one tube extending through the tank structure above the bath and terminating in proximity to the bath surface, said tube being terminated by a wire mesh so that a pellet comprising additive metal introduced into the tube is supported on the wire mesh as the pellet melts and falls in a liquid form into the bath of molten metal.

4. In the manufacture of flat glass during which glass is in contact with a molten metal surface, feeding into the molten metal an additive element with which oxygen and sulphur present in the molten metal react in preference to reaction with the molten metal, by supporting unmelted material comprising said additive element adjacent the molten metal surface for a time sufficient to permit the material to melt and run into the molten metal.

3,351,448

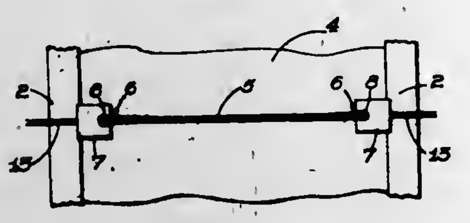
PROCESSES AND APPARATUS FOR THE MANUFACTURE OF SHEETS OF GLASS BY DRAWING

Arthur Broman and Raymond Bats, Marcinelle, Belgium, assignors to Glaverbel, Brussels, Belgium

Filed June 22, 1964, Ser. No. 376,838

Claims priority, application Luxembourg, June 29, 1963, 43,977

2 Claims. (Cl. 65—91)



1. The process of reducing the tensions in the edges of a sheet of glass which is drawn upwardly from a bath of molten glass, which consists in producing along each of such edges at a place located in adjacently spaced relation above the upper surface of the glass bath, a bulb of glass having its greatest cross-sectional dimension spaced outwardly from the body of the glass sheet and being of a size to constitute a reserve for heat in sufficent degree to moderate the cooling thereof above such place, and simultaneously at the place of formation of such bulb utilizing part of the heat radiated from the portion of the bath from which such edge is drawn to effect the formation of such bulb, reflecting part of such radiant heat back over the portion of such edge between such place and the bath and to such bath portion, and impeding the downward flow of cold gases past such place, whereby the glass in such edge is maintained heated to said place of formation and its solidification beyond such place is retarded to the extent that the creation of tensions in the glass in such edge are diminished.

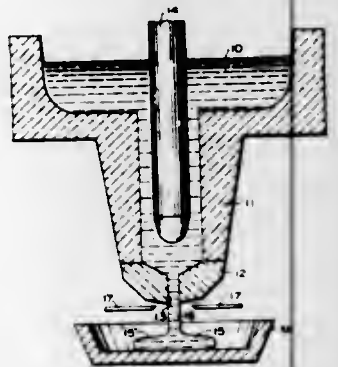
3,351,449

FORCED STREAM FEEDING THROUGH ORIFICE

Raymond R. Ambrogi, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed June 15, 1964, Ser. No. 375,269

1 Claim. (Cl. 65—122)



In the delivery of molten glass downwardly through a needle-controlled orifice, an improved process for delivering metered charges of molten glass having a viscosity below 1000 poises which comprises, moving a needle downwardly within an elongated confined pool of molten glass having a viscosity below 1000 poises and forcing such molten glass downwardly and outwardly through a restricted orifice in a continuous stream, initially puddling such stream in a forming device below such orifice, continuing a constant uniform flow of such stream to maintain the ratio of the overall length of the stream dispensed to its cross-sectional diameter greater than 15 and forming a circular patty centrally of the forming device, shearing such stream immediately below the orifice, and then providing zero flow at the orifice by raising the needle within such confined pool of low viscosity glass to hold the glass at the orifice without flow for a desired period of time.

3,351,450

APPARATUS FOR THE MANUFACTURE OF FLAT GLASS ON A MOLTEN METAL BATH

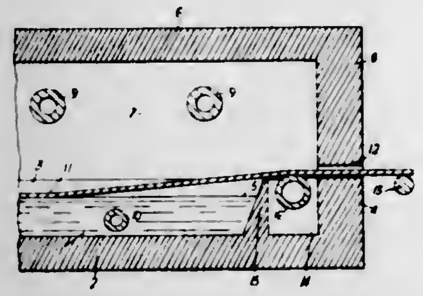
Frederick William Silverwood, Appley Bridge, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed Oct. 11, 1963, Ser. No. 315,615

Claims priority, application Great Britain, Oct. 11, 1962, 38,626/62

8 Claims. (Cl. 65—157)

1. Apparatus for use in the manufacture of flat glass during which the glass is advanced along a bath of molten metal, comprising a tank structure containing a bath of molten metal, temperature regulators for maintaining thermal conditions along the bath which ensure that the ribbon of glass is sufficiently stiff to permit it to be taken unharmed through an outlet from the bath, ribbon supporting means arranged within the tank structure near the outlet from the bath and having an operative surface portion above the level of the bath for taking up the ribbon from the bath surface and then discharging the ribbon through the outlet, a roof structure extending over the tank structure to define a headspace over the bath and the ribbon supporting means, and means for maintaining a plenum of protective atmosphere in the headspace.



3,351,451

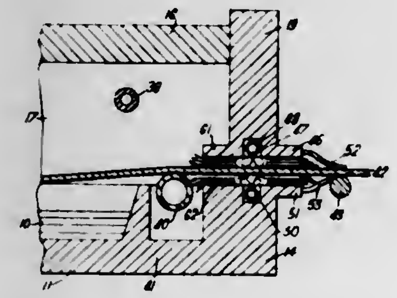
APPARATUS FOR FORMING GLASS RIBBON ON MOLTEN METAL WITH GAS SEAL MEANS

Richard Barradell-Smith, St. Helens, and James R. McLaggan, Windle, St. Helens, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed Oct. 11, 1963, Ser. No. 315,616

Claims priority, application Great Britain, Oct. 11, 1962, 38,625/62

10 Claims. (Cl. 65—157)



1. Apparatus for the manufacture of flat glass in ribbon form comprising a tank structure containing a bath of molten metal, a roof structure defining a headspace over the bath, means for supplying protective atmosphere to said headspace and for maintaining therein a plenum of said atmosphere, means for delivering glass to the bath through an inlet and for advancing the glass along the the bath towards an outlet through which the glass in ribbon form is discharged from the bath, said outlet being at or above the level of the bath and providing a smooth narrow elongated surface over and sufficiently close to the position of a glass ribbon to be advanced therethrough to form a laminar gas-flow passageway between said surface and said ribbon, gas ejection means extending transversely of said ribbon and disposed in said surface, and means for supplying pressurized gas for said ejection means.

3,351,452

APPARATUS FOR SUPPORTING A RIBBON OF GLASS ON A MOLTEN METAL BATH WITH GLASS RIBBON HEEL FLOW MEANS

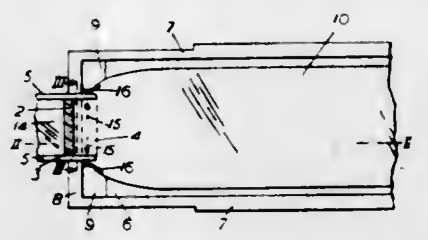
Albert Sidney Robinson, Birkdale, Southport, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed Nov. 4, 1963, Ser. No. 321,005

Claims priority, application Great Britain, Nov. 9, 1962, 42,506/62

11 Claims. (Cl. 65—182)

4. Apparatus for the manufacture of flat glass in ribbon form by advancing the glass along a bath of molten metal, which comprises an end wall element at the inlet end of the bath, a spout element overhanging said end wall and arranged to deliver glass to the surface of said bath forwardly of said end wall so that part of the glass can move forwardly to form part of said ribbon and part of the glass can move rearwardly to form a heel, and a distortion in at least one of said wall and spout elements at one portion of the width thereof for enforcing a greater mass flow in one area of said heel than in other areas thereof, thereby causing a displacement of molten glass in the heel which causes continuously a sufficient escape of molten glass from the heel to avoid the establishment of a stagnant zone in the heel of molten glass.



3,351,453

PROCESS OF MANUFACTURING IN A ROTATING SOLID BED SUBSTANTIALLY DRY, SOLID FERTILIZER CONTAINING GRANULATED AMMONIUM PHOSPHATE

George F. Moore and Thomas Beer, Tampa, Fla., assignors, by mesne assignments, to Tennessee Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 20, 1960, Ser. No. 63,876

8 Claims. (Cl. 71—34)

3. A one-step continuous process for the production of granular high-analysis fertilizer having ammonium phosphates as its principal phosphatic component which comprises continuously introducing a substantial portion of fines recycled from a later mentioned sizing step into a bed in a substantially horizontally rotating drum; continuously introducing phosphoric acid into the upper end of said bed in the drum; continuously introducing ammonia into the bed in quantity sufficient to neutralize and to cause a reaction with phosphoric acid to a degree such that ammonium phosphates comprising monoammonium phosphate and diammnoium phosphate are formed together with heat of reaction; continuously rolling discrete particles of granular fertilizer forward in said bed from the upper end to the lower end of the drum; continuously withdrawing granular fertilizer from the lower end of the drum at a temperature in the range up to about 212° F.; supplying substantially all of the heat for maintaining said temperature from the said heat of reaction; maintaining moisture content of said granular fertilizer leaving the drum in the range from about 1.0% to about 8.0%; sizing the withdrawn granular fertilizer; separating the fine portion thereof; separating a portion of product-size fertilizer; crushing the remaining portion of product-size fertilizer and all the over-size fertilizer; and recycling said crushed fertilizer together with said fine portion as fines to the horizontally rotating drum.

3,351,454

SILICOFLUORIDE INHIBITION OF CALCIUM NITRATE FORMATION IN NITROCHALK PRODUCTION

Sydney Atkin, Springfield, N.J., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 4, 1964, Ser. No. 394,599

5 Claims. (Cl. 71—59)

1. In the method for producing nitrochalk which comprises mixing molten ammonium nitrate with powdered limestone, and cooling the resulting fluid mixture to produce solid product nitrochalk, the improvement which

comprises adding a small but effective amount of a silicofluoride compound selected from the group consisting of sodium silicofluoride, potassium silicofluoride and ammonium silicofluoride to said fluid mixture, whereby the formation of calcium nitrate in said solid nitrochalk is effectively suppressed.

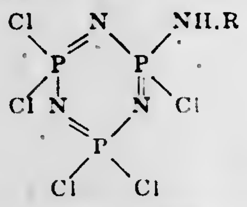
3,351,455
AMMONIUM SULFATE-AMMONIUM BISULFATE FERTILIZER AND METHOD OF MAKING
Walter L. Burns, Chandler, Ariz., assignor to Arizona Agrochemical Corporation
Filed Aug. 28, 1964, Ser. No. 395,107
8 Claims. (Cl. 71—61)

1. In a continuous process for preparing a granular fertilizer product including contacting a recirculating stream of granulation nuclei comprising undersize particles of said product in a granulation zone with a reaction mixture providing the desired fertilizer composition, thereby to coat said nuclei with said composition, and repeating the contacting step until the coated nuclei reaches product-size, the improvements in combination with said process whereby a substantially non-caking, free flowing granular product containing a substantial proportion of ammonium sulfate is continuously prepared comprising contacting said nuclei with a reaction mixture comprising ammonia and sulfuric acid wherein the mol ratio of ammonia to sulfuric acid is adjusted to provide a coated nuclei stream effluent the granulation zone having a bulk pH of less than 2.5.

8. A new manufacture comprising discrete granules of a composition consisting essentially of ammonium sulfate and ammonium bisulfate in an amount from about 10 to about 20 parts per weight of ammonium bisulfate per 100 parts of said composition.

3,351,456
METHOD OF DESTROYING UNDESIRED PLANT GROWTH
Harmannus Koopman and Jasper Daams, Van Houtenlaan, Weesp, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Original application Sept. 12, 1963, Ser. No. 308,363. Divided and this application Oct. 14, 1965, Ser. No. 511,009
5 Claims. (Cl. 71—86)

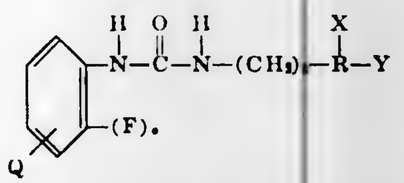
1. The method of destroying undesired plant growth comprising contacting the undesired plant with a herbicidally effective amount of pentachloro-alkylaminocyclotriphosphazatrienes of the formula



wherein R is an alkyl radical containing from 1–8 carbon atoms.

3,351,457
HERBICIDAL COMPOSITION AND METHOD
Raymond W. Luckenbaugh, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Original application Dec. 2, 1964, Ser. No. 415,484, now Patent No. 3,309,192, dated Mar. 14, 1967. Divided and this application Mar. 7, 1966, Ser. No. 532,106
The portion of the term of the patent subsequent to Mar. 13, 1984, has been disclaimed
13 Claims. (Cl. 71—120)

1. Method for preparing seed suitable for establishing a perennial turf grass substantially free from crabgrass comprising applying to perennial turf grass seed, based on a weight of 174 pounds of perennial turf grass seed, from 1 to 55 pounds of a compound of the formula:



wherein:

R is selected from the group consisting of saturated cycloalkyl of 5 through 8 carbon atoms and saturated bicycloalkyl of 7 through 8 carbon atoms;

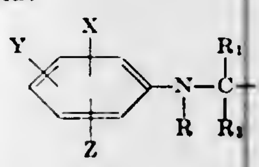
X and Y are each separately selected from the group consisting of hydrogen, halogen, methyl and ethyl;

a and *t* are each separately selected from the group consisting of 0 and 1;

Q is selected from the group consisting of hydrogen and methyl; and with the limitation that when R is selected from the group consisting of cycloheptyl, cyclooctyl and bicycloalkyl, Q must be in the meta position if methyl and X and Y are separately selected from the group consisting of hydrogen, halogen and methyl.

3,351,458
HERBICIDAL COMPOSITIONS AND PROCESSES OF CONTROLLING UNDESIRABLE PLANT SPECIES IN THE PRESENCE OF CROPS THEREWITH
Donald David Bondarenko, Trenton, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed June 30, 1964, Ser. No. 379,347
8 Claims. (Cl. 71—121)

1. A method for controlling undesirable plant species in the presence of planted and growing crops, comprising applying to the planted area a herbicidally effective amount of a compound selected from the group consisting of those having the formula:



wherein X, Y and Z represent radicals selected from the group consisting of hydrogen, halogen, halolower alkyl, lower alkyl and lower alkoxy radicals; R is selected from the group consisting of hydrogen, hydroxyl and nitroso radicals; and R_1, R_2 and R_3 are lower alkyl and their herbicidally effective salts.

3,351,459
PELLETING IRON ORE FINES
King L. Mills, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 479,839
6 Claims. (Cl. 75—3)

1. A process for producing partially reduced iron ore and coke pellets which comprises the steps of:

(1) mixing iron ore fines and heavy coke-forming hydrocarbon in proportions to form pellets;

(2) forming pellets of the mixture of step (1);

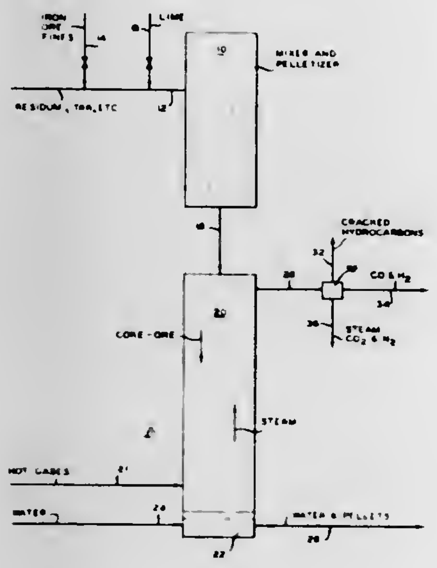
(3) gravitating the pellets of step (2) thru a coking zone in an ascending stream of hot combustion gas so as to maintain a temperature in said zone in the range of 800 to 2000° F., thereby cracking said hydrocarbon to form coke and lighter hydrocarbons;

(4) producing hard pellets of coke and iron ore in the coking zone of step (3);

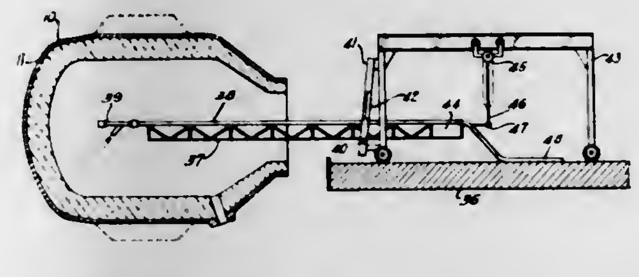
(5) gravitating the pellets of step (4) directly from the coking zone into water to cool said pellets and form steam;

(6) passing the steam formed in step (5) upwardly thru said coking zone so as to react with a portion of the coke in said pellets to form CO and H_2, said CO and H_2 effecting partial reduction and sintering of iron ore in said pellets; and

(7) recovering the cooled pellets from step (6).

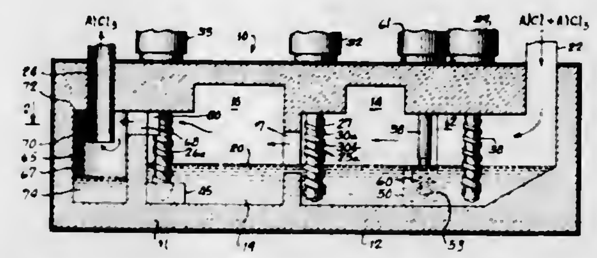


3,351,460
METHOD FOR PROLONGING THE LIFE OF REFRACTORY LININGS IN FURNACES OF THE KALDO, LINZ-DONOWITZ, DE MAY OR BASIC OR ACID CONVERTER TYPES
Raymond J. Demaison, Bronx, N.Y., assignor to Quigley Company, Inc., a corporation of New York
Filed Jan. 7, 1965, Ser. No. 424,071
13 Claims. (Cl. 75—60)



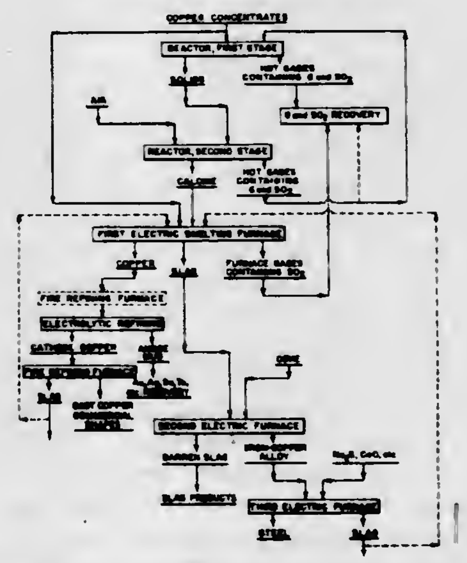
1. A method for prolonging the life of the refractory lining of a furnace of the acid or basic converter type by spraying upon the furnace lining in its cylindrical barrel and conical top portions a series of protective coatings of refractory material in the form of a wet slurry which will adhere to said lining and become bonded thereto as it is applied, comprising the step of operating the furnace throughout the life of the lining according to a programmed schedule of steel producing operations and lining spraying operations, the lining spraying operations being performed by temporarily discontinuing the steel producing operations for repeated time intervals of sufficient duration to apply the protective refractory coatings in amounts sufficient to maintain the lining at a sufficient thickness to prevent failure thereof until the relining of the furnace becomes necessary, the total time elapsing in the steel producing operations before relining of the furnace being substantially greater than the total time elapsing in the lining spraying operations, whereby a maximum steel production may be obtained during the prolonged life of the lining.

3,351,461
PROCEDURES FOR DECOMPOSING GASEOUS ALUMINUM SUBHALIDE
Frederick William Southam, Arvida, Quebec, Canada, assignor to Aluminium Laboratories Limited Dominion, Montreal, Quebec, Canada, a corporation of Canada
Filed May 19, 1965, Ser. No. 456,977
14 Claims. (Cl. 75—68)



3. In procedure for refining aluminum wherein impure aluminum-containing metallic material is exposed to a flow of aluminum normal halide gas in a confined region at a temperature for reaction of said normal halide gas with aluminum of said metallic material to produce aluminum subhalide gas, the process of decomposing said aluminum subhalide gas to recover purified aluminum metal and aluminum normal halide gas, which comprises: advancing a flow of gas containing said aluminum subhalide gas from said confined region to a first locality; cooling said flow of gas at said first locality to a temperature above the melting point of aluminum, to decompose the subhalide; conducting said flow of gas at said last-mentioned temperature from said first locality to a second locality, said flow of gas as conducted to said second locality including aluminum normal halide gas produced by decomposition of said subhalide gas in said first locality and carrying droplets of aluminum metal fog; separating said fog droplets from said flow of gas at said second locality by coalescing said droplets therein at a temperature above the melting point of aluminum, to collect said droplets as a coalesced liquid and thereby to effect essentially complete removal of said droplets from said flow of gas; and circulating said flow of gas from said second locality to said confined region.

3,351,462
ELECTRIC FURNACE SMELTING OF COPPER CONCENTRATES
Charles Arentzen, Theodore G. Fulmor, and Francis L. Holderreed, Anaconda, Mont., assignors to The Anaconda Company, New York, N.Y., a corporation of Montana
Continuation of application Ser. No. 121,251, June 30, 1961. This application Jan. 29, 1965, Ser. No. 430,247
14 Claims. (Cl. 75—74)



1. A process for producing metallic copper from copper concentrates containing iron sulfide and copper

sulfide which comprises roasting the copper concentrate in the presence of oxygen at a sufficiently high temperature to convert substantially all the iron sulfide to iron oxide and at least a part of the copper sulfide to copper oxide, and smelting the roasted concentrate directly in an electric furnace in the presence of slag forming agents and an amount of sulfur corresponding in molecular proportion to about one-sixth of the amount of copper present at a temperature sufficiently high to cause the sulfur to react with the copper oxide to reduce the copper oxide to metallic copper and to cause the iron oxide to form a molten slag with the slag-forming agents.

3,351,463

HIGH STRENGTH NICKEL-BASE ALLOYS

Alexander G. Rozner and William J. Buehler, Bethesda, Md., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Aug. 20, 1965, Ser. No. 481,436

10 Claims. (Cl. 75—170)

1. An alloy comprising 53.5–56.5 weight percent nickel the remainder being essentially titanium, said alloy having a yield strength greater than 100,000 p.s.i., an elongation greater than 7%, an ultimate tensile strength greater than 160,000 p.s.i., a strength to density ratio greater than 400×10^3 inches and a magnetic permeability of essentially unity.

3,351,464

METHOD FOR THE POWDER METALLURICAL FORMING OF METAL POWDERS BY HOT CASTING

Andor Budincsevits, Budapest, Hungary, assignor to Tavkozlesi Kutato Intezet, Budapest, Hungary

Filed July 25, 1966, Ser. No. 567,778

10 Claims. (Cl. 75—212)

1. A powder metallurgical process, comprising coating metal powder with a film of a mixture of oleic acid and paraffin wax of about 80° C. to enhance the wetability of the powder by paraffin wax, thereafter admixing the coated powder with hot paraffin wax to form a fluid paste, and thereafter pressing the fluid paste into a mold.

3,351,465

PHOTOGRAPHIC DIFFUSION TRANSFER PROCESSES UTILIZING A PROCESSING COMPOSITION CONTAINING POTASSIUM AND LITHIUM IONS

Dorothy C. Mendelsohn, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,863

7 Claims. (Cl. 96—3)

1. A process of forming multicolor images by diffusion transfer comprising the steps of developing an exposed photosensitive element with an aqueous alkaline processing composition having a pH of at least 12 and containing potassium hydroxide in a concentration of from about 2 to 15%, by weight, and also containing lithium ions in a concentration of about 1 to 15%, by weight, of the total alkali metal ions present, said photosensitive element containing a layer of a blue-sensitive silver halide emulsion, a layer of a green-sensitive silver halide emulsion, and a layer of a red-sensitive silver halide emulsion, said silver halide emulsions being superposed on the same support and having associated therewith, respectively, a yellow dye developer, a magenta dye developer, and a cyan dye developer, each of said dye developers containing a hydroquinonyl radical; forming an imagewise distribution of unoxidized dye developer in undeveloped areas of each said silver halide emulsion layers as a function of said development, transferring to a superposed image-receiving element, by diffusion, a quantity of each said imagewise distribution of unoxidized dye developer sufficient to form a visible multicolor image thereon, said image-receiving element comprising a support, an image layer thereon including a mordant for a dye, and a layer thereon containing a polymeric acid, reducing the pH of said image-receiving layer by extraction of alkali ions after said transfer has been effected and thereafter separating said image-receiving element from said superposed relationship.

3,351,466

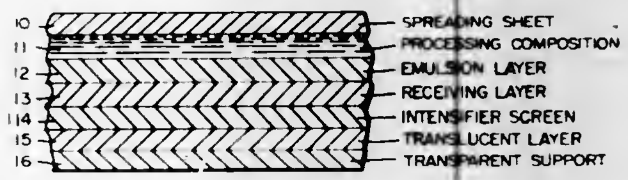
RADIOGRAPHS VIEWABLE BY REFLECTED OR TRANSMITTED LIGHT

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed July 8, 1963, Ser. No. 293,326

The portion of the term of the patent subsequent to May 25, 1982, has been disclaimed

6 Claims. (Cl. 96—29)



4. A process for preparing radiographs which comprises: (1) providing an integral film assembly comprising, in order, a transparent support, a translucent material and an intensifier screen in a layer above said support, an image-receiving layer above said intensifier screen and a photosensitive silver halide emulsion layer above said image-receiving layer; (2) exposing said film assembly through said support to radioactive rays; (3) developing said exposed emulsion; and (4) forming a positive silver image by transferring, by imbibition, an imagewise distribution of unexposed silver halide to said image-receiving layer, thereby forming a positive radiograph which is both a reflection print and a transparency.

3,351,467

METHOD OF FIXING PHOTOGRAPHICALLY EXPOSED OXYGEN-SENSITIVE FREE RADICAL PHOTOSENSITIVE FILM

Robert H. Sprague, Chagrin Falls, John A. Stewart, Parma, and James M. Lewis, Cleveland, Ohio, assignors to Horizons Incorporated, Cleveland, Ohio, a corporation of New Jersey

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,357

8 Claims. (Cl. 96—48)

1. A photographic method which comprises preparing an oxygen sensitive free radical photosensitive film, photographically exposing said film and thereafter applying a protective layer to at least one surface of said image-bearing photographically exposed film, said protective layer consisting essentially of a film-forming plastic and an inhibitor selected from the group consisting of ferric chloride, cobalt chloride, cobalt naphthenate and cobaltous thiocyanate dispersed throughout said film-forming plastic.

3,351,468

THIOPHENE COMPOUNDS USED AS COLOR COUPLERS FOR MAGENTA DYESTUFFS

Alfred Froehlich, Marly-le-Grand, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

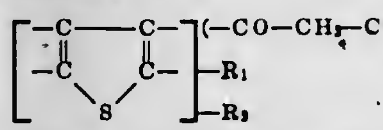
No Drawing. Filed Jan. 14, 1964, Ser. No. 337,543

Claims priority, application Switzerland, Jan. 19, 1963, 647/63

8 Claims. (Cl. 96—56.3)

7. In a process for the production of a color photograph with the aid of silver halide and color couplers the step which comprises developing a magenta image by

means of a primary aromatic amino photographic developer which contains as color coupler a thiophene compound of the formula



in which R_1 and R_2 each represents a member selected from the group consisting of a hydrogen atom, an aryl radical, an alkylaryl radical, an acylamino group containing at least 10 carbon atoms, a methylmercapto radical of the formula $—S—CH_2—R_5$, in which R_5 represents a member selected from the group consisting of a hydrogen atom, a $—COOH$, $—COOCH_3$, $—COOC_2H_5$ and $—CN$ radical.

3,351,469

PHOTOGRAPHIC IMAGE-RECEIVING MATERIAL

Louis Maria De Haes, Edegem, Belgium, assignor to Gevaert Photo-Producten N.V., Mortsel, Belgium, a company of Belgium

No Drawing. Filed Apr. 6, 1966, Ser. No. 540,510

Claims priority, application Netherlands, Oct. 20, 1960, 257,057

4 Claims. (Cl. 96—76)

1. An image-receiving material for use in the silver complex diffusion transfer process comprising successively a support, a gelatin image-receiving layer containing development nuclei and an alginate surface layer, the former layer being hardened in situ by a hardening agent for gelatin present in the coating composition of the alginate layer, and the latter layer being insolubilised in situ by a suitable water-soluble metal salt present in the coating composition of the image-receiving layer.

3,351,470

NOVEL PHOTOGRAPHIC PRODUCTS, PROCESSES AND COMPOSITIONS

William J. McCune, Jr., South Lincoln, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed July 25, 1963, Ser. No. 297,697

3 Claims. (Cl. 96—77)

1. A photographic film unit adapted for performing a diffusion transfer process in a lighted area, said film unit comprising:

(a) a photosensitive element comprising a substantially light-opaque support carrying blue-sensitive, green-sensitive and red-sensitive silver halide emulsion layers, said emulsions respectively having associated therewith a yellow dye developer, a magenta dye developer and a cyan dye developer, each of said dye developers being present in a layer behind its respective silver halide emulsion layer, said support layer possessing sufficient opacity to substantially prevent light being transmitted transversely therethrough to said photosensitive layers;

(b) an image-receiving element adapted to be brought into superposed relationship with said photosensitive element, said image-receiving element including a substantially light-opaque support and an image-receiving layer, said support possessing sufficient opacity to substantially prevent light being transmitted transversely therethrough to the photosensitive layers when said image-receiving element is in superposed relationship with said photosensitive element, said image-receiving element also including a mask releasably bonded to the outer surface of said image-receiving layer and defining an image area thereon;

(c) said image-receiving element containing at least one polymeric layer capable of transmitting light incident upon the edge of said layer inwardly from said edge by internal reflection a distance greater than the width of said mask so that light entering said edge may be emitted inwardly of said mask when said photosensitive element is in superposed processing relationship with said image-receiving element, said polymeric layer containing titanium dioxide in an amount less than 1%, by weight, of said polymer, said concentration of titanium dioxide being effective to prevent said inward or lateral transmission of light incident on said edge, said concentration of titanium dioxide being insufficient to visibly color said polymeric layer; and

(d) a rupturable container releasably holding a processing composition and so positioned as to be adapted to release said processing composition for distribution between said image-receiving element and said photosensitive element as said elements are brought into superposed relationship, said processing composition comprising water and alkali, a film-forming material effective to increase the viscosity of said composition, and carbon black in an amount approximately 1% or less, by weight, of said water, said quantity of carbon black being effective to prevent lateral transmission of light entering an edge of a layer of said processing composition.

3,351,471

SOLUBILIZED FUMARIC ACID COMPOSITIONS AND METHOD OF MAKING SAME

Walter R. Demler, Hamburg, and Monroe D. Edelman, Margaret R. Hallinan, and James M. Kosmala, Buffalo, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 10, 1964, Ser. No. 381,931

41 Claims. (Cl. 99—78)

1. A fumaric acid-containing composition having an increased rate of solubility in cold water which comprises ultrafine fumaric acid having a particle size of not more than 10 microns and a material selected from the group consisting of anionic and nonionic surfactants.

3,351,472

HONEYBUTTER AND PROCESS OF MANUFACTURE

Roy D. Finley and Kenneth A. Hollowell, Greenville, Ill., assignors to Pet Incorporated, a corporation of Delaware

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,323

13 Claims. (Cl. 99—146)

1. A spreadable, solid food product in which the dextrose is crystallized consisting essentially of honey, milk, sugar and water, the solids of which comprise 50–60% honey solids, 2–20% milk solids including 1–10% fat selected from the group consisting of milk fat, other animal fat and vegetable fat, 5–15% added dextrose and 5–15% corn syrup solids, the total solids in said product being about 68–82%.

3,351,473

FILLING APPARATUS

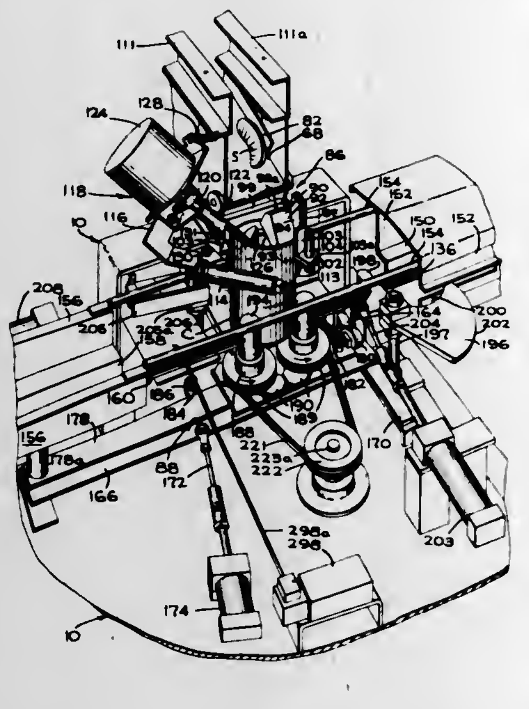
Wilber C. Belk, Lakeland, Fla., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Nov. 6, 1964, Ser. No. 409,472

20 Claims. (Cl. 99—186)

1. A method for filling containers with food products comprising the steps of supplying a row of spaced food products, feeding said products into a container and against the inside cylindrical wall of the container, and while so feeding rotating said container at a speed such

that the centrifugal force acting on said products results in a frictional resistance force between the products and the container wall which is just less than the gravitational force acting on the products so that the products slowly slide down the wall of the container.



3,351,474

GLASS COMPOSITIONS RESISTANT TO DISCOLORATION, METHOD OF MAKING AND ARTICLES PRODUCED THEREFROM

Erwin C. Hagedorn, Oregon, and Dallas P. Hall, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,623

11 Claims. (Cl. 106—52)

1. A method for making glass compositions which normally discolor when exposed to sterilizing radiation, the improvement whereby undesirable browing discoloration of the glass when subjected to radiation is substantially reduced, comprising incorporating in the base glass composition from about 0.10 to about 0.40% by weight of CuO, based on the weight of the base glass composition.

3,351,475

GLASS COMPOSITIONS, RESISTANT TO DISCOLORATION METHODS OF MAKING SAME AND ARTICLES PRODUCED THEREFROM

Erwin C. Hagedorn, Oregon, and Dallas P. Hall, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,631

6 Claims. (Cl. 106—52)

1. In a method for making silicate glass compositions which normally tend to discolor upon exposure to sterilizing radiation, the improvement whereby the glass compositions resist browning discoloration and undergo a specific desired transition in color upon exposure of the glass compositions to radiation thereby indicating to the observer that the glass has been subjected to radiation, which improvement comprises modifying the base glass composition by having present in the glass composition from about 0.25% to about 0.60% by weight of MnO_2 and about 0.002% by weight of CoO.

3,351,476

CHEMICALLY BONDED REFRACTORY SHAPES

Ernest P. Weaver and Ben Davies, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa.

No Drawing. Filed Mar. 23, 1966, Ser. No. 536,597

10 Claims. (Cl. 106—56)

1. Cold bonded refractory shapes consisting essentially of refractory grain mixed with from 3 to 8 parts, by weight, of a bonding mixture per 100 parts, by weight, of refractory grain and pressed into a desired shape for subsequent baking, said bond mixture consisting of two immiscible liquids; namely, from ½ to 2 parts, by weight, of a water-soluble aqueous heat setting bond, from 1 to 3½ parts, by weight, of creosote, and the remainder of the bonding mix being a powdered pitch.

2. Cold bonded refractory shapes according to claim 1 wherein said refractory grain are basic refractory grain.

7. Cold bonded refractory shapes according to claim 2 wherein said bonding system is composed of about 2½ parts of creosote, about 1 part of lignin liquor, about ½ part of carbon black and about 3 parts of powdered pitch.

3,351,477

TREAT SOLUTION FOR RENDERING CARBONACEOUS ARTICLES OXIDATION RESISTANT

Rudolph W. Wallouch, Lewiston, N.Y., assignor to Union Carbide Corporation, a corporation of New York

Filed Jan. 27, 1966, Ser. No. 523,343

7 Claims. (Cl. 106—56)

5. An oxidation resistant article consisting of a carbonaceous matrix selected from the group consisting of carbon and graphite having prior to baking a composition contained therein, said composition consisting essentially of boric anhydride, phosphorous pentoxide and zinc oxide in a molar ratio of between 0:1.0:0.5 and 1.0:1.0:2.0.

3,351,478

CONCRETE MIX WITH SET RETARDING ADMIXTURE

Vance H. Dodson, Needham, and Emery Farkas, Newtonville, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed June 18, 1964, Ser. No. 376,227

5 Claims. (Cl. 106—90)

1. A concrete mix comprising a Portland cement and a set-retarding admixture comprising (a) a retarder selected from the group consisting of lignosulfonic acid and salts thereof, gluconic acid and salts thereof and adipic acids and salts thereof and (b) a water soluble sulfate wherein the ratio of (a) to (b) is 6:1 to 1:2 and (b) is present at a level ranging from 0.01 to 10% by weight based on the weight of the cement.

3,351,479

PAPER COATING COMPOSITIONS AND PROCESSES

William P. Fairchild, San Diego, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware

No Drawing. Filed May 14, 1963, Ser. No. 280,459

5 Claims. (Cl. 106—208)

1. A paper coating composition comprising as essential constitutents water, a mineral pigment, sodium alginate, and glyoxal, said composition having a total solids content within the range of 20% to 60% by weight; the ratio of sodium alginate to said mineral pigment being within the range of 10 parts to 20 parts per 100 parts of said pigment; and said glyoxal being present within the range of 10% to 50% by weight of said sodium alginate.

3,351,480

STARCH-REMOISTENING ADHESIVE COMPOSITION

Merle J. Mentzer, Mokena, Ill., assignor to Corn Products Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 2, 1965, Ser. No. 445,274

7 Claims. (Cl. 106—210)

1. A process for the preparation of an adhesive composition which comprises admixing ungelatinized starch chemically modified to such an extent that the starch is substantially free of set back after gelatinization in water, a plasticizer, and water in proportions such that the ratio of starch to plasticizer exceeds about 2:1, and the resulting mixture contains between about 30% and about 70% solids by weight, adjusting the pH of the resulting mixture to between about 8 and about 12, and heating the mixture to a temperature sufficient to substantially gelatinize the starch.

3,351,481

PROCESS OF PRODUCING PHTHALOCYANINE PIGMENTS

Arthur P. Hopmeier, Upper Saddle River, and John W. Ingram, Cranford, N.J., assignors to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 12, 1964, Ser. No. 403,372

13 Claims. (Cl. 106—288)

1. A process which comprises subjecting a mixture consisting of a metal phthalocyanine. from 2 to 10 parts of an inorganic salt of a fine crystalline size, and from 0.4 to 1.5 parts of a solvent selected from the group consisting of morpholine, dimethylsulfoxide, polyglycolamines and mixtures thereof, to intensive mixing and shearing at a temperature of from 25–150° C. for a period of time of from 2 to 10 hours, said parts being parts by weight per part of metal phthalocyanine, and removing said inorganic salt and said solvent from said mixture.

3,351,482

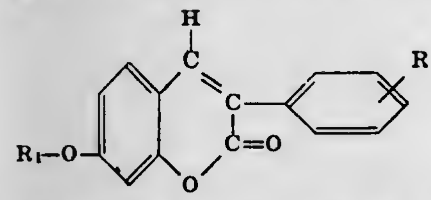
SYNTHETIC TEXTILES BRIGHTENED WITH 3-PHENYL-7-HYDROXY-COUMARIN

Roderich Raue, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

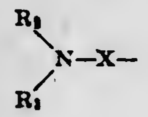
No Drawing. Filed Aug. 11, 1965, Ser. No. 479,007

3 Claims. (Cl. 117—33.5)

1. A material consisting essentially of at least one fiber component selected from the group consisting of polyacrylonitrile and synthetic polyesters, having incorporated therein a visible substantial brightening amount of a compound having the formula

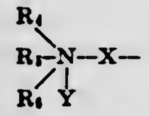


wherein R_1 is a member selected from the group consisting of alkyl, hydroxy alkyl, alkoxy alkyl, halo alkyl, cyano alkyl, carboxy alkyl, sulfo alkyl, alkenyl, aralkyl, aryl, arylketo alkyl,



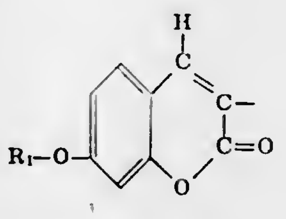
$$\begin{matrix} R_2 \\ & N{-}X{-} \\ R_3 \end{matrix}$$

and



$$\begin{matrix} R_4 \\ R_5{-}N{-}X{-} \\ R_6 \quad Y \end{matrix}$$

wherein R_2 and R_3 are members selected from the group consisting of hydrogen, alkyl, substituted alkyl, and aralkyl; R_4, R_5, and R_6 are members selected from the group consisting of alkyl, substituted alkyl, cycloalkyl, alkenyl and aralkyl; R_7 is a member selected from the group consisting of hydrogen, alkyl, chloro, carboxy, and carbomethoxy and



X is a bivalent alkyl residue having 1–4 carbon atoms; Y is an acid residue.

3,351,483

METHOD OF SOFTENING TEXTILE FABRICS

Carl S. Miner, Jr., Winnetka, Ill., Kathryn A. Park, Prairie Village, Kans., and Walter F. Weiss, Wheaton, Ill., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed Oct. 14, 1964, Ser. No. 403,939

7 Claims. (Cl. 117—66)

1. A method of treating a textile fabric to clean and soften the fabric which comprises washing said fabric with a household laundry detergent in the presence of a fabric softening effective amount of a solid fabric softener composition, said household laundry detergent being selected from the group consisting of anionic organic detergents and nonionic organic detergents and mixtures thereof with or without detergent builders, said solid fabric softener composition being present during the wash cycle and consisting essentially of a complex of urea with (1) a quaternary ammonium textile softening compound containing at least one straight-chain hydrocarbon radical of at least 8 carbon atoms or (2) an amine textile softening compound containing at least one straight-chain hydrocarbon radical of at least 8 carbon atoms.

3,351,484

CARBON FIBERS AND METHOD

Carlos L. Gutzeit, Long Beach, Calif., assignor to Hitco, a corporation of California

Filed Nov. 14, 1963, Ser. No. 323,649

7 Claims. (Cl. 117—106)

1. A flexible carbon fiber product having improved oxidation resistance, which product comprises a substrate of flexible amorphous carbon fiber in a fully fired heat shrunk condition, and a thin flexible surface coating of boron nitride extending over essentially all of the surface area of the substrate and molecularly bonded to the surface of the substrate, whereby the product is unitary in structure, the boron nitride coating being present in a concentration of between about 1 and about 4 percent, by weight of the product and having been formed in situ on the surface of said carbon fibers at an elevated temperature below that at which substantial graphitization of carbon fiber occurs and in a non-oxidizing atmosphere.

3,351,485

STABILIZATION AND PRESERVATION OF WOOD

Ralph R. Langner, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 6, 1964, Ser. No. 350,089

6 Claims. (Cl. 117—147)

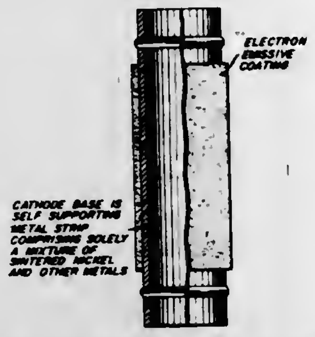
1. A process for preserving wood which comprises impregnating the wood with a 1,4-dioxanone.

3,351,486
CATHODES

William E. Buescher and Donald R. Kerstetter, Emporium, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Nov. 23, 1966, Ser. No. 596,418

4 Claims. (Cl. 117—223)


ELECTRON EMISSIVE COATING
CATHODE BASE IS SELF SUPPORTING METAL STRIP COMPRISING SOLELY A MIXTURE OF SINTERED NICKEL AND OTHER METALS

1. A cathode for an electron discharge device comprising a metal base and a layer of potentially electron emissive material thereon, said base being formed solely from a pliable self-supporting metal strip formed solely from a pliable self-supporting film and comprising a mixture of sintered nickel and other metal particles, wherein said base comprises a mixture of at least one metal in an amount by weight and from the group consisting of up to about 20% chromium, 3% hafnium, 0.5% magnesium, 3% tantalum, 6.0% tungsten, and 3% titanium, the balance of said mixture being substantially sintered particles of nickel.

3,351,487
PROCESS FOR PLATING PERMEABLE MEMBRANE

Charles A. Levine and Alfred L. Prevost, Concord, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 6, 1963, Ser. No. 321,741

33 Claims. (Cl. 117—227)

1. The process of plating a permeable membrane with a thin metallic coating comprising the steps of:

- (a) contacting one side of said membrane with a solution of a compound of the metal to be plated,
- (b) contacting the opposite side of the said membrane wih a solution of a reagent capable of reducing said metal in said metal compound solution to a metallic state,
- (c) effecting permeation of said membrane by the one of said solutions which is on the opposite of said membrane from that on which said metal is to be plated, and
- (d) maintaining said contacting and said permeation of said membrane at a temperature of 0° to 100° C. until a sufficient thickness of metal plating has been effected.

6. The process of claim 1 in which said permeable membrane is shaped in the form of a hollow fiber.

3,351,488
ION EXCHANGE SYSTEM

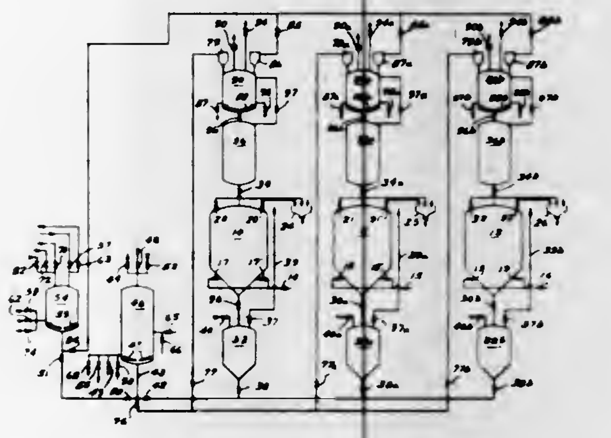
James F. Zievers, La Grange, Clay W. Riley, Palos Heights, and Charles J. Novotny, Cicero, Ill., assignors to Industrial Filter & Pump Mfg. Co., Cicero, Ill., a corporation of Illinois

Filed Feb. 8, 1965, Ser. No. 431,131

8 Claims. (Cl. 127—9)

1. A demineralization system for use in a sugar refining process, comprising

- a plurality of service columns each containing a mixture of anion and cation resins,
- means for passing a sucrose solution through the resins in said columns to remove ash components from said solution,
- a first resin regenerating column,
- control means including valved conduits for selectively transferring said resin mixture and a quantity of said sucrose solution from said service columns to said regenerating column,
- means for adding a liquid to said regenerating column to adjust the specific gravity of the sucrose solution to a value intermediate the specific gravities of said anion and cation resins whereby one of said resins floats in said solution while the other settles out,



- a second regenerating column,
- means for transferring the settled-out resin to said second regenerating column while leaving the other resin in said first regenerating column,
- means for then sweetening off the sucrose solution from said resin,
- means for then regenerating the resins in said regenerating columns, and
- means for thereafter mixing said resins together and returning them to said service columns.

3,351,489
STABLE AMYLOSE DISPERSIONS AND METHOD OF PREPARING THEM

Orlando A. Battista, Yardley, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Sept. 8, 1964, Ser. No. 395,050

6 Claims. (Cl. 127—32)

1. A composition of matter comprising an acid hydrolyzed, finely-divided starch material containing at least a major proportion of amylose, at least a portion of said amylose having submicron particle size, said portion being in an amount sufficient to form a stable dispersion.

5. A method of preparing a starch material, containing at least a major proportion of amylose, in a stable dispersion which comprises hydrolyzing the amylose in said starch material with a mineral acid to obtain water-insoluble attritable material, washing the hydrolyzed material with water, and then mechanically attriting said material by agitating a mixture of said material in an aqueous medium to obtain submicron particles of amylose in an amount sufficient to form a stable dispersion.

3,351,490
HERMETICALLY SEALED ALKALINE STORAGE BATTERY

Hermann-Hans von Doehren, Frankfurt am Main, Germany, assignor to Varta Aktiengesellschaft, Frankfurt am Main, Germany

Continuation of application Ser. No. 41,441, July 7, 1960. This application Mar. 20, 1964, Ser. No. 354,500

5 Claims. (Cl. 136—6)

1. In a hermetically sealed alkaline storage battery, in combination, positive and negative electrodes; and an alkaline electrolyte in contact with said electrodes, said positive electrode including a major proportion of nickel oxide and a minor proportion of a current conducting material selected from the group consisting of nickel and graphite and having distributed therethrough between 0.01% and 2% by weight of said active mass of at least one substance selected from the group consisting of oxides and hydroxides of lanthanum, cerium, gallium, indium and thallium and which is insoluble in said electrolyte and capable of alternating between a higher and a lower valency so as to form within said positive electrode an auxiliary redox system such that the oxygen potential relative to said auxiliary redox system is at least equal to the oxygen potential of said nickel oxide of said positive electrode.

3,351,491
METHOD OF MAKING SOLID ELECTROLYTE MATERIAL

Bryan Sidney Harris and Anthony Desmond Shand Tantram, Dorking, Surrey, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 14, 1963, Ser. No. 258,628

Claims priority, application Great Britain, Feb. 21, 1962, 6,788/62

9 Claims. (Cl. 136—86)

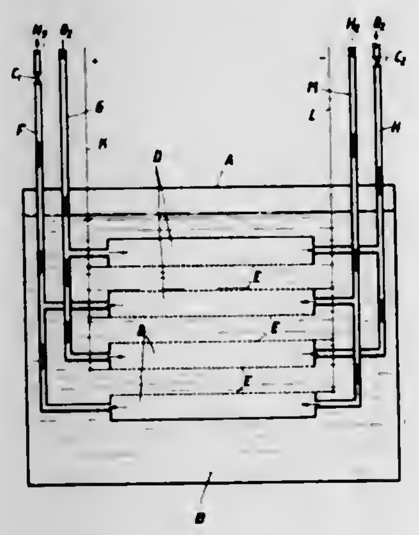
3. The method which comprises subjecting a preformed powder comprising solid active electrolyte material to a compacting operation at a temperature between about 20 to 30° C. below the temperature at which liquid phase would be present in said mixture to form an electrolyte body of the semi-solid type and thereafter using said electrolyte body in an electrochemical cell.

3,351,492
FUEL CELL WITH ELECTRODE HAVING FINE PORE OPENINGS

Josef Heyes, 20 Markgrafenstr., Dusseldorf, Germany, and Wilhelm Anton Fischer, 67 Mulheimer Strasse, Ratingen, near Dusseldorf, Germany

Filed Aug. 29, 1963, Ser. No. 305,424

7 Claims. (Cl. 136—86)



1. In a fuel cell for use with a liquid electrolyte and having an electrolyte space in which are disposed a pair of operatively opposed electrodes for electrochemical conversion thereat of corresponding fuel and oxidant reactants in contact with the liquid electrolyte with the concomitant generation of electrical energy and further having corresponding conducting means connected to such electrodes for utilizing the electrical energy generated, the improvement which comprises providing at least one of such electrodes as a gas diffusion electrode, in communication on one side with the electrolyte space and on the other side with a gas space for a corresponding gaseous reactant to be electrochemically converted at said electrode and forming an interface between said spaces, such that the electrochemical conversion takes place at a phase boundary between the gaseous reactant, gas diffusion electrode and electrolyte on the electrolyte side of said electrode, said gas diffusion electrode constituting a porous metal plate having a thickness less than 2 mm. and uniform fine open pores therethrough which is defined by a bundle of capillary tubes of uniform length corresponding to the thickness of said plate and of uniform internal diameter between 0.01 and 1 mm. corresponding to the fineness of said pores which are bonded together at their peripheries to block the interstices therebetween, whereby flow communication through said plate will take place only at said tubes.

3. In a fuel cell for use with a liquid electrolyte and having an electrolyte space in which are disposed a pair of operatively opposed electrodes for electrochemical conversion thereat of corresponding fuel and oxidant reactants in contact with the liquid electrolyte with the concomitant generation of electrical energy and further having corresponding conducting means connected to such electrodes for utilizing the electrical energy generated, the improvement which comprises providing at least one of such electrodes as a gas diffusion electrode, in communication on one side with the electrolyte space and on the other side with a gas space for a corresponding gaseous reactant to be electrochemically converted at said electrode and forming an interface between said spaces, such that the electrochemical conversion takes place at a phase boundary between the gaseous reactant, gas diffusion electrode and electrolyte on the electrolyte side of said electrode, said gas diffusion electrode constituting a porous metal plate having a thickness less than 2 mm. and uniform fine open pores therethrough which is defined by a bundle of thin wires of uniform length corresponding to the thickness of said plate so closely packed that the interstices therebetween form capillary tubes of uniform diameter between 0.01 and 1 mm. corresponding to the fineness of said pores, whereby flow communication through said plate will take place only at said interstices.

5. In a fuel cell for use with a liquid electrolyte and having an electrolyte space in which are disposed a pair of operatively opposed electrodes for electrochemical conversion thereat of corresponding fuel and oxidant reactants in contact with the liquid electrolyte with the concomitant generation of electrical energy and further having corresponding conducting means connected to such electrodes for utilizing the electrical energy generated, the improvement which comprises providing at least one of such electrodes as a hollow gas diffusion electrode, in communication on one side with the electrolyte space and on the other side with a gas space for a corresponding gaseous reactant to be electrochemically converted at said electrode and forming an interface between said spaces, such that the electrochemical conversion takes place at a phase boundary between the gaseous reactant, gas diffusion electrode and electrolyte on the electrolyte side of said electrode, and means for introducing one of said reactants into said hollow electrode, said hollow gas diffusion electrode including a porous metal plate having a thickness less than 2 mm. and uniform fine open pores therethrough which is defined by a fine screen having perforations therethrough of uniform length corresponding to the thickness of said plate and of uniform internal diameter of at most 0.015 mm. corresponding to the fineness of said pores, whereby flow communication through said plate will take place only at said perforations.

3,351,493

DIFFUSED RADIATION TRACKING TRANSDUCER HAVING A LATERAL PHOTO-VOLTAGE JUNCTION

Irving Weiman and William V. Wright, San Marino, Calif., assignors to Electro Optical Systems, Inc., Pasadena, Calif., a corporation of California

Filed Feb. 25, 1964, Ser. No. 347,655

8 Claims. (Cl. 136—89)

1. In a broad area radiation tracking transducer, a parent silicon crystal body;
- said parent crystal body being of intrinsic conductivity,
- a first diffused region of a first conductivity type and of a predetermined resistivity disposed within said body along a first surface of said body,
- a second diffused region of a lower resistivity than said first diffused region,
- said second diffused region being adjacent said first diffused region,
- said second diffused region being disposed intermediate said first diffused region and the intrinsic conductivity portion of said crystal body, and
- means for measuring the lateral photo voltage between first and second spaced apart points in the intrinsic conductivity portion of said crystal body upon impingement of radiation energy upon said first diffused region,
- said measuring means including a first ohmic contact to said first point and a second ohmic contact to said second point.

2. In a broad area radiation tracking transducer, a semiconductor crystal body of a predetermined resistivity,
- said crystal body having first and second opposed planar surfaces,
- said crystal body having diffused within said first planar surface thereof a thin heavily doped region of a resistivity substantially lower than the resistivity of the remaining portion of said body, resulting in a lateral photo voltage junction.
- first means for measuring the lateral photo voltage between first and second diametrically opposite points on said second planar surface of said wafer upon impingement of radiation energy on said first planar surface,
- said first measuring means including a first ohmic contact to said first point and a second ohmic contact to said second point, and,
- means for preventing radiation energy from impinging on any but said first surface of said body.

3,351,494

METHOD OF MAKING A WETPROOFED ELECTRODE

John S. Batzold, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,637

7 Claims. (Cl. 136—120)

1. A method of making a wetproofed electrode which comprises the steps of:
- (a) wetproofing an inert particulate base material selected from the group consisting of asbestos, carbon, mica, silica, and alumina by contacting said material with a solution of a halogenated alkyl silane,
- (b) rinsing and drying said wetproofed inert particulate base material prepared in step (a),
- (c) dry mixing the composition prepared in step (b) with a finely divided catalyst, and
- (d) pressing the mixture prepared in step (c) onto an electrically conductive support.

3,351,495

BATTERY SEPARATOR

Donald Wayne Larsen, Bowie, and Clifton Leroy Kehr, Ednor, Md., assignors to W. R. Grace & Co., Cambridge Mass., a corporation of Connecticut

No Drawing. Filed Nov. 22, 1966, Ser. No. 596,056

11 Claims. (Cl. 136—146)

1. A battery separator having an essentially flat surface and comprising a microporous polyolefin having a molecular weight of at least 300,000, a standard load melt index of substantially 0, and a reduced viscosity of not less than 4.0.

3,351,496

COMPOSITION OF MATTER AND METHOD OF PRODUCING SAME

Ralph E. Carter, Colonie, N.Y., assignor to General Electric Company, a corporation of New York

Filed July 30, 1965, Ser. No. 475,925

8 Claims. (Cl. 136—153)

1. A method of heat treating completely stabilized zirconia to control the rate of ionic resistivity increase thereof, which comprises:
- (a) heating the completely stabilized zirconia above 1400° C. to produce virgin stabilized zirconia, and
- (b) reheating at 1100° C. to 1300° C. for at least 30 hours.

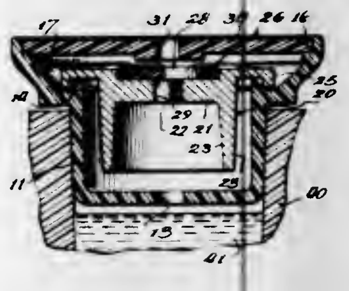
3,351,497

NON-SPILL VENT PLUG

Gordon B. Lucas, River Forest, Ill., assignor to The Richardson Company, Melrose Park, Ill., a corporation of Ohio

Filed Dec. 10, 1962, Ser. No. 243,519

4 Claims. (Cl. 136—178)



1. A battery cell vent plug comprising a hollow cup-like base composed of a cylindrical, closed-end lower section with a vent opening in the bottom thereof and an integral outwardly flared annular upper section provided with a ledge extending around its inner periphery, a plurality of circumferentially spaced upwardly extending bosses disposed around the internal wall of said base at substantially the juncture of said sections, the outer side of said bosses extending downwardly and outwardly, a cap provided with a vent opening supported by said ledge; and a valve of relatively heavy mass disposed within the vent plug having a circumferential shoulder provided with a downwardly extending peripheral flange, said valve being supported by said shoulder on said bosses in a position intermediate of the cap and the bottom of the base with said peripheral flange being disposed around the outer sides of said bosses whereby the interior of said plug is divided into two connecting compartments, said valve being capable of movement toward the underside of the cap to close its vent opening when the vent plug is partially or wholly inverted.

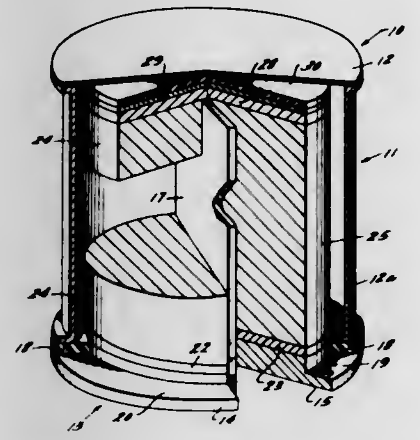
3,351,498

SEPARATELY CARTRIDGED THERMOELECTRIC ELEMENTS AND COUPLES

Jeffrey N. Shinn, Scotia, N.Y., and Soeren S. Nielsen, Topsfield, and John J. O'Connor, Dorchester, Mass., assignors to General Electric Company, a corporation of New York

Filed Mar. 29, 1963, Ser. No. 268,953

11 Claims. (Cl. 136—205)



1. A thermoelectric cartridge comprising
- a single thermoelectric element having first and second spaced end portions and
- means compressively encapsulating said thermoelectric element including
- first and second metal end walls lying in electrically conductive relation to said first and second end portions, respectively,
- a thin metal side wall surrounding said thermoelectric element in laterally spaced relation, and
- means insulatively sealing said side wall to said end walls.

6. A thermoelectric cartridge comprising
- means forming a thermoelectric couple comprising
  - a P-type thermoelectric element,
  - an N-type thermoelectric element,
  - each of said thermoelectric elements including first and second spaced end portions, and
  - means electrically connecting said first end portions of said thermoelectric elements while electrically insulating the remainder of said elements,
  - means compressively encapsulating said thermoelectric couple forming means comprising
  - a first end wall segment providing an electrical contact with said second end portion of said P-type thermoelectric element,
  - a second end wall segment providing an electrical contact with said second end portion of said N-type element,
  - said first and second end wall segments being laterally spaced,
  - an outer container having a thin metal side wall laterally spaced from said thermoelectric couple, and
  - means insulatively sealing said side walls to said end wall segments.

3,351,499

OIL IMPREGNATED THERMOELECTRIC ELEMENT WITH ELECTROPLATED METAL CONTACT AND METHOD OF PRODUCING SAME

Laurence H. Weitzman, Irwin, and William R. Harding, Jeannette, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 18, 1962, Ser. No. 231,595

3 Claims. (Cl. 136—236)

1. In the process for preparing an oleaginous impregnated thermoelectric element devoid of a spotty finish on a metal coating attached thereto, said coating having an improved metallurgical bond with said element, the steps comprising
- (1) compressing a quantity of finely divided thermoelectric material to provide a thermoelectric body having end surfaces,
- (2) sintering the body, the sintered body having a substantial number of voids,
- (3) impregnating the body with an oleaginous substance to fill the voids,
- (4) wiping the surfaces of the body clean of the oleaginous substance,
- (5) applying a metal coating by electrodeposition to the end surfaces of the oleaginous impregnated body, the coating being prevented from diffusing into the body by the oleaginous material and is therefore confined to the end face surface region above and continuous with the oleaginous impregnated body in electrical and metallurgical contact therewith.

3. An oil impregnated thermoelectric element produced by the process of claim **1**.

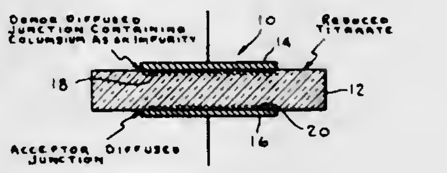
3,351,500

METHOD OF FORMING A TRANSISTOR AND VARISTOR BY REDUCTION AND DIFFUSION

Alfred S. Khouri, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed Mar. 13, 1963, Ser. No. 264,960

18 Claims. (Cl. 148—1.5)


Donor Diffused Junction Containing Columbium As an Impurity
10
14
Reduced Titanate
18
12
16
20
Acceptor Diffused Junction

15. The method of making a diode rectifier having high rectification efficiency and a large value of junction capacitance on an N-type reduced titanate semiconductor substrate comprising, the steps of soaking said substrate in a mixture containing an oxidizing agent for a length of time sufficient to permit said mixture to permeate said substrate and subsequently firing said substrate, applying a mixture of Ag_2O and Cb_2O_5 in a resinous vehicle onto a reduced titanate, polycrystalline, alkaline earth, applying a mixture of finely divided silver particles, bismuth BiO_3 and boron silicate alkali earth frit onto said semiconductor, and firing said semiconductor with said mixtures applied thereto so that a diffused donor junction rectifying contact is formed with a silver electrode in ohmic contact with a ceramic layer onto which a donor impurity agent (Cb_2O_5) has been diffused and an acceptor junction is also formed having a conducting silver film in ohmic contact with a diffused acceptor doped area of said semiconductor.

3,351,501

PROCESS FOR PRODUCING MAGNETIC SHEETS WITH CUBE-ON-FACE GRAIN TEXTURE

Robert G. Aspden, Penn Township, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed June 4, 1964, Ser. No. 372,693

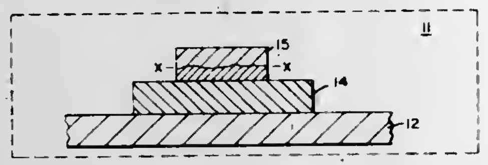
19 Claims. (Cl. 148—112)

1. In the method of producing (100) [*hkl*] texture in metals comprising iron and ferrous-base alloys having a gamma to alpha phase transformation the steps comprising heating a body of such metal to a temperature to convert the metal to the gamma phase, then cooling the metal to the alpha phase, the metal having from about 0.00003 to 0.0005%, by weight, of dissolved sulfur at least at the surface thereof during the phase transformation, whereby a high proportion of the grains of the metal are oriented to a (100) [*hkl*] texture.

3,351,502
METHOD OF PRODUCING INTERFACE-ALLOY EPITAXIAL HETEROJUNCTIONS

Robert H. Rediker, Newton, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed Oct. 19, 1964, Ser. No. 404,818
7 Claims. (Cl. 148—177)



1. The method of producing single crystal epitaxial junctions between dissimilar crystalline materials comprising the steps of, preparing paired wafers from dissimilar crystals cut to present surfaces oriented along crystallographic planes, supporting the lower melting wafer on the higher melting wafer in a controlled atmosphere, heating the higher melting wafter to melt the surface of the lower melting wafer, reducing the temperature to avoid further melting of said lower melting wafer and permitting recrystallization of the melted portion following the orientation of the higher melting wafer.

3,351,503
PRODUCTION OF P-N JUNCTIONS BY DIFFUSION

Richard A. Fotland, Lyndhurst, Ohio, assignor to Horizons Incorporated, a corporation of New Jersey

No Drawing. Filed Sept. 10, 1965, Ser. No. 486,550
4 Claims. (Cl. 148—188)

1. A method of producing P-N junctions which comprises: positioning a semiconductor material selected from the group consisting of P-type silicon and N-type silicon in an atmosphere of a decomposable vapor of a dopant compound at a pressure such that a layer of the vapor is adsorbed on the surface of the semiconductor material; decomposing selected portions of said adsorbed layer by scanning the same with an electron beam, thereby depositing a dopant on said semiconductor surface and diffusing the same into said semiconductor material, thereby producing a P-N junction in said semiconductor material.

3,351,504
METHOD OF BONDING COATINGS

Harold George De Hart, Clifton, N.J., assignor, by mesne assignments, to International Protected Metals, Inc., a corporation of New Jersey

No Drawing. Filed Oct. 9, 1963, Ser. No. 314,865
3 Claims. (Cl. 148—6.14)

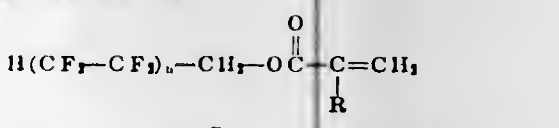
1. A method of bonding a resin coating on a metal base selected from the group consisting of aluminum, iron and steel, comprising cleaning a surface of the base, treating the cleaned surface with from about 0.1% to about 5.0% aqueous solution of an oxidizing agent selected from the group consisting of chromic acid, molybdic acid and vanadic acid, heating the treated surface and contacting the heated treated surface with a mixture of heat fusible resin powder and an oxidizable metal powder, the metal powder being present in the mixture in a metal to resin ratio of from about 1:9 to 1:1 by volume, the treated base being heated to a temperature above the fusion temperature of the resin powder, and permitting the base to cool.

3,351,505
HIGH ENERGY SOLID PROPELLANTS CONTAINING FLUOROPOLYMERS AND METALLIC FUELS

Isadore Shapiro, Beverly Hills, and Albert Cane, Los Angeles, Calif., assignors to Hughes Tool Company, Aircraft Division, Houston, Tex., a corporation of Delaware

No Drawing. Filed Sept. 1, 1960, Ser. No. 53,566
11 Claims. (Cl. 149—19)

1. A solid rocket propellant grain comprising: from about 5 percent to about 25 percent by weight, of pulverized solid fuel material; from about 35 percent to about 75 percent by weight, of pulverized solid oxidizer material; and from about 20 percent to about 50 percent by weight, of solidified binder material in which said fuel and oxidizer materials are uniformly dispersed; said binder material consisting essentially of a polymer of at least one monomer selected from the group consisting of fluoroalkyl acrylates and fluoroalkyl methacrylates characterized by the general formula



$$\mathrm{H(CF_2{-}CF_2)_n{-}CH_2{-}O\overset{\overset{O}{\|}}{C}{-}\underset{\underset{R}{|}}{C}{=}CH_2}$$

in which *n* is an integer from 2 to 5 and R is selected from the group consisting of H and CH_3; said fuel material consisting of at least one member selected from the group consisting of aluminum, boron, beryllium, magnesium, lithium, aluminum hydride, lithium hydride, lithium aluminum hydride, beryllium hydride, magnesium hydride, zirconium hydride, solid boron hydrides, and boron-containing compounds characterized by the general formula $B_xN_yH_z$ in which z/x is a number from 2 to 8 and x/y is a number from 1 to 10, and by the general formulas $B_{10}C_2H_{12}$ and $B_{10}C_2H_{11}Z$ in which Z is an aliphatic radical; and said oxidizer material consisting of at least one member selected from the group consisting of perchlorates and nitrates respectively characterized by general formulas $YClO_4$ and YNO_3 in which Y is at least one member selected from the group consisting of NH_4, N_2H_3, NO_2, Li, Na and K.

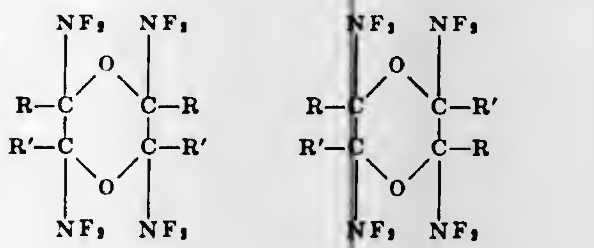
3,351,506
NITROCELLULOSE PROPELLANTS PLASTICIZED WITH DIFLUOROAMINO COMPOUNDS

James Grigor and James Brown Parker, Kilwinning, and Andrew Cochran Currie, Largs, Scotland, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

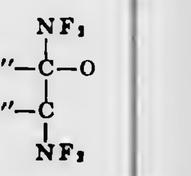
No Drawing. Original application Sept. 26, 1963, Ser. No. 311,914. Divided and this application July 15, 1965, Ser. No. 484,779

Claims priority, application Great Britain, Sept. 28, 1962, 36,974/62
6 Claims. (Cl. 149—20)

1. An explosive composition comprising nitrocellulose plasticized with a difluoramino compound consisting of



and



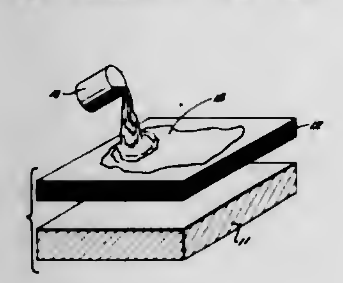
where R is selected from the group consisting of hydrogen and alkyl, R′ is selected from the group consisting of hydrogen and alkyl and is hydrogen when R is alkyl, and each of R″ and R‴ is alkyl.

6. A propellant explosive comprising ammonium perchlorate, aluminum and the explosive composition of claim 1.

3,351,507
METHOD OF PREPARING LAMINATE WITH GRAIN SURFACE

Kenneth A. Schafer, Pittsburgh, Pa., assignor to Freeman Chemical Corporation, Port Washington, Wis., a corporation of Delaware

Filed Oct. 16, 1964, Ser. No. 404,422
8 Claims. (Cl. 156—60)

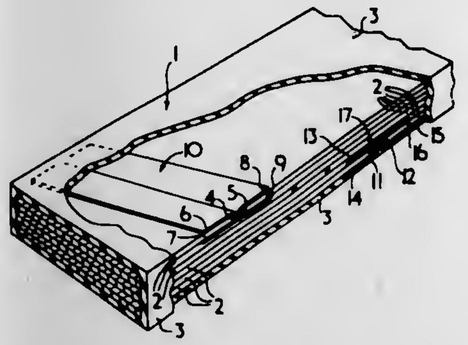


1. The method of making a laminated article which comprises forming a sandwich of a stiff structural backing element and a sheet of flexible, resilient, foamed resin having open, connected cellular configuration, applying a non-foaming thermosetting resinous composition in liquid form to the said foamed resin whereby the said foamed resin becomes wetted with the said resinous composition, compressing the said foamed resin against the said stiff backing element and curing the said resinous composition while maintaining the said foamed resin under compression to achieve a substantial flattening of the said foamed resin from its initial uncompressed thickness, whereby the said foamed resin configuration appears as a grainy presentation over the said exposed surface.

3,351,508
METHOD OF JOINING TOGETHER THE ENDS OF A REINFORCED BELT TO FORM AN ENDLESS BELT

Norman G. Baxendale, Liverpool, England, assignor to Dunlop Rubber Company Limited, London, England, a company of Great Britain

Filed May 14, 1965, Ser. No. 455,703
Claims priority, application Great Britain, May 26, 1964, 21,619/64
7 Claims. (Cl. 156—159)

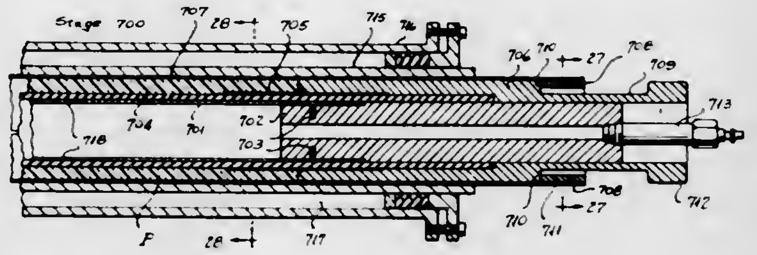


1. A method of joining together the ends of a reinforced belt to form an endless belt which comprises butting together the ends of a belt having at least one reinforcement ply embedded in a flexible material, enclosing the ends of the reinforcement ply between the ends of a two-ply fabric in which the two plies are interconnected along a line to form a fabric having an X-shaped section in a direction transverse the line of interconnection, and moulding the assembly so formed under heat and pressure to consolidate the assembly.

3,351,509
METHOD OF MAKING A REINFORCED HOLLOW PLASTIC ARTICLE OF WRAPPED TAPES OF FIBROUS MATERIAL

Henry M. Richardson, Somers, Conn, Alfred C. Alberghini, Sand Springs, Okla., Fred E. Wiley, Longmeadow, Mass., and Wesley S. Larson, Hazardville, Conn., assignors to The Youngstown Sheet and Tube Company, Boardman, Ohio, a corporation of Ohio

Original application Dec. 28, 1962, Ser. No. 248,058, now Patent No. 3,256,128, dated June 14, 1966. Divided and this application Sept. 13, 1965, Ser. No. 486,678
5 Claims. (Cl. 156—195)



1. The method of making a tubular article comprising, forming a preform by winding a plurality of layers of tape in different helical directions,

said tape comprising a carrier strip having on one side thereof a plurality of parallel longitudinal reinforcing strands which are substantially nonstretchable and a thermosetting binder;

enclosing said preform within a peripherally confining mold having a larger diameter than the outer diameter of the preform;

introducing fluid pressure into the interior of the preform to radially expand the wall thereof against the wall of the mold and to radially outwardly compress the layers of the preform into firm contact with one another to densify the preform and change the helix angle of the helically wound tapes to permit said expansion of the wall of the preform and place the helically wound reinforcing strands under equal tension;

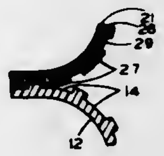
and heating the preform to soften the binder to reduce resistance to change of the helix angle of the tapes and to cure the binder;

said heat and pressure being applied at least in part during a common time interval which includes said cure of the binder.

3,351,510
METHOD OF MAKING SHEET MATERIAL

Thomas G. Harris, East Hempfield Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Filed July 7, 1964, Ser. No. 380,904
2 Claims. (Cl. 156—232)

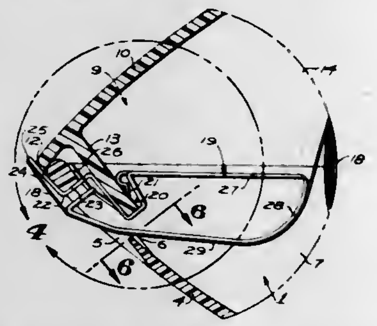


1. A method of making sheet material having a design with an embossed effect comprising the steps of embossing carrier sheet with a given design to form a plurality of depressions and lands therein, filling said depressions with granular fusible material, placing backing material over said embossed carrier sheet and over said fusible material, consolidating said fusible material on said backing material whereby said fusible material will be fused and attached to said backing material, separating said

embossed carrier from said fused material and said backing material whereby the removal of said lands from said fused material will create embossed areas therein, filling these embossed areas with fusible material, and then consolidating the sheet material again to fuse the last-mentioned fusible material to the originally consolidate fusible material to form a flat surface sheet.

3,351,511
PRESSURE SENSITIVE ADHESIVE TAPE APPLICATOR

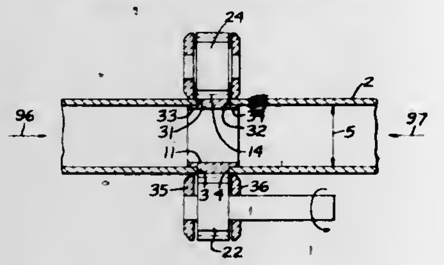
Tor Petterson, 2149 Paseo de Mar,
San Pedro, Calif. 90732
Filed June 1, 1965, Ser. No. 460,287
6 Claims. (Cl. 156—527)



1. A pressure sensitive adhesive tape applicator comprising:
- (a) a container having means for journalling a roll of pressure sensitive adhesive tape, and defining a slot for dispensing said tape;
- (b) tape retaining elements bordering one side of said slot;
- (c) a yieldable guide strip secured within said container, extending to said slot and biased toward said retaining elements, said guide strip terminating in a folded end to form adjacent said end a tape releasing element normally protruding slightly from said slot;
- (d) and a fixed tape applicator element bordering the side of said slot opposite from said tape retainer elements and terminating in a cutting edge;
- (e) said guide strip, releasing element and applicator element adapted to be covered by an end of said tape, said guide strip normally pressing said tape against said retainer elements, said releasing element being depressible into said container to move said guide strip clear of said retaining elements thereby to release said tape for movement from said container along said applicator element.

3,351,512
DEVICE FOR INTERCONNECTING TWO PIPES OF THERMOPLASTIC MATERIAL

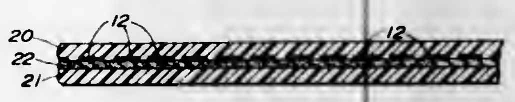
Ottomar von Zelewsky, Neuhausen am Rheinfall, and Werner Burkert, Schaffhausen, Switzerland, assignors to Georg Fischer Aktiengesellschaft, Schaffhausen, Switzerland
Filed Oct. 21, 1963, Ser. No. 317,735
2 Claims. (Cl. 156—580)



1. An annular member of thermoplastic material adapted to be interposed between two pipes of thermoplastic material to be spin-welded to said annular member, which has its outer periphery provided with teeth and has its end faces adjacent the inner periphery thereof provided with laterally outwardly extending annular collars having an outer diameter slightly less than the inner diameter of the pipes to be interconnected by said annular member for centering said annular member relative to the pipes to be interconnected.

3,351,513
LIGHT CONTROL STRUCTURE

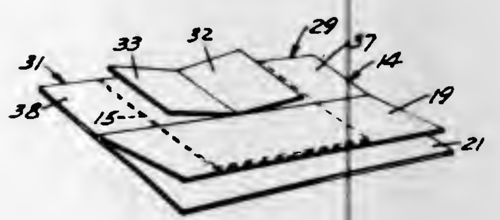
Alfred B. Menzer, Joliet, Ill., assignor to Kemlite Corporation, Joliet, Ill., a corporation of Illinois
Filed Oct. 7, 1963, Ser. No. 314,383
9 Claims. (Cl. 161—6)



1. A panel comprising a pair of fiberglass sheets, and a cellulose fiber center sheet between said fiberglass sheets, said center sheet having pigment particles distributed uniformly therein and having on one side thereof an ink layer in discontinuous distribution on the outer surface of the sheet to form a decorative design, each of said sheets being impregnated with a thermosetting resin and being bound by said resin into a unitary structure, said resin having substantially the same light refractive properties as the fibers of each of said sheets, whereby said panel will pass in a diffused manner some but not all of the light directed against it from the outside and produce a glow from the inside of the panel wtih said design being distinctly visible from the outside of the panel.

3,351,514
FILM SPLICING CONSTRUCTION

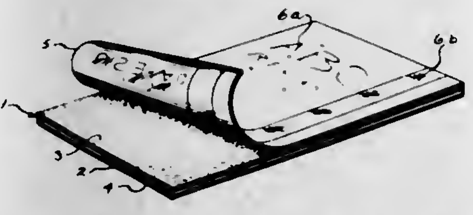
Walter F. Creigh, Newport Township, Washington County, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed May 20, 1965, Ser. No. 457,428
3 Claims. (Cl. 161—39)



1. A film splicing construction comprising
- (a) a generally rectangular, transparent backing sheet having a face side and an opposed back side, said face side being coated with a pressure-sensitive adhesive,
- (b) a first liner sheet having a first tab portion joined to a first base portion at a first fold line, said first base portion being superimposed upon a portion of said face side, and
- (c) a pair of second liner sheets each having a second tab portion joined to a second base portion at a second fold line, said second base portions both being superimposed upon the remaining portions of said face side, said pair of second liner sheets being so positioned on said face side as to abut against one another along their respective second fold lines.

3,351,515
ADHESIVE TAPE OR LABEL STRUCTURE HAVING A BARRIER LAYER

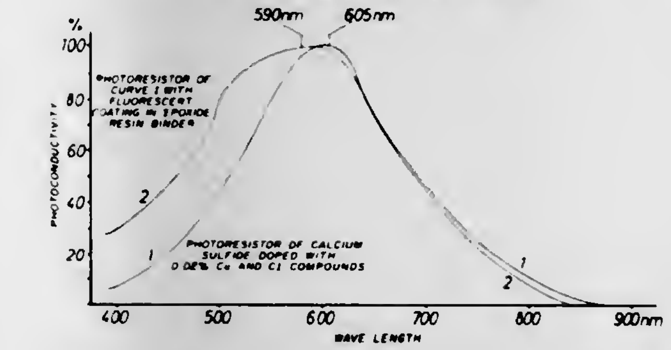
William H. Muttera, Jr., Mequon, Wis., assignor to W. H. Brady Co., Milwaukee, Wis., a corporation of Wisconsin
Filed July 5, 1962, Ser. No. 207,511
2 Claims. (Cl. 161—167)



1. An adhesive product, such as a label, tape and the like, comprising: (1) a barrier layer of a thin sheet of substantially liquid-impervious thermoplastic film-forming materials, said barrier layer having two opposed surfaces, (2) a layer of normally tacky pressure-sensitive adhesive adherent to one of the opposed surfaces of the barrier layer, (3) a layer of normally hard, solvent-activated adhesive adherent to the other opposed surface of the barrier layer, and (4) a top layer bonded to the layer of pressure-sensitive adhesive, said top layer being decorated with solvent sensitive material, said barrier layer being substantially liquid-impervious to solvents which render the solvent-activated adhesive layer adhesively tacky.

3,351,516
PHOTOCONDUCTIVE STRUCTURAL ELEMENT AND PROCESS OF MANUFACTURING SAME

Roland Weisbeck, Cologne-Poll, Andreas Brockes, Cologne-Mulheim, and Heinrich Nassenstein, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
Filed Oct. 7, 1963, Ser. No. 314,129
Claims priority, application Germany, Oct. 13, 1962, F 38,032; Nov. 6, 1962, F 38,227
13 Claims. (Cl. 161—184)



1. Photoconductive structural element which comprises photoconductive material composed of highly pure cadmium chalkogenide selected from the group consisting of cadmium sulfide, cadmium selenide, and cadmium sulfo-selenide, containing zinc sulfide, copper ions and chloride ions as guest components in the hexagonal lattice thereof with a transparent layer of a binding agent containing 0.01–1% by weight of a fluorescent substance in homogeneous distribution, said fluorescent substance absorbing the incident light at the short wave end of the spectral sensitivity curve of the photoconductive material and emitting such light as fluorescent light in the wave length region of maximum sensitivity of said material.

3,351,517
COVULCANIZING PROCESS

William D. Willis, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Apr. 27, 1964, Ser. No. 362,999
7 Claims. (Cl. 161—184)

5. A covulcanized composition comprising a blend of an epihalohydrin polymer selected from the group consisting of epihalohydrin homopolymers, copolymers of an epihalohydrin with alkylene oxides or saturated epoxide ethers and copolymers of epichlorohydrin with at least one other epihalohydrin, and at least one sulfur-curable rubber, selected from the group consisting of styrene-butadiene rubber, natural rubber, polychloroprene, acrylonitrile-butadiene rubber, isoprene-isobutadiene rubber, ethylene-propylene-diene terpolymers, cis-polybutadine, cis - polyisoprene and lower alkylene oxide-allyl glycidyl ether copolymers, said blend having been vulcanized with an organic accelerator selected from the group consisting of 2-mercaptoimidazoline, 2-mercaptopyrimidine, thiourea and trialkyl substituted thiourea, a metal compound selected from the group consisting of the salts of aromatic carboxylic acids, salts of aliphatic carboxylic acids, salts of carbonic acid, salts of phosphorous acid, salts of silicic acid and oxides of metals of Groups II–A, II–B, III–A, IV–A and V–A of the periodic table, and sulfur.

6. A covulcanized laminate comprising at least two strongly bonded plies, at least one ply comprising a vulcanized epihalohydrin polymer selected from the group consisting of epihalohydrin homopolymers, copolymers of an epihalohydrin with alkylene oxides or saturated epoxide ethers and copolymers of epichlorohydrin with at least one other epihalohydrin, and at least one other ply comprising a vulcanized sulfur-curable rubber selected from the group consisting of styrene-butadiene rubber, natural rubber, polychloroprene, acrylonitrile-butadiene rubber, isoprene - isobutadiene rubber, ethylene-propylene-diene terpolymers, cis-polybutadiene, cis-polyisoprene and lower alkylene oxide-allyl glycidyl ether copolymers, said laminate having been covulcanized with an organic accelerator selected from the group consisting of 2 - mercaptoimidazoline, 2 - mercaptopyrimidine, thiourea and trialkyl substituted thiourea, a metal compound selected from the group consisting of the salts of aromatic carboxylic acids, salts of aliphatic carboxylic acids, salts of carbonic acid, salts of phosphorous acid, salts of silicic acid and oxides of metals of Groups II–A, II–B, III–A, IV–A and V–A of the periodic table, and sulfur.

3,351,518
LAMINATED GLASS STRUCTURE

Joseph D. Ryan, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Dec. 14, 1962, Ser. No. 244,652
3 Claims. (Cl. 161—199)

1. A laminated glass glazing unit having a total visible light transmittance of more than 70 percent and a total solar radiation transmittance of less than 58 percent, comprising a first sheet of an iron oxide-containing heat absorbing plate glass, a second sheet of regular clear plate glass, and a plastic interlayer interposed between and bonded to both said first and second glass sheets, said interlayer being composed of a vinyl butyral resin internally and homogeneously pigmented with carbon black and having a total visible light transmittance in the range of about 78 to 85 percent.

3,351,519
PREPARATION OF PURIFIED VEGETABLE FIBERS

Le Roy E. Schulze, 710 Midland Bank Bldg.,
Minneapolis, Minn. 55401
Filed Jan. 21, 1965, Ser. No. 426,786
20 Claims. (Cl. 162—17)

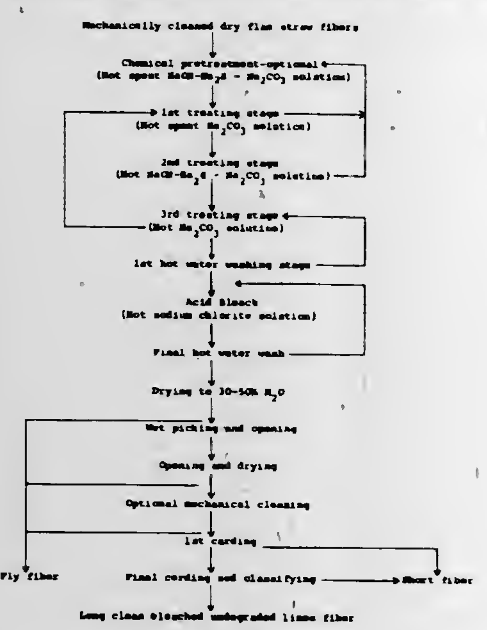
1. A process for preparing purified vegetable fibers which comprises
- (A) mechanically working the dry fiber-containing stems of a vegetable plant to fracture woody con-

stituents and dislodge and separate at least a major proportion of the woody constituents,

(B) mechanically opening the resulting dry partially cleaned fiber bundles to expose maximum surface area of the fibers and adherent minor proportion of woody constituents and non-woody contaminants,

(C) extracting said woody constituents and non-woody contaminants by subjecting the opened partially cleaned fibers in sequence to a plurality of mild hot aqueous extraction treating baths including

  (1) at least one caustic bath to remove water soluble and caustic soluble encrusting and contaminating substances adhering to said fibers,


Mechanically cleaned dry flax straw fibers
Chemical pretreatment-optional
(Hot spent NaOH-Na2S - Na2CO3 solution)
1st treating stage
(Hot spent Na2CO3 solution)
2nd treating stage
(Hot NaOH-Na2S - Na2CO3 solution)
3rd treating stage
(Hot Na2CO3 solution)
1st hot water washing stage
Acid Bleach
(Hot sodium chlorite solution)
Final hot water wash
Drying to 30-50% H2O
Wet picking and opening
Opening and drying
Optional mechanical cleaning
1st carding
Fly fiber
Final carding and classifying
Short fiber
Long clean bleached undegraded linen fiber

  (2) said baths being maintained at below boiling temperatures under near atmospheric pressure,

(D) separating the thusly treated wet fibers from the sequence of treating baths and from the extracted contaminants,

(E) partially drying the wet fibers to about 30 to 50% moisture content, above the moisture level at which the fibers dry bond to one another, to permit further fiber separation.

(F) mechanically working the partially dried fibers to pick apart and further open and separate the fibers, and

(G) drying the opened and cleaned fibers to below about 20% moisture content, below the moisture level at which the fibers are dry bonded.

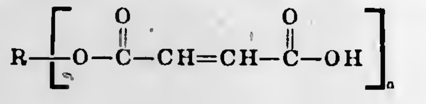
3,351,520
POLY - β - ASPARAGINEPOLYALKYLENEPOLYAMINE HALOHYDRIN RESINS AND APPLICATION THEREOF IN PRODUCTION OF WET STRENGTH PAPER AND FLOCCULATION OF SOLIDS

John C. Spicer, Sidney, N.Y., and Paul M. Westfall, St. Albans, and Nelson R. Eldred, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 13, 1964, Ser. No. 411,143

11 Claims. (Cl. 162—164)

8. In the manufacture of paper products from cellulosic paper-making fibers, the improvement which comprises incorporating in said fibers from about 0.05 to about 5 percent, based on the weight of said fibers, of a cationic water-soluble resinous reaction product of (a) a polyfunctional halohydrin and (b) a resin produced by reaction at a temperature of about 60° C. to 150° C. of about 0.5n to about 2n moles of a polyalkylenepolyamine per mole of a compound of the formula:



$$R\left[-O-\overset{O}{\overset{\|}{C}}-CH=CH-\overset{O}{\overset{\|}{C}}-OH\right]_n$$

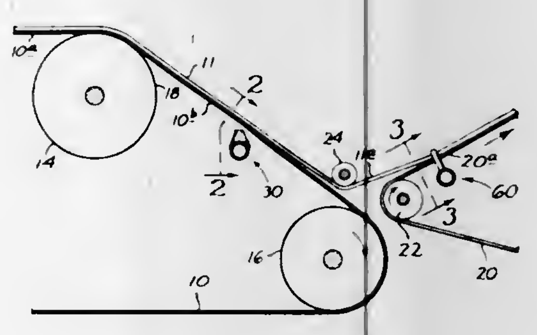
wherein n is an integer having a value of from 1 to 6 and R is the hydrocarbon residue of an aliphatic alcohol containing 1 to 8 carbon atoms and has a valence equal to n, the molar ratio of said polyfunctional halohydrin to secondary amine groups of said resin being from about 0.5 to about 1.5 and the reaction of said polyfunctional halohydrin and said resin being conducted at a temperature of from about 20° C. to about 100° C., and subsequently applying heat to cure said resinous reaction product to a water-insoluble form.

3,351,521
TRANSFER MECHANISM FOR WEB

Maurice M. Murray and Bill H. Andrews, Oregon City, Oreg., assignors to Publishers' Paper Co., Oregon City, Oreg., a corporation of Delaware

Filed June 14, 1965, Ser. No. 463,741

6 Claims. (Cl. 162—307)



1. In a paper-making machine, comprising an endless screen for carrying wet pulp while the same has water removed therefrom in the formation of a continuous paper web, and an endless belt for carrying a paper web moving from the screen, said belt and screen traveling in courses that come to close adjacency in a transfer region where the web transfers from the screen to the belt,

means for introducing against the underside of said screen, immediately before said transfer region, across substantially the entire width of the screen, a stream of air directed at the underside of the paper web carried by the screen, whereby the web may be loosened from the screen, and

means adjacent said belt for producing lateral outward flow of air, between the web and said belt, relative to the margins of the paper web, in a region directly following the transfer region, whereby air is removed from under the web from across the top of the belt permitting the web to lay down on the belt.

3,351,522
APPROACH FLOW SYSTEM FOR PAPER-MAKING MACHINE

Kasimir Lopas, Stamford, Conn., assignor to Time, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 3, 1964, Ser. No. 387,133

11 Claims. (Cl. 162—337)

4. A flow system for delivering a paper stock to paper-forming apparatus, the flow system comprising a supply-flow channel for transporting the paper stock, a recirculating loop, said recirculating loop and said supply-flow channel having a fluid-conducting connection with each other, a delivery-flow channel, said recirculating loop and said delivery-flow channel having a fluid-conducting connection with each other, a screw propeller coupled with said recirculating loop for varying the amount of the stock which is recirculated, and flow-stabilizing means mounted in said loop for preventing the acquisition by said stock of a helical motion due to the action of said propeller.

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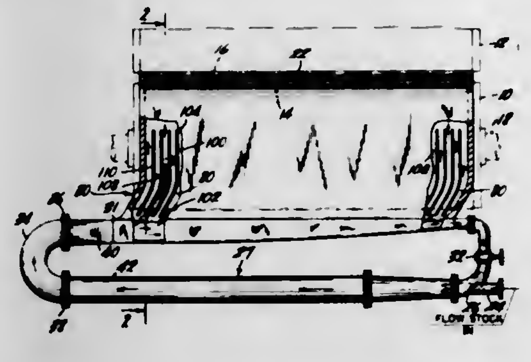
7. In apparatus for facilitating turning of a paper stock from flow in one direction at substantially uniform velocity across a cross section of said flow in said one direction to flow in another direction at substantially uniform velocity across a cross section of said flow in said other direction, the improvement comprising a plurality of vanes mounted in parallel relation, each vane (*a*) having a tail portion tapering to a sharp terminus and a nose portion, (*b*) being (1) mounted with said nose portion upstream of said tail portion in said flow system, (2) elongated along a first axis extending from said nose portion to said tail portion, (3) narrow along a second axis normal to said first axis, and (4) substantially flat along a third axis normal to said first and second axes, (*c*) having a pair of oppositely disposed sides extending parallel to said second axis, and (*d*) being curved in a plane normal to said second axis to impart a convexity to one of said sides and a concavity to the other of said sides.



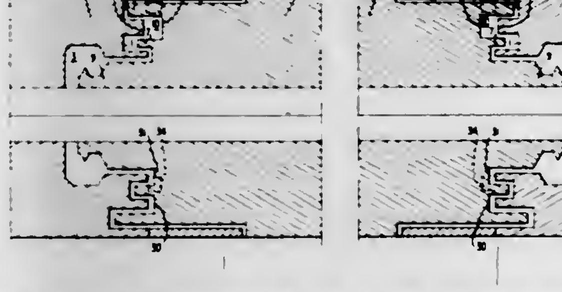
3,351,523
ROLLER FACE SUCTION BOX FOR PAPER-MAKING MACHINE

Jean-Pierre Maupas, 48 Rue Jouvenet, Rouen, France

Filed May 21, 1964, Ser. No. 369,262

Claims priority, application France, Dec. 21, 1963, 958,102, Patent 85,009; May 9, 1964, 973,907, Patent 85,722

4 Claims. (Cl. 162—373)



1. In a suction box device for paper-making machines, in combination:

a pair of spaced, fixed supports, each having concentric grooves therein,

a pair of spaced, parallel imperforate rollers extending between said fixed supports and defining a suction gap therebetween for passage of a span of a traveling felt thereover,

means cooperative with said rollers to define a suction chamber in communication with said suction gap,

each roller having a cylindrical main body and reduced end portions at its opposite ends presenting outwardly facing annular shoulders, and each such end portion terminating in an end face having radially spaced annular projections thereon disposed concentrically of the rotational axis of the roller with the projections on said rollers extending into corresponding grooves in said fixed supports to provide labrynth passages,

an endless belt trained over each of the corresponding reduced ends of said rollers and defining side edge boundaries of said suction gap for contact and movement with the side edges of the traveling felt,

each fixed support having shoulder portions disposed in spaced, aligned opposition with respect to a corresponding roller shoulder,

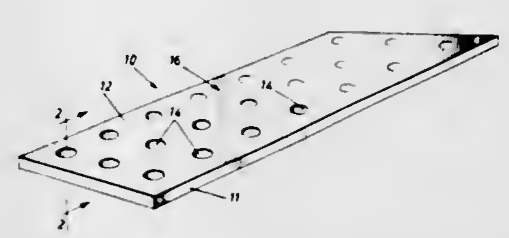
and each belt being of a width slightly less than the spacing between the corresponding shoulder portions of the fixed supports and said roller shoulders.

3,351,524
DEVICE FOR PROMOTING THE REMOVAL OF WATER FROM A PAPER-MAKING PULP SLURRY

William A. Duncan, Toronto, Ontario, Canada, assignor to Union Carbide Canada Limited, Toronto, Ontario, Canada, a company of Canada

Filed Dec. 31, 1964, Ser. No. 422,786

6 Claims. (Cl. 162—374)



1. A suction box cover for a paper-making machine which comprises a base member having a smooth surface, a metal sheet having a thickness of between 1/16 inch and 1/8 inch bonded to said smooth surface. A ceramic coating bonded to the exposed surface of said metal sheet to form a screen contacting surface portion; said coating having a hardness of at least 7 on Moh's scale.

3,351,525
COCCIDIOSTATIC COMPOSITIONS AND METHODS OF USING SAME

Ernst Hodel, Basel, Switzerland, assignor to J. R. Geigy A.-G., Basel, Switzerland

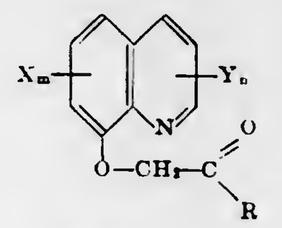
No Drawing. Filed May 6, 1963, Ser. No. 278,481

Claims priority, application Switzerland, May 11, 1962, 5,699/62, 5,700/62

8 Claims. (Cl. 167—53.1)

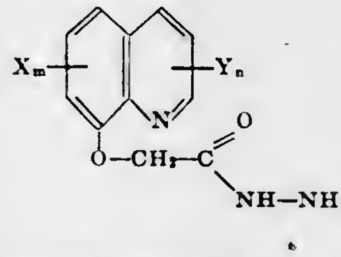
1. A process for controlling coccidiosis which comprises orally administering to an animal suffering therefrom, a member selected from the group consisting of

(a) a compound of the formula



(IB)

(b) a compound of the formula



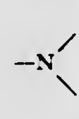
(IA)

(c) a water-soluble nontoxic salt of a compound of Formula IB, and

(d) a water-soluble nontoxic salt of a compound of Formula IA,

in which Formulae IB and IA:

R represents a member selected from the group consisting of hydroxy, lower alkoxy and the radical



each of R_1 and R_2, independently, represents a member selected from the group consisting of hydrogen, alkyl with from 1 to 5 carbon atoms, alkenyl with from 2 to 5 carbon atoms, lower alkoxy-lower alkyl, mono-lower alkylamino-lower alkyl, di-lower alkylamino-lower alkyl, hydroxy-lower alkoxy-lower alkyl, lower alkylamino - lower alkylamino - lower alkyl, phenyl, chlorophenyl and bromophenyl, and

R_1 and R_2 taken together is a member selected from the group consisting of morpholino, piperidino and piperazino,

each of X and Y, independently, represents a member selected from the group consisting of lower alkyl, chloro-lower alkyl, bromo-lower alkyl, fluoro-lower alkyl, phenyl, nitrophenyl, chlorophenyl, bromophenyl, lower alkyl-phenyl, hydroxyphenyl, benzyl, lower alkylbenzyl, chlorobenzyl, bromobenzyl, halogen, lower alkanoyl, benzoyl, chloro-lower alkanoyl, bromo-lower alkanoyl, fluoro-lower alkanoyl, chlorobenzoyl, nitrobenzoyl, phenacyl, nitro, amino, mono-lower alkanoylamino, mono-benzoylamino and mono- and di-lower alkylamino, and

each of *m* and *n*, independently, represents an integer ranging from 0 to 3,

in an amount sufficient to control coccidiosis.

3,351,526

PROCESS FOR REDUCING BLOOD COAGULATION TIME BY ADMINISTERING THERAPEUTICALLY ACTIVE DERIVATIVES OF DIHYDROXYBENZENE-SULFONATES

Antonio Esteve Subirana, Barcelona, Spain, assignor to Laboratoires Om Societe Anonyme, Geneva, Switzerland

No Drawing. Original application June 18, 1962, Ser. No. 202,981. Divided and this application Dec. 10, 1963, Ser. No. 329,391

Claims priority, application Switzerland, Jan. 29, 1962, 1,078/62

6 Claims. (Cl. 167—65)

1. The process of reducing blood coagulation time which comprises administering diethylammonium para-dihydroxybenzene sulfonate to the class consisting of animals and humans.

3,351,527

STABILIZED BENZATHINE PENICILLIN COMPOSITIONS

Joseph K. Apat, Downingtown, and Joseph E. Brady and William F. Elias, West Chester, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,906

4 Claims. (Cl. 167—65)

1. A stabilized therapeutic composition consisting of comminuted crystals of benzathine penicillin G in an aqueous suspending medium which includes a minor storage-stabilizing amount of sodium formaldehyde sulfoxylate.

3,351,528

COMPOSITIONS AND METHOD FOR STIMULATING THE CENTRAL NERVOUS SYSTEM

Anthony W. Pircio, East Brunswick, and Christie Semmes Krementz, Morristown, N.J., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

Filed Dec. 30, 1964, Ser. No. 422,286

16 Claims. (Cl. 167—65)

1. A composition of matter comprising a non-toxic pharmaceutical carrier and a compound selected from the group consisting of 3-(p-aminophenylsulfonyl)-3-azabicyclo[3.2.2]nonane and non-toxic acid salts thereof, said composition containing said compound in sufficient quantity to serve as a central nervous system stimulant.

3,351,529

SYDNONIMINE PHARMACEUTICAL COMPOSITIONS

Hans Ulrich Daeniker, Reinach, Basel-Land, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

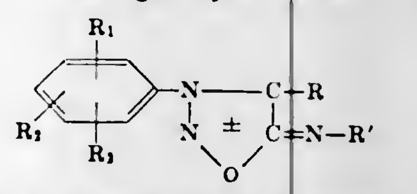
No Drawing. Filed Feb. 17, 1965, Ser. No. 433,458

Claims priority, application Switzerland, June 13, 1961, 6,898/61; Sept. 22, 1961, 11,070/61; Apr. 13, 1962, 4,598/62, 4,600/62

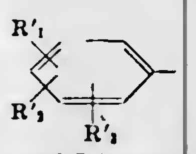
9 Claims. (Cl. 167—65)

1. A pharmaceutical composition useful as an antirheumatic which comprises

(a) an effective amount of a member selected from the group consisting of sydnonimines of the formula



in which R_1, R_2 and R_3 each stands for a member selected from the group consisting of hydrogen, lower alkyl, hydroxyl, lower alkoxy, lower alkanoyloxy, benzoyloxy, halogen and trifluoromethyl, and, when taken together, two of them form methylenedioxy, R stands for a member selected from the group consisting of hydrogen, lower alkyl, halogen, the group of the formula



in which R'_1, R'_2 and R'_3 each stands for a member selected from the group consisting of hydrogen, lower alkyl, hydroxyl, lower alkoxy, halogen and trifluoromethyl, and, when taken together, two of them form methylenedioxy, and lower alkylene attached to the phenyl radical in 4-position, and R′ stands for a member selected from the group consisting of hydrogen, alkanoyl containing up to 20 carbon atoms, benzoyl and lower-alkylcarbamyl, and its physiologically tolerable acid addition salts, and

(b) an inert pharmaceutical carrier.

3,351,530

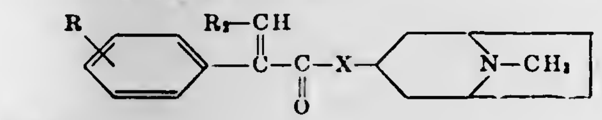
COMPOSITIONS FOR PRODUCING SPASMOLYTIC ACTIVITY COMPRISING 3-TROPANYL-2-PHENYLACRYLATE COMPOUNDS

Henry C. Caldwell, Ambler, and William G. Groves, Norristown, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Original application Feb. 18, 1965, Ser. No. 433,779, now Patent No. 3,317,544, dated May 2, 1967. Divided and this application Jan. 9, 1967, Ser. No. 607,890

3 Claims. (Cl. 167—65)

1. A pharmaceutical composition having spasmolytic activity in dosage unit form comprising from about 2.0 mg. to about 100 mg. of a 3-tropanyl-2-phenylacrylate compound having the formula:



in which:

X is a member selected from the group consisting of oxygen and sulfur;

R is a member selected from the group consisting of hydrogen, halogen, hydroxy, lower alkyl, lower alkoxy, cyano, nitro and trifluoromethyl; and

R_2 is a member selected from the group consisting of phenyl, furyl, pyridyl and thienyl combined with a pharmaceutical carrier.

3,351,531

WHEAT GLUTEN-ENCAPSULATED DRIED OIL-IN-WATER DISPERSIONS OF FAT-SOLUBLE FOOD, MEDICAMENTS, FLAVORING AGENTS OR FOOD COLORING AGENTS

Peter P. Noznick, Evanston, and Charles W. Tatter, Homewood, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 9, 1965, Ser. No. 478,413

12 Claims. (Cl. 167—83)

1. An encapsulated, dried product comprising 1 to 20% of an enveloping wheat gluten film encapsulating an oil in water dispersion wherein 30 to 70% of an oil or fat is a carrier for 1 to 20% of a material selected from the group consisting of fat soluble food, medicaments, flavoring agents and food coloring agents, said percentages being by weight on a dry basis.

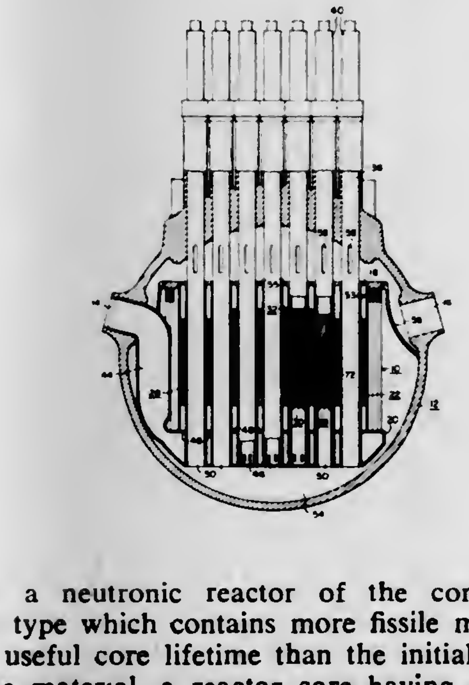
3,351,532

SEED-BLANKET CONVERTER-RECYCLE BREEDER REACTOR

Harry F. Raab, Jr., Pittsburgh, Milton J. Galper, McKeesport, and David H. Jones and George H. Conley, Pittsburgh, Pa., and William H. Hannum, Los Alamos, N. Mex., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 20, 1965, Ser. No. 488,487

9 Claims. (Cl. 176—17)



1. In a neutronic reactor of the converter-recycle breeder type which contains more fissile material at the end of useful core lifetime than the initial core loading of fissile material, a reactor core having a plurality of spaced seed regions and a blanket region completely surrounding each of said seed regions, each of the seed regions extending axially between the ends of the reactor core, and a blanket section positioned intermediate each of the ends of each seed region and the corresponding end of the reactor core, said seed regions being fueled with U^{233} and said blanket region being fueled with Th^{232}, said reactor core being moderated and cooled by light water, means for reducing the absorption of neutrons by Pa^{233} and for minimizing the parasitic losses of neutrons in said core, said means comprising means for moving portions of said seeds and said blanket out of said core to control the reactivity of said core, whereby parasitic losses of neutrons to control poisons are eliminated, said seeds having a H to U^{233} atom ratio therein of from 30 to 120, said seed having a volume fraction in said core lying between 15 and 40% of the total core volume, said blanket being formed with an average H to Th^{232} atom ratio of between 0.4 and 1.5, said core being fueled with an atom ratio of U^{233} to Th^{232} lying between 0.005 and 0.1 and a specific power lying between 300 and 1500 kw./kg., said reactor core being arranged to prevent neutron leakage therefrom of an amount greater than 1% of the total neutrons produced in the core whereby said core operates at a substantially uniform power density and whereby said reactor contains a larger fissile fuel inventory at the end of life than its initial inventory and whereby said reactor is operated such that equilibrium fuel concentrations do not occur for approximately 100 years.

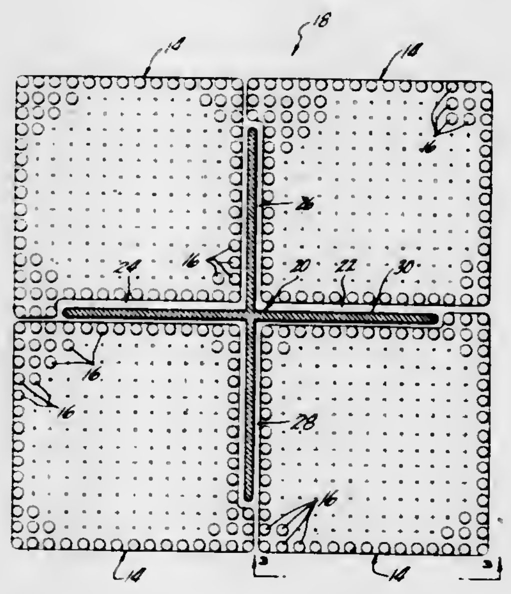
3,351,533

NUCLEAR REACTOR CORE ORGANIZATION AND FUEL ASSEMBLY THEREFOR

John F. Rohlin, Wapping, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 3, 1964, Ser. No. 415,698

1 Claim. (Cl. 176—40)



In a nuclear reactor core the combination of a plurality of elongated fuel assemblies retained in parallel side-by-side relation to form the core, each assembly being comprised of elongated parallel fuel rods retained in evenly spaced relation and arranged in a first group of parallel rows and a second group of parallel rows oriented at right angles to the first group, each of said rows extending across the entire width of the assembly with the exception of one outer row which extends from one edge of the assembly only a minor portion of the width of the assembly; there being the same number of rows in each direction with the exception of said partial row which is an additional row, the core including groups of four of the assemblies formed into subassemblies and oriented so that a cruciform passageway is formed centrally of the subassemblies with oppositely extending arms of the cruciform configuration being co-planar.

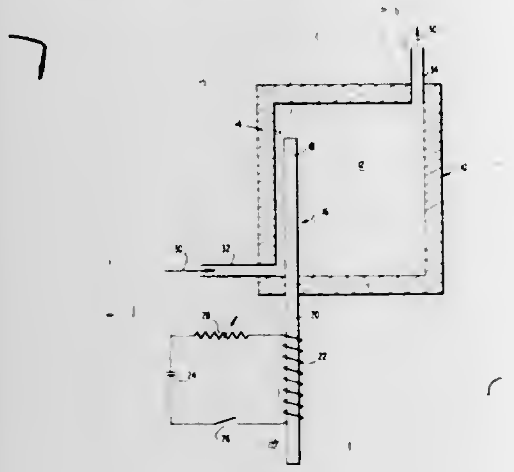
3,351,534

HYDROGEN DIFFUSION REACTOR CONTROL

Robert Magladry, Baltimore, Md., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland

Continuation of application Ser. No. 374,656, June 12, 1964. This application Jan. 3, 1966, Ser. No. 520,824

26 Claims. (Cl. 176—42)



26. A device for controlling a nuclear reactor having a core zone comprising:

- (a) a member of hydride material positioned within said core zone;
- (b) a hydrogen source external to said core zone and communicating with said member; and
- (c) means to induce reversible hydrogen flow between said source and said member.

3,351,535

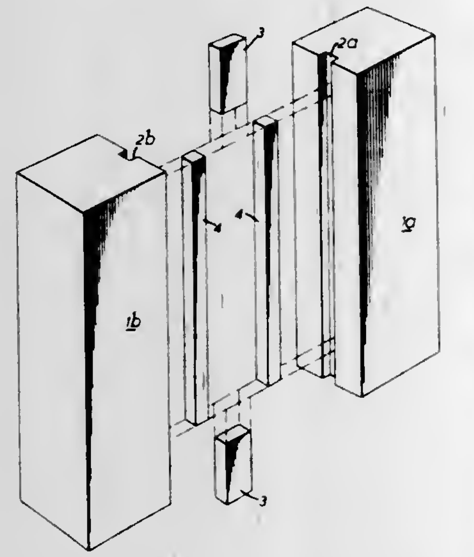
MODERATOR CORES FOR NUCLEAR REACTORS

Philip Cloudesley Warner, Wimbledon, London, England, assignor to United Power Company Limited, London, England, a British company

Filed Nov. 8, 1965, Ser. No. 506,719

Claims priority, application Great Britain, Nov. 13, 1964, 46,380/64

9 Claims. (Cl. 176—84)



1. In a nuclear reactor, a moderator core assembly comprises in combination,

- (i) a plurality of closely spaced, adjacent columns of vertically aligned prismatic blocks, prism faces formed on said prismatic blocks, laterally adjacent blocks presenting juxtaposed parallel prism faces and keyways formed in said juxtaposed parallel prism faces,
- (ii) a composite key assembly keying into said keyways comprising solid keys and longitudinally split keys, said solid keys spaced longitudinally along said keyways by said longitudinally split keys intermediate of said solid keys.

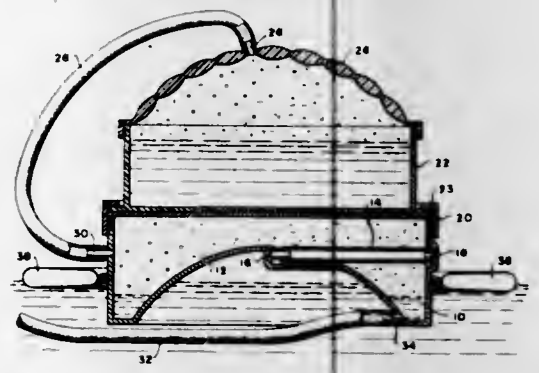
3,351,536

LENS-DOME SOLAR DISTILLATION UNIT

Robert M. Fox, 1035 Norman Drive, Apt. 104, Annapolis, Md. 21403

Filed Dec. 2, 1964, Ser. No. 415,550

7 Claims. (Cl. 202—83)



1. A solar distillation unit comprising:

a condenser can;

an evaporating container secured to the top of the said condenser can;

a lens-dome secured to the top of the said evaporating container;

means fluidly communicating the space adjacent the lens-dome with the space in the upper portion of the condenser can;

means for evacuating the said condenser can whereby vapor formed in the container and transferred to the condenser can be condensed into potable water;

an inflatable stabilizing floatation tube secured to said condenser can.

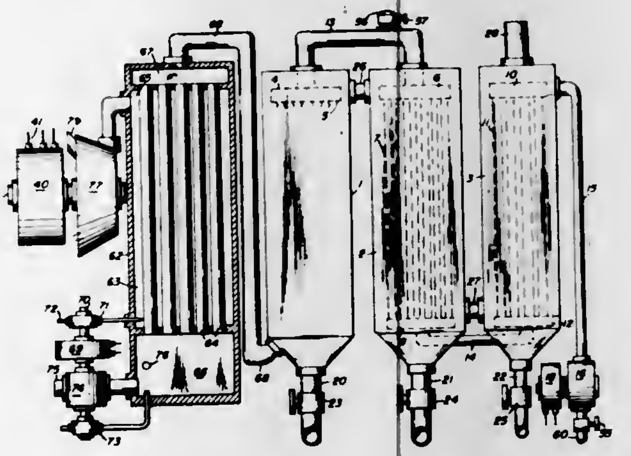
3,351,537

APPARATUS FOR CONVECTIVE DISTILLATION OF MATERIALS IN SOLUTION WITH HOT GAS PRODUCED BY COMBUSTION

Adolphe C. Peterson, 4623 Bruce Ave. S., Minneapolis, Minn. 55424

Filed Oct. 26, 1962, Ser. No. 233,231

4 Claims. (Cl. 202—172)



1. An apparatus comprising a low pressure evaporation chamber, a condensation chamber having a condensation space and cooling conduit means in heat transfer relation with a vapor bearing fluid through said conduit means to absorb heat from said vapor bearing fluid in said condensation chamber space, means for flow of a cooling fluid through said cooling conduit means to absorb heat from said vapor bearing fluid in said condensation chamber space; a power producing plant utilizing fuel and air combustion to effect power generation, means for flow of gases of combustion from said power producing plant to said low pressure evaporation chamber for movement therethrough in heat transfer relation by intimate and direct contact with the solution for segregation; means for flow of said combustion gases from said low pressure evaporation chamber with vaporized solvent from said solution to said condensation chamber space; means for flow of said combustion gases after substantial removal of condensed solvent therefrom in said condensation chamber space from said condensation chamber space and discharge to ambient air; the said power producing plant comprising a steam generating and heating unit, a combustion chamber and means for supplying air and fuel thereto for combustion therein and gas passage means for flow in indirect heat transfer relation with said steam generating and heating unit, a steam energized engine means with conduit and inlet means in communication with said steam generating and heating unit for receiving steam from said unit, the said gas passage means having means connected to said low pressure evaporation chamber for flow of combustion gases thereto; there being progressive flow of combustion gases to generate and heat steam, to evaporate liquid from the solution for segregation and to carry the vapor evolved to said condensation chamber space; said evaporation chamber having means to remove the unevaporated portion of said solution and said condensation chamber space having means to remove condensate.

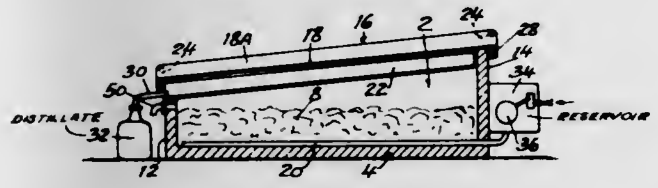
3,351,538

SOLAR DISTILLATION EQUIPMENT

Stella Andrassy, Ridge Road, Kingston, N.J. 08528

Filed June 18, 1963, Ser. No. 288,714

8 Claims. (Cl. 202—234)



1. Solar distillation equipment comprising a chamber having a peripheral wall, an inclined transparent cover for said chamber, a base for said chamber secured to the wall having dark granular material supported on the base in the form of a layer of predetermined depth located beneath said transparent cover, means for supplying liquid to be distilled to the granular material on said base, said means being operable to maintain said liquid at a level in said chamber above the base thereof but not normally exceeding the depth of said layer of granular material so as to maintain at least the lower portion of said layer substantially saturated with said liquid, and means located adjacent the lower portion of said inclined transparent cover in position to receive condensate flowing down the inner surface of said cover.

3,351,539

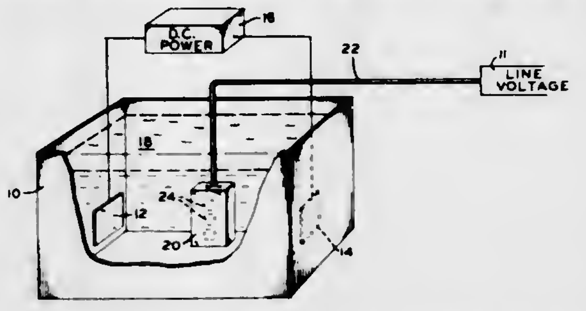
SONIC AGITATING METHOD AND APPARATUS

Norman G. Branson, Stamford, Conn., assignor, by mesne assignments, to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware

Filed Apr. 6, 1965, Ser. No. 446,008

5 Claims. (Cl. 204—14)

5. A method of electro.ytic plating comprising the provision of an electrolytic plating solution, and cyclically imparting to said solution sonic energy pulses having a frequency in the ultrasonic frequency range and having the characteristic of a damped oscillation to provide a non-standing wave pattern in said solution.



3,351,540

METHOD OF IMPROVING THE CORROSION RESISTANCE OF OXIDIZED METAL SURFACES

Charles J. Amore, New Haven, and James F. Murphy, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,162

9 Claims. (Cl. 204—35)

1. A method of improving the corrosion resistance of oxidized aluminum surfaces which comprises:

- (A) immersing the oxide coated aluminum in an aqueous solution containing from 0.0001% to saturation of a soluble organic amphipathic material selected from the group consisting of a fatty acid salt, an anionic surfactant and a cationic surfactant; and
- (B) passing an electric current of from 2 to 150 volts through said bath between an inert cathode and said oxide coated metal as an anode for from 30 seconds to 60 minutes, said bath being maintained at a temperature of from 50 to 150° C., to provide an oxide coating of at least 0.01 mil in thickness, at least the major portion of said oxide coating containing adsorbed therein said amphipathic material.

3,351,541

ELECTRODEPOSITION OF THE PLATINUM METALS

Ernest H. Lyons, Jr., Marblehead, and Russell M. Dempsey, Hamilton, Mass., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Jan. 19, 1965, Ser. No. 426,684

20 Claims. (Cl. 204—47)

1. A process of electroplating a platinum metal comprising

preparing an aqueous plating bath containing in solution at least 100 grams/liter of an electrolyte chosen from the group consisting of lithium halide an alkaline earth metal halide and from 1 to 50 grams/liter of a platinum metal in quadrivalent form,

maintaining the aqueous plating bath at a temperature of from 30° C. to 110° C.,

immersing an anode and a cathode in the plating bath, and

maintaining a cathode current density of from 10 to 200 milliamperes per square centimeter.

3,351,542

ELECTROLYTIC CHLORINATION AND pH CONTROL OF SWIMMING POOL WATER

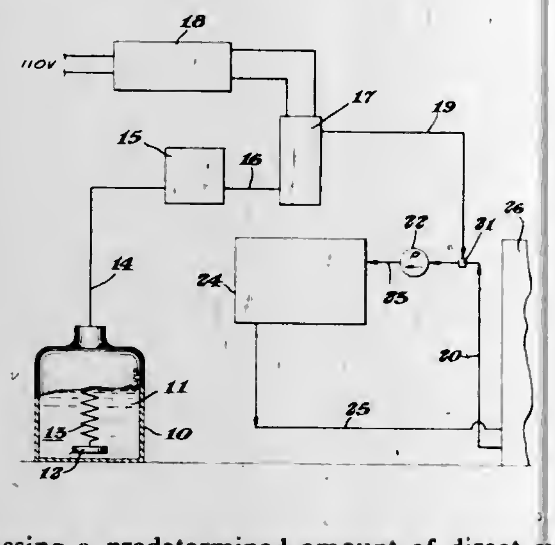
Charles F. Oldershaw, Concord, and Joseph F. Valle-Riestra, Walnut Creek, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 14, 1966, Ser. No. 593,940

3 Claims. (Cl. 204—149)

1. A method for chlorinating and controlling the pH of swimming pool water which comprises:

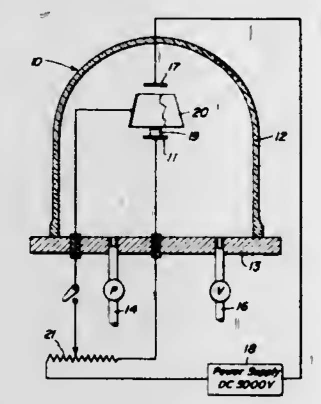
(a) providing an electrolytic cell having spaced apart a pair of electrodes;
(b) providing an electrolyte for said cell, said electrolyte comprising an aqueous solution containing at a minimum about 3 weight percent hydrogen chloride;
(c) introducing controlled amounts of said electrolyte into said electrolytic cell;



(d) passing a predetermined amount of direct current through said electrolyte between said electrodes thereby decomposing a portion of said electrolyte and producing a product mixture containing a predetermined quantity of chlorine and hydrogen gas and an aqueous solution containing hydrochloric acid of a predetermined lower concentration; and
(e) removing said product mixture as a froth from said electrolytic cell and introducing said froth into a stream of swimming pool water thereby to chlorinate and control the pH of said swimming pool water.

3,351,543
PROCESS OF COATING DIAMOND WITH AN ADHERENT METAL COATING USING CATHODE SPUTTERING

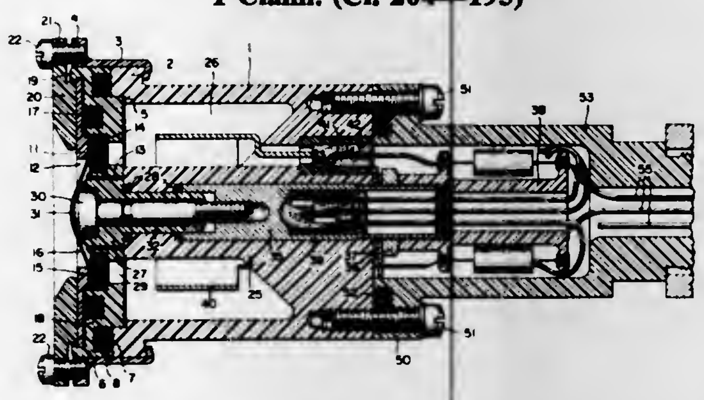
Thomas A. Vanderslice, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 28, 1964, Ser. No. 370,872
2 Claims. (Cl. 204—192)



1. In a process for cleaning crystalline material by glow discharge ion bombardment and coating said crystalline material with metal, during which process said crystalline material is located on a first cathode in an evacuated chamber and said crystalline material is exposed to the scrubbing action of gas ions impinging thereon during glow discharge established between an anode located spaced from said first cathode and said first cathode, after which a second cathode and said first cathode both receive gas ion impingement thereon, said first cathode being at a more positive potential than said second cathode, whereby metal particles are dislodged from said second cathode and deposited upon said crystalline material during continuing cleaning thereof, the improvement comprising the steps of:
(a) using diamond crystals as the crystalline material and
(b) continually adjusting the relative potentials of said first and second cathodes to render said first cathode progressively more positive relative to said second cathode.

3,351,544
GAS DETECTING CELL WITH DETACHABLE UNIT

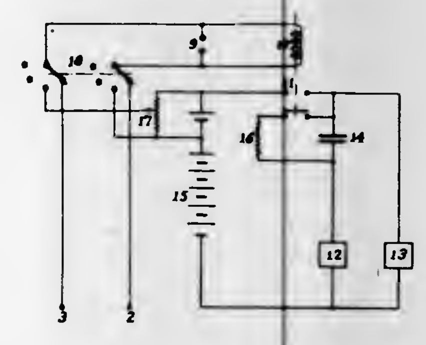
Lewis A. Medlar, Lansdale, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Mar. 23, 1964, Ser. No. 354,056
1 Claim. (Cl. 204—195)



In a polarographic cell for measuring the concentration of a dissolved reducible gas in a solution comprising a first electrode, a second electrode, chemically inert housing means supporting said electrodes in a spaced relationship and arranged to contain an electrolyte bridging said electrodes, a selectively permeable membrane in a position in intimate contact with said first electrode to separate said electrolyte and said electrodes from the solution and being selectively gas permeable to the reducible gas, and filter means in a position to separate said second electrode from said first electrode and said membrane and constituting the sole means through which said electrolyte bridges said electrodes, the improvement comprising a unit detachably secured to said housing means for supporting said membrane and said filter means in their said positions, said unit including first and second clamping means between which said membrane and said filter means are clamped, and fastening means releasably attaching said unit to said housing means.

3,351,545
DEVICE FOR CHECKING CATHODIC PROTECTION

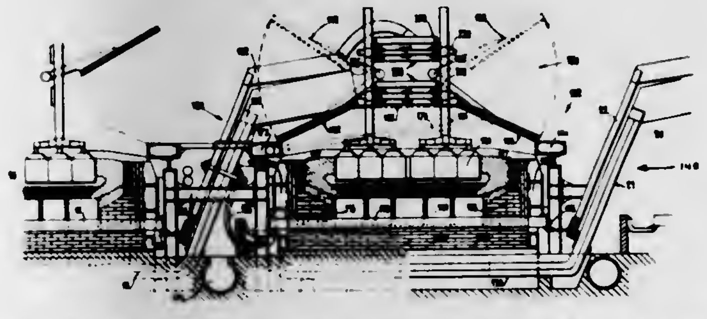
Bernard Marie Louis Heuzé, Boulogne-sur-Seine, France, assignor to Societe d'Etudes Contre la Corrosion (Secco), Paris, France, a corporation of France
Filed Dec. 23, 1963, Ser. No. 332,633
Claims priority, application France, Dec. 22, 1962, 919,750
6 Claims. (Cl. 204—196)



1. A monitoring and recording device for the continuous checking of the effectiveness of a cathodic protection system of a structure, comprising a voltmeter relay capable of sensing, and operable by, the potential difference between a structure being protected and a reference electrode located in the vicinity of the structure, said device further including a counter, a time device and a battery connected in a first circuit controlled by said relay, said relay being adjusted to close the first circuit upon deviation of said potential beyond a predetermined value, solely for the duration of said deviation, to trigger the counter to count and record the number of deviations and to trigger the timing device to record the total duration of said deviations.

3,351,546
HIGH YIELD ELECTROLYTIC FUSION CELL HAVING ANODE SUSPENSION MEANS

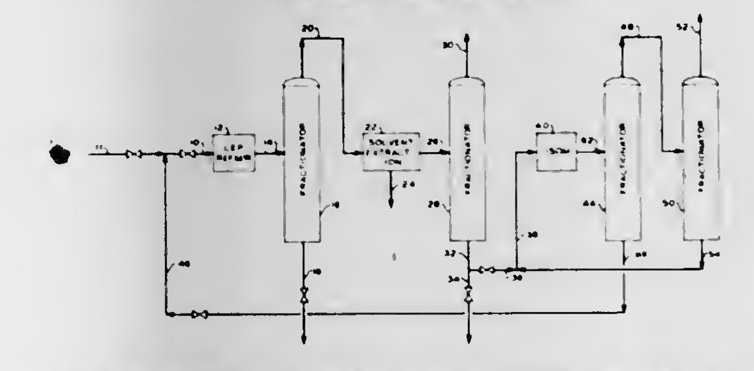
Jacques Chambran, Tarascon-sur-Ariege, Robert M. G. J. Scalliet, St.-Jean-de-Maurienne, and Daniel Duclaux, Lille, France, assignors to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France
Filed Oct. 11, 1963, Ser. No. 315,648
Claims priority, application France, Oct. 19, 1962, 912,817
10 Claims. (Cl. 204—243)



1. An electrolytic fusion construction comprising a plurality of cells arranged in series with the cathode of a preceding cell connected to the anode of a succeeding cell, each of said cells including a hood having heat reflecting material disposed on its interior surface and having heat insulating material disposed on its exterior surface, said hood comprising a fixed horizontal central portion and four inclined portions extending to the side walls of said cell, said inclined portions being rotatable about horizontal axes whereby each of said portions is adapted to be opened to permit access to the interior of said cell.

3,351,547
PROCESS FOR PRODUCING HIGH OCTANE GASOLINE

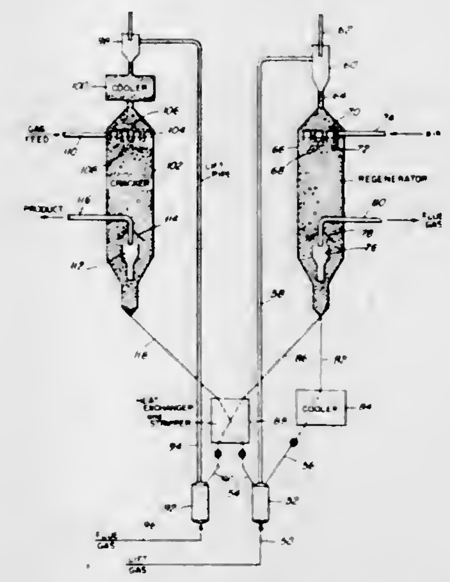
Lewis E. Drehman and Harold J. Hepp, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 29, 1965, Ser. No. 510,250
2 Claims. (Cl. 208—62)



1. A process for upgrading a hydrocarbon stream consisting principally of a mixture of C_6–C_7 hydrocarbons including a substantial amount of n-heptane which comprises the steps of:
(1) reforming said mixture to produce an effluent stream containing paraffins, naphthenes, and aromatics including benzene;
(2) fractionating the effluent stream of step (1) to recover an overhead stream of principally C_7 and lighter hydrocarbons and a bottoms stream of principally C_8 and heavier hydrocarbons;
(3) solvent extracting the overhead stream of step (2) to recover an aromatic extract stream of principally benzene and a raffinate stream of principally paraffinic and naphthenic of C_6–C_7 hydrocarbons;
(4) fractionating the raffinate stream of step (3) to recover an overhead stream of principally C_6 hydrocarbons and a bottom stream of principally C_7 hydrocarbons including substantially all of the n-heptane in said raffinate stream;
(5) isomerizing the bottoms stream of step (4) at a temperature in the range of 200 to 350° F. to principally a stream of C_7 branched chain isomers;
(6) fractionating the isomerizate from step (5) into a lighter stream comprising hydrocarbons boiling below about 190° F. as a high octane motor fuel, an intermediate stream boiling in the range of about 190 to 200° F., and a heavier stream boiling above about 200° F.;
(7) recycling the heavier stream of step (6) to step (1); and
(8) recycling the intermediate stream of step (6) to step (5) to form higher octane isomers thereof.

3,351,548
CRACKING WITH CATALYST HAVING CONTROLLED RESIDUAL COKE

John W. Payne, Woodbury, Robert A. Sailor, Cinaminson, and Jerome Farber, Cherry Hill, N.J., assignors to Mobil Oil Corporation, a corporation of New York
Filed June 28, 1965, Ser. No. 467,321
2 Claims. (Cl. 208—120)



1. A method for cracking hydrocarbons in the presence of finely divided solid crystalline aluminosilicate catalytic material which comprises forming a relatively dilute suspension of crystalline aluminosilicate catalytic material in hydrocarbon vapors at a temperature of at least about 850° F., passing the thus formed suspension through an elongated confined reaction zone under conditions to achieve at least about 50% conversion of fresh feed, separating spent catalytic material with carbon deposits thereon from said conversion products, combining separated spent crystalline aluminosilicate catalytic material with a quantity of hot regenerated catalytic material in an amount sufficient to provide a mixture of catalytic material at a temperature of at least about 1000° F., regenerating all of said mixture of catalytic material with oxygen containing gaseous material under conditions to retain up to about 0.5% by weight of residual coke on said catalytic

material without exceeding a temperature of about 1500° F., recycling a sufficient portion of said regenerated catalytic material to form the above mixture with spent catalytic material at a temperature of at least about 1000° F., cooling a portion of said regenerated catalytic material, and employing the thus cooled catalytic material to form said relatively dilute suspension at a temperature of at least about 850° F.

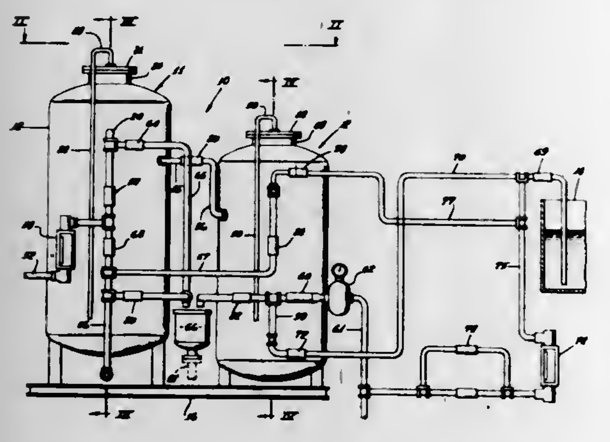
3,351,549
DESALINIZATION OF AQUEOUS SOLUTIONS

Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed June 19, 1964, Ser. No. 376,561
12 Claims. (Cl. 210—24)

1. A process for the desalinization of an aqueous solution of a dissolved salt which comprises contacting said solution at a low datum temperature with an ion retention agent comprising a water-insoluble aliphatic composition containing an acid-acting radical selected from the group consisting of sulfonic and carboxyl and a base-acting amino radical, each of said acid-acting and base-acting radicals being substituted on carbon atoms in the molecular structure of the composition separated by not more than five intervening carbon atoms, whereby substantially each acid-acting group adjacent to a base-acting group forms a di-polar aggregate which on contact with said solution withdraws the electropositive and electronegative ions of the salt from the solution and forms a resulting complex between the acid-acting and base-acting radicals in the ion retention agent with the electronegative and electropositive ions of said salt and withdrawing at said datum temperature from the ion retention agent containing adsorbed thereon the salt ions originally present in said solution a water product in which the concentration of salt is less than the salt concentration of said solution.

3,351,550
METHOD FOR SERIES WATER SOFTENING AND SERIES REGENERATION

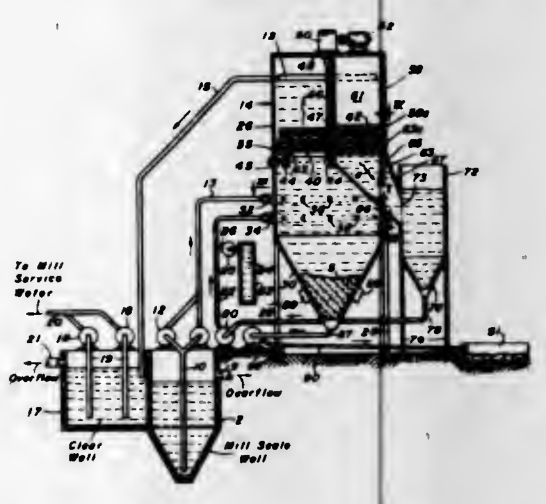
Harry Kraiker, Jr., West Covina, Calif., assignor, by mesne assignments, to Water Treatment Corporation, City of Industry, Calif., a corporation of Delaware
Filed Mar. 6, 1964, Ser. No. 349,890
5 Claims. (Cl. 210—34)



1. In a method of conditioning water to provide a virtually hardness free effluent and utilizing a primary softening unit having a primary bed of resinous material and a spaced separate polishing softening unit having a secondary bed of resinous material, the steps of:
- introducing raw water to said primary softening unit and passing said water through said primary bed to provide an effluent of low hardness;
- transporting said low hardness effluent to said polishing unit;
- passing said low hardness effluent through said secondary resin bed to remove any remaining hardness in the effluent;
- regenerating said primary and polishing units in their entirety and in series upon approach of a condition of substantial exhaustion of the primary resin bed and only partial exhaustion of the secondary bed;
- said regeneration including:
  - backwashing only said primary resin bed whereby said bed is agitated;
  - passing a regeneration solution upwardly through said secondary resin bed while maintaining a stable fixed unmixed resin bed in said polishing unit;
  - passing said partially used regeneration solution from the polishing unit to the primary unit;
  - and passing said partially used regeneration solution through the primary resin bed.

3,351,551
METHOD AND APPARATUS FOR REMOVING SOLID PARTICLES FROM LIQUIDS

Francis J. Sines, Youngstown, Ohio, assignor to United States Steel Corporation, a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 444,677
12 Claims. (Cl. 210—42)



9. A method of removing solid particles from a liquid comprising the steps of introducing said liquid and particles into a tank containing said liquid at an elevation intermediate the bottom of said tank and the top surface of said liquid, trapping in a filter the particles in said liquid carried upward from said intermediate elevation by the upward movement of said liquid flowing into said tank, collecting the particles which fall downward from said elevation at the bottom of said tank, drawing off some of the liquid which has risen above said filter back down through a portion of the filter and out of said tank, whereby particles trapped in said portion of the filter are removed and said portion of the filter is cleaned for reuse, alternatingly cleaning other portions of said filter in the same manner, and drawing off from said tank above said filter liquid which is substantially free of said particles.

3,351,552
LITHIUM COMPOUNDS AS RUST INHIBITORS FOR LUBRICANTS

William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
No Drawing. Filed Aug. 15, 1966, Ser. No. 572,230
6 Claims. (Cl. 252—41)

1. A lubricating composition comprising a major amount of lubricating oil and an amount sufficient to inhibit rust formation of a lithium salt of a hydrocarbon-substituted succinic acid having at least about 50 aliphatic carbon atoms in the hydrocarbon substituent.

3,351,553
RADIATION RESISTANT FLUIDS

Ralph Hollinghurst, Thundersley, Essex, England, assignor, by mesne assignments, to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed July 9, 1963, Ser. No. 293,893
5 Claims. (Cl. 252—45)

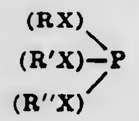
4. A method of lubricating the metal surfaces of equipment wherein the lubricating oil is exposed to radiation comprising the step of applying to the said metal surfaces a lubricant consisting essentially of from about 25% to about 95% by weight of a mineral oil normally prone to radiation deterioration and from about 75% to about 5% by weight of a partially hydrogenated terphenyl.

5. The method of claim 4 wherein there is additionally present a minor amount of didodecyl selenide.

3,351,554
NOVEL REACTION PRODUCTS AND ORGANIC COMPOSITIONS CONTAINING SAME

Herbert Myers, Barrington, and William F. Olszewski, Cherry Hill, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Jan. 25, 1966, Ser. No. 522,838
15 Claims. (Cl. 252—46.6)

1. As a novel composition of matter the reaction product of a reaction between (1) a phosphorus-sulfur compound of the structure



$$\left.\begin{matrix}(RX)\\(R'X)\\(R''X)\end{matrix}\right\rangle P$$

wherein R, R' and R'' may each be individually selected from the group consisting of alkyl, aralkyl, aryl, alkaryl, cycloalkyl and substituted derivatives thereof wherein such substituents contain atoms of nitrogen, oxygen, sulfur and halogen and each X atom is selected from the group consisting of sulfur and oxygen, wherein at least one X is sulfur and (2) an inorganic phosphorus-containing acid selected from the group consisting of phosphorus acid and phosphoric acid.

11. An organic composition comprising a preponderant amount of an organic base medium susceptible to oxidation deterioration and extreme pressure failure and a minor amount sufficient to provide stabilization thereto of the composition of matter of claim 1.

3,351,555
CHROMIC ACID-SULFURIC ACID SOLUTIONS CONTAINING A MERCURIC ION CATALYST FOR DISSOLVING OF COPPER AND ITS ALLOYS

Robert D. Byers, Onondaga, and John G. Poor, Otisco, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,220
12 Claims. (Cl. 252—79.2)

1. An aqueous solution for etching copper and its oxides consisting essentially of between 70 to 170 grams per liter chromic acid and 150 to 400 grams per liter sulfuric acid and having incorporated therein a catalytic amount of mercuric ions.

3,351,556
METHODS AND COMPOSITIONS FOR STRIPPING NICKEL

Harry K. Tsourmas, North Haven, Conn., assignor to MacDermid, Incorporated, Waterbury, Conn., a corporation of Connecticut
No Drawing. Filed Mar. 24, 1965, Ser. No. 442,506
12 Claims. (Cl. 252—102)

1. A nickel stripping composition for use in aqueous solution, which consists essentially of:
- (a) an oxidizer selected from the group consisting of the sodium, potassium, calcium and lithium salts of hypochlorite, normal chlorite, bromate and hypobromite;
- (b) a nickel-complexing agent selected from the group consisting of ammonia and ammonium carbonate, chloride, fluoride, phosphate, sulfate, nitrate and acetate; ethylenediamine, ethlenediamine tetraäcetic acid; nitrilotriacetic acid; glycine, glycolic, gluconic and tartaric acids and salts thereof; and
- (c) a divalent sulfur ion-supplying compound as a nickel-activating agent, said compound being selected from the group consisting of sodium, potassium, calcium, barium, magnesium, aluminum, ammonium, hydrogen sulfides and carbon disulfide; thiocyanates, thioacetates, thioamides, thioanilids, thiocarbamides and the salts thereof;

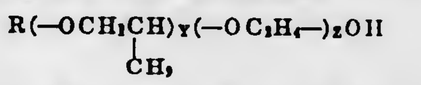
said oxidizer being present in amount to provide in solution from about 0.1 mol per liter to near saturation; said complexing agent being present in a mol ratio of at least 1:1 relative to the nickel to be dissolved; and said activating agent being present in small but effective amount up to about 0.23 mol per liter.

3,351,557
DETERGENT COMPOSITIONS

James L. Almstead, Rochester, N.Y., and Henry R. Greeb and Tom H. Ohren, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 16, 1965, Ser. No. 514,404
4 Claims. (Cl. 252—106)

1. A built liquid detergent composition, in the form of a stable oil-in-water emulsion, consisting essentially of:

(I) From about 1% to about 15% by weight of a nonionic detergent having the formula

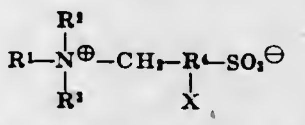


$$R(-OCH_2\underset{\underset{\displaystyle CH_3}{|}}{C}H)_Y(-OC_2H_4-)_ZOH$$

wherein R is selected from the group consisting of alkyl radicals containing from about 8 to about 18 carbon atoms and alkyl phenyl radicals wherein the alkyl groups contain from about 9 to about 15 carbon atoms, wherein Y is an integer from 0 to about 7 and wherein Z is an integer from about 5 to about 45;

(II) From about 2% to about 10% by weight of at least one detergent surfactant selected from the group consisting of

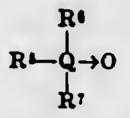
(a) A sultaine detergent having the formula



$$R^1-\overset{\overset{\displaystyle R^2}{|}}{\underset{\underset{\displaystyle R^3}{|}}{N}}{}^{\oplus}-CH_2-\underset{\underset{\displaystyle X}{|}}{R^4}-SO_3^{\ominus}$$

wherein R^1 is an alkyl radical containing from about 10 to about 18 carbon atoms, R^2 and R^3 are each selected from the group consisting of methyl and ethyl radicals, R^4 is selected from the group consisting of methylene, ethylene and propylene radicals and X is a hydroxyl group which is attached only to a secondary carbon atom;

(b) A detergent having the formula



$$R^5-\overset{\overset{\displaystyle R^6}{|}}{\underset{\underset{\displaystyle R^7}{|}}{Q}}\rightarrow O$$

wherein R^5 is selected from the group consisting of alkyl and monohydroxyalkyl radicals containing from about 10 to about 24 carbon atoms, containing from 0 to about 3 ether linkages and having one moiety which contains from about 10 to about 18 carbon atoms and no ether linkages; and R^6 and R^7 are each selected from the group consisting of methyl, ethyl, hydroxy ethyl, propyl and hydroxy propyl radicals, and Q is selected from the group consisting of phosphorus and nitrogen atoms; and

(c) Mixtures thereof:

(III) From about 10% to about 36% by weight of builder selected from the group consisting of alkali metal pyrophosphates; the alkali metal, ammonium and substituted ammonium salts of nitrilo triacetic acid, ethane-1-hydroxy-1,1-diphosphonic acid, and ethylenediaminetetraacetic acid; potassium tripolyphosphate; and mixtures thereof, there being no more than about 10% by weight of potassium tripolyphosphate present;

(IV) An emulsion stabilizer selected from the group consisting of ethylene/maleic-anhydride copolymers having specific viscosities of from about 0.5 to about 1.0 and methyl-vinyl-ether/maleic-anhydride copolymers having specific viscosities of from about 0.1 to about 0.6; when the former emulsion stabilizer is used it is present in an amount from about 1% to about 2% by weight and when the latter emulsion stabilizer is used it is present in an amount from about 0.3% to about 1.5% by weight and mixtures thereof; and

(V) The balance water, the pH of the composition being between about 11.7 and about 13.0.

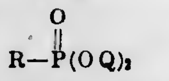
3,351,558
DETERGENT COMPOSITION CONTAINING ORGANIC PHOSPHONATE CORROSION INHIBITORS

Roger Earl Zimmerer, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 6, 1966, Ser. No. 577,149
10 Claims. (Cl. 252—137)

1. Detergent compositions consisting essentially of:

(1) from 1% to about 98% of the composition of a, detergency builder selected from the group consisting of water-soluble amino polyacetate, tripolyphosphate and polyphosphonate detergency builders and mixtures thereof;

(2) more than 0.05% and less than about 25% by weight of the total detergent composition of a corrosion inhibitor having the formula



$$R-\overset{\overset{O}{\|}}{P}(OQ)_2$$

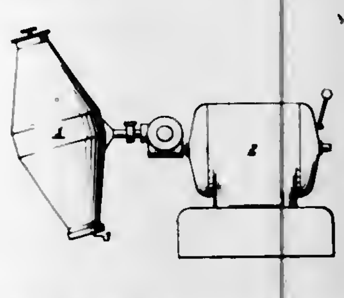
wherein R is selected from the group consisting of (1) a straight alkyl chain with the phosphorus atom attached to secondary carbon atoms on the chain, said straight chain alkyl radical containing from about 24 carbon atoms and (2) straight chain alkyl benzyl groups wherein the alkyl group contains from about 9 to about 18 carbon atoms and wherein Q is a water-solubilizing cation selected from the group consisting of hydrogen, alkali metal, ammonium, monoethanolammonium, diethanolammonium, and triethanolammonium cations;

(3) from 0% to about 90% of other detergency builders selected from the group consisting of alkali metal pyrophosphates, orthophosphates, tetraborates, perborates, hexaphosphates, sesquicarbonates and bicarbonates and mixtures thereof; and

(4) an organic detergent selected from the group consisting of nonionic, anionic, ampholytic and zwitterionic detergents and mixtures thereof in an amount such that the ratio of total detergency builders to organic detergent ranges from about 1:2 to about 10:1 and in an amount not greater than about 40% of the composition, said detergent composition being inhibited with respect to the corrosion of Zamac.

3,351,559
POURABLE AND FREE-FLOWING DETERGENT, WETTING, AND EMULSIFYING COMPOSITIONS

Werner Stein, Erkrath-Unterbach, Herbert Weiss, Cologne-Deutz, and Otto Koch, Hilden, Rhineland, Germany, assignors to Henkel & Cie., G.m.b.H., Dusseldorf, Germany, a corporation of Germany
Filed Oct. 8, 1964, Ser. No. 402,627
Claims priority, application Germany, Nov. 13, 1963, H 50,823
15 Claims. (Cl. 252—138)



1. A substantially solid particulate composition characterized by outstanding pouring and free-flowing properties which in combination with water constitutes a surface-active composition wherein the pouring and free-flowing properties thereof are derived from a combination consisting essentially of a non-ionic surface-active agent and a member selected from the group consisting of alkali metal, alkaline earth metal and ammonium salts of alpha-sulfo fatty acids having about 10 to 24 carbon atoms in the fatty acid portion of its molecule said surface active agent being present in an amount of from 5 to 50% by weight, the remainder being said α-sulfo fatty acid salt.

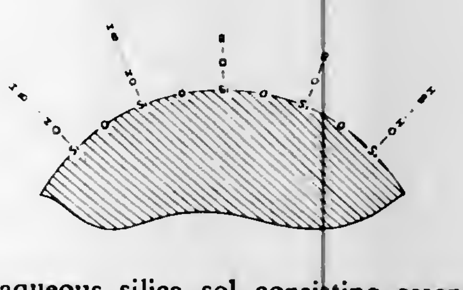
3,351,560
SOLVENT COMPOSITION

Winston E. Brown and Jerry R. La Coume, Lake Jackson, Tex., and Robert K. Treichler, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Apr. 9, 1965, Ser. No. 447,078
4 Claims. (Cl. 252—171)

1. A composition of matter consisting essentially of from about 20 to 50% by volume of a fluorohaloethane having from 2 to 4 fluoro atoms and the remainder of the valences of the carbon atoms being occupied by bromine or chlorine atoms or mixtures thereof and from 80 to 50% by volume of methyl chloroform.

3,351,561
NON-AQUEOUS SILICA SOLS AND METHOD FOR PREPARING SAME

William L. Albrecht, Naperville, and Morris Mindick, Chicago, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 9, 1961, Ser. No. 81,474
11 Claims. (Cl. 252—309)

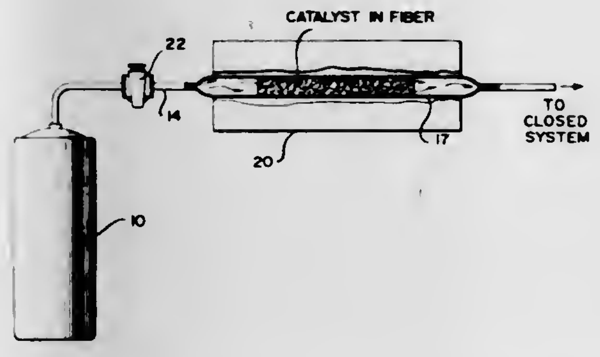


1. A non-aqueous silica sol consisting essentially of, as the continuous phase, a water miscible monohydric alcohol having a boiling point greater than 50° C., and as the dispersed phase 20–60% by weight of colloidal, discrete dense particles of salt-free silica which have an average particle diameter of 5–150 millimicrons, and a specific surface area of at least 20 $m.^2/g.$, which silica particles have from about 50% to about 95% of their surface silanol groups hydrogen bonded by an organic water miscible hydrogen bonding agent and from about 5% to about 50% of their surface silanol groups esterified with the same water miscible alcohol which corresponds to the continuous phase, said hydrogen bonding agent having a dipole moment of at least 3.0 Debye units, and being present in a mol ratio per mol of hydrogen bonded and surface esterified silanol groups of from 10:1 to 1:1.

7. The process of producing a non-aqueous silica sol which comprises the steps of adding an organic water miscible hydrogen bonding agent which has a dipole moment of at least 3.0 Debye units to an aqueous salt-free silica sol containing from 20% to 60% by weight of silica to form a reaction system, with the amount of hydrogen bonding agent being present in a mol ratio per mol of surface silanol groups present in the silica particles of the silica sol of from 10:1 to 1:1, adding under vacuum to the reaction system a water miscible monohydric alcohol in an amount of from 1 to 7 volumes per volume of water present in the aqueous salt-free silica sol, said alcohol having a boiling point greater than 50° C., maintaining said vacuum and heating the reactants under conditions whereby substantially all the water is removed from the reaction system, releasing the vacuum, heating the water miscible alcohol of the formed non-aqueous silica sol containing 20–60% by weight of silica to its reflux temperature at ambient pressure and maintaining said temperature for at least ¼ hour.

3,351,562
PROCESS FOR PRODUCING A SYNTHETIC BREATHABLE ATMOSPHERE

Thomas I. Taylor, Leonia, N.J., assignor to Isomet Corporation, Palisades Park, N.J., a corporation of New Jersey
Filed June 18, 1965, Ser. No. 465,011
4 Claims. (Cl. 252—372)



1. A process for producing a breathable atmosphere for a closed ecological system, comprising the steps of

providing nitrous oxide under pressure in liquid state,

reducing the pressure of said nitrous oxide to control gaseous flow rate thereof,

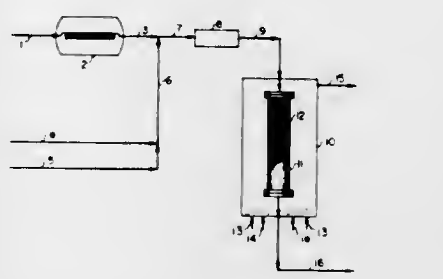
passing the gaseous nitrous oxide into contact, at a temperature within the range from 400° C. to 650° C., with a copper-magnesia catalyst for decomposing the gasous nitrous oxide into gaseous nitrogen and gaseous oxygen, said catalyst impregnated in fibrous heat-resistant material for support thereby,

removing traces of undecomposed nitrous oxide from the effluent nitrogen and oxygen gases by passage thereof through an absorbing material consisting of an aluminosilicate molecular sieve, and

supplying said nitrogen and oxygen gases in the approximate ratio of two parts to one to the atmosphere of said closed ecological system.

3,351,563
PRODUCTION OF HYDROGEN-RICH SYNTHESIS GAS

John S. Negra, South Plainfield, and Kenneth Mac Barclay, Stockton, N.J., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed June 5, 1963, Ser. No. 285,672
6 Claims. (Cl. 252—373)



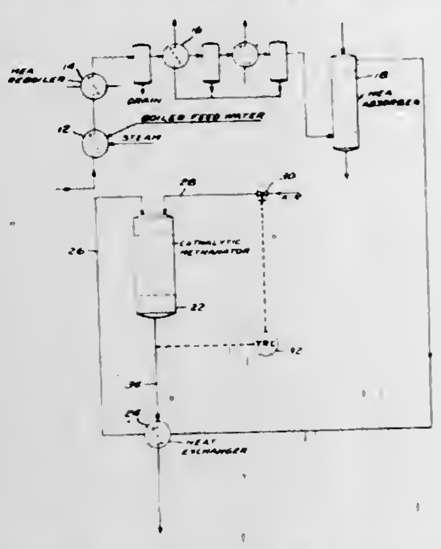
1. A process for reforming naphtha to produce a hydrogen-rich gas, suitable for methanol synthesis and containing essentially only hydrogen, carbon monoxide, carbon dioxide and steam, and substantially free of hydrocarbons, which consists of vaporizing and preheating naphtha to a temperature below 1000° F., superheating steam to a temperature above 1000° F., and preheating carbon dioxide to a temperature above 1000° F.; combining said streams of naphtha vapor, steam and carbon dioxide to form a mixed gaseous stream at a temperature in the range of 1400° F. to 1700° F., said mixed stream consisting of a mixture of naphtha vapor, steam and carbon dioxide and having a molar steam to carbon ratio in the range of 1.7 to 6.0 and a molar carbon dioxide to carbon ratio in the range of 0.1 to 1.0, reacting said mixture non-catalytically for an interval in the range of 0.05 to 1.0 seconds whereby said naphtha is simultaneously cracked to lower hydrocarbons, reacted with carbon dioxide, and partially steam reformed without accumulated deposition of free carbon, and catalytically reforming the resulting gas mixture in contact with a hydrocarbon reforming catalyst selected from the group consisting of nickel and cobalt deposited on a carrier, at a linear gas velocity of at least 5 ft./sec., said catalyst being externally heated to maintain a reaction temperature of at least 1600° F., whereby a final reformed gas mixture is produced substantially free of hydrocarbons and without accumulated deposition of free carbon, said final gas mixture having the proper ratio of hydrogen to carbon oxides for methanol synthesis and containing essentially only hydrogen, carbon monoxide, carbon dioxide and steam.

3,351,564
CONTROL OF CATALYTIC METHANATION UNIT

Albert C. Faatz, Jr., Montclair, and Earl B. Powell, Chatham Township, N.J., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Mar. 14, 1966, Ser. No. 534,236
6 Claims. (Cl. 252—377)

1. In a process involving a catalytic methanation reaction in a reaction vessel of a synthesis feed gas containing hydrogen and a small amount of carbon monoxide or carbon dioxide wherein the feed gas must be at a high temperature to initiate the reaction, and wherein the temperature level is achieved in part by heat exchange of the effluent gas from the reaction vessel with the feed gas, a small amount of carbon monoxide and carbon dioxide being defined as an insufficient amount to raise the temperature of the effluent gas to at least 50° F. above the temperature of the feed gas, the improvement comprising the steps of exothermally burning a portion of the

hydrogen in the feed gas with a controlled amount of an oxygen containing gas to raise the temperature level of the effluent gas from the reaction vessel, and passing the effluent gas in heat exchange with the feed gas, the amount of oxygen added being sufficient to raise the temperature level of the effluent gas at least 50° F. above the temperature of the feed gas.



3,351,565
CATALYST FOR THE PREPARATION OF DICARBOXYLIC ACID ANHYDRIDES

Ralph O. Kerr, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Original application Apr. 19, 1963, Ser. No. 274,302, now Patent No. 3,255,211, dated July 7, 1966. Divided and this application Oct. 21, 1965, Ser. No. 510,433

3 Claims. (Cl. 252—437)

2. A catalyst useful for the oxidation of aliphatic hydrocarbons to dicarboxylic acid anhydrides which comprises a catalytic composition of vanadium, phosphorus, niobium and a metal of Group I*a* of the Periodic Table deposited on a carrier in an atomic ratio of 1.1 to 1.8 atoms of phosphorus per atom of vanadium, 0.005 to 0.3 atom of niobium per atom of vanadium and from 0.003 to 0.2 atom of a metal of Group I*a* per atom of phosphorus, the said catalyst having been prepared by depositing on the carrier the catalytic composition wherein the vanadium is a cation and has an average valence of less than 4.6 at the time of the deposition of the catalytic composition on the carrier, and thereafter drying the catalytic composition on the carrier.

3,351,566
STABILIZED HIGH-ACTIVITY CATALYST

William F. Taylor, Scotch Plains, John H. Sinfelt, Berkeley Heights, and David J. C. Yates, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,828

3 Claims. (Cl. 252—452)

1. A solid nickel-silica catalyst having a stabilized high nickel surface area of 45 to 60 sq. meters per gram and total surface area of 225 to about 300 sq. meters per gram of the catalyst in activated condition is prepared by precipitating the nickel and silicate ions from solution as nickel hydrosilicate onto porous silica particles in such proportions that the activated catalyst contains 25 to 50 wt. percent nickel and of its total silica content 30 to 90 wt. percent thereof is derived from the precipitated silicate ions, the catalyst being activated by calcining in air the particles of porous silica with its deposit of nickel hydrosilicate at 600° to 900° F. then reducing with hydrogen the resulting calcined solids at 600° to 900° F.

3,351,567
PRODUCTION OF ATTRITION-RESISTANT ALUMINA CATALYST

Reno W. Moehl, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 19, 1963, Ser. No. 331,938

4 Claims. (Cl. 252—466)

1. A process of catalyst manufacture which comprises precipitating an amorphous hydrous alumina, forming the resultant undried amorphous precipitate into an aqueous slurry containing a salt of a metal of Group VIII of the Periodic Table, thereafter spray drying said slurry to form finely divided metal-containing particles, and then calcining said particles to form a hard and attrition-resistant catalyst.

3,351,568
PRODUCTION OF SOLID STATE PTC SENSORS

Joseph W. Waseleski, Jr., Mansfield, and Harry M. Landis, Norton, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Apr. 13, 1964, Ser. No. 359,370

10 Claims. (Cl. 252—520)

1. The method of producing electrical solid-state PTC sensors of a material such as $Ba_{.997}La_{.003}TiO_3$ and related perovskite materials comprising milling a stoichiometric mixture of barium and lanthanum carbonates with titanium dioxide, calcining, again milling and thereafter heating the material to a temperature of at least 115° C. to drive off adsorbed moisture, pelletizing the heated material to form pellets before the material has cooled below about 100° C., firing the pellets at a temperature on the order of not less than 1475° C. for a short period of time not exceeding about 15 minutes, and thereafter cooling the pellets.

3,351,569
PROCESS FOR THE PREPARATION OF EXPANDABLE POLYMERIC PRODUCTS

Leonardus J. Revallier, Coenraad L. de Booijs, and Cornelis Verweel, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed Dec. 3, 1962, Ser. No. 241,498

Claims priority, application Netherlands, July 11, 1962, 280,836

18 Claims. (Cl. 260—2.5)

1. Process for the preparation of expandable products by contacting a crystalline thermoplastic polymer in the solid state selected from the group consisting of thermoplastic polymers of ethylene and propylene with a liquid blowing agent yielding a gaseous phase during expansion, wherein the polymer used is mixed with at least 10% by weight of a finely divided inert inorganic solid nucleating agent selected from the group consisting of magnesium oxide, diatomaceous earth, aerosil, silicon dioxide, perlite, asbestos powder, metal silicates, metal carbonates, and mixtures thereof, and a wax.

3,351,570
STABILIZATION OF RUBBER ARTICLES BY TREATMENT WITH INORGANIC PEROXYGENATED COMPOUNDS

Bruce Kenneth Rodaway, Erdington, Birmingham, and Kenneth Osborne Calvert, Sutton Coldfield, England, assignors to Dunlop Rubber Company Limited, London, England, a British company

No Drawing. Filed Dec. 17, 1964, Ser. No. 419,181

Claims priority, application Great Britain, Jan. 17, 1964, 2,097/64

12 Claims. (Cl. 260—2.5)

1. In a process for the manufacture of a light colored shaped rubber article from natural or synthetic rubber using a dithiocarbamate accelerator and sulphur, the improvement which comprises contacting the cured article with a dilute aqueous solution of a peroxygenated compound until residual dithiocarbamate is substatnially oxidized without deleterious effect upon the rubber, the peroxygenated compound being selected from the group consisting of hydrogen peroxide and the alkali metal salts of perboric acid and persulphuric acid.

11. In a process for the manufacture of a light colored shaped rubber article from a synthetic rubber latex containing residual dithiocarbamate, using sulphur and an accelerator selected from the group consisting of mercaptobenzthiazoles and polythioamines, the improvement which comprises adding a dilute solution of a peroxygenated compound selected from the group consisting of hydrogen peroxide and the alkali metal salts of perboric acid and persulphuric acid to the synthetic rubber latex in an amount sufficient to oxidize the dithiocarbamate present.

3,351,571
BLENDS OF NATURAL OR SYNTHETIC RUBBER WITH POLYEPISULFIDE

Norman Singers Grace and Raymond Thomas Woodhams, Toronto, Ontario, Canada, assignors to Dunlop Rubber Company Limited, London, England, a British company

No Drawing. Filed Sept. 23, 1964, Ser. No. 398,739

Claims priority, application Great Britain, Oct. 19, 1963, 41,360/63; Feb. 27, 1964, 8,149/64

16 Claims. (Cl. 260—4)

1. A vulcanized elastomeric composition comprising the sulphur vulcanizate of a mixture of:

(a) an ethylenically unsaturated copolymer of at least one saturated aliphatic episulphide monomer and an episulphide monomer containing at least one aliphatic carbon-carbon double bond in addition to the episulphide group, the proportion of said unsaturated monomer in the copolymer being from 0.1 to 20 mole percent, and

(b) a sulphur vulcanizable elastomer selected from the group consisting of natural rubber and diolefin polymers—the amount of said unsaturated episulphide copolymer being from 1 to 99 percent by weight of the total elastomer content of the composition.

3,351,572
SOLVENT-RUBBER SYSTEMS OF LOW VISCOSITY

Alexander K. Jameson, Elizabeth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 30, 1964, Ser. No. 379,381

4 Claims. (Cl. 260—5)

1. A solvent-rubber system comprising in combination an isoparaffinic solvent and at least two co-milled rubbers wherein at least one rubber is a soluble rubber selected from the group consisting of natural rubber, butyl rubber, polyisobutylene, ethylene-propylene rubber, polyisoprene, and combinations thereof and wherein a second rubber is an insoluble rubber selected from the group consisting of styrene-butadiene rubber, neoprene, polybutadiene, nitrile rubber, and combinations thereof; the total rubber concentration being in the range between about 0.5 and 3.0 pounds of rubber per gallon of said solvent and the amount of insoluble rubber accounting for 10 to 75 wt. percent of the total rubber concentration wherein the isoparaffinic solvent contains at least 95 volume percent isoparaffins and has an ASTM distillation range of about 200 to about 220° F.

3,351,573
CATALYZED STORAGE-STABLE QUICK DRYING COATING COMPOSITION CONTAINING POLYURETHANE-POLYISOCYANATE FILM FORMER

Gerald R. Skreckoski, Buffalo, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed June 13, 1961, Ser. No. 116,694

7 Claims. (Cl. 260—18)

1. A package comprising a closed container containing a catalyzed storage-stable quick-drying coating composition which is substantially free from water and alkaline reacting materials, said water content being less than 0.1%, which contains from 10 to 90% by weight of solvent component substantially free from compounds containing reactive hydrogen and from 10 to 90% by weight of solute component comprising a polyurethane-polyisocyanate film-former and a catalyst to accelerate the film forming reaction in the applied coating, said catalyst being an organo-compound of tetravalent tin having at least one carbon atom bonded to the tin atom of said organo-compound and at least one atom selected from the group consisting of oxygen, sulfur and chlorine bonded to the tin atom of said organo-compound, the sum of bonds of tin to carbon and to said atoms being equal to four, said polyurethane-polyisocyanate film-former solute being prepared by forming a reaction mixture of a polyol reactant and a polyisocyanate reactant, said polyol reactant being an organic compound containing carbon, oxygen and hydrogen having a plurality of aliphatic hydroxyl groups and having an average functionally between 2 and 4 inclusive and an average hydroxyl equivalent weight between 100 and 600, said polyisocyanate reactant being an organic compound containing carbon, hydrogen, oxygen and nitrogen having a plurality of —NCO groups per molecule and having an average functionality between 2 and 3 inclusive and an average equivalent weight between 50 and 200, the amounts of polyisocyanate reactants and polyol reactants used being such that (1) the weight of polyisocyanate reactant is from 35% to 65% of the weight of the total polyisocyanate and polyol reactants, and (2) the ratio of NCO groups to OH groups in the reactant charge is between 1.5 and 2.2 inclusive, and heating said reaction mixture until the reaction between said polyisocyanate reactant and said polyol reactant is substantially complete.

6. A package as claimed in claim 1 wherein the catalyst is dibutyl tin dilaurate.

3,351,574
CASTOR OIL POLYGLYCIDYL ETHER

Darrel D. Hicks and William J. Belanger, Louisville, Ky., assignors to Celanese Coatings Company, a corporation of Delaware

No Drawing. Filed Feb. 24, 1965, Ser. No. 435,042

8 Claims. (Cl. 260—18)

6. A curable composition comprising castor oil polyglycidyl ether, a different polyepoxide containing more than one 1,2 epoxy group per molecule and an epoxy resin curing agent.

7. The composition of claim 6 wherein the polyepoxide is a diglycidyl ether of a dihydric phenol and the epoxy resin curing agent is a polycarboxylic acid anhydride.

8. The cured composition of claim 7.

3,351,575
RESINOUS COATING MATERIAL

Allan E. Gilchrist, Fairview Park, Ohio, assignor, by mesne assignments, to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

No Drawing. Filed Apr. 10, 1962, Ser. No. 186,320

The portion of the term of the patent subsequent to Jan. 18, 1983, has been disclaimed

1 Claim. (Cl. 260—19)

A phenolic resin-extended polycarboxylic acid resin consisting essentially of the product of heating together at a temperature between about 400° and 500° F. for at least about 30 minutes:

(a) 50–95 weight parts of a coupled siccative oil reacted under substantially anhydrous conditions with about 2–25%, based on the weight of said coupled siccative oil, of a vinyl monomer, wherein the resulting reaction product (a) has an Acid Number of at least about 30, and

(b) 5–50 weight parts of an oil soluble, non-heat reactive phenol-aldehyde resin.

3,351,576

VINYL CHLORIDE POLYMERS STABILIZED WITH MIXTURES COMPRISING BARIUM AND CADMIUM SOAPS OF MONOESTERS OF DICARBOXYLIC ACIDS

Vincent Oakes, Eccleston, England, assignor to Pure Chemicals Limited, Liverpool, England, a British company

No Drawing. Filed Feb. 17, 1964, Ser. No. 345,093

Claims priority, application Great Britain, Feb. 22, 1963, 7,199/63

6 Claims. (Cl. 260—23)

1. A composition for stabilizing vinyl chloride homopolymer and copolymers comprising a barium soap, a cadmium soap and a phenol, one of said soaps being a soap derived from a monoester of a dicarboxylic acid and the other of said soaps being a soap derived from a compound selected from the group consisting of monoesters of dicarboxylic acids and aliphatic monocarboxylic acids.

3,351,577

SOUND RECORD COMPRISING VINYL HALIDE RESIN, GROUP II METAL TALLATE AND HYDROGEN HALIDE ACCEPTOR

Stephen Krumm, Plainfield, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 28, 1966, Ser. No. 523,556

10 Claims. (Cl. 260—23)

1. A sound record having its playing surface formed from a composition comprising a vinyl halide resin, a primary stabilizer which acts as a hydrogen halide acceptor and is a material selected from Group II metal salts of acids having a maximum of 21 carbon atoms, Group IV metal salts of acids having a maximum of 21 carbon atoms, Group II metal salts of inorganic acids, Group IV metal salts of inorganic acids, alkali metal salts of weak acids, epoxides, and Group II metal oxides, and as a secondary stabilizer a Group II metal tallate, said stabilizers being present in said composition in an amount of from about 0.15 percent by weight to about 9 percent by weight, based on the weight of said resin and wherein said secondary stabilizer is present in an amount of from about 10 percent by weight to about 50 percent by weight, based on the weight of said stabilizers in said composition.

3,351,578

MONOAZO DYESTUFFS HAVING A MONOCHLOROTRIAZINE RING CARRYING A SULFOANTHRANILIC ACID AMINO SUBSTITUENT

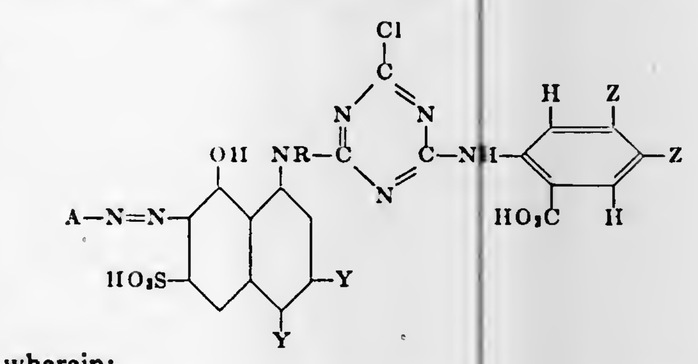
Herbert Francis Andrew and Donald Buckley, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Sept. 24, 1964, Ser. No. 399,094

Claims priority, application Great Britain, Nov. 23, 1960, 40,278/60

3 Claims. (Cl. 260—153)

1. The monoazo compounds which, in the free acid form, are represented by the formula:



wherein:

A stands for an o-sulfonated phenyl radical on which any substituents are selected from the group consisting of $—SO_3H$, $—NO_2$, $—CH_3$, —Cl, and $—OCH_3$;

one Y stands for a hydrogen atom and the other for a sulfonic acid group;

one Z stands for a member selected from the group consisting of $—CO_2H$ and $—SO_3H$, and the other for a hydrogen atom; and

R stands for a member selected from the group consisting of hydrogen and a lower alkyl group.

3,351,579

WATER-SOLUBLE CATIONIC AZO DYESTUFFS

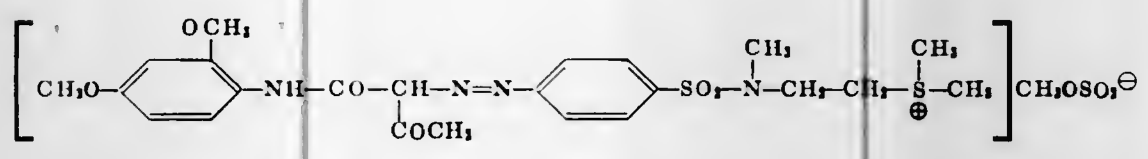
Edwin Baier, Frankfurt am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 1, 1963, Ser. No. 312,865

Claims priority, application Germany, Oct. 3, 1962, F 37,956

2 Claims. (Cl. 260—158)

1. Dyestuff of the formula



3,351,580

DISAZO DISPERSE DYESTUFFS

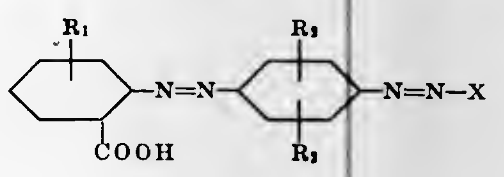
Eiji Koike and Fujio Kanazawa, Toyonaka-shi, and Hideo Otsuka, Fuse-shi, Japan, assignors to Sumitomo Chemical Company, Ltd. and Toyo Spinning Co., Ltd., both of Osaka, Japan, both corporations of Japan

No Drawing. Filed Aug. 13, 1963, Ser. No. 301,883

Claims priority, application Japan, Aug. 14, 1962, 37/35,224

6 Claims. (Cl. 260—160)

1. A disazo disperse dyestuff having the general formula,



wherein R_1 represents a member selected from the group consisting of hydrogen atom, chlorine atom and nitro radical, R_2 and R_3 represent a member selected from the group consisting of hydrogen atom, lower alkyl radical, lower alkoxy radical and chlorine atom, respectively, and X represents a phenolic, aniline, acetoacidanilide, pyrazolone or carbazole member free from sulfo and carboxyl radicals.

3,351,581

ACETYL ALGINATES AND PECTATES AND PROCESS OF MAKING THE SAME

Richard G. Schweiger, San Diego, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware

No Drawing. Filed June 24, 1966, Ser. No. 560,065

22 Claims. (Cl. 260—209.5)

1. The process of esterifying pectic acid with lower fatty organic acids which comprises: hydrating said pectic acid with water by contacting said pectic acid with water; partially but not completely dehydrating said hydrated pectic acid by washing the so-hydrated substance with an organic solvent which is miscible with water to lower its water content within the range of 4% to 40%; thereafter placing the thus partially dehydrated pectic acid in a reaction mixture consisting essentially of the anhydride of the organic acid selected together with from 0% to a substantial quantity of acetic acid and with a catalyst selected from the group consisting of perchloric acid and sulfuric acid; raising said mixture to a temperature within the range 35° to 80° C.; maintaining said reaction mixture within said temperature range until esterification has proceeded to the desired extent; thereafter washing said mixture with a selective solvent to remove the said acid reagent.

18. A process for acetylating an algin compound from the group consisting of alginic acid and propylene glycol alginate, said process comprising uniformly hydrating said algin compound to a water content ranging from 10 to 20% by weight, said algin compound having an ash content not in excess of about 1.5% by weight, admixing acetic acid and acetic anhydride with said hydrated algin compound to form a reaction mixture consisting essentially of said uniformly hydrated align compound and said acetic acid and acetic anhydride, adding perchloric acid incrementally to said reaction mixture, the total quantity of added perchloric acid ranging from about 1.0 to 2.0% by weight of said algin compound, maintaining the reaction temperature below about 40° C., and continuing the reaction until said algin compound is acetylated to a degree of substitution of acetyl groups of at least 0.2.

3,351,582

LINCOMYCIN DERIVATIVES AND PROCESS FOR PREPARING SAME

Jules J. J. Balansard, 36 Rue de la Bibliotheque, and Pierre J. L. Bernard, 229 Ave. du Prado, both of Marseille, France

No Drawing. Filed Oct. 6, 1965, Ser. No. 493,540

Claims priority, application France, Oct. 9, 1964, 990,983; Mar. 12, 1965, 9,069

7 Claims. (Cl. 260—210.5)

5. A process for obtaining an extract from a saponin-plant tissue, which comprises extracting said plant tissue with 5 to 15 times its dry weight of an alcohol selected from the group consisting of 65–75% aqueous ethanol, 65–75% aqueous methanol and 65–75% aqueous isopropanol at ambient temperature, concentrating the alcoholic extract thus obtained at a temperature not above 45° C., mixing the concentrate thus obtained with water at above 90° C., cooling the mixture thus produced, separating the insoluble residue therefrom, extracting said residue with a ketone selected from the group consisting of acetone and methyl ethyl ketone, mixing the extracted residue with magnesia and at least sufficient water to form a paste, drying said paste, extracting said paste with an alcohol selected from the group consisting of methanol and ethanol, and evaporating said alcohol from the extract thus obtained.

3,351,583

PREPARATION OF HYDROXYPROPYL CELLULOSE

Robert G. Bishop, Hopewell, Va., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed July 6, 1964, Ser. No. 380,608

13 Claims. (Cl. 260—231)

1. Process of preparing hydroxypropyl cellulose ethers having an M.S. of at least 2 which comprises dispersing cellulosic material in a liquid dispersant selected from the group consisting of water-immiscible dispersant and mixtures of water-miscible and water-immiscible dispersant, agitating the resulting dispersion at a temperature of about 55° C.–110° C. in the presence of alkali, water, and propylene oxide, and employing the following weight ratios to cellulose:

Alkali	0.02–0.3
Water	0.1–1.0
Water-immiscible dispersant	5–20
Water-miscible dispersant	0.2–7.0

3,351,584

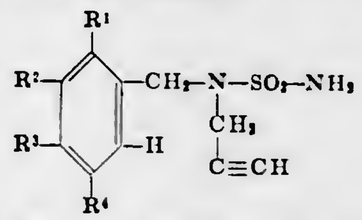
N-PROPARGYL SULFAMIDES

William J. Houlihan, Mountain Lakes, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Filed July 17, 1964, Ser. No. 383,507

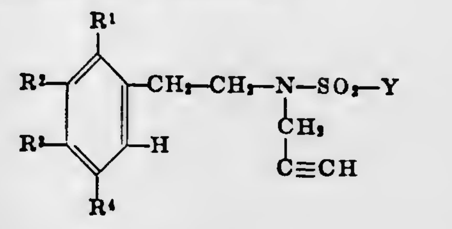
29 Claims. (Cl. 260—239)

1. A compound of the formula



wherein each of R^1, R^2, R^3, and R^4 is, independently, a member selected from the group consisting of a hydrogen atom, lower alkyl, lower alkoxy, a fluorine atom and a chlorine atom.

21. A sulfamide of the formula

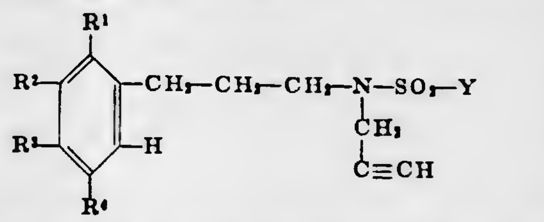


wherein:

each of R^1, R^2, R^3, and R^4 is, independently, a member selected from the group consisting of a hydrogen atom, lower alkyl, lower alkoxy, a fluorine atom and a chlorine atom, and

Y is a member selected from the group consisting of aziridino, pyrrolidino, piperidino, piperazino, azetidino, N′-(lower) alkyl-N-piperazino and morpholino.

29. A sulfamide of the formula



wherein:

each of R^1, R^2, R^3, and R^4 is, independently, a member selected from the group consisting of a hydrogen atom, lower alkyl, lower alkoxy, a fluorine atom, and a chlorine atom, and

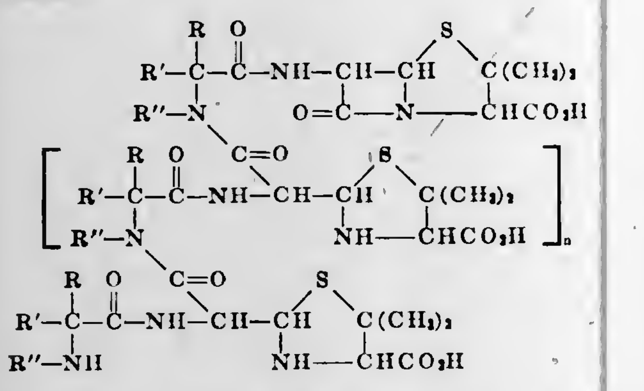
Y is a member selected from the group consisting of aziridino, pyrrolidino, piperidino, piperazino, azetidino, N'-(lower) alkyl-N-piperazino and morpholino.

3,351,585
PREPARATION OF FINE HMX
Paul L. Lee and Glenn E. Sims, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 28, 1966, Ser. No. 523,734
4 Claims. (Cl. 260—239)

1. A process for agglomerating a water slurry of fines of an explosive selected from the group consisting of cyclotetramethylenetetranitramine; cyclotrimethylenetrinitramine; trinitrotoluene; 2,4,6-trinitrophenylmethylnitramine; pentaerythritol tetranitrate; ammonium picrate; 1,2,3,5-tetranitroaniline; and 1,3-diamino-2,4,6-trinitrobenzene comprising adding a straight or branched-chain alcohol selected from the group consisting of n-butyl alcohol, isobutyl alcohol, secondary butyl alcohol, tertiary butyl alcohol, n-amyl alcohol, isoamyl alcohol; tertiary amyl alcohol, neopentyl alcohol, n-hexyl alcohol, n-octyl alcohol; and 2,2-dimethylbutanol thereto.

3,351,586
POLY-6(AMINO-ACYL-AMINO)PENICILLANIC ACIDS AND METHOD OF PREPARATION
Norman H. Grant, Wynnewood, Donald E. Clark, Norristown, and Harvey E. Alburn, West Chester, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 13, 1965, Ser. No. 479,641
8 Claims. (Cl. 260—239.1)

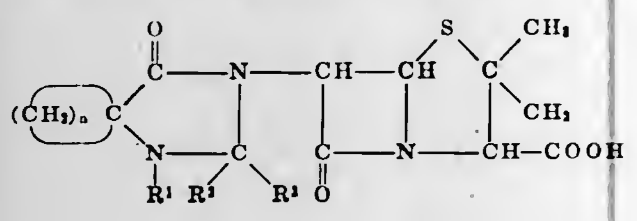
1. A poly-6(α-amino-acyl-amino)penicillanic acid of the formula:



wherein R, when taken alone is hydrogen, R' is a member of the group consisting of hydrogen, lower alkyl and phenyl, R'' is hydrogen, R and R', when joined together, complete a ring which is lower cycloalkyl having up to five carbon atoms, and *n* is an integer from 0 to about 100.

3,351,587
DIALKYL-OXO-DIAZASPIRO PENICILLINS
Harvey E. Alburn, West Chester, Norman H. Grant, Wynnewood, Donald E. Clark, Norristown, and Milton Wolf, West Chester, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 14, 1966, Ser. No. 593,690
10 Claims. (Cl. 260—239.1)

1. A compound of the group having the formula:



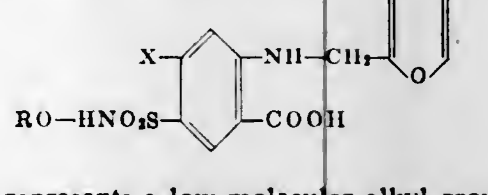
wherein R^1 is selected from the group consisting of hydrogen, lower alkyl and phenyl; R^2 and R^3, when separate, are each selected from the group consisting of hydrogen, lower alkyl and phenyl; and R^2 and R^3, when joined, complete a ring which is lower cycloalkyl having up to six carbon atoms, and *n* is an integer from 2 to 9.

3,351,588
DIBENZ[b,e]AZEPINE DERIVATIVE
Martin A. Davis and Ferenc Herr, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 14, 1965, Ser. No. 487,293
4 Claims. (Cl. 260—239.3)

1. A compound selected from the group which consists of 11-[(1-methyl-3-pyrrolidyl)methyl]-6-keto-5,6-dihydrodibenz[b,e]azepine and its acid addition salts with pharmacologically acceptable acids.

3,351,589
PROCESS FOR THE MANUFACTURE OF DIURETICALLY AND SALURETICALLY ACTIVE ALKOXYSULFAMYL - ANTHRANILIC ACIDS AND THEIR SALTS
Karl Sturm, Frankfurt am Main, Walter Siedel, Bad Soden, Taunus, and Rudi Weyer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed July 7, 1965, Ser. No. 470,231
Claims priority, application Germany, July 11, 1964, F 43,416
8 Claims. (Cl. 260—239.6)

1. 4 - halogen - N-(2'-furylmethyl)-5-alkoxy sulfamyl anthranilic acid of the formula



wherein R represents a low molecular alkyl group and X is chlorine or bromine and addition salt thereof with a pharamaceutically acceptable base.

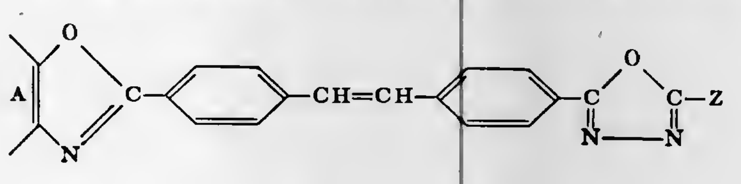
3,351,590
17-AMINOALKYL ETHERS OF 3-KETOESTRENES
Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 14, 1964, Ser. No. 344,834
6 Claims. (Cl. 260—239.55)

2. d-17β-(2-morpholinoethoxy) - 3 - methoxyestr-2,5 (10)-diene.

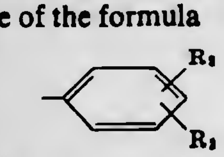
5. d-17β-(2-morpholinoethoxy)estr-5(10)-en-3-one.

3,351,591
4-AZOLYL-4'-OXDIAZOLYL-STILBENES
Adolf Emil Siegrist, Basel, Erwin Maeder, Aesch, Basel-Land, Peter Liechti, Binningen, and Leonardo Guglielmetti, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Aug. 31, 1965, Ser. No. 484,089
Claims priority, application Switzerland, Sept. 14, 1964, 11,919/64
9 Claims. (Cl. 260—240)

1. The 4-oxazolyl-4'-oxdiazolyl stilbene of the formula



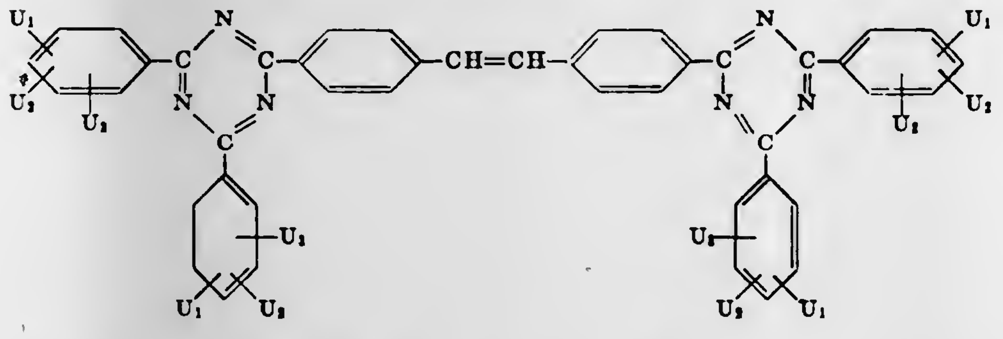
where A represents a member selected from the group consisting of naphthalene, tetrahydronaphthalene and phenylene linked with the oxazolyl ring in the manner indicated by the valency lines and Z_1 represents a member selected from the group of consisting of β-pyridyl, 2-furoyl, 2-thienyl, β-naphthyl, β-styryl, 4-stilbenzyl and the benzene residue of the formula



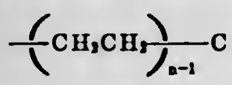
wherein R_8 and R_9 each represents a member selected from the group consisting of hydrogen, halogen, alkyl having 1–8 carbon atoms, alkoxy having 1–8 carbon atoms, phenyl, carboxyl, carbamoyl, nitrile and carboxylic acid ester of a member selected from the group consisting of alkyl, alkoxyalkyl, alkenyl, aryl and aralkyl, having up to 18 carbon atoms in the ester group.

3,351,592
AROMATICALLY SUBSTITUTED 4,4'-BIS-TRIAZINYLSTILBENES
Adolf Emil Siegrist, Basel, Erwin Maeder, Aesch, Basel-Land, Peter Liechti, Binningen, and Leonardo Guglielmetti, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Sept. 14, 1965, Ser. No. 487,306
Claims priority, application Switzerland, Sept. 23, 1964, 12,362/64
7 Claims. (Cl. 260—240)

1. A 4,4'-bis-triazinylstilbene of the formula

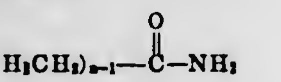


wherein U_1 represents a member selected from the group consisting of hydrogen, halogen, an alkyl group having 1 to 18 carbon atoms, an alkoxy group having 1 to 4 carbon atoms, a phenyl group, a sulfonic acid group, a sulfonamide group, a residue of the formula



$$-\left(CH_2CH_2\right)_{n-1}-COOH$$

and a residue of the formula



$$-(CH_2CH_2)_{n-1}-\overset{O}{\overset{\|}{C}}-NH_2$$

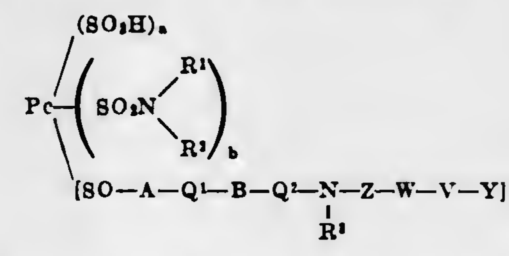
where *n* is a whole number selected from 1 and 2, U_2 stands for a member selected from the group consisting of hydrogen, halogen, an alkyl group having 1 to 18 carbon atoms and an alkoxy group having 1 to 4 carbon atoms and U_3 stands for a member selected from the group consisting of hydrogen, halogen and alkyl group having 1 to 4 carbon atoms.

3,351,593
PREPARATION OF METHYLENE BISTETRAFORMALTRISAZINE
Henry Moe, Sacramento, and Bernard B. Lampert, Carmichael, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Oct. 6, 1966, Ser. No. 585,219
3 Claims. (Cl. 260—241)

1. Methylene bistetraformaltrisazine.

3,351,594
PHTHALOCYANINE DYESTUFFS
Peter Frederick Clark and Victor David Poole, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Apr. 1, 1965, Ser. No. 444,782
Claims priority, application Great Britain, Nov. 25, 1964, 47,976/64; Mar. 15, 1965, 10,770/65
1 Claim. (Cl. 260—242)

A phthalocyanine dyestuff of the formula:



wherein Pc represents a copper phthalocyanine radical

R^1 and R^3 each represents a hydrogen atom, a lower alkyl radical or hydroxy lower alkyl radical;

R^2 represents a hydrogen atom, a lower alkyl radical, hydroxy-lower alkyl radical, or sulphoethyl radical;

Q^1 represents a s-triazile nucleus which carries a chlorine atom in one of the 2, 4 or 6 positions of the nucleus;

Q^2 represents a s-triazine nucleus which carries a chlorine atom, a methovyl group or a sulphonic acid group in one of the 2, 4 or 6 positions of the nucleus, or a pyrimidine nucleus which carries a cyano group in the 5-position and a chlorine atom in one of the 2, 4 or 6 positions of the nucleus;

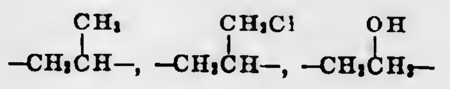
A represents a phenylenediamine sulphonic acid radical connected by its nitrogen atoms to the SO_2 group and to a carbon atom in one of the remaining 2, 4 or 6 positions of Q^1;

B represents a phenylenediamine sulphonic acid, piperazine, ethylenediamine or N-(β-hydroxyethyl)-ethylenediamine radical connected by its nitrogen atoms to a carbon atom in one of the remaining 2, 4 or positions of Q^1 and Q^2;

Z represents a m- or p-phenylene radical;

W represents —SO_2NH—, —CO—, —CONH—, —O— or —S—;

V represents a —CH_2—, —CH_2CH_2—,



$$-CH_2\overset{CH_3}{\overset{|}{C}}H-,\ -CH_2\overset{CH_2Cl}{\overset{|}{C}}H-,\ -CH_2\overset{OH}{\overset{|}{C}}H_2-$$

or —$CH_2CH_2OCH_2CH_2$— radical;

Y represents a chlorine atom, a bromine atom or a —OSO_3H group;

a represents a value of from 1 to 3; and

b represents a value of from 0 to 2 and *c* represents a value of from 1 to 3, provided that the sum of *a*, *b* and *c* does not exceed 4.

3,351,595

DERIVATIVES OF 3,4-DIHYDRO-2H-1,2,4-BENZOTHIADIAZINE-1,1-DIOXIDE

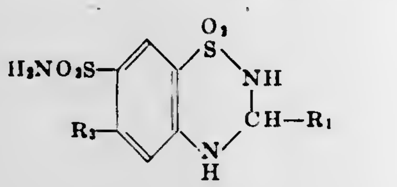
George de Stevens and Lincoln Harvey Werner, Summit, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 7, 1962, Ser. No. 242,913

The portion of the term of the patent subsequent to Dec. 29, 1981, has been disclaimed

17 Claims. (Cl. 260—243)

1. A member of the group consisting of compounds of the formula



in which R_1 represents cycloalkyl having from three to eight ring carbon atoms and R_3 stands for trifluoromethyl, and alkali metal salts thereof.

3,351,596

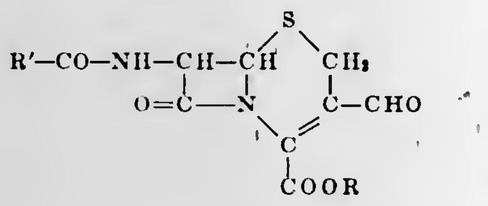
3-FORMYL CEPHALOSPORINS

James W. Chamberlin, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Sept. 21, 1966, Ser. No. 580,897

9 Claims. (Cl. 260—243)

1. Compounds of the formula:



wherein R is an ester group selected from the group consisting of alkyl having from 1 to 6 carbon atoms, 2,2,2-trichloroethyl, benzyl, and phenyl, and R′ is selected from the group consisting of thienylmethyl and α-amino-D-phenylmethyl.

3,351,597

PROCESS FOR ACYLATING 7-AMINO CEPHALOSPORANIC ACID

Harvey M. Higgins, Jr., Danville, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Nov. 23, 1966, Ser. No. 596,416

6 Claims. (Cl. 260—243)

1. In a process for acylating 7-ACA with an acyl halide to obtain a cephalosporin acylation product, the improvement which comprises contacting the 7-ACA with the acyl halide in the presence of (1) a substantially anhydrous organic liquid diluent which is a nonsolvent for the 7-ACA, chemically inert toward the acyl halide, but which is a solvent for the cephalosporin acylation product, and (2) at least one member of the group consisting of urea, thiourea, biuret, dithiobiuret, phenylurea, 1,1-diphenylurea, and phenylthiourea, said component (2) being present in the reaction mixture in an amount ranging from about 0.5 to about 2.0 molar equivalents of said component (2) for each molar equivalent of the acyl halide.

3,351,598

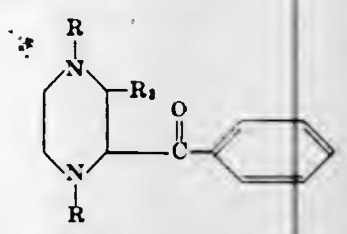
2-BENZOYL-PIPERAZINES

Anthony M. Akkerman, Geertruida C. van Leeuwen, and Josephus F. Michels, Amsterdam, Netherlands, assignors to N.V. Nederlandsche Combinatie Voor Chemische Industrie, Amsterdam, Netherlands, a limited liability company of the Netherlands

No Drawing. Filed Nov. 3, 1965, Ser. No. 506,269

1 Claim. (Cl. 260—268)

A compound of the formula:



in which R is selected from the group consisting of hydrogen, benzyl and methyl, and R_3 is selected from the group consisting of hydrogen, methyl and ethyl.

3,351,599

10,11-DIHYDRO DIBENZO[b,f]THIEPINS

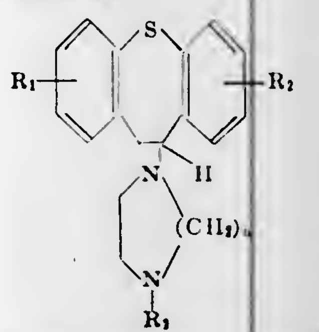
Miroslav Protiva, Jiří Jílek, Jiřina Metyšová, Ivan Ernest, Karel Pelz, and Edita Adlerová, Prague, Czechoslovakia, assignors to SPOFA, Spojene podniky pro zdravotnickou vyrobu, Prague, Czechoslovakia

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,102

Claims priority, application Czechoslovakia, Dec. 31, 1964, 7,437/64

5 Claims. (Cl. 260—268)

1. A substance selected from the group consisting of compounds of the formula



wherein R_1 and R_2 are hydrogen or halogen, at least one of R_1 and R_2 being halogen, R_3 is alkyl or hydroxyalkyl, said alkyl and hydroxyalkyl having 1–6 carbon atoms, *n* being 2 or 3, and salts of compounds of said formula with a physiologically tolerated acid.

3,351,600

NOVEL INDOLE CYANINE DYESTUFFS

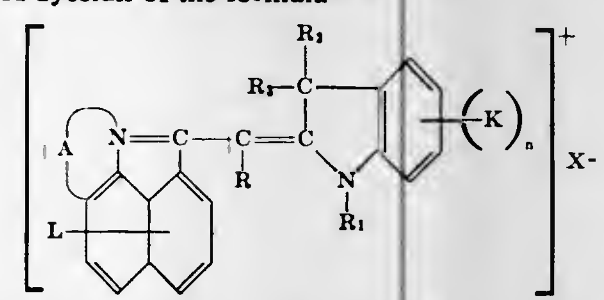
Alfred Brack and Roderich Raue, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,783

Claims priority, application Germany, Apr. 11, 1964, F 42,599

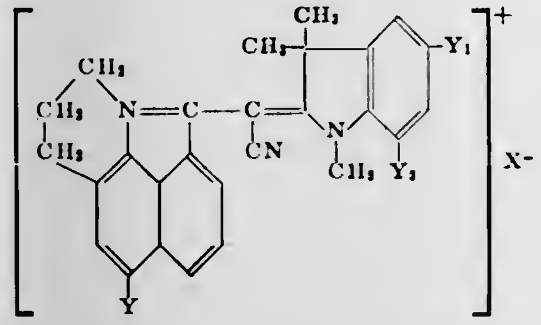
12 Claims. (Cl. 260—288)

1. A dyestuff of the formula



wherein A stands for —$CH_2CH_2CH_2$—, L stands for a member selected from the class consisting of hydrogen, chlorine and bromine, K stands for a member selected from the class consisting of hydrogen, lower alkyl and lower alkoxy, R_1, R_2 and R_3 stand for lower alkyl radicals. R represents a member selected from the class consisting of hydrogen and CN, X stands for an anion used for salt formation of basic dyestuffs and *n* stands for an integer ranging from 1 to 2.

2. A dyestuff of the formula



wherein Y stands for a member selected from the class consisting of hydrogen, chlorine and bromine, Y_1 stands for a member selected from the class consisting of hydrogen and methoxy, Y_2 stands for a member selected from the class consisting of hydrogen and lower alkoxy and X stands for an anion used for salt formation of basic dyestuffs.

3,351,601

CHLORINATED WAX, VINYL CHLORIDE/VINYL ACETATE BLEND COATED WITH LIMESTONE OR TALC AND PROCESS FOR PREPARING IT

Aurel Blaga, Syracuse, and Michael J. Skrypa, Camillus, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 13, 1963, Ser. No. 280,072

8 Claims. (Cl. 260—28.5)

1. A free flowing, particulate binder material comprising a normally sticky homogeneous blend of between about 70% and about 85% of a chlorinated soft paraffin wax containing at least about 45% chlorine and between about 15% and about 30% of a vinyl chloride/vinyl acetate copolymer of between about 80% and about 95% vinyl chloride, the balance vinyl acetate, said binder material particles having thereon a surface coating of an inorganic dust selected from the group consisting of limestone and talc of particle size not greater than about 2 microns, said coating being present in an amount equal to at least about 0.5% by weight of the binder material.

3,351,602

FILM-FORMING ACRYLONITRILE POLYMER AND LATEX THEREOF

William R. Dunnavant, Columbus, and Ruth A. Botham, Dayton, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 19, 1965, Ser. No. 481,077

The portion of the term of the patent subsequent to Feb. 22, 1983, has been disclaimed

3 Claims. (Cl. 260—29.6)

1. The stable aqueous latex having a minimum film-forming temperature no greater than 25° C. of a copolymer containing from 45 to 55% by weight of polymerized acrylonitrile, said copolymer being composed of a main polymer backbone of from about 80 to 85% by weight of polymerized acrylonitrile and from about 20 to 15% by weight of at least one polymerized acrylate ester having the structure $CH_2{=}CHCOOR$ wherein R is an alkyl group having from 2 to 4 carbon atoms, said main polymer backbone being overpolymerized with a major proportion of at least one acrylate ester having the structure $CH_2{=}CHCOOR$ wherein R has the foregoing designation.

3,351,603

ACRYLATE COLORLESS TRANSPARENT PHOTO-ACTIVATABLE CEMENTING COMPOSITIONS

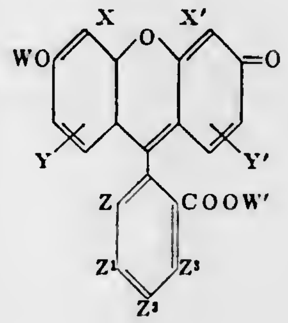
Catherine Shuihua Hsia Chen, Berkeley Heights, N.J., and Florence Martha Gray, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 19, 1965, Ser. No. 434,108

9 Claims. (Cl. 260—31.2)

1. A quick-setting photoactivatable cementing composition for colorless transparent and hydrophobic organic sheet material, consisting essentially of monomeric methyl methacrylate having a content of

(a) an oil-soluble dye of the theoretical formula



wherein W and W′ designate a substituent from the group consisting of hydrogen, the alkali metals and hydrocarbon radicals having not more than 6 carbon atoms; X and X′ designate halogens having atomic numbers above that of fluorine; Y and Y′ designate hydrogen and halogens having atomic numbers above that of fluorine; and Z, Z^1, Z^2 and Z^3 designate hydrogen, a halogen having an atomic number above that of fluorine, and a hydrocarbon having no more than 6 carbon atoms, at latent photopolymerization catalyst for said methyl methacrylate;

(b) an oil-soluble reducing agent for said dye, said agent having a reduction potential which is sufficiently low to be incapable of reducing said dye in the absence of light but which is sufficiently high to reduce said dye in the presence of light selected from the group consisting of tetramethylethylenediamine, phenylhydrazine (2,5-dichlorophenylhydrazine), hydroxylamine, and allylthiourea; and

(c) poly(methyl methacrylate) in amount 25% to 67% of the weight of said methyl methacrylate as hardening accelerator therefor.

3,351,604

COMPOSITIONS OF VINYL HALIDE RESINS, TRIALLYL CYANURATE, AND TRIOCTYL TRIMELLITATES AND CURED PRODUCTS THEREFROM

Moyer M. Safford, Schenectady, and Fred F. Holub, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed July 1, 1965, Ser. No. 468,973

20 Claims. (Cl. 260—31.8)

1. A vinyl halide resin composition of matter comprising on a weight basis (*a*) 100 parts of a vinyl halide resin selected from the class consisting of homopolymers of vinyl halides and copolymers of a major portion of a vinyl halide with an ethylenically unsaturated monomer copolymerizable therewith, (*b*) from 10 to 100 parts of a trioctyl trimellitate, (*c*) from 1 to 25 parts triallyl cyanurate, and (*d*) from 0.1 to 5 parts of an organic peroxide.

3,351,605
PHENOL-PARA-CUMYL-PHENOL RESIN AND PRIMER THEREFROM

Patrick J. Harvey, Pearl River, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 26, 1963, Ser. No. 333,668
18 Claims. (Cl. 260—33.4)

1. The process for producing a resinous product of outstanding chemical and physical properties especially adapted for primer coatings which comprises heating a mixture of phenols containing 82 to 95 mol percent monohydric mononuclear phenol having the three reaction favorable positions unoccupied and between about 5 to 18 mol percent para-α-cumylphenol together with formaldehyde in the molar proportion of about 1.0–1.5 mols of formaldehyde per mol of total phenol at a temperature between about 40° C. to 150° C. in the presence of a basic catalyst selected from the group consisting of ammonia and the basic amines to effect reaction of the phenols and formaldehyde and form a phenol-para-α-cumylphenol reaction product containing less than 3% by weight free formaldehyde.

3,351,606
OIL EXTENSION OF RUBBERY COMPOSITIONS

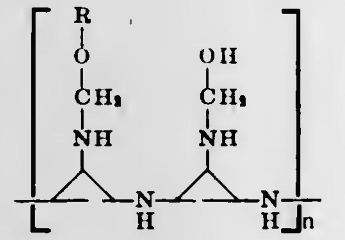
Robert C. Wheat, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed May 20, 1963, Ser. No. 281,807
4 Claims. (Cl. 260—33.6)

1. A rubbery composition comprising 100 parts by weight of a conjugated diene polymer having terminal mercapto groups and 25 to 100 parts by weight of an extender oil.

3,351,607
PHOSPHONITRILIC POLYMERS

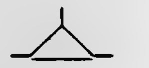
Bernard Grushkin, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed July 28, 1964, Ser. No. 385,762
22 Claims. (Cl. 260—39)

1. A polymeric material containing the repeating unit



(I)

wherein

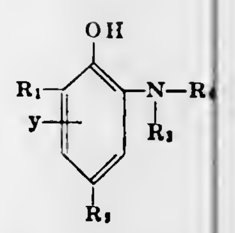


represents a 2,4,6-triphenyl substituted triphosphonitrilic residue having 3 open valences, R is an alkyl group having 1 to 4 carbon atoms, and *n* has a value of from about 5 to about 10.

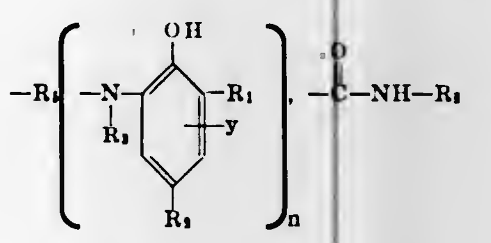
3,351,608
STABILIZED POLYURETHANES

Harald Oertel, Kurt Ley, and Heinrich Rinke, Leverkusen, and Wilhelm Thoma, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Feb. 27, 1964, Ser. No. 347,662
Claims priority, application Germany, Mar. 1, 1963, F 39,144
5 Claims. (Cl. 260—45.9)

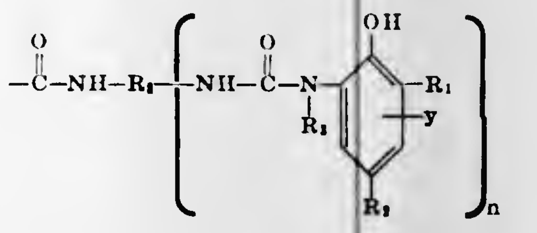
1. Polyurethane polymers stabilized against discoloration and aging by having incorporated therein from about 0.1 to about 10 percent by weight of a compound having the formula:



wherein R_1 and R_2 are hydrocarbon radicals having from 4 to 10 carbon atoms where the carbon atom adjacent the aromatic ring is a tertiary carbon atom; R_3 is a member selected from the group consisting of hydrogen, alkyl, cycloalkyl, alkenyl or aryl; *y* is hydrogen, alkyl, aralkyl, hydroxyl or halogen; R_4 is a member selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl



and



where R_1, R_2, R_3 and *y* have the same meaning as that set forth above and R_5 is a member selected from the group consisting of aliphatic radicals and aromatic radicals, said radical having a valence of 2 to 4; R_6 is a member selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl and aralkyl and *n* is an integer equal to one less than the valence of R_5.

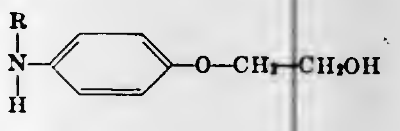
3,351,609
ARYL-β-HYDROXYETHYL ETHERS AS ANTIOZONANTS

Marshall R. Brimer and William T. Tucker, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Mar. 13, 1964, Ser. No. 351,860
8 Claims. (Cl. 260—45.9)

1. A rubber composition comprising:

(A) a rubber selected from the class consisting of natural and synthetic rubbers which are subject to ozone degradation, and

(B) an antiozonant amount of a hydroxyethylated substituted amino phenol having the structural formula

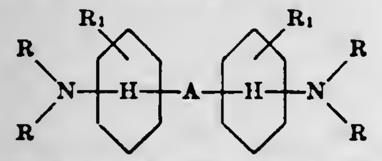


wherein R is ia substituent selected from the group consisting of alkyl groups containing from 1–18 carbon atoms phenyl, and lower alkyl substituted aryl groups.

3,351,610
CURABLE COMPOSITIONS CONTAINING A 1,2-EPOXY COMPOUND AND A DITERTIARY CYCLOALIPHATIC AMINE

Erich Preininger, Riehen, and Gustav Ott, Arlesheim, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed July 23, 1965, Ser. No. 474,508
Claims priority, application Switzerland, Aug. 31, 1964, 11,375/64
4 Claims. (Cl. 260—47)

1. A curable composition of matter, comprising (1) a 1,2-epoxy compound having a 1,2-epoxide equivalency greater than 1, and (2) as curing agent a ditertiary cycloaliphatic amine of the formula

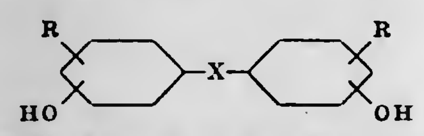


where A represents an alkylene radical containing 1 to 6 carbon atoms, R represents a lower alkyl radical with 1 to 4 carbon atoms and R_1 represents a member selected from the group consisting of hydrogen and lower alkyl radical with 1 to 4 carbon atoms.

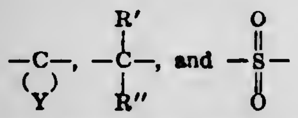
3,351,611
LINEAR AROMATIC POLYESTERS

André Jan Conix, Antwerp, Belgium, assignor to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed Nov. 8, 1965, Ser. No. 506,854
Claims priority, application Belgium, Dec. 13, 1957, 37,742, Patent 563,173
The portion of the term of the patent subsequent to Nov. 9, 1982, has been disclaimed
5 Claims. (Cl. 260—47)

1. A high molecular weight linear polyester of polybasic acid and polyhydric alcohol, said polybasic acid consisting essentially of fumaric acid, said polyhydric alcohol comprising at least one compound of the formula:



where each R is selected from the group consisting of hydrogen and lower alkyl and X is selected from the group consisting of:



$$-\underset{\underset{Y}{(\ )}}{C}-,\quad -\overset{R'}{\underset{R''}{\overset{|}{\underset{|}{C}}}}-,\ \text{and}\ -\overset{O}{\underset{O}{\overset{\|}{\underset{\|}{S}}}}-$$

Y representing the atoms necessary to close a lower cycloaliphatic ring and R′ and R″ each representing a member of the group consisting of hydrogen, an alkyl radical, a phenyl radical, a cycloalkyl radical, and a haloalkyl radical, alkyl in all instances being lower alkyl, said polymer having an intrinsic viscosity of at least about 0.5 dl./g. when measured in a solution of tetrachloroethane, and capable of forming a self-sustaining film.

3,351,612
CONDENSATION PRODUCTS OF PHENOL, POLYCYCLIC PHENOLS AND FORMALDEHYDE

Gordon E. Brown, Seattle, Charlton R. Cox, Bellevue and George Anthony Kennar, Seattle, Wash., assignors to Monsanto Company, a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,406
The portion of the term of the patent subsequent to Oct. 16, 1979, has been disclaimed
3 Claims. (Cl. 260—57)

1. A process for preparing a liquid condensation product of 100 parts by weight of phenol, 50–150 parts by weight of formaldehyde and 3–400 parts by weight of at least one polycyclic phenol containing 2–6 benzene rings and having 1–4 phenolic hydroxyl groups attached to said rings, at least one of the positions ortho and para to at least one of said hydroxyl groups being unsubstituted; said process consisting of (a) combining the phenol, the polycyclic phenol, from 40 to 60% of the total formaldehyde being employed and an alkaline catalyst, (b) heating the reaction mixture thus formed to a temperature of from about 180° F. to reflux temperature until an endpoint as delineated by the area between the two curves in FIGURE I is obtained and (c) adding the remaining formaldehyde in at least one further increment while heating the reaction mixture at a temperature of from about 140° F. to reflux following the addition of each such increment; the total quantity of alkaline catalyst employed being 4–50 parts by weight, 50–100% of which is present during step (b) with, correspondingly, from 50 to zero percent being added subsequent to the completion of step (b).

3,351,613
COPOLYMERS HAVING POLYOXYMETHYLENIC STRUCTURE AND A PROCESS OF PREPARING SAME

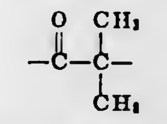
Giulio Natta, Gianfranco Pregaglia, and Giorgio Mazzanti, Milan, and Marco Binaghi, Varese, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy
No Drawing. Filed Dec. 12, 1963, Ser. No. 336,333
Claims priority, application Italy, Dec. 13, 1962, 24,331/62
11 Claims. (Cl. 260—64)

1. A process for preparing thermo-stabilized copolymers having prevailingly polyoxymethylenic structure and having an intrinsic viscosity of between 0.12 and 0.56, as determined in dimethylformamide at 150° C. which comprises polymerizing a mixture consisting essentially of trioxane and a monomer selected from the group consisting of dimethylketene and beta-pivalolactone in the presence of a Lewis-acid catalyst selected from the group consisting of BF_3, $FeCl_3$, BF_3-etherate and BF_3-thioetherate.

10. A thermostabilized copolymer having a prevailingly polyoxymethylenic structure and consisting of macromolecules made up of randomly distributed, polymerized units having the formulae

(a) $-CH_2-O-$

(b)



$$-\overset{O}{\overset{\|}{C}}-\overset{CH_3}{\underset{CH_3}{\overset{|}{\underset{|}{C}}}}-$$

said units being present in the copolymer in the ratio of from 6:1 to 1000:1, said copolymer having an intrinsic viscosity, as determined in dimethylformamide at 150° C., of from 0.12 to 0.56 and being prepared by polymerizing a monomer mixture consisting essentially of trioxane and of a monomer selected from the group consisting of dimethylketene and beta-pivalolactone, with the aid of a Lewis-acid catalyst selected from the group consisting of BF_3, $FeCl_3$, BF_3-etherate and BF_3-thioetherate, the molar ratio between trioxane and said other monomer in the monomer mixture being of from 10:1 to 1000:1.

3,351,614
PROCESS FOR THE ESTERIFICATION OF POLYOXYMETHYLENES

Leonardo Fiore, Milan, and Vittorio Tablino Possio, Busto Arsizio, Varese, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy
No Drawing. Filed July 26, 1963, Ser. No. 298,527
Claims priority, application Italy, July 27, 1962, 15,193/62
7 Claims. (Cl. 260—67)

1. A process for esterifying polyoxymethylene having a crystallinity of at least 90% which comprises esterifying the polyoxymethylene in a solution of an anhydride of a carboxylic acid at a temperature ranging from about 135° C. to 210° C. and in the presence of about 0.002 to 2.0% by weight of the anhydride of at least one stabilizing agent selected from the group consisting of urea, thiourea, substituted ureas, biuret, triuret, carbamates, allophanates, cyanuric acid, barbituric acid, and diketopiperazines.

3,351,615

PRODUCTION OF MELAMINE-FORMALDEHYDE PRECONDENSATES BY COMPLETING THE REACTION IN THE PRESENCE OF UREA AND GLYCERINE

Alex F. Gordon, Black Mountain, N.C., assignor to United Merchants and Manufacturers, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 3, 1964, Ser. No. 349,170

2 Claims. (Cl. 260—67.6)

1. The process of producing a melamine-formaldehyde precondensate which comprises mixing melamine, from 3 to 6 mols of formaldehyde per mol of melamine and methanol, the amount of methanol not exceeding 6 mols per mol of melamine, heating this mixture at a pH of from 4 to 7 to a temperature within the range of from room temperature to 150° F. to initiate the condensation reaction between the melamine and the formaldehyde, and after the condensation has been initiated and proceeded for at least 35% of the total reaction time but before completion of the reaction adding to the reaction mixture from 0.1 to 0.5 mol of urea and from 0.1 to 0.5 mol of glycerine per mol of melamine, thereafter heating the resultant reaction mixture to a temperature within the range of from 160° F. to 190° F. and maintaining the reaction mixture at this temperature until a melamine-formaldehyde precondensate having a concentration of from 65% to 75% resin solids is produced and cooling the product to a temperature of from 60° F. to 120° F.

3,351,616

BORON-CONTAINING POLYMERS

Joseph Green, Dover, and Nathan Mayes, Ironia, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Nov. 13, 1963, Ser. No. 324,168

17 Claims. (Cl. 260—75)

1. A boron-containing polyester condensation polymer of a glycol and a dicarboxylic acid, at least one of said glycol and said dicarboxylic acid being selected from the group consisting of carboranyl glycols and carboranyl dicarboxylic acids.

3,351,617

POLYMERIZABLE MONOMERS CONTAINING PHOSPHORUS AND PROCESS FOR THEIR MANUFACTURE

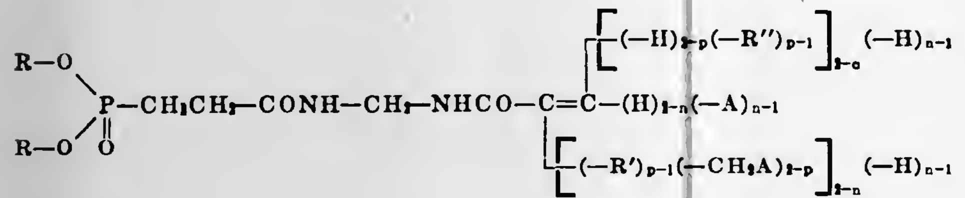
Horst Jaeger, Bettingen, Hermann Nachbur, Riehen, and Arthur Maeder, Therwil, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Sept. 9, 1964, Ser. No. 395,279

Claims priority, application Switzerland, Sept. 18, 1963, 11,513/63

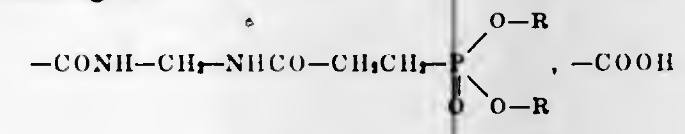
6 Claims. (Cl. 260—78.5)

1. A polymerisable compound of the general formula



$$(R-O)_2\overset{\overset{}{}}{P}(=O)-CH_2CH_2-CONH-CH_2-NHCO-\underset{\left[\left(-R'\right)_{p-1}\left(-CH_2A\right)_{2-p}\right]_{2-n}(-H)_{n-1}}{C}=\overset{\left[(-H)_{2-p}(-R'')_{p-1}\right]_{2-n}(-H)_{n-1}}{C}-(H)_{2-n}(-A)_{n-1}$$

where A represents a member selected from the group consisting of



$$-CONH-CH_2-NHCO-CH_2CH_2-\underset{\underset{O}{\|}}{P}(O-R)_2\text{, }-COOH$$

—CONH$_2$ and —CONHCH$_2$OR'''

R represents a member selected from the group consisting of an alkyl radical containing 1 to 18 carbon atoms, a cycloalkyl and an aryl radical; R' and R'' each represents a member selected from the group consisting of a hydrogen atom and a methyl group; R''' stands for a member selected from the group consisting of hydrogen and an alkyl radical containing 1 to 4 carbon atoms, and *n* and *p* each is an integer of at most 2.

3,351,618

POLYMERIZATION PRODUCTS OF CARBONAMIDES (CONTAINING SULFONAMIDO GROUPS) OF α,β-ETHYLENICALLY UNSATURATED ALIPHATIC CARBOXYLIC ACIDS

Rosemarie Toepfl, Basel, and Arthur Maeder, Therwil, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

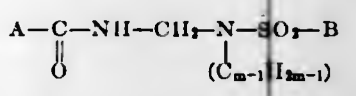
No Drawing. Filed Apr. 5, 1965, Ser. No. 445,705

Claims priority, application Switzerland, Apr. 17, 1964, 5,022/64

18 Claims. (Cl. 260—79.7)

1. A polymerization product from

(a) 2 to 100% of a carbonamide of the formula



$$A-\underset{\underset{O}{\|}}{C}-NH-CH_2-\underset{(C_{m-1}H_{2m-1})}{\underset{|}{N}}-SO_2-B$$

wherein A represents an ethylenically unsaturated radical of the composition $C_{n+1}H_{2n+1}$ in which *n* is a whole number of at the most 2, B represents a radical that contains at most 10 carbon atoms and *m* represents a whole number of at the most 4, and

(b) 98 to 0% of another copolymerizable ethylenically unsaturated monomer.

3,351,619

CROSSLINKABLE POLYMERS FORMED FROM IODINE-CONTAINING PERFLUOROALKYL VINYL ETHERS

Joseph Leo Warnell, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,112

6 Claims. (Cl. 260—80.76)

1. A melt-fabricable crosslinkable copolymer consisting essentially from about 0.1 to about 10 mole percent of a fluorocarbon vinyl ether having the formula:

$$I(CF_2)_{n+1}—O—[CF_2CF_2O]_p—[CF(CF_3)CF_2O]_m—CF=CF_2$$

where *n* is 1 or 3, *p* is an integer from 0 to 5 inclusive, and *m* is an integer from 0 to 5 inclusive and a halogenated monomer of the structure $RR'C=CF_2$ where R is a group selected from the class consisting of hydrogen, chlorine, fluorine and perfluoroalkyl and perfluoroalkoxy groups having from 1 to 3 carbon atoms and R' is a group selected from the class consisting of hydrogen and fluorine.

3,351,620

POLYMERIZATION OF UNSATURATED CYCLIC HYDROCARBONS AND MIXTURES THEREOF WITH OLEFINIC HYDROCARBONS

Noboru Yamada, Keizo Shimada, and Toshio Takemura, Yamaguchi-ken, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Feb. 12, 1964, Ser. No. 344,255

Claims priority, application Japan, Feb. 25, 1963, 38/8,437, 38/8,438

2 Claims. (Cl. 260—88.2)

1. A process for the polymerization of polymerizable unsaturated cyclic hydrocarbons or mixtures thereof with an aliphatic monoolefin having from 3 to 10 carbon atoms, wherein said polymerization is carried out in an inert organic solvent in the presence of a catalyst consisting of $VOCl_3$.

3,351,621

COPOLYMERIZATION WITH α,ω-DIENES

Robert Bacskai, Berkeley, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Feb. 6, 1964, Ser. No. 343,108

3 Claims. (Cl. 260—88.2)

1. Product prepared by copolymerizing propylene and an α,ω-diene of about 6 to 12 carbon atoms with a Ziegler-type catalyst comprising titanium trichloride and an aluminum compound of the formula:

$$R_nAlX_{3-n}$$

where *n* is a cardinal number varying from 2 to 3, R is alkyl of 1 to 6 carbon atoms and X is halogen of atomic number 17 to 35, the mol ratio of the aluminum compound to titanium trichloride being in the range of about 0.5:1 to 5:1, the amount of said α,ω-diene being sufficient to give the product an α,ω-diene content of about 0.1 to 10 weight percent, said product having a brittle point less than 15° C. and less than 75% penetration at 400° F.

3,351,622

POLYMERS AND TEXTILE MATERIALS TREATED THEREWITH

Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

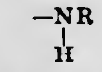
No Drawing. Filed Sept. 30, 1963, Ser. No. 312,284

27 Claims. (Cl. 260—89.7)

1. A method for making polymers comprising polymerizing (1) a polyoxyalkylene compound containing at least two groups corresponding to the structure

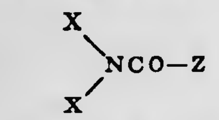
$$—(C_nH_{2n}O)—$$

where *n* is an integer from 2 to 4 and at least two terminal groups selected from the group consisting of —OH, —SH and



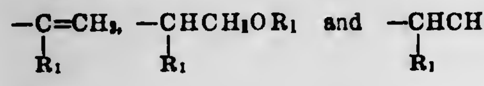
$$-\underset{H}{\underset{|}{N}}R$$

wherein R is selected from the group consisting of hydrogen and lower alkyl, with (2) a polyfunctional amide compound containing at least two groups and no more than 3 per molecule of the formula



$$X_2N-CO-Z$$

said groups being linked together by hydrocarbon groups and where X is selected from the group consisting of aliphatic and cycloaliphatic hydrocarbon groups and hydrogen, provided that one of said Xs' is always a hydrocarbon group as defined, and where Z is selected from the group consisting of



$$-\underset{R_1}{\underset{|}{C}}=CH_2,\ -\underset{R_1}{\underset{|}{C}}HCH_2OR_1 \text{ and } -\underset{R_1}{\underset{|}{C}}HCH_2Q$$

wherein R_1 is selected from the group consisting of hydrogen and lower alkyl and Q is a polar residue derived from a reagent of weak nucleophilic character and is selected from the group consisting of the anion of a strong acid and the cation of a weak base, under alkaline conditions.

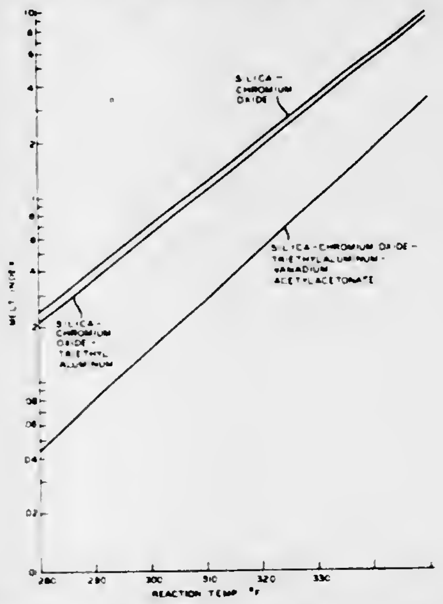
3,351,623

ETHYLENE POLYMERIZATION

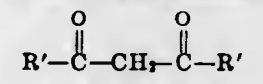
Darrell W. Walker and Edward L. Czenkusch, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 18, 1964, Ser. No. 419,313

13 Claims. (Cl. 260—94.9)



1. A process for polymerizing ethylene which comprises contacting an ethylene containing stream under polymerization conditions with a catalyst which forms on mixing (1) an oxide component selected from the group consisting of silica; mixtures of silica and alumina containing up to 25 weight percent alumina; and mixtures of chromium oxide and at least one material selected from the group consisting of silica, alumina, zirconia, and thoria, at least part of the chromium being in the hexavalent state at the initial contacting of monomer therewith, (2) an organometal component of the formula R_xM wherein R is selected from the group consisting of hydrogen and alkyl, aryl, cycloalkyl, alkoxy radicals and combinations of these radicals containing up to 12 carbon atoms, at least one R group being a hydrocarbon radical; M is selected from the group consisting of aluminum, gallium, indium, thallium, zinc, boron, lead, lithium, zirconium, cobalt, magnesium and tin; and *x* is an integer equal to the valence of M, and (3) a vanadium component selected from the group consisting of vanadium chelates and vanadyl chelates of beta-diketones of the formula



$$R'-\overset{\overset{O}{\|}}{C}-CH_2-\overset{\overset{O}{\|}}{C}-R'$$

where each R' is individually selected from the group consisting of alkyl, aryl, and cycloalkyl radicals and combinations of said radicals, each R' containing up to 12 carbon atoms.

3,351,624

PRODUCTION OF LINEAR AROMATIC POLYESTERS

André Jan Conix, Antwerp, Belgium, assignor to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

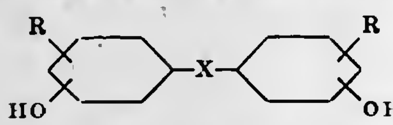
No Drawing. Filed Nov. 8, 1965, Ser. No. 506,835

The portion of the term of the patent subsequent to Nov. 9, 1982, has been disclaimed.

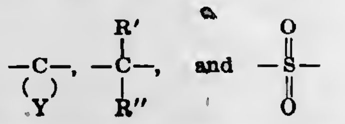
5 Claims. (Cl. 260—47)

1. A high molecular weight linear polyester of polybasic acid and polyhydric alcohol, said polybasic acid

consisting essentially of terephthalic acid, said polyhydric alcohol comprising at least one compound of the formula:



where each R is selected from the group consisting of hydrogen and lower alkyl and X is selected from the group consisting of:



Y representing the atoms necessary to close a lower cycloaliphatic ring and R′ and R″ each representing a member of the group consisting of hydrogen, an alkyl radical, a phenyl radical, a cycloalkyl radical, and a haloalkyl radical, alkyl in all instances being lower alkyl, said polymer having an intrinsic viscosity of at least about 0.5 dl./g. when measured in a solution of tetrachloroethane, and capable of forming a self-sustaining film.

3,351,625
CERTAIN NORTROPANYL ETHERS OF DIBENZO[a,d]-1,4-CYCLOHEPTADIENE

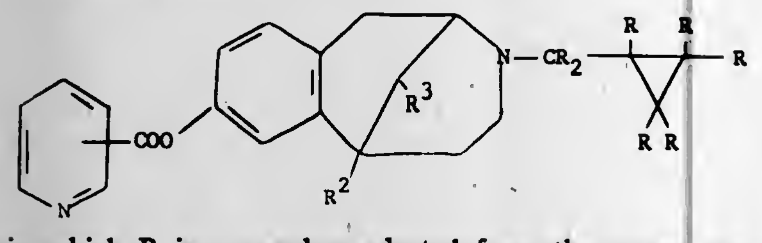
August F. Harms, Amsterdam, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades Stheeman & Pharmacia, Meppel, Netherlands
No Drawing. Filed Feb. 12, 1964, Ser. No. 344,243
Claims priority, application Great Britain, Feb. 15, 1963, 6,348/63
3 Claims. (Cl. 260—292)

1. A compound selected from the group consisting of 3-(dibenzo[a,d] - 1,4-cycloheptadien-5-yloxy)nortropane, and a non-toxic acid addition salt thereof.

3,351,626
N-CYCLOPROPYLMETHYL BENZMORPHAN DERIVATIVES

James Richard Bartels-Keith, Welwyn Garden City, England, and Maxwell Gordon, Elkins Park, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Jan. 22, 1963, Ser. No. 253,032
Claims priority, application Great Britain, Jan. 31, 1962, 3,723/62
4 Claims. (Cl. 260—294.3)

3. A compound selected from a base and its non-toxic salts with pharmaceutically acceptable acids, said base being of the structure:



in which R is a member selected from the group consisting of hydrogen and alkyl of 1 to 2 carbon atoms and R^2 and R^3 are, respectively, members selected from the group consisting of hydrogen and alkyl of 1 to 3 carbon atoms.

3,351,627
PROCESS FOR SYNTHESIS OF VINYLTETRAZOLE MONOMERS

Ronald A. Henry, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed June 2, 1960, Ser. No. 33,605
2 Claims. (Cl. 260—308)

1. The process for synthesizing 1-and 2-methyl-5-vinyltetrazoles which comprises reacting for periods up to 24 hours at a temperature from about 120–125° C. dimethylaminopropionitrile, sodium azide and dimethylammonium chloride in a solvent of dimethylformamide, methylating the product thereof with dimethyl sulfate, and refluxing the methylated products for up to 5 hours in an aqueous base solution.

3,351,628
1-ETHYL-4,5-DI-(PARA-METHOXYPHENYL)-IMIDAZOLE AND A SALT THEREOF

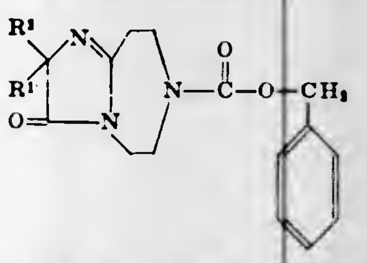
Adrian Marxer, Muttenz, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 15, 1964, Ser. No. 404,185
Claims priority, application Switzerland, Oct. 23, 1963, 12,956/63; Feb. 28, 1964, 2,505/64; Aug. 26, 1964, 11,162/64
2 Claims. (Cl. 260—309)

1. 1-ethyl-4,5-di-(para-methoxyphenyl)-imidazole.

3,351,629
BICYCLODECENES CONTAINING THREE RING NITROGEN ATOMS

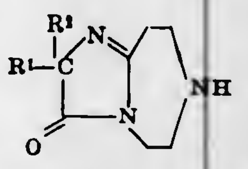
Rudolf G. Griot, Florham Park, N.J., assignor to Sandoz Inc., Hanover, N.J.
No Drawing. Filed Apr. 1, 1964, Ser. No. 356,641
7 Claims. (Cl. 260—309.6)

1. A compound of the formula



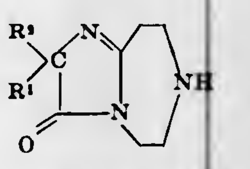
wherein each of R^1 and R^2 is either, independently, a member selected from the group consisting of a hydrogen atom, lower alkyl, hydroxy(lower)alkyl, (lower) alkylthio(lower)alkyl, phenyl(lower)alkyl, indolyl (lower)alkyl, imidazole(lower)alkyl, phenyl, and benzyl ring-substituted with at least one substituent selected from the group consisting of hydroxy, bromo and iodo; or, both taken together with the carbon atom to which they are bound, form a carbocyclic ring having from 3 to 9 carbon atoms and being selected from the group consisting of a saturated hydrocarbon ring and an ethylenically unsaturated hydrocarbon ring.

3. A compound which, in its free base form, has the formula



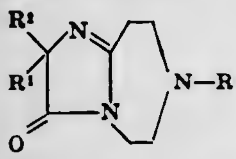
wherein each of R^1 and R^2 is, independently, a member selected from the group consisting of a hydrogen atom; lower alkyl; hydroxy(lower)alkyl; (lower)alkyl-thio-(lower)alkyl; phenyl(lower)alkyl; benzyl ring-substituted with at least one substituent selected from the group consisting of hydroxy, a bromine atom and an iodine atom; indolyl(lower)alkyl; imidazole(lower) alkyl; and phenyl.

4. A compound which, in its free base form, has the formula



wherein R^1 and R^2 form, with the carbon atom to which they are both bound, a carbocyclic ring having from 3 to 9 carbon atoms and selected from the group consisting of a saturated hydrocarbon ring and an ethylenically unsaturated hydrocarbon ring.

6. A member selected from the group consisting of a compound and pharmaceutically acceptable salts thereof, the compound having the formula



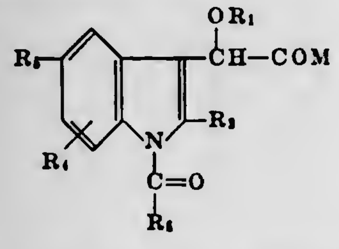
wherein each of R^1 and R^2 is either, independently, a member selected from the group consisting of a hydrogen atom, lower alkyl, hydroxy(lower)alkyl, (lower)alkylthio(lower)alkyl, phenyl(lower)alkyl, indolyl(lower)alkyl, imidazole(lower)alkyl, phenyl, and benzyl ring-substituted with at least one substituent selected from the group consisting of hydroxy, bromo and iodo; or, both taken together with the carbon atom to which they are bound, form a carbocyclic ring having from 3 to 9 carbon atoms and being selected from the group consisting of a saturated hydrocarbon ring and an ethylenically unsaturated hydrocarbon ring; and

R^5 is a member selected from the group consisting of a lower aliphatic hydrocarbon radical, phenyl, phenyl (lower)alkyl, phenyl-keto-(lower)alkyl and (lower) alkyl-keto-(lower)alkyl.

3,351,630
α-SUBSTITUTED-3-INDOLYL ACETIC ACID COMPOUNDS AND PROCESSES FOR THEIR PREPARATION

Tsung-Ying Shen, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Jan. 27, 1966, Ser. No. 523,291
15 Claims. (Cl. 260—326.12)

1. A compound of the formula:



wherein:

R_1 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, lower alkynyl, benzyl phenethyl, halo lower alkyl, dihalo lower alkyl, lower alkanoyl, lower alkenoyl, lower alkynoyl, benzoyl, phenacetyl, and halo lower alkanoyl;

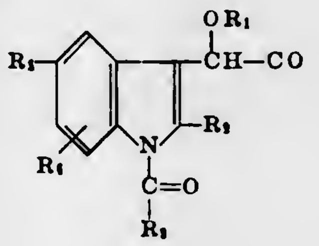
R_2 is selected from the group consisting of lower alkenyl and lower alkyl;

R_4 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, fluorine and trifluoromethyl;

R_5 is selected from the group consisting of hydroxy, lower alkyl, lower alkoxy, nitro, amino, lower alkylamino, di(lower alkyl)amino, bis(hydroxy lower alkyl)amino, 1-pyrrolidino, 4-methyl-1-piperazinyl, 4-morpholinyl, cyano, trifluoromethyl, halogen, di(lower alkyl)sulfamyl, benzylthio, lower alkylbenzylthio, lower alkoxybenzylthio, halogenobenzylthio, benzyloxy, lower alkylbenzyloxy, lower alkoxybenzyloxy, halogenobenzyloxy, lower alkenyl, lower alkenyloxy, 1-azacyclopropyl, cyclopropyl methyloxy, and cyclobutyl methyloxy;

R_6 is selected from the group consisting of phenyl, naphthyl and biphenyl, and substituted phenyl, naphthyl and biphenyl wherein said substituents are selected from the group consisting of halogen, lower alkyl, lower alkylthio, lower alkoxy, trifluoromethyl, phenoxy, lower alkylphenoxy, lower alkoxyphenoxy, halogenophenoxy, di(lower alkyl)sulfamyl, cyano, trifluoromethylthio, lower alkyl sulfinyl, lower alkyl sulfonyl, benzylthio, lower alkylbenzylthio, lower alkoxybenzylthio, halogenobenzylthio, mercapto, nitro, amino, di(lower alkyl)amino, lower alkylamino, hydroxy, benzyloxy, lower alkylbenzyloxy, lower alkoxybenzyloxy, and halogenobenzyloxy in which the aroyl radical contains at least one of the above substituents; and

M is selected from the group consisting of OH, NH_2, lower alkylamino, di(lower alkyl)amino, glycosylamino, allylamino, phenethylamino, N-ethylphenethyl amino, p-chloroanilino, 1-ethyl-2-aminomethyl piperidino, tetrahydrofurfurylamino, 1,2,5,6-tetrahydropyridino, morpholino, N-methyl-piperazino, piperazino, N-phenyl-piperazino, piperidino, benzylamino, anilino, p-ethoxyanilino, cyclohexylamino, pyrrolidino, N-hydroxyethyl-piperazino, N,N-dimethyl-carboxamidomethylamino, N,N - diethylaminoethylamino, benzyloxy, diphenylmethyloxy, triphenylmethyloxy, lower alkoxy, OZ (where Z is a sodium, potassium or calcium) and OY, where Y represents the structure:



3,351,631
RECOVERY AND FRACTIONATION OF COMPLEX ACIDS

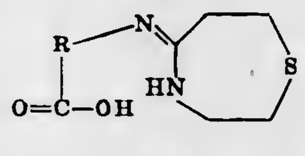
Theodore H. Szawlowski, Wonder Lake, and Robert C. Kimble, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Dec. 2, 1963, Ser. No. 327,492
13 Claims. (Cl. 260—327)

1. In the process of preparing high molecular weight, aromatic, heterocyclic acids from sulfur-containing compounds of petroleum origin by metalation of said complex compounds with an alkali metal to form the alkali metal adduct and carbonation to form the alkali metal salt of the corresponding carboxylic acid, the improvement comprising mechanically separating unreacted alkali metal from the reaction mixture, concentrating the resulting mixture by removal of about 50% by volume of volatiles to form a concentrate of the reaction mixture, precipitating alkali metal salts by adding a non-polar, inert liquid selected from the class consisting of: C_5–C_{10} alkanes; C_5–C_7 isoalkanes and C_5–C_7 cycloalkanes and recovering the resulting precipitate for conversion to the free acid form.

3,351,632
THIAZEPINES AND RELATED COMPOUNDS

Rudolf G. Griot, Florham Park, N.J., assignor to Sandoz Inc., Hanover, N.J.
No Drawing. Original application Mar. 4, 1964, Ser. No. 349,492. Divided and this application Feb. 2, 1967, Ser. No. 627,238
8 Claims. (Cl. 260—327)

1. A compound of the formula



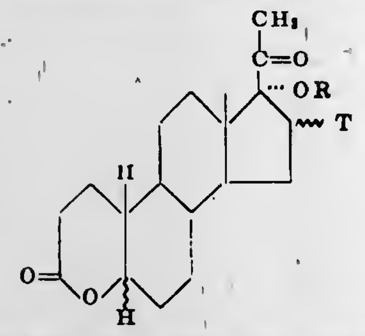
that moiety of an α-amino acid which is free of primary amino and carboxylic acid groups, the α-amino acid being one which is derived from protein.

3,351,633
4-OXA-19-NORPREGNAN-17α-OL-3,20-DIONES AND DERIVATIVES

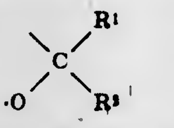
Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Oct. 14, 1965, Ser. No. 496,188
18 Claims. (Cl. 260—343.2)

1. A compound represented by the general formula:



wherein R is selected from the group consisting of hydrogen, hydrocarbon carboxylic acyl containing less than 12 carbon atoms, T is selected from the group consisting of hydrogen, α-hydroxyl, α-hydrocarbon carboxylic acyloxy containing less than 12 carbon atoms, α-methyl and β-methyl, and R and T taken together represent the grouping



wherein R^1 is selected from the group consisting of lower alkyl and lower aryl containing up to 8 carbon atoms, inclusive, and R^2 is selected from the group consisting of hydrogen and lower alkyl.

3,351,634
METHOD OF CARRYING OUT EXOTHERMIC VAPOR PHASE CHEMICAL REACTIONS

John R. B. Ellis, Kentfield, and Mack F. Hughes, Albany, Calif., assignors to Chevron Research Company, a corporation of Delaware

Filed July 15, 1963, Ser. No. 294,838
6 Claims. (Cl. 260—346.4)

1. Process for the partial oxidation of a vaporizable and oxidizable organic feed selected from the group consisting of hydrocarbons containing from 1 to 25 carbon atoms per molecule and having a boiling point at one atmosphere pressure below 1000° F. which comprises:

(a) maintaining in an ebullient fluid-bed zone a variable valent heavy metal oxide vapor phase fluid-bed oxidation catalyst;

(b) maintaining said zone at a temperature in the range from about 212° F. to 1000° F. and below the vapor phase oxidation temperature of said feed by indirect heat exchange means located in a portion of the continuous phase of said fluid-bed; and

(c) separately introducing as vapors said feed and an oxygen-containing gas into a separate portion of said continuous phase and into mutual contact substantially simultaneously with said introduction wherein at least one of said intromittents is at a temperature substantially above the vapor phase oxidation temperature of said feed, thereby generating upon said mutual contacting for a period less than about 0.5 second a local oxidation reaction and partially oxidizing said feed.

3,351,635
EPOXIDATION PROCESS

John Kollar, Wallington, N.J., assignor to Halcon International, Inc., a corporation of Delaware

No Drawing. Filed Mar. 14, 1966, Ser. No. 536,179
9 Claims. (Cl. 260—348.5)

1. The method of preparing an oxirane compound which comprises reacting an olefinically unsaturated compound with an organic hydroperoxide in the presence of a catalyst selected from the group consisting of a compound of molybdenum, tungsten, titanium, columbium, tantalum, rhenium, selenium, chromium, zirconium, tellurium and uranium.

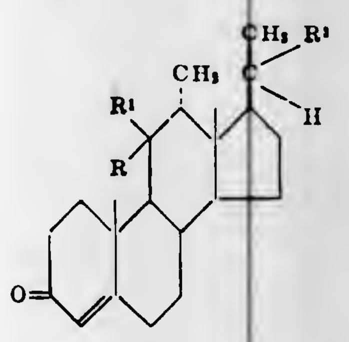
3,351,636
20-(ALIPHATIC HYDROCARBONOXY)- AND 20-(SUBSTITUTED ALIPHATIC HYDROCARBONOXY)-PREGNENE-11-OXYGENATED-3-ONES

Mariano A. Guiducci, Edison, and Paul P. Lemanski, Nixon, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 25, 1966, Ser. No. 544,699

6 Claims. (Cl. 260—397.1)

1. A compound of the formula



wherein R^2 is selected from the group consisting of hydroxyalkoxy, acyloxyalkoxy and carboxylalkoxy; R is hydrogen, R^1 is β—OH and R and R^1 together are oxo (O=).

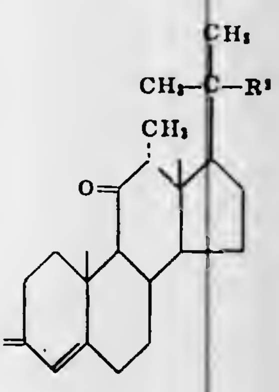
3,351,637
12,20-DIMETHYL-Δ^4-PREGNENE-3,20-DIONE STEROIDS AND DERIVATIVES THEREOF

Mariano A. Guiducci, Edison, and Nancy C. Kraemer, Cranford, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 25, 1966, Ser. No. 544,700

4 Claims. (Cl. 260—397.1)

1. A compound having the formula



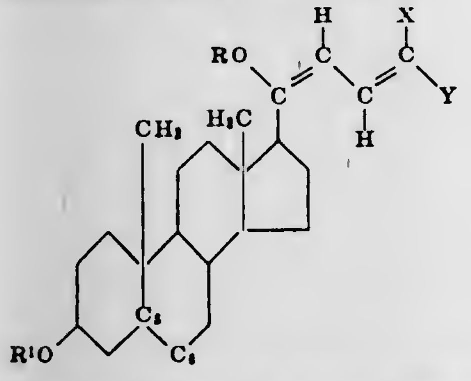
wherein R^2 is selected from the group consisting of hydroxyalkoxy, acyloxyalkoxy and carboxyalkoxy.

3,351,638
NOVEL SUBSTITUTED 21-NOR-$\Delta^{20(22),23}$-STEROIDAL DIENES

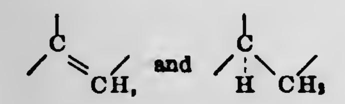
John Paul Dusza, Nanuet, N.Y., Joseph Peter Joseph, Cliffside Park, N.J., and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 29, 1966, Ser. No. 568,727
10 Claims. (Cl. 260—397.1)

1. A steroid of the formula:



wherein X is selected from the group consisting of hydrogen, lower alkyl, carboloweralkoxy and cyano; Y is selected from the group consisting of carboloweralkoxy, cyano and nitro; R is lower alkyl; R^1 is selected from the group consisting of hydrogen and lower alkanoyl and C_5—C_6 is a trivalent radical selected from the group consisting of



3,351,639
17-ALKYL-20-KETO SUBSTITUTED PREGNENES, PREGNADIENES AND METHODS OF PREPARING THE SAME

George Rodger Allen, Jr., Old Tappan, and Martin Joseph Weiss, Oradell, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 20, 1963, Ser. No. 266,491
2 Claims. (Cl. 260—397.3)

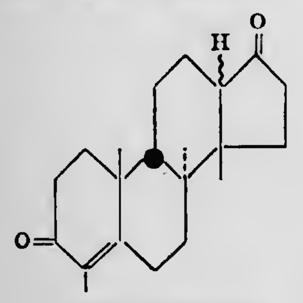
1. The compound 17α-ethyl-3β-fluoro-6-methylpregn-5-en-20-one.

3,351,640
4,8,14-TRIMETHYL-18-NOR-8α,9β,14β-ANDROST-4-ENE-3,17-DIONE

Patrick A. Diassi, Westfield, and Pacifico A. Principe, South River, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 23, 1966, Ser. No. 536,623
3 Claims. (Cl. 260—397.3)

1. A compound having the formula



3,351,641
3β-ACETOXY-5α-HYDROXY-17α-BROMO-PREGNANE-6,20-DIONE

Gordon S. Myers, Mount Royal, Montreal, Quebec, and Anthonie J. Verwijs, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 30, 1965, Ser. No. 510,697
1 Claim. (Cl. 260—397.4)

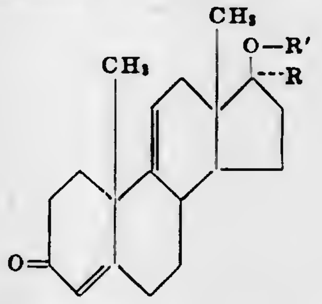
3β-acetoxy-5α-hydroxy-17α-bromopregnane-6,20-dione.

3,351,642
9(11)-DEHYDRO-17α-METHYL TESTOSTERONE AND DERIVATIVES THEREOF

Milton E. Herr, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Sept. 14, 1962, Ser. No. 223,816
3 Claims. (Cl. 260—397.45)

1. 9(11)-dehydro-17-alkyltestosterones represented by the following formula



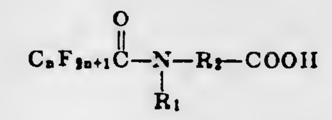
wherein R′ is selected from the group consisting of hydrogen and the acyl radical of a hydrocarbon carboxylic acid containing from one to twelve carbon atoms, inclusive, and wherein R is a lower-alkyl group containing less than three carbon atoms, and the 3-pyrrolidyl enamines thereof.

3,351,643
COORDINATION COMPLEXES

Murray Hauptschein and Charles Edward Inman, Glenside, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 9, 1965, Ser. No. 478,408
7 Claims. (Cl. 260—404)

1. Chromium coordination complexes of compounds of the formula



$$C_nF_{2n+1}\overset{\overset{\displaystyle O}{\|}}{C}-\underset{\underset{\displaystyle R_1}{|}}{N}-R_2-COOH$$

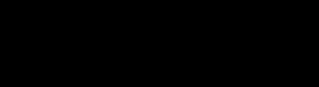
where C_nF_{2n+1} is perfluoroalkyl, *n* is an integer from 8 to 12, R_1 is selected from the group consisting of hydrogen and alkyl having from 1 to 4 carbon atoms, and R_2 is alkylene having from 1 to 6 carbon atoms.

3,351,644
PREPARATION OF TELOMERIC ACID FLUORIDES

Murray Hauptschein, Glenside, Pa., and Chester L. Parris, Morris Plains, N.J., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 15, 1963, Ser. No. 316,424
4 Claims. (Cl. 260—408)

1. A method for the production of tetrafluoroethylene telomer acid fluorides which comprises the steps of reacting a tetrafluoroethylene telomer iodide of the formula $R_f[CF_2CF_2]_nI$ where *n* is a small integer from 1 to about 8 and where R_f is selected from the class consisting of perfluoroalkyl and ω-monochloroperfluoroalkyl radicals with fuming sulfuric acid containing from about 20% to 65% by weight of SO_3 at a temperature of from 130 to 200° C. and for a reaction time of from 1 to 20 hours, the shorter of said reaction times being employed at the higher temperatures in said range, thereby producing a telomer acid fluoride of the formula



$$R_f[CF_2CF_2]_{n-1}CF_2\overset{\overset{\displaystyle O}{\|}}{C}F$$

as the major product of the reaction, discontinuing said reaction after the formation of said acid fluoride to avoid conversion thereof to other products, permitting said reaction product to separate into an inorganic phase consisting essentially of fuming sulfuric acid, and an organic phase containing said acid fluoride, and then recovering said acid fluoride.

3,351,645

7,7-DIALKYLBICYCLO [3.2.0] HEPTAN-6-OLS AND ESTERS THEREOF

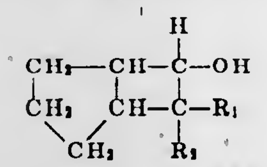
John R. Caldwell, Kenneth P. Perry and Winston J. Jackson, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 9, 1962, Ser. No. 172,098

The portion of the term of the patent subsequent to Dec. 10, 1980, has been disclaimed.

7 Claims. (Cl. 260—410)

1. Cyclic alcohols of the formula:



wherein R_1 and R_2 are lower alkyl radicals.

7. 7,7-methylethylbicyclo[3.2.0]heptan-6-yl pelargonate.

3,351,646

MAGNESIUM AND TIN DERIVATIVES OF STYRENES AND THE PREPARATION THEREOF

Hugh E. Ramsden, Scotch Plains, and John E. Engelhart, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,294

21 Claims. (Cl. 260—429.7)

1. An adduct of magnesium with a styrene compound selected from the group consisting of styrene and C_1 to C_7 alkyl, alkoxyl and aroxyl substituted styrenes.

3,351,647

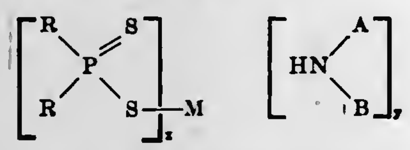
NITROGEN, PHOSPHORUS AND METAL CONTAINING COMPOSITION

Thomas A. Butler and Herbert F. Wiese, Cleveland, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed May 14, 1963, Ser. No. 280,452

7 Claims. (Cl. 260—429.9)

1. An oil soluble nitrogen- and phosphorus-containing composition having the general formula



wherein R is an aryl or halogen-substituted aryl radical, or an alkaryl radical containing from 7 to about 26 carbon atoms; each of A and B is hydrogen or an aliphatic hydrocarbon radical; M is zinc, calcium, copper, nickel, cobalt, chromium, lead or cadmium; *x* is the valence of M; and *y* is from about 0.5 to about 6.

3,351,648

PROCESS FOR PREPARING IRON TETRACARBONYL COMPOUNDS WITH MONO-OLEFINIC LIGANDS

Erwin L. Weiss, Grand-Lancy, Geneva, Switzerland, assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 3, 1963, Ser. No. 327,825

4 Claims. (Cl. 260—439)

1. A process for preparing π-olefin iron tetracarbonyl compounds of the formula

$$\pi\text{-LFe(CO)}_4$$

where L is a mono-olefinic ligand characterized by at least one carbonyl group alpha to the unsaturated carbon to carbon bond which comprises reacting the said mono-olefinic ligand with di-iron enneacarbonyl at a temperature of from about 30 to about 60° C. at atmospheric pressure.

3,351,649

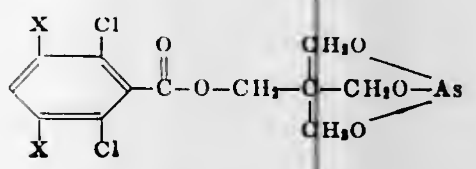
PENTAERYTHRITOL ARSENITE SUBSTITUTED BENZOATES

Marcel A. Gradsten, Demarest, N.J., assignor to Tenneco Chemicals, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 13, 1965, Ser. No. 447,898

3 Claims. (Cl. 260—440)

1. A compound having the structure



wherein each X represents a member selected from the group consisting of hydrogen, chlorine, lower alkyl, lower alkoxy, nitro, and amino.

3,351,650

2,4- AND 2,6-LOWER ALKYL CYCLOHEXYLENE DIISOCYANATE MIXTURES

James Martin Cross and Sidney H. Metzger, Jr., New Martinsville, and Clyde D. Campbell, Wheeling, W. Va., assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed June 1, 1964, Ser. No. 371,842

5 Claims. (Cl. 260—453)

1. An isocyanate mixture of at least 50 percent 2,4-lower alkyl cyclohexylene diisocyanate and at least 5 percent 2,6-lower alkyl cyclohexylene diisocyanate.

3,351,651

PROCESS FOR PREPARING 2,6-DICHLOROBENZONITRILE

Leonard A. Rothman, Brooklyn, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 5, 1964, Ser. No. 365,190

4 Claims. (Cl. 260—465)

1. The process for preparing 2,6-dichlorobenzonitrile which comprises

(a) heating at a temperature in the range of from about 155° C. to about 210° C. in the absence of a solvent,

(b) a mixture which consists essentially of about 65% to about 90% by weight of 1,2-dichloro-4-nitrobenzene and about 35% to about 10% by weight of 1,2-dichloro-3-nitrobenzene

(c) with 1 to about 2 moles of cuprous cyanide per mole of 1,2-dichloro-3-nitrobenzene

(d) in the presence of about 0.02 to about 0.2 mole of a catalyst per mole of 1,2-dichloro-3-nitrobenzene, said catalyst consisting of at least 1 member of the group consisting of pyridine, lutidine and quinoline, until cyanation is complete;

(e) then passing elemental chlorine through the reaction mixture at a temperature in the range of about 155° C. to about 205° C. until chlorination is complete;

(f) and then separating from the reaction mass 2,6-dichlorobenzonitrile and 1,2,4-trichlorobenzene.

3,351,652

QUATERNARY AMMONIUM COMPOUNDS

Reginald L. Wakeman, Philadelphia, Pa., and Joseph F. Coates, Washington, D.C., assignors, by mesne assignments, to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,530

5 Claims. (Cl. 260—473)

1. A compound formed by the reaction of (1) a water-soluble bacteriologically active quaternary ammonium compound having as N-substituents a member of the group consisting of alkyl, alkylebnzyl and alkylpehnoxyethoxyethyl wherein the alkyl, in each instance, has 8 to 22 carbon atoms, two methyl groups, and a member selected from the group consisting of methyl, benzyl, menaphthyl and substituted benzyl wherein the substituents consist of from one to four alkyls containing from 1 to 4 carbon atoms; and (2) a phenolic compound containing only carbon, hydrogen and oxygen and having as acidic groups only at least one phenolic hydroxy group.

3,351,653

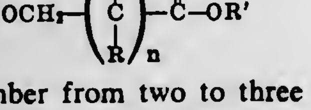
FLUORINE-CONTAINING HYDROXY ACIDS AND ESTERS AND METHODS FOR THE MANUFACTURE THEREOF

Russell L. K. Carr, Grand Island, and Charles F. Baranauckas, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Mar. 8, 1962, Ser. No. 178,228

12 Claims. (Cl. 260—484)

1. A composition having the following general formula:



$$\text{HOCH}_2-\left(\begin{matrix}\text{R}\\|\\\text{C}\\|\\\text{R}\end{matrix}\right)_n-\overset{\text{O}}{\overset{\|}{\text{C}}}-\text{OR}'$$

wherein *n* is a number from two to three inclusive and R is selected from the group consisting of hydrogen, fluorine, perfluoroalkyl, perfluorocycloalkyl, perfluoroaryl, alkyl, cycloalkyl, aryl and mixtures thereof, wherein at least one of the R's contains fluorine, and wherein R' is a substance selected from the group consisting of hydrogen and alkyl.

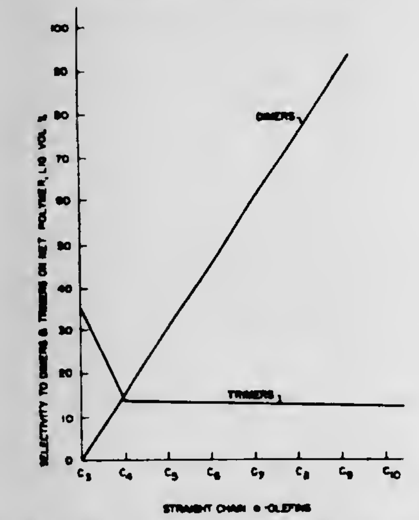
3,351,654

PROCESS OF PREPARING BIODEGRADABLE ALKYLBENZENE SULFONATES BY DIMERIZING AN OLEFIN OF 5 TO 10 CARBON ATOMS WITH A SILICA-ALUMINA CATALYST

David A. Gudelis, Sarnia, Ontario, Canada, assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed May 19, 1961, Ser. No. 111,387

2 Claims. (Cl. 260—505)



1. A process for the preparation of biodegradable alkylbenzene sulfonates comprising contacting a hydrocarbon feed consisting essentially of straight-chain alpha-mono-olefin hydrocarbons of 5 to 10 carbon atoms with a silica-alumina catalyst having a weight ratio of silica to alumina of 1:1 to 10:1 at a temperature of 93–250° C. and at a pressure of 200 to 1500 p.s.i.g., fractionating the reaction product to obtain a dimer-containing fraction, subjecting said fraction to alkylation conditions in the presence of benzene and aluminum chloride and thereafter subjecting the resulting alkylbenzenes to sulfonation.

3,351,655

PROCESS FOR PREPARING ODORLESS ALKYLARYL SULFONATES AND THE COMPOSITIONS PRODUCED THEREBY

Wolfgang K. Seifert, Fairfax, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Aug. 27, 1964, Ser. No. 392,613

10 Claims. (Cl. 260—505)

1. In a process for producing alkylaryl sulfonate by sulfonating an alkylaryl hydrocarbon having 9 to 18 carbon atoms in the alkyl groups with concentrated sulfuric acid to produce a mixture comprising alkylaryl sulfonic acids, and neutralizing said sulfonic acid mixture, the improvement of producing a substantially odorless neutralized alkylaryl sulfonate detergent product which comprises incorporating into the sulfonic acid phase free of sulfuric acid a hydroxylamine salt in an amount of about .004 to 2% by weight based on the detergent active component therein.

9. An odorless neutralized alkylaryl sulfonate detergent composition having 9 to 18 carbon atoms in the alkyl groups having incorporated therein hydroxylamine in an amount of about 0.004 to 2% by weight based on the sulfonate detergent.

3,351,656

METHOD FOR MAKING AN ALKALI METAL SALT OF HEPTAGLUCONIC ACID

Peter Leenders, Allendale, N.J., and Hans G. Creutz, Detroit, Mich., assignors, by mesne assignments, to Allied Research Products, Inc. (formerly Allied Richardson, Inc.), Baltimore, Md., a corporation of Delaware

Original application Oct. 12, 1961, Ser. No. 144,725, now Patent No. 3,219,560, dated Nov. 23, 1965. Divided and this application May 18, 1965, Ser. No. 468,665

3 Claims. (Cl. 260—528)

1. A method for producing an alkali metal salt of heptagluconic acid which comprises reacting d-glucose with an alkali metal cyanide, hydrolyzing the resulting glucose cyanohydrine, driving off the ammonia produced thereby, treating the hydrolyzed and ammonia-free glucose cyanohydrine with hydrogen peroxide and recovering said alkali metal salt of heptagluconic acid.

3,351,657

PRODUCTION OF OXYGEN-CONTAINING ORGANIC COMPOUNDS BY THE CO-OXIDATION OF CYCLOPARAFFINS AND ALDEHYDES

Leonard Andrew Duncanson and Herbert George Lawley, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of England

No Drawing. Filed Feb. 18, 1963, Ser. No. 259,410

Claims priority, application Great Britain, Feb. 23, 1962, 7,155/62

9 Claims. (Cl. 260—530)

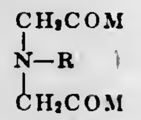
1. A process for the production of oxygen-containing organic compounds, selected from the group consisting of carboxylic acids, alcohols and ketones, which comprises co-oxidizing in a liquid mixture an aldehyde having from two to four carbon atoms and a cycloparaffin selected from the group consisting of cyclopentane and cyclohexane and methyl derivatives thereof, the molar ratio of the said cycloparaffin to the said aldehyde being in the range of 1:1 to 8:1, at a temperature in the

range of 90 to 150° C., and at a pressure of atmospheric to 50 atmospheres with a gas containing molecular oxygen, the molar ratio of the oxygen in said gas to said aldehyde being in the range of 3:1 to 10:1, in the presence of a cobalt salt soluble in the reaction mixture, the cobalt concentration lying in the range of 10 to 10,000 p.p.m. based on the weight of the cycloparaffin undergoing oxidation.

3,351,658
AMIDE REACTION PRODUCTS OF AMINO ACID CHELATING COMPOUNDS

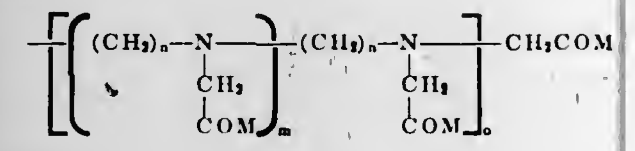
Frederick C. Bersworth, 120 Washington St., East Orange, N.J. 07052
No Drawing. Continuation of application Ser. No. 446,120, Apr. 6, 1965. This application Sept. 20, 1966, Ser. No. 580,829
7 Claims. (Cl. 260—534)

1. The reaction product of a compound having a formula given by:



$$\begin{array}{l}CH_2COM\\ |\\ N-R\\ |\\ CH_2COM\end{array}$$

wherein,
R is



$$-\left[\left((CH_2)_n-\underset{\substack{|\\CH_2\\|\\COM}}{N}-\right)_m(CH_2)_n-\underset{\substack{|\\CH_2\\|\\COM}}{N}-\right]_o-CH_2COM$$

$m=0$–4
$o=0,1$
$n=2,3$

and —COM is independently selected from the group consisting of COOH, —COONa, —COOK,

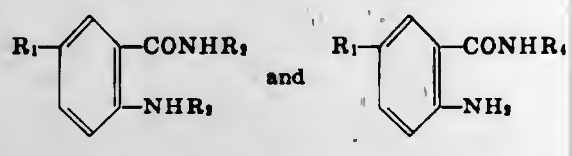
$$-COONH_4$$

and C—O—O-alkyl, not more than two COM's being $-CH_2OH$, with a compound selected from the group consisting of hydrazine, alkyl substituted hydrazines having 1–8 carbon atoms, guanidine, and urea, wherein at least one of said —COM's is reacted, said reaction being conducted under conditions wherein the reactants are freed of water, the conditions being such that water is liberated in the reaction, the reaction being conducted at a temperature sufficient to eliminate water of reaction with acid forms and alcohol of reaction with ester forms.

3,351,659
AMINOBENZAMIDES

Arthur A. Santilli, Havertown, Pa., and Thomas S. Osdene, Richmond, Va., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 12, 1966, Ser. No. 586,055
9 Claims. (Cl. 260—558)

1. A compound selected from the group consisting of those having the formula:



wherein R_1 is selected from the group consisting of hydrogen and chloro; R_2 is selected from the group consisting of chlorobenzyl, lower alkoxy(lower)alkyl, phen(lower) alkyl, and cyclo(lower)alkyl with the proviso that when R_2 is phen(lower)alkyl and cyclo(lower)alkyl R_1 is chloro; R_3 is lower alkyl; and R_4 is selected from the group consisting of β-hydroxyphenethyl and chloro-β-hydroxyphenethyl.

3,351,660
NF_2 ADDUCTS OF CYCLOOCTATETRAENE AND PREPARATION THEREOF

Lawrence J. Engel, Dunellen, Somerset, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Apr. 9, 1963, Ser. No. 272,505
7 Claims. (Cl. 260—563)

1. An NF_2 adduct of cyclooctatetraene.

7. Process for preparing hexakis and octakis adducts of cyclooctatetraene, which comprises reacting tetrakis(NF_2) adduct of cyclooctatetraene with from 1 to 2 moles of N_2F_4 per mole of the tetrakis adduct in a period of about 5 to 10 hours at temperatures in the range of 100° to 175° C.

3,351,661
DICYCLOHEXYLAMINE

Frederik H. Van Munster, Waukegan, Ill., assignor to Abbott Laboratories, Chicago, Ill., a corporation of Illinois
No Drawing. Filed June 2, 1964, Ser. No. 372,097
5 Claims. (Cl. 260—563)

1. The process of preparing dicyclohexylamine consisting essentially of the step of reacting phenol with ammonia and hydrogen at a pressure above 15 p.s.i.g. and at a temperature between 70° and 150° in the presence of at least 0.02% of catalytic metallic palladium by weight based on the amount of phenol, whereby said phenol, ammonia and hydrogen are introduced into the reaction vessel substantially at a molar ratio between 2:1:6 and 1:1:4.

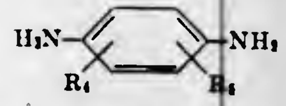
3,351,662
HYDROXYBENZALDEHYDE-ALIPHATIC ALDEHYDE-POLYAMINE POLYCONDENSATES

Walter M. Chamot, Brookfield, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Original application Aug. 30, 1960, Ser. No. 52,786, now Patent No. 3,184,294, dated May 18, 1965. Divided and this application Dec. 18, 1964, Ser. No. 419,551
4 Claims. (Cl. 260—566)

1. A linear condensation polymer of a hydroxybenzaldehyde, an aliphatic aldehyde selected from the group consisting of formaldehyde and acetaldehyde, and an organic polyamine selected from the group consisting of (A) aliphatic diamines selected from the group consisting of an alkylene diamine of the formula $H_2N-R-NH-R_1$ wherein R is a member selected from the group consisting of a hydrocarbon alkylene group, said alkylene group containing 2–6 carbons, and where R_1 is a member selected from the group consisting of hydrogen, ethyl and hydroxyethyl, and a diamine of the formula

$$H_2N-R_2-X-R_3-NH_2$$

wherein R_2 and R_3 are alkylene groups having a total of 2–6 carbons and X is a member selected from the group consisting of sulfur and oxygen; (B) a phenylene diamine of the formula



wherein R_4 and R_5 are each a member selected from the group consisting of hydrogen and alkyl of 1–4 carbons; and (C) polyalkylene polyamines with at least one primary amino group, alkylene groups with 2–3 carbons each and 3–10 amino groups per molecule; said hydroxybenzaldehyde, said aldehyde and said organic polyamine being condensed in said linear condensation polymer at a mol ratio of said hydroxybenzaldehyde to said organic polyamine in the range of 1:0.5–1, respectively, and at a mol ratio of said aliphatic aldehyde to said polyamine in the range of 0.9–1.1:1, respectively.

3,351,663
HIGH ENERGY OXIDIZERS

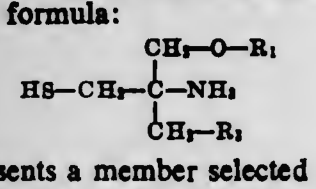
Donald A. Guthrie, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed June 14, 1960, Ser. No. 36,701
8 Claims. (Cl. 260—583)

1. A nitro radical adduct of a difluoroamino-substituted olefinic hydrocarbon selected from the group consisting of allyl difluoroamine, 1,4-bis(difluoroamino)-butene-2, 1,2-bis(difluoroamino)-butene-3, 4,5-bis(difluoroamino)-pentene-1, 5,6-bis(difluoroamino)-hexene-1, and difluoroamine adducts of polybutadiene, of polyisoprene, of polymethylpentadiene, and of polyhexadiene, said difluoroamino adducts containing 25 to 60 wt. percent of NF_2, an NO_2 radical being attached to each of 2 carbon atoms linked together by a double bond in said difluoroamino-substituted olefinic hydrocarbon.

3,351,664
2-AMINO-ALKANETHIOLS

Clarence R. Bresson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Sept. 28, 1964, Ser. No. 399,933
9 Claims. (Cl. 260—584)

1. A compound selected from those represented by the following general formula:



$$HS-CH_2-\underset{\substack{|\\CH_2-R_2}}{\overset{\substack{CH_2-O-R_1\\|}}{C}}-NH_2$$

wherein R_1 represents a member selected from the group consisting of hydrogen and alkyl radicals containing from 1–12 carbon atoms and R_2 represents a member selected from the group consisting of hydroxyl radicals, alkoxy radicals having 1–12 carbon atoms, hydrogen and alkyl, aryl, and aralkyl radicals having 1–12 carbon atoms.

3,351,665
PREPARATION OF PERHALOACETONES

Everett E. Gilbert, Morris Township, Morris County, N.J., and Basil S. Farah, Allentown, Pa., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed May 12, 1964, Ser. No. 366,893
5 Claims. (Cl. 260—593)

1. A process for the preparation of perhaloacetones containing one to two bromine substituents which comprises reacting a perhaloacetone selected from the class consisting of hexachloroacetone and fluorochloroacetones selected from the group consisting of $F_2ClCCOCClF_2$, $FCl_2CCOCCl_2F$, F_3CCOCF_2Cl, $F_2ClCCOCFCl_2$,

$$F_3CCOCFCl_2$$

$F_3CCOCCl_3$ and $F_2ClCCOCCl_3$ with aluminum bromide.

3,351,666
HYDROFORMYLATION CATALYST AND PROCESS RELATING THERETO

Joseph Kern Mertzweiller and Horace Marion Tenney, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Original application Feb. 5, 1963, Ser. No. 256,258. Divided and this application Aug. 16, 1965, Ser. No. 480,149
6 Claims. (Cl. 260—604)

1. The method of preparing oxygen-containing compounds which comprises reacting an olefinic hydrocarbon compound with carbon monoxide and hydrogen at a temperature between 200° F. and 500° F. in the presence of a catalytic amount of a complex having the general formula:

$$[C_nH_{2n-1}]M(CO)_z[(R_zA)_x-P-R_y]$$

wherein

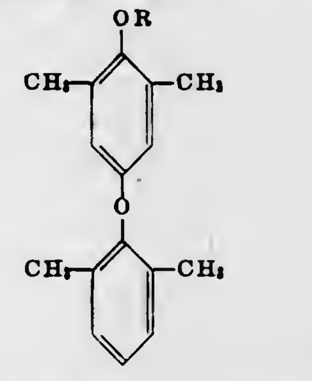
$$[(R_zA)_x-P-R_y]$$

is a biphyllic ligand, M is a transistion metal selected from Group VIII of the Periodic Chart, R is selected from the group consisting of hydrogen and alkyl groups, A is selected from the group consisting of oxygen, nitrogen and sulfur, n has a value of 2 to 20, x has a value of 0 to 3, y has a value of $3-x$ and z has a value of from 1 to 2.

3,351,667
4 - (4' - BROMO - 2',6' - DIMETHYLPHENOXY)-2,6-DIMETHYLPHENOL AND METHOD OF PREPARATION

Stephen B. Hamilton, Jr., and Harry S. Blanchard, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed July 31, 1964, Ser. No. 386,699
7 Claims. (Cl. 260—613)

1. The process of making a monobromo-dimethyl-phenoxy-dimethylphenol which comprises reacting a compound having the formula



where R is selected from the group consisting of hydrogen and methyl, with sufficient bromine under nuclear brominating conditions to produce a dibrominated product, reacting the dibrominated product with hydriodic acid, and thereafter separating the monobromo-dimethyl-phenoxy-dimethylphenol from the reaction mixture.

7. 4 - (4' - bromo-2',6'-dimethylphenoxy)-2,6-dimethylphenol.

3,351,668
PRODUCTION OF PARAFORMALDEHYDE

Helmut Junkermann and Friedrich Löffler, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
No Drawing. Filed July 16, 1964, Ser. No. 383,208
Claims priority, application Germany, Aug. 10, 1963, D 42,220
2 Claims. (Cl. 260—615.5)

1. A process for the production of paraformaldehyde in the form of beads which comprises introducing from a nozzle a thin stream of molten formaldehyde preconcentrate containing 70 to 85% by weight of formaldehyde obtained by the concentration of an aqueous formaldehyde solution at a moderately raised pressure into an inert liquid hydrocarbon having a boiling point below 120° C. maintained in turbulent motion and at a temperature at least 50° C. below that of the melt being introduced, said nozzle being spaced above the surface of the hydrocarbon.

3,351,669
REDUCTION OF METAL CONTENT OF PHENOLICS

Robert E. Anderson, Midland, and Albert J. Gouin, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed June 28, 1963, Ser. No. 291,252
7 Claims. (Cl. 260—621)

1. A method for reducing the concentration of metal impurities in phenolics containing ionic metallic species

capable of forming metal-halide negatively charged ion complexes, said phenolics being selected from the group consisting of phenol, o-chlorophenol, p-chlorophenol, m-cresol, resorcinol, o-nitrophenol, m-amino-phenol, o-sec-butyl phenol and 2,4,6-tribromophenol, which comprises the step of:

- (1) contacting a solution of said phenolic containing:
    - (a) said metallic species,
    - (b) from about 0.001 to 2 weight percent, phenolic solution basis, of halide ions selected from the group consisting of chloride, bromide and iodide ions, and
    - (c) from about 0.001 to 15 weight percent, phenolic solution basis, of water
- (2) with a quaternary ammonium anion exchange resin; and
- (3) subsequently separating said solution from said resin.

3,351,670
PREPARATION OF p-HALOTETRAFLUOROPHENOL

Leon Jerzy Belf, Avonmouth, England, assignor to The National Smelting Company Limited, London, England
No Drawing. Filed July 25, 1963, Ser. No. 297,692
Claims priority, application Great Britain, July 30, 1962, 29,236/62; Nov. 30, 1962, 43,387/62
6 Claims. (Cl. 260—623)

1. A chemical compound of formula p-X—C_6F_4—OH where X is chosen from the group consisting of chlorine, bromine and iodine.

5. A method for the preparation of a compound of formula X—C_6F_4—OH where X is chosen from the group consisting of chlorine, bromine and iodine comprising the steps of mixing a compound of formula C_6F_5X wherein X has the same meaning as in the preceding formula and potassium hydroxide in tertiary butanol solution and heating the resulting homogeneous mixture at a temperature up to reflux.

3,351,671
PREPARATION OF PENTAFLUOROIODOETHANE

Louis G. Anello, Basking Ridge, and Richard F. Sweeney, Randolph Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed May 5, 1966, Ser. No. 547,765
2 Claims. (Cl. 260—653.8)

1. The process comprising reacting 1,2-diiodotetrafluoroethane with a fluorinating agent consisting essentially of SbF_3Cl_2, at temperatures in the range of about 60–130° C. and recovering pentafluoroiodoethane from the reaction mixture.

3,351,672
PREPARATION OF ALKYLAROMATIC HYDROCARBONS SUITABLE AS DETERGENT ALKYLATE

Robert T. Adams, Lafayette, and Mack F. Hughes, Albany, Calif., assignors to Chevron Research Company, a corporation of Delaware
No Drawing. Filed Mar. 10, 1965, Ser. No. 438,719
6 Claims. (Cl. 260—671)

1. In the process of preparing detergent alkylate by alkylating an aromatic hydrocarbon with a C_{10}–C_{20} 1-olefin mixture to produce C_{10}–C_{20} alkylaryl hydrocarbons convertible by sulfonation and neutralization to a detergent active material, the improvement of producing an alkylaromatic hydrocarbon mixture which upon sulfonation and neutralization yields a detergent product characterized by a low unsulfonated oil content, which comprises separately alkylating said aromatic hydrocarbon with two contiguous fractions of said C_{10}–C_{20} 1-olefin mixture, a lower-boiling fraction and a higher-boiling fraction, the boiling point spread of the lower-boiling fraction being about 3.0 to 5.8 times that of the higher-boiling fraction, to produce two alkylation products, isolating a detergent heart-cut fraction from each of the alkylation products and combining said heart-cuts before sulfonation and neutralization to produce a detergent active material having a low content of unsulfonated oil.

3,351,673
PROCESS FOR PREPARING COMPOSITE EPOXIDE RESINS

Herbert P. Price, Louisville, Ky., assignor to Celanese Coatings Company, a corporation of Delaware
No Drawing. Filed Aug. 2, 1965, Ser. No. 476,702
4 Claims. (Cl. 260—830)

1. A process for preparing composite epoxide resins which comprises reacting cyanuric acid in an excess of epichlorohydrin using an organic base as catalyst to form polychlorohydrin derivatives of cyanuric acid, adding to and dissolving therein a polyepoxide compound containing more than one vicinal epoxy group per molecule and being free from the triazine ring structure and reacting the resulting solution with an alkali metal hydroxide wherein the epichlorohydrin is present in the amount of at least about 2 mols per active hydrogen equivalent of the cyanuric acid and wherein the amount of alkali metal hydroxide used is substantially equivalent to the active hydrogens of the cyanuric acid originally present to form a composite epoxide resin of polyglycidyl isocyanurate and the polyepoxide compound.

3,351,674
MIXED GLYCIDYL DERIVATIVES OF CYANURIC ACID AND PHENOLS

John E. Masters, Louisville, Ky., assignor to Celanese Coatings Company, a corporation of Delaware
No Drawing. Filed Aug. 2, 1965, Ser. No. 476,745
7 Claims. (Cl. 260—830)

1. A process for preparing composite epoxide resins which comprises reacting cyanuric acid in an excess of epichlorohydrin using an organic base as catalyst to form polychlorohydrin derivatives of cyanuric acid, adding to and dissolving therein a polyhydric phenol and reacting the resulting solution with an alkali metal hydroxide, said components being in a ratio of at least about 2 mols of epichlorohydrin for each active hydrogen equivalent of the cyanuric acid and for each active hydrogen equivalent of the polyhydric phenol and wherein the amount of alkali metal hydroxide used is substantially equivalent to the total active hydrogens of the cyanuric acid and of the polyhydric phenol to form a composite epoxide resin of polyglycidyl isocyanurate and polyglycidyl ethers of the polyhydric phenol.

3,351,675
RESINOUS COATING MATERIALS

Allan E. Gilchrist, Westlake, Ohio, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
No Drawing. Filed Jan. 10, 1966, Ser. No. 519,523
7 Claims. (Cl. 260—845)

1. A phenolic resin-extended polycarboxylic acid resin consisting essentially of the product of heating together at a temperature between about 400° F. and about 500° F. for at least about 30 minutes in the absence of a source of formaldehyde sufficient to convert said product into an infusible state:

- (a) 50–95 weight parts of a maleinized siccative hydrocarbon-comprising conjugated diene copolymer having an acid number of at least about 30, and
- (b) 5–50 weight parts of an oil soluble, nonheat reactive phenol-aldehyde resin.

3,351,676
METHOD FOR PREPARING A POLYURETHANE CONTAINING 0.2 TO 5% POLYOLEFIN

James H. Saunders and Samuel Steingiser, Bridgeville, Pa., assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed May 4, 1964, Ser. No. 364,802
10 Claims. (Cl. 260—859)

1. In a method for simultaneously protecting a polyurethane reaction mixture from moisture absorption and providing a lubricant for subsequent shaping operations wherein the polyurethane has from about 0.2 percent to about 5 percent by weight of a polyolefin selected from the group consisting of polyethylene, polypropylene, and mixtures thereof dispersed substantially uniformly therein, said polyolefin having a melt index of at least about 115 and a molecular weight of from about 1000 to about 500,000, the improvement which comprises disposing a mixture of components which will react to form a polyurethane between two sheets of a polyolefin selected from the group consisting of polyethylene, polypropylene, and mixtures thereof, allowing chemical reaction to form a product which can be shaped by thermoplastic shaping methods and thereafter reducing the resulting laminate to particulate form.

3,351,677
CHLORINATED POLYETHYLENE ELASTOMERS

Oliver A. Barton, Florham Park, and Edward W. Pietrusza, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Apr. 13, 1964, Ser. No. 359,497
1 Claim. (Cl. 260—889)

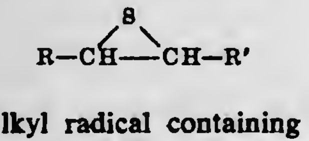
A covulcanized elastomeric composition comprising:

- (a) chlorinated linear polyethylene containing about 25 to about 35% by weight of chlorine, said polyethylene having a glass transition temperature of no greater than —10° C.; having an intrinsic viscosity from about 3.0 to about 4.5 dl./gm. in o-dichlorobenzene at 100° C.; and having a crystallinity of no greater than 1% as determined by the substantial absence of an endothermal differential thermal analysis peak at about the melting point of the parent polyethylene, said parent polyethylene having a molecular weight of from 700,000 to about 5 million;
- (b) a chlorinated hydrocarbon selected from the group consisting of polychloroprene and chlorosulfonated polyethylene, the ratio by weight of said chlorinated polyethylene to said chlorinated hydrocarbon being from about 3:1 to about 1:1; and
- (c) a curing agent.

3,351,678
POLYOLEFINS STABILIZED WITH A COMBINATION OF PHENOLS AND EPISULFIDE POLYMERS

Lane F. McBurney, Newark, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Aug. 12, 1964, Ser. No. 389,219
5 Claims. (Cl. 260—897)

1. A high molecular weight, crystalline, stereoregular polymer of an α-monoolefin having at least 3 carbon atoms containing as a stabilizer therefor stabilizing amounts of a polymer of an episulfide of the formula



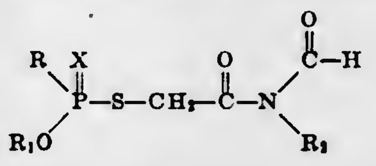
$$\mathrm{R{-}CH\overset{S}{\text{—}}CH{-}R'}$$

where R is an alkyl radical containing 1 to 28 carbon atoms and R′ is selected from the group consisting of hydrogen and methyl, said polymer of an episulfide having an RSV greater than about 0.8 as measured on a 0.1% solution in chloroform at 25° C., and a phenolic antioxidant selected from the group consisting of 2,4,6-trialkyl phenols, 2-aralkyl-4,6-dialkyl phenols, mono (dialkylhydroxybenzyl) phenols, di(dialkylhydroxybenzyl) phenols, tri(dialkylhydroxybenzyl) phenols, poly (alkylphenol) substituted hydrocarbons, hydroxyphenyl polyalkyl chromans, adducts of an alkylphenol and a cyclic terpene, thiobis (alkylphenol)s, and hydroxyphenoxy substituted triazines.

3,351,679
SUBSTITUTED (N-FORMYL-N-ALKYLCARBAMOYL METHYL) PHOSPHONOTHIOATES

Karoly Szabo, Orinda, and David J. Broadbent, San Jose, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 7, 1964, Ser. No. 388,303
6 Claims. (Cl. 260—943)

1. Compounds corresponding to the formula

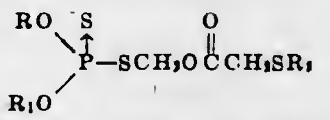


wherein R is a member selected from the group consisting of lower alkyl, lower haloalkyl and phenyl, R_1 and R_2 are lower alkyl radicals, X is a member selected from the group consisting of oxygen and sulfur.

3,351,680
O,O - DILOWERALKYL PHOSPHORODITHIOYLMETHYL-SUBSTITUTED MERCAPTOACETATES

Arnold D. Gutman, Oakland, and Jack P. Orr, Mountain View, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 1, 1965, Ser. No. 436,343
6 Claims. (Cl. 260—948)

1. A compound of the formula

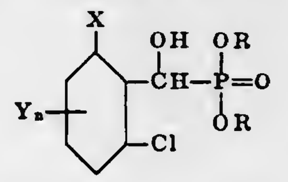


wherein R and R_1 are lower alkyl radicals, and R_2 is a member selected from the group consisting of alkyl radicals containing from 1 to 8 carbon atoms, inclusive, and phenyl.

3,351,681
NUCLEAR CHLORINATED α-HYDROXYBENZYL PHOSPHONIC ACIDS AND THE SALTS AND ESTERS OF SAID ACIDS

Adolph J. Deinet, Woodcliff Lake, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware
No Drawing. Filed Nov. 27, 1964, Ser. No. 414,464
8 Claims. (Cl. 260—953)

1. A compound having the structure



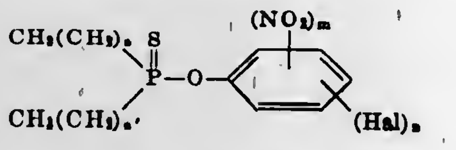
wherein X represents a member selected from the group consisting of hydrogen and chlorine, Y represents a member selected from the group consisting of hydrogen, chlorine, nitro, and amino, *n* represents an integer in the range of zero to 2, and each R represents a member selected from the group consisting of hydrogen, an alkali metal, an alkyl group having from 1 to 6 carbon atoms, and a hydroxylalkyl group having from 1 to 6 carbon atoms.

3,351,682

O-ARYL DIALKYLPHOSPHINOTHIOATES

Joseph W. Baker and John P. Chupp, Kirkwood, Mo., and Peter E. Newallis, Morris Plains, N.J., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Original application Dec. 18, 1959, Ser. No. 860,374. Divided and this application June 4, 1962, Ser. No. 199,600
7 Claims. (Cl. 260—954)

1. A dialkylphosphinothioate of the formula



wherein *a* and *a′* are like integers from 0 to 1, wherein Hal is halogen having an atomic number not higher than 35, wherein *m* is a number from 0 to 2, wherein *n* is a number from 0 to 3; and wherein the sum of *m* and *n* is a whole number from 1 to 3.

3,351,683

PRODUCTION OF PHOSPHITE ESTERS

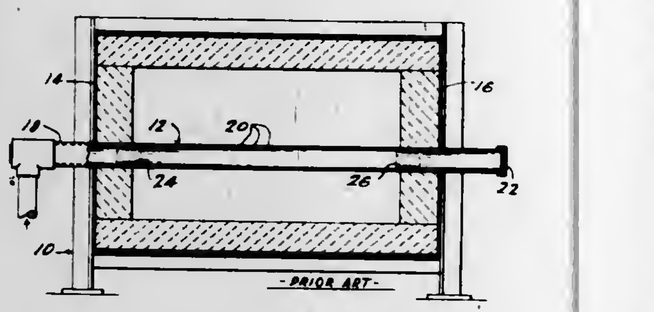
Chisung Wu, South Charleston, and Frank J. Welch, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Jan. 28, 1965, Ser. No. 428,854
16 Claims. (Cl. 260—982)

1. Process which comprises reacting a trialkyl trithiophosphite, wherein the alkyl has up to 5 carbon atoms, with a compound selected from the group consisting of alcohols, phenols and mercaptans, at a temperature and for a period of time sufficient to produce the phosphite of said compound and the alkyl mercaptan derived from said trialkyl trithiophosphite, provided that said alkyl mercaptan has a lower boiling point than said compound, and further provided that said alkyl mercaptan is continuously removed from the reaction mixture during the course of said process.

3,351,684

METHOD OF REDUCING CARBON DEPOSITS ON SURFACES IN CONTACT WITH CARBONACEOUS GASES AND SUBJECTED TO ELEVATED TEMPERATURES

Joseph A. Lincoln, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed Mar. 8, 1965, Ser. No. 437,676
8 Claims. (Cl. 263—52)

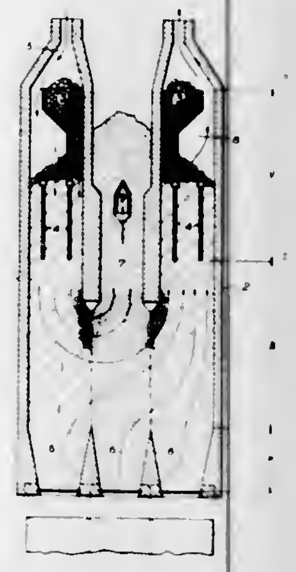


1. In the method of preventing deposition of carbon from a heated carbonaceous gas, the steps comprising: securing a tube in confluent relationship with a furnace, providing that portion of the tube having a temperature between 1100° and 1300° F. with a lining having a positive standard electrode potential, based upon the standard electrode potential of sodium as being negative, and passing the carbonaceous gas through said tube.

3,351,685

PROCESS FOR FIRING AND COOLING PARTICULATE SOLIDS

Alois Schmid, Gregor Mendelstrasse 46, Vienna XIX, Austria, and Hermann Hofer, Richard Wagner Strasse 28, Postfach 8027, Zurich, Switzerland
Filed Nov. 16, 1965, Ser. No. 508,080
Claims priority, application Austria, Nov. 17, 1964, A 9,724/64
6 Claims. (Cl. 263—52)



1. A process of firing and cooling particulate solids, which comprises dividing said solids into a coarse fraction and a fine fraction, causing said coarse fraction to descend in the form of first and second coarse-fraction piles disposed one beside, and spaced from the other, causing said fine fraction to descend in the form of a third pile disposed between said coarse-fraction piles, burning fuel in said first and second piles to produce hot gas, passing said hot gas, in periodic alternation, upwardly in one of said coarse-fraction piles and downwardly in the other of said coarse-fraction piles, and then downwardly in said one coarse-fraction pile and upwardly in said other coarse-fraction pile, whereby a preheating zone, a firing zone, and a cooling zone are formed, from top to bottom, in each of said coarse-fraction piles, passing secondary air upwardly in both said coarse-fraction piles below said firing zone thereof, withdrawing gas emerging from said firing zone of said coarse-fraction pile in which gas is passed downwardly, passing said withdrawn gas and secondary air from the same coarse-fraction pile, transversely through said third pile, feeding at least part of said withdrawn gas and secondary air, which have been passed through said third pile, into that one of said first and second piles in which said hot gas is passed upwardly, and heating said third pile by said withdrawn hot gas passed therethrough and in the absence of a supply of fuel to said third pile.

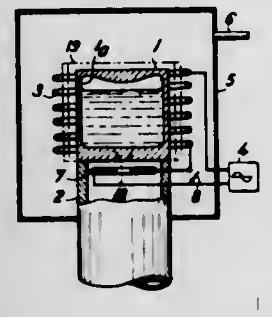
3,351,686

INDUCTION MELTING PROCESS OF CENTRAL CORE PORTION OF CYLINDRICAL SHAPED REFRACTORY MATERIALS

Bernard Gayet and Jean Holder, Ballancourt, Gerard Kurka, Grenoble, Jean Reboux, Savigny-sur-Orge, and Jean Trouve, Versailles, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Jan. 28, 1964, Ser. No. 340,637
Claims priority, application France, Jan. 31, 1963, 923,338
8 Claims. (Cl. 264—.5)

4. In a process for preparing a dense powder of a refractory non-insulating material having a melting temperature at least equal to 1900° C., a thermal conductivity

which is less than 0.05 cal./sec./° C./cm. and an electrical resistivity between 100 and 0.01 ohms/cm.²/cm. in the vicinity of the melting point, the steps of preheating a central longitudinal part of a substantially cylindrical sample of said material to a temperature adjacent to its melting point, subjecting said sample to a magnetic field substantially coaxial to said sample of such frequency that the ratio between the radius of the sample and the depth of penetration of the current into said sample is between 1.5 and 3 until a central core of said sample is molten, cooling said sample to solidify it and then crushing said sample to the desired grain size.

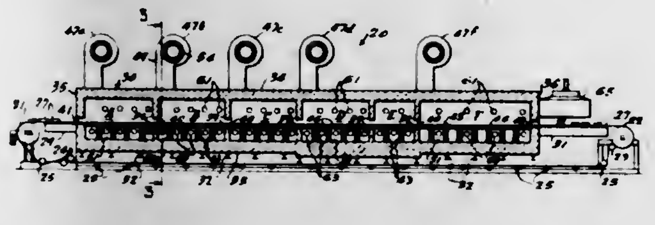


8. In a process for preparing refractory oxides as a group consisting of UO_2, ZrO_2, ThO_2, TiO_2, CeO, mixtures thereof and mixtures thereof with MgO and BeO in high density form, the steps of preheating a central longitudinal part of a cylindrical body of said oxide to a temperature adjacent to the melting point of the oxide other than by direct induction in the oxide and continuously moving said cylindrical body axially through a radio frequency electromagnetic field having an axial symmetry and having a frequency in the mc./sec. range beginning with said preheated part of said body at a speed such that a core portion of said body is melted and then is moved out of said magnetic field and freezes.

3,351,687

METHOD AND APPARATUS FOR FIRING CERAMIC BODIES

William L. Thome and Donald Beggs, Toledo, and Joe B. McCully, Maumee, Ohio, assignors to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed Jan. 8, 1965, Ser. No. 424,240
8 Claims. (Cl. 264—58)



1. Apparatus for firing ceramic bodies comprising, in combination, a longitudinally extending kiln, at least one generally horizontally extending belt, having upper and lower surfaces, positioned within said kiln, means for moving said belt through said kiln, a plurality of longitudinally spaced apart, and vertically extending intermediate walls positioned within said kiln, said walls and said kiln defining successive temperature compartments, means for supplying heat to each of said compartments, at least one support chamber within each of said compartments, each of said support chambers having a top member adjacent to the lower surface of said belt, said top member defining a plurality of openings therein, and means for supplying a pressurized fluid to each of said support chambers.

3,351,688

PROCESS OF CASTING REFRACTORY MATERIALS

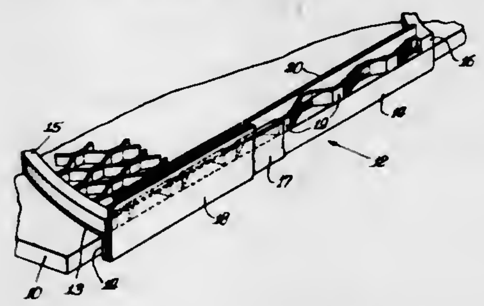
William D. Kingery, Lexington, and Arthur Waugh, Brookline, Mass., assignors to Lexington Laboratories, Inc., Cambridge, Mass., a corporation of Massachusetts
No Drawing. Filed Sept. 18, 1964, Ser. No. 397,640
4 Claims. (Cl. 264—63)

1. A process for forming an object of precise predetermined configuration comprising the steps of: mixing a refractory granular material capable of being sintered with a meltable binder in sufficient quantities so that the volume of said binder when in a solid state is equal to the volume of the interstices of said material forming said mixture in a molten state into said configuration, allowing said mixture to solidify thereby forming a solid object having said predetermined configuration, packing said object into a non-reactive refractory powder, heating said packed object to a temperature sufficiently high enough to drive off said binder while leaving said granular material, raising the temperature of said object to a level for presintering to unify said material and thereafter removing said object from the powder and heating said object to a temperature for sufficient time for said object to reach a desired density.

3,351,689

METHOD FOR MAKING LAMP SHADES

Rudolph A. Bushcott, Fort Atkinson, and Elmer E. Waldmann, Jefferson, Wis., assignors to Thomas Industries Inc., Louisville, Ky., a corporation of Delaware
Filed Sept. 6, 1963, Ser. No. 307,246
6 Claims. (Cl. 264—69)



1. A method of making a lamp shade comprising the steps of: placing on a horizontal supporting surface a generally circular mold comprised of a thin flexible metal sheet formed with an open sector and having an upstanding wall about the outer periphery thereof, pouring a thermosetting resin into said mold, spreading out a sheet of honeycomb material into the shape of said mold and into said resin with the lower edges thereof in contact with the surface of said metal sheet, allowing said resin to jell, removing the portion of the upstanding wall along the radial edges of said mold, bending said mold into a truncated cone and bringing the radial edges of said honeycomb material into abutting relation whereby a seam is defined, pouring thermosetting resin into said seam along the abutting radial edges of said honeycomb material, allowing said resin along said seam to jell to complete a shade form, and curing said resin to thereby rigidify said shade form into a shade.

3,351,690

HEAT TREATING PYROLYTIC GRAPHITE AND BORON NITRIDE BODIES WITH SIMULTANEOUS APPLICATION OF MULTIAXIAL TENSION

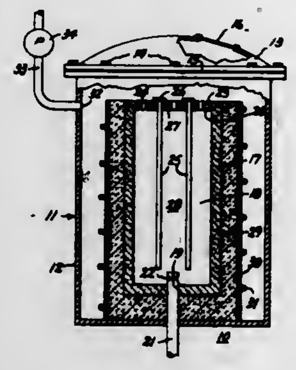
Edward R. Stover, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 18, 1962, Ser. No. 188,477
4 Claims. (Cl. 264—81)

1. A method for forming an article which comprises: depositing a relatively thin body, having an inner major

surface and an outer major surface at a temperature in the range of 1700° C. to 2500° C. on a surface of a hollow member having fine pores therethrough;

said body being made of material selected from the group consisting of pyrolytic graphite and pyrolytic boron nitride;

heating said body to a temperature of at least 2500° C., and simultaneously exerting pressure of significant



magnitude against the interior surface of said body to induce multiaxial tension within said body,

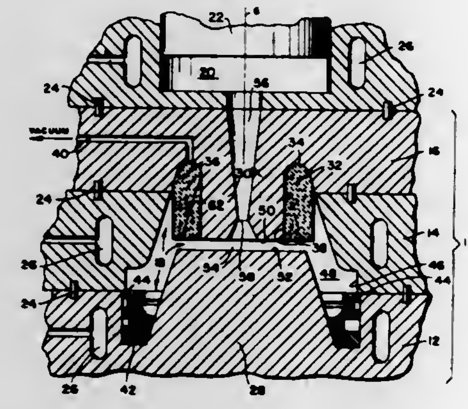
said tension acting at least in part along axes displaced approximately 90° to each other, and said simultaneous pressure exertion and heating being continued for a period of time sufficient to transform said body to an annealed article of pronounced ductility.

3,351,691
NOZZLE ASSEMBLY AND METHOD OF MOLDING SAME

Paul B. Wilford, Long Beach, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 20, 1963, Ser. No. 303,455

3 Claims. (Cl. 264—90)



1. The method of making an expanding nozzle having a first annular insert of erosion resistant material at its gas entry end, a second axially spaced annular insert of larger internal diameter than the first insert forming an attachment ring at its gas exit end, an intermediate annular portion of a plastic molding material joining said inserts, said intermediate annular portion having a conical inner surface and including a portion surrounding the first insert and a transverse rupture diaphragm of a plastic molding material extending across the opening through the longitudinally intermediate portion at a position immediately adjacent the inner end face of the first annular insert, said longitudinally intermediate and transverse diaphragm portions being made of plastic having thermosetting and bonding characteristics, said method comprising the steps of:

(1) maintaining said inserts in predetermined spaced relationship in a mold,

(2) introducing molding material into the mold at the axis of the nozzle and thence flowing same outwardly in all radial directions through a space so shaped to form said transverse diaphragm and axially located in alignment with the inner end face of the first annular insert, and thence flowing same in opposite axial directions toward both inserts including flowing into a space surrounding the first insert,

(3) simultaneously applying heat and appreciable pressure to the mold material to harden same and moldingly bond same to the insert,

(4) remove the composite article from the mold,

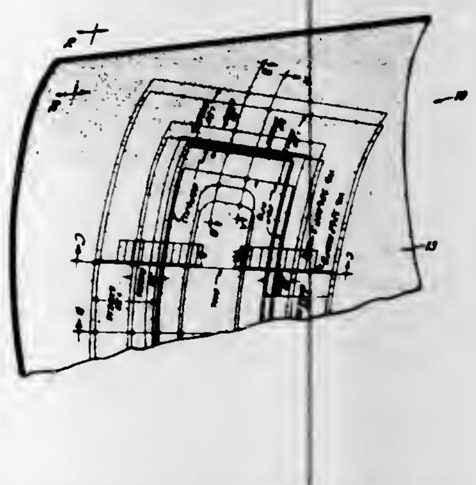
(5) machining the inner surface of the first annular insert to a shape forming a continuation of said conical surface.

3,351,692
METHOD OF FORMING AN IMAGE IN A PLASTIC SURFACE

Cary Purdum and Howard W. Gibney, Middletown, Ohio, assignors to Aeronca, Inc., a corporation of Ohio

Filed Mar. 8, 1966, Ser. No. 532,711

17 Claims. (Cl. 264—132)



4. A method of forming an image in a plastic surface which comprises:

forming an image consisting essentially of a dye on a carrier sheet,

contacting the image-side of the carrier sheet with a self-polymerizable intermixture of a thermosetting resin and a curing agent,

curing said intermixture at room temperature without any appreciable external pressure applied between the resin and the sheet to form the plastic surface while at least a portion of dye from the image on the carrier sheet impregnates said intermixture and and becomes immobilized in the formed plastic surface, and

separating the carrier sheet from the formed plastic surface leaving the dye image impregnated and immobilized in the plastic surface in clear and legible form whereby the dye image is protected in the plastic surface against abrasion, heat and solvent action.

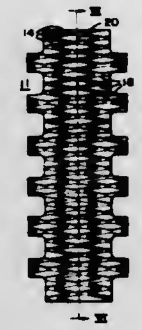
3,351,693
METHOD OF MANUFACTURING ELECTRICAL INSULATING STRUCTURES

Landis E. Feather, Hickory Township, and Ralph C. Morrison, West Middlesex, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 14, 1964, Ser. No. 344,947

2 Claims. (Cl. 264—160)

1. A method of preparing electrical insulating material, comprising the steps of cutting a blank having predetermined dimensions from a sheet of insulating material of predetermined thickness, corrugating said blank to form a plurality of spaced parallel first indentations having a uniform depth which increases the effective thickness of said blank by substantially fifty percent and which shortens a predetermined dimension of said blank, and corrugating said blank to form a plurality of spaced parallel second indentations having a uniform depth substantially less than the depth of said first indentations, said second indentations crossing said first indentations at an angle which returns said blank to within ten percent of its original predetermined thickness and to substantially its original predetermined dimensions and then forming said blank to construct an electrical insulating structure for electrical inductive apparatus having a predetermined configuration and dimensions.

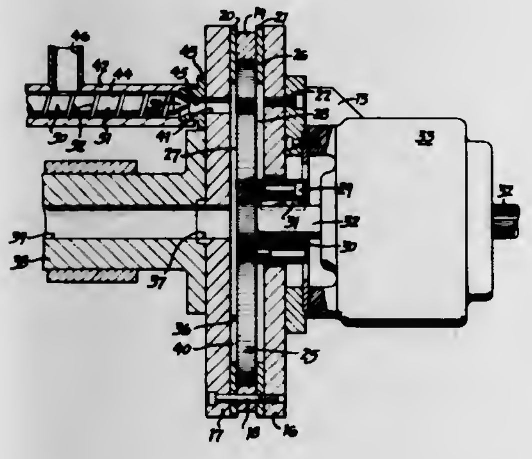


3,351,694
METHOD AND APPARATUS FOR EXTRUDING THERMOPLASTIC MATERIAL

Nicholas J. Curto, Toledo, Ohio, and James E. Henry, Bound Brook, N.J., assignors to Owens-Illinois Inc., a corporation of Ohio

Filed Mar. 4, 1964, Ser. No. 349,241

5 Claims. (Cl. 264—176)



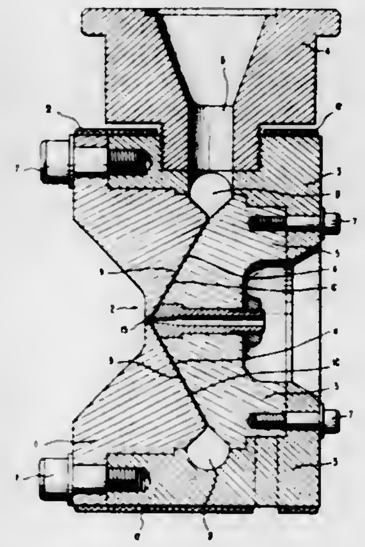
4. In a method of extruding thermoplastic material from an elastic melt extruder having a fixed plate and a rotatable plate provided with axially spaced, confronting faces defining a melt chamber therebetween, relative rotation of said plates centripetally advancing material through said chamber in a spiral path for issuance in a plasticized state through an extrusion orifice formed in one of said plates, the steps of advancing unplasticized material under positive pressure exerted by a rotating screw from a source of such material external to said chamber in a direction parallel to the axis of relative rotation of said plates, passing said unplasticized material through an opening in said fixed plate opposite a portion only of the periphery of said rotatable plate and in said direction into the melt chamber, and deflecting said material from said direction and screw into said spiral path only after said material is in said chamber by rotating said rotatable plate.

3,351,695
METHOD OF AND APPARATUS FOR EXTRUDING THERMOPLASTIC MATERIAL

J. B. Lee Hollingsworth, Bound Brook, N.J., assignor to Union Carbide Corporation, a corporation of New York

Filed Oct. 5, 1964, Ser. No. 401,337

6 Claims. (Cl. 264—176)



5. A method of extruding thermoplastic which comprises progressively increasing the linear velocity of said thermoplastic material as it passes through a parallel passageway to a die orifice and in said die orifice maintaining the linear velocity of said thermoplastic material equal to the linear velocity of said thermoplastic material in said parallel passageway at a point immediately prior to said die orifice.

3,351,696
METHOD FOR PRODUCING REGENERATED CELLULOSE PRODUCTS

Nicolas Drisch, Paris, France, assignor to CTA-Compagnie Industrielle de Textiles Artificels et Synthetiques, a corporation of France

No Drawing. Filed July 18, 1963, Ser. No. 296,117

Claims priority, application France, July 20, 1962, 904,601

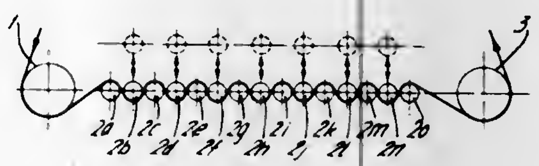
3 Claims. (Cl. 264—195)

1. A process for the production of filaments of regenerated cellulose having a very high tenacity both in the conditioned state and in the wet state, good dimensional stability, a high modulus of elasticity in the wet state, which comprises spinnning a viscose which contains a cellulose whose DP is equal to at least 500, and having a viscosity of 150 poises to 1000 poises and a gamma number of 45 to 100 into a first bath containing less than 60 grams per liter of sulphuric acid, 10 to 120 grams per liter of sodium sulphate and less than 1% zinc sulphate to produce filaments, introducing the filaments so formed into an intermediate bath containing from 1 to 40 grams per liter of an aldehyde, introducing the filaments from said intermediate bath into a second hot regenerative bath and stretching said filaments 100% of their length at a stage prior to removal from said second bath, and fixing said stretched filaments.

3,351,697
STRETCHING OF POLYMER FOILS

Walter Hufnagel, Forchheim, Upper Franconia, and Zoltan Doboczky, Eggolsheim, Germany, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
Filed July 6, 1964, Ser. No. 380,546
Claims priority, application Germany, July 9, 1963, F 40,191
6 Claims. (Cl. 264—288)

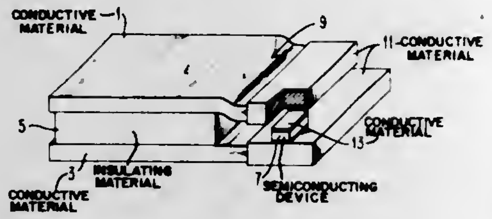
1. Process for continuous stretching and elongation of synthetic polymer film, comprising the steps of continuously feeding a web of polymer film to a stretching zone at a pre-determined feed-in rate, roller-guiding the web over its full width to follow a zig-zag path through said stretching zone by a reverse turning of the web through multiple circular arcs of radius less than 20 mm., and withdrawing the web from said stretching zone, at a pre-determined rate which is greater than said feed-in rate.



ELECTRICAL

3,351,698
HEAT SINK MOUNTING FOR SEMICONDUCTOR DEVICES

John C. Marinace, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 13, 1964, Ser. No. 411,062
7 Claims. (Cl. 174—15)

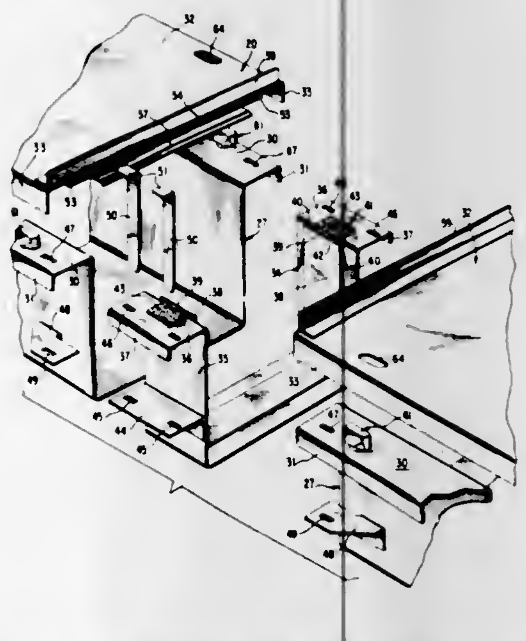


1. A heat sink mounting comprising a pair of planar members formed of resilient conductive material and rigidly supported at one end portion on an insulating spacer in parallel electrically-insulated relationship, a semiconductor device inserted between the other end portion of said planar members and having planar areas defining terminal contacts which are disposed adjacent to opposing surfaces of said planar members, a thin film of conductive material formed over at least said opposing surface areas of said planar members and over said planar areas of said semiconductor device, the thickness of said insulating spacer being effective to determine the normal spacing between said opposing surface areas of said planar members such that pressure contact is made between engaging thin films on said planar members and said semiconductor device at least sufficient to provide electrical conductivity between said planar members and said semiconductor device.

3,351,699
RACEWAY FOR ELECTRICAL CABLES AND WIRES ADAPTED TO RETAIN RF ENERGY

Claude O. Merckle, Hagerstown, Md., assignor to The Danzer Metal Works Co., Inc., Hagerstown, Md., a corporation of Maryland
Filed Mar. 19, 1965, Ser. No. 441,149
10 Claims. (Cl. 174—35)

1. An RF energy retaining raceway for communications cables comprising plural raceway sections each having a trough-like body portion into which the cables are laid and a readily removable cover substantially coextensive therewith, connector units for adjacent raceway sections, each connector unit comprising a short trough-like member having telescoping interfitting engagement with end portions of an adjacent pair of raceway sections, apertured flange parts on the raceway sections and each connector unit, connector pins engaging through the apertures of the flange parts while the apertures are in registration and securing the connector unit and said sections substantially rigidly in assembled relation, metallic RF energy shielding gasketing arranged between each cover and raceway section and extending continuously along the sides and across the ends of the cover, a section of metallic RF energy shielding gasketing on each connector unit extending across the bottom and up the side walls of the unit and including terminal portions on the flange parts of the connector unit, the ends of adjacent raceway sections electrically contacting the section of gasketing on the connector unit at the bottom and side walls of the unit and raceway sections, opposed end portions of adjacent covers overlapping the flange parts of each connector unit and the end transverse sections of the metallic gasketing on the covers lying upon and electrically contacting said terminal portions of gasketing on the connector unit, and readily releasable fasteners interconnecting each cover and raceway section and applying substantially even pressure to the gasketing between the cover and raceway section.



3,351,700
HEADER FOR A CAPSULE FOR A SEMICONDUCTOR ELEMENT OR THE LIKE

Unto U. Savolainen, Attleboro, and Alan M. Huntress, Norton, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 302,869, Aug. 19, 1963. This application Nov. 10, 1966, Ser. No. 593,588
3 Claims. (Cl. 174—50.56)

1. A header for a capsule for a semiconductor element or the like,

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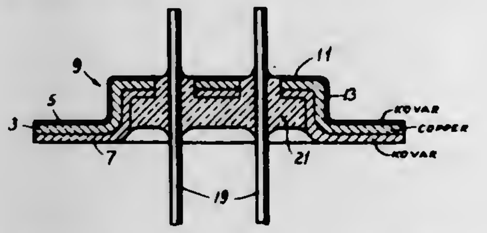
said header comprising a cup having an opening for passage therethrough of a conductor extending through the cup into the capsule,

the cup being a composite multi-layered cup having an inner layer of a metallic glass-sealing material, an intermediate metallic core layer of a material having a relatively high thermal conductivity in relation to said glass-sealing material, and an outer layer of the same metallic glass-sealing material as the inner layer, said layers being metallurgically bonded together,

and a mass of glass contained in the cup surrounding said conductor and sealing it in place,



the glass being adhered to said inner layer of glass-sealing material,

the glass-sealing material of said inner and outer layers having a thermal coefficient of expansion which substantially matches that of the glass,

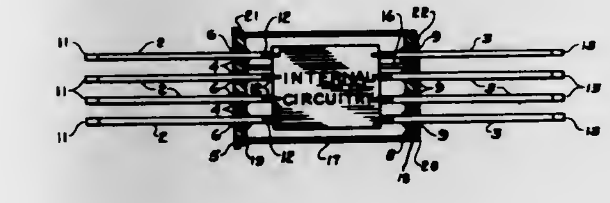
said intermediate core layer being protected on both faces by said inner and outer layers of glass-sealing material,

the thermal coefficient of expansion of the composite multi-layer material of the cup closely matching that of the glass-sealing material per se,

and the provision of the glass-sealing material on both faces of the intermediate core layer minimizing thermal flexing of the cup.

3,351,701
ELECTRONIC PACKAGE ASSEMBLY

Franklin D. Wood, Cudahy, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Feb. 25, 1965, Ser. No. 435,185
3 Claims. (Cl. 174—52)



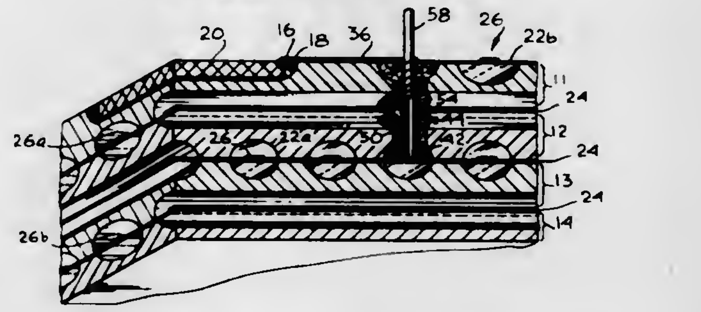
1. An electronic package assembly comprising:
(a) a first end cap carrying a plurality of electrical conducting leads protruding therethrough;
(b) a second end cap carrying a plurality of electrical conducting leads protruding therethrough;
(c) support means extending between and joining said first and second end caps to support said first and second end caps in spaced apart and in substantially parallel relationship to each other to thereby establish an independently rigid assembly;
(d) an electronic element comprising a flat substrate carrying a circuit network with end terminals at two opposite ends thereof;
(e) said electronic element being a complete and independent unit located between said end caps and adjacent to at least one said support means with said end terminals connected to respective conducting leads;
(f) a shield member extending between and engaging at opposite longitudinal ends of the first and second end caps to thereby enclose the volume between said first and second caps.

ERRATUM

For Class 174—68.5 see:
Patent No. 3,351,953

3,351,702
INTERCONNECTION MEANS AND METHOD OF FABRICATION THEREOF

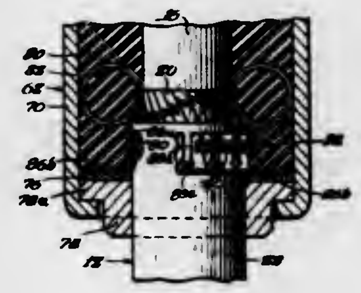
Raymond A. Stephens, Springfield, Mo., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 529,876
6 Claims. (Cl. 174—68.5)



1. An electrical circuit structure including:
first and second electrically conductive nonmagnetic plates supported in superposed relationship with first surfaces of said plates adjacent one another;
a sheet of dielectric material disposed between and in contact with each of said plates;
aligned troughs formed in said first surfaces of said first and second plates; and
a single electrically conductive path supported on said dielectric sheet in alignment with opposed troughs, said sheet constituting the sole support for said conductive path.

3,351,703
ELECTRICAL CABLE CONNECTOR WITH CABLE GRIPPING MEANS

Cyril V. Miller, Arlington Heights, and Donald E. Carlson, Highland Park, Ill., assignors to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois
Filed Jan. 13, 1965, Ser. No. 425,263
2 Claims. (Cl. 174—75)



1. A connector device for an electrical cable including a rigid housing having an elongated cavity for receiving an end portion of said cable, an elongated, tubular, elastic filler around the end portion of said cable inserted into said cavity, a cup-shaped, force exerting means including an inwardly extending annular end flange for applying an end thrust on said filler to force and hold said filler under

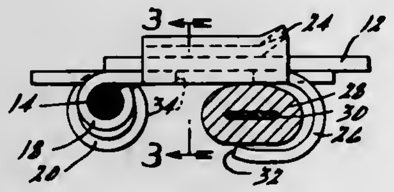
compression in said cavity, and cable gripping means for preventing longitudinal movement of said cable away from said cavity, said gripping means including a tubular structure extending into the bore of said filler engaging the exterior of said cable and a radial flange disposed between one end of said filler and said annular flange of said force exerting means, said tubular structure including a plurality of deflectable segments in a ring around said cable, each having a free outer end and an opposite end hingedly joined to an annulus adjacent the radial flange of said gripping means, the free ends of said segments being deflectable radially inwardly in gripping engagement against the exterior surface of said cable upon application of end thrust on said filler, and a sharpened tooth integrally formed on each of said segments, each tooth including a pointed outer end for biting engagement with said cable and a body portion extending angularly inward of said segment toward said cable whereby said tooth bites deeper into said cable upon attempted movement of said cable away from said cavity.

3,351,704
SOLDERING AID TERMINAL

Fred C. Sitzler, Mechanicsburg, Pa., assignor to Berg Electronics, Inc., New Cumberland, Pa., a corporation of Pennsylvania

Filed Mar. 18, 1965, Ser. No. 440,679

8 Claims. (Cl. 174—84)



1. A soldering aid terminal comprising a flat body of thin sheet metal including first means on one side of said body for receiving and biasing an electric conductor against and into intimate contact with said one side of said body, second means for holding a second conductor in intimate surface to surface contact with said body, an integral mass of solder, means for holding said mass in contact with the other side of said body, and a solder flow opening through the thickness of said body connecting said sides of the body whereby upon heating the terminal said solder melts and flows by capillary action along the surface of the terminal and through the opening to said first means and flows to said second means so as to form a positive solder connection between the terminal and the two electric conductors.

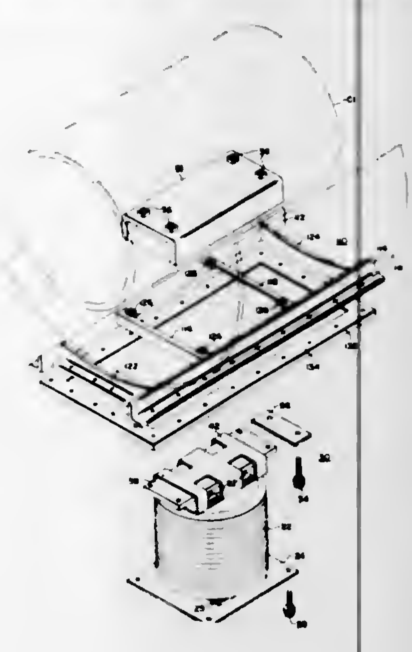
3,351,705
ISOLATED PHASE BUS STRUCTURE

Arthur B. Niemoller, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 29, 1964, Ser. No. 407,347

7 Claims. (Cl. 174—99)

1. An isolated phase bus structure comprising a longitudinally extending bus conductor, a generally tubular housing spaced from and enclosing the bus conductor, said housing including a plurality of sections welded together end to end, each section of said housing having a plurality of axially spaced openings each with a removable cover secured to said housing to close off each opening, a plurality of insulating members for supporting said conductor, each of said insulating members being releasably secured at one end to said conductor and releasably secured at the other end to said housing at one of said openings, each insulating member being disposed to pass through the associated opening generally transverse with respect to the bus conductor when the cover of the opening is removed.

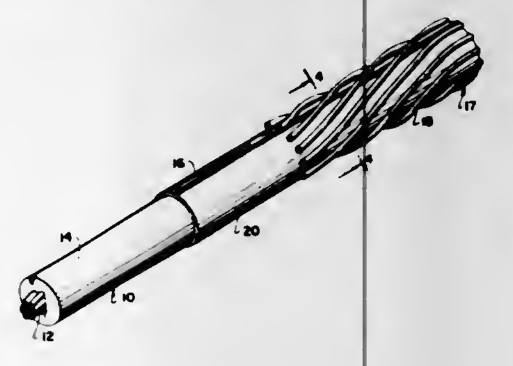


3,351,706
SPACED HELICALLY WOUND CABLE

C. Gerald Gnerre, Belmont, and Ralph Dinunzio, Lexington, Mass., assignors to Simplex Wire and Cable Company, Cambridge, Mass., a corporation of Massachusetts

Filed Mar. 18, 1965, Ser. No. 450,231

16 Claims. (Cl. 174—105)



8. A cable which includes a central electrical conductor, a layer of solid dielectric surrounding said conductor, said layer of solid dielectric having longitudinal ribs extending outward therefrom, and spaced wire servings permanently shaped into a predetermined helix and helically applied about said layer of solid dielectric overlying said ribs.

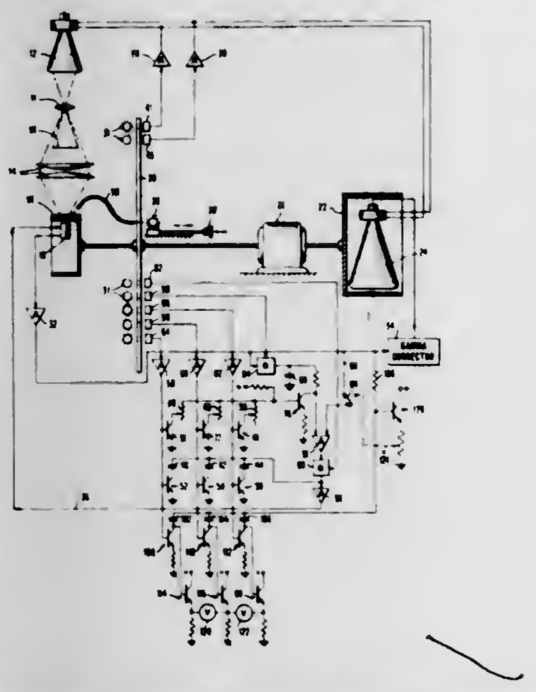
3,351,707
ELECTRONIC COLOR VIEWER

Alex W. Dreyfoos, Jr., Port Chester, N.Y., and George W. Mergens, Wilton, Conn., assignors to Photo Electronics Corporation, Byram, Conn., a corporation of New York

Filed May 4, 1965, Ser. No. 453,144

29 Claims. (Cl. 178—5.2)

1. An electronic color viewer for presenting a color representation of pictorial information contained on a color original comprising a cathode ray flying spot scanner arranged to scan the color original, a photo-electric pickup element arranged to receive the scanning information and to generate electric signals in accordance therewith, a cathode ray picture tube, first and second color filter wheels, said first color wheel being operable to interpose color filters in sequence between said flying spot scanner and said photo-electric pickup element, said second color wheel being mechanically connected for rotation with said first color wheel to interpose color filters in sequence over the face of the picture tube, a video amplifier connected to control the intensity of the beam of said picture tube in accordance with the output of said photo-electric pickup element, a timing device connected for rotation with said color wheels for movement in synchronism therewith, said timing device including timing tracks for generating timing signals, signal pickup elements associated with said timing tracks and connected for the operation of the sweep circuits of both said flying spot scanner and said picture tube in response to movement of said timing device.

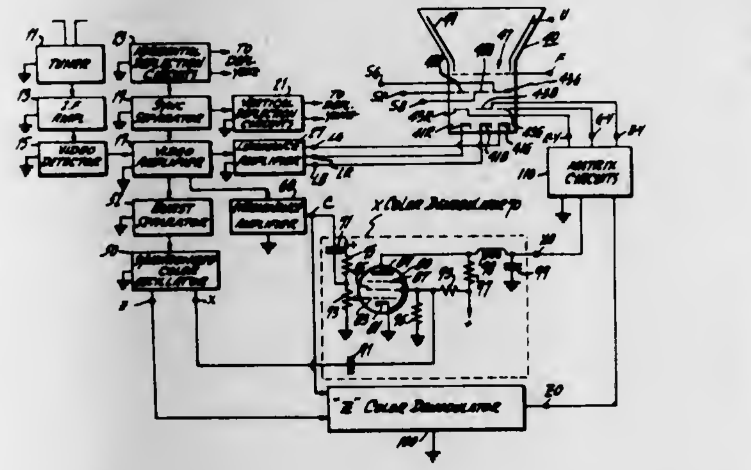


3,351,708
SYNCHRONOUS DEMODULATORS

Gordon E. Kelly, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 26, 1965, Ser. No. 450,669

3 Claims. (Cl. 178—5.4)



1. In a color television receiver, the combination including:

a source of modulated color subcarrier waves;

a source of unmodulated color reference oscillations of nominal subcarrier frequency and of a relatively fixed phase;

an electron discharge device having a cathode, control grid, screen grid, suppressor grid and anode electrodes, said suppressor grid being directly connected to said cathode;

means applying a unidirectional bias potential to said screen grid which is appreciably lower than the maximum screen grid potential rating of said pentode;

means for biasing said control grid to draw grid current;

means for heterodyning signals from said two sources in said device including means for varying the potential at said control grid in accordance with the output of said sources of modulated color subcarrier waves, and means for varying the potential at said screen grid in accordance with the output of the source of unmodulated color reference oscillations;

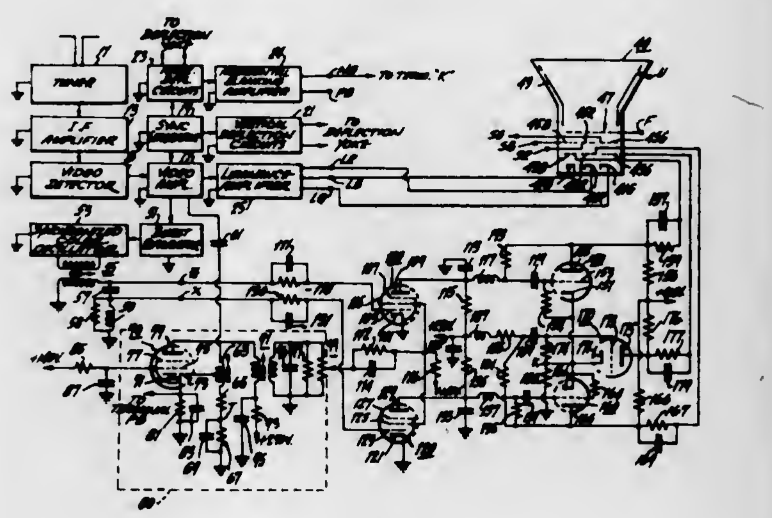
and output circuit means coupled to said anode electrode for selectively deriving the difference frequency product of the heterodyning action in said device.

3,351,709
COLOR DEMODULATORS

Larry A. Cochran and John A. Konkel, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware

Filed Apr. 26, 1965, Ser. No. 450,706

4 Claims. (Cl. 178—5.4)



1. In a color television receiver including a source of chrominance signals comprising modulated color subcarrier waves, and a source of reference oscillations of nominal subcarrier frequency, a color demodulator comprising, in combination:

an electron discharge device having cathode, control grid, screen grid, suppressor grid and anode electrodes, said suppressor grid being maintained at the potential of said cathode, and said screen grid having a maximum screen grid potential rating of a given magnitude;

means for establishing periodic intervals of conduction in said device including means for applying oscillations from said reference oscillation source between said control grid and cathode electrodes and bias establishing means responsive to said applied oscillations for biasing said device to cut-off for periods intervening recurring peaks of a given polarity of said applied oscillations;

means for supplying said screen grid electrode with a unidirectional operating potential of a magnitude appreciably smaller than said given magnitude;

means for varying the magnitude of current drawn by said anode electrode during said periodic conduction intervals in accordance with said modulated color subcarrier waves, said anode current varying means comprising means for applying said chrominance signals to said screen grid electrode;

and means for deriving a demodulated signal output from said anode current variations.

3,351,710

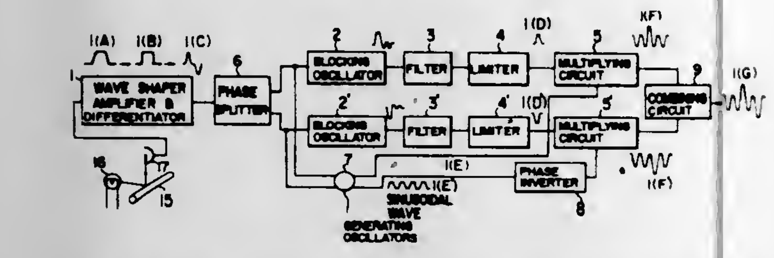
NARROW BAND FACSIMILE COMMUNICATING SYSTEM

Zenji Katagata, Kawasaki-shi, Japan, assignor to Denki Onkyo Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Apr. 6, 1966, Ser. No. 540,731

Claims priority, application Japan, Oct. 13, 1961, 36/36,644

6 Claims. (Cl. 178—6)



1. A facsimile system for narrow band transmission on a transmission line, comprising means for generating a facsimile signal representative of the intelligence to be transmitted in said system, a wave shape-amplifier and differentiator circuit connected to the first mentioned means to convert said facsimile signal to rectangular pulses having a leading edge and a trailing edge, shaping means for shaping said rectangular pulses, means connected to the shaping means to receive said shaped rectangular pulses and transform said rectangular pulses to pulses having positive pulse components and negative pulse components corresponding respectively to said leading and trailing edges of said rectangular pulses, a phase splitter connected to said means transforming said rectangular pulses to receive the transformed pulses and divide them into positive and negative pulses, two blocking oscillators connected independently respectively to said phase splitter in two parallel paths to receive and be driven respectively by said positive pulses and negative pulses therefrom, a pulling effect oscillator connected to said phase splitter respectively excited by said positive and negative pulses for generating a sinusoidal carrier wave, two multiplying circuits each connected to a respective one of said blocking oscillators, a filter and a limiter in series in each of said two parallel paths connecting said blocking oscillators respectively to a respective one of said two multiplying circuits, means connecting said multiplying circuits independently to said pulling effect oscillator to receive two output carrier waves thereof, and a combining circuit connected to receive the outputs of both of said multiplying circuits to develop a sinusoidal output transmitted onto said transmission line modulated in positive and negative maximum and negative values of said pulses and maximum and minimum values of said sinusoidal wave and corresponding to said facsimile signal normalized with respect to a time sequence and converted to a narrow band signal.

3,351,711

CODE TRANSMITTER-DISTRIBUTOR WITH MECHANICAL MEANS FOR VARYING DURATION OF STOP PULSE

Roger A. Schmit, Northbrook, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware

Filed July 31, 1964, Ser. No. 386,556

10 Claims. (Cl. 178—53.1)

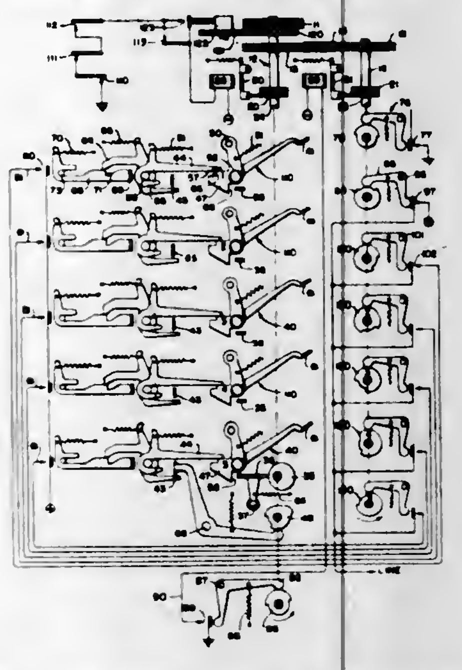
7. A device for controlling telegraph distributors including:

a distributor;

means for operating the distributor through cycles of operation of a predetermined period;

starting means for causing the operating means to start each cycle of operation of the distributor coincidentally with the end of the next preceding cycle;

delay means driven by the operating means for causing the operating means to start each cycle of operation of the distributor a predetermined time after the end of the next preceding cycle, and



means for selectively starting the distributor by the starting means and by the delay means.

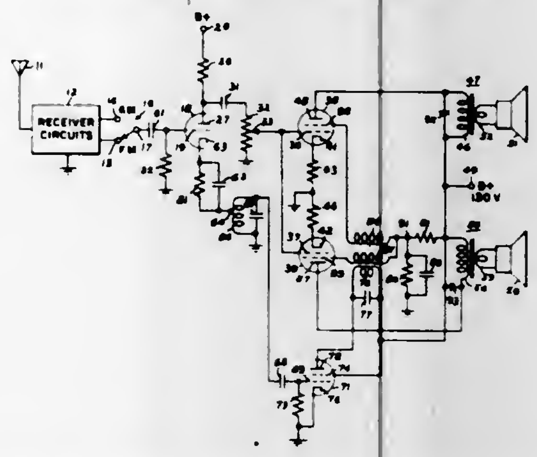
3,351,712

SIMPLIFIED TIME-SAMPLING STEREOPHONIC RECEIVER CIRCUIT

Antal Csicsatka and Robert M. Linz, Utica, N.Y., assignors to General Electric Company, a corporation of New York

Filed June 1, 1965, Ser. No. 460,364

1 Claim. (Cl. 179—15)



A circuit for deriving stereo signals from a detected composite signal including as frequency components thereof a sum combination of the stereo signals, a difference combination of the stereo signals in the form of sidebands of a suppressed reference wave of given frequency, and a pilot signal at a frequency related to said given frequency, said circuit comprising an amplifier channel for said detected composite signal, volume control means connected to the output of said amplifier channel for adjusting the amplitude of said detected composite signal, means connected in said amplifier channel ahead of said volume control means for deriving said pilot signal from the detected composite signal whereby the amplitude of the derived pilot signal is unaffected by said volume control means, a switching signal generator connected to provide a switching signal under the control of said derived pilot signal, and a time-sampling switching circuit comprising first and second audio amplifier devices each having an input electrode connected to receive the volume-controlled composite signal from said amplifier channel, said audio amplifier devices being of the screen-grid type, and including means for biasing said screen grids at a

value approximately half-way between the values for normal full amplification and for non-amplification by said amplifier devices, and means to apply said switching signal to said screen grids in opposite phases and at an amplitude to render said amplifier devices alternately in amplifying condition and non-amplifying condition.

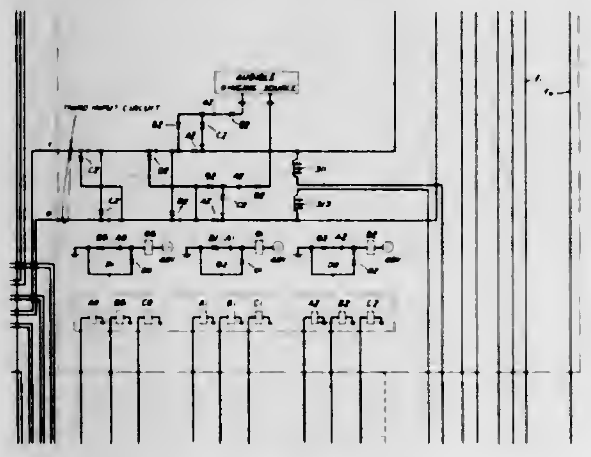
3,351,713

MULTIPLE ACCESS COMMON CONTROL AND RINGING TONE SUPPLY CIRCUIT

John A. Hackett, Matawan, and William A. O'Connell, New Monmouth, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 12, 1964, Ser. No. 389,171

11 Claims. (Cl. 179—27)



1. In a telephone switching system, a common control circuit, a first call-receiving input normally prepared for extending a call to said circuit, a ringing tone supply, a second call-receiving input, means operative during the serving of a call received by said circuit via said first input for connecting said first input to said ringing tone supply, means simultaneously effective for preparing said second input for the extension of a call to said circuit, means operative during the serving of a call subsequently received by said circuit via said second input for connecting said second input to said ringing tone supply, another call-receiving input, and means operative for preparing said other input for the extension of a subsequent call to said circuit.

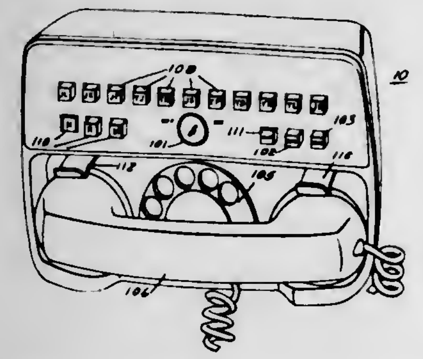
3,351,714

MOBILE RADIO TELEPHONE APPARATUS

Ronald C. Kunzelman, Kentfield, and James D. Malone, San Mateo, Calif., assignors to Secode Corporation, San Francisco, Calif., a corporation of California

Filed May 12, 1964, Ser. No. 366,789

29 Claims. (Cl. 179—41)



1. Mobile radio telephone apparatus comprising a radio tunable to a plurality of radio channels and having channel searching means for causing the radio to be tuned in succession to different radio channels, means for selectively determining particular channels of said plurality of channels which are to be searched for a distinctive marking signal, a telephone, means responsive to signals on a channel to which the radio is tuned designating the mobile radio telephone apparatus for establishing a communication path between the telephone and the radio, means for causing the radio to search for another channel in the event the signals do not designate the mobile radio telephone apparatus, means for establishing said communication path between the telephone and the radio when the mobile radio telephone apparatus originates a call, and means for interrupting said communication path upon the termination of a call.

3,351,715

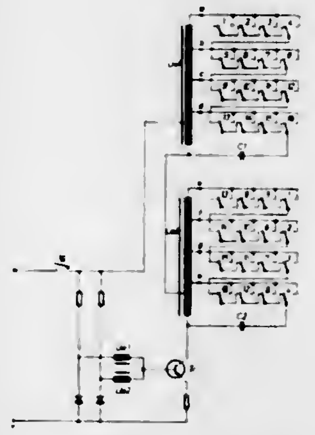
KEY-CONTROLLED MULTI-FREQUENCY TONE GENERATOR

Lorenz Gasser, Gerlingen, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 24, 1964, Ser. No. 391,486

Claims priority, application Germany, Sept. 14, 1963 St 21,078

5 Claims. (Cl. 179—84)



1. A key-controlled single active element audiofrequency generator capable of simultaneously generating at least two distinct frequencies, said generator having first and second tank circuits, said first tank circuits comprising a first tapped inductance and a first capacitor, said second tank circuit comprising a second tapped inductance and a second capacitor, key contact means for simultaneously tuning said first and second tank circuit by simultaneously connecting said first and second capacitors to selected ones of the taps on said first and second tapped inductances respectively, said key contacts arranged in first and second changeover contact chains associated with said first and second tank circuit respectively, means for connecting the break contact sides of said changeover chains to said first and second capacitors, and means for connecting the make contact sides of said changeover contact chains with said taps to selectively tune said tank circuits.

3,351,716

MAGNETIC ERASING CIRCUITRY

Akira Hirota, Ota-ku, Tokyo, Japan, assignor to Victor Company of Japan, Limited, Yokohama, Japan, a corporation of Japan

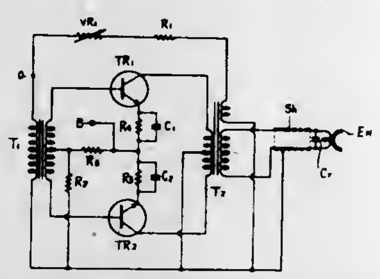
Filed July 30, 1963, Ser. No. 298,605

Claims priority, application Japan, Aug. 6, 1962, 37/33,594

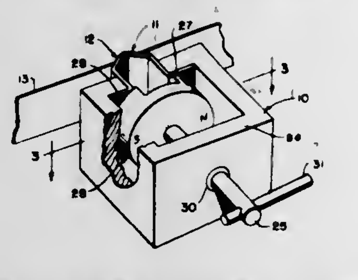
2 Claims. (Cl. 179—100.2)

1. A magnetic erasing apparatus comprising an oscillator, a resonant circuit forming a tank circuit for said oscillator, said resonant circuit having a resonant frequency and consisting of a condenser and an erase head connected in parallel, said oscillator including a feedback

circuit having a variable resistor for feeding back power from said resonant circuit, said oscillator having an oscillation frequency coinciding with the resonant frequency of said resonant circuit, and said resonant circuit providing the only phase shifting circuitry in said oscillator.

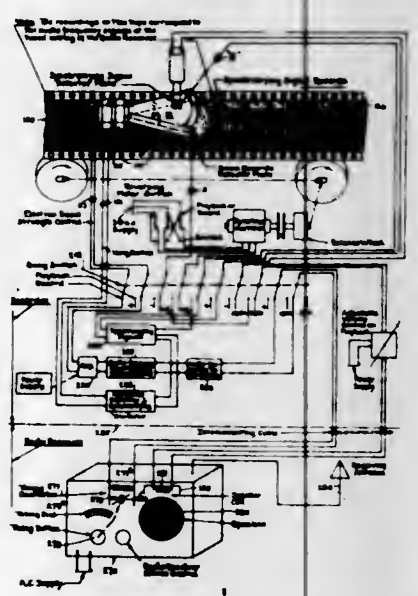


3,351,717
PERMANENT MAGNET ERASE HEAD
Jack L. Metz, Des Plaines, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Aug. 12, 1965, Ser. No. 479,105
5 Claims. (Cl. 179—100.2)



1. A permanent magnet erase head for magnetic recording systems comprising:
- a pair of pole shoes of magnetic material;
- means for supporting said pole shoes in closely spaced juxtaposition to form a flux concentrating gap between them adjacent the path of movement of a magnetic recording medium;
- extensions on said pole shoes spaced an appreciably greater distance than the width of the flux concentrating gap;
- a permanent magnet having pole extensions of opposite polarify spaced substantially the same distance apart as the spacing of the pole shoe extensions; and
- means for supporting said permanent magnet for rotation from a position where its pole extensions will individually engage the pole shoe extensions to generate a flux field at the pole shoe gap, to a position where both of its pole extensions will bridge the pole shoe extensions and shunt the magnetic field at the gap.

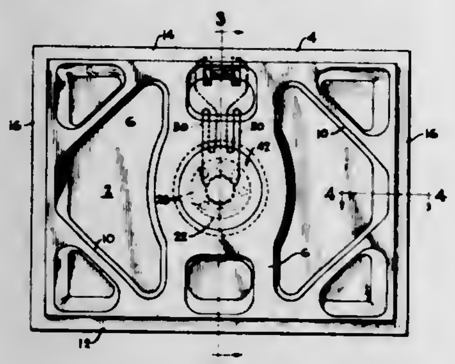
3,351,718
TRANSVERSE SCAN MAGNETIC RECORDING USING A CATHODE RAY TUBE RECORDING MEANS
Thomas A. Banning, Jr., 5500–5520 S. Shore Drive, Chicago, Ill. 60637, and Emil L. Ranseen, deceased, late of Chicago, Ill., by Agnes J. Ranseen, executrix, Evanston, Ill., assignors to Thomas A. Banning, Jr., Chicago, Ill.
Application Mar. 9, 1961, Ser. No. 94,651, now Patent No. 3,164,685, dated Jan. 5, 1965, which is a division of application Ser. No. 427,428, May 4, 1954, now Patent No. 2,976,354, dated Mar. 21, 1961. Divided and this application Dec. 18, 1964, Ser. No. 419,612
1 Claim. (Cl. 179—100.2)



A radio receiver constituted to receive a carrier wave frequency which is modulated to correspond to audio intelligence, including audio frequency output connections; together with a recorder including means to drive a tape having a recording surface, at substantially uniform speed; a deflectable beam scanning head mounted in proximity to the recording surface of said tape, means to produce a deflectable beam of controlled strength with production of a force exterior to the scanning head and against the recording surface of the tape, the strength of the force exterior to the scanning head being proportional to the strength of the beam; beam lateral deflection signal producing means; means and connections under control of said lateral deflection signal producing means constituted to cause the beam to execute regularly timed lateral deflections across the recording width of the tape with production of recorded cross scans of strength varying according to the variations of the strength of the beam, on the recording surface of the tape; connections between the audio frequency output connections of the receiver and the beam producing means constituted to cause the beam strength to vary proportionately to the strength of the audio frequency output; means to produce a synchronizing signal corresponding to each group of a predetermined number of lateral deflection signals; means proximate to the tape constituted to produce synchronizing signals records on the tape; and connections and means constituted to cause said synchronizing record producing means to produce a synchronizing record on the tape corresponding to each synchronizing signal; together with a speaker element; together with means and connections between the audio output connections, and the speaker, constituted to cause the speaker to function according to the strengths of the audio frequency signals; and together with two position switching means having a first defined recording position and a second defined playing-back position; together with a scanning detector plate in proximity to the tape surface at the location of the scanning head, and a synchronizing signal detector plate in proximity to the tape at the location of the synchronizing signal record producing means, and a source of substantially constant potential; connections to the scanning detector plate and connections to the synchronizing signal detector plate; the connections to all said units and the switching means being constituted such that when the swtiching means is in the first defined recording position the means to produce the controlled strength of the beam of the scanning head is connected to the audio signal output connections, and the lateral deflection signal producing means is connected to the scanning head, the synchronizing signal producing means is connected to the synchronizing signal recording means; and said connections to all said units and to the switching means, being constituted such that when the switching means is in the second defined playing-back position, the means to connect the controlled strength of the beam of the scanning head to the audio signal output connection is inoperative, and said controlled beam strength means is connected to the source of constant potential, the connections of the synchronizing signal producing

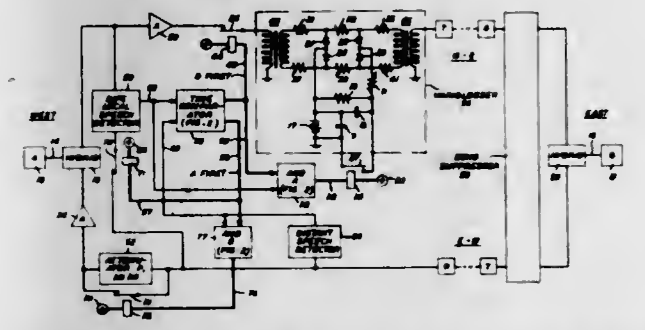
means to the synchronizing signal record producing means is inoperative, and said synchronizing signal record producing means is connected to the source of constant potential; and the connections of the scanning detector plate are connected to the speaker; and the connections of the synchronizing signal detector plate are connected to the beam lateral deflection producing means.

3,351,719
LOUDSPEAKER ASSEMBLY
Herbert Schoengold, Mount Vernon, N.Y., assignor to Electronic Research Associates, Inc., Cedar Grove, N.J., a corporation of New Jersey
Filed Feb. 5, 1964, Ser. No. 342,827
18 Claims. (Cl. 179—115.5)



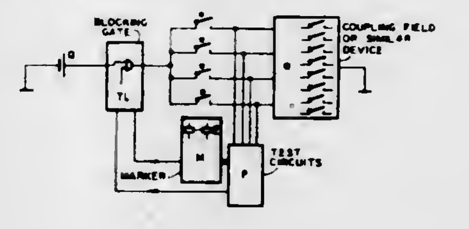
2. In a loudspeaker a diaphragm, and a frame supporting the diaphragm adjacent the periphery only of the diaphragm thereof, said diaphragm and frame being a unitary structure composed substantially entirely of stiff cellular plastic material.

3,351,720
ECHO SUPPRESSOR FOR COMMUNICATION SYSTEM HAVING TRANSMISSION DELAY
Paul T. Brady, Maplewood, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 31, 1964, Ser. No. 393,327
4 Claims. (Cl. 179—170.2)



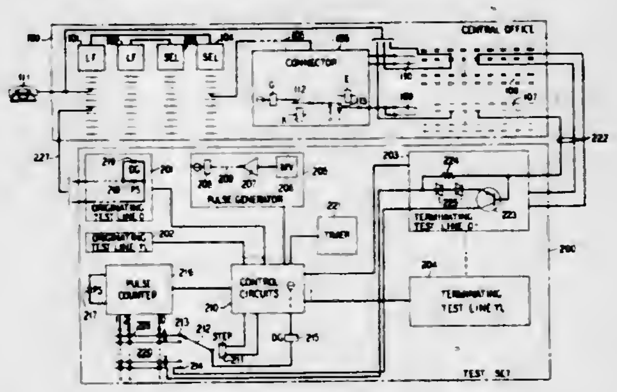
1. In combination in a two-way communication system, first and second terminals each comprising a two-way transmission path and two one-way transmission paths, said one-way transmission paths of said first terminal being connected to said one-way transmission paths of said second terminal to provide two-way communication between said two-way paths, and a split terminal echo suppressor included in each said terminal, said split terminal echo suppressor comprising means for producing a first control signal in response to communication signals originating at said terminal, means for producing a second control signal responsive to communication signals from said other terminal, means responsive to said first and second control signals for producing a first output when the first control signal is the first received and a second output when the second control signal is the first received, means responsive to said second output for suppressing said communication signals originating at said terminal, and means responsive to said first output and said second control signal concurrently for attenuating said communication signals from said other terminal.

3,351,721
METHOD AND SWITCHING ARRANGEMENT FOR PREVENTING IMPROPER SETTINGS IN DEVICES OF TELEPHONE EXCHANGE INSTALLATIONS
Dieter Voegtlen and Ulrich Korber, Munich, and Hans Joachim Jabczynski, Munich-Solln, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Mar. 23, 1964, Ser. No. 354,173
Claims priority, application Germany, Mar. 26, 1963, S 84,360
10 Claims. (Cl. 179—175.21)



1. In combination with a system, such as a telephone exchange, which includes a plurality of switching devices each disposed for effecting a connection between a pair of conductors, an apparatus for eliminating false connections therein, comprising
- (a) an energy source,
- (b) means for selectively connecting said source to each of the switching devices and to provide marker signals from said source to the switching devices for initiating actuation thereof,
- (c) means for sensing the occurrence of a predetermined marker signal and of more than one attempted connection by corresponding ones of the switching devices and supplying the predetermined marker signal at an output thereof at a time corresponding to such occurrence, and
- (d) switching means connected to said sensing means and responsive to the predetermined marker signal for disconnecting said source from said connecting means, the response time of said sensing means and said switching means being shorter than the response time of the switching devices.

3,351,722
TELEPHONE AUTOMATIC TEST CIRCUIT
Alfred L. Fleming, Farmingdale, and John A. Hackett, Matawan, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 1, 1964, Ser. No. 371,595
8 Claims. (Cl. 179—175.21)

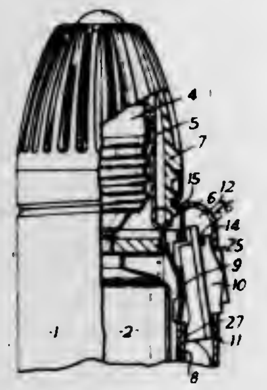


1. In combination in an automatic switching system, comprising a plurality of automatically controlled

switches, a plurality of lines and a test line, a test set for automatically transmitting control signals for controlling said switches to establish a path from said test set to said test line, and means operating upon the establishing of a path to a line other than said test line for transmitting additional control signals to advance one of said switches to overflow.

3,351,723
POCKET FLASHLIGHT HAVING CLIP AND SWITCH CONSTRUCTION

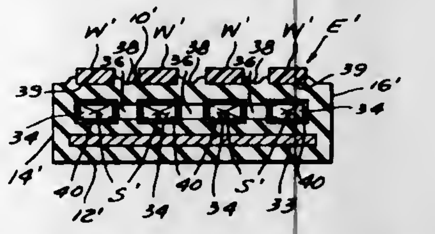
Yip Ming, Eric Fook-Chuen Li, and Yue-Chun Cheng, Kowloon, Hong Kong, assignors to Sonca Industries Limited, Kowloon, Hong Kong
Continuation of application Ser. No. 472,990, July 19, 1965. This application Dec. 12, 1966, Ser. No. 601,210
4 Claims. (Cl. 200—60)



1. A battery operated flashlight comprising
(a) a cylindrical barrel having an aperture therethrough near one end thereof,
(b) a pocket-engaging clip member extending longitudinally of the barrel and being attached thereto near said one end thereof, the clip member having a slot formed therein,
(c) a first switch contact member within said barrel,
(d) a second switch contact member passing through said aperture and having at least a part lying between the slotted portion of said clip and the barrel, the second switch contact member being movable into and out of electrical engagement with the first switch contact member, and
(e) a switch closing member being carried in the slot in the clip and being manually movable towards the barrel to engage the said part of the first switch contact member to alter the state of electric contact between the switch contact members, the switch closing member having ends extending transversely to the direction of the length of the clip and the distance between the said ends being less than the length of the said slot in the said direction so that the switch closing member can slide in the said direction relative to the clip member, the said switch closing member having holding flanges extending from the opposite ends in the said direction, the combined length of the holding flanges and the switch closing member in the said direction being greater than the said length of the slot, the switch closing member having locking flange means on one of the said ends and spaced outwardly of the barrel from the holding flange extending from that end, the portion of the clip defining the edge of said slot being engaged between said locking flange means and the holding flange on said one of said ends, when said switch closing member is in the position away from the barrel, the combined length of the said switch holding member and the locking flange means in the said direction being less than the said length of the slot.

3,351,724
ROAD TREADLE SWITCH

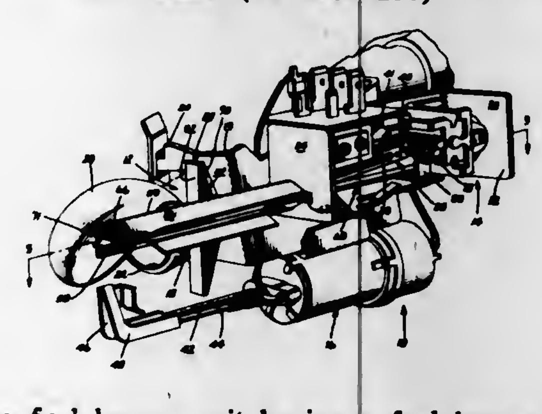
William C. Goble, East Paterson, N.J., assignor to Raybestos-Manhattan, Inc., Passaic, N.J., a corporation of New Jersey
Filed July 8, 1966, Ser. No. 563,756
8 Claims. (Cl. 200—86)



1. A road treadle switch comprising an envelope defined by a top wall, a bottom wall, opposite side walls, and opposite end walls, and switch members encased by said envelope, the said switch members comprising normally open contact elements movable to switch closing condition by treadle depression of a passing vehicle acting on the top wall of said envelope, characterized by the said envelope comprising an elastomeric material possessing inherent resilience, flexibility and abrasive resistance, said elastomeric material providing in the top wall of said envelope spaced areas possessing said inherent resilience, flexibility and abrasive resistance, combined with wear improving means incorporated into surface areas of the top wall of said elastomeric envelope between and spaced by said flexibility areas thereof, said means comprising wear pads having abrasive resistance greater than the inherent abrasive resistance of said adjoining flexibility areas.

3,351,725
COMBUSTION RESPONSIVE DEVICE ESPECIALLY SUITABLE FOR USE IN CONTROLLING THE OPERATION OF A FUEL BURNER

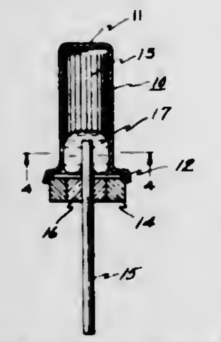
David F. Gibson, Sterling, Ill., assignor to General Electric Company, a corporation of New York
Filed Mar. 18, 1966, Ser. No. 535,584
12 Claims. (Cl. 200—137)



7. In a fuel burner unit having a fuel burner outlet port means, means for controlling the fuel supply to the unit, and means for initiating combustion of the fuel to produce a burner flame; a temperature responsive device comprising, an elongate temperature differential expansion member having a non-circular cross section and being formed from a single piece of sheet material of relatively low thermal conductivity, said member including a base wall section adapted to be disposed in the vicinity of the burner outlet port means wherein the burner flame will impinge upon the base wall section and a pair of side wall sections each having one longitudinal edge integrally joined to said base wall section, said member supported at one end and free at the other end, a switch actuator arm, said arm rigidly attached at one end to the free end of said member and the other end of said arm extending through said member beyond the supported end thereof, and switch actuating means on said other end of said arm.

3,351,726
LOW POWER MERCURY SWITCH

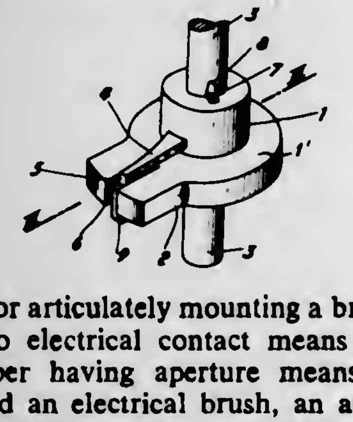
Leonard W. Cook, Warwick, R.I., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 353,658, Mar. 19, 1964. This application Jan. 20, 1966, Ser. No. 533,105
4 Claims. (Cl. 200—152)



1. In a metal enclosed mercury switch the improvement which comprises a low resistance at an internal surface, said surface being formed as an internal surface of a steel casing containing at least 2.0% manganese in the steel thereof, and said surface having a higher manganese content than that of the steel due to the preferential depletion of iron from said surface.

3,351,727
ELECTRICAL BRUSH SUPPORT

Roger Marcel Chaveneaud, Levallois-Perret, France, assignor to Societe a Responsabilite Limitee: Societe Lamy d'Etudes et de Recherches "SOLER," Courbevoie, France, a corporation of France
Filed June 13, 1966, Ser. No. 557,058
Claims priority, application France, June 15, 1965, 20,903
10 Claims. (Cl. 200—166)

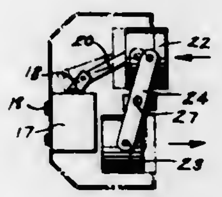


1. A device for articulately mounting a brush for movement relative to electrical contact means comprising a rotatable member having aperture means in which is guidingly housed an electrical brush, an arm carried by said member having a terminal end portion in line-contacting engagement with an upper end portion of said brush, said terminal end portion and brush end portion including cooperative means for effecting free rocking movement of said brush about the line of contact between the brush and the terminal end portion as well as free linear movement of said brush in a direction generally normal to the line of contact, said cooperative means being a notch formed in one of said end portions opening toward and in linear engagement with a blade-like edge of the other of said end portions, and the line of contact between said blade-like edge and the generatrix of said notch being in generally parallel relationship.

3,351,728
RECEPTACLE WITH CIRCUIT BREAKER MEANS

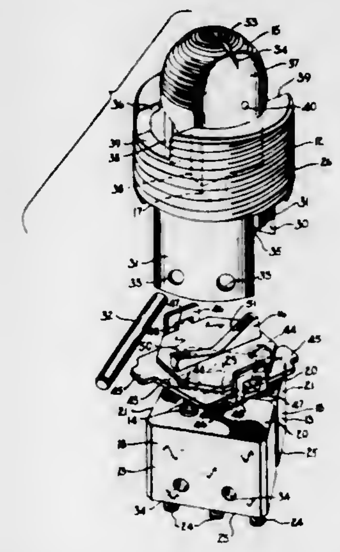
David Allen Miller, 5816 Townsend Place, Cheyenne, Wyo. 82001
Filed Nov. 29, 1966, Ser. No. 597,723
5 Claims. (Cl. 200—167)

1. A receptacle circuit breaker connector comprising a junction box having side walls, rear wall and an open front, a pair of guidance members secured within said box, a circuit breaker unit secured to said rear wall and having an inverted U-shaped handle member pivotally supported therein, means securing said units within said box, a projection extending outwardly from one of said units and pivotally affixed to said handle member whereby a visual indication is provided and a means for manually resetting said circuit breaker units within said box is provided when the current load is excessive.



3,351,729
SWITCH MEANS FOR SELECTIVE CONTROL OF PLURAL CIRCUITS

Sven Gunnar Bergman, Jonkoping, Sweden, assignor to Saab Aktiebolag, Linkoping, Sweden, a corporation of Sweden
Filed June 20, 1966, Ser. No. 558,947
Claims priority, application Sweden, June 18, 1965, 8,060/65
5 Claims. (Cl. 200—172)



1. Switch means for selectively controlling a plurality of circuits comprising:
(A) a pair of pushbutton switches, each having a parallelepiped casing and an axially movable pushbutton which projects from a side surface of the casing, near one end thereof, and which is outwardly biased relative to the casing;
(B) housing means mounting the switches with their casings in fixed side-by-side relationship with said surface of each casing uppermost and coplanar with that of the other so that the tops of the pushbuttons are normally in a common plane parallel to that of said surfaces of the casings, and with said end of each casing remote from that of the other so that a line connecting the axes of the pushbuttons extends obliquely across said uppermost surfaces of the casings;
(C) a rocker lever having a pair of oppositely extending arms, one for each pushbutton;
(D) cooperating trunnion means on the housing means and on the rocker lever, between and transverse to the arms of the latter, mounting the rocker lever with its arms over their respective pushbuttons, said trunnion means defining a rocking axis of the rocker lever which is parallel to said plane and transverse to said

line, about which the rocking lever can pivot from a neutral position in opposite directions to a pair of operative positions in each of which the rocker lever depresses one of said pushbuttons;

(E) a generally upright actuating lever;

(F) cooperating pivot means on the housing means and on the actuating lever, medially pivoting the actuating lever for swinging motion about an axis above and substantially parallel to the axis of said trunnion means;

(G) a cam follower carried by the lower portion of said actuating lever and constrained to swinging motion therewith and to generally up and down motion lengthwise of the actuating lever;

(H) spring means reacting between the actuating lever and the cam follower to bias the latter generally downwardly, toward the rocker lever; and

(I) means on each arm of the rocker lever defining a generally upwardly facing cam surface that is inclined obliquely upwardly from the axis of the trunnion means, each of said cam surfaces being cooperable with the cam follower, upon swinging of the actuating lever in one direction from a neutral straight up position, to rock the rocker lever to one of its said operative positions.

3,351,730

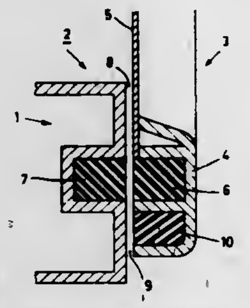
ENERGY SEAL FOR MICROWAVE OVENS

Kurt Påhlman, Kall Hall, Sweden, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 9, 1965, Ser. No. 438,191

Claims priority, application Sweden, Mar. 10, 1964, 2,989/64

8 Claims. (Cl. 219—10.55)



1. A microwave oven comprising a metallic walled heating chamber having an access aperture in one wall of said chamber, a metallic door adjacent to and overlapping said aperture to provide a pair of spaced confronting planar surfaces defining a gap about the periphery of said aperture in the closed position of the door, said one wall having a recess therein extending about the periphery of said access aperture, said door having a recess therein extending about the periphery of the surface facing said wall and in confronting relationship with said wall recess, the depth of each of said recesses being approximately one-fourth wavelength at the frequency of the oven microwave energy.

3,351,731

METHOD AND APPARATUS FOR TREATING MATERIAL WITH A CHARGED BEAM

Kazumitsu Tanaka, Tokyo, Japan, assignor to Nihon Denshi Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Oct. 3, 1963, Ser. No. 313,665

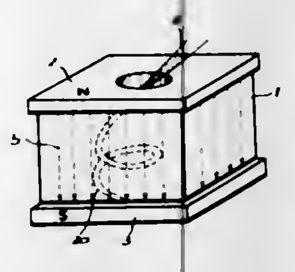
Claims priority, application Japan, Oct. 23, 1962, 37/47,304

9 Claims. (Cl. 219—69)

1. A method of curvilinearly treating material with a charged beam which comprises,

(A) focusing a charged beam onto the material, and

(B) applying to the material a field capable of deflecting charged particles within the material, the direction of the deflecting field being at an angle to the direction of the charged beam so as to curvilinearly treat the material.



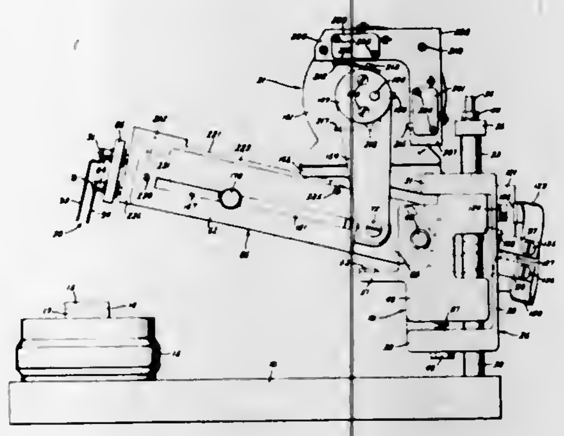
3,351,732

ELECTRIC WELDING DEVICE

Charles J. Adams, Bloomington, Ill., assignor to General Electric Company, a corporation of New York

Filed July 22, 1964, Ser. No. 385,102

30 Claims. (Cl. 219—86)



1. A welding device comprising in combination, electrode means adapted for engagement with a workpiece, support means mounting said electrode means for pivotal movement about an axis along a generally vertically extending arcuate path between spaced rest and second positions, and also mounting said electrode means for translatory movement along a generally vertically extending path generally perpendicular to said axis between said second position and a weld position spaced from the second position, said axis being spaced horizontally from a vertical line which includes said path of translatory movement and which intersects the workpiece, and means including an electric motor drivingly connected to a part of said support means and operable to effect pivotal movement of said electrode means from its rest position to its second position, and to effect translatory movement of said electrode means from its second position to its weld position in response to arrival of said electrode means at its second position.

3,351,733

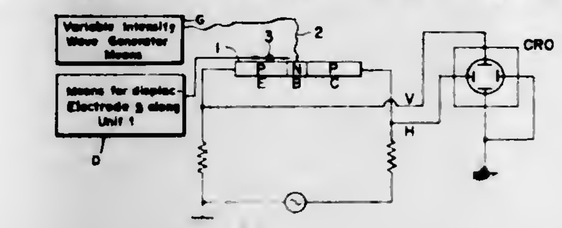
WELDING METHOD

Masami Tomono, Hiroshi Ueda, and Hirokazu Kimura, Tokyo, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Aug. 21, 1963, Ser. No. 303,557

10 Claims. (Cl. 219—117)

1. A method of welding a lead wire to a base, said method comprising placing a base under an electromagnetic wave source, projecting a beam of electromagnetic waves from said electromagnetic wave source upon the region of said base to which said lead wire is to be welded, said beam causing a detectable current to flow within said base, moving the lead wire to be welded to the base along the surface of said base in the path of the beam of electromagnetic waves, detecting a change in the current when the lead wire is positioned in the path of the beam, stopping the lead wire in the path of the beam as detected by the change in current, and intensifying the beam of electromagnetic waves to weld the lead wire to the base.


Variable Intensity Wave Generator Means
Means for displac. Electrode 3 along Unit 1
D
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1
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H
CRO

3,351,734

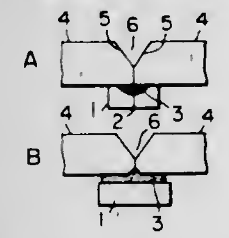
ELECTRIC ARC WORKING FOR WELDING ONE SIDE OF TWO PIECES OF STEEL PLATES

Masayasu Arikawa, Fujisawa-shi, Naoki Okuda, Kamakura-shi, and Motomi Kano, Fujisawa-shi, Japan, assignors to Kobe Steel Ltd., Fukiai-ku, Kobe, Japan

Filed Nov. 14, 1966, Ser. No. 594,235

Claims priority, application Japan, Nov. 15, 1965, 40/70,398

15 Claims. (Cl. 219—137)



1. A method of electric arc welding from only one side of two adjacent steel plates to be joined together in order to form a rippled bead on the other side of said steel plates, comprising placing a copper backing plate supporting a granular welding flux containing iron powder in an amount of from 10 to 75% by weight against the other side of said plates underneath the adjacent edges of the plates, and then electric arc welding the steel plates together at said adjacent edges by moving an electric arc along said edges from only the one side thereof.

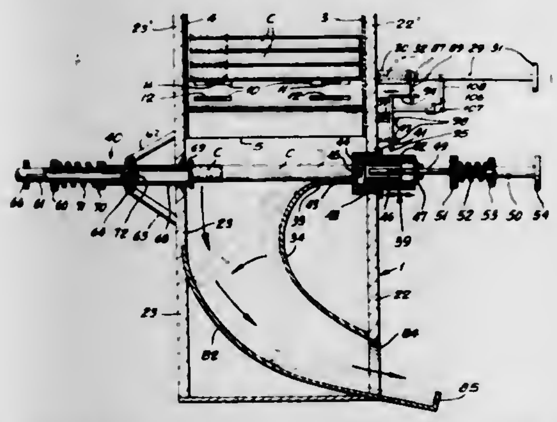
3,351,735

CIGARETTE DISPENSER AND LIGHTER

Marcellin Desbiens, 1395 Rachel St. E., Apt. 4, Montreal, Quebec, Canada

Filed Sept. 3, 1965, Ser. No. 485,002

10 Claims. (Cl. 219—261)



1. A cigarette dispenser and lighter comprising, in combination, a casing having an elongated cross-section and end walls and side walls, a storage magazine in communication with said casing at the upper portion thereof, igniting means mounted on one end wall of said casing, means to discharge a cigarette from said storage magazine, means to temporarily retain said discharged cigarette into a cigarette-lighting position in alignment with said igniting means, manually-operable means to operate said igniting means, cigarette guiding means to turn an ignited cigarette released from said position from end to end in a vertical swinging movement, said end wall having a cigarette discharge opening from which said guiding means protrude, whereby only the non-lighted end of the cigarette protrudes through said opening in the discharge position of said cigarette.

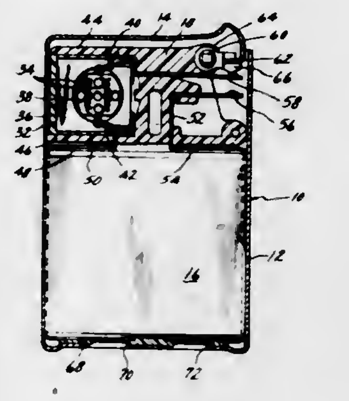
3,351,736

PORTABLE ELECTRIC CIGARETTE LIGHTER

Chester F. Jacobson, Asheboro, N.C., assignor to General Electric Company, a corporation of New York

Filed Sept. 30, 1965, Ser. No. 491,689

6 Claims. (Cl. 219—267)



1. A portable electric cigarette lighter comprising a housing, a battery within said housing, a frame carried by said housing, said frame including first and second spaced generally parallel wall members each having a cigarette tip receiving opening therein, an electric heating unit removably supported in said frame between said wall members, said heating unit including a sub-frame engageable with said frame and a filament mounted in said sub-frame so as to be accessible from one side thereof, and electrical means including manually operable switch means for conducting current from said battery to said filament when said heating unit is supported in said frame, said heating unit being insertable into said frame in either a first position in which said filament is accessible through said opening in said first wall member or a second position in which said filament is accessible through said opening in said second wall member, whereby the lighter may be adapted by the user for operation in either the right hand or the left hand and the heating unit may be removed from the lighter to facilitate cleaning of the filament.

3,351,737

HOOD FOR STEAM FACIAL

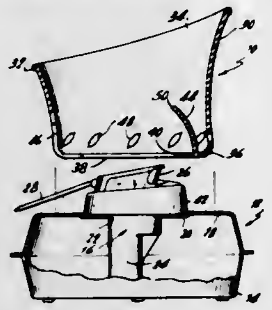
Lawrence Katzman, New York, Edward Briggin, Brooklyn, Anthony N. D'Elia, Riverdale, and Edward M. Stolarz, New York, N.Y., assignors to Kaz Manufacturing Co., Inc., New York, N.Y., a corporation of New York

Filed Apr. 25, 1966, Ser. No. 544,956

4 Claims. (Cl. 219—271)

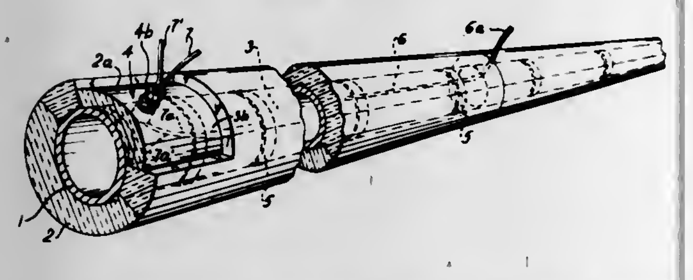
1. A device for affording facial treatment comprising a fluid container having an upper wall provided with a primary aperture therein, a vaporizer head for dispensing steam disposed on said upper wall and extending into said aperture, and a hood disposed on said upper wall and having a lower wall embracing said vaporizer head, said hood having an open upper end, and baffle means integral with and rising from said lower wall for diffusing steam emanating from said vaporizer head and directing the steam toward said open upper end, said upper wall having a

depressed portion therein surrounding said aperture, said lower wall extending inwardly of said depressed portion



so that condensation fluid will be directed from said hood onto said depressed portion and thence back through said aperture into said container.

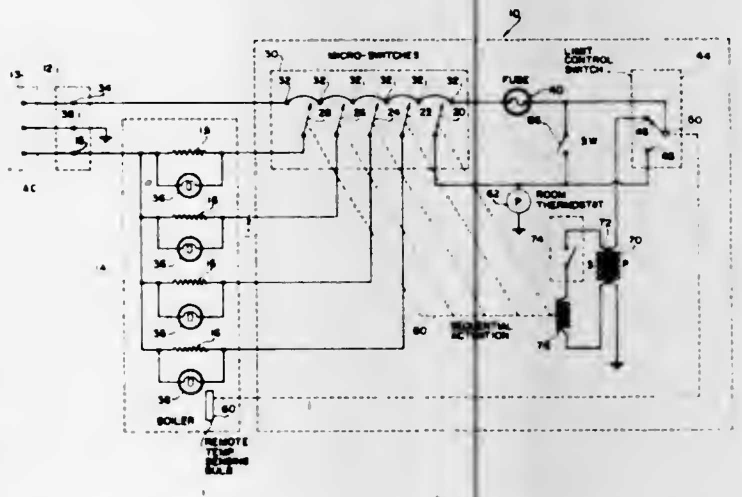
3,351,738
PIPE HEATING ARRANGEMENT
Walter C. Kahn, 1 Berndale Drive, Westport, Conn. 06880
Filed July 26, 1963, Ser. No. 297,875
3 Claims. (Cl. 219—301)



1. A pipe heating arrangement comprising, in combination, metallic pipe means adapted to contain a fluid; a thermal insulating means surrounding said pipe means and having a cutout at one end; a thin flat elongated heating strip including a thin resistance element, a pair of elongated electrodes electrically connected with said resistance element so that current flows transversely through said resistance element across the length of the same, electrical insulating means surrounding and substantially coextending with said resistance element and electrodes, and connector means at one end of said strip and having terminals connected with said electrodes, respectively, said strip being disposed inwardly of said thermal insulating means on the surface of said metallic pipe means extending along the length of the same and said electrical insulating means insulating said heating strip from said metallic pipe means, and said connector means being located at one end of said pipe means in said cutout so that access to only said one point of said pipe means is sufficient for connecting said connector means to a voltage source so as to effect heating of said pipe means along the entire length thereof; and means for attaching said strip to said pipe means.

3,351,739
CONTROL SYSTEM FOR ELECTRICALLY HEATED BOILER
Hanford L. Eckman, Dallas, Pa., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 449,250, Apr. 19, 1965. This application Nov. 21, 1966, Ser. No. 595,994
2 Claims. (Cl. 219—321)

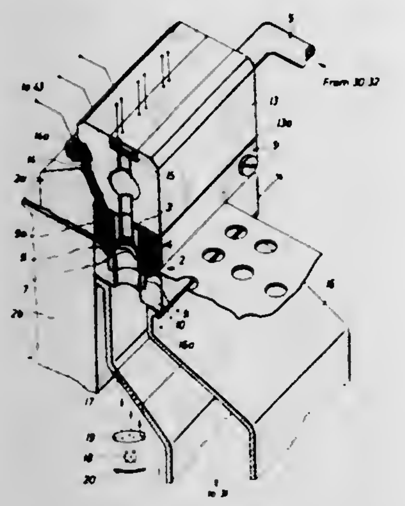
1. A control system for an electric hot water house heating system having a boiler, a plurality of electric heating elements mounted within said boiler to heat the water therein and pump means for circulating the water through a predetermined path in the electric hot water house heating system, said control system comprising a source of electrical energy utilizing alternating current and means for selectively energizing and deenergizing said plurality of heating elements and said pump means comprising switch means for sequentially energizing in a single complete continuous operation first said pump means and then one by one all of said heating elements and sequentially deenergizing in a single complete continuous operation one by one all of said heating elements and then said pump means, said switch means including a plurality of small displacement sensitive switches, solenoid relay means and sequential switch actuation means responsive to said relay means for sequentially actuating said small displacement sensitive switches, an electrical transformer having a primary and a secondary coil, a room thermostat connected in series with the secondary coil of said electrical transformer and the solenoid of said solenoid relay means, a limit control switch, temperature sensing means responsive to the temperature of the water in the boiler for actuating said limit control switch at a predetermined maximum water temperature, said limit control switch having a pair of circuit closing positions, said first limit control switch position being effective below said predetermined maximum water temperature to complete a circuit between said transformer primary coil and said source of electrical energy and said second limit control switch position being effective at said predetermined maximum water temperature to actuate said pump means to maintain the water circulation until the water temperature as sensed by said temperature sensing means drops below said predetermined maximum temperature, whereby said thermostat activates said solenoid relay means when the thermostat environment reaches a predetermined low temperature thereby rapidly energizing said pump means and all of said heating elements in sequence and said thermostat deactivates said solenoid relay means when said thermostat environment reaches a predetermined high temperature thereby rapidly deenergizing all of said heating elements and said pump means in sequence.



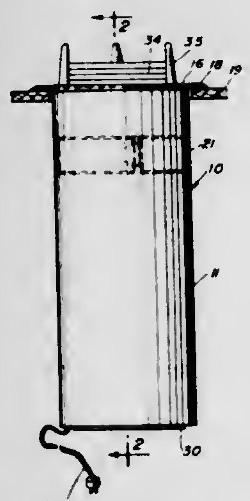
3,351,740
PUNCHING APPARATUS
Hans Heuer, Wilhelmshaven, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany
Filed July 25, 1963, Ser. No. 299,448
Claims priority, application Germany, Aug. 9, 1962, O 8,919
14 Claims. (Cl. 219—384)

1. An apparatus for perforating coded holes in a tape comprising means for advancing the tape, first electrodes disposed on one side of the tape and second electrodes disposed on the opposite side of the tape for perforating the tape with an electric spark, the improvement comprising said first electrodes having first ring-shaped edges and said second electrodes having second ring-shaped edges of substantially the same diameter of said first ring-shaped

edges; said first ring-shaped edges disposed coaxial to said second ring-shaped edges defining a gap whereby a spark which forms at one point between a pair of said edges moves around the peripheries of said edges in a closed path severing a rondelle from the tape by burning away the periphery of the rondelle, in combination with pneumatic means for removing rondelles and waste material from said edges and photoelectric means responsive to optical conditions in said gap actuating said electrodes and said means for advancing whereby the tape is advanced when the rondelle is removed and the advancement of the tape is stopped when the rondelle is not removed.

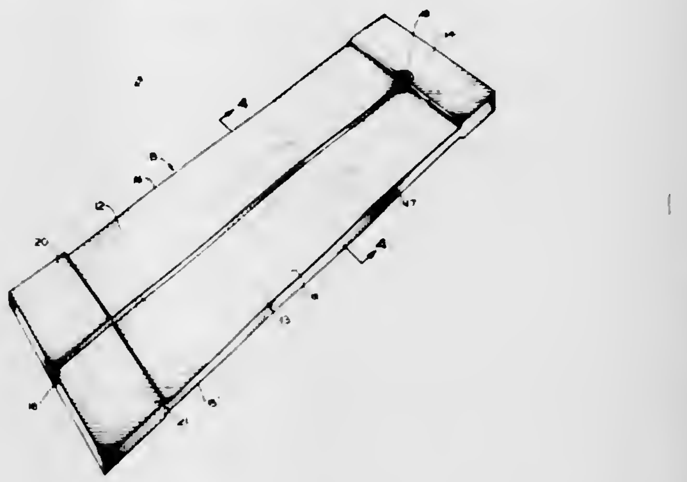


3,351,741
DISH-DISPENSING APPARATUS
George R. Shelley, South Miami, Fla., assignor to Shelley Manufacturing Company, Miami, Fla., a corporation of Florida
Filed July 8, 1964, Ser. No. 381,148
13 Claims. (Cl. 219—385)



1. A heated dish-dispensing apparatus comprising, in combination, a tubular housing having an open top and including an inner tubular wall member and an outer tubular wall member spaced from each other to provide an intra-wall space having a body of heat-insulating material arranged therein, electrical heating means in the said tubular housing for heating the interior of the said tubular housing structure including a heat-conductive tubular metallic member, the said heating means including a heat-conductive tubular metallic member arranged within the said tubular wall structure and in heat-exchange relationship with the said inner tubular wall member, an electrically energizable heating unit arranged in heat-exchange relationship with the said tubular heat-conductive metallic member for heating the interior of said housing, and a tubular dish-dispensing member having an upper end and adapted to fit within said tubular housing, dish-supporting means within the said tubular dish-dispensing member for supporting a stack of dishes, spring means in the said tubular dish-dispensing member below the said dish-supporting means and having the said dish-supporting means resting thereon, said tubular dish-dispensing member being in heat absorbing relation with said heated tubular housing for heating said stack of dishes therein, said tubular dish-dispensing member being readily adapted for insertion into and removal as a unit from the heated interior of said tubular housing.

3,351,742
ELECTRIC RESISTANCE HEATERS
Darrel M. Harris, Kirkwood, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Dec. 2, 1964, Ser. No. 415,363
5 Claims. (Cl. 219—552)



1. An electrical heating element formed substantially of carbonaceous resistance material for use in epitaxial deposition furnaces and the like and being adapted to be heated by the passage of an electric current therethrough; said heating element comprising a plurality of longitudinally extending substantially coplanar legs, a bight portion extending across and operatively connecting one of the transverse ends of each of said legs, said legs having free opposed transverse ends adapted for operative attachment to a source of electrical power, each of said legs being longitudinally tapered from points centrally of their length to each of the transverse ends so that the cross sectional area of each leg is reduced as the distance from the center of the legs to the transverse ends thereof is increased, said taper being sized to produce differences in the longitudinal cross sectional area and in resistance characteristics of each of said legs of said heating element and creates a substantially uniform temperature across the length of said legs, said heating element having a recess formed in said bight portion adjacent said legs at the point of attachment to said bight portion to maintain uniformity of temperature in said bight portion.

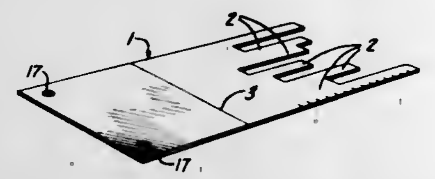
3,351,743
AUTOMATIC CONTROL APPARATUS
Charles E. Jordan, Milwaukee, Wis., assignor to Jordan Controls, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 30, 1963, Ser. No. 305,679
7 Claims. (Cl. 235—61.11)

1. A coded control for establishing a plurality of selected output signals, comprising

(a) an energy flux source for emitting a directed flux beam having a predetermined length,

(b) a collector means mounted in spaced relation to the source and in the path of the flux beam and responsive to proportionate engagement with the length of the beam,

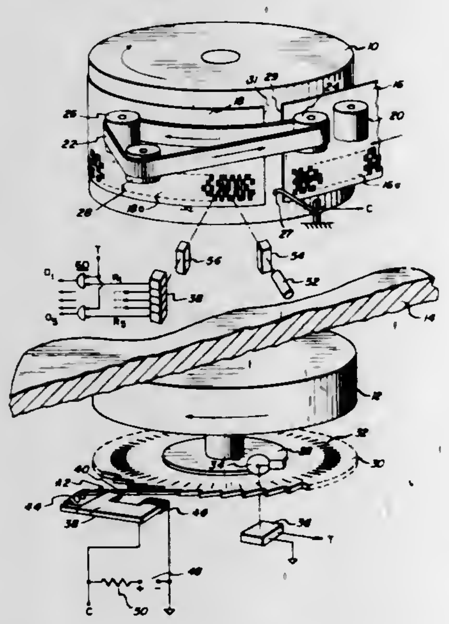
(c) a code element having a plurality of side-by-side operating portions defining a plurality of projecting lengths each of which includes a flux transmitting portion permitting the flux to pass and a flux opaque portion preventing passage thereof in accordance with the selected output signals, and



(d) means for releasably mounting said code element between the source and collector whereby the flux collected is proportional to the ratio of the length of said flux transmitting and flux opaque portions.

3,351,744
SYNCHRONIZED DOCUMENT READER

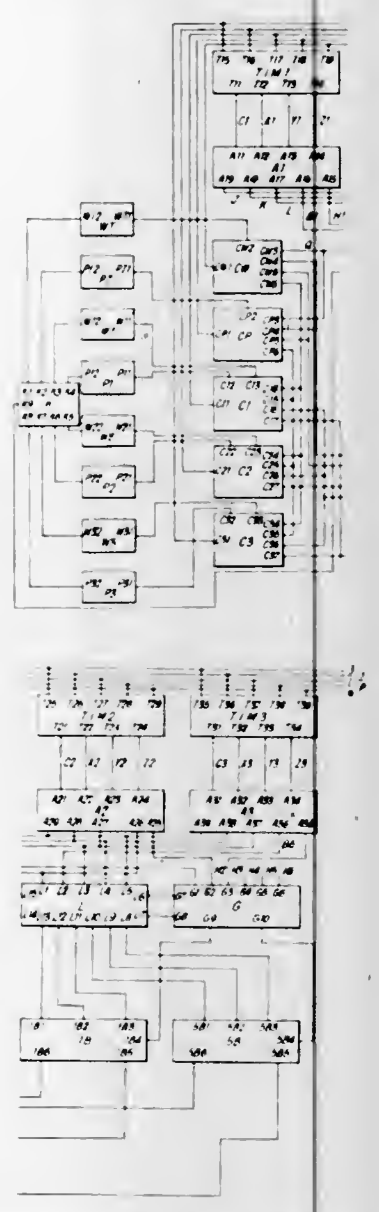
Earl E. Masterson, Newtonville, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,270
7 Claims. (Cl. 235—61.11)



5. Apparatus for synchronously reading out printed bar code data from a document, comprising a readout station, a feed drum, means cooperating with said feed drum to retain a document thereagainst, means for rotating said feed drum to move successive documents past said read station, means for mechanically sensing the presence of each document prior to its arrival at said read station, means responsive to said sensing means for deriving a control signal for the duration of said document at said read station, said readout station including a first light source for illuminating said bar code, a photoelectric reading head for scanning said illuminated bar code to derive corresponding readout signals, a slip clutch coaxially fast with said drum, a toothed timing disc including radial slots with a center-to-center spacing corresponding to that of said code bars, a second light source disposed on one side of said timing disc, photoelectric sensing means disposed on the other side of said timing disc in line with said second light source and said slots to generate timing pulses corresponding to said slots, a pawl normally urged into engagement with the teeth of said timing disc to lock the latter against rotation with said clutch, and a solenoid responsive during the presence of said control signal to disengage said pawl from said timing disc.

3,351,745
TOTALISATOR EQUIPMENT

John Charlton Barlow and Kenneth William Cocksedge, London, England, asssignors to Bell Punch Company Limited, London, England, a British company
Filed June 27, 1963, Ser. No. 291,113
Claims priority, application Great Britain, June 28, 1962, 24,822/62
5 Claims. (Cl. 235—92)



1. A totalisator system comprising a control station, a plurality of ticket-issuing machines each having a plurality of selector switches, means for rendering the ticket-issuing machines operative one at a time, a current transmitter in the control station, said transmitter being capable of delivering a predetermined maximum amount of electric current, a plurality of current receivers in the control station, the response current of each receiver being greater than one half of the said predetermined current, and a plurality of conductors in a multi-core cable for selectively connecting said current transmitter to said current receivers through said selector switches.

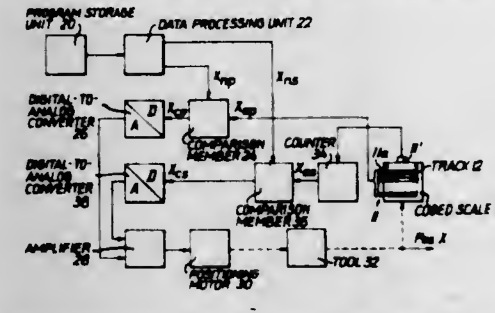
3,351,746
PROGRAM CONTROL SYSTEM TO REGULATE TOOL SPEED

Elmar Gotz, Frankfurt-Gravenbruch, and Peter Boese, Neu Isenburg, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Feb. 28, 1963, Ser. No. 261,720
Claims priority, application Germany, Mar. 14, 1962, L 41,475
9 Claims. (Cl. 235—151.11)

1. In an arrangement for controlling the position which two parts occupy relative to each other, a system for controlling the speed at which one of the parts moves relative to the other, said system comprising, in combination:

(a) means for supplying data representing the nominal speed of said one part;

(b) means for deriving the actual speed of said one part, said last-mentioned means including a scale having a subdivided track extending in the direction of movement and means for scanning said track, said scale and scanning means being carried by said parts, respectively, said speed deriving means comprising means for counting the number of subdivisions scanned by said scanning means, means for periodically resetting said counting means, and storage means connected to the output of said counting means for storing the number of subdivisions counted by said counting means during each period;

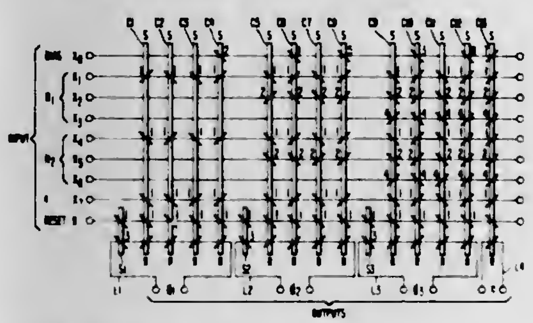


(c) means connected to receive the data from said means (a) and also connected to receive the output of said storage means of said means (b) for comparing the nominal and actual speeds; and

(d) moving means responsive to said comparing means for moving said one part.

3,351,747
MAGNETIC CORE OCTAL ADDER HAVING NOISE CANCELLING WINDINGS

Oscar B. Stram, Paoli, and Sidney N. Einhorn, Willow Grove, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 30, 1965, Ser. No. 468,321
8 Claims. (Cl. 235—175)



1. An octal adder comprising:

(a) three groups of function cores, each said group having four function cores,

(b) a common output lead threaded through each of the four cores of each of said groups to form core windings and to link the outputs of the four cores of each said group, each said group comprising a one-significant-sum bit output means such that the three groups together provide an octal digit output comprising three significant sum bits, said function cores forming a temporary output register capable of emptying their contents into a shift register for accumulating the octal digits to provide the sum of two octal numbers, said output common core linking leads and their windings having sets of terminals and being connected to provide an output from each link terminal set such that the link lead and windings for each group of four cores provides connections of each of the cores to each other in series arrangement and the three groups present simultaneous output in a parallel array,

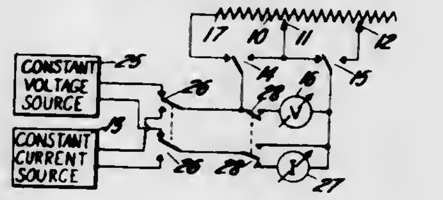
(c) a carry output core means for providing a carry into the input of the adder to enable summing a next more significant octal digit,

(d) input means connecting bit currents representing the input octal digits of an augend and an addend number to be added into predetermined cores of said function and carry cores in parallel array,

(e) said carry output core having an output lead with terminals to present its output simultaneously and in parallel with the output of said groups of function cores.

3,351,748
ELECTRICAL ANALOGUE COMPUTING CIRCUITS WHICH DETERMINE THE MODULES OF THE DIFFERENCE OF TWO QUANTITIES

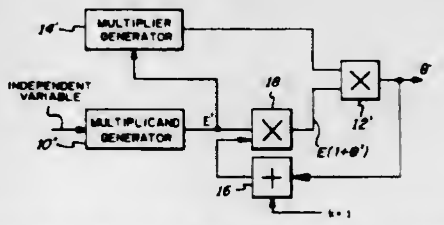
Raymond Calvert, Chessington, Surrey, England, assignor to The Wayne Kerr Laboratories Limited, Chessington, Surrey, England, a British company
Filed Apr. 8, 1964, Ser. No. 358,338
Claims priority, application Great Britain, Apr. 9, 1963, 14,197/63
11 Claims. (Cl. 235—193)



1. An electrical analogue computing circuit for determining the modulus of the difference of two quantities comprising a potentiometer having two adjustable taps, a constant current source arranged to feed said potentiometer, means responsive to the magnitude of a voltage and switch means arranged for selectively coupling said responsive means between one end of the potentiometer and one tap or between said one end of the potentiometer and the other tap or between the two taps.

3,351,749
FUNCTION GENERATOR USING LINEAR ELEMENTS

Harry D. Smith, Old Bethpage, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,515
8 Claims. (Cl. 235—197)

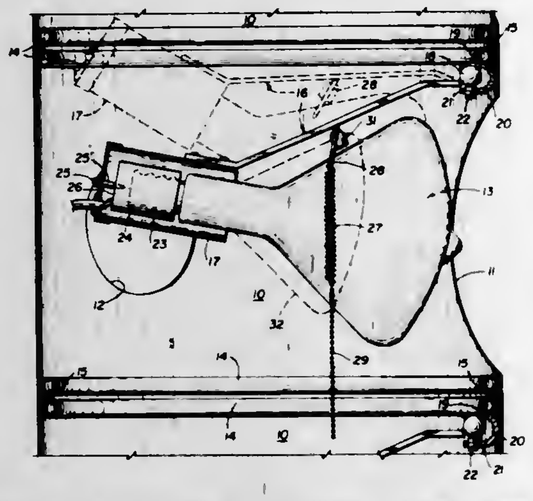


1. Apparatus for producing a signal representing a nonlinear function of a variable that continually changes slope only in one direction comprising first means adapted to produce a first signal that varies as a linear function of said variable at a rate that is never greater and never less respectively than the minimum and maximum rates at which said nonlinear function varies with respect to said variable when the slope of said nonlinear function respectively continually increases and continually decreases, second means for multiplying two signals to produce a product output signal, modifying means responsive to said product signal to increase and decrease the magnitude of said linear function signal in proportion to the instantaneous magnitude of said product signal when respectively the slope of said nonlinear function signal continually increases and continually decreases, and third means responsive according to the magnitude

of said first signal to produce a multiplier signal the instantaneous magnitude of which is such that the product of the signal from said modifying means and said multiplier signal varies like said nonlinear function of said variable, said multiplier signal and the signal from said modifying means being the two signals applied to said multiplying means.

3,351,750
LIGHTING APPARATUS

Warren D. Hall, Cherry Hills Village, Colo.
(4400 S. High St., Englewood, Colo. 80110)
Filed Mar. 29, 1965, Ser. No. 443,499
13 Claims. (Cl. 240—3)

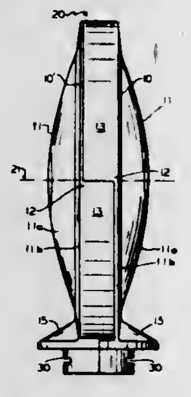


1. Lighting apparatus for lighting large areas comprising

- (a) a generally cylindrical shade provided with a side opening for passage of light rays therethrough,
- (b) an elongated bracket,
- (c) means pivotally connecting one end of the bracket to the shade and for retaining the bracket in adjusted position,
- (d) a socket casing connected to the opposite end of the bracket,
- (e) a socket floatingly mounted in the socket casing,
- (f) a lamp having an end mounted in said socket, and
- (g) yielding means engaging the lamp and connected to the bracket for supporting the lamp and socket in adjusted position relatively to the socket casing.

3,351,751
COMBINED LAMP HOUSING AND LENS

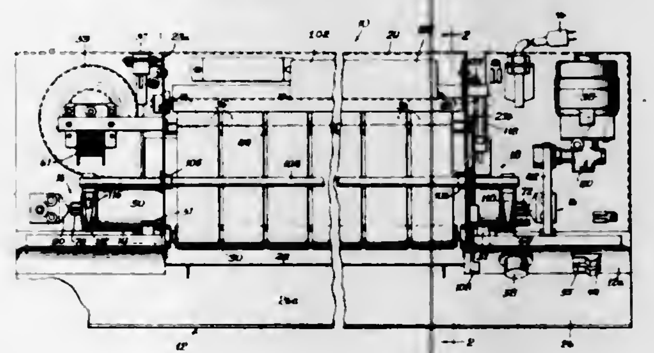
Frederick F. Stube, Syracuse, and Edward J. Nitsch, Camillus, N.Y., assignors to R. E. Dietz Company, Syracuse, N.Y., a corporation of New York
Filed June 21, 1965, Ser. No. 465,605
8 Claims. (Cl. 240—10.6)



1. A combined lamp housing and lens consisting of two identical oppositely facing halves of translucent material, each half comprising a symmetrical lens face portion having a central lens axis and a rim around the face portion projecting axially toward the face portion of the other half, the rim of each half being divided symmetrically on either side of a medial line extending across the face portion into alternate inner layer segments and outer layer segments, the inner layer segments on each side of the line being disposed opposite the outer layer segments of the other side of the line, each outer layer segment overlying and engaging with a cooperating inner layer segment of the other half when one half is turned about the line and forced back-to-back against the other half with the medial lines parallel, a bead along the outer surface of each inner layer segment and a cooperating groove along the inner surface of each outer layer segment, the grooves of the outer layer segments being adapted to overlie and contain the beads of the inner layer segments when the halves are forced together, whereby the halves are locked together.

3,351,752
CONTACT PRINTING APPARATUS

Joseph Hruby, Deerfield, Ill., assignor to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware
Filed Jan. 20, 1966, Ser. No. 521,860
10 Claims. (Cl. 240—49)



1. In an apparatus for exposing superimposed copy and original sheets by passing said superimposed sheets over the surface of an illuminating source, the combination comprising:

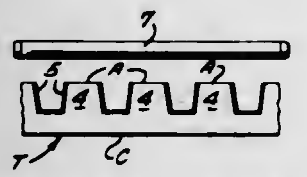
a lamp having a cylindrical envelope,
a pair of spaced apart contactors fixedly mounted to a base support,
terminal means extending axially from the ends of said lamp,
support means acting independently of said contactors for supporting the envelope between said contractors with its axis of rotation lying in a plane substantially parallel to said base member and being in electrical contact therewith,
spacer means for spacing and supporting the envelope with respect to said support means providing entry way means and exit means at the regions where said support means engage and disengage said envelope, said contactor including conductive biasing elements to accommodate the independent movement of the lamp in said support and spacer means in order to maintain continuous electrical contact of the lamp during rotation.

3,351,753
LUMINAIRE REFRACTOR

Emanuel Berger, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 27, 1965, Ser. No. 483,066
4 Claims. (Cl. 240—106)

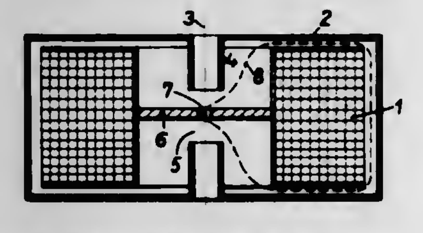
1. A refractor extending in longitudinal and transverse planes for use in a luminaire having a linear light source, comprising: a light incident and a light emergent surface, a plurality of truncated prisms in longitudinal and transverse spaced relation with regard to each other on the light incident surface, said prisms having inwardly tapering sufaces extending toward the light source, and

comprising means for reflecting light internally of said refractor toward said light emergent surface, said prisms having top surfaces at the truncated end, and light reflective material covering said tapering surfaces and the areas between said prisms, said light reflective material constituting means for reflecting light from the source toward the source, said top surfaces of said truncated prisms being exposed and constituting means for receiving and transmitting direct light from the linear light source at substantially all incident angles.



3,351,754
MAGNETIC LENS COMPRISING AN ANNULAR ELECTRIC COIL AND SUPERCONDUCTING MATERIAL TO SHAPE THE MAGNETIC FLUX

Isolde Dietrich, Erhard Berkl and Reinhard Weyl, Munich, and Karl-Heinz Herrmann, Berlin, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany
Filed Aug. 12, 1964, Ser. No. 389,089
Claims priority, application Germany, Aug. 16, 1963, S 86,746
13 Claims. (Cl. 250—49.5)

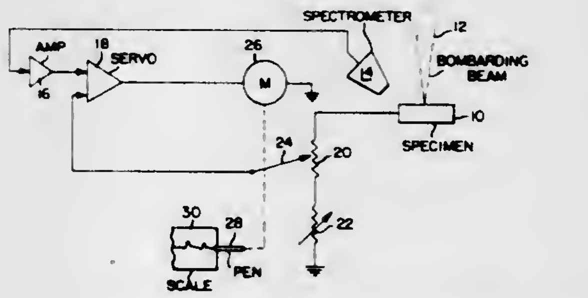


1. A particle beam magnetic lens device, comprising a lens structure defining a lens axis and having annular electric coil means coaxially around said axis for producing a lens magnetic field and an annular envelope of superconducting material enclosing said coil means, said envelope having an inner surface around the axis of said coil means, said envelope forming a magnetic shield around all sides of said coil means and having an annular opening formed by its inner surface around the coil axis, said envelope being completely closed with the exception of the annular opening thereof, a centrally apertured disc of superconducting material extending in said annular opening transverse to said axis, said disc being sufficiently spaced from the annular opening of said annular envelope to permit the passage of the magnetic flux produced by said coil, cryogenic means, heat-conducting means for connecting said cryogenic means with said envelope and said disc, said disc forming, when superconducting, a partition within said annular envelope which is impermeable to the magnetic flux produced by said coil, the central aperture of said disc being outside of said magnetic shield and constituting a passage for the beam as well as for the magnetic flux issuing through said annular opening.

2. A particle beam magnetic lens device for use as objective lens in an electron microscope, comprising a lens structure defining a lens axis and having annular electric coil means coaxially around said axis for producing a lens magnetic field and an annular envelope of superconducting material enclosing said coil means, said envelope having an inner surface around the axis of said coil means, said envelope forming a magnetic shield around all sides of said coil means and having an annular opening formed by its inner surface around the coil axis, said envelope being completely closed with the exception of the annular opening thereof, a centrally apertured disc of superconducting material extending in said annular opening transverse to said axis, said disc being sufficiently spaced from the annular opening of said annular envelope to permit the passage of the magnetic flux produced by said coil, cryogenic means, heat-conducting means for connecting said cryogenic means with said envelope and said disc, said disc forming, when superconducting, a partition within said annular envelope which is impermeable to the magnetic flux produced by said coil, the central aperture of said disc being outside of said magnetic shield and constituting a passage for the beam as well as for the magnetic flux issuing through said annular opening, a tubular structure of non-magnetizable material coaxially mounted in said annular opening and having an end axially spaced from said disc, and a specimen holder mounted on said end of said tubular structure.

3,351,755
METHOD OF AND APPARATUS FOR SPECTROSCOPIC ANALYSIS HAVING COMPENSATING MEANS FOR UNCONTROLLABLE VARIABLES

Maurice F. Hasler, Montecito, Santa Barbara, Calif., assignor to Applied Research Laboratories, Inc., Glendale, Calif., a corporation of Delaware
Filed Sept. 25, 1964, Ser. No. 399,163
11 Claims. (Cl. 250—49.5)



1. Method of spectroscopic chemical analysis comprising the steps of:

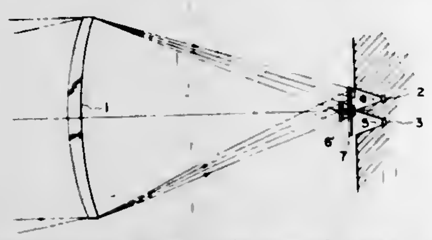
- (1) bombarding a material to be analyzed with a particulate beam to cause the material to emit radiation characteristic of a selected analyte in it,
- (2) producing a first continuous signal indicative of the intensity of the characteristic emission so emitted,
- (3) producing a second continuous signal indicative of the flux in the beam at its point of impact on the material, and
- (4) comparing said signals with each other to produce a continuous output signal which is primarily a function of the concentration of the selected analyte and highly independent of other variables.

3,351,756
PLANET SENSOR HAVING A PLURALITY OF FIXED DETECTORS ABOUT TWO ORTHOGONAL AXES AND A PARTIALLY ATTENUATING MASK CENTRALLY LOCATED IN THE FIELD OF VIEW OF THE DETECTORS AND SMALLER THAN THE TOTAL FIELD OF VIEW

Eli A. Kallet, Teaneck, N.J., and Philip Wardham Collyer, Stamford, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed July 8, 1964, Ser. No. 381,069
6 Claims. (Cl. 250—83.3)

1. In a horizon sensor having pairs of radiation detectors arranged to sense motion along two orthogonal axes and imaging means for directing energy from a target thereon, the improvement which comprises, a partially attenuating mask substantially centrally located with re-

spect to the pairs of radiation detectors of a size greater than target image size but substantially less than the field of view of each of the detectors so that movement of



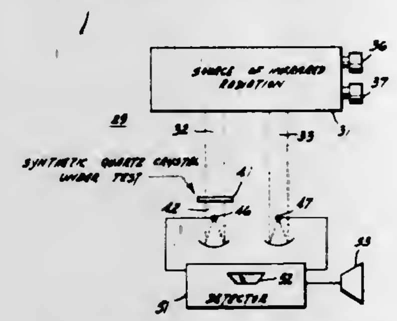
a target image along the orthogonal axes produces a proportional signal output even after the image has moved so that only one radiation detector of a pair is illuminated.

3,351,757
METHOD OF TESTING THE INTERNAL FRICTION OF SYNTHETIC QUARTZ CRYSTAL BY THE USE OF TWO DIFFERENT FREQUENCIES OF INFRARED

David B. Fraser, Berkeley Heights, N.J., and David W. Rudd, Topsfield, Mass.; said Fraser assignor to Bell Telephone Laboratories, Incorporated, and said Rudd assignor to Western Electric Company, Incorporated, New York, N.Y., both corporations of New York

Filed Feb. 18, 1965, Ser. No. 433,676

3 Claims. (Cl. 250—83.3)


SOURCE OF INFRARED RADIATION
36
37
29
31
32
33
SYNTHETIC QUARTZ CRYSTAL UNDER TEST
41
42
46
47
53
52
DETECTOR
51

1. A method for determining the internal friction of quartz crystal by irradiating the crystal with infrared energy, comprising the steps of:

plotting a curve which correlates internal friction of quartz crystal as a function of spectral absorption with respect to first and second frequencies of infrared energy, wherein said first frequency is a base-reference frequency and the second frequency is one where quartz crystal exhibits an absorption peak characteristic,

adjusting means for irradiating quartz crystal with infrared energy to establish a reference value of energy transmitted through a quartz crystal at said first frequency,

irradiating a sample of quartz crystal with infrared energy at said second frequency, and measuring energy transmitted through said sample at said second frequency, and

scaling off from said curve the value of internal friction for said quartz crystal sample which corresponds to the difference between said reference value and said measured value of energy.

3,351,758
WINDOWLESS HIGH-RESOLUTION SOLID STATE RADIATION DETECTOR

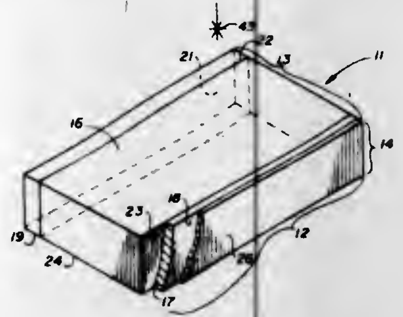
Guy A. Armantrout and David C. Camp, Livermore, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 15, 1965, Ser. No. 448,548

6 Claims. (Cl. 250—83.3)

1. A solid state radiation detector element comprising: an elongated wafer of semiconductor material defining an incident radiation surface of maximum area and minimum surface areas transversely intersecting said surface of maximum area including;

(1) a positively doped semiconductor zone extending into said wafer from a first surface of minimum area,



(2) a negatively doped semiconductor zone extending into said wafer from a second surface of minimum area opposite said first surface, and

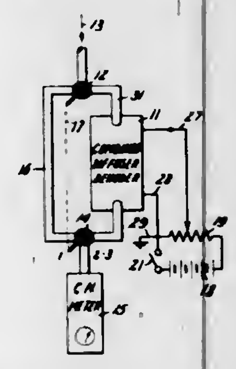
(3) an intrinsic semiconductor zone of selected width conductively interposed said positively and negatively doped zones.

3,351,759
APPARATUS FOR DETERMINING AEROSOL PARTICLE SIZE COMPRISING A COMBINED DIFFUSER-DENUDER

Theodore A. Rich, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Aug. 4, 1964, Ser. No. 387,468

7 Claims. (Cl. 250—83.6)



7. Apparatus for determining aerosol particle size distribution including in combination a combined diffuser-denuder comprised by a diffusion box formed from a gastight housing having an input plenum and an output plenum and a plurality of electrically conductive spaced-apart collecting members supported within the housing and interconnecting the two plenums, one set of alternate spaced-apart collecting members being electrically interconnected and insulated electrically from the remaining set of alternate spaced-apart collecting members which likewise are electrically interconnected, the spacing between the collecting members being in the order of .01 to .10 inch and the total collecting area of the collecting members is in the order of 500 to 10,000 square inches, a source of low voltage electric potential in the order of 100 volts, selectively operable switching means for selectively connecting the source of low voltage electric potential in electric circuit relationship across the two sets of the electrically interconnected alternate collecting members, a source of radiant energy mounted in the input plenum for bringing the aerosols in the gaseous sample being treated to electrical equilibrium, a condensation nuclei meter having its input operatively connected to the output plenum of the combined diffuser-denuder, and selectively operable bypass means connected between the input plenum of the combined diffuser-denuder and the input of the condensation nuclei meter for selectively bypassing the gaseous sample to be monitored around the combined diffuser-denuder.

3,351,760
METHODS OF EVALUATING AND INSPECTING ADHESIVELY BONDED JOINTS AND STRUCTURES ADAPTED FOR SUCH EVALUATION AND INSPECTION

Robert L. Brown, 2019 Princeton Blvd., Huntsville, Ala. 35801

Filed Aug. 26, 1963, Ser. No. 304,363

40 Claims. (Cl. 250—106)

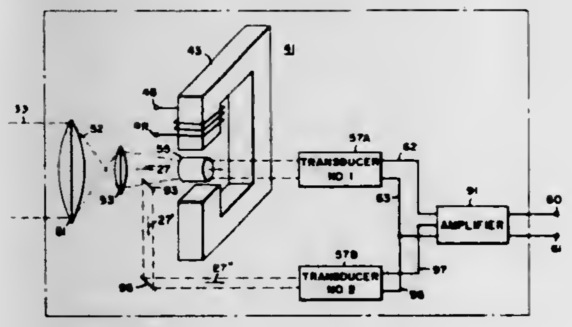
2. The method of evaluating and inspecting adhesively bonded joints in structural members which comprises the steps of uniformly distributing a radiation-opaque material throughout the body of the adhesive before application of the adhesive to the structural member, directing a source of radiation toward the structural member having the adhesive with the radiation-opaque material therein, and detecting the effect produced on the radiation by the radiation-opaque material in the adhesive as an indication of the adhesive distribution in the structural member.

3,351,761
FM LIGHT COMMUNICATIONS SYSTEM

Jefferson O. Hamby, Baltimore, and Roland H. Chase, Carrollton, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 9, 1962, Ser. No. 208,245

2 Claims. (Cl. 250—199)



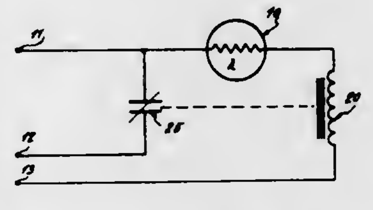
1. A communication system for optical frequencies where infrared, visible and ultraviolet light is used as the carrier wave comprising in combination: a transmitter producing a frequency modulated light beam and including a spectral source of predetermined atomic structure emitting a spectrum of lines, means for selecting a predetermined line of a known frequency, a first means for producing a static magnetic field encompassing said spectral source for splitting said predetermined line into a number of components that are symmetrically displaced and shifted in frequency about said predetermined line and having a polarization depending upon the relationship between an observer and the direction of said static magnetic field, a second means for producing an alternating magnetic field encompassing said source to frequency modulate said components in accordance with an input signal, and first optical means operative with said spectral source for focusing and directing said light; a second optical means for receiving light from said transmitter, an absorption filter having atoms of the same atomic structure as said spectral source responsive to optical radiation and located to be illuminated by said frequency modulated light gathered by said second optical means, a first optical-to-electrical transducer means for converting light from said absorption filter into a first electrical signal, optical means for sampling a portion of said frequency modulated light received by said second optical means, a second optical-to-electrical transducer adapted to receive said portion of the light to produce a second electrical signal, and amplifier means connected to said first and second transducer to provide an output signal.

3,351,762
VERY CLOSE DIFFERENTIAL OUTDOOR LIGHTING CONTROL

Harold T. Adkins, Hanover, and Robert H. Pierce, Duxbury, Mass., assignors to Sigma Instruments, Inc., a corporation of Massachusetts

Filed July 6, 1964, Ser. No. 380,363

12 Claims. (Cl. 250—206)



2. An ambient light-responsive control circuit comprising, in combination, a photo sensitive cell; switch means in operative circuit connection with said photo sensitive cell; said cell effecting closure of said switch means responsive to one level of ambient light incident upon said cell and opening of said switch means responsive to another level of ambient light incident upon said cell; and means operable to reduce the differential between the respective ambient light levels effecting closing and opening of said switch means, said differential reducing means comprising means operatively associated with said cell and controlling the sensitivity of response of the latter by modulating energy supplied to said cell; said means having an energy modulating effect which varies as a function of the duration of an immediately preceding ambient light level of substantial duration; said means decreasing the sensitivity of response of said cell with respect to a change from one level of ambient light effecting operation of said switch means while increasing the sensitivity of response of said cell with respect to the other level of ambient light effecting operation of said switch means.

3,351,763
PHOTOELECTRIC CLOUD COVER AND OPACITY MEASURING EQUIPMENT

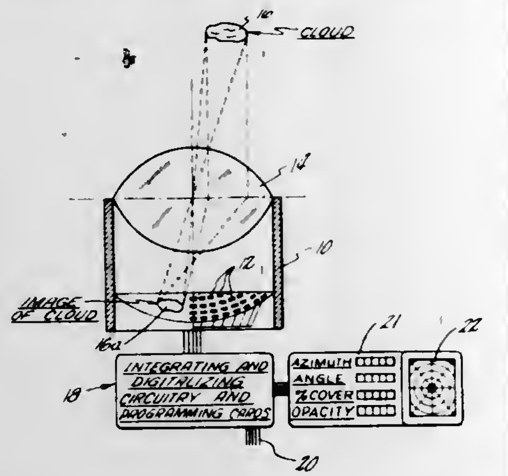
Rodney A. Shuart, Wapping, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Jan. 27, 1965, Ser. No. 428,366

10 Claims. (Cl. 250—209)

1. Apparatus for indicating cloud cover and cloud location within the horizon-to-horizon sky canopy from a single location on the ground comprising a surface on which the sky image is focused having a plurality of energy-sensitive cells arranged in a predetermined array on the surface, and focusing means comprising a lens

means subtending a wide angle field of view of the sky canopy for focusing on said surface an image of the en-


CLOUD
IMAGE OF CLOUD
INTEGRATING AND DIGITALIZING CIRCUITRY AND PROGRAMMING CARDS
AZIMUTH
ANGLE
%COVER
OPACITY
21
22
20

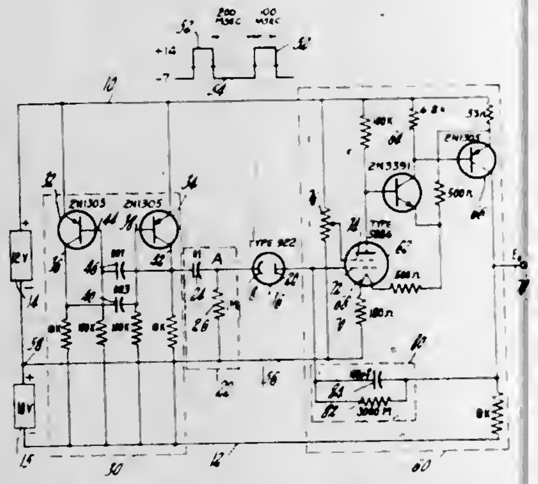
tire sky from horizon to horizon and any clouds that may be present in the sky.

3,351,764
CIRCUIT FOR BALANCING OUT NOISE CURRENT IN A PHOTODIODE USING A D-C ZERO AVERAGE WAVEFORM

David E. Blackmer, Weston, Mass., assignor to Instrumentation Laboratory Inc., a corporation of Massachusetts

Filed June 4, 1965, Ser. No. 461,267

10 Claims. (Cl. 250—214)



1. An electric circuit for translating radiation flux into an electrical signal comprising
- a photodiode having a radiation responsive electrode element, and an input terminal and an output terminal,
- means for applying an alternating signal to the input terminal of said photodiode,
- a DC current amplifier connected to the output terminal of said photodiode,
- and means for maintaining a zero average DC electric potential between the input and output terminals of said photodiode.

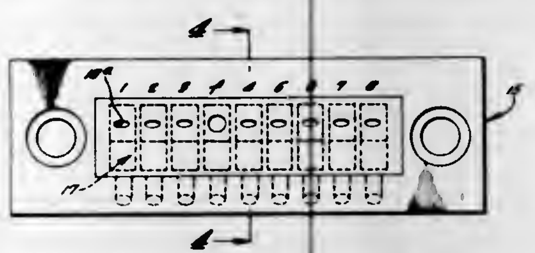
3,351,765
PHOTOSENSITIVE READ-OUT DEVICE FOR APERTURED RECORDS

Robert L. Malone, Palos Verdes Peninsula, and George W. Floyd, Inglewood, Calif., assignors, by mesne assignments, to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan

Continuation of application Ser. No. 249,355, Jan. 4, 1963. This application Oct. 31, 1966, Ser. No. 595,299

7 Claims. (Cl. 250—219)

2. A read out device for sensing light transmitting apertures in a record member and providing output indications thereof comprising a light sensitive member comprising a plurality of elements for individually producing electrical output indications in response to a light signal impinging thereon, said elements each being arranged to receive light from individual areas of a record member, a holder having an aperture for mounting the light sensitive member to expose the individual elements to light, a mask having individual light transmitting semi-



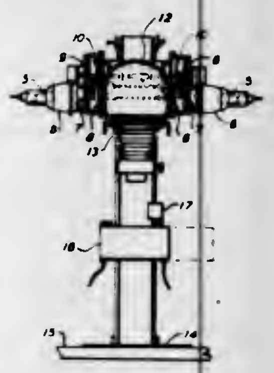
elliptical apertures for exposing preselected portions of the light exposed portions of corresponding light sensitive elements and being mounted in the holder aperture over the light sensitive member, said light transmitting apertures being defined to expose a light element a preselected portion of the time a recorded aperture is passed over an element, and a light transmitting member mounted in the holder aperture over the mask to function as a closure for the holder aperture.

3,351,766
COLOR BALANCE COMPUTER FOR MAKING COLOR PRINTS

Louis L. Weisglass, New York, N.Y., assignor to Simmon Brothers, Inc., Long Island City, N.Y., a corporation of New York

Filed Oct. 13, 1964, Ser. No. 403,566

5 Claims. (Cl. 250—226)



1. A color balance computer for photographic printers and enlargers used in the making of color prints comprising:

(a) a plurality of color filters each of which is operable to control the intensity of light of one of the primary colors in a light beam passed through a film transparency and impinging upon sensitized paper during the making of a print,

(b) means operable to measure the intensities of several different color components of the light beam of said photographic printer including a housing supporting a first photosensitive tube operable to pass current proportional to the intensity of one color component in the light beam impinging thereon after passing through one primary color filter, and a second photosensitive tube in said housing surrounded by a shield having filters of two other primary colors forming a part of the wall thereof, and said shield being rotatable to subject said second photosensitive tube to the light beam after passing first through one filter and then the other to render such tube operable to sequentially pass a current proportional to the intensity of a second and then a third color component of said light beam,

(c) voltage generating means connected to said photosensitive tubes and operable in response to the passage of current therethrough to produce voltages proportional to such respective current values, and said voltage generating means being operable in response to the intensity of the light initially passing through said respective color filters to cause a voltage differential between a first and second of said proportional voltages and between the first and a third proportional voltages respectively, and

(d) electronic switching means connected to said voltage generating means and operable to cause illumination of an electric indicator lamp upon adjustment of said color filters and said voltage differentials thereupon becoming zero.

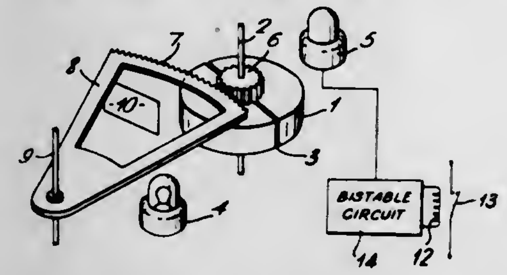
3,351,767
DEVICES RESPONSIVE TO THE ANGULAR POSITION OF A SHAFT

John Ross Suiter, Basingstoke, England, assignor to S. Smith & Sons (England) Limited, London, England, a British company

Filed Apr. 13, 1964, Ser. No. 359,313

Claims priority, application Great Britain, Apr. 11, 1963, 14,540/63

10 Claims. (Cl. 250—230)



10. A device responsive to the angular position of a shaft comprising a substantially solid generally cylindrical member mounted coaxially on said shaft for angular movement with said shaft, said cylindrical member comprising a light refracting material having spaced interior walls defining a slit extending at least partially across a diameter of said member, a source of light, and means responsive to light, said source of light and said light responsive means being disposed on diametrically opposite sides of said cylindrical member respectively at positions such that light from said source passes through said cylindrical member and is incident onto said light responsive means only when the light from said source is incident onto one of said interior walls at an angle less than the critical angle at that wall.

3,351,768
APPARATUS FOR DETECTING AND INDICATING THE EXTENT OF RELATIVE MOVEMENT

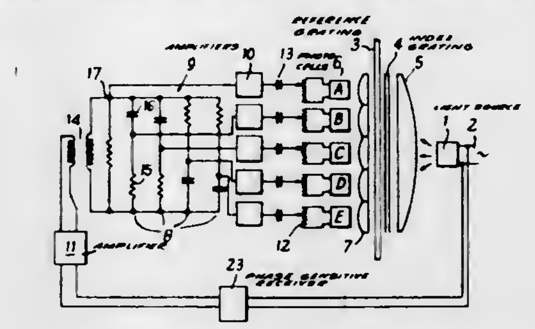
Conrad Reginald Cooke, 1 Court Drive, Shillingford, England

Filed June 15, 1964, Ser. No. 375,262

Claims priority, application Great Britain, June 21, 1963, 24,873/63

15 Claims. (Cl. 250—237)

1. Apparatus responsive to relative movement between two relatively movable members comprising a reference source providing an alternating current signal, a pair of gratings mounted respectively in fixed relation to said relatively movable members, said gratings being superposed in close proximity for producing a cyclic pattern of interference fringes in a flux field, means defining a plurality of elemental areas of the fringe pattern which areas are relatively displaced in phase with respect to the fringe pattern, detector means responsive to the fringes and positioned with respect to said areas for producing an alternating current signal having components each of whose amplitudes is a function of the flux across a respective elemental area of the fringe pattern, a phase shift network having input terminals and output terminals and including a number of phase-shifting elements corresponding to the number of said elemental areas, said input terminals being connected to the detector means and



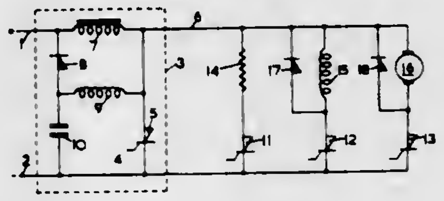
said output terminals being connected to an output circuit for deriving an output signal which is phase-displaced relatively to said reference signal by an amount proportional to the displacement of the fringes from a reference position, and means for comparing the output signal with the reference signal.

3,351,769
STATIC SWITCHING SYSTEM WITH A SINGLE MEANS FOR SELECTING ANY OF A PLURALITY OF D.C. LOADS TO BE SUPPLIED

Rex M. Davis, Loughborough, England, assignor to Brush Electrical Engineering Company Limited, Loughborough, England

Filed Aug. 3, 1964, Ser. No. 387,099

17 Claims. (Cl. 307—38)



1. A static switching system for selectively connecting a plurality of loads in parallel between the positive and negative lines of a D.C. supply, comprising a respective static switching device interposed between one of the D.C. supply lines and each load, and a single means interposed between both D.C. supply lines on the one hand and the loads with their respective static switching devices on the other hand to cause a reverse voltage to be applied to all of said respective static switching devices to turn them off and thereby inhibit current flow through said loads, said reverse voltage being of longer duration than the turn-off time of the one of said respective static switching devices last to achieve the turned-off condition.

3,351,770
A.C. POWER SYSTEM HAVING D.C. DRIVEN STANDBY POWER SUPPLY

Bryan J. O'Sullivan, Wakefield, and Robert R. Smyth, Lincoln, Mass., assignors to Technical Operations Inc., Burlington, Mass., a corporation of Delaware

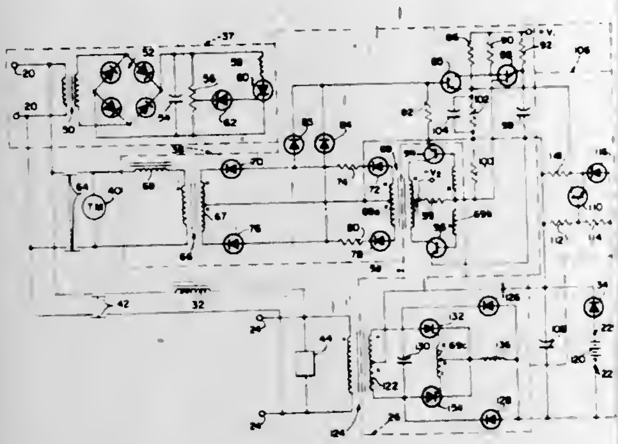
Filed Mar. 12, 1964, Ser. No. 351,335

15 Claims. (Cl. 307—64)

1. A standby power supply device adapted to be coupled to a load in parallel with an A.C. power line, said device comprising, in combination;
- inverter means having input terminals adapted to be connected to an electrical storage battery, and output terminals adapted to be connected across said load;
- a passive reactive element having a fixed magnitude of impedance, said impedance having a magnitude such that in the event of a short circuit of said power line

said impedance limits the total current demand on said inverter means by said load and said impedance to a value which does not exceed the power output capability of said inverter means;

means connecting said load to said power line in series through said reactive impedance and in parallel with said inverter output terminals; and



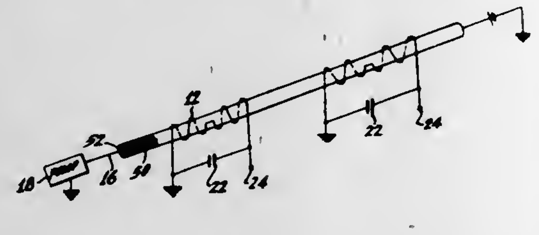
voltage detector means connected to said A.C. power line and having an output coupled to said inverter means for controllably in response to magnitude of voltage in said A.C. power line maintaining the frequency and relative phase of voltage at the output terminals of said inverter means in a predeterminedly fixed relation to the frequency and phase of the voltage of said A.C. power line only when the latter voltage is above a predetermined limit.

3,351,771
PARAMETRIC SUBHARMONIC OSCILLATOR

James C. Miller, Hamilton Square, N.J., and Arthur W. Lo, Poughkeepsie, N.Y., assignors to Radio Corporation of America, a corporation of Delaware

Filed Sept. 21, 1960, Ser. No. 57,474

14 Claims. (Cl. 307—88)



13. The combination comprising: a tubular thin member of high permeability material having an easy direction of magnetization; first and second conductors magnetically linking said member, one of said conductors being disposed within said tubular member; means connected to one of said conductors to form a circuit having a natural resonant frequency $f_0 \cong f$; and means for applying A.C. energizing signals having a frequency nf to the other of said conductors, where n is an integer.

3,351,772
MAGNETIC CORE SWITCH

Willem Bongenaar, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 7, 1963, Ser. No. 314,208

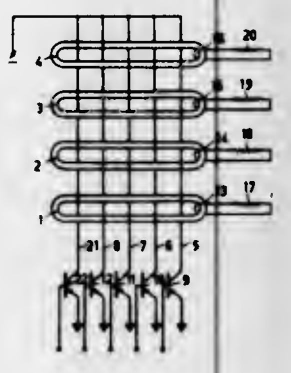
Claims priority, application Netherlands, Oct. 18, 1962, 284,496

2 Claims. (Cl. 307—88)

1. A magnetic core switch assembly comprising a plurality of magnetic cores, a plurality of energizing coils on said cores in an amount equal to $N(2^{2n})$ where N is equal to 1 or 2 and $2n$ is the smallest even power of 2 which is equal to or larger than the number of said cores, said coils being coupled to each of said cores in a polarity pattern in which the number of coils having a given one magnetic polarity is equal to

$$N\left(2\frac{2n}{2}+2^{n-1}\right)$$

means for connecting the respective coils of said cores in series to form a plurality of series energizing circuits equal to the number of coils on each core, compensating windings coupled to each of said cores and connected in series to form a series compensating circuit, means for selectively energizing one of said cores in a given polarity direction comprising means for selectively supplying a first current of given intensity to the coils of said core having said given one magnetic polarity and for supplying to said compensating winding a second current at an intensity substantially equal of $N(2^{n-1})$ times said given current intensity, means for selectively energizing said given core at an opposite polarity comprising means for supplying to the complementary coils of said core said first current of given intensity and for supplying to said compensating winding the said second current intensity, and output means coupled to the said cores.

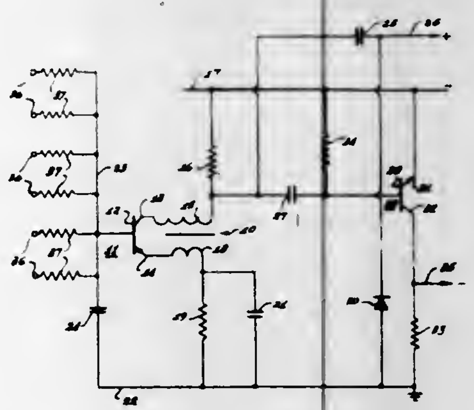


3,351,773
ELECTRONIC CIRCUIT FOR SIMULATING CERTAIN CHARACTERISTICS OF A BIOLOGICAL NEURON

Horst F. Wolf, Costa Mesa, and Vaughn W. Goldsworthy, Tustin, Calif., assignors to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

Filed May 31, 1963, Ser. No. 284,645

7 Claims. (Cl. 307—88.5)



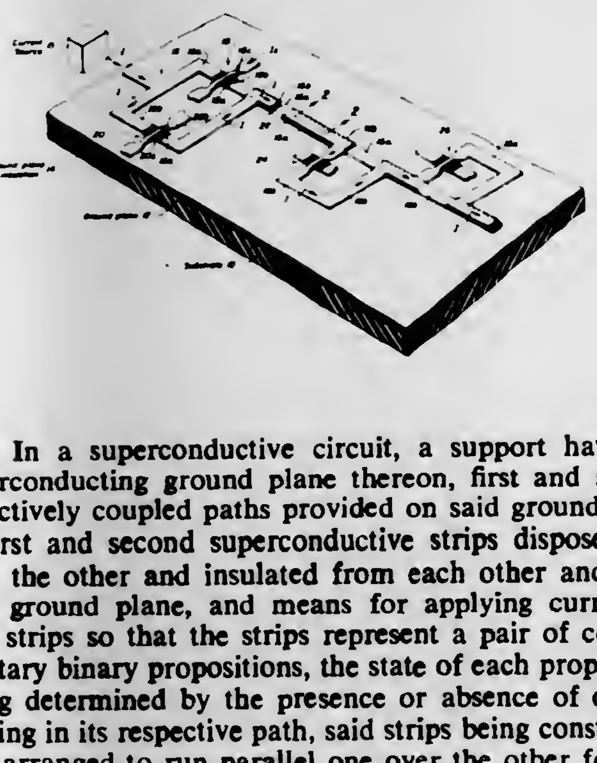
1. An electronic circuit for simulating certain of the characteristics of a biological neuron comprising: a blocking oscillator having a feedback circuit whereby said oscillator generates a series of pulses whose amplitude is independent of the value of the input signal to the oscillator but the frequency of which is controlled by the input amplitude, said oscillator having a minimum input threshold below which it will not conduct; input means to said oscillator including a series resistor and a capacitor connected to a point between said resistor and oscillator to provide both an input delay period and temporal summation of a succession of inputs individually below said threshold; an inhibitory output for said circuit connected to said oscillator output through a series capacitor; and a diode connecting the output side of said capacitor to ground so as to maintain said inhibitory output normally at ground potential and to add thereto the output of the oscillator to produce a positive inhibitory output pulse.

3,351,774
SUPERCONDUCTING CIRCUIT CONSTRUCTIONS EMPLOYING LOGICALLY RELATED INDUCTIVELY COUPLED PATHS TO REDUCE EFFECTIVE MAGNETIC SWITCHING INDUCTANCE

Sigmund N. Porter, Los Angeles, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Oct. 9, 1963, Ser. No. 314,949

27 Claims. (Cl. 307—88.5)



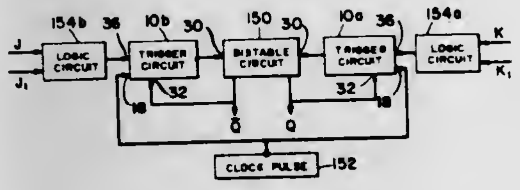
1. In a superconductive circuit, a support having a superconducting ground plane thereon, first and second inductively coupled paths provided on said ground plane as first and second superconductive strips disposed one over the other and insulated from each other and from said ground plane, and means for applying current to said strips so that the strips represent a pair of complementary binary propositions, the state of each proposition being determined by the presence or absence of current flowing in its respective path, said strips being constructed and arranged to run parallel one over the other for substantially the entire distance of travel thereof.

3,351,775
SINGLE PULSE TRIGGER CIRCUIT

Charles R. Cook, Jr., Lake Park, Fla., and Billy M. Martin, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed May 22, 1964, Ser. No. 369,432

12 Claims. (Cl. 307—88.5)



11. A circuit for producing a single output pulse in response to a predetermined input voltage change comprising:

- a first transistor of one type the collector of which is connected to ground, the emitter of which is connected by a first resistor to a voltage supply, and the base of which is connected to an input,
- a second transistor of the other type the emitter of which is connected to ground, the collector of which is connected to the emitter of the first transistor, and the base of which is connected through a second resistor to the input, the junction between the emitter of the first transistor and the collector of the second transistor being the output control point,
- a third transistor the base of which is connected to the output control point, the collector of which is connected to a supply voltage, and the emitter of which is connected to an output,

logic circuit means connected to the output control point for selectively connecting the control point to ground through a high impedance or through a low impedance in response to predetermined conditions,

bi-stable circuit means connected to the emitter of the third transistor having an output the voltage of which is changed in response to the output from the emitter of the third transistor, and

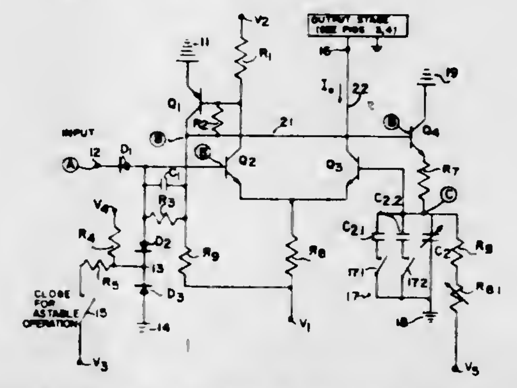
feedback circuit means connecting the output of the bi-stable circuit means to the base of the second transistor for varying the duration of the output pulse from the emitter of the third transistor.

3,351,776
CONTROLLABLE TIMING CIRCUIT

Daniel Y. S. Chin, Northboro, Mass., assignor, by mesne assignments, to Honeywell Inc., a corporation of Delaware

Filed May 22, 1964, Ser. No. 369,763

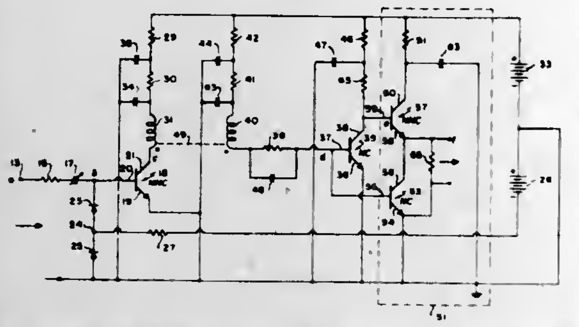
16 Claims. (Cl. 307—88.5)



1. Electrical timing wave generator circuit comprising four transistors Q_1, Q_2, Q_3 and Q_4, respectively; means to bias Q_1 to have an ON state in which its collector voltage is at a first level and an OFF state in which its collector voltage is at a second level negative by a fixed amount with respect to said first voltage level; Q_2 having its base coupled to Q_1 collector and its collector coupled to Q_1 base; said means to bias Q_1 being adjusted so that when Q_2 is ON Q_1 is ON, and when Q_2 is OFF Q_1 is OFF; the base of Q_4 being coupled to the collector of Q_1; means to bias Q_4 so that when Q_1 is ON Q_4 is ON and when Q_1 is OFF Q_4 is OFF; the emitters of Q_2 and Q_3 being coupled together to a common current source; means to base-bias Q_2 and Q_3 so that only one of them can draw current from said source at any one instant of time depending on the relative magnitudes of their respective base biases; the emitter of Q_4 being coupled to the base of Q_3 via a biasing connection containing resistance means such that Q_4 in the ON state applies to Q_3 base a bias voltage at a third voltage level intermediate said first and second levels whereby to hold Q_3 OFF when Q_2 is ON; and timing integrator means including capacitance means connected to said resistance means for charging said capacitance means through Q_4 when the latter is ON and for holding Q_3 ON for a predetermined period of time of discharge of said capacitance means through said resistance means, following an event which turns Q_2 OFF; said timing wave being the current through Q_3 when the latter is ON for said predetermined period of time.

3,351,777
AUTOMATIC PULSE FORMER

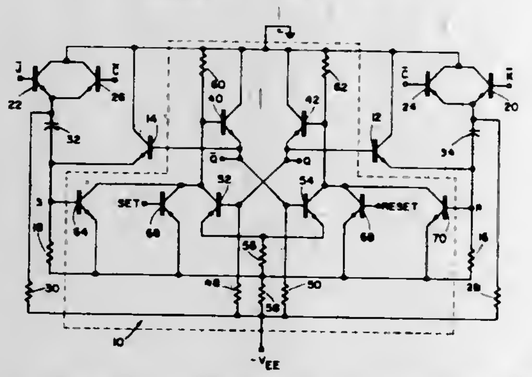
Frank J. Horlander, Lexington, Ky., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 8, 1964, Ser. No. 373,590
14 Claims. (Cl. 307—88.5)



1. A pulse generator for reforming deteriorated clock pulses into pulses having an accurate predetermined height and duration comprising:
a first electronic valve means for generating pulses of accurate predetermined height from input pulses of different heights having an input and an output;
means for accurately determining the beginning and end of an output pulse from inputs pulses of various durations coupled to said first electronic valve means input;
a second electronic valve means for gating an output pulse having an input; and
third electronic valve means for latching said second electronic valve means off in absence of said accurately predetermined pulse having an output coupled to said input of said second electronic valve means;
third input of said electronic valve means for latching said second electronic valve means off coupled to said electronic valve means for generating pulses whereby the second pulse of the output electronic valve means has an accurate predetermined pulse duration and height.

3,351,778
TRAILING EDGE J-K FLIP-FLOP

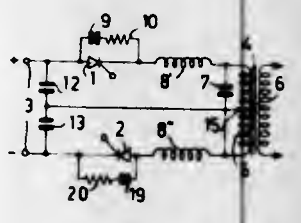
Walter C. Seelbach, Scottsdale, Arthur M. Cappon, Phoenix, Paul J. De Marco, Mesa, and Norman J. Miller, Scottsdale, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 8, 1964, Ser. No. 402,388
9 Claims. (Cl. 307—88.5)



1. A J-K flip-flop including, in combination: first and second emitter follower signal output transistors cross-coupled, respectively, to first and second holding transistors and providing a current path to said first and second holding transistors during the alternate conduction thereof, a first pullover transistor DC coupled in parallel with said first holding transistor and adapted to receive an override signal to thereby override said first holding transistors and initiate a change in the conductive state of said flip-flop, a second pullover transistor DC coupled in parallel with said second holding transistor and adapted to receive an override signal and thereby override said second holding transistor and initiate a change in the conductive state of said flip-flop, and means for receiving AC coupled voltage transitions at the inputs of said first and second pullover transistors for alternately driving the voltages at the inputs of said first and second pullover transistors to levels sufficiently high to drive said first and second pullover transistors into conduction and provide a toggling of said flip-flop.

3,351,779
CIRCUIT FOR SUPPRESSION OF VOLTAGE PEAKS ACROSS A RECTIFIER

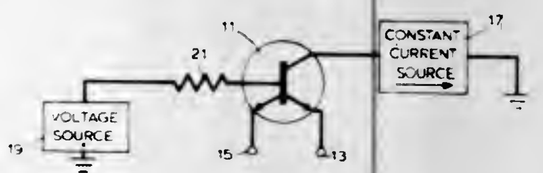
Theodorus Hehenkamp, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 15, 1964, Ser. No. 418,511
Claims priority, application Netherlands, Jan. 11, 1964, 64—160
4 Claims. (Cl. 307—88.5)



1. A circuit arrangement for dissipating the stored charge on at least one of at least two semiconductor controlled rectifiers each having a cathode an anode and a triggering control electrode, comprising, means for applying a voltage to said rectifier, said voltage exceeding the maximum permissible voltage for the cathode-anode path of one of said rectifiers, a load circuit, means connecting the cathode anode path of all of said rectifiers in the same passing direction and in series with said load circuit across said means for applying a voltage, means for applying periodic triggering to trigger all of said rectifiers into conduction substantially simultaneously, first and second capacitive means connected in series across said means for applying a voltage, and means connecting each of said rectifiers to the junction point of said first and second capacitive means for dissipating the stored charge on at least one of said rectifiers.

3,351,780
SOLID STATE SWITCHING CIRCUIT

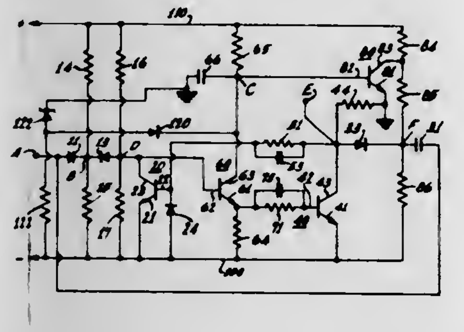
Peter A. Guarino, Orange, N.J., and Stephen Gardner, San Clemente, Calif., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Feb. 9, 1965, Ser. No. 431,280
11 Claims. (Cl. 307—88.5)



1. A precision solid state switch comprising an integrated double emitter transistor, means to selectively supply current to the base of said transistor, and a constant current source selectively operable to drive the collector of said transistor, the constant current provided by said constant current source being selected to differ slightly from the current supplied to the base of said transistor by an amount and in a direction to precisely compensate for the offset voltage that would normally exist between the emitters of said transistor if the base and collector currents of said transistor were equal so that the voltage applied to one of said emitters will be transferred to the other of said emitters with zero offset potential across said emitters.

3,351,781
COUNTER CIRCUIT

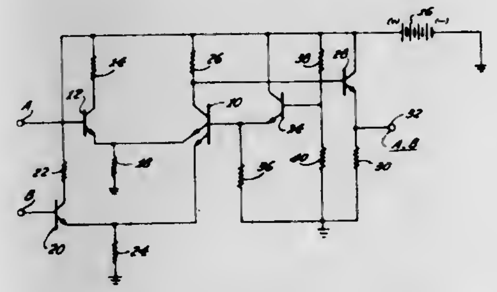
Floyd Irvin Johnson, Philadelphia, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 19, 1965, Ser. No. 441,253
6 Claims. (Cl. 307—88.5)



5. A counter circuit comprising the combination of
a pair of transistors intercoupled in such manner as to provide, unless otherwise arrested, bistable multivibrator action whereby successive input impulses cause said transistor pair to alternate between a first state where one transistor is conducting and the other is nonconducting, and a second state where said one transistor is nonconducting and said other transistor is conducting;
and means for controllably arresting said multivibrator action of said intercoupled transistor pair, said arresting means including: a ramp waveform generator comprising a third transistor coupled to said transistor pair in such manner as to match the conducting and nonconducting states of said other transistor of said pair, a diode for alternately blocking and passing input impulses to said one transistor of said pair, and means for controlling the alternation of said diode between said input impulse blocking and passing states in accordance with the output of said ramp generator.

3,351,782
MULTIPLE EMITTER TRANSISTORIZED LOGIC CIRCUITRY

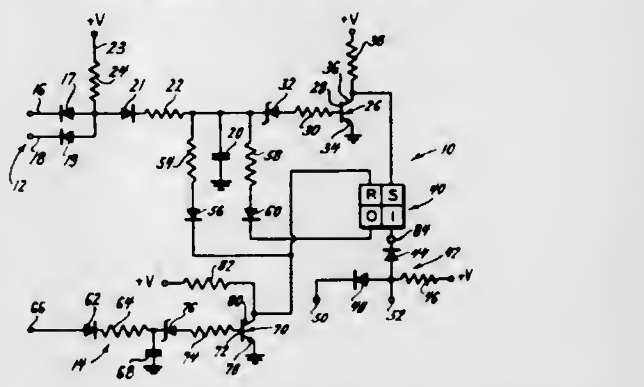
Jan A. Narud and Walter C. Seelbach, Scottsdale, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 297,610, July 25, 1963. This application Apr. 1, 1965, Ser. No. 446,781
10 Claims. (Cl. 307—88.5)



1. Logic circuitry including in combination, first semiconductor means having an input electrode portion, a plurality of common electrode portions and an output electrode portion, a plurality of further semiconductor means each having input, output and common electrode portions; first impedance means coupling said output electrode portion of said first semiconductor means to potential supply means; means including a common degenerative feedback impedance coupled to said common electrode portions of said further semiconductor means and to respective ones of said common electrode portions of said first semiconductor means; means for introducing different input signals to said input electrode portions of respective ones of said further semiconductor means to switch the circuitry between a first state in which said first semiconductor means is conductive and a second state in which said first semiconductor means is nonconductive and in which at least one of said further semiconductor means in each of said groups is conductive; bias circuit means for applying a reference potential to said input electrode portion of said first semiconductor means, said bias circuit means including additional semiconductor means connected to the potential supply means and compensating said reference potential for variations in the potential of the supply means and for variations in temperature, and output circuit means including an emitter follower coupled to said output electrode portion of said first semiconductor means and responsive to the potential across said first impedance means for producing an output signal.

3,351,783
MEANS FOR SIMULATING LEARNING, FORGETTING AND OTHER LIKE PROCESSES

Robert P. Harris, St. Louis, Mo., and Jerome L. Krasner, Fort Collins, Colo., assignors, by mesne assignments, to Conductron Corporation, Ann Arbor, Mich., a corporation of Delaware
Filed June 21, 1965, Ser. No. 465,554
13 Claims. (Cl. 307—88.5)

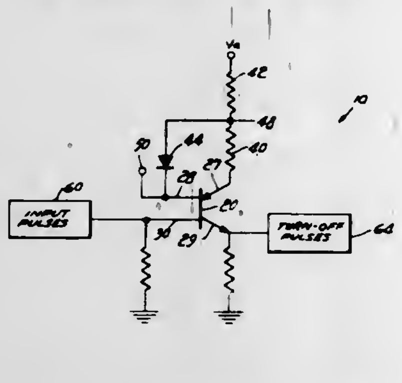


1. Means for simulating a learning process comprising an electronic circuit having an input adapted to be connected to a source of input signals, an integrating circuit connected to the input circuit and including means capable of charging at a predetermined charging rate in response to and during receipt of input signals, means actuated by the charge on the integrating means reaching a predetermined charge, and means for dissipating a charge on said integrating circuit, said charge dissipating means including means for selectively changing the charge dissipation rate, said means for changing the charge dissipation rate including first relatively high impedance means connected to provide a charge dissipation rate that is substantially slower than the charging rate of the charging means, and other charge dissipating means including said means activated by a predetermined charge on the integrating circuit and a bi-stable flip-flop circuit under control thereof, means connecting said bi-stable flip-flop circuit to the charging means, said flip-flop circuit having a relatively high impedance in the deactivated condition thereof so that the first relatively high impedance means controls the charge dissipation rate of the integrating circuit and a relatively low impedance in the activated condition to accelerate the charge dissipation rate.

3,351,784
MULTIPLE JUNCTION SEMICONDUCTOR DEVICE AND CIRCUIT FOR INCREASING ITS SPEED OF OPERATION BY SATURATION PREVENTION

Thomas C. McNulty, Nutley, and Frank J. Ziemba, Perth Amboy, N.J., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed July 19, 1965, Ser. No. 472,885
6 Claims. (Cl. 307—88.5)

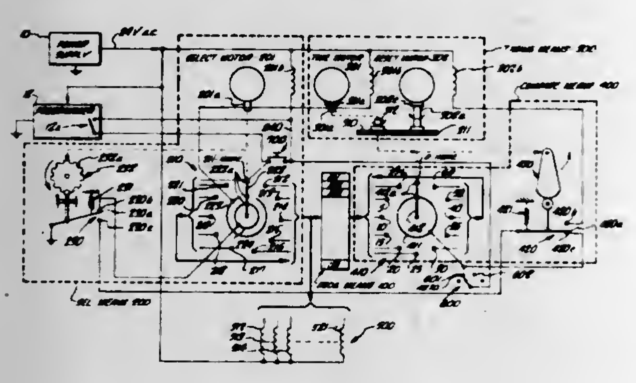


1. An electronic circuit module for performing counting and storage operations comprising
- a four-electrode semiconductor device including anode, anode gate, cathode, and cathode gate electrodes, said device having (1) a characteristic holding current level at which the device switches on and (2) a characteristic saturation current level above which the device goes into saturation,
- said anode, anode gate, cathode gate, and cathode comprising a first current flow path,
- a first potential coupled to said anode at one end of said first current flow path and a second potential coupled to said cathode at the other end of said current flow path whereby current can flow through said first path from said one end to said other end, and
- an auxiliary current flow path in parallel with said first current flow path and cooperating with said first path to maintain the current flow in said first path below the saturation current level of said device.

3,351,785
CONTROL APPARATUS

Burnie M. Craig and Philip A. Shaffer, Jr., Pasadena, Calif., assignors, by mesne assignments, to Campus Road Investment Company, Inc., a corporation of California

Filed June 15, 1964, Ser. No. 375,026
2 Claims. (Cl. 307—141)

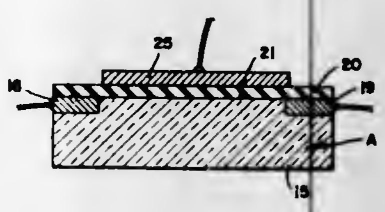


1. Control apparatus the combination comprising selection means having a plurality of output circuits at which timed control signals are sequentially applied and removed, one by one, said selection means comprising a rotary switch means having a plurality of contacts and a brush for making electrical contact with said switch contacts, motor means for rotating said brush causing electrical contact to be sequentially made and broken with said contacts, said selection means additionally comprising at least one cam actuated switch coupled to said orush and adapted to be actuated after said brush is in electrical contact with one of said contacts and apply a control signal thereto, timing means including a reference member, timing motor means mechanically coupled to the reference member and operative for rotating the reference member and thereby cause the member to provide an indication of elapsed time from a reference position of the member, reset motor means mechanically coupled to the reference member and operative for causing said reference member to be reset to said reference position and clutch means coupled between the timing motor means and the reference member to permit said reference member to be reset; programming means coupled to said selection means and operative for providing a separate indication of the desired time a signal is to be applied at each of said output circuits; and means for applying a control signal to said selection means including compare means coupled to said reference member and programming means and adapted for applying a control signal to said selection means in response to a coincidence between the programmed time for a particular one of said plurality of output circuits and the elapsed time indicated by said reference member causing the timed control signal to be removed from the output circuits of said selection means.

3,351,786
PIEZOELECTRIC-SEMICONDUCTOR, ELECTROMECHANICAL TRANSDUCER

Richard S. Muller, Berkeley, and James Conragan, Albany, Calif., assignors to The Regents of the University of California, Berkeley, Calif.

Filed Aug. 6, 1965, Ser. No. 477,689
7 Claims. (Cl. 310—8)



1. A stress-strain transducer comprising an active element composed of a body of piezoelectric material having conductive source and drain electrodes at opposite ends thereof, an insulating coating over said source and drain and piezoelectric body, and a conductive gate electrode mounted on said insulating coating between said source and drain, means providing a gate voltage to said source and gate, means providing a drain voltage to said source and drain, current indicating means responding to current flow between said drain and said power source and means to apply stress-strain pressure to said active element whereby the current indicated by said current indicating means is an analogue of the quantum of stress-strain applied to said active element.

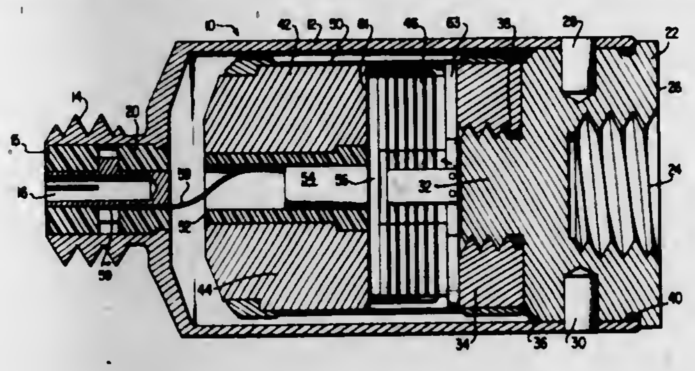
3,351,787
ACCELEROMETER

Walter P. Kistler, Clarence, N.Y., assignor to Kistler Instrument Corporation, Clarence, N.Y., a corporation of New York

Filed Jan. 11, 1965, Ser. No. 424,527
6 Claims. (Cl. 310—8.4)

1. A force sensing device comprising a protective housing having a rigid base at one end, a force responsive mass in said housing, piezoelectric means between said mass and said base, a stressed preloading sleeve joined at one end to said mass and at its other end to said base,

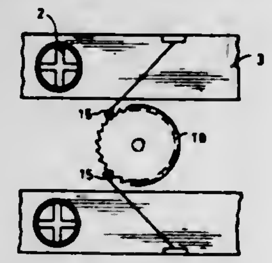
at least one end of said sleeve being joined by a welded connection, said sleeve being spaced from the remainder of said housing, and means coupled to said piezoelectric means for deriving an electrical output signal.



3,351,788
APPARATUS FOR MECHANICALLY CONVERTING THE OSCILLATING MOVEMENT OF AN ELECTRO-MECHANICAL OSCILLATOR

Robert Favre, Lausanne, Switzerland, assignor to Fabriques Movado, La Chaux-de-Fonds, and Manufacture des Montres Universal, Perret Freres S.A., Geneva, Switzerland

Filed Feb. 1, 1966, Ser. No. 524,350
3 Claims. (Cl. 310—22)



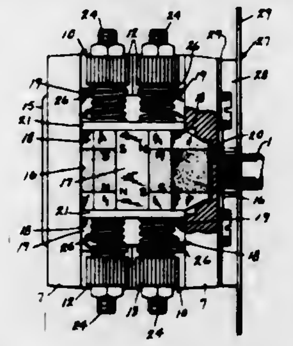
1. Apparatus for mechanically converting oscillating movement into one-directional movement in a timepiece having a plate, two torsion springs secured thereto and a toothed ratchet wheel driving the timepiece gearing comprising:
- (A) two elongated oscillating masses, positioned parallel to one another and oscillating about the axes of said torsion springs,
- (B) electric means for keeping up the oscillations of said masses;
- (C) two resilient pawls each secured to one of said oscillating masses, said pawls having ends adapted to mesh with the teeth of said ratchet wheel, said ratchet wheel being successively rotated by one and then by the other of said pawls the driving movement of one pawl corresponding to the return movement of the other.

3,351,789
DOUBLE OSCILLATOR ELECTRIC MOTOR

Ronald J. Bertling, Grafton, Wis., assignor to Energy Conversion Systems Corporation, Grafton, Wis., a corporation of Wisconsin

Filed Oct. 12, 1964, Ser. No. 403,188
11 Claims. (Cl. 310—37)

7. In an oscillatory electric motor the combination comprising:
- an output shaft;
- a pair of clutches associated with said shaft, each adapted to be advanced in one direction in which said shaft is moved with the clutch and to be retracted in reverse direction in which there is slippage between clutch and shaft;
- a pair of oscillatory magnetic members each connected with one of said clutches and each having a central magnetic leg, a pair of side magnetic legs, and a magnetic yoke joining the legs with one another;
- windings encircling both of said central legs; and

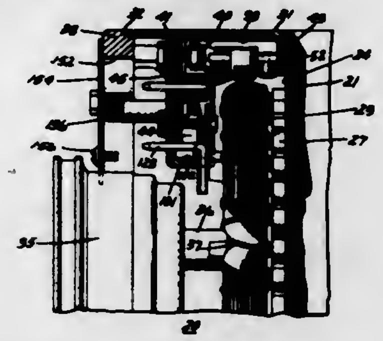


- a stationary composite magnetic assembly having a pair of permanent magnets, one for each of said pair of oscillatory magnetic members wherein each permanent magnet has an associated pair of pole pieces, one for each polarity, that are each magnetically interposed between a central leg and a side leg of the associated oscillatory magnetic member.

3,351,790
RESETTABLE OVERLOAD SWITCH DEVICE FOR USE IN AN ELECTRICAL INDUCTIVE APPARATUS

Clovis E. Linkous, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York

Original application Jan. 2, 1964, Ser. No. 335,243, now Patent No. 3,311,764, dated Mar. 28, 1967. Divided and this application Nov. 21, 1966, Ser. No. 595,870
5 Claims. (Cl. 310—68)



1. For use in a single winding control unit of a dynamoelectric machine having a support, the arrangement including an overload switch carried by the support comprising a pair of normally closed contacts, and an insulator post turnably mounted by the support adjacent said contacts, said post including an electrically insulated wedge having an original position outwardly of the contacts, spring means connected to said post biasing said wedge against said contacts in the original position when said contacts are closed, said contacts having means responsive to the operation of the machine to open them, said spring means turning said wedge between the contacts when the contacts are opened, means retaining said wedge between said contacts, and rotatable means for returning said wedge to its original position.

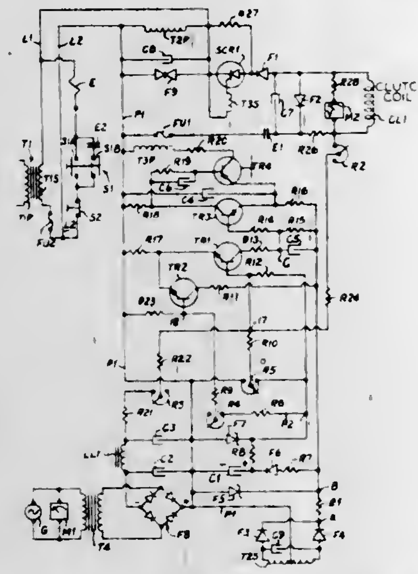
3,351,791
CONTROLLED VELOCITY DRIVE

Aubrey H. Smith and Lester T. Christensen, Kenosha, Wis., assignors to Eaton Yale & Towne, Inc., a corporation of Ohio

Filed Sept. 19, 1963, Ser. No. 310,093
19 Claims. (Cl. 310—94)

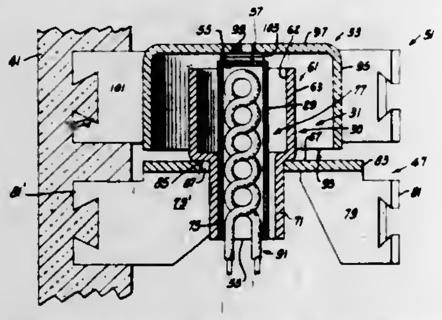
1. In a controlled-velocity drive having a driven member, and a winding the energization of which controls the speed of said driven member, a source of electrical power, and a solid-state switching device interconnected between said source and said winding and adapted selectively

to control the energization of said winding thereby to regulate the angular velocity of said driven member; a control for said switching device comprising means for producing a reference voltage proportional to a preselected angular velocity of said driven member, a first feedback circuit sensing the angular velocity of said driven member and producing a velocity feedback signal which varies as a function thereof, a second feedback circuit including a resistor in series with said winding for providing a current feedback signal which varies substantially in proportion to the current through said winding, and means responsive to said reference voltage and to said first and second feedback signals for selectively actuating said switching device to energize said winding substantially in proportion to the sum of said reference voltage and said velocity and current feedback signals substantially throughout the range of operation of said control thereby to maintain the angular velocity of said driven member substantially equal to said preselected angular velocity.



3,351,792
QUICK WARM-UP HEAT-SHIELDED CATHODE STRUCTURE FOR CATHODE RAY TUBES

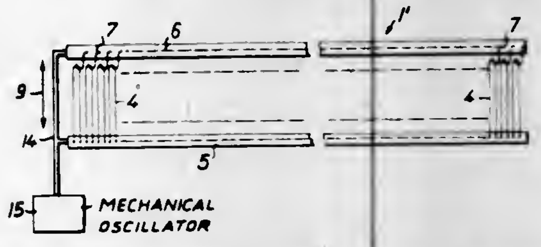
Alan T. Kuryla, Geneva, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Continuation of application Ser. No. 421,494, Dec. 28, 1964. This application Mar. 1, 1967, Ser. No. 619,877
5 Claims. (Cl. 313—38)



1. In a cathode ray tube electron gun assembly having at least one electrically insulative rod supporting a plurality of associated electrode elements including an apertured control grid, a related shielded cathode structure comprising:
- a cathode sleeve having an open end portion and an opposite walled end portion with electron emissive material terminally disposed thereon;
- metallic shield means formed to support and shield said cathode, said shield means being of tubular shape having open ends and comprising upper and lower portions of different diametrical dimensions with an exterior planar seating provision integrally formed of said shield material intermediate said open ends thereof, said lower shield portion having a plurality of spaced apart longitudinal support means formed therein to provide longitudinal support to said open end cathode portion oriented in and attached thereto, thereby forming a shielded cathode assembly with said upper shield portion being spaced from said upper cathode portion; and
- a cathode assembly support member having at least one first section with at least one formed extremity attached to said insulative rod and a second section formed at substantially right angles to said first section to provide a shield bonding surface having an opening formed therein of a size to accommodate said assembly with said shield planar seating provision being attached to said second section peripheral to said opening to provide a rigidly supported cathode-shield structure whereby said emissive material is oriented in spaced relationship with said control grid aperture.

3,351,793
SEPTUM EXTRACTION ELECTRODE COMPRISING A PLURALITY OF PARALLEL WIRES UNDER TENSION

Karl Steimel, Konigstein-Johanniswald, Taunus, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Oct. 25, 1965, Ser. No. 505,152
Claims priority, application Germany, Oct. 28, 1964, L 49,140
3 Claims. (Cl. 313—62)



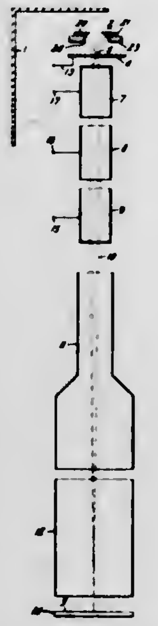
1. For use in a septum for extracting the beam from a cyclotron, an inner electrode to be exposed to the beam and comprising a plurality of elements each constituted by a wire placed under mechanical stress and oriented substantially perpendicular to the plane of movement of the particles forming the beam, said wires being in pairs, each of which pairs is constituted by a single piece of wire in the form of a hairpin, said electrode further comprising a holder to which the free ends of each hairpin are attached, and resilient means engaging the bend of each of said hairpins for maintaining said hairpins under tension.

3,351,794
ELECTRON BEAM DEVICE WITH HIDDEN CATHODE HAVING ANNULAR, FRUSTO-CONICAL EMISSIVE SURFACE

Lawrence A. Harris, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 23, 1965, Ser. No. 515,824
6 Claims. (Cl. 313—82)

1. An electron beam device for providing electrons to a utilization target without exposing the utilization target to heat or light radiation from a heated electron source comprising
- an envelope having an electron utilization target at one end thereof and a cathode member displaced longitudinally of the envelope from the target,
- an accelerating electrode comprising a conductive partition positioned between said cathode member and target provided with a single small axial aperture displaced from a direct radiation path between said cathode and target,

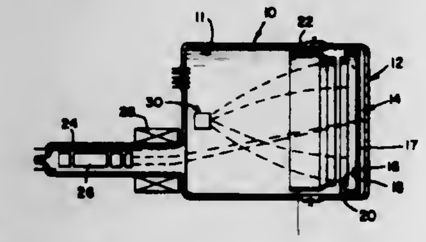
- said cathode member comprising an annular member spaced from said partition and having a central aperture comprising a first frusto-conical surface which comprises an electron emissive surface, the aperture in said cathode member being substantially larger than the axial aperture in said partition and said surface being inclined at an angle to direct emitted electrons toward the single axial aperture,



- annular electrode means positioned between said cathode and said partition, said electrode means also having a central aperture comprising a second frusto-conical surface symmetrically positioned with respect to the annular cathode member and axial aperture, the aperture in said annular electrode means being larger than the aperture in said cathode member, the wall of said second frusto-conical surface being inclined at an angle with the beam of electrons from said electron emissive surface, the edge of the smallest diameter portion of said second frusto-conical surface being positioned adjacent the edge of the largest diameter portion of said first frusto-conical surface whereby electrons emitted by such cathode are focused to travel with space-charged limited flow in a converging beam through said single axial aperture, and
- electron lens means positioned between said partition and said target for focusing said electrons as a fine pencil beam directed at said target.

3,351,795
ANNULAR BEAM FLOOD GUN FOR STORAGE TUBES

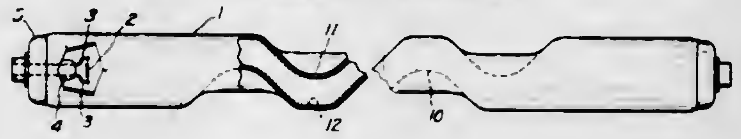
Bent Gronlund, Vista, Calif., assignor to Hughes Aircraft Company, Culver City, Calif.
Filed Mar. 29, 1966, Ser. No. 538,318
10 Claims. (Cl. 313—85)



1. In an electron gun,
- inner and outer peripheral wall elements defining an open-ended cavity therebetween,
- insulating means interconnecting the elements,
- an electron producing cathode carried by the insulating means in the cavity and facing said open end,
- heater means in operative association with the cathode to raise the temperature thereof and induce electron emission and thereby create an electron beam,
- and means to form the electron beam into the desired configuration and to accelerate the emitted electrons.

3,351,796
CALCIUM HALOPHOSPHATE PHOSPHOR FOR HIGHLY LOADED LAMP

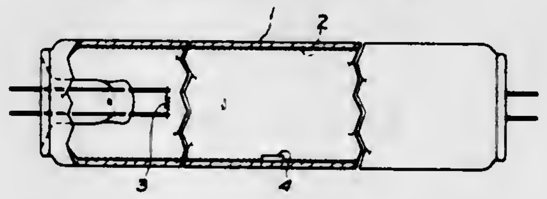
Eugene F. Apple, Highland Heights, and John B. Hollopetre, Willoughby, Ohio, assignors to General Electric Company, a corporation of New York
Filed Oct. 22, 1965, Ser. No. 501,466
2 Claims. (Cl. 313—109)



1. A fluorescent lamp for a loading in the range of 20 to 35 watts per foot of length comprising an elongated vitreous envelope provided with electrodes at opposite ends and containing a filling of mercury exerting a pressure of a few microns in operation at said loading and an inert buffer gas at a filling pressure of a few millimeters, and a phosphor coating on the inside surface of said envelope, said phosphor comprising calcium halophosphate activated with manganese and antimony and containing from 3.0 to 4.5 weight percent retained cadmium substituted for calcium.

3,351,797
LOW-PRESSURE DISCHARGE LAMP CONTAINING MERCURY AMALGAM

Klaus Eckhardt and Klaus Bachmann, Berlin, Germany, assignors to Patent-Treuhand-Gesellschaft für elektrische Gluhlampen m.b.H.
Filed Dec. 23, 1964, Ser. No. 420,759
Claims priority, application Germany, Dec. 30, 1963, P 33,294
8 Claims. (Cl. 313—174)



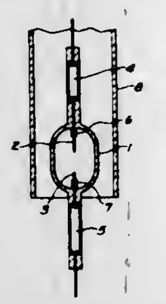
1. A highly loaded low-pressure mercury vapor discharge lamp comprising a vitreous envelope having electrodes sealed into its ends and containing an amalgam in the form of a body of relatively small surface area in relation to its volume, said body being located at a place having a temperature not appreciably higher than the portions of the envelope exposed to discharge, characterized in that the body consists of a layer of amalgam facing the discharge and a layer of a metallic foil coated with a synthetic adhesive facing the envelope wall and attached thereto.

3,351,798
SCANDIUM HALIDE DISCHARGE LAMP

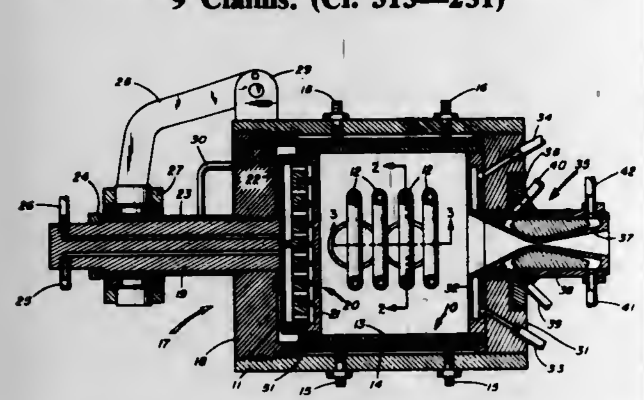
Arnold Bauer, Augsburg, Germany, assignor to Patent-Treuhand-Gesellschaft fur Elektrische Gluhlampen mbH
Filed Aug. 15, 1963, Ser. No. 302,376
Claims priority, application Germany, Aug. 22, 1962, P 30,071
6 Claims. (Cl. 313—225)

1. A high pressure electric discharge lamp comprising an envelope of refractory light-transmitting material having a pair of slender solid tungsten electrodes sealed

therein and containing a filling of mercury providing a vapor pressure in excess of 1 atmosphere when fully vaporized in normal operation, a quantity of scandium iodide in excess of that vaporizing during operation, and a rare gas at a cold filling pressure between 10 and 100 millimeters of mercury.



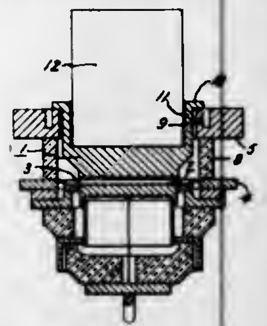
3,351,799
4-RING, 3-PHASE, A.C. ARC HEATER
Eva M. Winkler, Adelphi, and Richard L. Humphrey, Beltsville, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 10, 1966, Ser. No. 534,991
9 Claims. (Cl. 313—231)



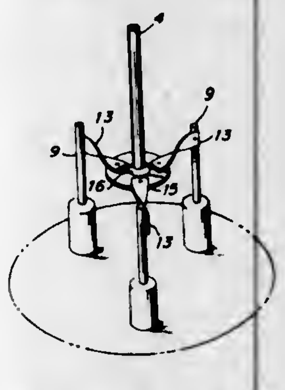
1. An A.C. arc heater for heating the supply gas of a hypervelocity wind tunnel where extremely high gas temperatures are required, comprising
  a heater pressure chamber having a gas discharge nozzle at one end thereof, the other end being closed,
  four split-ring electrodes of equal size and geometry uniformly spaced along the axis of said camber, the axes of said electrodes coinciding with the axis of said chamber, the first and fourth of said electrodes being connected to the same phase of a three-phase power supply and the second and third of said electrodes respectively being connected to the remaining two phases, and
  means for supplying gas under pressure to the interior of said chamber, the gas so supplied being heated by an arc column established between said electrodes thereby causing it to attain very high energy before exhausting through said nozzle.

3,351,800
DISCHARGE DEVICE WITH COMPENSATED ANODE STRUCTURE
James E. Beggs, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 4, 1965, Ser. No. 423,106
7 Claims. (Cl. 313—244)

1. In an electron discharge device of the type having an anode member having a planar surface with a radially extending supporting flange therefor and an opposed planar cathode surface with a control electrode positioned between said surfaces and wherein during operation of the device electrons from said cathode heat said anode to cause thermal expansion thereof and movement of the anode surface toward the cathode surface, a structure for compensating the expansion of the anode in the direction of the cathode comprising a refractory cylinder having one end sealed to said flange and spaced radially outward from the anode member, said refractory cylinder having its other end mechanically connected to said cathode surface and being formed of a material having a coefficient of expansion greater than that of the anode member and upon heating of said device expanding in a direction opposite to the direction of expansion of the anode member, said cylinder being removed from the electron flow path between the cathode and anode surfaces, said flange being exposed to ambient temperature and heat from said anode flowing to said cylinder through said supporting flange, whereby said cylinder is maintained at a lower temperature than the anode member during operation of the device.

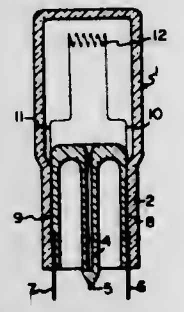


3,351,801
CATHODE CYLINDER HAVING A HEATER MEMBER SUPPORTED BY A PLURALITY OF FLEXIBLE METAL BANDS
John F. Richter, San Mateo, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 16, 1965, Ser. No. 433,240
5 Claims. (Cl. 313—270)



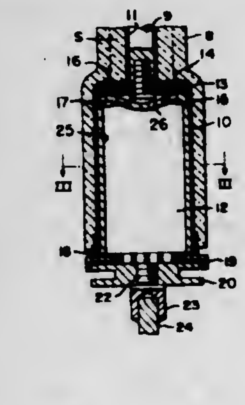
1. A cathode structure for use in an electron power tube capable of being rapidly heated to emission temperature comprising;
  a hollow conductive cylindrical cathode element having two open ends;
  a conductive end plate covering one end of said cylindrical cathode and affixed thereto;
  a heater support rod extending through said cylindrical cathode along its central longitudinal axis and rigidly attached at one of its ends to said end plate;
  heater coils disposed about said heater support rod and supported thereby;
  a plurality of flexible bands radially and symmetrically disposed about the other end of said heater support rod;
  one end of each of said bands being rigidly attached to said other end of said heater support rod;
  an insulated base member;
  first means attached to said base for rigidly supporting the other end of said cylindrical cathode in a position above said base; and
  second means attached to said base for rigidly supporting the other ends of each of said flexible bands in a position above said base.

3,351,802
SINGLE ENDED, QUARTZ TYPE INCANDESCENT LAMP
Paul E. Gates, Danvers, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 12, 1964, Ser. No. 374,750
4 Claims. (Cl. 313—315)



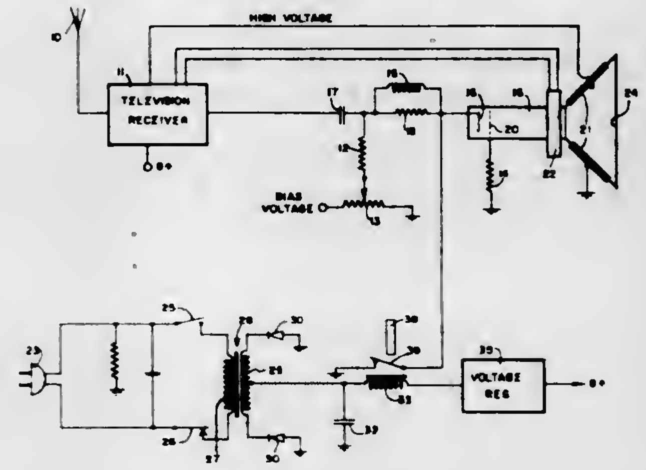
1. An incandescent lamp comprising: a tipless quartz glass envelope; a neck section disposed at one end of said envelope; a mount support disposed within said neck section and sealed to said neck section, said mount support having a closed top; means forming an aperture in said closed top; an exhaust tube sealed at one end and disposed within said mount support and attached to said means, the interior of said tube being open at the other end and in communication with the interior of said envelope; a filament disposed within said envelope; two means to conduct current from an external source through said seal and to said filament.

3,351,803
SEAL AND LEAD-IN CONDUCTOR ASSEMBLY FOR GASEOUS DISCHARGE LAMPS
Joseph P. Kearney, Teaneck, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 12, 1964, Ser. No. 410,659
6 Claims. (Cl. 313—331)



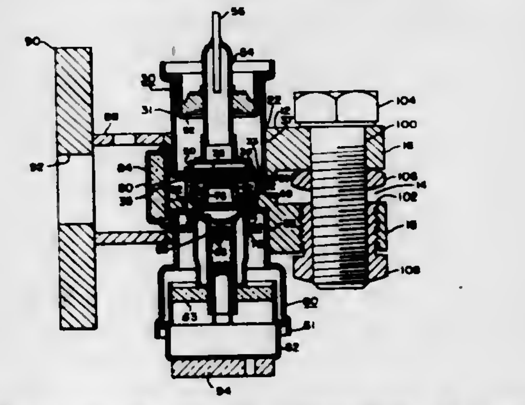
1. A high-pressure high-current electric discharge lamp comprising;
  (a) a sealed vitreous envelope having a bulbous portion and an outwardly extending elongated end portion,
  (b) a refractory metal electrode anchored in said elongated end portion and extending therefrom into the bulbous portion of said envelope,
  (c) a lead-in assembly for said electrode comprising a plurality of spaced longitudinally extending refractory metal conductors hermetically sealed within the end portion of said envelope with the inner ends of said conductors projecting laterally inward toward the axis of said end portion and secured to a movable refractory metal member that is located within said end portion proximate the anchored end of said electrode, and
  (d) means mechanically coupling said movable refractory metal member to the proximate end of said electrode and providing a positive electrical and stress-relieving connection between said sealed-in conductors and said electrode.

3,351,804
PROTECTIVE CIRCUIT FOR CATHODE RAY TUBES USING A SWITCH RESPONSIVE TO THE POWER SUPPLY TO CHANGE THE BIAS ON THE CATHODE RAY TUBE
Lowell S. Kongable, Prospect Heights, and Dennis C. Walstad, Franklin Park, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 9, 1964, Ser. No. 395,115
7 Claims. (Cl. 315—20)



1. A cathode ray tube circuit having energy storage means connected to the tube which produce undesirable beam current upon discharge thereof, including in combination, a bias circuit connected to the tube and having a first bias condition associated with reproduction of desired images by the tube and a second bias condition for increasing the beam current in the tube beyond the current associated with the first bias condition, a power supply circuit to supply energizing current for said circuit, and means operative in the absence of current from said power supply circuit for changing said bias circuit from said first condition to said second condition whereby the beam current in the tube is increased to rapidly discharge the energy storage means.

3,351,805
TUNABLE REFLEX KLYSTRON HAVING MEANS TO VARY THE SPACING BETWEEN THE FIRST AND SECOND GRIDS
Warren V. Hoxie, Elmira, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1963, Ser. No. 316,279
6 Claims. (Cl. 315—5.22)



1. A reflex klystron device comprising a U-shaped body member including a base portion and first and second leg portions, said first leg portion having an opening therein to provide a first thick wall envelope section,

a cathode and a first grid electrode secured within said opening of said first leg portion, said second leg portion having an opening therein to provide a second thick wall envelope section and aligned with said first opening, a repeller electrode and a second grid electrode secured within said second opening, a third envelope section connecting said first and second envelope sections and having a thin wall portion secured to said first and second leg members, and means mounted on said leg portions to apply force to said legs for distorting said thin wall portion and thereby vary the spacing between said first grid electrode and said second grid electrode.

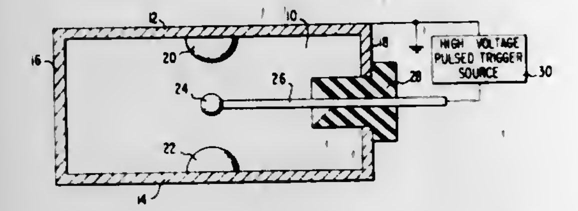
3,351,806

MICROWAVE SPARK-GAP SWITCH HAVING A TRIGGER ELECTRODE CENTERED BETWEEN AND ALIGNED WITH THE OPPOSED ELECTRODE

Herman Farber, Bellerose, and Max Sucher, Levittown, N.Y., assignors to Polytechnic Institute of Brooklyn, Brooklyn, N.Y., a corporation of New York

Filed May 21, 1965, Ser. No. 457,567

2 Claims. (Cl. 315—39)



1. A microwave spark-gap switch comprising:
(a) a uniconductor transmission line wave guide supportive of electromagnetic energy in a particular frequency range and having an ionizable gas therein;
(b) a pair of opposed electrodes mounted on and electrically connected to opposing walls of said wave guide;
(c) at least one trigger electrode also supported within said wave guide from another wall thereof, insulated therefrom and substantially centered between said pair of electrodes, all three electrodes lying substantially on a common axis;
(d) and a high energy source of pulsed D.C. voltage connected between said trigger electrode and said pair of electrodes.

3,351,807

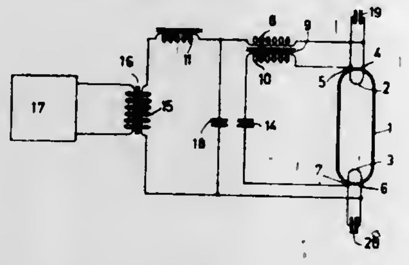
GAS DISCHARGE DEVICE HAVING THERMIONIC ELECTRODES ENERGIZED BY TRANSISTOR OSCILLATOR

Hubertus Mathias Jozef Chermin, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 24, 1965, Ser. No. 458,053

Claims priority, application Netherlands, May 30, 1964, 64—6,126

3 Claims. (Cl. 315—99)



1. An electric supply circuit comprising a gas discharge tube having a pair of spaced thermionic electrodes defining a discharge path therebetween, a D.C.-A.C. inverter comprising at least one controlled semiconductor element, a first capacitor connected in series with said tube electrodes and across the tube discharge path so as to complete the heating circuit of said electrodes, a resonant circuit coupling the output of said inverter to said tube electrodes so that said first capacitor forms a part of said resonant circuit, a pair of other capacitors each having a value of capacitance that is higher than the capacitance of said first capacitor, and means for connecting each of said other capacitors in shunt with an individual one of said tube electrodes, each of said other capacitors being chosen to have an impedance at the operating frequency of said inverter that is substantially higher than the impedance of the thermionic electrode in parallel therewith.

3,351,808

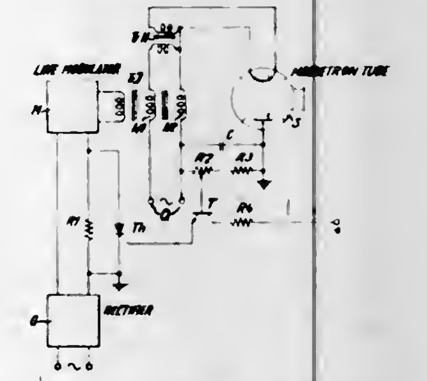
FEED CURRENT CONTROL FOR PULSE-MODULATED MAGNETRON TRANSMITTER

Armin Hürlimann, Schlieren, Zurich, Switzerland, assignor to Albiswerk Zurich A.G., Zurich, Switzerland

Filed Aug. 11, 1964, Ser. No. 388,816

Claims priority, application Switzerland, Aug. 28, 1963, 10,634/63

1 Claim. (Cl. 315—102)



A pulse-modulated magnetron transmitter comprising, in combination, a magnetron having an anode and a heated cathode; a heating circuit for said cathode; a pulse-modulator connected to said cathode to supply operating pulses to said magnetron; a D.C. voltage source; a supply circuit connecting said source to said modulator; a series resistance in said supply circuit to reduce the current supplied to said modulator during heating of said cathode; a semi-conductor thyratron connected in shunt with said series resistance; an adjustable voltage divider connected in the anode circuit of said magnetron to provide a voltage drop corresponding to the measured mean anode current of said magnetron; and a transistor having its input circuit connected to said adjustable voltage divider and its output circuit connected to said thyratron to supply a control current to said thyratron corresponding to the measured value of the mean anode current of said magnetron.

3,351,809

LAMP ENERGIZING SYSTEM

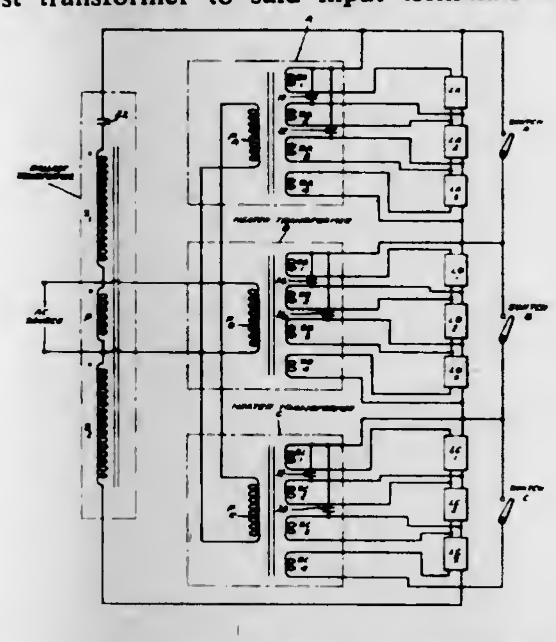
Franklin P. Eppert, Danville, Ill., assignor to General Electric Company, a corporation of New York

Filed Nov. 5, 1965, Ser. No. 506,562

4 Claims. (Cl. 315—185)

1. A system for individually energizing at least one set of a plurality of sets of gaseous discharge lamps having cathodes connected between input terminals to provide a series path therethrough, each of said sets comprising at least one lamp, said system comprising: a main ballast transformer having a magnetic core, a primary winding, and a secondary winding coupled to said magnetic core and connected in autotransformer relation between output terminals to produce an output voltage thereacross; a plurality of heater transformer means each having input terminals and a plurality of output

terminals; input leads for connection to a source of alternating current; means coupling said primary winding of said main ballast transformer across said input leads; means coupling said input terminals of said heater transformer means across said input leads; means respectively coupling the output terminals of each of said plurality of heater transformer means to cathodes of the lamps in a selected set; means coupling said output terminals of said ballast transformer to said input terminals of said serially connected sets of lamps for applying said output voltage thereto; a plurality of switching means each having an open position and a closed position respectively coupled across each of said sets of lamps and selectively activated to provide for energization and deenergization of individual sets of said plurality of sets of lamps so that said output voltage of said main ballast transformer is applied to the set of said lamps coupled to an open switching device.



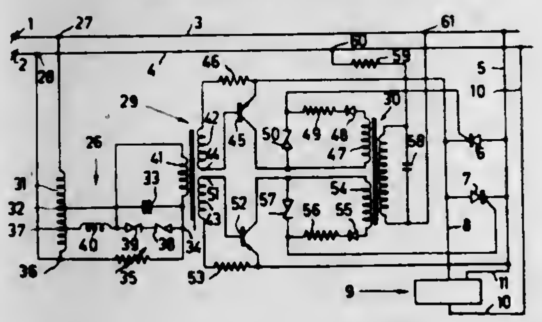
3,351,810

CONTROL CIRCUIT FOR REGULATING THE POWER SUPPLIED TO A NON-LINEAR LOAD FROM A SOURCE OF A.C. VOLTAGE

Jozef Cornelis Moerkens, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 1, 1965, Ser. No. 444,588

9 Claims. (Cl. 315—194)



1. A regulator circuit for coupling a source of AC voltage to a non-linear load including a reactance component, said circuit comprising first and second controlled rectifiers each of which includes first and second electrodes defining a current path therein and a control electrode for controlling the flow of current in said path, means connecting said controlled rectifiers in inverse-parallel relationship in series with said voltage source and said load, and a control circuit, said control circuit comprising input means adapted to be coupled to said A.C. voltage source, phase shifting means coupled to said input means for adjusting the firing angle of said controlled rectifiers, compensating means coupled to said phase shifting means and comprising a non-linear element having a constant voltage region in its I–V characteristic above a given voltage level connected in series with a reactance element of the same type as the load reactance, said compensating means being responsive to a variation in said A.C. voltage for deriving a control voltage across the terminals of said non-linear element which varies in phase relative to said A.C. voltage in a sense so as to control the conductive periods of said controlled rectifiers to maintain the power supplied to said load approximately constant despite said variation in the A.C. voltage, and output means coupled to the control electrodes of said first and second rectifiers for supplying said control voltage thereto.

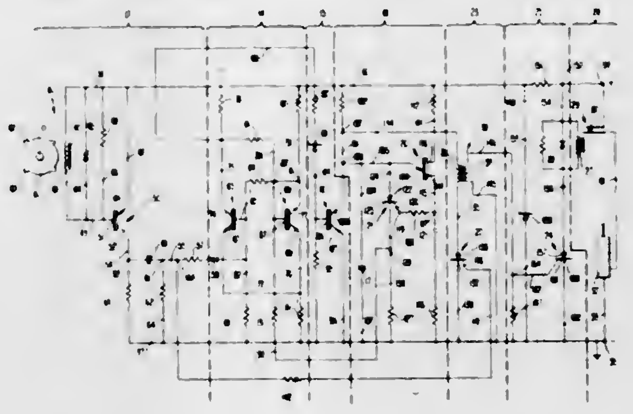
3,351,811

SPEED RESPONSIVE APPARATUS

Clayton G. Buckley, Unadilla, and David C. Brown, Sidney, N.Y., assignors to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware

Filed Jan. 15, 1962, Ser. No. 166,306

10 Claims. (Cl. 317—5)



1. Signal apparatus comprising a source of input signals having a variable interval between said signals, means responsive to said input signals for producing an electrical timing signal in response to each of said input signals, said timing signals being of substantially equal duration, and means responsive to a said timing signal and a said input signal to provide an output signal whenever the interval between two successive input signals of said source is a predetermined value less than the duration of said timing signal.

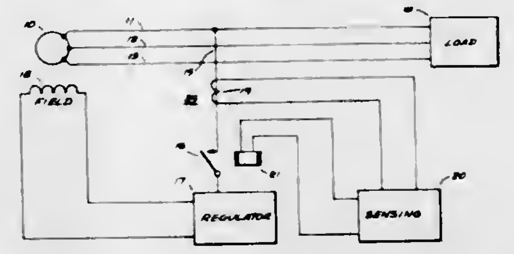
3,351,812

GENERATOR PROTECTIVE SYSTEMS

John H. Cutler and William A. Le Doux, Waynesboro, Va., assignors to General Electric Company, a corporation of New York

Filed Nov. 15, 1963, Ser. No. 323,992

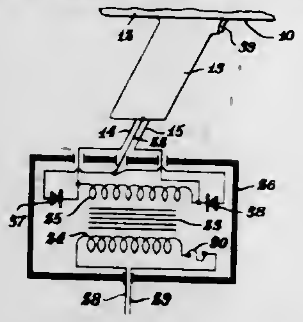
8 Claims. (Cl. 317—13)



1. In a protection system for a generator having a field energized under the control of a regulator, normally conducting switching means connecting the input of said regulator to the output of said generator, and means coupled to said switching means and responsive to detection of current being supplied to said regulator in excess of a predetermined amount to render said switching means nonconductive.

3,351,813
SAFETY CIRCUIT FOR ELECTRICAL APPARATUS

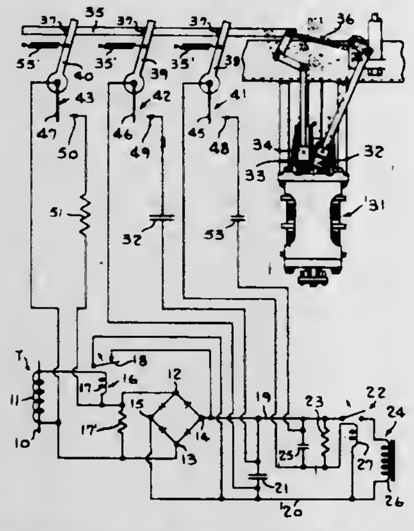
Charles M. Trout, 7120 N. Sheridan Road,
Chicago, Ill. 60626
Filed July 16, 1965, Ser. No. 472,420
9 Claims. (Cl. 317—18)



1. A safety circuit for use with electrical apparatus in which normally insulated power supply leads supply operating current from a power source through a current limiting device to a power translating device having an electrically conductive and normally ungrounded housing, and comprising, in combination, an electrically conductive and normally ungrounded housing element, a power translating device insulatingly mounted on said housing element and having terminal means thereon for the supply of operating current thereto, a plurality of normally insulated power supply line leads connected to said terminal means for conducting said operating current to the power translating device, semi-conductor devices each connected to one of said power supply line leads and to said housing element so as to be normally conductive in a direction from the housing element to the one of the power supply line leads to which it is connected, whereby an abnormal condition providing a flow of current from any one power supply line lead to said housing element will cause an abnormal current flow through the semi-conductor connected to another power supply lead than said one to disrupt the circuit at said current limiting device.

3,351,814
ELECTRONIC TIME DELAY DEVICES

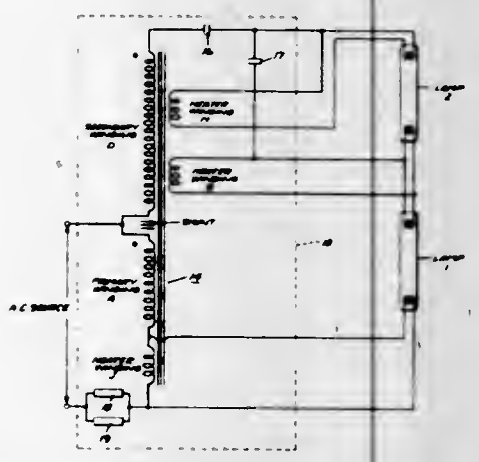
Richard E. Riebs, Hales Corners, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Original application Oct. 5, 1961, Ser. No. 143,094, now Patent No. 3,167,686, dated Jan. 26, 1965. Divided and this application Mar. 4, 1964, Ser. No. 349,347
The portion of the term of the patent subsequent to Jan. 26, 1982, has been disclaimed
13 Claims. (Cl. 317—36)



1. In combination: means adapted to be coupled to an electric current circuit for deriving therefrom a D.C. signal having a magnitude dependent upon the value of a characteristic electric quantity of the circuit; circuit means including two interconnected sections comprising, respectively, a resistance element and a reactance element comprising energy storage means disposed for energization under the control of said D.C. signal, wherein one of the sections comprising in parallel combination at least two elements of like kind, said energy storing means also including nonlinear impedance means connected in series circuit relationship therewith, the effective impedance of said nonlinear means being higher, whenever voltage across the resistance element is less than a predetermined magnitude, than when said voltage is greater than said predetermined magnitude; and means connected to said energy storing means for initiating a predetermined control function in response to the accumulation by said energy storing means of at least predetermined amount of energy.

3,351,815
BALLAST EMPLOYING PLURALITY OF TEMPERATURE SENSITIVE FUSES

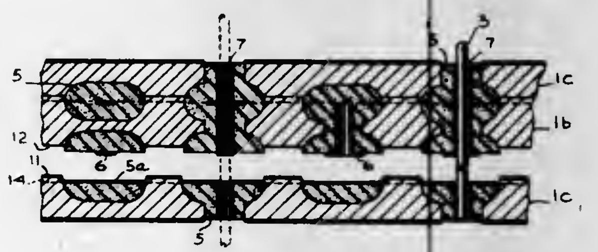
George L. Wolfert, Danville, Ill., assignor to General Electric Company, a corporation of New York
Filed July 9, 1965, Ser. No. 470,853
9 Claims. (Cl. 317—40)



1. In a fluorescent lamp ballast circuit having at least a primary winding and a secondary winding coupled to a magnetic core, said ballast being supplied with electrical power through input leads, the improvement comprising: a plurality of temperature sensitive fuses each having a structure that opens the electric circuit through said fuse in response to the ambient temperature of said fuse exceeding a predetermined magnitude; means connecting said fuses in parallel; means connecting said parallel connected fuses in series with one lead of said ballast circuit; and means positioning said fuses in said ballast case.

3,351,816
PLANAR COAXIAL CIRCUITRY

Brian E. Sear, Canoga Park, Los Angeles, Raymond A. Stephens, Thousand Oaks, and Robert C. Williams, Canoga Park, Los Angeles, Calif., assignors to The Bunker Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Feb. 4, 1965, Ser. No. 430,321
9 Claims. (Cl. 317—101)

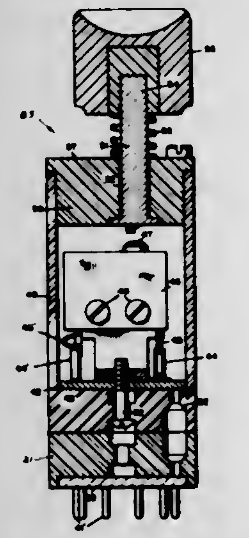


7. An electrical circuit structure including: first and second electrically interconnected conductive

plates supported in superposed relationship with first surfaces of said plates adjacent one another;
aligned and opposed recesses formed in said first surfaces of said first and second plates;
dielectric material disposed between said recesses; and
an electrical conductor supported by said dielectric material between said recesses and electrically insulated from said conductive plates.

3,351,817
CODE MODULES

Alex Wadolny, 2778 Lantern Lane, Audubon, Pa. 19407, and Robert Bratek, 7648 Brockton Road, Philadelphia, Pa. 19151
Filed May 27, 1966, Ser. No. 553,435
6 Claims. (Cl. 317—112)



1. A plug-in code module suitable for control circuit use either as a single control element or in keyboard arrays, the code module being operable for generating a coded electrical signal when actuated and being so constructed that the encoding circuit elements are completely encapsulated and quickly changeable to change the coded output signal as desired, comprising in combination,

(a) an upper encapsulating module including a base having an upper face and a lower face and circuit element receiving recesses therein extending from the upper face of the base to the lower face, the cross-sectional area of each recess being slightly larger than the cross-sectional area of the circuit element to be placed therein, each recess being fully open at its lower end to permit insertion of a circuit element into the recess, but being constricted at its upper end to prevent passage of the circuit element therethrough while still permitting passage therethrough of a circuit element conductive lead, and a contact assembly physically connected to and carried by the base at its upper face, said contact assembly having a friction-grip contact terminal disposed above the constricted open end of each said recess to which a circuit connection is desired, whereby, the conductive lead at one end of a circuit element which is placed into one of said recesses is projectable through the constricted open upper end of said recess and into frictionally gripped electrical connection with the contact terminal associated with that particular recess,

(b) a lower encapsulating module for retaining circuit elements within the said upper module and for providing circuit connection to an external circuit, said lower module including a base having an upper face and a lower face with apertures extending completely therebetween, said apertures being the same in number as the recesses in said upper module and being located to align with the open lower ends of the latter when the upper and lower modules are operatively assembled, said apertures being of sufficiently small cross-sectional area to prevent passage of a circuit element therethrough while permitting passage therethrough of a circuit element conductive lead, and a plug-in connector physically connected to and carried by the base at its lower face, said plug-in connector having friction-grip contact terminals aligned with each of said base apertures to which an external circuit connection is desired, whereby, a conductive lead at the end of a circuit element placed in a recess of said upper module is projectable through the aligned aperture of said lower module base and into frictionally gripped electrical connection with the associated contact terminal of said plug-in connector,

(c) a hollow housing physically engageable with said upper module and extending upward from the upper face thereof in enclosing relationship to said contact assembly,

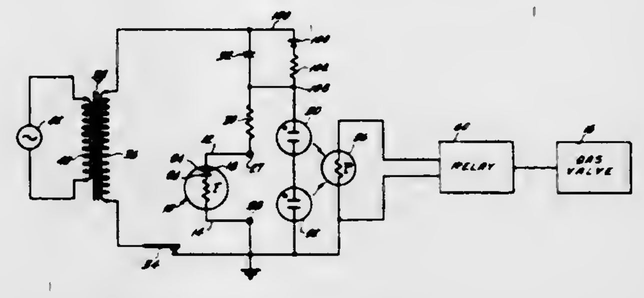
(d) an electrical signal generating device disposed within said hollow housing and having electrical contacts electrically connected to at least some of the contacts of said contact assembly,

(e) an actuator carried by and extending into said housing from the outside of the housing and operable to actuate said signal generating device to generate a coded electrical output signal at contact terminals of said plug-in connector, and

(f) quick-release securing means holding together said modules and housing, whereby, upon release of said securing means said upper and lower modules and hollow housing are immediately separable from one another for access to said signal generating device and to all of the circuit elements that are contained within said encapsulating modules.

3,351,818
A.C.-OPERABLE VOLTAGE THRESHOLD CIRCUITS

Robert J. Zielinski, Mayfield Heights, Ohio, assignor to American Gas Association, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 8, 1965, Ser. No. 424,316
7 Claims. (Cl. 317—124)



1. Electrical apparatus comprising:
a source of alternating input voltage;
capacitive means;
direct-current conductive means connected in series with said capacitive means across said source, said direct-current conductive means having a lower resistance for one polarity of said input voltage than for the other;
voltage breakdown means connected in parallel with said direct-current conductive means and responsive to voltage in excess of a predetermined firing voltage V_f applied thereto to change from a low-conduction state to a high-conduction state and to remain in said high-conduction state until said applied voltage falls to a predetermined extinction voltage V_x;

said input voltage having a zero-to-peak value V_{IN} less than said firing voltage V_f but greater than said extinction voltage V_x whereby said voltage breakdown means is changed from said low-conduction state to said high-conduction state in response to the combined effect of direct voltage developed across said capacitive means and a half-cycle of said input voltage of predetermined polarity; and

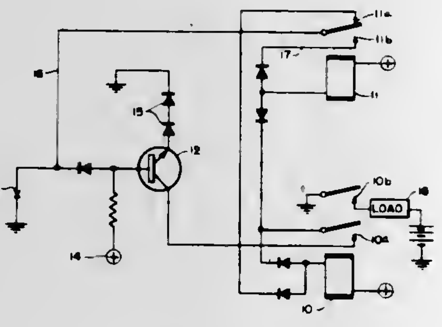
bypassing means connected across said capacitive means and in common series circuit with said source and said voltage breakdown means, said bypassing means being responsive to said change from said low-conduction state to said high-conduction state for effectively bypassing said capacitive means during at least a portion of the remainder of said half-cycle.

3,351,819
RELAY FLIP-FLOP CIRCUIT

Frank D. Biggam, Deerfield, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware

Filed Aug. 31, 1964, Ser. No. 393,177

4 Claims. (Cl. 317—140)



1. A relay flip-flop including:

first and second relays;

a source of pulses;

first means controlled by the second relay for applying a first pulse from the pulse source to the first relay to operate the first relay when the second relay is released;

a switch which closes upon termination of the first pulse for holding the first relay operated and for operating the second relay, the operation of the second relay disabling the first means; and

third means controlled by the second relay and an applied pulse from the pulse source for holding the second relay operated during receipt of a second pulse from the pulse source, the receipt of the second pulse opening the switch, the third means being disabled upon termination of the second pulse.

3,351,820
PULSE STRETCHER ELECTRIC CIRCUIT

Andrew Balint, Park Ridge, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Apr. 21, 1964, Ser. No. 361,499

6 Claims. (Cl. 317—148.5)

1. In combination with document handling apparatus having document-actuated switching means comprising normally open switch contacts and actuating means responsive to movement of sheet-like articles such as documents to develop short make-break time intervals, the improvement of:

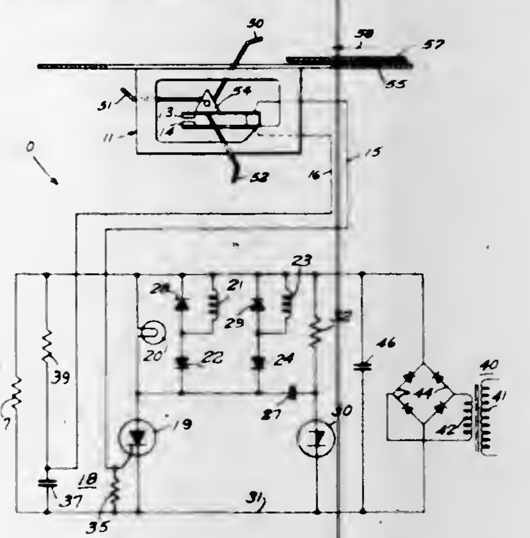
a pulse stretching circuit having a silicon controlled rectifier with a gate electrode and being responsive to pulses of short time duration to actuate an electromechanical device which could not be actuated by said pulses directly,

and an input circuit connecting said switching means to said pulse stretching circuit and more specifically comprising:

first and second resistors,

one of said resistors being connected between said gate electrode of said silicon controlled rectifier and a line,

one of said switch contacts being conductive and being connected to said gate electrode, and a capacitor having one terminal connected to the other of said switch contacts and to the other of said resistors and having the other terminal thereof connected to a line,



whereupon closure of said switch contacts said capacitor will discharge through said one of said resistors and the gate of said silicon controlled rectifier,

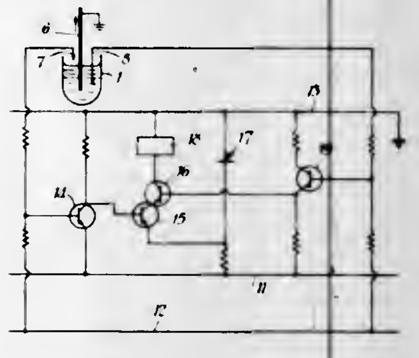
the charge time of the capacitor and the closure time of the contacts being such as to protect said contacts against arcing and producing only a single pulse for each closure of the contacts.

3,351,821
COUNTERS FOR COUNTING CELLS IN SUSPENSION AND CIRCUIT THEREFOR

John Harold Blackett, Croydon, Surrey, England, assignor to Vickers Instruments Limited, York, England, a British company

Filed Aug. 3, 1964, Ser. No. 386,825

4 Claims. (Cl. 317—148.5)



1. In a counter for counting cells in suspension which incorporates cell counting means, a sample volume measuring device including a container, means for supplying to or withdrawing from the container an electrically conductive cell suspension, first and second probes located in said container at predetermined upper and lower levels respectively, a third probe located in said container below said second probe and an electrical control circuit incorporating said probes, said circuit further incorporating a relay arranged upon energization to actuate the counting means and upon de-energization to interrupt operation of said counting means, first switching means to interrupt current through the relay whilst the liquid connects the first and third probes, and second switching means to interrupt current through the relay whilst the liquid level is below that of said second probe, whereby the relay is energized to actuate the cell counting means whilst the liquid level is changing from the level of one of the first and second probes to the other.

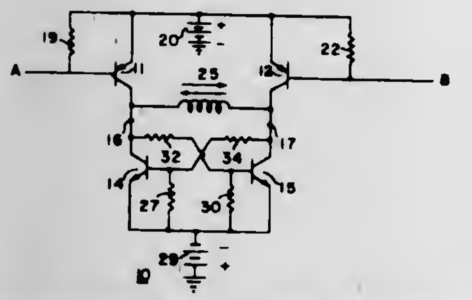
3,351,822
TRANSISTOR CIRCUIT FOR GENERATING PULSES IN ALTERNATE DIRECTIONS

Issei Imahashi, Nagano-ken, Japan, assignor to Kabushiki Kaisha Suwa Seikosha

Filed Apr. 29, 1965, Ser. No. 451,829

Claims priority, application Japan, Oct. 28, 1964, 39/61,002

10 Claims. (Cl. 317—148.5)



1. A system for providing current flow through a coil in alternate directions comprising,

a first and a second pair of transistors with each transistor having at least a base, an emitter and a collector,

the collector of a first transistor of said first pair being connected to the collector of a first transistor of said second pair at a first junction,

the collector of said second transistor of said first pair being connected to the collector of a second transistor of said second pair at a second junction,

input circuit means for normally maintaining nonconductive said first pair of transistors,

means including impedance means cross-connecting said second pair of transistors and connected to said first and second junctions for maintaining non-conductive said second pair of transistors when said first pair of transistors is non-conductive,

said coil being connected between said first and said second junctions, and

means connected to said input circuit means for applying input pulses alternately to said first and second transistors of said first pair to (1) turn on said first transistor of said first pair thereby to turn on said second transistor of said second pair to provide current flow through said coil in a first direction and (2) to turn on said second transistor of said first pair thereby to turn on said first transistor of said second pair to provide current flow through said coil in a second direction.

3,351,823
NON-AQUEOUS CAPACITOR ELECTROLYTE HAVING A SALT DISSOLVED IN A CO-SOLVENT

Alfred L. Jenny, Columbia, S.C., assignor to General Electric Company, a corporation of New York

Filed May 24, 1965, Ser. No. 458,246

5 Claims. (Cl. 317—230)

1. An electrolytic capacitor comprising:

(a) a plurality of spaced electrodes at least one of which is coated with a metallic oxide layer;

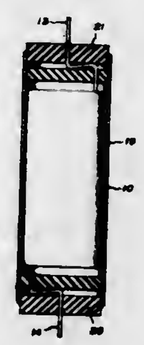
(b) and an electrolyte in contact with said electrodes;

(c) said electrolyte comprising a solvent including:

(1) 15.2% to 21.8% by weight of N-methyl pyrrolidone;

(2) 38.5% to 55.0% by weight of butyrolactone and;

(3) 21.9% to 46.2% by weight of a modifying agent selected from the group consisting essentially of dimethyl formamide, dimethyl acetamide, dimethyl propionamide, N-ethylacetamide, ethylene glycol, dimethyl sulfoxide, diethylcvanamide, and tributylamine;



(d) said electrolyte having a conducting salt dissolved therein from about 0.06% to 4.0% by weight, said salt including a cation and film-forming anion.

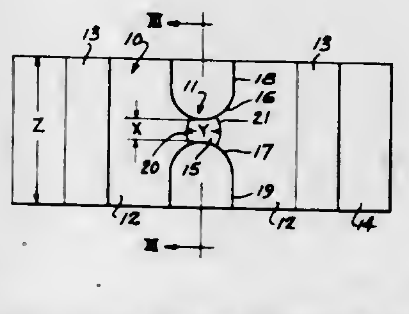
3,351,824
CONSTANT CURRENT DEVICE

Jacob J. H. Park, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed June 2, 1964, Ser. No. 371,902

Claims priority, application Canada, Apr. 28, 1964, 901,469

4 Claims. (Cl. 317—234)



1. A constant current device comprising an element of semi-conducting material having end portions and a neck portion narrower than said end portions and interconnecting said end portions, all said portions being doped to the same conductivity type, a central area extending across the neck portion, said central area being still of said same conductivity type, but less heavily doped than the remaining areas of the element, wherein each junction between the central area and the end areas extends in an arc, said arc being coincident with an equipotential line of an electric field upon application of a potential between the end portions of the element.

3,351,825
SEMICONDUCTOR DEVICE HAVING AN ANODIZED PROTECTIVE FILM THEREON AND METHOD OF MANUFACTURING SAME

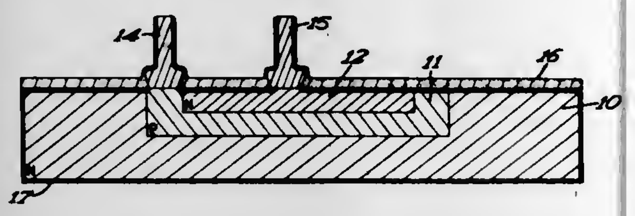
Robert O. Vidas, Richfield, Minn., assignor, by mesne assignments, to Solitron Devices, Inc., a corporation of New York

Filed Dec. 21, 1964, Ser. No. 419,778

5 Claims. (Cl. 317—234)

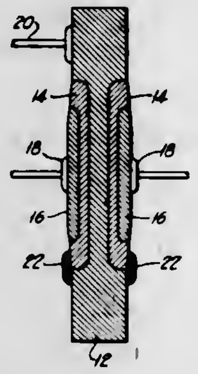
3. A semiconductor device comprising a body of silicon of a first conductivity type having at least one region of opposite conductivity type diffused into and beneath a

first surface thereof defining a PN junction extending to the surface thereof, electrodes in ohmic contact to said body and said regions, a layer of anodically grown silicon oxide covering at least the region of said surface where



said PN junction reaches the surface, and a second anodically grown oxide of aluminum in contiguous engagement with said silicon oxide and in covering relationship thereto.

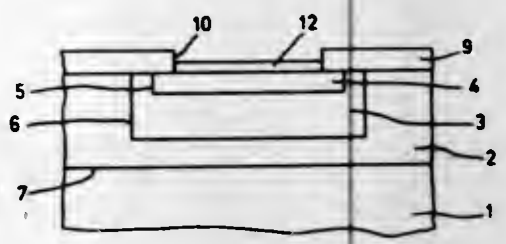
3,351,826
FIVE-REGION, THREE ELECTRODE, SYMMETRICAL SEMICONDUCTOR DEVICE, WITH RESISTIVE MEANS CONNECTING CERTAIN REGIONS
Leroy N. Hermann, 707 Mossdale St.,
St. Charles, Ill. 60174
Filed Feb. 5, 1963, Ser. No. 256,368
5 Claims. (Cl. 317—235)



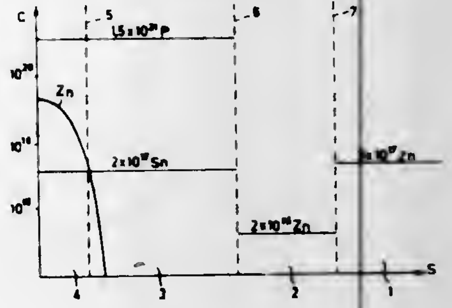
3. A symmetrical five layer controlled conduction device comprising a base layer of one conductivity type, a region of an opposite conductivity type on each of the opposite major faces of the base layer, a region of the one conductivity type in each of the regions of the opposite conductivity type, electrode means connected to each of the regions of the one conductivity type, means providing an ohmic contact to the base layer, and a pair of resistive means connected between the base layer and different ones of the adjacent regions of the opposite conductivity type.

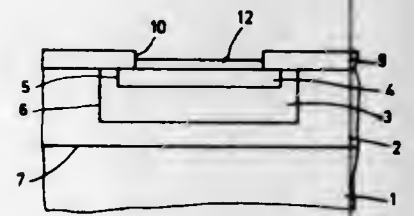
3,351,827
OPTO-ELECTRONIC SEMICONDUCTOR WITH IMPROVED EMITTER-REGION
Peter Colin Newman, Crawley, Sussex, England, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 13, 1965, Ser. No. 479,402
Claims priority, application Great Britain, Aug. 19, 1964, 33,878/64
6 Claims. (Cl. 317—235)

1. An opto-electronic transistor formed of a monocrystalline semiconductive material, said transistor having a base region of one conductivity type, an emitter region of the other conductivity type forming with said base region a charge carrier-to-photon conversion p-n junction for emitting photons into said base region, and a collector region of the other conductivity type forming a photon-to-charge carrier conversion p-n junction with said base region for collecting photons from said base region, said p-n junctions being spaced apart by at least one diffusion length for charge carriers, and said emitter region having major conductivity type determining impurities in a progressively increasing concentration from the surface thereof to an area located at a depth less than the depth of said emitter-base junction.



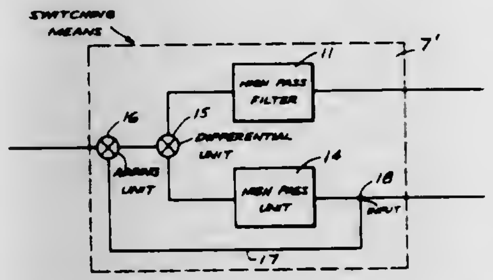
3,351,828
OPTO-ELECTRONIC SEMICONDUCTOR DEVICE
Julian Robert Anthony Beale, Reigate, Surrey, and Andrew Francis Beer and Peter Colin Newman, Crawley, Sussex, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 13, 1965, Ser. No. 479,412
Claims priority, application Great Britain, Aug. 19, 1964, 33,875/64
10 Claims. (Cl. 317—235)





1. An opto-electronic device comprising a semiconductor body having photon-emitting and photon-collecting, spaced, p-n junctions, said photon-emitting junction being operable when biased in the forward direction to emit photons with a quantum efficiency greater than 0.1, means for biasing said photon-emitting junction in the forward direction to cause the emission of photons toward the photon-collecting junction, and means for biasing said photon-collecting junction in the reverse direction to establish in a body portion adjacent the photon-collecting junction a depletion field for collecting charge carriers generated upon absorption within the body of the emitted photons, the spacing between the photon-emitting and photon-collecting junctions being at least one diffusion length at operating temperature for charge carriers injected by the photon-emitting junction into the semiconductor body regions lying intermediate the junctions, said photon-emitting junction lying adjacent a plane surface of the semiconductor body and extending only to said surface, said photon-collecting junction completely surrounding the photon-emitting junction in the bulk and extending only to the same said surface of the semiconductor body, thereby improving the efficiency of collection of the emitted photons.

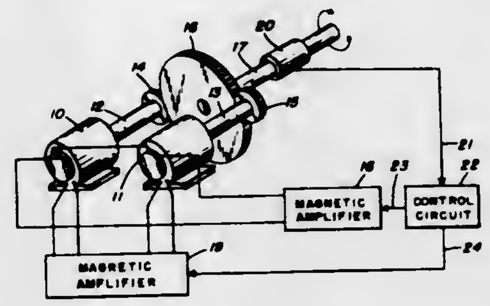
3,351,829
STABILIZING DEVICE FOR A CONTROL SYSTEM
Birger Arthur Emil Qvarnström, Gothenburg, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden
Filed Jan. 30, 1964, Ser. No. 341,344
3 Claims. (Cl. 318—18)



1. A stabilizing device for a control system operating with electrical signals comprising:
- at least one signal-transmitting component having an input side and an output side and capable of exhibiting within a limited frequency range mechanical instability phenomena tending adversely to affect the stability of the system;
- signal-transmitting analog means having the same signal-transmitting characteristics but being free of said phenomena throughout the entire operating range of the system;
- signal-transmitting switching means comprising a filter network passing signals only within said limited frequency range including at least two high-pass filters each having an input side and an output side, a differential unit having an input and an output, and an adding unit having two inputs and one output, the outputs of said filters being connected to the input of said differential unit, the output of said differential unit being connected to one input of said adding unit, the other input of said adding unit being connected to the input side of one of said filters, the portion of the switching means between the input side of said one filter and the output of said adding unit constituting part of a resetting device for the control of the system;
- means for connecting the input side on said one filter to the output side of said component;
- means for connecting the input side of said other filter to the output side of said analog means; and
- means for connecting the output of said adding unit to the input side of said component.

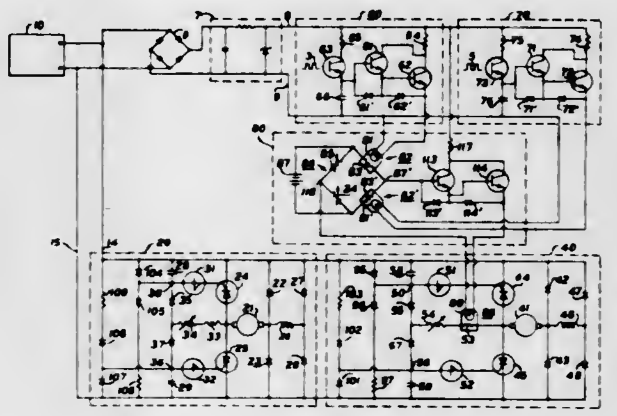
3,351,830
SERVO SYSTEM INCLUDING ARMATURE AND FIELD CONTROL OF PLURAL MOTORS CONNECTED IN TORQUE OPPOSITION
George C. Samson, St. James, and John Endlich, Great Neck, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 26, 1965, Ser. No. 435,760
4 Claims. (Cl. 318—48)

1. A servo system for controlling output torque comprising:
- a first motor developing torque in one direction;
- a second motor developing torque in another direction;
- means for measuring the composite rotational output of the two motors and generating an error signal indicative of this movement;
- circuit control means activated in response to the error signal;
- first amplifier means for applying part of the output of the control means through the armatures of the first and second motors; and
- a second amplifier means for applying another part of the output of the control means to the field of the first



and second motors, whereby the motors will develop torque in excess of their rated values for short intervals of time.

3,351,831
MOTOR SPEED CONTROL UTILIZING LIGHT SENSITIVE CONDUCTIVE AND RESISTIVE ELEMENTS
Kent W. Hemphill, Rochester, and Joseph P. Donnolo, Ontario, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 28, 1964, Ser. No. 421,296
8 Claims. (Cl. 318—77)

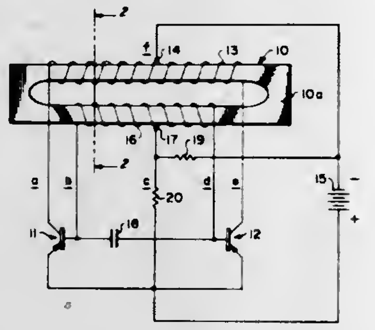


1. A motor speed control system comprising:
- a master motor,
- at least one direct current shunt wound electric motor,
- reference speed signal producing means adapted to continuously produce electrical signals corresponding to the shaft rotational speed of said master motor; and,
- a branch for each direct current motor comprising
  - control means for connecting the direct current motor to a power supply, said control means including a light sensitive variable resistor for controlling current flow through the armature of the direct current motor,
  - speed signal means adapted to continuously produce electrical signals corresponding to the shaft rotational speed of the direct current motor,
  - means adapted to receive the electrical signals from the aforesaid speed signal means and from said reference speed signal producing means and produce therefrom an error signal corresponding to the deviation from a predetermined speed relationship for the direct current motor and said master motor, and,
  - means to apply said error signal to said light sensitive variable resistor to change the current flow through said armature to achieve said predetermined spaced relationship.

3,351,832

ARTICLE OF MANUFACTURE AND APPARATUS FOR PRODUCING ULTRASONIC POWER

Richard B. Houghton, Culver City, and Steven A. Bell, Santa Monica, Calif., assignors to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed Feb. 1, 1967, Ser. No. 635,629
6 Claims. (Cl. 318—118)

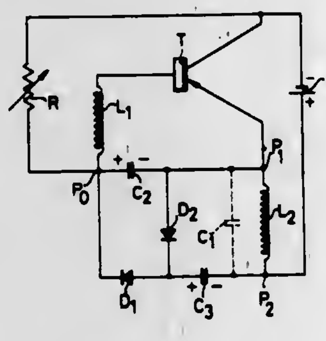


6. A circuit for producing ultrasonic vibrations when a suitable voltage source is connected between the input terminals thereof, said circuit comprising: a magnetostrictive core; a substantially uniformly thick epoxy-resin coating .020 to .050 inch thick shrunk over said core which exerts a compressive force on the core; first and second center-tapped windings respectively constituting primary and secondary windings wound on said core over the cured epoxy-resin coating, the center-tap of said primary winding being connected to one of the input terminals; a pair of transistors, each of them having first, second and third elements, said first elements being connected to the other of the input terminals, said second elements respectively being connected to the ends of said secondary winding, and said third elements respectively being connected to the ends of said primary winding; means coupled to the center-tap of said secondary winding for applying a substantially equal voltage bias to said transistors; and a capacitor connected between the ends of said secondary winding, the capacitance of said capacitor being of such value that said capacitor will resonate with said secondary winding at substantially the frequency of vibration of said magnetostrictive transducer.

3,351,833

COMPENSATED TRANSISTORIZED ELECTRIC CLOCK CIRCUIT

Erich Gerum, Rothenbach (Pegnitz), Germany, assignor to Diehl, Nurnberg, Germany
Filed May 31, 1966, Ser. No. 554,164
Claims priority, application Germany, June 29, 1962, D 39,257
6 Claims. (Cl. 318—132)

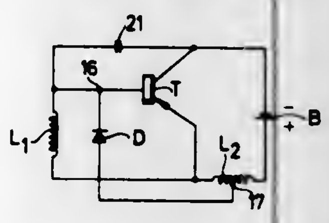


1. A transistorized circuit for a mechanism having a moveable member, especially for an electric clockwork, which comprises: a transistor having a base, an emitter, and a collector; a direct current source which tends to decrease in voltage over a period of time; a working coil; said direct current source and said working coil being arranged in series between said collector and said emitter with said source adjacent said collector and said working coil adjacent said emitter; said working coil being operable when supplied with current impulses from said source to impart driving impulses on said moveable member; a control coil having one end connected to said base and means connecting the other end of said control coil to said emitter, movement of said member being operable to supply controlling voltage pulses to said base to thereby control the conductivity of said transistor and the supply of current pulses to said working coil; said means connecting the other end of said control coil to said emitter comprising voltage dependant diode means connected between said other end of said control coil and one end of said working coil and poled in a direction to supply a bias to said other end of said control coil during the off period of said transistor which is opposite to that which will open the transistor, said diode means being conductive at a minimum voltage greater than the lowest voltage to which said source drops over a period of time but less than the maximum voltage of said source, and condenser means connected in parallel relation with said diode means and at least one condenser having one side connected to the other end of said working coil.

3,351,834

COMPENSATED TRANSISTORIZED ELECTRIC CLOCK CIRCUIT

Erich Gerum, Rothenbach (Pegnitz), Germany, assignor to Diehl, Nurnberg, Germany
Filed May 31, 1966, Ser. No. 554,165
Claims priority, application Germany, July 9, 1962, D 39,870
8 Claims. (Cl. 318—132)

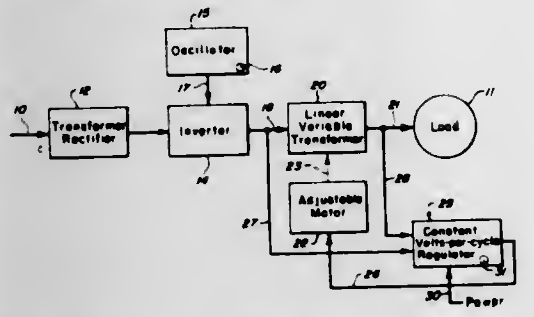


1. A transistorized circuit for a mechanism having a movable member, especially for an electric clockwork, which comprises: a transistor having a base, an emitter, and a collector; a source of direct current in which the voltage declines over the life of the source; impedance means including a working coil; said direct current source and said impedance means being arranged in series between said collector and said emitter with at least a portion of the impedance being between the said source and the said emitter; said working coil being operable when supplied with current impulses from said source to impart driving impulses on said movable member; a control coil connected between said base and said emitter and operable in response to a movement of said member to supply controlling voltage pulses to said base to thereby control the conductivity of said transistor and the supply of current pulses to said working coil; and a diode which is nonconductive below a predetermined voltage less than the algebraic sum of the maximum voltage of said source and the voltage of the control pulses supplied to said base by said control coil; said diode being connected between said base and a point on said portion of impedance means which is spaced from said emitter; said diode being poled so as to be operable, when the voltage of said direct current source is above a predetermined minimum value, to supply a voltage from said source to said base at least during the period that a control pulse is supplied to said base by said control coil opposite in polarity to that of the control pulse supplied by said control coil.

3,351,835

CONSTANT VOLTS-PER-CYCLE ENERGIZING SYSTEM IN WHICH THE FREQUENCY OF THE ENERGY IS FIRST ADJUSTED AND THEREAFTER THE AMPLITUDE OF THE ENERGY IS REGULATED TO MAINTAIN A PRESET VOLTS-PER-CYCLE RATIO

Jay R. Borden, Santa Ana, Kurt Gasser, Orange, and Stanley Krauthamer, Monterey Park, Calif., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 10, 1964, Ser. No. 374,065
13 Claims. (Cl. 318—227)



1. A control system for regulating the volts-per-cycle ratio of energy passed from an alternating energy supply to an electrical load, comprising

a transformer rectifier for receiving the alternating energy and providing a substantially constant DC output voltage,

an inverter coupled to said transformer rectifier for energization by said substantially constant DC output voltage from the transformer rectifier to produce an alternating output voltage,

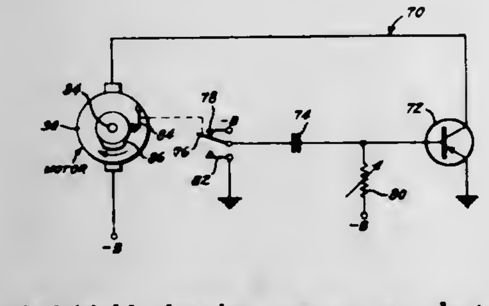
frequency regulating means coupled to said inverter for governing the rate of alternation of its output voltage, and

variable transformer means, coupled between said inverter and the electrical load, for providing a variation in the output voltage level of the transformer, to supply the load with energy of a substantially constant volts-per-cycle ratio.

3,351,836

WINDSHIELD WIPER SYSTEM WITH INTERMITTENT OPERATION

Robert W. Kearns, Detroit, Mich., assignor, by mesne assignments, to Tann Company, Detroit, Mich., a partnership of Michigan
Filed Dec. 1, 1964, Ser. No. 414,973
19 Claims. (Cl. 318—443)

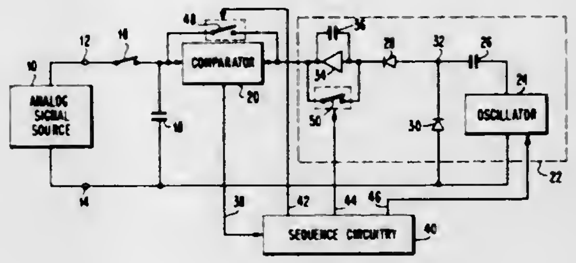


1. In a windshield cleaning system, an electric windshield wiper motor unit for driving wiper means through repeating wiping cycles, and control means for automatically deenergizing said motor near the end of each wiping cycle for a predetermined dwell period, said control means comprising transistor means for de-energizing the motor when the transistor means is turned off and energizing the motor when the transistor means is turned on, capacitive timing means to determine said predetermined dwell period, and switch means responsive to the position of said motor unit for conditioning said capacitive timing means to bias said transistor means off for said predetermined dwell period near the end of each of said wiping cycles.

3,351,837

ANALOG SAMPLE AND HOLD CIRCUIT

Charles Edward Owen, Chandlers Ford, England, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 3, 1966, Ser. No. 583,917
Claims priority, application Great Britain, Oct. 6, 1965, 42,492/65
5 Claims. (Cl. 320—1)



1. Circuitry for sampling and holding an electrical potential corresponding to an analog input signal value comprising in combination:

electrical potential storage means for receiving and storing said electrical potential;

signal generating means for generating an incremental voltage signal comprising a cyclically recurring rising staircase voltage having a series of voltage levels;

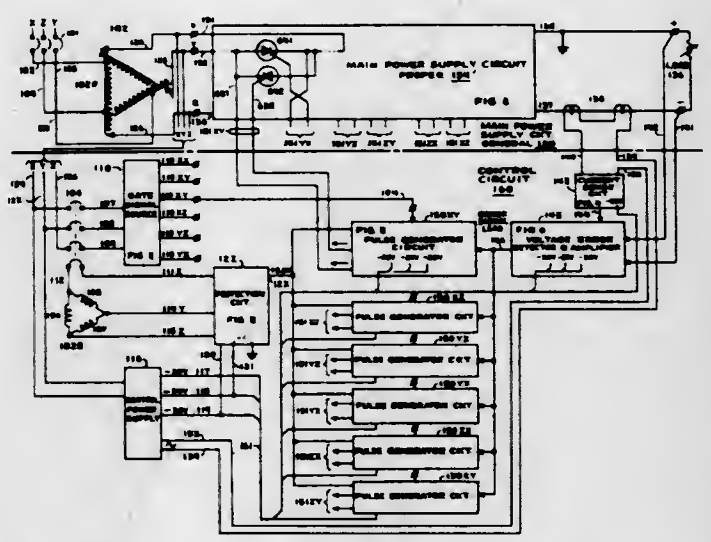
comparing means for comparing said electrical potential on said electrical potential storage means to said voltage signal at each increment of said voltage signal; and

means responsive to said comparing means for cyclically recharging said electrical potential storage means to one of said voltage levels with said incremental voltage signal when said incremental voltage signal equals or first exceeds said electrical potential.

3,351,838

AUTOMATIC BATTERY CHARGER USING RAMP FUNCTION FOR ERROR SIGNAL REFERENCE IN SCR CONTROL OF MULTIPHRASE LOAD

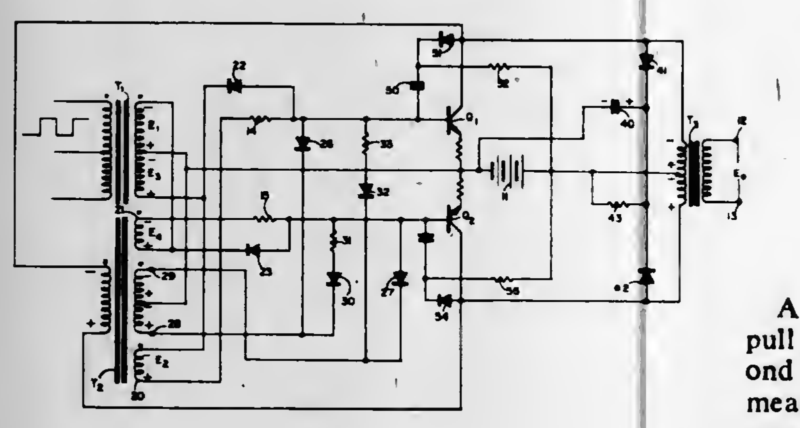
Patrick L. Hunter, Worthington, Ohio, assignor to North Electric Company, Galion, Ohio, a corporation of Ohio
Filed Nov. 9, 1964, Ser. No. 409,855
21 Claims. (Cl. 321—5)



1. A control circuit for controlling the supply of power to a load from a source which provides a multi-phase current, a plurality of switching means connected be-

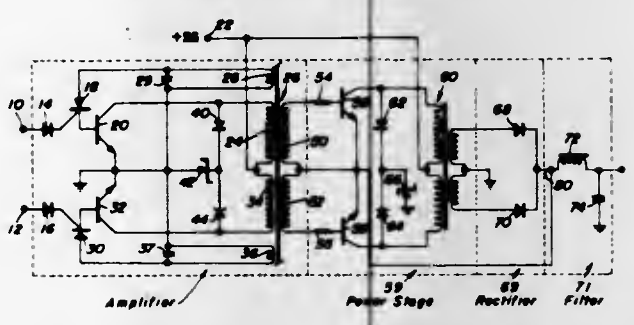
tween said source and said load, error detector means connected to said load to sense the average value of a predetermined load characteristic including means for producing an error signal which varies with the amount of deviation of said characteristic of the power to the load from a predetermined value, gate signal source means connected to said source including means for providing a signal at least once in each cycle of each phase and a plurality of output circuits including at least one circuit for each of the different output signals, pulse generator means including at lease one pulse generator circuit for each phase, each having one input circuit connected to the output of said error detector means, and a second input connected to an output circuit of said gate signal source, the second input of different pulse generator circuits being connected to different ones of said gate signal source output circuits, and waveform generator means in said pulse generator means for generating a ramp waveform responsive to receipt of said signal over said second input, and comparer means for comparing said ramp waveform with the signal received over said first input circuit, and means for generating an output pulse controlled by said comparer means responsive to a predetermined relationship between said error signal and said ramp waveform and means connecting said output pulse output of each pulse generator to control an associated one of said switching means.

3,351,839
TRANSISTORIZED DRIVEN POWER INVERTER UTILIZING BASE VOLTAGE CLAMPING
Leo J. Johnson, Santa Ana, Calif., and Donald A. Melton, Livonia, Mich., assignors to North American Aviation, Inc.
Filed Dec. 23, 1964, Ser. No. 420,587
8 Claims. (Cl. 321—45)



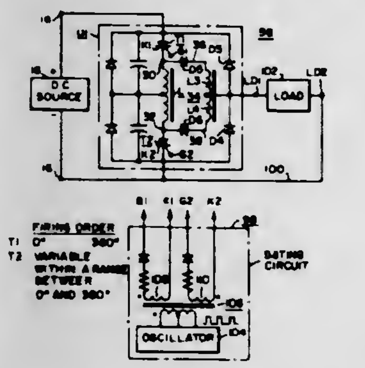
5. A driven inverter comprising
a pair of transistors, each having collector, emitter and base electrodes,
an output transformer having a center tapped primary winding and a secondary winding,
means for connecting a source of direct current in series with the emitter-collector circuit of one said transistor and one side of said center tapped primary winding, and in series with the emitter-collector circuit of the other of said transistors and the other side of said center tapped primary winding,
an input transformer having a center tapped secondary winding, the number of turns of each half of said center tapped secondary winding being selected to provide approximately half the forward drive voltage required across the base-emitter circuit of said transistors to drive them into saturation in response to a square wave input signal applied to a primary winding thereof,
an auxiliary transformer having a primary winding and at least two secondary windings of equal turns,
means for connecting one of said secondary windings of said auxiliary transformer in series with one half of said center tapped secondary winding and the base-emitter circuit of one of said transistors, the number of turns and sense of said secondary winding being selected to provide approximately half the forward drive voltage required across the base-emitter circuit of the one of said transistors to cause it to conduct at saturation when it conducts collector current,
means for connecting the other of said secondary windings of said auxiliary transformer in series with the other half of said center tapped secondary winding and the base-emitter circuit of the other one of said transistors, the number of turns and sense of said secondary winding being selected to provide approximately half the forward drive voltage required across the base-emitter circuit of the other of said transistors to cause it to conduct at saturation when it conducts collector current, and
a pair of diodes, each being connected in parallel with respective ones of said two secondary windings of said auxiliary transformer, and each being connected in a direction for forward current conduction in a direction opposite the forward current conduction of the base-emitter junction of its associated transistor.

3,351,840
DUTY CYCLE REGULATED POWER SUPPLY
Lawrence E. Yearley, Vista, Calif., assignor to General Precision, Inc., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,564
1 Claim. (Cl. 321—45)



A regulated electrical power supply including a push-pull amplifier comprising a first input path and a second input path each having unidirectionally conducting means interposed therein and adapted to receive and pass alternately interlaced electrical signals of a predetermined polarity, first and second silicon controlled rectifiers each having an anode, a cathode, and a control element connected to said unidirectional devices and alternately enabled by said interlaced pulses, first and second transistors each having an emitter, a collector and a base, a saturable core transformer having a center tapped primary winding and respective ends of said primary winding connected to collector electrodes of said transistors, the emitter electrodes of said transistors being connected to ground and the bases of said transistors being connected to respective cathodes of said silicon controlled rectifiers, said transformer having a pair of feedback windings each having one end grounded and the other ends of said feedback windings being connected to respective anodes of said silicon controlled rectifiers, a further pair of unidirectional devices having anodes connected to respective collectors of said transistors and cathodes connected together, a zener type diode having a cathode connected to the cathodes of said further pair of unidirectional devices and an anode connected to ground, said transformer having a secondary winding coupled to push-pull power amplifier means, rectifier and filter means coupled to said power amplifier means.

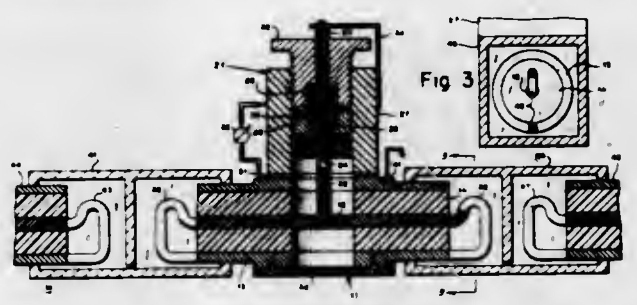
3,351,841
CURRENT CONVERTER WITH DECOUPLING NETWORK FOR ISOLATING LOAD FROM COMMUTATION CIRCUIT ELEMENTS
Kenneth Lipman, Tonawanda, and Eugene R. Pledger, West Seneca, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 16, 1965, Ser. No. 472,622
6 Claims. (Cl. 321—45)



2. In a current converter: a DC input circuit having first and second DC input terminals; first and second output terminals for connection to a load; first and second controlled electric valves, each having respective inlet, outlet and control electrodes, and an internal main current path extending between said inlet and outlet electrodes, said valves being of the type which block in both directions until a firing signal is applied to the control electrode while the valve is forwardly biased at which time the valve is rendered conductive in the forward direction until a reverse bias is applied across the valve; a first circuit connected across said DC terminals and including in series in the order named said first valve, a first junction, first winding means, a second junction, second winding means, a third junction and said second valve, said first and second winding means being inductively coupled, said valves being poled in the same direction relative to said DC terminals; a second circuit connected across said DC terminals and including in series in the order named a first commutation capacitor, said second junction and a second commutation capacitor; a first asymmetric circuit connected across said first junction and said first output terminal, and poled in the same direction as said first valve relative to said first output terminal; a second asymmetric circuit connected across said third junction and said first output terminal; said first and second asymmetric circuits being poled in the same direction as said valves relative to said DC terminals; said first and second asymmetric circuits forming a shunt circuit across said first and second winding means, said shunt circuit having sufficient impedance therein to prevent short circuiting of commutation energy developed across said first and second winding means; return current path means coupling said second output terminal to said DC input circuit, said return current path means being operable when a load is connected to said output terminals to provide a return path cooperating with at least one of said valves during at least a portion of the conductive period of said at least one valve to transmit power to said load; and means for supplying control signals to the control electrodes of said valves in a predetermined order.

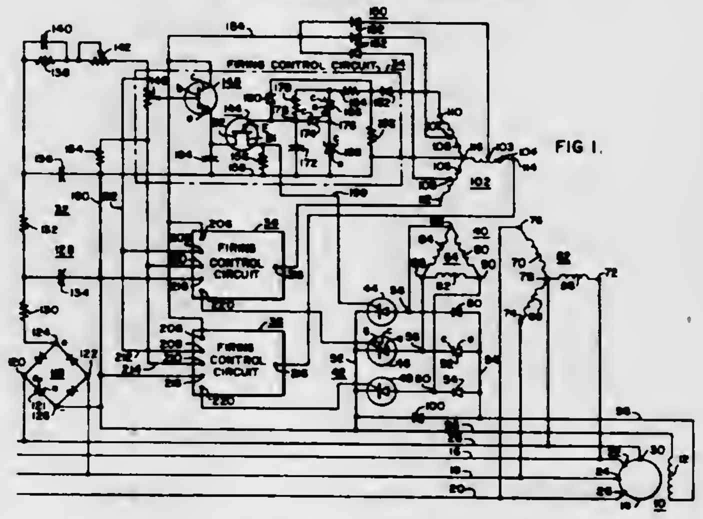
3,351,842
COAXIAL DIODE CARTRIDGE
Orest J. Hanas, Philadelphia, Pa., and Raymond D. Alaburda, Somerdale, N.J., assignors, by mesne assignments, to the United States of America as represented by Secretary of the Navy
Filed Dec. 23, 1964, Ser. No. 420,841
24 Claims. (Cl. 321—69)

2. A coaxial diode cartridge comprising:
a coaxial line having a center conductor and a conductive outer sheath coaxial therewith and separated therefrom;
a cross conductor connected at one end to said center conductor between its ends;
a diode in said cross conductor between its ends;
connecting means to connect said cross conductor to said sheath at a point on said cross conductor beyond said diode from said center conductor;
an input loop rotatably attached to said center conductor at one end thereof and connected slidably to said outer sheath, the distance from the geometric center of the input loop along the center conductor and up the cross conductor to the junction of said diode being one-quarter of the wavelength of an input frequency;



an output loop rotatably attached to said center conductor at the other end thereof and connected slidably to said outer sheath, the distance from the junction of said diode down the cross conductor along the center conductor to the geometric center of said output loop being one-quarter the wavelength of an output frequency; said output frequency being an integral multiple of said input frequency; and
an input resonant cavity and an output resonant cavity each being connected to said coaxial line and each containing a respective one of said loops and being slidable with respect thereto.

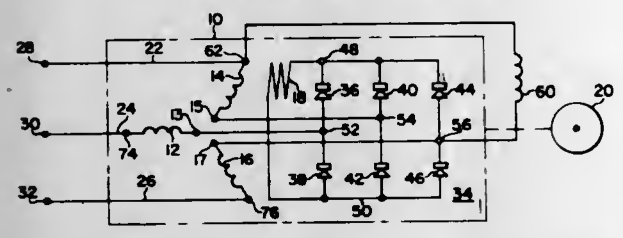
3,351,843
ELECTRICAL APPARATUS
Lynn L. Tipton, American Township, Lima County, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 14, 1964, Ser. No. 396,122
9 Claims. (Cl. 322—28)



1. A regulating system for a dynamoelectric machine having output terminals and an excitation field winding comprising, first means connected in circuit relation with said output terminals producing a first signal proportional to the output voltage of said dynamoelectric machine, second means connected in circuit relation with said output terminals producing a second signal having a predetermined slope, third means having first, second and third terminals and the characteristic of blocking current flow from the third to the first terminal until the voltage ap-

plied to the third terminal exceeds the product of the voltage applied across the first and second terminals and a constant, said first signal being applied across the first and second terminals of said third means, said second signal being applied to the third terminal of said third means, fourth means connected in circuit relation with said third means producing a third signal when said second signal exceeds the product of said first signal and said constant, and fifth means connected in circuit relation with said fourth means and said field winding providing a unidirectional excitation potential for said field winding in response to said third signal to maintain the output voltage of said dynamoelectric machine at a predetermined magnitude.

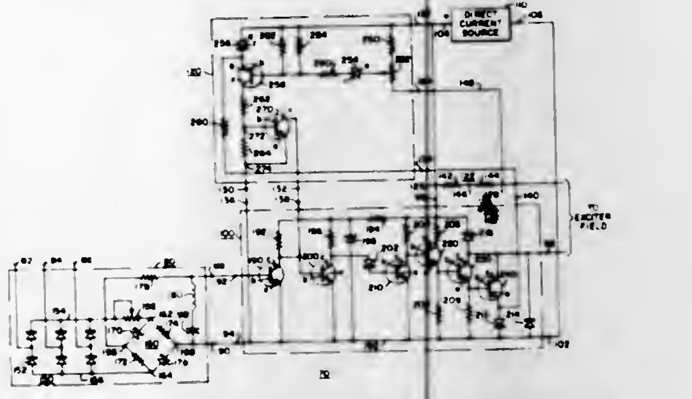
3,351,844
GENERATOR WITH CONSTANT FREQUENCY TO VOLTAGE RATIO OUTPUT
Walter E. Wier, Lima, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 6, 1964, Ser. No. 349,867
4 Claims. (Cl. 322—79)



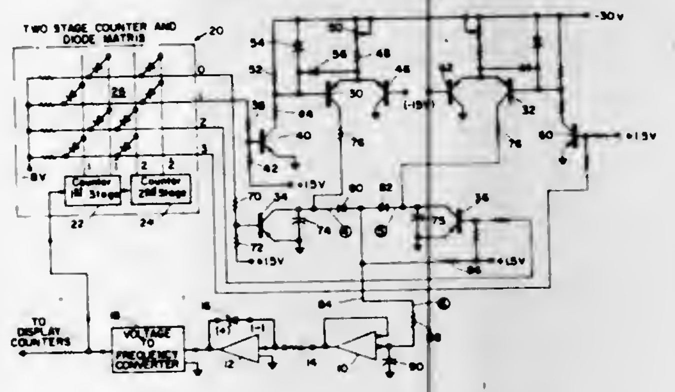
1. An electric circuit comprising an alternating current generator having a field winding and output terminals, said alternating current generator having a plurality of phase windings each having an output end and a neutral end, the output end of said plurality of phase windings being connected to the output terminals of said alternating current generator, rectifier means having input terminals and output terminals, the neutral ends of said plurality of phase windings being connected to the input terminals of said rectifier means, the output terminals of said rectifier means being connected in circuit relation with the field winding of said alternating current generator, reactor means, said reactor means having one end thereof connected in circuit relation with one of the output ends of said plurality of phase windings, and its other end connected in circuit relation with one of the input terminals of said rectifier means other than the input terminal to which its associated phase winding is connected, said rectifier means and said reactor means providing field excitation current for said field winding, with said rectifier means providing field current responsive to the magnitude of the load on said alternating current generator when said output terminals are connected to a load circuit, and said reactor means providing a constant field current, enabling said alternating current generator to provide an output at said output terminals having a substantially constant voltage to frequency ratio from no-load to full-load.

3,351,845
EXCITATION SYSTEM FOR A DYNAMO-ELECTRIC MACHINE
James L. Roof, Fort Shawnee, and Larry L. Hire, Lima, Ohio, assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 16, 1964, Ser. No. 383,037
8 Claims. (Cl. 322—87)

1. An excitation current limiting system for a dynamoelectric machine having a field winding whose excitation current from a source of potential is controlled by a switching type regulator, comprising first means connected in circuit relation with said field winding, said regulator and said source of potential, producing a voltage drop responsive to the magnitude of the excitation current flowing through said field winding; said dynamoelectric machine inducing a ripple component into the current flowing through said field winding which appears in the voltage drop across said first means; second means connected in circuit relation with said first means responsive to the voltage drop across said first means; said second means being switchable from a non-conductive state to a conductive state in response to a signal of predetermined magnitude; said second means switching at the frequency of said ripple component when the excitation current produces a voltage drop across said first means having a predetermined magnitude; said second means being connected in circuit relation with said regulator; said regulator being responsive to the switching of said second means, with said regulator switching the source of potential at the frequency of said ripple component to maintain the excitation current at a predetermined magnitude.

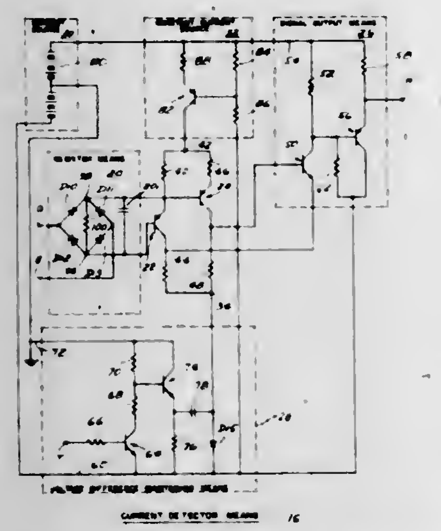


3,351,846
CONSTANT POWER GENERATOR
Carl G. Tinsley, Scottsdale, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 15, 1964, Ser. No. 337,920
6 Claims. (Cl. 323—1)



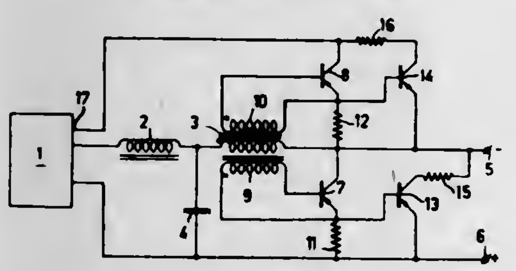
4. A constant power signal generating system including in combination: a voltage-to-frequency converter responsive to an applied voltage for producing a series of pulses having a repetition frequency which is a function of the applied voltage; first circuit means coupled to said converter for applying said voltage thereto; counter network means coupled to said converter for producing four successive rectangular wave signals each having a period which is a function of the interval between successive ones of said pulses; first and second further circuit means coupled to said counter network means and respectively responsive to first and second pairs of said rectangular wave signals for producing a direct-current voltage having an amplitude which is a function of the period of each of said signals; and means coupled to said first circuit means and to said first and second further circuit means and responsive to said direct-current voltage therefrom for producing a current in said first circuit means whose value is an inverse function of the repetition frequency of said pulses.

3,351,847
CURRENT-DETECTING APPARATUS
Tore Lennart Jansson and Sven Carl Johan Holmström, Karlskoga, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden, a Swedish company
Filed Nov. 30, 1964, Ser. No. 414,714
Claims priority, application Sweden, Dec. 4, 1963, 13,456/63
13 Claims. (Cl. 323—4)



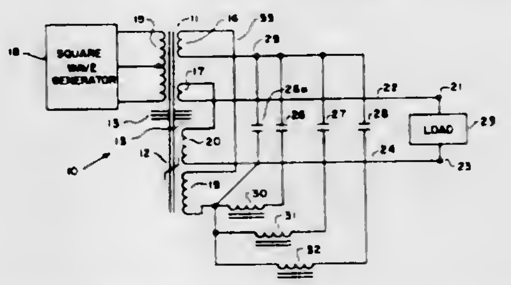
1. In combination with means for detecting a current comprising a current detector circuit including an input terminal through which current is adapted to pass and a connecting terminal, and a current source including first and second outer terminals, all said terminals being connected to said current detector circuit for supplying operating current thereto, apparatus for maintaining the voltage difference between the connecting and input terminals of said current detector circuit at greater than a given minimum value, said apparatus comprising a unilateral conducting device connected between said connecting terminal and the second outer terminal of said current source, a capacitor including a first terminal connected to said connecting terminal and a second terminal, means including an output terminal adapted to transmit a voltage pulse when the voltage difference between the input terminal of said current detector circuit and the second terminal of said source of current is less than a predetermined value, and means for connecting the output terminal of said last-named means to the second terminal of said capacitor to cause the voltage at said connecting point to change.

3,351,848
DIRECT VOLTAGE REGULATORS WITH REDUCED DYNAMIC OUTPUT IMPEDANCE
Johannis Cornelis Lodder, Hilversum, Netherlands, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed June 25, 1965, Ser. No. 467,024
Claims priority, application Netherlands, June 27, 1964, 64—7,351
7 Claims. (Cl. 323—22)



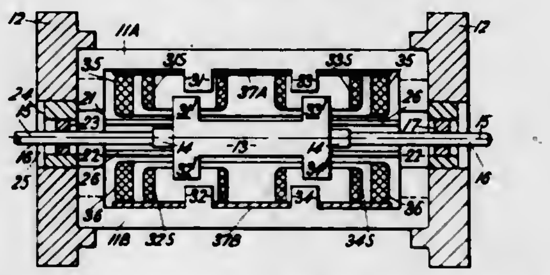
1. A regulator for a direct voltage source having an output smoothing filter including a series impedance, comprising: first and second transistors having emitter, base and collector electrodes, the emitter-collector circuit of the first transistor being connected between the output terminals of said filter, the emitter-collector circuit of the second transistor being connected between the output terminal connected to the series impedance and a point at a potential higher than that and having the same polarity as that of said output terminal, means for biasing both transistors to be nonconducting, and an alternating current coupling between said series impedance and each of said bases, said first transistor becoming temporarily conducting upon a decrease in the current flowing through the series-impedance, and the second transistor becoming temporarily conducting upon an increase in said current, whereby the dynamic output impedance of the direct voltage source is reduced.

3,351,849
FERRORESONANT VOLTAGE REGULATING AND HARMONIC SUPPRESSING CIRCUIT
Lee O. Mesenhimer, Lakewood, Ohio, assignor to Lorain Products Corporation, a corporation of Ohio
Filed Apr. 28, 1964, Ser. No. 363,222
10 Claims. (323—45)



1. In a voltage regulating circuit of the ferroresonant type, in combination, a saturable core transformer including an input winding, a tuned winding and an output winding, a plurality of series resonant circuits each comprising a capacitor and an inductor, each tuned to a different harmonic of the input voltage supplied to said input winding and each connected across said tuned winding, load compensating windings means coupled to said input winding for applying a first portion of said input voltage between said output winding and a load connected thereacross and in opposition to the voltage on said output winding, harmonic canceling winding means also coupled to said input winding for applying a second portion of said input voltage between said tuned winding and said series resonant circuits and in opposition to the voltage on said tuned winding whereby harmonic distortion is prevented from appearing on the load voltage.

3,351,850
ELECTRO-MAGNETIC PICKOFF DEVICES
Charles Ian Crawford, Edinburgh, and Kenneth Robson Brown, Midlothian, Scotland, assignors to Ferranti, Limited, Lancashire, England, a company of Great Britain and Northern Ireland
Filed Aug. 9, 1965, Ser. No. 478,078
Claims priority, application Great Britain, Aug. 21, 1964, 34,208/64
11 Claims. (Cl. 323—51)



1. An electromagnetic pickoff device including a stator, an armature mounted from the stator for straight-line movement with respect to the stator, the stator having

two pairs of salient poles disposed so that the two poles of each pair face one another across the axis of movement of the armature, the armature in the region of each stator pole pair having two salient poles to cooperate with those two stator poles, a winding for each stator pole, means for energising those windings from a source of alternating voltage, and interconnections between those windings for deriving an output voltage which is dependent in amplitude and phase with respect to the source voltage on the extent and direction of the movement of the armature over a restricted range from a datum position with respect to the stator.

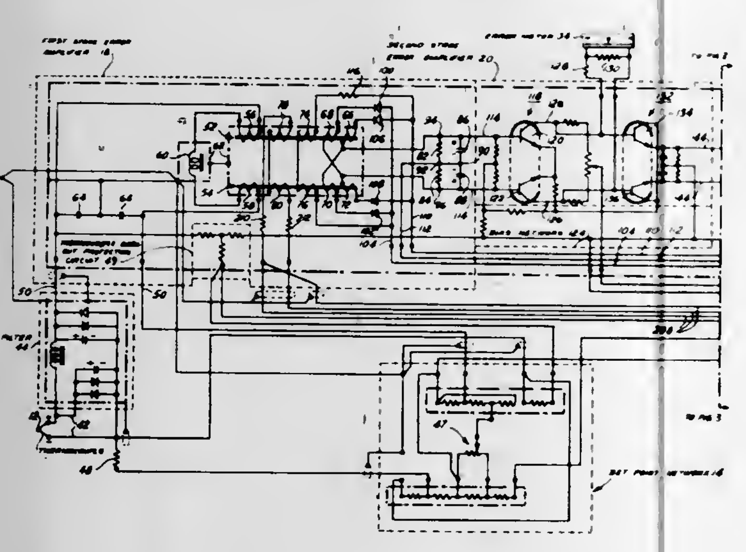
3,351,851

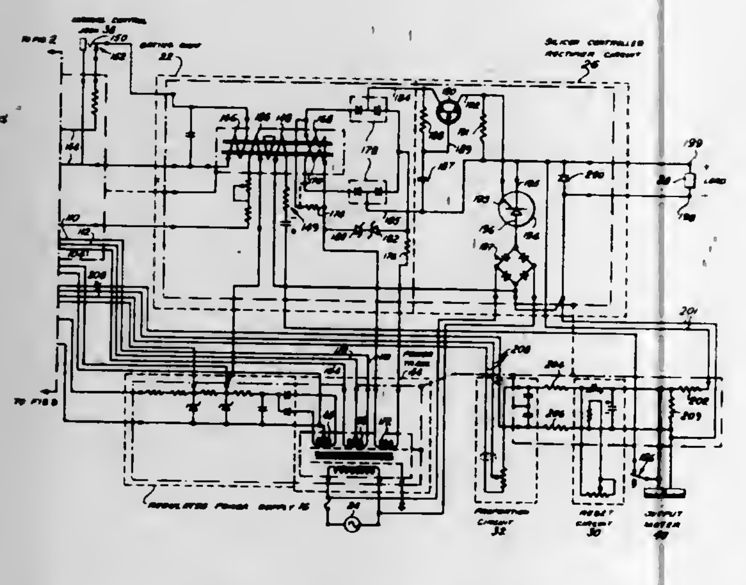
BALANCED MAGNETIC AMPLIFICATION AND PROCESS CONTROL APPARATUS

Horace E. Darling, North Attleboro, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts

Filed June 26, 1964, Ser. No. 378,132

13 Claims. (Cl. 323—89)





13. Industrial process control apparatus for automatically regulating the flow of electrical energy so as to maintain a variable of the process at a desired value, said apparatus comprising, in combination; means for receiving an electrical signal developed in response to deviations of said process variable from said desired value; a balanceable magnetic amplifier having a pair of magnetic cores, control winding means coupled to said cores and connected to said receiving means, and output winding means for developing an amplified signal corresponding to said deviation signal; a balanced load; an alternating current source; and means associated with said cores, energized by said alternating current source, and connected to said load for developing across said load an electrical signal whose magnitude is dependent upon the magnitude of said input signals for conducting current controlled by the magnetic flux in a first one of said cores through said load in one direction during one half-cycle of said source current and in the opposite direction during the next half-cycle of said source current, and for conducting current controlled by the magnetic flux in the second of said cores through said load in a direction which is at substantially all times opposite to the direction of flow of said current controlled by the flux in said first core; a balanceable transistor amplifier having at least one pair of transistors connected together and adapted to receive and amplify the output signal developed by said balanceable magnetic amplifier; means connected to said output winding means for generating electrical gating signals spaced in time from one another in correspondence to the output of said transistor amplifier; silicon controlled rectifier means having control electrode means connected to said gating signal generating means for receiving said gating signals; a process control load; an alternating-current power source connected to said process control load and to said silicon controlled rectifier means; and feedback means connected between said process control load and the input of said balanceable magnetic amplifier, said gating signals controlling the conduction of power from said source to said process control load through said rectifier means to maintain said process variable at said desired value.

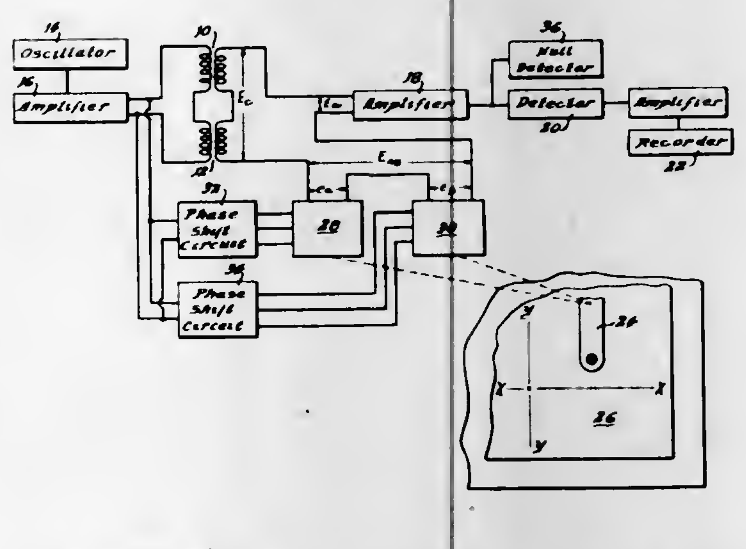
3,351,852

GRAPHICAL NULLING DEVICE FOR NON-DESTRUCTIVE EDDY CURRENT TESTING EQUIPMENT

Hugo L. Libby, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Aug. 26, 1964, Ser. No. 392,348

5 Claims. (Cl. 324—40)



1. In an eddy current nondestructive testing device having a test coil, means for exciting said coil and means for measuring the output signal of said coil, the combination with said test coil, said exciting means and said measuring means of a base, paper, means for mounting said paper on said base, a member having first and second ends, means for pivotally mounting said member at the first end thereof to said base, marking means, means for slidably mounting said marking means on said member engageable with said paper, means for generating a signal responsive in amplitude to the position of said marking means along said member and in phase to the angular position of said member in the plane of the paper, and means for combining said generated signal and the output signal of said test coil to effect a null resultant signal input to said test coil signal measuring means.

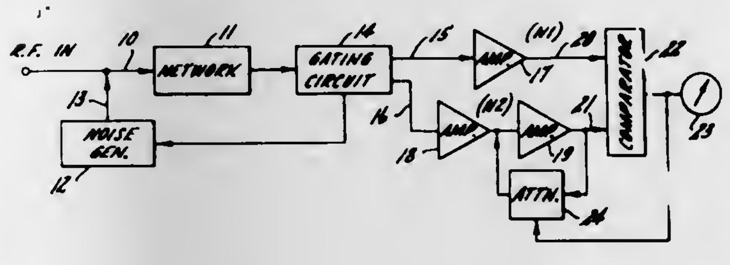
3,351,853

AUTOMATIC NOISE FIGURE METER

Kenneth E. Wood, Severna Park, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Feb. 17, 1964, Ser. No. 345,541

13 Claims. (Cl. 324—57)



1. An automatic noise figure meter for microwave systems comprising:
an input;
a radio frequency source including microwave system noise coupled to apply radio frequency signals to said input;
a noise signal source coupled to apply noise signals to said input;
a detector means coupled to said input to detect said radio frequency with said system noise and said noise signals;
a comparator coupled to receive detected radio frequency with system noise signals from said detector and to receive detected radio frequency signals with system noise and detected noise signal from said noise source;
switching means coupled to said noise signal source and between said detector and comparator to switch said noise signal source "on" and "off" simultaneously with switching of the detected frequency signals with system noise and the detected frequency signals with system noise and said detected noise signals to said comparator; and
a means indicating the comparator output to produce a noise figure of the noise in the microwave system.

3,351,854

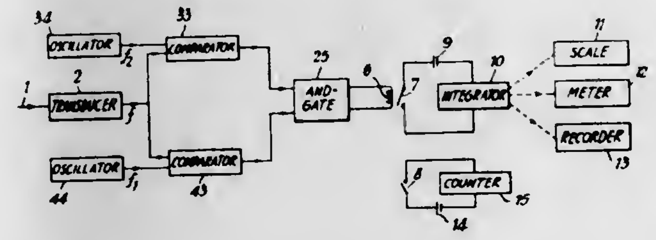
APPARATUS FOR DETERMINING THE ACCUMULATED LENGTH OF TIME A VARIABLE FREQUENCY INPUT SIGNAL IS WITHIN A PREDETERMINED RANGE

Herbert W. C. Sheen, Harpenden, and Leslie Bullock, Ware, England, assignors to Hawker Siddeley Dynamics Limited, Hatfield, England, a company of Great Britain

Filed Jan. 14, 1965, Ser. No. 425,516

Claims priority, application Great Britain, Jan. 20, 1964, 2,406/64

17 Claims. (Cl. 324—68)



1. An elapsed-time indicator for measuring the accumulated time for which an electrical input signal of variable frequency lies within a predetermined frequency-band bounded by a predetermined upper frequency and a predetermined lower frequency, the indicator including a first frequency comparator arranged to compare the variable frequency with said predetermined upper frequency and to give a first electrical output signal only when said variable frequency is less than said predetermined upper frequency, a second frequency comparator arranged to compare said variable frequency with the said predetermined lower frequency and to give a second electrical output signal only when said variable frequency exceeds said predetermined lower frequency, coincidence means supplied with said first and second electrical output signals and arranged to give a third electrical output signal only upon simultaneous receipt of said first and second electrical output signals, and time-interval-responsive means supplied with said third electrical output signal and responsive to the accumulated time for which said third electrical output signal persists.

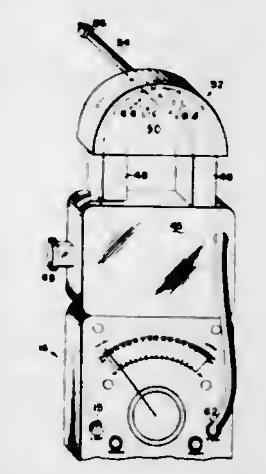
3,351,855

TACHOMETER ATTACHMENT FOR CLAMP-ON TYPE ELECTRIC METER

William G. Scott, Bluffton, Ohio, assignor to The Triplett Electrical Instrument Co., Bluffton, Ohio, a corporation of Ohio

Filed Sept. 8, 1964, Ser. No. 394,894

6 Claims. (Cl. 324—70)



1. In combination; an AC-DC volt-ohm-ammeter and a clamp-on type split transformer yoke having a coil wound thereon and a tachometer attachment comprising; a housing having spaced parallel side walls, magnetic spacer members positioned between said side walls and secured thereto to maintain said side walls in spaced relation, magnetic rotor means rotatably mounted in said side walls and positioned between said spacer members to rotate therebetween, said magnetic rotor means having at least two magnetic poles thereon, shaft means connected with said rotor means and extending from said housing for coupling said rotor means to a rotating body whose rotational speed is to be measured, said housing having an open end to receive the said split transformer yoke to enable the jaws thereof to be positioned adjacent to the said spacer members to be influenced by the rotation of said rotor means, the coil on said clamp-on type transformer yoke having first and second output leads, said AC-DC volt-ohm-ammeter and said clamp-on type transformer yoke having means thereon to detachably secure them together, said AC-DC volt-ohm-ammeter having a case and an electrical common receptacle therein, said clamp-on type transformer yoke having a case and an electrode extending therefrom which is connected to said first output lead and which electrode is inserted in said receptacle, said receptacle and said second output lead being connected to terminals of said AC-DC volt-ohm-ammeter to read AC volts for indicating rotational speed of said rotating body.

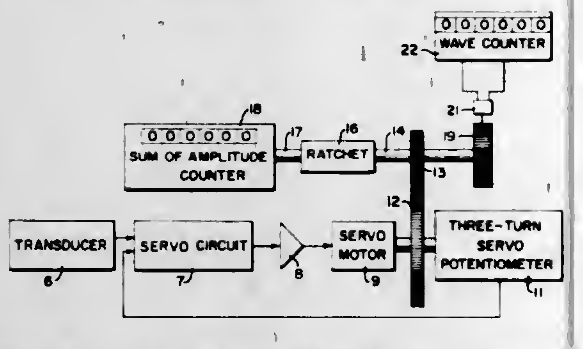
3,351,856

APPARATUS FOR DETERMINING TOTAL AMPLITUDE AND TOTAL NUMBER OF OSCILLATIONS OF WAVES

Nathaniel H. Luttrell, Jr., Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 18, 1963, Ser. No. 259,794

5 Claims. (Cl. 324—99)



1. Apparatus for determining the sum of amplitudes and the total number of mechanical oscillations comprising, in combination,

a transducer means for obtaining a continuous electrical potential output proportional to the instantaneous amplitude of the oscillations,

a servo motor, servo circuit means connected between said transducer means and said servo motor for converting the potential output of the transducer means to mechanical shaft rotation,

coupling means connected to the shaft of said servo motor for transmitting shaft rotation in one direction but not in the other,

first counter means connected to said coupling means for summing the total number of shaft rotations in the one direction,

switch means connected to the shaft of said servo motor for alternately closing an electrical circuit each time the shaft of the servo motor changes direction of rotation from the other direction to the one direction,

and second counter means connected to said switch means for registering the total number of times said switch means closes whereby the sum of the amplitudes of the oscillations is recorded by the first counter means and the total number of oscillations is recorded by the second counter means.

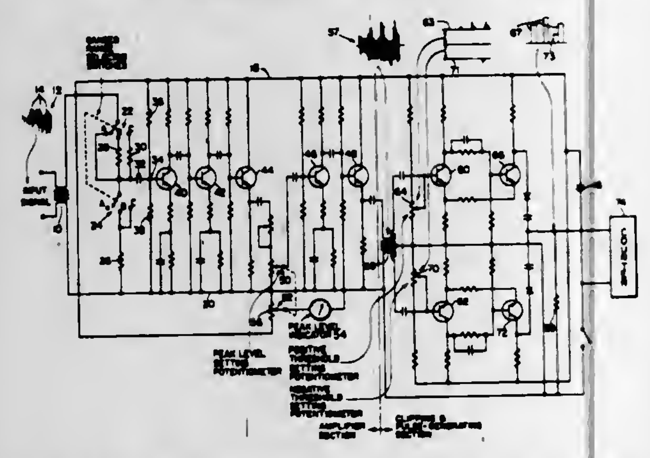
3,351,857

CIRCUIT FOR DETERMINING THE FREQUENCY OF OCCURRENCE OF RANDOM NOISE EXCURSIONS IN AN INTELLIGENCE SIGNAL

John Guillen, 115 E. Iris St., Oxnard, Calif. 93030, and Dennis W. Johnson, 878 Empire Ave., Ventura, Calif. 93003

Filed Feb. 26, 1964, Ser. No. 347,622

1 Claim. (Cl. 324—103)



A circuit for determining the frequnecy of occurrence in a transmission network of random noise excursions contained in an intelligence signal when such noise excursions exceed a predetermined amplitude level in both directions of polarity, said circuit comprising:

means forming part of said circuit for setting respective threshold amplitude levels in both directions of polarity below which levels no applied energy is passed;

means for applying said intelligence signal in which said random noise excursions appear to said threshold-setting means so that only noise excursions which excursions which exceed the set amplitude levels are passed by the said threshold-setting means;

means operating upon the reception of a noise excursion in either direction of polarity which is passed by the said threshold-setting means to generate a single output pulse for each such passed noise excursion;

means for counting the number of pulses so generated;

said means for setting a threshold in one direction of polarity below which level no applied energy is passed comprising a first transistor biased to cutoff in the absence of an applied voltage variation representative of an intelligence signal containing at least one noise excursion extending in the said one direction of polarity and of an amplitude exceeding the amount by which said first transistor is biased, and said means for setting a threshold in the other direction of polarity comprising a second transistor biased to cutoff in the absence of an applied voltage variation representative of an intelligence signal containing at least one noise excursion extending in the said other direction of polarity and of an amplitude exceeding the amount by which said second transistor is biased; and for setting the bias level of said first transistor independently of the bias level of said second transistor so that the minimum amplitude of the random noise excursions passed by said threshold-setting means in one direction of polarity may vary from the minimum amplitude of the random noise excursions passed by the said threshold-setting means in the other direction of polarity.

3,351,858

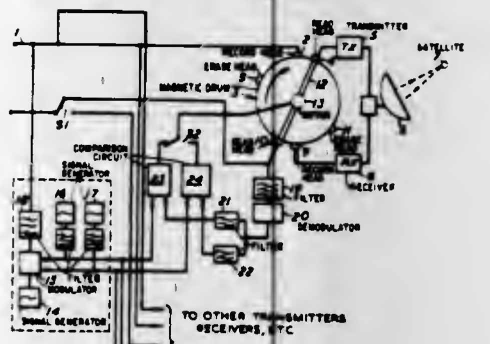
SATELLITE COMMUNICATION SYSTEMS

John Kenneth Savile Jowett, Cheam, and Richard Holden, Hendon, London, England, assignors to Her Majesty's Postmaster General, London, England

Filed Jan. 2, 1963, Ser. No. 248,913

Claims priority, application Great Britain, Jan. 8, 1962, 710/62

7 Claims. (Cl. 325—15)



1. A ground station for a broadband, multi-channel satellite communication system, said ground station comprising in combination, a radio transmitter, a broadband modulating signal input connected to said radio transmitter, an aerial connected to said radio transmitter, a first variable transmission time delay unit connected in circuit between said broadband modulating signal input and said aerial to vary the transmission time of said broadband modulating signal from said input to said aerial, a radio receiver, a demodulated broadband signal output connected to said radio receiver, a second variable transmission time delay unit for varying the transmission time taken by signals received by the ground station to pass to said demodulated broadband signal output and a transmission time assessing circuit which assesses the total transmission time of signals transmitted from the ground station to a satellite and back to the same ground station and is connected to said first and second variable transmission time delay units to cause an increase in the said total transmission time to a value which is constant irrespective of changes in said total transmission time.

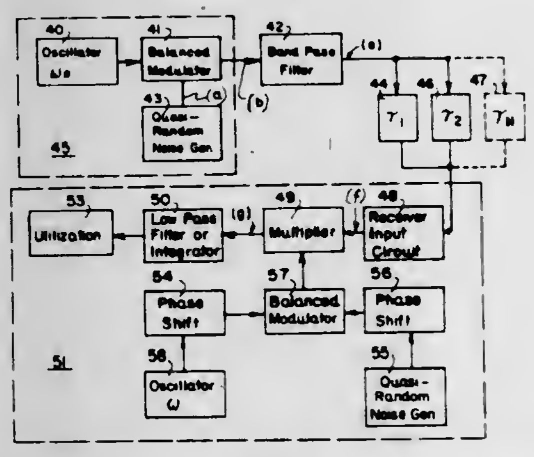
3,351,859

COMMUNICATION SYSTEM EMPLOYING MULTIPATH REJECTION MEANS

Edward J. Groth, Jr., and Stanley W. Attwood, Scottsdale, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Aug. 19, 1964, Ser. No. 390,591

10 Claims. (Cl. 325—42)



1. A signal transmission system including in combination, transmitter means having a first signal generator for providing a carrier wave signal modulated by a first quasi-random noise signal having a predetermined order of pulse signals with a first pulse duration and a predetermined period, and a receiver having a second signal generator for providing a reference signal modulated by a second quasi-random noise signal having said predetermined order of pulse signals with said predetermined period, said second quasi-random noise signal having a second pulse duration no greater than said first pulse duration and less than the interval between the reception of any two identical signals received at different times and modulated by said first quasi-random noise signal and transmitted to said receiver, said second signal generator including phase shifting means for shifting the phase of said second quasi-random noise signal relative to said received first quasi-random noise signal, said receiver including multiplier means coupled to said second signal generator and adapted to receive said carrier wave signal, said multiplier means acting to multiply said reference signal and said carrier wave signal, and integrator means coupled to said multiplier means for integrating the signal produced by said multiplier means.

3,351,860

TUNING ARRANGEMENT FOR RADIO TRANSMITTER

Heinz Siegfried Wolff, Hampstead, London, England, assignor to National Research Development Corporation, London, England, a British corporation

Filed Feb. 8, 1965, Ser. No. 430,971

Claims priority, application Great Britain, Feb. 14, 1964, 6,220/64

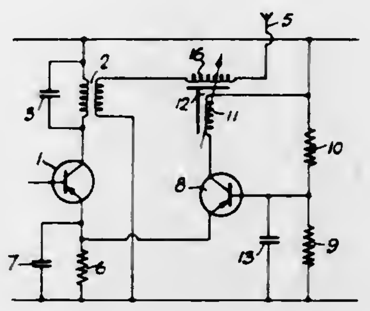
6 Claims. (Cl. 325—173)

1. An automatic tuning arrangement for a radio transmitter which includes a radio frequency generator and an aerial ci.cuit, said arrangement comprising:

a reactive network connected between said radio frequency generator and said aerial circuit, said reactive network including an inductance element the inductance of which is dependent upon a control signal applied to said inductance element;

means for deriving a uni-directional voltage the magnitude of which is representative of the magnitude of power flow in said reactive network;

generating means for generating a uni-directional reference voltage;



a comparator circuit connected to compare said power representative voltage with said reference voltage to provide as said control signal a difference signal representative of the difference between the magnitudes of said voltages;

means for applying said control signal to control said inductance of said inductance element to maintain the combination of said reactive network and said aerial circuit tuned to a predetermined frequency approaching, but differing slightly from, the frequency of said radio frequency generator, whereby the power flowing in said reactive network is maintained close to the maximum power available.

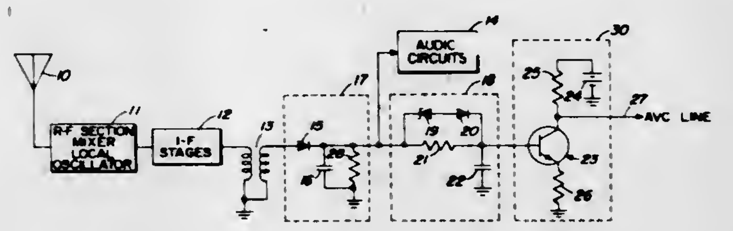
3,351,861

DUAL TIME CONSTANT AVC CIRCUIT

Jerry A. Martin, Cedar Rapids, and Howard B. Rooks, Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed June 8, 1964, Ser. No. 373,424

5 Claims. (Cl. 325—410)



1. In an automatic volume control circuit comprising:

time constant circuit means for producing a substantially D-C output signal representative of the intensity of the received signal; and

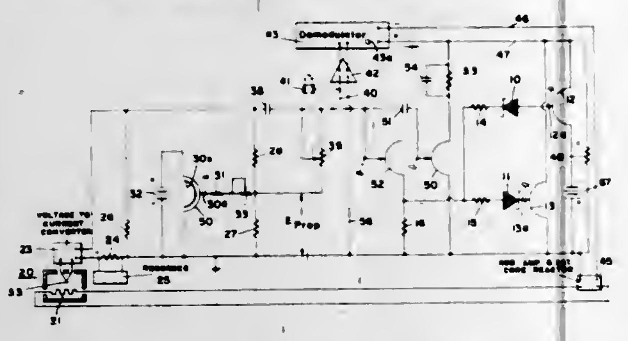
maximum voltage threshold means connected in parallel with said time constant circuit means and constructed to shunt input signals above a predetermined threshold voltage level around said time constant circuit means;

said maximum voltage threshold means comprising the series combination of a Zener diode means and a conventional diode means;

said Zener diode means connected to present its high reverse impedance to the signal supplied to said time constant circuit means;

and said conventional diode means connected to present its low forward impedance to said supplied signal.

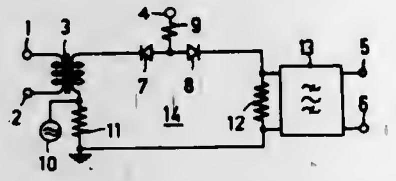
3,351,862
CONTROL SYSTEM HAVING PROPORTIONAL BAND SHIFT-LIMITING CIRCUIT
Edward J. Cranch, Bryn Athyn, Pa., assignor to Leeds & Northrup Company, a corporation of Pennsylvania
Filed July 29, 1963, Ser. No. 298,055
4 Claims. (Cl. 328—28)



1. An automatic control system for varying the magnitude of a controlled variable to maintain the magnitude of a controlled variable at a predtermined value, comprising

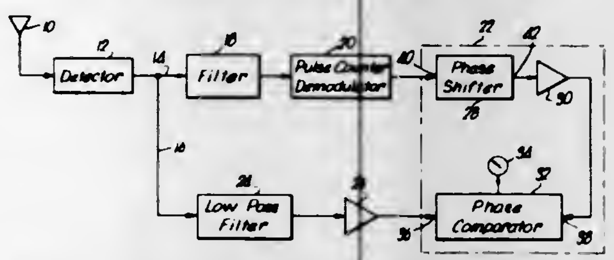
- a balanceable network including means responsive to deviation of said controlled variable from its set point for unbalancing the same,
- said network including negative feedback means producing a D.C. negative feedback,
- means associated with said negative feedback means for establishing a proportional band,
- a reset capacitor and a reset resistor for automatically shifting that proportional band in accordance with the time integral of departure of said controlled variable from said set point,
- said reset resistor having in series therein a supplemental resistor,
- a pair of Zener diodes each connected in the circuit including said supplemental resistor and each including a variable resistor energized in response to the magnitude of said D.C. negative feedback,
- the polarities of said Zener diodes relative to said circuit through said supplemental resistor being oppositely disposed, and
- a source of potential connected in series with one of said variable resistors whereby one of said diodes establishes one limit for the shifting of said proportional band and the other of said diodes establishes another limit for the shifting of said proportional band, one in one direction and the other one in the opposite direction.

3,351,863
ADJUSTABLE DAMPING NETWORK
Karel Riemens, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 20, 1964, Ser. No. 340,122
Claims priority, application Netherlands, Jan. 29, 1963, 288,320
8 Claims. (Cl. 328—171)



1. An adjustable damping circuit comprising a source of signals, a source of auxiliary oscillations, having a frequency outside the frequency band of said signals, amplitude limiter means, means for applying the vectorial sum of said signals and oscillations to said amplitude limiter means for producing amplitude limited oscillations, a source of an adjustable control voltage connected to said limiter means for controlling the limiting level thereof, output circuit means, and means for applying said limited oscillations to said output circuit means comprising filter means for removing oscillations of the frequency of said auxiliary oscillations from the oscillations applied to said output circuit means.

3,351,864
PULSE COUNTER FREQUENCY MODULATION DETECTION
Neal Scribner, Independence, Mo., assignor to Wilcox Electric Company, Inc., Kansas City, Mo., a corporation of Kansas
Filed Apr. 12, 1963, Ser. No. 272,794
8 Claims. (Cl. 329—126)



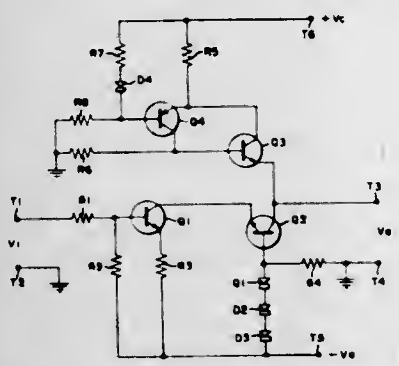
5. Apparatus for demodulating a frequency modulated, generally sinusoidal input signal comprising:

- first electrically responsive, bistate switching means adapted to have said input signal applied thereto and responsive to a pair of time-spaced amplitudes of said signal for producing a first series of electrical pulses, each of which occurs during a corresponding cycle of said signal and which commences substantially coincident in time with one of said amplitudes and terminates substantially coincident in time with the other amplitude;
- circuit means coupled with said electrical means and responsive to said first series of pulses for electrically differentiating the latter, whereby to provide a second series of electrical pulses;
- electrical means coupled with said circuit means and responsive to every other pulse of said second series of pulses for providing a third series of pulses of equal duration, each of which substantially coincides in time with a corresponding pulse of said second series of pulses;
- a source of constant, direct voltage;
- second electrically responsive switching means provided with load switching terminals coupled with said source and control terminals coupled with said electrical means, said second switching means being responsive to said third series of pulses for providing a train of output pulses at said load switching terminals, whereby each of said output pulses is of the same amplitude and of a width substantially equal to said duration; and
- output means coupled with said load switching terminals and responsive to said train of output pulses for integrating said train, whereby to provide an output signal having an amplitude level proportional to the frequency of said input signal.

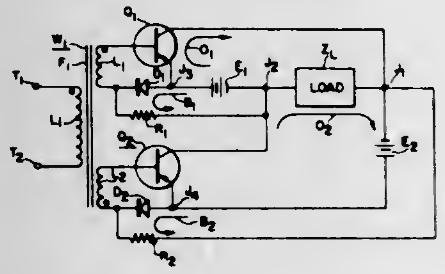
3,351,865
OPERATIONAL AMPLIFIER
Bruce R. Dow, Franklin Township, and Richard A. Johnson, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 1, 1964, Ser. No. 356,587
5 Claims. (Cl. 330—9)

1. An operational amplifier operative with direct and alternating input signals and a common reference source comprising, a first transistor of a first conductivity type operative to receive said input signals including base, collector and emitter electrodes, and a combination transistor

operative as a current source and having an enhanced characteristic and being of a second conductivity type, said combination transistor including a second transistor of the first conductivity type, and a third transistor of the second conductivity type, each of said second and third transistors including base, collector and emitter electrodes, with the collector and base electrodes of said second transistor operatively connected to said emitter and collector electrodes of said third transistor, respectively, the emitter electrode of said second transistor connected to the collector electrode of said first transistor, biasing means operatively connected between the base electrode of said third transistor and said common reference source, and with output signals appearing at the collector electrode of said first transistor being of the opposite polarity with respect to said input signals applied at the base electrode of said first transistor.

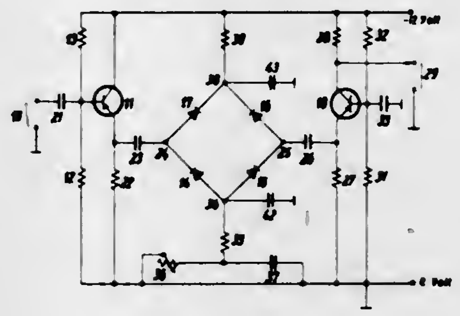


3,351,866
AMPLIFIER CIRCUIT HAVING SEPARATE AND INDEPENDENT OUTPUT AND BIASING PATHS
Alan S. Goldsmith, Plainfield, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 18, 1964, Ser. No. 397,510
2 Claims. (Cl. 330—15)



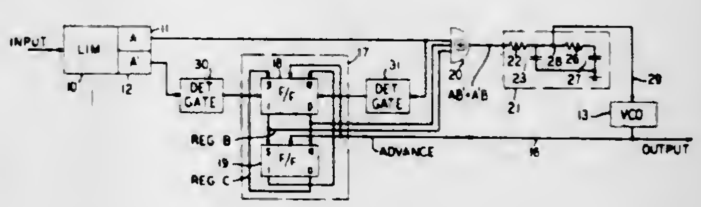
1. An amplifier circuit operative with a common load comprising, a pair of transistors connected to function in a push-pull manner and each including base, collector and emitter electrodes, said pair of transistors being of the same conductivity type, input circuit means for applying input signals to the base electrodes of each of said transistors so that said transistors function in a push-pull manner, a biasing circuit connected respectively to each of said transistors, each biasing circuit including a source of direct potential, a diode and an impedance device operatively connected to forward bias said diode, said source being operatively connected to the emitter electrode of the respective transistor to supply bias potential thereto, and an output circuit respectively connected to each of said transistors to drive said common load, said collector electrodes of said pair of transistors directly connected respectively to opposite ends of said load, each output circuit including one of said separate sources of direct potential, the emitter-collector circuit of the respective transistor and said load and operative to function independently of said biasing circuits, with current being supplied through said load in opposite directions from each of said output circuits respectively.

3,351,867
CIRCUIT ARRANGEMENT FOR VARYING THE LEVEL OF A SIGNAL
Edmund Jauernik and Achim Bopp, Darmstadt, Germany, assignors to Fernseh G.m.b.H., Darmstadt, Germany
Filed Apr. 15, 1964, Ser. No. 360,021
Claims priority, application Germany, June 20, 1963, F 40,013
10 Claims. (Cl. 330—16)



1. An electronic circuit arrangement for varying the level of a signal comprising, in combination, a voltage source having a first polarity terminal and a second polarity terminal; four non-linear circuit elements having non-linear voltage/current characteristics and connected in sequence as a four-armed bridge for four consecutive bridge terminals, the first one of which is connected to said first polarity terminal; variable resistor means connected between said second polarity terminal and the third consecutive bridge terminal; first amplifier means connected to said voltage source for providing operating voltages thereto and having an output connected to the second consecutive bridge terminal for applying a voltage signal to said bridge; and second amplifier means connected to said voltage source for providing operating voltages thereto and having an input connected to the fourth consecutive bridge terminal; whereby said bridge is a coupling network between said first and second amplifier means to vary the level of a signal applied to said first amplifier means by varying said variable resistor means.

3,351,868
PHASE LOCKED LOOP WITH FAST FREQUENCY PULL-IN
Cecil W. Farrow, Monmouth Hills, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 2, 1966, Ser. No. 524,551
7 Claims. (Cl. 331—17)



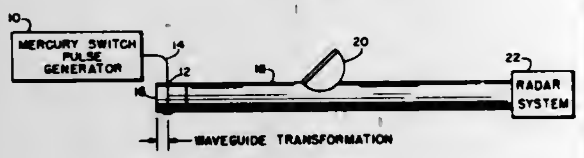
1. A circuit for adjusting a voltage controlled oscillator to provide an output signal having a frequency and phase related to a received signal comprising:

- a countdown circuit responsive at a first input to said output signal for advancing said countdown circuit to provide a countdown signal, and at a second input to said received signal to bring said countdown circuit to a predetermined condition; and
- means responsive to the phase relationship between said received signal and said countdown signal for adjusting the frequency of said voltage controlled oscillator.

3,351,869
SHORT MICROWAVE PULSE GENERATOR

Carl O. Olson, Jr., Burke, Va., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 29, 1965, Ser. No. 468,177
7 Claims. (Cl. 331—77)



1. A generator for producing short pulses of microwave energy at a desired frequency band, said short pulses being suitable for use in a radar system, said generator comprising:

modulating pulse generating means for producing a pulse, the frequency spectrum of which includes said desired frequency band;

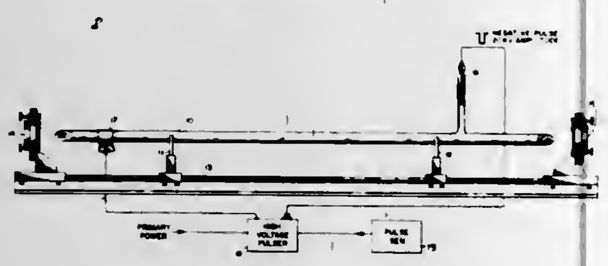
waveguide means suitable for propagating said desired frequency band and

connector means coupling said modulating pulse generating means to said waveguide means, said connector means functioning to pass said desired frequency band and to substantially not pass the other frequencies in said modulating pulse frequency spectrum.

3,351,870
PULSED GAS LASER

Joseph Goldsmith, Maitland, William H. McMahan, Orlando, and Earl H. Byerly, Maitland, Fla., assignors to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland

Filed Apr. 2, 1963, Ser. No. 269,940
8 Claims. (Cl. 331—94.5)

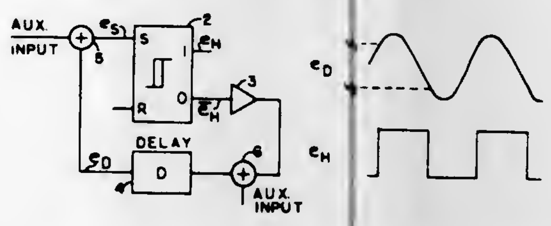


1. A high efficiency pulsed gas laser for producing a pulsed output of coherent electromagnetic energy having a peak power output substantially greater than that of a continuous wave laser, comprising a gas tube containing a lasable gas possessing two energy levels between which lasing can occur, and having partially reflective surfaces adjacent the ends of the tube, aligned so as to define an optically resonant cavity spaced cathode and anode electrodes disposed in operative relation to said tube, and means for supplying high voltage, short duration pulses to said electrodes thereby to produce a free electron density in said gas, such electrons being accelerated in the field generated by said high voltage pulses, said pulses having a fast rise time and a duration less than the diffusion time of the free electrons from cathode to anode under the influence of said field to bring about a population of the upper laser level of said gas from which stimulated emission can take place as long as the lower laser level of said gas has not become significantly populated, such radiative emission in said resonant cavity growing by coherent amplification and escaping from said cavity through said partially reflective surfaces as a pulsed coherent beam, the high efficiency of the overall lasing process being made possible by the utilization of high voltage pulses of sufficiently short duration as to avoid significant population of said lower laser level.

3,351,871
ELECTRICAL OSCILLATOR WITH HYSTERESIS AND DELAY ELEMENTS

William H. Swain, Sarasota, Fla., assignor of one-third to Walter J. Kreske, Newton Centre, Massachusetts

Filed June 10, 1965, Ser. No. 462,819
17 Claims. (Cl. 331—111)

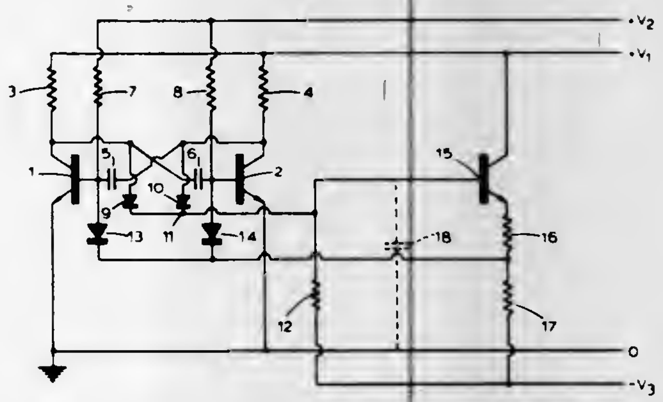


1. In an oscillating device, a hysteresis element having an output in either one of two binary states, one state being induced by an input signal that must exceed a threshold and the other being induced by a signal that must be below another threshold, the two thresholds being separated by a finite difference; an LC delay element having a signal response output which occurs some finite time after an input signal stimulus; means for coupling said elements together in series in a feedback loop, means coupled in said loop for providing sufficient signal magnitude gain around the loop such that the delay element signal response output causes said hysteresis element input signals to respectively exceed and be below said thresholds; and means for causing signal inversion at an odd number of points in the loop.

3,351,872
SELF-STARTING ASTABLE MULTIVIBRATORS

Peter Swift Horley, Surrey, England, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 1, 1965, Ser. No. 484,247
Claims priority, application Great Britain, Nov. 25, 1964, 47,909/64, Patent 1,026,894
6 Claims. (Cl. 331—113)



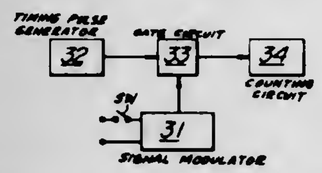
1. A self-starting astable multivibrator circuit arrangement comprising: first and second transistors each having at least an input electrode circuit and an output electrode circuit, said input and output circuits being cross-coupled to connect said transistors in astable multivibrator relationship, first and second rectifiers connected back-to-back between a given oscillation phase output electrode circuit of said first transistor and an opposite oscillation phase output electrode circuit of said second transistor, each of said rectifiers being poled in the reverse direction with respect to current flow through the respective output electrode, a load connected between the common point of said rectifiers and a point at reference potential, third and fourth rectifiers connected back-to-back between an input electrode circuit of said first transistor and an input electrode circuit of said second transistor, each of said latter rectifiers being poled in the reverse direction with respect to current flow through the respective input

electrode, and a direct current conductive coupling from said load to the common point of said third and fourth rectifiers.

3,351,873
ANALOG TO DIGITAL CONVERTER EMPLOYING NOISE REJECTION SIGNAL MODULATOR

Naokazu Kimura, Katsuta-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed July 8, 1964, Ser. No. 381,106
2 Claims. (Cl. 332—9)

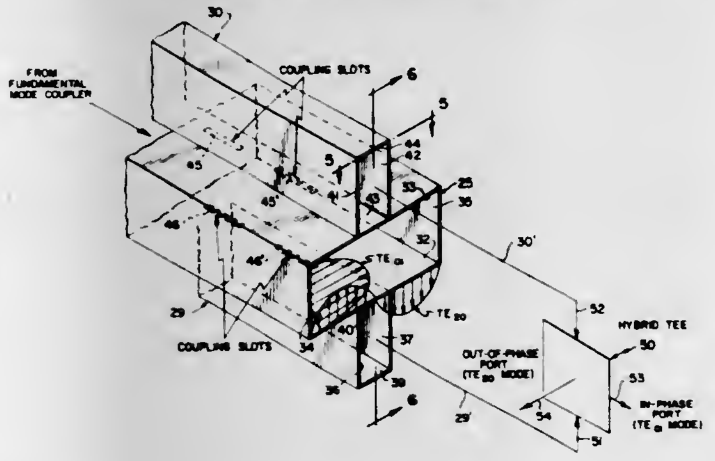


1. An analog-to-digital converter comprising: a noise rejection signal modulator including an input signal winding to give average value of an input signal voltage supplied to a pair of input terminals connected across said input signal winding; a controlled switch element inserted between one of said input terminals and said input signal winding; an output signal winding magnetically coupled to said input signal winding to produce a voltage proportional to said average value of voltage; and a constant voltage element connected across output terminals of said output signal winding; said analog-to-digital converter further comprising a gate circuit operating in response to the output voltage from said signal modulator; a timing pulse generator to supply clock pulses of predetermined frequency to said gate circuit; and a counting circuit operatively controlled by the output pulses from said gate circuit, to thereby convert the analogous input signal voltage into a pulse count proportional to the average value of said voltage.

3,351,874
WAVEGUIDE APPARATUS FOR COUPLING OUT AND ISOLATING MODES ABOVE THE FUNDAMENTAL

Peter E. Engler, Cheektowaga, and Jacobus A. Hammer, Clarence, N.Y., assignors to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York

Filed Feb. 23, 1965, Ser. No. 434,375
5 Claims. (Cl. 333—10)

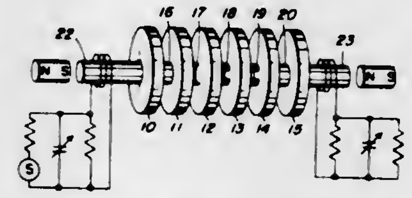


1. In electromagnetic wave apparatus, a higher mode directional coupler comprising a first waveguide rectangular in cross-section including a pair of opposite broad side walls and so dimensioned that the fundamental mode and higher modes of an electromagnetic wave can propagate therein, each of said broad walls having a pair of elongated coupling slots longitudinally spaced from each other and arranged centrally therein and extending longitudinally thereof, and second and third-waveguides severally on said broad walls and each being rectangular in cross-section having a narrow side providing a common wall with the corresponding one of said broad walls and communicating with the corresponding pair of said slots and so dimensioned that only the fundamental mode can propagate therein, whereby one of said higher modes coupled out through one pair of said slots is out of phase with the same mode coupled out through the other pair of said slots and another of said higher modes coupled out through one pair of said slots is in phase with the same mode coupled out through the other pair of said slots.

3,351,875
RING COUPLED MECHANICAL FILTER

Melvin L. Midgley, Santa Ana, Calif., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Dec. 20, 1962, Ser. No. 246,061
3 Claims. (Cl. 333—71)

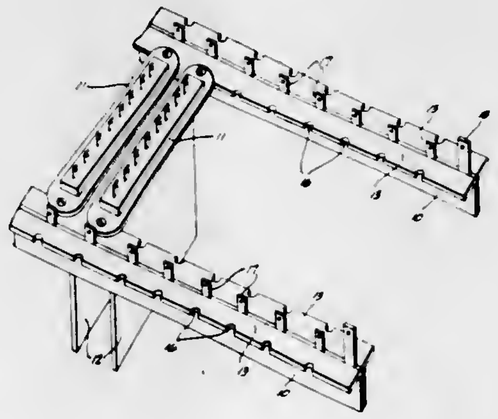


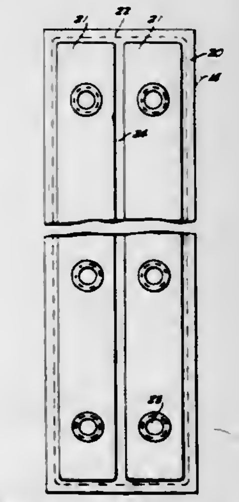
1. Mechanical filter means comprising a plurality of disks of the circular type mode of vibration spaced apart from each other and having their axes lie on a common center line, coupling means for coupling together adjacent disks, said coupling means each comprising a short, thin-walled tubular section of metallic composition with the axis thereof coincident with said common center line, the diameter of said tubular section being substantially equal to the diameter of a circular node of said disks near the natural resonant frequency of said disks.

3,351,876
ELECTRICAL TRANSMISSION SYSTEM

Elton Conrad, Anaheim, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Oct. 26, 1964, Ser. No. 406,378
4 Claims. (Cl. 333—84)





1. A transmission line having a low characteristic impedance comprising:

(a) a sheet of dielectric material having a layer of copper foil on each side thereof, said sheet being folded longitudinally;

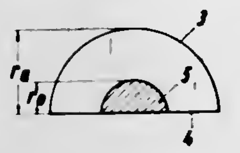
(b) first rigid conductive means having terminals projecting from one edge thereof, said conductive means being inserted into the fold of said sheet in contact with one of said layers of foil with said terminals extending beyond said sheet;

(c) second rigid conductive means disposed on each side of said sheet in contact with the other of said layers of foil;

(d) and means for forcing said second means together to clamp said sheet and said first means therebetween.

3,351,877
BACKWARD WAVEGUIDE HAVING A DIELECTRIC CONTIGUOUS WITH ONE INNER WALL THEREOF

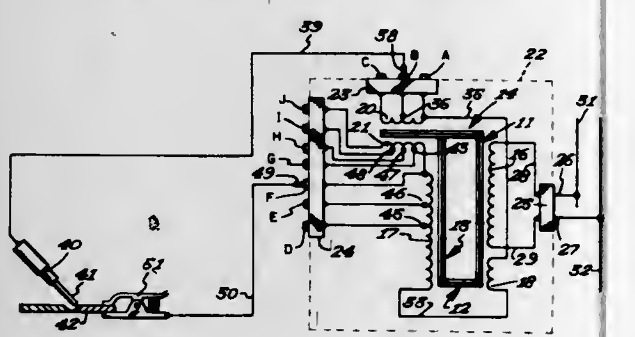
Hans Georg Unger and Arne Lavik, Braunschweig, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed July 20, 1964, Ser. No. 383,757
Claims priority, application Germany, July 20, 1963, T 24,338
3 Claims. (Cl. 333—98)



1. A waveguide for conducting backward waves, comprising, in combination: a waveguide, and a dielectric element in the form of an elongated strip within the waveguide and of smaller cross section than the waveguide, the cross section of the waveguide and the cross section of the dielectric element both being semicircular in shape, the flat side of the dielectric element cross section being contiguous with the flat side of the waveguide cross section, the dielectric element extending in the propagation direction of the waveguide and being symmetrical with respect to the waveguide, the relative dielectric constant of the dielectric element being greater than 9.1, the ratio between the radius of the dielectric element and the radius of the waveguide being between 0.5 and 0.8 inclusive, and the waveguide and dielectric element being so dimensioned as to produce backward waves within said waveguide.

3,351,878
TRANSFORMER WITH AUXILIARY REACTOR WINDING

Frank J. Hajicek, St. Paul, Minn., assignor to Marquette Corporation, Minneapolis, Minn., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,803
6 Claims. (Cl. 336—155)



1. A transformer having a

transformer core including a first portion forming a magnetic loop and an additional stub portion projecting from and constituting a continuous magnetic extension of said first portion but disposed outside of the magnetic loop formed by said first portion, said stub portion having the free end thereof substantially spaced magnetically from said first portion,

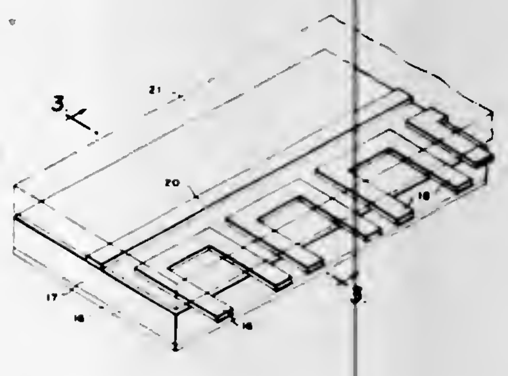
primary and secondary windings disposed on said first portion of said core and electromagnetically coupled with each other through said core,

and a reactor winding disposed on said additional portion and connected in series with said secondary winding in such a direction that the flux produced in said stub portion by the reactor winding is in the same direction as the flux produced by said secondary winding and entering said stub portion,

said reactor winding normally having substantially no voltage induced therein by reason of being disposed outside of said magnetic loop but being effective by reason of the mutual coupling between said reactor winding and secondary winding to reduce substantially the over-all output voltage when current flows therethrough.

3,351,879
TRANSFORMER HAVING WINDINGS BETWEEN TWO FERRITE STRIPS

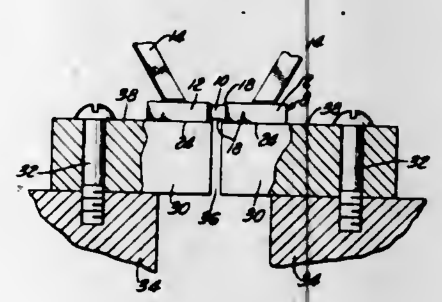
Melvin M. Kaufman, Merchantville, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Original application Aug. 23, 1961, Ser. No. 133,533, now Patent No. 3,222,756. Divided and this application June 30, 1965, Ser. No. 482,652
1 Claim. (Cl. 336—170)



A high speed transformer means for use in inductive sensing of tunnel diode memory cells comprising a conductive ground plane, a first ferrite strip having a first and second side, said first side being attached to said ground plane, eighteen primary winding means and a secondary winding means, each of said primary winding means and said secondary winding means comprises a printed circuit strip printed on said second side of said first ferrite strip, and a second ferrite strip being without a ground plane mounted against said printed transformer, said ferrite strips comprising manganese-zinc oxide whereby a high coefficient of coupling may be achieved for said transformer.

3,351,880
PIEZORESISTIVE TRANSDUCER

Leslie B. Wilner, Palo Alto, Calif., assignor to Endevco Corporation, Pasadena, Calif., a corporation of California
Filed Oct. 26, 1966, Ser. No. 599,334
9 Claims. (Cl. 338—6)



1. In a system for converting mechanical movements of two interconnected parts of a mechanical device into electrical signals,

a strain sensitive element comprising a unitary member composed of a piezoresistive semiconductive material and having two pads interconnected by and separated by a reduced neck, the semiconductive material of which said pads and said neck are formed being of the same semiconductive type,

said reduced neck and said pads lying on a common axis,

each of said pads having a face extending generally in the same direction as said axis,

the length of said neck being less than the length of said faces along said axis,

the minimum thickness of said neck being less than the thickness of said pads in a direction normal to said axis,

the cross-section of said neck enlarging continuously as the pads are approached from the region of minimum thickness of said neck,

said two faces of said pads being respectively bonded to said relatively movable parts and said neck being unbonded with respect to said relatively movable parts, the parts of said pads remote from said faces being unbonded,

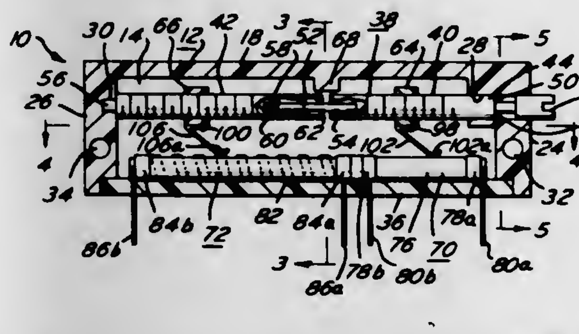
a pair of electrode means electrically connected to said respective pads,

said pair of electrode means constituting the only electrode means connected to said strain-sensitive element, and

means for connecting said pair of electrode means to measure changes in the electrical resistance of said strain-sensitive element due to relative movement of said two interconnected parts.

3,351,881
POTENTIOMETER

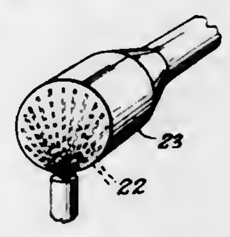
Kenneth M. Merz, Malvern, Pa., assignor to IRC, Inc., Philadelphia, Pa.
Filed June 22, 1966, Ser. No. 559,589
6 Claims. (Cl. 338—123)



1. A potentiometer comprising a substantially rectangular housing having an enclosed cavity therein, a pair of longitudinally aligned, threaded shafts extending across the cavity and rotatably supported on said housing, one end of one of said shafts extending through a wall of said cavity and being accessible from outside said housing for actuating the shafts, means normally holding the adjacent ends of said shafts in spaced apart relation but permitting longitudinal movement of said one shaft to bring said adjacent ends into engagement, means on the adjacent ends of said shafts providing a driving connection between said shafts when the adjacent ends are in engagement so that rotation of said one shaft also rotates the other shaft, a pair of longitudinally aligned electrical resistance elements mounted on said housing within said cavity and parallel to said shafts, a separate electrically conductive contact member carried by each of said shafts for longitudinal movement along said shafts upon rotation of the shafts, each of said contacts slidably engaging a separate one of said resistance elements, and terminals extending through said housing and electrically connected to said resistance elements.

3,351,882
PLASTIC RESISTANCE ELEMENTS AND METHODS FOR MAKING SAME

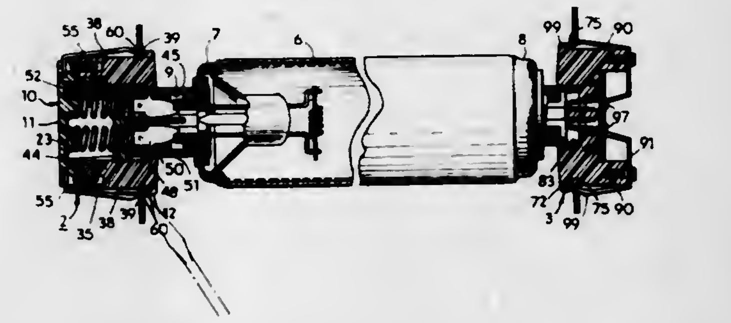
Fred Kohler, New York, and Wallace C. Rudd, Larchmont, N.Y., assignors to Polyelectric Corporation, Larchmont, N.Y., a corporation of New York
Filed Oct. 9, 1964, Ser. No. 402,716
7 Claims. (Cl. 338—322)



1. An electrical element comprised of normally solid firm thermoplastic polymer material capable of being cross-linked and thereby to resist softening thereof at increased temperatures, said element also embodying particles lending limited conductive properties thereto, said particles having a sufficiently smaller temperature coefficient of expansion than said polymer material whereby said properties are abruptly diminished upon reaching a predetermined temperature, and electrical circuit terminals for said element in the form of "meshed" conductive material of substantial area embedded in said polymer material, said terminals extending along approximately "equal potential surfaces" transversely of the paths of current flow between the terminals through the element, said polymer material, at least at the region of said terminals, being cross-linked with the terminals in situ.

3,351,883
SNAP-IN FLUORESCENT LAMPHOLDERS WITH QUICK-CONNECT TERMINALS

John M. Pistey, Fairfield, Conn., assignor to General Electric Company, a corporation of New York
Filed Mar. 31, 1964, Ser. No. 356,272
6 Claims. (Cl. 339—52)

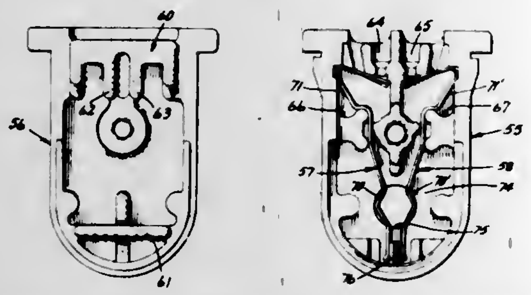


1. In a lampholder, a housing having a base member and a cover member, said base member having a cavity therein, at least one rib on the outside of said base member and a channel formed in said rib, said cover member having an outer flange portion and a reduced inner portion, said reduced portion having a leg aligned with said rib and secured in said channel when said base and cover members are secured together, said cover member having a plunger receiving opening aligned with said cavity in said base and forming therewith a continuous plunger cavity, at least one rib on the outside of said cover member aligned with said rib on said base member, a channel in said rib of said cover member in alignment with said channel in said base member and extending to said flange of said cover member, a plunger reciprocally mounted in said continuous plunger cavity, contact means positioned by said plunger for engagement with a lamp, a resilent arm for mounting said lampholder received in said channels in the ribs of said cover member and said base

member, and a fastener securing said base member to said cover member and attaching said resilient arm to said housing.

3,351,884
LAMPHOLDERS FOR ELECTRIC DISCHARGE LAMPS

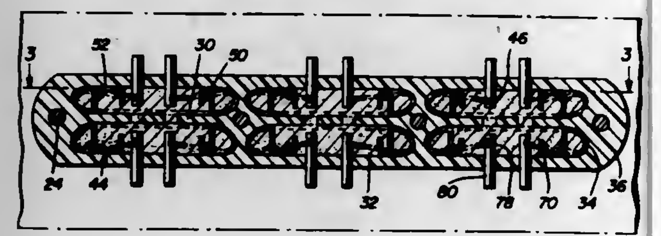
John M. Pistey, Fairfield, Conn., assignor to General Electric Company, a corporation of New York
Original application Oct. 1, 1963, Ser. No. 313,061, now Patent No. 3,290,638, dated Dec. 6, 1966. Divided and this application Sept. 22, 1965, Ser. No. 489,306
2 Claims. (Cl. 339—52)



1. A lampholder for an electric lamp comprising a split housing formed of a front and a rear housing section of molded insulating material, each of said housing sections having an essentially vertical wall, said rear housing section having first and second projections extending in interlocking relation into said front housing section, a pair of symmetrical contact strips disposed in edgewise relation along the vertical wall of said front housing section and adjacent to said projections, each of said contact strips having a first and a second contact portion, said first and second projections extending from said rear housing section and engaging an edge of each said contact strip thereby locking the resilient contact strips in said front housing section, said front housing section having a lamp pin receiving aperture in said vertical wall, means formed in said front housing section for positioning the first portions of said contact strips at the inner side of said lamp pin receiving aperture so that the lamp pin is resiliently engaged by said first portions when inserted therethrough, and means for connecting the second portions of said contact strips in circuit with conductor leads.

3,351,885
PROTECTIVE JUNCTURE BOX AND RELEASABLE CONNECTOR

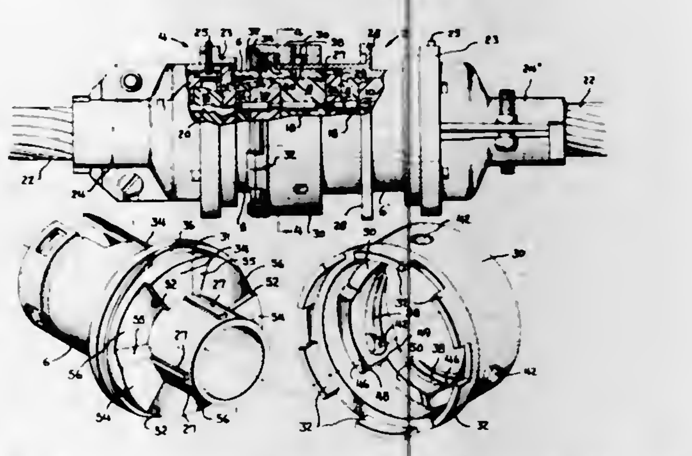
George D. Baldwin, Jamestown, N.Y., Joseph Spiteri, Erie, Pa., and Harry W. Grosser and Harold J. Collette, Jamestown, N.Y., assignors to Truck-Lite Company, Inc., a corporation of New York
Filed Feb. 1, 1966, Ser. No. 524,176
14 Claims. (Cl. 339—74)



1. A juncture box for electrical conductors comprising, an enclosure made of a relatively rigid, non-conductive material having at least one chamber therein, at least two plungers slidably mounted by the enclosure projecting into said chamber, an electrical connector peripherally lining said chamber internally of the enclosure and having anchoring portions and elastically flexible clamping portions, means operatively connecting the plungers to the clamping portions of the connector for displacement thereof transversely of the anchoring portions and, conductor receiving means mounted by the enclosure having apertures aligned with gaps formed between the anchoring portions and the clamping portions in response to said displacement of the clamping portions by the plungers.

3,351,886
ELECTRICAL CONNECTOR HAVING IMPROVED COUPLING MEANS

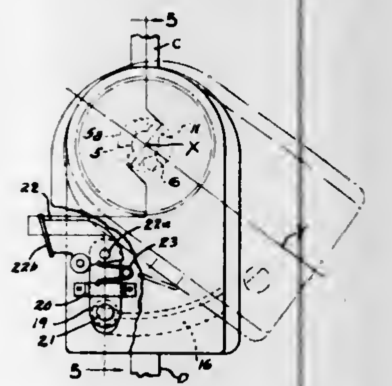
John Aaron Zimmerman, Jr., Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Dec. 14, 1965, Ser. No. 513,697
2 Claims. (Cl. 339—90)



1. In a multi-contact electrical connector of the type comprising two cylindrical parts engageable with each other, said parts comprising shell members having interfitting key and keyway means for polarizing purposes, one of said parts having a locking ring rotatably mounted thereon, said locking ring and said other part having cooperable interengageable means thereon to pull said parts together upon rotation of said locking ring, said locking ring having an internal rearwardly facing shoulder, said shell of said one part having a radially extending flange facing said shoulder, ratchet means effective between, and being formed on, the opposed surfaces of said shoulder and said flange, said ratchet means being effective to latch said locking ring in at least one position, said one position corresponding to the starting position of said interengaging means whereby, after initial coupling of said shells, said locking ring can be immediately rotated to engage said parts with each other.

3,351,887
INTERLOCKING ELECTRICAL CONNECTION

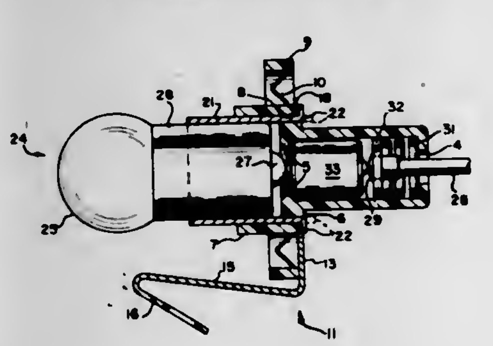
Eldon D. Jones, 1903 S. Nettleton, Springfield, Mo. 65804
Filed June 28, 1965, Ser. No. 467,467
6 Claims. (Cl. 339—91)



1. In an electrical connection, a plug member with a mating face and terminal prongs projecting from said face, a receptacle member with a mating face having recesses adapted to receive said prongs as said member faces are moved toward each other into contiguous relation if said members are disposed angularly to each other with said faces parallel, said receptacle having terminals in said recesses normally spaced from said prongs during such movement and positioned to be contacted by said prongs as said members are swung about an axis normal to said faces after the latter are in said relation, said members being elongated transversely of said axis, securing means comprising a latch pin in one member slidable lengthwise thereof, and a recess in the other member receiving said pin and having an offset positively engaging said pin as said members are swung relative to each other in one direction to terminal-contacting position, and a release element on the exterior of one member for manually disengaging said latch pin from said recess offset to permit reverse relative swinging of said members.

3,351,888
LAMP SOCKET ASSEMBLY

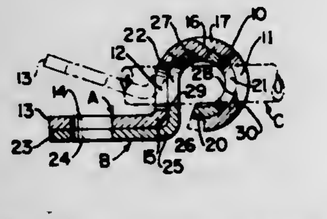
Donald R. Ford, Grosse Pointe Shores, Mich., assignor to Boyne Products, Inc., Detroit, Mich., a corporation of Michigan
Filed July 6, 1965, Ser. No. 469,454
9 Claims. (Cl. 339—93)



1. A socket assembly for a lamp bulb comprising a body member formed of electrically insulating material, said body member having a tubular portion terminating adjacent one end thereof in a peripheral flange; electrically conductive terminal means mounted in said tubular portion of said body member for movements toward and away from said one end thereof; spring means acting on said terminal means and biasing the latter to move toward said one end; an electrically conductive socket member adapted to accommodate an electrical lamp bulb; conductive means securing said socket member to said flange; and electrically conductive means connected to said socket member by said conductive securing means, said flange comprising radially inner and outer annular wall portions joined to one another by a flexible web portion.

3,351,889
ELECTRICAL CONNECTOR WITH WIRE-GRIPPING MEANS AND INSULATION PIERCING CONTACT JAW

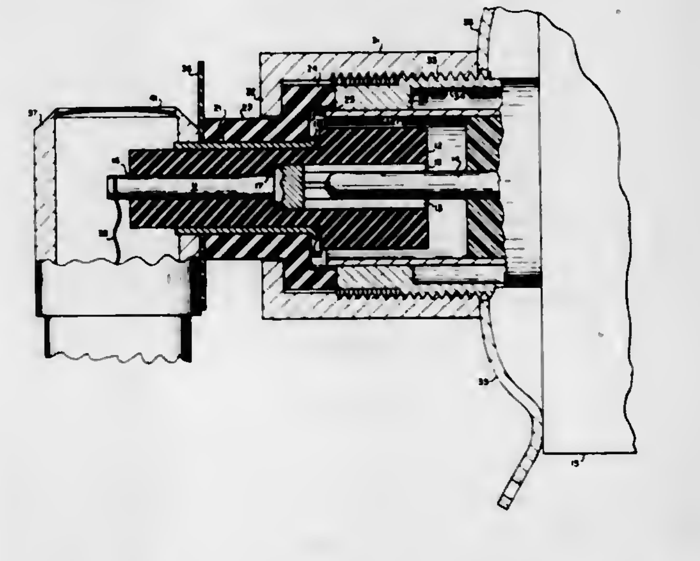
Robert E. Lawlor, Ridgecrest, and John E. Beaudlon, Sherman Oaks, Calif., assignors of fifty-five percent to Paul A. Cornell, Los Angeles, Calif.
Filed Aug. 3, 1964, Ser. No. 386,913
5 Claims. (Cl. 339—97)



1. An electrical connector comprising: a pair of connector parts of strap metal each embodying a jaw member of split cylindrical ring form and a flat tail extending as an integral continuation of one cylindrical extremity thereof, said tails adapted to be both secured to a support, one of said jaw members being rotatably mounted within the other, said jaw members having respective apertures adapted to be substantially registered upon spreading said tails in a hinging movement, whereby a conductor with insulation sheath may be extended through said apertures, one of said jaw members having an insulation-penetrating jaw formed integrally in the margin of its respective aperture at one circumferential extremity thereof and projecting circumferentially into said respective aperture, the other jaw member having, at the opposite extremity of its respective aperture, an anvil surface in opposed relation to said insulation-penetrating jaw and adapted, upon closing of said tails into abutting contact with one another, to force said conductor against said jaw so as to cause the jaw to lance through said sheath and establish conductive contact with said conductor, the inner jaw member having a circumferentially extending slot; said outer jaw member including an integral tongue struck inwardly from its median area and slidably engaged in said slot to retain said jaw members in coupled assembly.

3,351,890
ELECTRICAL CONNECTOR

Raymond C. Wilkinson, Walter P. Aleksiewicz, and Claude C. Martin, Oxon Hill, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed May 13, 1966, Ser. No. 551,180
6 Claims. (Cl. 339—143)



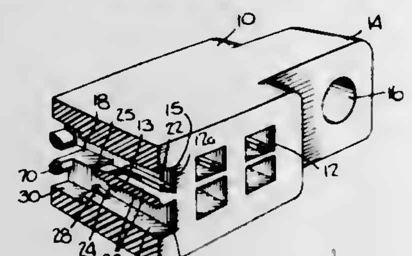
1. An electrical connector for connecting a coaxial cable at a right angle to the output of an ionization chamber wherein the connector includes:
a linear axially disposed electrical conductor element, adapted to be connected electrically to the center pin of an ionization chamber and to the center wire conductor of a coaxial cable,
a first insulator element,
said first insulator element surrounding said conductor element over substantially the entire length thereof,
a conductive sleeve surrounding one end of said insulator element,
a second insulator element,
said second insulator element surrounding said conductive sleeve with a portion thereof spaced from and extending beyond the inner end of said cylindrical sleeve over and along a portion of said first insulator element,
a coupling,
said coupling extending over a portion of said second insulator element and including an inwardly extending flange that secures against a portion of said second insulator element,
said coupling including screw-threads on the inner surface thereof that screws onto matching threads of a connector.

3,351,891
ELECTRICAL CONNECTOR WITH TERMINAL ELEMENTS OF GENERALLY T-SHAPED CROSS SECTION

Martin Schneck, Old Bridge, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey

Filed Oct. 20, 1964, Ser. No. 405,082

7 Claims. (Cl. 339—176)



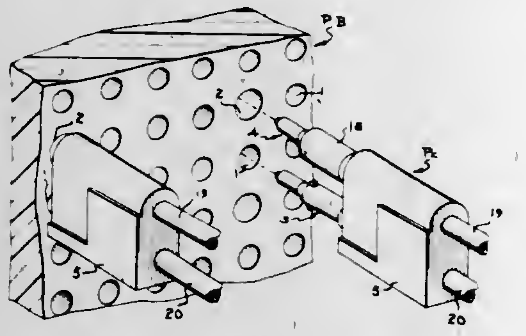
1. An electrical terminal for terminating one or more electrical conductors adapted to be inserted into an electrical connector housing comprising a terminal segment of generally T-shaped cross section at one end of said terminal adapted to extend externally of said connector housing for terminating one or more electrical conductors wound around said terminal segment, and a second segment integral with said terminal segment adapted to be inserted within said connector housing, said second segment having a spring portion at the other end of said terminal, said spring portion adapted to hold said electrical terminal within said connector housing and to provide positive contact pressure for an external contact to be inserted into said connector housing and engaged with said electrical terminal, said second segment further having a portion of generally T-shaped cross section intermediate said spring portion of said second segment and said terminal segment and integral with both said segments, said intermediate portion of said second segment adapted to be internal of said connector housing.

3,351,892
POLARIZED PATCHCORD

William Coover Feeser, New Cumberland, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Continuation of application Ser. No. 366,734, May 12, 1964. This application Feb. 6, 1967, Ser. No. 614,364

7 Claims. (Cl. 339—184)



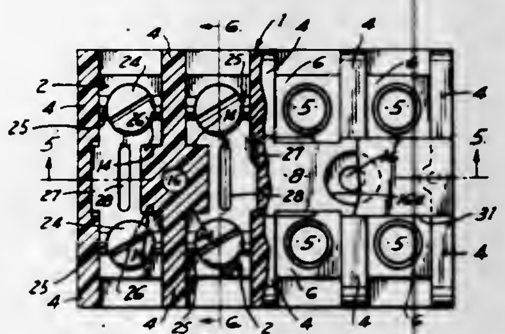
1. A patchcord assembly for engagement with openings in a plugboard comprising a plurality of plug members, each of the plug members including a sleeve having a support portion and a contact portion, latch means extending outwardly from an exterior surface of said sleeve and being movable toward and away from a longitudinal axis of said sleeve by a force acting substantially normal with respect to said longitudinal axis, stop means on said sleeve spaced from said latch means, and means extending along said exterior surface of said sleeve of at least one of said plurality of plug members between said latch means and said stop means and being maintained thereon by said latch means, said means interfering with openings of a configuration to receive at least the other of said plurality of plug members thereby defining a polarized patchcord assembly.

3,351,893
ONE PIECE TERMINAL BLOCK

Thomas Parris, Milwaukee, and Erik J. Nielsen, Mequon, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed May 23, 1966, Ser. No. 552,321

9 Claims. (Cl. 339—198)



1. A terminal block comprising a body of dielectric material having a transverse passage therethrough with side walls and open ends, and with wall portions angularly disposed to the side walls and adapted to be engaged by, and to support, one face of a terminal bar when the bar is disposed in operating position in the passage;

shoulder means in the passage in overhanging spaced relation to said wall portions;

a terminal bar having terminal connecting portions at its opposite ends, respectively, and said bar being disposed in, and extending endwise of, the passage and being juxtaposed at one face against said wall portions and at the other face having lateral margins juxtaposed against the shoulder means;

a slot in the portion of the bar between the connecting portions; and

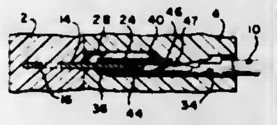
said slot being elongated endwise of the bar.

3,351,894
CONNECTOR

Robert John Kinkaid, New Cumberland, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Application Mar. 3, 1965, Ser. No. 436,827, now Patent No. 3,264,599, dated Aug. 2, 1966, which is a division of application Ser. No. 157,037, Nov. 27, 1961, now Patent No. 3,215,975. Divided and this application July 27, 1966, Ser. No. 568,221

8 Claims. (Cl. 339—217)



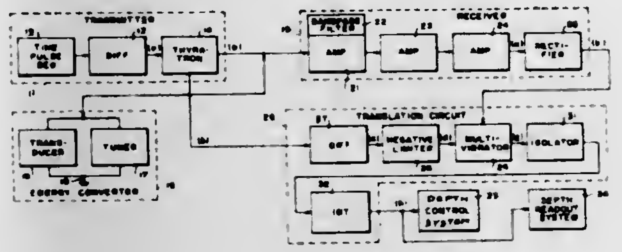
1. A connector element adapted to be received in a housing, said connector comprising a forward contact-engaging portion and a rearward conductor-engaging portion, said forward portion having a spring detent struck from one side thereof, said forward portion further having an opening extending along a second side opposite to said one side, said detent extending generally rearwardly from its point of attachment on said one side and into the opening along said second side, said detent being capable of rearward flexing upon insertion of said connector into said housing, and upon further insertion into said housing said detent being capable of movement away from said one side into cooperation with a depending surface of said housing to prevent the withdrawal of said connector from said housing.

3,351,895
DEPTH INDICATOR AND CONTROLLER

Frederick B. Cupp, Willoughby, and Burton L. Frankel, Beachwood, Ohio, assignors to the United States of America as represented by the Secretary of the Navy

Filed Apr. 21, 1965, Ser. No. 450,575

15 Claims. (Cl. 340—3)



1. Means for producing an error signal that is proportional to the distance a submarine vehicle deviates from a predetermined control path comprising in combination,

means for broadcasting acoustical energy toward a predetermined target the location of which is known relative to the aforesaid predetermined control path,

means for receiving the echo of said broadcast acoustical energy from said predetermined target,

means connected to said broadcasting and receiving means for producing a substantially squarewave type of signal the positive portion of which has a period that is proportional to the distance to said target,

a neon tube adapted for firing and extinguishing at predetermined voltages, respectively, coupled to the output of said substantially squarewave type of signal producing means,

integrator means connected to the output of said neon tube for producing a first voltage that is proportional to the positive period thereof,

adjustable means for providing a second voltage representing the known distance between said control path and said target,

means connected to the outputs of said first and second voltage producing means for producing an error signal representing the difference between said first and second voltages,

control surface means mounted on said submarine vehicle for controlling the attitude and travel direction thereof, and

actuator means connected between said error signal producing means and said control surface means for providing up and down movement thereto in response to said error signal and as appropriate to substantially eliminate the distance deviation of the aforesaid submarine vehicle from its predetermined control path.

3,351,896
UNDERWATER TARGET DETECTION SYSTEM

Richard O. Rowlands, State College, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 4, 1965, Ser. No. 461,567

1 Claim. (Cl. 340—3)

An underwater echo-ranging target-detection system comprising:

timer means for providing first, second, third, and fourth timing signals;

modulator means connected to said timer means for receiving said second timing signal and for providing a series of D.C. pulses each having a voltage which varies as a predetermined function of time;

voltage controlled, variable-frequency oscillator means connected to said modulator means for receiving said D.C. pulses and providing a series of search pulses each having a frequency f which varies as a function of time t in accordance with the equation

$$f=f_0/(1-Kt)$$

wherein f_0 is a predetermined initial frequency and K is a predetermined constant;

amplifier means connected to said oscillator means for receiving and amplifying said search pulses;

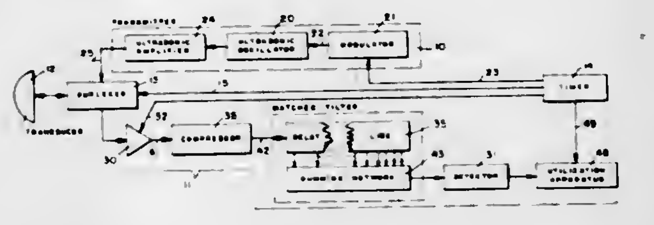
transducer means for transmitting said search pulses, receiving the echoes thereof and providing echo signals;

duplexer means having an output and connected to said timer means for receiving said first timing signal and connected to said amplifier means for receiving said amplified search pulses and connected to said transducer means for providing thereto each of said search pulses for transmission by said transducer means and for receiving said echo signals of said transducer means, said duplexer means providing said echo signals at said output;

a time-variable-gain amplifier connected to the output of said duplexer means and to said timer means for receiving respectively therefrom echo signals and said third timing signal for providing amplified echo signals and adapted to maintain background noise-signal output thereof at a substantially constant level;

compressor means connected to said time-variable-gain amplifier for receiving said amplified echo signals, for raising the signal frequencies by a time compression ratio and for providing time compressed signals;

a non-dispersive delay line connected to said compressor means for receiving and delaying said time compressed signals;



a plurality of signal-sampling taps spaced along said delay line in a geometric progression having a predetermined multiplying factor equal to

$$e^{-\mathrm{m}K/f_0}$$

wherein e is the base of natural logarithims, m is the number of cycles occurring in a predetermined time interval, K is said constant and f_0 is said initial frequency;

summing network means connected to said signal-sampling taps for providing an output signal having an instantaneous amplitude equivalent to the summation of the signal amplitudes provided by said taps;

threshold detector means connected to said summing network for receiving said signal and providing a detector output signal when the amplitude of said summing network signal is greater than a predetermined amplitude; and

utilization apparatus connected to said detector means for receiving said signals therefrom and connected to said timer means for receiving said fourth timing signal for utilizing said detector output signals in response thereto;

whereby successive time intervals embracing successive groups of a fixed number of cycles of any resultant echo signal present the characteristic of varying in a geometric progression having a predetermined ratio factor equivalent to said predetermined multiplying factor, and said delay line and summing network operate to affect Doppler-invariant detection in consequence of said geometric progression characteristic.

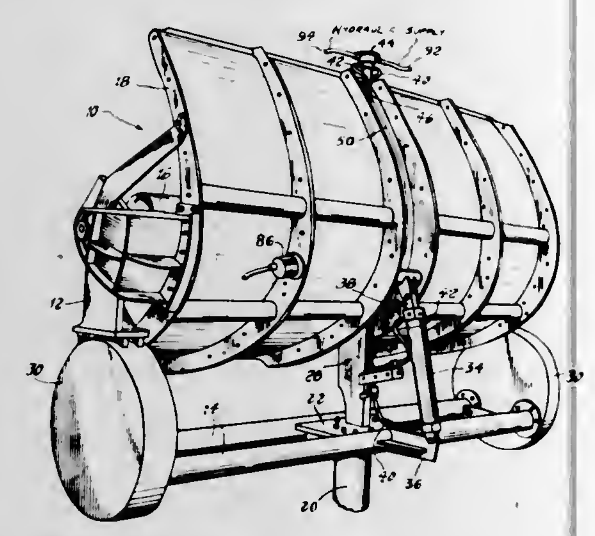
3,351,897

QUIET HYDRAULIC DEPRESSION-ELEVATION DRIVE FOR SONAR TRANSDUCER REFLECTOR INDEPENDENTLY ROTATABLE IN AZIMUTH

Sidney Baron, New London, Conn., assignor to the United States of America, as represented by the Secretary of the Navy

Filed Mar. 11, 1966, Ser. No. 535,303

4 Claims. (Cl. 340—5)



1. An underwater acoustic transducer assembly that is trainable relatively noiselessly comprising:
a cylindrical transducer,
a cylindrical parabolic reflector of approximately the same length as said transducer,
means mounting said cylindrical transducer and journalling said parabolic reflector in spaced parallel coextensive relationship with the axis of the cylindrical transducer and the focal line of the parabolic reflector coincident,
a shaft secured at one end to said mounting means with the axis substantially perpendicular to the axis of the cylindrical transducer and the focal line of the reflector,
means journalling said shaft vertically,
a hydraulic cylinder and a piston reciprocable therein and a piston rod extending from the piston through one end of the cylinder, the other end of the cylinder and the free end of the piston rod being pivotally joined to said mounting means and said reflector for angularly adjusting said reflector about the transducer axis and focal line of the reflector,
a fluid coupling having coaxial relatively rotatable parts for providing continuous fluid communication between respective pairs of hydraulic conduits independently of relative angular orientation of the parts mounted above said reflector coaxial with said shaft,
rigid means secured to said mounting means and to one part of said fluid coupling,
said reflector being slotted transversely to its length for providing clearance therethrough for said rigid means over a range of angular orientation of the reflector relative to said mounting means, said rigid means extending through the slotted portion of the reflector,
fluid conduits extending between the fluid coupling and opposite ends of said cylinder, and
a hydraulic system connected to the fluid coupling for selectively establishing a pressure differential across said cylinder for adjusting the depression-elevation angle of the reflector.

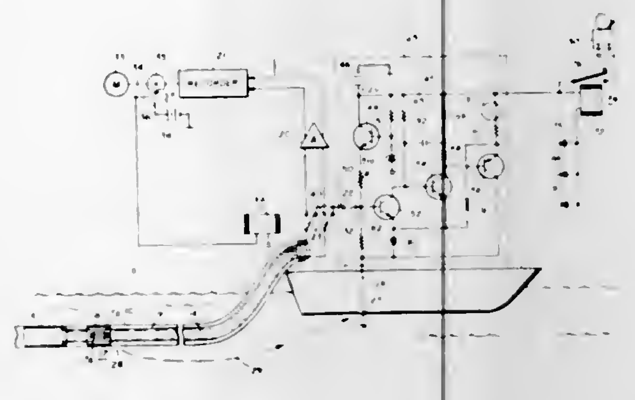
3,351,898

METHOD AND APPARATUS FOR MONITORING THE CONDITION OF A MARINE SEISMIC DETECTOR CABLE

Francis M. Romberg, Irving, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed May 27, 1966, Ser. No. 553,363

14 Claims. (Cl. 340—7)



1. In seismic exploration, the method of detecting the ripping or tearing of a marine seismic cable which is being towed by a boat and which includes electrical conductors within a normally watertight outer sheath, said method comprising the steps of:
(a) applying a voltage between at least one of said conductors and a grounding point in the water,
(b) sensing for the flow of electric current from said conductors via the water to said grounding point, and
(c) providing an alarm indication of the ripping or tearing of said outer sheath when the sensed electric current exceeds a predetermined threshold level.

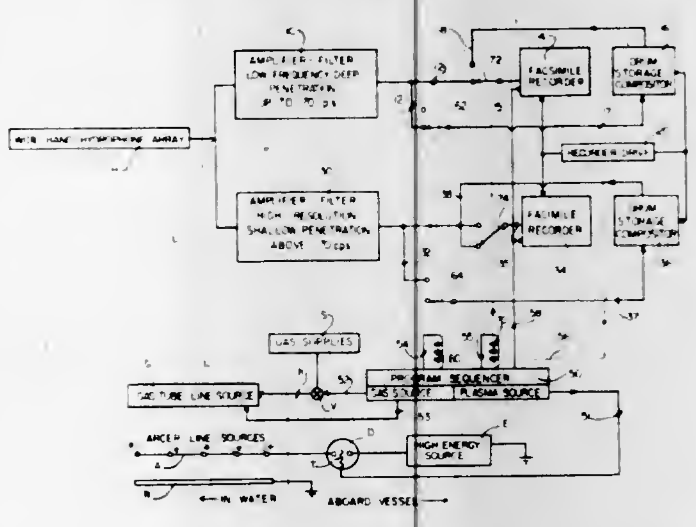
3,351,899

PROGRAMMED MULTIPLE SHOT SOURCE SYSTEM AND METHOD

William H. Luehrmann and Neil A. Moore, Dallas, Tex., assignors to Teledyne Industries, Inc., Geotech Division, a corporation of California

Filed June 27, 1966, Ser. No. 560,782

8 Claims. (Cl. 340—7)



1. A seismic survey system for obtaining and recording data representing formations at different depths, comprising:
(a) geophone means;
(b) plural amplifier channels connected to said geophone means and including tuned filter means adjusted respectively to pass a band of lower frequencies through one channel and a band of higher frequencies through a different channel;
(c) a first seismic source operative when actuated to generate seismic disturbances at frequencies within said lower pass band;
(d) a second seismic source operative when actuated to generate seismic disturbances at frequencies within said higher pass band;
(e) seismic-reflection recorder means connected with said channels to record the frequencies passing therethrough; and
(f) sequencer means operative to establish a continuous cycle of operation by the time-interlaced actuation of the first and second seismic sources according to a programmed sequence, and including means for actuation of said recorder means to separately record reflection signals corresponding with the particular frequency components within the pass bands of said plural channels.

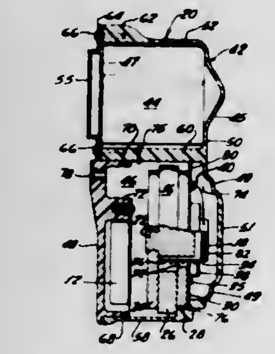
3,351,900

ACOUSTIC TRANSDUCER FOR USE IN DENSE MEDIUM

Yujiro Yamamoto, 18611 Newton Ave., and Edwin S. Hamberg, 17171 Calvo Drive, both of Santa Ana, Calif. 92705

Filed Jan. 24, 1966, Ser. No. 522,468

9 Claims. (Cl. 340—8)



9. An acoustic transducer for use under water or other dense medium, comprising:
a movable diaphragm having two opposed radiating surfaces;
transducer means cooperatively associated with said diaphragm for converting electrical energy into acoustical vibrations of said diaphragm, or vice versa;
a pulsation damper secured to one surface of said diaphragm, including means providing a number of relatively small pockets within which quantities of gas are permanently entrapped in isolation from each other;
and means subjecting said pulsation damper to a substantially constant pressure level irrespective of variations in the ambient pressure to which said transducer is subjected.

3,351,901

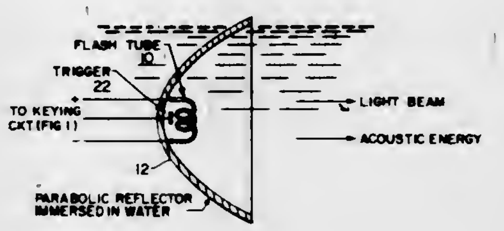
VISUAL AND ACOUSTIC ENERGY GENERATOR FOR UNDERWATER USE

Louis R. Padberg, Jr., Santa Barbara, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 24, 1966, Ser. No. 522,793

6 Claims. (Cl. 340—12)

1. Apparatus for ascertaining the presence of an under water object and for facilitating the identification thereof, said apparatus comprising:
selectively energizable electro-responsive means, designed for immersion into a body of water so as to lie in direct contact therewith, for periodically generating electromagnetic energy in the visible portion of the frequency spectrum and for additionally producing an output of acoustic energy at both the instant of initiation of each period of electromagnetic energy generation and at the instant of termination of each such period;
means for selectively energizing said electro-responsive means; and



means for directing both the electromagnetic energy generated by said electro-responsive means and the acoustic energy produced thereby along a common path toward said object, the acoustic energy so directed acting primarily to ascertain the presence of said object and the electromagnetic energy so directed acting primarily to facilitate its identification;
said electro responsive means comprising a tube containing therewithin an ionizable gas.

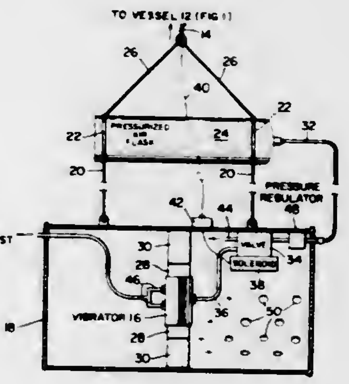
3,351,902

UNDERWATER SOUND SOURCE

Louis R. Padberg, Jr., 22 Rincon Vista, Santa Barbara, Calif. 93103

Filed Dec. 30, 1965, Ser. No. 517,872

4 Claims. (Cl. 340—12)

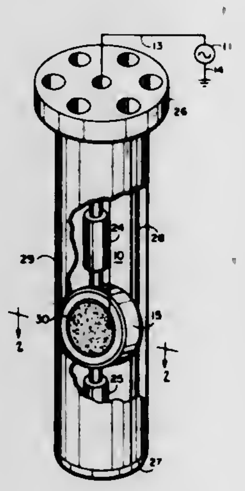


1. A high-power underwater sound source designated for deep submergence and capable of being selectively controlled from the surface so as to produce pulses of variable spacing and time duration and possessing broadband frequency characteristics, said sound source comprising:
a pneumatically-operated vibrator developing acoustic energy and adapted to operate over a given frequency band;
a chamber enclosing said vibrator and to which the latter is attached, said chamber having a natural frequency of vibration and being provided with at least one aperture designed to permit the passage of fluid therethrough;
means for operating said vibrator at the natural frequency of vibration of said chamber;
whereby said chamber is caused to resonate to increase the acoustic output of said source above the highest level capable of being reached solely by operation of said vibrator;

a container of pressurized air forming part of said sound source and submersible therewith, and means, controllable from the surface, for selectively admitting air from said container to said vibrator to determine the time periods during which acoustic energy is developed.

3,351,903
TRANSDUCER WITH PRESSURE RELEASE MEANS

Helmut J. Straube, Monroe County, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Oct. 27, 1966, Ser. No. 589,975
7 Claims. (Cl. 340—17)

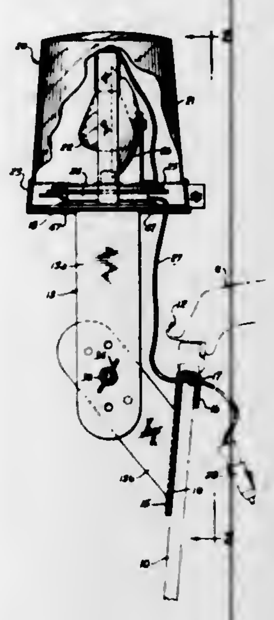


1. An underwater transducer operable at various depths and ambient pressures comprising
- (a) a housing having a cavity open at one end and terminating in a plurality of subcavities at the opposite end thereof,
- (b) a relatively stiff plate mounted opposite said open end of said cavity in sealing relationship with said plurality of subcavities to define a corresponding plurality of gas-filled chambers,
- (c) said subcavities in said housing being separated by wall portions which support said plate against fluid pressure within said cavity, and
- (d) an element exhibiting electromechanical transducing action mounted in said open end of said cavity in sealing relationship with said housing for containing a fluid therein,
- (e) said element generates compressional waves in one direction transverse to said open end of said cavity and in another direction to said plate in response to an electrical input signal applied thereto.

3,351,904
MOUNTING BRACKET FOR REVOLVING WARNING LIGHT FOR VEHICLES

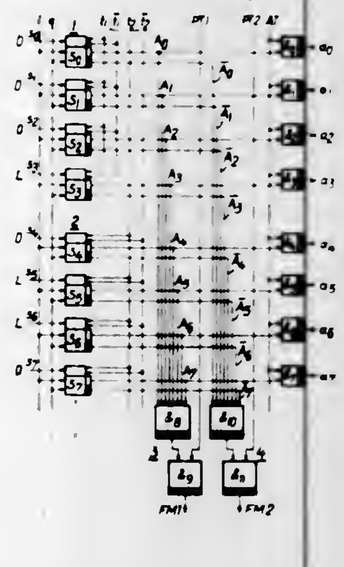
Frank Anthony Noruk, 1751 N. 119th St., Wauwatosa, Wis. 54177
Filed Apr. 5, 1965, Ser. No. 445,355
6 Claims. (Cl. 340—97)

1. A quickly detachable mounting bracket for a revolving red warning light for a vehicle, said bracket comprising, a mounting plate resting flat against the window and having means along its upper edge adapted to be slipped over the top edge of the vehicle window, arm means extending upwardly and outwardly from the plate and terminating above the vehicle roof when in the fully operative position, means for attaching said revolvable warning light at the upper end of the arm means, and adjustable means on said bracket for adjusting the light to a level position whereby the beam emitted from the revolving light will sweep around in a path which is at a generally constant attitude in respect to the ground over which the vehicle is traversing.



3,351,905
ERROR CHECKING METHOD AND APPARATUS

Djordje Kramer, Fislisbach-Aargau, Switzerland, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Jan. 20, 1964, Ser. No. 338,723
Claims priority, application Germany, Jan. 18, 1963, L 43,923
14 Claims. (Cl. 340—146.1)

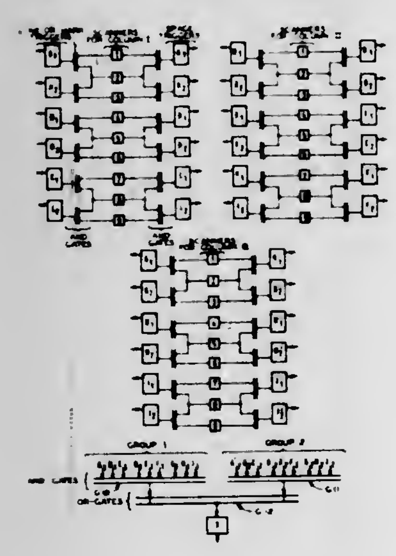


1. An error checking arrangement for use with a plurality of storage elements each having an input and an output, said arrangement comprising, in combination:
- (a) means connected to the inputs of the storage elements for writing the same information into all of the storage elements to be checked;
- (b) means connected to the outputs of the storage elements for producing a first error signal in the event at least one of the storage elements fails to produce a signal representing said information;
- (c) means connected to the inputs of the storage elements for erasing the information written thereinto by said writing-in means; and

- (d) means connected to the outputs of the storage elements for producing a second error signal in the event at least one of the storage elements fails to produce a signal representative of the erased condition, each of said error signal means comprising
  - (1) a first logic circuit having a plurality of inputs connected, respectively, to the outputs of the storage elements,
  - (2) a second logic circuit having two inputs one of which is connected to the output of said first logic circuit, and
  - (3) means for applying a test signal to the other of said two inputs of said second logic circuit.

3,351,906
READING-DEVICE FOR AN INFORMATION BEARER

Hendrik Cornelis Anthony van Duuren, Wassenaar, Netherlands, assignor to De Staat der Nederlanden, ten deze vertegenwoordigd door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands
Filed Sept. 26, 1962, Ser. No. 226,357
Claims priority, application Netherlands, Oct. 2, 1961, 269,829
6 Claims. (Cl. 340—146.3)

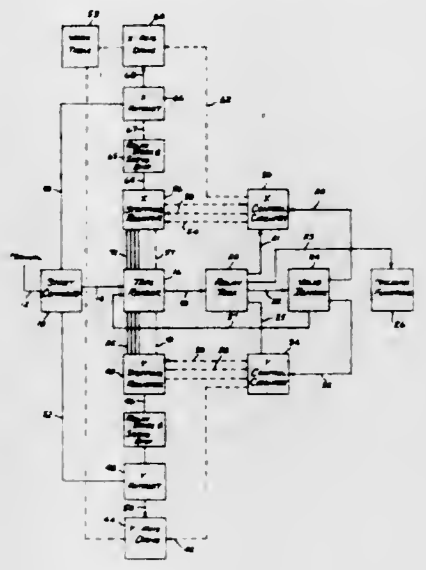


1. A reading device for characters consisting of code elements arranged in columns, and comprising: for each element:
- (a) at least three different scanning means (1–3, 4–6 or 7–9) for simultaneously scanning each element and
- (b) element responsive means (A_1, A_2—or J'2) responsive to similar outputs from at least each two adjacent ones of said scanning means,

and for each character:
- (a) first character responsive means (G10) responsive to similar outputs from all those said elements responsive means which correspond to the same relatively located adjacent ones of said scanning means for each element, for the specific combination of said element responsive means for that character,
- (a) second character responsive means (G11) responsive to similar outputs from all those said element responsive means which correspond to the same but other relatively located adjacent ones of said scanning means for each element, for the specific combination of said element responsive means for that same character, and
- (c) means (G12) responsive to at least one of said character responsive means for detection of said character.

3,351,907
MACHINE TOOL CONTROL SYSTEM HAVING MEANS FOR IGNORING INVALID COMMAND SIGNALS

Edward V. Cordes, Jr., Greenwood Lake, N.Y., assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed May 3, 1963, Ser. No. 277,912
7 Claims. (Cl. 340—147)



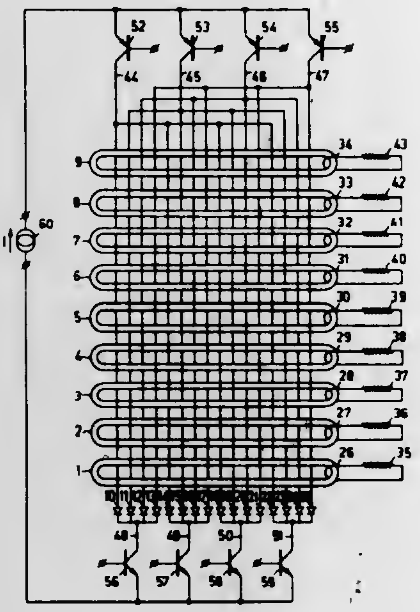
1. In a machine control system the code reader for reading in sequence words of coded information representing data of a machine operation including the operation of moving a tool relative to a workpiece, storage means to register in sequence coded data to be performed by the machine, permutation responsive means for providing different outputs in response to each different word, circuit means coupled to the output of said permutation responsive means to provide a valid indication for certain of said outputs to be accepted by the machine and an invalid indication in response to other of said outputs to be ignored, switching means separate from said permutation responsive means for connecting said code reader to said storage independently of said permutation responsive means for setting at least part of said storage means from said code reader in accordance with the words being read by said code reader, first control means responsive to said circuit means for actuating said switching means to set said storage means from said code reader including a control element responsive to said valid indication and second control means responsive to said invalid indication to effect an indexing of said code reader to read the next word.

3,351,908
MAGNETIC CORE SELECTION SYSTEM HAVING PLURAL CODED INPUTS

Jacob Fredrik Klinkhamer, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 26, 1963, Ser. No. 326,110
Claims priority, application Netherlands Dec. 18, 1962, 286,926
4 Claims. (Cl. 340—147)

1. A magnetic core switch assembly comprising a plurality of magnetic cores, input means for energizing said cores, a plurality of energizing windings threading said cores, said energizing windings being interconnected at one end thereof in a first given pattern to form a plurality of first groups of conductors and being interconnected at the other end thereof in a second given pat-

tern to form a plurality of second groups of conductors, the product number of said first and second groups being equal to the number of said energizing windings, unidirectional conducting elements connected in series with each of said windings, a plurality of switch means connected in series with said windings and interconnecting



each of said groups of conductors and said input means, output windings coupled to said cores, and means for selectively energizing one of said cores and an associated output winding comprising means for selectively actuating a plurality of said switches in a given pattern to produce additive current excitation of said one core and neutralizing excitation of others of said cores.

3,351,909

INFORMATION STORAGE AND TRANSFER SYSTEM FOR DIGITAL COMPUTERS

Hermann Hummel, Meersburg, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed July 15, 1964, Ser. No. 382,743

Claims priority, application Germany, July 17, 1963, T 24,308

7 Claims. (Cl. 340—172.5)

1. An information storage and transfer system for an electronic digital computer, comprising, in combination:

(a) a high speed storage unit for storing a plurality of digital words at a corresponding plurality of storage locations therein, each of said storage locations being identified by a corresponding digital address;

(b) means for writing into said high speed storage unit a plurality of operand words upon which operations are to be performed;

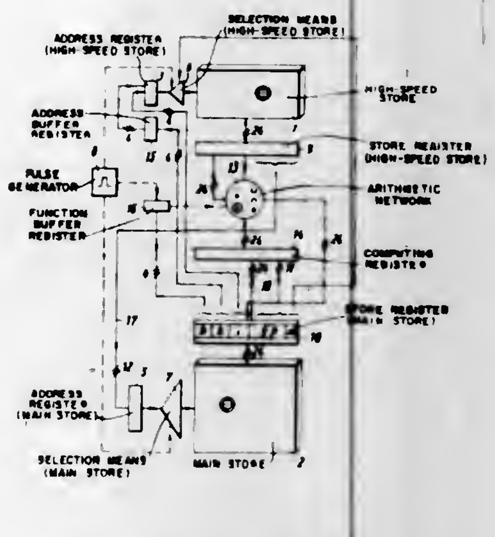
(c) a first register coupled to said high speed storage unit for receiving digital words read out of said high speed storage unit;

(d) a lower speed storage unit for storing a plurality of digital words in a corresponding plurality of storage locations therein, each of said storage locations being identified by a corresponding digital address;

(e) means for writing into said lower speed storage unit a plurality of operand words upon which operations are to be performed and a plurality of instruction words each containing an operation portion signifying an operation to be performed, a high speed address portion signifying the address of an operand word stored in said high speed storage unit, and an address modification portion signifying in part the address of an operand word stored in said lower speed storage unit, said address modification portion including an algebraic sign;

(f) a second register coupled to said lower speed storage unit for receiving digital words read out of said lower speed storage unit;

(g) means for writing into said high speed storage unit a plurality of partial address words which, when combined with the address modification portion of a corresponding instruction word, will signify the complete address of an operand word in said lower speed storage unit; and


SELECTION MEANS (HIGH-SPEED STORE)
ADDRESS REGISTER (HIGH-SPEED STORE)
HIGH-SPEED STORE
ADDRESS BUFFER REGISTER
STORE REGISTER (HIGH-SPEED STORE)
PULSE GENERATOR
ARITHMETIC NETWORK
FUNCTION BUFFER REGISTER
COMPUTING REGISTER
STORE REGISTER (MAIN STORE)
ADDRESS REGISTER (MAIN STORE)
SELECTION MEANS (MAIN STORE)
MAIN STORE

(h) means for transferring the words stored in said high speed and lower speed storage units into said first and second registers in two alternating cycles, the first of said two cycles comprising an instruction transfer cycle in which an instruction word is transferred from said lower speed storage unit into said second register and a corresponding partial address word is transferred from said high speed storage unit into said first register, said partial address word being combined with the address modification portion of said instruction word to form the complete address of an operand word in said lower speed storage unit, and the second of said two cycles comprising an operation transfer cycle in which the operand words whose addresses were designated in the instruction transfer cycle are transferred from said high speed and lower speed storage units into the corresponding registers to be operated on in accordance with the operation designated in said instruction transfer cycle.

3,351,910

APPARATUS FOR COLLECTING AND RECORDING DATA

William G. Miller, West Babylon, and Charles A. Burt, Oscawana, N.Y., assignors to Communitron, Inc., New York, N.Y.

Filed Aug. 5, 1964, Ser. No. 387,563

18 Claims. (Cl. 340—172.5)

1. A system for monitoring the operation of a plurality of data processing units at a plurality of stations which comprises

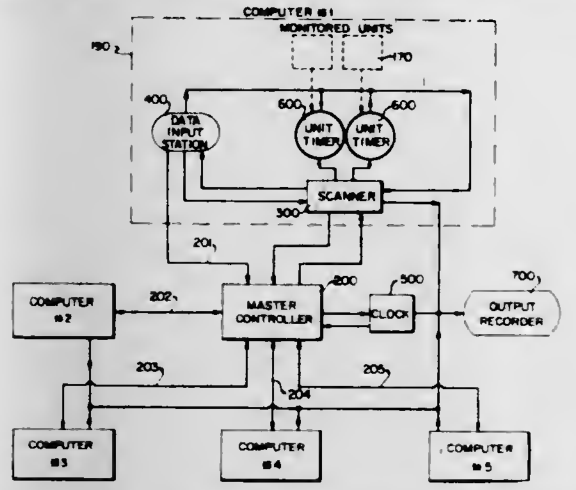
monitoring apparatus associated with said stations including a data input station having means for registering information to be reported, and a unit timer for each unit to be monitored having means for registering the accumulated operation time thereof,

a scanner for selecting sequentially the information registered in the data input stations and the operating times registered by the unit timers,

recording means for recording the information sequentially selected by said scanner,

clock means for registering time,

and a controller for supplying time registered by said clock to said recording means and actuating said scanner to record the information sequentially selected thereby.



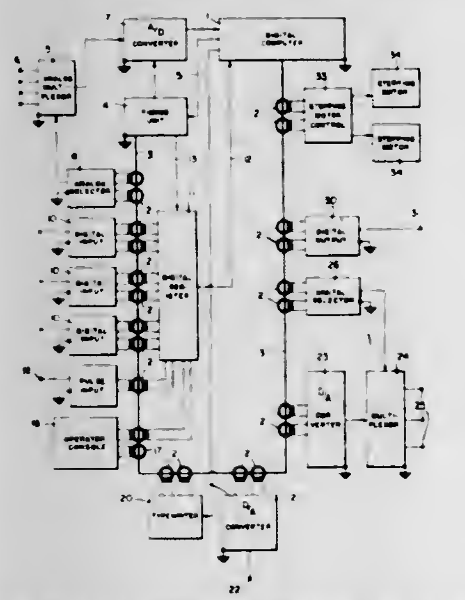
3,351,911

INTERFACING SYSTEM

Kenneth G. Harple, North Wales, and Wallace B. Jakacki, Chalfont, Pa., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Aug. 18, 1964, Ser. No. 390,428

1 Claim. (Cl. 340—172.5)



An interfacing system comprising, input means, output means, each of said input means and said output means having terminal means, a plurailty of magnetic elements, each of said magnetic elements exhibiting a hysteresis characteristic having a plurality of regions of substantial saturation, each of said magnetic elements individually connected to a separate one of said terminal means, pulse supplying means coupled to each of said magnetic elements for supplying thereto signals having two different levels, each of said different levels of signals operative to drive said magnetic elements to opposite magnetic conditions, inhibit means for selectively supplying signals to said magnetic elements in accordance with preselected and unique coupling arrangements at each of said magnetic elements, said signals supplied by said inhibit means having a magnitude and sense to drive said selected magnetic elements to saturation in one magnetic condition whereby said signals supplied by said pulse supplying means effect no change in the magnetic elements which receive signals from said inhibit means, said magnetic elements which exhibit a change in the magnetic condition thereof as a result of a drive signal from said pulse supplying means and the concurrent absence of a signal from said inhibit means produce a signal at said terminal means of the associated input and output means, and digital computer means selectively transferring signals relative to said input means and said output means in accordance with the production of a signal at one of said terminal means.

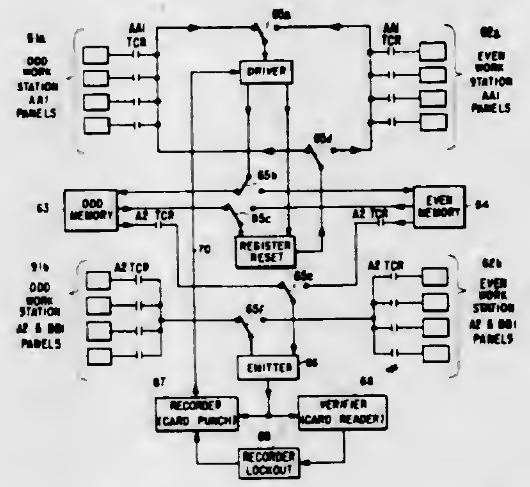
3,351,912

PRODUCTION MONITORING SYSTEM AND SEQUENCING CONTROL THEREFOR

Donald J. Collom, Birmingham, and Charles G. Mann, Farmington, Mich., assignors to Weltronic Company, Southfield, Mich., a corporation of Michigan

Filed Aug. 21, 1964, Ser. No. 391,102

31 Claims. (Cl. 340—172.5)


ODD WORK STATION AAI PANELS
AAI TCR
DRIVER
EVEN WORK STATION AAI PANELS
ODD MEMORY
A2 TCR
REGISTER RESET
EVEN MEMORY
ODD WORK STATION A2 & BBI PANELS
EVEN WORK STATION A2 & BBI PANELS
EMITTER
RECORDER (CARD PUNCH)
VERIFIER (CARD READER)
RECORDER LOCKOUT

1. A system for recording information from a plurality of sets of sources of information divided into a plurality of groups comprising a recording device, a memory means for each group, means for recording information for a set of sources for one group from said memory means for said one group, and means for storing information for a set of sources for another group in said memory means for said other group simultaneously with the operation of said recording means.

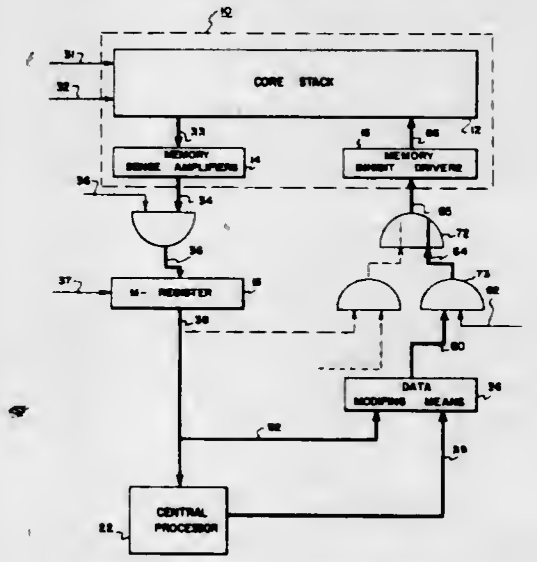
3,351,913

MEMORY SYSTEM INCLUDING MEANS FOR SELECTIVELY ALTERING OR NOT ALTERING RESTORED DATA

Buddie J. Pine, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York

Filed Oct. 21, 1964, Ser. No. 405,471

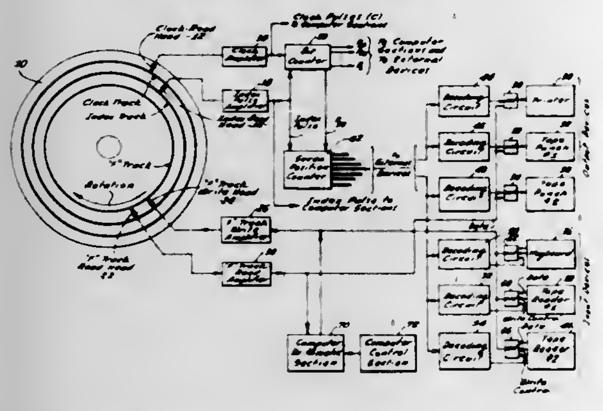
7 Claims. (Cl. 340—172.5)



1. In a data processing system, the combination comprising: a main memory, for the storage of a plurality of data units, comprised of a plurality of selectively addressable cells each of which is capable of storing one of said data units; a temporary memory; means coupled be-

tween said main memory and said temporary memory for transferring said data units from said main memory to said temporary memory; a first controllable data return path for providing communication directly from said temporary memory to said main memory; a second controllable data return path, including a data modifying means, for providing communication from said temporary memory to said main memory; and means for selectively rendering one of said data return paths operative.

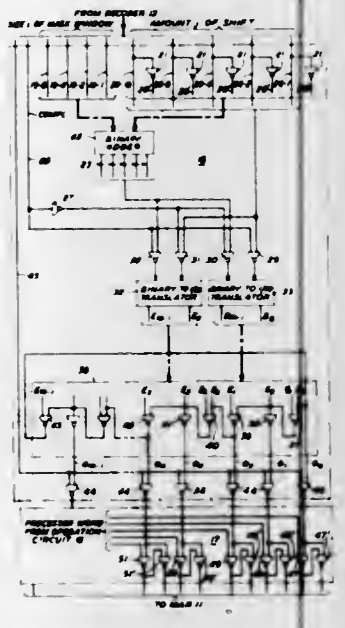
3,351,914
INPUT-OUTPUT BUFFER SYSTEM
Grey E. Stone, Covina, Calif., assignor to General Precision, Inc., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 413,202
7 Claims. (Cl. 340—172.5)



1. An input/output system for a digital computer including: a memory means for storing a plurality of computer words in a corresponding plurality of memory locations; writing means coupled to said memory for successively and repeatedly scanning said memory locations to store binary signals in said memory locations corresponding to said computer words; reading means coupled to said memory for successively and repeatedly scanning said memory locations to reproduce said binary signals stored therein; at least one input device; at least one output device; first control circuitry coupling said input device to said writing means; second control circuitry coupling said reading means to said output device; and timing circuit means coupled to said first and second control circuitry for successively and selectively completing a path from said reading means to said output device when said reading means successively and repeatedly scans predetermined ones of said memory locations, and for successively and selectively completing a path from said input device to said writing means when said writing means successively and repeatedly scans other predetermined ones of said memory locations, said timing circuit means including a counter synchronized with said memory means for producing distinctive control effects in said first and second control circuitry as said counter changes from state to state.

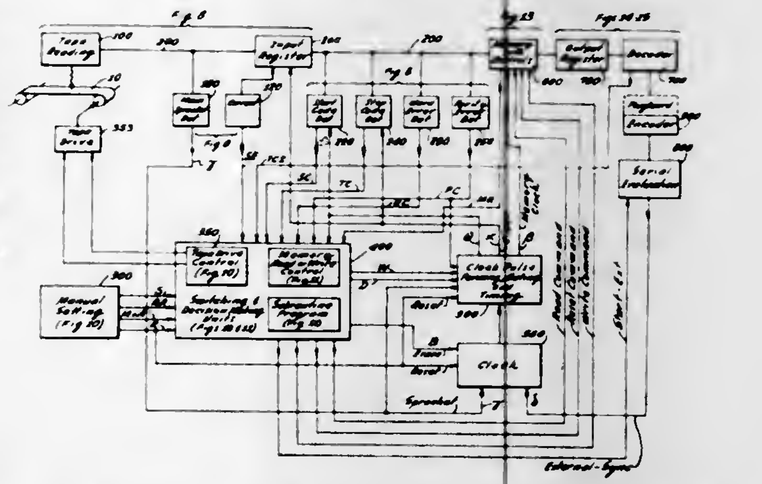
3,351,915
MASK GENERATING CIRCUIT
Benjamin T. Fought, Columbus, Ohio, William B. Macurdy, Fair Haven, N.J., and David Muir III, Columbus, Ohio, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 30, 1964, Ser. No. 422,247
12 Claims. (Cl. 340—172.5)

5. A data processing machine comprising
an instruction decoder,
means supplying to said decoder machine instructions specifying the size and position of an adjacent-bit mask window, said decoder producing output signals representing in binary coded form on a plurality of output circuits the bit magnitude of said window and the bit magnitude of shift defining said window position with respect to a right-adjusted position,
a binary adder computing the sum of said window magnitude and shift signals,
translating means separately converting said shift signals and the output signals of said adder into separate one-out-of-*m* signal representations, where *m* is the number of bits in a processing machine word, for defining the bit positions in a processing machine word corresponding to the beginning and ending bits of said mask window,



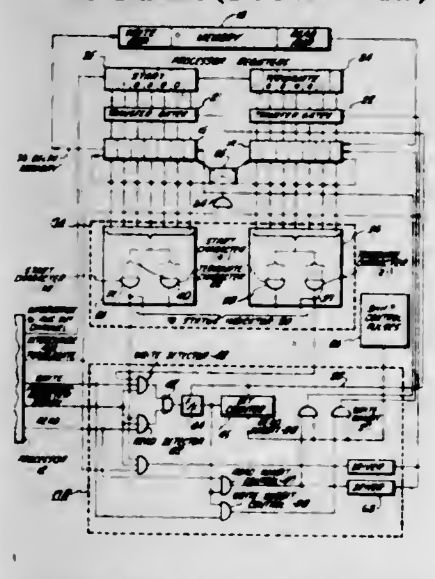
masking circuit means, and
means responsive to said one-out-of-*m* coded signals defining said mask window for controlling said masking means to pass signals in only those bit positions included in said window.

3,351,916
DATA CONVERTER
Biaglo F. Ambrosio, 5711 Melvin Ave., Tarzana, Calif. 91356, and Rein Turn, Van Nuys, Calif.; said Turn assignor to said Ambrosio
Filed Jan. 11, 1965, Ser. No. 424,572
44 Claims. (Cl. 340—172.5)



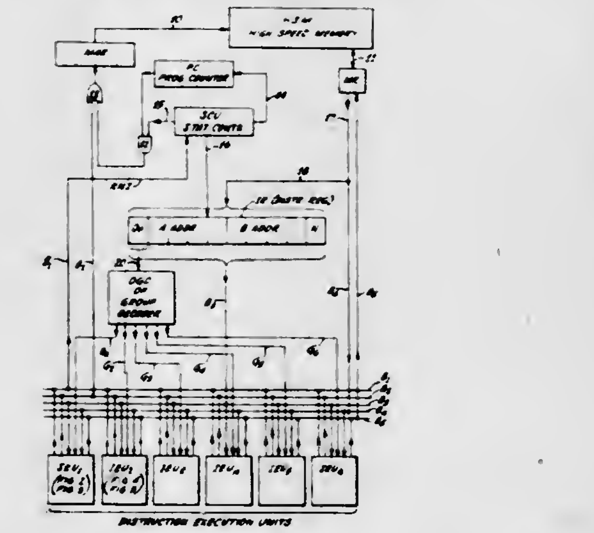
1. A data converter for operative interpositioning between a data-evaluating apparatus and a data storage medium containing characters comprised of a combination of bits arranged in parallel tracks, and in a serial-by-character and parallel-by-bit relationship, comprising:
a plural channel reader for serially reading said characters, parallel by bit, one channel per track and bit;
an input register connected to said reader for temporarily storing all read-out bits pertaining to one character;
a buffer memory having a plurality of addresses and having an activatable input circuit connected to said input register for storing said read-out characters parallel by bit in individual addresses, there being a buffer output circuit including a character decoding adapted for connection to said evaluating apparatus;
an instruction decoder connected to said input register and monitoring each character in said register for specific instruction codes prior to loading of such character into said memory, and including means for providing first and second control signals in response to respectively two code characters respectively preceding and succeeding a group of said characters other than instruction characters;
a control circuit connected to said instruction decoders for alternatingly activating said memory input and output circuits, respectively in response to said first and second control signals; and
means for controlling memory input and output character flow rates in respective response to the supply rate by the reader and the demand rate by the evaluating device.

3,351,917
INFORMATION STORAGE AND RETRIEVAL SYSTEM HAVING A DYNAMIC MEMORY DEVICE
George T. Shimabukuro, Monterey Park, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 5, 1965, Ser. No. 430,599
26 Claims. (Cl. 340—172.5)



22. An information storage and retrieval system for storing binary information in series in a circulating loop comprising a dynamic memory circuit for repeating each bit of binary input information at its output, said storage loop further comprising first and second shift registers tandem connected and in series with said memory circuit, said shift registers each having a plurality of stages for storing a fixed number of binary digits which form one information character for each register, a source of continually appearing shift control pulses applied to said first and second registers for sequentially and repetitively advancing each bit stored in series in said registers into said dynamic memory, means for inserting a start character uniquely coded from all other information into one of said registers to indicate the beginning point of an information pattern in said loop and also for inserting a terminate character uniquely coded from said start character and all other information into said loop for indicating the end of said information pattern, first and second signal detecting devices, first and second character decoding means connected respectively between said first and second registers and said first and second detecting devices, said first and second character decoding means being responsive to the presence of said start character in said first and second registers respectively for delivering output signals to said first and second signal detecting devices, a control circuit for delivering command signals to said first and second signal detecting devices, means activatingly operative for recovering an information character stored in said first shift register, and means connected between said first and second detecting devices and said signal recovery means for activating said recovery means upon coincidence of a command and a character decoding output signal at said second detecting means.

3,351,918
COMPUTER SYSTEM EMPLOYING SPECIALIZED INSTRUCTION EXECUTION UNITS
Saul Y. Levy, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,774
6 Claims. (Cl. 340—172.5)

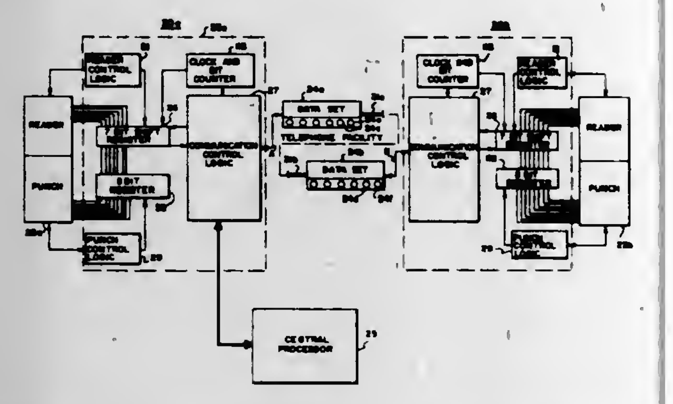


1. A computer system in which the many individual instructions and their respective incorporated operation codes are classified into groups, comprising
a random access memory for storing instructions and data,
means to staticize an instruction stored in said memory,
an operation group decoder to determine to group to which a staticized instruction belongs,
a number of instruction execution units each corresponding with one of said groups of instructions, each instruction execution unit including an operation register, an individual operation decoder coupled to the operation register, an address register, and a data register,
means responsive to the outputs of said operation group decoder to enable the operation register and the address register in a respective one of said instruction execution units to receive said staticized instruction, and
means in an enabled instruction execution unit responsive to the output of the respective individual operation decoder therein to employ the address register and data register in the enabled instruction execution unit for the execution of an individual instruction.

3,351,919
DATA RECORDING AND ERROR DETECTION SYSTEM
Richard E. Milford, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed May 19, 1965, Ser. No. 456,949
15 Claims. (Cl. 340—172.5)

1. A data recording system for receiving groups of signals wherein each signal represents a binary digit, each group of signals comprises a start signal followed by a

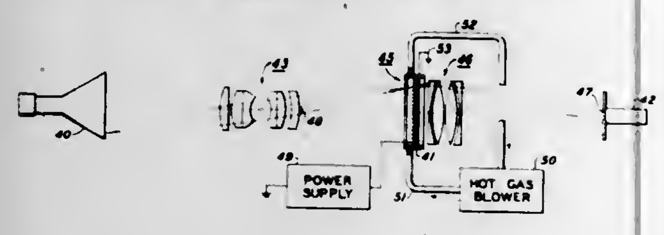
plurality of signals representing a character and a plurality of signals representing the inverse image of said character, a storage means, means for receiving said group of signals and for applying signals representing said character to said storage means and for inverting said inverse image of said character and applying the inverted signals to said storage means, a counting means coupled to said receiving means and responsive to the receipt of said start signal for advancing through a counting cycle, a register, a recording structure coupled to receive signals from said register, and means coupled to said recording structure and said counting means and jointly responsive to the operating condition of said recording structure and given counts of said counting means for transferring to said register from said storage means signals representing said character and signals representing the inverted inverse image of said character.



3,351,920
THERMOPLASTIC COMPUTER MEMORY STORAGE SYSTEM

David C. Harper, Rochester, Raymond T. Wright, West Webster, and James E. Young, Pittsford, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Jan. 2, 1964, Ser. No. 335,256
12 Claims. (Cl. 340—173)

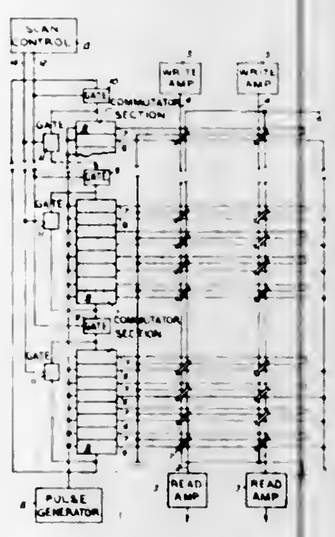


1. A computer memory storage system comprising: a light source operative to produce a light spot, means for tracking said light spot in a predetermined pattern, and means to modulate said light spot in accordance with the intelligence to be stored during a record mode, means to set said light spot at a fixed high intensity during a read mode, a photosensitive medium having an electrostatically deformable surface, a first lens system comprising an objective optical lens for imaging said light spot on said deformable surface, means for forming on said surface a latent electrostatic image of said intelligence, and means for deforming said surface in accordance with said electrostatic image to retain said image; a mask positioned on said objective lens for masking said light spot, photomultiplier tube system operative to convert a light beam into electrical signals, said photomultiplier tube including an aperture adapted to receive said light, a second lens system comprising a collective optical lens for imaging said mask on said aperture of said photomultiplier tube, said deformed surface operative to diffuse said masked light source to scatter said light to said collective lens thereby permitting light to enter through said aperture in said photomultiplier.

3,351,921
MAGNETIC CORE DATA STORAGE MATRIX

Peter George Briggs, Tewin, near Welwyn, England, assignor to International Computers and Tabulators Limited

Filed Mar. 13, 1962, Ser. No. 179,306
Claims priority, application Great Britain, Mar. 20, 1961, 10,038/61
10 Claims. (Cl. 340—174)

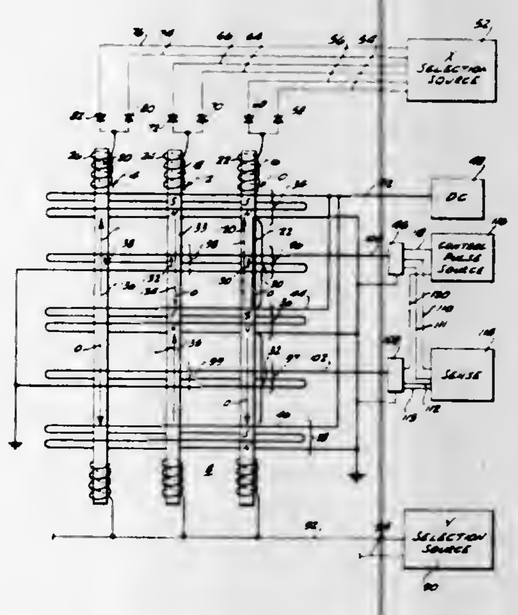


1. Data storage apparatus for storing a multi-digit item of data, including a plurality of storage locations, one for each digit, respectively, of the item; scanning means operative to scan said locations in sequence in a succession of time intervals to effect in each of said time intervals the reading-out of the digit stored in the location being scanned and the writing-in of a digit into the same location; and means operable to modify the operation of said scanning means to cause said scanning means to repeat the scanning of a location before scanning the next location in the sequence.

3,351,922
COLLAPSING DOMAIN MAGNETIC MEMORY

Richard L. Snyder, Fullerton, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Oct. 31, 1963, Ser. No. 320,295
4 Claims. (Cl. 340—174)

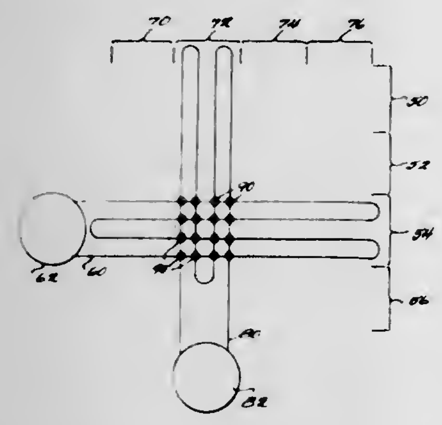


1. A storage element comprising
a magnetic medium having an axis and having a magnetic orientation substantially parallel to said axis, said medium having storage position therealong.
first means coupled to said medium for establishing magnetic regions of a first magnetic polarity at the ends of said storage positions,
second means coupled to said medium for selectively applying along said axis a first propagating field for reading, of said first polarity and a second propagating field for writing, of a second magnetic polarity opposite to the polarity of said magnetic regions,
third means coupled to said medium and including an information source for apply a switching field for writing, of said second polarity for establishing a domain being unstable in the absence of said switching field, along a portion of said storage position and that responds to said second propagating field to establish a stable domain of said second polarity along the length of said storage region, said stable domain of second polarity responding during reading to said first propagating field to establish a stable domain of a first polarity,,
and sensing means coupled to said third means for responding to said magnetic regions changing to said first polarity in response to said first propagating field.

3,351,923
COINCIDENT CURRENT INHIBIT SYSTEM

Seymour R. Cray, Chippewa Falls, Wis., and Paul A. Kristensen, Bad Homburg vor der Hohe, Germany, assignors to Control Data Corporation, Minneapolis, Minn, a corporation of Minnesota

Filed July 8, 1964, Ser. No. 381,034
10 Claims. (Cl. 340—174)

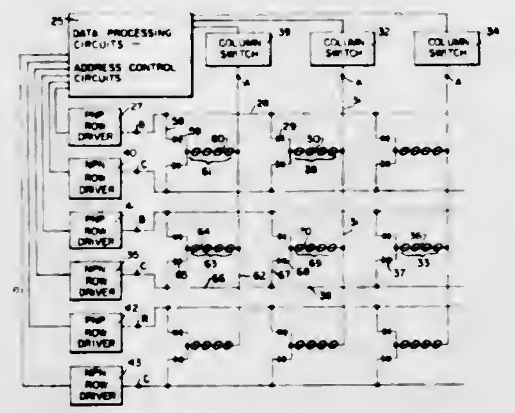


1. A coincident current inhibit system, comprising,
(a) a plurality of bistable magnetic elements electrically arranged in an array of columns and rows;
(b) driving means electrically coupled to the elements for selectively energizing a selected element in one sense with sufficient excitation to effect a change of state of the selected element;
(c) a first inhibiting means for coupling in series the elements of each column, the first inhibiting means including means for energizing the elements in the column having the selected element, simultaneously with and in a sense opposite to that of the driving means; and
(d) a second inhibiting means for coupling in series the elements of each row, the second inhibiting means including means for energizing the cores in the row having the selected element, simultaneously with and in a sense opposite to that of the driving means and in coincidence with the first inhibiting means, the first inhibiting means and the second inhibiting means in coincidence to have sufficient excitation to prevent a change in state of the selected element.

3,351,924
CURRENT STEERING CIRCUIT

Albert J. Meyerhoff, Wynnewood, Pa., and Harold C. Goodman, Newport Beach, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Continuation of application Ser. No. 782,752, Dec. 24, 1958. This application Nov. 27, 1964, Ser. No. 415,859
8 Claims. (Cl. 340—174)

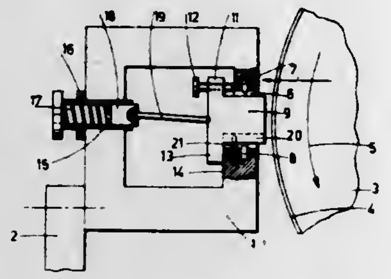


1. In a multi-word linear selection magnetic core memory system, including a plurality of planes forming a three dimensional matrix with each plane having a plurality of magnetizable cores thereon and stacked vertically such that the cores lying along a vertical line represent bits of a word, a read-write drive circuit comprising a first electrical current conducting means threading a group of cores, which cores each lie in a different one of said planes and together represent a word, said current conducting means bypassing the remaining cores other than those constituting a desired word, a reference voltage source coupled to a first end of said current conducting means, a first unidirectional current conducting device having first and second terminals and having its first terminal coupled to a second end of said electrical current conducting means to provide a first direction current conducting path, a second unidirectional current conducting device having first and second terminals and having its second terminal coupled to said second end of said electrical current conducting means to provide a second direction current conducting path, first and second semiconductor variable current generating means respectively coupled to said second terminal of said first unidirectional current conducting device and to said first terminal of said second unidirectional current conducting device to provide current flow alternatively along said first and second direction current conducting paths through said magnetizable cores of only those cores constituting a desired word to provide flux interlinking said cores in a first and second direction, circuit means causing said first semiconductor variable current generating means to provide current flow of sufficient magnitude, in the absence of additional aiding current, to read out said group of cores by switching the switchable ones of said cores into their opposite magnetizable state and circuit means causing said second semiconductor current generator means to provide current current flow for writing desired bits into said group of cores only when flowing in the presence of an information current separately provided by a further electrical current conducting means coupled to the individual bit cores, a separate sensing means for each said plane and during a read out operation connected to receive output signals from only those cores of said desired word, said second current generator means providing substantially two-thirds the current required to switch the word cores during a writing operation and said further electrical conducting means being capable of generating substantially one-third the current required to switch the bit cores and being of a positive or a negative polarity depending upon the binary bit to be stored in each core of said word.

3,351,925
AIR BEARING MAGNETIC HEAD MOUNTING

Johannes Antonius van Lammeren, Georgius Bamler, Jacob Koorneef, and Jules Bos, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed July 6, 1964, Ser. No. 380,438
Claims priority, application Netherlands, July 4, 1963, 294,936
12 Claims. (Cl. 340—174.1)



1. In combination: at least one magnetic head having a front face adapted to co-act with a moving magnetic carrier which creates a gas pressure between said front face and said carrier when in operation, and a rear face remote from said carrier, said head bearing on a fixedly arranged knife-edged support, an adjustable flexible member exerting a force from one end thereof, coupling means mechanically coupling said one end of the flexible member and the rear face of the head, said force being exerted on said head against said gas pressure when the carrier is moving, said coupling means creating a component of said force which is substantially parallel to the direction of movement of the carrier and substantially perpendicular to the knife-edged support, and stop means on said head co-acting with a fixed stationary member for limiting the distance of the head from the carrier when the carrier is stationary.

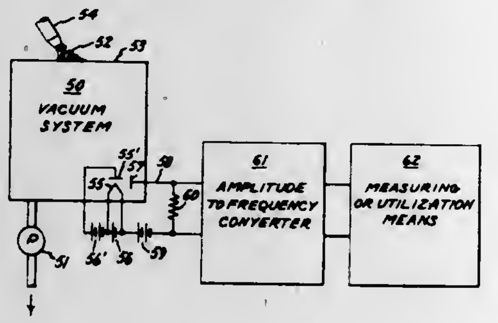
ERRATUM

For Class 340—187 see:
Patent No. 3,351,952

3,351,926
APPARATUS AND METHOD FOR DETECTING LEAKS IN EVACUATED SYSTEMS

Robert L. Watters, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed June 5, 1964, Ser. No. 372,803
11 Claims. (Cl. 340—242)


54
52
53
50
VACUUM SYSTEM
55'
57
58
55
60
61
AMPLITUDE TO FREQUENCY CONVERTER
62
MEASURING OR UTILIZATION MEANS
P
51
56'
56
59

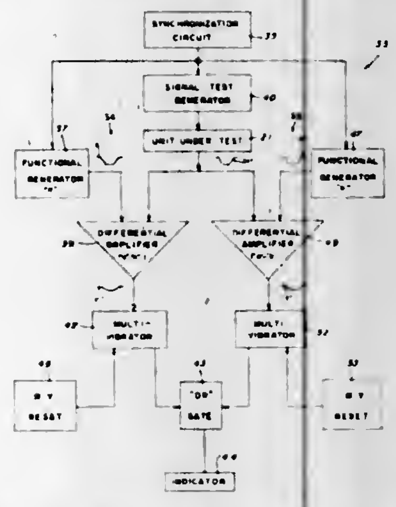
9. The method for detecting leaks in an evacuated system, which method comprises:

(a) applying a tracer gas to a localized area of the external surface of said system;
(b) ionizing continuously a portion of the gas within said system;
(c) continuously collecting the ionized gas particles at a rate which establishes a magnitude of current; and
(d) generating an audio signal of frequency in accordance with the magnitude of said current whereby a frequency variation is indicative of a leak in the vicinity of said localized area.

3,351,927
SIGNAL LIMITS DETECTOR

Richard W. Stinson, Columbus, Ohio, assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 3, 1964, Ser. No. 415,684
4 Claims. (Cl. 340—248)



1. A device for detecting out-of-limits variations of a signal being tested, which comprises:

means for generating a pair of signals having substantially the same pulse shape as an ideal pulse shape of the signal being tested, a first of the pair of generated signals having instantaneous voltage values higher than desired respective instantaneous voltage values of the signal being tested, a second of the pair of generated signals having instantaneous voltage values lower than desired respective instantaneous voltage values of the signal being tested,

means for differentially comparing the signal being tested with the pair of generated signals and for developing detection signals when instantaneous voltage values of the signal being tested exceed respective instantaneous voltage values of the first of the pair of generated signals and are below respective instantaneous voltage values of the second of the pair of generated signals, and

means responsive to the developed detection signals for indicating the out-of-limits variations of the signal being tested.

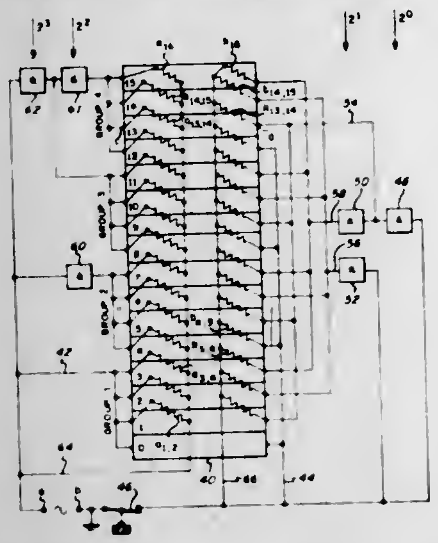
3,351,928
DISPLAY APPARATUS

Harold Smola, Carle Place, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Feb. 17, 1964, Ser. No. 345,328
9 Claims. (Cl. 340—324)

1. Indicating apparatus comprising a plurality of electroluminescent elements, a logic circuit for exciting selected electroluminescent elements, said logic circuit being adapted to receive bits of as large a binary number as there are elements in said plurality of elements, said logic circuit consisting of first and second sublogic circuits connected to receive the higher order bits and the lower order bits respectively of said binary number, said plurality of elements being divided into as many groups as said first sublogic circuit may select, each of said groups having as many elements as may be selected by said second sublogic circuit, means responsive to said higher ordered bits to apply power through said first sublogic circuits to a selected combination of groups, said selected combination

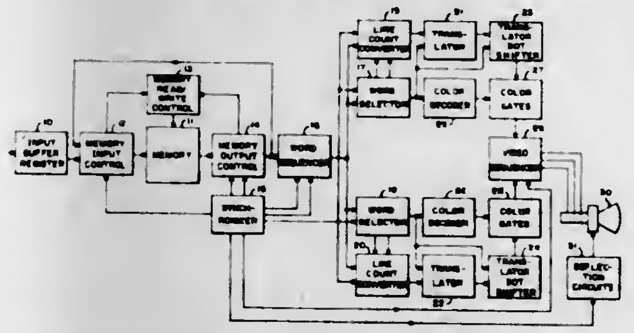
being representative of the particular binary value of the higher ordered bits, and means responsive to said lower ordered bits to apply power through said second sublogic circuit to corresponding selected elements in each group, each of said selected elements being representative of the particular binary value of the lower ordered bits.



3,351,929
DATA CONVERTER

William R. Wagner, Bronx, N.Y., assignor to Hazeltine Research Inc., a corporation of Illinois

Filed May 26, 1964, Ser. No. 370,154
13 Claims. (Cl. 340—324)



1. A data converter system in which coded information signals representative of discrete characters are converted to a form suitable for reproduction in a line scan type display at positions determined by their corresponding coded addresses, said system comprising:

storage means, having a plurality of storage positions, for storing said coded information signals at different ones of said storage positions;

means responsive to said coded addresses for causing the coded information signals to be stored in said storage means at positions determined by their corresponding coded addresses;

readout means for reading from said storage means said coded information signals in a line scan format;

and means responsive to said readout means for converting said stored coded information signals into a second signal in which each of the characters has the form of a plurality of information bits corresponding to unique dot elements in a dot matrix;

whereby substantial savings in required storage capacity results from storing the coded information signals rather than the information bits corresponding to the dot elements.

2. A data converter system in which coded information signals representative of discrete characters are converted to a form suitable for reproduction in a line scan type display at positions determined by their corresponding coded addresses, said addresses including a coarse address which defines a display character sized segment in which the production of the character is to be initiated and a fine address which defines at what point in said display segment the production of the character is to be initiated, said system comprising:

storage means, having a plurality of storage positions, for storing said coded information signals at different ones of said storage positions;

means responsive to said coded addresses for causing the coded information signals and their corresponding coded fine addresses to be stored in said storage means at the storage positions determined by the corresponding coarse addresses;

readout means for reading from said storage means said coded information signals and their corresponding fine addresses in a line scan format;

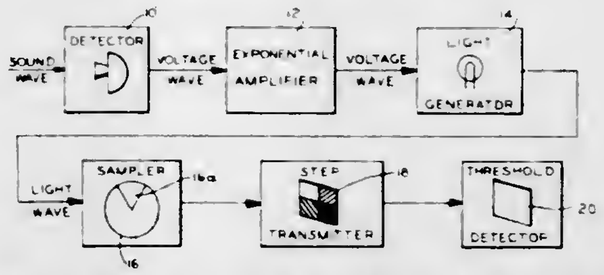
means responsive to said readout means for converting said stored coded information signals into a second signal in which each of the characters has the form of a plurality of information bits corresponding to unique dot elements in a dot matrix;

and means responsive to the fine addresses of the characters for positioning said information bits, representative of the characters, with respect to the segments within which each character is to be displayed, as a function of their corresponding fine addresses.

3,351,930
METHOD OF AND APPARATUS FOR ANALOG TO DIGITAL DATA CONVERSION

Hans Jacob Zweig, 151 Calderon Ave., Mountain View, Calif. 94040

Filed Feb. 14, 1963, Ser. No. 258,474
9 Claims. (Cl. 340—347)

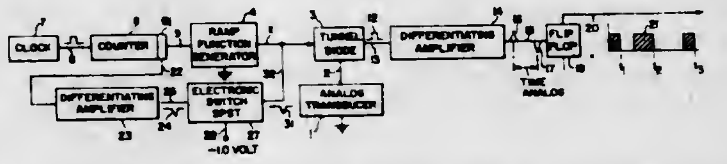


1. The method of analog to digital data conversion which comprises the steps of detecting the analog data and converting the same to an analog signal, exponentially amplifying the analog voltage signal, modulating the intensity of a light beam with the amplified voltage, sampling the modulated light beam, attentuating the light beam in separate discrete varied elements, and detecting the presence of the separate variably-attentuated, light elements above a threshold.

3,351,931
VOLTAGE ANALOG TO TIME ANALOG CONVERTER

Walter J. Lytle, Catonsville, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 4, 1963, Ser. No. 313,835
7 Claims. (Cl. 340—347)



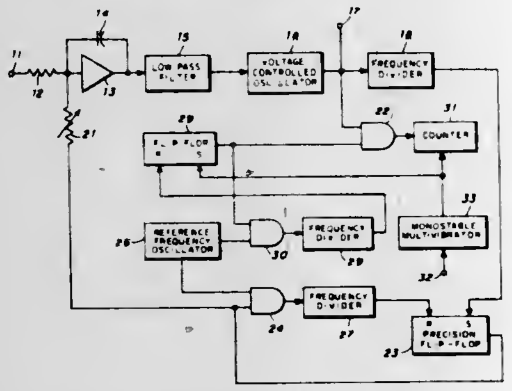
1. An analog amplitude-to-time analog converter comprising, first means including a continuously operating clock pulse generator continuously driving a cyclic counter feeding a ramp function generator for generating a series of periodic incrementally stepped simulated ramp function voltage output pulses, second means connected to

said ramp function generator and having high impedance and low impedance states, said second means being responsive to the algebraic sum of an unknown analog input voltage and the voltage generated by said first means for changing its impedance from high to low impedance state and thereby generating an output signal pulse the front edge of which represents a time mark, said output signal pulse continuing until abruptly terminated by the cyclic resetting of said counter.

3,351,932
ANALOG DIGITAL CONVERTER

Forrest G. Hibbits, San Diego, and Paul M. Haas, Del Mar, Calif., assignors, by mesne assignments, to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed July 23, 1964, Ser. No. 384,762
8 Claims. (Cl. 340—347)



6. An analog to digital converter comprising:

(a) an integrating means having an input and an output;

(b) means for applying a voltage to be converted to said input of said integrating means;

(c) a voltage controlled oscillator having a control input and an output, said control input coupled to the output of said integrating means;

(d) a flip-flop having set and reset inputs and an output, said flip-flop set input coupled to said voltage controlled oscillator output;

(e) a first And gate having a signal input, an enabling input, and an output, said enabling input connected to said flip-flop output;

(f) a reference frequency oscillator having an output connected to said first And gate signal input;

(g) a first divider having an input and an output for producing an output after a predetermined number of pulses at its input, said first divider input connected to said first And gate output, and said first divider output connected to said flip-flop reset input;

(h) feedback means connected between said flip-flop output and said input of said integrating means for cancelling a portion of said voltage to be converted;

(i) a second And gate having a signal input, an enabling input, and an output, said signal input connected to said voltage controlled oscillator output;

(j) switch means;

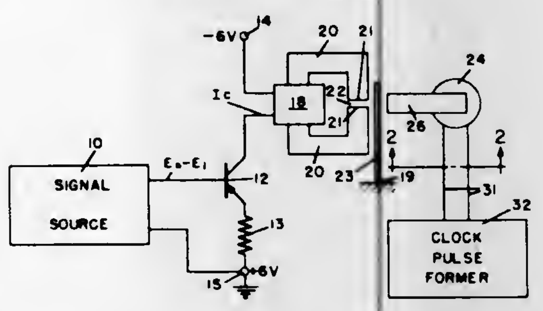
(k) a second divider having an input and an output for producing an output signal after a predetermined number of pulses at its input, said second divider input coupled to said reference frequency oscillator output, and said second divider output selectively connected to said second And gate enabling input via said switch means; and

(l) frequency measuring means having an input connected to said second And gate output to detect the signals produced by said voltage controlled oscillator when said second divider output is connected to said second And gate enabling input.

3,351,933
START-STOP PULSE GENERATORS

Frederick L. Maltby, Abington, Pa., and Harry Reifel, Waltham, Mass., assignors to Stevens-Arnold Inc., a corporation of Massachusetts

Filed Dec. 17, 1964, Ser. No. 419,087
17 Claims. (Cl. 340—359)

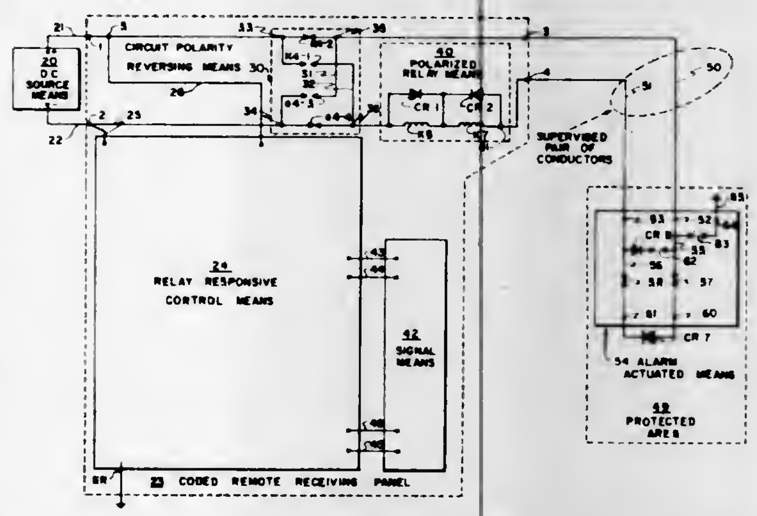


8. In a data transmission system having means for supplying stop signals for equally spaced-apart, equal periods of time, and for supplying start signals between said stop signals, and having a clock pulse former, a start-stop pulse generator comprising a non-driven vibratible reed having a portion of magnetic material, a reed clamping coil having a polepiece with an end adjacent to and normally spaced from said reed opposite said portion, means connected to said first mentioned means and to said coil for energizing said coil to cause said reed to be clamped against said polepiece during said stop signals and for deenergizing said coil for releasing said reed during said start signals, means responsive to the vibration of said reed at its resonant frequency when said reed is released for generating an AC voltage, and means connecting said last mentioned means to the input of said clock pulse former.

3,351,934
SUPERVISED ALARM SYSTEM

Norman J. Vletz, Brooklyn Center, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 19, 1965, Ser. No. 456,934
9 Claims. (Cl. 340—409)

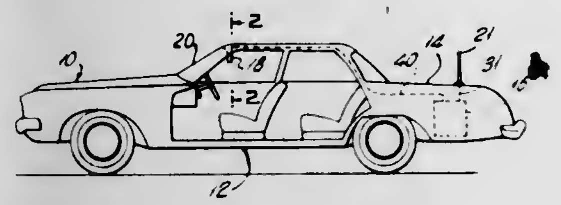

20 DC SOURCE MEANS
CIRCUIT POLARITY REVERSING MEANS 30
40 POLARIZED RELAY MEANS
SUPERVISED PAIR OF CONDUCTORS
24 RELAY RESPONSIVE CONTROL MEANS
42 SIGNAL MEANS
23 CODED REMOTE RECEIVING PANEL
54 ALARM ACTUATED MEANS
12 PROTECTED AREA

1. An alarm system, comprising: direct current source means including connection means connected to alarm actuated means in series with polarized relay means; said alarm actuated means including first asymmetric current conducting means; said alarm actuated means further including alarm actuated switching means having second asymmetric current conducting means substituted in place of said first asymmetric current conducting means in reverse polarity upon the operation of said alarm actuated means; circuit polarity reversing means including said connection means connected to said source means to reversibly power said alarm actuated means and said polarized relay means; and relay responsive control means and signal means connected by said connection means to said source means and responsive to said operation of said polarized relay means to in turn operate said circuit polarity reversing means and said polarized relay means to activate said relay responsive control means to thereby operate said signal means.

3,351,935
VEHICLE DETECTING SYSTEM AND DUAL PURPOSE MIRROR ARRANGEMENT THEREFOR

Albert C. Nolte, Jr., Oyster Bay Cove, N.Y., assignor to Elton Industries, Inc., New York, N.Y., a corporation of New York

Filed Mar. 29, 1965, Ser. No. 443,583
14 Claims. (Cl. 343—5)



1. A vehicle detecting system, comprising

a vehicle;

a dual purpose mirror arrangement mounted in said vehicle and having a dark condition in which it provides a reflecting mirror surface and a light condition in which it produces light;

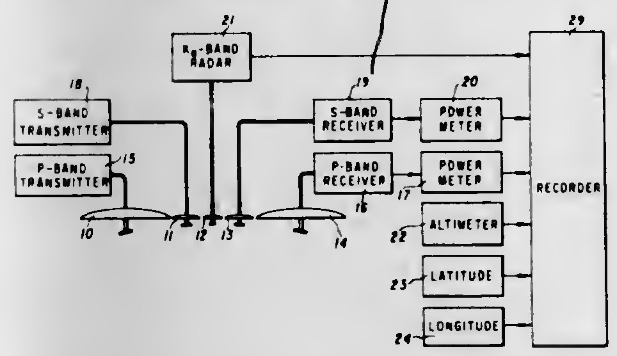
detecting means carried by said vehicle for detecting the presence of an object in the vicinity of said vehicle; and

coupling means for selectively coupling said detecting means to said dual purpose mirror arrangement for controlling the condition thereof.

3,351,936
METHOD AND APPARATUS FOR EXPLORING THE EARTH WITH ELECTROMAGNETIC ENERGY

Allen M. Feder, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Jan. 10, 1966, Ser. No. 519,605
9 Claims. (Cl. 343—5)



1. An apparatus for geological and pedological exploration comprising:

transmitting means supported for movement along a vehicle traverse for subjecting the terrain to first and second radiations having different wavelengths approximately within the range of the radar wavelengths, said first radiation having a first soil absorption factor for penetration of said terrain to a first predetermined depth, said second radiation having a second different soil absorption factor for penetration of said terrain to a second predetermined depth,

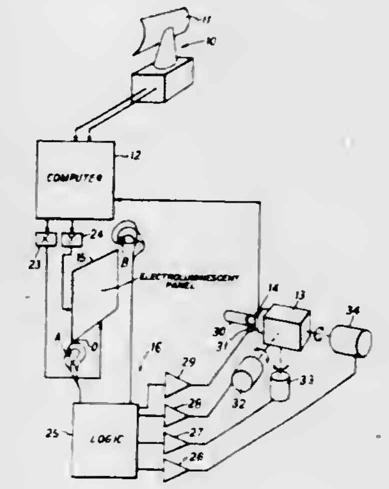
means for receiving energy of said first and second radiations reflected from said terrain to produce first and second return signals respectively representative of power in the received energy, and

recording means responsive to said receiving means to separately record said first and second signals as a function of location along said traverse to provide an indication of the shape and location of subsurface and surface geological features within said first and second terrain depths.

3,351,937
DATA-DISPLAY APPARATUS

Stephen Nicholas Spens, Farnborough, England, assignor to The Solartron Electronic Group Limited, Farnborough, Hampshire, England, a corporation of Great Britain

Filed Aug. 1, 1966, Ser. No. 569,409
Claims priority, application Great Britain, Aug. 6, 1965, 33,851/65
17 Claims. (Cl. 343—5)



12. Data-display apparatus comprising a radar installation including a radar scanner, said installation being adapted to supply data relating to the positions of objects defined with respect to a first set of position co-ordinates, a matrix of electrically controlled electroluminescent cells arranged in rows in accordance with a second set of co-ordinates, an optical project or for superimposing upon the said matrix a chart defined in accordance with the first set of co-ordinates;

and computing means responsive to position data from the said radar installation for causing light cells in the said matrix to be electrically excited and emit light at co-ordinate positions bearing to the chart the same relation as the objects to the said first set of co-ordinates.

3,351,938
VEHICLE IDENTIFICATION APPARATUS

George W. Gray, Lambertville, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed May 17, 1965, Ser. No. 456,264
5 Claims. (Cl. 343—6.5)

3. A railroad car identification apparatus comprising

a transponder to be mounted on a railroad car adapted to run on railroad tracks, said transponder consisting of

a plurality of crystals tuned to different frequencies,

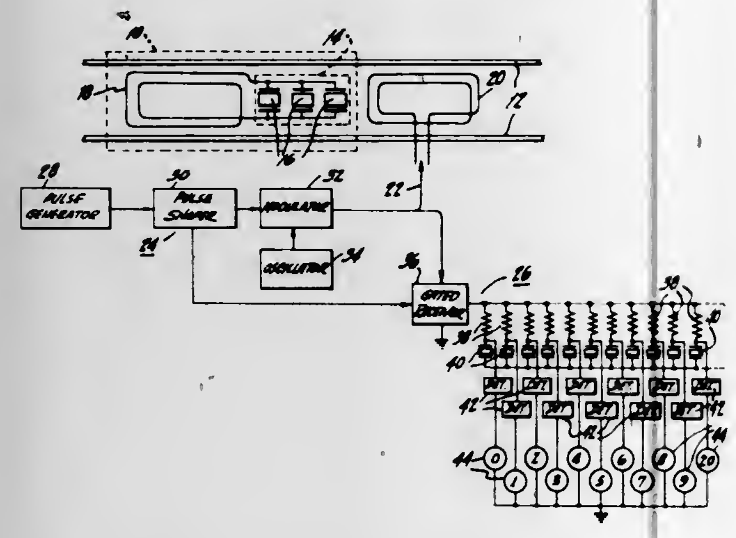
an antenna mounted on said car, said antenna being connected in energy transfer connection to said crystals, and

a transmitter-receiver device, said device comprising

an antenna located along said track,

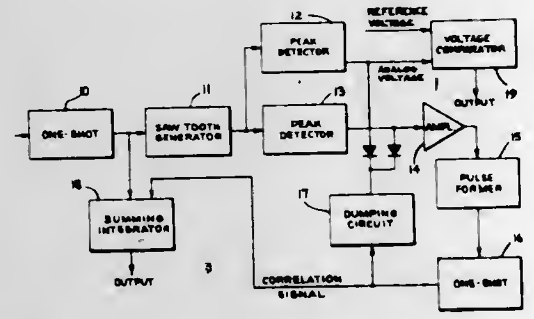
means for producing periodic pulses of an unmodulated wave of a frequency to energize all of said transponder crystals connected to said first named antenna upon energy transfer from said last named antenna to said first named antenna,

- a receiver having an input terminal connected to said pulse producing means and having an output terminal,
- means for preventing said receiver from receiving said pulses during the production thereof,
- a plurality of crystals connected to the output terminals of said receiver, whereby upon applying pulses to said second mentioned antenna, said crystals of said car are energized and upon the cessation of said pulses, corresponding crystals connected to said receiver are energized, and



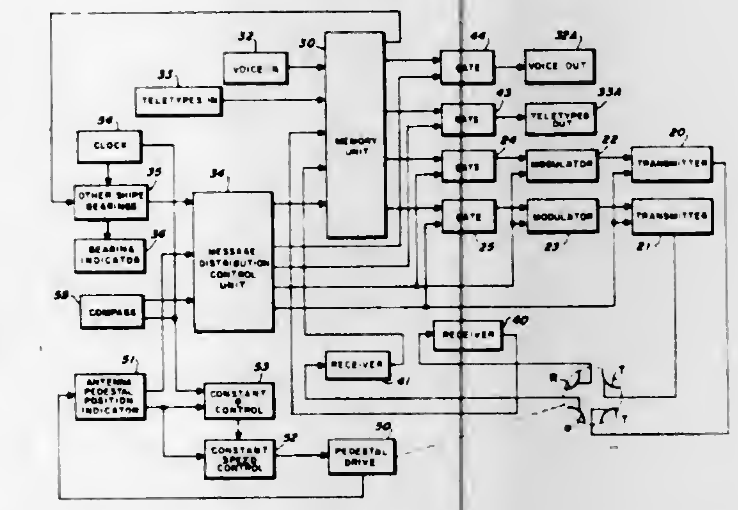
- means for indicating the energization of individual ones of said plurality of crystals which are connected to said receiver.

3,351,939
PULSE REPETITION INTERVAL CORRELATION DETECTOR
Robert C. Olsen and Frederick O. Stahlhut, Indianapolis, Ind., assignors to the United States of America as represented by the Secretary of the Navy
Filed Feb. 24, 1966, Ser. No. 531,637
3 Claims. (Cl. 343—17.1)



1. A means for detecting a single radar pulse repetition frequency from a multisignal environment, comprising:
- a first one-shot multivibrator having an input for receiving pulses from the multisignal environment, said first one-shot multivibrator for furnishing a standard pulse regardless of the amplitude and width of the input pulse;
- a sawtooth generator having its input coupled to the output of said first one-shot multivibrator, the pulses from said first one-shot causing said sawtooth generator to reset;
- a peak detector means having an input thereof coupled to the output of said sawtooth generator, said peak detector means for detecting and storing the peak voltage to which said sawtooth generator charges and then discharging the stored value slightly so that a small pulse is generated when the next sawtooth generator peak voltage is reached which is as high as the first said peak voltage;
- a pulse forming circuit having its input coupled to receive the output of said peak detector means for converting said small pulse from said peak detector means into a sharp pulse;
- a second one-shot multivibrator having its input coupled to the output of said pulse forming circuit, said second one-shot for producing an output pulse for each of said peak detector means pulses; and
- a summing integrator circuit having a first and a second input, said first input coupled to the output of said first one-shot and said second input coupled to the output of said second one-shot, said summing integrator circuit for integrating said input pulses and producing an output pulse when a predetermined correlation level has been attained.

3,351,940
MICROWAVE TRANSHORIZON BROADCAST RADIO SYSTEM
Norman R. Ortwein, San Diego, and Clark A. Potter, La Jolla, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Apr. 6, 1965, Ser. No. 448,560
5 Claims. (Cl. 343—100)

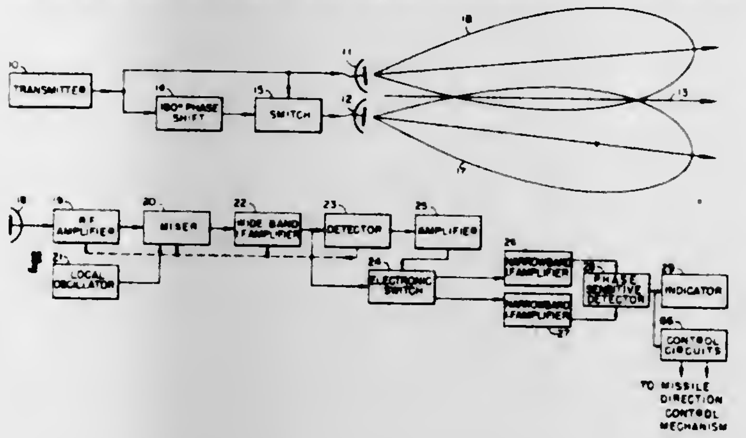


5. A radio station of the class described for a secure communication system comprising:
- a transmitter and a receiver,
- two directional antennas, each having a relatively sharp beams pattern, the beam patterns being oppositely directed and the antennas being coupled, respectively, to said transmitter and said receiver, and
- means connected to said antennas for effectively rotating said beam patterns about a vertical axis at a constant speed and with a predetermined rotational phase angle so that the transmitting beam sweeps past a reference azimuth at a predetermined instant of time.

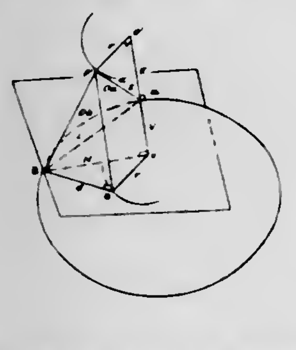
3,351,941
RADIO WAY-FOLLOWING SYSTEM
Robert M. Page, Camp Springs, Md.
(6715 Shay Lane, Paradise, Calif. 95969)
Filed Oct. 6, 1949, Ser. No. 119,983
10 Claims. (Cl. 343—107)

1. In a direction finding system, a signal source providing radiant energy release in slightly divergent overlapping patterns, means within said source alternately reversing the phase of the radiant energy in one pattern, a remote signal receptive device, first and second signal paths, received signal responsive switch means delivering signals from the signal receptive device to the first signal

path when the radiated energy patterns are in-phase and to the second signal path when the radiated energy patterns are out-of-phase, and phase responsive utilization apparatus connected to the signal paths responsive to produce output signals in dependency on relative phase and amplitudes of the signals in said paths.

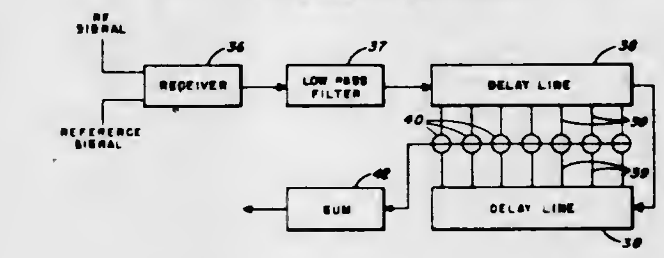


3,351,942
METHOD FOR THE DETERMINATION OF DISTANCE AND/OR DIRECTION BETWEEN NON-INTERVISIBLE DISTANT STATIONS
Emanuel M. Sodano, 8105 Riverside Ave., Cabin John, Md. 20731
Filed Aug. 26, 1964, Ser. No. 392,360
8 Claims. (Cl. 343—112)



5. A method of making measurements to determine the direction between first and second non-intervisible points on the surface of the earth comprising:
- (a) providing an intermediate point above the earth's surface, said point moving in a first path and a second path from which both of said first and second points are simultaneously in line of sight relationship, each path lying on opposite sides of the axis between said first and second points and being located on horizontal circular arcs of substantially the same altitude, said arcs being within spheres symmetrically disposed about said axis, said spheres being centered at points where lines from said first and second points intersect at right angles and having radii equal to approximately ⅓ the distance from said center to said first point; each of said circular arcs being centered at said first point and having a radius equal to approximately ½ the distance between said first and second points;
- (b) producing an electrical signal for initiating electronic means at said intermediate point for producing a plurality of first signals effective to measure the distance between said intermediate point and said second point along said first path;
- (c) simultaneously producing with each of said first signals a second signal effective to measure the distance between said intermediate point and said first point, and actuating means for determining the direction of said intermediate point from said first point along said first path;
- (d) producing an electrical signal for initiating electronic means at said intermediate point for producing a plurality of third signals effective to measure the distance between said intermediate point and said second point along said second path which are symmetrically disposed with respect to the points from which the first signals measured the distance along said first path;
- (e) simultaneously producing with each of said third signals a fourth signal effective to measure the distance between said intermediate point and said first point, and actuating means for determining the direction of said intermediate point from said first point along said second path; and
- (f) recording said distance and direction measurements.

3,351,943
CORRELATION DOPPLER SYSTEM
George B. Bush, Clarksville, and Larry L. Warnke, Laurel, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 13, 1965, Ser. No. 495,738
7 Claims. (343—112)



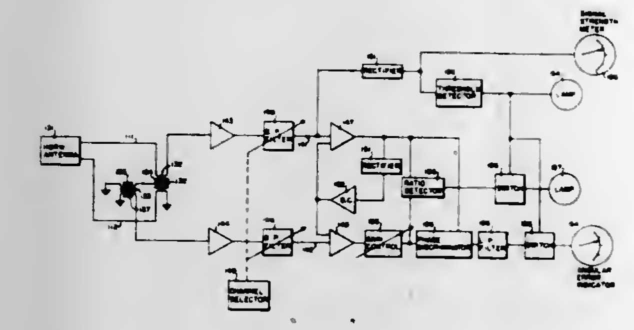
1. A correlation Doppler system for determining the time of intercept between a Doppler frequency of a radio frequency signal of a moving satellite and a fixed reference signal at a receiving position comprising:
- means for receiving the transmitted radio frequency signal from a moving satellite;
- means for mixing said received satellite signal with a fixed reference signal to produce a beat frequency signal between said signals because of the variation of the frequency of said satellite signal due to the Doppler effect caused by the motion of the satellite;
- delay means for combining various delayed signals of said beat frequency signal from the first half of said delay means with second half of said delay means;
- means for feeding said beat frequency signal from said mixing means to said delay means; and
- summing means for adding the combined delay signals of said delay means whereby a peak of said combined signals will indicate the time of intercept between the Doppler frequency signal and the fixed reference signal at a receiving position.

3,351,944
COMPLETE SIMPLIFIED HOMING SYSTEM FOR AIRCRAFT
John H. Dunn, 5508 Ridgefield Road, Springfield, Md. 21784, and Dean D. Howard, 8914 Oak Lane, Oxon Hill, Md. 20028
Filed Jan. 17, 1966, Ser. No. 521,221
13 Claims. (Cl. 343—113)

1. A microwave receiver for homing on a given transmitter radiating an amplitude modulated, polarized signal, said receiver having an axis of directivity and providing information as to the angular error between said axis of directivity and said transmitter in the plane of at least one of the electric and magnetic field components of said signal, said receiver comprising:
- a single aperture microwave antenna of sufficient size to sustain higher order modes, said antenna being

symmetrical about said axis of directivity whereby both symmetrical and unsymmetrical mode energy are excited therein upon illumination thereof by said signal when said plane of said component is unsymmetrical about said axis of directivity whereas only symmetrical mode energy is excited therein upon illumination thereof by said signal when said plane of said component is symmetrical about said axis of directivity;

detector means coupled to said antenna for detecting the modulation components of said symmetrical and said unsymmetrical mode energy;

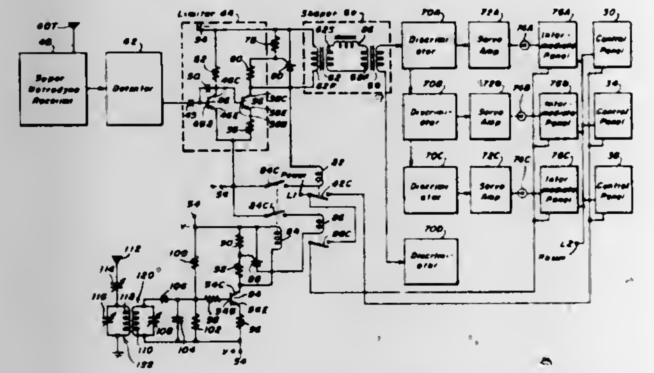


separating means coupled to said detector means for separating the modulation component of said symmetrical mode energy from the modulation component of said unsymmetrical mode energy;

phase discriminating means coupled to said separating means; and

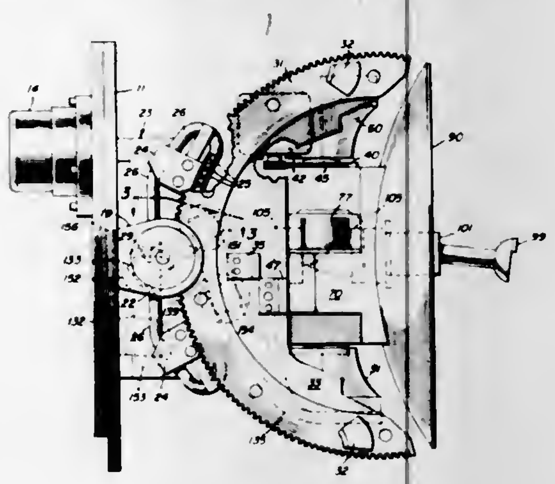
angular error indicating means coupled to said phase discriminating means to thereby provide an indication of said angular error in intelligible form.

3,351,945
SAFETY REMOTE CONTROL FOR A CARRIER
Vincent S. Borsattino, Chursel E. Marker, and Jesse W. Shalla, Gary, Ind., assignors to United States Steel Corporation, a corporation of Delaware
Filed Feb. 7, 1964, Ser. No. 343,411
3 Claims. (Cl. 343—225)



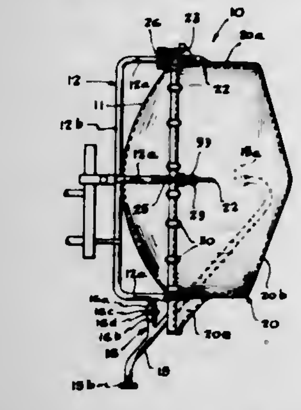
1. A control for a carrier comprising a first transmitter for transmitting a first signal of known frequency, a second transmitter for transmitting a second signal having a frequency substantially different than that of the first transmitter, said transmitters being at a position remote from said carrier, a first receiver mounted on said carrier for receiving the signal transmitted by said first transmitter, a detector connected to the output of said first receiver, a limiter connected to the output of said detector, said limiter including a first transistor connected to receive the output of said detector, discriminator means connected to the output of said limiter for detecting and distinguishing the frequency of said first signal, an electrical powered device, second means operable by the output of said discriminator means for operating said device, a silicon controlled rectifier connected in circuit with said transistor and switched on by said transistor, a power source, a first relay coil connected in series with said silicon controlled rectifier to said power source to allow current to pass through said relay coil when the silicon controlled rectifier is turned on, a first tuned circuit tuned to the second signal frequency for picking up a signal from said second transmitter, a second tuned circuit tuned to the frequency of said first tuned circuit and inductively coupled thereto, rectifier means connected to the output of said second tuned circuit for passing one portion of the output signal, a second transistor, a second relay coil connected in series with said second transistor to said power source, means connecting the output of said rectifier means to said second transistor to switch the transistor on and allow current to pass from said power source to said second relay coil, power supply means for said devices, and a normally open contact associated with each of said relay coils, said relay coils closing said contacts when they are energized to permit flow of electricity from said power supply means to said electrical powered device when said second means is operable.

3,351,946
MISSILE MOUNTED HYDRAULICALLY DRIVEN SCANNING ANTENNA
Kenneth W. Verge, Farmington, Mich., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 3, 1963, Ser. No. 306,390
15 Claims. (Cl. 343—705)



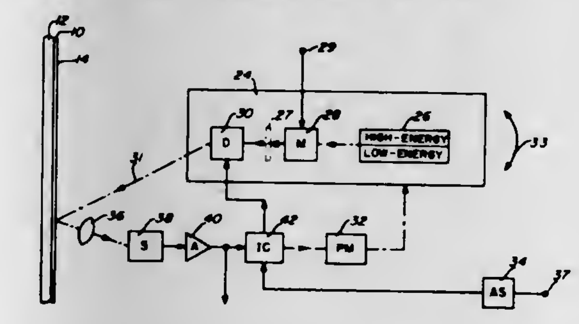
1. A two axis tracking antenna system for use in guidance of a pilotless missile for receiving or directing radiant energy for target location for providing homing information to said missile comprising:
- a base for supporting the antenna system in spaced relationship with the missile air frame;
- a centrally positioned rigid saddle member secured to said base;
- a gimballing means movable about two axes;
- ball-bearing suspension tubes and ball-bearing recirculating tubes secured to said saddle member and said gimballing means;
- ball-bearings positioned in said ball-bearing suspension tubes and ball-bearing recirculating tubes;
- said gimballing means operatively mounted to said ball-bearings; and
- a radiant energy reflecting means operatively coupled to said gimballing means;
- whereby the radiant reflecting means moves in response to the gimballing system as the gimballing system moves on said ball-bearings in the ball-bearing suspension tubes thereby providing the ball-bearings to recirculate through the recirculating tubes for allowing substantially frictionless movement of the radiant energy reflecting means over a wide scanning area.

3,351,947
SHROUDED PARABOLIC ANTENNA STRUCTURE
James W. Hart, Highland Park, Ill., assignor, by mesne assignments, to Mark Products Company, Skokie, Ill., a corporation of Illinois
Filed Feb. 17, 1965, Ser. No. 433,288
5 Claims. (Cl. 343—840)



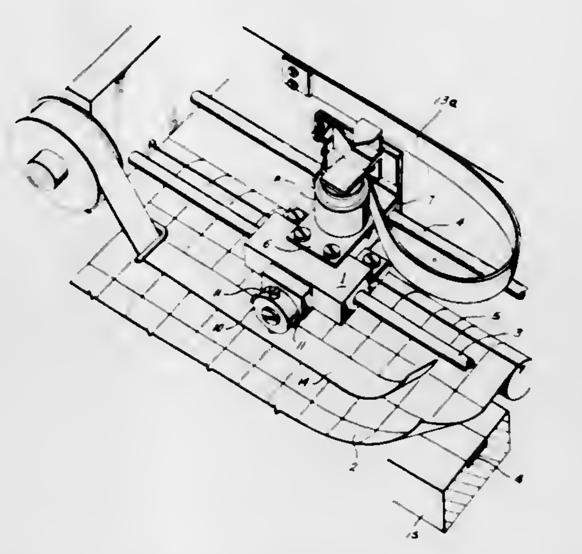
1. A high frequency antenna of paraboloid configuration, comprising; a parabolic dish reflector having a concave reflecting surface and a marginal flange, energizing means to radiate electromagnetic energy onto said surface from a point forwardly thereof for reflection as a sharply defined beam, unitary cover means constructed of low loss, light weight, non-metallic material having a marginal conformation to seat on said dish flange, said cover means having a cylindrical portion extending from the periphery of said dish reflector to a point beyond the confines of said energizing means, said cover means further having an imperforate web portion integral with the cylindrical portion spanning the forward end thereof to define a weather-tight enclosure for the reflector surface, said web portion protruding outwardly towards the center to present a generally conical conformation so as to substantially reduce wind loading and form a mechanically rigid structure, and a conducting facing on the interior surface of said cylindrical portion operative to function as a reflecting shroud and improve the radiation directional pattern of said antenna.

3,351,948
LASER RECORDER USING MEDIUM HAVING ENCAPSULATED CHEMICALS
Theodore H. Bonn, Lexington, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,438
15 Claims. (Cl. 346—76)



1. In combination, a recording medium having a film of encapsulated chemicals deposited on at least one surface thereof, a source for selectively generating at least one focused high-energy beam, said high-energy beam being adapted to liberate said chemicals from their encapsulant in a discrete location of said surface so as to record a mark thereon, said source further including means for selectively generating a low-energy beam, means responsive to an address signal for directing said beams to selected discrete locations of said surface, means responsive to received input signals for modulating the energy applied by said high-energy beam, and means for reading out said recorded marks with said low-energy beam from said discrete locations.

3,351,949
POINT PLOTTING GRAPHIC RECORDER
Albert D. Brown, Houston, Tex., assignor, by mesne assignments, to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Dec. 15, 1965, Ser. No. 513,972
3 Claims. (Cl. 346—94)

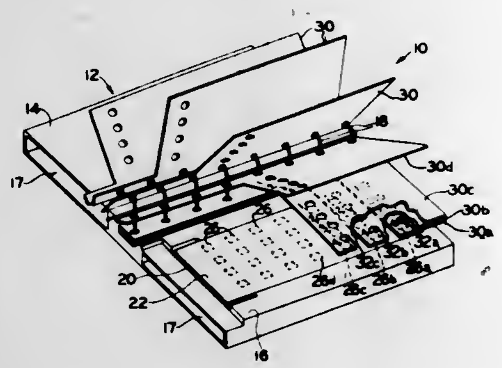


1. In a high speed point plotting graphic recorder having a record medium upon which points are to be plotted, in combination therewith of a printing apparatus for printing said points on said medium at a speed of several hundreds of points per minute comprising a body mounted adjacent said medium, a leaf spring rigidly attached to said body at one locus along its length and having a portion extending from said locus to overlie said medium; a character printer mounted on the extending portion of said spring and, with the spring in an at-rest position spaced above the medium and having a character thereon of sufficient hardness to cause a distinct character to be printed; means responsive to an electrical signal for applying a force to said spring between said locus and said printer to cause the spring to flex downwardly to cause the character printer to deliver a blow to said medium and imprint thereon; and a body of elastomer beneath said medium and positioned to receive the downward blows of said character printer to cushion same and to supply a rebounding force to said character printer to cause the printer and spring to move rapidly back to the spring's at-rest position.

3,351,950
INFORMATION STORING APPARATUS
David F. Wolfe, New York, N.Y., assignor to Record-A-Punch Corporation, Carlstadt, N.J., a corporation of New Jersey
Filed Apr. 12, 1965, Ser. No. 447,488
3 Claims. (Cl. 346—104)

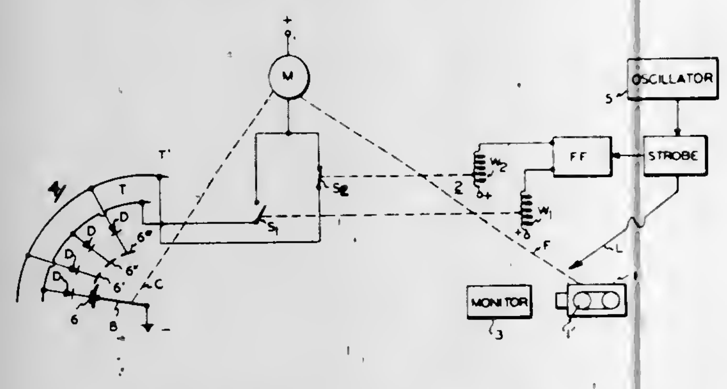
1. Apparatus for entering information in punch cards including a support member,
- a blank punch card supported on said support member, said punch card having a plurality of areas arranged in a pattern and adapted to be selectively removed to represent the entry of information in the punch card,
- a plurality of master code cards each carrying information to be entered in said punch card, the information on each code card being represented by an array of perforations arranged in the same pattern as said

areas in said punch card so that the perforations in each master card can be aligned with the corresponding array of areas in the punch card, each master card being adapted to be moved separately into and out of operative relation with the blank punch card,



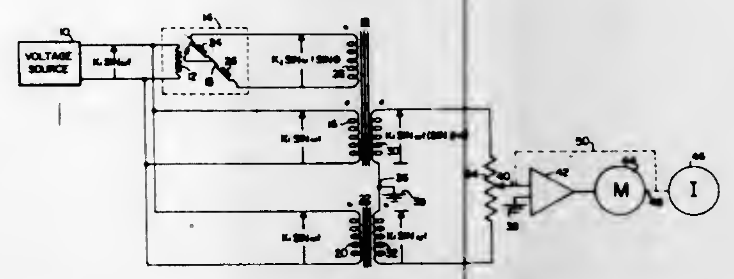
and an auxiliary card for use in re-reading information entered in a punch card, said auxiliary card including a plurality of columns of indicia corresponding to the columns of perforations in the master code cards, said auxiliary card being positioned beneath the punch card whereby indicia thereon may be read through apertures in the punch card.

3,351,951
STEPPING CIRCUITS FOR RECORDING APPARATUS
Kenneth E. Perry, Wayland, Mass., assignor to Geodyne Corporation, Waltham, Mass., a corporation of Massachusetts
Filed Apr. 19, 1966, Ser. No. 543,730
9 Claims. (Cl. 346—107)



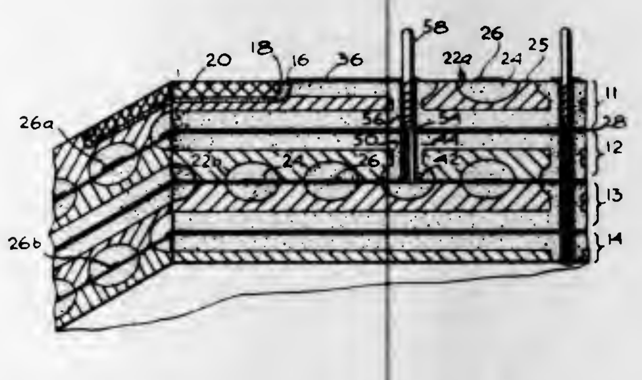
1. Stepping circuit apparatus having, in combination, switching means comprising a plurality of successively positioned switch commutator segments successively contactable by a movable contactor, the segments being divided into two groups of alternately connected-together segments, motor means for controlling the movement of the movable contactor, relay means for alternately connecting one segment group and then the other to the motor means to energize the same in steps, means for producing periodic timing impulses, recording means having a movable recording medium the movement of which is controlled in accordance with the stepping of the motor means, means responsive to the onset of each timing impulse for effecting recording upon the recording medium, and means responsive to the termination of each timing impulse for controlling the relay means in order to energize the motor means to move the contactor one segment and thus advance the motor means one step and synchronously to move the recording medium a predetermined distance for the next recording, the speed of the motor means being adjusted such that in stepping it moves the contactor from one segment to the next in the interval between successive periodic timing impulses.

3,351,952
ANGULAR POSITION INDICATORS
Patrick J. Kobold and Robert M. Thomas, St. Paul, Minn., assignors to Honeywell Inc., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 412,961
5 Claims. (Cl. 340—187)



5. Apparatus for indicating the angular position of a synchro resolver comprising, in combination:
a source of sinusoidal voltage of the form $K_1 \sin \omega t$ energizing said resolver, said resolver having an output voltage of the form $K_2 \sin (\omega t) \sin \theta$, θ representing the angular position of said resolver, K_1 and K_2 representing constants;
a first transformer with first and second primary windings and a secondary winding, the first and second primary windings being energized with the voltages $K_2 \sin (\omega t) \sin \theta$ and $K_1 \sin \omega t$ respectively, the windings turns ratio selected such that the voltage across the output winding has the form $K_1 \sin \omega t (\sin \theta + 1)$;
a second transformer having a primary winding and a secondary winding, the primary winding being energized by the voltage $K_1 \sin \omega t$, the voltage produced across the secondary winding being of the form $-K_1 \sin \omega t$;
a rebalanceable potentiometer, having a wiper, connected in series with the secondary windings of said first and second transformers, the secondary windings being connected in series and grounded at a common junction;
means for amplifying an error signal appearing at the potentiometer wiper;
indicator means; and
phase sensitive motor means driven by said amplifying means connected to drive said indicator and the wiper on said rebalanceable potentiometer.

3,351,953
INTERCONNECTION MEANS AND METHOD OF FABRICATION THEREOF
Brian E. Sear, Canoga Park, Calif., assignor to The Bunker Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Mar. 10, 1966, Ser. No. 533,375
4 Claims. (Cl. 174—68.5)



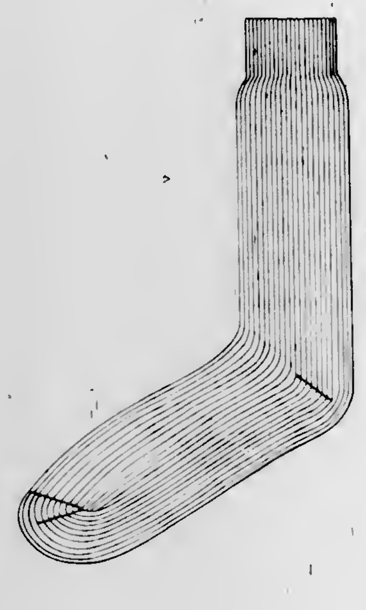
1. An electrical circuit structure including:
first and second electrically interconnected conductive plates supported in superposed relationship with first surfaces of said plates adjacent one another;

aligned and opposed troughs formed in said first surfaces of said first and second plates;
dielectric material disposed in each of said troughs;
an electrical conductor supported by said dielectric material in said troughs and electrically insulated from said conductive plates, said dielectric material constituting the major support for said conductor; and
a substantially continuous homogeneous dielectric adhesive sheet disposed between said first surfaces of said first and second plates adhering said plates together.

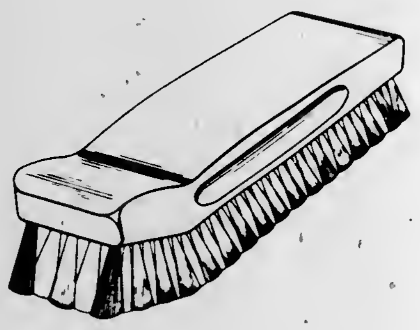
DESIGNS

NOVEMBER 7, 1967

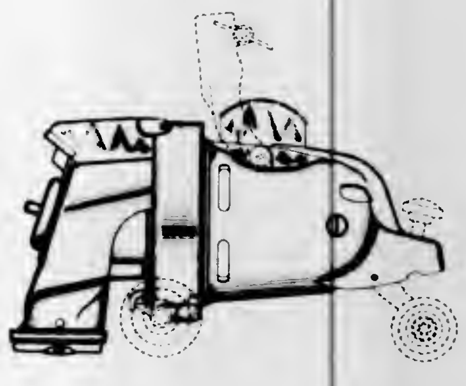
209,129
KNITTED SOCK
John R. Killian, Jr., Whitfield, Reading, Pa., assignor to K. W. Knitting Mills, Inc., Mohnton, Pa.
Filed Feb. 14, 1966, Ser. No. 1,033
Term of patent 14 years
(Cl. D2—331)



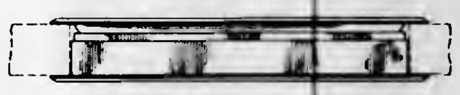
209,130
BRUSH
Ronald Edwin Brookes, Bath, England, assignor to L. G. Harris & Company Limited, Worcestershire, England, a British company
Filed Oct. 13, 1966, Ser. No. 4,265
Claims priority, application Great Britain Apr. 15, 1966
Term of patent 14 years
(Cl. D9—2)

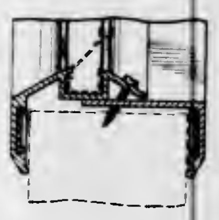


209,131
SUCTION CLEANER
Stanley E. Erbor, Cleveland Heights, Ohio, assignor to Royal Appliance Manufacturing Co., Inc., Cleveland, Ohio, a corporation of Ohio
Continuation of design applications Ser. No. 88,215 and 88,243, dated Nov. 26, 1965. This application Jan. 5, 1967, Ser. No. 6,042
Term of patent 14 years
(Cl. D9—2)

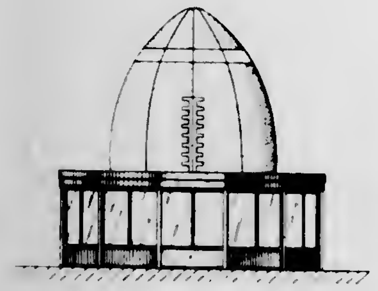


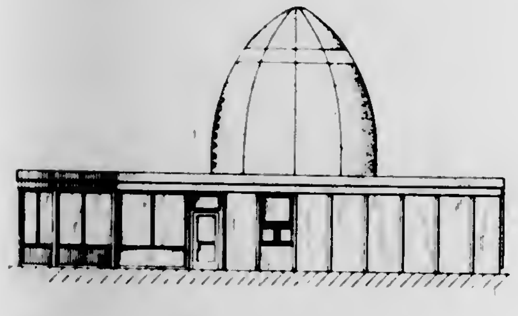
209,132
ADJUSTABLE FRAME FOR DOOR LOUVERS
Richard W. Graham, Williamstown, W. Va., assignor to The Airolite Company, Marietta, Ohio, a corporation of Ohio
Filed Apr. 5, 1966, Ser. No. 1,783
Term of patent 14 years
(Cl. D13—1)



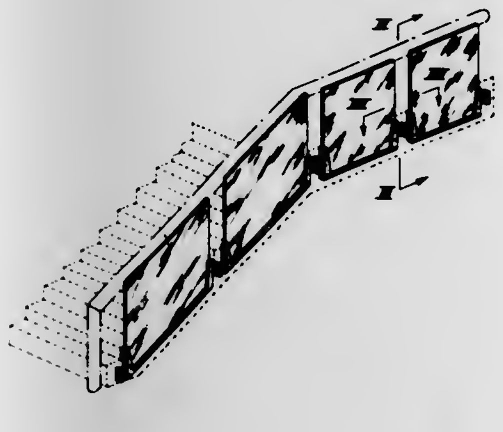


209,133
RESTAURANT
James H. Sorenson, 1009 W. 80th St., Minneapolis, Minn. 55420
Filed Mar. 16, 1967, Ser. No. 6,258
Term of patent 14 years
(Cl. D13—1)

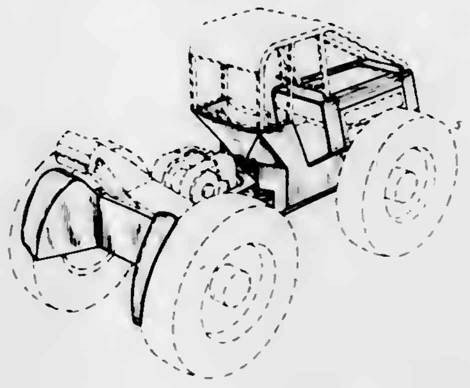


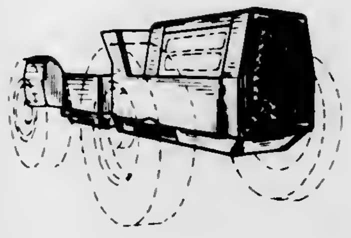


209,134
ORNAMENTAL RAILING
Louis Blum and William J. Horgan, Jr., Pittsburgh, Pa., assignors to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm
Original design application July 28, 1965, Ser. No. 86,318. Divided and this application Dec. 15, 1966, Ser. No. 5,974
Term of patent 14 years
(Cl. D13—7)

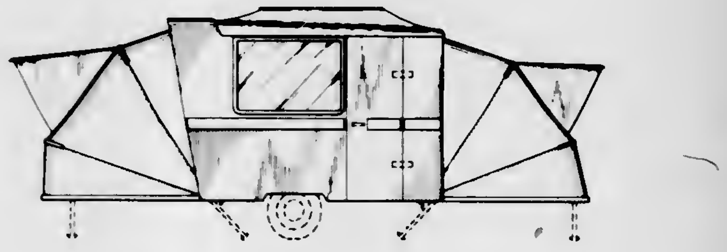


209,135
VEHICLE
Robert J. Orpana, St. Thomas, Ontario, Canada, assignor to Clark Equipment Company, a corporation of Michigan
Filed Apr. 1, 1966, Ser. No. 1,746
Term of patent 14 years
(Cl. D14—3)

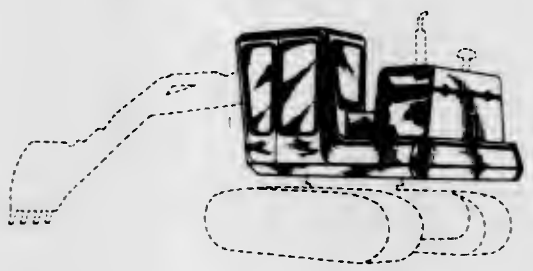




209,136
TRAVEL TRAILER
Georges Etienne Christin, Marnes-la-Coquette, France, assignor to Etablissements Bertrand Faure, Puteaux, Seine, France, a corporation of France
Filed Dec. 23, 1966, Ser. No. 5,166
Claims priority, application France June 24, 1966
Term of patent 14 years
(Cl. D14—3)

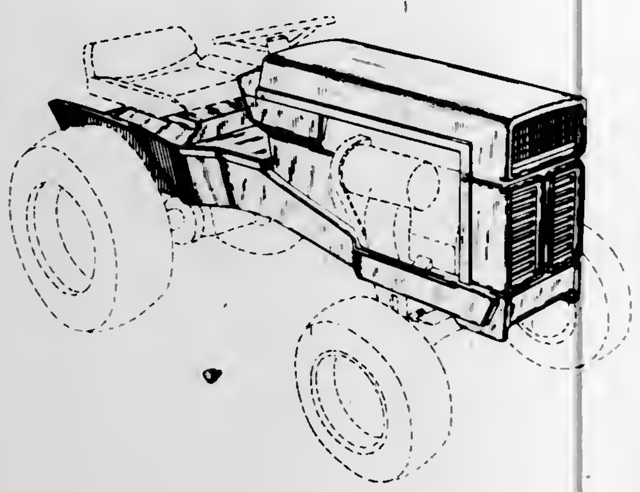


209,137
EXCAVATOR
Samuel M. Highberger and Harlan E. Kifer, Birmingham, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich.
Filed Jan. 18, 1967, Ser. No. 5,466
Term of patent 14 years
(Cl. D14—3)



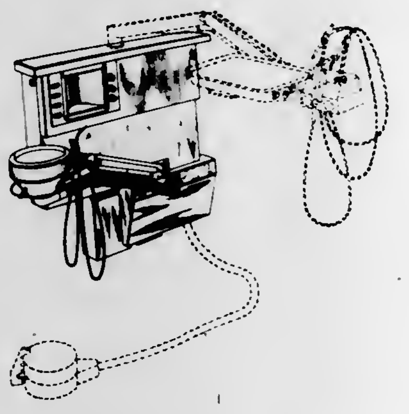
209,138
COMBINED TRACTOR BODY AND FRAME

William H. Armstrong and Jack L. Ponkey, Bloomfield Hills, Mich., assignors to Gilson Bros. Co., Plymouth, Wis., a corporation of Wisconsin
Filed Feb. 17, 1967, Ser. No. 5,845
Term of patent 14 years
(Cl. D14—3)



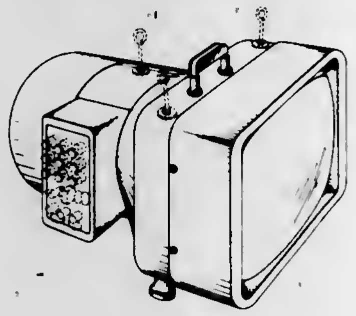
209,139
WALL-MOUNTED DENTAL UNIT

John A. Maurer and Kenneth R. Lappin, Canton, and David A. Walquist, Wooster, Ohio, assignors to The Weber Dental Manufacturing Company, Canton, Ohio, a corporation of Ohio
Filed Aug. 18, 1966, Ser. No. 3,524
Term of patent 14 years
(Cl. D24—1)



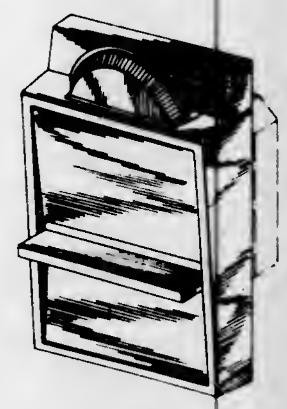
209,140
PORTABLE KINESCOPE JIG FOR TESTING TELEVISION TUBES

Cecil L. Marshall, 406 Brewer Drive,
Greenwood, Ind. 46142
Filed Sept. 9, 1966, Ser. No. 3,795
Term of patent 14 years
(Cl. D26—1)



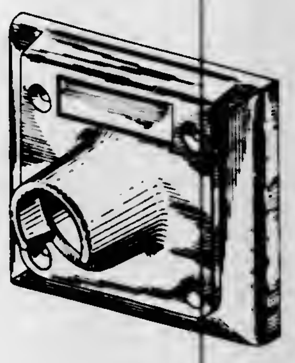
209,141
LIGHT DIMMER CONTROL UNIT

Ernest R. Carlson, Fairfield, Conn., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Apr. 1, 1966, Ser. No. 1,736
Term of patent 14 years
(Cl. D26—13)



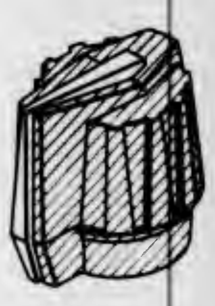
209,142
COVER FOR AN ELECTRICAL WIRING DEVICE

Ernest R. Carlson, Fairfield, Conn., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Apr. 1, 1966, Ser. No. 1,744
Term of patent 14 years
(Cl. D26—13)



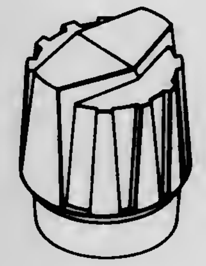
209,143
KNOB

Herbert J. Hampel, Philadelphia, and Milton I. Ross, Bala Cynwyd, Pa.; said Hampel assignor to The Ross Manufacturing Company, Southampton, Pa., a corporation of Pennsylvania
Filed Apr. 14, 1966, Ser. No. 1,890
Term of patent 14 years
(Cl. D26—13)



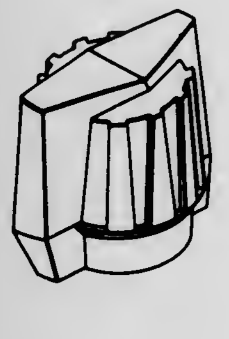
209,144
KNOB

Herbert J. Hampel, Philadelphia, and Milton I. Ross, Bala Cynwyd, Pa.; said Hampel assignor to The Ross Manufacturing Company, Southampton, Pa., a corporation of Pennsylvania
Filed Apr. 14, 1966, Ser. No. 1,897
Term of patent 14 years
(Cl. D26—13)



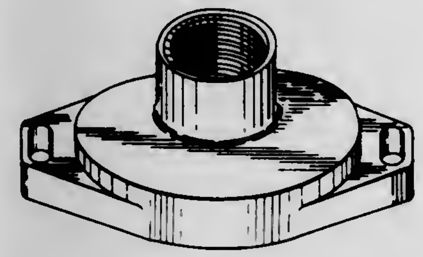
209,145
KNOB

Herbert J. Hampel, Philadelphia, and Milton I. Ross, Bala Cynwyd, Pa.; said Hampel assignor to The Ross Manufacturing Company, Southampton, Pa., a corporation of Pennsylvania
Filed Apr. 14, 1966, Ser. No. 1,898
Term of patent 14 years
(Cl. D26—13)



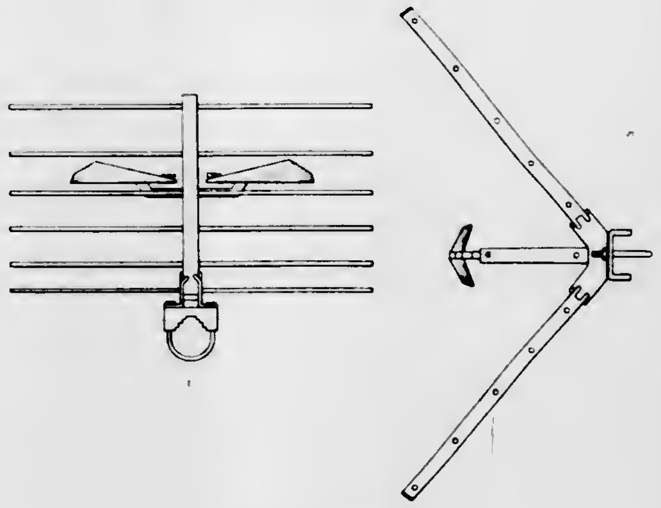
209,146
RAINTIGHT FITTING FOR AN OUTDOOR ENCLOSURE OF AN ELECTRICAL DEVICE

Harold A. Duvall, Pasadena, and Charles G. Esler, Arcadia, Calif., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Feb. 8, 1967, Ser. No. 5,734
Term of patent 14 years
(Cl. D26—13)



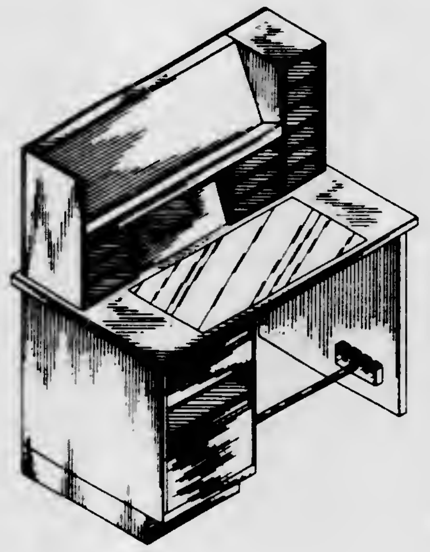
209,147
ANTENNA

Ernest O. Johnson, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Continuation of design applications Ser. No. 361 and Ser. No. 368, Dec. 29, 1965. This application Oct. 21, 1966, Ser. No. 5,365
Term of patent 14 years
(Cl. D26—14)



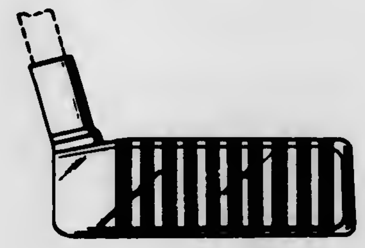
209,148
WORK DESK FOR A TELEPHONE OPERATOR

Francis C. Kegel, Tonawanda, N.Y., assignor to Barrett-Kegel Corporation, Franklinville, N.Y., a corporation of New York
Filed Oct. 11, 1966, Ser. No. 4,229
Term of patent 14 years
(Cl. D33—7)



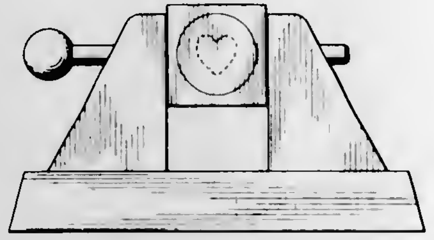
209,149
PUTTER HEAD OR SIMILAR ARTICLE

John R. Sowers, 1608 E. Tucker, Compton, Calif. 90221
Original design application Oct. 16, 1964, Ser. No. 82,207, now Patent No. 204,466, dated Apr. 19, 1966. Divided and this application Nov. 22, 1965, Ser. No. 1,497
Term of patent 14 years
(Cl. D34—5)



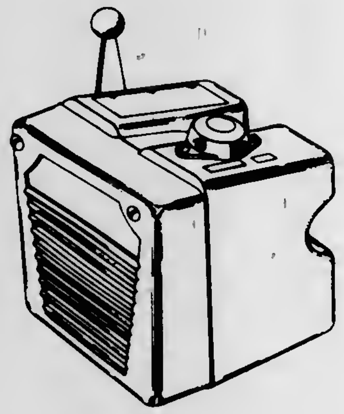
209,150
TRUMP INDICATOR FOR CARD GAME

Frank E. Peart, Rte. 1, Box 75, Camdenton, Mo. 65020
Filed Nov. 25, 1966, Ser. No. 4,807
Term of patent 14 years
(Cl. D34—13)



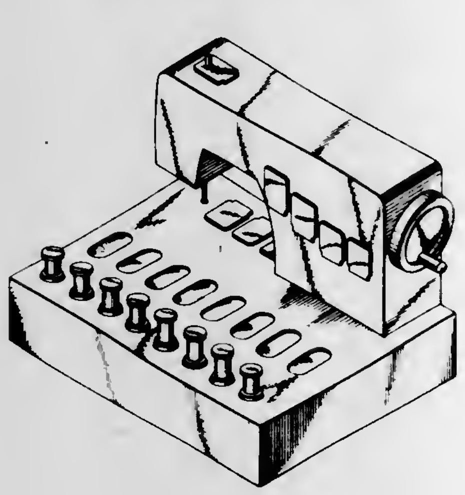
209,151
TOY CONSOLE FOR CHILD'S VEHICLE

Lawrence T. Jones, Olney, Ill., assignor to American Machine and Foundry Company, a corporation of New Jersey
Filed Dec. 16, 1965, Ser. No. 214
Term of patent 14 years
(Cl. D34—15)



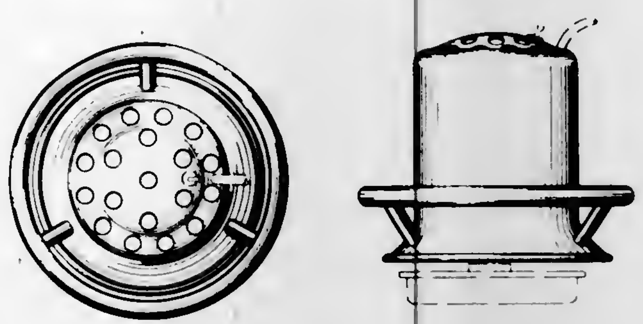
209,152
MUSICAL TOY

Frank Fusco, Monroe, Norman Charles Gold, New York, and William Gold, Great Neck, N.Y., assignors to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 6, 1967, Ser. No. 5,326
Term of patent 7 years
(Cl. D34—15)



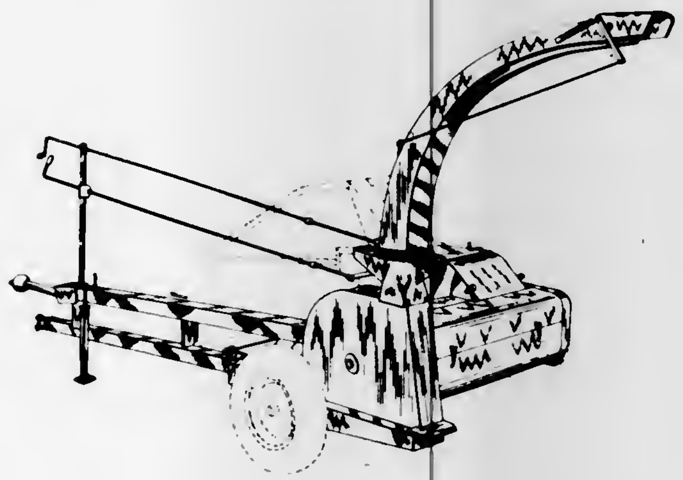
209,153
POLISHING MACHINE

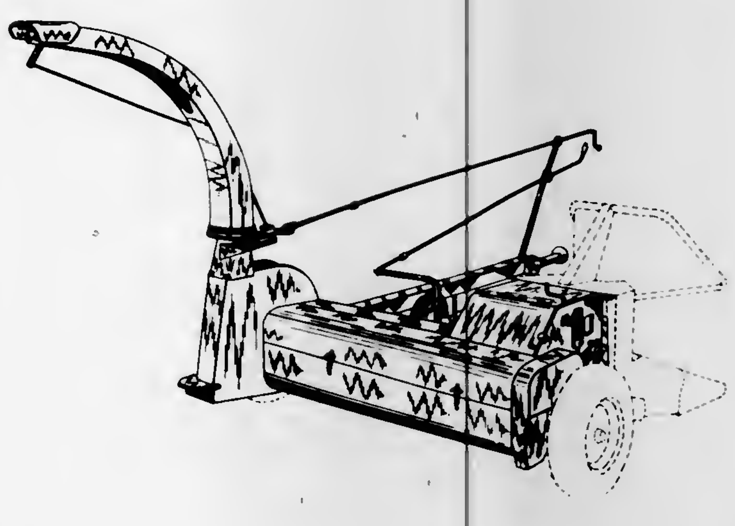
Joel Goldschein, East Northport, N.Y., assignor to Joel Goldschein, Jericho, and Gulfport Chemical Corporation, Plainview, N.Y.
Filed Nov. 7, 1966, Ser. No. 4,564
Term of patent 14 years
(Cl. D37—1)



209,154
FORAGE HARVESTER

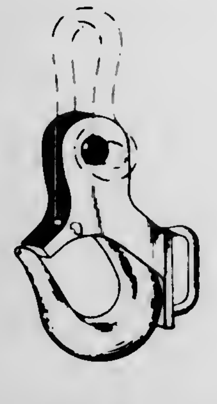
Kenneth Q. Kessler, Ottumwa, Iowa, and James M. Conner, Glendale, and Henry Dreyfuss, South Pasadena, Calif., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Feb. 6, 1967, Ser. No. 5,689
Term of patent 14 years
(Cl. D40—1)





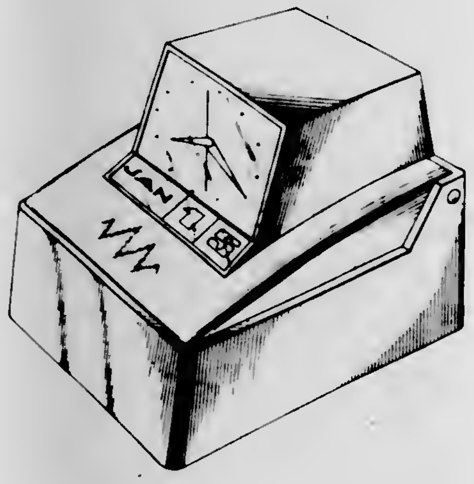
209,155
CRANE HOOK

Raymond F. Van Den Houten, Albany, and Adam R. Akelewicz, Voorheesville, N.Y., assignors to Creative Associates of Albany, Ltd., Latham, N.Y., a corporation of New York
Filed Feb. 21, 1967, Ser. No. 5,908
Term of patent 14 years
(Cl. D41—1)



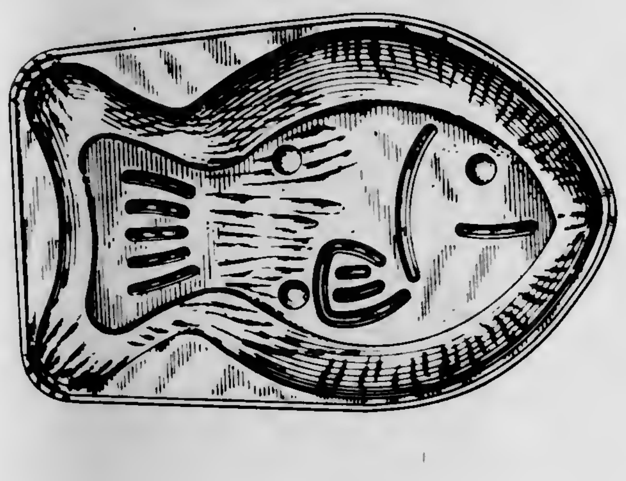
209,156
COMBINED CLOCK, CALENDAR AND CABINET FOR EYEGLASSES

Chester M. MacChesney, Chicago, and Richard Winkler, Palos Heights, Ill., assignors to Ellamac Incorporated, a corporation of Illinois
Filed Oct. 17, 1966, Ser. No. 4,310
Term of patent 7 years
(Cl. D42—7)



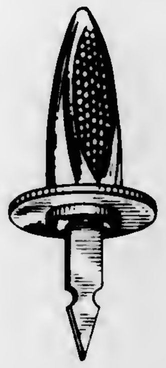
209,157
FOOD MOLD

Myron M. Levin, Lincolnwood, Ill.
(4315 N. Lincoln Ave., Chicago, Ill. 60618)
Filed Feb. 28, 1967, Ser. No. 5,998
Term of patent 14 years
(Cl. D44—1)



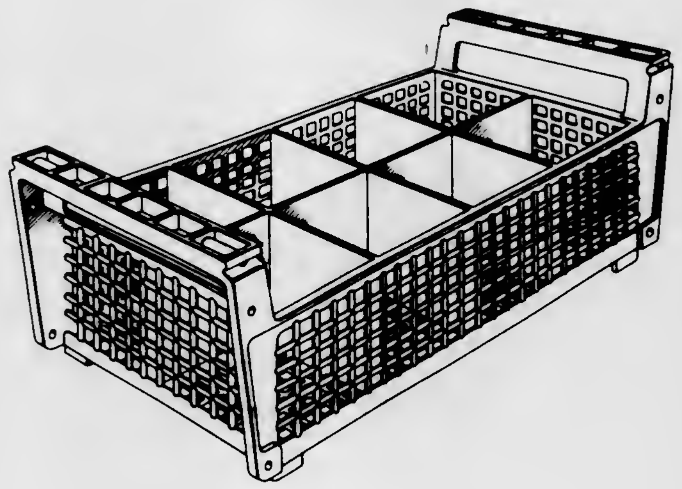
209,158
CORN SKEWER

Myron M. Levin, Lincolnwood, Ill.
(4315 N. Lincoln Ave., Chicago, Ill. 60618)
Filed Feb. 28, 1967, Ser. No. 5,997
Term of patent 14 years
(Cl. D44—4)



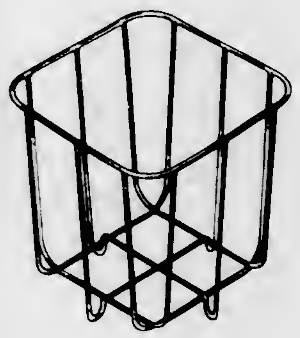
209,159
SILVER WASHING BASKET

Sol Kesilman, 7930 Oak Hill Drive, Cheltenham, Pa. 19012; Hyman B. Penn, 435 Twickenham Road, Glenside, Pa. 19038; and Milton Kravitz, 7908 Rolling Green Road, Cheltenham, Pa. 19012
Filed Mar. 7, 1966, Ser. No. 1,319
Term of patent 14 years
(Cl. D44—29)

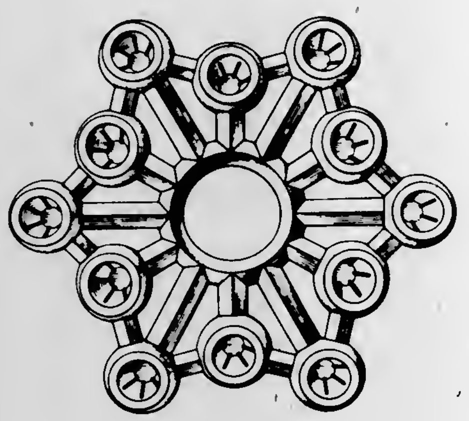


209,160
SINK BASKET

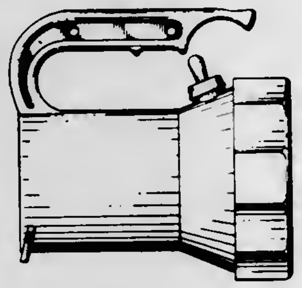
David J. Benjamin, New London, Conn., assignor to Artistic Wire Products Company, Inc., Taftville, Conn., a corporation of Connecticut
Filed June 9, 1966, Ser. No. 2,623
Term of patent 14 years
(Cl. D44—29)



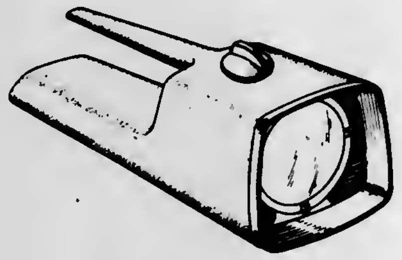
209,161
CANDLE HOLDER
Ralph G. Beagle, 1201 Louise St., Arcadia, Calif. 91006
Filed Mar. 20, 1967, Ser. No. 6,299
Term of patent 7 years
(Cl. D48—2)



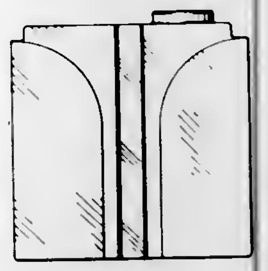
209,162
UNDERWATER DIVING LIGHT
Owsley H. Brigham, 7510 Morningside Drive, Indianapolis, Ind. 46240
Filed Jan. 20, 1967, Ser. No. 5,490
Term of patent 14 years
(Cl. D48—24)



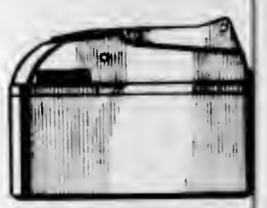
209,163
FLASHLIGHT
John P. Cannon, Shawnee Mission, Kans., assignor to Plattner Industries, Inc., North Kansas City, Mo., a corporation of Missouri
Filed Feb. 17, 1967, Ser. No. 5,846
Term of patent 14 years
(Cl. D48—24)



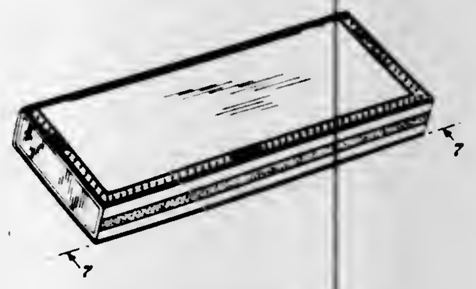
209,164
CARTRIDGE FOR CIGARETTE LIGHTER
Shirley McLarty, Dallas, Tex., assignor, by mesne assignments, to American Lighter Corporation, Fort Worth, Tex., a corporation of Texas
Substituted for abandoned design application Ser. No. 80,032, May 18, 1964. This application July 12, 1966, Ser. No. 4,079
Term of patent 14 years
(Cl. D48—27)



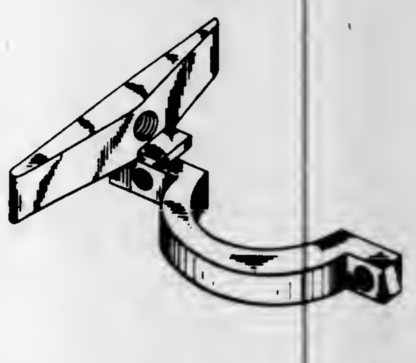
209,165
LIGHTER OR SIMILAR ARTICLE
Sadao Yoshinaga, Tokyo, Japan, assignor to Yoshinaga Prince Kabushiki Kaisha, Tokyo, Japan, a Japanese corporation
Filed Feb. 27, 1967, Ser. No. 5,952
Term of patent 14 years
(Cl. D48—27)



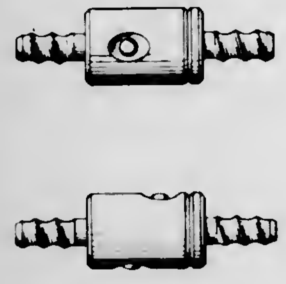
209,166
MATCH BOX OR SIMILAR ARTICLE
William Shiner, 4815 14th Ave., Brooklyn, N.Y. 11219
Filed Feb. 1, 1967, Ser. No. 5,646
Term of patent 14 years
(Cl. D48—29)



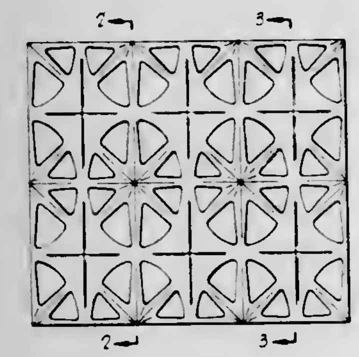
209,167
SIGN SUPPORT BRACKET
Joe D. Huffman, Tulsa, Okla., assignor to Continental Research Company, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Oct. 13, 1966, Ser. No. 4,264
Term of patent 14 years
(Cl. D54—1)



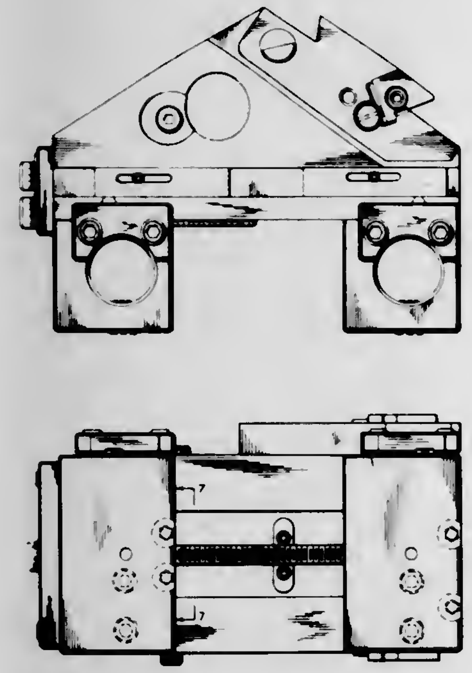
209,168
SNAP COUPLING
Robert G. Hunt 5821 Holt Ave., Los Angeles, Calif. 90058
Filed May 2, 1966, Ser. No. 2,099
Term of patent 14 years
(Cl. D54—1)



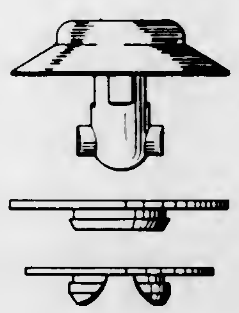
209,169
DECORATIVE PANEL FOR CONSTRUCTION PURPOSES
Ronald C. Thedford, P.O. Box 14642, Oklahoma City, Okla. 73114
Filed Mar. 16, 1967, Ser. No. 6,254
Term of patent 14 years
(Cl. D54—2)



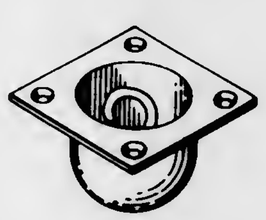
209,170
ADJUSTABLE TURNING AND BORING HEAD TOOLHOLDER
Michael W. Papp, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 4, 1966, Ser. No. 1,772
Term of patent 14 years
(Cl. D54—6)



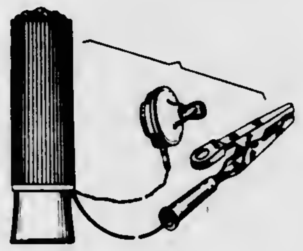
209,171
QUICK RELEASE FASTENER
Keith E. Myatt, Birmingham, England, assignor to G.K.N. Screws & Fasteners Limited, Birmingham, England, a British company
Filed Oct. 27, 1966, Ser. No. 4,441
Claims priority, application Great Britain Apr. 28, 1966
Term of patent 14 years
(Cl. D54—9)



209,172
TIE DOWN FITTING
Victor Brock, 3900 39th Ave., Sacramento, Calif. 95824
Filed Aug. 29, 1966, Ser. No. 3,634
Term of patent 14 years
(Cl. D54—11)



209,173
RADIO
Eugene A. Swee, New York, N.Y., assignor to Miner Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 1,165
Term of patent 14 years
(Cl. D56—4)

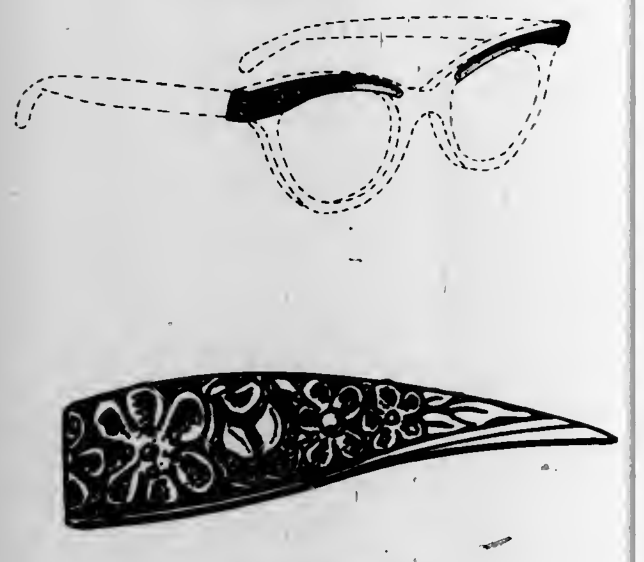


209,174

EYEGLASS FRAME OR SIMILAR ARTICLE

Alexander Kono, Woodside, N.Y., assignor to Kono Manufacturing Co., Inc., New York, N.Y., a corporation of New York

Filed Sept. 9, 1966, Ser. No. 3,788
Term of patent 14 years
(Cl. D57—1)

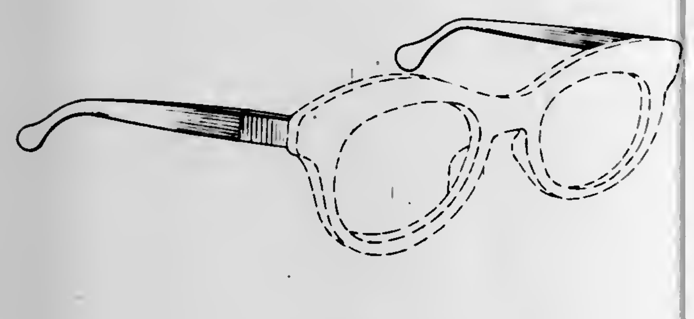


209,175

EYEGLASS FRAME OR THE LIKE

Alexander Kono, Woodside, N.Y., assignor to Kono Manufacturing Co., Inc., New York, N.Y., a corporation of New York

Filed Sept. 20, 1966, Ser. No. 3,930
Term of patent 14 years
(Cl. D57—1)

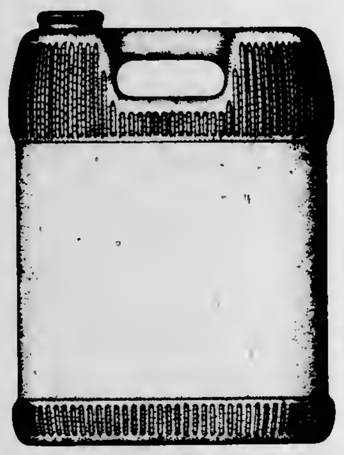


209,176

JUG OR THE LIKE

Robert G. Neubauer, Easton, Conn., assignor to Union Carbide Corporation, a corporation of New York

Filed July 18, 1966, Ser. No. 3,109
Term of patent 14 years
(Cl. D58—5)

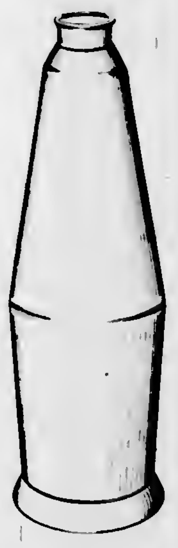


209,177

BOTTLE

Martin James Ferguson, Greenwich, Conn., assignor to Companhia Uniao Fabril Portuense, S.A.R.L., Leco do Bahia, Portugal, a corporation of Portugal

Filed July 8, 1966, Ser. No. 2,988
Term of patent 14 years
(Cl. D58—8)

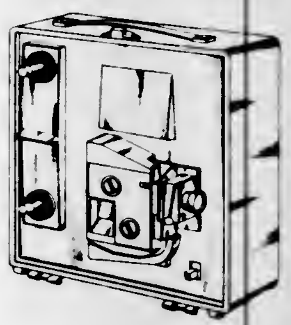


209,178

MOTION PICTURE PROJECTOR

Peter Tighe Quinn, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Nov. 12, 1965, Ser. No. 88,074
Term of patent 14 years
(Cl. D61—1)

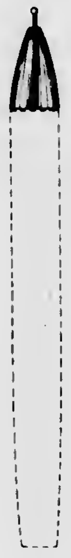


209,179

FOUNTAIN PEN

Robert John Darst, Fort Madison, Iowa, assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island

Filed Sept. 22, 1966, Ser. No. 3,978
Term of patent 14 years
(Cl. D74—17)

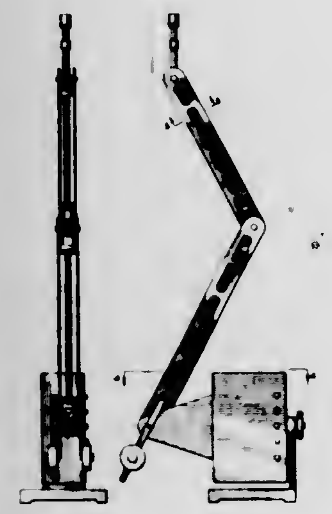


209,180

COMBINED ADJUSTABLE SUPPORT AND ULTRASONIC TRANSDUCER HOLDER FOR DIAGNOSTIC SCANNERS

Edward P. Meyer, Boulder, and William L. Wright, Longmont, Colo., assignors to Physionic Engineering, Inc., Longmont, Colo., a corporation of Colorado

Filed June 17, 1966, Ser. No. 2,716
Term of patent 14 years
(Cl. D83—1)

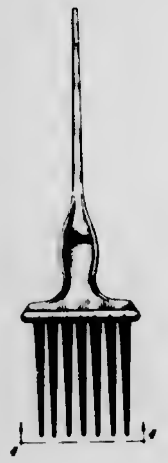


209,181

HAIR STYLING TOOL

Merlyn O. Larson, Spencer, Iowa, assignor to Nylrem Enterprises Inc., a corporation of Ohio

Filed Dec. 15, 1966, Ser. No. 5,051
Term of patent 14 years
(Cl. D86—8)

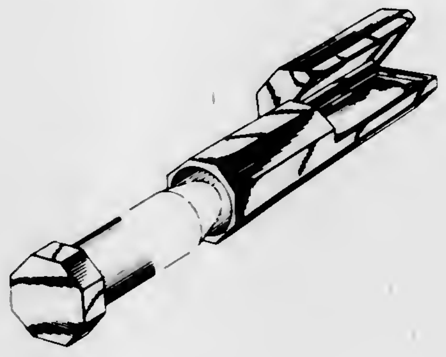


209,182

COMBINED COMPACT AND HOLDER FOR LIPSTICK OR THE LIKE

Frank T. Buchner, Upper Montclair, N.J., assignor to Products Marketing Corporation, Upper Montclair, N.J., a corporation of Delaware

Filed Feb. 27, 1967, Ser. No. 5,972
Term of patent 14 years
(Cl. D86—10)

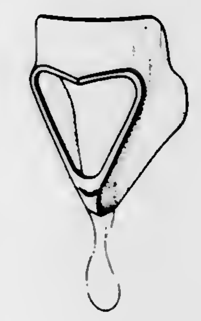


209,183

FACE MASK

Steve P. Vorves, 20970 Delaware, Southfield, Mich. 48075

Filed Mar. 20, 1967, Ser. No. 6,292
Term of patent 14 years
(Cl. D86—10)

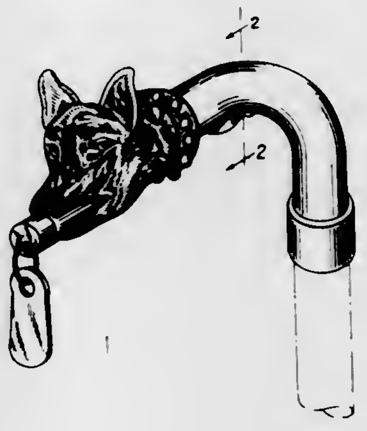


209,184

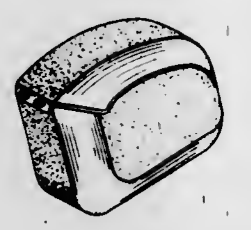
COMBINED HANDLE AND IDENTIFICATION TAG FOR A WALKING CANE

Augustine Y. Murillo, 127 S. Boyle Ave., Los Angeles, Calif. 90033

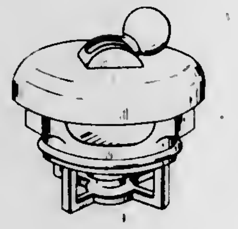
Filed July 21, 1966, Ser. No. 3,161
Term of patent 14 years
(Cl. D88—4)



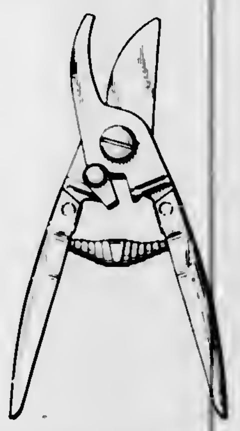
209,185
MOTORCYCLE SADDLEBAG
Aarre Aleksis Lahti, Ann Arbor, Mich., assignor to American Safety Equipment Corporation of Michigan, Southfield, Mich.
Filed Apr. 18, 1967, Ser. No. 6,741
Term of patent 14 years
(Cl. D90—3)



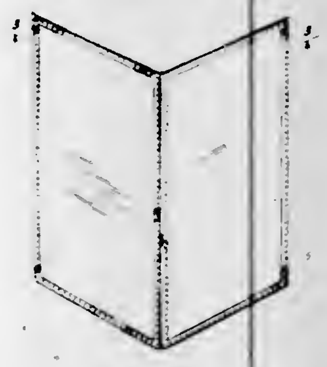
209,186
DRAIN STOPPER
Richard A. Mason, Orange, Conn., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Feb. 21, 1966, Ser. No. 1,124
Term of patent 14 years
(Cl. D91—1)



209,187
SECATEURS
Edward A. Rogers, 16 Pall Mall, S.W.1, London, England
Filed July 22, 1966, Ser. No. 3,177
Claims priority, application Great Britain Jan. 28, 1966
Term of patent 14 years
(Cl. D95—5)



209,188
DECORATIVE COVER OR SIMILAR ARTICLE
William Shiner, 4815 14th Ave., Brooklyn, N.Y. 11219
Filed Feb. 1, 1967, Ser. No. 5,645
Term of patent 14 years
(Cl. D97—1)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 7TH DAY OF NOVEMBER, 1967

Note.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Broding, Robert A., G. C. Summers, and J. O. Ely, deceased; L. V. B. Ely, executrix, to Mobil Oil Corp. Method of and means for measuring travel times through earth formations. Re. 26,297, 11-7-67, Cl. 181—.5.
- Ellis, Belvin B., to Westinghouse Electric Corp. Plural part transformer core having joints divided between the sides of the core. Re. 26,296, 11-7-67, Cl. 336—211.
- Ely, John O.: *See—*
  - Broding, Robert A., Summers, and Ely. Re. 26,297.
- Ely, La Verne B.: *See—*
  - Broding, Robert A., Summers, and Ely. Re. 26,297.
- George, Henry: *See—*
  - Grieshaber, Gunther S., O'Mara, and George. Re. 26,295.
- Grieshaber, Gunther S., R. J. O'Mara, and H. George, to Pass & Seymour, Inc. Angle type swivelling cord grip. Re. 26,295, 11-7-67, Cl. 339—103.
- Johnson, James R.: *See—*
  - Sowman, Harold G., and Johnson. Re. 26,294.
- Minnesota Mining and Mfg. Co.: *See—*
  - Sowman, Harold G., and Johnson. Re. 26,294.
- Mobil Oil Corp.: *See—*
  - Broding, Robert A., Summers, and Ely. Re. 26,297.
- O'Mara, Robert J.: *See—*
  - Grieshaber, Gunther S., O'Mara, and George. Re. 26,295.
- Pass & Seymour, Inc.: *See—*
  - Grieshaber, Gunther S., O'Mara, and George. Re. 26,295.
- Sowman, Harold G., and J. R. Johnson, to Minnesota Mining and Mfg. Co. Crystalline spherules. Re. 26,294, 11-7-67, Cl. 176—67.
- Summers, Gerald C.: *See—*
  - Broding, Robert A., Summers, and Ely. Re. 26,297.
- Westinghouse Electric Corp.: *See—*
  - Ellis, Belvin B. Re. 26,296.

LIST OF PLANT PATENTEES

- Krause, Walter D. Nectarine tree. 2,775, 11-7-67, Cl. 41.

LIST OF DESIGN PATENTEES

- Airolite Co., The: *See—*
  - Graham, Richard W. 209,132.
- Akelewicz, Adam R.: *See—*
  - Van Den Houten, Raymond F., and Akelewicz. 209,155.
- American Lighter Corp.: *See—*
  - McLarty, Shirley. 209,164.
- American Machine and Foundry Co.: *See—*
  - Jones, Lawrence T. 209,151.
- American Safety Equipment Corp. of Michigan: *See—*
  - Lahti, Aarre A. 209,185.
- Armstrong, William H., and J. L. Ponkey, to Gilson Bros. Co. Combined tractor body and frame. 209,138, 11-7-67, Cl. D14—3.
- Artistic Wire Products Co., Inc.: *See—*
  - Benjamin, David J. 209,160.
- Barrett-Kegel Corp.: *See—*
  - Kegel, Francis C. 209,148.
- Beagle, Ralph G. Candle holder. 209,161, 11-7-67, Cl. D48—2.
- Benjamin, David J., to Artistic Wire Products Co., Inc. Sink basket. 209,160, 11-7-67, Cl. D44—29.
- Blum, Louis, and W. J. Horgan, Jr., to Blumcraft of Pittsburgh. Ornamental railing. 209,134, 11-7-67, Cl. D13—7.
- Blumcraft of Pittsburgh: *See—*
  - Blum, Louis, and Horgan. 209,134.
- Brigham, Owsley H. Underwater diving light. 209,162, 11-7-67, Cl. D48—24.
- Brock, Victor. Tie down fitting. 209,172, 11-7-67, Cl. D54—11.
- Brookes, Ronald E., to L. G. Harris Co., Ltd. Brush. 209,130, 11-7-67, Cl. D9—2.
- Buchner, Frank T., to Products Marketing Corp. Combined compact and holder for lipstick or the like. 209,182, 11-7-67, Cl. D86—10.
- Cannon, John P., to Plattner Industries, Inc. Flashlight. 209,163, 11-7-67, Cl. D48—24.
- Carlson, Ernest R., to Harvey Hubbell, Inc. Light dimmer control unit. 209,141, 11-7-67, Cl. D26—13.
- Carlson, Ernest R., to Harvey Hubbell, Inc. Cover for an electrical wiring device. 209,142, 11-7-67, Cl. D26—13.
- Christin, Georges E., to Etablissements Bertrand Faure. Travel trailer. 209,136, 11-7-67, Cl. D14—3.
- Clark Equipment Co.: *See—*
  - Orpana, Robert J. 209,135.
- Companhia Uniao Fabril Portuense, S.A.R.L. Leco do Ballo: *See—*
  - Ferguson, Martin J. 209,177.
- Conner, James M.: *See—*
  - Kessler, Kenneth Q., Conner, and Dreyfuss. 209,154.
- Continental Research Co., Inc.: *See—*
  - Huffman, Joe D. 209,167.
- Creative Associates of Albany, Ltd.: *See—*
  - Van Den Houten, Raymond F., and Akelewicz. 209.155.
- Darst, Robert J., to Textron Inc. Fountain pen. 209,179, 11-7-67, Cl. D74—17.
- Deere & Co.: *See—*
  - Kessler, Kenneth Q., Conner, and Dreyfuss. 209,154.
- Duvall, Harold A., and C. G. Esler, to Square D Co. Raintight fitting for outdoor enclosure of electrical device. 209,146, 11-7-67, Cl. D26—13.
- Eastman Kodak Co.: *See—*
  - Quinn, Peter T. 209,178.
- Ellamac Inc.: *See—*
  - MacChesney, Chester M., and Winkler. 209,156.
- Erbor, Stanley E., to Royal Appliance Mfg. Co., Inc. Suction cleaner. 209,131, 11-7-67, Cl. D9—2.
- Esler, Charles G.: *See—*
  - Duvall, Harold A., and Esler. 209,146.
- Etablissements Bertrand Faure: *See—*
  - Christin, Georges E. 209,136.
- Ferguson, Martin J., to Companhia Uniao Fabril Portuense, S.A.R.L. Leco do Ballo. Bottle. 209,177, 11-7-67, Cl. D58—8.
- Fusco, Frank, N. C. and W. Gold, to Louis Marx & Co., Inc. Musical toy. 209,152, 11-7-67, Cl. D34—15.
- G.K.N. Screws & Fasteners Ltd.: *See—*
  - Myatt, Keith E. 209,171.
- Gilson Bros. Co.: *See—*
  - Armstrong, William H., and Ponkey. 209,138.
- Gold, Norman C.: *See—*
  - Fusco, Frank, N. C. and W. Gold. 209,152.
- Gold, William: *See—*
  - Fusco, Frank, N. C. and W. Gold. 209,152.
- Goldschein, Joel, to Joel Goldschein and Gulfport Chemical Corp. Polishing machine. 209,153, 11-7-67, Cl. D37—1.
- Graham, Richard W., to The Airolite Co. Adjustable frame for door louvers. 209,132, 11-7-67, Cl. D13—1.
- Gulfport Chemical Corp.: *See—*
  - Goldschein, Joel. 209,153.
- Hampel, Herbert J., and M. I. Ross, to The Ross Mfg. Co. Knob. 209,143, 11-7-67, Cl. D26—13.
- Hampel, Herbert J., and M. I. Ross, to The Ross Mfg. Co. Knob. 209,144, 11-7-67, Cl. D26—13.
- Hampel, Herbert J., and M. I. Ross, to The Ross Mfg. Co. Knob. 209,145, 11-7-67, Cl. D26—13.
- Harris, L. G., Co., Ltd.: *See—*
  - Brookes, Ronald E. 209,130.
- Highberger, Samuel M., and H. E. Kifer, to Massey-Ferguson, Inc. Excavator. 209,137, 11-7-67, Cl. D14—3.
- Horgan, William J., Jr.: *See—*
  - Blum, Louis, and Horgan. 209,134.
- Hubbell, Harvey, Inc.: *See—*
  - Carlson, Ernest R. 209,141.
  - Carlson, Ernest R. 209,142.
- Huffman, Joe D., to Continental Research Co., Inc. Sign support bracket. 209,167, 11-7-67, Cl. D54—1.
- Hunt, Robert G. Snap coupling. 209,168, 11-7-67, Cl. D54—1.
- Johnson, Ernest O., to Radio Corp. of America. Antenna. 209,147, 11-7-67, Cl. D26—14.
- Jones, Lawrence T., to American Machine and Foundry Co. Toy console for child's vehicle. 209,151, 11-7-67, Cl. D34—15.
- K.W. Knitting Mills, Inc.: *See—*
  - Killian, John R., Jr. 209,129.
- Killian, John R., Jr., to K.W. Knitting Mills, Inc. Knitted sock. 209.129, 11-7-67, Cl. D2—331.
- Kegel, Francis C., to Barrett-Kegel Corp. Work desk for a telephone operator. 209,148, 11-7-67, Cl. D33—7.
- Kesilman, Sol, H. B. Penn, and M. Kravitz. Silver washing basket. 209.159, 11-7-67, Cl. D44—29.
- Kessler, Kenneth Q., J. M. Conner, and H. Dreyfuss, to Deere & Co. Forage harvester. 209,154, 11-7-67, Cl. D40—1.

- Kifer, Harlan E.: *See—*
  - Highberger, Samuel M., and Kifer. 209,137.
- Kono, Alexander, to Kono Mfg. Co., Inc. Eyeglass frame or similar article. 209,174, 11-7-67, Cl. D57—1.
- Kono, Alexander, to Kono Mfg. Co., Inc. Eyeglass frame or the like. 209,175, 11-7-67, Cl. D57—1.
- Kono Mfg. Co., Inc.: *See—*
  - Kono, Alexander. 209,174.
  - Kono, Alexander. 209,175.
- Lahti, Aarre A., to American Safety Equipment Corp. of Michigan. Motorcycle saddlebag. 209,185, 11-7-67, Cl. D90—3.
- Lappin, Kenneth R.: *See—*
  - Maurer, John A., Lappin, and Walquist. 209,139.
- Larson, Merlyn O., to Nylrem Enterprises Inc. Hair styling tool. 209,181, 11-7-67, Cl. D86—8.
- Levin, Myron M. Food mold. 209,157, 11-7-67, Cl. D44—1.
- Levin, Myron M. Corn skewer. 209,158, 11-7-67, Cl. D44—4.
- MacChesney, Chester M., and R. Winkler, to Ellamac Inc. Combined clock, calendar and cabinet for eyeglasses. 209,156, 11-7-67, Cl. D42—7.
- Marshall, Cecil L. Portable kinescope jig for testing television tubes. 209,140, 11-7-67, Cl. D26—1.
- Marx, Louis, & Co., Inc.: *See—*
  - Fusco, Frank, and N. C. and W. Gold. 209,152.
- Mason, Richard A., to National Distillers and Chemical Corp. Drain stopper. 209,186, 11-7-67, Cl. D91—1.
- Massey-Ferguson, Inc.: *See—*
  - Highberger, Samuel M., and Kifer. 209,137.
- Maurer, John A., K. R. Lappin, and D. A. Walquist, to The Weber Dental Mfg. Co. Wall mounted dental unit. 209,139, 11-7-67, Cl. D24—1.
- McLarty, Shirley, to American Lighter Corp. Cartridge for cigarette lighter. 209,164, 11-7-67, Cl. D48—27.
- Meyer, Edward P., and W. L. Wright, to Physionic Engineering, Inc. Combined adjustable support and ultrasonic transducer holder for diagnostic scanners. 209,180, 11-7-67, Cl. D83—1.
- Miner Industries, Inc.: *See—*
  - Swee, Eugene A. 209,173.
- Murillo, Augustine Y. Combined handle and identification tag for a walking cane. 209,184, 11-7-67, Cl. D88—4.
- Myatt, Keith E., to G.K.N. Screws & Fasteners Ltd. Quick release fastener. 209,171, 11-7-67, Cl. D54—9.
- National Distillers and Chemical Corp.: *See—*
  - Mason, Richard A. 209,186.
- Neubauer, Robert G., to Union Carbide Corp. Jug or the like. 209,176, 11-7-67, Cl. D58—5.
- Nylrem Enterprises Inc.: *See—*
  - Larson, Merlyn O. 209,181.
- Orpana, Robert J., to Clark Equipment Co. Vehicle. 209,135. 11-7-67, Cl. D14—3.
- Papp, Michael W., to The Warner & Swasey Co. Adjustable turning and boring head toolholder. 209,170, 11-7-67; Cl. D54—6.
- Peart, Frank E. Trump indicator for card game. 209,150. 11-7-67, Cl. D34—13.
- Penn, Hyman B.: *See—*
  - Kesilman, Sol, Penn, and Kravitz. 209,159.
- Physionic Engineering, Inc.: *See—*
  - Meyer, Edward P., and Wright. 209,180.
- Plattner Industries, Inc.: *See—*
  - Cannon, John P. 209,163.
- Ponkey, Jack L.: *See—*
  - Armstrong, William H., and Ponkey. 209,138.
- Products Marketing Corp.: *See—*
  - Buchner, Frank T. 209,182.
- Quinn, Peter T., to Eastman Kodak Co. Motion picture projector. 209,178, 11-7-67, Cl. D61—1.
- Radio Corp. of America: *See—*
  - Johnson, Ernest O. 209,147.
- Rogers, Edward A. Secateurs. 209,187, 11-7-67, Cl. D95—5.
- Ross Mfg. Co., The: *See—*
  - Hampel, Herbert J., and Ross. 209,143.
  - Hampel, Herbert J., and Ross. 209,144.
  - Hampel, Herbert J., and Ross. 209,145.
- Ross, Milton I.: *See—*
  - Hampel, Herbert J., and Ross. 209,143.
  - Hampel, Herbert J., and Ross. 209,144.
  - Hampel, Herbert J., and Ross. 209,145.
- Royal Appliance Mfg. Co., Inc.: *See—*
  - Erbor, Stanley E. 209,131.
- Shiner, William. Match box or similar article. 209,166, 11-7-67, Cl. D48—29.
- Shiner, William. Decorative cover or similar article. 209,188. 11-7-67, Cl. D97—1.
- Sorenson, James H. Restaurant. 209,133, 11-7-67, Cl. D13—1.
- Sowers, John R. Putter head or similar article. 209,149, 11-7-67, Cl. D34—5.
- Square D Co.: *See—*
  - Duvall, Harold A., and Esler. 209,146.
- Swee, Eugene A., to Miner Industries, Inc. Radio. 209,173, 11-7-67, Cl. D56—4.
- Textron Inc.: *See—*
  - Darst, Robert J. 209,179.
- Thedford, Ronald C. Decorative panel for construction purposes. 209,169 11-7-67, Cl. D54—2.
- Union Carbide Corp.: *See—*
  - Neubauer, Robert G. 209,176.
- Van Den Houten, Raymond F., and A. R. Akelewicz, to Creative Associates of Albany, Ltd. Crane hook. 209,155, 11-7-67, Cl. D41—1.
- Vorves, Steve P. Face mask. 209,183, 11-7-67, Cl. D86—10.
- Weber Dental Mfg. Co., The: *See—*
  - Maurer, John A., Lappin, and Walquist. 209,139.
- Warner & Swasey Co., The: *See—*
  - Papp, Michael W. 209,170.
- Winkler, Richard: *See—*
  - MacChesney, Chester M., and Winkler. 209,156.
- Wright, William L.: *See—*
  - Meyer, Edward P., and Wright. 209,180.
- Yoshinaga Prince Kabushiki Kaisha: *See—*
  - Yoshinaga, Sadao. 209,165.
- Yoshinaga, Sadao, to Yoshinaga Prince Kabushiki Kaisha. Lighter. 209,165, 11-7-67, Cl. D48—27.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 7TH DAY OF NOVEMBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- AMP Inc.: *See—*
  - Feeser, William C. 3,351,892.
  - Kinkaid, Robert J. 3,351,894.
  - Zimmerman, John A., Jr. 3,351,886.
- A. Z. Products, Inc.: *See—*
  - Zvejnieks, Andrejs. 3,351,199.
- Abbott Laboratories: *See—*
  - Van Munster, Frederik H. 3,351,661.
- Abbott, Randie L.: *See—*
  - Lamburn, Alan S., and Abbott. 3,350,960.
- Abshire, Franklin P. Portable drinking water fountain. 3,351,286, 11-7-67, Cl. 239—29.3.
- Achkio, Anthony A., to Pittsburgh Plate Glass Co. Preliminary pressing of bent glass laminated assemblies. 3,351,001, 11-7-67, Cl. 100—176.
- Ackley, Edward L. High speed rotary hydraulic motor. 3,350,985, 11-7-67, Cl. 91—87.
- Acrometal Products, Inc.: *See—*
  - Kitselman, Harry L. 3,351,104.
- Adams, Charles J., to General Electric Co. Electric welding device. 3,351,732, 11-7-67, Cl. 219—86.
- Adams, Robert T., and M. F. Hughes, to Chevron Research Co. Preparation of alkylaromatic hydrocarbons suitable as detergent alkylate. 3,351,672, 11-7-67, Cl. 260—671.
- Addressograph-Multigraph Corp.: *See—*
  - Hruby, Joseph. 3,351,752.
- Adkins, Harold T., and R. H. Pierce, to Sigma Instruments, Inc. Close differential outdoor lighting control. 3,351,762. 11-7-67, Cl. 250—206.
- Adlerova, Edita: *See—*
  - Protiva, Miroslav, Jilek, Metyšova, Ernest, Pelz, and Adlerova. 3,351,599.
- Admiral Corp.: *See—*
  - Cable, John F. 3,350,893.
- Aerojet-General Corp.: *See—*
  - Houghton, Richard B., and Bell. 3,351,832.
- Aeronca, Inc.: *See—*
  - Purdum, Cary, and Gibney. 3,351,692.
- Agency of Industrial Science and Technology: *See—*
  - Ogura, Takashi, Ueda, and Yasuda. 3,350,905.
- Ainslie, Robert E., P. Comisarow, and B. S. Hutchins, to United States of America, Navy. Air-dropped segmental line explosive charge. 3,351,010, 11-7-67, Cl. 102—4.
- Air Reduction Co., Inc.: *See—*
  - Hutton, Harry T., Goetjen, and Ogborn. 3,351,284.
- Airolite Co., The: *See—*
  - Rose, Fred L. 3,350,996.
- Akkerman, Antony M., G. C. van Leeuwen, and J. F. Michels, to N.V. Nederlandsche Combinatie voor Chemische Industrie. 2-benzoyl-piperazines. 3,351,598, 11-7-67, Cl. 260—268.
- Aktiebolaget Bofors: *See—*
  - Henstrom, Sten A. 3,351,150.
  - Jansson, Tore L., and Holmstrom. 3,351,847.
  - Lundin, Lars O., Johansson, Svanstrom, and Gustafsson. 3,351,149.
  - Qvarnstrom, Birger A. E. 3,351,829.
  - Simmons, Bjorn H. O. 3,351,013.
- Aktiebolaget Svenska Mashinverken: *See—*
  - Chambert, Lars A. A. 3,351,091.
- Alaburda, Raymond D.: *See—*
  - Hanas, Orest J., and Alaburda. 3,351,842.
- Alberghini, Alfred C.: *See—*
  - Richardson, Henry M., Alberghini, Wiley, and Larson. 3,351,309.
- Albert, James R., and P. W. Hawley, to Rexall Drug and Chemical Co. Process and apparatus for solids blending. 3,351,326, 11-7-67, Cl. 259—95.
- Albertson, Orris E., and W. E. Budd, to Dorr-Oliver Inc. Treatment and incineration of waste sludges. 3,351,030, 11-7-67, Cl. 110—8.
- Albiswerk Zurich A.G.: *See—*
  - Hurlimann, Armin. 3,351,808.
- Albrecht, William L., and M. Mindick, to Nalco Chemical Co. Nonaqueous silica sols and method for preparing same. 3,351,561, 11-7-67, Cl. 252—309.
- Alburn, Harvey E.: *See—*
  - Grant, Norman H., Clark, and Alburn. 3,351,586.
- Alburn, Harvey E., N. H. Grant, D. E. Clark, and M. Wolf, to American Home Products Corp. Dialkyl-oxo-diazaspiro penicillins. 3,351,587, 11-7-67, Cl. 260—239.1.
- Aleksiewicz, Walter P.: *See—*
  - Wilkinson, Raymond C., Aleksiewicz, and Martin. 3,351,890.
- Alers, Perry B. Optical rotation measuring instrument. 3,350,978, 11-7-67, Cl. 88—14.
- Alexander, Laurence R.: *See—*
  - Wallack, Stanley, Alexander, and Oxley. 3,351,015.
- Alexander, L. Bruce, to Automatic Machinery and Electronics, Inc. Juice extraction apparatus with pulp-peel separator. 3,351,000, 11-7-67, Cl. 100—98.
- Allan Mfg. Co.: *See—*
  - Chion, Christ. 3,350,809.
- Allen-Bradley Co.: *See—*
  - Wood, Franklin D. 3,351,701.
- Allen, George R., Jr., and M. J. Weiss, to American Cyanamid Co. 17-alkyl-20-keto substituted pregnenes, pregnadienes and methods of preparing the same. 3,351,639, 11-7-67, Cl. 260—397.3.
- Allen, Harvey G., to Westinghouse Electric Corp. Fluid pump. 3,351,022, 11-7-67, Cl. 103—89.
- Allen, Kenneth M., and C. H. Harper. Conveyors of granular material. 3,351,181, 11-7-67, Cl. 198—215.
- Allied Chemical Corp.: *See—*
  - Anello, Louis G., and Sweeney. 3,351,671.
  - Barton, Oliver A., and Pietrusza. 3,351,677.
  - Blaga, Aurel, and Skrypa. 3,351,601.
  - Boggs, Beryl A. 3,350,758.
  - Byers, Robert D., and Poor. 3,351,555.
  - Demler, Walter R., Edelman, Hallinan, and Kosmala. 3,351,471.
  - Gilbert, Everett E., and Farah. 3,351,665.
  - Harvey, Patrick J. 3,351,605.
  - Skreckoski, Gerald R. 3,351,573.
  - Winckihofer, Robert C., and Bhuta. 3,350,917.
- Allied Research Products, Inc.: *See—*
  - Leenders, Peter, and Creutz. 3,351,656.
- Allingham, Walter F., to Honeywell, Inc. Control apparatus. 3,351,085, 11-7-67, Cl. 137—495.
- Allis-Chalmers Mfg. Co.: *See—*
  - Grimes, Patrick G., and Raether. 3,351,434.
- Almstead, James L., H. R. Greeb, and T. H. Ohren, to The Procter & Gamble Co. Detergent compositions. 3,351,557, 11-7-67, Cl. 252—106.
- Alnor Instruments, Division Illinois Testing Laboratories: *See—*
  - Peltola, Veikko K. 3,350,942.
- Alta Industries, Inc.: *See—*
  - Ropiequet, Richard L., and Webber. 3,351,406.
- Aluminum Laboratories Ltd.: *See—*
  - Southam, Frederick W. 3,351,461.
- Ambrogi, Raymond R., to Corning Glass Works. Forced stream feeding through orifice. 3,351,449, 11-7-67, Cl. 65—122.
- Ambrozio, Biagio F., and R. Turn. Data converter. 3,351,916, 11-7-67, Cl. 340—172.5.
- Amco Capital Corp.: *See—*
  - Webb, John C. 3,351,058.
- American Air Filter Co., Inc.: *See—*
  - Murphy, David J., Jr. 3,350,861.
  - Nutting, Arthur. 3,350,862.
  - Revell, Alan E. 3,350,853.
  - Revell, Alan E. 3,350,854.
  - Revell, Alan E. 3,350,855.
  - Revell, Alan E. 3,350,856.
- American Bosch Arma Corp.: *See—*
  - Bock, Charles D. 3,350,916.
- American Cyanamid Co.: *See—*
  - Allen, George R., Jr., and Weiss. 3,351,639.
  - Bondarenko, Donald D. 3,351,458.
  - Chen, Catherine S. H., and Gray. 3,351,603.
  - Dusza, John P., Joseph, and Bernstein. 3,351,638.
  - Hulliger, Fritz. 3,351,435.
  - Martinez, Ricardo M. 3,351,193.
  - Weiss, Erwin L. 3,351,648.
- American Factors Associates Ltd.: *See—*
  - Silver, Harold F., Steele, and Price. 3,351,295.
- American Gas Assn., Inc.: *See—*
  - Zielinski, Robert J. 3,351,818.
- American Home Products Corp.: *See—*
  - Alburn Harvey E., Grant, Clark, and Wolf, 3,351,587.
  - Apat, Joseph K., Brady, and Elias. 3,351,527.
  - Davis, Martin A., and Herr. 3,351,588.
  - Grant, Norman H., Clark, and Alburn. 3,351,586.
  - Myers, Gordon S., and Verwijs. 3,351,641.
  - Santilli, Arthur A., and Osdene. 3,351,659.
  - Wendt, Gerhard R., and Ledig. 3 351,590.
- American Photocopy Equipment Co.: *See—*
  - Levine, Franklin R. 3,351,340.
- American Safety Equipment Corp. of Mich.: *See—*
  - Webb, Daniel D. 3,350,718.
- American Seating Co.: *See—*
  - Miller, Milton J., Henrikson, and Barecki. 3,351,402.
- Amerock Corp.: *See—*
  - Anderson, Lloyd L. 3,351,377.
- Amore, Charles J., and J. F. Murphy, to Olin Mathieson Chemical Corp. Method of improving the corrosion resistance of oxidized metal surfaces. 3,351,540, 11-7-67, Cl. 204—35.
- Amrehn Hermann, G. Beckmann, P. Bernemann, and W. Schanzer, to Chemische Werke Huls Aktiengesellschaft. Method for the automatic control of reactions in continuous flow reaction series. 3,351,430, 11-7-67, Cl. 23—230.
- Anaconda Co., The: *See—*
  - Arentzen, Charles, Fulmor, and Holderreed. 3,351,462.
- Anaconda Wire and Cable Co: *See—*
  - Berling, Eckart. 3,350,918.
- Anc, Inc.: *See—*
  - Mulligan, Robert J. 3,341,177.
- Andersen, Ralph V. Audio visual teaching device. 3,350,792, 11-7-67, Cl. 35—8.

LIST OF PATENTEES

Anderson, Arthur Y.: *See*—
  Mucci, Ralph L., and Anderson. 3,350,919.
Anderson, Gerald R., to FMC Corp. Method and apparatus for processing fruit. 3,351,114, 11-7-67, Cl. 146—238.
Anderson, Gerald R., to FMC Corp. Filtering device. 3,351,204, 11-7-67, Cl. 210—158.
Anderson, James H. Vacuum jacket construction. 3,351,224, 11-7-67, Cl. 220—15.
Anderson, John W. Windshield wiper blade assembly. 3,350,738, 11-7-67, Cl. 15—250.42.
Anderson, Lloyd L., to Amerock Corp. Foldable tablet assembly. 3,351,377, 11-7-67, Cl. 297—162.
Anderson, Olof O. Article dispenser including a rotary support for a plurality of article retaining magazines. 3,351,232, 11-7-67, Cl. 221—113.
Anderson, Robert E., and A. J. Gouin, to The Dow Chemical Co. Reduction of metal content of phenolics. 3,351,669, 11-7-67, Cl. 260—621.
Andrassy, Stella. Solar distillation equipment. 3,351,538, 11-7-67, Cl. 202—234.
Andrew, Herbert F., and D. Buckley, to Imperial Chemical Industries Ltd. Monoazo dyestuffs having a monochlorotriazine ring carrying a sulfoanthranilic acid aminono substituent. 3,351,578, 11-7-67, Cl. 260—153.
Andrews, Bill H.: *See*—
  Murray, Maurice M., and Andrews. 3,351,521.
Andrews, Julian N., and H. C. Gersbacher, to United Aircraft Products, Inc. Tube beading machine. 3,350,908, 11-7-67, Cl. 72—102.
Anello, Louis G., and R. F. Sweeney, to Allied Chemical Corp. Preparation of pentafluoroiodoethane. 3,351,671, 11-7-67, Cl. 260—653.8.
Antunes, Manoel J. Process for making a spark plug. 3,350,759, 11-7-67, Cl. 29—25.12.
Apat, Joseph K., J. E. Brady, and W. F. Elias, to American Home Products Corp. Stabilized benzathine penicillin compositions. 3,351,527, 11-7-67, Cl. 167—65.
Apple, Eugene F., and J. B. Hollopetre, to General Electric Co. Calcium halophosphate phosphor for highly loaded lamp. 3,351,796, 11-7-67, Cl. 313—109.
Applied Research Laboratories, Inc.: *See*—
  Hasler, Maurice F. 3,351,755.
Aqua-Chem, Inc.: *See*—
  Goeldner, Richard W., and Steinbruchel. 3,351,120.
Arentzen, Charles, T. G. Fulmor, and F. L. Holderreed, to The Anaconda Co. Electric furnace smelting of copper concentrates. 3,351,462, 11-7-67, Cl. 75—74.
Arikawa, Masayasu, N. Okuda, and M. Kano, to Kobe Steel Ltd. Electric arc working for welding one side of two pieces of steel plates. 3,351,734, 11-7-67, Cl. 219—137.
Arizona Agrochemical Corp.: *See*—
  Burns, Walter L. 3,351,455.
Arlo Mfg. Corp.: *See*—
  Morse, Stanley A. 3,350,999.
Armantrout, Guy A., and D. C. Camp, to United States of America, Atomic Energy Commission. Windowless high-resolution solid state radiation detector. 3,351,758, 11-7-67, Cl. 250—83.3.
Armour and Co.: *See*—
  Nelson, Richard P., and Edwards. 3,351,173.
Armstrong Cork Co.: *See*—
  Harris, Thomas G. 3,351,510.
  Schneider, Charles F. 3,350,971.
Arnold, Karl F., to United States Steel Corp. Deflector roll repositioning assembly. 3,350,904, 11-7-67, Cl. 72—17.
Artru, Jean, and E. Vignal. Portable shears. 3,350,780, 11-7-67, Cl. 30—228.
Ashkin, Arthur, to Bell Telephone Laboratories, Inc. Coupled junction semiconductor devices for optical wavelengths. 3,351,410, 11-7-67, Cl. 350—161.
Ashland Oil & Refining Co.: *See*—
  Whitsel, Travis S., Jr. 3,350,790.
Ashton, Robert, J. G. Butler, and M. L. Gullickson, to Massey-Ferguson Ltd. Corn harvester. 3,350,863, 11-7-67, Cl. 56—18.
Ashton, Robert, J. G. Butler, and M. L. Gullickson, to Massey-Ferguson Ltd. Gathering unit for corn harvesters. 3,350,865, 11-7-67, Cl. 56—119.
Ashworth, James E.: *See*—
  Marks, William M., and Ashworth. 3,351,372.
Aspden, Robert G., to Westinghouse Electric Corp. Process for producing magnetic sheets with cube-on-face grain texture. 3,351,501, 11-7-67, Cl. 148—112.
Aston, Bruno D. Applicator for cosmetics and the like. 3,351,074, 11-7-67, Cl. 132—79.
Atkin, Sydney, to Chemical Construction Corp. Silicofluoride inhibition of calcium nitrate formation in nitrochalk production. 3,351,454, 11-7-67, Cl. 71—59.
Attwood, Stanley W.: *See*—
  Groth, Edward J., Jr., and Attwood. 3,351,859.
Auto Specialties Mfg. Co.: *See*—
  Grams, Ronald L., and Graafsma. 3,351,321.
Automatic Machinery and Electronics, Inc.: *See*—
  Alexander, L. Bruce. 3,351,000.
Avco Corp.: *See*—
  Kantrowitz, Arthur R., and Russell. 3,350,721.
  Park, Jerald L., and Lagasse. 3,351,398.
  Stein, Wolfgang J., and O'Connor. 3,351,304.
Avriel, Mordechai: *See*—
  Resnick, William, and Avriel. 3,351,202.
Axelson, John W., and G. R. Russum, to Johns-Manville Corp. Method for testing paving materials. 3,350,929, 11-7-67, Cl. 73—146.
BLH Electronics, Inc.: *See*—
  Senour, Donald A. 3,350,927.
Bachmann, Klaus: *See*—
  Eckhardt, Klaus, and Bachmann. 3,351,797.
Bacskai, Robert, to Chevron Research Co. Copolymerization with α,ω-dienes. 3,351,621, 11-7-67, Cl. 260—88.2.
Baehr, Hans-Dieter, to Kommanditgesellschaft Industrie-Bau Nord G.m.b.H. & Co. Outlet device for bunkers for bulk goods. 3,351,248, 11-7-67, Cl. 222—459.
Baier, Edwin, to Farbwerke Hoechst Aktiengesellshaft vormals Meister Lucius & Bruning. Water-soluble cationic azo dyestuffs. 3,351,579, 11-7-67, Cl. 260—158.
Baker, Joseph W., J. P. Chupp, and P. E. Newallis, to Monsanto Co. O-aryl dialkylphosphinothioates. 3,351,682, 11-7-67, Cl. 260—954.
Baker Oil Tools, Inc.: *See*—
  Chenoweth, David V. 3,351,349.
  Clark, Earnest H., Jr., and Raulins. 3,351,133.
  Park, Robert O. 3,351,144.
Baker, Stephen C. Adjustable straight-through flow regulator. 3,351,086, 11-7-67, Cl. 137—501.
Balansard, Jules J. J., and P. J. L. Bernard. Lincomycin derivatives and process for preparing same. 3,351,582, 11-7-67, Cl. 260—210.5.
Baldwin, Edward K. Lawn treating system. 3,351,290, 11-7-67, Cl. 239—276.
Baldwin, George D., J. Spiteri, H. W. Grosser, and H. J. Collette, to Truck-Lite Co., Inc. Protective juncture box and releasable connector. 3,351,885, 11-7-67, Cl. 339—74.
Baldwin-Ehret-Hill, Inc.: *See*—
  Kodaras, Michael J. 3,351,154.
  Melander, Jack A. 3,350,968.
Balint, Andrew, to Bell & Howell Co. Pulse stretcher electric circuit. 3,351,820, 11-7-67, Cl. 317—148.5.
Ballas, William E. Bookholder. 3,351,312, 11-7-67, Cl. 248—448.
Ballenger, Robert J., and R. G. Schaefer, to Central Specialties Co. Flexible clothing clamp structure. 3,350,754, 11-7-67, Cl. 24—255.
Banning, Thomas A., Jr.: *See*—
  Banning, Thomas A., Jr., and Ranseen. 3,351,718.
Banning, Thomas A., Jr., E. L. Ranseen, deceased (by A. J. Ranseen, executrix), to T. A. Banning, Jr. Transverse scan magnetic recording using a cathode ray tube recording means. 3,351,718, 11-7-67, Cl. 179—100.2.
Baranauckas, Charles F.: *See*—
  Carr, Russell L. K., and Baranauckas. 3,351,653.
Barclay, Denneth M.: *See*—
  Negra, John S., and Barclay. 3,351,563.
Barecki, Chester J.: *See*—
  Miller, Milton J., Henrikson, and Barecki. 3,351,402.
Barker, Charles E. Apparatus for repetitive application of a controlled force. 3,351,047, 11-7-67, Cl. 125—20.
Barker, Ellis N. Animators for cameras. 3,351,414, 11-7-67, Cl. 352—84.
Barker, Thomas H., R. C. Nance, and J. R. Shine, to Bell Telephone Laboratories, Inc. Counter resetting mechanism. 3,351,278, 11-7-67, Cl. 235—144.
Barlow, John C., and K. W. Cocksedge, to Bell Punch Co. Ltd. Totalisator equipment. 3,351,745, 11-7-67, Cl. 235—92.
Barnd, John W. Multi-zone temperature control. 3,341,128, 11-7-67, Cl. 165—22.
Barnes Engineering Co.: *See*—
  Kallet, Eli A., and Collyer. 3,351,756.
Barnier, Georgius: *See*—
  Van Lammeren, Johannes A., Barnier, Koorneef, and Bos. 3,351,925.
Baron, Sidney, to United States of America, Navy. Quiet hydraulic depression-elevation drive for sonar transducer reflector independently rotatable in azimuth. 3,351,897, 11-7-67, Cl. 340—5.
Barradell-Smith, Richard, and J. R. McLaggan, to Pilkington Brothers Ltd. Apparatus for forming glass ribbon on molten metal with gas seal means. 3,351,451, 11-7-67, Cl. 65—157.
Bartels-Keith, James R., and M. Gordon, to Smith Kline & French Laboratories. N-cyclopropylmethyl benzmorphan derivatives. 3,351,626, 11-7-67, Cl. 260—294.3.
Barton, Oliver A., and E. W. Pietrusza, to Allied Chemical Corp. Chlorinated polyethylene elastomers. 3,351,677, 11-7-67, Cl. 260—889.
Batman, Robert: *See*—
  Jue, Lawrence S., Batman, and Horn. 3,350,786.
Bats, Raymond: *See*—
  Broman, Arthur, and Bats. 3 351,448.
Battista, Orlando A., to FMC Corp. Stable amylose dispersions and method of preparing them. 3,351,489, 11-7-67, Cl. 127—32.
Batzold, John S., to Esso Research and Engineering Co. Method of making a wetproofed electrode. 3,351,494, 11-7-67, Cl. 136—120.
Bauer, Arnold, to Patent-Treuhand-Gesellschaft fur elektrische. Scandium halide discharge lamp. 3,351,798, 11-7-67, Cl. 313—225.
Bauer, Edward W.: *See*—
  Bergholdt, William, and Bauer. 3,350,913.
Baum, Leo, and D. W. Watkins, to Esco Corp. Tobacco smoke filter. 3,351,072, 11-7-67, Cl. 131—266.
Bausch & Lomb Inc.: *See*—
  Brown, Albert D. 3,351,949.
Baxendale, Norman G., to Dunlop Rubber Co., Ltd. Method of joining together the ends of a reinforced belt to form an endless belt. 3,351,508, 11-7-67, Cl. 156—159.
Beale, Julian R. A., A. F. Beer, and P. C. Newman, to North American Philips Co. Inc. Opto-electronic semiconductor device. 3,351,828, 11-7-67, Cl. 317—235.
Bealle, Morris A. Football place-kicking shoe. 3,350,796, 11-7-67, Cl. 36—2.5.
Beard, Ralph L., and J. F. Hester, to Hanes Corp. Strip folding device. 3,351,339, 11-7-67, Cl. 270—94.
Beatrice Foods Co.: *See*—
  Noznick, Peter P., and Tatter. 3,351,531.
Beaudion, John E.: *See*—
  Lawlor, Robert E., and Beaudion. 3,351,889.

LIST OF PATENTEES

Becker, Dietrich: *See*—
  Taesler, Rudolf, Becker, and Borner. 3,351,298.
Becker, Kurt, to F. Zimmermann & Co. Coin counting and wrapping device. 3,350,835, 11-7-67, Cl. 53—66.
Beckman, C. Lee, to Lennox Industries, Inc. Corner lock construction. 3,351,367, 11-7-67, Cl. 287—189.36.
Beckmann, Gunther: *See*—
  Amrehn, Hermann, Beckmann, Bernemann, and Schanzer. 3,351,430.
Becton, Dickinson of California, Inc.: *See*—
  Rodrigues, Anthony F. 3,350,888.
Bedall, Hans, to Diehl. Percussion fuse. 3,351,018, 11-7-67, Cl. 102—77.
Beebe, Austin H., Jr., and V. Gallatin, to Federal-Mogul-Bower Bearings, Inc. Method of making bearings. 3,350,773, 11-7-67, Cl. 29—492.
Beer, Andrew F.: *See*—
  Beale, Julian R. A., Beer, and Newman. 3,351,828.
Beer, Thomas: *See*—
  Moore, George F., and Beer. 3,851,453.
Beggs, Donald: *See*—
  Thome, William L., Beggs, and McCully. 3,351,687.
Beggs, James E., to General Electric Co. Discharge device with compensated anode structure. 3,351,800, 11-7-67, Cl. 313—244.
Behr-Thomson Dehnstoffregler G.m.b.H.: *See*—
  Saur, Roland. 3,351,279.
Belanger, William J.: *See*—
  Hicks, Darrell D., and Belanger. 3,351,574.
Belf, Leon J., to The National Smelting Co. Ltd. Preparation of p-halotetrafluorophenol. 3,351,670, 11-7-67, Cl. 260—623.
Belfort, Alan M., to FMC Corp. Carbon filter material and process for preparing it. 3,351,071, 11-7-67, Cl. 131—265.
Belk, Wilber C.: *See*—
  Willis, Beuford N., and Belk. 3,351,110.
Belk, Wilber C., to FMC Corp. Filling apparatus. 3,351,473, 11-7-67, Cl. 99—186.
Bell Aerospace Corp.: *See*—
  Moran, James R. 3,351,097.
Bell & Howell Co.: *See*—
  Balint, Andrew. 3,351,820.
Bell Punch Co. Ltd.: *See*—
  Barlow, John C., and Cocksedge. 3,351,745.
Bell, Steven A.: *See*—
  Houghton, Richard B., and Bell. 3,351,832.
Bell Telephone Laboratories, Inc.: *See*—
  Ashkin, Arthur. 3,351,410.
  Barker, Thomas H., Nance, and Shine. 3,351,278.
  Brady, Paul T. 3,351,720.
  Farrow, Cecil W. 3,351,868.
  Fleming, Alfred L., and Hacket. 3,351,722.
  Fought, Benjamin T., Macurdy, and Muir. 3,351,915.
  Fraser, David B., and Rudd. 3,351,757.
  Hackett, John A., and O'Connell. 3,351,713.
  Logan, Walter, and Newhall. 3,351,102.
Bellmer, Friedrich O., to Worthington Corp. Unloading device for reciprocating compressors. 3,351,271, 11-7-67, Cl. 230—24.
Belson, Ross A., to Honeywell Inc. Print hammer having braking means. 3,351,006, 11-7-67, Cl. 101—93.
Beltx Corp.: *See*—
  De Woskin, Irvin S. 3,351,060.
Bender, Arthur V. Card indexing punch. 3,350,781, 11-7-67, Cl. 30—358.
Bender, Martin. Rotatable toy on a sectional shaft. 3,350,811, 11-7-67, Cl. 46—51.
Bendix Corp., The: *See*—
  Buckley, Clayton G., and Brown. '3,351,811.
  Burnett, Richard T. 3,351,159.
  Datwyler, Walter F., Jr., Mayer, and Taplin. 3,351,080.
  McCombs, Howard L., Jr. 3,350,880.
Benerito, Ruth R.: *See*—
  McKelvey, John B., Benerito, Berni, and Burigis. 3,351,420.
Benish, Joe: *See*—
  Depew, Herbert D., Jr., Le Donne, and Benish. 3,351,303.
Benjamin, Allen. Tapping device. 3,350,731, 11-7-67, Cl. 10—136.
Bentley-Leek, Herbert, to Saunders Valve Co. Ltd. Means for sealing a spindle. 3,351,351, 11-7-67, Cl. 277—115.
Berard, Edmund. Book index unit. 3,350,801, 11-7-67, Cl. 40—23.
Berg Electronics, Inc.: *See*—
  Sitzler, Fred C. 3,351,704.
Bergholdt, William, and E. W. Bauer, to Lockheed Aircraft Corp. Method of and apparatus for flattening sheet beryllium. 3,350,913, 11-7-67, Cl. 72—342.
Bergman, Sven G., to Saab Aktiebolag. Switch means for selective control of plural circuits. 3,351,729, 11-7-67, Cl. 200—172.
Berkl, Erhard: *See*—
  Dietrich, Isolde, Berkl, Weyl, and Herrmann. 3,351,754.
Berger, Emanuel, to Holophane Co., Inc. Luminaire refractor. 3,351,753, 11-7-67, Cl. 240—106.
Berling, Eckart, to Anaconda Wire and Cable Co. Gas mixture analyzer. 3,350,918, 11-7-67, Cl. 73—30.
Bernard, Pierre J. L.: *See*—
  Balansard, Jules J. J., and Bernard. 3,351,582.
Bernemann, Paul: *See*—
  Ameehn, Hermann, Beckmann, Bernemann, and Schanzer. 3,351,430.
Berni, Ralph J.: *See*—
  McKelvey, John B., Benerito, and Berni. 3,351,420.
Bernstein, Seymour: *See*—
  Dussa, John P., Joseph, and Bernstein. 3,351,638.
Berry, John H. Formula and method for determining the proportion of fat in dairy products. 3,351,431, 11-7-67, Cl. 23—231.
Berry, Johnnie R. Irrigation pipe moving apparatus and method. 3,350,769, 11-7-67, Cl. 29—431.
Bersworth, Frederick C. Amide reaction products of amino acid chelating compounds. 3,351,658, 11-7-67, Cl. 260—534.
Berta, James J., and J. E. Scheidt, to Caterpillar Tractor Co. Two-pump supply for hydraulic circuits having different flow requirements. 3,350,986, 11-7-67, Cl. 91—414.
Berthold, Louis, to Societe Grenobloise d'Etudes et d'Applications Hydrauliques. Heat exchangers. 3,351,131, 11-7-67, Cl. 165—159.
Bertling, Ronald J., to Energy Conversion Systems Corp. Double oscillator electric motor. 3,351,789, 11-7-67, Cl. 310—37.
Best, John H., & Sons, Inc.: *See*—
  Best, Leon H. 3,351,211.
Best, Leon H., to John H. Best & Sons, Inc. Display rack. 3,351,211, 11-7-67, Cl. 211—169.
Betschart, Robert J.: *See*—
  Miller, Phillip A., and Betschart. 3,351,038.
Bhuta, Mahendra: *See*—
  Wincklhofer, Robert C., and Bhuta. 3,350,917.
Bickl, Joseph. Furniture joint. 3,351,365, 11-7-67, Cl. 287—127.
Biddle, James A. Hardware locating and starting tool. 3,351,111, 11-7-67, Cl. 145—52.
Bien, Alfred A., to Chrysler Corp. Self-threading nut. 3,350,975, 11-7-67, Cl. 85—32.
Biesecker, Douglas A.: *See*—
  Lewis, Donald E., and Biesecker. 3,351,316.
Biggam, Frank D., to Teletype Corp. Relay flip-flop circuit. 3,351,819, 11-7-67, Cl. 317—140.
Binaghi, Marco: *See*—
  Natta, Giulio, Pregaglia, Mazzanti, and Binaghi. 3,351,613.
Bing, Herbert A.: *See*—
  Finelli, Patrick L., and Bing. 3,350,990.
Binstead, Dennis R.: *See*—
  Scarr, George E., and Binstead. 3,350,750.
Bishop, Robert G., to Hercules Inc. Preparation of hydroxypropyl cellulose. 3,351,583, 11-7-67, Cl. 260—231.
Biver, Jean: *See*—
  Simonet, Jocelyn E. L., and Biver. 3,351,327.
Black and Decker Mfg. Co., The: *See*—
  Sheps, Martin I., Fitzgerald, and Shuman. 3,350,864.
Blackett, John H., to Vickers Instruments Ltd. Counters for counting cells in suspension and circuit therefor. 3,351,821, 11-7-67, Cl. 317—148.5.
Blackmer, David E., to Instrumentation Laboratory Inc. Circuit for balancing out noise current in a photodiode using a D-C zero average waveform. 3,351,764, 11-7-67, Cl. 250—214.
Blackwelder Mfg. Co.: *See*—
  Gates, Lauren W. 3,351,399.
Blaga, Aurel, and M. J. Skrypa, to Allied Chemical Corp. Chlorinated wax, vinyl chloride/vinyl acetate blend coated with limestone or talc and process for preparing it. 3,351,601, 11-7-67, Cl. 260—28.5.
Blake, Jack W., to F. L. Jacobs Co. Ash receptacle for automobiles. 3,351,404, 11-7-67, Cl. 312—246.
Blake, William T. Railroad car shock absorber. 3,351,336, 11-7-67, Cl. 267—3.
Blakeley, James, and H. M. Sweet, to Victaulic Co. of America. Gasket for pipe joint. 3,351,352, 11-7-67, Cl. 277—206.
Blanchard, Harry S.: *See*—
  Hamilton, Stephen B., Jr., and Blanchard. 3,351,667.
Bliss, Beatrice: *See*—
  Bliss, Charles O. 3,351,378.
Bliss, Charles O., deceased (by B. Bliss, executrix), to Blisscraft of Hollywood. Chair. 3,351,378, 11-7-67, Cl. 297—239.
Blisscraft of Hollywood: *See*—
  Bliss, Charles O. 3,351,378.
Bloch, Herman S., to Universal Oil Products Co. Desalinization of aqueous solutions. 3,351,549, 11-7-67, Cl. 210—24.
Blum, Louis, and W. J. Horgan, Jr., to Blumcraft of Pittsburgh. Ornamental railing. 3,351,324, 11-7-67, Cl. 256—08.
Blumberg, Sidney: *See*—
  Chanoch, Lawrence H., and Blumberg. 3,351,233.
Blumcraft of Pittsburgh: *See*—
  Blum, Louis, and Horgan. 3,351,324.
Blumer, Armin, to Maschinenfabrik und Giesserei Netstal AG. Apparatus for mounting an injection mold for angular movement. 3,350,746, 11-7-67, Cl. 18—30.
Blumer, Hans H. Package taping. 3,351,185, 11-7-67, Cl. 206—60.
Boblitz, Oliver W. Automatic safety belt devices. 3,351,381, 11-7-67, Cl. 297—385.
Bock, Charles D., to American Bosch Arma Corp. Accelerometer calibration on inertial platforms. 3,350,916, 11-7-67, Cl. 73—1.
Boda, Robert A., and D. K. Kollman, to Kiekhaefer Corp. Insulated outboard motor housing. 3,350,879, 11-7-67, Cl. 60—31.
Boehlow, Roger W. Thread-forming and fastening screw. 3 351,115, 11-7-67, Cl. 151—22.
Boese, Peter: *See*
  Gotz, Elmar, and Boese. 3,351,746.
Boggs, Beryl A., to Allied Chemical Corp. Wrap remover. 3,350,758, 11-7-67, Cl. 28—20.
Boggs, Wilburn A., A. A. Esral, and S. C. Jacobsen to Lockheed Aircraft Corp. Method for treatment of corrosion. 3,351,421, 11-7-67, Cl. 21—2.7.

Bogossian, Armen, and H. H. Mackal, to Halkey-Roberts Corp. Oral inflation valve. 3,351,081, 11-7-67, Cl. 137—223.

Boissevain, Mathew G., to FMC Corp. Intermittently operable coding mechanism for conveyor system. 3,351,176, 11-7-67, Cl. 198—38.

Bondarenko, Donald D., to American Cyanamid Co. Herbicidal compositions and processes of controlling undesirable plant species in the presence of crops therewith. 3,351,458, 11-7-67, Cl. 71—121.

Bongenaar, Willem, to North American Philips Co. Inc. Magnetic core switch. 3,351,772, 11-7-67, Cl. 307—88.

Bonn, Theodore H., to Honeywell Inc. Laser recorder using medium having encapsulated chemicals. 3,351,948, 11-7-67, Cl. 346—76.

Booher, Carl V.: *See—*
Walker, John C. F., III, and Booher. 3,351,004.

Bopp, Achim: *See—*
Jauernik, Edmund, and Bopp. 3,351,867.

Borden, Jay R., K. Gasser, and S. Krauthamer, to Borg-Warner Corp. Constant volts-per-cycle energizing system in which the frequency of the energy is first adjusted and thereafter the amplitude of the energy is regulated to maintain a preset volts-per-cycle ratio. 3,351,835, 11-7-67, Cl. 318—227.

Borg-Warner Corp.: *See—*
Borden, Jay R., Gasser, and Krauthamer. 3,351,835.

Borner, Gerhard: *See—*
Taesler, Rudolf, Becker, and Borner. 3,351,298.

Bornn, Ralph: *See—*
Lindsay, Kenneth W., Bornn, and Ensmann. 3,350,812.

Borsattino, Vincent S., C. E. Marker, and J. W. Shalla, to United States Steel Corp. Safety remote control for a carrier. 3,351,945, 11-7-67, Cl. 343—225.

Bos, Jules: *See—*
Van Lammeren, Johannes, Antonius, Barnier, Koorneef, and Bos. 3,351,925.

Bostitch, Inc.: *See—*
Readyhough, Peter A. 3,351,256.

Bostrom, John D., to Illinois Tool Works Inc. Packaging device. 3,351,124, 11-7-67, Cl. 229—42.

Botham, Ruth A.: *See—*
Dunnavant, William R., and Botham. 3,351,602.

Bowen, James B., and P. W. Miller, Jr., to Steel Heddle Mfg. Co. Shuttle grip and strap assembly. 3,351,100, 11-7-67, Cl. 139—207.

Bowles, Arnold G. Apparatus for the manufacture of brick and tile. 3,350,757, 11-7-67, Cl. 25—112.

Bowman, Hyman D. Filter muffler. 3,350,877, 11-7-67, Cl. 60—30.

Boyne Products, Inc.: *See—*
Ford Donald R. 3,351,888.

Brack, Alfred, and R. Raue, to Farbenfabriken Bayer Aktiengesellschaft. Novel indole cyanine dyestuffs. 3,351,600, 11-7-67, Cl. 260—288.

Brady, Joseph E.: *See—*
Apat, Joseph K., Brady, and Elias. 3,351,527.

Brady, Paul T., to Bell Telephone Laboratories, Inc. Echo suppressor for communication system having transmission delay. 3,351,720, 11-7-67, Cl. 179—170.2.

Brady, W. H., Co.: *See—*
Muttera, William H., Jr. 3,351,515.

Brand, Heinz, to Dorstener Eisengiesserei Maschinfabric, AG. Brick manufacturing apparatus. 3,350,756, 11-7-67, Cl. 25—2.

Brandon Equipment Co. Inc.: *See—*
Broling, Keith W. 3,351,024.

Branson Instruments, Inc.: *See—*
Branson, Norman G. 3,351,539.

Branson, Norman G., to Branson Instruments, Inc. Sonic agitating method and apparatus. 3,351,539, 11-7-67, Cl. 204—14.

Branstner, Rudolf: *See—*
Gräf Ingholt, Alfred, and Branstner. 3,350,840.

Bratek, Robert: *See—*
Wadolny, Alx, and Bratek. 3,351,817.

Brater, Donald C., J. Dykstra, Jr., H. L. Kaufman, and S. H. Smiley, to United States of America, Atomic Energy Commission. Continuous sorption-desorption system and method. 3,350,848, 11-7-67, Cl. 55—71.

Brauer, Hans, to Th. Kieserling and Albrecht. Apparatus for testing tubular workpieces. 3,350,920, 11-7-67, Cl. 73—49.1.

Brauer, Hans, and A. Goeke, to Th. Kieserling and Albrecht. Apparatus for testing tubes. 3,350,921, 11-7-67, Cl. 73—49.6.

Brauer, Hans, and H. Lorenz, to Th. Kieserling and Albrecht. Apparatus for shaving elongated workpieces of circular cross section. 3,350,965, 11-7-67, Cl. 82—20.

Bray, Lane A., and F. P. Roberts, to United States of America, Atomic Energy Commission. Separation of cerium from other rare earths. 3,351,424, 11-7-67, Cl. 23—22.

Breeding, Dillard. Shaping device. 3,350,816, 11-7-67, Cl. 51—80.

Bresson, Clarence R., to Phillips Petroleum Co. 2-aminoalkanethiols. 3,351,664, 11-7-67, Cl. 260—584.

Bretton, Georges L. Fishing reels provided with a hood. 3,351,301, 11-7-67, Cl. 242—84.21.

Breuer, Richard G.: *See—*
Titus, Leslie, Thornberry, and Breuer. 3,351,428.

Breuers, Theo P. C., and P. A. Friesen, to Chemische Fabriek L. Van Der Grinten N. V. Process and apparatus for drying damp sheet material. 3,350,788, 11-7-67, Cl. 34—23.

Brewer, David R. Apparatus for measuring tankfuls and counting the same. 3,350,937, 11-7-67, Cl. 73—224.

Bridenstine, Orville J., to Phillips Petroleum Co. Nesting and stacking container. 3,351,229, 11-7-67, Cl. 220—97.

Bridges, Thomas N., Sr., to Lockheed Aircraft Corp. Sealant applying apparatus. 3,350,774, 11-7-67, Cl. 29—564.

Briggin, Edward: *See—*
Katzman, Lawrence, Briggin, D'Elia, and Stolarz. 3,351,737.

Briggs, Peter G., to International Computers and Tabulators Ltd. Magnetic core data storage matrix. 3,351,921, 11-7-67, Cl. 340—174.

Brimer, Marshall R., and W. T. Tucker, to Eastman Kodak Co. Aryl-β-hydroxyethyl ethers as antiozonants. 3,351,609, 11-7-67, Cl. 260—45.9.

Bristol, David A., to General Electric Co. Digital span adjuster for differential pressure measure device. 3,350,945, 11-7-67, Cl. 73—398.

Bristol-Myers Co.: *See—*
Pircio, Anthony W., and Krementz. 3,351,528.

British Aluminium Co. Ltd.: *See—*
Pomeroy, Laurence E. W. 3,351,044.

British Oxygen Co. Ltd., The: *See—*
Owen, Bernard D., Smith, and Swan. 3,351,333.

Britton, D. Art: *See—*
Harrison, Harry W. 3,350,900.

Broadbent, David J.: *See—*
Szabo, Karoly, and Broadbent. 3,351,679.

Brockes, Andreas: *See—*
Weisbeck, Roland, Brockes, and Nassenstein. 3,351,516.

Broling, Keith W., to Brandon Equipment Co. Inc. Automobile bridge plate. 3,351,024, 11-7-67, Cl. 105—458.

Broman, Arthur, and R. Bats, to Glaverbel. Processes and apparatus for the manufacture of sheets of glass by drawing. 3,351,448, 11-7-67, Cl. 65—91.

Brooks, Daryl G. Counterbore facing tool. 3,350,964, 11-7-67, Cl. 82—4.

Brown, Albert D., to Bausch & Lomb Inc. Point plotting graphic recorder. 3,351,949, 11-7-67, Cl. 346—94.

Brown, Albert D., and T. B. Franklin, Sr., to Lockheed Aircraft Corp. Aspirator apparatus. 3,351,090, 11-7-67, Cl. 137—557.

Brown, David C.: *See—*
Buckley, Clayton G., and Brown. 3,351,811.

Brown, Gordon E., C. R. Cox, and G. A. Kennar, to Monsanto Co. Condensation products of phenol, polycyclic phenols and formaldehyde. 3,351,612, 11-7-67, Cl. 260—57.

Brown, H. H., Shoe Co.: *See—*
Schlecht, Frederick J. 3,350,795.

Brown, Kenneth R.: *See—*
Crawford, Charles I., and Brown. 3,351,850.

Brown, Richard W., to Honeywell Inc. Unitary spring clip. 3,350,974, 11-7-67, Cl. 85—8.8.

Brown, Robert G., and H. J. Rosenberg, to B. H. Bunn, Co. Tilted bundle tying machine and conveyor feed therefor. 3,350,998, 11-7-67, Cl. 100—4.

Brown, Robert L. Methods of evaluating and inspecting adhesively bonded joints and structures adapted for such evaluation and inspection. 3,351,760, 11-7-67, Cl. 250—106.

Brown, Winston E., J. R. LaCoume, and R. K. Treichler, to The Dow Chemical Co. Solvent composition. 3,351,560, 11-7-67, Cl. 252—171.

Bruce, Edward: *See—*
Clauss, Francis J., Lavendel, and Bruce. 3,351,440.

Bruckl, Franz X., to Hannes Marker. Heel holder for safety ski bindings. 3,351,355, 11-7-67, Cl. 280—11.35.

Bruns, Edward C.: *See—*
Wiatt, James G., and Bruns. 3,350,969.

Brunswick Corp.: *See—*
Knuth, Carl. 3,351,045.

Brush Electrical Engineering Co. Ltd.: *See—*
Davis, Rex M. 3,351,769.

Buchner, Eberhard: *See—*
Leunig, Heimbert, Meyer, and Buchner. 3,350,887.

Buckley, Clayton G., and D. C. Brown, to The Bendix Corp. Speed responsive apparatus. 3,351,811, 11-7-67, Cl. 317—5.

Buckley, Donald: *See—*
Andrew, Herbert F., and Buckley. 3,351,578.

Budd, William E.: *See—*
Albertson, Orris E., and Budd. 3,351,030.

Budincsevits, Andor, to Tavkozlesi Kutato Intezet. Method for the powder metallurgical forming of metal powders by hot casting. 3,351,464, 11-7-67, Cl. 75—212.

Bue, Richard C., to Sico Inc. Folding stage construction. 3,351,029, 11-7-67, Cl. 108—112.

Buehler, William J.: *See—*
Rozner, Alexander G., and Buehler. 3,351,463.

Buescher, William E., and D. R. Kerstetter, to Sylvania Electric Products Inc. Cathodes. 3,351,486, 11-7-67, Cl. 117—223.

Buhler, Gebruder: *See—*
Dellsperger, Fritz. 3,351,390.
Eppenberger, Paul. 3,351,201.

Builders Equipment Co.: *See—*
Thomas, Paul M., Wright, Burge, and Crile. 3,351,216.

Bullock, Leslie: *See—*
Sheen, Herbert W. C., and Bullock. 3,351,854.

Bunker Ramo Corp., The: *See—*
Sear, Brian E. 3,351,953.
Sear, Brian E., Stephens, and Williams. 3,351,816.
Stephens, Raymond A. 3,351,702.

Bunn, B. H., Co.: *See—*
Brown, Robert G., and Rosenberg. 3,350,998.

Burenga, Thomas I., to FMC Corp. Screen cleaning apparatus. 3,351,200, 11-7-67, Cl. 209—299.

Burge, Russell W.: *See—*
Thomas, Paul M., Wright, Burge, and Crile. 3,351,216.

Burgess, Douglas P., G. A. Williams, and J. D. Harkey, to Cannon Mills Co. Terry loom with fell shifting means. 3,351,096, 11-7-67, Cl. 139—25.

Burkert, Werner: *See—*
Von Zelewsky, Ottomar, and Burkert. 3,351,512.

Burlington Industries, Inc.: *See—*
Morrison, Elbert F., and Joy. 3,350,867.

Burnett, Richard T., to The Bendix Corp. Backing plate, anchor construction. 3,351,159, 11-7-67, Cl. 188—78.

Burns, Walter L., to Arizona Agrochemical Corp. Ammonium sulfate-ammonium bisulfate fertilizer and method of making. 3,351,455, 11-7-67, Cl. 71—61.

Burroughs Corp.: *See—*
McNulty, Thomas C., and Ziemba. 3,352,784.
Meyerhoff, Albert J., and Goodman. 3,351,924.
Shimabukuro, George T. 3,351,917.
Stram, Oscar B., and Einhorn. 3,351,747.

Burt, Charles A.: *See—*
Miller, William G., and Burt. 3,351,910.

Bush, George B., and L. L. Warnke, to United States of America, Navy. Correlation doppler system. 3,351,943, 11-7-67, Cl. 343—112.

Bushcott, Rudolph A., and E. E. Waldmann, to Thomas Industries Inc. Method for making lamp shades. 3,351,689, 11-7-67, Cl. 264—69.

Bushmeyer, Richard W., to J. I. Case, Co. Trip mechanism for plow bottom. 3,351,138, 11-7-67, Cl. 172—269.

Bushnell, Russell S., and A. R. Marko. Automatic card rating and teaching machine. 3,350,793, 11-7-67, Cl. 35—9.

Butler, Clarence A., and D. R. Lazzaro, to The Lindsay Wire Weaving Co. Twisted strands and non-woven filtering media made of such strands. 3,351,205, 11-7-67, Cl. 210—400.

Butler, James G.: *See—*
Ashton, Robert, Butler, and Gullickson. 3,350,863.
Ashton, Robert, Butler, and Gullickson. 3,350,865.

Butler, Keith H., M. J. B. Thomas, and R. F. Quirk, to Sylvania Electric Products Inc. Method of processing halophosphate phosphors. 3,351,194, 11-7-67, Cl. 209—5.

Butler, Thomas A., and H. F. Wiese, to The Lubrizol Corp. Nitrogen, phosphorus and metal containing composition. 3,351,647, 11-7-67, Cl. 260—429.9.

Byerly, Earl H.: *See—*
Goldsmith, Joseph, McMahan, and Byerly. 3,351,870.

Byers, Robert D., and J. G. Poor, to Allied Chemical Corp. Chromic acid-sulfuric acid solutions containing a mercuric ion catalyst for dissolving of copper and its alloys. 3,351,-555, 11-7-67, Cl. 252—79.2.

C.A.V. Ltd.: *See—*
Kemp, Kenneth A. W. 3,351,020.

CF & I Steel Corp.: *See—*
Nachazel, John S. 3,350,822.

CTA-Compagnie Industrielle de Textiles Artificels et Synthetiques: *See—*
Drisch, Nicolas. 3,351,696.

Cable, John F., to Admiral Corp. Control for hot gas defrost system. 3,350,893, 11-7-67, Cl. 62—126.

Cabot Corp.: *See—*
Wendell, Charles B., Carpenter, and Greene. 3,351,427.

Caldwell, Henry C., and W. G. Groves, to Smith Kline & French Laboratories. Compositions for producing spasmolytic activity comprising 3-tropanyl-2-phenylacrylate compounds. 3 351,530, 11-7-67, Cl. 167—65.

Caldwell, John R., K. P. Perry, and W. J. Jackson, Jr., to Eastman Kodak Co. 7,7-dialkylbicyclo [3.2.0] heptan-6-ols and esters thereof. 3,351,645, 11-7-67, Cl. 260—410.

Calvert, Kenneth O.: *See—*
Rodaway, Bruce K., and Calvert. 3 351,570.

Calvert, Raymond, to The Wayne Kerr Laboratories Ltd. Electrical analogue computing circuits which determines the modulus of the difference of two quantities. 3,351,748, 11-7-67, Cl. 235—193.

Camp, David C.: *See—*
Armantrout, Guy A., and Camp. 3,351,758.

Camp William C.: *See—*
Ulam, John B., and Camp. 3,350,772.

Campbell, Clyde D.: *See—*
Cross, James M., Metzger, and Campbell. 3,351,650.

Campbell, Robert H., to R. L. Kuss & Co., Inc. Molding machine and process. 3 350,747, 11-7-67, Cl. 18—30.

Campus Road Investment Co., Inc.: *See—*
Craig, Burnie M., and Shaffer. 3,351,785.

Canadian International Paper Co.: *See—*
Hamilton, Douglas D. 3,351,107.

Cane, Albert: *See—*
Shapiro, Isadore, and Cane. 3,351,505.

Cannon Mills Co.: *See—*
Burgess, Douglas P., Williams, and Harkey. 3,351,096.

Canomac Corp.: *See—*
Haines, Norman R. 3,351,076.

Caparrelli, Frederick: *See—*
Goodyear, Chalmers, Connolly, and Caparrelli. 3,351,057.

Cappon, Arthur M.: *See—*
Seelbach, Walter C., Cappon, De Marco, and Miller. 3,351,778.

Carlson, Donald E.: *See—*
Miller, Cyril V., and Carlson. 3,351,703.

Carpenter, Clifford L.: *See—*
Wendell, Charles B., Carpenter, and Greene. 3,351,427.

Carper, Harold R. Ash tray. 3,351,069, 11-7-67, Cl. 131—235.

Carr, Russell L. K., and C. F. Barnauckas, to Hooker Chemical Corp. Fluorine-containing hydroxy acids and esters and methods for the manufacture thereof. 3,351,653, 11-7-67, Cl. 260—484.

Carson, Earl W., R. E. Derr, and M. W. Iverson, to Honeywell Inc. Control apparatus. 3,351,315, 11-7-67, Cl. 244—77.

Carter, James S. F., ½ to K. B. Ray. Apparatus for packaging fruit juices and similar products. 3,350,839, 11-7-67, Cl. 53—88.

Carter, Ralph E., to General Electric Co. Composition of matter and method of producing same. 3,351,496, 11-7-67, Cl. 136—153.

Casale, Ernest R. V-drive transmission. 3,350,958, 11-7-67, Cl. 74—417.

Case, J. I., Co.: *See—*
Bushmeyer, Richard W. 3,351,138.
Wridt, Alfred A. 3,351,358.

Cast, Adolf: *See—*
Reich, Kurt, and Cast. 3,351,257.

Catania, Salvatore J. Drying attachment for hair dryer. 3,350,791, 11-7-67, Cl. 34—90.

Caterpillar Tractor Co.: *See—*
Berta, James J., and Scheidt. 3,350,986.

Celanese Coatings Co.: *See—*
Hicks, Darrel D., and Belanger. 3,351,574.
Masters, John E. 3,351,674.
Price, Herbert P. 3,351,673.

Central Specialties Co.: *See—*
Ballenger, Robert J., and Schaefer. 3,350,754.

Chamberlin, James W., to Eli Lilly and Co. 3-formyl cephalosporins. 3,351,596, 11-7-67, Cl. 260—243.

Chambert, Lars A. A., to Aktiebolaget Svenska Mashinverken. Valve structure adapted to be arranged in a flue bend. 3,351,091, 11-7-67, Cl. 137—601.

Chambran, Jacques, R. M. G. J. Scalliet, and D. Duclaux, to Pechiney Compagnie de Produits Chimiques et Electrometallurgiques. High yield electrolytic fusion cell having anode suspension means. 3,351,546, 11-7-67, Cl. 204—243.

Chamot, Walter M., to Nalco Chemical Co. Hydroxybenzaldehyde-aliphatic aldehyde-polyamine polycondensates. 3,351,662. 11-7-67. Cl. 260—566.

Chance, William E., to C. W. Cheney & Son Ltd. Key-operated locks for articles of lugage. 3,350,902, 11-7-67, Cl. 70—74.

Chanoch, Lawrence H., and S. Blumberg. Refrigerated food dispenser having a reciprocating ejector. 3,351,233, 11-7-67, Cl. 221—150.

Chapman, Alan, to Rank Precision Industries Ltd., trading as The Rank Taylor Hobson Division, Rank Organization. Zooming mechanism for optical objectives of variable equivalent focal length. 3,351,411, 11-7-67, Cl. 350—187.

Chase, Roland H.: *See—*
Hamby, Jefferson O., and Chase. 3,351,761.

Chaveneaud, Roger M., to Societe a Responsabilite Limitee: Societe Lamy d'Etudes et de Recherches "Soler." Electrical brush support. 3,351,727, 11-7-67, Cl. 200—166.

Chemical Construction Corp.: *See—*
Atkin, Sydney. 3,351,454.
Negra, John S., and Barclay. 3,351,563.

Chemische Fabriek L. Van Der Grinten N.V.: *See—*
Breuers, Theo P. C., and Friesen. 3,350,788.

Chemische Werke Huls Aktiengesellschaft: *See—*
Amrehn, Hermann, Beckmann, Bernemann, and Schanzer. 3,351,430.

Chem-Spray Controls, Inc.: *See—*
Gray, Robert L. 3,351,240.

Chen, Catherine S. H., and F. M. Gray, to American Cyanamid Co. Acrylate colorless transparent photoactivatable cementing compositions. 3 351,603, 11-7-67, Cl. 260—31.2.

Cheney, C. W., & Son Ltd.: *See—*
Chance, William E. 3,350,902.

Cheney, Grant W.: *See—*
Sederlund, Edward F., and Cheney. 3,350,744.

Cheng, Yue-Chu: *See—*
Ming, Yip, Li, and Cheng. 3,351,723.

Chenoweth, David V., to Baker Oil Tools, Inc. Hydraulically expandable well packer. 3,351,349, 11-7-67, Cl. 277—34.

Chermin, Hubertus M. J., to North American Philips Co. Inc. Gas discharge device having thermionic electrodes energized by transistor oscillator. 3,351,807, 11-7-67, Cl. 315—99.

Cherry-Burrell Corp.: *See—*
Green, John F. 3,351,391.

Chevron Research Co.: *See—*
Adams, Robert T., and Hughes. 3,351,672.
Bacskai, Robert. 3,351,621.
Ellis, John R. B., and Hughes. 3,351,634.
Seifert, Wolfgang K. 3,351,655.

Chin, Daniel Y. S., to Honeywell, Inc. Controllable timing circuit. 3,351,776, 11-7-67, Cl. 307—88.5.

Chion, Christ, to Allan Mfg. Co. Roller guide for a fishing rod. 3,350,809, 11—767, Cl. 43—24.

Christensen, Lester T.: *See—*
Smith, Aubrey H., and Christensen. 3,351,791.

Christin, Georges E., Etablissements Bertrand Faure. Habitable vehicle. 3,351 373, 11-7-67, Cl. 296—23.

Chrysler Corp.: *See—*
Bien, Alfred A. 3,350,975.
Leising, Maurice B. 3,350,882.
Medelsohn, Robert A. 3,351,127.
Ruettinger, Thurman O. 3,350,954.

Chupp, John P.: *See—*
Baker, Joseph W., Chupp, and Newallis. 3,351,682.

Ciba Corp.: *See—*
Daeniker, Hans U. 3,351,529.
De Stevens, George and Werner. 3,351,595.
Marxer, Adrian. 3,351,628.

Ciba Ltd.: *See—*
Froehlich, Alfred. 3,351,468.
Jaeger, Horst, Nachbur, and Maeder. 3,351,617.
Preininger, Erich, and Ott. 3,351,610.
Siegrist, Adolf E., Maeder, Liechti, and Guglielmetti. 3,351,591.
Siegrist, Adolf E., Maeder, Liechti, and Guglielmetti, 3,351,592.
Toepfl, Rosemarie, and Maeder. 3,351,618.

Cincinnati Milling Machine Co., The: *See—*
Wiatt, James G., and Bruns. 3,350,969.

Claeveau, Emile. Brake systems for motor vehicles. 3,351,157, 11-7-67, Cl. 188—18.

- Clark, Bob R., and G. W. Perry; said Perry assor. to said Clark. Truck tie-down device. 3,351,356, 11-7-67, Cl. 280—179.
- Clark, Donald E.: *See—*
  - Alburn, Harvey E., Grant, Clark, and Wolf. 3,351,587.
  - Grant, Norman H., Clark, and Alburn. 3,351,586.
- Clark, Earnest H., Jr., and G. M. Raulins, to Baker Oil Tools, Inc. Tubing weight controlled safety valve apparatus. 3,351,133, 11-7-67, Cl. 166—53.
- Clark Equipment Co.: *See—*
  - Frost, Barry L. J., and Zeller. 3,350,951.
  - Williamson, William A. 3,351,147.
- Clark, Frederick G., to Eastman Machine Co. Knife sharpening mechanism. 3,350,818, 11-7-67, Cl. 51—246.
- Clark, Peter F., and V. D. Poole, to Imperial Chemical Industries Ltd. Phthalocyanine dyestuffs. 3,351,594, 11-7-67, Cl. 260—242.
- Clauss, Francis J., H. W. Lavendel, and E. Bruce, to Lockheed Aircraft Corp. Electrical contact materials. 3,351,440, 11-7-67, Cl. 29—182.5.
- Clevite Corp.: *See—*
  - Kingsbury, George R., Junge, Weinkamer, and Slater. 3,350,763.
- Coal Industry (Patents) Ltd.: *See—*
  - Dowell, Joseph. 3,351,385.
- Coates, Joseph F.: *See—*
  - Wakeman, Reginald L., and Coates. 3,351,652.
- Cochran, Larry A., and J. A. Konkel, to Radio Corporation of America. Color demodulators. 3,351,709, 11-7-67, Cl. 178—5.4.
- Cocksedge, Kenneth W.: *See—*
  - Barlow, John B., and Cocksedge. 3,351,745.
- Codina, Jorge G. Automatic electronic microgram scale. 3,351,146, 11-7-67, Cl. 177—210.
- Codman & Shurtleff, Inc.: *See—*
  - Mallina, Rudolph F. 3,351,191.
- Cohen, Gerald D.: *See—*
  - Potter, John T., and Cohen. 3,351,166.
- Cohen, Maurice. Cabinet assembly for use with display rack. 3,351,401, 11-7-67, Cl. 312—201.
- Cohn, Adolph E. Combined notebook and flexible bag closure. 3,351,064, 11-7-67, Cl. 129—1.
- Coleman, Donald G.: *See—*
  - Hook, Charles E., and Coleman. 3,351,262.
- Colgate, Harry R. Chemical composition alteration of tobacco. 3,351,066, 11-7-67, Cl. 131—140.
- Colibri Lighters Ltd.: *See—*
  - Lowenthal, Hans. 3,351,067.
- Collette, Harold J.: *See—*
  - Baldwin, George D., Spiteri, Grosser, and Collette. 3,351,885.
- Collie, Stafford D., to Phillips Petroleum Co. Container and cover therefor. 3,351,227, 11-7-67, Cl. 220—60.
- Collins Radio Co.: *See—*
  - Martin, Jerry A., and Rooks. 3,351,861.
  - Midgley, Melvin L. 3,351,875.
- Collins, Robert C. Power rotated abrading tool. 3,351,046, 11-7-67, Cl. 125—5.
- Collom, Donald J., and C. G. Mann, to Weltronic Co. Production monitoring system and sequencing control therefor. 3,351,912, 11-7-67, Cl. 340—172.5.
- Collyer, Philip W.: *See—*
  - Kallet, Eli A., and Collyer. 3,351,756.
- Colombani, Don P. L. J., and F. G. M. Ferrie, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Propellent supply to electro-thermic ejectors. 3,350,884, 11-7-67, Cl. 60—203.
- Colombo, Enzo. Flexible segmental starting bar for continuous metal casting machine. 3,351,125, 11-7-67, Cl. 164—274.
- Combustion Engineering Inc.: *See—*
  - Rohlin, John F. 3,351,533.
- Comisarow, Paul: *See—*
  - Ainslie, Robert E., Comisarow, and Hutchins. 3,351,010.
- Commissariat A l'Energie Atomique: *See—*
  - Gayet, Bernard, Holder, Kurka, Reboux, and Trouve. 3,351,686.
- Communitron, Inc.: *See—*
  - Miller, William G., and Burt. 3,351,910.
- Composite Metal Products, Inc.: *See—*
  - Ulam, John B., and Camp. 3,350,772.
- Conductron Corp.: *See—*
  - Harris, Robert P., and Krasner. 3,351,783.
- Conix, Andre J., to Gevaert Photo-Producten N.V. Linear aromatic polyesters. 3,351,611, 11-7-67, Cl. 260—47.
- Conix, André J., to Gevaert Photo-Producten N.V. Production of linear aromatic polyesters. 3,351,624, 11-7-67, Cl. 260—47.
- Conley, George H.: *See—*
  - Raab, Harry F., Jr., Galper, Jones, Conley, and Hannum. 3,351,532.
- Connolly, Edward A.: *See—*
  - Goodyear, Chalmers, Connolly, and Caparrelli. 3,351,057.
- Conrad, Elton, to Hughes Aircraft Co. Electrical transmission system. 3,351,876, 11-7-67, Cl. 333—84.
- Conragan, James: *See—*
  - Muller, Richard S., and Conragan. 3,351,786.
- Continental Can Co., Inc.: *See—*
  - Dupuis, Clyde F. 3,351,348.
  - Grek, John W. 3,351,034.
  - Jackson, Robert T. 3,351,267.
  - Lodding, William F., and Klygis. 3,351,242.
- Control Data Corp.: *See—*
  - Cray, Seymour R., and Kristensen. 3,351,923.
  - Poland, William L. 3,351,007.
- Cook, Charles R., Jr., and B. M. Martin, to Texas Instruments Inc. Single pulse trigger circuit. 3,351,775, 11-7-67, Cl. 307—88.5.
- Cook, John F., and J. B. Wegmann, to McNeil Corp. Lubrication apparatus. 3,351,156, 11-7-67, Cl. 184—6.
- Cook, Leonard W., to General Electric Co. Low power mercury switch. 3,351,726, 11-7-67, Cl. 200—152.
- Cooke, Conrad R. Apparatus for detecting and indicating the extent of relative movement. 3,351,768, 11-7-67, Cl. 250—237.
- Cooper, Julie. Automobile ash tray. 3,351,070, 11-7-67, Cl. 131—236.
- Cope, Louis T., to Olin Mathieson Chemical Corp. Process for transferring liquefied gases. 3,350,890, 11-7-67, Cl. 62—45.
- Cordes, Edward V., Jr., to The Warner & Swasey Co. Machine tool control system having means for ignoring invalid command signals. 3,351,907, 11-7-67, Cl. 340—147.
- Corn Products Co.: *See—*
  - Mentzer, Merle J. 3,351,480.
- Cornell Aeronautical Laboratory, Inc.: *See—*
  - Engler, Peter E., and Hammer. 3,351,874.
- Cornell, Paul A.: *See—*
  - Lawlor, Robert E., and Beaudion. 3,351,889.
- Corning Glass Works: *See—*
  - Ambrogi, Raymond R. 3,351,449.
  - Dunn, John P. 3,350,815.
- Cotton, Robert B. Aerial pick-up and delivery system. 3,351,325, 11-7-67, Cl. 258—1.4.
- Cox, Charlton R.: *See—*
  - Brown, Gordon E., Cox, and Kennar. 3,351,612.
- Coy, Gerald R., to Republic Steel Corp. Testing assembly for testing a weld bead or the like. 3,350,925, 11-7-67, Cl. 73—71.5.
- Craig, Burnie M., and P. A. Shaffer, Jr., to Campus Road Investment Co., Inc. Control apparatus. 3,351,785, 11-7-67, Cl. 307—141.
- Cranch, Edward J., to Leeds & Northrup Co. Control system having proportional band shift-limiting circuit. 3,351,862, 11-7-67, Cl. 328—3.
- Crawford, Charles I., and K. R. Brown, to Ferranti, Ltd. Electro-magnetic pickoff devices. 3,351,850, 11-7-67, Cl. 323—51.
- Cray, Seymour R., and P. A. Kristensen, to Control Data Corp. Coincident current inhibit system. 3,351,923, 11-7-67, Cl. 340—174.
- Creative Packaging Inc.: *See—*
  - Harris, Dale C. 3,351,186.
- Creed, Sherman H., and R. C. Luhdorff, to FMC Corp. Removing skin from fruit. 3,351,112, 11-7-67, Cl. 146—226.
- Creigh, Walter F., to Minnesota Mining and Mfg. Co. Film splicing construction. 3,351,514, 11-7-67, Cl. 161—39.
- Creutz, Hans G.: *See—*
  - Leenders, Peter, and Creutz. 3,351,656.
- Crile, Eugene E.: *See—*
  - Thomas, Paul M., Wright, Burge, and Crile. 3,351,216.
- Crooks, Darris R. Dump pot system with additive pump. 3,350,851, 11-7-67, Cl. 55—166.
- Cross, Alexander D., to Syntex Corp. 4-oxa-19-norpregnan-17α-ol-3,20-diones and derivatives. 3,351,633, 11-7-67, Cl. 260—343.2.
- Cross, James M., S. H. Metzger, Jr., and C. D. Campbell, to Mobay Chemical Co. 2,4- and 2,6-lower alkyl cyclohexylane diisocyanate mixtures. 3,351,650, 11-7-67, Cl. 260—453.
- Cross, Newbold O., to Esso Research and Engineering Co. Ultrasonic pulse echo testing method and apparatus. 3,350,923, 11-7-67, Cl. 73—67.8.
- Crown Zellerbach Canada, Ltd.: *See—*
  - Davies, Raymond D. 3,350,789.
- Csicsatka, Antal, and R. M. Linz, to General Electric Co. Simplified time-sampling stereophonic receiver circuit. 3,351,712, 11-7-67, Cl. 179—15.
- Cummins Engine Co., Inc.: *See—*
  - Perr, Julius P. 3,351,288.
- Cupp, Frederick B., and B. L. Frankel, to United States of America, Navy. Depth indicator and controller. 3,351,895, 11-7-67, Cl. 340—3.
- Curto, Nicholas J., and J. E. Henry, to Owens-Illinois, Inc. Method and apparatus for extruding thermoplastic material. 3,351,694, 11-7-67, Cl. 264—176.
- Currie, Andrew C.: *See—*
  - Grigor, James, Parker, and Currie. 3,351,506.
- Cutler, John H., and W. A. Le Doux, to General Electric Co. Generator protective systems. 3,351,812, 11-7-67, Cl. 317—13.
- Czenkusch, Edward L.: *See—*
  - Walker, Darrell W., and Czenkusch. 3,351,623.
- Czubak, Albin S., to Micromatic Hone Corp. Linear motion transmitting device. 3,350,948, 11-7-67, Cl. 74—53.
- D & B Rigging Supplies Ltd.: *See—*
  - Scarr, George E., and Binstead. 3,350,750.
- Daams, Jasper: *See—*
  - Koopman, Harmannus, and Daams. 3,351,456.
- Daeniker, Hans U., to Ciba Corp. Sydnonimine pharmaceutical compositions. 3,351,529, 11-7-67, Cl. 167—65.
- Dalby, Eric. Suspended ceilings. 3,350,829, 11-7-67, Cl. 52—495.
- D'Amato, Michael A., to Delavan Mfg. Co. Constant delivery pump system. 3,350,881, 11-7-67, Cl. 60—52.
- Dana Corp.: *See—*
  - McIndoe, Ronald M. 3,351,169.
- Danzer Metal Works Co., Inc., The: *See—*
  - Merckle, Claude O. 3,351,699.
- Darling, Horace E., to The Foxboro Co. Balanced magnetic amplification and process control apparatus. 3,351,851, 11-7-67, Cl. 323—89.
- Dassinger, Carl C., and R. L. Hageny. Set of interchangeable utility apparatuses. 3,350,797, 11-7-67, Cl. 37—53.
- Datwyler, Walter F., Jr., E. A. Mayer, and L. B. Taplin, to The Bendix Corp. Fluid device. 3,351,080, 11-7-67, Cl. 137—81.5.
- Daunt, John G.: *See—*
  - Malaker, Stephen F., and Daunt. 3,351,063.

- Davenport, Edward D. Scroll type reference guide. 3,350,806, 11-7-67, Cl. 40—336.
- Davidson, Louis. Load-bearing industrial pallet. 3,351,028, 11-7-67, Cl. 108—56.
- Davies, Ben: *See—*
  - Weaver, Ernest P., and Davies. 3,351,476.
- Davies, Ivor J., to Teleflex Products Ltd. Safety harnesses for vehicle occupants. 3,351,382, 11-7-67, Cl. 297—389.
- Davis, Martin A., and F. Herr, to American Home Products Corp. Dibenz[B,E]azepine derivative. 3,351,588, 11-7-67, Cl. 260—239.3.
- Davies, Raymond D., to Crown Zellerbach Canada Ltd. Method of determining the moisture content of thin porous materials. 3,350,789, 11-7-67, Cl. 34—30.
- Davis, Rex M., to Brush Electrical Engineering Co. Ltd. Static switching system with a single means for selecting any of a plurality of D.C. loads to be supplied. 3,351,769, 11-7-67, Cl. 307—38.
- Davy and United Instruments Ltd.: *See—*
  - Newman, William M., and Forster. 3,351,213.
- De Booijs, Coenraad L.: *See—*
  - Revallier, Leonardus J., De Booijs, and Verweel. 3,351,569.
- De Graaf, Paul A.: *See—*
  - Elbogen, James S., and De Graaf. 3,351,094.
- De Haes, L. M., to Gevaert Photo-Producten N.V. Photographic image-receiving material. 3,351,469, 11-7-67, Cl. 96—76.
- Delavan Mfg. Co.: *See—*
  - D'Amato, Michael A. 3,350,881.
- D'Elia, Anthony N.: *See—*
  - Katzman, Lawrence, Briggin, D'Elia, and Stolarz. 3,351,737.
- De Hart, Harold G., to New Jersey International Protected Metals, Inc. Method of bonding coatings. 3,351,504, 11-7-67, Cl. 148—614.
- Delnet, Adolph J., to Tenneco Chemicals, Inc. Nuclear chlorinated α-hydroxybenzyl phosphonic acids and the salts and esters of said acids. 3,351,681, 11-7-67, Cl. 260—953.
- De Koning, Kornelis K. K.: *See—*
  - De Koning, Arie A. and K. K. K. 3,351,160.
- De Koning, Arie A. and K. K. K. Remotely controlled, adjustable valve means for shock absorbers. 3,351,160, 11-7-67, Cl. 188—88.
- Dellsperger, Fritz, to G. Buhler. Method and apparatus for transferring bulk material between zones at different respective pressures. 3,351,390, 11-7-67, Cl. 302—49.
- Demaison, Raymond J., to Quigley Co., Inc. Apparatus for applying a protective refractory coating to the refractory linings of basic oxygen furnaces. 3,351,289, 11-7-67, Cl. 239—132.3.
- Demaison, Raymond J., to Quigley Co., Inc. Method for prolonging the life of refractory linings in furnaces of the kaldo, linz-donowitz, demay or basic or acid converter types. 3,351,460, 11-7-67, Cl. 75—60.
- De Marco, Paul J.: *See—*
  - Seelbach, Walter C., Cappon, Demarco, and Miller. 3,351,778.
- De Masi, Ernest. Rolling mill. 3,350,909, 11-7-67, Cl. 72—242.
- De Michele, Dominick J., to General Electric Co. Strain gauge pressure transducer. 3,350,944, 11-7-67, Cl. 73—398.
- Demler, Walter R., M. D. Edelman, M. R. Hallinan, and J. M. Kosmala, to Allied Chemical Corp. Solubilized fumaric acid compositions and method of making same. 3,351,471, 11-7-67, Cl. 99—78.
- Dempsey, Russell M.: *See—*
  - Lyons, Ernest H., Jr., and Dempsey. 3,351,541.
- Demrick, Carl J. Steel wool soap pad and method of making same. 3,351,416, 11-7-67, Cl. 401—201.
- Denki Onkyo Kabushiki Kaisha: *See—*
  - Katagata, Zenji. 3,351,710.
- Depew, Herbert D., Jr., E. A. Le Donne, and J. Benish, to General Dynamics Corp. Missile control system. 3,351,303, 11-7-67, Cl. 244—3.16.
- Derr, Richard E.: *See—*
  - Carson, Earl W., Derr, and Iverson. 3,351,315.
- Desbiens, Marcellin. Cigarette dispenser and lighter. 3,351,735, 11-7-67, Cl. 219—261.
- De Stevens, George, and L. H. Werner, to Ciba Corp. Derivatives of 3,4-dihydro-2H-1,2,4-benzothiadiozine-1,1-dioxide. 3,351,595, 11-7-67, Cl. 260—243.
- Detweiler, James I., to Lockheed Aircraft Corp. Contamination filter mask. 3,350,979, 11-7-67, Cl. 88—14.
- Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See—*
  - Junkermann, Helmut, and Loffler. 3,351,668.
- De Woskin, Irvin S., to Beltx Corp. Tampons. 3,351,060, 11-7-67, Cl. 128—263.
- Diamond Crystal Salt Co.: *See—*
  - Koefoed, Jack F., and Tilden. 3,351,209.
- Diamond International Corp.: *See—*
  - McDonald, George W. 3,350,841.
  - Reifers, Richard F. 3,351,266.
- Diassi, Patrick A., and P. A. Principe, to E. R. Squibb & Sons, Inc. 4,8,14-trimethyl-18-nor-8α,9β,14β-androst-4-ene-3,17-dione. 3,351,640, 11-7-67, Cl. 260—397.3.
- Dick, A. B., Co.: *See—*
  - Lincoln, Seamon A., and Ort. 3,351,008.
- Dickinson, George A.: *See—*
  - Pilkington, David F., and Dickinson. 3,351,446.
- Diehel, John M.: *See—*
  - Fielder, William S., Rautiola, and Diehel. 3,351,445.
- Diehl: *See—*
  - Bedall, Hans. 3,351,018.
  - Gerum, Erich. 3,351,833.
  - Gerum, Erich. 3,351,834.
- Dietrich, Isolde, E. Berkl, R. Weyl, and K.-H. Herrmann, to Siemens & Halska Aktiengesellschaft. Magnetic lens comprising an annular electric coil and superconducting material to shape the magnetic flux. 3,351,754, 11-7-67, Cl. 250—49.5.
- Dietz, R. E., Co.: *See—*
  - Stube, Frederick F., and Nitsch. 3,351,751.
- Dillingham Ticket Co.: *See—*
  - Japs, John R. 3,350,799.
- Dillon, Chadburn L., and P. W. Robinson. Carton divider inserting apparatus. 3,350,836, 11-7-67, Cl. 53—67.
- Dinunzio, Ralph: *See—*
  - Gnerre, C. Gerald, and Dinunzio. 3,351,706.
  - Di Perna, Mario S. Rechargeable dispenser. 3,351,105, 11-7-67, Cl. 141—18.
- Doboczky, Zoltan: *See—*
  - Hufnagel, Walter, and Doboczky. 3,351,697.
- Dodge, Adiel Y. Locking differential. 3,350,961, 11-7-67, Cl. 74—711.
- Dodson, Vance H., and E. Farkas, to W. R. Grace & Co. Concrete mix with set retarding admixture. 3,351,478, 11-7-67, Cl. 106—90.
- Donaldson Co., Inc.: *See—*
  - Grassel, Eugene E., and Schoen. 3,350,860.
- Donnolo, Joseph P.: *See—*
  - Hemphill, Kent W., and Donnolo. 3,351,831.
- Dorr-Oliver Inc.: *See—*
  - Albertson, Orris E., and Budd. 3,351,030.
- Dorstener Eisengiesserei Maschinfabric, A.G.: *See—*
  - Brand, Heinz. 3,350,756.
- Dow, Bruce R., and R. A. Johnson, to Westinghouse Electric Corp. Operational amplifier. 3,351,865, 11-7-67, Cl. 330—9.
- Dow Chemical Co., The: *See—*
  - Anderson, Robert E., and Gouin. 3,351,669.
  - Brown, Winston E., LaCoume, and Treichler. 3,351,560.
  - Gibson, Daniel L. 3,351,079.
  - Heisterkamp, Herbert W. 3,351,039.
  - Hoornstra, Clayton W. 3,351,077.
  - Langner, Ralph R. 3,351,485.
  - Levine, Charles A., and Prevost. 3,351,487.
  - Murray, George E. 3,350,823.
  - Oldershaw, Charles F., and Valle-Riestra. 3,351,542.
  - Sederlund, Edward R., and Cheney. 3,350,744.
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- Drechsler, Lee: *See—*
  - Koolnis, Stanley R. 3,351,260.
- Drehman, Lewis E., and H. J. Hepp, to Phillips Petroleum Co. Process for producing high octane gasoline. 3,351,547, 11-7-67, Cl. 208—62.
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  - Marks, William M., and Ashworth. 3,351,372.
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- Duclaux, Daniel: *See—*
  - Chambran, Jacques, Scalliet, and Duclaux. 3,351,546.
- Duffau, Georges, to Trefimetaux. Devices for separating and handling stoppering or capping capsules. 3,351,234, 11-7-67, Cl. 221—220.
- Dufrene, Donald E., to Interoceanic Commodities Corp. Louver type window operating means. 3,350,814, 11-7-67, Cl. 49—82.
- Duncan, William A., to Union Carbide Canada Ltd. Device for promoting the removal of water from a paper-making pulp slurry. 3,351,524, 11-7-67, Cl. 162—374.
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- Dunlap, Leonard D.: *See—*
  - Greer, Tommy D., and Dunlap. 3,351,182.
- Dunlop Rubber Co., Ltd.: *See—*
  - Baxendale, Norman G. 3,351,508.
  - Grace, Norman S., and Woodhams. 3,351,571.
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  - Gorrafa, Adly A.-M. 3,350,872.
  - Luckenbaugh, Raymond W. 3,351,457.
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Durney, George P., to United States of America, Navy. Shoulder seal between a protective suit and helmet. 3,351,056, 11–7–67, Cl. 128—142.5.
Durst, George, to Texas Instruments Inc. Manufacture of seamed metallic tubing. 3,350,771, 11–7–67, Cl. 29—477.
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Dyer, Arthur M. Water volume control for water closet. 3,350,723, 11–7–67, Cl. 4—57.
Dykstra, Joseph, Jr.: *See*—
Brater, Donald C., Dykstra, Kaufman, and Smiley. 3,350,-848.
Dyna-Lite, Inc.: *See*—
Stockwell, Jane C. 3,350,803.
Eastman Kodak Co.: *See*—
Brimer, Marshall R., and Tucker. 3,351,609.
Caldwell, John R., Perry, and Jackson. 3,351,645.
Lee, Paul L., and Sims. 3,351,585.
Eastman Machine Co.: *See*—
Clark, Frederick G. 3,350,818.
Eaton Yale & Towne, Inc.: *See*—
Smith, Aubrey H., and Christensen. 3,351,791.
Eckhardt, Klaus, and K. Bachmann, to Patent-Treuhand-Gesellschaft fur elektrische. Low-pressure discharge lamp containing mercury amalgam. 3,351,797, 11–7–67, Cl. 313—174.
Eckman, Hanford L., to The Singer Co. Control system for electrically heated boiler. 3,351,739, 11–7–67, Cl. 219—321.
Edelman, Monroe D.: *See*—
Demler, Walter R., Edelman, Hallinan, and Kosmala. 3,351,471.
Edwards, Everett: *See*—
Nelson, Richard P., and Edwards. 3,351,173.
Egger, Josef, and H. Meitinger, to The United States Time Corp. Date indexing. 3,350,873, 11–7–67, Cl. 58—4.
Egyesult Izzolampa es Villamossagi Reszvenytarsasags: *See*—
Millner, Tivadar, Neugebauer, and Kerenyi. 3,351,436.
Einhorn, Sidney N.: *See*—
Stram, Oscar B., and Einhorn. 3,351,747.
Elshold, Horst-Gunter, to Metallgesellschaft Aktiengesellschaft. System for preventing arc re-ignition in electrostatic dust separators. 3,350,849, 11–7–67, Cl. 55—105.
Elbogen, James S., and P. A. de Graaf, to Parker-Hannifin Corp. Excess flow shut-off servo valve. 3,351,094, 11–7–67, Cl. 137—625.66.
Eldred, Nelson R.: *See*—
Spicer, John C., Westfall, and Eldred. 3,351,520.
Electrolux Corp.: *See*—
Downey, David F., and Ferraris. 3,351,363.
Ferraris, John T. 3,351,359.
Electronic Research Associates, Inc.: *See*—
Schoengold, Herbert. 3,351,719.
Electronique Marcel Dessault: *See*—
Michel, Louis, Poncel, and Patron. 3,351,307.
Electro Optical Systems, Inc.: *See*—
Weiman, Irving, and Wright. 3,351,493.
Elias, William F.: *See*—
Apat, Joseph K., Brady, and Elias. 3,351,527.
Ellard, James S., Jr., and B. A. Paige, to Lockheed Aircraft Corp. Shock resistant, vibration isolating platform. 3,351,-027, 11–7–67, Cl. 108—051.
Ellis, John R. B., and M. F. Hughes, to Chevron Research Co. Method of carrying out exothermic vapor phase chemical reactions. 3,351,634, 11–7–67, Cl. 260—346.4.
Elmo Co. Ltd.: *See*—
Kono, Seki. 3,351,413.
Elton Industries, Inc.: *See*—
Nolte, Albert C., Jr. 3,351,935.
Emmerich, Claude L., to United Aircraft Corp. Piezoelectric oscillating bearing. 3,351,393, 11–7–67, Cl. 308—9.
Endevco Corp.: *See*—
Wilner, Leslie B. 3,351,880.
Endlich, John: *See*—
Samson, George C., and Endlich. 3,351,830.
Energy Conversion Systems Corp.: *See*—
Bertling, Ronald J. 3,351,789.
Engel, Lawrence J., to Esso Research and Engineering Co. NF_2 adducts of cyclooctatetraene and preparation thereof. 3,351,660, 11–7–67, Cl. 260—563.
Engelhart, John E.: *See*—
Ramsden, Hugh E., and Engelhart. 3,351,646.
England, Alfred C.: *See*—
Nowell, William, and England. 3,351,332.
Englander Co., Inc., The: *See*—
Fasanella, George S. 3,350,725.
Engler, Peter E., and J. A. Hammer, to Cornell Aeronautical Laboratory, Inc. Waveguide apparatus for coupling out and isolating modes above the fundamental. 3,351,874, 11–7–67, Cl. 333—10.
Ensmann, Burt W.: *See*—
Lindsay, Kenneth W., Bornn, and Ensmann. 3,350,812.
Eppenberger, Paul, to G. Buhler. Oscillating screen with hanger supports. 3,351,201, 11–7–67, Cl. 209—329.
Eppert, Franklin P., to General Electric Co. Lamp energizing system. 3,351,809, 11–7–67, Cl. 315—185.
Equity Oil Co.: *See*—
Dougan, John L., and Reynolds. 3,351,132.
Erickson, Warren E., and R. T. Meinen. Container orientation mechanism. 3,351,175, 11–7–67, Cl. 198—30.
Ernest, Ivan: *See*—
Protiva, Miroslav, Jilek, Mětysova, Ernest, Pelz, and Adlerova. 3,351,599.
Esso Corp.: *See*—
Baum, Leo, and Watkins. 3,351,072.
Esral, Abraham A.: *See*—
Boggs, Wilburn A., Esral, and Jacobsen. 3,351,421.
Essiccatoi Fava S.p.A.: *See*—
Fava, Augusto. 3,351,023.
Esso Production Research Co.: *See*—
Johnson, Carlton R., and Raynor. 3,350,931.
Kirby, Robert A., and Shallenberger. 3,350,932.
Esso Research and Engineering Co.: *See*—
Batzold, John S. 3,351,494.
Cross, Newbold O. 3,350,923.
Engel, Lawrence J. 3,351,660.
Gudelis, David A. 3,351,654.
Guthrie, Donald A. 3,351,063.
Jameson, Alexander K. 3,351,572.
Kim, Dae S., and Vick. 3,350,922.
Mertzweiller, Joseph K., and Tenney. 3,351,666.
Paoli, Alexander D. 3,351,036.
Ramsden, Hugh E., and Engelhart. 3,351,646.
Salt, Peter A. 3,351,083.
Shrier, Adam L. 3,350,888.
Taylor, William F., Sinfelt, and Yates. 3,351,566.
Etablissements Bertrand Faure: *See*—
Christin, Georges E. 3,351,373.
Evantash, Leon. Ice cream cone holder. 3,351,258, 11–7–67. Cl. 229—1.5.
Ex-Cell-O Corp.: *See*—
Malone, Robert L., and Floyd. 3,351,765.
FMC Corp.: *See*—
Anderson, Gerald R. 3,351,114.
Anderson, Gerald R. 3,351,204.
Battista, Orlando A. 3,351,489.
Belfort, Alan M. 3,351,071.
Belk, Wilber C. 3,351,473.
Boissevain, Mathew G. 3,351,176.
Burenga, Thomas I. 3,351,200.
Creed, Sherman H., and Luhdorff. 3,351,112.
Faccou, Armand L. 3,351,360.
Hagerborg, John G. 3,350,837.
Miller, Phillip A., and Betschart. 3,351,038.
Mumma, Harold J. 3,351,145.
Neuman, Milton C., and Wiethoff. 3,350,984.
Sassen, Bernard, Nisenbaum, and Young. 3,351,217.
Shindler, George R. 3,351,099.
Willis, Beuford N., and Belk. 3,351,110.
Faatz, Albert C., Jr., and E. B. Powell, to Foster Wheeler Corp. Control of catalytic methanation unit. 3,351,564, 11–7–67, Cl. 252—377.
Fabriques Movado and Manufacture des Montres Universal, Perret Freres S.A.: *See*—
Favre, Robert. 3,351,788.
Faccou, Armand L., to FMC Corp. Fluid supply apparatus. 3,351,360. 11–7–67, Cl. 285—41.
Fairchild, William P., to Kelco Co. Paper coating compositions and processes. 3,351,479, 11–7–67, Cl. 106—208.
Fannon, John J., Jr., to Fostoria-Fannon, Inc. Infra-red gas burner structure. 3,351,048, 11–7–67, Cl. 126—92.
Farah, Basil S.: *See*—
Gilbert, Everett E., and Farah. 3,351,665.
Farbenfabriken Bayer Aktiengesellschaft: *See*—
Brack, Alfred, and Raue. 3,351,600.
Oertel, Harold, Ley Rinke, and Thoma. 3,351,608.
Raue, Roderich. 3,351,482.
Weisbeck, Roland, Brockes, and Nassenstein. 3,351,516.
Farber, Herman, and M. Sucher, to Polytechnic Institute of Brookyln. Microwave spark-gap switch having a trigger electrode centered between and aligned with the opposed electrode. 3,351,806, 11–7–67, Cl. 315—39.
Farber, Jerome: *See*—
Payne, John W., Sailor, and Farber. 3,351,548.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Baier, Edwin. 3,351,579.
Sturm, Karl, Siedel, and Weyer. 3,351,589.
Farkas, Emery: *See*—
Dodson, Vance H., and Farkas. 3,351,478.
Farrow, Cecil W., to Bell Telephone Laboratories, Inc. Phase locked loop with fast frequency pull-in. 3,351,868, 11–7–67, Cl. 331—17.
Fasanella, George S., to The Englander Co., Inc. Convertible couch. 3,350,725, 11–7–67, Cl. 5—12.
Fava, Augusto, to Essiccatoi Fava S.p.A. Transporting and storing device. 3,351,023, 11–7–67, Cl. 104—172.
Favre, Robert, to Fabriques Movado and Manufacture des Montres Universal, Perret Freres S.A. Apparatus for mechanically converting the oscillating movement of an electro-mechanical oscillator. 3,351,788, 11–7–67, Cl. 310—22.
Feather, Landis E., and R. C. Morrison, to Westinghouse Electric Corp. Method of manufacturing electrical insulating structures. 3,351,693, 11–7–67, Cl. 264—160.
Fedde, Paul A., to Texas Gas Transmission Corp. Compressor testing apparatus and method. 3,350,928, 11–7–67, Cl. 73—116.
Feder, Allen M., to Texas Instruments Inc. Method and apparatus for exploring the earth with electromagnetic energy. 3,351,936, 11–7–67, Cl. 343—5.
Federal-Mogul-Bower Bearings, Inc.: *See*—
Beebe, Austin H., Jr., and Gallatin. 3,350,773.
Feeser, William C., to AMP Inc. Polarized patchcord. 3,351,-892, 11–7–67, Cl. 339—184.
Fehr, Corey M., to United States Steel Corp. Coil car. 3,351,299, 11–7–67, Cl. 242—79.
Fell, Eric T., S. A. Fox, and B. G. Burgis. Precision Processes (Textiles) Ltd. Permonosulfuric acid-hydrogen peroxide wool shrinkproofing combined with dyeing. 3,351,419, 11–7–67, Cl. 8—17.
Felsa S.A.: *See*—
Meylan, Andre, and Haidegger. 3,350,768.
Fernud, Roger A., and J. P. J. Jardinier, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Process and device for stabilizing and guiding a rocket-propelled ballistic vehicle. 3,350,886, 11–7–67, Cl. 60—204.

Ferdinand, Irwin J., and D. R. Lopatka, to S. A. Hirsh Mfg. Co. Desk top. 3,351,405, 11–7–67, Cl. 312—297.
Ferguson, Evelyn M. Infant garment. 3,351,062, 11–7–67, Cl. 128—284.
Ferusch G.m.b.H.: *See*—
Jauernik, Edmund, and Bopp. 3,351,867.
Ferranti, Ltd.: *See*—
Crawford, Charles I. and Brown. 3,351,850.
Pitches, Brian E., and Hope. 3,350,935.
Ferraris, John T.: *See*—
Downey David F., and Ferraris. 3,351,363.
Ferraris, John T., to Electrolux Corp. Adjustable length wand. 3,351,359, 11–7–67, Cl. 285—7.
Ferrie, Franck G. M.: *See*—
Colombani, Don P. L. J., and Ferrie. 3,350,884.
Fesco, John J., to Studley Paper Co., Inc. Vacuum cleaner filter bag. 3,350,857, 11–7–67, Cl. 55—363.
Fesco, John J., to Studley Paper Co., Inc. Vacuum cleaner filter bag. 3,350,859, 11–7–67, Cl. 55—380.
Fielder, William S., N. A. Rautiola, and J. M. Diebel. Method of making a battery plate. 3,351,445, 11–7–67, Cl. 65—3.
Finch, Walter G.: *See*—
McLean William B. 3,351,035.
Finelli, Patrick L., and H. A. Bing, to Polaroid Corp. Camera apparatus. 3,350,990, 11–7–67, Cl. 95—13.
Finley, Roy D., and K. A. Hollowell, to Pet Inc. Honeybutter and process of manufacture. 3,351,472, 11–7–67, Cl. 99—146.
Fiore, Leonardo, and V. T. Possio, to Montecatini Edison S.p.A. Process for the esterification of polyoxymethylenes. 3,351,614, 11–7–67, Cl. 260—67.
Fischer, Georg, Aktiengesellschaft: *See*—
Von Zelewsky, Ottomar, and Burkert. 3,351,512.
Fischer, Stefan. Device for making hollow bodies from thermoplastic material. 3,350,740, 11–7–67, Cl. 18—5.
Fischer, Wilhelm A.: *See*—
Heyes, Josef, and Fischer. 3,351,492.
Fitzgerald, Millard C., Jr.: *See*—
Sheps, Martin I., Fitzgerald, and Shuman. 3,350,864.
Fleming, Alfred L., and J. A. Hackett, to Bell Telephone Laboratories, Inc. Telephone automatic test circuit. 3,351,-722, 11–7–67, Cl. 179—175.21.
Flock, Truman F., to Inst-O-Matic Corp. Fluid dispensing device. 3,351,239, 11–7–67, Cl. 222—54.
Florek, Florian F. Tool and method for inserting pins. 3,351,-054, 11–7–67, Cl. 128—83.
Florida Brace Corp.: *See*—
Stuttle, Fred L. 3,351,053.
Floyd, George W.: *See*—
Malone, Robert L., and Floyd. 3,351,765.
Folts, Ralph A.: *See*—
Stone, Guthrie B., and Folts. 3,351,178.
Ford, Donald R., to Boyne Products, Inc. Lamp socket assembly. 3,351,888, 11–7–67, Cl. 339—93.
Ford Motor Co.: *See*—
Gilchrist, Allan E. 3,351,575.
Gilchrist, Allan E. 3,351,675.
Foregger Co., Inc., The: *See*—
Goodyear, Chalmers, Connolly, and Caparrelli. 3,351,057.
Forster, Graham A.: *See*—
Newman, William M., and Forster. 3,351,213.
Forsyth, John P.: *See*—
Forsyth, Robert W. and J. P. 3,351,374.
Forsyth, Robert W. and J. P., to Lockheed Aircraft Corp. Armor construction. 3,351,374, 11–7–67, Cl. 296—31.
Foster Michael J.: *See*—
Rawstron, George O., and Foster. 3,350,785.
Foster Wheeler Corp.: *See*—
Faatz, Albert C., Jr., and Powell. 3,351,564.
Fostoria-Fannon, Inc.: *See*—
Fannon, John J., Jr. 3,351 048.
Fotland, Richard A., to Horizons Inc. Production of P-N junctions by diffusion. 3,351,503, 11–7–67, Cl. 148—188.
Fought, Benjamin T., W. B. Macurdy, and D. Muir, III, to Bell Telephone Laboratories Inc. Mack generating circuit. 3,351,915, 11–7–67, Cl. 340—172.5.
Fowler, Roy J. Posthole auger stabilizer. 3,351,141, 11–7–67, Cl. 173—38.
Fox Robert M. Lens-dome solar distillation unit. 3,351,536, 11–7–67, Cl. 202—83.
Fox, Scott A.: *See*—
Fell, Eric T., Fox, and Burgis. 3,351,419.
Foxboro Co., The: *See*—
Darling, Horace E. 3,351,851.
Fr. Hesser Maschinenfabrik-Aktiengesellschaft: *See*—
Gräf Ingholt, Alfred, and Branstner. 3 350.840.
Frangos, John, to Revlon, Inc. Anti-clogging device. 3,351,-247, 11–7–67, Cl. 222—402.12.
Frank, Alan I. W., to The Alan I. W. Frank Corp. Mechanism for handling and testing containers. 3,351,388, 11–7–67, Cl. 302—2.
Frank, Alan I. W., Corp., The: *See*—
Frank, Alan I. W. 3,351,388.
Frankel, Burton L.: *See*—
Cupp, Frederick B., and Frankel. 3,351,895.
Franklin Terry B., Sr.: *See*—
Brown, Albert D., and Franklin. 3,351,090.
Frantz, Virgil L., to Graham-White Sales Corp. Manually operable solenoid valve. 3,351,093, 11–7–67, Cl. 137—625.27.
Franz Clouth Rheinische Gummiwarenfabrik: *See*—
Paasche, Fritz, Zipf, and Müller. 3,351,283.
Fraser, David B., and D. W. Rudd; said Fraser, assor. to Bell Telephone Laboratories, Inc. and said Rudd assor. to Western Electric Co., Inc. Method of testing the internal friction of synthetic quartz crystal by the use of two different frequencies of infrared. 3,351,757, 11–7–67, Cl. 250—83.3.
Frazelle, Jay B., and R. F. Williams. Combined golfer's towel, brush and cleat cleaner. 3,350,736, 11–7–67, Cl. 15—113.
Freeman Chemical Corp.: *See*—
Schafer, Kenneth A. 3,351,507.
Freeman, Frank G., to Joseph Lucas (Industries) Ltd. Hydraulic accumulator. 3,351,098, 11–7–67, Cl. 138—30.
Frei, Karl A., to Gebruder Frei. Electromagnetic thread-tension control assembly. 3,351,296, 11–7–67, Cl. 242—45.
Freund, Betty M. Aprons. 3,350,720, 11–7–67, Cl. 2—48.
Friesen, Peter A.: *See*—
Breuers, Theo P. C., and Friesen. 3,350,788.
Fritz Hurxthal K.G. Maschinenfabrik: *See*—
Wostbrock, Werner. 3,350,952.
Froehlich, Alfred, to Ciba Ltd. Thiophene compounds used as color couplers for magneta dyestuffs. 3,351,468, 11–7–67, Cl. 96—56.3.
Front Projection Corp.: *See*—
Margolin, George D. 3,350,980.
Frost, Barry L., and B. S. Zeller, to Clark Equipment Co. Transmission. 3,350,951, 11–7–67, Cl. 74—360.
Frost, Lewis J., to United Aircraft Corp. Compressor and fan exit guide vane assembly. 3,351,319, 11–7–67, Cl. 253—78.
Fulmor, Theodore G.: *See*—
Arentzen, Charles, Fulmor, and Holderreed. 3,351,462.
Funk, William E., and I. H. Lehman. Slurry slinging apparatus for treating soil. 3,351,287, 11–7–67, Cl. 239—161.
Gallatin, Victor: *See*—
Beebe, Austin H., Jr., and Gallatin. 3,350,773.
Galper, Milton J.: *See*—
Raab, Harry F., Jr., Galper, Jones, Conley, and Hannum. 3,351,532.
Gandrud, Ebenhard S. Sprocket wheel. 3,350,950, 11–7–67, Cl. 74—243.
Gandrud, Ebenhard S. Attachment for row wheel for agricultural implements. 3,351,140, 11–7–67, Cl. 172—606.
Gans, Carl, and W. Tanski, Jr.; said Tanski, assor. to said Gans. Remote control focusing attachment for a microscope. 3,350,977, 11–7–67, Cl. 88—1.
Gardner, Orville N. Mattress retainer. 3,350,726, 11–7–67, Cl. 5—317.
Gardner, Stephen: *See*—
Guarino, Peter A., and Gardner. 3,351,780.
Garrahan, Richard. Control valve for diving apparatus. 3,351,-089, 11–7–67, Cl. 137—599.
Garthoffner, Hermann E. Double deck auto park apparatus. 3,351,218, 11–7–67, Cl. 214—16.1.
Gasser, Kurt: *See*—
Borden, Jay R., Gasser, and Krauthamer. 3,351,835.
Gasser, Lorenz, to International Standard Electric Corp. Key-controlled multi-frequency tone generator. 3,351,715, 11–7–67, Cl. 179—84.
Gates, Lauren W., to Blackwelder Mfg. Co. Seal for flange-supported bearings. 3,351,399, 11–7–67, Cl. 308—187.
Gates, Paul E., to Sylvania Electric Products Inc. Single ended, quartz type incandescent lamp. 3,351,802, 11–7–67, Cl. 313—315.
Gauthier, Alfred, G.m.b.H.: *See*—
Starp, Franz W. R., and Rackl. 3,350,992.
Gayet, Bernard, J. Holder, G. Kurka, J. Reboux, and J. Trouve, to Commissariat a l'Energie Atomique. Induction melting process of central core portion of cylindrical shaped refractory materials. 3,351,686, 11–7–67, Cl. 264—.5.
Gaylord, John A., to H. Koch & Sons. Disconnect device for survival kits with safety devices. 3,351,082, 11–7–67, Cl. 137—315.
Gebruder Frei: *See*—
Frei, Karl A. 3,351,296.
Gebruder Buhler: *See*—
Herzog, Rene, and Landolf. 3,351,180.
Geldwerth, Simon. Method and apparatus for attaching a clasp to a bracelet. 3,350,764, 11–7–67, Cl. 29—160.6.
General Electric Co.: *See*—
Adams, Charles J. 3,351,732.
Apple, Eugene F., and Hollopetre. 3,351,796.
Beggs, James E. 3,351,800.
Bristol, David A. 3 350,945.
Carter, Ralph E. 3,351,496.
Cook, Leonard W. 3,351.726.
Csicsatka, Antal, and Linz. 3,351,712.
Cutler, John H., and Le Doux. 3,351,812.
De Michele, Dominick J. 3,350,944.
Eppert, Franklin P. 3 351.809.
Gibson, David F. 3,351.725.
Groschke, George F. 3,350,751.
Hall, Harold E., and Karras. 3,350.885.
Hamilton, Stephen B., Jr., and Blanchard. 3,351,667.
Harris, Lawrence A. 3,351,794.
Hoth, Robert C. 3,351,189.
Jacobson, Chester F. 3,351,736.
Jenny, Alfred L. 3 351.823.
Jones, Gary D., Vanegas, and True. 3,350,899.
La Plante, Gordyn T. 3,351.192.
Linkous Clovis E. 3,351,790.
Lyons, Ernest H., Jr., and Dempsey. 3,351,541.
Milford, Richard E. 3.351,919.
Pine Buddie J. 3,351,913.
Pistey, John M. 3.351,883.
Pistey, John M. 3,351,884.
Reinker, Gerald E. 3.351.334.
Rich, Theodore A. 3,351,759.
Robb, Walter L. 3,350,844.
Robb, Walter L. 3,351.203.
Safford, Moyer M., and Holub. 3,351,604.
Sarver, James F. 3,351.436.
Segel, Joseph M. 3,350,802.
Shinn, Jeffrey N., Nielsen, and O'Connor. 3,351,498.
Stover, Edward R. 3.351,690.
Swartz, Paul S., and Rosner. 3,351,437.
Watters, Robert L. 3,351,926.
Thomas, David W. 3,351.329.
Vanderslice, Thomas A. 3,351,543.
Wolfert, George L. 3,351,815.

- General Dynamics Corp.: *See*—
  - Depew, Herbert D., Jr., Le Donne, and Benish. 3,351,303.
  - Monge, Anton B. 3,350,956.
  - Straube, Helmut J. 3,351,903.
- General Precision Inc.: *See*—
  - Guarino, Peter A., and Gardner. 3,351,780.
  - Mendelsohn, Charles. 3,350,777.
  - Rapoza, Edward J. 3,350,949.
  - Stone, Grey E. 3,351,914.
  - Yearley, Lawrence E. 3,351,840.
- Geodyne Corp.: *See*—
  - Perry, Kenneth. 3,351,951.
- Gerry, Martin E. Slide retainer and sound track frame. 3,350,983, 11-7-67, Cl. 88—28.
- Gersbacher, Harry C.: *See*—
  - Andrews, Julian N., and Gersbacher. 3,350,908.
- Gerstein, David E. Slitting mechanism. 3,350,967, 11-7-67. Cl. 82—46.
- Gerum, Erich, to Diehl. Compensated transistorized electric clock circuit. 3,351,834, 11-7-67, Cl. 318—132.
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- Gevaert Photo-Production N. V.: *See*—
  - De Haes, Louis M. 3,351,469.
  - Conix, Andre J. 3,351,611.
  - Conix, Andre J. 3,351,624.
- Gewiss, Lucien Victor, to Marc Wood Societe Anonyme pour la Promotion des Echanges Techniques Internationaux. Shape, constitution and processes for manufacturing materials derived from developable chevroned configurations. 3,351,441, 11-7-67. Cl. 29—183.
- Gibney, Howard W.: *See*—
  - Purdum, Cary, and Gibney. 3,351,692.
- Gibson, Daniel L., to The Dow Chemical Co. Low fluid loss compositions. 3,351,079, 11-7-67, Cl. 137—13.
- Gibson, David F., to General Electric Co. Combustion responsive device especially suitable for use in controlling the operation of a fuel burner. 3,351,725, 11-7-67, Cl. 200—137.
- Gilbert, Everett E., and B. S. Farah, to Allied Chemical Corp. Preparation of perhaloacetones. 3,351,665, 11-7-67, Cl. 260—593.
- Gilbert, Roland E.: *See*—
  - Warner Roger J., and Gilbert. 3,350,810.
- Gilbertson, Lynn A., to Honeywell, Inc. Dispenser with low supply indicator. 3,351,238, 11-7-67, Cl. 222—23.
- Gilchrist, Allan E., to Ford Motor Co. Resinous coating material. 3,351,575, 11-7-67, Cl. 260—19.
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- Gilchrist, Reginald S., to The Klinger Mfg. Co. Ltd. Apparatus relating to false twisting. 3,350,869, 11-7-67, Cl. 57—77.3.
- Giori, Gualtiero. Rotary ticket printing and numering machine with fraud preventing means. 3,351,005, 11-7-67, Cl. 101—77.
- Giuluzza, Pietro, to Officine Meccaniche Cigardi S.p.A.-O.M.C.S.A. Textile drafting apparatus. 3,350,870, 11-7-67, Cl. 57—77.4.
- Glastra, Hendrik, to N.V. Maatschappy Voor Industriële Research en Ontwikkeling. Apparatus for cutting sheet material. 3,350,970, 11-7-67, Cl. 83—201.07.
- Glaverbel: *See*—
  - Broman, Arthur, and Bats. 3,351,448.
- Globe-Union Inc.: *See*—
  - Khouri, Alfred S. 3,351,500.
- Gnerre, C. G., and R. Dinunzio, to Simplex Wire and Cable Co. Spaced helically wound cable. 3,351,706, 11-7-67, Cl. 174—105.
- Goble, William C., to Raybestos-Manhattan, Inc. Road treadle switch. 3,351,724, 11-7-67, Cl. 200—86.
- Goeke, Alfons: *See*—
  - Brauer. Hans, and Goeke. 3,350,921.
- Goeldner, Richard W., and A. B. Steinbruchel, to Aqua-Chem, Inc. Multiple effect, multi-stage flash and film evaporator. 3 351 120, 11-7-67, Cl. 159—13.
- Goetjen, Cleo R.: *See*—
  - Hutton, Harry T., Goetjen, and Ogborn. 3,351,284.
- Goldsmith, Alan S., to Westinghouse Electric Corp. Amplifier circuit having separate and independent output and biasing paths 3,351,866, 11-7-67, Cl. 330—15.
- Goldsmith, Joseph, W. H. McMahan, and E. H. Byerly, to Martin-Marietta Corp. Pulsed gas laser. 3,351,870, 11-7-67, Cl. 331—94.5.
- Goldsworthy, Vaughn W.: *See*—
  - Wolf, Horst F., and Goldsworthy. 3,351,773.
- Goodman, Harold C.: *See*—
  - Meyerhoff, Albert J., and Goodman. 3,351,924.
- Goodwin, Benjamin H. Elevator unloading spout. 3,351,171, 11-7-67, Cl. 193—16.
- Goodyear, Chalmers, E. A. Connolly, and F. Caparrelli, to The Foregger Co. Patient safeguarding anesthesia apparatus. 3,351,057, 11-7-67, Cl. 128—188.
- Gorawski, Alfred S., and H. A. Seesselberg, to Lockheed Aircraft Corp. Tape transport pressure roller actuator. 3,351,255, 11-7-67, Cl. 226—181.
- Gordon, Alex F., to United Merchants and Manufacturers, Inc. Production of melamine-formaldehyde precondensates by completing the reaction in the presence of urea and glycerine. 3,351,615, 11-7-67, Cl. 260—67.6.
- Gordon, Maxwell: *See*—
  - Bartels-Keith, James R., and Gordon. 3,351,626.
- Gorrafa, Adly A.-M., to E. I. du Pont de Nemours and Co. Process for yarn production from acrylic fibers. 3,350,872, 11-7-67, Cl. 57—157.
- Gottfried. Max, to Jobst Institute, Inc. Pressure bandage-splint and method of forming same. 3,351,055, 11-7-67, Cl. 128—87.
- Gotz, Elmar, and P. Boese, to Licentia Patent-Verwaltungs-G.m.b.H. Program control system to regulate tool speed. 3,351,746, 11-7-67, Cl. 235—151.11.
- Gouin, Albert J.: *See*—
  - Anderson, Robert E., and Gouin. 3,351,669.
- Graafsma, Richard S.: *See*—
  - Grams, Ronald L., and Graafsma. 3,351,321.
- Grace, Norman S., and R. T. Woodhams, to Dunlop Rubber Co. Ltd. Blends of natural or synthetic rubber with polyepisulfide. 3,351,571, 11-7-67, Cl. 260—4.
- Grace, W. R., & Co.: *See*—
  - Dodson, Vance H., and Farkas. 3,351,478.
  - Grushkin, Bernard. 3,351,607.
  - Larsen, Donald W., and Kehr. 3,351,495.
- Gradsten, Marcel A., to Tenneco Chemicals, Inc. Pentaerythritol arsenite substituted benzoates. 3,351,649, 11-7-67, Cl. 260—440.
- Gräf Ingholt, Alfred, and R. Branstner, to Fr. Hesser Maschinenfabrik-Aktiengesellschaft. Packaging machine. 3,350,840, 11-7-67, Cl. 53—180.
- Graham-White Sales Corp.: *See*—
  - Frantz, Virgil L. 3,351,093.
- Grainger, William G., to Western Electric Co., Inc. Apparatus for severing, feeding, and welding a predetermined length of wire. 3,351,103, 11-7-67, Cl. 140—112.
- Gramm, Walter P., and L. E. Wills, to Great Lakes Carbon Corp. Packaged charcoal fuel. 3,351,443, 11-7-67, Cl. 44—40.
- Grams, Ronald L., and R. S. Graafsma, to Auto Specialties Mfg. Co. Trailer tongue lifting device. 3,351,321, 11-7-67, Cl. 254—86.
- Grant, Norman H., D. E. Clark, and H. E. Alburn, to American Home Products Corp. Poly-6(aminoacyl-amino)penicillanic acids and method of preparation. 3,351,586, 11-7-67, Cl. 260—239.1.
- Grant, Norman H.: *See*—
  - Alburn, Harvey E., Grant, Clark, and Wolf. 3,351,587.
- Grassel. Eugene E., and D. W. Schoen, to Donaldson Co., Inc. Gas filter. 3,350,860, 11-7-67, Cl. 55—387.
- Gray, Florence M.: *See*—
  - Chen, Catherine S. H., and Gray. 3,351,603.
- Gray, George W., to Radio Corp. of America. Vehicle identification apparatus. 3,351,938. 11-7-67, Cl. 343—6.5.
- Gray, Robert L., to Chem-Spray Controls, Inc. Automatic aerosol dispenser. 3,351,240, 11-7-67, Cl. 222—70.
- Great Lakes Carbon Corp.: *See*—
  - Gramm, Walter P., and Wills. 3,351,443.
- Greeb, Henry R.: *See*—
  - Almstead, James L., Greeb, and Ohren. 3,351,557.
- Green, John F., to Cherry-Burrell Corp. Airtight bag packer. 3,351,391, 11-7-67, Cl. 302—53.
- Green, Joseph, and N. Mayes, to Thiokol Chemical Corp. Boron-containing polymers. 3,351,616, 11-7-67. Cl. 260—75.
- Greenberg's, M., Sons: *See*—
  - Page, Edward. 3,351,366.
- Greene, Michael J.: *See*—
  - Wendell, Charles B., Carpenter, and Greene. 3,351,427.
- Greer, Tommy D., and L. D. Dunlap, to Texize Chemicals Inc. Display package. 3,351,182, 11-7-67, Cl. 206—44.
- Gregg, Richard G. Coiffure protectors. 3,351,073, 11-7-67, Cl. 132—46.
- Grek, John W., to Continental Can Co., Inc. Towing and cutting device. 3,351,034, 11-7-67, Cl. 113—1.
- Grigor, James, J. B. Parker, and A. C. Currie, to United States of America, Navy. Nitrocellulose propellants plasticized with difluoroamino compounds. 3,351,506, 11-7-67, Cl. 149—20.
- Grimes, Patrick G., and M. C. Raether, to Allis-Chalmers Mfg. Co. Liquid-liquid two-phase contactor. 3,351,434, 11-7-67, Cl. 23—310.
- Grimm, Charles H.: *See*—
  - Maring, Blayne E., Pendy, Grimm, and Johnson. 3,351,341.
- Griot, Rudolf G., to Sandoz Inc. Bicyclodecenes containing three ring nitrogen atoms. 3,351,629, 11-7-67, Cl. 260—309.6.
- Griot, Rudolf G., to Sandoz Inc. Thiazepines and related compounds. 3,351,632, 11-7-67, Cl. 260—327.
- Gronlund, Bent, to Hughes Aircraft Co. Annular beam flood gun for storage tubes. 3,351,795, 11-7-67, Cl. 313—85.
- Groos, Horst H., to Schloemann Aktiengesellschaft. Hydraulic tube extrusion press. 3,350,911, 11-7-67, Cl. 72—265.
- Groschke, George F., to General Electric Co. Erectile member. 3,350,751, 11-7-67, Cl. 24—201.
- Grosser, Harry W.: *See*—
  - Baldwin, George D., Spiteri, Grosser, and Collette. 3,351,885.
- Groth, Edward J., Jr., and S. W. Attwood, to Motorola, Inc. Communication system employing multipath rejection means. 3,351,859, 11-7-67, Cl. 325—42.
- Groves, William G.: *See*—
  - Caldwell, Henry C., and Groves. 3 351,530.
- Grushkin, Bernard, to W. R. Grace & Co. Phosphonitrilic polymers. 3,351,607. 11-7-67, Cl. 260—39.
- Guarino, Michael. Barber razor for double edge blades. 3,350,779, 11-7-67, Cl. 30—55.
- Guarino, Peter A., and S. Gardner, to General Precision Inc. Solid state switching circuit. 3,351,780, 11-7-67, Cl. 307—88.5.
- Gudelis, David A., to Esso Research and Engineering Co. Process of preparing biodegradable alkylbenzene sulfonates by dimerizing an olefin of 5 to 10 carbon atoms with a silica-alumina catalyst. 3,351,654, 11-7-67, Cl. 260—505.
- Guglielmetti, Leonardo: *See*—
  - Siegrist, Adolf E., Maeder, Liechti, and Guglielmetti. 3,351,591.
  - Siegrist, Adolf E., Maeder, Liechti, and Guglielmetti. 3,351,592.

- Guibert, Raul. Air curtain, ventilating system and air pump therefor. 3,350,994, 11-7-67, Cl. 98—36.
- Guichet, Niles F. Dental apparatus and method. 3,350,782, 11-7-67, Cl. 32—32.
- Guiducci, Mariano A., and P. P. Lemanski, to E. R. Squibb & Sons, Inc. 20-(aliphatic hydrocarbonozy)- and 20-(substituted aliphatic hydrocarbon oxy)-pregnene-11-oxygenated-3-ones. 3,351,636, 11-7-67, Cl. 260—397.1.
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- Guillen, John, and D. W. Johnson. Circuit for determining the frequency of occurrence of random noise excursions in an intelligence signal. 3,351,857, 11-7-67, Cl. 324—103.
- Guillon, Jacques S., to Massey-Ferguson Industries Ltd. Adjustable shelf support. 3,351,313. 11-7-67. Cl. 248—246.
- Guin, Joel B. High pressure jumping stick. 3,351,342, 11-7-67, Cl. 272—57.
- Gulf Envelope Co.: *See*—
  - Schroeder, Peter W. 3,351,268.
- Gullickson, Myron L.: *See*—
  - Ashton, Robert, Butler, and Gullickson. 3,350,863.
  - Ashton, Robert, Butler, and Gullickson. 3,350,865.
- Gustafsson, Per O. L.: *See*—
  - Lundin, Lars O., Johansson, Svanstrom, and Gustafsson. 3,351,149.
- Guthrie, Donald A., to Esso Research and Engineering Co. High energy oxidizers. 3,351,663, 11-7-67, Cl. 260—583.
- Gutman, Arnold D., and J. P. Orr, to Stauffer Chemical Co. O,O-diloweralkyl phosphorodithioyl-methyl-substituted mercaptoacetates. 3,351,680, 11-7-67, Cl. 260—948.
- Gutzeit, Carlos L., to Hitco. Carbon fibers and method. 3,351,484, 11-7-67, Cl. 117—106.
- Guyer, Reynolds, Agency of Design: *See*—
  - Guyer, Reynolds W., Jr., and Robinson. 3,350,804.
- Guyer, Reynolds W., Jr., and W. J. Robinson, to Reynolds Guyer Agency of Design. Displays. 3,350,804, 11-7-67, Cl. 40—124.1.
- H & E Aircraft Co.: *See*—
  - Hogan, Clark H., and Packard. 3,351,226.
- Haas, Paul M.: *See*—
  - Hibbits, Forrest G., and Haas. 3,351,932.
- Hackett, John A.: *See*—
  - Fleming, Alfred L., and Hackett. 3,351,722.
- Hackett, John A., and W. A. O'Connell, to Bell Telephone Laboratories, Inc. Multiple access common control and ringing tone supply circuit. 3,351,713, 11-7-67, Cl. 179—27.
- Hagedorn, Erwin C., and D. P. Hall, to Owens-Illinois Inc. Glass compositions resistant to discoloration, method of making and articles produced therefrom. 3,351,474, 11-7-67, Cl. 106—52.
- Hagedorn, Erwin C., and D. P. Hall, to Owens-Illinois Inc. Glass compositions, resistant to discoloration methods of making same and articles produced therefrom. 3,351,475, 11-7-67, Cl. 106—52.
- Hageny, Richard L.: *See*—
  - Dassinger, Carl C., and Hageny. 3,350,797.
- Hagerborg, John G., to FMC Corp. Tool actuating mechanism. 3,350,837, 11-7-67, Cl. 53—77.
- Haggar Mills Div. of I. Zendman Inc.: *See*—
  - Noe, Harold C. 3,350,901.
- Haidegger, Hans: *See*—
  - Meylan, Andre, and Haidegger. 3,350,768.
- Haines, Norman R., to Canomac Corp. Vehicle washer. 3,351,076, 11-7-67, Cl. 134—58.
- Hajicek, Frank J., to Marquette Corp. Transformer with auxiliary reactor winding. 3,351,878, 11-7-67, Cl. 336—155.
- Halcon International, Inc.: *See*—
  - Kollar, John. 3,351,635.
- Halkey-Roberts Corp.: *See*—
  - Bogossian, Armen, and Mackal. 3,351,081.
- Hall, Dallas P.: *See*—
  - Hagedorn, Erwin C., and Hall. 3,351,474.
  - Hagedorn, Erwin C., and Hall. 3,351,475.
- Hall, Harold E., and T. W. Karras, to General Electric Co. Fluid metal vaporizer. 3,350,885, 11-7-67, Cl. 60—203.
- Hall, Warren D. Lighting apparatus. 3,351,750, 11-7-67, Cl. 240—3.
- Hallinan, Margaret R.: *See*—
  - Demler, Walter R., Edelman, Hallinan, and Kosmala. 3,351,471.
- Halkiades, George, to Phillips Petroleum Co. Fluid level controller. 3,351,084, 11-7-67, Cl. 137—416.
- Halvorsen, Elmer W., and F. S. Russell, to Sleeper and Hartley, Inc. Wire forming machine. 3,351,101, 11-7-67, Cl. 140—1.
- Hamby, Jefferson O., and R. H. Chase, to Westinghouse Electric Corp. FM light communications system. 3,351,761, 11-7-67, Cl. 250—199.
- Hamilton, Douglas D., ⅓ to Canadian International Paper Co., ⅓ to Quebec North Shore Paper Co., and ⅓ to Abitibi St. Anne Paper Ltd. Tree processing machine. 3,351,107, 11-7-67, Cl. 144—3.
- Hamilton, Stephen B., Jr., and H. S. Blanchard, to General Electric Co. 4-(4′-bromo-2′,6′-dimethylphenoxy)-2,6-dimethylphenol and method of preparation. 3,351,667, 11-7-67, Cl. 260—613.
- Hammer, Jacobus A.: *See*—
  - Engler, Peter E., and Hammer. 3,351,874.
- Hammonds, Eddie R, to Owens-Johnson Shearing Blade Corp. Land clearing blade. 3,351,108, 11-7-67, Cl. 144—34.
- Hanas, Orest J., and R. D. Alaburda, to United States of America, Navy. Coaxial diode cartridge. 3,351,842, 11-7-67, Cl. 321—69.
- Hanes Corp.: *See*—
  - Beard Ralph L., and Hester. 3,351,339.
- Hanna, Daniel C. Car washing devices. 3,350,733, 11-7-67, Cl. 15—21.
- Hanner, John R. Wedge lock clamp and fastener device. 3,350,755, 11-7-67, Cl. 24—263.
- Hannes Marker: *See*—
  - Bruckl, Franz X. 3,351,355.
- Hannum, William H.: *See*—
  - Raab, Harry F., Jr., Galper, Jones, Conley, and Hannum. 3,351,532.
- Hansen, Howard J., to The Hansen Mfg. Co. Quick-disconnective coupling. 3,351,362, 11-7-67, Cl. 285—83.
- Hansen Mfg. Co., The: *See*—
  - Hansen, Howard J. 3,351,362.
- Harbison-Walker Refractories Co.: *See*—
  - Weaver, Ernest P., and Davies. 3,351,476.
- Harding, William R., Jr.: *See*—
  - Weitzman, Laurence H., and Harding. 3,351,499.
- Harkey, John D.: *See*—
  - Burgess, Douglas P., Williams, and Harkey. 3,351,096.
- Harms, August F., to Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman & Pharmacia, N.V. Certain nortropanyl ethers of dibenzo [a,d]-1,4-cycloheptadiene. 3,351,625, 11-7-67, Cl. 260—292.
- Harnish, James R., to Westinghouse Electric Corp. Defrost means for non-reversible refrigeration systems. 3,350,895, 11-7-67, Cl. 62—197.
- Harnish, James R., to Westinghouse Electric Corp. Multiple evaporator refrigeration systems. 3,350,896, 11-7-67, Cl. 62—200.
- Harnish, James R., to Westinghouse Electric Corp. Refrigeration systems using high pressure receivers. 3,350,898, 11-7-67, Cl. 62—218.
- Harper, Chester H.: *See*—
  - Allen, Kenneth M., and Harper. 3,351,181.
- Harper, David C., R. T. Wright, and J. E. Young, to Xerox Corp. Thermoplastic computer memory storage system. 3,351,920, 11-7-67, Cl. 340—173.
- Harple, Kenneth G., and W. B. Jakacki, to Honeywell Inc. Interfacing system. 3,351,911, 11-7-67, Cl. 340—172.5.
- Harrel Inc.: *See*—
  - Harris, Holton E. 3,351,280.
- Harris, Bryan S., and A. D. S. Tantram, to National Research Development Corp. Method of making solid electrolyte material. 3,351,491, 11-7-67, Cl. 136—86.
- Harris, Dale C., to Creative Packaging Inc. Ring box. 3,351,186, 11-7-67. Cl. 206—76.
- Harris, Darrel M., to Monsanto Co. Electric resistance heaters. 3,351,742. 11-7-67, Cl. 219—552.
- Harris, Holton E., to Harrel Inc. Temperature program apparatus. 3,351,280. 11-7-67, Cl. 236—46.
- Harris, Lawrence A., to General Electric Co. Electron beam device with hidden cathode having annular, frusto-conical emissive surface. 3,351,794, 11-7-67, Cl. 313—82.
- Harris, Robert P., and J. L. Krasner, to Conductron Corp. Means for simulating learning, forgetting and other like processes. 3,351,783, 11-7-67, Cl. 307—88.5.
- Harris, Thomas G., to Armstrong Corp Co. Method of making sheet material. 3,351,510, 11-7-67, Cl. 156—232.
- Harrison, Arthur S. Honey extracting apparatus. 3,351,273, 11-7-67, Cl. 233—20.
- Harrison, Harry W., ¼ each to D. A. Britton, and E. B. Colvin. Shock cushioning rotary driving well tool. 3,350,900, 11-7-67, Cl. 64—23.
- Harrison, Reginald, to Metalastik Ltd. Resilient mounting. 3,351,309, 11-7-67, Cl. 248—22.
- Harvey Aluminum (Inc.): *See*—
  - Harvey, Homer M., and Hart. 3,351,095.
- Hart, Dale H.: *See*—
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- Hart, James W., to Mark Products Co. Shrouded parabolic antenna structure. 3,351,947, 11-7-67, Cl. 343—840.
- Harvey, John T. C., to P.S.C. Equipment Ltd. System for securing wires in a stressed condition. 3,351,320, 11-7-67, Cl. 254—29.
- Harvey, Patrick J., to Allied Chemical Corp. Phenol-paracumyl-phenol resin and primer therefrom. 3,351,605, 11-7-67, Cl. 260—33.4.
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- Hatanaka, Yoshihiro, and Y. Kinoshita, to Kokuei Machinery Mfg., Co., Ltd. Coin controlled merchandise ejecting apparatus with reciprocating merchandise ejecting racks. 3,351,172, 11-7-67, Cl. 194—71.
- Hauptschein, Murray, and C. E. Inman, to Pennsalt Chemicals Corp. Coordination complexes. 3,351,643, 11-7-67, Cl. 260—404.
- Hauptschein, Murray, and C. L. Parris, to Pennsalt Chemicals Corp. Preparation of telomeric acid fluorides. 3,351,644, 11-7-67, Cl. 260—408.
- Hawker Siddeley Dynamics Ltd.: *See*—
  - Sheen, Herbert W. C., and Bullock. 3,351,854.
- Hawkinson, Paul E., Co.: *See*—
  - Hawkinson, Raymond P., and Olson. 3,351,117.
- Hawkinson, Raymond P., and R. E. Olson, to P. E. Hawkinson, Co. Air attachment for buffing machines and the like. 3,351,117, 11-7-67, Cl. 157—13.
- Hawley, Phillip W.: *See*—
  - Alberts, James R., and Hawley. 3,351,326.
- Hayashi, Torahiko. Device for continuously making spherical filled encrustations with dough. 3,351,026, 11-7-67, Cl. 107—68.
- Hayes, Eric F. J., to Milltronics Ltd. Control systems. 3,351,294, 11-7-67, Cl. 241—34.

- Hazetine Research Inc.: *See*—
  - Wagner, William R. 3,351,929.
- Hazleton-Nuclear Science Corp.: *See*—
  - Lawrence, Donald C. 3,351,049.
- Headrick, Richard T. Sling for pillow tanks. 3,351,371, 11-7-67, Cl. 294—77.
- Hedwin Corp.: *See*—
  - Speas, Charles A., and Jordan. 3,351,225.
- Hegar, Harry J.: *See*—
  - Warn, Arthur M., and Hegar. 3,351,364.
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  - Stein, Werner, Weiss, and Koch. 3,351,559.
- Henrikson, Bror W.: *See*—
  - Miller, Milton J., Henrikson, and Barecki. 3,351,402.
- Henro Mfg. Co.: *See*—
  - Hogstrom, Ralph H. 3,351,369.
- Henry, James E.: *See*—
  - Curto, Nicholas J., and Henry. 3,351,694.
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- Henstrom, Sten A., to Aktiebolaget Bofors. Yieldable suspension device for a track laying vehicle. 3,351,150, 11-7-67, Cl. 180—9.2.
- Hepp, Haróld J.: *See*—
  - Drehman, Lewis E., and Hepp. 3,351,547.
- Herbert, Donald L., to The Ohio Brass Co. Shear bolt. 3,351,214, 11-7-67, Cl. 213—9.
- Herbig, Harry C.: *See*—
  - Witt, Edward A., and Herbig. 3,350,800.
- Hercules Inc.: *See*—
  - Bishop, Robert G. 3,351,583.
  - McBurney, Lane F. 3,351,678.
  - Willis, William D. 3,351,517.
- Hermann, Leroy N. Five-region, three electrode, symmetrical semiconductor device, with resistive means connecting certain regions. 3,351,826, 11-7-67, Cl. 317—235.
- Herr, Ferenc: *See*—
  - Davis, Martin A., and Herr. 3,351,588.
- Herr, Milton E., to The Upjohn Co. 9(11)-dehydro-17a-methyl testosterone and derivatives thereof. 3,351,642, 11-7-67, Cl. 260—397.33.
- Herrmann, Karl-Heinz: *See*—
  - Dietrich, Isolde, Berkl, Weyl, and Herrmann. 3,351,754.
- Herzog, Rene, and W. Landolf, to Gebruder Buhler. Conveyor trough gate. 3,351,180, 11-7-67, Cl. 198—205.
- Hess, Walter, to Schloemann Aktiengesellschaft. Continuous casting plant. 3,351,124, 11-7-67, Cl. 164—274.
- Hester, James F.: *See*—
  - Beard, Ralph L., and Hester. 3,351,339.
- Hester, Wesley W. Necklace clasp. 3,350,753, 11-7-67, Cl. 24—239.
- Heuer, Hans, to Olympia Werke AG. Punching apparatus. 3,351,740, 11-7-67, Cl. 219—384.
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- Hewson, Carl E. Heart and lung resuscitator. 3,351,052, 11-7-67, Cl. 128—53.
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- Heywood, Vincent E., and A. H. Johnson, to United States Envelope Co. High-speed banding of envelopes and the like. 3,350,834, 11-7-67, Cl. 53—3.
- Hibbits, Forrest G., and P. M. Haas, to Honeywell, Inc. Analog digital converted. 3,351,932, 11-7-67, Cl. 340—347.
- Hicks, Darrel D., and W. J. Belanger, to Celanese Coatings Co. Castor oil polyglycidyl ether. 3,351,574, 11-7-67, Cl. 260—18.
- Higgins, Harvey M., Jr., to Eli Lilly and Co. Process for acylating 7-amino cephalosporanic acid. 3,351,597, 11-7-67, Cl. 260—243.
- Hildon, Anthony M.: *See*—
  - Leaver, John P., and Hildon. 3,351,426.
- Hinkle, Charles G. Umbrella holder for automobiles. 3,351,251, 11-7-67, Cl. 224—29.
- Hire, Larry L.: *See*—
  - Roof, James L., and Hire. 3,351,845.
- Hirota, Akira, to Victor Co. of Japan, Ltd. Magnetic erasing circuitry. 3,351,716, 11-7-67, Cl. 179—100.2.
- Hirsch, Arthur E., F. I. Whitten, and E. V. Pickford, to United States of America, Navy. Shock isolation platform. 3,351,314, 11-7-67, Cl. 248—358.
- Hirsh, S. A., Mfg. Co.: *See*—
  - Ferdinand, Irwin J., and Lopatka. 3,351,405.
- Hirst, Archie J., to Metalastik Ltd. Resilient mounting. 3,351,308. 11-7-67, Cl. 248—22.
- Hitachi, Ltd.: *See*—
  - Kimura, Noakazu. 3,351,873.
  - Tomono, Masami, Ueda, and Kimura. 3,351,733.
- Hitco: *See*—
  - Gutzeit, Carlos L. 3,351,484.
- Hoch, René G., L. F. Jumelle, and J. M. Minos, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Adjustable jet silencer nozzle with controlled flaps and follower flaps. 3,351,155, 11-7-67, Cl. 181—51.
- Hofer, Hermann: *See*—
  - Schmid, Alois, and Hofer. 3,351,685.
- Hoffman, Carrol J.: *See*—
  - Shapiro, Wilbur, and Hoffman. 3,351,397.
- Hoffman Electronics Corp.: *See*—
  - Iles, Peter A. 3,350,775.
- Hoffman, Francis V. Dispensing container. 3,351,415, 11-7-67, Cl. 401—137.
- Hogan, Clark H., and H. R. Packard, to H & E Aircraft Co. Removable closure. 3,351,226, 11-7-67, Cl. 220—25.
- Hogstrom, Ralph H., to Henro Mfg. Co. Latching structure for closure operator. 3,351,369, 11-7-67, Cl. 292—263.
- Hohnjec, Zeljko. Two-part box. 3,351,270, 11-7-67, Cl. 229—44.
- Holbrook, Orrin C.: *See*—
  - Woertz, Byron B., and Holbrook. 3,350,847.
- Holden, Richard: *See*—
  - Jowett, John K. S., and Holden. 3,351,858.
- Holder, Jean: *See*—
  - Gayet, Bernard, Holder, Kurka, Reboux, and Trouve. 3,351,686.
- Holderreed, Francis L.: *See*—
  - Arentzen, Charles, Fulmor, and Holderreed. 3,351,462.
- Hollinghurst, Ralph, to Mobil Oil Corp. Radiation resistant fluids. 3,351,553, 11-7-67, Cl. 252—45.
- Hollingsworth, J. B. Lee, to Union Carbide Corp. Method of and apparatus for extruding thermoplastic material. 3,351,695, 11-7-67, Cl. 264—176.
- Hollister Inc.: *See*—
  - Nolan, John L. 3,351,061.
- Hollopetre, John B.: *See*—
  - Apple, Eugene F., and Hollopetre. 3,351,796.
- Hollowell, Kenneth A.: *See*—
  - Finley, Roy D., and Hollowell. 3,351,472.
- Holm, Kurt A., to Uddeholms Aktiebolag. Degreasing of strip material by solvent vapour. 3,350,734, 11-7-67, Cl. 15—102.
- Holmstrom, Sven C. J.: *See*—
  - Jansson, Tore L., and Holmstrom. 3,351,847.
- Holophane Co., Inc.: *See*—
  - Berger, Emanuel. 3,351,753.
- Holub, Fred F.: *See*—
  - Safford, Moyer M., and Holub. 3,351,604.
- Honeywell Inc.: *See*—
  - Allingham, Walter F. 3,351,085.
  - Belson, Ross A. 3,351,006.
  - Bonn, Theodore H. 3,351,948.
  - Brown, Richard W. 3,350,974.
  - Carson, Earl W., Derr, and Iverson. 3,351,315.
  - Chin, Daniel Y. S. 3,351,776.
  - Gilbertson, Lynn A. 3,351,238.
  - Harple, Kenneth G., and Jakacki. 3,351,911.
  - Hibbits, Forrest G., and Haas. 3,351,932.
  - Kobold, Patrick J., and Thomas. 3,351,952.
  - Masterson, Earl E. 3,351,744.
  - Medlar, Lewis A. 3,351,544.
  - Vietz, Norman J. 3,351,934.
- Hook, Charles E., and D. G. Coleman, to Michigan Carton Co. Egg carton. 3,351,262, 11-7-67, Cl. 229—29.
- Hooker Chemical Corp.: *See*—
  - Carr, Russell L. K., and Baranauckas. 3,351,653.
- Hooker, Ralph J., to Mechanical Technology Inc. Hydrostatic bearings for a rotatable element. 3,351,394, 11-7-67, Cl. 308—9.
- Hooper, William K., to Republic Foil, Inc. Treatment of aluminum foil and product produced thereby. 3,351,442, 11-7-67, Cl. 29—183.5.
- Hoornstra, Clayton W., to The Dow Chemical Co. Curved plate etching apparatus. 3,351,077, 11-7-67, Cl. 134—147.
- Hope, Donald: *See*—
  - Pitches, Brian E., and Hope. 3,350,935.
- Hopmeier, Arthur P., and J. W. Ingram, to Sun Chemical Corp. Process of producing phthalocyanine pigments. 3,351,481, 11-7-67, Cl. 106—288.
- Horgan, William J., Jr.: *See*—
  - Blum, Louis, and Horgan. 3,351,324.
- Horizons Inc.: *See*—
  - Fotland, Richard A. 3,351,503.
  - Sprague, Robert H., Stewart, and Lewis. 3,351,467.
- Horlander, Frank J., to United States of America, Navy. Automatic pulse former. 3,351,777, 11-7-67, Cl. 307—88.5.
- Hosono, Hiroo: *See*—
  - Kimura, Shinzo, and Hosono. 3,350,997.
- Hoth, Robert C., to General Electric Co. Support brace. 3,351,189, 11-7-67, Cl. 206—46.
- Houdaille Industries, Inc.: *See*—
  - Rumsey, Rollin D. 3,351,121.
- Houghton, Richard B., and S. A. Bell, to Aerojet-General Corp. Article of manufacture and apparatus for producing ultrasonic power. 3,351,832, 11-7-67, Cl. 318—118.
- Houlihan, William J., to Sandoz Inc. N-propargyl sulfamides. 3,351,584, 11-7-67, Cl. 260—239.
- Howard, Dean D.: *See*—
  - Dunn, John H., and Howard. 3,351,944.
- Howells, Thomas H.: *See*—
  - Ingerfield, Maurice E., and Howells. 3,351,092.
- Hoxie, Warren V., to Westinghouse Electric Corp. Tunable reflex klystron having means to vary the spacing between the first and second grids. 3,351,805, 11-7-67, Cl. 315—5.22.
- Hruby, Joseph, to Addressograph-Multigraph Corp. Contact printing apparatus. 3,351,752, 11-7-67, Cl. 240—49.
- Huck, William L. Chaff trailer. 3,351,384, 11-7-67, Cl. 298—26.
- Hufnagel, Walter, and Z. Doboczky, to Lever Brothers Co. Stretching of polymer foils. 3,351,697, 11-7-67, Cl. 264—288.

- Hughes Aircraft Co.: *See*—
  - Conrad, Elton. 3,351,876.
  - Gronlund, Bent. 3,351,795.
  - Snyder, Richard L. 3,351,922.
- Hughes, Mack F.: *See*—
  - Ellis, John R. B., and Hughes. 3,351,634.
  - Adams, Robert T., and Hughes. 3,351,672.
- Hughes, Robert D.: *See*—
  - Ryan, Jack D., Nold, and Hughes. 3,351,444.
- Hughes Tool Co.: *See*—
  - Shapiro, Isadore, and Cane. 3,351,505.
- Hughes, William L., to Monowall Corp. Wall with a footing and method for constructing same. 3,350,826, 11-7-67, Cl. 52—293.
- Huisman, George R., to Rehrig Pacific Co. Bottom structure for molded plastic container. 3,351,228, 11-7-67, Cl. 220—66.
- Hukki, Risto T. Method and apparatus for continuous classification of solid particles dispersed in a fluid carrier. 3,351,195, 11-7-67, Cl. 209—39.
- Hulliger, Fritz, to American Cyanamid Co. Semiconductors and devices employing the same. 3,351,435, 11-7-67, Cl. 23—315.
- Hummel, Hermann, to Telefunken Patentverwertungsgesellschaft m.b.H. Information storage and transfer system for digital computers. 3,351,909, 11-7-67, Cl. 340—172.5.
- Humphrey, Richard L.: *See*—
  - Winkler, Eva M., and Humphrey. 3,351,799.
- Hunter, L., to North Electric Co. Automatic battery charger using ramp function for error signal reference in SCR control of multiphase load. 3,351,838, 11-7-67, Cl. 321—5.
- Huntress, Alan M.: *See*—
  - Savolainen, Unto U., and Huntress. 3,351,700.
- Hurlimann, Armin, to Albiswerk Zurich A.G. Feed current control for pulse-modulated magnetron transmitter. 3,351,808, 11-7-67, Cl. 315—102.
- Hutchins, Blanchard S.: *See*—
  - Ainslie, Robert E., Comisarow, and Hutchins. 3,351,010.
- Hutton, Harry T., C. R. Goetjen, and J. M. Ogborn, said Hutton and said Goetjen assor. to Air Reduction Co., Inc. Methods of operating burners and improved burners. 3,351,284, 11-7-67, Cl. 239—11.
- Hydraulik G.m.b.H.: *See*—
  - Muller, Ernst. 3,350,910.
- Hyster Co.: *See*—
  - Olson, John E. 3,351,370.
- IRC, Inc.: *See*—
  - Merz, Kenneth M. 3,351,881.
- Ideal Toy Corp.: *See*—
  - Isaacson, Anson. 3,350,813.
  - Lindsay, Kenneth W., Bornn, and Ensmann. 3,350,812.
- Iles, Peter A., to Hoffman Electronics Corp. Process of making solar cells or the like. 3,350,775, 11-7-67, Cl. 29—572.
- Ilford Ltd.: *See*—
  - Neale, Denis M. 3,350,981.
- Illinois Tool Works Inc.: *See*—
  - Bostrom, John D. 3,351,124.
- Imahashi, Issei, to Kabushiki Kaisha Suwa Seikosha. Transistor circuit for generating pulses in alternate directions. 3,351,822, 11-7-67, Cl. 317—148.5.
- Imperial Chemical Industries Ltd.: *See*—
  - Andrew, Herbert F., and Buckley. 3,351,578.
  - Clark, Peter F., and Poole. 3,351,594.
  - Duncanson, Leonard A., and Lawley. 3,351,657.
- Industrial Filter & Pump Mfg., Co.: *See*—
  - Zievers, James F., Riley, and Novotny. 3,351,488.
- Ingerfield, Maurice E., and T. H. Howells, to Pye Ltd. Volume cycled medical ventilators. 3,351,092, 11-7-67, Cl. 137—624.14.
- Ingram, John W.: *See*—
  - Hopmeier, Arthur P., and Ingram. 3,351,481.
- Inland Steel Co.: *See*—
  - Slagley William E. 3,351,335.
- Inman, Charles E.: *See*—
  - Hauptschein, Murray, and Inman. 3,351,643.
- Inst-O-Matic Corp.: *See*—
  - Flock, Truman F. 3,351,239.
- Instrumentation Laboratory Inc.: *See*—
  - Blackmer, David E. 3,351,764.
- Intercontinental Mfg. Co., Inc.: *See*—
  - Levinson, Louis E., and Shape. 3,350,906.
- Interlake Steel Corp.: *See*—
  - McConnell, Kennedy. 3,351,212.
- International Business Machines Corp.: *See*—
  - Marinace, John C. 3,351,698.
  - Maring, Blayne E., Pendy, Grimm, and Johnson. 3,351,341.
  - Owen, Charles E. 3,351,837.
- International Computers and Tabulators Ltd.: *See*—
  - Briggs, Peter G. 3,351,921.
- International Equipment Co.: *See*—
  - Van Dyck, Kenneth, and Smith. 3,351,432.
- International Standard Electric Corp.: *See*—
  - Gasser, Lorenz. 3,351,715.
- Interoceanic Commodities Corp.: *See*—
  - Dufrene, Donald E. 3,350,814.
- Isaacson, Anson, to Ideal Toy Corp. Electrically powered wheeled toy vehicle. 3,350,813, 11-7-67, Cl. 46—243.
- Ishizuka, Hiroshi. High temperature and high pressure apparatus. 3,350,743, 11-7-67, Cl. 18—16.5.
- Isomet Corp.: *See*—
  - Taylor, Thomas I. 3,351,562.
- Isreeli, Jack, to Technicon Instruments Corp. Sample containers for analysis apparatus. 3,350,946, 11-7-67, Cl. 73—423.
- Iverson, Marlowe W.: *See*—
  - Carson, Earl W., Derr, and Iverson. 3,351,315.
- Jabczynski, Hans J.: *See*—
  - Voegtlien, Dieter, Korber, and Jabczynski. 3,351,721.
- Jablonski, Olgierd. Arrangement for determining and analysing ship's stability. 3,351,275, 11-7-67, Cl. 235—61.
- Jackson, Robert T., to Continental Can Co., Inc. Flip-flap carton. 3,351,267, 11-7-67, Cl. 229—44.
- Jackson, Winston J., Jr.: *See*—
  - Caldwell, John R., Perry, and Jackson. 3,351,645.
- Jacobs, F. L., Co.: *See*—
  - Blake, Jack W. 3,351,404.
- Jacobsen, Samuel C.: *See*—
  - Boggs, Wilburn A., Esral, and Jacobsen. 3,351,421.
- Jacobson, Chester F., to General Electric Co. Portable electric cigarette lighter. 3,351,736, 11-7-67, Cl. 219—267.
- Jaeger, Horst, H. Nachbur, and A. Maeder, to Ciba Ltd. Polymerizable monomers containing phosphorus and process for their manufacture. 3,351,617, 11-7-67, Cl. 260—78.5.
- Jakacki, Wallace B.: *See*—
  - Harple, Kenneth G., and Jakacki. 3,351,911.
- Jameson, Alexander K., to Esso Research and Engineering Co. Solvent-rubber systems of low viscosity. 3,351,572, 11-7-67, Cl. 260—5.
- Jamieson, Hugh W.: *See*—
  - Smith, Charles J., and Jamieson. 3,351,347.
- Jansson, Tore L., and S. C. J. Holmstrom, to Aktiebolaget Bofors. Current-detecting apparatus. 3,351,847, 11-7-67, Cl. 323—4.
- Japs, John R., to Dillingham Ticket Co. Ticketing structure and procedure. 3,350,799, 11-7-67, Cl. 40—2.
- Jardinier, Jean P. J.: *See*—
  - Feraud, Roger A., and Jardinier. 3,350,886.
- Jauernik, Edmund, and A. Bopp, to Fernseh G.m.b.H. Circuit arrangement for varying the level of a signal. 3,351,867, 11-7-67, Cl. 330—16.
- Jennings, Jesse A. Treatment table with locking means. 3,351,051, 11-7-67, Cl. 128—24.
- Jennings, Irving C. Vacuum pump. 3,351,272, 11-7-67, Cl. 230—79.
- Jenny, Alfred L., to General Electric Co. Non-aqueous capacitor electrolyte having a salt dissolved in a co-solvent. 3,351,823, 11-7-67, Cl. 317—230.
- Jensen, Lloyd L., to Schlumberger Technology Corp. Drill stem testing apparatus. 3 351,135, 11-7-67, Cl. 166—149.
- Jensen, Nathan K. Low pressure alarm valve. 3,351,088, 11-7-67, Cl. 137—517.
- Jeru, Henri, to S.A. des Ateliers et Chantiers de La Seine Maritime. Silo having a plurality of bins therein. 3,350,995, 11-7-67, Cl. 98—55.
- Jewett, David N.: *See*—
  - Makrides, Alkis C., Wright, and Jewett. 3,350,846.
- Jilek, Jiři: *See*—
  - Protiva, Miroslav, Jilek, Metyšová, Ernest, Pelz, and Adlerová. 3,351,599.
- Jobst Institute, Inc.: *See*—
  - Gottfried, Max. 3,351,055.
- Johansson, Arve T.: *See*—
  - Tillander, Magnus E., Persson, and Johansson. 3,351,025.
- Johansson, Nils O.: *See*—
  - Lundin, Lars O., Johansson, Svanstrom, and Gustafsson. 3,351,149.
- Johns-Manville Corp.: *See*—
  - Axelson, John W., and Russum. 3,350,929.
- Johnson, Albert H.: *See*—
  - Heywood, Vincent E., and Johnson. 3,350,834.
- Johnson, Carlton R., and R. Raynor, to Esso Production Research Co. System for measuring changes in fluid pressure. 3,350,931, 11-7-67, Cl. 73—152.
- Johnson, Dell A., to Thiokol Chemical Corp. Hydraulic cylinder. 3,350,987, 11-7-67, Cl. 92—24.
- Johnson, Dennis W.: *See*—
  - Guillen, John, and Johnson. 3,351,857.
- Johnson, Floyd I., to Radio Corp. of America. Counter circuit. 3,351,781, 11-7-67, Cl. 307—88.5.
- Johnson, Joel S.: *See*—
  - Maring, Blayne E., Pendy, Grimm, and Johnson. 3,351,341.
- Johnson & Johnson: *See*—
  - Petrozziello, Michael A. 3,351,338.
- Johnson, Leo J., and D. A. Melton, to North American Aviation, Inc. Transistorized driven power inverter utilizing base voltage clamping. 3,351,839, 11-7-67, Cl. 321—45.
- Johnson Ranch: *See*—
  - Miller, Clinton F., Jr., and Johnson. 3,351,151.
- Johnson, Richard A.: *See*—
  - Dow, Bruce R., and Johnson. 3,351,865.
- Johnson, Robert W.: *See*—
  - Miller, Clinton F., Jr., and Johnson. 3,351,151.
- Johnson, Roy W. P. Internal combustion engine plant. 3,350,876, 11-7-67, Cl. 60—11.
- Johnson, Rudolph W. Dispenser for ground coffee and the like. 3,351,245, 11-7-67, Cl. 222—308.
- Johnson Service Co.: *See*—
  - Misevich, Kenneth W., and Sullivan. 3,350,941.
- Johnston Testers, Ltd.: *See*—
  - Jensen, Lloyd I. 3,351,135.
- Jones, Arthur L., and E. J. Neal, Jr., to The Pelton & Crane Co. Sterilizer. 3,351,422, 11-7-67, Cl. 21—94.
- Jones, David H.: *See*—
  - Raab, Harry F., Jr., Galper, Jones, Conley, and Hannum. 3,351,532.
- Jones, Eldon D. Interlocking electrical connection. 3,351,887, 11-7-67, Cl. 339—91.
- Jones, Gary D., G. J. Vanegas, and H. D. F. True, Jr., to General Electric Co. Household refrigerator. 3,350,899, 11-7-67, Cl. 62—414.
- Jones, Ronald C. L., to The Potteries Motor Traction Co. Ltd. Building construction responsive to changing support condition. 3,350,821, 11-7-67, Cl. 52—122.

Jones, William T. Valve. 3,351,318, 11-7-67, Cl. 251—188.
Jordan, Charles E., to Jordan Controls, Inc. Automatic control apparatus. 3,351,743, 11-7-67, Cl. 235—61.11.
Jordan, Charles T.: *See—*
    Speas, Charles A., and Jordan. 3,351,225.
Jordan Controls, Inc.: *See—*
    Jordan, Charles E. 3,351,743.
Jorgensen, Irving W. Display device. 3,350,805, 11-7-67, Cl. 40—125.
Joseph, Joseph P.: *See—*
    Dusza, John P., Joseph, and Bernstein. 3,351,638.
Joslyn Mfg. and Supply Co.: *See—*
    Miller, Cyril V., and Carlson. 3,351,703.
Jost, Ernest M., to Texas Instruments Inc. Electrodes. 3,351,439, 11-7-67, Cl. 29—182.2.
Jowett, John K. S., and R. Holden, to Postmaster General, Her Majesty's. Satellite communication systems. 3,351,858, 11-7-67, Cl. 325—15.
Joy, Raymond D.: *See—*
    Morrison, Elbert F., and Joy. 3,350,867.
Jue, Lawrence S., R. Batman, and D. A. Horn, to United States of America, Navy. Apparatus for determining circularity of large diameter objects. 3,350,786, 11-7-67, Cl. 33—178.
Jumelle, Louis F.: *See—*
    Hoch, René G., Jumelle, and Minos. 3,351,155.
Junge, Charles H.: *See—*
    Kingsbury, George R., Junge, Weinkamer, and Slater. 3,350,763.
Junghans Aktiengesellschaft, Gebruder: *See—*
    Wolber, Robert. 3,350,874.
Junkermann, Helmut, and F. Loffler, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Production of paraformaldehyde. 3,351,668, 11-7-67, Cl. 260—615.5.
Junkins, Ernest M. Work holding and transferring device. 3,351,032, 11-7-67, Cl. 112—2.
Kabushiki-Kaisha Nihon Seikosho: *See—*
    Kiso, Seiji, and Nakamura. 3,350,817.
Kabushiki Kaisha Suwa Seikosha: *See—*
    Imahashi, Isei. 3,351,822.
Kahn, Walter C. Pipe heating arrangement. 3,351,738, 11-7-67, Cl. 219—301.
Kelco Co.: *See—*
    Fairchild, William P. 3,351,479.
Kaiser Aluminum & Chemical Corp.: *See—*
    Titus, Leslie, Thornberry, and Breuer. 3,351,428.
Kaiser Industries Corp.: *See—*
    Meisel, George M. 3,351,293.
Kallet, Eli A., and P. W. Collyer, to Barnes Engineering Co. Planet sensor having a plurality of fixed detectors about two orthogonal axes and a partially attenuating mask centrally located in the field of view of the detectors and smaller than the total field of view. 3,351,756, 11-7-67, Cl. 250—83.3.
Kammerer, Archer W.: *See—*
    Kammerer, Archer W., Jr. 3,351,134.
Kammerer, Archer W., Jr., ⅓ to J. K. Lamphere, and ⅓ to A. W. Kammerer. Casing severing tool with centering pads and tapered cutters. 3,351,134, 11-7-67, Cl. 166—55.8.
Kanazawa, Fujio: *See—*
    Koike, Eiji, Kanazawa, and Otsuka. 3,351,580.
Kano, Motomi: *See—*
    Arikawa, Masayasu, Okuda, and Kano. 3,351,734.
Kantrowitz, Arthur R., and F. B. Russell, to Avco Corp. Apparatus for augmenting blood flow. 3,350,721, 11-7-67, Cl. 3—1.
Karl, Walter, to Utilux Proprietary Ltd. Terminal applying machine. 3,350,765, 11-7-67, Cl. 29—203.
Karnuth, Delmar D. Brush attachment for shaving cream cans. 3,351,418, 11-7-67, Cl. 401—270.
Karras, Thomas W.: *See—*
    Hall, Harold E., and Karras. 3,350,885.
Katagata, Zenji, to Denki Onkyo Kabushiki Kaisha. Narrow band facsimile communicating system. 3,351,710, 11-7-67, Cl. 178—6.
Kato, Seinosukeo: *See—*
    Nishioka, Kunio, Nishimura, and Kato. 3,351,337.
Katzman, Lawrence, E. Briggin, A. N. D'Elia, and E. M. Stolarz, to Kaz Mfg. Co., Inc. Hood for steam facial. 3,351,737, 11-7-67, Cl. 219—271.
Kaufman, Harry L.: *See—*
    Brater, Donald C., Dystra, and Kaufman, and Smiley. 3,350,848.
Kaufman, Melvin M., to United States of America, Navy. Transformer having windings between two ferrite strips. 3,351,879, 11-7-67, Cl. 336—170.
Kaz Mfg. Co., Inc.: *See—*
    Katzman, Lawrence, Briggin, D'Elia, and Stolarz. 3,351,737.
Kearney, Joseph P., to Westinghouse Electric Corp. Seal and lead-in conductor assembly for gaseous discharge lamps. 3,351,803, 11-7-67, Cl. 313—331.
Kearns, Robert W., to Tann Co. Windshield wiper system with intermittent operation. 3,351,836, 11-7-67, Cl. 318—443.
Kehr, Clifton L.: *See—*
    Larsen, Donald W., and Kehr. 3,351,495.
Keil, Howard W. Unitary steam trap rig. 3,351,281, 11-7-67, Cl. 236—56.
Kelco Co.: *See—*
    Schweiger, Richard G. 3,351,581.
Keller, Wolfgang, to Siemens-Schuckertwerke Aktiengesellschaft. Method of producing monocrystalline semiconductor rods. 3,351,433, 11-7-67, Cl. 23—301.
Kelley, Gilbert A., to Midland-Ross Corp. Two-stage air conditioning system. 3,350,892, 11-7-67, Cl. 62—94.
Kelly, Edward C.: *See—*
    Polidoro, John E., and Kelly. 3,350,819.
Kelly, Gordon E., to Radio Corp. of America. Synchronous demodulators. 3,351,708, 11-7-67, Cl. 178—5.4.
Kemlite Corp.: *See—*
    Menzer, Alfred B. 3,351,513.
Kemp, Kenneth A. W., to C.A.V. Ltd. Liquid fuel injection pumps for internal combustion engines. 3,351,020, 11-7-67, Cl. 103—2.
Kennar, George A.: *See—*
    Brown, Gordon E., Cox, and Kennar. 3,351,612.
Kennecott Copper Corp.: *See—*
    Zimmerley, Stuart R., and Messner. 3,351,423.
Kennedy, Carl E., and W. E. Reynolds, Jr. Range feeder apparatus. 3,351,243, 11-7-67, Cl. 222—189.
Kerenyi, Laszlo: *See—*
    Miliner, Tivadar, Neugebauer, and Kerenyi. 3,351,436.
Kerr, Ralph O., to Petro-Tex Chemical Corp. Catalyst for the preparation of dicarboxylic acid anhydrides. 3,351,565, 11-7-67, Cl. 252—437.
Kerstetter, Donald R.: *See—*
    Buescher, William E., and Kerstetter. 3,351,486.
Khouri, Alfred S., to Globe-Union Inc. Method of forming a transistor and varistor by reduction and diffusion. 3,351,500, 11-7-67, Cl. 148—1.5.
Kiekhaefer Corp.: *See—*
    Boda, Robert A., and Kollman. 3,350,879.
Kienel, Joseph E. Apparatus and method for seaming hosiery blanks. 3,351,033, 11-7-67, Cl. 112—2.
Kienzle Uhrenfabriken G.m.b.H.: *See—*
    Siefert, Roland, and Knauer. 3,350,875.
Kieserling, Th., and Albrecht: *See—*
    Brauer, Hans. 3,350,920.
    Brauer, Hans, and Goeke. 3,350,921.
    Brauer, Hans, and Lorenz. 3,350,965.
Kilby, Jack S., to Texas Instruments Inc. Capacitor for miniature electronic circuits or the like. 3,350,760, 11-7-67, Cl. 29—25.42.
Kim, Dae S., and G. K. Vick, to Esso Research and Engineering Co. Engine viscosity simulator. 3,350,922, 11-7-67, Cl. 73—60.
Kimble, Robert C.: *See—*
    Szawlowski, Theodore H., and Kimble. 3,351,631.
Kimura, Hirokazu: *See—*
    Tomono, Masami, Ueda, and Kimura. 3,351,733.
Kimura, Noakazu, to Hitachi, Ltd. Analog to digital converter employing noise rejection signal modulator. 3,351,873, 11-7-67, Cl. 332—9.
Kimura, Shinzo, and H. Hosono, to Matsushita Electric Industrial Co., Ltd. Electric toaster. 3,350,997, 11-7-67, Cl. 99—329.
King, James D., to Southwest Research Institute. Apparatus for ultrasonic inspection. 3,350,924, 11-7-67, Cl. 73—67.9.
Kingery, William D., and A. Waugh, to Lexington Laboratories, Inc. Process of casting refractory materials. 3,351,688 11-7-67, Cl. 264—63.
Kingsbury, George R., C. H. Junge, W. A. Weinkamer, and R. L. Slater. 3,350,763, 11-7-67, Cl. 29—149.5.
Kinkaid, Robert J., to AMP Inc. Connector. 3,351,894, 11-7-67, Cl. 339—217.
Kinoshita, Yoshio: *See—*
    Hatanaka, Yoshihiro, and Kinoshita. 3,351,172.
Kirby, Robert A., and L. K. Shallenberger, to Esso Production Research Co. System for measuring changes in fluid pressure. 3,350,932, 11-7-67, Cl. 73—152.
Kirkbride, William W. Power elevator system. 3,351,220, 11-7-67, Cl. 214—75.
Kiso, Seiji, and N. Nakamura, to Kabushiki-Kaisha Nihon Seikosho. Automatic stopping device for plane lapping machine. 3,350,817, 11-7-67, Cl. 51—165.
Kistler Instrument Corp.: *See—*
    Kistler, Walter P. 3,351,787.
Kistler, Walter P., to Kistler Instrument Corp. Accelerometer. 3,351,787, 11-7-67, Cl. 310—8.4.
Kitch, Paul E., to G. T. Schjeldahl Co. Sheet article stacker. 3,351,215, 11-7-67, Cl. 214—6.
Kite, Paul E., to United States of America, Navy. Locking device for flexible member. 3,351,158, 11-7-67, Cl. 188—65.4.
Kitselman, Harry L., to Acrometal Products, Inc. Method and apparatus for coiling resilient wire. 3,351,104, 11-7-67, Cl. 104—149.
Kleiman, Floyd R. Car top camper. 3,351,078, 11-7-67, Cl. 135—1.
Kline, Smith, & French Laboratories: *See—*
    Caldwell, Henry C., and Groves. 3,351,530.
Klinger Mfg. Co. Ltd., The: *See—*
    Gilchrist, Reginald S. 3,350,869.
Klinkhamer, Jacob F., to North American Philips Co. Inc. Magnetic core selection system having plural coded inputs. 3,351,908, 11-7-67, Cl. 340—147.
Klockner-Humboldt-Deuty Aktiengesellschaft: *See—*
    Schulz, Horst, and Knepper. 3,351,137.
Klygis, Mindaugas J.: *See—*
    Lodding, William F., and Klygis. 3,351,242.
Knaeur, Norbert: *See—*
    Siefert, Roland, and Knauer. 3,350,875.
Knepper, Herbert: *See—*
    Schulz, Horst, and Knepper. 3,351,137.
Knoll Associates, Inc.: *See—*
    Richardson, Donald A. 3,351,383.
Knuth, Carl, to Brunswick Corp. Two-cycle internal combustion engine. 3,351,045, 11-7-67, Cl. 123—52.
Kobayashi, Iwao. Golf ball warmer. 3,351,330, 11-7-67, Cl. 263—5.
Kobe Steel Ltd.: *See—*
    Arikawa, Masayasu, Okuda, and Kano. 3,351,734.
Kobold, Patrick J., and R. M. Thomas, to Honeywell Inc. Angular position indicators. 3,351,952, 11-7-67, Cl. 340—187.

Koch, H., & Sons: *See—*
    Gaylord, John A. 3,351,082.
Koch, Otto: *See—*
    Stein, Werner, Weiss, and Koch. 3,351,559.
Kodaras, Michael J., to Baldwin-Ehret-Hill, Inc. Acoustical panel with cellular lattice embedded into sound absorptive element. 3,351,154, 11-7-67, Cl. 181—33.
Koefoed, Jack F., and F. F. Tilden, to Diamond Crystal Salt Co. Packet dispenser. 3,351,209, 11-7-67, Cl. 211—49.
Kohler, Fred, and W. C. Rudd, to Polyelectric Corp. Plastic resistance elements and methods for making same. 3,351,822, 11-7-67, Cl. 338—322.
Kohlhagen, Walter. Presettable and resettable counter. 3,351,277, 11-7-67, Cl. 235—132.
Koike, Eiji, F. Kanazawa, and H. Otsuka, to Sumitomo Chemical Co. Ltd. and Toyo Spinning Co., Ltd. Disazo disperse dyestuffs. 3,351,580, 11-7-67, Cl. 260—160.
Kokuei Machinery Mfg., Co., Ltd.: *See—*
    Hatanaka, Yoshihiro, and Y. Kinoshita. 3,351,172.
Kollar, John, to Halcon International, Inc. Epoxidation process. 3,351,635, 11-7-67, Cl. 260—348.5.
Kollman, Delhardt, K.: *See—*
    Boda, Robert A., and Kollman. 3,350,879.
Kommanditgesellschaft Industrie-Bau Nord G.m.b.H. & Co.: *See—*
    Baehr, Hans-Dieter. 3,351,248.
Kongable, Lowell S., and D. C. Walstad, to Motorola, Inc. Protective circuit for cathode ray tubes using a switch responsive to the power supply to change the bias on the cathode ray tube. 3,351,804, 11-7-67, Cl. 315—20.
Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman & Pharmacia, N. V.: *See—*
    Harms, August F. 3,351,625.
Konkel, John A.: *See—*
    Cochran, Larry A., and Konkel. 3,351,709.
Kono Seki, to Elmo Co. Led. Cinematographic camera with magazine having sensitivity control. 3,351,413, 11-7-67, Cl. 352—72.
Koolnis, Stanley R., to Lee Drechsler and Fred Zandell. Dispensing container. 3,351,260, 11-7-67, Cl. 229—17.
Koopman, Harmannus, and J. Daams, to North American Philips Co., Inc. Method of destroying undesired plant growth. 3 351,456, 11-7-67, Cl. 71—86.
Koorneef, Jacob: *See—*
    Van Lammeren, Johannes, Antonius, Barnier, Koorneef, and Bos. 3,351,925.
Koppelmann, Eldo K., to Madison Industries, Inc. Roller burnishing tool. 3,350,762, 11-7-67, Cl. 29—90.
Koppers Co., Inc.: *See—*
    Shepler, Paul R. 3,351,350.
Korber, Ulrich: *See—*
    Voegtlen, Dieter, Korber, and Jabczynski. 3,351,721.
Kosmala, James M.: *See—*
    Demler, Walter R., Edelman, Hallinan, and Kosmal. 3,351,471.
Kraemer, Nancy C.: *See—*
    Guiducci, Mariano A., and Kraemer. 3,351,637.
Kraiker, Harry Jr., to Water Treatment Corp. Method for series water softening and series regeneration. 3,351,550, 11-7-67, Cl. 210—34.
Kamer, Djordje, to Licentia Patent-Verwaltungs-G.m.b.H. Error checking method and apparatus. 3,351,905, 11-7-67, Cl. 340—146.1.
Krasner, Jerome L.: *See—*
    Harris, Robert P., and Krasner. 3,351,783.
Krauthamer, Stanley: *See—*
    Borden, Jay R., Gasser, and Krauthamer. 3,351,835.
Kravitz, Harvey, ½ to Norman Lettvin. Single stable dose vaccinator. 3,351,059, 11-7-67, Cl. 128—253.
Krementz, Christie S.: *See—*
    Pircio, Anthony W., and Krementz. 3,351,528.
Kreske, Walter J.: *See—*
    Swain, William H. 3,351,871.
Krewalk, John J. Sunlight filtering ocular adapter for telescopes. 3,351,408, 11-7-67, Cl. 350—69.
Kristensen, Paul A.: *See—*
    Cray, Seymour R., and Kristensen. 3,351,923.
Krumm, Stephen, to Union Carbide Corp. Sound record comprising vinyl halide resin, group II metal tallate and hydrogen halide acceptor. 3,351,577 11-7-67, Cl. 260—23.
Kubit, Ted J., and W. S. Stanton. Automatically-inflating life presserver. 3,350,730, 11-7-67, Cl. 9—317.
Kunzelman, Ronald C., and J. D. Molone, to Secode Corp. Mobile radio telephone apparatus. 3,351,714, 11-7-67, Cl. 179—41.
Kurka, Gerard: *See—*
    Gayet, Bernard, Holder, Kurka, Reboux, and Trouve. 3,351,686.
Kuryla, Alan T., to Sylvania Electric Products Inc. Quick warm-up heat-shielded cathode structure for cathode ray tubes. 3,351 792, 11-7-67, Cl. 313—38.
Kuss, R. L., & Co., Inc.: *See—*
    Campbell, Robert H. 3,350,747.
LTV Aerospace Corp.: *See—*
    Welch, Albert B. 3,350,770.
Laboratories Om Societe Anonyme: *See—*
    Subirana, Antonio E. 3,351,526.
LaCoume, Jerry R.: *See—*
    Brown, Winston E., LaCoume, and Treichler. 3,351,560.
Lagasse, Normand L.: *See—*
    Park, Jerald L., and Lagasse. 3,351,398.
Lambert, Eunice F. Carbon monoxide burner for automobile exhaust. 3,350,878, 11-7-67, Cl. 60—30.
Lamburn, Alan S., and R. L. Abbott, to Axel Wickman Transmissions Ltd. Power transmission syatem. 3,350,960, 11-7-67, Cl. 74—701.
Lampert, Bernard B.: *See—*
    Moe, Henry, and Lampert. 3,351,593.
Lamphere, Jean K.: *See—*
    Kammerer, Archer W., Jr. 3,351,134.
Land, Edwin H., to Polaroid Corp. Radiographs viewable by reflected or transmitted light. 3,351,466, 11-7-67, Cl. 96—29.
Landis, Harry M.: *See—*
    Waseleski, Joseph W., Jr., and Landis. 3,351,586.
Landolf, Walter: *See—*
    Herzog, Rene, and Landolf. 3,351,180.
Lang, Ernest U., to National-Standard Co. Apparatus for paying out wire. 3,351,302, 11-7-67, Cl. 242—156.2.
Langner, Ralph R., to The Dow Chemical Co. Stabilization and preservation of wood. 3,351,485, 11-7-67, Cl. 117—147.
La Plante, Gordyn T., to General Electric Co. Package and retainer tray. 3,351,192, 11-7-67, Cl. 206—56.
Laporte Chemicals Ltd.: *See—*
    Leaver, John P. and Hildon. 3,351,426.
Larger, George K. Brick laying apparatus. 3,350,833, 11-7-67, Cl. 52—749.
Larsen, Donald W., and C. L. Kehr, to W. R. Grace & Co. Battery separator. 3,351,495, 11-7-67, Cl. 136—146.
Larson, Wesley S.: *See—*
    Richardson, Genry M., Alberghini, Wiley, and Larson. 3,351,509.
Lavendel, Henry W.: *See—*
    Clauss, Francis J., Lavendel, and Bruce. 3,351,440.
Lavik, Arne: *See—*
    Unger, Hans G., and Lavik. 3,351,877.
Lawley, Herbert G.: *See—*
    Duncanson, Leonard A., and Lawley. 3,351,657.
Lawlor, Robert E., and J. E. Beaudion, 55% to P. A. Cornell. Electrical connector with wire-gripping means and insulation piercing contact jaw. 3,351,889, 11-7-67, Cl. 339—97.
Lawrence, Donald C., to Hazleton-Nuclear Science Corp. Therapeutic metal seed containing within a radioactive isotope disposed on a carrier and method of manufacture. 3,351,049, 11-7-67, Cl. 128—1.2.
Lawrenson, Jack, to Pilkington Bros. Ltd. Method and apparatus for the manufacture of flat glass on a molten metal bath. 3,351,447, 11-7-67, Cl. 65—65.
Lazzaro, Dominic R.: *See—*
    Butler, Clarence A., and Lazzaro. 3,351,205.
Leaver, John P., and A. M. Hildon, to Laporte Chemicals Ltd. Method of preparation of dipersulphates. 3,351,426, 11-7-67, Cl. 23—114.
Lechene, Leo L. Plastic bristle mats and method of making same. 3,351,387, 11-7-67, Cl. 300—21.
Ledig Kurt W.: *See—*
    Wendt, Gerhard R., and Ledig. 3,351,590.
Le Donne, Elmer A.: *See—*
    Depew, Herbert D., Jr., Le Donne, and Benish. 3,351,303.
Le Doux, William A.: *See—*
    Cutler, John H., and Le Doux. 3,351,812.
Lee, Harry W., Jr., to Reynolds Metals Co. Cylindrical container construction. 3,351,259, 11-7-67, Cl. 229—4.5.
Lee, Paul L., and G. E. Sims, to Eastman Kodak Co. Preparation of fine HMX. 3,351,585, 11-7-67, Cl. 260—239.
Leeds & Northrup Co.: *See—*
    Cranch, Edward J. 3,351,862.
Leenders, Peter, and H. G. Creutz, to Allied Research Products, Inc., (Formerly Allied Richardson, Inc.) Method for making an alkali metal salt of heptagluconic acid. 3,351,656, 11-7-67, Cl. 260—528.
Leesona Corp.: *See—*
    Wallack, Stanley, Alexander, and Oxley. 3,351,015.
Legion Mfg. Co.: *See—*
    Spinks, Sam, and Owenby. 3,351,184.
Leigh, Walter J. Method and apparatus for generating artificial waves in a body of water. 3,350,724, 11-7-67, Cl. 4—171.
Leising, Maurice B., to Chrysler Corp. Vehicle braking system. 3,350,882, 11-7-67, Cl. 60—54.6.
Leiss Ikon Aktiengesellschaft: *See—*
    Taesler, Rudolf, Becker, and Borner. 3,351,298.
Leitten, Carl F., Jr.: *See—*
    McDonald, Robert E., and Leitten. 3,350,907.
Lemanski, Paul P.: *See—*
    Guiducci, Mariano A., and Lemanski. 3,351,636.
Lennox Industries, Inc.: *See—*
    Beckman, C. Lee. 3,351,367.
Lepelletier, Pierre A. G., to Societe Anonyme Francaise Du Feredo. Self-energizing brake syatem. 3,351,161, 11-7-67, Cl. 188—152.
Le Suer, William M., to The Lubrizol Corp. Lithium compounds as rust inhibitors for lubricants. 3,351,552, 11-7-67, Cl. 252—41.
Lettvin, Norman: *See—*
    Kravitz, Harvey. 3,351,059.
Leunig, Heimbert, R. Meyer, and E. Buchner, to Wasag-Chemie, A.G. Two-stage rocket propulsion system. 3,350,887, 11-7-67, Cl. 60—251.
Lever Bros. Co.: *See—*
    Hufnagel, Walter, and Doboczky. 3,351,697.
Levine, Charles A., and A. L. Prevost, to The Dow Chemical Co. Process for plating permeable membrane. 3,351,487, 11-7-67, Cl. 117—227.
Levine, Franklin R., to American Photocopy Equipment Co. Document transport for photocopy machine. 3,351,340, 11-7-67, Cl. 271—51.
Levinson, Louis E., and R. H. Shape, to Intercontinental Mfg. Co., Inc. Forming apparatus and methods. 3,350,906, 11-7-67, Cl. 72—37.
Levy, Saul Y., to Radio Corp. of America. Computer system employing specialized instruction execution units. 3,351,918, 11-7-67, Cl. 340—172.5.
Lewis, Donald E., and D. A. Biesecker. Pilot operated piston valve. 3,351,316, 11-7-67, Cl. 251—30.
Lewis, James M.: *See—*
    Sprague, Robert H., Stewart, and Lewis. 3,351,467.

- Lexington Laboratories Inc.: *See—*
  - Kingery, William D., and Waugh. 3,351,688.
- Ley, Kurt: *See—*
  - Oertel, Harald, Ley, Rinke, and Thoma. 3,351,608.
- Li, Eric F.-C.: *See—*
  - Ming, Yip, Li, and Cheng. 3,351,723.
- Li, Yao-tzu. Mass flow meter. 3,350,936, 11-7-67, Cl. 73—194.
- Libby, Hugo L., to United States of America, Atomic Energy Commission. Graphical nulling device for nondestructive eddy current testing equipment. 3,351,852, 11-7-67, Cl. 324—40.
- Libbey-Owens-Ford Glass Co.: *See—*
  - Ryan, Joseph D. 3,351,518.
- Licentia Patent-Verwaltungs-G.m.b.H.: *See—*
  - Gotz, Elmar, and Boese. 3,351,746.
  - Kramer, Djordje. 3,351,905.
  - Steimel, Karl. 3,351,793.
- Liechti, Peter: *See—*
  - Siegrist, Adolf E., Maeder, Liechti, and Guglielmetti. 3,351,591.
  - Siegrist, Adolf E., Maeder, Liechti, and Guglielmetti. 3,351,592.
- Lilly, Eli, and Co.: *See—*
  - Chamberlin, James W. 3,351,596.
  - Higgins, Harvey M., Jr. 3,351,597.
- Lincoln, Joseph A., to Midland-Ross Corp. Method of reducing carbon deposits on surfaces in contact with carbonaceous gases and subjected to elevated temperatures. 3,351,684, 11-7-67, Cl. 263—52.
- Lincoln, Seamon A., and G. M. Ort, to A. B. Dick Co. Composition for treatment of imaged lithographic masters and methods of use. 3,351,008, 11-7-67, Cl. 101—149.2.
- Lindsay, Kenneth W., R. Bornn, and B. W. Ensmann, to Ideal Toy Corp. Limb member for a doll. 3,350,812, 11-7-67, Cl. 46—161.
- Lindsay Wire Weaving Co., The: *See—*
  - Butler, Clarence A., and Lazzaro. 3,351,205.
- Lindsey, Joe P.: *See—*
  - Doubt, Ralph A., and Lindsey. 3,351,153.
- Linkous, Clovis E., to General Electric Co. Resettable overload switch device for use in an electrical inductive apparatus. 3,351,790, 11-7-67, Cl. 310—68.
- Linz, Robert M.: *See—*
  - Csicsatka, Antal, and Linz. 3,351,712.
- Lipman, Kenneth, and E. R. Pledger, to Westinghouse Electric Corp. Current converter with decoupling network for isolating load from commutation circuit elements. 3,351,841, 11-7-67, Cl. 321—45.
- Lipsius, Harold B.: *See—*
  - Romano, Ralph. 3,350,787.
- Little, Arthur D., Inc.: *See—*
  - Miner, Carl S., Jr., Park, and Weiss. 3,351,483.
- Litton Systems, Inc.: *See—*
  - Sawyer, Bruce A. 3,350,947.
- Lloyd, Anthony M., to Rose, Downs & Thompson Ltd. Method and apparatus for deodorizing oil. 3,350,843, 11-7-67, Cl. 55—15.
- Lo, Arthur W.: *See—*
  - Miller, James C., and Lo. 3,351,771.
- Lockheed Aircraft Corp.: *See—*
  - Bergholdt, William, and Bauer. 3,350,913.
  - Boggs, Wilburn A., Esral, and Jacobsen. 3,351,421.
  - Bridges, Thomas N., Sr. 3,350,774.
  - Brown, Albert D., and Franklin. 3,351,090.
  - Clauss, Francis J., Lavendel, and Bruce. 3,351,440.
  - Detweiler, James I. 3,350,979.
  - Ellard, James S., Jr., and Paige. 3,351,027.
  - Forsyth, Robert W. and J. P, 3,351,374.
  - Gorawski, Alfred S., and Seesselberg. 3,351,255.
  - McCoy, Artice C. 3,351,003.
  - Russell, Gordon C. 3,350,828.
- Lodder, Johannis C., to North American Philips Co. Inc. Direct voltage regulators with reduced dynamic output impedance. 3,351,848, 11-7-67, Cl. 323—22.
- Lodding, William F., and M. J. Klygis, to Continental Can Co., Inc. Dispensing closure. 3,351,242, 11-7-67, Cl. 222—189.
- Loffler, Friedrich: *See—*
  - Junkermann, Helmut, and Loffler. 3,351,668.
- Logan, Walter, and E. E. Newhall, to Bell Telephone Laboratories, Inc. Wiring machine for magnetic core boards. 3,351,102, 11-7-67, Cl. 140—93.
- Lopas, Kasimir, to Time, Inc. Approach flow system for papermaking machine. 3,351,522, 11-7-67, Cl. 162—337.
- Lopatka, Dale R.: *See—*
  - Ferdinand, Irwin J., and Lopatka. 3,351,405.
- Lorain Products Corp.: *See—*
  - Mesenhimer, Lee O. 3,351,849.
- Lorenz, Horst: *See—*
  - Brauer, Hans, and Lorenz. 3,350,965.
- Lowe, Leonard F., to The Patterson-Kelley Co., Inc. Dual temperature water heating and supply system. 3,351,130, 11-7-67, Cl. 165—39.
- Lowenthal, Hans, to Colibri Lighters Ltd. Smokers' utensils. 3,351,067, 11-7-67, Cl. 131—184.
- Lubrizol Corp., The: *See—*
  - Butler, Thomas A., and Wiese. 3,351,647.
  - Le Suer, William M. 3,351,552.
- Lucas, Gordon B., to The Richardson Co. Non-spill vent plug. 3,351,497, 11-7-67, Cl. 136—178.
- Lucas, Joseph, (Industries) Ltd.: *See—*
  - Freeman, Frank G. 3,351,098.
- Luckenbaugh, Raymond W., to E. I. du Pont de Nemours and Co. Herbicidal composition and method. 3,351,457, 11-7-67, Cl. 71—120.
- Luehrmann, William H., and N. A. Moore, to Teledyne Industries, Inc. Programmed multiple shot source system and method. 3,351,899, 11-7-67, Cl. 340—7.
- Luhdorff, Robert C.: *See—*
  - Creed, Sherman H., and Luhdorff. 3,351,112.
- Lundin, Lars O., N. O. Johansson, C. R. Svanstrom, and P. O. Gustafsson, to Aktiebolaget Bofors. Steering device for track-laying vehicles. 3,351,149, 11-7-67, Cl. 180—6.7.
- Lustig, Frank C., and C. H. Taylor, to Minnesota Mining and Mfg. Co. Automatic threader for motion picture projector. 3,351,254, 11-7-67, Cl. 226—91.
- Luttrell, Nathaniel H., Jr., to United States of America, Navy. Apparatus for determining total amplitude and total number of oscillations of waves. 3,351,856, 11-7-67, Cl. 324—99.
- Lyons, Ernest H., Jr., and R. M. Dempsey, to General Electric Co. Electrodeposition of the platinum metals. 3,351,541, 11-7-67, Cl. 204—47.
- Lytle, Walter J., to Westinghouse Electric Corp. Voltage analog to time analog converter. 3,351,931, 11-7-67, Cl. 340—347.
- MacDermid, Inc.: *See—*
  - Tsourmas, Harry K. 3,351.556.
- MacDonald, John A., to Vapor Corp. Heater. 3,351,042, 11-7-67, Cl. 122—250.
- Machate, Fred, to Teleflex Inc. Cable or conduit assembly. 3,350,959, 11-7-67, Cl. 74—501.
- Mackal, Henry H.: *See—*
  - Bogossian, Armen, and Mackal. 3,351,081.
- Macurdy, William B.: *See—*
  - Fought, Benjamin T., Macurdy, and Muir. 3,351,915.
- Madison Industries, Inc.: *See—*
  - Koppelmann, Eldo K. 3.350,762.
- Madsen, Marvin J. Lock washer. 3,351,116, 11-7-67, Cl. 151—34.
- Maeder, Arthur: *See—*
  - Jaeger, Horst, Nachbur, and Maeder. 3,351,617.
  - Toepfl, Rosemarie, and Maeder. 3,351,618.
- Maeder, Erwin: *See—*
  - Siegrist, Adolf E., Maeder, Liechti, and Guglielmetti. 3,351,591.
  - Siegrist, Adolf E., Maeder, Liechti, and Guglielmetti. 3,351 592.
- Magladry, Robert, to Martin-Marietta Corp. Hydrogen diffusion reactor control. 3,351,534, 11-7-67, Cl. 176—42.
- Magnuson, Raymond A., to Vogel-Peterson Co. Wall mounted post supported raised cabinet. 3,351,403, 11-7-67, Cl. 312—245.
- Makowsky, Herbert. Toothbrush with a divided pivotable brush. 3,350,737, 11-7-67, Cl. 15—172.
- Makrides, Alkis C., M. A. Wright, and D. N. Jewett, to Tyco Laboratories, Inc. Separation of hydrogen by permeation. 3,350,846, 11-7-67, Cl. 55—16.
- Malaker, Stephen F., and J. G. Daunt. Cryosurgical probe. 3,351,063, 11-7-67, Cl. 128—303.1.
- Malone, Robert L., and G. W. Floyd, to Ex-Cell-O Corp. Photosensitive read-out device for apertured records. 3,351,765, 11-7-67, Cl. 250—219.
- Mallina, Rudolph F., to Codman & Shurtleff, Inc. Surgical staple cartridge. 3,351,191, 11-7-67, Cl. 206—56.
- Maltby, Frederick L., and H. Reifel, to Stevens-Arnold Inc. Start-stop pulse generators. 3,351,933, 11-7-67, Cl. 340—359.
- Mann, Charles G.: *See—*
  - Collom, Donald J., and Mann. 3,351,912.
- Marc Wood Societe Anonyme pour la Promotion des Echanges Techniques Internationaux: *See—*
  - Gewiss, Lucien V. 3.351,441.
- Margolin, George D., to Front Projection Corp. Photographic apparatus. 3,350,980, 11-7-67, Cl. 88—24.
- Marinace, John C., to International Business Machines Corp. Heat sink mounting for semiconductor devices. 3,351,698, 11-7-67, Cl. 174—15.
- Maring, Blayne E., W. J. Pendy, Jr., C. H. Grimm, and J. S. Johnson, to International Business Machines Corp. Variable angle card deck support. 3,351,341, 11-7-67, Cl. 271—87.
- Marino, Anthony P., to L. Marino, Inc. Portable ballast bags. 3,351,306, 11-7-67, Cl. 244—93.
- Marino, L., Inc.: *See—*
  - Marino, Anthony P. 3,351,306.
- Mark Products Co.: *See—*
  - Hart, James W. 3,351,947.
- Marker, Chursel E.: *See—*
  - Borsattino, Vincent S., Marker, and Shalla. 3,351,945.
- Marko, Adolf R.: *See—*
  - Glenapp, Eric M., Thaler, Potor, and Marko. 3,350,794.
- Marks, Alvin M. Light polarizing structures. 3,350,982, 11-7-67, Cl. 88—24.
- Marks, William M., and J. E. Ashworth, to Dresser Industries, Inc. Split hook hoisting apparatus. 3,351,372, 11-7-67, Cl. 294—81.
- Marquette Corp.: *See—*
  - Hajicek, Frank J. 3,351,878.
- Martin, Albert R. Heat control for kiln. 3,351,331, 11-7-67, Cl. 263—40.
- Martin, Billy M.: *See—*
  - Cook, Charles R., Jr., and Martin. 3,351,775.
- Martin, Claude C.: *See—*
  - Wilkinson, Raymond C., Aleksiewicz, and Martin. 3,351,890.
- Martin, Jerry A., and H. B. Rooks, to Collins Radio Co. Dual time constant AVC circuit. 3,351,861, 11-7-67, Cl. 325—410.
- Martin, Joseph L., to New England Realty Co. Insulated piping system. 3,351,361, 11-7-67, Cl. 285—47.
- Martin-Marietta Corp.: *See—*
  - Goldsmith, Joseph, McMahan, and Byerly. 3,351,870.
  - Magladry, Robert. 3,351,534.

- Martinez, Ricardo M., to American Cyanamid Co. Recovery of molybdenite from copper-bearing ores. 3,351,193, 11-7-67, Cl. 209—3.
- Marxer, Adrian, to Ciba Corp. 1-ethyl-4,5-di-(para-methoxyphenyl)-imidazole and a salt thereof. 3,351,628, 11-7-67, Cl. 260—309.
- Maryland Capital Corp.: *See—*
  - Webb, John C. 3,351,058.
- Maryland Cup Corp.: *See—*
  - West, John B. 3,351,250.
- Maschinenfabrik Rissen G.m.b.H.: *See—*
  - Wommelsdorf, Fritz, and Schmidt. 3,351,174.
- Maschinenfabrik und Giesserei Netstal AG.: *See—*
  - Blumer, Armin. 3,350,746.
- Maschinenfabrik Vits G.m.b.H.: *See—*
  - Vits, Hilmar. 3,351,297.
- Mason, Paul B., to Polaroid Corp. Photographic apparatus for treating light-sensitive materials with a liquid. 3,350,993, 11-7-67, Cl. 95—89.
- Massachusetts Institute of Technology: *See—*
  - Rediker, Robert H. 3,351,502.
- Massey-Ferguson Ltd.: *See—*
  - Ashton, Robert, Butler, and Gullickson. 3,350,863.
  - Ashton, Robert, Butler, and Gullickson. 3,350,865.
  - Guillon, Jacques S. 3,351,313.
- Masters, John E., to Celanese Coatings Co. Mixed glycidyl derivatives of cyanuric acid and phenols. 3,351,674, 11-7-67, Cl. 260—830.
- Masterson, Earl E., to Honeywell Inc. Synchronized document reader. 3,351,744, 11-7-67, Cl. 235—61.11.
- Matsushita Electric Industrial Co., Ltd.: *See—*
  - Kimura, Shinzo, and Hosono. 3,350,997.
- Maupas, Jean-Pierre. Roller face suction box for paper making machine. 3,351,523, 11-7-67, Cl. 162—373.
- Mayer, Endre A.: *See—*
  - Datwyler, Walter F., Jr., Mayer, and Taplin. 3,351,080.
- Mayes, Nathan: *See—*
  - Green, Joseph, and Mayes. 3,351,616.
- Mayr, Robert: *See—*
  - Vetterli, Peter. 3,351,328.
- Mazzanti, Giorgio: *See—*
  - Natta, Giulio, Pregaglia, Mazzanti, and Binaghi. 3,351,613.
- McBurney, Lane F., to Hercules Inc. Polyolefins stabilized with a combination of phenols and episulfide polymers. 3,351,678, 11-7-67, Cl. 260—897.
- McCall, Hannon L. Moistening or wetting apparatus. 3,351,040, 11-7-67, Cl. 118—249.
- McClure, Christopher C., Jr. Knee brace. 3,350,719, 11-7-67, Cl. 2—22.
- McCombs, Howard L., Jr., to The Bendix Corp. Gas turbine combustion engine fuel control. 3,350,880, 11-7-67, Cl. 60—39.28.
- McConnell, Kennedy, to Interlake Steel Corp. Pallet rack construction. 3,351,212, 11-7-67, Cl. 211—177.
- McCoy, Artice C., to Lockheed Aircraft Corp. Stamping tool die matrix with movable actuating head. 3,351,003, 11-7-67, Cl. 101—18.
- McCully, Joe B.: *See—*
  - Thome, William L., Beggs, and McCully. 3,351,687.
- McCune, William J., Jr., to Polaroid Corp. Novel photographic products, processes and compositions. 3,351,470, 11-7-67, Cl. 96—77.
- McDonald, George W., to Diamond International Corp. Carton folding and filling machine. 3,350,841, 11-7-67, Cl. 53—186.
- McDonald, Robert E., and C. F. Leitten, Jr., to United States of America, Atomic Energy Commission. Method for extruding molybdenum and tungsten. 3,350,907, 11-7-67, Cl. 72—38.
- McDonnell Douglas Corp.: *See—*
  - Wolf, Horst F., and Goldsworthy. 3,351,773.
- McDuffie, James W., to Sperry Rand Corp. Hay baler. 3,351,002, 11-7-67, Cl. 100—189.
- McGraw-Edison Co.: *See—*
  - Riebs, Richard E. 3,351,814.
- McGuire, Irvin H. Light diffusion material, method of making and using same. 3,351,409, 11-7-67, Cl. 350—117.
- McGuire, Sigmund J. Packaging of sleeves. 3,351,190, 11-7-67, Cl. 206—56.
- McIlvin, Donald B., to United Shoe Machinery Corp. Quick change mold assemblies. 3,350,748, 11-7-67, Cl. 18—34.
- McIndoe, Ronald M., to Dana Corp. Control system for hydraulically actuated friction clutches. 3,351,169, 11-7-67, Cl. 192—85.
- McIntyre, Brouwer D., to Monroe Auto Equipment Co. Safety lock for cuff links. 3,350,749, 11-7-67, Cl. 24—97.
- McKee, Paul W., Jr., to E. I. du Pont de Nemours and Co. Low friction punch tool. 3,350,972, 11-7-67, Cl. 83—686.
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- McKinley, David L., to Union Carbide Corp. Metal alloy for hydrogen separation and purification. 3,350,845, 11-7-67, Cl. 55—16.
- McKirnan, Robert A., to Rambar Corp. Pressure gauge. 3,350,930, 11-7-67, Cl. 73—146.3.
- McLaggan, James R.: *See—*
  - Barradel-Smith, Richard, and McLaggan. 3,351,451.
- McLean, William B., to W. G. Finch. Controlled undersea vessel. 3,351,035, 11-7-67, Cl. 114—16.
- McMahan, William H.: *See—*
  - Goldsmith, Joseph, McMahan, and Byerly. 3,351,870.
- McNeil Corp.: *See—*
  - Cook, John F., and Wegmann. 3,351,156.
- McNulty, Thomas C., and F. J. Ziemba, to Burroughs Corp. Multiple junction semiconductor device and circuit for increasing its speed of operation by saturation prevention. 3,352,784, 11-7-67, Cl. 307—88.5.
- McQuade, Lawrence E., to National Service Industries, Inc. Dispenser having measured delivery from an outlet. 3,351,246, 11-7-67, Cl. 222—380.
- Mead Corp., The: *See—*
  - Wood, Prentice J. 3,351,263.
- Mechanical Technology Inc.: *See—*
  - Hooker, Ralph J. 3,351,394.
- Mechanische Baumwollspinnerei und Weberei Augsburg: *See—*
  - Winter, Nikolaus. 3,350,868.
- Medelsohn, Robert A., to Chrysler Corp. Regenerator seal. 3,351,127, 11-7-67, Cl. 165—9.
- Medlar, Lewis A., to Honeywell Inc. Gas detecting cell with detachable unit. 3,351,544, 11-7-67, Cl. 204—195.
- Meek, Ralph L. Scaffold trailer. 3,351,207, 11-7-67, Cl. 211—13.
- Meili, Ernst. Cross-country motor driven vehicles. 3,351,037, 11-7-67, Cl. 115—1.
- Meinen, Robert T.: *See—*
  - Erickson, Warren E., and Meinen. 3,351,175.
- Meisel, George M., to Kaiser Industries Corp. Grinding mill and method of operation. 3,351,293, 11-7-67, Cl. 241—21.
- Meitinger, Heinz: *See—*
  - Egger, Josef, and Meitinger. 3,350,873.
- Melander, Jack A., to Baldwin-Ehret-Hill, Inc. Cutting apparatus. 3,350,968, 11-7-67, Cl. 83—1.
- Melfi, Samuel T. Support of guard rails. 3,351,311, 11-7-67, Cl. 248—226.
- Melton, Donald A.: *See—*
  - Johnson, Leo J., and Melton. 3,351,839.
- Memering, Le Roy J.: *See—*
  - Schott, Stuart, and Memering. 3,350,745.
- Mendelsohn, Charles, to General Precision Inc. Method of fabrication of electrical heater. 3,350,777, 11-7-67, Cl. 29—620.
- Mendelsohn, Dorothy C., to Polaroid Corp. Photographic diffusion transfer processes utilizing a processing composition containing potassium and lithium ions. 3,351,465, 11-7-67, Cl. 96—3.
- Mentzer, Merle J., to Corn Products Co. Starch-remoistening adhesive composition. 3,351,480, 11-7-67, Cl. 106—210.
- Menzer, Alfred B., to Kemlite Corp. Light control structure. 3,351,513, 11-7-67, Cl. 161—6.
- Merck & Co., Inc.: *See—*
  - Shen, Tsung-Ying. 3,351,630.
- Merckle, Claude O., to The Danzer Metal Works Co. Raceway for electrical cables and wires adapted to retain RF energy. 3,351,699, 11-7-67, Cl. 174—35.
- Mergens, George W.: *See—*
  - Dreyfoos, Alex W., Jr., and Mergens. 3,351,707.
- Mertzweiller, Joseph K., and H. M. Tenney, to Esso Research and Engineering Co. Hydroformylation catalyst and process relating thereto. 3,351,666, 11-7-67, Cl. 260—604.
- Merz, Kenneth M., to IRC, Inc. Potentiometer. 3,351,881, 11-7-67, Cl. 338—123.
- Mesenhimer, Lee O., to Lorain Products Corp. Ferroresonant volt regulating and harmonic suppressing circuit. 3,351,849, 11-7-67, Cl. 323—45.
- Messner, Martin E.: *See—*
  - Zimmerley, Stuart R., and Messner. 3,351,423.
- Metalastik Ltd.: *See—*
  - Harrison, Reginald. 3,351,309.
  - Hirst, Archie J. 3,351,308.
- Metallgesellschaft Aktiengesellschaft: *See—*
  - Eisbold, Horst-Gunter. 3.350,849.
  - Schindling, Josef. 3.350,852.
  - Steuernagel, Walter. 3 350,850.
- Metcalf, John S., C. E. Miller, and R. C. Olney, to Olin Mathieson Chemical Corp. Biaxially oriented plastic shot shell. 3,351 014, 11-7-67, Cl. 102—43.
- Metyšova, Jiřina: *See—*
  - Protiva, Miroslav, Jílek, Metyšova, Ernest, Pelz, and Adlerova. 3,351,599.
- Metz, Jack L., to Teletype Corp. Permanent magnet erase head. 3 351,717, 11-7-67, Cl. 179—100.2.
- Metzger, Sidney H., Jr.: *See—*
  - Cross, James M., Metzger, and Campbell. 3,351,650.
- Meyer, Rudolf: *See—*
  - Leunig, Helmbert, Meyer, and Buchner. 3,350,887.
- Meyerhoff, Albert J., and H. C. Goodman, to Burroughs Corp. Current steering circuit. 3,351,924, 11-7-67, Cl. 340—174.
- Meylan, Andre, and H. Haidegger, to Felsa S.A. Device for fitting together two pieces. 3,350,768, 11-7-67, Cl. 29—271.
- Michel, Louis, Y. Poncel, and R. Patron, to Electronique Marcel Dassault. Damped suspension system. 3,351,307, 11-7-67, Cl. 248—18.
- Michels, Josephus F.: *See—*
  - Adderman, Antony M., Van Leeuwen, and Michels. 3,351,598.
- Michigan Carton Co.: *See—*
  - Hook, Charles E., and Coleman. 3,351,262.
- Micromatic Hone Corp.: *See—*
  - Czubak, Albin S. 3,350,948.
- Midgley, Melvin L., to Collins Radio Co. Ring coupled mechanical filter. 3,351,875, 11-7-67, Cl. 333—71.
- Midland-Ross Corp.: *See—*
  - Kelley, Gilbert A. 3.350,892.
  - Lincoln, Joseph A. 3.351,684.
  - Thome, William L., Beggs, and McCully. 3,351,687.
  - Ward, Mark E. 3,351,118.
- Miguel, Anthony S.: *See—*
  - Webb, James E. 3,350,926.

- Milford, Richard E., to General Electric Co. Data recording and error detection system. 3,351,919, 11-7-67, Cl. 340—172.5.
- Miller, Charles E.: *See*—
  - Metcalf, John S., Miller, and Olney. 3,351,014.
- Miller, Clinton F., Jr., and R. W. Johnson, to Johnson Ranch. Harvesting vehicle for supporting workers. 3,351,151, 11-7-67, Cl. 180—26.
- Miller, Cyril V., and D. E. Carlson, to Joslyn Mfg. and Supply Co. Electrical cable connector with cable gripping means. 3,351,703, 11-7-67, Cl. 174—75.
- Miller, David A. Receptacle with circuit breaker means. 3,351,728, 11-7-67, Cl. 200—167.
- Miller, Harmon B., to Scientific Atlanta, Inc. Container and closure. 3,351,265, 11-7-67, Cl. 229—43.
- Miller, James C., and A. W. Lo, to Radio Corp. of America. Parametric subharmonic oscillator. 3,351,771, 11-7-67, Cl. 307—88.
- Miller, Milton J., B. W. Henrikson, and C. J. Barecki, to American Seating Co. Reversible lectern stand. 3,351,402, 11-7-67, Cl. 312—233.
- Miller, Peter H. Mounting device with flexible tab for wallboard. 3,350,831, 11-7-67, Cl. 52—573.
- Miller, Phillip A., and R. J. Betschart, to FMC Corp. Confection coating apparatus. 3,351,038, 11-7-67, Cl. 118—24.
- Miller, Pickens W., Jr.: *See*—
  - Bowen, James B., and Miller. 3,351,100.
- Miller, William G., and C. A. Burt, to Communitron, Inc. Apparatus for collecting and recording data. 3,351,910, 11-7-67, Cl. 340—172.5.
- Millmaster Onyx Corp.: *See*—
  - Wakeman, Reginald L., and Coates. 3,351,652.
- Millner, Tivadar, J. Neugebauer, and L. Kerenyi, to Egyesult Izzolampa es Villamossagi Reszvenytarsasag. Tungsten incandescent body of large crystalline structure and process for its production. 3,351,436, 11-7-67, Cl. 29—182.
- Mills, King L., to Phillips Petroleum Co. Pelleting iron ore fines. 3,351,459, 11-7-67, Cl. 75—3.
- Milltronics Ltd.: *See*—
  - Hayes, Eric F. J. 3,351,294.
- Mindick, Morris: *See*—
  - Albrecht, William L., and Mindick. 3,351,561.
- Miner, Carl S., Jr., K. A. Park, and W. F. Weiss, to Arthur D. Little, Inc. Method of softening textile fabrics. 3,351,483, 11-7-67, Cl. 117—66.
- Ming, Yip, E. F.-C. Li, and Y.-C. Cheng, to Sonca Industries Ltd. Pocket flashlight having clip and switch construction. 3,351,723, 11-7-67, Cl. 200—60.
- Minnesota Mining and Mfg. Co.: *See*—
  - Creigh, Walter F. 3,351,514.
  - Lustig, Frank C., and Taylor. 3,351,254.
- Minos, Jean M.: *See*—
  - Hoch, René G., Jumelle, and Minos. 3,351,155.
- Misevich, Kenneth W., and H. M. Sullivan, to Johnson Service Co. Humidity sensing element. 3,350,941, 11-7-67, Cl. 73—336.5.
- Mitchell, Donald H. Adjustable cushion. 3,350,727, 11-7-67, Cl. 5—345.
- Mitchell, Edward C. Goose decoy. 3,350,808, 11-7-67, Cl. 43—3.
- Mitchell Engineering Ltd.: *See*—
  - Watson, Henry D., and Richardson. 3,351,041.
- Miten Corp.: *See*—
  - Moore, George F., and Beer. 3,351,453.
- Miyawaki, Sentaro. Thermobellows steam trap. 3,351,282, 11-7-67, Cl. 236—56.
- Mobay Chemical Co.: *See*—
  - Cross, James M., Metzger, and Campbell. 3,351,650.
  - Saunders, James H., and Steingiser. 3,351,676.
- Mobil Oil Corp.: *See*—
  - Hollinghurst, Ralph. 3,351,553.
  - Myers, Herbert, and Olszewki. 3,351,554.
  - Payne, John W., Sailor, and Farber. 3,351,548.
  - Romberg, Francis M. 3,351,898.
- Moe, Henry, and B. B. Lampert, to United States of America, Navy. Preparation of methylene bistetraformaltrisazine. 3,351,593, 11-7-67, Cl. 260—241.
- Moehl, Reno W., to Universal Oil Products Co. Production of attrition-resistant alumina catalyst. 3,351,567, 11-7-67, Cl. 252—466.
- Moerkens, Jozef C. to North American Philips Co., Inc. Control circuit for regulating the power supplied to a nonlinear load from a source of A.C. voltage. 3,351,810, 11-7-67, Cl. 315—194.
- Molone, James D.: *See*—
  - Kunzelman, Ronald C., and Molone. 3,351,714.
- Monge, Anton B., to General Dynamics Corp. Six-degree of freedom integrated controller. 3,350,956, 11-7-67, Cl. 74—471.
- Monowall Corp.: *See*—
  - Hughes, William L. 3,350,826.
- Monroe Auto Equipment Co.: *See*—
  - McIntyre, Brouwer D. 3,350,749.
- Monroe, James H. Method and means of improving firearm accuracy. 3,350,807, 11-7-67, Cl. 42—75.
- Monsanto Chemicals Ltd.: *See*—
  - Payne, John. 3,351,123.
- Monsanto Co.: *See*—
  - Baker, Joseph W., Chuff, and Newallis. 3,351,682.
  - Brown, Gordon E., Cox, and Kennar. 3,351,612.
  - Harris, Darrel M. 3,351,742.
- Montecatini Edison S.p.A.: *See*—
  - Fiore, Leonardo, and Possio. 3,351,614.
- Montectini Edison S.p.a.: *See*—
  - Natta, Giulio, Pregaglia, Mazzanti, and Binaghi, 3,351,613.
- Montesi, Louis J., to United States of America, Navy. Detonator. 3,351,011, 11-7-67, Cl. 102—27.
- Moore, Earl K., Jr. Free piston pneumatic arrestor and control system. 3,351,021, 11-7-67, Cl. 103—52.
- Moore, George F., and T. Beer, to Tennessee Corp. Process of manufacturing in a rotating solid bed substantially dry, solid fertilizer containing granulated ammonium phosphate. 3,351,453, 11-7-67, Cl. 71—34.
- Moore, Neil A.: *See*—
  - Luehrmann, William H., and Moore. 3,351,899.
- Moran, James R., to BellAerospa ce Corp. Hydraulic reservoir. 3,351 097, 11-7-67, Cl. 138—30.
- Moreschini, Ronald. Splash guard for toilet bowls. 3,350,722, 11-7-67, Cl. 4—1.
- Morrison, Edward. Reconstructed internal combustion engine cylinder heads and method of making same. 3,351,043, 11-7-67, Cl. 123—32.
- Morrison, Elbert F., and R. D. Joy, to Burlington Industries, Inc. Process and apparatus for making a novelty yarn. 3,350,867, 11-7-67, Cl. 57—12.
- Morrison, George W., to Western Body and Hoist Co., Inc. Trash hauling truck. 3,351,222, 11-7-67, Cl. 214—302.
- Morrison, Ralph C.: *See*—
  - Feather, Landis E., and Morrison. 3,351,693.
- Morrison, Willard L., to Union Stock Yard and Transit Co. of Chicago. Insulated enclosure. 3,351,223, 11-7-67, Cl. 220—12.
- Morse Controls, Inc.: *See*—
  - Morse, John F. 3,350,957.
- Morse, John F., to Morse Controls Inc. Transmission control le er mount. 3,350,957, 11-7-67, Cl. 74—473.
- Morse, Stanley A., to Arlo Mfg. Corp. Means for restricting and releasing the outlet of a baler. 3,350,999, 11-7-67, Cl. 100—43.
- Moss, Jack W., to Wichita Clutch Co. Thermostat safety control for air actuated clutches. 3,351,167, 11-7-67, Cl. 192—56.
- Motorola, Inc.: *See*—
  - Groth, Edward J., Jr., and Attwood. 3,351,859.
  - Kongable, Lowell S., and Walstad. 3,351,804.
  - Narud, Jan A., and Seelbach. 3,351,782.
  - Seelbach, Walter C., Cappon, De Marco, and Miller. 3,351,778.
  - Tinsley, Carl G. 3,351,846.
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- Moulton, Charles L., to United States of America. Atomic Energy Commission. Automatic digital tool-setting system. 3,350 966, 11-7-67, Cl. 82—21.
- Mount Hope Machine Co., Inc.: *See*—
  - Smith, Leo J. 3,350,933.
- Mucci, Ralph L., and A. Y. Anderson, to John R. Nalbach Engineering Co. Testing apparatus. 3,350,919, 11-7-67, Cl. 73—41.2.
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- Muir, David, III: *See*—
  - Fought, Benjamin T., Macurdy, and Muir. 3,351,915.
- Muller, Ernest, to Hydrantik G.m.b.H. Hydraulic extrusion press with improved supporting frame structure. 3,350,910, 11-7-67, Cl. 72—253.
- Muller, Richard S., and J. Conragan, to The Regents of the University of California. Piezoelectric-semiconductor, electromechanical transducer. 3,351,786, 11-7-67, Cl. 310—8.
- Müller, Robert: *See*—
  - Paasche, Fritz, Zipf, and Muller. 3,351,283.
- Muller, Wilhelm, to Richards Bros. & Sons Ltd. Method for manufacturing scissors and the like. 3,350,962, 11-7-67, Cl. 76—104.
- Mulligan, Robert J., to Anc, Inc. Sample conveyor. 3,351,177, 11-7-67, Cl. 198—40.
- Mumma, Harold J., to FMC Corp. Machine weighing and candling eggs. 3,351,145, 11-7-67, Cl. 177—12.
- Murcott, Charles E. Medication dispensing tray and support therefor. 3,351,210, 11-7-67, Cl. 211—74.
- Murphy, David J., Jr., to American Air Filter Co., Inc. Particulate fluid treating filter assembly. 3,350,861, 11-7-67, Cl. 55—484.
- Murphy, George T. (by Irene M. Murphy, executrix). Car door barricade. 3,351,122, 11-7-67, Cl. 160—368.
- Murphy, Irene M.: *See*—
  - Murphy, George T. 3,351,122.
- Murphy, James F.: *See*—
  - Amore, Charles J., and Murphy. 3,351,540.
- Murphy, John B., to Polaroid Corp. Photographic apparatus. 3,350,991, 11-7-67, Cl. 95—13.
- Murray, George E., to The Dow Chemical Co. Insulate skylight. 3,350,823, 11-7-67, Cl. 52—200.
- Murray, Maurice M., and B. H. Andrews, to Publishers' Paper Co. Transfer mechanism for web. 3,351,521, 11-7-67, Cl. 162—307.
- Muttera, William H., Jr., to W. H. Brady Co. Adhesive tape or label structure having a barrier layer. 3,351,515, 11-7-67, Cl. 161—167.
- Myers, Gordon S., and A. J. Verwijs, to American Home Products Corp. 3β-acetoxy-5α-hydroxy-17α-bromopregnane-6,20-dione. 3,351,641, 11-7-67, Cl. 260—397.4.
- Myers, Herbert, and W. F. Olszewki, to Mobil Oil Corp. Novel reaction products and organic compositions containing same. 3,351,554, 11-7-67, Cl. 252—46.6.
- Myers, Jack A., to United States of America, Navy. Air-arming impact fuze. 3,351,017, 11-7-67, Cl. 102—76.
- N.V. Maatschappy Voor Industriële Research en Ontwikkeling: *See*—
  - Glastra, Hendrik. 3,350,970.
- N.V. Nederlandsche Combinatie Voor Chemische Industrie: *See*—
  - Akkerman, Antony M., Van Leeuwen, and Michels. 3,351,598.
- Nachazel, John S., to CF & I Steel Corp. Steel reinforcer for wooden poles. 3,350,822, 11-7-67, Cl. 52—170.

- Nachbur, Hermann: *See*—
  - Jaeger, Horst, Nachbur, and Maeder. 3,351,617.
- Naftolin, Frederick. Device for collecting urine from females. 3,351,050, 11-7-67, Cl. 128—2.
- Nagy, Michael J. Spinning type fishing reel. 3,351,300, 11-7-67, Cl. 242—84.2.
- Nakamura, Naoto: *See*—
  - Kiso, Seiji, and Nakamura. 3,350,817.
- Nalbach, John R., Engineering Co.: *See*—
  - Mucci, Ralph L., and Anderson. 3,350,919.
- Nalco Chemical Co.: *See*—
  - Albrecht, William L., and Mindick. 3,351,561.
  - Chamot, Walter M. 3,351,662.
- Nance, Robert C.: *See*—
  - Barker, Thomas H., Nance, and Shine. 3,351,278.
- Narud, Jan A., and W. C. Seelbach, to Motorola, Inc. Multiple emitter transistorized logic circuitry. 3,351,782, 11-7-67, Cl. 307—88.5.
- Nassenstein, Heinrich: *See*—
  - Weisbeck, Roland, Brockes, and Nassenstein. 3,351,516.
- National Aeronautics and Space Administration: *See*—
  - Webb, James E. 3,350,926.
- National Cash Register Co., The: *See*—
  - Porter, Sigmund N. 3,351,774.
  - Walker, John C., F., III, and Booher. 3,351,004.
- National Distillers and Chemical Corp.: *See*—
  - Schott, Stuart, and Memering. 3,350,745.
- National Research Development Corp.: *See*—
  - Harris, Bryan S., and Tantram. 3,351,491.
  - Wolfe, Heinz S. 3,351,860.
- National Service Industries, Inc.: *See*—
  - McQuade, Lawrence E. 3,351,246.
- National Smelting Co. Ltd., The: *See*—
  - Belf, Leon J. 3,351,670.
- National-Standard Co.: *See*—
  - Lang, Ernest U. 3,351,302.
- Natta, Giulio, G. Pregaglia, G. Mazzanti, and M. Binaghi, to Montectini Edison S.p.A. Copolymers having polyoxymethylenic structure and a process of preparing same. 3,351,618, 11-7-67, Cl. 260—64.
- Neal, Eugene J., Jr.: *See*—
  - Jones, Arthur L., and Neal. 3,351,422.
- Neale, Denis M., to Ilford Ltd. Photographic multicolour printing. 3,350,981, 11-7-67, Cl. 88—24.
- Negra, John S., and D. M. Barclay, to Chemical Construction Corp. Production of hydrogen-rich synthesis gas. 3,351,563, 11-7-67, Cl. 252—373.
- Nelson, Arthur J. Condition responsive elevator dredge. 3,350,798, 11-7-67, Cl. 37—65.
- Nelson, Fred B., to N. A. Nelson. Casing centralizer and well bore wiper. 3,351,136, 11-7-67, Cl. 166—173.
- Nelson, Norman A.: *See*—
  - Nelson, Fred B. 3,351,136.
- Nelson, Richard P., and E. Edwards, to Armour and Co. Meat emulsion transportation method and apparatus. 3,351,178, 11-7-67, Cl. 198—1.
- Nemeth, Otto R., to Photo Electronics Corp. Resilient coupling for flywheel film drive. 3,351,258, 11-7-67, Cl. 226—13.
- Neugebauer, Jeno: *See*—
  - Millner, Tivadar, Neugebauer, and Kerenyi. 3,351,436.
- Neuman, Milton C., and R. H. Wiethoff, to FMC Corp. Fin openers for missile launcher system. 3,350,984, 11-7-67, Cl. 89—1.8.
- New England Realty Co.: *See*—
  - Martin, Joseph L. 3,351,361.
- New Jersey International Protected Metals, Inc.: *See*—
  - De Hart, Harold G. 3,351,504.
- Newallis, Peter E.: *See*—
  - Baker, Joseph W., Chupp, and Newallis. 3,351,682.
- Newhall, Edmunde E.: *See*—
  - Logan, Walter, and Newhall. 3,351,102.
- Newman, Peter C., to North American Philips Co. Inc. Optoelectronic semiconductor with improved emitter-region. 3,351,827, 11-7-67, Cl. 317—235.
- Newman, Peter C.: *See*—
  - Beale, Julian R. A., Beer, and Newman. 3,351,828.
- Newman, William M., and G. A. Forster, to Davy and United Instruments Ltd. Control systems. 3,351,218, 11-7-67, Cl. 212—39.
- Nielsen, Erik J.: *See*—
  - Parris, Thomas, and Nielsen. 3,351,893.
- Nielsen, Soeren S.: *See*—
  - Shinn, Jeffrey N., Nielsen, and O'Connor. 3,351,498.
- Niemoller, Arthur B., to Westinghouse Electric Corp. Isolated phase bus structure. 3,351,705, 11-7-67, Cl. 174—99.
- Nihon Denshi Kabushiki Kaisha: *See*—
  - Tanaka, Kazumitsu. 3,351,731.
- Nisenbaum, Philip: *See*—
  - Sassen, Bernard, Nisenbaum, and Young. 3,351,217.
- Nishimura, Seitchi: *See*—
  - Nishioka, Kunio, Nishimura, and Kato. 3,351,337.
- Nishioka, Kunio, S. Nishimura, and S. Kato, to Summimoto Metal Industries Ltd. Air spring. 3,351,337, 11-7-67, Cl. 267—65.
- Nitsch, Edward J.: *See*—
  - Stube, Frederick F., and Nitsch. 3,351,751.
- Noe, Harold C., to Haggar Mills Div. of I. Zendman Inc. Guide bar lapping mechanism for warp knitting machines. 3,350,901, 11-7-67, Cl. 66—86.
- Nolan, John L., to Hollister Inc. Drainage pouch for postsurgical use. 3,351,061, 11-7-67, Cl. 128—283.
- Nold, James J.: *See*—
  - Ryan, Jack D., Nold, and Hughes. 3,351,444.
- Nolte, Albert C., Jr., to Elton Industries, Inc. Vehicle detecting system and dual purpose mirror arrangement therefor. 3,351,935, 11-7-67, Cl. 343—5.
- North American Aviation, Inc.: *See*—
  - Johnson, Leo J., and Melton. 3,351,839.
- North Electric Co.: *See*—
  - Hunter, L. 3,351,838.
- North American Philips Co. Inc.: *See*—
  - Bongenaar, Willem. 3,351,772.
  - Beale, Julian R. A., Beer, and Newman. 3,351,828.
  - Chermin, Hubertus M. J. 3,351,807.
  - Henenkamp, Theodorus. 3,351,779.
  - Klinkhamer, Jacob F. 3,351,908.
  - Koopman, Harmannus, and Daams. 3,351,456.
  - Lodder, Johannis C. 3,351,848.
  - Moerkens, Jozef C. 3,351,810.
  - Newman, Peter C. 3,351,827.
  - Pahlman, Kurt. 3,351,730.
  - Riemens, Karel. 3,351,863.
  - Swift, Peter. 3,351,872.
  - Van Lammeren, Johannes A., Barnier, Koorneef, and Bos. 3,351,925.
- Northern Electric Co. Ltd.: *See*—
  - Park, Jacob J. H. 3,351,824.
- Noruk, Frank A. Mounting bracket for revolving warning light for vehicles. 3,351,904, 11-7-67, Cl. 340—97.
- Novotny, Charles J.: *See*—
  - Zievers, James F., Riley, and Novotny. 3,351,488.
- Nowell, William, and A. C. England. Circle cutting machine. 3,351,332, 11-7-67, Cl. 266—23.
- Noznick, Peter P., and C. W. Tatter, to Beatrice Foods Co. Wheat gluten-encapsulated dried oil-in-water dispersions of fat-soluble food, medicaments, flavoring agents or food coloring agents. 3,351,531, 11-7-67, Cl. 167—83.
- Nutting, Arthur, to American Air Filter Co., Inc. Modular support frame and filter media assembly. 3,350,862, 11-7-67, Cl. 55—493.
- Oakes, Vincent, to Pure Chemicals Ltd. Vinyl chloride polymers stabilized with mixtures comprising barium and cadmium soaps of monoesters of dicarboxylic acids. 3,351,576, 11-7-67, Cl. 260—23.
- O'Connell, William A.: *See*—
  - Hackett, John A., and O'Connell. 3,351,713.
- O'Connor, John J.: *See*—
  - Shinn, Jeffrey N., Nielsen, and O'Connor. 3,351,498.
- O'Connor, William: *See*—
  - Stein, Wolfgang J., and O'Connor. 3,351,304.
- Oechslin, Konrad, to Wyss, Escher, Aktiengesellschaft. Shaft seal for a thermal machine. 3,351,396, 11-7-67, Cl. 308—36.3.
- Oertel, Harold, K. Ley, H. Rinke, and W. Thoma, to Farbenfabriken Bayer Aktiengesellschaft. Stabilized polyurethanes. 3,351,608, 11-7-67, Cl. 260—45.9.
- Officine Meccaniche Cigardi S.p.A.-O.M.C.S.A.: *See*—
  - Giuiuzza, Pietro. 3,350,870.
- Ogborn, James M.: *See*—
  - Hutton, Harry T., Goetjen, and Ogborn. 3,351,284.
- Ogura, Takashi, T. Ueda, and K. Yasuda, to Agency of Industrial Science and Technology. Liquid pressure bulge forming apparatus. 3,350,905, 11-7-67, Cl. 72—28.
- Ohio Brass Co., The: *See*—
  - Herbert, Donald L. 3,351,214.
- Ohlsson, Olof B. Device for production of sheet metal objects of truncated cone shape. 3,350,914, 11-7-67, Cl. 72—393.
- Ohren, Tom H.: *See*—
  - Almstead, James L., Greeb, and Ohren. 3,351,557.
- Okuda, Naoki: *See*—
  - Arikawa, Masayasu, Okuda, and Kano. 3,351,734.
- Oldershaw, Charles F., and J. F. Valle-Riestra, to The Dow Chemical Co. Electrolytic chlorination and pH control of swimming pool water. 3,351,542, 11-7-67, Cl. 204—149.
- Olin Mathieson Chemical Corp.: *See*—
  - Amore, Charles J., and Murphy. 3,351,540.
  - Cope, Louis T. 3,350,890.
  - Metcalf, John S., Miller, and Olney. 3,351,014.
  - Murphy, James F., and Amore. 3,351,540.
- Olinkraft, Inc.: *See*—
  - Schuster, Richard L. 3,351,230.
- Olney, Roy C.: *See*—
  - Metcalf, John S., Miller, and Olney. 3,351,014.
- Olsen, Emil A. Method of manufacturing chain saw cutter bars. 3,350,770, 11-7-67, Cl. 29—475.
- Olsen, Robert C., and F. O. Stahlhut, to United States of America, Navy. Pulse repetition interval correlation detector. 3,351,939, 11-7-67, Cl. 343—17.1.
- Olson, Carl O., Jr., to United States of America, Navy. Short microwave pulse generator. 3,351,869, 11-7-67, Cl. 331—77.
- Olson, John E., to Hyster Co. Vacuum barrel handlers. 3,351,370, 11-7-67, Cl. 294—64.
- Olson, Rudolph E.: *See*—
  - Hawkinson, Raymond P., and Olson. 3,351,117.
- Olszewki, William F.: *See*—
  - Myers, Herbert, and Olszewki. 3,351,554.
- Olympia Werke AG.: *See*—
  - Heuer, Hans. 3,351,740.
- Orkney, John C.: *See*—
  - Orkney, John C., Jr. and J. C. 3,350,934.
- Orkney, John C., Jr. and J. C. Apparatus for use in measuring the hydraulic efficiency of fluid machines, such as pumps. 3,350,934, 11-7-67, Cl. 73—168.
- Orr, Jack P.: *See*—
  - Gutman, Arnold D., and Orr. 3,351,680.
- Ort, George M.: *See*—
  - Lincoln, Seamon A., and Ort. 3,351,008.
- Ortega, Robert. Measured-quantity intermittent-action dispenser for a particulate material. 3,351,237, 11-7-67, Cl. 222—23.
- Ortwein, Norman R., and C. A. Potter, to United States of America, Navy. Microwave transhorizon broadcast radio system. 3,351,940, 11-7-67, Cl. 343—100.

- Osdene, Thomas S.: *See—*
  - Santilli, Arthur A., and Osdene. 3,351,659.
- O'Sullivan, Bryan J., and R. R. Smyth, to Technical Operations Inc. A.C. power system having D.C. driven standby power supply. 3,351,770, 11–7–67, Cl. 307—64.
- Otsuka, Hideo: *See—*
  - Koike, Eiji, Kanazaqa, and Otsuka. 3,351,580.
- Ott, Gustav: *See—*
  - Preininger, Erich, and Ott 3,351,610.
- Owen, Bernard D., S. W. Smith, and A. H. B. Swan, to The British Oxygen Co. Ltd. Profile cutting machine. 3,351,333, 11–7–67, Cl. 266—23.
- Owen, Charles E., to International Business Machines Corp. Analog sample and hold circuit. 3,351,837, 11–7–67, Cl. 320—1.
- Owenby, Frank C.: *See—*
  - Spinks, Sam, and Owenby. 3,351,184.
- Owens-Illinois, Inc.: *See—*
  - Curto, Nicholas J., and Henry. 3,351,694.
  - Hagedorn, Erwin C., and Hall. 3,351,474.
- Owens-Illinois Inc.: *See—*
  - Hagedorn, Erwin C., and Hall. 3,351,475.
  - Wyman, James H. 3,351,198.
- Owens-Johnson Shearing Blade Corp.: *See—*
  - Hammonds, Eddie R. 3,351,108.
- Owens, William H., to Pittsburgh Plate Glass Co. Method of recovering zirconium and hafnium. 3,351,425, 11–7–67, Cl. 23—23.
- Oxley, James E.: *See—*
  - Wallack, Stanley, Alexander, and Oxley. 3,351,015.
- P.S.C. Equipment Ltd.: *See—*
  - Harvey, John T. C. 3,351,320.
- Paasche, Fritz, C.-H. Zipf, and R. Müller, to Franz Clouth Rheinische Gummiwarenfabrik Aktiengesellschaft. Sound-absorbent railway track. 3,351,283, 11–7–67, Cl. 238—283.
- Packard, Harry R.: *See—*
  - Hogan, Clark H., and Packard. 3,351,226.
- Padberg, Louis R., Jr., to United States of America, Navy. Visual and acoustic energy generator for underwater use. 3,351,901, 11–7–67, Cl. 340—12.
- Padberg, Louis R., Jr. Underwater sound source. 3,351,902, 11–7–67, Cl. 340—12.
- Page Edward, to M. Greenberg's Sons. Interlocking joint. 3,351,366, 11–7–67, Cl. 287—189.36.
- Page, Robert M. Radio way-following system. 3,351,941, 11–7–67, Cl. 343—107.
- Pahlman, Kurt, to North American Philips Co. Inc. Energy seal for microwave ovens. 3,351,730, 11–7–67, Cl. 219—10.55.
- Paige, Bruce A.: *See—*
  - Ellard, James S., Jr., and Paige. 3,351,027.
- Paoli, Alexander D., to Esso Research and Engineering Co. Jettison system for discharging fluid from a ship at sea. 3,351,036, 11–7–67, Cl. 114—183.
- Papp, Stephen J. Game ball and tethering means therefor. 3,351,343, 11–7–67, Cl. 273—26.
- Park, Jacob J. H., to Northern Electric Co. Ltd. Constant current device. 3,351,824, 11–7–67, Cl. 317—234.
- Park, Jerald L., and N. L. Lagasse, to Avco Corp. Combination roller and ball radial bearing. 3,351,398, 11–7–67, Cl. 308—177.
- Park, Kathryn A.: *See—*
  - Miner, Carl S., Jr., Park, and Weiss. 3,351,483.
- Park, Robert O., to Baker Oil Tools, Inc. Rotary expansible drilling apparatus with centrifugally operated latch. 3,351,144, 11–7–67, Cl. 175—269.
- Parker-Hannifin Corp.: *See—*
  - Elbogen, James S., and De Graaf. 3,351,094.
- Parker, James B.: *See—*
  - Grigor, James, Parker, and Currie. 3,351,506.
- Parris, Chester L.: *See—*
  - Hauptschein, Murray, and Parris. 3,351,644.
- Parris, Thomas, and E. J. Nielsen, to Square D Co. One piece terminal block. 3,351,893, 11–7–67, Cl. 339—198.
- Patch, Robert J.: *See—*
  - Moulthrop, Le Roy E. 3,351,106.
- Patent-Treuhand-Gesellschaft fur elektrische: *See—*
  - Bauer, Arnold. 3,351,798.
  - Eckhardt, Klaus, and Bachmann. 3,351,797.
- Paton, Hamilton N. K. Internal membrane material discharging device for containers. 3,351,235, 11–7–67, Cl. 222—1.
- Patron, Raymond: *See—*
  - Michel, Louis, Poncel, and Patron. 3,351,307.
- Patterson-Kelley Co., Inc., The: *See—*
  - Lowe, Leonard F. 3,351,130.
- Payne, John, to Monsanto Chemicals Ltd. Mold and process of coating foamed pattern with refractory filler in silicon-containing binder. 3,351,123, 11–7–67, Cl. 164—34.
- Payne, John W., R. A. Sailor, and J. Farber, to Mobil Oil Corp. Cracking with catalyst having controlled residual coke. 3,351,548, 11–7–67, Cl. 208—120.
- Peacock Brothers Ltd.: *See—*
  - Stonely, Donald R. 3,350,820.
- Pechiney Compagnie de Produits Chimiques et Electrometallurgiques: *See—*
  - Chambran, Jacques, Scalliet, and Duclaux. 3,351,546.
- Peltola, Veikko K., to Alnor Instruments, Division, Illinois Testing Laboratories. Ultrasonic pyrometer. 3,350,942, 11–7–67, Cl. 73—339.
- Pelton & Crane Co., The: *See—*
  - Jones, Arthur L., and Neal. 3,351,422.
- Pelz, Karel: *See—*
  - Protiva, Miroslav, Jilek, Metysova, Ernest, Pelz, and Adlerova. 3,351,599.
- Pendy, William J., Jr.: *See—*
  - Maring, Blayne E., Pendy, Grimm, and Johnson. 3,351,341.
- Pennsalt Chemicals Corp.: *See—*
  - Hauptschein, Murray, and Inman. 3,351,643.
  - Hauptschein, Murray, and Parris. 3,351,644.
- Perr, Julius P., to Cummins Engine Co., Inc. Fuel injector. 3,351,288, 11–7–67, Cl. 239—89.
- Perry, Glen W.: *See—*
  - Clark, Bob R., and Perry. 3,351,356.
- Perry, Joseph F., and K. A. Stevens. Onion peeler. 3,350,778, 11–7–67, Cl. 30—24.
- Perry, Kenneth E., to Geodyne Corp. Stepping circuits for recording apparatus. 3,351,951, 11–7–67, Cl. 346—107.
- Perry, Kenneth P.: *See—*
  - Caldwell, John R., Perry, and Jackson. 3,351,645.
- Persson, Ake B.: *See—*
  - Tillander, Magnus E., Persson, and Johansson. 3,351,025.
- Persson, Bo K. G., to Trelleborgs Gummifabriks Aktiebolag. Walls exposed to wear. 3,350,832, 11–7–67, Cl. 62—622.
- Persson, Karl R., to Sprinter-Pack AB. Multi-cell trays. 3,351,261, 11–7–67, Cl. 229—28.
- Pet Inc.: *See—*
  - Finley, Roy D., and Hollowell. 3,351,472.
- Peterson, Adolphe C. Apparatus for convective distillation of materials in solution with hot gas produced by combustion. 3,351,537, 11–7–67, Cl. 202—172.
- Petro-Tex Chemical Corp.: *See—*
  - Kerr, Ralph O. 3,351,565.
- Petrozziello, Michael A., to Johnson & Johnson. Apparatus for transporting and folding a collagen casing. 3,351,338, 11–7–67, Cl. 270—79.
- Petterson, Tor. Pressure sensitive adhesive tape applicator. 3,351,511, 11–7–67, Cl. 156—527.
- Phillips, Charles T.: *See—*
  - Smith, Walter K., Jr., and Phillips. 3,350,830.
- Phillips, Irvine L., and D. B. Scott, to Soilserv, Inc. Planting method. 3,351,031, 11–7–67, Cl. 111—1.
- Phillips Petroleum Co.: *See—*
  - Bresson, Clarence R. 3,351,664.
  - Bridenstine, Orville J. 3,351,229.
  - Collie, Stafford D. 3,351,227.
  - Doubt, Ralph A., and Lindsey. 3,351,153.
  - Drehman, Lewis E., and Hepp. 3,351,547.
  - Halkiades, George. 3,351,084.
  - Mills, King L. 3,351,459.
  - Walker, Darrell W., and Czenkusch. 3,351,623.
  - Wheat, Robert C. 3,351,606.
- Photo Electronics Corp.: *See—*
  - Dreyfoos, Alex W., Jr., and Mergens. 3,351,707.
  - Nemeth, Otto R. 3,351,253.
- Pickford, Edward V.: *See—*
  - Hirsch, Arthur E., Whitten, and Pickford. 3,351,314.
- Pierce, Norwin C., and C. E. Reese, to E. I. du Pont de Nemours and Co. Yarn blend. 3,350,871, 11–7–67, Cl. 57—140.
- Pierce, Robert H.: *See—*
  - Adkins, Harold T., and Pierce. 3,351,762.
- Pietrusza, Edward W.: *See—*
  - Barton, Oliver A., and Pietrusza. 3,351,677.
- Pike, John W., to Struthers Scientific and International Corp. Freeze concentration process. 3,350,891, 11–7–67, Cl. 62—58.
- Pilkington Bros, Ltd.: *See—*
  - Barradell-Smith, Richard, and McLaggan. 3,351,451.
  - Lawrenson, Jack. 3,351,447.
  - Pilkington, David F., and Dickinson. 3,351,446.
  - Robinson, Albert S. 3,351,452.
  - Silverwood, Frederick W. 3,351,450.
- Pilkington, David F., and G. A. Dickinson, to Pilkington Bros. Ltd. Method and apparatus for vertically drawing glass from a molten metal bath. 3,351,446, 11–7–67, Cl. 65—65.
- Pine, Buddie J., to General Electric Co. Memory system including means for selectively altering or not altering restored data. 3,351,913, 11–7–67, Cl. 340—172.5.
- Pircio, Anthony W., and C. S. Krementz, to Bristol-Myers Co. Compositions and method for stimulating the central nervous system. 3,351,528, 11–7–67, Cl. 167—65.
- Pistey, John M., to General Electric Co. Snap-in fluorescent lampholders with quick-connect terminals. 3,351,883, 11–7–67, Cl. 339—52.
- Pistey, John M., to General Electric Co. Lampholders for electric discharge lamps. 3 351,884, 11–7–67, Cl. 339—52.
- Pitches, Brian E., and D. Hope, to Ferranti, Ltd. Airflow direction indicators. 3,350,935, 11–7–67, Cl. 73—188.
- Pittsburgh Plate Glass Co.: *See—*
  - Achkio, Anthony A. 3,351,001.
  - Owens, William H. 3,351,425.
- Placock Bros. Ltd.: *See—*
  - Stonely, Donald R. 3,350,820.
- Plank, Edward M. Printing plate blank with elastomeric backing. 3,351,009, 11–7–67, Cl. 101—401.1.
- Plaster, Robert L., to Westinghouse Electric Corp. Controls for centrifugal compressors having spin vanes in their inlets. 3,350,897, 11–7–67, Cl. 62—209.
- Pledger, Eugene R.: *See—*
  - Lipman, Kenneth, and Pledger. 3,351,841.
- Plummer, Walter A. Laterally-engaging self-locking plastic seam assembly. 3,350,752, 11–7–67, Cl. 24—201.
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- Poland, William L., to Control Data Corp. Print hammer rapid reset means in high speed printers. 3,351,007, 11–7–67, Cl. 101—93.
- Polaroid Corp.: *See—*
  - Finelli, Patrick L., and Bing. 3,350,990.
  - Land, Edwin H. 3,351,466.
  - Mason, Paul B. 3,350,993.
  - McCune, William J., Jr. 3,351,470.
  - Mendelsohn, Dorothy C. 3 351,465.
  - Murphy, John B. 3,350,991.

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- Polyelectric Corp.: *See—*
  - Kohler, Fred, and Rudd. 3,351,882.
- Polytechnic Institute of Brooklyn: *See—*
  - Farber, Herman, and Sucher. 3,351,806.
- Pomeroy, Laurence E. W., ½ to British Aluminium Co. Ltd. and ¼ to Technical Relations Ltd. Internal combustion engines. 3,351,044, 11–7–67, Cl. 123—41.28.
- Poncel, Yves: *See—*
  - Michel, Louis, Poncel, and Patron. 3,351,307.
- Poole, Victor D.: *See—*
  - Clark, Peter F., and Poole. 3,351,594.
- Poor, John G.: *See—*
  - Byers, Robert D., and Poor. 3,351,555.
- Porter, Sigmund N., to The National Cash Register Co. Superconducting circuits constructions employing logically related inductively coupled paths to reduce effective magnetic switching inductance. 3,351,774, 11–7–67, Cl. 307—88.5.
- Possio, Vittorio T.: *See—*
  - Fiore, Leonardo, and Possio. 3,351,614.
- Postmaster General, Her Majesty's: *See—*
  - Jowett, John K. S., and Holden. 3,351,858.
- Potor, George, Jr.: *See—*
  - Glenapp, Eric M., Thaler, Potor, and Marko. 3,350,794.
- Potter, Clark A.: *See—*
  - Ortwein, Norman R., and Potter. 3,351,940.
- Potter Instrument Co., Inc.: *See—*
  - Potter, John T., and Cohen. 3,351,166.
- Potter, John T., and G. D. Cohen, to Potter Instrument Co., Inc. High speed instrument clutch. 3,351,166, 11–7–67, Cl. 192—21.5.
- Potteries Motor Traction Co. Ltd., The: *See—*
  - Jones, Ronald C. L. 3,350,821.
- Powell, Daniel R. Leader pin assembly for die sets. 3,351,392, 11–7–67, Cl. 308—5.
- Powell, Earl B.: *See—*
  - Faatz, Albert C., Jr., and Powell. 3,351,564.
- Pratt, James S., to Purex Corp., Ltd. Scouring pad. 3,350,735, 11–7–67. Cl. 15—104.94.
- Precision Processes (Textiles) Ltd.: *See—*
  - Fell, Eric T., Fox, and Burgis. 3,351,419.
- Pregaglia, Gianfranco: *See—*
  - Natta, Giulio, Pregaglia, Mazzanti, and Binaghi. 3,351,613.
- Preininger, Erich, and G. Ott, to Ciba Ltd. Curable compositions containing a 1,2-epoxy compound and a ditertiary cycloaliphatic amine. 3,351,610, 11–7–67, Cl. 260—47.
- Prevost, Alfred L.: *See—*
  - Levine, Charles A., and Prevost. 3,351,487.
- Price, Frank B.: *See—*
  - Silver, Harold F., Steele, and Price. 3,351,295.
- Price, Herbert P., to Celanese Coatings Co. Process for preparing composite epoxide resins. 3,351,673, 11–7–67, Cl. 260—830.
- Principe, Pacifico A.: *See—*
  - Diassi, Patrick A., and Principe. 3,351,640.
- Procedyne Corp.: *See—*
  - Staffin, Herbert K. 3,350,015.
- Procter & Gamble Co., The: *See—*
  - Almstead, James L., Greeb, and Ohren. 3,351,557.
  - Zimmerer, Roger E. 3,351,558.
- Pro-Putt, Inc.: *See—*
  - Robinette, George H. 3,351,345.
- Protiva, Miroslav, J. Jílek, J. Metyšová, I. Ernest, K. Pelz and E. Adlerová, to SPOFA, Spojene podniky pro zdravotnickou vyrobu. 10,11-dihydro dibenzo[b,f]thiepins. 3,351,599, 11–7–67, Cl. 260—268.
- Prox, Frank, Co., Inc.: *See—*
  - Prox, Robert F., Jr. 3,351,386.
- Prox, Robert F., Jr., to Frank Prox Co., Inc. Retainer for coal cutter bits. 3,351,386, 11–7–67, Cl. 299—92.
- Publishers' Paper Co.: *See—*
  - Murray, Maurice M., and Andrews. 3,351,521.
- Purdum, Cary, and H. W. Gibney, to Aeronca, Inc. Method of forming an image in a plastic surface. 3,351,692, 11–7–67, Cl. 264—132.
- Pure Chemicals Ltd.: *See—*
  - Oakes, Vincent. 3,351,576.
- Purex Corp., Ltd.: *See—*
  - Pratt, James S. 3,350,735.
- Pye Ltd.: *See—*
  - Ingerfield, Maurice E., and Howells. 3,351,092.
- Quigley Co., Inc.: *See—*
  - Demaison, Raymond J. 3,351,289.
  - Demaison, Raymond J. 3,351,460.
- Quirk, Robert F.: *See—*
  - Butler, Keith H., Thomas, and Quirk. 3,351,194.
- Qvarnstrom, Birger A. E., to Aktiebolaget Bofors. Stabilising device for a control system. 3,351,829, 11–7–67, Cl. 318—18.
- Raab, Harry F., Jr., M. J. Galper, D. H. Jones, G. H. Conley, and W. H. Hannum, to United States of America, Atomic Energy Commission. Seed-blanket converter-recycle breeder reactor. 3,351,532, 11–7–67, Cl. 176—17.
- Racki, Vladimir: *See—*
  - Starp, Franz W. R., and Racki. 3,350,992.
- Radio Corp. of America: *See—*
  - Cochran, Larry A., and Konkel. 3,351,709.
  - Gray, George W. 3,351,938.
  - Johnson, Floyd I. 3,351,781.
  - Kelly, Gordon E. 3,351,708.
  - Levy, Saul Y. 3,351,918.
  - Miller, James C., and Lo. 3,351,771.
- Raether, Marvin C.: *See—*
  - Grimes, Patrick G., and Raether. 3,351,434.
- Rambar Corp.: *See—*
  - McKirnan, Robert A. 3,350,930.
- Ramaden, Hugh E., and J. E. Engelhart, to Esso Research and Engineering Co. Magnesium and tin derivatives of styrenes and the preparation thereof. 3,351,646, 11–7–67, Cl. 260—429.7.
- Rank Organisation Ltd., The: *See—*
  - Rawstron, George O., and Foster. 3,350,785.
- Rank Precision Industries Ltd., trading as The Rank Taylor Hobson Division, Rank Organisation: *See—*
  - Chapman, Alan. 3,351,411.
- Ranseen, Agnes J.: *See—*
  - Banning, Thomas A., Jr., and Ranseen. 3,351,718.
- Ranseen, Emil L.: *See—*
  - Banning, Thomas A., Jr., and Ranseen. 3,351,718.
- Rapoza, Edward J., to General Precision Inc. Electromechanical actuation apparatus. 3,350,949, 11–7–67, Cl. 74—127.
- Raue, Roderich, to Farbenfabriken Bayer Aktiengesellschaft. Synthetic textiles brightened with 3-phenyl-7-hydroxycoumarin. 3,351,482, 11–7–67, Cl. 117—33.5.
- Raue, Roderich: *See—*
  - Brack, Alfred, and Raue. 3,351,600.
- Raulins, George M.: *See—*
  - Clark, Earnest H., Jr., and Raulins. 3,351,133.
- Rautiola, Norman A.: *See—*
  - Fielder, William S., Rautiola, and Diebel. 3,351,445.
- Rawlins, David J.: *See—*
  - Singley, Alfred D., and Rawlins. 3,351,252.
- Rawstron, George O., and M. J. Foster, to The Rank Organisation Ltd. Apparatus for testing the diameter of a cylindrical surface. 3,350,785, 11–7–67, Cl. 33—178.
- Ray, Kenneth B.: *See—*
  - Carter, James S. F. 3,350,839.
- Raybestos-Manhattan, Inc.: *See—*
  - Goble, William C. 3,351,724.
- Raynor, Ray: *See—*
  - Johnson, Carlton R., and Raynor. 3,350,931.
- Readybough, Peter A., to Bostitch, Inc. Fluid actuated driving apparatus. 3,351,256, 11–7–67, Cl. 227—130.
- Reboux, Jean: *See—*
  - Gayet, Bernard, Holder, Kurka, Reboux, and Trouve. 3,351,686.
- Record-A-Punch Corp.: *See—*
  - Wolfe, David F. 3,351,950.
- Rediker, Robert H., to Massachusetts Institute of Technology. Method of producing interface-alloy epitaxial heterojunctions. 3,351,502, 11–7–67, Cl. 148—177.
- Reese, Cecil E.: *See—*
  - Pierce, Norwin C., and Reese. 3,350,871.
- Regina Corp., The: *See—*
  - Verhagen, Edward L. 3,350,858.
- Rehrig Pacific Co.: *See—*
  - Hnisman, George R. 3,351,228.
- Reich, Karl M., Maschinenfabrik: *See—*
  - Reich, Kurt, and Cast. 3,351,257.
- Reich, Kurt, and A. Cast, to Karl M. Reich Maschinenfabrik. Pneumatic nailing machine. 3,351,257, 11–7–67, Cl. 227—130.
- Reifel, Harry: *See—*
  - Maltby, Frederick L., and Reifel. 3,351,933.
- Reifers, Richard F., to Diamond International Corp. Molded pulp article. 3,351,266, 11–7–67, Cl. 229—43.
- Reinker, Gerald E., to General Electric Co. Container for molten fused silica. 3,351,334, 11–7–67, Cl. 266—24.
- Renish, Robert L. Capping machine. 3,350,842, 11–7–67, Cl. 53—316.
- Republic Foil, Inc.: *See—*
  - Hooper, William K. 3,351,442.
- Republic Steel Corp.: *See—*
  - Coy, Gerald R. 3.350,925.
- Resnick, William, and M. Avriel, to Technion Research and Development Foundation, Ltd. Method of fractionating mixtures of particulate solid materials. 3,351,202, 11–7–67, Cl. 209—474.
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- Revell, Alan E., to American Air Filter Co., Inc. Media support arrangement for roll-type filter apparatus. 3,350,856, 11–7–67, Cl. 55—354.
- Revlon, Inc.: *See—*
  - Frangos, John. 3,351,247.
- Rexall Drug and Chemical Co.: *See—*
  - Alberts, James R., and Hawley. 3,351,326.
- Reynolds, Fred S.: *See—*
  - Dougan, John L., and Reynolds. 3,351,132.
- Reynolds Metals Co.: *See—*
  - Lee, Harry W., Jr. 3,351,259.
- Reynolds, Wiley E., Jr.: *See—*
  - Kennedy, Carl E., and Reynolds. 3,351,243.
- Rezansoff, Cecil. Envelope. 3,351,269, 11–7–67, Cl. 229—75.
- Rheinmetall, G.m.b.H., Firma: *See—*
  - Schaadt, Franz, and Weber. 3,351,019.
- Rich, Theodore A., to General Electric Co. Apparatus for determining aerosol particle size comprising a combined diffuser-denuder. 3,351,759, 11–7–67, Cl. 250—83.6.
- Richards Bros. & Sons Ltd.: *See—*
  - Muller, Wilhelm. 3,350,962.
- Richards, Roy, A. M. Wagner, and G. C. Ward; said Wagner assor. to Western Electric Co., Inc. and said Richards and Ward assors. to Southwire Co. Inc. Casting wheel apparatus. 3,351,126, 11–7–67, Cl. 164—278.
- Richardson Co., The: *See—*
  - Lucas, Gordon B. 3,351,497.

- Richardson, Edward C.: *See*—
  - Watson, Henry D., and Richardson. 3,351,041.
- Richardson, Henry M., A. C. Alberghini, F. E. Wiley, and W. S. Larson, to The Youngstown Sheet and Tube Co. Method of making a reinforced hollow plastic article wrapped tapes of fibrous material. 3,351,509, 11–7–67, Cl. 156—195.
- Richter, John F., to United States of America, Navy. Cathode cylinder having a heater member supported by a plurality of flexible metal bands. 3,351,801, 11–7–67, Cl. 313—270.
- Ridge Rock Industries, Inc.: *See*—
  - Sugar, Ben L. 3,350,827.
- Riebs, Richard E., to McGraw-Edison Co. Electronic time delay devices. 3,351,814, 11–7–67, Cl. 317—36.
- Riemens, Karel, to North American Philips Co. Inc. Adjustable damping network. 3,351,863, 11–7–67, Cl. 328—171.
- Rifkin, Morton S. Panel guide structure for tub enclosures and the like. 3,350,739, 11–7–67, Cl. 16—90.
- Riley, Clay W.: *See*—
  - Zievers, James F., Riley, and Novotny. 3,351,488.
- Rillo, Nicholas J. Wallboard corner construction and method. 3,350,825, 11–7–67, Cl. 52—288.
- Rinke, Heinrich: *See*—
  - Oertel, Harald, Ley, Rinke, and Thoma. 3,351,608.
- Rittenhouse, Howard E., and S. L. Wood, to Rockwell Mfg. Co. Turbine flowmeter. 3,350,938, 11–7–67, Cl. 73—231.
- Robb, Walter L., to General Electric Co. Process for the separation or enrichment of gases. 3,350,844, 11–7–67, Cl. 55—16.
- Robb, Walter L., to General Electric Co. Separation apparatus and method for its operation. 3,351,203, 11–7–67, Cl. 210—65.
- Roberts, Francis P.: *See*—
  - Bray, Lane A., and Roberts. 3,351,424.
- Robinette, George H., to Pro-Putt, Inc. Golf putting practice device. 3,351,345, 11–7–67, Cl. 273—176.
- Robinson, Albert S., to Pilkington Bros. Ltd. Apparatus for supporting a ribbon of glass on a molten metal bath with glass ribbon heel flow means. 3,351,452, 11–7–67, Cl. 65—182.
- Robinson, Phillip W.: *See*—
  - Dillon, Chadburn L., and Robinson. 3,350,836.
- Robinson, William J.: *See*—
  - Guyer, Reynolds W., Jr., and Robinson. 3,350,804.
- Rockwell Mfg. Co.: *See*—
  - Rittenhouse, Howard E., and Wood. 3,350,938.
- Rodaway, Bruce K., and K. O. Calvert, to Dunlop Rubber Co., Ltd. Stabilization of rubber articles by treatment with inorganic peroxygenated compounds. 3,351,570, 11–7–67, Cl. 260—2.5.
- Rodrigues, Anthony F., to Becton, Dickinson of California, Inc. Apparatus for closing a package. 3,350,838, 11–7–67, Cl. 53—86.
- Rohlfs, John H., to Wagner Electric Corp. Tandem master cylinder. 3,350,883, 11–7–67, Cl. 60—54.6.
- Rohlin, John F., to Combustion Engineering Inc. Nuclear reactor core organization and fuel assembly therefor. 3,351,533, 11–7–67, Cl. 176—40.
- Rolnick, Louis: *See*—
  - Topf, Sam B. 3,350,976.
- Romano, Ralph, 10% to H. B. Lipsius and 10% to A. H. Seidel. Placement implement for drapery hooks. 3,350,787, 11–7–67, Cl. 33—180.
- Romberg, Francis M., to Mobil Oil Corp. Marine seismic cable leakage detection. 3,351,898, 11–7–67, Cl. 340—7.
- Roof, James L., and L. L. Hire, to Westinghouse Electric Corp. Excitation system for a dynamoelectric machine. 3,351,845, 11–7–67, Cl. 322—87.
- Rooks, Howard B.: *See*—
  - Martin, Jerry A., and Rooks. 3,351,861.
- Roosa, Vernon D. Nozzle drilling machine. 3,350,963, 11–7–67, Cl. 77—32.2.
- Root, Viotti E. Combined pollen collector and entrance restriction for bee hives. 3,350,728, 11–7–67, Cl. 6—4.
- Ropiequet, Richard L., and W. C. Webber, to Alta Industries, Inc. Drawer guide. 3,351,406, 11–7–67, Cl. 312—332.
- Rose, Downs & Thompson Ltd.: *See*—
  - Lloyd, Anthony M. 3,350,843.
- Rose, Fred L., to The Airolite Co. Adjustable fire louvre. 3,350 996, 11–7–67, Cl. 98—86.
- Rosenberg, Harold J.: *See*—
  - Brown, Robert G., and Rosenberg. 3,350,998.
- Rosenblad, Curt F. Falling film type heat exchanger. 3,351,119, 11–7–67, Cl. 159—13.
- Rosner, Carl H.: *See*—
  - Swartz, Paul S., and Rosner. 3,351,437.
- Rothenberger, Ellis F. Irrigation ditch gate valve. 3,351,317, 11–7–67, Cl. 251—147.
- Rothman, Leonard A., to E. I. du Pont de Nemours and Co. Process for preparing 2,6-dichlorobenzonitrile. 3,351,651, 11–7–67, Cl. 260—465.
- Roush, John H. Loose leaf binder structure. 3,351,065, 11–7–67, Cl. 129—18.
- Rowlands, Richard O., to United States of America, Navy. Underwater target detection system. 3,351,896, 11–7–67, Cl. 340—3.
- Rozner, Alexander G., and W. J. Buehler, to United States of America, Navy. High strength nickel-base alloys. 3,351,463, 11–7–67, Cl. 75—170.
- Rudd, David W.: *See*—
  - Fraser, David B., and Rudd. 3,351,757.
- Rudd, Wallace C.: *See*—
  - Kohler, Fred, and Rudd. 3,351,882.
- Ruderfer, Walter A. Warehousing order selection system. 3,351,219, 11–7–67, Cl. 214—16.4.
- Ruettinger, Thurman O., to Chrysler Corp. Vibration isolation arrangement. 3,350,954, 11–7–67, Cl. 74—333.
- Rumsey, Rollin D., to Houdaille Industries, Inc. Hatch cover with piston-lever rotary actuators. 3,351,121, 11–7–67, Cl. 160—188.
- Russell, Frank S.: *See*—
  - Halvorsen, Elmer W., and Russell. 3,351,101.
- Russell, Frederick B.: *See*—
  - Kantrowitz, Arthur R., and Russell. 3,350,721.
- Russell, Gordon C., to Lockheed Aircraft Corp. Abutting wall panels and sealing structure therefor. 3,350,828, 11–7–67, Cl. 52—395.
- Russum, Gaillard R.: *See*—
  - Axelson, John W., and Russum. 3,350,929.
- Ryan, Jack D., J. J. Nold, and R. D. Hughes. Granular fire starting material. 3,351,444, 11–7–67, Cl. 44—41.
- Ryan, Joseph D., to Libbey-Owens-Ford Glass Co. Laminated glass structure. 3,351,518, 11–7–67, Cl. 161—199.
- S.A. des Ateliers et Chantiers de La Seine Maritime: *See*—
  - Jeru, Henri. 3,350,995.
- SPOFA, Spojene podniky pro zdravotnickou vyrobu: *See*—
  - Protiva, Miroslav, Jilek, Metyšova, Ernest, Pelz, and Adlerová. 3,351,599.
- Saab Aktiebolag: *See*—
  - Bergman, Sven G. 3,351,729.
- Safford, Moyer M., and F. F. Holub, to General Electric Co. Compositions of vinyl halide resins, triallyl cyanurate, and trioctyl trimellitates, and cured products therefrom. 3,351,604, 11–7–67, Cl. 260—31.8.
- Sailor, Robert A.: *See*—
  - Payne, John W., Sailor, and Farber. 3,351,548.
- Salt, Peter A., to Esso Research and Engineering Co. Float valve. 3,351,083, 11–7–67, Cl. 137—399.
- Sammarco, Alfred R., to Schenley Industries, Inc. Combination shipping and display carton. 3,351,183, 11–7–67, Cl. 206—44.
- Samson, George C., and J. Endlich, to United States of America, Navy. Servo system including armature and field control of plural motors connected in torque opposition. 3,351,830, 11–7–67, Cl. 318—48.
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- Sandoz Inc.: *See*—
  - Griot, Rudolf G. 3,351,629.
  - Griot, Rudolf G. 3,351,632.
  - Houlihan, William J. 3,351,584.
- Santilli, Arthur A., and T. S. Osdene, to American Home Products Corp. Aminobenzamides. 3,351,659, 11–7–67, Cl. 260—558.
- Sarver, James F., to General Electric Co. Preparation of thorium pyrophosphate. 3,351,436, 11–7–67, Cl. 23—345.
- Sassen, Bernard, P. Nisenbaum, and H. J. Young, to FMC Corp. Apparatus for handling articles. 3,351,217, 11–7–67, Cl. 214—7.
- Saunders, James H., and S. Steingiser, to Mobay Chemical Co. Method for preparing a polyurethane containing 0.2 to 5% polyolefin. 3,351,676, 11–7–67, Cl. 260—859.
- Saunders Valve Co. Ltd.: *See*—
  - Bentley-Leek, Herbert. 3,351,351.
- Saur, Roland, to Behr-Thomson Dehnstoffregler G.m.b.H. Thermostatic valve. 3,351,279, 11–7–67, Cl. 236—34.
- Savolainen, Unto U., and A. M. Huntress, to Texas Instruments Inc. Header for a capsule for a semiconductor element or the like. 3,351,700, 11–7–67, Cl. 174—50.56.
- Sawyer, Bruce A., to Litton Systems, Inc. Density controlled floated gyro. 3,350,947, 11–7–67, Cl. 74—5.41.
- Scalliet, Robert M. G. J.: *See*—
  - Chambran, Jacques, Scalliet, and Duclaux. 3,351,546.
- Scarr, George E., and D. R. Binstead, to D & B Rigging Supplies Ltd. Cable shackle. 3,350,750, 11–7–67, Cl. 24—126.
- Schaadt, Franz, and T. Weber, to Rheinmetall, G.m.b.H., Firma. Primer charge. 3,351,019, 11–7–67, Cl. 102—86.5.
- Schabel, Harry J. Tool attachment. 3,350,784, 11–7–67, Cl. 33—75.
- Schaefer, Robert G.: *See*—
  - Ballenger, Robert J., and Schaefer. 3,350,754.
- Schafer, Kenneth A., to Freeman Chemical Corp. Method of preparing laminate with grain surface. 3,351,507, 11–7–67, Cl. 156—60.
- Schanzer, Wilhelm: *See*—
  - Amrehn, Hermann, Beckmann, Bernemann, and Schanzer. 3,351,430.
- Scheldt, James E.: *See*—
  - Berta, James J., and Scheldt. 3,350,986.
- Schenley Industries, Inc.: *See*—
  - Sammarco, Alfred R. 3,351,183.
- Schindling, Josef, to Metallgesellschaft Aktiengesellschaft. Multi-cell centrifugal dust separator. 3,350,852, 11–7–67, Cl. 55—348.
- Schjeldahl, G. T., Co.: *See*—
  - Kitch, Paul E. 3,351,215.
- Schlecht, Frederick J., ½ each to H. H. Brown Shoe Co., and George H. Rosen Shoe Mfg. Co., Inc. Stitched shoe with inner lining. 3,350,795, 11–7–67, Cl. 36—2.5.
- Schloemann Aktiengesellschaft: *See*—
  - Groos, Horst H. 3,350,911.
  - Hess, Walter. 3,351,124.
- Schlumberger Technology Corp.: *See*—
  - Jensen, Lloyd L. 3,351,135.
- Schmid, Alois, and H. Hofer. Process for firing and cooling particulate solids. 3,351,685, 11–7–67, Cl. 263—52.
- Schmidt, Werner: *See*—
  - Wommelsdorf, Fritz, and Schmidt. 3,351,174.
- Schmit, Roger A., to Teletype Corp. Code transmitted-distributor with mechanical means for varying duration of stop pulse. 3,351,711, 11–7–67, Cl. 178—53.1.
- Schmitz, James E.: *See*—
  - Schmitz, Vincent O., and Schmitz. 3,351,139.

- Schmitz, Vincent O. and J. E. Plow colter. 3,351,139, 11–7–67, Cl. 172—602.
- Schneck, Martin, to The Thomas & Betts Co. Electrical connector with terminal elements of generally T-shaped cross section. 3,351,891, 11–7–67, Cl. 339—176.
- Schneider, Charles F., to Armstrong Cork Co. Chip forming apparatus. 3,350,971, 11–7–67, Cl. 83—354.
- Schneider, Joseph, & Co., Optische Werke: *See*—
  - Soilsch, Rudolf, and Wagner. 3,351,412.
- Schneider, Klaus, to Veb Peene-Werft Wolgast. Device for hydraulically emptying containers filled with solid bodies. 3,351,389, 11–7–67, Cl. 302—14.
- Schoen, Donald W.: *See*—
  - Grassel, Eugene E., and Schoen. 3,350,860.
- Schoengold, Herbert, to Electronic Research Associates, Inc. Loudspeaker assembly. 3,351,719, 11–7–67, Cl. 179—115.5.
- Schott, Stuart, and L. J. Memering, to National Distillers and Chemical Corp. Rotational molding. 3,350,745, 11–7–67, Cl. 18—26.
- Schroeder, Paul G. K. Casing fastening machine. 3,350,766, 11–7–67, Cl. 29—211.
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  - Miller, Harmon B. 3,351,265.
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  - Gorawski, Alfred S., and Seesselberg. 3,351,255.
- Segal, Hyman R. Key retainer. 3,350,903, 11–7–67, Cl. 70—456.
- Segel, Joseph M., to General Numismatics Corp. Metal gaming tokens. 3,350,802, 11–7–67, Cl. 40—27.5.
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- Seidel, Arthur H.: *See*—
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  - Craig, Burnie M., and Shaffer. 3,351,785.
- Shalla, Jesse W.: *See*—
  - Borsattino, Vincent S., Marker, and Shalla. 3,351,945.
- Shallenberger, Laurence K.: *See*—
  - Kirby, Robert A., and Shallenberger. 3,350,932.
- Shape, Raymond H.: *See*—
  - Levinson, Louis E., and Shape. 3,350,906.
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- Shelley Mfg. Co.: *See*—
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- Sheps, Martin I., M. C. Fitzgerald, Jr., and C. W. Shuman, Jr., to The Black and Decker Mfg. Co. Power-operated lawn trimmer-edger. 3,350,864, 11–7–67, Cl. 56—25.4.
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- Shimada, Keizo: *See*—
  - Yamada, Noboru, Shimada, and Takemura. 3,351,620.
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- Shimano Kogyo Kabushiki Kaisha: *See*—
  - Shimano, Keizo. 3,351,165.
- Shimizu, Patrick K. Chair. 3,351,376, 11–7–67, Cl. 297—16.
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  - Suzuki, Noboru, and Yoshino. 3,351,113.
- Shindler, George R., to FMC Corp. Fluid controlling apparatus. 3,351,099, 11–7–67, Cl. 138—94.5.
- Shine, John R.: *See*—
  - Barker, Thomas H., Nance, and Shine. 3,351,278.
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- Shirley, Horace E.: *See*—
  - Seibold, Alvin V., and Shirley. 3,351,143.
- Sholtes, Carl E., to Westinghouse Electric Corp. Cabinet assembly. 3,351,400, 11–7–67, Cl. 312—111.
- Shovic, Folke C.: *See*—
  - Sorenson, Theodore I., and Shovic. 3,351,236.
- Shrier, Adam L., to Esso Research and Engineering Co. Method of increasing strength of frozen soil. 3,350,888, 11–7–67, Cl. 61—36.
- Shuart, Rodney A., to United Aircraft Corp. Photoelectric cloud cover and opacity measuring equipment. 3,351,763, 11–7–67, Cl. 250—209.
- Shuman, Clyde W., Jr.: *See*—
  - Sheps, Martin I., Fitzgerald, and Shuman. 3,350,864.
- Shurtleff, Harold R. Semi-automatic shank taping machine. 3,350 732, 11–7–67, Cl. 12—40.5.
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  - Bue, Richard C. 3,351,029.
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- Siegrist, Adolf E., E. Maeder, P. Liechti, and L. Guglielmetti, to Ciba Ltd. 4-azolyl-4′-oxdiazolyl-stilbenes. 3,351,591, 11–7–67, Cl. 260—240.
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  - Voegtlen, Dieter, Korber, and Jabczynski. 3,351,721.
- Siemens & Walska Aktiengesellschaft: *See*—
  - Dietrich, Isolde, Berkl, Weyl, and Herrmann. 3,351,754.
- Siemens-Schuckestwerke Aktiengesellschaft: *See*—
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  - Adkins, Harold T., and Pierce. 3,351,762.
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- Silver, Robert H.: *See*—
  - Webb, James E. 3,350,926.
- Silverwood, Frederick W., to Pilkington Brothers Ltd. Apparatus for the manufacture of flat glass on a molten metal bath. 3,351,450, 11–7–67, Cl. 65—157.
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  - Weisglass, Louis L. 3,351,766.
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  - Lee, Paul L., and Sims. 3,351,585.
- Sines, Francis J., to United States Steel Corporation. Method and apparatus for removing solid particles from liquids. 3 351,551, 11–7–67, Cl. 210—42.
- Sinfelt, John H.: *See*—
  - Taylor, William F., Sinfelt, and Yates. 3,351,566.
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  - Singley, Alfred D., and Rawlins. 3,351,252.
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- Sitzler, Fred C., to Berg Electronics, Inc. Soldering aid terminal. 3,351,704, 11–7–67, Cl. 174—84.

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- Skrypa, Michael J.: *See*—
  - Blaga, Aurel, and Skrypa. 3,351,601.
- Slagley, William E., to Inland Steel Co. High velocity tuyere with convolute-shaped cooling passageway. 3,351,335, 11-7-67, Cl. 266—41.
- Slater, Raymond L.: *See*—
  - Kingsbury, George R., Junge, Weinamer, and Slater. 3,350,763.
- Sleeper and Hartley, Inc.: *See*—
  - Halvorsen, Elmer W., and Russell. 3,351,101.
- Smalley, Richard (Engineering) Ltd.: *See*—
  - Smalley, Richard. 3,351,221.
- Smalley, Richard, to Richard Smalley (Engineering) Ltd. Excavating and/or loading device. 3,351,221, 11-7-67, Cl. 214—138.
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  - Brater, Donald C., Dykstra, Kaufman, and Smiley. 3,350,848.
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  - Van Dyck, Kenneth, and Smith. 3,351,432.
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- Smith Kline & French Laboratories: *See*—
  - Bartels-Keith, James R., and Gordon. 3,351,626.
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- Smith, S., & Sons (England) Ltd.: *See*—
  - Sulter, John R. 3,351,767.
- Smith, Stanley J., to Simmonds Precision Products, Inc. Jet stream indicator. 3,350,943, 11-7-67, Cl. 73—362.
- Smith, Sydney W.: *See*—
  - Owen, Bernard D., Smith, and Swan. 3,351,333.
- Smith, Walter K., Jr., and C. T. Phillips. Building structure having facing slabs and removable securing means therefor. 3,350,830, 11-7-67, Cl. 52—509.
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  - O'Sullivan, Bryan J., and Smyth. 3,351,770.
- Snyder, Richard L., to Hughes Aircraft Co. Collapsing domain magnetic memory. 3,351,922, 11-7-67, Cl. 340—174.
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  - Lepelletier, Pierre A. G. 3,351,161.
- Societe a Responsabilite Limitee: Societe Lamy d'Etudes et de Recherches "Soler": *See*—
  - Chaveneaud, Roger M. 3,351,727.
- Societe des Engrenages: *See*—
  - Turible, Rene. 3,351,152.
- Societe d'Etudes Contre la Corrosion: *See*—
  - Heuze, Bernard M. L. 3,351,545.
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  - Simonet, Jocelyn E. L., and Biver. 3,351,327.
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  - Berthold, Louis. 3,351,131.
- Societe Industrielle Bull-General Electric (Societe Anonyme):
  - Vadrot, Michel J. 3,351,162.
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  - Feraud, Roger A., and Jardinier. 3,350,886.
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  - Phillips, Irvine L., and Scott. 3,351,031.
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  - Thomson, Charles. 3,351,179.
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  - Spens, Stephen N. 3,351,937.
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  - Vidas, Robert O. 3,351,825.
- Solomon, Shawn M. Self-operable detachable power unit attachment for wheel chairs and power control unit therefor. 3,351,148, 11-7-67, Cl. 180—6.5.
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- Sorenson, Theodore I., and F. C. Shovic. Weighing device with electronic computer. 3,351,236, 11-7-67, Cl. 222—20.
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- Southwest Research Institute: *See*—
  - King, James D. 3,350,924.
- Southwire Co. Inc.: *See*—
  - Richards, Roy, Wagner, and Ward. 3,351,126.
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- Spens, Stephen N., to The Solartron Electronic Group Ltd. Data-display apparatus. 3,351,937, 11-7-67, Cl. 343—5.
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  - McDuffie, James W. 3,351,002.
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- Spicer, John C., P. M. Westfall, and N. R. Eldred, to Union Carbide Corp. Poly-β-asparaginepolyalkylenepolyamine halohydrin resins and application thereof in production of wet strength paper and flocculation of solids. 3,351,520, 11-7-67, Cl. 162—164.
- Spinks, Sam, and F. C. Owenby, to Legion Mfg. Co. Slipper display package. 3,351,184, 11-7-67, Cl. 206—46.
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  - Baldwin, George D., Spiteri, Grosser, and Collette. 3,351,885.
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  - Pohle, Werner P. 3,351,291.
- Sprinter-Pack AB: *See*—
  - Persson, Karl R. 3,351,261.
- Square D Co.: *See*—
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- Staffin, Herbert K., to Procedyne Corp. Thermometric calibration apparatus utilizing a fluidized bed of solid particles. 3,350,915, 11-7-67, Cl. 73—1.
- Stahlhut, Frederick O.: *See*—
  - Olsen, Robert C., and Stahlhut. 3,351,939.
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  - Revallier, Leonardus J., de Booijs, and Verweel. 3,351,569.
- Standard Oil Co., The, Ohio: *See*—
  - Dunnavant, William R., and Botham. 3,351,602.
- Standardwerk Eugene Reis G.m.b.H.: *See*—
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  - Kubit, Ted J., and Stanton. 3,350,730.
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  - Gutman, Arnold D., and Orr. 3,351,680.
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  - Silver, Harold F., Steele, and Price. 3,351,295.
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  - Goeldner, Richard W., and Steinbruchel. 3,351,120.
- Steingiser, Samuel: *See*—
  - Saunders, James H., and Steingiser. 3,351,676.
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  - Maltby, Frederick L., and Reifel. 3,351,933.
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  - Tesoro, Giuliana C. 3,351,622.
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- Stewart, Edward R. Brake-drive assembly for miniature racing cars. 3,350,953, 11-7-67, Cl. 74—411.5.
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  - Sprague, Robert H., Stewart, and Lewis. 3,351,467.
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  - Katzman, Lawrence, Briggin, D'Elia, and Stolarz. 3,351,737.
- Stone Conveyor Co., Inc.: *See*—
  - Stone, Guthrie B., and Folts. 3,351,178.
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- Sucher, Max: *See*—
  - Farber, Herman, and Sucher. 3,351,806.
- Sullivan, Harris M.: *See*—
  - Misevich, Kenneth W., and Sullivan. 3,350,941.
- Sumitomo Chemical Co. Ltd.: *See*—
  - Koike, Eiji, Kanazawa, and Otsuka. 3,351.580.
- Subirana, Antonio E., to Laboratoires Om Societe Anonyme. Process for reducing blood coagulation time by administering therapeutically active derivatives of dihydroxybenzene-sulfonates. 3,351.526, 11-7-67, Cl. 167—65.
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- Summimoto Metal Industries Ltd.: *See*—
  - Nishioka, Kunio, Nishimura, and Kato. 3,351,337.
- Sun Chemical Corp.: *See*—
  - Hopmeier, Arthur P., and Ingram. 3,351,481.
- Suzuki, Noboru, and T. Yoshino, to Shimizu Suisan Kabushiki Kaisha. Hydraulic division of fruits. 3,351,113, 11-7-67, Cl. 146—230.
- Svanstrom, Claes R.: *See*—
  - Lundin, Lars O., Johansson, Svanstrom, and Gustafsson. 3,351,149.
- Svenska Aktiebolaget Bromsregulator: *See*—
  - Sander, Nils B. L., and Svensson. 3,351,163.
- Svensson, Sten-Eric: *See*—
  - Sander, Nils B. L., and Svensson. 3,351,163.
- Svensson, Sten-Eric. Automatic slack adjusters for vehicles brakes. 3,351,164, 11-7-67, Cl. 188—196.
- Swain, William H., ⅛ to W. J. Kreske. Electrical oscillator with hysteresis and delay elements. 3,351,871, 11-7-67, Cl. 331—111.
- Swan, Allan H. B.: *See*—
  - Owen, Bernard D., Smith, and Swan. 3,351,333.
- Swartz, Paul S., and C. H. Rosner, to General Electric Co. Superconductive body of niobium-tin. 3,351,437, 11-7-67, Cl. 29—182.
- Sweeney, Richard F.: *See*—
  - Aneilo, Louis G., and Sweeney. 3,351,671.
- Sweet, Harry M.: *See*—
  - Blakeley, James, and Sweet. 3,351,352.
- Sweet, Richard K. Magnetic catch. 3,351,368, 11-7-67, Cl. 292—251.5.
- Swift, Peter, to North American Philips Co., Inc. Self-starting astable multivibrators. 3,351,872, 11-7-67, Cl. 331—113.
- Sylvania Electric Products Inc.: *See*—
  - Buescher, William E., and Kerstetter. 3,351,486.
  - Butler, Keith H., Thomas, and Quirk. 3,351,194.
  - Gates, Paul E. 3,351,802.
  - Kuryla, Alan T. 3,351,792.
  - Zarins, Karl T. 3,351,407.
- Syntex Corp.: *See*—
  - Cross, Alexander D. 3,351,633.
- Szabo, Karoly, and D. J. Broadbent, to Stauffer Chemical Co. Substituted (N-formyl-N-alkylcarbamoyl methyl) phosphonothioates. 3,351,679, 11-7-67, Cl. 260—943.
- Szawlowski, Theodore H., and R. C. Kimble, to Union Oil Co. of California. Recovery and fractionation of complex acids. 3,351,631, 11-7-67, Cl. 260—327.
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- Takemura, Toshio: *See*—
  - Yamada, Noboru, Shimada, and Takemura. 3,351,620.
- Tan-Sad Chair Co. (1936) Ltd., The: *See*—
  - Street, Leslie J. 3,351,379.
- Tanaka, Kazumitsu, to Nihon Denshi Kabushiki Kaisha. Method and apparatus for treating material with a charged beam. 3,351,731, 11-7-67, Cl. 219—69.
- Tann Co.: *See*—
  - Kearns, Robert W. 3,351,836.
- Tanouchi, Keisuke: *See*—
  - Yoshida, Masatoshi, and Tanouchi. 3,350,741.
- Tanski, William, Jr.: *See*—
  - Gans, Carl, and Tanski. 3,350,977.
- Tantram, Anthony D. S.: *See*—
  - Harris, Bryan S., and Tantram. 3,351,491.
- Taplin, Lael B.: *See*—
  - Datwyler, Walter F., Jr., Mayer, and Taplin. 3,351,080.
- Tatter, Charles W.: *See*—
  - Noznick, Peter P., and Tater. 3,351,531.
- Tavkozlesi Kutato Intezet: *See*—
  - Budincsevits, Andor. 3,351,464.
- Taylor, Charles H.: *See*—
  - Lustig, Frank C., and Taylor. 3,351,254.
- Taylor, Thomas I., to Isomet Corp. Process for producing a synthetic breathable atmosphere. 3,351,562, 11-7-67, Cl. 252—372.
- Taylor, William F., J. H. Sinfelt, and D. J. C. Yates, to Esso Research and Engineering Co. Stabilized high-activity catalyst. 3,351,566, 11-7-67, Cl. 252—452.
- Technical Operations Inc.: *See*—
  - O'Sullivan, Bryan J., and Smyth. 3,351,770.
- Technicon Instruments Corp.: *See*—
  - Isreeli, Jack. 3,350,946.
- Technion Research and Development Foundation, Ltd.: *See*—
  - Resnick, William, and Avriel. 3,351,202.
- Teijin Ltd.: *See*—
  - Yamada, Noboru, Shimada, and Takemura. 3,351,620.
- Teledyne Industries, Inc.: *See*—
  - Luehrmann, William H., and Moore. 3,351,899.
- Teleflex Products Ltd.: *See*—
  - Davies, Ivor J. 3,351,382.
- Teleflex Inc.: *See*—
  - Machate, Fred. 3,350,959.
- Telefunken Patentverwertungsgesellschaft m.b.H.: *See*—
  - Hummel, Hermann. 3,351,909.
- Telefunken Patentverwertungs-G.m.b.H.: *See*—
  - Unger, Hans G., and Lavik. 3,351,877.
- Teletype Corp.: *See*—
  - Biggam, Frank D. 3,351,819.
  - Metz, Jack L. 3.351,717.
  - Schmit, Roger A. 3,351,711.
- Tenneco Chemicals, Inc.: *See*—
  - Deinet, Adolph J. 3,351.681.
  - Gradsten, Marcel A. 3,351,649.
- Tennessee Corp.: *See*—
  - Moore, George F., and Beer. 3,351,453.
- Tenney, Horace M.: *See*—
  - Mertzweiller, Joseph K., and Tenney. 3,351,666.
- Tesoro, Giuliana, to J. P. Stevens & Co., Inc. Polymers and textile materials treated therewith. 3,351,622, 11-7-67, Cl. 260—89.7.
- Texas Gas Transmission Corp.: *See*—
  - Fedda, Paul A. 3,350,928.
- Texas Instruments Inc.: *See*—
  - Cook, Charles R., Jr., and Martin. 3,351,775.
  - Durst, George. 3,350.771.
  - Feder, Allen M. 3,351,936.
  - Jost, Ernest M. 3.351.439.
  - Kilby, Jack S. 3,350,760.
  - Savolainen, Unto U., and Huntress. 3,351.700.
  - Waseleski, Joseph W., Jr., and Landis. 3,351,568.
- Texize Chemicals Inc.: *See*—
  - Greer, Tommy D., and Dunlap. 3,351,182.
- Textron Inc.: *See*—
  - St. Clair, Theodore A. 3,350,939.
- Thaler, Victor H.: *See*—
  - Glenapp, Eric, Thaler, Potor, and Marko. 3,350,794.
- Thiokol Chemical Corp.: *See*—
  - Green, Joseph, and Mayes. 3,351,616.
  - Johnson, Dell A. 3,350,987.
- Tholome, Roger. Spraying apparatus having improved spray controlling means. 3,351,285, 11-7-67, Cl. 239—15.
- Thoma, Wilhelm: *See*—
  - Oertel, Harald, Ley, Rinke, and Thoma. 3,351,608.
- Thomas & Betts Co., The: *See*—
  - Schneck, Martin. 3,351,891.
- Thomas, David W., to General Electric Co. Wire coating oven apparatus. 3,351,329, 11-7-67, Cl. 263—3.
- Thomas Industries Inc.: *See*—
  - Bushcott, Rudolph A., and Waldmann. 3,351,689.

Thomas, Martha J. B.: *See*—
  Butler, Keith H., Thomas, and Quirk. 3,351,194.
Thomas, Paul M., L. W. Wright, R. W. Burge, and E. E. Crile, to Builders Equipment Co. Concrete block stacking machine. 3,351,216, 11–7–67, Cl. 214—6.
Thomas, Robert M.: *See*—
  Kobold, Patrick J., and Thomas. 3,351,952.
Thome, William L., D. Beggs, and J. B. McCully, to Midland-Ross Corp. Method and apparatus for firing ceramic bodies. 3,351,687, 11–7–67, Cl. 264—58.
Thomson, Charles, to Solar Thomson Engineering Co. Ltd. Conveyors. 3,351,179, 11–7–67, Cl. 198—203.
Thornberry, John R.: *See*—
  Titus, Leslie, Thornberry, and Breuer. 3,351,428.
Thorner, Robert H. Control device for refrigeration system. 3,350,894, 11–7–67, Cl. 62—140.
Thorpe, Walter H. Automatic fluid transmission. 3,351,168, 11–7–67, Cl. 192—61.
Ti-Pe Elmeko: *See*—
  Tillander, Magnus E., Persson, and Johansson. 3,351,025.
Tilden, Fred F.: *See*—
  Koefoed, Jack F., and Tilden. 3,351,209.
Tillander, Magnus E., A. B. Persson, and A. T. Johansson, to Ti-Pe Elmeko. Baking oven. 3,351,025, 11–7–67, Cl. 107—55.
Time, Inc.: *See*—
  Lopas, Kasimir. 3,351,522.
Timms, Peter L., to United States Borax and Chemical Corp. Production of titanium diboride. 3,351,429, 11–7–67, Cl. 23—204.
Tinsley, Carl G., to Motorola, Inc. Constant power generator. 3,351,846, 11–7–67, Cl. 323—1.
Tipton, Lynn L., to Westinghouse Electric Corp. Electrical apparatus. 3,351,843, 11–7–67, Cl 322—28.
Titus, Leslie, J. R. Thornberry, and R. G. Breuer, to Kaiser Aluminum & Chemical Corp. Process for the production of refractory hard metal materials. 3,351,428, 11–7–67, Cl. 23—204.
Toepfl, Rosemarie, and A. Maeder, to Ciba Ltd. Polymerization products of carbonamides (containing sulfonamido groups) of α,β-ethylenically unsaturated aliphatic carboxylic acids. 3,351,618, 11–7–67, Cl. 260—79.3.
Toho Beslon Kabushiki Kaisha: *See*—
  Yoshida, Masatoshi, and Tanouchi. 3,350,741.
Tomono, Masami, H. Ueda, and H. Kimura, to Hitachi, Ltd. Welding method. 3,351,733, 11–7–67, Cl. 219—117.
Toomey, John B., Jr., to Value Engineering Co. Photographic camera. 3,350,989, 11–7–67, Cl. 95—11.5.
Topf, Sam B., ½ to L. Rolnick. One piece plastic expansion fastener. 3,350,976, 11–7–67, Cl. 85—37.
Toyo Spinning Co., Ltd.: *See*—
  Koike, Eiji, Kanazawa, and Otsuka. 3,351,580.
Trefimetaux: *See*—
  Duffau, Georges. 3,351,234.
Treichler, Robert K.: *See*—
  Brown, Winston E., LaCoume, and Treichler. 3,351,560.
Trelleborgs Gummifabriks Aktiebolag: *See*—
  Persson, Bo K. G. 3,350,832.
Triplett Electrical Instrument Co., The: *See*—
  Scott, William G. 3,351,855.
Trout, Charles M. Safety circuit for electrical apparatus. 3,351,813, 11–7–67, Cl. 317—18.
Trouve, Jean: *See*—
  Gayet, Bernard, Holder, Kurka, Reboux, and Trouve. 3,351,686.
Truck-Lite Co., Inc.: *See*—
  Baldwin, George D., Spiteri, Grosser, and Collette. 3,351,885.
Trumbley, Donald W. Coin case. 3,351,187, 11–7–67, Cl. 206—.81.
Tsourmas, Harry K., to MacDermid, Inc. Methods and compositions for stripping nickel. 3,351,556, 11–7–67, Cl. 252—102.
Tucker, William T.: *See*—
  Brimer, Marshall R., and Tucker. 3,351,609.
Tung-Sol Electric Inc.: *See*—
  Rohlfs, John H. 3,350,883.
Turible, René, to Societe des Engrenages. Steering gears for vehicles. 3,351,152, 11–7–67, Cl. 180—79.1.
Turn, Rein: *See*—
  Ambrosio, Biagio F., and Turn. 3,351,916.
Turner, Ralph S. Flower holder for caskets. 3,351,310, 11–7–67, Cl. 248—27.8.
Tyco Laboratories, Inc.: *See*—
  Makrides, Alkis C., Wright, and Jewett. 3,350,846.
Uddeholms Aktiebolag: *See*—
  Holm, Kurt A. 3,350,734.
Ueda, Hiroshi: *See*—
  Tomono, Masami, Ueda, and Kimura. 3,351,733.
Ueda, Terumori: *See*—
  Ogura, Takashi, Ueda, and Yasuda. 3,350,905.
Ulam, John B., and W. C. Camp, to Composite Metal Products, Inc. Methods of cladding stainless steel to aluminum. 3,350,772, 11–7–67, Cl. 29—488.
Unger, Hans G., and A. Lavik, to Telefunken Patentverwertungs-G.m.b.H. Backward waveguide having a dielectric contiguous with one inner wall thereof. 3,351,877, 11–7–67, Cl. 333—98.
Union Carbide Canada Ltd.: *See*—
  Duncan, William A. 3,351,524.
Union Carbide Corp.: *See*—
  Hollingsworth, J. B. L. 3,351,695.
  Krumm, Stephen. 3,351,577.
  McKinley, David L. 3,350,845.
  Spicer, John C., Westfall, and Eldred. 3,351,520.
  Wallouch, Rudolph W. 3,351,477.
  Wu, Chisung, and Welch. 3,351,683.
Union Oil Co. of California: *See*—
  Szawlowski, Theodore H., and Kimble. 3,351,631.
  Woertz, Byron B., and Holbrook. 3,350,847.
Union Stock Yard and Transit Co. of Chicago: *See*—
  Morrison, Willard L. 3,351,223.
United Aircraft Products, Inc.: *See*—
  Andrews, Julian N., and Gersbacher. 3,350,908.
United Aircraft Corp.: *See*—
  Emmerich, Claude L. 3,351,393.
  Frost, Lewis J. 3,351,319.
  Shuart, Rodney A. 3,351,763.
United Merchants and Manufacturers, Inc.: *See*—
  Gordon, Alex F. 3,351,615.
United Power Co. Ltd.: *See*—
  Warner, Philip C. 3,351,535.
United Shoe Machinery Corp.: *See*—
  McIlvin, Donald B. 3,350,748.
United States of America
  Agriculture: *See*—
    McKelvey, John B., Benerito, Berni, and Burigis. 3,351,420.
  Atomic Energy Commission: *See*—
    Armantrout, Guy A., and Camp. 3,351,758.
    Brater, Donald C., Dykstra, Kaufman, and Smiley. 3,350,848.
    Bray, Lane A., and Roberts. 3,351,424.
    Libby, Hugo L. 3,351,852.
    McDonald, Robert E., and Leitten. 3,350,907.
    Moulton, Charles L. 3,350,966.
    Raab, Harry F., Jr., Galper, Jones, Conley, and Hannum. 3,351,532.
  Navy: *See*—
    Ainslie, Robert E., Comisarow, and Hutchins. 3,351,010.
    Baron, Sidney. 3,351,897.
    Bush, George B., and Warnke. 3,351,943.
    Cupp, Frederick B., and Frankel. 3,351,895.
    Durney, George P. 3,351,056.
    Grigor, James, Parker, and Currie. 3,351,506.
    Hanas, Orest J., and Alaburda. 3,351,842.
    Henry, Ronald A. 3,351,627.
    Hirsch, Arthur E., Whitten, and Pickford. 3,351,314.
    Horlander, Frank J. 3,351,777.
    Jue, Lawrence S., Batman, and Horn. 3,350,786.
    Kaufman, Melvin M. 3,351,879.
    Kite, Paul E. 3,351,158.
    Luttrell, Nathaniel H., Jr. 3,351,856.
    Moe, Henry, and Lampert. 3,351,593.
    Montesi, Louis J. 3,351,011.
    Myers, Jack A. 3,351,017.
    Olsen, Robert C., and Stahlhut. 3,351,939.
    Olson, Carl O., Jr. 3,351,869.
    Ortwein, Norman R., and Potter. 3,351,940.
    Padberg, Louis R., Jr. 3,351,901.
    Rowlands, Richard O. 3,351,896.
    Rozner, Alexander G., and Buehler. 3,351,463.
    Weikert, James N. 3,351,276.
    Wilford, Paul B. 3,351,691.
    Wilkinson, Raymond C., Aleksiewicz, and Martin. 3,351,890.
    Winkler, Eva M., and Humphrey. 3,351,799.
    Richter, John F. 3,351,801.
    Samson, George C., and Endlich. 3,351,830.
    Shapiro, Wilbur, and Hoffman. 3,351,397.
    Verge, Kenneth W. 3,351,946.
    Wilson, Robert E. 3,351,012.
    Wood, Kenneth E. 3,351,853.
United States Borax and Chemical Corp.: *See*—
  Timms, Peter L. 3,351,429.
United States Envelope Co.: *See*—
  Heywood, Vincent E., and Johnson. 3,350,834.
United States Steel Corp.: *See*—
  Arnold, Karl F. 3,350,904.
  Borsattino, Vincent S., Marker, and Shalla. 3,351,945.
  Fehr, Corey M. 3,351,299.
  Sines, Francis J. 3,351,551.
United States Time Corp., The: *See*—
  Egger, Josef, and Meltinger. 3,350,873.
Universal Match Corp.: *See*—
  Simpson, Clarence E. 3,351,016.
Universal Oil Products Co.: *See*—
  Bloch, Herman S. 3,351,549.
  Moehl, Reno W. 3,351,567.
University of California, The Regents of the: *See*—
  Muller, Richard S., and Conragan. 3,351,786.
Upjohn Co., The: *See*—
  Herr, Milton E. 3,351,642.
Utilux Proprietary Ltd.: *See*—
  Karl, Walter. 3,350,765.
Vadrot, Michel J., to Societe Industrielle Bull-General Electric (Societe Anonyme). Electromagnetic braking mechanism. 3,351,162, 11–7–67, Cl. 188—164.
Vajtay, Leslie. Display package. 3,351,188, 11–7–67, Cl. 206—45.34.
Valle-Riestra, Joseph F.: *See*—
  Oldershaw, Charles F., and Valle-Riestra. 3,351,542.
Value Engineering Co.: *See*—
  Toomey, John B., Jr. 3,350,989.
Vanderslice, Thomas A., to General Electric Co. Process of coating diamond with an adherent metal coating using cathode sputtering. 3,351,543, 11–7–67, Cl. 204—192.
Van Duuren, Hendrik C. A., to de Staat der Nederlanden, ten deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrifie en Telefonie. Reading-device for an information bearer. 3,351,906, 11–7–67, Cl. 340—146.3.

Van Dyck, Kenneth, and F. J. Smith, to International Equipment Co. Apparatus for use in washing red blood cells in reconstituting blood by addition of plasma to the washed red blood. 3,351,432, 11–7–67, Cl. 23—258.5.
Van Eaton, Ralph D. Agricultural implement coupler. 3,351,357, 11–7–67, Cl. 280—415.
Vanegas, Guillermo J.: *See*—
  Jones, Gary D., Vanegas, and True. 3,350,899.
Van Laanen, Dolph V. Defective sheet sorting apparatus. 3,351,196, 11–7–67, Cl. 209—73.
Van Lammeren, Johannes A., G. Barnier, J. Koorneef, and J. Bos, to North American Philips Co., Inc. Air bearing magnetic head mounting. 3,351,925, 11–7–67, Cl. 340—174.1.
Van Leeuwen, Geetruida C.: *See*—
  Akkerman, Antony M., Van Leeuwen, and Michels. 3,351,598.
Van Munster, Frederik H., to Abbott Laboratories. Dicyclohexylamine. 3,351,661, 11–7–67, Cl. 260—563.
Vapor Corp.: *See*—
  MacDonald, John A. 3,351,042.
Varot, Michel J., to Societe Industrielle Bull-General Electric (Societe Anonyme). Electromagnetic braking mechanism. 3,351,162, 11–7–67, Cl. 188—164.
Varta Aktiengesellschaft: *See*—
  Von Doehren, Hermann-Hans. 3,351,490.
VEB Peene-Werft Wolgast: *See*—
  Schneider, Klaus. 3,351,389.
Verge, Kenneth W., to United States of America, Navy. Missile mounted hydraulically driven scanning antenna. 3,351,946, 11–7–67, Cl. 343—705.
Verhagen, Edward L., to The Regina Corp. Upright vacuum cleaner bag holder. 3,350,858, 11–7–67, Cl. 55—376.
Verweel, Cornelia: *See*—
  Revallier, Leonardus J., De Booijs, and Verweel. 3,351,569.
Verwijs, Anthonie J.: *See*—
  Myers, Gordon S., and Verwijs. 3,351,641.
Vetterli, Peter, to R. Mayr. Appliance for the enrichment of water with oxygen, particularly in fish breeding. 3,351,328, 11–7–67, Cl. 261—112.
Vick, Gerald K.: *See*—
  Kim, Dae S., and Vick. 3,350,922.
Vickers Instruments Ltd.: *See*—
  Blackett, John H. 3,351,821.
Victaulic Co. of America: *See*—
  Blakeley, James, and Sweet. 3,351,352.
Victor Co. of Japan, Ltd.: *See*—
  Hirota, Akira. 3,351,716.
Vidas, Robert O., to Solitron Devices, Inc. Semiconductor device having an anodized protective film thereon and method of manufacturing same. 3,351,825, 11–7–67, Cl. 317—234.
Vietz, Norman J., to Honeywell Inc. Supervised alarm system. 3,351,934, 11–7–67, Cl. 340—409.
Vignal, Edmond: *See*—
  Artru, Jean, and Vignal. 3,350,780.
Vits, Hilmar, to Maschinenfabrik Vits G.m.b.H. Web splicing device. 3,351,297, 11–7–67, Cl. 242—58.2.
Voegtlen, Dieter, U. Korber and H. J. Jabczynski, to Siemens Aktiengesellschaft. Method and switching arrangement for preventing improper settings in devices of telephone exchange installations. 3,351,721, 11–7–67, Cl. 179—175.21.
Vogel-Peterson Co.: *See*—
  Magnuson, Raymond A. 3,351,403.
Von Doehren, Hermann-Hans, to Varta Aktiengesellschaft. Hermetically sealed alkaline storage battery. 3,351,490, 11–7–67, Cl. 136—6.
Von Ruden, Raymond E. Power transmission mechanism for rotary power tools. 3,350,955, 11–7–67, Cl. 74—421.
Von Zelewsky, Ottomar, and W. Burkert, to Georg Fischer Aktiengesellschaft. Device for interconnecting two pipes of thermoplastic material. 3,351,512, 11–7–67, Cl. 156—580.
Wadolny, Alex, and R. Bratek. Code modules. 3,351,817, 11–7–67, Cl. 317—112.
Wagner, Arthur M.: *See*—
  Richards, Roy, Wagner, and Ward. 3,351,126.
Wagner Electric Corp.: *See*—
  Rohlfs, John H. 3,350,883.
Wagner, Werner: *See*—
  Sollisch, Rudolf, and Wagner. 3,351,412.
Wagner, William R., to Hazeltine Research Inc. Data converter. 3,351,929.
Wakeman, Reginald L., and J. F. Coates, to Millmaster Onyx Corp. Quaternary ammonium compounds. 3,351,652, 11–7–67, Cl. 260—473.
Waldmann, Elmer E.: *See*—
  Bushcott, Rudolph A., and Waldmann. 3,351,689.
Walker, Darrell W., and E. L. Czenkusch, to Phillips Petroleum Co. Ethylene polymerization. 3,351,623, 11–7–67, Cl. 260—94.9.
Walker, John C. F., III, and C. V. Booher, to The National Cash Register Co. Detent control mechanism for keyboards in value printing machines. 3,351,004, 11–7–67, Cl. 101—69.
Wallack, Stanley, L. R. Alexander, and J. E. Oxley, to Leesona Corp. Explosive activator. 3,351,015, 11–7–67, Cl. 102—70.2.
Wallouch, Rudolph W., to Union Carbide Corp. Treat solution for rendering carbonaceous articles oxidation resistant. 3,351,477, 11–7–67, Cl. 106—56.
Walstad, Dennis C.: *See*—
  Kongable, Lowell S., and Walstad. 3,351,804.
Ward, Mark E., to Midland-Ross Corp. Means for supplying air to a gas burner. 3,351,118, 11–7–67, Cl. 158—118.
Wark, George C.: *See*—
  Richards, Roy, Wagner, and Ward. 3,351,126.
Warn, Arthur M., and H. J. Hegar. Lockable hub. 3,351,364, 11–7–67, Cl. 287—53.
Warnell, Joseph L., to E. I. du Pont de Nemours and Co. Crosslinkable polymers formed from iodine-containing perfluoroalkyl vinyl ethers. 3,351,619, 11–7–67, Cl. 260—80.76.
Warner, Philip C., to United Power Co. Ltd. Moderator cores for nuclear reactors. 3,351,535, 11–7–67, Cl. 176—84.
Warner, Roger J., and R. E. Gilbert. Fishing tackle box. 3,350,810, 11–7–67, Cl. 43—57.5.
Warner, Wayne E. Airborne distribution system and retraction apparatus therefor. 3,351,305, 11–7–67, Cl. 244—136.
Warner & Swasey Co., The: *See*—
  Cordes, Edward V., Jr. 3,351,907.
Warnke, Larry L.: *See*—
  Bush, George B., and Warnke. 3,351,943.
Wasag-Chemie, A.G.: *See*—
  Leunig, Heimbert, Meyer, and Buchner. 3,350,887.
Waseleski, Joseph W., Jr., and H. M. Landis., to Texas Instruments Inc. Production of solid state PTC sensors. 3,351,568, 11–7–67, Cl. 252—520.
Water Treatment Corp.: *See*—
  Kraiker, Harry, Jr. 3,351,550.
Watkins, Douglas W.: *See*—
  Baum, Leo, and Watkins. 3,351,072.
Watson, Henry D., and E. C. Richardson, to Mitchell Engineering Ltd. Water tube boiler. 3,351,041, 11–7–67, Cl. 122—250.
Watters, Robert L., to General Electric Co. Apparatus and method for detecting leaks in evacuated systems. 3,351,926, 11–7–67, Cl. 340—242.
Waugh, Arthur: *See*—
  Kingery, William D., and Waugh. 3,351,688.
Wayne Kerr Laboratories Ltd., The: *See*—
  Calvert, Raymond. 3,351,748.
Weaver, Ernest P., and B. Davies, to Harbison-Walker Refractories Co. Chemically bonded refractory shapes. 3,351,476, 11–7–67, Cl. 106—56.
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Webb, John C., to Amco Capital Corp. and Maryland Capital Corp. Two compartment medical injector. 3,351,058, 11–7–67, Cl. 128—216.
Webber, William C.: *See*—
  Roplequet, Richard L., and Webber. 3,351,406.
Weber, Theodor: *See*—
  Schaadt, Franz, and Weber. 3,351,019.
Wegmann, Jerome B.: *See*—
  Cook, John F., and Wegmann. 3,351,156.
Weikert, James N., to United States of America, Navy. Apparatus for inertially deriving ground track angle. 3,351,276, 11–7–67, Cl. 235—61.
Weiman, Irving, and W. V. Wright, to Electro Optical Systems, Inc. Diffused radiation tracking transducer having a lateral photo voltage junction. 3,351,493, 11–7–67, Cl. 136—89.
Weinkamer, William A.: *See*—
  Kingsbury, George R., Junge, Weinkmer, and Slater. 3,350,763.
Weis, Andrew J. and A. B. Music chord finder device. 3,350,973, 11–7–67, Cl. 84—478.
Weis, Anne B.: *See*—
  Weis, Andrew J. and A. B. 3,350,973.
Weisbeck, Roland, A. Brockes, and H. Nassenstein, to Farbenfabriken Bayer Aktiengesellschaft. Photoconductive structural element and process of manufacturing same. 3,351,516, 11–7–67, Cl. 161—184.
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Weiss, Herbert: *See*—
  Stein, Werner, Weiss, and Koch. 3,351,559.
Weiss, Martin J.: *See*—
  Allen, George R., Jr., and Weiss. 3,351,639.
Weiss, Walter F.: *See*—
  Miner, Carl S., Jr., Park, and Weiss. 3,351,483.
Weisskopf, Ernst, to Standardwerk Eugen Reis G.m.b.H. Coin-sorting and counting machine. 3,351,075, 11–7–67, Cl. 133—3
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Welch, Frank J.: *See*—
  Wu, Chisung, and Welch. 3,351,683.
Weltronic Co.: *See*—
  Collom, Donald J.. and Mann. 3,351,912.
Welty, Frank. Device for controlling the rate of flow of fluids. 3,351,087, 11–7–67, Cl. 137—504.
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Werner, Lincoln H. : *See*—
De Stevens, George, and Werner. 3,351,595.
West, John B., to Maryland Cup Corp. Valve for viscous fluids. 3,351,250, 11-7-67, Cl. 222—532.
Western Body and Hoist Co., Inc. : *See*—
Morrison, George W. 3,351,222.
Western Electric Co., Inc. : *See*—
Grainger, William G. 3,351,103.
Fraser, David B., and Rudd. 3,351,757.
Richards, Roy, Wagner, and Ward. 3,351,126.
Smith, Richard T. 3,351,197.
Stinson, Richard W. 3,351,927.
Westfall, Paul M. : *See*—
Spicer, John S., Westfall, and Eldred. 3,351,520.
Westinghouse Electric Corp. : *See*—
Allen, Harvey G. 3,351,022.
Aspden, Robert G. 3,351,501.
Dow, Bruce R., and Johnson. 3,351,865.
Feather, Landis E., and Morrison. 3,351,693.
Westinghouse Electric Corp. : *See*—
Goldsmith, Alan S. 3,351,866.
Hamby, Jefferson O., and Chase. 3,351,761.
Harnish, James R. 3,350,895.
Harnish, James R. 3,350,896.
Harnish, James R. 3,350,898.
Hoxie, Warren V. 3,351,805.
Kearney, Joseph P. 3,351,803.
Lipman, Kenneth, and Pledger. 3,351,841.
Lytle, Walter J. 3,351,931.
Niemoller, Arthur B. 3,351,705.
Plaster, Robert L. 3,350,897.
Roof, James L., and Hire. 3,351,845.
Sholtes, Carl E. 3,351,400.
Tipton, Lynn L. 3,351,843.
Weitzman, Laurence H., and Harding. 3,351,499.
Wier, Walter E. 3,351,844.
Weyer, Rudi : *See*—
Sturm, Karl, Siedel, and Weyer. 3,351,589.
Weyl, Reinhard : *See*—
Dietrich, Isolde, Berkl, Weyl, and Herrmann. 3,351,754.
Wheat, Robert C., to Phillips Petroleum Co. Oil extension of rubbery compositions. 3,351,606, 11-7-67, Cl. 260—33.6.
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Whitten, Frank I. : *See*—
Hirsch, Arthur E., Whitten, and Pickford. 3,351,314.
Wiatt, James G., and E. C. Bruns, to The Cincinnati Milling Machine Co. Machine for cutting material. 3,350,969, 11-7-67, Cl. 83—201.7.
Wichita Clutch Co. : *See*—
Moss, Jack W. 3,351,167.
Wickman, Axel, Transmissions Ltd. : *See*—
Lamburn, Alan S., and Abbott. 3,350,960.
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Wiener Metallwarenfabrik Smolka & Co. : *See*—
Smolka, Thomas G., and Schweizer. 3,351,354.
Wier, Walter E., to Westinghouse Electric Co. Generator with constant frequency to voltage ratio output. 3,351,844, 11-7-67, Cl. 322—79.
Wiese, Herbert F. : *See*—
Butler, Thomas A., and Wiese. 3,351,647.
Wiethoff, Roger H. : *See*—
Neuman, Milton C., and Wiethoff. 3,350,984.
Wilcox Electric Co., Inc. : *See*—
Scribner, Neal. 3,351,864.
Wilderman Drilling Ltd. : *See*—
Wilderman, Giles H. 3,351,142.
Wilderman, Giles H., to Wilderman Drilling Ltd. Drilling rig. 3,351,142, 11-7-67, Cl. 173—147.
Wiley, Fred E. : *See*—
Richardson, Genry M., Alberghini, Wiley, and Larson. 3,351,509.
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Williams, Gilmer A. : *See*—
Burgess, Douglas P., Williams, and Harkey. 3,351,096.
Williams, Robert C. : *See*—
Sear, Brian E., Stephens, and Williams. 3,351,816.
Williams, Robert F. : *See*—
Frazelle, Jay B., and Williams. 3,350,736.
Williamson, William A., to Clark Equipment Co. Hydrostatic drive for vehicles. 3,351,147, 11-7-67, Cl. 180—6.3.
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Gramm, Walter P., and Wills. 3,351,443.
Wilner, Leslie B., to Endevco Corp. Piezoresistive transducer. 3,351,880, 11-7-67, Cl. 338—6.
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Wolf, Milton : *See*—
Alburn, Harvey E., Grant, Clark, and Wolf. 3,351,587.
Wolfe, David F., to Record-A-Punch Corp. Information storing apparatus. 3,351,950, 11-7-67, Cl. 346—104.
Wolfe, Heinz S., to National Research Development Corp. Tuning arrangement for radio transmitter. 3,351,860, 11-7-67, Cl. 325—173.
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Wood, Sherman L. : *See*—
Rittenhouse, Howard E., and Wood. 3,350,938.
Wood, Stanley D., to E. I. du Pont de Nemours, and Co. Removable liner for a vent port housing. 3,350,742, 11-7-67, Cl. 18—12.
Woodhams, Raymond T. : *See*—
Grace, Norman S., and Woodhams. 3,351,571.
Worst, Joseph C. Method of washing clothes. 3,350,729, 11-7-67, Cl. 8—159.
Worthington Corp. : *See*—
Bellmer, Friedrich O. 3,351,271.
Wostbrock, Werner, to Fritz Hurxthal K. G. Maschinenfabrik. Arrangement for conveying power in a play-free manner from the main drive of chip-removing machine tools. 3,350,952, 11-7-67, Cl. 74—409.
Wridt, Alfred A., to J. I. Case Co. Telescoping drawbar. 3,351,358, 11-7-67, Cl. 280—478.
Wright, Lawrence W. : *See*—
Thomas, Paul M., Wright, Burge, and Crile. 3,351,216.
Wright, Maurice A. : *See*—
Makrides, Alkis C., Wright, and Jewett. 3,350,846.
Wright, William V. : *See*—
Weiman, Irving, and Wright. 3,351,493.
Wright, Raymond T. : *See*—
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Oechslin, Konrad. 3,351,396.
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Hemphill, Kent W., and Donnolo. 3,351,831.
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Ogura, Takashi, Ueda, and Yasuda. 3,350,905.
Yates, David J. C. : *See*—
Taylor, William F., Sinfelt, and Yates. 3,351,566.
Yearley, Lawrence E., to General Precision, Inc. Duty cycle regulated power supply. 3,351,840, 11-7-67, Cl. 321—45.
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Suzuki, Noboru, and T. Yoshino, to Shimizu Suisan Kabushiki Kaisha. Hydraulic division of fruits. 3,351,113, 11-7-67, Cl. 146—230.
Young, Harold J. : *See*—
Sassen, Bernard, Nisenbaum, and Young. 3,351,217.
Young, James E. : *See*—
Harper, David C., Wright, and Young. 3,351,920.
Youngstown Sheet and Tube Co., The : *See*—
Richardson, Henry M., Alberghini, Wiley, and Larson 3,351,509.
Zandberg, Paul I., and C. F. Taylor. Dispenser for impression material. 3.351,244, 11-7-67, Cl. 222—216.
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Zeller, Burton S. : *See*—
Frost, Barry L. J., and Zeller. 3,350,951.
Zielinski, Robert J., to American Gas Association, Inc. A.C. operable oltage threshold circuits. 3,351,818, 11-7-67, Cl. 317—124.
Ziemba, Frank J. . *See*—
McNulty, Thomas C., and Ziemba. 3,352,784.
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Zimmerman, F., & Co. : *See*—
Becker, Kurt. 3,350,835.
Zipf, Carl-Heinz : *See*—
Paasche, Fritz, Zipf, and Müller. 3,351,283.
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169 : 3,350,721
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57 : 3,350,723
171 : 3,350,724
5– 12 : 3,350,725
317 : 3,350,726
345 : 3,350,727
6– 4 : 3,350,728
8– 17 : 3,351,419
116.2 : 3,351,420
159 : 3,350,729
9–317 : 3,350,730
10–136 : 3,350,731
12– 40.5 : 3,350,732
15– 21 : 3,350,733
102 : 3,350,734
104.94: 3,350,735
113 : 3,350,736
172 : 3,350,737
250.42: 3,350,738
16– 90 : 3,350,739
18– 5 : 3,350,740
8 : 3,350,741
12 : 3,350,742
16.5 : 3,350,743
19 : 3,350,744
26 : 3,350,745
30 : 3,350,746
3,350,747
34 : 3,350,748
21– 2.7 : 3,351,421
94 : 3,351,422
23– 22 : 3,351,423
3,351,424
23 : 3,351,425
114 : 3,351,426
202 : 3,351,427
204 : 3,351,428
3,351,429
230 : 3,351,430
231 : 3,351,431
258.5 : 3,351,432
301 : 3,351,433
310 : 3,351,434
315 : 3,351,435
345 : 3,351,436
24– 97 : 3,350,749
126 : 3,350,750
201 : 3,350,751
3,350,752
239 : 3,350,753
255 : 3,350,754
263 : 3,350,755
25– 2 : 3,350,756
112 : 3,350,757
28– 20 : 3,350,758
29– 25.12: 3,350,759
25.42: 3,350,760
34 : 3,350,761
90 : 3,350,762
149.5 : 3,350,763
160.6 : 3,350,764
182 : 3,351,437
3,351,438
182.2 : 3,351,439
182.5 : 3,351,440
183 : 3,351,441
183.5 : 3,351,442
203 : 3,350,765
211 : 3,350,766
235 : 3,350,767
271 : 3,350,768
431 : 3,350,769
475 : 3,350,770
477 : 3,350,771
488 : 3,350,772
492 : 3,350,773
564 : 3,350,774
572 : 3,350,775
592 : 3,350,776
620 : 3,350,777
30– 24 : 3,350,778
55 : 3,350,779
228 : 3,350,780
358 : 3,350,781
32– 32 : 3,350,782
33– 74 : 3,350,783

33– 75 : 3,350,784
178 : 3,350,785
3,350,786
180 : 3,350,787
34– 23 : 3,350,788
30 : 3,350,789
31 : 3,350,790
90 : 3,350,791
35– 8 : 3,350,792
9 : 3,350,793
48 : 3,350,794
36– 2.5 : 3,350,795
3,350,796
37– 53 : 3,350,797
65 : 3,350,798
40– 2 : 3,350,799
2.2 : 3,350,800
23 : 3,350,801
27.5 : 3,350,802
106.53: 3,350,803
124.1 : 3,350,804
125 : 3,350,805
336 : 3,350,806
42– 75 : 3,350,807
43– 3 : 3,350,808
24 : 3,350,809
57.5 : 3,350,810
44– 40 : 3,351,443
41 : 3,351,444
46– 51 : 3,350,811
161 : 3,350,812
243 : 3,350,813
49– 82 : 3,350,814
51– 7 : 3,350,815
80 : 3,350,816
165 : 3,350,817
246 : 3,350,818
52– 1 : 3,350,819
29 : 3,350,820
122 : 3,350,821
170 : 3,350,822
200 : 3,350,823
251 : 3,350,824
288 : 3,350,825
293 : 3,350,826
309 : 3,350,827
395 : 3,350,828
495 : 3,350,829
509 : 3,350,830
573 : 3,350,831
622 : 3,350,832
749 : 3,350,833
53– 3 : 3,350,834
66 : 3,350,835
67 : 3,350,836
77 : 3,350,837
86 : 3,350,838
88 : 3,350,839
180 : 3,350,840
186 : 3,350,841
316 : 3,350,842
55– 15 : 3,350,843
16 : 3,350,844
3,350,845
3,350,846
48 : 3,350,847
71 : 3,350,848
105 : 3,350,849
148 : 3,350,850
166 : 3,350,851
348 : 3,350,852
354 : 3,350,853
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3,350,856
363 : 3,350,857
376 : 3,350,858
380 : 3,350,859
387 : 3,350,860
484 : 3,350,861
493 : 3,350,862
56– 18 : 3,350,863
25.4 : 3,350,864
119 : 3,350,865
400.12: 3,350,866
57– 12 : 3,350,867
52 : 3,350,868
77.3 : 3,350,869
77.4 : 3,350,870
140 : 3,350,871

57–157 : 3,350,872
58– 4 : 3,350,873
52 : 3,350,874
109 : 3,350,875
60– 11 : 3,350,876
30 : 3,350,877
3,350,878
31 : 3,350,879
39.28: 3,350,880
52 : 3,350,881
54.6 : 3,350,882
3,350,883
78.5 : 3,351,617
203 : 3,350,884
3,350,885
204 : 3,350,886
251 : 3,350,887
61– 36 : 3,350,888
85 : 3,350,889
62– 45 : 3,350,890
58 : 3,350,891
94 : 3,350,892
126 : 3,350,893
140 : 3,350,894
197 : 3,350,895
200 : 3,350,896
209 : 3,350,897
218 : 3,350,898
414 : 3,350,899
64– 23 : 3,350,900
65– 3 : 3,351,445
65 : 3,351,446
3,351,447
91 : 3,351,448
122 : 3,351,449
157 : 3,351,450
3,351,451
182 : 3,351,452
66– 86 : 3,350,901
70– 74 : 3,350,902
456 : 3,350,903
71– 34 : 3,351,453
59 : 3,351,454
61 : 3,351,455
86 : 3,351,456
120 : 3,351,457
121 : 3,351.458
72– 17 : 3,350,904
28 : 3,350,905
37 : 3,350,906
38 : 3,350,907
102 : 3,350,908
242 : 3,350,909
253 : 3,350,910
265 : 3,350,911
310 : 3,350,912
342 : 3,350,913
393 : 3,350,914
73– 1 : 3,350,915
3,350,916
15.6 : 3,350,917
30 : 3,350,918
41.2 : 3,350,919
49.1 : 3,350,920
49.6 : 3,350,921
60 : 3,350,922
67.8 : 3,350,923
67.9 : 3,350,924
71.5 : 3,350,925
88.5 : 3,350,926
3,350,927
116 : 3,350,928
146 : 3,350,929
146.3 : 3,350,930
152 : 3,350,931
3,350,932
159 : 3,350,933
168 : 3,350,934
188 : 3,350,935
194 : 3,350,936
224 : 3,350,937
231 : 3,350,938
272 : 3,350,939
301 : 3,350,940
336.5 : 3,350,941
339 : 3,350,942
362 : 3,350,943
398 : 3,350,944
3,350,945
423 : 3,350,946

74– 5.41: 3,350,947
53 : 3,350,948
127 : 3,350,949
243 : 3,350,950
333 : 3,350,954
360 : 3,350,951
409 : 3,350,952
411.5 : 3,350,953
417 : 3,350,958
421 : 3,350,955
471 : 3,350,956
473 : 3,350,957
501 : 3,350,959
701 : 3,350,960
711 : 3,350,961
75– 3 : 3,351,459
60 : 3,351,460
68 : 3,351,461
74 : 3,351,462
170 : 3,351,463
212 : 3,351,464
76–104 : 3,350,962
77– 32.2 : 3,350,963
82– 4 : 3,350,964
20 : 3,350,965
21 : 3,350,966
46 : 3,350,967
83– 1 : 3,350,968
201.07: 3,350,969
3,350,970
354 : 3,350,971
686 : 3,350,972
84–478 : 3,350,973
85– 8.8 : 3,350,974
32 : 3,350,975
37 : 3,350,976
88– 1 : 3,350,977
14 : 3,350,978
3,350,979
24 : 3,350,980
3,350,981
3,350,982
28 : 3,350,983
89– 1.8 : 3,350,984
91– 87 : 3,350,985
414 : 3,350,986
92– 24 : 3,350,987
93– 61 : 3,350,988
95– 11.5 : 3,350,989
13 : 3,350,990
3,350,991
53.3 : 3,350,992
89 : 3,350,993
96– 3 : 3,351,465
29 : 3,351,466
48 : 3,351,467
56.3 : 3,351,468
76 : 3,351,469
77 : 3,351,470
98– 36 : 3,350,994
55 : 3,350,995
86 : 3,350,996
99– 78 : 3,351,471
146 : 3,351,472
186 : 3,351,473
329 : 3,350,997
100– 4 : 3,350,998
43 : 3,350,999
98 : 3,351,000
176 : 3,351,001
189 : 3,351,002
101– 18 : 3,351,003
69 : 3,351,004
77 : 3,351,005
93 : 3,351,006
3,351,007
401.1 : 3,351,009
465 : 3,351,008
102– 4 : 3,351,010
27 : 3,351,011
28 : 3,351,012
35.6 : 3,351,013
43 : 3,351,014
70.2 : 3,351,015
3,351,016
76 : 3,351,017
77 : 3,351,018
86.5 : 3,351,019
103– 2 : 3,351,020
52 : 3,351,021

103– 89 : 3,351,022
104–172 : 3,351,023
105–458 : 3,351,024
106– 52 : 3,351,474
3,351,475
56 : 3,351,476
3,351,477
90 : 3,351,478
208 : 3,351,479
210 : 3,351,480
288 : 3,351,481
107– 55 : 3,351,025
68 : 3,351,026
108– 51 : 3,351,027
56 : 3,351,028
112 : 3,351,029
110– 8 : 3,351,030
111– 1 : 3,351,031
112– 2 : 3,351,032
3,351,033
113– 1 : 3,351,034
114– 16 : 3,351,035
183 : 3,351,036
115– 1 : 3,351,037
117– 33.5 : 3,351,482
66 : 3,351,483
106 : 3,351,484
147 : 3,351,485
223 : 3,351,486
227 : 3,351,487
118– 24 : 3,351,038
70 : 3,351,039
249 : 3,351,040
122–250 : 3,351,041
3,351,042
123– 32 : 3,351,043
41.28: 3,351,044
52 : 3,351,045
125– 5 : 3,351,046
20 : 3,351,047
126– 92 : 3,351,048
127– 9 : 3,351,488
32 : 3,351,489
128– 1.2 : 3,351,049
2 : 3,351,050
24 : 3,351,051
53 : 3,351,052
78 : 3,351,053
83 : 3,351,054
87 : 3,351,055
142.5 : 3,351,056
188 : 3,351,057
216 : 3,351,058
253 : 3,351,059
263 : 3,351,060
283 : 3,351,061
284 : 3,351,062
303.1 : 3,351,063
129– 1 : 3,351,064
18 : 3,351,065
131–140 : 3,351,066
184 : 3,351,067
232 : 3,351,068
235 : 3,351,069
236 : 3,351,070
265 : 3,351,071
266 : 3,351,072
132– 46 : 3,351,073
79 : 3,351,074
133– 3 : 3,351,075
134– 58 : 3,351,076
147 : 3,351,077
135– 1 : 3,351,078
136– 6 : 3,351,490
86 : 3,351,491
3,351,492
89 : 3,351,493
120 : 3,351,494
146 : 3,351,495
153 : 3,351,496
178 : 3,351,497
205 : 3,351,498
236 : 3,351,499
137– 13 : 3,351,079
81.5 : 3,351,080
223 : 3,351,081
315 : 3,351,082
399 : 3,351,083
416 : 3,351,084
495 : 3,351,085

137–501 : 3,351,086
504 : 3,351,087
517 : 3,351,088
557 : 3,351,090
599 : 3,351,089
601 : 3,351,091
624.14: 3,351,092
625.27: 3,351,093
625.66: 3,351,094
637.4 : 3,351,095
138– 30 : 3,351,097
3,351,098
94.5 : 3,351,099
139– 25 : 3,351,096
207 : 3,351,100
140– 1 : 3,351,101
93 : 3,351,102
112 : 3,351,103
149 : 3,351,104
141– 18 : 3,351,105
67 : 3,351,106
144– 3 : 3,351,107
34 : 3,351,108
208 : 3,351,109
145– 52 : 3,351,111
146– 3 : 3,351,110
226 : 3,351,112
230 : 3,351,113
238 : 3,351,114
148– 1.5 : 3,351,500
6.14: 3,351,504
112 : 3,351,501
177 : 3,351,502
188 : 3,351,503
149– 19 : 3,351,505
20 : 3,351,506
151– 22 : 3,351,115
34 : 3,351,116
156– 60 : 3,351,507
159 : 3,351,508
195 : 3,351,509
232 : 3,351,510
527 : 3,351,511
580 : 3,351,512
157– 13 : 3,351,117
158–118 : 3,351,118
159– 13 : 3,351,119
3,351,120
160–188 : 3,351,121
368 : 3,351,122
161– 6 : 3,351,513
39 : 3,351,514
167 : 3,351,515
184 : 3,351,516
3,351,517
199 : 3,351,518
162– 17 : 3,351,519
164 : 3,351,520
307 : 3,351,521
337 : 3,351,522
373 : 3,351,523
374 : 3,351,524
164– 34 : 3,351,123
274 : 3,351,124
3,351,125
278 : 3,351,126
165– 9 : 3,351,127
22 : 3,351,128
30 : 3,351,129
39 : 3,351,130
159 : 3,351,131
166– 11 : 3,351,132
53 : 3,351,133
55.8 : 3,351,134
149 : 3,351,135
173 : 3,351,136
167– 53.1 : 3,351,525
65 : 3,351,526
3,351,527
3,351,528
3,351,529
3,351,530
83 : 3,351,531
172– 7 : 3,351,137
269 : 3,351,138
602 : 3,351,139
606 : 3,351,140
173– 38 : 3,351,141
147 : 3,351,142
174– 15 : 3,351,698

174– 35 : 3,351,699
50.56: 3,351,700
52 : 3,351,701
68.5 : 3,351,702
3,351,953
75 : 3,351,703
84 : 3,351,704
99 : 3,351,705
105 : 3,351,706
175–209 : 3,351,143
269 : 3,351,144
176– .17 : 3,351,532
40 : 3,351,533
42 : 3,351,534
67 : Re.26,294
84 : 3,351,535
177– 12 : 3,351,145
210 : 3,351,146
178– 5.2 : 3,351,707
5.4 : 3,351,708
3,351,709
6 : 3,351,710
53.1 : 3,351,711
179– 15 : 3,351,712
27 : 3,351,713
41 : 3,351,714
84 : 3,351,715
100.2 : 3,351,716
3,351,717
3,351,718
115.5 : 3,351,719
170.2 : 3,351,720
175.21: 3,351,721
3,351,722
180– 6.3 : 3,351,147
6.5 : 3,351,148
6.7 : 3,351,149
9.2 : 3,351,150
26 : 3,351,151
79.1 : 3,351,152
181– .5 : Re.26,297
3,351,153
33 : 3,351,154
51 : 3,351,155
184– 6 : 3,351,156
188– 18 : 3,351,157
65.4 : 3,351,158
78 : 3,351,159
88 : 3,351,160
152 : 3,351,161
164 : 3,351,162
196 : 3,351,163
3,351,164
192– 6 : 3,351,165
21.5 : 3,351,166
56 : 3,351,167
61 : 3,351,168
85 : 3,351,169
87.15: 3,351,170
193– 16 : 3,351,171
194– 71 : 3,351,172
198– 1 : 3,351,173
19 : 3,351,174
30 : 3,351,175
38 : 3,351,176
40 : 3,351,177
192 : 3,351,178
203 : 3,351,179
205 : 3,351,180
215 : 3,351,181
200– 60 : 3,351,723
86 : 3,351,724
137 : 3,351,725
152 : 3,351,726
166 : 3,351,727
167 : 3,351,728
172 : 3,351,729
202– 83 : 3,351,536
172 : 3,351,537
234 : 3,351,538
204– 14 : 3,351,539
35 : 3,351,540
47 : 3,351,541
149 : 3,351,542
192 : 3,351,543
195 : 3,351,544
196 : 3,351,545
243 : 3,351,546
206– 44 : 3,351,182
3,351,183
45.34: 3,351,188
46 : 3,351,184
3,351,189
56 : 3,351,190
3,351,191
3,351,192
60 : 3,351,185
76 : 3,351,186
81 : 3,351,187
208– 62 : 3,351,547
120 : 3,351,548

209– 3 : 3,351,193
5 : 3,351,194
39 : 3,351,195
73 : 3,351,196
74 : 3,351,197
111.6 : 3,351,198
170 : 3,351,199
299 : 3,351,200
329 : 3,351,201
474 : 3,351,202
210– 24 : 3,351,549
34 : 3,351,550
42 : 3,351,551
65 : 3,351,203
158 : 3,351,204
400 : 3,351,205
474 : 3,351,206
211– 13 : 3,351,207
3,351,208
49 : 3,351,209
74 : 3,351,210
169 : 3,351,211
177 : 3,351,212
212– 39 : 3,351,213
213– 9 : 3,351,214
214– 6 : 3,351,215
3,351,216
7 : 3,351,217
16.1 : 3,351,218
16.4 : 3,351,219
75 : 3,351,220
138 : 3,351,221
302 : 3,351,222
219– 10.55: 3,351,730
69 : 3,351,731
86 : 3,351,732
117 : 3,351,733
137 : 3,351,734
261 : 3,351,735
267 : 3,351,736
271 : 3,351,737
301 : 3,351,738
321 : 3,351,739
384 : 3,351,740
385 : 3,351,741
552 : 3,351,742
220– 12 : 3,351,223
15 : 3,351,224
22 : 3,351,225
25 : 3,351,226
60 : 3,351,227
66 : 3,351,228
97 : 3,351,229
113 : 3,351,230
221– 13 : 3,351,231
113 : 3,351,232
150 : 3,351,233
220 : 3,351,234
222– 1 : 3,351,235
20 : 3,351,236
23 : 3,351,237
3,351,238
54 : 3,351,239
70 : 3,351,240
158 : 3,351,241
189 : 3,351,242
3,351,243
216 : 3,351,244
308 : 3,351,245
380 : 3,351,246
402.12: 3,351,247
459 : 3,351,248
520 : 3,351,249
532 : 3,351,250
224– 29 : 3,351,251
225–103 : 3,351,252
226– 13 : 3,351,253
91 : 3,351,254
181 : 3,351,255
227–130 : 3,351,256
3,351,257
229– 1.5 : 3,351,258
4.5 : 3,351,259
17 : 3,351,260
28 : 3,351,261
29 : 3,351,262
40 : 3,351,263
42 : 3,351,264
43 : 3,351,265
3,351,266
44 : 3,351,267
3,351,270
72 : 3,351,268
75 : 3,351,269
230– 24 : 3,351,271
79 : 3,351,272
233– 20 : 3,351,273
235– 1.3 : 3,351,274
61 : 3,351,275
3,351,276
61.11: 3,351,743

235– 61.11: 3,351,744
92 : 3,351,745
132 : 3,351,277
144 : 3,351,278
151.11: 3,351,746
175 : 3,351,747
193 : 3,351,748
197 : 3,351,749
236– 34 : 3,351,279
46 : 3,351,280
56 : 3,351,281
3,351,282
238–283 : 3,351,283
239– 11 : 3,351,284
15 : 3,351,285
29.3 : 3,351,286
89 : 3,351,288
132.3 : 3,351,289
161 : 3,351,287
276 : 3,351,290
511 : 3,351,291
534 : 3,351,292
240– 3 : 3,351,750
10.6 : 3,351,751
49 : 3,351,752
106 : 3,351,753
241– 21 : 3,351,293
34 : 3,351,294
187 : 3,351,295
242– 45 : 3,351,296
58.2 : 3,351,297
74.1 : 3,351,298
79 : 3,351,299
84.2 : 3,351,300
84.21: 3,351,301
156.2 : 3,351,302
244– 3.16: 3,351,303
17.19: 3,351,304
77 : 3,351,315
93 : 3,351,306
136 : 3,351,305
248– 18 : 3,351,307
22 : 3,351,308
3,351,309
27.8 : 3,351,310
226 : 3,351,311
246 : 3,351,313
358 : 3,351,314
448 : 3,351,312
250– 49.5 : 3,351,754
3,351,755
83.3 : 3,351,756
3,351,757
3,351,758
83.6 : 3,351,759
106 : 3,351,760
199 : 3,351,761
206 : 3,351,762
209 : 3,351,763
214 : 3,351,764
219 : 3,351,765
226 : 3,351,766
230 : 3,351,767
237 : 3,351,768
251– 30 : 3,351,316
147 : 3,351,317
188 : 3,351,318
252– 41 : 3,351,552
45 : 3,351,553
46.6 : 3,351,554
79.2 : 3,351,555
102 : 3,351,556
106 : 3,351,557
137 : 3,351,558
138 : 3,351,559
171 : 3,351,560
309 : 3,351,561
372 : 3,351,562
373 : 3,351,563
377 : 3,351,564
437 : 3,351,565
452 : 3,351,566
466 : 3,351,567
520 : 3,351,568
253– 78 : 3,351,319
254– 29 : 3,351,320
86 : 3,351,321
256– 13.1 : 3,351,322
25 : 3,351,323
68 : 3,351,324
258– 1.4 : 3,351,325
259– 95 : 3,351,326
260– 2.5 : 3,351,569
3,351,570
4 : 3,351,571
5 : 3,351,572
18 : 3,351,573
3,351,574
19 : 3,351,575
23 : 3,351,576
3,351,577

260– 28.5 : 3,351,601
29.6 : 3,351,602
31.2 : 3,351,603
31.8 : 3,351,604
33.4 : 3,351,605
33.6 : 3,351,606
39 : 3,351,607
45.9 : 3,351,608
3,351,609
47 : 3,351,610
3,351,611
3,351,624
57 : 3,351,612
64 : 3,351,613
67 : 3,351,614
67.6 : 3,351,615
75 : 3,351,616
78.5 : 3,351,617
79.7 : 3,351,618
80.76: 3,351,619
88.2 : 3,351,620
3,351,621
89.7 : 3,351,622
94.9 : 3,351,623
153 : 3,351,578
158 : 3,351,579
160 : 3,351,580
209.5 : 3,351,581
210.5 : 3,351,582
231 : 3,351,583
239 : 3,351,584
3,351,585
239.1 : 3,351,586
3,351,587
239.3 : 3,351,588
239.55: 3,351,590
239.6 : 3,351,589
240 : 3,351,591
3,351,592
241 : 3,351,593
242 : 3,351,594
243 : 3,351,595
3,351,596
3,351,597
268 : 3,351,598
3,351,599
288 : 3,351,600
292 : 3,351,625
294.3 : 3,351,626
308 : 3,351,627
309 : 3,351,628
309.6 : 3,351,629
326.12: 3,351,630
327 : 3,351,631
3,351,632
343.2 : 3,351,633
346.4 : 3,351,634
348.5 : 3,351,635
397.1 : 3,351,636
3,351,637
3,351,638
397.3 : 3,351,639
3,351,640
397.4 : 3,351,641
397.45: 3,351,642
404 : 3,351,643
408 : 3,351,644
410 : 3,351,645
429.7 : 3,351,646
429.9 : 3,351,647
439 : 3,351,648
440 : 3,351,649
453 : 3,351,650
465 : 3,351,651
473 : 3,351,652
484 : 3,351,653
505 : 3,351,654
3,351,655
528 : 3,351,656
530 : 3,351,657
534 : 3,351,658
558 : 3,351,659
563 : 3,351,660
3,351,661
566 : 3,351,662
583 : 3,351,663
584 : 3,351,664
593 : 3,351,665
604 : 3,351,666
613 : 3,351,667
615.5 : 3,351,668
621 : 3,351,669
623 : 3,351,670
653.8 : 3,351,671
671 : 3,351,672
830 : 3,351,673
3,351,674
845 : 3,351,675
859 : 3,351,676
889 : 3,351,677
897 : 3,351,678

260–943 : 3,351,679
948 : 3,351,680
953 : 3,351,681
954 : 3,351,682
982 : 3,351,683
261– 48 : 3,351,327
112 : 3,351,328
263– 3 : 3,351,329
5 : 3,351,330
40 : 3,351,331
52 : 3,351,684
3,351,685
264– .5 : 3,351,686
58 : 3,351,687
63 : 3,351,688
69 : 3,351,689
81 : 3,351,690
90 : 3,351,691
132 : 3,351,692
160 : 3,351,693
176 : 3,351,694
3,351,695
195 : 3,351,696
288 : 3,351,697
266– 23 : 3,351,332
3,351,333
24 : 3,351,334
41 : 3,351,335
267– 3 : 3,351,336
65 : 3,351,337
270– 79 : 3,351,338
94 : 3,351,339
271– 51 : 3,351,340
87 : 3,351,341
272– 57 : 3,351,342
273– 26 : 3,351,343
95 : 3,351,344
176 : 3,351,345
193 : 3,351,346
213 : 3,351,347
277– 32 : 3,351,348
34 : 3,351,349
58 : 3,351,350
115 : 3,351,351
206 : 3,351,352
280– 7.13: 3,351,353
11.35: 3,351,354
3,351,355
179 : 3,351,356
415 : 3,351,357
478 : 3,351,358
285– 7 : 3,351,359
41 : 3,351,360
47 : 3,351,361
83 : 3,351,362
303 : 3,351,363
287– 53 : 3,351,364
127 : 3,351,365
189.36: 3,351,366
3,351,367
292–251.5 : 3,351,368
263 : 3,351,369
294– 64 : 3,351,370
77 : 3,351,371
81 : 3,351,372
296– 23 : 3,351,373
31 : 3,351,374
97 : 3,351,375
297– 16 : 3,351,376
162 : 3,351,377
239 : 3,351,378
358 : 3,351,379
377 : 3,351,380
385 : 3,351,381
389 : 3,351,382
460 : 3,351,383
298– 26 : 3,351,384
299– 1 : 3,351,385
92 : 3,351,386
300– 21 : 3,351,387
302– 2 : 3,351,388
14 : 3,351,389
49 : 3,351,390
53 : 3,351,391
307– 38 : 3,351,769
64 : 3,351,770
88 : 3,351,771
3,351,772
88.5 : 3,351,773
3,351,774
3,351,775
3,351,776
3,351,777
3,351,778
3,351,779
3,351,780
3,351,781
3,351,782
3,351,783
3,351,784
141 : 3,351,785

308– 5 : 3,351,392
9 : 3,351,393
3,351,394
27 : 3,351,395
36.3 : 3,351,396
160 : 3,351,397
177 : 3,351,398
187 : 3,351,399
310– 8 : 3,351,786
8.4 : 3,351,787
22 : 3,351,788
37 : 3,351,789
68 : 3,351,790
94 : 3,351,791
312–111 : 3,351,400
201 : 3,351,401
233 : 3,351,402
245 : 3,351,403
246 : 3,351,404
297 : 3,351,405
332 : 3,351,406
313– 38 : 3,351,792
62 : 3,351,793
82 : 3,351,794
85 : 3,351,795
109 : 3,351,796
174 : 3,351,797
225 : 3,351,798
231 : 3,351,799
244 : 3,351,800
270 : 3,351,801
315 : 3,351,802
331 : 3,351,803
315– 5.22: 3,351,805
20 : 3,351,804
39 : 3,351,806
99 : 3,351,807
102 : 3,351,808
185 : 3,351,809
194 : 3,351,810
316– 25 : 3,351,407
317– 5 : 3,351,811
13 : 3,351,812
18 : 3,351,813
36 : 3,351,814
40 : 3,351,815
101 : 3,351,816
112 : 3,351,817
124 : 3,351,818
140 : 3,351,819
148.5 : 3,351,820
3,351,821
3,351,822
230 : 3,351,823
234 : 3,351,824
3,351,825
235 : 3,351,826
3,351,827
3,351,828
318– 18 : 3,351,829
48 : 3,351,830
77 : 3,351,831
118 : 3,351,832
132 : 3,351,833
3,351,834
227 : 3,351,835
443 : 3,351,836
320– 1 : 3,351,837
321– 5 : 3,351,838
45 : 3,351,839
3,351,840
3,351,841
69 : 3,351,842
322– 28 : 3,351,843
79 : 3,351,844
87 : 3,351,845
323– 1 : 3,351,846
4 : 3,351,847
22 : 3,351,848
45 : 3,351,849
51 : 3,351,850
89 : 3,351,851
324– 40 : 3,351,852
57 : 3,351,853
68 : 3,351,854
70 : 3,351,855
99 : 3,351,856
103 : 3,351,857
325– 15 : 3,351,858
42 : 3,351,859
173 : 3,351,860
410 : 3,351,861
328– 1 : 3,351,862
171 : 3,351,863
329–126 : 3,351,864
330– 9 : 3,351,865
15 : 3,351,866
16 : 3,351,867
331– 17 : 3,351,868
77 : 3,351,869
94.5 : 3,351,870

331–111 : 3,351,871
113 : 3,351,872
332– 9 : 3,351,873
333– 10 : 3,351,874
71 : 3,351,875
84 : 3,351,876
98 : 3,351,877
336–155 : 3,351,878
170 : 3,351,879
211 : Re.26,296
338– 6 : 3,351,880
123 : 3,351,881
322 : 3,351,882
339– 52 : 3,351,883
3,351,884
74 : 3,351,885

339– 90 : 3,351,886
91 : 3,351,887
93 : 3,351,888
97 : 3,351,889
103 : Re.26,295
143 : 3,351,890
176 : 3,351,891
184 : 3,351,892
198 : 3,351,893
217 : 3,351,894
340– 3 : 3,351,895
3,351,896
5 : 3,351,897
7 : 3,351,898
3,351,899
8 : 3,351,900

340– 12 : 3,351,901
3,351,902
17 : 3,351,903
97 : 3,351,904
146.1 : 3,351,905
146.3 : 3,351,906
147 : 3,351,907
3,351,908
172.5 : 3,351,909
3,351,910
3,351,911
3,351,912
3,351,913
3,351,914
3,351,915
3,351,916

340–172.5 : 3,351,917
3,351,918
3,351,919
173 : 3,351,920
174 : 3,351,921
3,351,922
3,351,923
3,351,924
174.1 : 3,351,925
187 : 3,351,952
242 : 3,351,926
248 : 3,351,927
324 : 3,351,928
3,351,929
347 : 3,351,930
3,351,931

340–347 : 3,351,932
359 : 3,351,933
409 : 3,351,934
343– 5 : 3,351,935
3,351,936
3,351,937
6.5 : 3,351,938
17.1 : 3,351,939
100 : 3,351,940
107 : 3,351,941
112 : 3,351,942
3,351,943
113 : 3,351,944
225 : 3,351,945
705 : 3,351,946
840 : 3,351,947

346– 76 : 3,351,948
94 : 3,351,949
104 : 3,351,950
107 : 3,351,951
350– 69 : 3,351,408
117 : 3,351,409
161 : 3,351,410
187 : 3,351,411
207 : 3,351,412
352– 72 : 3,351,413
84 : 3,351,414
401–137 : 3,351,415
201 : 3,351,416
206 : 3,351,417
270 : 3,351,418

Classification of Designs

D02–331 : 209,129
D09– 2 : 209,130
209,131
D13– 1 : 209,132
209,133
7 : 209,134
D14– 3 : 209,135
209,136
209,137
209,138

D24– 1 : 209,139
D26– 1 : 209,140
13 : 209,141
209,142
209,143
209,144
209,145
209,146
14 : 209,147
D33– 7 : 209,148

D34– 5 : 209,149
13 : 209,150
15 : 209,151
209,152
D37– 1 : 209,153
D40– 1 : 209,154
D41– 1 : 209,155
D42– 7 : 209,156
D44– 1 : 209,157
4 : 209,158

D44– 29 : 209,159
209,160
D48– 2 : 209,161
24 : 209,162
209,163
27 : 209,164
209,165
29 : 209,166
D54– 1 : 209,167
209,168

D54– 2 : 209,169
6 : 209,170
9 : 209,171
11 : 209,172
D56– 4 : 209,173
D57– 1 : 209,174
209,175
D58– 5 : 209,176
8 : 209,177
D61– 1 : 209,178

D74– 17 : 209,179
D83– 1 : 209,180
D86– 8 : 209,181
10 : 209,182
209,183
D88– 4 : 209,184
D90– 3 : 209,185
D91– 1 : 209,186
D95– 5 : 209,187
D97– 1 : 209,188

Classification of Plants

P. – 41 : 2,775

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

Alabama	1
Alaska	53
Arizona	2
Arkansas	3
California	4
Canal Zone	57
Colorado	5
Connecticut	6
Delaware	7
District of Columbia	8
Florida	9
Georgia	10
Guam	58
Hawaii	50
Idaho	11
Illinois	12
Indiana	13
Iowa	14
Kansas	15
Kentucky	16
Louisiana	17
Maine	18
Maryland	19
Massachusetts	20
Michigan	21
Minnesota	22
Mississippi	23
Missouri	24
Montana	25
Nebraska	26
Nevada	27
New Hampshire	28
New Jersey	29
New Mexico	30
New York	31
North Carolina	32
North Dakota	33
Ohio	34
Oklahoma	35
Oregon	36
Pennsylvania	37
Puerto Rico	51
Rhode Island	38
South Carolina	39
South Dakota	40
Tennessee	41
Texas	42
U.S. Army	55
U.S. Air Force	54
U.S. Navy	56
U.S. Samoa	59
Utah	43
Vermont	44
Virgin Islands	52
Virginia	45
Washington	46
West Virginia	47
Wisconsin	48
Wyoming	49

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,351,073
3,351,760
4 : 3,350,731
3,350,801
3,350,878
3,351,016
3,351,216
3,351,286
3,351,455
3,351,509
3,351,778
3,351,782
3,351,846
3,351,859
3,351,913
3,351,919
6 : 3,350,721
3,350,723
3,350,724
3,350,736
3,350,752
3,350,753
3,350,775
3,350,782
3,350,786
3,350,798
3,350,799
3,350,811
3,350,828
3,350,836
3,350,838
3,350,842
3,350,908
3,350,913
3,350,937
3,350,947
3,350,953
3,350,956
3,350,958
3,350,964
3,350,979
3,350,983
3,351,000
3,351,012
3,351,017
3,351,031
3,351,035
3,351,038
3,351,049
3,351,050

6 : 3,351,058
3,351,065
3,351,066
3,351,068
3,351,072
3,351,074
3,351,082
3,351,085
3,351,094
3,351,095
3,351,106
3,351,111
3,351,112
3,351,114
3,351,133
3,351,134
3,351,143
3,351,144
3,351,145
3,351,148
3,351,151
3,351,176
3,351,198
3,351,204
3,351,218
3,351,222
3,351,228
3,351,237
3,351,240
3,351,244
3,351,252
3,351,253
3,351,273
3,351,290
3,351,293
3,351,300
3,351,303
3,351,305
3,351,317
3,351,318
3,351,326
3,351,332
3,351,346
3,351,347
3,351,356
3,351,360
3,351,366
3,351,371
3,351,374
3,351,378

6 : 3,351,391
3,351,399
3,351,428
3,351,431
3,351,440
3,351,479
3,351,484
3,351,487
3,351,493
3,351,505
3,351,511
3,351,542
3,351,550
3,351,581
3,351,593
3,351,621
3,351,627
3,351,634
3,351,655
3,351,672
3,351,679
3,351,680
3,351,691
3,351,714
3,351,755
3,351,758
3,351,765
3,351,773
3,351,774
3,351,785
3,351,786
3,351,795
3,351,801
3,351,816
3,351,832
3,351,835
3,351,839
3,351,840
3,351,857
3,351,875
3,351,876
3,351,880
3,351,889
3,351,900
3,351,901
3,351,902
3,351,914
3,351,916
3,351,917
3,351,922

6 : 3,351,930
3,351,932
3,351,940
3,351,953
7 : 3,351,414
8 : 3,350,722
3,350,783
3,350,822
3,351,295
3,351,343
3,351,750
9 : 3,350,803
3,350,876
3,350,939
3,350,943
3,350,963
3,351,014
3,351,030
3,351,032
3,351,177
3,351,193
3,351,266
3,351,272
3,351,280
3,351,304
3,351,319
3,351,359
3,351,363
3,351,398
3,351,408
3,351,432
3,351,442
3,351,522
3,351,533
3,351,539
3,351,540
3,351,556
3,351,738
3,351,763
3,351,883
3,351,884
3,351,897
10 : 3,350,808
3,350,872
3,351,056
3,351,242
3,351,457
3,351,517
3,351,619
3,351,678

11 : 3,350,926
3,350,978
3,350,998
3,351,009
3,351,368
3,351,381
3,351,513
3,351,856
12 : 3,350,739
3,350,830
3,350,846
3,350,976
3,351,046
3,351,110
3,351,199
3,351,311
3,351,375
3,351,401
3,351,453
3,351,473
3,351,741
3,351,775
3,351,870
3,351,871
13 : 3,350,774
3,350,890
3,350,988
3,351,003
3,351,027
3,351,083
3,351,090
3,351,126
3,351,184
3,351,239
3,351,263
3,351,265
3,351,310
3,351,409
3,351,421
17 : 3,350,725
3,350,754
3,350,761
3,350,784
3,350,847
3,350,893
3,350,912
3,350,919
3,350,930
3,350,940
3,350,942

17 : 3,350,961
3,350,986
3,351,008
3,351,024
3,351,034
3,351,053
3,351,059
3,351,061
3,351,086
3,351,122
3,351,138
3,351,189
3,351,206
3,351,211
3,351,212
3,351,223
3,351,233
3,351,254
3,351,264
3,351,267
3,351,277
3,351,340
3,351,345
3,351,348
3,351,357
3,351,369
3,351,377
3,351,403
3,351,405
3,351,443
3,351,472
3,351,480
3,351,483
3,351,488
3,351,497
3,351,531
3,351,549
3,351,561
3,351,567
3,351,631
3,351,661
3,351,662
3,351,703
3,351,711
3,351,717
3,351,718
3,351,725
3,351,732
3,351,752
3,351,804

17 : 3,351,809
3,351,813
3,351,815
3,351,819
3,351,820
3,351,826
3,351,947
18 : 3,350,738
3,350,880
3,350,904
3,350,999
3,351,069
3,351,158
3,351,159
3,351,186
3,351,232
3,351,287
3,351,288
3,351,329
3,351,335
3,351,386
3,351,596
3,351,597
3,351,708
3,351,709
3,351,790
3,351,939
3,351,945
19 : 3,350,881
3,351,139
3,351,175
3,351,861
20 : 3,351,171
3,351,219
3,351,229
21 : 3,350,729
3,350,853
3,350,854
3,350,855
3,350,856
3,350,861
3,350,862
3,350,899
3,350,928
3,351,574
3,351,673
3,351,674
3,351,777
22 : 3,351,108
3,351,136
3,351,140
3,351,230
3,351,420
3,351,666
24 : 3,350,864
3,351,011
3,351,225
3,351,250
3,351,292
3,351,314
3,351,350
3,351,463
3,351,495
3,351,534
3,351,536
3,351,607
3,351,699
3,351,761
3,351,799
3,351,853
3,351,890
3,351,931
3,351,941
3,351,942
3,351,943
3,351,944
25 : 3,350,732
3,350,748
3,350,771
3,350,778
3,350,795
3,350,834
3,350,846
3,350,927
3,350,936
3,350,945
3,350,990
3,350,991
3,350,993
3,351,006
3,351,052
3,351,101
3,351,105
3,351,194
3,351,209
3,351,231
3,351,276
3,351,291
3,351,323
3,351,407
3,351,427

25 : 3,351,439
3,351,465
3,351,466
3,351,470
3,351,478
3,351,502
3,351,541
3,351,568
3,351,688
3,351,700
3,351,706
3,351,744
3,351,762
3,351,764
3,351,770
3,351,776
3,351,802
3,351,851
3,351,948
3,351,951
26 : 3,350,718
3,350,730
3,350,744
3,350,749
3,350,773
3,350,805
3,350,823
3,350,882
3,350,894
3,350,948
3,350,951
3,350,975
3,351,007
3,351,048
3,351,076
3,351,077
3,351,080
3,351,127
3,351,147
3,351,168
3,351,187
3,351,192
3,351,200
3,351,220
3,351,262
3,351,302
3,351,312
3,351,321
3,351,402
3,351,404
3,351,416
3,351,642
3,351,669
3,351,836
3,351,888
3,351,912
3,351,946
27 : Re.26,294
3,350,804
3,350,814
3,350,860
3,350,950
3,350,955
3,350,974
3,350,984
3,351,029
3,351,088
3,351,104
3,351,116
3,351,117
3,351,215
3,351,238
3,351,315
3,351,341
3,351,392
3,351,514
3,351,519
3,351,537
3,351,825
3,351,878
3,351,934
3,351,952
29 : 3,350,883
3,351,060
3,351,115
3,351,156
3,351,173
3,351,207
3,351,682
3,351,702
3,351,742
3,351,783
3,351,864
3,351,887
30 : 3,351,236
3,351,462
31 : 3,350,791
3,351,078
33 : 3,350,727
34 : 3,350,766
3,350,781

34 : 3,350,825
3,350,858
3,350,888
3,350,901
3,350,915
3,350,917
3,350,922
3,350,923
3,350,929
3,351,062
3,351,063
3,351,070
3,351,081
3,351,102
3,351,119
3,351,128
3,351,188
3,351,249
3,351,255
3,351,271
3,351,284
3,351,338
3,351,344
3,351,410
3,351,454
3,351,458
3,351,481
3,351,494
3,351,504
3,351,528
3,351,538
3,351,548
3,351,554
3,351,562
3,351,563
3,351,564
3,351,566
3,351,572
3,351,577
3,351,584
3,351,595
3,351,603
3,351,616
3,351,629
3,351,630
3,351,632
3,351,635
3,351,636
3,351,637
3,351,638
3,351,639
3,351,640
3,351,646
3,351,649
3,351,656
3,351,658
3,351,660
3,351,663
3,351,665
3,351,671
3,351,677
3,351,681
3,351,695
3,351,713
3,351,720
3,351,722
3,351,724
3,351,756
3,351,757
3,351,780
3,351,784
3,351,803
3,351,866
3,351,868
3,351,879
3,351,891
3,351,918
3,351,938
36 : Re.26,295
3,350,728
3,350,735
3,350,764
3,350,777
3,350,779
3,350,793
3,350,809
3,350,812
3,350,813
3,350,815
3,350,818
3,350,831
3,350,839
3,350,841
3,350,844
3,350,857
3,350,859
3,350,891
3,350,903
3,350,909
3,350,916
3,350,918

36 : 3,350,944
3,350,946
3,350,949
3,350,954
3,350,967
3,350,968
3,350,973
3,350,977
3,350,980
3,350,982
3,350,994
3,351,009
3,351,015
3,351,028
3,351,036
3,351,043
3,351,057
3,351,064
3,351,121
3,351,129
3,351,146
3,351,154
3,351,166
3,351,178
3,351,183
3,351,191
3,351,203
3,351,208
3,351,210
3,351,227
3,351,247
3,351,260
3,351,281
3,351,289
3,351,306
3,351,342
3,351,353
3,351,393
3,351,394
3,351,395
3,351,417
3,351,437
3,351,449
3,351,460
3,351,471
3,351,477
3,351,496
3,351,498
3,351,520
3,351,543
3,351,555
3,351,557
3,351,573
3,351,601
3,351,604
3,351,605
3,351,622
3,351,651
3,351,653
3,351,667
3,351,690
3,351,698
3,351,707
3,351,712
3,351,719
3,351,737
3,351,749
3,351,751
3,351,759
3,351,766
3,351,771
3,351,787
3,351,792
3,351,794
3,351,800
3,351,805
3,351,806
3,351,811
3,351,830
3,351,831
3,351,841
3,351,874
3,351,882
3,351,885
3,351,903
3,351,907
3,351,910
3,351,920
3,351,926
3,351,928
3,351,929
3,351,935
3,351,950
37 : 3,350,871
3,350,877
3,350,933
3,351,051
3,351,096
3,351,103
3,351,339
3,351,422

37 : 3,351,615
3,351,736
38 : 3,350,824
39 : 3,350,720
3,350,745
3,350,747
3,350,763
3,350,794
3,350,797
3,350,810
3,350,827
3,350,833
3,350,892
3,350,925
3,350,957
3,350,969
3,351,004
3,351,039
3,351,055
3,351,087
3,351,118
3,351,169
3,351,205
3,351,214
3,351,246
3,351,278
3,351,334
3,351,361
3,351,362
3,351,367
3,351,400
3,351,418
3,351,436
3,351,444
3,351,467
3,351,474
3,351,475
3,351,503
3,351,518
3,351,551
3,351,552
3,351,558
3,351,575
3,351,602
3,351,647
3,351,675
3,351,684
3,351,687
3,351,692
3,351,694
3,351,753
3,351,796
3,351,818
3,351,838
3,351,843
3,351,844
3,351,845
3,351,849
3,351,855
3,351,895
3,351,915
3,351,927
40 : Re.26,297
3,350,931
3,351,079
3,351,084
3,351,141
3,351,153
3,351,181
3,351,226
3,351,380
3,351,459
3,351,547
3,351,606
3,351,623
3,351,664
41 : 3,350,733
3,350,792
3,350,985
3,351,245
3,351,370
3,351,406
3,351,521
42 : Re.26,296
3,350,726
3,350,751
3,350,757
3,350,767
3,350,772
3,350,787
3,350,800
3,350,802
3,350,807
3,350,819
3,350,885
3,350,959
3,350,971
3,351,001
3,351,002
3,351,010
3,351,022

42 : 3,351,054
3,351,071
3,351,130
3,351,224
3,351,258
3,351,299
3,351,316
3,351,324
3,351,325
3,351,383
3,351,387
3,351,388
3,351,397
3,351,476
3,351,486
3,351,489
3,351,499
3,351,501
3,351,507
3,351,510
3,351,527
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DESIGN PATENTS

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PLANT PATENTS

6 : 2,775

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 7, 1967 Volume 844 Number 1

TRADEMARKS

NOTICES

New Search Room Hours

Effective Friday, October 20, 1967, the Public Search Room will be open from 7:30 a.m. to 6:00 p.m. on workdays.

The discontinuance of the additional night and Saturday hours is due to budgetary and other operating considerations.

RICHARD A. WAHL,
Assistant Commissioner.

Oct. 18, 1967.

Notice of Tentative Recordation of a Trade Name

[T.D. 67–234]

Tentative recordation of trade name under section 1124, title 15, United States Code, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS
Washington, D.C., October 2, 1967

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 1124, title 15, United States Code, and section 11.16, Customs Regulations:

"BEAUNIT CORPORATION," is a trade name used by Beaunit Corporation (also doing business as Beaunit Fibers and Beaunit Textiles), a corporation organized under the laws of the State of New York, located at 261 Madison Avenue, New York, New York, 10016. The trade name is used in connection with man-made fibers, knitted and woven fabrics and garments, manufactured in the United States.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C., 20226, before the expiration of 30 days after October 31, 1967, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after October 31, 1967, of any opposition proceedings.

Until 45 days after October 31, 1967, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized. If a notice is received that an opposition has been filed, such articles shall continue to be detained until a final determination is made concerning the right of the applicant of the trade name. Articles detained either before or after any such notice is received shall receive the treatment provided for in section 11.17(b), Customs Regulations, which permits

CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17, 337
Date of oldest new application	Oct. 7, 1966
Date of oldest amended application (filing date)	Oct. 30, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	10-7-66	10-5-65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	12-14-66	9-29-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	11-22-66	10-18-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	12-6-66	10-30-64
Renewals (All Classes)	9-1-67	....
Sec. 12(c) Publications (All Classes)	9-5-67	....

Applications filed during the month of September 1967—2,140

Registrations Issued	445—No. 838,141 to No. 838,585
Renewals Issued	60

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

removal or obliteration of the offending mark or name prior to release, or exportation or destruction of the merchandise.

LESTER D. JOHNSON,
Commissioner of Customs.

Veterans Day Holiday

Since Veterans Day falls this year on a Saturday, the preceding day, Friday, November 10, is considered to be a holiday within the District of Columbia and the Patent Office will be closed for business on that day. Accordingly, any action due on November 10, or November 11, 1967, is to be considered timely if taken on November 13, 1967.

By direction of the Acting Commissioner.

JOSEPH SCHIMMEL,
Solicitor.

Oct. 11, 1967.

Trademark Suits

Notices under 15 U.S.C. 1116 ; Trademark Act of July 5, 1946

Reg. No. 204,796 (CBR), Jean Bergmann, Calculating machines, **filed** June 2, 1967, D.C., S.D.N.Y., Doc. 67–C–2140, *Mole-Richardson Co.* v. *Times Square Stage Lighting Co., Inc.* Consent judgment, defendant enjoined, July 25, 1967.

Reg. No. 204,873 (COAT-O-MAIL), The Campe Corporation, Men's, women's, and children's knitted sweaters, **filed** Aug. 7, 1967, D.C., N.D. Calif. (San Francisco), Doc. 47611, *Stagecoach Enterprises* v. *E. J. Clemente et al.*

Reg. No. 320,151 (LOCKHEED), Lockheed Aircraft Corp., Aeroplanes and parts thereof exclusive of hydraulic brakes or braking equipment not in other classes ; **Reg. No. 373,314,** same, Airplanes and structural parts therefor not in other classes ; **Reg. No. 649,614** (LOCKHEED ELECTRA AND DESIGN), same, Airplanes and components thereof, **filed** Apr. 6, 1962, D.C., N.D. Calif. (San Francisco), Doc. 40628, *Lockheed Aircraft Corporation* v. *Wagner Electric Corporation.* Consent judgment, July 5, 1967.

Reg. No. 373,314. (See Reg. No. 320,151.)

Reg. No. 386,919 (TELESIGN), Naxon Telesign Corp., Gaseous-tube and filament lamp electric signs, electric sign flashing and control devices, and/or equipment for the above, **filed** Aug. 14, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1410, *Naxon Telesign Corp.* v. *Tel-A-Sign Incorporated and Scopitone Incorporated.*

Reg. No. 401,915 (TUSSY), Lehn and Fink Products Corp., Perfume, eau de cologne, toilet powders, face powder, liquid face powder, dusting powder, talcum powder, sachet, rouge, lipstick, pomade, toilet creams, cleansing creams, tissue cream, skin cream, finishing cream, almond cream, eye cream, night cream, creamy masque, powder base cream, toilet lotions, powder base lotion, skin lotion, hand lotion, cucumber lotion, deodorant, eyebrow pencils, eye shadow, mascara (cosmetique), leg tinting or make-up cosmetic, bubble bath preparation, anti-sunburn foundation cream, suntan lotion, suntan oil, preparations for shampooing and for brightening the hair and restoring and preserving its luster and sheen, hair tonic ; preparations for the care of the nails—namely, nail polish, nail cream, cream enamel, nail polish dissolvent, cuticle oil, nail cuticle remover, preparation for removing stains from the skin and from under the nails ; vanity cases containing powder and/or rouge and/or lipsticks, refills for vanities, beauty cases containing different assortments of some of the aforementioned toilet preparations ; **Reg. No. 773,133** (TRESSY), American Doll and Toy Corporation, Dolls, **filed** Feb. 25, 1966, D.C., S.D.N.Y., Doc. 66–C–541, *American Character Inc.* v. *Lehn and Fink Products Corp.* Stipulation and order of dismissal, July 11, 1967.

Reg. No. 428,563. (See Reg. No. 613,544.)

Reg. No. 436,379 (SYLKAY), Kleinman Bros., Chains of gold, silver and other precious metals, **filed** Jan. 8, 1964, D.C., S.D.N.Y., Doc. 64–C–72, *Kleinman Bros.* v. *Gama Chain Company, Inc.* Stipulation and order that the temporary injunction order is made permanent and action is discontinued without costs, Aug. 14, 1967.

Reg. No. 527,862 (DRAMAMINE), G. D. Searle and Co., Dimenhydrinate tablets useful in the prevention and treatment of motion sickness, nausea, and vomiting, and a histamine antagonist, **filed** May 10, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67–C–424, *G. D. Searle & Co.* v. *Generic Formulae Inc. et ano.*

Reg. No. 593,787 (NOVAHISTINE), Allied Laboratories Inc., Preparation useful for nasal congestion, allergic rhinitis and allergic bronchial coughs, **filed** Mar. 15, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67–C–245, *Dow Chemical Co.* v. *Generic Formulae Inc.*

Reg. No. 574,642 (BARONESS), Baroness Blouse Inc., Ladies' and misses' blouses and jackets, **filed** Aug. 18, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1223–IH, *Baroness Blouse Inc.* v. *Baroness Inc.*

Reg. No. 613,544 (OLD PAL AND DESIGN), Jacob M. Goldstein, Fishing equipment—namely, minnow buckets, bait boxes, fly and leader boxes, minnow traps, and wade cans ; **Reg. No. 798,497** (OLD PAL), Old Pal Inc., Fishing equipment—namely, minnow buckets, bait boxes, fly and leader boxes, minnow traps, and wade cans, fishing rods and reels therefor ; **Reg. No. 798,498,** (OLD PAL AND DESIGN), same ; **Reg. No. 428,563** (PAL), James Heddon's Sons, Fishing rods, **filed** Aug. 10, 1966, D.C., S.D.N.Y., Doc. 66–C–2495, *Old Pal Inc.* v. *James Heddon's Sons.* Stipulation and order of discontinuance, Mar. 17, 1967.

Reg. No. 614,915 (DAIRYLAND), Foremost Dairies, Inc., Ice cream and sherbet, **filed** July 25, 1967, D.C., W.D. Tex. (San Antonio), Doc. C–67–71–SA, *Foremost Dairies, Inc.* v. *Leon McDonald, doing business as Mac's Dairyland Mobile Ice Cream Co.* Final judgment granting permanent injunction, July 31, 1967.

Reg. No. 645,435 (CASUAL CORNER), Casual Corner, Inc., Women's apparel—namely, dresses, shorts, slacks, sport jackets, coats, suits, sweaters, blouses, skirts, swim wear, shirts and beachwear, **filed** Aug. 12, 1967, D.C.N.J. (Newark), Doc. 860–67, *Casual Corner Associates, Inc.* v. *Ceil Geller.*

Reg. No. 649,614. (See Reg. No. 320,151.)

Reg. No. 670,052 (AUTUMN HAZE), Mutation Mink Breeders Association, Mink fur pelts, **filed** Dec. 6, 1966, D.C. Conn. (New Haven), Doc. 11724, *Emba Mink Breeders Association* v. *Gottfried's Furs Inc. and Andrew Gottfried.* Consent and judgment, defendants enjoined, Aug. 17, 1967.

Reg. No. 721,716 (SAFEWAY), Safeway Stores, Inc., Retail grocery services, **filed** June 2, 1967, D.C., S.D.N.Y., Doc. 67–C–2145, *Safeway Stores, Inc.* v. *Safeway Stations, Inc. et al.*

Reg. No. 740,389 (RED CARPET SERVICE); The Maytag Co., Appliance installation, maintenance and repair service, **filed** July 19, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1247, *The Maytag Co.* v. *Borg-Warner Corp.*

Reg. No. 746,034. (See Reg. No. 786,158.)

Reg. No. 771,737 (SHIELD DESIGN), Tenneco Corp., Petroleum products—namely, gasoline, lubricating oil and grease, diesel fuel, and furnace oils, **filed** Aug. 16, 1967, D.C.N.J. (Newark), Doc. 868–67, *Tenneco Inc.* v. *Raritan Oil Co., Inc.*

Reg. No. 773,133. (See Reg. No. 401,915.)

Reg. No. 784,934 (JADE EAST), Swank, Inc., Cologne, after shave lotion and deodorant, **filed** Aug. 17, 1967, D.C., S.D.N.Y., Doc. 67–C–3134, *Swank, Inc.* v. *Martin Goldstein, doing business as The Nagold Co.*

Reg. No. 786,158 (SENSATIONAL SKYLARKS), James W. Copeland, doing business as The Sensational Skylarks, Musical performances—namely, gospel and spiritual singing ; **Reg. No. 795,733** (U-HAUL), Arcoa, Inc., Rental of automobile freight trailers ; **Reg. No. 746,034,** same, Rental of trucks and automobile freight trailers, **filed** Aug. 11, 1967, D.C., N.D. Calif. (San Francisco), Doc. 47647, *Arcoa, Inc.* v. *Richard A. Morgan.*

Reg. No. 795,733. (See Reg. No. 786,158.)

Reg. No. 798,497. (See Reg. No. 613,544.)

Reg. No. 798,498. (See Reg. No. 613,544.)

Reg. No. 799,544 (EXPO 67), Canadian Corporation for the 1967 World Exhibition, Publications issued from time to time ; **Reg. No. 800,518,** same, Services involving the establishing, publicizing and promoting an international exposition for the benefit of sponsors and others, **filed** Aug. 17, 1967, D.C., S.D.N.Y., Doc. 67–C–3151, *Canadian Corporation for the 1967 World Exhibition* v. *Dexter Press, Inc. et al.*

Reg. No. 800,518. (See Reg. No. 799,544.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 232,881. Roy Welton, Saratoga, Wyo. Filed Nov. 17, 1965.

ROY WELTON

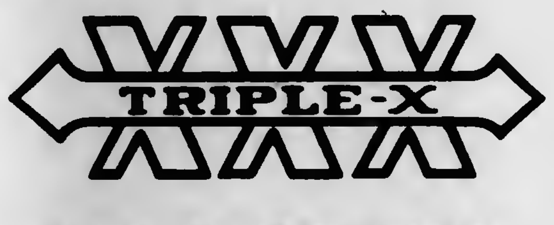
Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Lariat Hondas, Lariat Holders, and Stirrup Buckles.
First use on or about Apr. 15, 1959.

Class 39—Clothing

For Leather Western Hats and Chaps.
First use on or about Jan. 15, 1957.

SN 234,784. Triple-X Chemical Laboratories, Incorporated, Chicago, Ill. Filed Dec. 16, 1965.



Class 4—Abrasives and Polishing Materials

For Chemical Specialties for the Hardware Trade—Namely, Metal Polish.

Class 15—Oils and Greases

For Chemical Specialties for the Hardware Trade—Namely, Electric Motor Oil, Graphite Penetrating Oil, and Neatsfoot Oil.

First use at least as early as 1933.

SN 236,169. PRD Electronics, Inc., Westbury, N.Y. Filed Jan. 10, 1966.

PRD

Owner of Reg. Nos. 503,953, 561,404, and 567,957.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus, Machines and Supplies for the Transmission and Control of High Frequency Signals—Namely, Amplifiers, Power Supplies, Generators, Noise Generators, Impedance Transformers, Adaptors, Oscillators, Oscillator Cavities, Harmonic Generators, Programmable Generators, Couplers, Microwave Receivers, Isolators, Waveguide Bends and T's, Thermistors, Waveguide Switches, Crystal Switches, Waveguide Stands and Antennas, Microwave Attenuators, Termination Loads, Sliding Shorts, Slotted Lines and Probe Carriages.

Class 26—Measuring and Scientific Appliances

For Measuring and Scientific Appliances Relating to High Frequency Waves—Namely, Ratiometers, Frequency Meters, Power Meters, Microwave Educational Kits To Teach Microwave Theory and Techniques (Said Kits Including a Klystron Power Supply, a Cavity Frequency Meter and a Teaching Manual), Slotted Line Detectors, Detectors, Bolometers, Bolometer Mounts, Dry Calorimeters, Laser Bolometers, Laser Calorimeters, Programmable Meters, Power Monitors, Spectrum Analyzers, Electronic Devices for Testing Electrical Parameters, Echo Boxes, and Interference Measuring Sets.

First use during August 1946.

SN 240,050. Pall Corporation, Glen Cove, N.Y. Filed Mar. 3, 1966.

PALL

Owner of Reg. No. 715,059.

Class 14—Metals and Metal Castings and Forgings

For Porous Alloys and Metals—Namely, Porous Stainless Steel, Ferrous and Non-Ferrous Woven Wire Mesh Sheet Material, and Rigidified Woven Wire Mesh Sheet Material Suitable for Use as Porous Aircraft Parts Such as Leading Edges for Wings and Control Surfaces for Turbine Afterburner Lines.
First use July 1955 on porous stainless steel.

Class 21—Electrical Apparatus, Machines, and Supplies

For Insulation—Namely, Electrical Insulation.
First use October 1963.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Fluid Pumps ; Sewage Treatment and Disposal Systems ; and Water Clarification Apparatus.
First use October 1963 on fluid pumps.

Class 26—Measuring and Scientific Appliances

For Fluid Measuring, Sensing and Control Devices—Namely, Fluid Couplings, Pressure Sensitive Valves, Flow Responsive Valves, Combined Pressure and Temperature Responsive Valves, Flow Indicators, Gauges and Switches ; Fluid Pressure Sensing Indicators, Namely, Differential Pressure Indicators, Pressure Sensitive Switches ; Temperature Sensing and Control Elements, Namely, Thermocouples, Thermocouple Assemblies, and Thermowells ; Test Equipment, Namely, Bubble Point Test Instruments, Pore Size Determinators, Silting Index Determinators, Filter Test Equipment, and Ultrasonic Testing and Cleaning Equipment and Systems.
First use Aug. 8, 1950, on ultrasonic testing and cleaning equipment and systems.

Class 31—Filters and Refrigerators

For Filters for Fluids—Namely, Filter Elements, Filter Housings, Filter Assemblies and Parts Therefor, Filter Assemblies Having Relief Valves, Filter Manifolds, Woven Wire Mesh Filters, Rigidified Woven Wire Mesh Filters, Paper Filters, Porous Plastic Filters, Filters Having Microporous Layers, Membrane Filters and Dialyzers, Coalescers, Cyclone and Vortex Separators, Oil Removal Filters ; Water Treatment Systems—Namely, Demineralizers and Water Conditioners and Valves Therefor ; Cooling and Refrigerating Systems and Components.
First use July 1955 on filters and filter assemblies.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Environmental Control Systems—Namely, Air Conditioning and Heating Equipment for Personal Comfort, Thermoelectric Air Conditioning Equipment and Systems, Cooling Systems and Components ; Heat Exchangers for Industrial and Aerospace Use ; Gas Transfer and Reclamation Systems and Components ; Gas Dryers—Namely, Desiccant and Refrigerant Gas Dryers and Components Therefor, Cycling Control and Timing Devices and Valves for Dryers, Gas and Fluid Dehydrators and Components Therefor.
First use May 1961 on desiccant gas dryers.

SN 240,580. Alberto Cernuschi, Paris, France. Filed Mar. 10, 1966.

PSICODÉCOR

Class 32—Furniture and Upholstery

For Beds, Chairs, Tables, Stands, Mirrors, Cabinets, and Desks.

Class 38—Prints and Publications

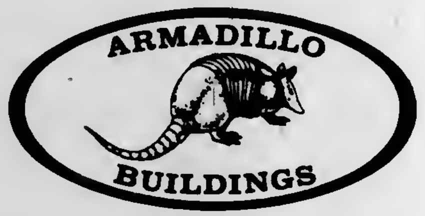
For Oil and Water Color Paintings.

Class 50—Merchandise Not Otherwise Classified

For Three-Dimensional Works of Art and Wall Decorations.

First use Nov. 1, 1965; in commerce Nov. 1, 1965.

SN 243,209. Armadillo Manufacturing Company, Denver, Colo. Filed Apr. 12, 1966.



The word "Buildings" is disclaimed apart from the mark as shown.

Class 12—Construction Materials

For Prefabricated Industrial Buildings.

Class 21—Electrical Apparatus, Machines, and Supplies

For Generators, Microwave Control and Dispatch Systems, and Point-To-Point Relay Communications Systems.

First use Oct. 29, 1961.

SN 248,338. International Products, Inc., Pasadena, Calif. Filed June 17, 1966.

REAL-FYRE

Class 34—Heating, Lighting, and Ventilating Apparatus

For Hearth Equipment—Namely, Refractory Logs, Fire Beds, Gas Burners, Grates, Hoods, and Refractory Granules for Use in Fire Beds.

First use on or about Sept. 18, 1953.

Class 50—Merchandise Not Otherwise Classified

For Plaques.

First use on or about July 3, 1962.

SN 250,290. Munck International A/S, Bergen, Norway. Filed July 14, 1966.

MUNCK

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Motors.

First use May 1950; in commerce May 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Electric Wire Rope Hoists, Electric Chain Hoist, Electric Overhead Travelling Cranes, Manually Operated Overhead Travelling Cranes, Rotating Stacker Cranes, and Deck Mounted Cargo Handling Cranes.

First use May 1950; in commerce May 1956.

SN 251,054. Consolidated Brass Company, Matthews, N.C. Filed July 26, 1966.

CONBRACO

Owner of Reg. No. 555,462.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Valves of the Safety, Relief, Drain, Air Gas, and Indicator Types; Cocks for Water and Steam Gauges, for Hose Ends, for Air, Gas, and Steam, and for Laboratory Use; Oil and Grease Cups and Fittings; Faucets of the Lawn, Bibb, Barrel and Compression Types; Storage Tank Floats, Tube and Pipe Fittings.

First use Nov. 29, 1950.

Class 26—Measuring and Scientific Appliances

For Water and Steam Gauges and Fittings.

First use prior to January 1954.

SN 252,304. Malco Products, Inc., Minneapolis, Minn. Filed Aug. 15, 1966.

MALCO

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Screws and Rivets.

First use Mar. 13, 1961.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For General Purpose Mechanics' Hand Tools and Pneumatic Powered Hand Tools—Namely, Rivet Guns; and Electric Powered Hand Tools—Namely, Drills and Saws.

First use Mar. 14, 1950.

Class 26—Measuring and Scientific Appliances

For Multi-Purpose Layout and Cutting or Marking Tool Including a Rule, Square, Plumb, Level, and Saw in a Single Unit.

First use Sept. 1, 1963.

SN 255,595. California Products Corporation, Cambridge, Mass. Filed Oct. 3, 1966.

MICAFIL

Class 1—Raw or Partly Prepared Materials

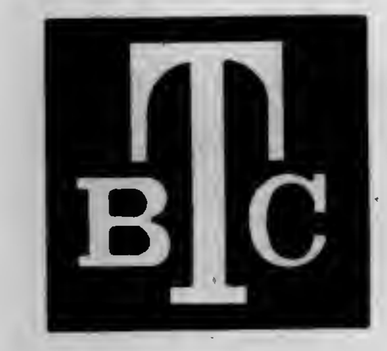
For Expanded Vermiculite.

Class 12—Construction Materials

For Vermiculite Concrete, Vermiculite Plaster, Vermiculite Insulating Plaster, Slabs and Blocks Containing Expanded Vermiculite and Refractory Blocks and Special Shapes Containing Expanded Vermiculite.

First use about the middle of December 1938.

SN 258,337. United States Tabulating Binder Corporation, Niles, Ill. Filed Nov. 9, 1966.



Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Binding Machines for Adhesively Securing a Binding Strip Across the Edge Portions of a Plurality of Sheets Maintained in Vertically Aligned Relationship so as To Form a Book Thereof.

First use Oct. 28, 1966.

Class 37—Paper and Stationery

For Covers, Folders, Posts, Binders, and Parts Thereof, Utilized To Bind a Plurality of Sheets to One Another in Book Form; and Sheets for Utilization in Such Covers, Folders, and Binders.

First use May 18, 1964.

SN 260,311. Schlumberger Limited, New York, N.Y., assignee of Schlumberger Technology Corporation, Houston, Tex. Filed Dec. 8, 1966.

Owner of Reg. No. 563,702.

Class 100—Miscellaneous

For Services Rendered in Connection With Open and Cased Wells—Namely, Well Logging and Surveying; Production Logging; Formation and Log Analysis; Testing and Sampling; Depth Determining and Controlling; and Perforating.

First use in 1934.

Class 103—Construction and Repair

For Completion and Remedial Services Including Well Tool Setting, Formation Treating, Downhole Casing Repairing, and Casing and Tubing Cutting.

First use May 1949.

SN 261,255. Clairol Incorporated, New York, N.Y. Filed Dec. 22, 1966.

MAY DAY

Class 51—Cosmetics and Toilet Preparations

For Hair Dressing and Hair Conditioner.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Aug. 11, 1966.

SN 269,718. Thexton Manufacturing Company, Hopkins, Minn. Filed Apr. 21, 1967.

THEXTON

Class 19—Vehicles

For Automotive Shock Absorber Attachment Devices, and Automotive Hand Brake Cable Repair Kits.

First use Nov. 1, 1956.

Class 21—Electrical Apparatus, Machines, and Supplies

For Automotive Light Socket Attachments; Battery Cable Lug Gripping Devices; and Electrical Repair Terminals for Automotive Generators.

First use on or about July 1, 1948.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Piston Expanders, Oil Pressure Regulators, Regrooving Tools, Timing Plates for Automotive Engines, Rocker Arm Oiler Kits, Choke Tube Repair Kits for Automotive Engines, Choke Conversion Kits, Rivet Removers, Springs for Automotive Carburetors, Plug Extractors, Peening Tools, and Automotive Fuel Feed Systems.

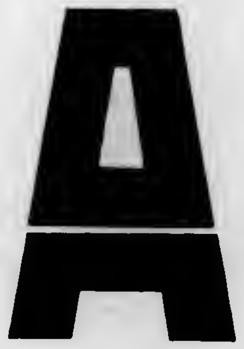
First use 1929.

Class 26—Measuring and Scientific Appliances

For Anti-Freeze Testers, Battery Testers, and Martini Alcoholic Content Testers, Top Dead Center Indicators, and Speedometer Cable Repair Kits.

First use Aug. 1, 1952.

SN 275,597. Albergotti & Co., Inc., Norfolk, Va. Filed July 10, 1967.



Class 101—Advertising and Business

For Real Estate Brokerage and Appraisal Services.

Class 102—Insurance and Financial

For Real Estate Property Management Services.

First use Jan. 1, 1964.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1 — Raw or Partly Prepared Materials

SN 261,098. Northrup, King & Co., Minneapolis, Minn. Filed Dec. 19, 1966.

MEDALIST

For Grass Seed.
First use July 15, 1956.

SN 261,228. Pioneer Hi-Bred Corn Company, Des Moines, Iowa. Filed Dec. 21, 1966.

Space-Age

For Corn Seed.
First use on or about Nov. 1, 1966.

SN 263,081. L. Teweles Seed Co., Milwaukee, Wis. Filed Jan. 23, 1967.

57

For Soybean Seed.
First use Jan. 12, 1967.

SN 263,082. L. Teweles Seed Co., Milwaukee, Wis. Filed Jan. 23, 1967.

68

For Soybean Seed.
First use Jan. 12, 1967.

SN 263,083. L. Teweles Seed Co., Milwaukee, Wis. Filed Jan. 23, 1967.

46

For Soybean Seed.
First use Jan. 12, 1967.

SN 263,084. L. Teweles Seed Co., Milwaukee, Wis. Filed Jan. 23, 1967.

32

For Soybean Seed.
First use Jan. 12, 1967.

SN 263,085. L. Teweles Seed Co., Milwaukee, Wis. Filed Jan. 23, 1967.

XR-55

For Soybean Seed.
First use Jan. 12, 1967.

SN 263,086. L. Teweles Seed Co., Milwaukee, Wis. Filed Jan. 23, 1967.

XR-22

For Soybean Seed.
First use Jan. 12, 1967.

SN 263,087. L. Teweles Seed Co., Milwaukee, Wis. Filed Jan. 23, 1967.

21-A

For Soybean Seed.
First use Jan. 12, 1967.

SN 270,276. Rohm and Haas Company, Philadelphia, Pa. Filed Apr. 28, 1967.

AYRLEX

For Synthetic Fibers.
First use on or about Apr. 17, 1967.

SN 278,452. Minerals & Chemicals Philipp Corporation, Menlo Park, N.J. Filed Aug. 17, 1967.

ULTRA FINE 90

Owner of Reg. No. 740,437.
For Clays for Coating and Filling Paper and Paperboard.
First use July 6, 1967.

SN 279,510. Box-O'Fire Company, Canfield, Ohio. Filed Sept. 1, 1967.

BOX O'FIRE

For Packaged Cannel Coal With Self-Contained Igniter.
First use at least as early as Nov. 15, 1966.

Class 2 — Receptacles

SN 247,381. Harold B. Martin, Miami, Fla. Filed June 6, 1966.

READYGROW

For Non-Rigid Plastic Containers for Growing Plants Therein.
First use Mar. 29, 1966.

SN 263,186. Massey & Slavings Fendatank Company, Hayti, Mo. Filed Jan. 24, 1967.

FENDATANK

For Liquid Storage Tanks for Agricultural Vehicles.
First use Dec. 14, 1966.

SN 265,980. Cal-June Corporation, North Hollywood, Calif. Filed Mar. 6, 1967.

KRETE-WARE

For Architectural Planters, Flower and Planter Boxes, Urns and Pots.
First use Nov. 4, 1966.

SN 266,398. American Can Company, New York, N.Y. Filed Mar. 10, 1967.

GLAMAGARD

For Paperboard Cartons.
First use Dec. 23, 1966.

SN 268,252. The Warner Brothers Company, Bridgeport, Conn. Filed Apr. 3, 1967.

WARNACO

For Cartons.
First use Mar. 1, 1967.

SN 279,892. Con-O-Lite Corporation, Lynchburg, Va. Filed Sept. 8, 1967.

Con-O-Royal

Owner of Reg. No. 170,642.
For Burial Vaults.
First use December 1963.

SN 279,893. Con-O-Lite Corporation, Lynchburg, Va. Filed Sept. 8, 1967.

Con-O-Crypt

Owner of Reg. No. 170,642.
For Burial Vaults.
First use November 1948.

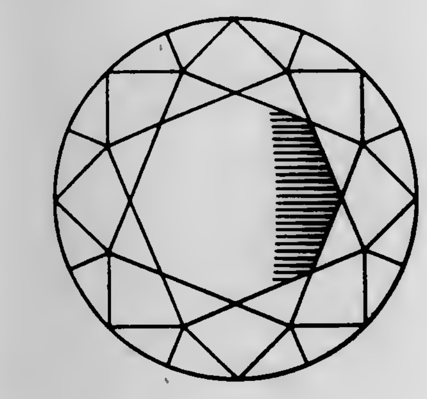
Class 4 — Abrasives and Polishing Materials

SN 261,391. Peck's Products Company, St. Louis, Mo. Filed Dec. 23, 1966.

COMPLEMENT

For Self-Polishing Wax Floor Finisher.
First use Dec. 5, 1966.

SN 279,890. Barton Manufacturing Company, St. Louis, Mo. Filed Sept. 8, 1967.



For Polish for Footwear.
First use Jan. 3, 1967.

SN 279,891. Barton Manufacturing Co., St. Louis, Mo. Filed Sept. 8, 1967.

Dyanshine

Owner of Reg. Nos. 131,931, 506,911, and 579,587.
For Polish for Footwear.
First use July 15, 1918.

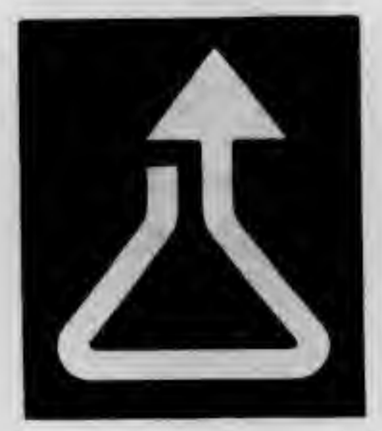
Class 5 — Adhesives

SN 238,064. Evode Ltd., Stafford, England. Filed Feb. 4, 1966.

THERMAFLO

Owner of British Reg. No. 859,868, dated Feb. 6, 1964.
For Adhesives.

SN 238,570. Rohm & Haas Company, Philadelphia, Pa. Filed Feb. 10, 1966.



Owner of Reg. No. 797,392.
For Adhesives, Binders, or Tackifiers Composed of Resin Suspensions or Dispersions.
First use on or about Dec. 28, 1965.

SN 240,875. The Gates Rubber Company, Denver, Colo. Filed Mar. 14, 1966.

Owner of Reg. Nos. 424,054, 821,456, and others.
For Rubber Adhesives.
First use Oct. 28, 1944.

SN 250,497. Lord Corporation, Erie, Pa. Filed July 18, 1966.

FLOCK-LOK

Owner of Reg. Nos. 647,649 and 669,147.
For Resinous Plastic Adhesive Composition of Paint-Like Consistency for Attaching Flock to Elastomers, Plastics, Metals, Wood, Textiles, Glass, Ceramics, Concrete, and Like Rigid and Flexible Surfaces.
First use Mar. 16, 1966.

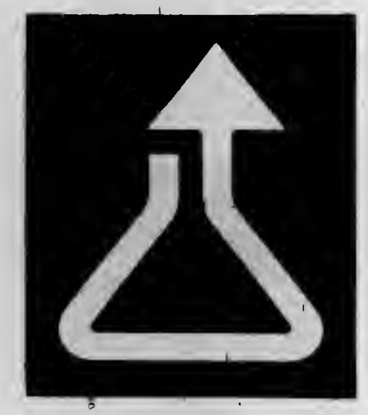
Class 6 — Chemicals and Chemical Compositions

SN 70,995. Coastal Chemical Co., Inc., Savannah, Ga. Filed Apr. 7, 1959.

PINEAIRE

Applicant claims use in the States of Georgia, Florida, Alabama, North Carolina, and South Carolina.
For Disinfectant Having Deodorizing, Cleaning, and Germicidal Properties.
First use July 23, 1949.
Subj. to Concurrent Use Proceeding with Reg. No. 620,114.

SN 238,571. Rohm & Haas Company, Philadelphia, Pa. Filed Feb. 10, 1966.



Owner of Reg. Nos. 326,002 and 407,049.
For Emulsifying and Wetting Agents.
First use on or about Dec. 23, 1965.

SN 239,550. W. R. Spence Industries Limited, Weston, Ontario, Canada. Filed Feb. 24, 1966.

For Pigmented Resinous Concrete Hardener Solution Which Colors and Imparts Dust-Proof Properties to Concrete Surfaces; and Thinners Therefor.
First use Mar. 1, 1955; in commerce Dec. 27, 1957.

SN 252,675. Miles Laboratories, Inc., Elkhart, Ind. Filed Aug. 18, 1966.

HYPO-DEXTROSTIX

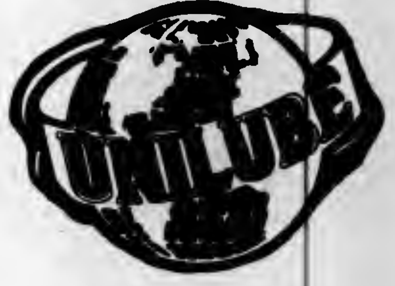
Owner of Reg. Nos. 656,288 and 682,731.
For Test for Hypoglycemia for Laboratory Use.
First use Dec. 15, 1965.

SN 255,121. Pierrefitte Societe Generale d'Engrais et Produits Chimiques, Paris, France. Filed Sept. 26, 1966.

HEXAMETAPOL

Priority claimed under Sec. 44(d) on French Reg. No. 10,066, dated Mar. 29, 1966.
For Organophosphorized Composition for Use as Intermediate Agents in the Manufacture of Organic Products and Phosphorized Products, and for Use as Solvents and Stabilizing Agents for Industrial and Scientific Purposes.

SN 259,978. Southern Petroleum Company, Inc., d.b.a. Unilube Products, West Memphis, Ark. Filed Dec. 2, 1966.



Owner of Reg. No. 806,615.
For Hydraulic Brake Fluids.
First use Nov. 9, 1966.

SN 264,286. Omco Chemical Corporation, South Gate, Calif. Filed Feb. 9, 1967.

OMCHLOR

For Chlorine Agent Which Combines the Properties of a Fungicide, Bactericide, and Algaecide for Swimming Pools.
First use Dec. 23, 1966.

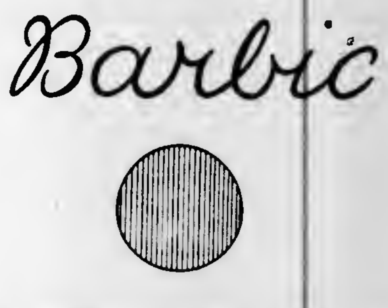
SN 265,228. Union Carbide Corporation, New York, N.Y. Filed Feb. 21, 1967.

SIRMATE

For Herbicide.
First use on or about Dec. 15, 1966.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 256,265. Bartlett & Bickley Limited, London, England. Filed Oct. 12, 1966.



The drawing is lined for the color red. Owner of British Reg. No. 898,030, dated Aug. 5, 1966; and U.S. Reg. No. 529,464.
For Tobacco Pipes, and Cigar and Cigarette Holders (Not of Precious Metal or Coated Therewith).

Class 10 — Fertilizers

SN 210,253. Armour Agricultural Chemical Company, Atlanta, Ga., assignee of Armour and Company, d.b.a. Armour Agricultural Chemical Co., Chicago, Ill. Filed Jan. 21, 1965.

TEE-GREEN

For Fertilizer.
First use on or prior to Oct. 6, 1964.

Class 12 — Construction Materials

SN 240,447. Lancaster Chemical Corporation, Carlstadt, N.J. Filed Mar. 8, 1966.

KLING

For Asphalt Additives Used With Asphalt To Promote Adhesion to Aggregates for Construction Purposes.
First use Apr. 22, 1947.

SN 256,389. U.S. Plywood-Champion Papers Inc., New York, N.Y., by merger and change of name from United States Plywood Corporation, New York, N.Y. Filed Oct. 12, 1966.

MANZANA

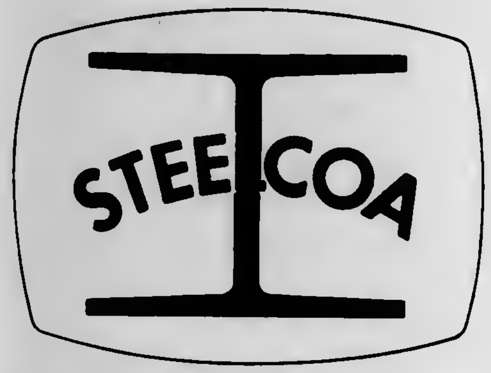
For Lumber and Wood Products, i.e., Plywood.
First use Sept. 23, 1966.

SN 258,837. Penn Metal Company, Inc., Boston, Mass. Filed Nov. 16, 1966.

PENRAIL

For Movable Interior Partitions and Parts Therefor.
First use Sept. 30, 1966.

SN 260,598. Allan Irvin Silverstein, d.b.a. Steel Company of America, Columbus, Ohio. Filed Dec. 12, 1966.



For Structural Steel Fabrications and Construction Products Used in Connection With Framing of Pre-Engineered Steel Buildings, Including Roof and Wall Panels of Color-Coated, Roll-Formed Galvanized Steel.
First use Oct. 1, 1966.

SN 264,850. Parr Paint and Sealants Inc., Cleveland, Ohio. Filed Feb. 16, 1967.

PARR-CRYLIC

Owner of Reg. Nos. 689,343, 697,667, and 701,189.
For Sealing and Caulking Compounds.
First use July 11, 1966.

SN 265,191. Industrial Acoustics Company, Inc., Bronx, N.Y. Filed Feb. 21, 1967.

NOISHIELD

Owner of Reg. No. 741,755.
For Acoustic Structures—Namely, Acoustic Enclosures and Acoustic Enclosure Components.
First use 1959.

SN 271,202. Advanced Equipment Corporation, Anaheim, Calif. Filed May 11, 1967.

THE DOWN TO EARTH SPACE PEOPLE

For Interior Building Walls, Ceilings, and Partitions, Doors, Windows, and Related Types of Building Supplies; and Equipment Sold Together With the Building Supplies, Including Door Handles, Window Hardware, Ceiling Mounting Brackets, and the Like.
First use Apr. 13, 1967.

SN 277,864. General Refractories Company, Philadelphia, Pa. Filed Aug. 9, 1967.

ARCOLOK

Owner of Reg. No. 534,889.
For Refractory Mortar.
First use Nov. 11, 1965.

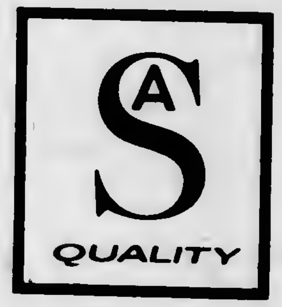
Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 232,356. Shur-Lok Corporation, Santa Ana, Calif. Filed Nov. 8, 1965.

SHUR-TAB

For Holding Device for Attachment to the End of a Fastener Insert and Attachable to the Surface of a Honeycomb Sandwich Panel Around a Hole in the Panel in Which the Insert Is Received, for Temporarily Supporting the Insert in Position in the Hole During Injection of Potting Compound Into the Hole To Anchor the Insert Therein.
First use in or about May 1965.

SN 246,496. Supreme Automotive Manufacturing Corp., Brooklyn, N.Y. Filed May 24, 1966.



The word "Quality" is disclaimed apart from the mark as shown.
For Automotive Products—Namely, Battery Terminal Bolts, Brake Cable Adjusters, Bumper Bolts, Cap Screws, Carriage Bolts, Tail Pipe Hangers and Insulators, Cotter Pins, Drain Cocks, Floor Board Screws, Gear Shift Lever Screws, Headlamp Adjusting Screws, Machine Screws, Manifold Bolts, Moulding Bolts, Muffler Clamps, Nuts of All Kinds, Sheet Metal Screws, Stove Bolts, Striker Plate Screws, Thread Cutting Machine Screws, Tri-Drive Screws, Trim Screws, Metal Washers, and Wire Stops and Muffler Strap and Bolts.
First use Feb. 1, 1966.

SN 252,543. C. W. Cheney & Son Limited, Hockley, Birmingham, England. Filed Aug. 17, 1966.

CHENEY

For Hardware Made of Metal and Plastics, Consisting of Hose Clips and Internal and External Fittings for Suitcases, Traveling Bags, Attaché Cases, Trunks, and Like Articles, Such Fittings Including Hinges, Hasps, and Handles.
First use 1911; in commerce 1951.

SN 253,785. Safe-T-Lawn, Inc., Hialeah, Fla. Filed Sept. 2, 1966.

RISE-N-RAIN

For Pop-Up Fixture and Housing for Sprinkler Head.
First use June 24, 1966.

SN 259,898. Chadwick-Miller Importers, Boston, Mass. Filed Dec. 2, 1966.

DYFLON

For Plastic Coated Cooking Utensils.
First use Nov. 9, 1966.

SN 260,101. Tube Manufacturing Company, Inc., Stirling, N.J. Filed Dec. 5, 1966.

TUMACO

For Welded Stainless Steel Tubing.
First use May 1, 1966.

SN 260,937. Industrial Ceramics, Inc., Houston, Tex. Filed Dec. 16, 1966.

PERMA-SEAT

For Valve Stems, Valve Inserts, Valve Seats, and Valve Throttling Members.
First use at least as early as July 8, 1966.

SN 261,730. Grove Valve and Regulator Company, Oakland, Calif. Filed Dec. 30, 1966.

CHEXFLO

Owner of Reg. No. 430,056.
For Check Valves.
First use Dec. 1, 1944.

SN 262,415. The Enterprise Aluminum Company, Massillon, Ohio. Filed Jan. 12, 1967.

COOK QUEEN

Owner of Reg. No. 741,151.
For Base Metal Cookware.
First use Dec. 22, 1966.

SN 263,837. Koehler-Dayton, Inc., Dayton, Ohio. Filed Feb. 2, 1967.

BUS-LAV

Owner of Reg. No. 712,388.
For Self-Contained Toilet Assembly and Parts Therefor.
First use Feb. 23, 1963.

SN 263,838. Koehler-Dayton, Inc., Dayton, Ohio. Filed Feb. 2, 1967.

TRAIN-LAV

Owner of Reg. No. 712,388.
For Self-Contained Toilet Assembly, and Parts Therefor.
First use Apr. 18, 1966.

SN 279,517. Henry Pratt Company, Aurora, Ill. Filed Sept. 1, 1967.

GROUNDHOG

For Butterfly Valves for Service in Water Lines and the Like.
First use October 1964.

Class 14 — Metals and Metal Castings and Forgings

SN 231,253. Societa Metallurgica Italiana, Florence, Italy. Filed Oct. 22, 1965.

SMINI

Priority claimed under Sec. 44(d) on Italian application filed June 30, 1965; Reg. No. 173,189, dated Nov. 23, 1965.
For Nickel Alloys—Namely, Semi-Manufactured Products in the Nature of Sheets and Ribbons, Bars and Wires.

Class 15 — Oils and Greases

SN 254,590. Continental Oil Company, Ponca City, Okla. Filed Sept. 16, 1966.

For Gasoline.
First use May 1966.

Class 16 — Protective and Decorative Coatings

SN 235,915. Gard Industries, Inc., Elk Grove Village, Ill. Filed Jan. 6, 1966.

MR. COLOR

For Paint for Interior and/or Exterior Decoration of Wood, Plastics, Metal, Paper, and Furniture, Flocking, and Pearlizing Coating.
First use Mar. 31, 1963.

SN 265,497. Dub-L-Kleen Chemical Corporation, College Point, N.Y. Filed Feb. 27, 1967.

DUB-L-FINISH

For Waxless Safety Floor Finish.
First use Sept. 19, 1966.

SN 273,562. C. J. Webb, Inc., Dresher, Pa. Filed June 12, 1967.

CRC
URETHANE SEAL COAT

The wording "Urethane Seal Coat" is disclaimed apart from the mark as shown. Owner of Reg. No. 696,251 and others.
For Polyurethane Protective Coating.
First use May 24, 1967.

Class 17 — Tobacco Products

SN 256,736. House of Windsor, Inc., Windsor, Pa. Filed Oct. 18, 1966.

HANOVER HOUSE

For Cigars.
First use July 7, 1966.

SN 257,351. The Antonio Company of Tampa, Tampa, Fla. Filed Oct. 27, 1966.

REY DEL MUNDO

The mark "Rey Del Mundo" is translated to mean "king of the world."
For Cigars.
First use Oct. 6, 1966.

SN 258,729. St. Regis Tobacco Corporation Limited, Zurich, Switzerland. Filed Nov. 15, 1966.

Alvaro de Mendana

"Alvaro de Mendana" is the name of a renowned Spanish navigator who is credited with the discovery of the Solomon Islands in 1567. Owner of Swiss Reg. No. 215,058, dated Jan. 4, 1966.
For Cigarettes.

SN 278,651. Universal Cigar Corporation, New York, N.Y. Filed Aug. 21, 1967.

ULTIMA

For Cigars.
First use June 1967.

Class 18 — Medicines and Pharmaceutical Preparations

SN 247,840. Standard X-Ray Company, Chicago, Ill. Filed June 10, 1966.

STANDARD

For X-Ray Diagnostic Reagent—Namely, Barium Sulfate.
First use September 1964.

SN 261,201. Ciba Limited, Basel, Switzerland. Filed Dec. 21, 1966.

GLYVENOL

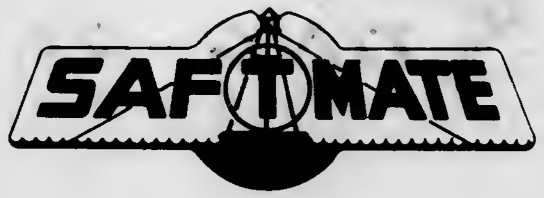
Owner of Swiss Reg. No. 213,376, dated Sept. 29, 1965.
For Anti-Inflammatory Preparation.

Class 19 — Vehicles

SN 237,888. Town & Country Mobile Homes, Inc., Wichita Falls, Tex. Filed Feb. 2, 1966.

For Mobile Homes.
First use Feb. 8, 1956.

SN 238,496. Sal-T-Mate, Inc., Cadillac, Mich., assignee of Clipper Craft, Inc., Cadillac, Mich. Filed Feb. 10, 1966.



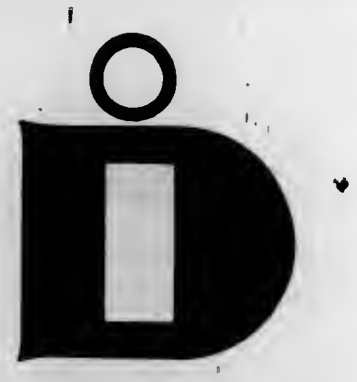
Owner of Reg. No. 684,374.
For Pleasure Boating Craft.
First use Oct. 7, 1965.

SN 244,935. Travco Corporation, Brown City, Mich. Filed May 4, 1966.

Family-Wagon

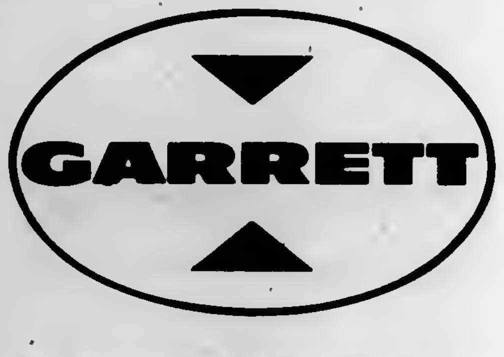
For Station Wagon Type Motor Vehicles Equipped With Living Accommodations.
First use Mar. 17, 1966.

SN 245,571. Delta, Inc., Jonesboro, Ark. Filed May 13, 1966.



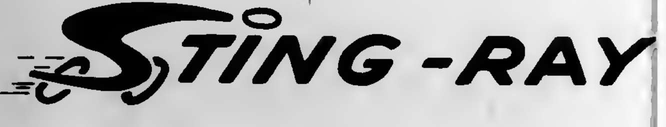
For Non-Powered Trucks, Industrial, Commercial, and Institutional—Namely, Hand Trucks, Cage Trucks, Pallet Trucks, Towline Trucks, Cradle Trucks, Dollies; and Casters and Wheels for Trucks.
First use Nov. 1, 1962.

SN 247,220. The Garrett Corporation, Los Angeles, Calif. Filed June 3, 1966.



For Aircraft Multiple Cowl Flap Positioning Controls, Vehicle Engine Coolant Radiators, and Engine Air Intake Heat Exchangers.
First use December 1955.

SN 247,873. Schwinn Bicycle Company, Chicago, Ill., by change of name from Arnold, Schwinn & Co., Chicago, Ill. Filed June 13, 1966.



Owner of Reg. No. 772,712.
For Accessories and Replacement Parts for Bicycles—Namely, Saddles, Handlebars, and Windshields.
First use August 1964.

SN 248,827. Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan. Filed June 23, 1966.

COLT

Priority claimed under Sec. 44(d) on Japanese application filed Mar. 3, 1966; Reg. No. 740,117, dated Apr. 21, 1967.
Owner of Japanese Reg. No. 379,582.
For Motor Cars.

Class 20—Linoleum and Oiled Cloth

SN 252,752. Reverso Products, Inc., Brooklyn, N.Y. Filed Aug. 19, 1966.

DEBUT

For Vinyl Fabric Wall Covering.
First use in or about April 1966.

SN 252,753. Reverso Products, Inc., Brooklyn, N.Y. Filed Aug. 19, 1966.

TRU-VINYL

For Embossed, Solid Sheet Vinyl Wall Covering.
First use in or about May 1958.

SN 259,749. Limhamns Träindustri Aktiebolag, Malmo, Sweden. Filed Nov. 30, 1966.

TARKETT

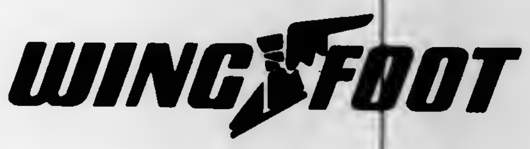
Owner of Swedish Reg. No. 62,073, dated Nov. 22, 1946.
For Vinyl Tiles Used for Covering Floors, Roofs and Walls for Insulation Against Sound, Heat and Dampness, and for Worktables in Kitchens.

SN 270,745. Armstrong Cork Company, Lancaster, Pa. Filed May 5, 1967.

QUAKER

For Resilient Hard Surface Type Covering for Floors, Walls, and Other Surfaces—Namely, Vinyl Rug Border and the Like.
First use Mar. 17, 1927.

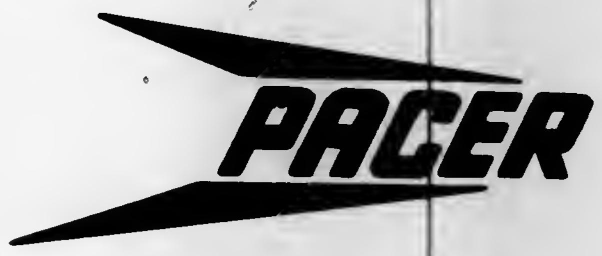
SN 276,125. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed July 17, 1967.



Owner of Reg. No. 511,162.
For Vinyl Flooring.
First use Apr. 10, 1967.

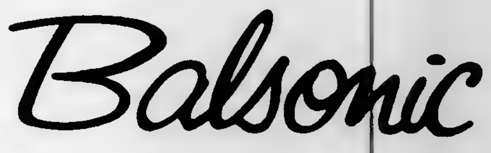
Class 21—Electrical Apparatus, Machines, and Supplies

SN 228,790. The Louis Allis Company, Milwaukee, Wis. Filed Sept. 27, 1965.



For Electric Motors Rated at ¾ H.P. or More.
First use May 4, 1964.

SN 242,419. Bausch & Lomb Incorporated, Rochester, N.Y. Filed Apr. 1, 1966.



For Ultrasonic Cleaners Utilizing an Ultrasonically Vibrating Liquid Bath for Cleaning Articles Such as Eyewear, Laboratory Glassware, Metallurgical Specimens, Jewelry, Precision Mechanical Parts, Electronic Components, Dies, and Surgical Instruments.
First use Mar. 10, 1966.

SN 242,684. The Telex Corporation, Tulsa, Okla. Filed Apr. 4, 1966.

ADJUSTATONE

For Headphones and Headsets.
First use Oct. 15, 1965.

SN 243,067. Aktiebolaget Jarnforadling, Halleforsnas, Sweden. Filed Apr. 11, 1966.

NAVILIGHT

Owner of Swedish Reg. No. 114,703, dated Dec. 10, 1965.
For Battery Powered Boat Lights.

SN 245,509. Radio Corporation of America, New York, N.Y. Filed May 12, 1966.

TRANS VISTA

For Television Receivers.
First use on or about Nov. 12, 1964.

SN 248,149. Master Television Systems Company, Inc., Washington, D.C. Filed June 15, 1966.

MASTERVISION

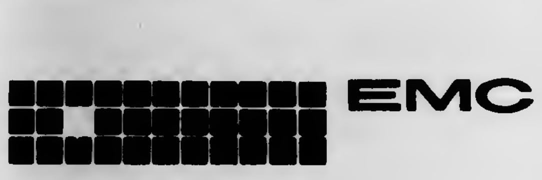
For Television Antennas, Parts, and Accessories for Installing Television Antenna Systems.
First use July 1, 1965.

SN 249,430. Jerrold Electronics Corporation, Philadelphia, Pa. Filed July 1, 1966.

COLORAXIAL

For Television Antennas.
First use Nov. 13, 1964.

SN 249,630. Electronic Modules Corporation, Timonium, Md. Filed July 6, 1966.



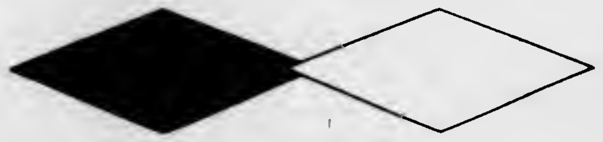
The words "Electronic Modules Corporation" are disclaimed apart from the mark as shown.
For Solid State Encapsulated or Potted Circuits in the Form of Encapsulated Modules Constituting Interchangeable Components for Electronic Equipment for Control Systems, Such as Process Sequencers, Scanning and Logging Devices for Temperature and Other Variable Factors; Railway Supervisory Systems; and Special Purpose Computers.
First use Apr. 5, 1961.

SN 250,513. Piped Piper International Corporation, Lyons, Ill. Filed July 18, 1966.

SONA-GARD

For Portable Ultrasonic Device To Repel Rodents Consisting of a Self-Contained Electrically Powered Air Source Coupled to an Ultrasonic Generator.
First use May 27, 1966.

SN 252,383. The Rucker Manufacturing Company, Oakland, Calif., assignee of Insul-8-Corp., San Carlos, Calif. Filed Aug. 15, 1966.



Owner of Reg. Nos. 578,786, 788,687, and others.
For Trolley Conductor Systems and Components Thereof, for Conducting Electrical Current to Mobile Machines.
First use on or about June 5, 1958.

SN 252,384. The Rucker Manufacturing Company, Oakland, Calif., assignee of Insul-8-Corp., San Carlos, Calif. Filed Aug. 15, 1966.

AEROWIRE

Owner of Reg. No. 682,473.
For Electrical Conductor of the Suspended Cable Type.
First use on or about June 5, 1958.

SN 256,102. Kahn Research Laboratories, Inc., Freeport, N.Y. Filed Oct. 10, 1966.

ECHOPLEX

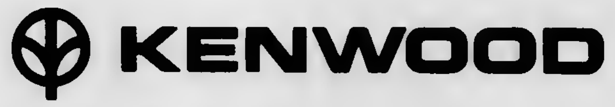
For Audio Processor—Namely, Diversity Voice Communications Equipment Characterized by Modified Frequency and Time Relationships of Audio Signal Components.
First use on or about Aug. 28, 1963.

SN 257,053. Hayakawa Electric Co., Ltd., Osaka, Japan. Filed Oct. 24, 1966.

SHARP

Owner of Reg. Nos. 707,148, 712,312, and others.
For Clock Radios.
First use January 1956; in commerce January 1956.

SN 259,939. Kenwood Electronics, Inc., Los Angeles, Calif. Filed Dec. 2, 1966.



Owner of Reg. No. 735,246.
For Radio and Audio Equipment—Namely, AM and FM Receivers, Tuners, Amplifiers, and Loudspeakers.
First use January 1962.

SN 260,229. Anzac Electronics, Inc., Norwalk, Conn. Filed Dec. 7, 1966.

ANZAC

For High Frequency Electrical Components—Namely, Mixers, Hybrid Junctions, Frequency Multipliers, Tunable Preselectors, Signal Distributors, Electronic Switches, Frequency Doublers, and Modulators.
First use at least as early as Apr. 6, 1962.

SN 260,237. Camera Sales Center Corp., New York, N.Y. Filed Dec. 7, 1966.

SPACE PAC

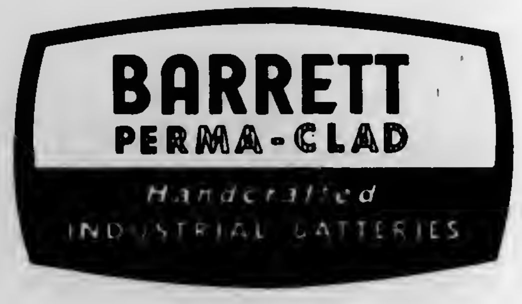
For Batteries.
First use Mar. 30, 1966.

SN 260,527. Christie Electric Corp., Los Angeles, Calif. Filed Dec. 12, 1966.

XENOLITE

For Power Supplies, Igniters and Illuminators (Including Housings and Optics), for Arc Lamps.
First use Oct. 28, 1966.

SN 261,034. James H. Barrett, Jr., d.b.a. Barrett Battery Company, Toledo, Ohio. Filed Dec. 19, 1966.



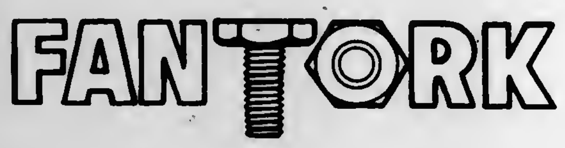
The drawing is lined for the color red, but no claim is made for the particular color shown. No claim is made for the words "Handcrafted Industrial Batteries" apart from the mark as shown.
For Batteries.
First use Sept. 12, 1966.

SN 261,312. Mark Products, Inc., Houston, Tex. Filed Dec. 22, 1966.

SEISCORD

For Electrical Conductor Cables.
First use at least as early as June 1966.

SN 261,827. Fansteel Metallurgical Corporation, North Chicago, Ill. Filed Jan. 3, 1967.



For Semiconductor Heat Sinks.
First use Oct. 13, 1966.

SN 264,836. LTV Ling Altec, Inc., d.b.a. University Sound, Anaheim, Calif. Filed Feb. 16, 1967.

SORRENTO

For Loudspeakers and Loudspeaker Systems, and Parts Therefor.
First use Aug. 1, 1966.

SN 268,481. Fansteel Metallurgical Corporation, North Chicago, Ill. Filed Apr. 6, 1967.

FANTORK

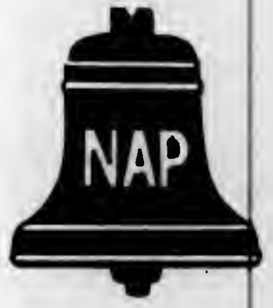
For Semiconductor Heat Sinks.
First use Oct. 13, 1966.

SN 271,896. Globe-Union Inc., Milwaukee, Wis. Filed May 19, 1967.

SCORESTRATES

For Ceramic Thin Sheet Material for Electronic Components.
First use on or about Apr. 27, 1967.

SN 276,071. Belknap Hardware and Manufacturing Co., Louisville, Ky. Filed July 17, 1967.



Owner of Reg. No. 74,603.
For Electrical Wiring Devices—Namely, Flush Toggle Switches, Flush Switches, Table Taps, Pull Chain Lampholders, Keyless Lampholders, Combination Switch and Receptacles, Combination Switches and Pilot Lights, Flush Receptacles, Armored Caps, Connector Bodies, Cord Connectors, Attachment Plugs, Attachment Plug Caps, Weatherproof Receptacle Plates, Weatherproof Switches, Grounding Adapters, Canopy Switches, Fixture Switches, Rotary Canopy Switches, Thru-Cord Switches, Wall Plates, Switch Plates, Combination Plates, Receptacle Plates, Outlet Box Covers, Clock Hanger Receptacles, Lamp Sockets, Rosettes, Cut-Out Plugs, Entrance Switches, Battery Switches, Outlet Box Receptacles, Pull Receptacles, Current Taps, Multiple Plugs, Pull Chains, and Lamp Socket Adapters.
First use Mar. 1, 1963.

SN 279,780. Communication Mfg. Co., Huntington Park, Calif. Filed Sept. 7, 1967.

BUSI-MATIC

For Device for Telephone Central Office Installation, for Reserving In-Use Telephone Circuit Switches During Maintenance of the Group of Circuits Embodying the In-Use Switches.
First use Aug. 2, 1967.

SN 279,781. Communication Mfg. Co., Huntington Park, Calif. Filed Sept. 7, 1967.

P-G MATIC

For Device for Telephone Central Office Installation To Deadline One Phone of a Group of Phones in a Single System To Retain the Remaining Phones in Said System for Normal Operation.
First use Aug. 2, 1967.

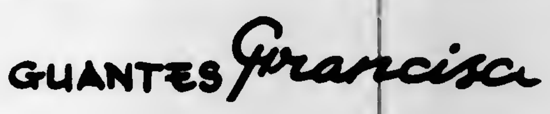
Class 22 — Games, Toys, and Sporting Goods

SN 238,794. Ski Free Company, Mill Valley, Calif. Filed Feb. 14, 1966.

HEEL FREE

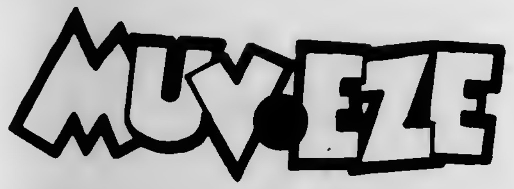
For Heel Bindings for Skis.
First use August 1954.

SN 243,904. Shakespeare Company, Kalamazoo, Mich. Filed Apr. 20, 1966.



The words "Guantes Francisco" are Spanish for "gloves by Francisco." No claim of exclusive right is made to "Guantes" for the goods recited.
For Sporting Goods—Namely, Golf Gloves.
First use Nov. 10, 1965.

SN 243,913. Lawrence D. Siegler, Farmers Branch, Tex. Filed Apr. 20, 1966.



For Toys Representing Animals, Skeletons, Fictional Characters, and the Like.
First use on or about Apr. 2, 1966.

SN 246,050. Cossco Products, Incorporated, Hollywood, Calif. Filed May 19, 1966.

FLIPPY

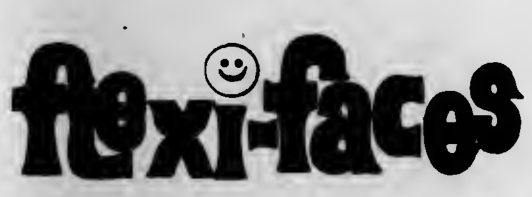
For Water Toys, Specifically Water Powered Submarine and Scuba Diver.
First use in or about 1958.

SN 246,051. Cossco Products, Incorporated, Hollywood, Calif. Filed May 19, 1966.

WATER WONDERS

The word "Water" is disclaimed apart from the mark as a whole.
For Water Toys, Specifically Cutouts Representing Various People, Animals, and Objects, for Use With a Water Motor To Attain Animation.
First use on or about Mar. 7, 1966.

SN 249,235. Ideal Marketing Corp., New York, N.Y., assignee of Gro Sales Concepts, Inc., New York, N.Y. Filed June 29, 1966.



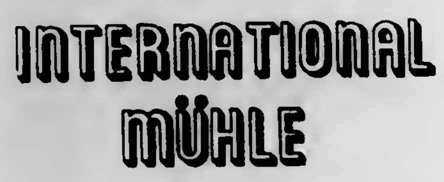
For Masks, Rubber Puppet Faces Which Can Be Flexed by Hand.
First use June 1, 1966.

SN 252,391. James W. Lang, Mound, Minn. Filed Aug. 15, 1966.

RADIX

For Various Suited and Numeration Playing Cards for Playing Amusement and Educational-Type Card Games.
First use on or about Aug. 20, 1965.

SN 254,765. Reliable Home Appliances, Inc., d.b.a. Aüf Zü, Washington, D.C. Filed Sept. 20, 1966.



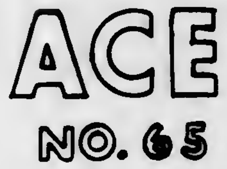
"Mühle" is the German word for "mill."
For Equipment Comprising a Board and Movable Pieces for Use in Playing a Game.
First use Sept. 15, 1966.

SN 255,020. Raybestos-Manhattan, Inc., Passaic, N.J. Filed Sept. 23, 1966.

ADJUST-A-SIGHT

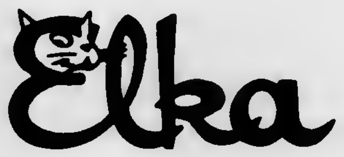
For Bowling Ball Grip Inserts.
First use Sept. 16, 1966.

SN 256,921. Bruck Tackle & Manufacturing Co., Portland, Oreg. Filed Oct. 21, 1966.



For Fishing Reels.
First use Nov. 8, 1962.

SN 257,475. Elka Toy & Novelty Mfg. Corp., New York, N.Y. Filed Oct. 28, 1966.



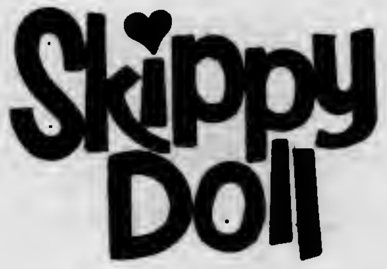
For Stuffed Toys.
First use January 1938.

SN 260,462. South Bend Tackle Company Inc., South Otselic, N.Y. Filed Dec. 9, 1966.

RASCAL

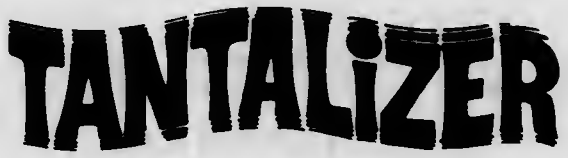
Owner of Reg. No. 532,902.
For Fishing Lures.
First use Aug. 10, 1966.

SN 263,958. Skippy Doll Corp., Long Island City, N.Y. Filed Feb. 3, 1967.



No claim is made to the word "Doll" apart from the mark as shown.
For Dolls.
First use 1949.

SN 264,071. Lakeside Industries, Inc., Minneapolis, Minn. Filed Feb. 6, 1967.



For Apparatus Sold as a Unit for Playing an Amusement Parlor Game.
First use Nov. 10, 1960.

SN 264,834. Kenner Products Company, Cincinnati, Ohio. Filed Feb. 16, 1967.

GLOPPY

For Toy or Children's Modeling Compound.
First use Oct. 17, 1966.

SN 265,623. Glendinning Companies, Inc., Westport, Conn. Filed Feb. 28, 1967.

SPELL·a·CHECK

For Promotional Game Materials—Namely, Equipment Sold as Units, Cooperating Pieces, and Parts of Such Units, for Playing Promotional or Contest Games.
First use July 13, 1966.

SN 278,639. Mattel, Inc., Hawthorne, Calif. Filed Aug. 21, 1967.

SWOOPSY SKIDDLE

For Dolls, Doll Clothing, and Doll Accessories.
First use July 18, 1967.

SN 278,641. Mattel, Inc., Hawthorne, Calif. Filed Aug. 21, 1967.

SLIPSY SLIDDLE

For Dolls, Doll Clothing, and Doll Accessories.
First use July 18, 1967.

SN 278,643. Mattel, Inc., Hawthorne, Calif. Filed Aug. 21, 1967.

LEMONS STIDDLE

For Dolls, Doll Clothing, and Doll Accessories.
First use July 18, 1967.

SN 278,645. Mattel, Inc., Hawthorne, Calif. Filed Aug. 21, 1967.

KAMPY KIDDLE

For Dolls, Doll Clothing, and Doll Accessories.
First use July 18, 1967.

SN 278,646. Mattel, Inc., Hawthorne, Calif. Filed Aug. 21, 1967.

PINEY NIDDLE

For Dolls, Doll Clothing, and Doll Accessories.
First use July 18, 1967.

SN 279,440. The Toney Penna Company, Jupiter, Fla. Filed Aug. 31, 1967.

AVENGER

For Golf Clubs.
First use July 15, 1967.

SN 279,441. The Toney Penna Company, Jupiter, Fla. Filed Aug. 31, 1967.

PIN/JAMMER

For Golf Clubs.
First use July 15, 1967.

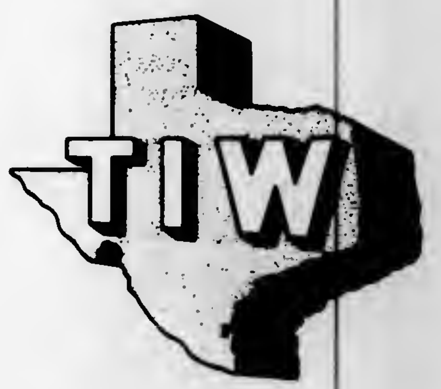
SN 279,903. Mattel, Inc., Hawthorne, Calif. Filed Sept. 8, 1967.

SADIE

For Dolls, Doll Clothing, and Doll Accessories.
First use Aug. 15, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 227,974. Texas Iron Works, Houston, Tex. Filed Sept. 16, 1965.



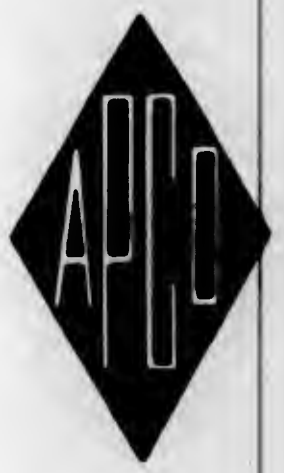
Without waiving any common law rights, the exclusive right to use an outline map of Texas, apart from the entire mark is disclaimed.
For Drilling and Production Equipment for the Oil Field Industry—Namely, Packers, Safety Joints, Completion Tools, Blowout Preventers and Flow Controllers, Setting Tools, Cable Stuffing Boxes, Liner Pullers, Blast Joints, Slips, Bits, and Accessories Therefor.
First use before 1945.

SN 227,975. Texas Iron Works, Houston, Tex. Filed Sept. 16, 1965.

TIW

For Drilling and Production Equipment for the Oil Field Industry—Namely, Packers, Safety Joints, Completion Tools, Blowout Preventers and Flow Controllers, Setting Tools, Cable Stuffing Boxes, Liner Pullers, Blast Joints, Slips, Bits, and Accessories Therefor.
First use before 1945.

SN 233,987. Applied Engineering Company, Orangeburg, S.C. Filed Dec. 6, 1965.
For Propane Air Mixers and Plants.
First use June 1959.

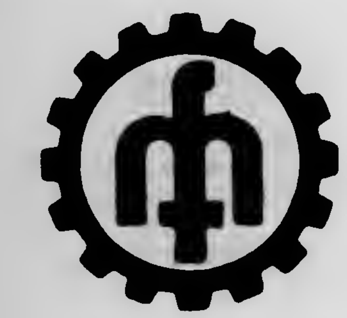


SN 238,081. Hamac-Hansella Gesellschaft mit beschrankter Haftung, Viersen, Rhineland, Germany, by change of name from Hamac-Hansella Aktiengesellschaft, Viersen, Rhineland, Germany. Filed Feb. 4, 1966.

TRANSCLIP

Owner of German Reg. No. 801,808, dated Mar. 17, 1965.
For Packaging Machines Employing a Tying Operation.

SN 240,285. Firma Franz Müller, Monchen-Gladbach, Germany. Filed Mar. 7, 1966.



Owner of German Reg. No. 641,585, dated July 16, 1953.
For Textile Machines, in Particular, Weaving-Preparing Machines—Namely, Spool Machines, as Well as Warp Installations, and Textile Finishing Machines.
First use 1952; in commerce 1952.

SN 242,857. Torque Controls, Inc., South El Monte, Calif. Filed Apr. 6, 1966.

TORQUEMASTER

For Hand Operated Torque Wrenches and Hand Operated Torque Screwdrivers.
First use Feb. 23, 1966.

SN 242,859. Torque Controls, Inc., South El Monte, Calif. Filed Apr. 6, 1966.

TCI

For Hand Operated Torque Wrenches and Hand Operated Torque Screwdrivers.
First use May 16, 1961.

SN 243,501. Toro Manufacturing Corporation, Minneapolis, Minn. Filed Apr. 14, 1966.

PARKMASTER

For Mowers.
First use at least as early as 1934.

SN 246,153. E. W. Bliss Company, Pittsburgh, Pa. Filed May 20, 1966.

ACICULLOY

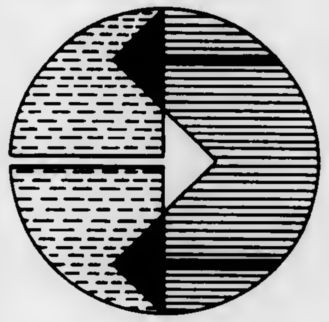
For Metal Made Into Metal Rolls for Use in Rolling Mills.
First use on or about Feb. 16, 1966.

SN 247,740. Universal American Corporation, New York, N.Y. Filed June 9, 1966.

SPARTAN

For Battery Operated Pallet Trucks With Hand-Controlled Fork Lifts.
First use Apr. 15, 1966.

SN 249,136. Wallace-Murray Corporation, New York, N.Y., assignee of Cen-Trific-Air Products, Inc., New Haven, Conn. Filed June 28, 1966.



The drawing is lined for the colors blue and silver or grey, but color is not claimed as a feature of the mark.
For Air Treating and Cleaning Apparatus—Namely, Air Scrubbers.
First use May 24, 1966.

SN 249,999. H. D. Hudson Manufacturing Company, Chicago, Ill. Filed July 11, 1966.

TEK

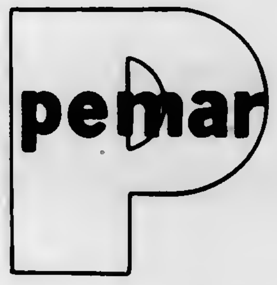
For Hand-Operated Sprayers, and Parts Thereof, for Dispensing Insecticides, Fungicides, Pesticides, Paint, Weed Killers, Fertilizers, and Other Liquids.
First use June 2, 1964.

SN 251,526. Frank W. Egan & Company, Somerville, N.J. Filed Aug. 2, 1966.

RECIPROSCREW

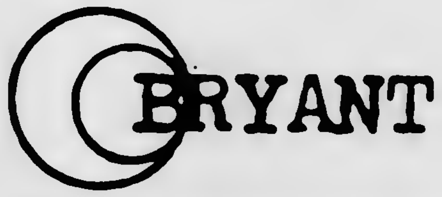
For Machinery for Use in Working Plastic Compositions
First use on or about Jan. 27, 1964.

SN 252,273. Pemar Products, Inc., Houston, Tex. Filed Aug. 12, 1966.



For Vehicle Replacement Parts—Namely, Ball Bearings, Roller Bearings, and Ball Joints.
First use on or about Dec. 1, 1964, on ball bearings.

SN 254,770. Bryant Chucking Grinder Co., Springfield, Vt. Filed Sept. 20, 1966.



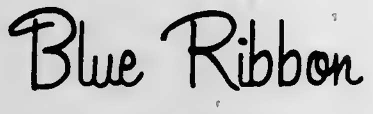
Owner of Reg. Nos. 137,770, 786,754, and others.
For Metal Grinding Machines and Parts Thereof.
First use Aug. 31, 1966.

SN 256,816. Better Packages, Inc., Shelton, Conn. Filed Oct. 20, 1966.

PIGGYBACK

For Auxiliary Tape Basket for a Tape Dispensing Machine.
First use Aug. 26, 1966.

SN 257,491. Jarvis Corporation, Hartford, Conn. Filed Oct. 28, 1966.



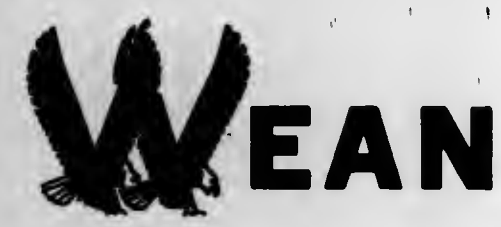
For Drill Bits, Taps, End Mills, Reamers, Rotary Files, Boring Bits, Countersinks, and Key Seat Cutters.
First use on or before Feb. 1, 1966.

SN 257,792. Murray Company of Texas, Inc., d.b.a. Boston Gear Works, North Quincy, Mass. Filed Nov. 2, 1966.

CLIP-TOP

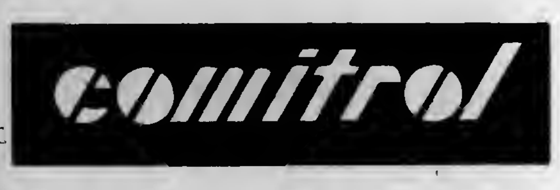
Owner of Reg. No. 759,972.
For Conveyor Chains.
First use Oct. 3, 1966.

SN 257,808. Wean Industries, Inc., Warren, Ohio. Filed Nov. 2, 1966.



Owner of Reg. No. 408,288.
For Metal Sheet, Strip and Tin Plate Processing Machinery and Equipment.
First use August 1942; Oct. 28, 1933, as to "Wean."

SN 258,178. Urschel Laboratories, Inc., Valparaiso, Ind. Filed Nov. 7, 1966.



For Machinery and Parts Thereof for Reducing the Size of and Treating of Materials.
First use Sept. 23, 1966.

SN 258,543. Ingersoll-Rand Company, New York, N.Y. Filed Nov. 14, 1966.

CRAWLAIR

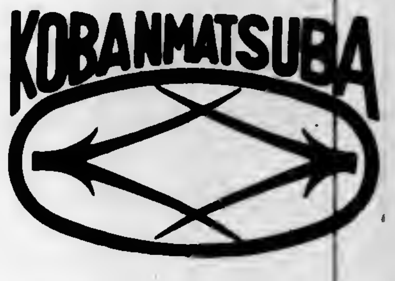
Owner of Reg. Nos. 661,620 and 689,837.
For Portable Self-Propelled Drilling Rig.
First use September 1966.

SN 258,752. Madison Industries, Inc., Smithfield, R.I. Filed Nov. 16, 1966.

MADISON-KOSTA

Owner of Reg. No. 666,274.
For Machine Lathe Centers.
First use Oct. 6, 1966.

SN 258,817. Kabushiki Kaisha Sabun Kogyosho, Nakakanbara-gun, Niigata-ken, Japan. Filed Nov. 16, 1966.



The Japanese word "Kobanmatsuba" may be translated in English to mean "gold coin and pine leaves."
For Sewing Machine Attachments.
First use Apr. 1, 1950; in commerce Apr. 14, 1950.

SN 258,826. Maschinenfabrik Fahr Aktiengesellschaft, Gottmadingen, Kreis Konstanz, Germany. Filed Nov. 16, 1966.

CENTIPEDE

For Agricultural Tractors, Agricultural Harvesting Machines, and Haymakers.
First use June 1964; in commerce June 1964.

SN 259,545. Glasduct Specialties, Inc., San Antonio, Tex. Filed Nov. 28, 1966.

GROOV-MASTER

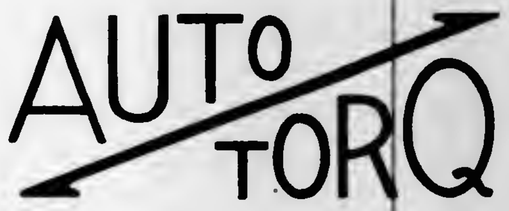
For Machinery for Cutting, Grooving, Slitting, and Trimming Sheet Material—Namely, Styrenes, Urethanes and Glass Fibers, and Accessories and Parts Therefor.
First use Sept. 29, 1966.

SN 259,706. Arneson Products, Inc., San Rafael, Calif. Filed Nov. 30, 1966.

ARN-A-CLOR

For Automatic Chlorine Dispensers for Water Bodies.
First use on or about Jan. 15, 1966.

SN 259,925. Jeffrey Galion Manufacturing Company, Columbus, Ohio. Filed Dec. 2, 1966.



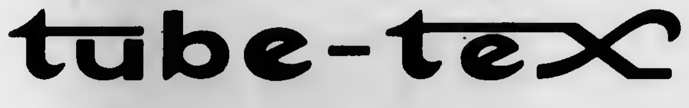
Owner of Reg. No. 815,731.
For Hydraulic Motors.
First use on or about Nov. 27, 1963.

SN 260,012. Brown Machine Company of Michigan, Inc., Beaverton, Mich. Filed Dec. 5, 1966.

BANTAM

For Differential Pressure Organic Plastics Thermoforming and Trimming Machines.
First use Nov. 18, 1966.

SN 260,287. Tubular Textile Machinery Corporation, Woodside, N.Y. Filed Dec. 7, 1966.



Owner of Reg. Nos. 290,179 and 592,587.
For Machines for Treating Textile Fabrics, and Parts for Such Machines.
First use on or about July 27, 1931.

SN 260,984. Ing. C. Olivetti & C., S.p.A., Ivrea, Italy. Filed July 18, 1966.

PRAXIS

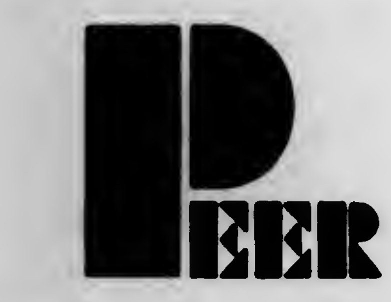
For Office Machines—Namely, Typewriters of Every Kind, and Parts Thereof.
First use February 1965; in commerce September 1965.

SN 260,987. Ing. C. Olivetti & C., S.p.A., Ivrea, Italy. Filed July 18, 1966.

STUDIO

For Office Machines—Namely, Typewriters of Every Kind, and Parts Thereof.
First use 1938; in commerce January 1947.

SN 261,514. Peer Bearing Company, Chicago, Ill. Filed Dec. 27, 1966.



For Ball Bearings.
First use Nov. 14, 1966.

SN 264,098. Pringles, Inc., Walla Walla, Wash. Filed Feb. 6, 1967.

PRINGLE POWER VAC

For Power Vacuum Equipment for Cleaning Heating and Air Conditioning Systems.
First use on or about Mar. 15, 1955.

SN 271,103. Economy Engineering Company, Chicago, Ill. Filed May 10, 1967.

HI-JACKER

For Telescoping Work Platform.
First use at least as early as Feb. 19, 1967.

SN 275,982. Cameron Machine Company, Dover, N.J. Filed July 14, 1967.

MULTIWIND

For Machines for Rolling Paper and Other Flexible Web Materials.
First use June 30, 1967.

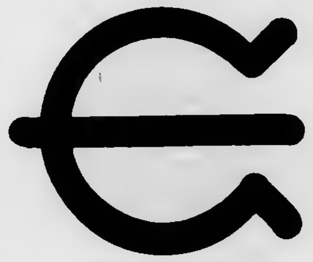
SN 279,705. The Singer Company, New York, N.Y. Filed Sept. 6, 1967.

PROFESSIONAL

Owner of Reg. No. 742,664.
For Sewing Machine Attachments, Typewriters, Typewriter Cases, and Parts Thereof.
First use Apr. 21, 1961.

Class 26—Measuring and Scientific Appliances

SN 231,423. International Equipment Co., Needham Heights, Mass. Filed Oct. 23, 1965.



The mark consists of a monogram comprising the stylized letters "IEC."
For Tubes for Use in Centrifuges for Laboratory Use.
First use Sept. 17, 1965.

SN 234,688. Ultronic Systems Corp., Pennsauken, N.J. Filed Dec. 15, 1965.

VALIDATOR

For Credit Card Reading Devices, Used With Computers, for Checking the Credit Standing of Customers of Retail Stores and Similar Establishments.
First use April 1965.

SN 241,272. Photographic Specialties, Hollywood, Calif. Filed Mar. 17, 1966.

PROTECT-A-PRINT

For Flexible Film Strip Material for Making Leaders for Motion Picture Films.
First use on or about July 14, 1958.

SN 243,560. Honeywell Inc., Minneapolis, Minn. Filed Apr. 15, 1966.

AUTO/STROBONAR

Owner of Reg. Nos. 542,428 and 697,782.
For Electronic Photographic Flash Equipment.
First use at least as early as Sept. 22, 1965.

SN 244,423. Nuclear-Chicago Corporation, Des Plaines, Ill. Filed Apr. 27, 1966.

G.O.

For Mechanical System Composed of a Tungsten Rod and a Rack and Pinion Drive Mechanism Which Automatically Inserts an External Standard Radioactive Source Into a Liquid Scintillation Counting Chamber and Removing It Therefrom To Provide Standardization Measurements of Said System.
First use Apr. 9, 1965.

SN 254,585. Don C. Cherrington, Lafayette, Calif. Filed Sept. 16, 1966.

MOD RULE

The word "Rule" is disclaimed apart from the mark as a whole.
For Ruler and Template Used in Teaching and Study of Mathematics.
First use Aug. 6, 1966.

SN 256,085. General Radio Company, West Concord, Mass. Filed Oct. 10, 1966.

STROBOSLAVE

Owner of Reg. Nos. 349,448 and 425,588.
For Stroboscopes.
First use on or about June 1, 1965.

SN 256,122. Northern Scientific, Inc., Austin, Tex. Filed Oct. 10, 1966.

NORTHERN

For Signal Measuring Instruments—Namely, Pulse Height Analyzers and Digital Memory Oscilloscopes.
First use at least as early as Aug. 15, 1964.

SN 259,747. K. J. Law Engineers, Inc., Detroit, Mich. Filed Nov. 30, 1966.

VERICODE

For Electronic Scanning System for Inspecting Code Bearing Articles, Such as Packages, Labels, or Other Items.
First use Jan. 5, 1966.

SN 259,810. Cole National Corporation, Cleveland, Ohio. Filed Dec. 1, 1966.

OPTI-COAT

For Eyeglass or Spectacle Lenses.
First use on or about Sept. 20, 1966.

SN 260,074. RCI Northwest, Portland, Oreg. Filed Dec. 5, 1966.

MAGNA-SPECT

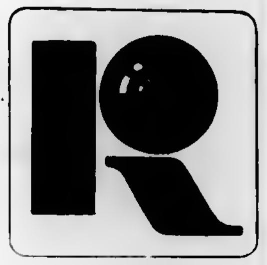
For Apparatus for Inspecting Tires for Locating Physical Imperfections Preliminary To Repairing or Recapping the Tires.
First use Oct. 15, 1966.

SN 260,396. American Polarizers, Inc., Philadelphia, Pa. Filed Dec. 9, 1966.

SUN-BAR

For Polarized Optical Blanks.
First use Nov. 30, 1966.

SN 260,452. Robertson Photo-Mechanix, Inc., Des Plaines, Ill. Filed Dec. 9, 1966.



The mark consists of the letter "R" and design.
For Graphic Arts Equipment and Apparatus—Namely, Graphic Arts Cameras and Parts Thereof, Plate Making Equipment, Developing Sinks, Utility Sinks, Etching Tables, Stabilization Processors and Camera Processors.
First use Nov. 1, 1966.

SN 263,605. Physics International Company, San Leandro, Calif. Filed Jan. 30, 1967.

PULSERAD

For X-Ray Equipment.
First use December 1965.

SN 263,617. Simmonds Precision Products, Inc., Tarrytown, N.Y. Filed Jan. 30, 1967.

PACITOR

For Liquid Level Indicators.
First use on or about Jan. 4, 1944.

SN 263,895. Comptone Company, Ltd., New York, N.Y. Filed Feb. 3, 1967.

AFTER DARK

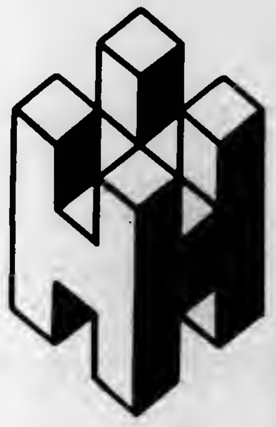
For Eye Glasses, Sunglasses, Spectacles, Frames, and Parts Thereof, Including Lenses.
First use July 1966.

SN 263,901. Eastman Kodak Company, Rochester, N.Y. Filed Feb. 3, 1967.

SHELLBURST

For Sensitized Photographic Film.
First use Oct. 27, 1949.

SN 264,058. Holotron Corporation, Wilmington, Del. Filed Feb. 6, 1967.



For Holograms.
First use Nov. 30, 1966.

SN 264,083. The National Cash Register Company, Dayton, Ohio. Filed Feb. 6, 1967.

NCR

Owner of Reg. Nos. 148,174, 799,036, and others.
For Readers for Displaying, From Transparencies, Selected High-Resolution Microimages.
First use on or about May 12, 1966.

SN 264,167. Technicon Corporation, Ardsley, N.Y., by merger and change of name from The Technicon Company, Inc., Ardsley, N.Y. Filed Feb. 7, 1967.

Autotechnicon ULTRA

Owner of Reg. Nos. 407,208, 739,356, and others.
For Automatic Immersion Apparatus Especially for Use in the Preparation of Histological Specimens for Microscopic Examination.
First use Apr. 1, 1966.

SN 264,423. Julius Kaufmann Limited, London, England. Filed Feb. 10, 1967.

JIFFY

Owner of British Reg. No. B828,607, dated Dec. 13, 1961.
For Slide Rules.

SN 265,619. Fairchild Camera and Instrument Corporation, Syosset, N.Y. Filed Feb. 28, 1967.

PTS

For Photographic Type Composing Machine.
First use Oct. 11, 1966.

SN 273,235. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed June 7, 1967.

MINCOM

Owner of Reg. Nos. 689,512 and 705,516.
For Digital, Communication, Telemetric and General Instrumentation Recorders, Reproducing Machines, and Test and Accessory Equipment Therefor.
First use Jan. 12, 1959.

SN 273,236. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed June 7, 1967.

MINCOM

Owner of Reg. Nos. 689,512 and 705,516.
For Drop Out Compensator.
First use Mar. 29, 1963.

SN 274,287. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed June 20, 1967.

MR-412

For Camera, Camera Processor, and Lighting Brackets for Use in Connection Therewith.
First use Mar. 16, 1967.

SN 279,252. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Aug. 29, 1967.

DU PONT

Owner of Reg. Nos. 413,806, 830,168, and others.
For Diamond Knives for Microtomy and Precision Machining.
First use Jan. 6, 1967.

Class 27 — Horological Instruments

SN 251,813. General Time Corporation, Stamford, Conn. Filed Aug. 5, 1966.

Crown Gift

For Clocks and Watches.
First use Aug. 21, 1965.

SN 252,978. Waltham Watch Company, Chicago, Ill. Filed Aug. 23, 1966.

Waltham

Owner of Reg. Nos. 86,188, 769,921, and others.
For Watches.
First use Jan. 1, 1961; as early as December 1859 as to the mark "Waltham."

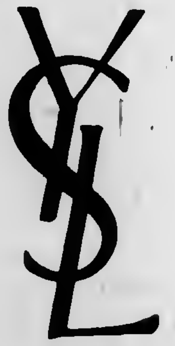
SN 271,221. Bulova Watch Company, Inc., Flushing, N.Y. Filed May 11, 1967.

PERCHERON

For Watches and Parts Thereof.
First use May 2, 1967.

Class 28 — Jewelry and Precious-Metal Ware

SN 275,347. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed July 5, 1967.



The mark consists of the letters "YSL." Owner of Reg. No. 766,417.
For Jewelry.
First use March 1966.

Class 29 — Brooms, Brushes, and Dusters

SN 254,298. Ludenne, Paris, France. Filed Sept. 12, 1966.

FLUGINA

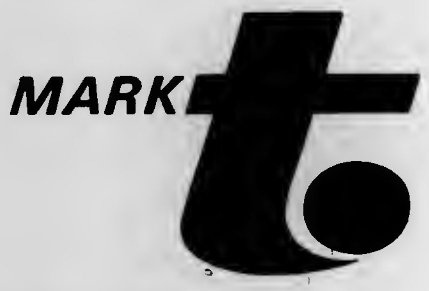
Priority claimed under Sec. 44(d) on French Reg. No. 9,630, dated Mar. 18, 1966.
For Double Brush That Fits on the Hand Like a Glove for Massage Purposes.

SN 262,939. I. Sekine Company, Inc., New York, N.Y. Filed Jan. 20, 1967.

LORD BALTIMORE

For Toothbrushes and Hairbrushes.
First use October 1937 on toothbrushes.

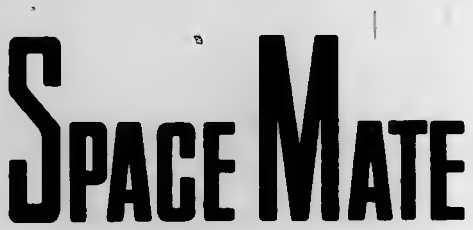
SN 263,489. Southwestern Drug Corporation, d.b.a. Mark-T Products, Dallas, Tex. Filed Jan. 27, 1967.



For Electrically Operated Tooth Brushes.
First use Dec. 5, 1966.

Class 32 — Furniture and Upholstery

SN 262,578. Formco, Inc., Cincinnati, Ohio. Filed Jan. 16, 1967.



For Vanities.
First use Dec. 8, 1964.
Subj. to Intf. with SN 273,801.

SN 268,955. The Globe-Wernicke Co., Cincinnati, Ohio. Filed Apr. 12, 1967.

6500 LINE

The word "Line" is disclaimed apart from the mark as shown.
For Filing Cabinets.
First use Mar. 21, 1967.

SN 273,801. Southern Cross Industries, Inc., Atlanta, Ga. Filed June 13, 1967.

SPACE MATES

For Mattresses.
First use Jan. 4, 1967.
Subj. to Intf. with SN 262,578.

Class 33 — Glassware

SN 238,329. Asahi Glass Company Limited, Chiyoda-ku, Tokyo, Japan. Filed Feb. 8, 1966.

TEMPERLITE

For Sheet Glass, Plate Glass, Wired Glass, Safety Glass (Laminated and Tempered Glass).
First use October 1954; in commerce in or about June 1958.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 245,944. National Stamping & Electric Works, St. Louis, Mo. Filed May 18, 1966.

STAR-O-MATIC

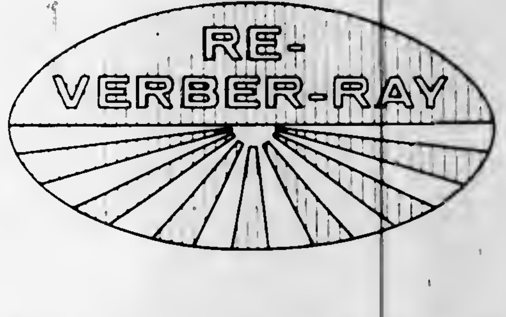
For Commercial Type Coffee and Hot Water Makers.
First use 1961.

SN 246,813. Joseph K. Ryan, Canoga Park, Calif. Filed May 27, 1966.

KEN O'LITE

For Restaurant Table Lamps.
First use Feb. 7, 1966.

SN 247,341. Detroit Radiant Products Company, Detroit, Mich. Filed June 6, 1966.



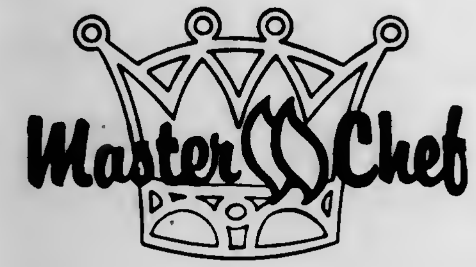
The drawing is lined for red. Owner of Reg. No. 632,686.
For Radiant Gas Heaters.
First use September 1960; October 10, 1955, as to the mark "Reverber-Ray."

SN 247,978. Societe des Poudres Metalliques et des Alliages Speciaux Ugine-Carbone, Paris, France. Filed June 13, 1966.

SPARKAL

Owner of French Reg. No. 535,297, dated July 13, 1965 (Seine); Natl. Inst. No. 257,706.
For Electrodes for Welding Machines and Machine Tools—Namely, Electrodes for Joint Welding, Electrodes for Electro-Erosion Machining, and Electrodes for Disintegration of Screw-Taps.

SN 249,323. Glaser Products Corporation, St. Louis, Mo. Filed June 30, 1966.



For Barbecue Braziers and Barbecue Smoker Wagons.
First use January 1959.

SN 255,646. Rheem Manufacturing Company, New York, N.Y. Filed Sept. 30, 1966.

SANIMASTER

Owner of Reg. Nos. 625,395, 737,477, and 743,439.
For Electric Water Heaters.
First use June 14, 1966.

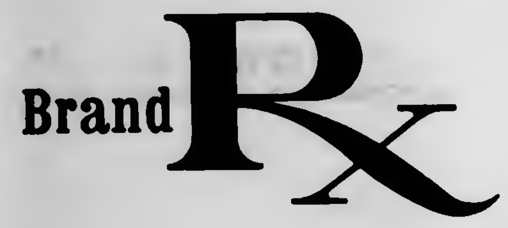
SN 259,256. Microdot, Incorporated, S. Pasadena, Calif. Filed Nov. 22, 1966.

ROLLECTRODE

Owner of Reg. No. 672,748.
For Motor Driven Roller-Type Welding Electrodes, and Component Parts Therefor.
First use Dec. 14, 1957.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 240,765. Moore Manufacturing Inc., San Francisco, Calif. Filed Mar. 11, 1966.



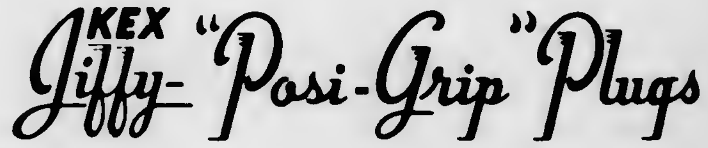
Applicant disclaims use of the word "Brand" except when used as a part of the mark as shown. Owner of Reg. No. 727,513.
For Garden Hose.
First use Nov. 18, 1964.

SN 258,526. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Nov. 14, 1966.

ORIGINAL DUTY

Applicant disclaims the word "Original" apart from the mark as shown.
For Friction Lining for Brakes.
First use Aug. 5, 1966.

SN 262,271. Kex Products, Incorporated, St. Louis, Mo. Filed Jan. 10, 1967.



Applicant disclaims the word "Plugs" apart from the mark as shown. Owner of Reg. Nos. 201,823, 752,117, and 776,612.
For Tire Plug.
First use Oct. 1, 1966.

SN 263,049. The General Tire & Rubber Company, Akron, Ohio. Filed Jan. 23, 1967.

POLESTAR

For Pneumatic Tires.
First use Nov. 4, 1966.

SN 264,535. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Feb. 13, 1967.

PANTHER

For Resilient Vehicle Tires.
First use Dec. 22, 1966.

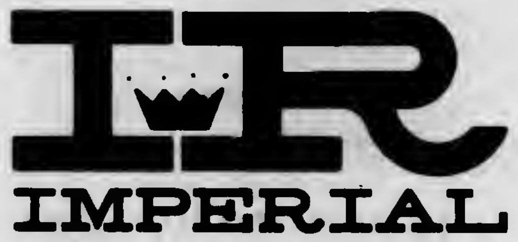
Class 36 — Musical Instruments and Supplies

SN 228,587. Worldwide Musical Instrument Co., Inc., New York, N.Y. Filed Sept. 24, 1965.

MAJESTIC

For Woodwind Instruments: Piccolo Flutes, Flutes, Clarinets, Bassoons, Contra Bassoons, Saxophones, and Oboes; Brasswind Instruments: Trumpets, Cornets, Trombones, Valve Trombones, Fluegelhorns, Baritone Horns, French Horns, Tubas, and Sousaphones; Reed Instruments: Piano Accordions, Button Accordions, Concertinas, and Harmonicas (Mouthorgans); and Recorders: Soprano, Alto, Tenor, Bass, and Sopranino Recorders, Made of Plastic Material or Wood.
First use Sept. 2, 1965.

SN 234,704. Liberty Records, Inc., Los Angeles, Calif. Filed Dec. 14, 1965.



Owner of Reg. Nos. 436,710 and 437,695.
For Phonograph Records and Albums Thereof.
First use September 1956.

Class 37 — Paper and Stationery

SN 259,981. Stratford Packaging Systems Corporation, Englewood, N.J. Filed Dec. 2, 1966.

VYNAWRAP

For Plastic Sheets and Film for Wrapping Purposes.
First use Sept. 7, 1966.

SN 278,453. Polaroid Corporation, Cambridge, Mass. Filed Aug. 17, 1967.

POLACOLOR

Owner of Reg. Nos. 732,138 and 739,042.
For Mounts for Photographic Prints.
First use on or about May 2, 1963.

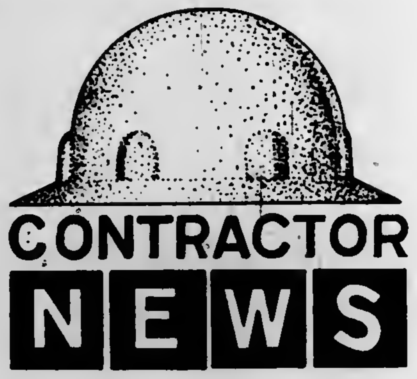
Class 38 — Prints and Publications

SN 228,332. Compendium Publishers International Corp., New York, N.Y. Filed Sept. 22, 1965.

SEARCH
SYSTEMIZED EXCERPTS, ABSTRACTS & REVIEWS OF CHEMICAL HEADLINES

The expression "Systemized Excerpts, Abstracts & Reviews of Chemical Headlines" is disclaimed apart from the mark as shown.
For Periodical News Bulletin of Chemical Industry.
First use Oct. 10, 1964.

SN 235,917. Hagan Publications Inc., Montclair, N.J. Filed Jan. 6, 1966.



For Periodical Publication—Namely, a Magazine.
First use Sept. 1, 1962.

SN 253,576. Lloyd D. Tracy, d.b.a. Vista Insurance Agency, Vista, Calif. Filed Aug. 31, 1966.

INSURACHAT

For Newspaper or Magazine Column Devoted to Matters Relating to Insurance.
First use July 9, 1964.

SN 259,222. Concept Publishing Corporation, New York, N.Y. Filed Nov. 22, 1966.

COSMETIC WORLD

For Biweekly Newsletter Dealing With Cosmetics.
First use Sept. 30, 1966.

SN 260,929. Executive Publishing Co., Oklahoma City, Okla. Filed Dec. 16, 1966.

EXECUTIVE GUFFEY'S Journal

For Fortnightly Newspaper.
First use December 1963.

SN 273,155. International Minerals & Chemical Corporation, Skokie, Ill. Filed June 6, 1967.

AGRICLIMATE

For Periodic Reports Relating to the Agronomic Effect of Weather.
First use March 1964.

Class 39 — Clothing

SN 148,330. Saks, Inc., Washington, D.C. Filed July 3, 1962.

Saks WASHINGTON

The geographical term "Washington" is disclaimed apart from the mark as shown.
For Women's Fur Wearing Apparel—Namely, Coats, Jackets, Stoles, Capes, Neckwear, Muffs, and Hats; and Other Women's Wearing Apparel—Namely, Dresses, Skirts, Capes, Coats, Suits, Gowns, Hats, Headdresses, Sweaters, Blouses, Slacks, Shorts, and Shirts.
First use at least as early as 1920 on fur coats; at least as early as 1896 in a different form.

SN 226,083. Scarves by Vera, Inc., New York, N.Y. Filed Aug. 19, 1965.

Vera inseparable

Owner of Reg. No. 683,332.
For Coordinated Garments and Accessories for Women—Namely, Blouses Coordinated With Skirts, Blouses Coordinated With Slacks, Scarves Worn About the Neck and Scarves Worn on the Head Coordinated With Dresses, Blouses, Skirts, and Slacks.
First use Jan. 4, 1965.

SN 249,981. Rubin Grais & Sons, Chicago, Ill. Filed July 11, 1966.

College Man Action Jacket

Applicant disclaims the word "Jacket" apart from the mark as shown.
For Men's and Boys' Jackets and Coats.
First use Mar. 25, 1966.

SN 250,195. Varsity Industries, Inc., New York, N.Y. Filed July 13, 1966.

GRAN-PAPPIES

For Men's and Ladies' Nightshirts.
First use on or about May 20, 1966.

SN 250,576. Kermit R. Goldbergh, d.b.a. Kavanaugh's Baltimore, Md. Filed July 19, 1966.

TAILOR WIGGINS

The mark "Tailor Wiggins" is fanciful.
For Top Coats, Suits, Sport Coats, Slacks, Rain Wear, Jackets, Car Coats, Smoking Jackets, Robes, Dress Shirts, Sport Shirts, Knit Shirts, Sweaters, Shoes, and Slippers.
First use Sept. 28, 1964.

SN 251,795. Casimiro Silveira S.A. Industria e Comercio, Joinville, Santa Catarina, Brazil. Filed Aug. 5, 1966.

LUMIÈRE

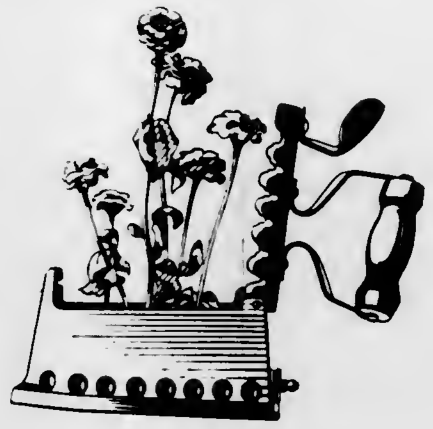
The English translation of the foreign word "Lumiere" is "focus of light." Owner of Brazilian Reg. No. 308,104, dated Nov. 26, 1964.
For Nightgowns, Shirts, Underwear, Blouses, Caps, Bathing Trunks, Belts, Garters, Pajamas, Skirts, Dresses, and Stockings.

SN 252,972. Town & Country Distributors, Inc., Camp Hill, Pa. Filed Aug. 23, 1966.

Townco

For Hosiery, Socks, Shirts, Pants, Panties, Slips, and Blouses.
First use Sept. 10, 1965.

SN 255,352. Quikoton A.G., Glarus, Zurich, Switzerland. Filed Sept. 28, 1966.



Owner of Swiss Reg. No. 207,290, dated Oct. 14, 1964.
For Boots, Shoes, and Slippers; Blouses, Shirts, Scarves, Trousers, Slacks, Skirts, Dresses, Sweaters, Socks, Stockings; Men's and Women's Underwear, Slips, Overcoats, Jackets, Suits, and Raincoats.

SN 255,965. Craddock-Terry Shoe Corporation, Lynchburg, Va. Filed Oct. 7, 1966.

DIRECT HITS

For Shoes for Men, Women, and Children.
First use Sept. 28, 1966.

SN 257,617. Brian Locksley Goodin, New York, N.Y. Filed Oct. 31, 1966.

khadejha

The translation of the Arabic word "Khadejha" is "the perfect woman."
For Men's and Boys' Shirts, Jackets, Sweaters, Coats, Suits, Slacks, Rainwear, Beachwear, Hats, and Shoes; and Women's and Girls' Dresses, Blouses, Jackets, Sweaters, Coats, Suits, Pants, Hats, Rainwear, Beachwear, Shoes, and Mini Skirts.
First use October 1955.

SN 259,230. E-Z Mills, Inc., New York, N.Y. Filed Nov. 22, 1966.

ACTO

For Infants' and Children's Shirts, Pants, and Skirts.
First use Oct. 14, 1966.

SN 259,313. Mildred Ginsburg, d.b.a. Ginzi, Johnstown, Pa. Filed Nov. 23, 1966.

GINZI

For Children's Dresses; Toddlers' and Boys' Suits, Shirts, Jackets, Trousers, and Overalls.
First use Nov. 11, 1966.

SN 260,024. Crown Western, Inc., Hood River, Oreg. Filed Dec. 5, 1966.

PRINCESS ROSE

For Ladies' Dresses, Sweaters, Skirts, Suits, and Slacks.
First use May 10, 1966.

SN 260,251. Hughes Hatcher, Inc., Detroit, Mich. Filed Dec. 7, 1966.

SHELBY

For Men's and Boys' Suits, Topcoats, Overcoats, and Sport Jackets.
First use before Jan. 8, 1936.

SN 261,299. I. C. Herman & Company, Inc., New York, N.Y. Filed Dec. 22, 1966.

HI-SORB FINISH

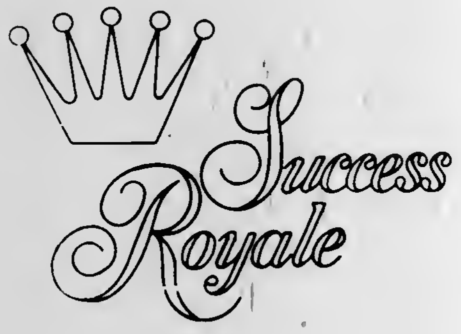
Applicant disclaims any right in the word "Finish" apart from the mark as shown.
For Men's Handkerchiefs.
First use Nov. 25, 1966.

SN 262,325. Flexnit Company, Inc., New York, N.Y. Filed Jan. 11, 1967.

DO SOMETHING

Owner of Reg. No. 716,192.
For Foundation Garments.
First use Dec. 29, 1966.

SN 262,327. Fortuna Foundations, Inc., New York, N.Y. Filed Jan. 11, 1967.



For Girdles and Panty-Girdles.
First use Oct. 1, 1966.

SN 262,373. Tru Balance Corsets, Inc., New York, N.Y. Filed Jan. 9, 1967.

"SoftPower"

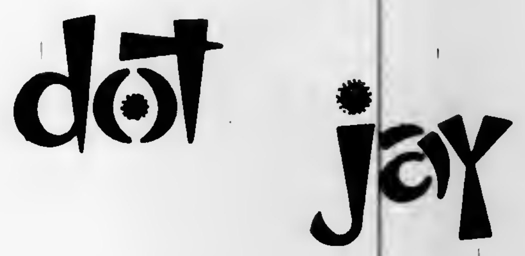
For Ladies' Corsets, Girdles, Panty Corselettes, Bathing Suits, and Underwear.
First use Oct. 10, 1966.

SN 262,483. Foster-Hochberg Manufacturing Co. Inc., Seattle, Wash. Filed Jan. 13, 1967.

PLUS ONE

For Ladies' Wearing Apparel—Namely, Shorts, Slacks, Culottes, Skirts, Jackets, Sweaters, Vests, Shirts, and Blouses.
First use Jan. 5, 1967.

SN 262,484. H. Mendel & Co., Inc., Atlanta, Ga. Filed Jan. 13, 1967.



"Dot Joy" is not the name of any known living individual.
For Ladies' Sportswear—Namely, Slacks, Shorts, Skirts, Shirts, and Blouses.
First use Oct. 3, 1966.

SN 262,683. California Forms, Inc., Culver City, Calif. Filed Jan. 17, 1967.

ACCENTUETTE

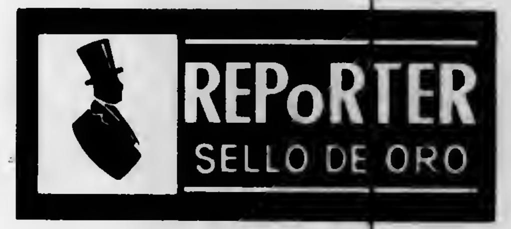
Owner of Reg. Nos. 508,695 and 619,521.
For Sun Suits, Swim Suits, Brassieres and Bikinis for Under and Outer Wear, Shorts, Beach Wear, Panties, Brassiere and Panty Sets, Panty Girdles, Garter Belts, Garter Bikinis, Petticoats, Slips, Chemises, Nightgowns, Robes, Peignoirs and Sleepwear.
First use Feb. 14, 1947.

SN 264,971. Sally Gee, Inc., New York, N.Y. Filed Feb. 17, 1967.

PEBLON KNIT BY SALLY GEE

"Sally Gee," identifies "Sally Goldenstein," a living individual whose consent is of record. Owner of Reg. No. 748,503.
For Ladies' Sweaters.
First use Feb. 15, 1965.

SN 265,104. Regency Neckwear Incorporated, Miami, Fla. Filed Feb. 20, 1967.



The Spanish words "Sello de Oro" are disclaimed apart from the mark as shown.
For Neckties.
First use on or about May 4, 1964.

SN 269,241. Virginia Maid Hosiery Mills, Inc., Pulaski, Va. Filed Apr. 14, 1967.

SMALL CHANGE

For Ladies' Hosiery.
First use Mar. 27, 1967.

SN 272,238. Charles H. Bacon Company, Inc., Lenoir City, Tenn. Filed May 24, 1967.

PEDIKINS

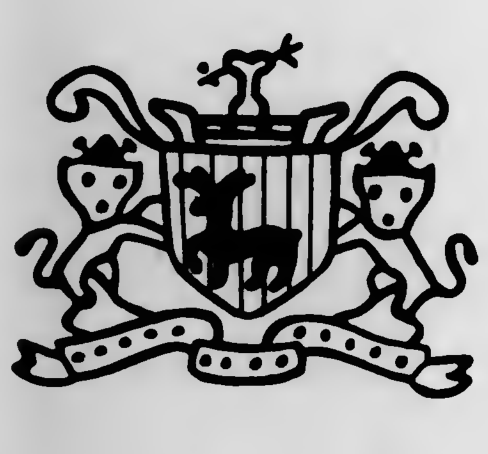
For Foot Socks.
First use Apr. 26, 1967.

SN 276,904. Izod, Ltd., New York, N.Y. Filed July 27, 1967.

THE CHOICE OF CHAMPIONS

Owner of Reg. Nos. 667,890, 806,968, and others.
For Boys' Shirts, Golf Caps, and Golf Gloves.
First use Mar. 11, 1959.

SN 276,905. Izod, Ltd., New York, N.Y. Filed July 27, 1967.



The lining shown on the drawing does not represent any particular color. Owner of Reg. Nos. 692,103 and 757,821.
For Men's Shirts, Golf Caps, and Golf Gloves.
First use February 1956 on men's shirts.

SN 276,906. Izod, Ltd., New York, N.Y. Filed July 27, 1967.

IZOD THE CHOICE OF CHAMPIONS

Owner of Reg. Nos. 667,890, 787,383, and others.
For Men's Swim Trunks, Men's Walking Shorts, Slacks, Sweaters, Golf Caps and Golf Gloves, Socks, Jackets; and Men's and Women's Sport Shirts.
First use Aug. 22, 1956.

SN 277,003. David Crystal, Inc., New York, N.Y. Filed July 28, 1967.

DAVID CRYSTAL

The mark identifies "David Crystal," now deceased. Owner of Reg. Nos. 556,557, 806,406, and others.
For Ladies' and Misses' Dresses, Coats, Suits, Blouses, Skirts, and Sweaters.
First use 1906.

SN 279,779. Chadbourn Gotham, Inc., d.b.a. Carwood Manufacturing Co., Charlotte, N.C. Filed Sept. 7, 1967.

CARSUAL

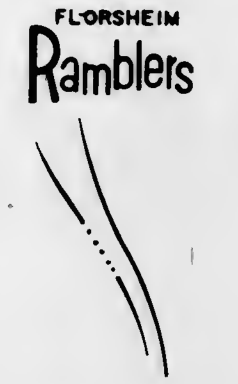
For Men's and Boys' Pants and Jackets.
First use Aug. 25, 1967.

SN 279,894. David Crystal, Inc., New York, N.Y. Filed Sept. 8, 1967.

CRYSTAL SUNFLOWERS

Owner of Reg. Nos. 535,038, 764,347, and others.
For Women's and Children's Dresses, Suits, Slacks, Shorts, Shirts, and Pants.
First use Aug. 25, 1967.

SN 279,895. Interco Incorporated, d.b.a. The Florsheim Shoe Company, Chicago, Ill. Filed Sept. 8, 1967.



Owner of Reg. Nos. 73,586, 146,737, and others.
For Women's Shoes.
First use June 26, 1967; January 1890 as to "Florsheim"; at least as early as 1936 as to "Rambler"; in March 1960 in a different form.

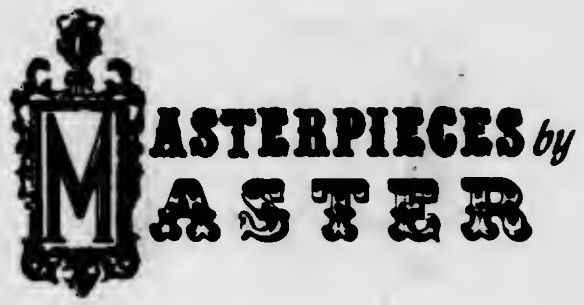
Class 40—Fancy Goods, Furnishings, and Notions

SN 257,095. Samson's Toupees, Inc., New York, N.Y. Filed Oct. 24, 1966.

SAMSON'S OF FIFTH AVENUE

Applicant disclaims any exclusive rights to the words "Of Fifth Avenue" apart from the mark as shown.
For Men's Toupees and Hair Pieces.
First use February 1964.

SN 267,339. Master Trading Corporation, New York, N.Y. Filed Mar. 22, 1967.



For Wigs and Hairpieces.
First use on or about Apr. 1, 1966.

Class 44—Dental, Medical, and Surgical Appliances

SN 252,354. Corbin-Farnsworth, Inc., Palo Alto, Calif. Filed Aug. 15, 1966.

MAX

For Mobile Intensive Care and Emergency Life Support Cart for Holding Patient To Be Resuscitated, and Holding Oxygen Supply and Having Space for Drugs and Appliances Needed.
First use in or about June 1966.

SN 252,756. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company, Los Angeles, Calif. Filed Aug. 19, 1966.

Moiré

For Syringes and Water Bottles.
First use Sept. 1, 1926.

SN 254,178. The Pelton & Crane Company, Charlotte, N.C. Filed Sept. 9, 1966.

PERCHERON

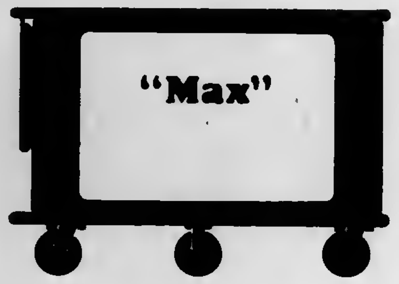
For Dental and Medical Vacuum Evacuation Systems, for the Removal of Liquids or Other Waste Material From the Body of a Patient.
First use July 1, 1966.

SN 254,368. Bacti-Lab Products, Mountain View, Calif. Filed Sept. 13, 1966.

URO-BACTI-LAB

For Disposable Bacteriological Diagnostic Plates for Diagnosis of Urinary Tract Infections.
First use May 11, 1966.

SN 254,992. Corbin-Farnsworth, Inc., Palo Alto, Calif. Filed Sept. 23, 1966.



For Mobile Intensive Care and Emergency Life Support Cart for Holding Patient To Be Resuscitated, and Holding Oxygen Supply and Having Space for Drugs and Appliances Needed.
First use in or about June 1966.

SN 259,341. Resiflex Laboratory, Los Angeles, Calif. Filed Nov. 23, 1966.

SMALL-ALL

For Medical and Pharmaceutical Kits or Equipment Groups Containing Component Parts and Accessories for Use in Irrigation, Preparation, Catheterization, and Other Medical and Surgical Procedures and the Like.
First use Feb. 23, 1966.

SN 259,474. Scott Industries, Inc., Lancaster, N.Y. Filed Nov. 25, 1966.

SCOTT-O-VISTA

Owner of Reg. Nos. 757,831, 765,200, and others.
For Breathing Masks.
First use on or about Sept. 30, 1966.

SN 261,486. H.G. Enterprises, Kansas City, Mo. Filed Dec. 27, 1966.

MEPCO

For Trusses, Sacroiliac Supports, Lombar Sacroiliac Supports, Shoulder Braces, Chest Binders, Cervical Collars, Elastic Bandages, Hygienic Belts and Pads Therefor, and Surgical Needle Holders.
First use about July 1, 1966.

SN 262,576. David Ferber, d.b.a. Ferber Associates, Sherman Oaks, Calif. Filed Jan. 16, 1967.

CARDIOSTAT

For Medical Electronic Instruments—Namely, Electrocardiograph Monitoring Systems, Including Transmitters, Receivers, Recorders, and Limb Electrodes.
First use October 1965.

SN 262,636. Stern Dental Laboratory Company, d.b.a. Stern Laboratories, Houston, Tex. Filed Jan. 16, 1967.

HYDROPAK

For Denture Base Resin.
First use on or before Oct. 20, 1966.

SN 262,638. Surgical Eng. & Research Corp., Victoria, Tex. Filed Jan. 16, 1967.

CRYODENT

For Hypothermia Instruments Used for Controlling Body Temperature, as Well as for Inducing Local Anesthesia.
First use as early as July 18, 1966.

SN 265,027. Abbott Laboratories, North Chicago, Ill. Filed Feb. 20, 1967.

UROGATE

For Urological Drainage Sets.
First use Mar. 29, 1966.

Class 45—Soft Drinks and Carbonated Waters

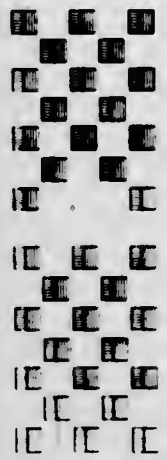
SN 268,130. The Welch Grape Juice Company, Inc., Westfield, N.Y. Filed Apr. 3, 1967.

WELCH'S

Owner of Reg. Nos. 109,970, 742,054, and others.
For Orange Drink Containing Water and Other Ingredients.
First use Mar. 1, 1967.

Class 46—Foods and Ingredients of Foods

SN 223,901. National Dairy Products Corporation, New York, N.Y. Filed July 21, 1965.



The drawing is lined for the colors red and blue.
For Dairy Products Consisting of a Mixture of Milk and Cream.
First use July 22, 1963.

SN 233,450. Briggs Ice Cream Co., Landover, Md. Filed Nov. 29, 1965.

BRIGGS

For Ice Cream, Ice Milk, and Sherbet.
First use Aug. 1, 1965.

SN 243,421. Dunkirk Ice Cream Co., Inc., Dunkirk, N.Y. Filed Apr. 14, 1966.

PARTY PARADE

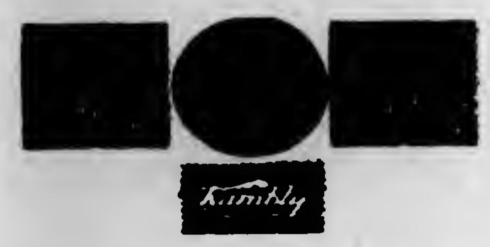
For Frozen Desserts—Namely, Ice Cream and Ice Cream Novelties.
First use on or about Apr. 1, 1963.

SN 243,422. Dunkirk Ice Cream Co., Inc., Dunkirk, N.Y. Filed Apr. 14, 1966.

MASTER PIECE

For Frozen Desserts—Namely, Ice Cream, Ice Cream Novelties, Ice Milk, and Sherbet.
First use on or about Feb. 1, 1958.

SN 243,993. Kambly AG, Biscuits- und Confiseriefabrik, Trubschachen, Switzerland. Filed S.R. Apr. 21, 1966; Am. P.R. Aug. 30, 1967.



Applicant disclaims the representation of the goods apart from the mark as shown. Owner of Swiss Reg. No. 201,385, dated Nov. 11, 1963.
For Biscuits and Bakery Products Containing Vitamins—Namely, Cookies, Salted Biscuits, Pastries, and Cakes.

SN 243,994. Kambly AG, Biscuits- und Confiseriefabrik, Trubschachen, Switzerland. Filed Apr. 21, 1966.

BUTTERFLY

For Biscuits and Bakery Products—Namely, Cookies, Salted Biscuits, Pastries, and Cakes.
First use 1950; in commerce Nov. 19, 1954.

SN 247,617. Jesus Espinoza Ortiz, d.b.a. Jesus Espinoza & Sons, Culiacan, Sinaloa, Mexico. Filed June 8, 1966.

LAGUNA

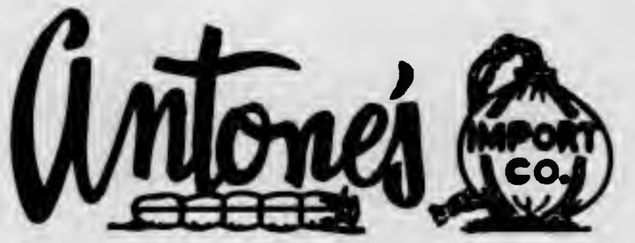
"Laguna" is a Spanish word which may be translated into English as "lagoon."
For Fresh Packaged Tomatoes, Melons, and Mixed Vegetables.
First use December 1963; in commerce December 1963.

SN 250,243. Perry H. Chipurnoi, Inc., New York, N.Y. Filed July 14, 1966.

HONEYCOTS

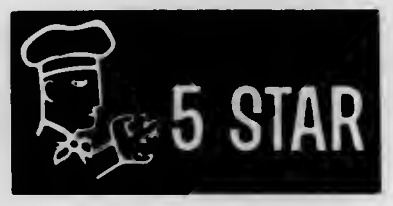
For Dried Apricots Impregnated With Honey.
First use June 29, 1966.

SN 251,268. Jalal E. Antone, d.b.a. Antone's Import Co., Houston, Tex. Filed July 29, 1966.



For Olives, Salad Dressings, Non Meat Sauces for Seafoods and Salads, Canned or Bottled Stuffed Eggplant, Mustard, Canned or Bottled Marinated Artichokes, Canned or Bottled Garden Vegetables in Vinegar, Sesame Seed, Vinegar, Olive Oil for Culinary Purposes, Cheese, Grenadine Syrup for Food Purposes, Butter Peppers, Cheese Dip, Pepper Salad, Capers, Canned or Bottled Shell Seafood, Candies, Cakes, Cookies, and Rolls.
First use Oct. 15, 1962.

SN 252,340. Bernard Food Industries, Inc., San Jose, Calif. Filed Aug. 15, 1966.



For Dehydrated Foods—Namely, Fruit Sauces, Ham and Eggs, Biscuits, Coffee With Cream, Dairy Pancakes, Maple Syrup, Omelettes, Cornbread, Whole Wheat Cooked Cereal, Spaghetti With Tomato Sauce, Apple Jelly, Chili and Beans, Chicken Stew, Spanish Rice, Deviled Ham, Chicken Soup, Beef and Rice (Spanish Style), Butterscotch Pudding, Beef-Vegetable Stew, Banana Pudding, Tomato Soup, Beef With Vegetables, Vanilla Pudding, Beef Stew, Chocolate Pudding, Potato Soup, and New England Dinner Consisting of Vegetables.
First use May 3, 1966.

SN 253,237. Armando G. Pablos, Culiacan, Sinaloa, Mexico. Filed Aug. 26, 1966.

TORERO

"Torero" is a Spanish word which may be translated into English as "bullfighter."
For Fresh Packaged Tomatoes and Mixed Vegetables.
First use January 1960; in comemrce January 1960.

SN 253,238. Armando G. Pablos, Culiacan, Sinaloa, Mexico. Filed Aug. 26, 1966.

YOLI

"Yoli" is a Spanish nickname for the name "Yolanda."
For Fresh Packaged Tomatoes and Mixed Vegetables.
First use January 1958; in commerce January 1958.

SN 253,695. Uncle Dan's, Inc., Yakima, Wash. Filed Sept. 1, 1966.

UNCLE DAN'S

For Dry Mixtures To Be Used for Making Dressings for Such Items as Salads and Baked Potatoes, and for the Making of Dips.
First use on or about May 23, 1966.

SN 256,825. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 20, 1966.

PUDDIN' HEAD

Owner of Reg. No. 763,633.
For Instant Pudding in Powdered Form.
First use Sept. 30, 1966.

SN 256,879. Staff Supermarket Associates, Inc., Jericho, N.Y. Filed Oct. 20, 1966.

Man's FRIEND

For Dog Food.
First use October 1961.

SN 257,889. Procea Products Limited, Colnbrook, Slough, England. Filed Nov. 3, 1966.

SLIMCEA

Owner of British Reg. No. 779,410, dated July 3, 1958.
For Bread, Biscuits, Cakes, Pastry, Flour, and Gluten.

SN 258,499. Colgate-Palmolive Company, New York, N.Y. Filed Nov. 14, 1966.

PUDDIN'HEAD

The drawing is lined for blue, pink, and orange. Owner of Reg. No. 763,633.
For Instant Pudding in Powdered Form.
First use Sept. 30, 1966.

SN 258,510. Doughboy Industries, Inc., New Richmond, Wis. Filed Nov. 14, 1966.

DOUGHBOY

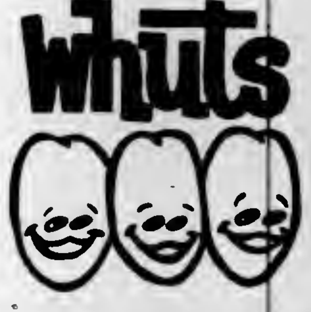
Owner of Reg. Nos. 428,369, 583,272, and 619,554.
For Fresh Dressed and Frozen Dressed Turkey, Frozen Turkey Parts, and Frozen Sliced Turkey With Gravy.
First use on or about Oct. 1, 1966.

SN 258,634. White Rose Foods Corp., Syosset, N.Y. Filed Nov. 14, 1966.

WHITE ROSE

For Tea.
First use July 1, 1900.

SN 260,618. Whuts, Inc., Afton, Wyo. Filed Dec. 12, 1966.



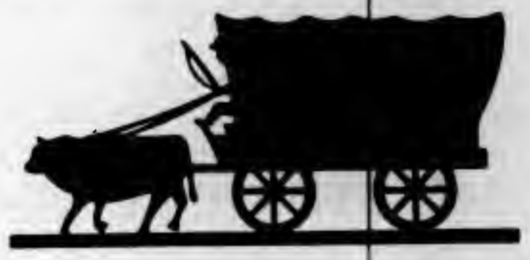
For Processed Wheat Which Is Softened and Flavored To Be Consumed as a Confection.
First use July 14, 1965.

SN 260,805. Agway, Inc., Syracuse, N.Y. Filed Dec. 15, 1966.

COMMAND

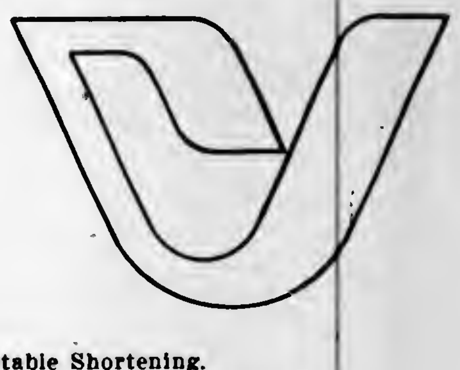
For Dog Food.
First use Nov. 9, 1966.

SN 262,532. Michigan Sugar Company, Saginaw, Mich. Filed Dec. 20, 1966.



Owner of Reg. No. 333,850.
For Sugar.
First use on or about Oct. 1, 1965.

SN 262,844. Armour and Company, Chicago, Ill. Filed Jan. 19, 1967.



For Vegetable Shortening.
First use on or prior to Oct. 31, 1966.

SN 262,966. The Pasta House, Inc., Clarks Summit, Pa. Filed Jan. 20, 1967.

THE PASTA HOUSE

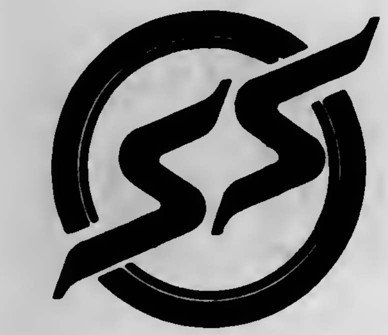
For Spaghetti Sauce.
First use Apr. 2, 1965.

SN 262,974. Scot Lad Foods, Inc., Chicago, Ill. Filed Jan. 20, 1967.

SCOT FARMS

Owner of Reg. Nos. 665,826 and 783,307.
For Refrigerated Canned Biscuits and Rolls.
First use Aug. 31, 1964.

SN 263,146. Southern States Cooperative, Incorporated, Richmond, Va. Filed Jan. 24, 1967.



Owner of Reg. No. 742,794.
For Feed for Livestock.
First use June 15, 1966.

SN 263,454. Continental Organization of Distributor Enterprises, Inc., Pittsburgh, Pa. Filed Jan. 27, 1967.

CODE

For Canned Fruits and Canned Vegetables, Ham Flavored Food Seasoning, Soup Base, Sour Cream, Cheese Sauce, and Egg Nog.
First use Feb. 1, 1966.

SN 263,493. Sunshine Biscuits, Inc., Long Island City, N.Y. Filed Jan. 27, 1967.

CHOCOLATE KINGS

Applicant disclaims the word "Chocolate" apart from the mark as shown.
For Cakes.
First use at least as early as Dec. 5, 1930.

SN 266,487. Bird-in-Hand Poultry Co., Bird-in-Hand, Pa. Filed Mar. 13, 1967.

Truly Dutch

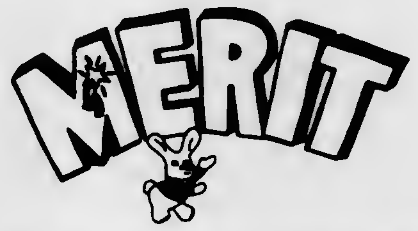
For Fresh and Frozen Poultry and Fowl, i.e., Chickens, Capons, Turkeys, Ducks, Geese, Squabs, Pheasants, Rock Cornish Fowl, and Parts Thereof.
First use in or about June 1955.

SN 274,054. Eggway Foods, Inc., Jacksonville, Fla. Filed June 16, 1967.

MRS. HUMPTY'S

The mark does not consist of or comprise the name of or represent any particular living individual.
For Frozen Omelets.
First use June 14, 1967.

SN 278,648. Merit Packing Co., Salinas, Calif. Filed Aug. 21, 1967.



Owner of Reg. Nos. 610,478, 683,756, and 790,811.
For Fresh Vegetables.
First use June 6, 1958.

SN 278,936. General Mills, Inc., Minneapolis, Minn. Filed Aug. 24, 1967.

SNORX

For Ready To Eat Cereal.
First use on or prior to June 2, 1966.

SN 278,938. General Mills, Inc., Minneapolis, Minn. Filed Aug. 24, 1967.

SUGAROOS

For Ready To Eat Breakfast Cereal.
First use on or prior to June 21, 1967.

Class 47 — Wines

SN 243,853. Distillers Corporation (S.A.) Limited, Stellenbosch, Republic of South Africa. Filed Apr. 20, 1966.

CONSULATE

Owner of South African Reg. No. 2,036/46, dated July 18, 1946.
For Wines.

SN 254,852. Almaden Vineyards, Inc., d.b.a. Almaden Vineyards, San Francisco, Calif. Filed Sept. 21, 1966.

ALMADÉN

MOUNTAIN NECTAR

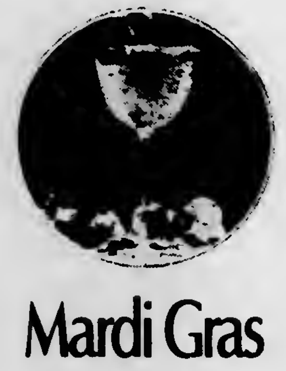
No exclusive rights are claimed in the term "Mountain Nectar." Owner of Reg. Nos. 602,208, 604,040, and 605,570.
For Wine.
First use Sept. 1, 1966; 1943 as to "Almaden."

SN 262,714. Schieffelin & Co., New York, N.Y. Filed Jan. 17, 1967.

DOM RUINART

Owner of Reg. No. 820,020.
For Wines.
First use August 1965.

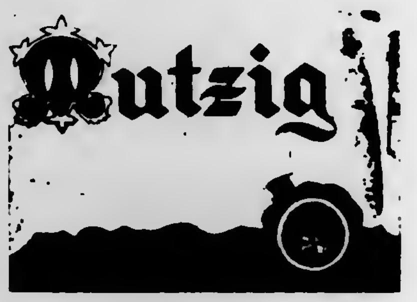
SN 278,854. Puerto Rico Distillers, Inc., Arecibo, Puerto Rico. Filed Aug. 23, 1967.



Owner of Reg. Nos. 443,762, 799,895, and 803,197.
For Wine.
First use Aug. 4, 1967.

Class 48 — Malt Beverages and Liquors

SN 236,960. Brasserie de Mutzig Anct. J. Wagner S.A., Mutzig, Bas-Rhin, France. Filed Jan. 21, 1966.



The word "Mutzig" is disclaimed apart from the mark as shown. Priority claimed under Sec. 44(d) on French Reg. No. 1,250, dated July 29, 1965 (Saverne); Natl. Inst. No. 264,958.
For Beer.

Class 49 — Distilled Alcoholic Liquors

SN 179,481. Peter Thomson (Perth) Limited, Perth, Scotland. Filed Oct. 21, 1963.

BENEAGLES

Owner of British Reg. No. 790,845, dated May 13, 1959.
For Scotch Whisky.
First use 1923; in commerce Oct. 25, 1960.

SN 251,318. Old Boone Distillery Co., d.b.a. Ascot Distillery Ltd., Louisville, Ky. Filed July 29, 1966.

TARTAN TOAST

For Scotch Whisky.
First use Nov. 14, 1963.

SN 259,167. Sazerac Company, Inc., New Orleans, La. Filed Nov. 21, 1966.

TOCKA

For Vodka.
First use Sept. 30, 1966.

SN 259,171. Sazerac Company, Inc., d.b.a. King's Mark Company, New Orleans, La. Filed Nov. 21, 1966.

KING'S MARK

The word "Mark" is disclaimed apart from the mark as shown.
For Scotch Whisky.
First use July 12, 1960.

SN 259,173. Sazerac Company, Inc., d.b.a. Wide World Importers, New Orleans, La. Filed Nov. 21, 1966.

TINA

For Tequila.
First use Feb. 25, 1964.

SN 259,175. Sazerac Company, Inc., d.b.a. Macaulay & Co., New Orleans, La. Filed Nov. 21, 1966.

ROSSMOOR

For Scotch Whisky.
First use Mar. 31, 1961.

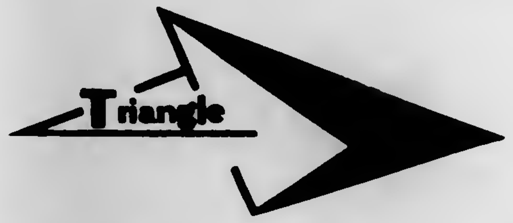
SN 264,106. Schenley Distillers, Inc., New York, N.Y. Filed Feb. 6, 1967.

SAMURAI

For Whiskey.
First use Dec. 16, 1966.

Class 50 — Merchandise Not Otherwise Classified

SN 224,988. Triangle Plastics, Inc., Roseville, Mich. Filed Aug. 4, 1965.



For Molded Plastic Structural Parts and Accessories for Automotive Vehicles—Namely, Bushings, Pins, and Plates.
First use Aug. 7, 1963.

SN 243,656. Fibers, Incorporated, Vancouver, Wash. Filed Apr. 18, 1966.

UNICARRIER

For Molded Shipping and Storage Pallets.
First use Feb. 16, 1966.

SN 258,831. Carl Moller, d.b.a. Informatics Center, New York, N.Y. Filed Nov. 16, 1966.

SQUEEZERETTES

For Simulated Cigarette Package Which Aids in Breaking the Smoking Habit.
First use Aug. 19, 1966.

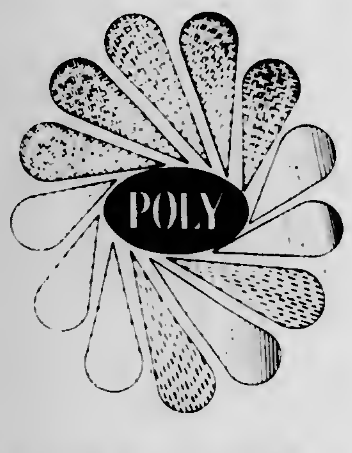
Class 51 — Cosmetics and Toilet Preparations

SN 239,906. Guardian Chemical Corporation, Long Island City, N.Y. Filed Mar. 1, 1966.

DIANNE JEFFRIES

The name "Dianne Jeffries" is fictitious.
For Skin Creams and Lotions and Powders, Hair Conditioning Lotions and Creams, Toilet Waters and Perfumes.
First use Feb. 11, 1966.

SN 248,861. Therachemie Chemisch Therapeutische GmbH, d.b.a. Therachemie GmbH, Dusseldorf, Germany. Filed June 23, 1966.



The drawing is lined for the colors red, orange, yellow, green, blue, brown, and violet. Owner of U.S. Reg. Nos. 630,610, 825,083, and others.
For Creme Hair Coloring Preparation.
First use February 1964; in commerce February 1964.

SN 253,804. Viviane Woodard Corporation, Panorama City, Calif. Filed Sept. 2, 1966.

COVER-CARE

For Cosmetic Blemish Cream.
First use July 14, 1966.

SN 260,839. The Fuller Brush Company, d.b.a. Charter Products, East Hartford, Conn. Filed Dec. 15, 1966.

YANTALĀ

For All Purpose Cologne and Personal Deodorant.
First use October 1965.

SN 261,215. Houbigant, Inc., New York, N.Y. Filed Dec. 21, 1966.

CIAO

The word "Ciao" is a diverse Italian term connoting an expression of greeting.
For Perfume, Eau de Cologne, Toilet Water, Mist Cologne, Friction Cologne, Perfumed Moisture Balm, Bath Oil, Spray Bath Oil, Dusting Powder, Spray Body Talc, Perfumed Bubble Bath, Foam Milk Bath Powder, Hand Lotion, Lipstick, Rouge, Face Powder, and Skin Cream.
First use Oct. 17, 1966.

SN 261,633. Clairol Incorporated, New York, N.Y. Filed Dec. 29, 1966.

INNOCENCE

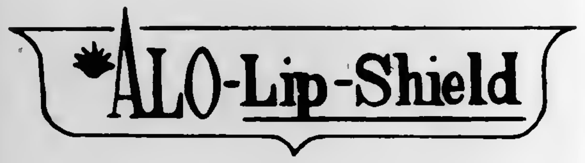
Owner of Reg. No. 789,228.
For Hair Tinting, Dyeing and Coloring Preparation and a Hair Lightener.
First use Sept. 26, 1966.

SN 266,458. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company, Los Angeles, Calif. Filed Mar. 10, 1967.

FOIL

For Personal Deodorant.
First use Feb. 3, 1967.

SN 266,988. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. Filed Mar. 17, 1967.



For Lipstick.
First use Mar. 14, 1967.

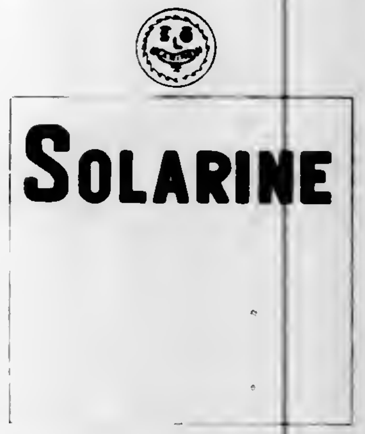
SN 279,030. Posner Laboratories, Inc., Corona, N.Y. Filed Aug. 25, 1967.

PRO

For Hair Straightener.
First use Aug. 7, 1967.

Class 52 — Detergents and Soaps

SN 258,164. Laco Corp., Baltimore, Md., assignee of The Solarine Company, Baltimore, Md. Filed Nov. 7, 1966.



Owner of Reg. No. 27,826.
For Floor Wax Remover and Cleaner.
First use September 1946.

SN 261,275. Avon Products, Inc., New York, N.Y. Filed Dec. 22, 1966.

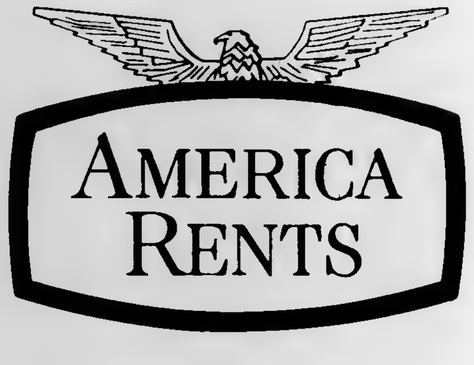
CARTOUCHE

For Toilet Soap and Hair Shampoo.
First use Dec. 9, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 234,866. America Rents, Incorporated, Cincinnati, Ohio. Filed Dec. 20, 1965.



Applicant hereby disclaims, without waiver of common law rights, any exclusive rights to the words "America" and "Rents" apart from their use in connection with the remainder of the mark.

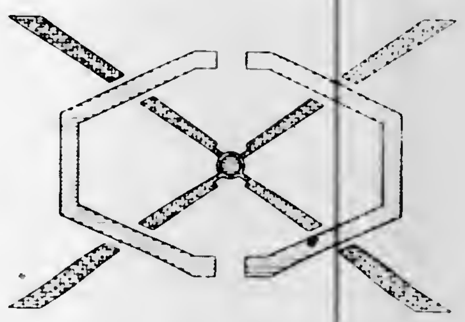
For Equipment Rental Services for Rental of Camping Trailers and Camping Equipment, Tools, Party Supplies, Furniture, Convention Decorating and Convention Equipment, Physical Fitness Equipment, Sick Room Equipment, and Guest Needs.
First use May 13, 1965.

SN 237,179. UMC Motor Club, Salt Lake City, Utah. Filed Jan. 24, 1966.

UMC

For Automobile Association Services—Namely, Promoting the Interests of Motorists.
First use on or about Jan. 1, 1951.

SN 246,663. Copter Club, Inc., New York, N.Y. Filed May 26, 1966.



The drawing is lined for blue and gold, but no claim is made to color as a feature of the mark.
For Restaurant Services.
First use Mar. 15, 1966.

SN 251,588. The National Commemorative Society, Inc., Philadelphia, Pa. Filed Aug. 3, 1966.

NATIONAL
COMMEMORATIVE SOCIETY

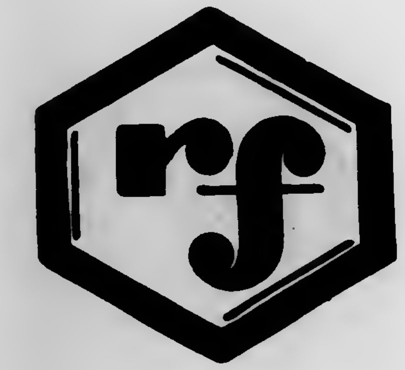
For Services of Supplying a Commemorative Coin Medal Every Month to Members of the Society.
First use Apr. 20, 1964.

SN 251,726. Hilton Hotels Corporation, Chicago, Ill. Filed Aug. 4, 1966.

STATLER

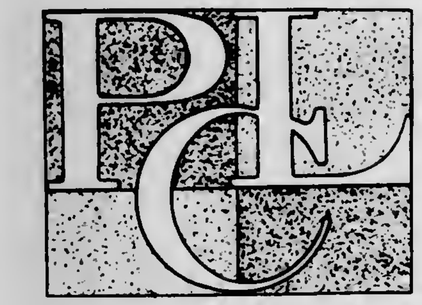
Owner of Reg. No. 810,877.
For Hotel and Restaurant Services.
First use in 1907.

SN 255,386. Ralph Wells & Co., d.b.a. Ralph Wells Research Foundation, Monmouth, Ill. Filed Sept. 28, 1966.



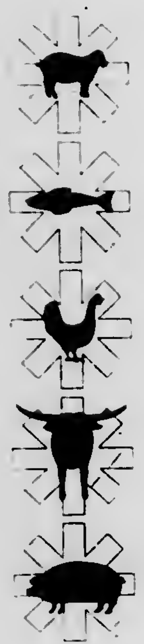
For Chemical Analysis, Biological Assay, Preparation and Testing of Nutritional Formulae Services Relating to Nutrition.
First use Nov. 15, 1965.

SN 257,649. Puritan Leasing Company, Santa Barbara, Calif. Filed Oct. 31, 1966.



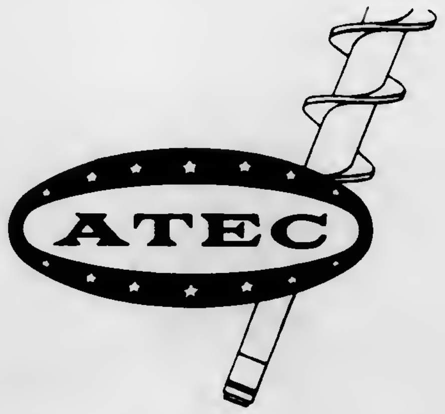
For Leasing of Buildings, Machinery, and Capital Equipment of Any Type.
First use Oct. 29, 1962.

SN 258,934. Southern Saw Service, Atlanta, Ga. Filed Nov. 17, 1966.



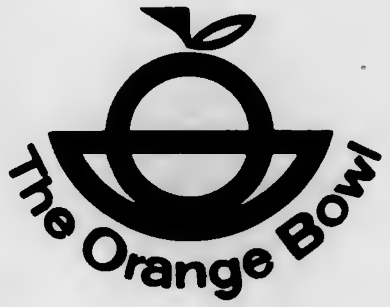
For Leasing Butchering Equipment.
First use on or about Oct. 25, 1966.

SN 261,444. American Testing and Engineering Corporation, Indianapolis, Ind. Filed Dec. 27, 1966.



For Soil Testing Services, Including Soil and Foundation Engineering, Construction Inspection and Drilling.
First use Apr. 18, 1959.

SN 269,022. The Orange Bowl Management Corporation, Miami Beach, Fla. Filed Apr. 13, 1967.



For Restaurant Services.
First use August 1965.

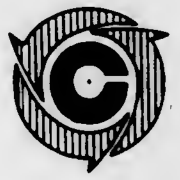
Class 101 — Advertising and Business

SN 245,443. Dimensional Lithographers, Inc., New York, N.Y. Filed Apr. 20, 1966.

KWIK-TRONICS

For Printing and Lithography.
First use Jan. 10, 1966.

SN 250,242. Checkmaster, Inc., New York, N.Y. Filed July 14, 1966.



The drawing is lined for the color red, but color is not claimed as a feature of the mark.
For Custom Printing of Checks and Stationery for Banks and Furnishing Advertising Aids Such as Direct Mail Enclosures, Folders, Lobby Posters, Window Posters, Counter Displays, Newspaper Mats, Bus Cards, Radio Scripts, Billboard Layouts, and Decalcomanias.
First use May 1, 1966.

SN 253,923. Walter M. Szary, Peabody, Mass. Filed Sept. 6, 1966.

HAVE GAVEL WILL TRAVEL

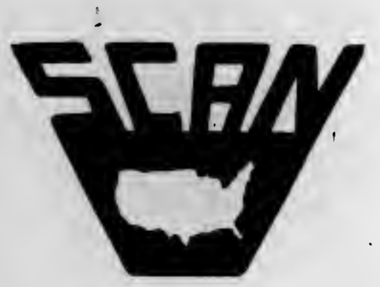
For Auctioneering Services.
First use July 31, 1965.

SN 257,408. Mario Oswald Salvador, d.b.a. Southern International Supply Company, Lake City, S.C. Filed Oct. 27, 1966.

SISCo

For Manufacturers' Representative Services in the Field of Earth Drilling Equipment.
First use Apr. 30, 1961.

SN 258,560. Marketing Evaluations Incorporated, Port Washington, N.Y. Filed Nov. 14, 1966.



The outline of the map of the United States depicted in the mark is disclaimed except as used in conjunction with the other portions of the mark.
For Performance of Market Surveys, Research and Analyses.
First use June 1966.

SN 259,074. Audit Bureau of Circulations, Chicago, Ill. Filed Nov. 21, 1966.

ABC

Owner of Reg. Nos. 644,562, 650,683, and others.
For Auditing and Verification of Circulation of Newspapers and Periodicals.
First use Jan. 21, 1964.

SN 259,075. Audit Bureau of Marketing Services, Chicago, Ill. Filed Nov. 21, 1966.

AUDITED
ABMS
MARKET DATA

The words "Audited Market Data" are disclaimed apart from the mark as shown.
For Auditing and Verification of Marketing Media.
First use June 27, 1966.

SN 259,100. Glendinning Companies, Inc., Westport, Conn. Filed Nov. 21, 1966.

SPELL·a·CHECK

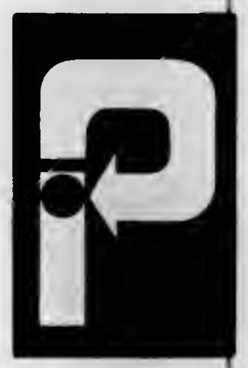
For Services Related to Promotional Game Programs of the Public-Participation Type, for Retail Businesses of Others—Namely, Originating, Planning, Devising Materials for, and Implementing Such Programs.
First use July 13, 1966.

SN 259,292. Al Packer Ford, Inc., Baltimore, Md. Filed Nov. 23, 1966.

HOME OF THE MOST AFFORDABLE

For Automobile Agency Services.
First use Oct. 19, 1966.

SN 262,456. Input, Inc., Highland Park, Ill. Filed Jan. 13, 1967.



The mark consists of a fanciful representation of the letter "P."
For Keypunch and Data Processing Services.
First use Jan. 30, 1966.

Class 102 — Insurance and Financial

SN 243,818. Royal Insurance Company Limited, New York, N.Y. Filed Apr. 6, 1966.

ROYAL
INSURANCE
COMPANY,
LIMITED.

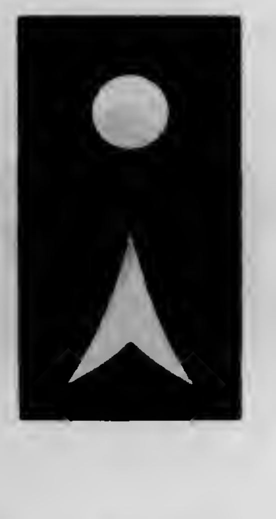
Applicant disclaims the wording "Insurance Company Limited," apart from the mark as shown.
For Underwriting of Insurance and Services in Connection With Underwriting of Insurance.
First use prior to Dec. 31, 1864.

SN 247,016. General Fire and Casualty Company, New York, N.Y. Filed June 1, 1966.

TOUR tm MASTER

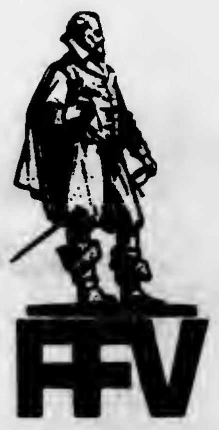
For Underwriting Travel Insurance.
First use May 17, 1966.

SN 260,879. Perrine-Cutler Ridge Bank, Perrine, Fla. Filed Dec. 15, 1966.



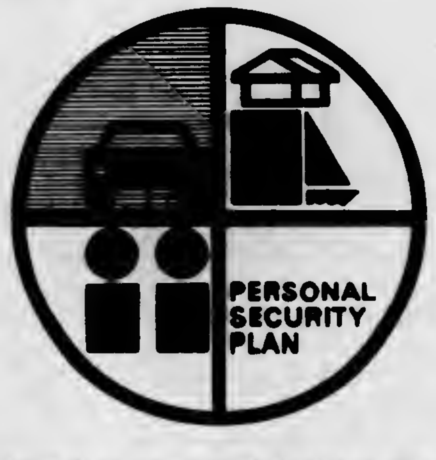
For Commercial Banking Services.
First use Sept. 1, 1966.

SN 262,694. First Fund of Virginia, Inc., Richmond, Va. Filed Jan. 17, 1967.



For Mutual Fund Services.
First use July 20, 1966.

SN 267,293. Continental Casualty Company, Chicago, Ill. Filed Mar. 22, 1967.



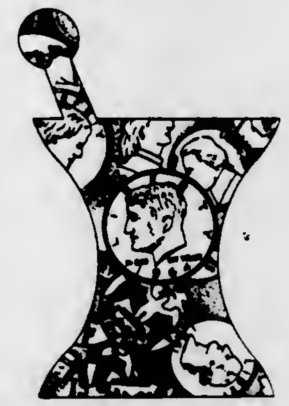
No claim is made to the exclusive use of the word "Plan" alone. The drawing is lined for the color blue, but color is not a part of the trademark.
For Underwriting Automobile Insurance.
First use Oct. 1, 1965.

SN 267,294. Continental Casualty Company, Chicago, Ill. Filed Mar. 22, 1967.

PERSONAL SECURITY PLAN

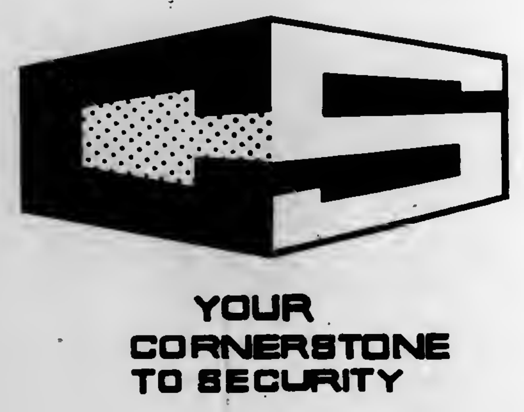
No claim is made to the exclusive use of the word "Plan" alone.
For Underwriting Automobile Insurance.
First use Oct. 1, 1965.

SN 267,376. Prepaid Prescription Plans, Inc., Los Angeles, Calif. Filed Mar. 23, 1967.



For Consultation on and Designing of Plans for, and the Furnishing of Administrative and Fiscal Control for Prepaid Insured Indemnity Prescription Plans.
First use Jan. 3, 1967; May 8, 1966, in a different form.

SN 268,706. Cotton State Mutual Insurance Company, Atlanta, Ga. Filed Apr. 10, 1967.



For Underwriting Fire, Casualty, and Life Insurance.
First use January 1965.

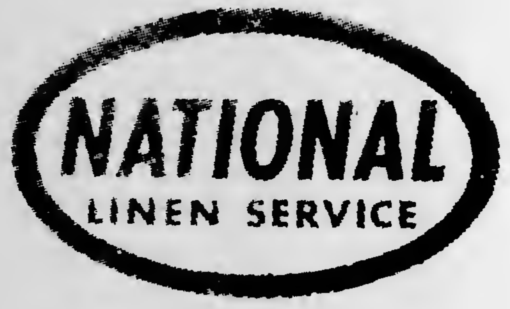
SN 268,707. Cotton States Mutual Insurance Company, Atlanta, Ga. Filed Apr. 10, 1967.

COTTON STATES INSURANCE

The word "Insurance" is disclaimed apart from the mark as shown.
For Underwriting Fire, Casualty, and Life Insurance.
First use January 1965.

Class 103 — Construction and Repair

SN 240,638. National Service Industries, Inc., d.b.a. Lubbock Linen Service and American Linen Service, Atlanta, Ga. Filed Mar. 10, 1966.



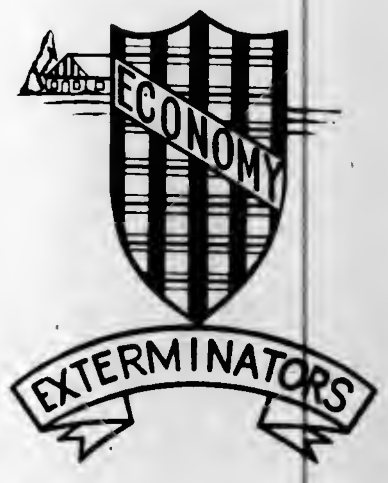
Applicant disclaims any exclusive rights in the words "Linen Service" apart from the mark as shown.
For Rental of Linens, Uniforms, and Work Clothes.
First use Aug. 20, 1928.

SN 261,086. George W. Kendall, d.b.a. City Tire Service, Wheeling, W. Va. Filed Dec. 19, 1966.

PERMALIGN

For Inspection and Installation of Automotive Brake Systems.
First use Aug. 14, 1966.

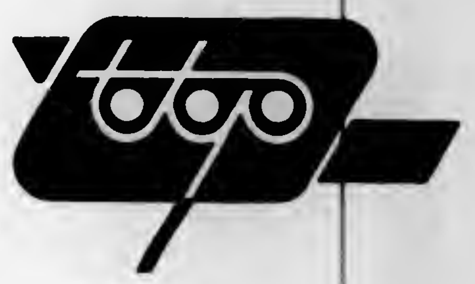
SN 273,837. Economy Exterminating Company, Atlanta, Ga. Filed June 14, 1967.



Applicant disclaims the word "Exterminators" apart from the mark as shown.
For Exterminating and Pest Control, Termite Control and Fumigation.
First use Mar. 30, 1958.

Class 104 — Communication

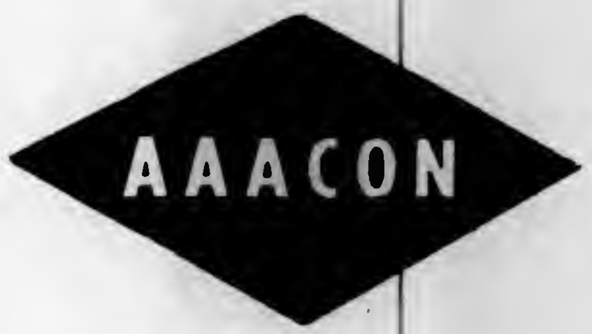
SN 254,743. Tele-Tape Productions, Inc., d.b.a. Tele-Tape Productions, Chicago, Ill. Filed Sept. 19, 1966.



The mark comprises, in part, a fanciful representation of the letters "TTP."
For Recording and Transmission of Television Programs and Commercials.
First use June 1960.

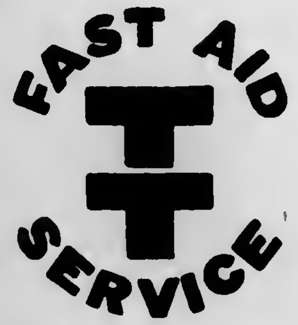
Class 105 — Transportation and Storage

SN 254,363. AAACon Auto Transport Inc., New York, N.Y. Filed Sept. 13, 1966.



For Providing Transportation of Motor Vehicles in Interstate Commerce.
First use Dec. 17, 1960.

SN 256,889. TTC Corporation, Atlanta, Ga. Filed Oct. 20, 1966.



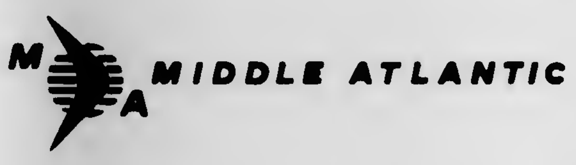
No claim is made to the wording "Fast Aid Service" apart from the mark as shown. Owner of Reg. Nos. 555,144 and 781,148.
For Moving and Shipping by Motor Truck of General Commodities.
First use on or about Aug. 20, 1966; Dec. 4, 1948, as to "TT."

SN 259,190. United Air Lines, Inc., Chicago, Ill. Filed Nov. 21, 1966.

SUNBIRD

For Air Transportation of Passengers.
First use Aug. 27, 1965.

SN 260,340. Middle Atlantic Transportation Co., Inc., New Britain, Conn. Filed Dec. 8, 1966.



Without waiver of its common law rights therein, applicant, for purposes of Federal registration, disclaims exclusive rights in the term "Middle Atlantic" apart from the mark as shown.
For Common-Carrier Transportation Services—Namely, the Transportation of General and Special Commodities by Motor Truck.
First use on or about Aug. 20, 1957.

Class 107 — Education and Entertainment

SN 242,428. Children's Caravan, Inc., Weston, Conn. Filed Apr. 1, 1966.

Children's Caravan

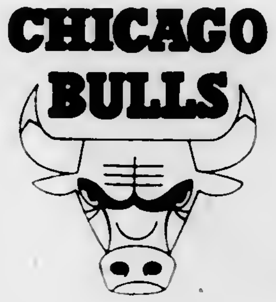
The word "Children's" is disclaimed apart from the mark as shown.
For Entertainment Services in the Form of Programs for Young or Family Audiences, Utilizing Various Modes of Expression—Namely, Motion Pictures, Film Strips, Recorded Material, and/or Orally Delivered Material.
First use Dec. 23, 1963.

SN 242,907. McDonald's Corporation, Chicago, Ill. Filed Apr. 7, 1966.

HAMBURGER UNIVERSITY

For Conducting Training Courses in Restaurant Operation and Food Preparation.
First use Feb. 6, 1961.

SN 248,591. The Chicago Professional Basketball Corporation, Chicago, Ill. Filed June 21, 1966.



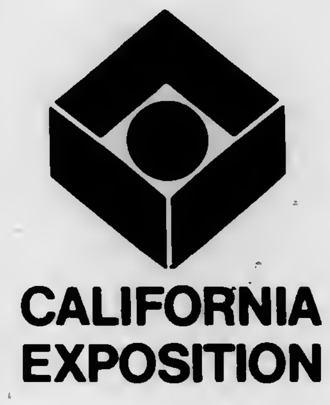
Without waiving any common law rights therein, applicant disclaims the word "Chicago" apart from the mark as shown.
For Entertainment Services—Namely, Professional Basketball Games.
First use at least as early as March 1966.

SN 251,316. The National Council on Alcoholism, Inc., New York, N.Y. Filed July 29, 1966.

THE NATIONAL COUNCIL ON ALCOHOLISM

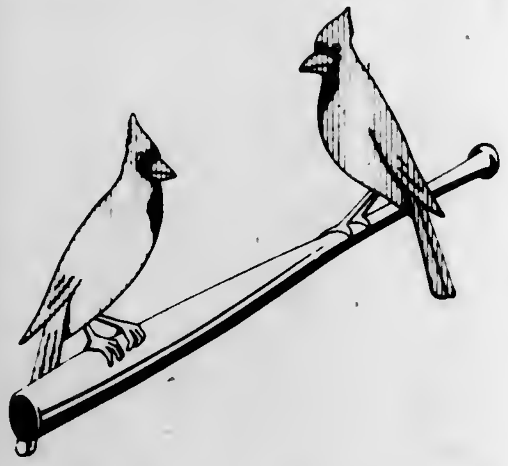
For Providing a Comprehensive Voluntary Program of Public and Professional Education, Community Services and Research Into the Causes and Improved Treatment of the Disease of Alcoholism and Providing the Community, the Professions, Industries and Agencies Involved, with the Medical, Scientific and Practical Knowledge Needed To Treat and Rehabilitate Alcoholics and Prevent Alcoholism; Such Program Being Furthered by Press Releases, Radio and Television Programs, Talks, Lectures, Film and Pamphlets.
First use October 1944.

SN 258,488. California Exposition and Fair Corporation, Sacramento, Calif. Filed Nov. 14, 1966.



The drawing is lined for yellow or gold, orange, and red, but color is not claimed as a feature of the mark. Applicant disclaims the words "California Exposition."
For Organizing, Planning and Operating an Exposition and Fair.
First use Aug. 30, 1966.

SN 275,104. St. Louis National Baseball Club, Inc., St. Louis, Mo. Filed July 3, 1967.

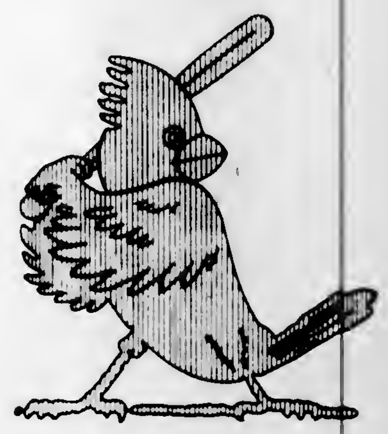


The mark consists of the representation of two cardinals standing on a baseball bat. The drawing is lined for the color red. The representation of a baseball bat is disclaimed apart from the mark as shown.

For Entertainment Services in the Nature of Baseball Games and Exhibitions, Some of Which Services Are Rendered Through the Media of Radio and Television Broadcasts.

First use in or about 1925.

SN 275,105. St. Louis National Baseball Club, Inc., St. Louis, Mo. Filed July 3, 1967.



The mark consists of the representation of a cardinal grasping a bat in a batter's stance. The drawing is lined for the color red. The representation of a baseball bat is disclaimed apart from the mark as shown.

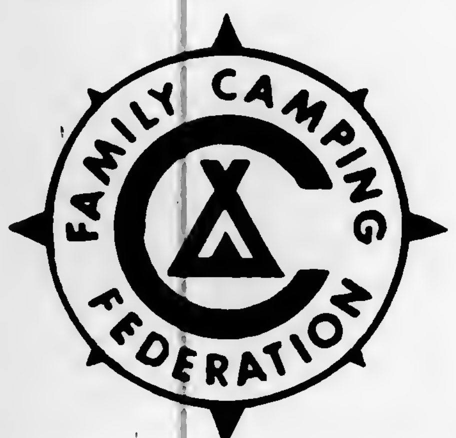
For Entertainment Services in the Nature of Baseball Games and Exhibitions, Some of Which Services Are Rendered Through the Media of Radio and Television Broadcasts.

First use in or about 1949.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 270,025. American Camping Association, Inc., Martinsville, Ind. Filed Apr. 26, 1967.



For Indicating Membership in Family Camping Federation, a Division of Applicant Organized To Stimulate Interest in Family Camping Grounds and To Promote Their Development.

First use June 1966; 1962 as to "Family Camping Federation."

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

838,141. M MATHER. Monsanto Company, assignee of The Mather Company. SN 228,547. Pub. 3-1-66. Filed 9-24-65.

838,142. "JET BLACK MINK" NATURAL AND DESIGN. J. Weinig & Son. SN 247,280. Pub. 8-22-67. Filed 6-3-66.

838,143. A.C.E. Allied Chemical Corporation. MULTIPLE CLASS (Classes 1 and 43). SN 252,510. Pub. 5-16-67. Filed 8-17-66.

838,144. EL CAMINO. Germain's, Inc. SN 255,703. Pub. 8-22-67. Filed 10-4-66.

838,145. VISTRON. The Standard Oil Company. SN 256,015. Pub. 8-22-67. Filed 10-7-66.

838,146. STYRITE. The Dow Chemical Company. SN 256,434. Pub. 8-22-67. Filed 10-14-66.

838,147. VAN-AMID. R. T. Vanderbilt Company, Inc. SN 257,804. Pub. 8-22-67. Filed 11-2-66.

838,148. PROSAVA. Polymers, Inc. SN 257,980. Pub. 8-22-67. Filed 11-4-66.

838,149. VISTRON. The Standard Oil Company. SN 258,166. Pub. 8-22-67. Filed 11-7-66.

838,150. SAHARA. Cudahy Tanning Co., Inc. SN 258,289. Pub. 8-22-67. Filed 11-9-66.

838,151. OPTIWHITE P. Burgess Pigment Company. SN 273,350. Pub. 8-22-67. Filed 6-8-67.

Class 2 — Receptacles

838,152. BON-PAK. United Shoe Machinery Corporation. SN 224,271. Pub. 8-22-67. Filed 7-26-65.

838,153. TRIMPAK. Haveg Industries, Inc. SN 233,802. Pub. 8-22-67. Filed 12-2-65.

838,154. K MART. S. S. Kresge Company. SN 233,917. Pub. 8-22-67. Filed 12-3-65.

838,155. DOY-N-PAK. Louis Doyen and Leon Doyen (joint owners). SN 236,477. Pub. 8-22-67. Filed 1-14-66.

838,156. TOWER-TUCK STERILE CUFF. Tower Packaging Company. SN 246,213. Pub. 8-22-67. Filed 5-20-66.

838,157. LOLLY-PUSH AND DESIGN. Sweetheart Plastics, Inc. SN 248,065. Pub. 8-22-67. Filed 6-14-66.

838,158. S.I.CTAINER AND DESIGN. Societe Intercontinentale des Containers S.I.C. SN 249,080. Pub. 8-22-67. Filed 6-27-66.

838,159. PLES-UR-PAK. C-Thru Products Inc. SN 249,836. Pub. 8-22-67. Filed 7-8-66.

838,160. FUN-E-PAK. C-Thru Products Inc. SN 249,837. Pub. 8-22-67. Filed 7-8-66.

838,161. MISCELLANEOUS DESIGN. Hoerner-Waldorf Corporation. SN 249,988. Pub. 8-22-67. Filed 7-11-66.

838,162. STAFF. Staff Supermarket Associates, Inc. SN 256,881. Pub. 8-22-67. Filed 10-20-66.

Class 4 — Abrasives and Polishing Materials

838,163. SUPERSUPPLY. Mersick Industries, Inc. MULTIPLE CLASS (Classes 4, 12, 13, 16, 21, and 34). SN 226,878. Pub. 8-22-67. Filed 9-1-65.

838,164. ZIP WAX. National Service Industries, Inc., assignee of Turtle Wax, Inc. SN 230,721. Pub. 1-3-67. Filed 10-20-65.

838,165. SOLARINE ETC. AND DESIGN. Laco Corp., assignee of The Solarine Company. SN 257,413. Pub. 8-22-67. Filed 10-27-66.

838,166. TOP-KAT. Morris L. Tanner, d.b.a. Tannerize Laboratories. SN 257,666. Pub. 8-22-67. Filed 10-31-66.

838,167. SOLARSHEEN. Laco Corp., assignee of The Solarine Company. SN 271,414. Pub. 8-8-67. Filed 5-15-67.

Class 5 — Adhesives

838,168. GROTESQUE DESIGN. The Glidden Company. SN 227,577. Pub. 8-22-67. Filed 9-10-65.

838,169. REXCEL. Patent Cereals Sales Corporation. SN 238,279. Pub. 7-11-67. Filed 2-7-66.

Class 6 — Chemicals and Chemical Compositions

838,170. MEDICINE CHEST. Food Products Company of America, assignee of Pharmaceutical Laboratories, Inc. MULTIPLE CLASS (Classes 6, 18, 44, and 51). SN 192,200. Pub. 8-22-67. Filed 4-28-64.

838,171. E-Z-FLO AND DESIGN. Grower Service Corporation. SN 209,159. Pub. 8-22-67. Filed 12-31-64.

838,172. ARLATONE. Atlas Chemical Industries, Inc. SN 248,009. Pub. 8-22-67. Filed 6-14-66.

838,173. HALOCHECK. Miles Laboratories, Inc. SN 248,725. Pub. 8-22-67. Filed 6-22-66.

838,174. K MART AND DESIGN. S. S. Kresge Company. SN 253,173. Pub. 8-22-67. Filed 8-25-66.

838,175. SAVOL. Thompson-Hayward Chemical Company. SN 258,004. Pub. 8-22-67. Filed 11-4-66.

838,176. TP-110. Thiokol Chemical Corporation. SN 258,936. Pub. 8-22-67. Filed 11-17-66.

838,177. TP-105. Thiokol Chemical Corporation. SN 258,937. Pub. 8-22-67. Filed 11-17-66.

838,178. TP-95. Thiokol Chemical Corporation. SN 258,938. Pub. 8-22-67. Filed 11-17-66.

838,179. CARE 'N' WEAR. The Mennen Company. SN 260,867. Pub. 8-22-67. Filed 12-15-66.

838,180. HYDROSET. National Lead Company. SN 260,949. Pub. 8-22-67. Filed 12-16-66.

838,181. BILOBRAN. Ciba Limited. SN 261,195. Pub. 8-22-67. Filed 12-21-66.

838,182. PERGACID. Ciba Limited. SN 261,197. Pub. 8-22-67. Filed 12-21-66.

838,183. COPYTONE. Copystatics Manufacturing Corporation. SN 261,975. Pub. 8-22-67. Filed 1-5-67.

838,184. FAIRTONE. Fairchild Camera and Instrument Corporation. SN 271,248. Pub. 8-22-67. Filed 5-11-67.

Class 7 — Cordage

838,185. GRIP CORD. Mobil Oil Corporation. SN 266,972. Pub. 8-22-67. Filed 3-17-67.

838,186. GOLD CREST. National Cooperatives, Inc. SN 267,541. Pub. 8-22-67. Filed 3-24-67.

Class 8 — Smokers' Articles, Not Including Tobacco Products

838,187. DECO AND DESIGN. Decatur Industries, Inc. SN 257,464. Pub. 6–27–67. Filed 10–28–66.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

838,188. RED-JET AND DESIGN. Herbert F. Sampson, d.b.a. Sampson Machine Works. SN 251,243. Pub. 8–22–67. Filed 7–28–66.

838,189. POURVEX. E. I. du Pont de Nemours and Company. SN 253,589. Pub. 8–22–67. Filed 9–1–66.

838,190. STAFF. Staff Supermarket Associates, Inc. SN 258,263. Pub. 8–22–67. Filed 11–8–66.

Class 10 — Fertilizers

838,191. HYDRO-SPRIGGING. International Paper Company. SN 252,853. Pub. 8–22–67. Filed 8–22–66.

838,192. MAGIC MULCH. MacAndrews & Forbes Company. SN 255,708. Pub. 8–22–67. Filed 10–4–66.

838,193. PH "ACIDALL." Kellogg Supply Co., Inc. SN 260,163. Pub. 8–22–67. Filed 12–6–66.

838,194. MISCELLANEOUS DESIGN. Emhart Corporation. SN 264,924. Pub. 8–22–67. Filed 2–17–67.

Class 12 — Construction Materials

838,163. (See Class 4 for this trademark.)

838,195. LONG-BELL AND DESIGN. International Paper Company. SN 234,032. Pub. 8–22–67. Filed 12–6–65.

838,196. WEBBAC. Harris Manufacturing Company. SN 239,995. Pub. 8–22–67. Filed 3–2–66.

838,197. ASPENITE AND DESIGN. McMillan Bloedel Limited. SN 247,135. Pub. 8–22–67. Filed 6–2–66.

838,198. TORBEAM. Harnischfeger Corporation. SN 249,530. Pub. 8–22–67. Filed 7–5–66.

838,199. TIPCO AND DESIGN. Commercial Carports, Inc. SN 252,248. Pub. 8–22–67. Filed 8–12–66.

838,200. TARTAN-CLAD. Minnesota Mining and Manufacturing Company. SN 253,081. Pub. 8–22–67. Filed 8–25–66.

838,201. ENTREE. Binswanger Glass Co. SN 254,661. Pub. 8–22–67. Filed 9–19–66.

838,202. MAR-SECS. Marble Products Company of Georgia. SN 261,937. Pub. 8–22–67. Filed 1–4–67.

838,203. 300 AFG. Delta Roofing Mills Incorporated. SN 263,030. Pub. 8–22–67. Filed 1–23–67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

838,163. (See Class 4 for this trademark.)

838,204. STAR (DESIGN). Interstate Engineering Corporation. SN 229,812. Pub. 8–22–67. Filed 10–11–65.

838,205. SAF-T-PAK JR. Lear Siegler, Inc. SN 246,184. Pub. 6–13–67. Filed 5–20–66.

838,206. JETNUT. Jerry Tools, Inc. SN 251,062. Pub. 8–22–67. Filed 7–26–66.

838,207. HI-BALL. Fisher Governor Company. SN 251,413. Pub. 8–22–67. Filed 8–1–66.

838,208. TECHITE. United Aircraft Corporation. SN 252,309. Pub. 8–22–67. Filed 8–15–66.

838,209. LIMITURN. Krouse Doremus Foundry Co. SN 257,495. Pub. 8–22–67. Filed 10–28–66.

838,210. SLIMPINS. C. F. Baker & Co., Inc. SN 257,576. Pub. 8–22–67. Filed 10–31–66.

838,211. PAINTED SPIRAL STRIPE (DESIGN). A. M. Byers Company. SN 257,587. Pub. 8–22–67. Filed 10–31–66.

838,212. UNITROL. Eaton Yale & Towne Inc. SN 258,079. Pub. 8–22–67. Filed 11–7–66.

838,213. MAGIC MARGIN. Kenlin Enterprises, Inc. SN 258,188. Pub. 8–22–67. Filed 11–7–66.

838,214. TORK LOK NUT AND DESIGN. Continental Fastener Corporation. SN 262,479. Pub. 8–22–67. Filed 1–13–67.

Class 14 — Metals and Metal Castings and Forgings

838,215. MAGICRAFT. Magic American Chemical Corporation. SN 249,544. Pub. 8–22–67. Filed 7–5–66.

838,216. PERMASHELL. Eaton Yale & Towne Inc. SN 255,787. Pub. 8–22–67. Filed 10–5–66.

Class 15 — Oils and Greases

838,217. EAGLE (DESIGN). Gold Eagle Products Co. SN 255,615. Pub. 8–22–67. Filed 10–3–66.

838,218. AMOGAS. The American Oil Company. SN 256,636. Pub. 8–22–67. Filed 10–18–66.

Class 16 — Protective and Decorative Coatings

838,163. (See Class 4 for this trademark.)

838,219. METALIFE. Metalife Limited, by change of name from Metalife Liquid Metals Limited. SN 196,884. Pub. 12–27–66. Filed 7–1–64.

838,220. SILASTIC. Dow Corning Corporation. SN 255,297. Pub. 8–22–67. Filed 9–28–66.

838,221. FANCIFUL LETTERS FC. Hooker Chemical Corporation. SN 255,321. Pub. 8–22–67. Filed 9–28–66.

838,222. SCOTCH-CLAD. Minnesota Mining and Manufacturing Company. SN 265,955. Pub. 8–22–67. Filed 3–6–67.

Class 17 — Tobacco Products

838,223. PACIFIC. Philip Morris Incorporated. SN 259,262. Pub. 8–22–67. Filed 11–22–66.

Class 18 — Medicines and Pharmaceutical Preparations

838,170. (See Class 6 for this trademark.)

838,224. OTOCORT. Lemmon Pharmacal Company. SN 246,085. Pub. 6–27–67. Filed 5–19–66.

838,225. VISAN AND DESIGN. Con-Stan Industries, Inc. SN 248,428. Pub. 2–28–67. Filed 6–20–66.

838,226. FELIDOVAC. Behringwerke Aktiengesellschaft. SN 250,345. Pub. 8–22–67. Filed 7–15–66.

838,227. CARTER'S. Carter-Wallace, Inc. SN 251,049. Pub. 8–22–67. Filed 7–26–66.

838,228. PYR-I-BEE. Invenex Pharmaceuticals. SN 252,659. Pub. 8–22–67. Filed 8–18–66.

838,229. ZEROSIN. Carter-Wallace, Inc. SN 252,722. Pub. 8–22–67. Filed 8–19–66.

838,230. VARIBIOTIC. American Cyanamid Company. SN 253,613. Pub. 8–22–67. Filed 9–1–66.

838,231. DRUG WORLD. Drug City, Inc., d.b.a. Drug World. SN 252,082. Pub. 9–5–67. Filed 8–10–66.

838,232. STANOFILL. Standard Brands Incorporated. SN 254,326. Pub. 8–22–67. Filed 9–12–66.

838,233. JELDERM GEL. The Purdue Frederick Company. SN 255,123. Pub. 8–22–67. Filed 9–26–66.

838,234. B LEVEL AND DESIGN. Charles A. Crete, d.b.a. Pharmaceutical Associates. SN 255,294. Pub. 8–22–67. Filed 9–28–66.

838,235. PRINCIPEN. E. R. Squibb & Sons, Inc. SN 256,245. Pub. 8–22–67. Filed 10–11–66.

838,236. NORMETS. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company. SN 260,077. Pub. 8–22–67. Filed 12–5–66.

838,237. LIQUI-HIST. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company. SN 260,079. Pub. 8–22–67. Filed 12–5–66.

838,238. DIASTOS. Merck & Co., Inc. SN 260,560. Pub. 8–22–67. Filed 12–12–66.

838,239. ENTIGUE. Colgate-Palmolive Company. SN 262,854. Pub. 8–22–67. Filed 1–19–67.

838,240. BEEF SHAKE. W. R. Grace & Co. SN 262,936. Pub. 8–22–67. Filed 1–20–67.

838,241. SINUGEN. Hudson National, Inc. SN 262,938. Pub. 8–22–67. Filed 1–20–67.

838,242. TIREND. McKesson & Robbins, Incorporated, d.b.a. Norcliff Laboratories. SN 262,958. Pub. 8–22–67. Filed 1–20–67.

838,243. THERA-FLUR. The Kendall Company. SN 268,500. Pub. 8–22–67. Filed 4–6–67.

838,244. OBESITY BELL. Hollings-Smith Company, Inc., d.b.a. Hollings-Smith Co. SN 272,556. Pub. 8–22–67. Filed 5–29–67.

838,245. PFIZER-VAX MEASLES-L. Chas. Pfizer & Co., Inc. SN 272,896. Pub. 8–22–67. Filed 6–2–67.

838,246. CEOPIN. Chas. Pfizer & Co., Inc. SN 272,898. Pub. 8–22–67. Filed 6–2–67.

838,247. GENTROL. American Home Products Corporation. SN 273,150. Pub. 8–22–67. Filed 6–6–67.

838,248. VECTREN. Parke, Davis & Company. SN 273,157. Pub. 8–22–67. Filed 6–6–67.

838,249. PONSTEL. Parke, Davis & Company. SN 273,240. Pub. 8–22–67. Filed 6–7–67.

Class 19 — Vehicles

838,250. DOVE LODGETTE AND DESIGN. General Engineering & Manufacturing Corp. SN 219,557. Pub. 8–22–67. Filed 5–24–65.

838,251. CAMPMOBILE. Volkswagen of America, Inc. MULTIPLE CLASS (Classes 19 and 50). SN 239,183. Pub. 8–22–67. Filed 2–18–66.

838,252. VANTAGE. Pretty Products, Inc. SN 240,196. Pub. 8–22–67. Filed 3–4–66.

838,253. E-T. Wheel Centre Company. SN 240,378. Pub. 8–22–67. Filed 3–7–66.

838,254. LEGNANO. Emilio Bozzi S.p.A. SN 241,297. Pub. 8–22–67. Filed 2–21–66.

838,255. AVENGER 39 AND DESIGN. Avenger Yachts, Inc. SN 242,703. Pub. 8–22–67. Filed 4–5–66.

838,256. TURBOLINER. Freightliner Corporation. SN 248,611. Pub. 5–23–67. Filed 6–21–66.

838,257. PORT-A-LIFT. Portalift Trailer Corporation. SN 251,947. Pub. 8–22–67. Filed 8–8–66.

838,258. SHREW AND DESIGN. Hansen North America, Inc. SN 252,849. Pub. 8–22–67. Filed 8–22–66.

838,259. SHIP N SHORE. C. and C. Manufacturing Company. SN 253,981. Pub. 8–22–67. Filed 9–6–66.

838,260. LIL' MISS. Schwinn Bicycle Company, by change of name from Arnold, Schwinn & Co. SN 255,771. Pub. 8–22–67. Filed 10–5–66.

838,261. MSL AND DESIGN. MSL Industries, Inc. MULTIPLE CLASS (Classes 19, 23, 44, and 50). SN 256,755. Pub. 8–22–67. Filed 10–19–66.

838,262. MISCELLANEOUS DESIGN. Henry R. Hinckley & Company. SN 257,709. Pub. 8–22–67. Filed 11–1–66.

Class 20 — Linoleum and Oiled Cloth

838,263. SERANADA. Armstrong Cork Company. SN 256,516. Pub. 8–22–67. Filed 10–17–66.

838,264. ACCOTONE. Armstrong Cork Company. SN 258,475. Pub. 8–22–67. Filed 11–14–66.

Class 21 — Electrical Apparatus, Machines, and Supplies

838,163. (See Class 4 for this trademark.)

838,265. SPECTROLINE. Spectronics Corporation. SN 149,333. Pub. 11–5–63. Filed S.R. 7–18–62; Am. P.R. 8–21–63.

838,266. GB AND DESIGN. Grigsby-Barton, Inc. SN 206,257. Pub. 3–22–66. Filed 11–16–64.

838,267. CM. Murata Manufacturing Co., Ltd. SN 227,172. Pub. 11–8–66. Filed 9–3–65.

838,268. MISCELLANEOUS DESIGN. Dicrolite Company, Inc., assignee of Dicrolite Co. SN 230,523. Pub. 12–6–66. Filed 10–19–65.

838,269. TOA. Toa Electric Co., Ltd. SN 238,366. Pub. 8–22–67. Filed 2–8–66.

838,270. NUMERALAMP. Los Angeles Miniature Products, Inc. SN 238,957. Pub. 8–22–67. Filed 2–16–66.

838,271. BABY-BI. Packaged Lighting Services, Inc. SN 239,305. Pub. 8–22–67. Filed 2–21–66.

838,272. GAKKEN. Gakken Co., Ltd. SN 239,610. Pub. 8–22–67. Filed 2–25–66.

838,273. GREGORY. The Gregory Amplifier Corp. SN 243,238. Pub. 6–20–67. Filed 4–12–66.

838,274. EPIC. American Home Products Corporation. MULTIPLE CLASS (Classes 21, 29, and 34). SN 244,546. Pub. 8–22–67. Filed 4–29–66.

838,275. CONTRAMATIC. Emerson Electric Co. SN 249,148. Pub. 8–22–67. Filed 6–28–66.

838,276. STANBROOKE. Terra International Company, Ltd. SN 249,359. Pub. 8–22–67. Filed 6–30–66.

838.277. PANASONIC HI-TOP AND DESIGN. Matsushita Electric Industrial Co., Ltd. SN 250,852. Pub. 8–22–67. Filed 7–22–66.

838,278. LAWDESCENT LITE. The Marbelite Company, Inc. SN 251,066. Pub. 8–22–67. Filed 7–26–66.

838,279. QR. Quartz Radiation Corp. MULTIPLE CLASS (Classes 21, 26, 34, 38, and 103). SN 252,146. Pub. 8–22–67. Filed 8–11–66.

838,280. LAM A SHIELD. Howmet Corporation. SN 252,954. Pub. 8–22–67. Filed 8–23–66.

838,281. BEREC. The Ever Ready Company (Great Britain) Limited. SN 253,513. Pub. 8–22–67. Filed 8–31–66.

838,282. MINI-STRESS. Amicon Corporation. SN 256,711. Pub. 8–22–67. Filed 10–19–66.

838,283. HOMELITE. Textron Inc. SN 256,890. Pub. 8–22–67. Filed 10–20–66.

838,284. DORAL. Global Import & Export, Inc. SN 257,183. Pub. 8–22–67. Filed 10–25–66.

838,285. H AND DESIGN. Hammarlund Manufacturing Co., Inc., d.b.a. Hammarlund Manufacturing Co. SN 257,273. Pub. 8–22–67. Filed 10–26–66.

838,286. MEPCO AND DESIGN. Forestville Industries. Inc. SN 257,380. Pub. 8–22–67. Filed 10–27–66.

838,287. MODIFILM. Industrial Condenser Corporation. SN 257,488. Pub. 8–22–67. Filed 10–28–66.

838,288. GO GO. Joséph Nagy. SN 258,135. Pub. 8–22–67. Filed 11–7–66.

838,289. LONDON LAMPS. Le Ro Company. SN 258,911. Pub. 8–22–67. Filed 11–17–66.

Class 22 — Games, Toys, and Sporting Goods

838,290. BABS. Mattel, Inc., assignee of Faber-Luft, Ltd. SN 114,462. Pub. 6–12–62. Filed 2–27–61.

838,291. DEER ME AND DESIGN. Arvid H. Bergsten. SN 224,061. Pub. 8–22–67. Filed 7–23–65.

838,292. QUADICE! Eva H. Jacobs. SN 234,905. Pub. 8–22–67. Filed 12–20–65.

838,293. BEND-A-BITTYS. Diener Industries, Inc. SN 235,823. Pub. 8–22–67. Filed 1–5–66.

838,294. SNAP·LOCK. Fisher-Price Toys, Inc. SN 249,752. Pub. 8–22–67. Filed 7–7–66.

838,295. PIC-A-LUR. Paul E. Greiner. SN 253,525. Pub. 8–22–67. Filed 8–31–66.

838,296. CONSENSUS. John Reed Koza. SN 253,888. Pub. 8–22–67. Filed 9–6–66.

838,297. CHESS TUTOR. E. S. Lowe Company, Inc. SN 254,396. Pub. 8–22–67. Filed 9–13–66.

838,298. DODGE CITY. De Luxe Topper Corporation. SN 257,168. Pub. 8–22–67. Filed 10–25–66.

838,299. ROTTEN EGG. Hassenfeld Bros. Inc. SN 257,627. Pub. 8–22–67. Filed 10–31–66.

838,300. CAPTURE HILL 79. Hassenfeld Bros. Inc. SN 257,628. Pub. 8–22–67. Filed 10–31–66.

838,301. SUN-GLO. Azrak-Hamway International Inc. SN 259,518. Pub. 8–22–67. Filed 11–28–66.

838,302. GUNSLINGER. Eldon Industries, Inc. SN 265,951. Pub. 8–22–67. Filed 3–6–67.

838,303. EX-PAN-DEES. James Industries, Inc. SN 267,484. Pub. 8–22–67. Filed 3–24–67.

838,304. DEMOLITION DERBY. Eldon Industries, Inc. SN 270,463. Pub. 8–22–67. Filed 5–2–67.

838,305. SNIPER. Gudebrod Bros. Silk Co., Inc. SN 272,994. Pub. 8–22–67. Filed 6–5–67.

838,306. KOLA KIDDLES. Mattel, Inc. SN 273,201. Pub. 8–22–67. Filed 6–6–67.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

838,261. (See Class 19 for this trademark.)

838,307. DYN-ADJUST. Dodge Manufacturing Corporation. SN 233,782. Pub. 5–2–67. Filed 12–2–65.

838,308. ALUSEAL. Hamac-Hansella Gesellschaft mit beschrankter Haftung, by change of name from Hamac-Hansella Aktiengesellschaft. SN 238,080. Pub. 8–22–67. Filed 2–4–66.

838,309. SANDUSKY FLAREX. Sandusky Foundry & Machine Company. SN 248,547. Pub. 8–22–67. Filed 6–20–66.

838,310. HYDRO-SPACR. Agri-Tek, Inc. SN 249,393. Pub. 8–22–67. Filed 7–1–66.

838,311. AUTO-TORQUE. Toledo-Beaver Tools, Inc. SN 249,597. Pub. 8–22–67. Filed 7–5–66.

838,312. TURBOCONVEYOR. Wallace-Murray Corporation. SN 250,062. Pub. 3–21–67. Filed 7–11–66.

838,313. ATKINS SAW NICHOLSON AND DESIGN. Nicholson File Company. SN 250,393. Pub. 8–22–67. Filed 7–15–66.

838,314. SUN MOTOR SUPPLY AND DESIGN. Sun Motor Supply, Inc. SN 250,530. Pub. 8–22–67. Filed 7–18–66.

838,315. PAGEBOY. Collator Corporation. SN 252,545. Pub. 8–22–67. Filed 8–17–66.

838,316. CHEMAPLY. The Dow Chemical Company. SN 254,263. Pub. 8–22–67. Filed 9–12–66.

838,317. SYN–TAC. Chicago Manifold Products Company. SN 254,577. Pub. 2–28–67. Filed 9–16–66.

838,318. KOYO AND DESIGN. Koyo Seiko Co. Ltd. SN 254,693. Pub. 8–22–67. Filed 9–19–66.

838,319. JOLO. Harold C. Sheader and Lorraine Sheader (joint owners), d.b.a. Sheader Industries. SN 255,727. Pub. 8–22–67. Filed 10–4–66.

838,320. BLUE SEAL. Camco, Incorporated. SN 255,775. Pub. 8–22–67. Filed 10–5–66.

838,321. POSITIVE-PRESSURE. American Hoist & Derrick Company. SN 256,049. Pub. 8–22–67. Filed 10–10–66.

838,322. CLARK. Clark Equipment Company. SN 256,199. Pub. 8–22–67. Filed 10–11–66.

838,323. BLOCK-MATIC. Landers Machine Company. SN 256,221. Pub. 8–22–67. Filed 10–11–66.

838,324. CMS AND DESIGN. Century Merchandise Service, Inc. SN 256,344. Pub. 8–22–67. Filed 10–13–66.

838,325. KEWANEE. Kewanee Machinery & Conveyor Company. SN 256,361. Pub. 8–22–67. Filed 10–13–66.

838,326. STEER (DESIGN). The Neff and Fry Company, d.b.a. P & D Mfg. Co. SN 256,370. Pub. 8–22–67. Filed 10–13–66.

838,327. ACCROFORM AND DESIGN. Accurate Manufacturing Co. SN 256,400. Pub. 8–22–67. Filed 7–13–66.

838,328. SELECTRO. Sperry Rand Corporation. SN 256,606. Pub. 8–22–67. Filed 10–17–66.

838,329. HOMELITE. Textron Inc. SN 256,611. Pub. 8–22–67. Filed 10–17–66.

838,330. APOLLO. Royal Typewriter Company, Inc. SN 256,972. Pub. 8–22–67. Filed 10–21–66.

838,331. GRAV-T-LOCK. T & S Equipment Co. SN 256,986. Pub. 8–22–67. Filed 10–21–66.

838,332. BOHN COMBI. Karl A. Bohn. SN 257,249. Pub. 8–22–67. Filed 10–26–66.

838,333. TRANSIT AND DESIGN. Bucyrus-Erie Company. SN 257,458. Pub. 8–22–67. Filed 10–28–66.

838,334. YARD TRAC AND DESIGN. Textron Inc. SN 257,539. Pub. 8–22–67. Filed 10–28–66.

838,335. INSTA-GRADE. The J-B• Corporation. SN 257,865. Pub. 8–22–67. Filed 11–3–66.

838,336. MISCELLANEOUS DESIGN. Tos Kuřim, Narodni Podnik. SN 258,331. Pub. 8–22–67. Filed 11–9–66.

838,337. MIDGET WIDGET. Tesco Chemicals, Inc. SN 270,536. Pub. 8–22–67. Filed 5–3–67.

Class 25 — Locks and Safes

838,338. VS. Sargent & Greenleaf, Inc. SN 256,008. Pub. 8–22–67. Filed 10–7–66.

Class 26 — Measuring and Scientific Appliances

838,279. (See Class 21 for this trademark.)

838,339. GUIDE LINER. Gregory S. Dolgorukov, d.b.a. Dolgorukov Manufacturing Company. SN 211,994. Pub. 8–22–67. Filed 2–15–65.

838,340. MICROSEAL AND DESIGN. Microseal Corporation. SN 220,012. Pub. 8–22–67. Filed 5–28–65.

838,341. DATASTAT. Photomechanisms, Inc. SN 221,086. Pub. 1–17–67. Filed 6–14–65.

838,342. NATIONAL. National Appliance Company. SN 229,268. Pub. 4–4–67. Filed 10–4–65.

838,343. AUTOCHEMIST. AB Autokemi. SN 233,433. Pub. 8–22–67. Filed 11–29–65.

838,344. DIGI-PLOT AND DESIGN. Commerce Engraving, Inc. SN 234,387. Pub. 8–22–67. Filed 12–13–65.

838,345. DIGITAVO. Brown, Boveri & Cie Aktiengesellschaft. SN 242,107. Pub. 8–22–67. Filed 3–29–66.

838,346. PLUSLIGHT. Rinn Corporation. SN 242,847. Pub. 8–22–67. Filed 4–6–66.

838,347. TRU-FLO. Bowser, Inc. SN 249,942. Pub. 8–22–67. Filed 7–11–66.

838,348. VLR. The Perkin-Elmer Corporation. SN 250,297. Pub. 8–22–67. Filed 7–14–66.

838,349. ANSCOFLEX. General Aniline & Film Corporation. SN 250,839. Pub. 8–22–67. Filed 7–22–66.

838,350. SCANOMARK. Leupold & Stevens Instruments, Inc. SN 252,109. Pub. 8–22–67. Filed 8–10–66.

838,351. CABOT NIGROMETER. Cabot Corporation. SN 252,346. Pub. 8–22–67. Filed 8–15–66.

838,352. MONOWELD. American Allsafe Company, Inc. SN 253,268. Pub. 8–22–67. Filed 8–29–66.

838,353. FAIRTONE. Fairchild Camera and Instrument Corporation. SN 255,974. Pub. 8–22–67. Filed 10–7–66.

838,354. NANOSTAK. Electronic Memories, Inc. SN 256,931. Pub. 8–22–67. Filed 10–21–66.

838,355. NANOMEMORY. Electronic Memories, Inc. SN 256,932. Pub. 8–22–67. Filed 10–21–66.

838,356. DENSIMITE. United Color Corporation. SN 257,542. Pub. 8–22–67. Filed 10–28–66.

838,357. S/EAM. Giannini Controls Corporation. SN 257,614. Pub. 8–22–67. Filed 10–31–66.

838,358. DEN-TEST. Kimtec, Incorporated. SN 258,190. Pub. 8–22–67. Filed 11–7–66.

Class 27 — Horological Instruments

838,359. INSTAMATIC CALENDAR. Movado Watch Agency, Inc. SN 248,243, Pub. 8–22–67. Filed 6–16–66.

838,360. EXECUTRON. Movado Watch Agency, Inc. SN 248,244. Pub. 8–22–67. Filed 6–16–66.

838,361. THE WATCH-A-MA-CALL-IT. Movado Watch Agency, Inc. SN 250,102. Pub. 8–22–67. Filed 7–12–66.

838,362. THE WITCHWATCH. Movado Watch Agency, Inc. SN 250,103. Pub. 8–22–67. Filed 7–12–66.

838,363. CLINERGIC. Les Fabriques d'Assortiments Réunies. SN 255,903. Pub. 8–22–67. Filed 10–6–66.

Class 28 — Jewelry and Precious-Metal Ware

838,364. LORIENT. W. Bell & Co., Inc. SN 245,458. Pub. 8–22–67. Filed 5–12–66.

Class 29 — Brooms, Brushes, and Dusters

838,274. (See Class 21 for this trademark.)

838,365. AMWAY AND DESIGN. Amway Corporation. SN 248,764. Pub. 8–22–67. Filed 6–23–66.

838,366. KEYSTONE AND DESIGN. Stevens-Hepner Company, Limited. SN 251,250. Pub. 8–22–67. Filed 7–28–66.

Class 31 — Filters and Refrigerators

838,367. "POP" ICE. Nor-Lake, Incorporated. SN 244,135. Pub. 8–22–67. Filed 4–22–66.

Class 32 — Furniture and Upholstery

838,368. TIARA PROVINCIAL. Formco, Inc. SN 231,099. Pub. 1–3–67. Filed 10–22–65.

838,369. TIARA AND DESIGN. Leonetti Furniture Mfg. Co., Inc. SN 242,994. Pub. 1–3–67. Filed 4–8–66.

838,370. CHEVRON (DESIGN). Standard Oil Company of California. SN 253,351. Pub. 8–22–67. Filed 8–29–66.

Class 33 — Glassware

838,371. UMC (DESIGN). UMC Industries, Inc. SN 256,388. Pub. 8–22–67. Filed 10–13–66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

838,163. (See Class 4 for this trademark.)

838,274. (See Class 21 for this trademark.)

838,279. (See Class 21 for this trademark.)

838,372. TOTE·A·GRILL AND DESIGN. Sales Art Productions Corp. SN 206,884. Pub. 5–10–66. Filed 11–24–64.

838,373. CLEANWALL. Chemetron Corporation. SN 233,322. Pub. 8–22–67. Filed 11–26–65.

838,374. MICROVOID. Air Control, Inc. SN 241,956. Pub. 8–22–67. Filed 3–28–66.

838,375. VOLUME AIRE. Big Dutchman, Inc. SN 242,105. Pub. 6–6–67. Filed 3–29–66.

838,376. BEST OF ALL AND DESIGN. Beacon Steel Products Co., Inc. SN 249,111. Pub. 8–22–67. Filed 6–28–66.

838,377. RINNAI. Kabushiki Kaisha Rinnai Seisakusho. SN 250,160. Pub. 8–22–67. Filed 7–13–66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

838,378. RED LIP. Albert Trostel Packings, Ltd. SN 175,066. Pub. 1–14–64. Filed 8–14–63.

838,379. RALLY. The Goodyear Tire & Rubber Company. SN 210,777. Pub. 9–7–65. Filed 1–27–65.

838,380. THUNDER BOLT. The Goodyear Tire & Rubber Company. SN 225,145. Pub. 8–22–67. Filed 8–6–65.

838,381. TEC AND DESIGN. Tec Seal Corporation. SN 232,738. Pub. 6–20–67. Filed 11–15–65.

838,382. DOCK MASTER. The Gates Rubber Company. SN 242,812. Pub. 8–22–67. Filed 4–6–66.

838,383. WIND-JAMMER. Wind-Jammer Industries. SN 259,497. Pub. 8–22–67. Filed 11–25–66.

Class 36 — Musical Instruments and Supplies

838,384. CAMBRIDGE. Grossman Music Corporation. SN 247,691. Pub. 8–22–67. Filed 6–9–66.

838,385. UNI-SWIV. The E. Konigslow Stamping & Tool Co. SN 248,042. Pub. 8–22–67. Filed 6–14–66.

838,386. ORPLID. Axioma A.G. SN 248,583. Pub. 8–22–67. Filed 6–21–66.

838,387. LA BURDINA. Colorado School of Accordion, Inc. SN 254,254. Pub. 8–22–67. Filed 9–12–66.

838,388. LEO. Metro-Goldwyn-Mayer Inc. SN 254,460. Pub. 8–22–67. Filed 9–14–66.

838,389. ASTRAMOLD. The Seeburg Corporation. SN 254,635. Pub. 8–22–67. Filed 9–16–66.

Class 37 — Paper and Stationery

838,390. TISHU ELEGANCE. Norcross, Inc. SN 217,049. Pub. 8–16–66. Filed 4–21–65.

838,391. EA 5X AND DESIGN. Eaton Allen Corp. SN 228,435. Pub. 8–22–67. Filed 9–23–65.

838,392. YHP COMPANY AND DESIGN. Ed Rossiter, d.b.a. YHP Company. SN 234,306. Pub. 8–22–67. Filed 12–9–65.

838,393. TIPP-EX. Wolfgang Dabisch, d.b.a. Tipp-Ex Fabrication. SN 236,793. Pub. 8–22–67. Filed 1–18–66.

838,394. ROTO PHOTO AND DESIGN. Roto-Photo Company. SN 238,573. Pub. 8–22–67. Filed 2–10–66.

838,395. TOP SCHOLAR AND DESIGN. Paul E. Sernau, Inc. SN 239,451. Pub. 5–23–67. Filed 2–23–66.

838,396. DIAL A RATE. Dodson Bros. Sales Co., Inc. SN 240,082. Pub. 8–22–67. Filed 3–3–66.

838,397. FF FOLIO-FILE. Dale L. Nelson. SN 244,129. Pub. 8–22–67. Filed 4–22–66.

838,398. ROUND TOIT. The Auto-Soler Company. SN 252,942. Pub. 8–22–67. Filed 8–23–66.

838,399. SHELF-MASTER. The Smead Manufacturing Company. SN 255,362. Pub. 8–22–67. Filed 9–28–66.

838,400. VARIAN. Varian Associates. SN 255,379. Pub. 8–22–67. Filed 9–28–66.

838,401. ALL-RITE. All-Rite Pen Company, Inc. SN 256,046. Pub. 8–22–67. Filed 10–10–66.

838,402. ARTIS' STIK. Micropoint, Inc. SN 256,575. Pub. 8–22–67. Filed 10–17–66.

838,403. 3M. Minnesota Mining and Manufacturing Company. SN 271,321. Pub. 8–22–67. Filed 5–12–67.

Class 38 — Prints and Publications

838,279. (See Class 21 for this trademark.)

838,404. THE WALL STREET PROFESSIONAL. The Wall Street Professional, Incorporated. SN 218,508. Pub. 5–31–66. Filed 5–10–65.

838,405. PHOTOMATIC AND DESIGN. The Photo-Matic Corporation. SN 251,462. Pub. 8–22–67. Filed 8–1–66.

838,406. PHILIPS. N.V. Philips' Gloeilampenfabrieken. SN 251,746. Pub. 8–22–67. Filed 8–4–66.

838,407. DIACORA. 3-D of America, Inc. SN 253,436. Pub. 8–22–67. Filed 8–30–66.

838,408. STEP AND DESIGN. STEP. SN 255,733. Pub. 8–22–67. Filed 10–4–66.

838,409. "MARK 'N DIAL." Anthony M. Era, Sr. SN 256,205. Pub. 8–22–67. Filed 10–11–66.

838,410. SME ETC. AND DESIGN. Sales and Marketing Executives-International, Inc. SN 257,093. Pub. 8–22–67. Filed 10–24–66.

Class 39 — Clothing

838,411. TRICOTEER. Piedmont Shirt Company. SN 186,274. Pub. 12–21–65. Filed 2–7–64.

838,412. CASINO. Eleven-Eleven Corporation. SN 194,471. Pub. 8–22–67. Filed 5–28–64.

838,413. HONEYBEE ETC. AND DESIGN. Honeybee, Inc. SN 209,695. Pub. 8–22–67. Filed 1–11–65.

838,414. SNO-BUNNY. Charles Pindyck, Inc. SN 213,476. Pub. 8–22–67. Filed 3–5–65.

838,415. CONTINENTALS LTD. Kenrich Shoe Corporation, by change of name from Lucky Stride Stoes, Inc. SN 214,133. Pub. 8–22–67. Filed 3–15–65.

838,416. THE BOND FOUR SEASONS COAT AND DESIGN. Bond Stores, Incorporated. SN 228,123. Pub. 8–22–67. Filed 9–20–65.

838,417. CISANNELLA AND DESIGN. C.B.S. Maglieria di Lusso S.p.A. SN 233,318. Pub. 8–22–67. Filed 11–26–65.

838,418. THE UNIVERSITY SHOP AND DESIGN. University Shops, Inc., assignee of Lafeyette University Shop, Inc. SN 233,804. Pub. 3–21–67. Filed 12–2–65.

838,419. FIGURE BEAUTY. De Luxe Girdlecraft Co., Inc. SN 238,057. Pub. 8–22–67. Filed 2–4–66.

838,420. D (DESIGN). Denton Sleeping Garment Mills, Inc. SN 239,979. Pub. 8–22–67. Filed 3–2–66.

838,421. MERRY MITES. Merry Mites, Inc. SN 240,012. Pub. 6–20–67. Filed 3–2–66.

838,422. MACKSTER. New York Mackintosh Clothing Company, Inc. SN 241,500. Pub. 6–20–67. Filed 3–21–66.

838,423. THE CABOOSE AND DESIGN. Caboose Incorporated. SN 243,091. Pub. 8–22–67. Filed 4–11–66.

838,424. SPORTSTER AND DESIGN. Sportster, Inc. SN 243,489. Pub. 8–22–67. Filed 4–14–66.

838,425. ANELLO D'ORO. Goldring Inc. SN 243,663. Pub. 8–22–67. Filed 4–18–66.

838,426. JANINE WRIGHT. Janine Wright. SN 246,508. Pub. 8–22–67. Filed 5–24–66.

838,427. BRAVO-FLEX. Di Fini Originals, Inc. SN 247,112. Pub. 8–22–67. Filed 6–2–66.

838,428. SUMMER FRESHNESS. Genesco Inc. SN 248,328. Pub. 8–22–67. Filed 6–17–66.

838,429. MISS TALL AMERICA BY TALLER MODES AND DESIGN. Taller Modes, Inc. SN 248,938. Pub. 8–22–67. Filed 6–10–66.

838,430. CIVITAS. Bressan Export-Import, Inc., d.b.a. Bressan Footwear Co. SN 249,114. Pub. 8–22–67. Filed 6–28–66.

838,431. CIVETTE'S. Bressan Export-Import, Inc., d.b.a. Bressan Footwear Co. SN 249,115. Pub. 8–22–67. Filed 6–28–66.

838,432. BE-FREE. Fitzgerald Underwear Corp. SN 249,821. Pub. 8–22–67. Filed 7–8–66.

838,433. JOR. Parkland of Dallas, Inc. SN 249,871. Pub. 5–23–67. Filed 7–8–66.

838,434. FORE-PREST. Balfour Shirtmakers Ltd. SN 251,696. Pub. 8–22–67. Filed 8–4–66.

838,435. BAL-PRESS. Balfour Shirtmakers Ltd. SN 251,697. Pub. 8–22–67. Filed 8–4–66.

838,436. FIELD N' FOREST. Fleet Wholesale Supply Co., Inc. SN 252,560. Pub. 8–22–67. Filed 8–17–66.

838,437. MAM'SELLE BOUTIQUE. Puritan Fashions Corporation. SN 252,890. Pub. 8–22–67. Filed 8–22–66.

838,438. POTOMAC SHOP AND DESIGN. Woodward & Lothrop, Incorporated. SN 252,920. Pub. 8–22–67. Filed 8–22–66.

838,439. MATT-LON BY SMARTEE AND DESIGN. Smartee, Inc. SN 253,056. Pub. 8–22–67. Filed 8–24–66.

838,440. MARIE CLAIRE. Bata Shoe Company, Inc. SN 253,418. Pub. 8–22–67. Filed 8–30–66.

838,441. FLEXFORM. Spartans Industries, Inc., by change of name from E. J. Korvette, Inc. SN 255,152. Pub. 8–22–67. Filed 9–22–66.

838,442. O.R.F. JRS. AND DESIGN. Amco of Norvelt, Inc. SN 255,686. Pub. 8–22–67. Filed 10–4–66.

838,443. FRECKLES. Dubrow & Bravman, Inc. SN 255,972. Pub. 8–22–67. Filed 10–7–66.

838,444. BRASALINI. A. S. Beck Shoe Corporation. SN 256,043. Pub. 8–22–67. Filed 10–10–66.

838,445. EXPAND-A-THIGH. Flexnit Company, Inc. SN 256,658. Pub. 8–22–67. Filed 10–18–66.

838,446. VELURA. Cannon Mills Company. MULTIPLE CLASS (Classes 39 and 42). SN 259,619. Pub. 6–20–67. Filed 11–28–66.

838,447. WICK DRY AND DESIGN. Rockford Textile Mills, Inc. SN 262,624. Pub. 8–22–67. Filed 1–16–67.

Class 40 — Fancy Goods, Furnishings, and Notions

838,448. PLAYMATES. Standard Pyroxoloid Corporation. SN 243,372. Pub. 8–22–67. Filed 4–14–66.

838,449. BRIGHT EYES. Standard Pyroxoloid Corporation. SN 243,375. Pub. 8–22–67. Filed 4–14–66.

838,450. LADY KATHY. Lady Kathy Corporation. SN 255,989. Pub. 8–22–67. Filed 10–7–66.

838,451. ADRIAN WIG. Friend Associates, Inc. SN 258,530. Pub. 8–22–67. Filed 11–14–66.

838,452. SPICE. Hair Fashions, Inc. SN 260,048. Pub. 8–22–67. Filed 12–5–66.

838,453. EIFFEL TOWER AND WOMAN'S HEAD (DESIGN). Midwest Hair Products, Inc. MULTIPLE CLASS (Classes 40 and 51). SN 260,756. Pub. 8–22–67. Filed 12–14–66.

838,454. B.B. Bates Manufacturing Company, Incorporated. SN 267,717. Pub. 8–22–67. Filed 3–28–67.

838,455. DESIGNER COLLECTION. Reid-Meredith, Inc. SN 270,197. Pub. 8–22–67. Filed 4–28–67.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

838,446. (See Class 39 for this trademark.)

838,456. PP AND DESIGN. Patchogue-Plymouth Company, assignee of Patchogue-Plymouth Corporation. MULTIPLE CLASS (Classes 42 and 43). SN 205,131. Pub. 1–11–66. Filed 10–29–64.

838,457. JEFF-PRESS. Dan River Mills, Incorporated. SN 242,115. Pub. 5–23–67. Filed 3–29–66.

838,458. BEAUNAIRE. Beaunit Corporation. SN 260,134. Pub. 5–23–67. Filed 12–6–66.

Class 43 — Thread and Yarn

838,143. (See Class 1 for this trademark.)

838,456. (See Class 42 for this trademark.)

Class 44 — Dental, Medical, and Surgical Appliances

838,170. (See Class 6 for this trademark.)

838,261. (See Class 19 for this trademark.)

838,459. RENEE-DERM. Renée-Derm Otto E. Meckelburg KG. SN 194,315. Pub. 6–28–66. Filed 5–26–64.

838,560. CONDUCTO STRAP. Beltx Corporation. SN 257,247. Pub. 8–22–67. Filed 10–26–66.

838,461. ORIPET. American Cyanamid Company. SN 257,568. Pub. 8–22–67. Filed 10–31–66.

838,462. DISPET. American Cyanamid Company. SN 257,570. Pub. 8–22–67. Filed 10–31–66.

838,463. AMERICARE. American Republic Insurance Company. SN 257,752. Pub. 8–22–67. Filed 11–2–66.

838,464. SPHYGMOBILE. Propper Manufacturing Company, Inc. SN 265,774. Pub. 8–22–67. Filed 3–2–67.

Class 45 — Soft Drinks and Carbonated Waters

838,465. KICK LIKE A MULE JUST AIN'T NONE BETTER ! AND DESIGN. Royal Crown Cola Co. SN 237,595. Pub. 8–22–67. Filed 1–28–66.

838,466. CAWY AND DESIGN. Cawy Bottling Co. Inc., d.b.a. Cawy Bottling Co. SN 250,855. Pub. 8–22–67. Filed 7–15–66.

838,467. BLUE ROCK. York Bar Bell Company, Inc., d.b.a. Bob Hoffman's Springs. SN 272,666. Pub. 8–22–67. Filed 5–31–67.

Class 46 — Foods and Ingredients of Foods

838,468. GOLDEN CIRCLES. American Bakeries Company. SN 175,153. Pub. 2–11–64. Filed 8–16–63.

838,469. MISCELLANEOUS DESIGN. Thelma Lu's, Inc. SN 229,604. Pub. 8–22–67. Filed 10–7–65.

838,470. FLING. Mead Johnson & Company. SN 237,467. Pub. 8–22–67. Filed 1–28–66.

838,471. AC'CENT. International Minerals & Chemical Corporation, d.b.a. Ac'cent International. SN 238,532. Pub. 8–22–67. Filed 2–10–66.

838,472. UNIFRANCK. Unifranck Lebensmittelwerke G.m.b.H. SN 242,294. Pub. 8–22–67. Filed 3–30–66.

838,473. POOR FOLKS CAVIAR. S. H. Mitchell, d.b.a. Cockram Mill. SN 242,470. Pub. 8–22–67. Filed 4–1–66.

838,474. STAR FIRE AND DESIGN. Schafer Canned Food Corp. SN 244,623. Pub. 8–22–67. Filed 4–29–66.

838,475. SFINX AND DESIGN. Ceskoslovenske Cokoladovny, Oborovy Podnik, Modrany. SN 244,968. Pub. 8–22–67. Filed 5–5–66.

838,476. J & R AND DESIGN. J & R Food Specialties, Inc. SN 246,082. Pub. 8–22–67. Filed 5–19–66.

838,477. SEA-DECKER. The Gorton Corporation (Delaware corporation), by merger from The Gorton Corporation (Massachusetts corporation), d.b.a. Gorton's of Gloucester. SN 246,464. Pub. 8–22–67. Filed 5–24–66.

838,478. HONI-DIET. Food Technology, Inc. SN 248,454. Pub. 8–22–67. Filed 6–20–66.

838,479. HONI-CUP. Food Technology, Inc. SN 248,455. Pub. 8–22–67. Filed 6–20–66.

838,480. SEASPAN. Seaspan Products Corp. SN 248,548. Pub. 8–22–67. Filed 6–20–66.

838,481. LIL' THINGS. Edy's Character Candies of Northern California, d.b.a. Edy's. SN 248,792. Pub. 8–22–67. Filed 6–23–66.

838,482. LZ. Midwest Pretzel, Inc. SN 250,011. Pub. 8–22–67. Filed 7–11–66.

838,483. VAN CAMP'S. Ralston Purina Company. SN 251,333. Pub. 8–22–67. Filed 7–29–66.

838,484. FIGURE OF A BOY (DESIGN). Gordon L. Guilliams, d.b.a. Nob Hill Ice Cream Company. SN 251,422. Pub. 8–22–67. Filed 8–1–66.

838,485. GOAL. NFM Corporation. SN 252,404. Pub. 6–27–67. Filed 8–15–66.

838,486. INSTA-MIX. Superior Tea & Coffee Co., d.b.a. King Coffee Company. SN 252,907. Pub. 8–22–67. Filed 8–22–66.

838,487. CONTINENTAL COFFEE. Continental Coffee Company. SN 258,503. Pub. 8–22–67. Filed 11–14–66.

838,488. CONTINENTAL COFFEE AND DESIGN. Continental Coffee Company. SN 258,504. Pub. 8–22–67. Filed 11–14–66.

838,489. BALANCED. Balanced Foods, Inc. SN 258,664. Pub. 8–22–67. Filed 11–15–66.

838,490. COFFEE-MATE. Carnation Company. SN 259,404. Pub. 8–22–67. Filed 11–25–66.

838,491. MIGNONETT. Harvest Home Foods, Inc. SN 263,570. Pub. 8–22–67. Filed 1–30–67.

838,492. THE LITTLE GIANT OF SWEETENERS. E. R. Squibb & Sons, Inc. SN 263,876. Pub. 8–22–67. Filed 2–3–67.

838,493. "FOR ALL." Knapp-Sherriff-Koelle, Inc., d.b.a. Knapp-Sherriff Koelle. SN 264,939. Pub. 8–22–67. Filed 2–17–67.

838,494. CHA·MA AND DESIGN. Pacific Vegetable Company, Inc. SN 268,658. Pub. 8–22–67. Filed 4–10–67.

838,495. PUFFA PUFFA RICE. Kellogg Company. SN 269,145. Pub. 8–22–67. Filed 4–14–67.

838,496. VITA GOLD. Farmers Cooperative Creamery Association, d.b.a. Farmer's Co-Op Creamery Ass'n. SN 270,024. Pub. 8–22–67. Filed 4–26–67.

838,497. HUB BUBS. General Mills, Inc. SN 270,326. Pub. 8–22–67. Filed 5–1–67.

838,498. INFED. Mead Johnson & Company. SN 273,156. Pub. 8–22–67. Filed 6–6–67.

838,499. CHIPMUNKS. C. J. Webb, Inc., d.b.a. Bowers Candies. SN 274,027. Pub. 8–22–67. Filed 1–3–67.

Class 47 — Wines

838,500. SA MARSALOVO ETC. AND DESIGN. San Antonio Winery, Inc., d.b.a. San Antonio Winery. SN 237,597. Pub. 5–23–67. Filed 1–28–66.

838,501. ALCANTA. John Joseph G. Randazzo, d.b.a. Antonio Alcanta & Cia., and Plessis Import Company. SN 254,320. Pub. 8–22–67. Filed 9–12–66.

838,502. SCHLOSS SCHMITT. Gustav Adolf Schmitt'sches Weingut. SN 255,204. Pub. 8–22–67. Filed 9–27–66.

838,503. BATIK. Batik Wine & Spirits, Inc. SN 255,288. Pub. 8–22–67. Filed 9–28–66.

838,504. E & J G AND DESIGN. E. & J. Gallo Winery, d.b.a. Gallo Vineyards. SN 272,679. Pub. 8–22–67. Filed 5–31–67.

Class 49 — Distilled Alcoholic Liquors

838,505. HOFFMAN RARE. L & E Wertheimer, Inc., d.b.a. The Old Spring Distilling Company. SN 226,925. Pub. 8–22–67. Filed 9–1–65.

838,506. REGAL SEAL. Intercontinental Import & Export Co., Inc. SN 235,780. Pub. 8–22–67. Filed 1–4–66.

838,507. SAVINI. McKesson & Robbins, Incorporated. SN 250,388. Pub. 8–22–67. Filed 7–15–66.

838,508. MAD CAP. Schenley Distillers, Inc. SN 256,238. Pub. 8–22–67. Filed 10–11–66.

838,509. RONRICO. Ronrico Corporation. SN 272,901. Pub. 8–22–67. Filed 6–2–67.

Class 50 — Merchandise Not Otherwise Classified

838,251. (See Class 19 for this trademark.)

838,261. (See Class 19 for this trademark.)

838,510. NATURALS. Naturals, Inc. SN 237,373. Pub. 8–22–67. Filed 1–26–66.

838,511. INSTANT-ICER. Dynamic Classics, Ltd. SN 245,297. Pub. 8–22–67. Filed 5–10–66.

838,512. BEST OF ALL AND DESIGN. Beacon Steel Products Co., Inc. SN 249,109. Pub. 8–22–66. Filed 6–28–66.

838,513. HAS-KAP. Haskon, Inc. SN 250,268. Pub. 8–22–67. Filed 7–14–66.

838,514. PIGEON POLICE AND DESIGN. John M. Keefe, d.b.a. The Flomar Company. SN 253,223. Pub. 8–22–67. Filed 8–26–66.

Class 51 — Cosmetics and Toilet Preparations

838,170. (See Class 6 for this trademark.)

838,453. (See Class 40 for this trademark.)

838,515. MY FAIR LADY AND DESIGN. Ravel Perfume Corp., d.b.a. Ravel N.Y. SN 214,286. Pub. 12–14–65. Filed 3–16–65.

838,516. LORELEI. Avon Products, Inc. SN 246,856. Pub. 12–13–66. Filed 5–31–66.

838,517. LORELEI. Avon Products, Inc., assignee of Richardson-Harris, Inc. SN 247,176. Pub. 12–13–66. Filed 6–3–66.

838,518. MAN SET. L.B. Laboratories, Inc. SN 248,143. Pub. 8–22–67. Filed 6–15–66.

838,519. BABYDAS. UHU-Werk H. & M. Fischer. SN 249,269. Pub. 8–22–67. Filed 6–29–66.

838,520. FEEL OF CLEAN. Carter-Wallace, Inc. SN 249,838. Pub. 8–22–67. Filed 7–8–66.

838,521. SUNSHINE BLONDE. Clairol Incorporated. SN 254,123. Pub. 8–22–67. Filed 9–9–66.

838,522. GOYA. Goya Limited. SN 254,385. Pub. 8–22–67. Filed 9–13–66.

838,523. REAL-EYES. Elizabeth Arden Sales Corporation. SN 255,076. Pub. 8–22–67. Filed 9–26–66.

838,524. ANALERGIC. Les Parfums de Dana, Inc., d.b.a. Dana. SN 257,786. Pub. 8–22–67. Filed 11–2–66.

838,525. WINCHESTER. Olin Mathieson Chemical Corporation. SN 265,463. Pub. 8–22–67. Filed 2–27–67.

838,526. S & S AND DESIGN. S & S Chemicals, Ltd. SN 234,244. Pub. 4–25–67. Filed 12–8–65.

Class 52 — Detergents and Soaps

838,527. COSMIC. Pennsalt Chemicals Corporation. SN 247,055. Pub. 8–22–67. Filed 6–1–66.

838,528. SOFANOL. Developments Unlimited Inc. SN 251,290. Pub. 8–22–67. Filed 7–29–66.

838,529. GENAPOL. Farbwerke Hoechst Aktiengesellschaft, vormals Meister Lucius & Bruning. SN 252,086. Pub. 8–22–67. Filed 8–10–66.

838,530. GOYA. Goya Limited. SN 254,386. Pub. 8–22–67. Filed 9–13–66.

838,531. COMFY. Standard International Corporation. SN 255,552. Pub. 8–22–67. Filed 9–30–66.

838,532. D·R·X ETC. AND DESIGN. G. H. Wood and Company Limited. SN 256,354. Pub. 8–22–67. Filed 10–13–66.

838,533. BISOLV. Bison Corporation. SN 256,717. Pub. 8–22–67. Filed 10–19–66.

838,534. ANALERGIC. Les Parfums de Dana, Inc., d.b.a. Dana. SN 257,787. Pub. 8–22–67. Filed 11–2–66.

838,535. GET. The Procter & Gamble Company. SN 269,153. Pub. 8–22–67. Filed 4–14–67.

838,536. SPIRAL. Lever Brothers Company. SN 272,893. Pub. 8–22–67. Filed 6–2–67.

838,537. BIO-ENZIM. The Procter & Gamble Company. SN 272,998. Pub. 8–22–67. Filed 6–5–67.

838,538. WONDACO. Diamond Alkali Company. SN 273,228. Pub. 8–22–67. Filed 6–7–67.

Service Marks

Class 100 — Miscellaneous

838,539. INN AMERICA. Inn America, Inc., assignee of Inn America, Inc., SN 141,726. Pub. 6–8–65. Filed 4–6–62.

838,540. CPM AND DESIGN. CPM Systems, Inc. MULTIPLE CLASS (Classes 100 and 101). SN 229,407. Pub. 8–22–67. Filed 10–6–65.

838,541. NEUTRON LIFETIME LOG. Dresser Industries, Inc., d.b.a. Lane Wells Company. SN 231,554. Pub. 8–22–67. Filed 10–24–65.

838,542. FANTUS. The Fantus Company, Inc. SN 243,434. Pub. 8–22–67. Filed 4–14–66.

838,543. EDUCOM. Interuniversity Communications Council, Inc. SN 246,127. Pub. 8–22–67. Filed 5–20–66.

838,544. PTA. Plastic Tooling Aids Laboratory, Inc. SN 269,144. Pub. 8–22–67. Filed 4–14–67.

Class 101 — Advertising and Business

838,540. (See Class 100 for this trademark.)

838,545. POA. Pony of the Americas Club, Inc. SN 223,577. Pub. 8–22–67. Filed 7–16–65.

838,546. RETAILERS COMMERCIAL AGENCY, INC. 1873 AND DESIGN. Retail Credit Company. SN 236,416. Pub. 8–22–67. Filed 1–13–66.

838,547. SILO AND DESIGN. Silo, Inc., by change of name from Silo Discount Centers, Inc. SN 237,753. Pub. 8–22–67. Filed 2–1–66.

838,548. TRAVELER'S CHOICE. Traveler's Choice International, Inc. SN 243,196. Pub. 8–22–67. Filed 4–11–66.

838,549. DESCO. Edwin K. Williams & Co. (Va.). SN 245,125. Pub. 8–8–67. Filed 5–6–66.

838,550. "SERVICE WITH INTEGRITY." Stan Ridgeway Realty, Inc. SN 248,550. Pub. 8–22–67. Filed 6–20–66.

838,551. S&H GREEN STAMPS AND SHIELD DESIGN. The Sperry and Hutchinson Company. SN 249,186. Pub. 8–22–67. Filed 6–28–66.

838,552. WORLD COLOR PRESS, INC. AND DESIGN. World Color Press, Inc. SN 252,982. Pub. 8–22–67. Filed 8–23–66.

Class 102 — Insurance and Financial

838,553. UNI-LOAN. C.I.T. Financial Corporation. SN 254,771. Pub. 8–22–67. Filed 9–20–66.

838,554. IMAGINATION AND DESIGN. Insurance Company of North America. SN 256,360. Pub. 8–22–67. Filed 10–13–66.

Class 103 — Construction and Repair

838,279. (See Class 21 for this trademark.)

838,555. LET ALL-SERV SERVE YOU! AND DESIGN. Robert A. Westerhausen, d.b.a. All Services Co. SN 243,739. Pub. 8–22–67. Filed 4–18–66.

838,556. RAI. Radican Associates, Inc. SN 244,617. Pub. 8–22–67. Filed 4–29–66.

Class 105 — Transportation and Storage

838,557. EDDI AND DESIGN. Exposition Drayage Division, Inc. SN 243,232. Pub. 8–22–67. Filed 4–12–66.

Class 107 — Education and Entertainment

838,558. VARIAN. Varian Associates. SN 255,381. Pub. 8–22–67. Filed 9–28–66.

Collective Membership Mark

Class 200

838,559. MEMBER INTERNATIONAL CORRUGATED CASE ASSOCIATION ICCA AND DESIGN. International Corrugated Case Association. SN 224,198. Pub. 8–22–67. Filed 7–26–65.

Certification Mark

Class A — Goods

838,560. NEMA VERIFIED AND DESIGN. National Electrical Manufacturers Association. SN 254,796. Pub. 8–22–67. Filed 9–20–66.

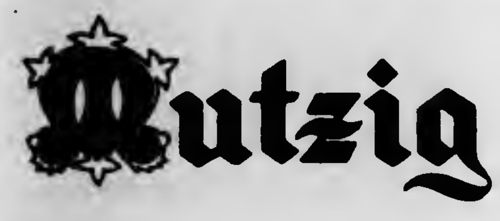
SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates.)

838,579. Brasserie de Mutzig Anct. J. Wagner S.A., Mutzig, Bas-Rhin, France. SN 236,949. Filed P.R. 1–21–66; Am. S.R. 8–25–67.



Priority claimed under Sec. 44(d) on French Reg. No. 1,231, dated July 29, 1965 (Saverne); Natl. Inst. No. 264,939.

Class 45—Soft Drinks and Carbonated Waters

For Mineral Water, Carbonated Water, and Soft Drinks.

Class 48—Malt Beverages and Liquors

For Beer.

SECTION 2

Class 2 — Receptacles

838,561. Thomas E. Wright, d.b.a. Wright Industries, Chicago Ridge, Ill. SN 221,871. Filed P.R. 6–23–65; Am. S.R. 9–13–67.

TISSUE N' LITTER

For Plastic Container for Disposable Tissues and Litter.
First use Apr. 3, 1965.

Class 4 — Abrasives and Polishing Materials

838,562. Phoenix Abrasive & Manufacturing Inc., Jamaica, N.Y. SN 246,601. Filed P.R. 5–25–66; Am. S.R. 6–30–67.

PLASTIC GUARD

For Combined Cleaner and Polish for Automobiles.
First use November 1965.

Class 6 — Chemicals and Chemical Compositions

838,563. United Gilsonite Laboratories, Scranton, Pa. SN 257,900. Filed P.R. 11–3–66; Am. S.R. 8–9–67.

D-GLOSS

For Liquid Sander—Namely, a Liquid Composition for Application to Smooth Hard Finishes To Prepare the Same for Re-Painting.
First use Apr. 4, 1966.

Class 12 — Construction Materials

838,564. Kinkead Industries Incorporated, Chicago, Ill., assignee of Keller Bath Enclosures, Inc., Miami, Fla. SN 237,568. Filed P.R. 1–28–66; Am. S.R. 7–3–67.

The Fold-a-way

For Metal Frame and Vinyl Panel Tub and Shower Enclosures.
First use Dec. 28, 1965.

838,565. Union Laboratories, Inc., Morganville, N.J. SN 248,376. Filed P.R. 6–17–66; Am. S.R. 9–7–67.

CABLE

SEAL

For Plastic Protective Coating for Sealing Moisture Leaks in Lead and Plastic Communication Cables.
First use Apr. 22, 1966.

Class 21 — Electrical Apparatus, Machines, and Supplies

838,566. D. H. Baldwin Company, Cincinnati, Ohio. SN 229,740. Filed P.R. 10–11–65; Am. S.R. 9–13–67.

SUPERSOUND

For Tonal Control Electronic Amplifiers Used With Electrical Musical Instruments—Namely, Guitars, Harpsichords, and Organs.
First use Aug. 26, 1965.

838,567. Chemtronics Inc., Brooklyn, N.Y. SN 241,030. Filed P.R. 3–15–66; Am. S.R. 8–30–67.

NO ARC

For Protective Insulation on Wires and Electrical Components.
First use on or about June 1, 1961.

Class 22 — Games, Toys, and Sporting Goods

838,568. Arnold Brilhart, Oceanside, Calif. SN 220,198. Filed P.R. 6–2–65; Am. S.R. 9–13–67.

Fiber STEEL

For Golf Clubs and/or the Component Parts Thereof.
First use May 3, 1965.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

838,569. The Huffman Manufacturing Company, Miamisburg, Ohio. SN 240,440. Filed P.R. 3–8–66; Am. S.R. 7–3–67.

T BAR

For Sprocket Ratio Control for Use on Bicycles.
First use Feb. 2, 1966.

838,570. The Gillette Company, Boston, Mass. SN 270,645. Filed P.R. 5–4–67; Am. S.R. 9–7–67.

BOSTONIAN

Owner of Reg. No. 158,346.
For Safety Razors.
First use Apr. 26, 1921.

Class 28 — Jewelry and Precious-Metal Ware

838,571. Wells, Inc., Attleboro, Mass. SN 265,959. Filed P.R. 3–6–67; Am. S.R. 9–5–67.

NO BAX

For Jewelry for Personal Wear and Adornment, Not Including Watches.
First use August 1966.

Class 32 — Furniture and Upholstery

838,572. Formco, Inc., Cincinnati, Ohio. SN 239,503. Filed P.R. 2–24–66; Am. S.R. 9–5–67.

ROCOCO

For Modern, Laminated, Plastic Covered Vanities and Modern Wood Vanities.
First use Dec. 1, 1965.

Class 38 — Prints and Publications

838,573. Foto Features, Inc., Woodland, Calif., by change of name from Foto Fillers, Inc., Woodland, Calif. SN 251,717. Filed P.R. 8–4–66; Am. S.R. 9–6–67.

'QUICKIE'
5-MINUTE SPANISH LESSON

For Educational Column Appearing in Newspapers From Time to Time.
First use Mar. 31, 1966.

838,574. McGraw-Hill, Inc., New York, N.Y. SN 253,665. Filed P.R. 9–1–66; Am. S.R. 9–13–67.

ENERGY SYSTEMS
ENGINEERING

Owner of Reg. No. 714,423.
For Monthly Newsletter.
First use Aug. 1, 1966.

838,575. Baptist Joint Committee on Public Affairs, Washington, D.C. SN 254,961. Filed P.R. 9–20–66; Am. S.R. 9–6–67.

Baptist
JOINT COMMITTEE
ON PUBLIC AFFAIRS

For Printed Pamphlets, Leaflets, Bulletins, and Releases.
First use in June 1950.

838,576. Fim Bruchard Publishing Corp., New York, N.Y. SN 256,207. Filed P.R. 10–11–66; Am. S.R. 9–8–67.

JOBS U.S.A.
&
overseas

For Periodic Newsletter.
First use Sept. 1, 1966.

838,577. McGraw-Hill, Inc., New York, N.Y. SN 272,894. Filed P.R. 6–2–67; Am. S.R. 8–29–67.

BUSINESS ABROAD

Owner of Reg. No. 432,729.
For Section of a Weekly Publication.
First use Sept. 9, 1929.

Class 44 — Dental, Medical, and Surgical Appliances

838,578. J.M.R. Enterprises, Inc., Worcester, Mass. SN 232,562. Filed P.R. 11–12–65; Am. S.R. 8–7–67.

SIT 'N' SOAK

For Medical Treatment Tray for Use in Conjunction With a Toilet Seat.
First use on or about Dec. 10, 1964.

Class 45 — Soft Drinks and Carbonated Waters

838,579. See Section 1 (Combined Certificate).

Class 46 — Foods and Ingredients of Foods

838,580. Onion Specialties of South Holland, Inc., South Holland, Ill. SN 253,546. Filed P.R. 8–31–66; Am. S.R. 8–18–67.

EVERY ONION A PEARL

For Onions Both Fresh and Preserved.
First use Aug. 20, 1965.

Class 48 — Malt Beverages and Liquors

838,579. See Section 1 (Combined Certificate).

838,581. Brasserie de Mutzig Anct. J. Wagner S.A., Mutzig, Bas-Rhin, France. SN 237,411. Filed P.R. 1–21–66; Am. S.R. 8–25–67.

MUTZIG

Priority claimed under Sec. 44(d) on French Reg. No. 705,985, dated Dec. 28, 1965.
For Beer.

Service Marks

Class 102 — Insurance and Financial

838,582. Continental Casualty Company, Chicago, Ill. SN 234,882. Filed P.R. 12-20-65; Am. S.R. 8-23-67.

EXTRA CARE

For Underwriting Medical and Hospitalization Insurance.
First use Apr. 19, 1965.

838,583. Continental Casualty Company, Chicago, Ill. SN 242,566. Filed P.R. 4-4-66; Am. S.R. 8-23-67.

XTRA CARE

For Underwriting Medical and Hospitalization Insurance.
First use Apr. 19, 1965.

Class 106 — Material Treatment

838,584. Joseph E. Berg, d.b.a. Berg Industries, Los Angeles, Calif. SN 253,839. Filed P.R. 9-6-66; Am. S.R. 9-5-67.

BERG-COAT

For Application of Protective Coatings to Glass, Metallic, and Polymer Surfaces.
First use June 1, 1966.

838,585. Joseph E. Berg, d.b.a. Berg Industries, Los Angeles, Calif. SN 258,477. Filed P.R. 11-14-66; Am. S.R. 9-5-67.

EASY-VUE

For Applying of Anti-Reflective Coatings to Glass, Metallic, and Polymer Surfaces.
First use Jan. 15, 1960.

TRADEMARK REGISTRATIONS RENEWED

30,910. HM. Cl. 13. 11-30-1897.
30,595. BECKERS ABC PLASTER. Cl. 44. 9-28-1897.
61,278. ROCK SPRING JR. AND DESIGN. Cl. 45. 5-12-07.
63,163. AERTEX. Cl. 39. 6-11-07.
65,001. AKRON. Cl. 35. 9-3-07.
65,002. WHITE ANCHOR. Cl. 35. 9-3-07.
65,003. CASCADE. Cl. 35. 9-3-07.
65,005. DELUGE. Cl. 35. 9-3-07.
65,008. CHIEFTAIN. Cl. 35. 9-3-07.
65,012. SOLAR. Cl. 35. 9-3-07.
65,013. ALARM. Cl. 35. 9-3-07.
65,014. JUPITER. Cl. 35. 9-3-07.
65,382. REGENT. Cl. 46. 9-24-07.
65,410. REPRESENTATION OF A BOCK'S HEAD (DESIGN). Cl. 35. 9-24-07.
65,411. BOCK. Cl. 35. 9-24-07.
65,413. TORRENT. Cl. 35. 9-24-07.
65,415. ARTESIAN. Cl. 35. 9-24-07.
65,416. TIDAL. Cl. 35. 9-24-07.
66,021. VTF AND DESIGN. Cl. 33. 11-5-07.
149,592. MARCHANT. Cl. 26. 12-13-21.
212,831. MAXWELL HOUSE. Cl. 46. 5-11-26.
226,889. BULOVA. Cl. 27. 4-19-27.
231,400. DAYTON DAIRY MAID. Cl. 46. 8-16-27.
232,511. POLLY-BOB BABY PANTS. Cl. 39. 9-13-27.
232,924. BIG JO. Cl. 46. 9-20-27.
232,925. COLGATE'S. Cl. 51. 9-20-27.
232,954. JOHN B. Cl. 39. 9-20-27.
233,491. WESTFIELD. Cl. 27. 9-27-27.
233,698. JOHNSON. Cl. 23. 10-4-27.
234,831. ELKONITE. Cl. 14. 11-8-27.
235,174. REPRESENTATION OF A GIRL AND DESIGN. Cl. 45. 11-15-27.
235,207. KITCHEN AID. Cl. 31. 11-15-27.
235,456. AMERICAN STANDARD. Cl. 27. 11-15-27.
235,641. BUFFALO. Cl. 6. 11-22-27.
235,669. ROQUEFORT J COUDERC & CIE. ETC. AND DESIGN. Cl. 46. 11-22-27.
239,084. "LADDIE BOY" AND REPRESENTATION OF A DOG. Cl. 46. 2-21-28.
428,382. PLASTO-ARCH. Cl. 44. 3-25-47.
432,581. LITTLE BALLERINA. Cl. 38. 9-9-47.
432,587. RAGS RABBIT AND DESIGN. Cl. 38. 9-9-47.
432,836. VELDOWN. Cl. 37. 9-16-47.
432,858. SANTOTINE. Cl. 6. 9-16-47.
432,999. RELIDE. Cl. 27. 9-23-47.
433,163. COOTIE. Cl. 22. 9-30-47.
433,224. QUINOTINE. Cl. 6. 9-30-47.
433,294. BUTCH. Cl. 37. 10-7-47.
433,303. THE SNOOZER. Cl. 32. 10-7-47.
433,427. BUCOLENE. Cl. 52. 10-14-47.
433,491. RENGAS. Cl. 39. 10-14-47.
433,736. CHEMI-TROLL. Cl. 6. 10-28-47.
433,805. SYLVIOLA. Cl. 51. 10-28-47.
433,983. ACNOMEL. Cl. 18. 11-4-47.
434,988. COCOLOID. Cl. 46. 12-9-47.
435,462. VULCO. Cl. 23. 12-30-47.
435,666. POLYKEN. Cl. 5. 1-6-48.
436,158. LASU. Cl. 44. 1-27-48.
436,384. SILOTEX. Cl. 21. 2-3-48.
436,471. KICKERNICK. Cl. 39. 2-10-48.
436,651. ALUMATIC. Cl. 12. 2-17-48.
436,686. EMPCO. Cl. 12. 2-17-48.
436,753. AERCO. Cl. 46. 2-17-48.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

290,126. SOLINEAR. Cl. 26. 12-22-31.
553,265. TONE. Cl. 4. 1-8-52.
734,917. TONE EDUCATOR. Cl. 36. 7-24-62.
815,133. TERTIO. Cls. 51 and 52. 9-13-66.
829,666. ARCOLAK. Cl. 12. 6-6-67.

Section 8

The following registrations issued Sept. 19, 1961

721,468. CELANESE. Cl. 2.
721,472. KEY-KACHE AND DESIGN. Cl. 3.
721,473. MERRY WINDOW. Cl. 3.
721,477. AUTOPRINT. Cl. 5.
721,479. SEAM-HEASIVE. Cl. 5.
721,482. HUGHSON. Cl. 6.
721,484. CFS AND DESIGN. Cl. 6.
721,487. IPATONE. Cl. 6.
721,490. MOUSERS. Cl. 6.
721,495. SMAK. Cl. 6.
721,499. JENFRED-WARE. Cl. 8.
721,500. SILVER K. Cl. 8.
721,511. FRESH-PAK. Cl. 11.
721,514. TREASURETILE. Cl. 12.
721,515. CLARY DYNAMICS ETC. AND DESIGN. Cl. 13.
721,518. NS AND GLOBE DESIGN. Cl. 14.
721,527. AQUANAMEL. Cl. 16.
721,529. MIRACOLOR. Cl. 16.
721,532. ZESTAN. Cl. 18.
721,535. BUERLECITHIN. Cl. 18.
721,536. NUTRIGAIN. Cl. 18.
721,537. PRELUVIT. Cl. 18.
721,541. DERM-OFF. Cl. 18.
721,548. N ZETA. Cl. 19.

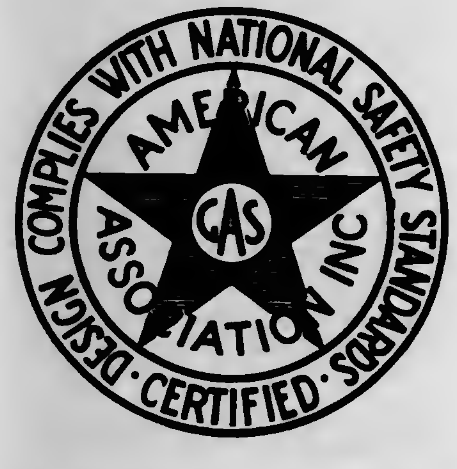
721,552. FLEXITOR. Cl. 19.
721,555. SCENT-'N'-SELL. Cl. 21.
721,557. SOLAGRID. Cl. 21.
721,559. AMDUR AND DESIGN. Cl. 21.
721,564. DYNACODE. Cl. 21.
721,566. HI-FLI. Cl. 22.
721,570. FIBERLITE. Cl. 22.
721,572. INSTANT BASS. Cl. 22.
721,573. BOOMER. Cl. 22.
721,575. GLASS-LITE. Cl. 22.
721,577. HYDRODYN. Cl. 23.
721,578. REPRESENTATION OF CHEMICAL FLASK AND DESIGN. Cl. 23.
721,588. READ-O-MAT-JUNIOR. Cl. 23.
721,592. TOOL-FAIR AND DESIGN. Cl. 23.
721,600. ORBIT. Cl. 31.
721,602. FROST-ARID. Cl. 31.
721,605. QUADRALITE. Cl. 32.
721,606. SAS AND DESIGN. Cl. 32.
721,607. VERSAPLY. Cl. 32.
721,609. KEYFORM. Cl. 32.
721,616. HENRY PRATT. Cl. 34.
721,626. SERENE. Cl. 37.
721,630. SOLART AND DESIGN. Cl. 38.
721,631. STAINGLASS GRANT AND DESIGN. Cl. 38.
721,633. GREETINGS BY ADRIANE ST. PAUL AND DESIGN. Cl. 38.
721,641. DESIGN OF THREE GRACES. Cl. 39.
721,643. PATITE. Cl. 42.
721,648. TUDOR. Cl. 42.
721,649. BEVERLY. Cl. 42.
721,650. SCREENART. Cl. 42.
721,654. FROZ-O-LOG. Cl. 46.
721,658. GEBOTT'S. Cl. 46.
721,665. GUSTAMATE. Cl. 46.
721,666. JOLLY FARMER. Cl. 46.
721,667. LARRY'S. Cl. 46.
721,675. MARDI-GRAS. Cl. 46.
721,677. ROYAL VELVET. Cl. 46.
721,682. SORRENTO. Cl. 46.
721,689. FERN AND VASE DESIGN. Cl. 50.
721,690. SILVER PINE. Cl. 50.
721,691. PAINT-A-PET. Cl. 50.
721,695. CARVETTES. Cl. 50.
721,701. CAFE SOCIETY. Cl. 51.
721,702. COLORZON. Cl. 51.
721,709. HAIR-O-SOL. Cl. 52.
721,711. RENELLE. Cl. 52.
721,712. LADY LEONE. Cl. 52.
721,719. AMERICAN PHILOSOPHICAL INSTITUTE OF COSOLARGY ETC. AND DESIGN. Cl. 200.
721,720. THE CROSS OF GENERAL ASSEMBLY ETC. AND DESIGN. Cl. 200.
721,725. FREE O'MIST. Cl. 6.
721,726. FREE O'ICE. Cl. 6.
721,735. PRECISION FARM PROGRAMMING. Cl. 100.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

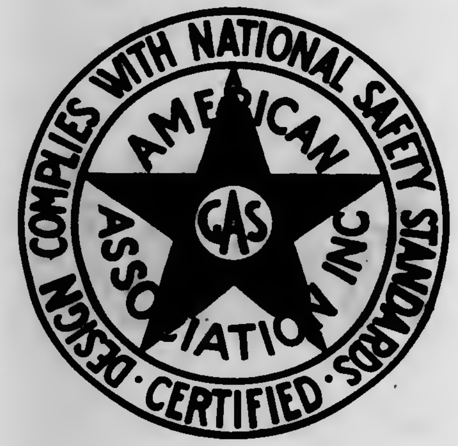
430,206. SPECIAL BOLTRONIZED. Cl. 6. 6-10-47. St. Lawrence Chemical Company, Inc., Ogdensburg, N.Y. Amended: In the statement, column 2, lines 6 and 7 are deleted, and the drawing is amended to appear:

BOLTRONIZED

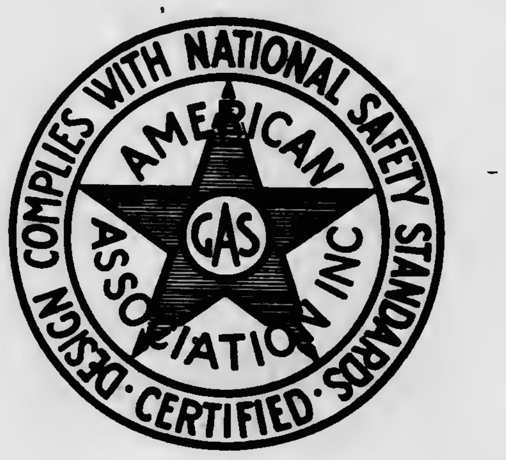
508,003. STAR IN CIRCLES. Cl. 34. 3-22-49. American Gas Association, Inc., New York, N.Y. Amended to appear:


DESIGN COMPLIES WITH NATIONAL SAFETY STANDARDS
AMERICAN GAS ASSOCIATION INC
GAS
CERTIFIED

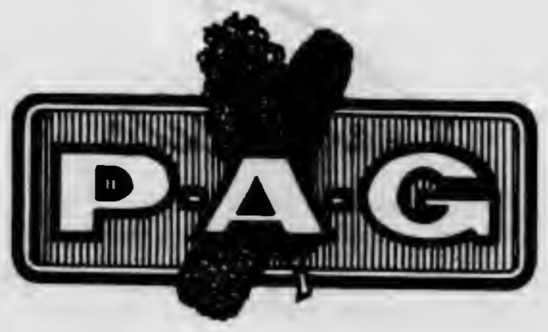
510,770. STAR IN CIRCLES. Cl. 24. 6-7-49. American Gas Association, Inc., New York, N.Y. Amended to appear:


DESIGN COMPLIES WITH NATIONAL SAFETY STANDARDS
AMERICAN GAS ASSOCIATION INC
GAS
CERTIFIED

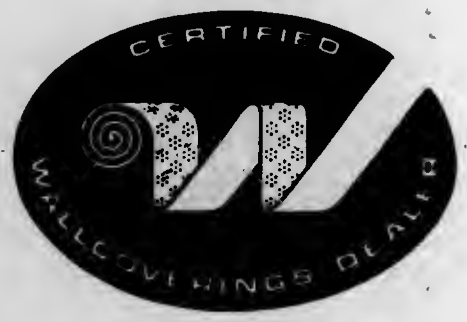
513,645. AMERICAN GAS ASSOCIATION ETC. WITH STAR AND CIRCLE. Cl. 31. 8-16-49. American Gas Association, Inc., New York, N.Y. Amended to appear:


DESIGN COMPLIES WITH NATIONAL SAFETY STANDARDS
AMERICAN GAS ASSOCIATION INC
GAS
CERTIFIED

726,110. P-A-G AND DESIGN. Cl. 1. 1-9-62. Pfiste Associated Growers, Inc. W. R. Grace & Co., Aurora, Ill Amended to appear:



799,255. CERTIFIED WALLPAPER DEALER AND DESIGN. Cl. 101. 11–23–65. Wallpaper Council Incorporated. Wallcoverings Council Incorporated, New York, N.Y. Amended: In the statement, column 1, line 7 and column 2, line 5, "Wallpaper" is deleted and *Wallcoverings* is inserted, and the drawing is amended to appear:



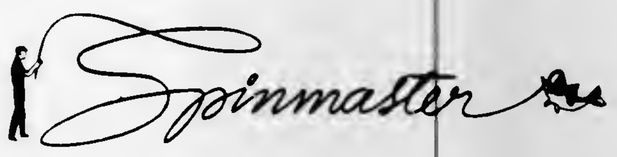
801,539. AMERICAN GAS ASSOCIATION ETC. AND DESIGN. Cl. A. 1–4–66. American Gas Association, Inc., New York, N.Y. Amended to appear:

DESIGN COMPLIES WITH NATIONAL SAFETY STANDARDS
AMERICAN GAS ASSOCIATION INC
GAS
CERTIFIED

813,838. PALGARD. Cl. 16. 8–30–66. Pratt & Lambert-Inc., Buffalo, N.Y. Corrected: In the statement, column 2, line 3, "616,415" should be deleted and *616,445* should be inserted.

820,529. STAR TIP TOOLS AND DESIGN. Cl. 23. 12–13–66. Paul G. Williams, Jr., Bonne Terre, Mo. Amended: In the statement, column 2, line 1, after "tools", *exclusive of saws, saw blades and files of all kinds, including hand and power metal cutting saws and band saws* is inserted.

820,650. SPINMASTER ROD COMPANY INC. AND DESIGN. Cl. 22. 12–20–66. Amended: In the statement, column 2, lines 4 and 5 are deleted, and the drawing is amended to appear:



830,778. FOLLOW THE SUN FOR LIFE. Cl. 102. 6–20–67. Sun Life Assurance Company of Canada, Montreal, Quebec, Canada. Corrected: In the statement, column 2, line 2, "like" should be deleted and *life* should be inserted.

832,934. CRC SCIENTIFIC REVIEW AND DESIGN. Cl. 38. 8–1–67. The Chemical Rubber Company. Corrected: In the statement, column 2, line 4, "1956" should be deleted and *1965* should be inserted.

833,397. YOUNG BACHELOR. Cl. 39. 8–8–67. H. Daroff & Sons, Inc., Philadelphia, Pa. Corrected: In the heading, "883,397" should be deleted and *833,397* should be inserted.

834,960. VIBRESIST. Cl. 13. 9–12–67. Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N.Y. Corrected: In the statement, column 2, line 2, after "nuts" *and screws* should be inserted.

835,433. DOG'S BEST FRIEND. Cl. 22. 9–19–67. Items, Incorporated, St. Louis, Mo. Corrected: In the statement, column 2, line 1, "ray-" should be deleted and *raw-* should be inserted.

835,651. GRAYBAR QUALITY AND DESIGN. Cl. 101. 9–19–67. Graybar Electric Company, Inc., New York, N.Y. Corrected: In the statement, column 2, line 6, "1966" should be deleted and *1926* should be inserted.

835,697. FAMOUS MUSICIANS. Cl. 38. 9–19–67. Jay Frederick. Famous Musicians, Inc., Westport, Conn. Corrected: In the statement, column 2, line 4 should be deleted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 1 — Raw or Partly Prepared Materials

433,858. Nov. 4, 1947. Permalite Corporation, New York, N.Y. Pub. by Grefco, Inc., Philadelphia, Pa.

Permalite

For Materials in Powdered and Granular Form Formed From the Minerals Perlite and Ditamoaceous Silica, etc.

Class 6 — Chemicals and Chemical Compositions

236,413. Dec. 13, 1927. Hillyard Chemical Company, St. Joseph, Mo. Pub. by Hillyard Enterprises, Inc., St. Joseph, Mo.

HI-KO

For Disinfectant.

431,811. Aug. 12, 1947. Plant Products Company, assignor to Plant Products Corporation, Blue Point, N.Y. Pub. by Plant Products Corporation, Blue Point, N.Y.

Stim Root

For Insecticides Used for Spraying Plants.

434,679. Dec. 2, 1947. Mary F. Cushing, executrix for the estate of Caleb H. Cushing, d.b.a. W. Cushing & Company, assignor to Mary F. Cushing, d.b.a. W. Cushing and Company, Dover-Foxcroft, Maine. Pub. by William H. Burdick, Dover-Foxcroft, Maine.

"PERFECTION"

For Powdered Dyestuffs, Dry, Water Soluble Derived From Coal Tar and Aniline for Use in Dyeing and/or Tinting Textile Fabrics, etc.

435,134. Dec. 9, 1947. E. I. du Pont de Nemours and Company, Wilmington, Del. Pub. by registrant.

PARZATE

For Agricultural Fungicide.

Class 11 — Inks and Inking Materials

435,308. Dec. 16, 1947. Sun Chemical Corporation, New York, N.Y. Pub. by The Western Petrochemical Corporation, Chanute, Kans.

CARDIS

For Wax for Use in Printing Ink Compositions.

Class 12 — Construction Materials

431,680. July 29, 1947. The Beldam Packing & Rubber Company Limited, London, England. Pub. by registrant.

For Asbestos Fibre for Lagging, Asbestos Covering for Boilers, Pipes, etc.

Class 14 — Metals and Metal Castings and Forgings

431,708. Aug. 5, 1947. Firth Sterling Steel Company, McKeesport, Pa. Pub. by Firth Sterling Inc., Pittsburgh, Pa.

Diecarb

For Sintered Carbide Hard Metal Compositions, etc.

Class 21 — Electrical Apparatus, Machines, and Supplies

220,441. Nov. 9, 1926. Aktiengesellschaft fur Schaltapparate, Bern, Switzerland. Pub. by Saia A.G., Murten, Switzerland.

SAIA

For Electrical Switches—Namely, Automatic Time, Temperature, Remote Control, Manual, and Staircase Switches.

Class 22 — Games, Toys, and Sporting Goods

433,186. Sept. 30, 1947. Animal Trap Company of America, Lititz, Pa. Pub. by Woodstream Corporation, Lititz, Pa.

VICTOR

For Duck Decoys, and Decoys for Other Wild Fowl and Water Fowl.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

61,344. Mar. 19, 1907. William Hunt & Sons, The Brades, Limited, Oldbury, near Birmingham, England. Pub. by registrant.

BRADES

For Trowels.

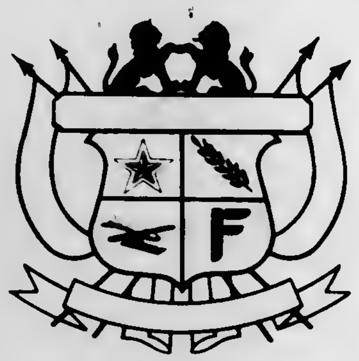
62,586. May 14, 1907. William Hunt & Sons, The Brades, Limited, Oldbury, near Birmingham, England. Pub. by registrant.

BRADES

For Hoes, etc.

Class 31 — Filters and Refrigerators

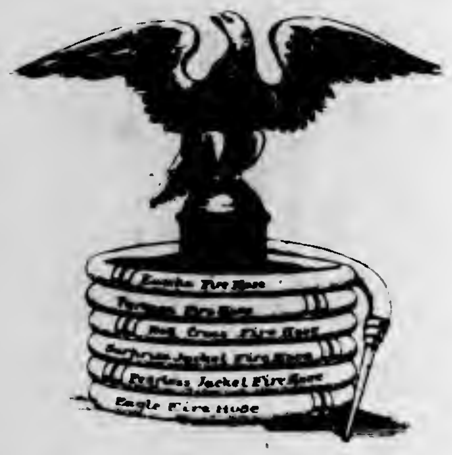
431,194. July 15, 1947. Ed Friedrich, Incorporated, San Antonio, Tex. Pub. by AIC Corporation, San Antonio, Tex.



For Walk-In Coolers, Storage Coolers, etc.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

30,606. Oct. 5, 1897. Eureka Fire Hose Co., New York, N.Y. Pub. by Uniroyal, Inc., New York, N.Y.



For Seamless Fabric Hose.

Class 36 — Musical Instruments and Supplies

156,636. July 11, 1922. The Brunswick-Balke-Collender Company, Wilmington, Del., and Chicago, Ill. Pub. by Coral Records, Inc., New York, N.Y.

Brunswick

For Phonographs and Phonograph Records.

Class 38 — Prints and Publications

66,508. Dec. 10, 1907. The Evening Star Newspaper Co., Washington, D.C. Pub. by registrant.

The Sunday Star.

For Newspaper.

66,509. Dec. 10, 1907. The Evening Star Newspaper Co., Washington, D.C. Pub. by registrant.

The Evening Star.

For Newspaper.

432,372. Sept. 2, 1947. Fred Sands, Kansas City, Mo. Pub. by Ruth G. Jones, Dallas, Tex.

Things Beautiful

For Publications Issued at Irregular Intervals, etc.

Class 39 — Clothing

230,975. Aug. 9, 1927. I. B. Kleinert Rubber Company, New York, N.Y. Pub. by registrant.

"SEA SHELL"

For Bathing Shoes.

232,631. Sept. 13, 1927. United States Rubber Company, New York, N.Y. Pub. by Uniroyal, Inc., New York, N.Y.

Gaytees

For Boots and Shoes Composed of Rubber, Fabric, or Rubber and Fabric.

432,531. Sept. 2, 1947. John B. Stetson Company, Philadelphia, Pa. Pub. by registrant.

Mistral

For Berets for Men, Women, and Children.

Class 45 — Soft Drinks and Carbonated Waters

441,922. Jan. 25, 1949. Midwestern Beverage Laboratories, Inc., St. Louis, Mo. Pub. by Canada Dry Corporation, New York, N.Y.

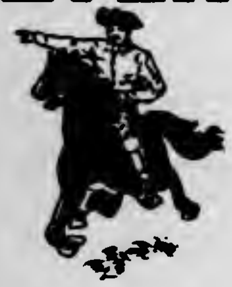
WINK

For Non Alcoholic, Non-Ceral, Maltless Carbonated Beverages, etc.

Class 46 — Foods and Ingredients of Foods

102,174. Jan. 26, 1915. Revere Sugar Refinery, Charlestown, Mass. Pub. by registrant.

REVERE



For Sugar.

227,937. May 17, 1927. Hershey Chocolate Company, Hershey, Pa. Pub. by Hershey Chocolate Corporation, Hershey, Pa.

CHOCLATIER

For Flavoring for Ice Cream and Other Foods.

Class 50 — Merchandise Not Otherwise Classified

65,498. Oct. 8, 1907. Oneida Community Ltd., Oneida and Niagara Falls, N.Y. Pub. by Woodstream Corporation, Lititz, Pa.

JUMP

For Animal Traps.

65,538. Oct. 8, 1907. Oneida Community Ltd., Oneida and Niagara Falls, N.Y. Pub. by Woodstream Corporation, Lititz, Pa.

VICTOR

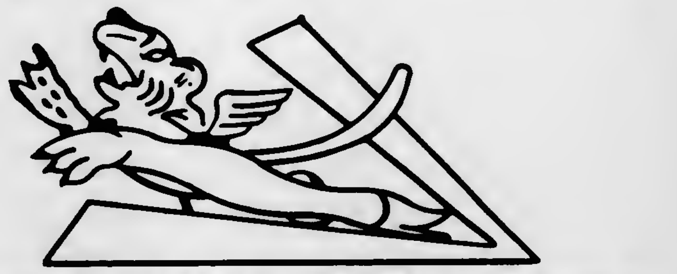
For Animal Traps.

435,874. Jan. 13, 1948. Animal Trap Company of America, Lititz, Pa. Pub. by Woodstream Corporation, Lititz, Pa.

VICTOR BLACK CAT

For Rodent Traps.

435,905. Jan. 13, 1948. The Flying Tigers (American Volunteer Group-Chinese Air Force) Incorporated, Los Angeles, Calif. Pub. by registrant.



For Lapel Buttons Made of Base Metal in the Nature of Insignia.

435,906. Jan. 13, 1948. The Flying Tigers (American Volunteer Group-Chinese Air Force) Incorporated, Los Angeles, Calif. Pub. by registrant.

FLYING

TIGERS

For Lapel Buttons Made of Base Metal in the Nature of Insignia.

435,907. Jan. 13, 1948. The Flying Tigers (American Volunteer Group-Chinese Air Force) Incorporated, Los Angeles, Calif. Pub. by registrant.

FLYING
TIGERS

For Lapel Buttons Made of Base Metal in the Nature of Insignia.

Class 51 — Cosmetics and Toilet Preparations

432,579. Sept. 9, 1947. Wetherholt's Perfume Co., Chicago, Ill. Pub. by Franth Wetherholts, Chicago, Ill.

Out of this World

For Perfume and Cologne.

Class 52 — Detergents and Soaps

59,202. Jan. 1, 1907. The Pompeian Mfg. Co., Cleveland, Ohio. Pub. by Pompeian Olive Oil Corporation, Baltimore, Md.

Pompeian

For Ointment and Cream for the Toilet, etc.

INDEX OF REGISTRANTS

NOVEMBER 7, 1967

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

AB Autokemi, Stockholm O, Sweden. 838,343, pub. 8–22–67. Cl. 26.
AIC Corp.: *See—*
  Friedrich, Ed, Inc.
Accurate Mfg. Co., Chicago, Ill. 838,327, pub. 8–22–67. Cl. 23.
Acme Sales Co., Camden, N.J. 721,559, canc. Cl. 21.
Aertex Ltd.: *See—*
  Cellular Clothing Co., Ltd.
Agfa Ansco Corp., Binghamton, N.Y. 290,126, ren. 11–7–67. Cl. 26.
Agri-Tek, Inc., Kaukauna, Wis. 838,310, pub. 8–22–67. Cl. 23.
Air Control, Inc., Norristown, Pa. 838,374, pub. 8–22–67. Cl. 34.
Aktiengesellschaft fur Schaltapparate, Bern, by Sala A.G., Murten, Switzerland. 220,441, 12(c) pub. 11–7–67. Cl. 21.
Albudon Products Co.: *See—*
  Robinson, A., Inc. of Altoona.
Alcauta, Antonio, & Cia.: *See—*
  Randazzo, John J. G.
All Services Co.: *See—*
  Westerhausen, Robert A.
Allied Chemical Corp.: *See—*
  National Aniline & Chemical Co., Inc.
Allied Chemical Corp., New York, N.Y. 838,143, pub. 5–16–67. Multiple Class (Classes 1 and 43).
All-Rite Pen Co., Inc., Hackensack, N.J. 838,401, pub. 8–22–67. Cl. 37.
Alumatic Corp. of America: *See—*
  Aluminum Building Products Co.
Aluminum Building Products Co., to Alumatic Corp. of America, Milwaukee, Wis. 436,651, ren. 11–7–67. Cl. 12.
Amco of Norvelt, Inc., New York, N.Y. 838,442, pub. 8–22–67. Cl. 39.
American Allsafe Co., Inc., Buffalo, N.Y. 838,352, pub. 8–22–67. Cl. 26.
American Bakeries Co., Chicago, Ill. 838,468, pub. 8–22–67. Cl. 46.
American Can Co., New York, N.Y. 721,626, canc. Cl. 37.
American Cyanamid Co., Wayne, N.J. 838,230, pub. 8–22–67. Cl. 18.
American Cyanamid Co., Wayne, N.J. 838,461–2, pub. 8–22–67. Cl. 44.
American Gas Association, Inc., New York, N.Y. 508,003. Am. 7(d). Cl. 34.
American Gas Association, Inc., New York, N.Y. 510,770. Am. 7(d). Cl. 24.
American Gas Association, Inc., New York, N.Y. 513,645. Am. 7(d). Cl. 31.
American Gas Association, Inc., New York, N.Y. 801,539. Am. 7(d). Cl. A.
American Hoist & Derrick Co., St. Paul, Minn. 838,321, pub. 8–22–67. Cl. 23.
American Home Products Corp., New York, N.Y. 838,247, pub. 8–22–67. Cl. 18.
American Home Products Corp., New York, N.Y. 838,274, pub. 8–22–67. Multiple Class (Classes 21, 29, and 34).
American Oil Co., The, Chicago, Ill. 838,218, pub. 8–22–67. Cl. 15.
American Philosophical Institute of Cosolargy, New Smyrna Beach. Fla. 721,719–20, canc. Cl. 200.
American Republic Insurance Co., Des Moines, Iowa. 838,463, pub. 8–22–67. Cl. 44.
Amicon Corp., Cambridge, Mass. 838,282, pub. 8–22–67. Cl. 21.
Amway Corp., Ada, Mich. 838,365, pub. 8–22–67. Cl. 29.
Anaconda Wire and Cable Co., to Anaconda Wire and Cable Co., New York, N.Y. 436,384, ren. 11–7–67. Cl. 21.
Animal Trap Co. of America, by Woodstream Corp., Letitz, Pa. 433 186, 12(c) pub. 11–7–67. Cl. 22.
Animal Tran Co. of America, by Woodstream Corp., Letitz, Pa. 435,874, 12(c) pub. 11–7–67. Cl. 50.
Arden, Elizabeth, Sales Corp., New York, N.Y. 838,523, pub. 8–22–67. Cl. 51.
Armstrong Cork Co., Lancaster, Pa. 838,263–4, pub. 8–22–67. Cl. 20.
Associated Brands, Inc., Brooklyn, N.Y. 721.702, canc. Cl. 51.
Atlas Chemical Industries, Inc., Wilmington, Del. 838,172, pub 8–22–67. Cl. 6.
Auto-Soler Co., The, Atlanta, Ga. 838,398, pub. 8–22–67. Cl. 37.
Avenger Yachts, Inc., Miami, Fla. 838,255, pub. 8–22–67. Cl. 19.
Avon Products, Inc., New York, N.Y. 838,516, pub. 12–13–66. Cl. 51.
Avon Products, Inc., from Richardson-Harris, Inc., New York, N.Y. 838,517, pub. 12–13–66. Cl. 51.
Axioma A.G., Glarus, Switzerland. 838,386, pub. 8–22–67. Cl. 36.
Azrak-Hamway International Inc., New York, N.Y. 838,301, pub. 8–22–67. Cl. 22.
Bachmann Bros., Inc., Philadelphia, Pa. 721,691, canc. Cl. 50.
Baker, C. F., & Co., Inc., Framingham, Mass. 838,210, pub. 8–22–67. Cl. 13.
Balanced Foods, Inc., New York, N.Y. 838,489, pub. 8–22–67. Cl. 46.
Baldwin, D. H., Co., Cincinnati, Ohio. 838,566. Cl. 21.
Balfour Shirtmaker Ltd., New York, N.Y. 838,434–5, pub. 8–22–67. Cl. 39.
Baptist Joint Committee On Public Affairs, Washington, D.C. 838,575. Cl. 38.
Bata Shoe Co., Inc., Belcamp, Md. 838,440, pub. 8–22–67. Cl. 39.
Bates Mfg. Co., Inc., Lewiston, Maine. 838,454, pub. 8–22–67. Cl. 40.
Batik Wine & Spirits, Inc., Los Angeles, Calif. 838,503, pub. 8–22–67. Cl. 47.
Beacon Mfg. Co., Swannanoa, N.C. 721,648–9, canc. Cl. 42.
Beacon Steel Products Co., Inc., Westminster, Md. 838,376, pub. 8–22–67. Cl. 34.
Beacon Steel Products Co., Inc., Westminster, Md. 838,512, pub. 8–22–67. Cl. 50.
Beaunit Corp., New York, N.Y. 838,458, pub. 5–23–67. Cl. 42.
Beck, A. S., Shoe Corp., New York, N.Y. 838,444, pub. 8–22–67. Cl. 39.
Becker, Napoleon C., Amsterdam, N.Y., to B. B. Maksel, Jersey City, N.J. 30,595, ren. 11–7–67. Cl. 44.
Behringwerk Aktiengesellschaft, Marburg (Lahn), Germany. 838,226, pub. 8–22–67. Cl. 18.
Beldam Packing & Rubber Co., Ltd., The. London, England. 431.680, 12(c) pub. 11–7–67. Cl. 12.
Bell, W., & Co., Inc., Washington, D.C. 838,364, pub. 8–22–67. Cl. 28.
Beltx Corp., St. Louis, Mo. 838,460, pub. 8–22–67. Cl. 44.
Berg, Joseph E., d.b.a. Berg Industries, Los Angeles, Calif. 838 584–5. Cl. 106.
Berg Industries: *See—*
  Berg, Joseph E.
Bergsten, Arvid H., Anoka, Minn. 838,291, pub. 8–22–67. Cl. 22.
Big Dutchman, Inc., Zeeland, Mich. 838,375, pub. 8–22–67. Cl. 34.
Binswanger Glass Co., Richmond, Va. 838,201, pub. 8–22–67. Cl. 12.
Bison Corp., Canton, Ohio. 838,533, pub. 8–22–67. Cl. 52.
Blackman-Uhler Co., to Synalloy Corp., Spartanburg, S.C. 433.427, ren. 11–7–67. Cl. 52.
Blue Cross Mattress, Inc.: *See—*
  Oslason, Inc.
Boehringer, C. H., Sohn, Ingelheim (Rhine), Germany. 721,-537, canc. Cl. 18.
Bohn. Karl A., Queens Village, N.Y. 838,332, pub. 8–22–67. Cl. 23.
Bond Stores, Inc., New York, N.Y. 838,416, pub. 8–22–67. Cl. 39.
Bowser, Inc., Greeneville, Tenn. 838,347, pub. 8–22–67. Cl. 26.
Bozzi, Emilio, S.p.A., Milan, Italy. 838,254, pub. 8–22–67. Cl. 19.
Brasserie de Mutzig Anct. J. Wagner S.A., Mutzig, Bas-Rhin, France. 838,579. Multiple Class (Classes 45 and 48).
Brasserie de Mutzig Anct. J. Wagner S.A., Mutzig, Bas-Rhin, France. 838,581. Cl. 48.
Bressan Export-Import, Inc., d.b.a. Bressan Footwear Co., Alliance, Ohio. 838,430–1, pub. 8–22–67. Cl. 39.
Bressan Foot Wear Co.: *See—*
  Bressan Export-Import, Inc.
Brilhart, Arnold, Oceanside, Calif. 838,568. Cl. 22.
Brown, Boveri & Cie Aktiengesellschaft, Mannheim-Kafertal, Germany. 838.345, pub. 8–22–67. Cl. 26.
Brugh Engineering Co.: *See—*
  Brugh, Roy O.
Brugh, Roy O., d.b.a. Brugh Engineering Co., South Bend, Ind. 721,600, canc. Cl. 31.
Brunswick-Blake-Collender Co., The, Wilmington, Del., and Chicago, Ill., by Coral Records, Inc., New York, N.Y. 156,636. 12(c) pub. 11–7–67. Cl. 36.
Bucyrus-Erie Co., South Milwaukee, Wis. 838,333. pub. 8–22–67. Cl. 23.
Bulova Watch Co., Inc., New York, N.Y. 226,889, ren. 11–7–67. Cl. 27.
Bulova Watch Co., Inc., to Bulova Watch Co., Inc., New York, N.Y. 233.491, ren. 11–7–67. Cl. 27.
Bulova Watch Co., Inc., New York, N.Y. 235,456, ren. 11–7–67. Cl. 27.
Burdick, William H.: *See—*
  Cushing, Mary F.
Burgess Pigment Co., Sandersville, Ga. 838,151, pub. 8–22–67. Cl. 1.
Byer, A. M., Co., Ambridge, Pa. 838.211, pub. 8–22–67. Cl. 13.
C.B.S. Maglieria di Lusso S.p.A., Milan, Italy. 838,417, pub. 8–22–67. Cl. 39.
C. and C. Mfg. Co., Groton, N.Y. 838,259, pub. 8–22–67. Cl. 19.
C.I.T. Financial Corp., New York, N.Y. 838,553, pub. 8–22–67. Cl. 102.
CPM Systems, Inc., Sherman Oaks, Calif. 838,540, pub. 8–22–67. Multiple Class (Classes 100 and 101).
Caboose. Inc., Springfield, Ill. 838,423, pub. 8–22–67. Cl. 39.
Cabot Corp., Boston, Mass. 838,351, pub. 8–22–67. Cl. 26.

California Farm Supply Co., Berkeley, Calif. 721,484, canc. Cl. 6.
Camco, Inc., Houston, Tex. 838,320, pub. 8–22–67. Cl. 23.
Canada Dry Corp.: *See*—
  Midwestern Beverage Laboratories, Inc.
Cannon Mills Co., Kannapolis, N.C. 838,446, pub. 8–22–67. Cl. 39.
Caprico International, Inc., New York, N.Y. 721,566, canc. Cl. 22.
Carnation Co., Los Angeles, Calif. 838,490, pub. 8–22–67. Cl. 46.
Carter-Wallace, Inc., New York, N.Y. 838,227, pub. 8–22–67. Cl. 18.
Carter-Wallace, Inc., New York, N.Y. 838,229, pub. 8–22–67. Cl. 18.
Carter-Wallace, Inc., New York, N.Y. 838,520, pub. 8–22–67. Cl. 51.
Cawy Bottling Co. Inc., d.b.a. Cawy Bottling Co., Hialeah, Fla. 838,466, pub. 8–22–67. Cl. 45.
Celanese Corp. of America, New York, N.Y. 721,468, canc. Cl. 2.
Cellular Clothing Co., Ltd., London, to Aertex Ltd., Derbyshire, England. 63,163, ren. 11–7–67. Cl. 39.
Century Merchandise Service, Inc., Minneapolis, Minn. 838,324, pub. 8–22–67. Cl. 23.
Ceske Zavody Motocyklove, Narodni Podnik, Strakonice, Czechoslovakia. 721,548, canc. Cl. 19.
Ceskoslovenske Cokoladovny, Oborovy Podnik, Modrany, Modrany, Czechoslovakia. 838,475, pub. 8–22–67. Cl. 46.
Cheek-Neal Coffee Co., Nashville, Tenn., to General Foods Corp., White Plains, N.Y. 212,831, ren. 11–7–67. Cl. 46.
Chemetron Corp., Chicago, Ill. 838,373, pub. 8–22–67. Cl. 34.
Chemical & Electronic Research Corp., Baltimore, Md. 721,495, canc. Cl. 6.
Chemical Rubber Co., The, Cleveland, Ohio. 832,934, cor. Cl. 38.
Chemi-Trol Chemical Co.: *See*—
  Chemi-Trol Products.
Chemi-Trol Products, to Chemi-Trol Chemical Co., Gibsonburg, Ohio. 433,736, ren. 11–7–67. Cl. 6.
Chemtronics Inc., Brooklyn, N.Y. 838,567. Cl. 21.
Chicago Manifold Products Co, Chicago, Ill. 838,317, pub. 2–28–67. Cl. 23.
Ciba Ltd., Basle, Switzerland. 838,181, pub. 8–22–67. Cl. 6.
Ciba Ltd., Basle, Switzerland. 838,182, pub. 8–22–67. Cl. 6.
Clairol Inc., New York, N.Y. 838,521, pub. 8–22–67. Cl. 51.
Clark Equipment Co., Buchanan, Mich. 838,322, pub. 8–22–67. Cl. 23.
Clary Dynamics Corp., from Flo-Ball Pen Corp., San Gabriel. Calif. 721,515, canc. Cl. 13.
Colgate & Co., Jersey City, N.J., to Colgate-Palmolive Co., New York, N.Y. 232,925, ren. 11–7–67. Cl. 51.
Colgate-Palmolive Co.: *See*—
  Colgate & Co.
Colgate-Palmolive Co., New York, N.Y. 838,239, pub. 8–22–67. Cl. 18.
Collator Corp., Seattle, Wash. 838,315, pub. 8–22–67. Cl. 23.
Colorado School of Accordion, Inc., Colorado Springs, Colo. 838,387, pub. 8–22–67. Cl. 36.
Commerce Engraving, Inc., Lynn, Mass. 838,344, pub. 8–22–67. Cl. 26.
Commercial Carports, Inc., Jerome, Idaho. 838,199, pub. 8–22–67. Cl. 12.
Consolidated Foods Corp., d.b.a. Lawson Milk Co., Cuyahoga Falls, Ohio. 721,677, canc. Cl. 46.
Consolidated Research and Mfg. Corp., New Haven, Conn. 721,725–6, canc. Cl. 6.
Con-Stan Industries, Inc., El Monte, Calif. 838,225, pub. 8–22–67. Cl. 18.
Constantin Rauch Ulmer Schraubenfabrik, Ulm (Danube), Germany. 721,577, canc. Cl. 23.
Continental Casualty Co., Chicago, Ill. 838,582–3. Cl. 102.
Continental Coffee Co., Chicago, Ill. 838,487–8, pub. 8–22–67. Cl. 46.
Continental Fastener Corp., Evanston, Ill. 838,214, pub. 8–22–67. Cl. 13.
Copystatics Mfg. Corp., Miami Lakes, Fla. 838,183, pub. 8–22–67. Cl. 6.
Coral Records, Inc.: *See*—
  Brunswick-Blake-Collender Co., The.
Couderc, J., & Cie: *See*—
  Couderc, Justin.
Couderc, Justin, d.b.a. J. Couderc & Cie., to Societe Anonyme des Caves Associates, Roquefort, France. 235,669, ren. 11–7–67. Cl. 46.
Crete, Charles A., d.b.a. Pharmaceutical Associates, San Francisco, Calif. 838,234, pub. 8–22–67. Cl. 18.
C-Thru Products Inc., Brooklyn, N.Y. 838,159–60, pub. 8–22–67. Cl. 2.
Cudahy Tanning Co., Inc., Cudahy, Wis. 838,150, pub. 8–22–67. Cl. 1.
Cushing, Mary F., executrix for the Estate of Caleb H. Cushing, d.b.a. W. Cushing & Co., assor. to Mary F. Cushing, d.b.a. W. Cushing and Co, by William H Burdick, Dover-Foxcraft. Maine. 434,679. 12(c) pub. 11–7–67. Cl. 6.
Dabisch, Wolfgang, d.b.a. Tipp-Ex Fabrication, Groos Strasse (Rhine), Germany. 838,393. pub. 8–22–67. Cl. 37.
Dan River Mills, Inc., Danville, Va. 838,457, pub. 5–23–67. Cl. 42.
Dana: *See*—
  Les Parfums de Dana, Inc.
Daroff, H., & Sons, Inc., Philadelphia, Pa. 833,397. cor. Cl. 39.
Decatur Industries, Inc., Decatur, Ind. 838,187, pub. 6–21–67. Cl. 8.
Delta Roofing Mills Inc., Slidell, La. 838,203, pub. 8–22–67. Cl. 12.
De Luxe Girdlecraft Co., Inc., New York, N.Y. 838,419, pub. 8–22–67. Cl. 39.
De Luxe Topper Corp., Elizabeth, N.J. 838,298, pub. 8–22–67. Cl. 22.
Denton Sleeping Garment Mills, Inc., Chicago, Ill. 838,420, pub. 8–22–67. Cl. 39.
Developments Unltd. Inc., Passaic, N.J. 838,528, pub. 8–22–67. Cl. 52.
Diamond Alkali Co., Cleveland, Ohio. 838,538, pub. 8–22–67. Cl. 52.
Dicrolite Co.: *See*—
  Dicrolite Co., Inc.
Dicrolite Co., Inc., Everett, from Dicrolite Co., Edmonds, Wash. 838,268, pub. 12–6–66. Cl. 21.
Diener Industries, Inc., Van Nuys, Calif. 838,293, pub. 8–22–67. Cl. 22.
Difini Originals, Inc., Bronx, N.Y. 838,427, pub. 8–22–67. Cl. 39.
Di Giorgio Fruit Corp., San Francisco, Calif. 721,666, canc. Cl. 46.
Doane Agricultural Service, Inc., St. Louis, Mo. 721,735, canc. Cl. 100.
Dodge Mfg. Corp., Mishawaka, Ind. 838,307, pub. 5–2–67. Cl. 23.
Dodson Bros. Sales Co., Inc., St. Louis, Mo. 838,396, pub. 8–22–67. Cl. 37.
Dolgorukov, Gregory S., d.b.a. Dolgorukov Mfg. Co., Detroit, Mich. 838,339, pub. 8–22–67. Cl. 26.
Dolgorukov Mfg Co.: *See*—
  Dolgorukov, Gregory S.
Dow Chemical Co., The, Midland, Mich., to S. B. Penick & Co., New York, N.Y. 433,805, ren. 11–7–67. Cl. 51.
Dow Chemical Co., The, Midland, Mich. 838,146, pub. 8–22–67. Cl. 1.
Dow Chemical Co., The, Midland, Mich. 838,316, pub. 8–22–67. Cl. 23.
Dow Corning Corp., Midland, Mich. 838,220, pub. 8–22–67. Cl. 16.
Doyen, Louis, and Leon Doyen, Lyon, France. 838,155, pub. 8–22–67. Cl. 2.
Drake Bakeries Inc., New York, N.Y. 721,658, canc. Cl. 46.
Dresser Industries, Inc., d.b.a. Lane Wells Co., Dallas, Tex. 838,541, pub. 8–22–67. Cl. 100.
Drug City, Inc., d.b.a. Drug World, Burlingame, Calif. 838,231, pub. 9–5–67. Cl. 18.
Drug World: *See*—
  Drug City, Inc.
Dubrow & Bravman, Inc., Boston, Mass. 838,443, pub. 8–22–67. Cl. 39.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 435,134, 12(c) pub. 11–7–67. Cl. 6.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 838,189, pub. 8–22–67. Cl. 9.
Duralex Paints Pty., Ltd., New South Wales, Australia. 721,527, canc. Cl. 16.
Dynamic Classics, Ltd., New York, N.Y. 838,511, pup 8–22–67. Cl. 50.
E-Z Walk Corp., New York, N.Y. 428,382, ren. 11–7–67. Cl. 44.
Eaton Allen Corp., Brooklyn, N.Y. 838,391, pub. 8–22–67. Cl. 37.
Eaton Yale & Towne Inc., Cleveland, Ohio. 838,212, pub. 8–22–67. Cl. 13.
Eaton Yale & Towne Inc., Cleveland, Ohio. 838,216, pub. 8–22–67. Cl. 14.
Edy's Character Candies of Northern California, d.b.a. Edy's, Oakland, Calif. 838,481, pub. 8–22–67. Cl. 46.
Egry Register Co., The, Dayton, Ohio. 721,511, canc. Cl. 11.
Eldon Industries, Inc., Hawthorne, Calif. 838,302, pub. 8–22–67. Cl. 22.
Eldon Industries, Inc., Hawthorne, Calif. 838,304, pub. 8–22–67. Cl. 22.
Electronic Memories, Inc., Hawthorne, Calif. 838,354–5, pub. 8–22–67. Cl. 26.
Eleven-Eleven Corp., Bayamon, Puerto Rico. 838,412, pub. 8–22–67. Cl. 39.
Elkon Works, Inc., Weehawken, N.J., to P. R. Mallory & Co., Inc., Indianapolis, Ind. 234,831, ren. 11–7–67. Cl. 14.
Emerson Electric Co., St. Louis, Mo. 838,275, pub. 8–22–67. Cl. 21.
Emhart Corp., Hartford, Conn. 838,194, pub. 8–22–67. Cl. 10.
Empire Metal Products Co., Cambridge, Mass. 436,686, ren. 11–7–67. Cl. 12.
Era, Anthony M., Sr., Omaha, Nebr. 838,409, pub. 8–22–67. Cl. 38.
Eureka Fire Hose Co., by Uniroyal, Inc., New York, N.Y. 30,606, 12(c) pub. 11–7–67. Cl. 35.
Evening Star Newspaper Co., The, Washington, D.C. 66,508–9, 12(c) pub. 11–7–67. Cl. 38.
Ever Ready Co. (Great Britain) Ltd., Whetstone, London, England. 838,281, pub. 8–22–67. Cl. 21.
Exposition Drayage Division, Inc., New York, N.Y. 838,557, pub. 8–22–67. Cl. 105.
Faber-Luft, Ltd.: *See*—
  Mattel, Inc.
Fairchild Camera and Instrument Corp., Syosset, N.Y. 838,184, pub. 8–22–67. Cl. 6.
Fairchild Camera and Instrument Corp., Syosset, N.Y. 838,353, pub. 8–22–67. Cl. 26.
Fantus Co., Inc., The, New York, N.Y. 838,542, pub. 8–22–67. Cl. 100.
Farbwerke Hoechst Aktiengesellschaft, Frankfurt (Main), Germany. 838,529, pub. 8–22–67. Cl. 52.
Farmers Cooperative Creamery Association, d.b.a. Farmer's Co-op Creamery Ass'n., Slater, Iowa. 838,486, pub. 8–22–67. Cl. 46.
Fashinder, Anton, d.b.a. Stainless Metal Craft Co., Chicago, Ill. 721,690, canc. Cl. 50.
Ferguson, George M., Portland, Oreg. 436,158, ren. 11–7–67. Cl. 44.

Fim Bruchard Publishing Corp., New York, N.Y. 838,576. Cl. 38.
Firma Carl Heinz Buer Chemisch-Pharmazutische Fabrik, Koln-Braunsfeld, Germany. 721,535, canc. Cl. 18.
Firth Sterling Inc.: *See*—
  Firth Sterling Steel Co.
Firth Sterling Steel Co., McKeesport, by Firth Sterling Inc., Pittsburgh, Pa. 431,708, 12(c) pub. 11–7–67. Cl. 14.
Fisher Governor Co., Marshalltown, Iowa. 838,207, pub. 8–22–67. Cl. 13.
Fisher-Price Toys, Inc., East Aurora, N.Y. 838,294, pub. 8–22–67. Cl. 22.
Fitzgerald Underwear Corp., New York, N.Y. 838,432, pub. 8–22–67. Cl. 39.
Fleet Wholesale Supply Co., Inc., Appleton, Wis. 838,436, pub. 8–22–67. Cl. 39.
Flexnit Co., Inc., New York, N.Y. 838,445, pub. 8–22–67. Cl. 39.
Flo-Ball Pen Corp.: *See*—
  Clary Dynamics Corp.
Flomar Co., The: *See*—
  Keefe, John M.
Flying Tigers (American Volunteer Group-Chinese Air Force) Inc., The, Los Angeles, Calif. 435,905–7, 12(c) pub. 11–7–67. Cl. 50.
Food Products Co. of America, Chicago, Ill., from Pharmaceutical Laboratories, Inc., Plainfield, N.J. 838,170, pub. 8–22–67. Multiple Class (Classes 6, 18, 44, and 51).
Food Technology, Inc., Chicago, Ill. 838,478–9, pub. 8–22–67. Cl. 46.
Forestville Industries, Inc., New York, N.Y. 838,286, pub. 8–22–67. Cl. 21.
Formco, Inc., Cincinnati, Ohio. 838,368, pub. 1–3–67. Cl. 32.
Formco, Inc., Cincinnati, Ohio. 838,572. Cl. 32.
Foto Features, Inc., from Foto Fillers, Inc., Woodland, Calif. 838,573. Cl. 38.
Foto Fillers, Inc.: *See*—
  Foto Features, Inc.
Fox, Clarice, d.b.a. Foxy Products, Bedford, Mass. 721,473, canc. Cl. 3.
Fragrance Process Co., Inc., The, New York, N.Y. 721,555, canc. Cl. 21.
Frederick, Jay, Famous Musicians, Inc., Westport, Conn. 835,697, cor. Cl. 38.
Freightliner Corp., Portland, Oreg. 838,256, pub. 8–22–67. Cl. 19.
Friedrich, Ed, Inc., by AIC Corp., San Antonio, Tex. 431,194, 12(c) pub. 11–7–67. Cl. 31.
Friend Associates, Inc., Hillside, N.J. 838,451, pub. 8–22–67. Cl. 40.
Fuller Tool Co., Inc., New York, N.Y. 721,592, canc. Cl. 23.
Gakken Co., Ltd., Ota-Ku, Tokyo, Japan. 838,272, pub. 8–22–67. Cl. 21.
Gallo, E. & J., Winery, d.b.a. Gallo Vineyards, Modesto, Calif. 838,504, pub. 8–22–67. Cl. 47.
Gallo Vineyards: *See*—
  Gallo, E. & J., Winery.
Gates Rubber Co., The, Denver, Colo. 435,462. ren. 11–7–67. Cl. 23.
Gates Rubber Co., The, Denver, Colo. 838,382, pub. 8–22–67. Cl. 35.
Geigy Chemical Corp., Ardsley, N.Y. 721,487, canc. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 838,349, pub. 8–22–67. Cl. 26.
General Engineering & Mfg. Corp., Andrews, Ind. 838,250, pub. 8–22–67. Cl. 19.
General Foods Corp.: *See*—
  Cheek-Neal Coffee Co.
General Mills, Inc., Minneapolis, Minn. 838,497, pub. 8–22–67. Cl. 46.
General Refractories Co., Philadelphia, Pa. 829,666, canc. Cl. 12.
Genesco Inc., Nashville, Tenn. 838,428, pub. 8–22–67. Cl. 39.
Germain's, Inc., Los Angeles, Calif. 838,144, pub. 8–22–67. Cl. 1.
Giannini Controls Corp., New York, N.Y. 838,357, pub. 8–22–67. Cl. 26.
Gill, Harry, Co., The, Urbana, Ill. 721,570, canc. Cl. 22.
Gillette Co., The, Boston, Mass. 838,570. Cl. 23.
Glidden Co., The, Cleveland, Ohio. 838,168, pub. 8–22–67. Cl. 5.
Global Import & Export, Inc., Miami, Fla. 838,284, pub. 8–22–67. Cl. 21.
Glover, H. Clay, Co., Inc., Garden City, N.Y. 721,709, canc. Cl. 52.
Gold Eagle Products Co., Chicago, Ill. 838,217, pub. 8–22–67. Cl. 15.
Goldring Inc., New York, N.Y. 838,425. pub. 8–22–67. Cl. 39.
Goodrich, B. F., Co., The, to The B. F. Goodrich Co., Akron, Ohio. 65,001–3. ren. 11–7–67. Cl. 35.
Goodrich B. F., Co., The, to The B. F. Goodrich Co., Akron, Ohio. 65,005. ren. 11–7–67. Cl. 35.
Goodrich. B. F., Co., The, to The B. F. Goodrich Co., Akron, Ohio. 65,008, ren. 11–7–67. Cl. 35.
Goodrich. B. F., Co., The, to The B. F. Goodrich Co., Akron, Ohio. 65,012–14, ren. 11–7–67. Cl. 35.
Goodrich. B. F., Co., The. to The B. F. Goodrich Co., Akron, Ohio. 65,410–11, ren. 11–7–67. Cl. 35.
Goodrich B. F., Co., The, to The B. F. Goodrich Co., Akron, Ohio. 65,413, ren. 11–7–67. Cl. 35.
Goodrich. B. F., Co., The. to The B. F. Goodrich Co., Akron, Ohio. 65,415–16, ren. 11–7–67. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 838,379–80. pub. 9–7–65. Cl. 35.
Gorton Corp., The, from The Gorton Corp., d.b.a. Gorton's of Gloucester, Gloucester, Mass. 838,477, pub. 8–22–67, Cl. 46.
Goya Ltd., London, England. 838,522, pub. 8–22–67. Cl. 51.
Goya Ltd., London, England. 838,530, pub. 8–22–67. Cl. 52.
Grace, W. R., & Co., New York, N.Y. 838,240, pub. 8–22–67. Cl. 18.
Grant Publishing Corp., Chicago, Ill. 721,631, canc. Cl. 38.
Graybar Electric Co., Inc., New York, N.Y. 835,651, cor. Cl. 101.
Greensboro Ice Cream Co., Greensboro, Md. 721,675, canc. Cl. 46.
Greetings Unlimited, Inc., St. Paul, Minn. 721,633, canc. Cl. 38.
Grefco, Inc.: *See*—
  Permalite Corp.
Gregory Amplifier Corp., The, Bronx, N.Y. 838,273, pub. 6–20–67. Cl. 21.
Greiner, Paul E., Mobile, Ala. 838,295, pub. 8–22–67. Cl. 22.
Grigsby-Barton, Inc., Arlington Heights, Ill. 838,266, pub. 3–22–67. Cl. 21.
Grossman Music Corp., Cleveland, Ohio. 838,384, pub. 8–22–67. Cl. 36.
Grower Service Corp., New York, N.Y. 838,171, pub. 8–22–67. Cl. 6.
Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. 838,305, pub. 8–22–67. Cl. 22.
Guilliams, Gordon L., d.b.a. Nob Hill Ice Cream Co., Portland, Oreg. 838,484, pub. 8–22–67. Cl. 46.
Gulf Laminates, Inc., Picayune, Miss. 721,607, canc. Cl. 32.
Hagan Chemicals & Controls, Inc., Pittsburgh, Pa. 721,578, canc. Cl. 23.
Hair Fashions, Inc., Philadelphia, Pa. 838,452, pub. 8–22–67. Cl. 40.
Hamac-Hansella Aktiengesellschaft: *See*—
  Hamac-Hansella Gesellschaft mit beschrankter Haftung.
Hamac-Hansella Gesellschaft mit beschrankter Haftung, from Hamac-Hansella Aktiengesellschaft, Viersen, Rhineland, Germany. 838,308, pub. 8–22–67. Cl. 23.
Hammarlund Mfg. Co.: *See*—
  Hammarlund Mfg. Co., Inc.
Hammarlund Mfg. Co., Inc., d.b.a. Hammarlund Mfg. Co., Amityville, N.Y. 838,285, pub. 8–22–67. Cl. 21.
Hammel, Riglander & Co., to Hammel, Riglander & Co., Inc., New York, N.Y. 66,021, ren. 11–7–67. Cl. 33.
Hammel, Riglander & Co., Inc.: *See*—
  Hammel, Riglander & Co.
Hansen North America, Inc., Spokane, Wash. 838,258, pub. 8–22–67. Cl. 19.
Harnischfeger Corp., Milwaukee, Wis. 838,198, pub. 8–22–67. Cl. 12.
Harris Mfg. Co., Johnson City, Tenn. 838,196, pub. 8–22–67. Cl. 12.
Harvest Home Foods, Inc., Roan Mountain, Tenn. 838,491, pub. 8–22–67. Cl. 46.
Harvey Features Syndicate, New York, N.Y. 432,587, ren. 11–7–67. Cl. 38.
Haskon, Inc., Long Island City, N.Y. 838,513, pub. 8–22–67. Cl. 50.
Hassenfeld Bros., Inc., Pawtucket, R.I. 838,299–300, pub. 8–22–67. Cl. 22.
Haveg Industries, Inc., Wilmington, Del. 838,153, pub. 8–22–67. Cl. 2.
Hawaiian Fern-Wood, Ltd., Hilo, Hawaii. 721,689, canc. Cl. 50.
Henson-Kickernick, Inc.: *See*—
  Kickernick, Inc.
Hershey Chocolate Co., by Hershey Chocolate Corp., Hershey, Pa. 227,937, 12(c) pub. 11–7–67. Cl. 46.
Hershey Chocolate Corp.: *See*—
  Hershey Chocolate Co.
Hillyard Chemical Co., by Hillyard Enterprises, Inc., St. Joseph, Mo. 236,413, 12(c) pub. 11–7–67. Cl. 6.
Hillyard Enterprises, Inc.: *See*—
  Hillyard Chemical Co.
Hinckley, Henry R., & Co., Southwest Harbor, Maine. 838,262, pub. 8–22–67. Cl. 19.
Hobart Mfg. Co., The: *See*—
  Kitchenaid Mfg. Co., The.
Hoerner-Waldorf Corp., St. Paul, Minn. 838,161, pub. 8–22–67. Cl. 2.
Hoffman Electronics Corp., Los Angeles, Calif. 721,557, canc. Cl. 21.
Hoffman's Springs: *See*—
  York Bar Bell Co., Inc.
Hollings-Smith Co., Inc., d.b.a. Hollings-Smith Co., Orangeburg, N.Y. 838,244, pub. 8–22–67. Cl. 18.
Honeybee, Inc., St. Joseph, Mo. 838,413, pub. 8–22–67. Cl. 39.
Hooker Chemical Corp., Niagara Falls, N.Y. 838,221, pub. 8–22–67. Cl. 16.
Howmet Corp., New York, N.Y. 838,280, pub. 8–22–67. Cl. 21.
Hudson National, Inc., New York, N.Y. 838,241, pub. 8–22–67. Cl. 18.
Huffman Mfg. Co., The, Miamisburg, Ohio. 838,569. Cl. 23.
Hunt, William, & Sons, The Brades, Ltd., Oldbury, near Birmingham, England. 61,344, 12(c) pub. 11–7–67. Cl. 23.
Hunt, William, & Sons, The Brades, Ltd., Oldbury, near Birmingham, England. 62,586. 12(c) pub. 11–7–67. Cl. 23.
Industrial Condenser Corp., Chicago, Ill. 838,287, pub. 8–22–67. Cl. 21.
Inland Steel Products Co., Milwaukee, Wis. 721,529, canc. Cl. 16.
Inn America, Inc., Southgate, from Inn America, Inc., Ann Arbor, Mich. 838,539. pub. 6–8–65. Cl. 100.
Insurance Co. of North America, Philadelphia, Pa. 838,554, pub. 8–22–67. Cl. 102.
Intercontinental Import & Export Co., Inc., Chicago, Ill. 838,506, pub. 8–22–67. Cl. 49.
International Cellucotton Products Co., Chicago, Ill., to Kimberly-Clark Corp., Neenah, Wis. 432,836, ren. 11–7–67. Cl. 37.
International Corrugated Case Association, Washington, D.C. 838,559, pub. 8–22–67. Cl. 200.

International Milling Co., Inc.: *See*—
Wabasha Roller Mill Co.
International Minerals & Chemical Corp., d.b.a. Ac'cent International, Skokie, Ill. 838,471, pub. 8–22–67. Cl. 46.
International Paper Co., New York, N.Y. 838,191, pub. 8–22–67. Cl. 10.
International Paper Co., New York, N.Y. 838,195, pub. 8–22–67. Cl. 12.
International Products Corp., New York, N.Y. 721,701, canc. Cl. 51.
Interstate Engineering Corp., Anaheim, Calif. 838,204, pub. 8–22–67. Cl. 13.
Interuniversity Communications Council, Inc., Pittsburgh, Pa. 838,543, pub. 8–22–67. Cl. 100.
Invenex Pharmaceuticals, San Francisco, Calif. 838,228, pub. 8–22–07. Cl. 18.
Items, Inc., St. Louis, Mo. 835,433, cor. Cl. 22.
J-B° Corp., The, Minneapolis, Minn. 838,335, pub. 8–22–67. Cl. 23.
J.M.R. Enterprises, Inc., Worcester, Mass. 838,578. Cl. 44.
J & R Food Specialties, Inc., St. Louis, Mo. 838,476, pub. 8–22–67. Cl. 46.
Jacobs, Eva H., Arlington, Va. 838,292, pub. 8–22–67. Cl. 22.
James Industries, Inc., Hollidaysburg, Pa. 838,303, pub. 8–22–67. Cl. 22.
James, John R., Maud, Okla. 721,572, canc. Cl. 22.
Jerry Tools, Inc., Cincinnati, Ohio. 838,206, pub. 8–22–67. Cl. 13.
Johnson Motor Co., South Bend, Ind., to Outboard Marine Corp., Waukegan, Ill. 233,698, ren. 11–7–67. Cl. 23.
Jones, Ruth G.: *See*—
Sands, Fred.
Kabushiki Kaisha Rinnai Seisakusho, Nakagawa-ku, Nagoya, Japan. 838,377, pub. 8–22–67. Cl. 34.
Keefe, John M., d.b.a. The Flomar Co., Minneapolis, Minn. 838,514, pub. 8–22–67. Cl. 50.
Kelco Co., San Diego, Calif. 434,988, ren. 11–7–67. Cl. 46.
Keller Bath Enclosures, Inc.: *See*—
Kinkead Industries Inc.
Kellogg Co., Battle Creek, Mich. 838.495, pub. 8–22–67. Cl. 46.
Kellogg Supply Co., Inc., Wilmington, Calif. 838,193, pub. 8–22–67. Cl. 10.
Kendall Co., The, Walpole, Mass. 435,666, ren. 11–7–67. Cl. 5.
Kendall Co., The, Walpole, Mass. 838,243, pub. 8–22–67. Cl. 18.
Kenlin Enterprises, Inc., Highland Park, Ill. 838,213, pub. 8–22–67. Cl. 13.
Kenrich Shoe Corp., from Lucky Stride Shoes, Inc., Maysville, Ky. 838,415, pub. 8–22–67. Cl. 39.
Kewanee Machinery & Conveyor Co., Kewanee, Ill. 838,325, pub. 8–22–67. Cl. 23.
Keyston Bros., San Francisco, Calif. 721,609, canc. Cl. 32.
Kickernick, Inc., Minneapolis, Minn., to Henson-Kickernick, Inc., Greenville, Tex. 436,471, ren. 11–7–67. Cl. 39.
Kimberly-Clark Corp.: *See*—
International Cellucotton Products Co.
Kimtec, Inc., Houston, Tex. 838,358, pub. 8–22–67. Cl. 26.
Kinkead Industries Inc., Chicago, Ill., from Keller Bath Enclosures, Inc., Miami, Fla. 838,564. Cl. 12.
Kitchenaid Mfg. Co., The, to The Hobart Mfg. Co., Troy, Ohio. 235,207, ren. 11–7–67. Cl. 31.
Kleinert, I. B., Rubber Co., New York, N.Y. 230,975, 12(c) pub. 11–7–67. Cl. 39.
Knapp-Sherriff-Koelle, Inc., d.b.a. Knapp-Sherriff-Koelle, Donna, Tex. 838,493, pub. 8–22–67. Cl. 46.
Komberec & Fiedler Enterprises, Inc., from Harold L. Komberec, Spokane, Wash. 721,654, canc. Cl. 46.
Komberec, Harold L.: *See*—
Komberec & Fiedler Enterprises, Inc.
Konigslow, E., Stamping & Tool Co., The, Elwood, Ind. 838,385, pub. 8–22–67. Cl. 36.
Korvette, E. J., Inc.: *See*—
Spartans Industries, Inc.
Koyo Seiko Co. Ltd., Osaka, Japan. 838,318, pub. 8–22–67. Cl. 23.
Koza, John R., Detroit, Mich. 838,296, pub. 8–22–67. Cl. 22.
Kresge, S. S., Co., Detroit, Mich. 838,154, pub. 8–22–67. Cl. 2.
Kresge, S. S., Co., Detroit, Mich. 838,174, pub. 8–22–67. Cl. 6.
Krous Doremus Foundry Co., Delawanna, N.J. 838,209, pub. 8–22–67. Cl. 13.
L.B. Laboratories, Inc., Glendale, Calif. 838,518, pub. 8–22–67. Cl. 51.
Laco Corp., from The Solarine Co., Baltimore, Md. 838,165, pub. 8–22–67. Cl. 4.
Laco Corp., from The Solarine Co., Baltimore, Md. 838,167, pub. 8–8–67. Cl. 4.
Laddie Boy Dog Foods, Inc.: *See*—
Hugo Strauss Packing Co., Inc.
Lady Kathy Corp., Holland, Mich. 838,450, pub. 8–22–67. Cl. 40.
Lafeyette University Shop, Inc.: *See*—
University Shops, Inc.
Landers Machine Co., Fort Worth, Tex. 838,323, pub. 8–22–67. Cl. 23.
Lane Wells Co.: *See*—
Dresser Industries, Inc.
Larry's Sandwiches, Inc., Culver City, Calif. 721,667, canc. Cl. 46.
Lawson Milk Co.: *See*—
Consolidated Foods Corp.
Leaf Plastics, Inc., Yonkers, N.Y. 721,472, canc. Cl. 3.
Lear Siegler, Inc., Cleveland, Ohio. 838,205, pub. 8–22–67. Cl. 13.
Lemmon Pharmacal Co., Sellersville, Pa. 838,224, pub. 8–22–67. Cl. 18.
Leonetti Furniture Mfg. Co., Inc., Portland, Oreg. 838,369, pub. 1–3–67. Cl. 32.

Le Ro Co., Redondo Beach, Calif. 838,289, pub. 8–22–67. Cl. 21.
Les Fabriques d'Assortiments Reunies, Le Locle, Nuchatel, Switzerland. 838,363, pub. 8–22–67. Cl. 27.
Les Parfums de Dana, Inc., d.b.a. Dana, New York, N.Y. 838,524, pub. 8–22–67. Cl. 51.
Les Parfums de Dana, Inc., d.b.a. Dana, New York, N.Y. 838,534, pub. 8–22–67. Cl. 52.
Les Parfums Sterle, Paris, France. 815,133, canc. Multiple Class (Classes 51 and 52).
Leupold & Stevens Instruments, Inc., Portland, Oreg. 838,350, pub. 8–22–67. Cl. 26.
Levco Metal Finishers, Inc., Long Island City, N.Y. 721,499, canc. Cl. 8.
Lever Brothers Co., New York, N.Y. 838,536, pub. 8–22–67. Cl. 52.
Lord Mfg. Co., Erie, Pa. 721,482, canc. Cl. 6.
Los Angeles Miniature Products, Inc., Gardena, Calif. 838,270, pub. 8–22–67. Cl. 21.
Lowe, E. S., Co., Inc., New York, N.Y. 838,297, pub. 8–22–67. Cl. 22.
Lucky Stride Shoes, Inc.: *See*—
Kenrich Shoe Corp.
M.F.A. Oil Co., Columbia, Mo. 721,490, canc. Cl. 6.
MSL Industries, Inc., Chicago, Ill. 838,261, pub. 8–22–67. Multiple Class (Classes 19, 23, 44, and 50).
Macandrews & Forbes Co., Camden, N.J. 838,192, pub. 8–22–67. Cl. 10.
Magic American Chemical Corp., Cleveland, Ohio. 838,215, pub. 8–22–67. Cl. 14.
Maksel, Bernadette B.: *See*—
Becker, Napoleon C.
Mallory, P. R., & Co., Inc.: *See*—
Elkon Works, Inc.
Marbelite Co., Inc., The, Brooklyn, N.Y. 838,278, pub. 8–22–67. Cl. 21.
Marble Products Co. of Georgia, Atlanta, Ga. 838,202, pub. 8–22–67. Cl. 12.
Marchant Calculating Machine Co., Oakland, Calif., to SCM Corp., New York, N.Y. 149,592, ren. 11–7–67. Cl. 26.
Mather Co., The: *See*—
Monsanto Co.
Matsushita Electric Industrial Co., Ltd., Kadoma-Shi, Osaka Prefecture, Japan. 838,277, pub. 8–22–67. Cl. 21.
Mattel, Inc., Hawthorne, Calif., from Faber-Luft, Ltd., New York, N.Y. 838 290, pub. 6–12–62. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 838,306, pub. 8–22–67. Cl. 22.
McGraw-Hill, Inc., New York, N.Y. 838,574. Cl. 38.
McGraw-Hill, Inc., New York, N.Y. 838,577. Cl. 38.
McKesson & Robbins, Inc., d.b.a. Norcliff Laboratories, New York, N.Y. 838 242, pub. 8–22–67. Cl. 18.
McKesson & Robbins, Inc., New York, N.Y. 838,507, pub. 8–22–67. Cl. 49.
McMillan Bloedel Ltd., Vancouver, British Columbia, Canada. 838,197, pub. 8–22–67. Cl. 12.
Mead Johnson & Co., Evansville, Ind. 838,470, pub. 8–22–67. Cl. 46.
Mead Johnson & Co., Evansville, Ind. 838,498, pub. 8–22–67. Cl. 46.
Mennen Co., The, Morristown, N.J. 838,179, pub. 8–22–67. Cl. 6.
Merck & Co., Inc., Rahway, N.J. 838,238, pub. 8–22–67. Cl. 18.
Merry Mites, Inc., New York, N.Y. 838,421, pub. 6–20–67. Cl. 39.
Mersick Industries, Inc., North Haven, Conn. 838,163, pub. 8–22–67. Multiple Class (Classes 4, 12, 13, 16, 21, and 34).
Metalife Liquid Metals Ltd.: *See*—
Metalife Ltd.
Metalife Ltd., from Metalife Liquid Metals Ltd., Harrogate, York, England. 838,219, pub. 12–27–66. Cl. 16.
Metro-Goldwyn-Mayer Inc., New York, N.Y. 838,388, pub. 8–22–67. Cl. 36.
Miami Valley Cooperative Milk Producers Association, The, to Miami Valley Milk Producers Association, Dayton, Ohio. 231.400. ren. 11–7–67. Cl. 46.
Miami Valley Milk Producers Association: *See*—
Miami Valley Cooperative Milk Producers Association.
Micropoint, Inc., Sunnyvale, Calif. 838,402, pub. 8–22–67. Cl. 37.
Microseal Corp., Skokie, Ill. 838,340, pub. 8–22–67. Cl. 26.
Midwest Hair Products, Inc., Spencer, Iowa. 838,453, pub. 8–22–67. Multiple Class (Classes 40 and 51).
Midwest Pretzel, Inc., Chicago, Ill. 838,482, pub. 8–22–67. Cl. 46.
Midwestern Beverage Laboratories, Inc., St. Louis, Mo., by Canada Dry Corp., New York, N.Y. 441,922, 12(c) pub. 11–7–67. Cl. 45.
Miles Laboratories, Inc., Elkhart, Ind. 838,173, pub. 8–22–67. Cl. 6.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 838,200, pub. 8–22–67. Cl. 12.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 838,222, pub. 8–22–67. Cl. 16.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 838,403, pub. 8–22–67. Cl. 37.
Miss Pat & Co., Los Angeles, Calif. 721.643, canc. Cl. 42.
Mitchell, S. H., d.b.a. Cockram Mill, Winston-Salem, N.C. 838,473, pub. 8–22–67. Cl. 46.
Mobil Oil Corp., New York, N.Y. 838,185, pub. 8–22–67. Cl. 7.
Monheim, Leonard, KG: *See*—
Wallace & Co.
Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 432,858, ren. 11–7–67. Cl. 6.
Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 433,224, ren. 11–7–67. Cl. 6.
Monsanto Co.: *See*—
Monsanto Chemical Co.

Monsanto Co., St. Louis, Mo., from The Mather Co., Toledo, Ohio. 838,141, pub. 3–1–66. Cl. 1.
Morris, Philip, Inc., New York, N.Y. 838,223, pub. 8–22–67. Cl. 17.
Moulton, George, Spences & Co., Ltd., Bradford-On-Avon, England. 721,552, canc. Cl. 19.
Movado Watch Agency, Inc., New York, N.Y. 838,359–62, pub. 8–22–67. Cl. 27.
Mueller Co.: *See*—
Mueller, H., Mfg. Co.
Mueller, H., Mfg. Co., to Mueller Co., Decatur, Ill. 30,910, ren. 11–7–67. Cl. 13.
Murata Mfg. Co., Ltd., Otokuni-gun, Kyoto-fu, Japan. 838,267, pub. 11–8–66. Cl. 21.
NFM Corp., Minneapolis, Minn. 838,485, pub. 6–27–67. Cl. 46.
N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. 838,406, pub. 8–22–67. Cl. 38.
Nagy, Joseph, Dearborn, Mich. 838,288, pub. 8–22–67. Cl. 21.
National Aniline and Chemical Co., Inc., to Allied Chemical Corp., New York, N.Y. 235,641, ren. 11–7–67. Cl. 6.
National Appliance Co., Portland, Oreg. 838,342, pub. 4–4–67. Cl. 26.
National Cooperatives, Inc., Albert Lea, Minn. 838,186, pub. 8–22–67. Cl. 7.
National Electrical Mfg. Association, New York, N.Y. 838,560, pub. 8–22–67. Cl. A.
National Lead Co., New York, N.Y. 838,180, pub. 8–22–67. Cl. 6.
National Service Industries, Inc., Atlanta, Ga., from Turtle Wax, Inc., Chicago, Ill. 838,164, pub. 1–3–67. Cl. 4.
National-Standard Co., Niles, Mich. 721,518, canc. Cl. 14.
National Steel Cabinet Co., Chicago, Ill. 721,605, canc. Cl. 32.
Naturals, Inc., Jackson, Minn. 838,510, pub. 8–22–67. Cl. 50.
Neff and Fry Co., The, d.b.a. P & D Mfg. Co., Plainfield, Ill. 838,326, pub. 8–22–67. Cl. 23.
Nelson, Dale L., Orem, Utah. 838,397, pub. 8–22–67. Cl. 37.
New York Mackintosh Clothing Co., Inc., New York, N.Y. 838.422, pub. 6–20–67. Cl. 39.
Nicholas International Ltd., Toronto, Ontario, Canada. 721,536, canc. Cl. 18.
Nicholson File Co., Providence, R.I. 838,313, pub. 8–22–67. Cl. 23.
Nielsen, Poul, d.b.a. Stanwell Briar Pipes, Kyringe, near Ringsted, Denmark. 721,500, canc. Cl. 8.
Norcross, to Norcross, Inc., New York, N.Y. 432,581, ren. 11–7–67. Cl. 38.
Norcross, to Norcross, Inc., New York, N.Y. 433,294, ren. 11–7–67. Cl. 37.
Norcross, Inc.: *See*—
Norcross.
Norcross, Inc., New York, N.Y. 838,390, pub. 8–16–66. Cl. 37.
Nor-Lake, Inc., Hudson, Wis. 838,367, pub. 8–22–67. Cl. 31.
Old Spring Distilling Co., The: *See*—
Wertheimer, L & E, Inc.
Oneida Community Ltd., Oneida, and Niagara Falls, N.Y., by Woodstream Corp., Letitz, Pa. 65,498, 12(c) pub. 11–7–67. Cl. 50.
Oneida Community Ltd., Oneida, and Niagara Falls, N.Y., by Woodstream Corp., Letitz, Pa. 65,538, 12(c) pub. 11–7–67. Cl. 50.
Onion Specialties of South Holland, Inc., South Holland, Ill. 838,580. Cl. 46.
Ortho-Dynamics, Inc., San Marino, Calif. 721,606, canc. Cl. 32.
Oslason, Inc., Fall River, to Blue Cross Mattress, Inc., Boston, Mass. 433,303, ren. 11–7–67. Cl. 32.
Outboard Marine Corp.: *See*—
Johnson Motor Co.
P & D Mfg. Co.: *See*—
Neff and Fry Co., The.
Pacific Vegetable Co., Inc., Nogales, Ariz. 838,494, pub. 8–22–67. Cl. 46.
Packaged Lighting Services, Inc., Yonkers, N.Y. 838,271, pub. 8–22–67. Cl. 21.
Pan Pacific Fisheries, Inc., Terminal Island, Calif. 721,682, canc. Cl. 46.
Parke, Davis & Co., Detroit, Mich. 838,248–9, pub. 8–22–67. Cl. 18.
Parkland of Dallas, Inc., Dallas, Tex. 838,433, pub. 5–23–67. Cl. 39.
Patchogue-Plymouth Co., New York, from Patchogue-Plymouth Corp., Scarsdale, N.Y. 838,456, pub. 1–11–66. Multiple Class (Classes 42 and 43).
Patchogue-Plymouth Corp.: *See*—
Patchogue-Plymouth Co.
Patent Cereals Sales Corp., Geneva, N.Y. 838,169, pub. 7–11–67. Cl. 5.
Penick, S. B., & Co.: *See*—
Dow Chemical Co., The.
Penney, J. C., Co., New York, N.Y. 232,511, ren. 11–7–67. Cl. 39.
Pennsalt Chemicals Corp., Philadelphia, Pa. 838,527, pub. 8–22–67. Cl. 52.
Perkin-Elmer Corp., The, Norwalk, Conn. 838,348, pub. 8–22–67. Cl. 26.
Permalite Corp., New York, N.Y., by Grefco, Inc., Philadelphia, Pa. 433,858. 12(c) pub. 11–7–67. Cl. 1.
Pet Toy of N.H.: *See*—
Peterson, William C.
Peterson, William C., d.b.a. Pet Toy of N.H., Claremont, N.H. 721,573, canc. Cl. 22.
Pfister Associated Growers, Inc, W. R. Grace & Co., Aurora, Ill. 726,110. Am. 7(d). Cl. 1.
Pfizer, Chas., & Co., Inc., New York, N.Y. 838,245–6, pub. 8–22–67. Cl. 18.
Pharmaceutical Associates: *See*—
Crete, Charles A.
Pharmaceutical Laboratories, Inc.: *See*—
Food Products Co. of America.

Phoenix Abrasive & Mfg., Inc., Jamaica, N.Y. 838,562. Cl. 4.
Photo-Matic Corp., The, Chicago, Ill. 838,405, pub. 8–22–67. Cl. 38.
Photomechanisms, Inc., Huntington Station, N.Y. 838,341, pub. 1–17–67. Cl. 26.
Piedmont Shirt Co., Greenville, S.C. 838,411, pub. 12–21–65. Cl. 39.
Pindyck, Charles, Inc., New York, N.Y. 838,414, pub. 8–22–67. Cl. 39.
Plant Products Co., assor. to Plant Products Corp., by Plant Products Corp., Blue Point, N.Y. 431,811, 12(c) pub. 11–7–67. Cl. 6.
Plant Products Corp.: *See*—
Plant Products Co.
Plas-Steel Products, Inc., Walkerton, Ind. 721,575, canc. Cl. 22.
Plastic Tooling Aids Laboratory, Inc., Bridgeport, Conn. 838,544, pub. 8–22–67. Cl. 100.
Plessis Import Co.: *See*—
Randazzo, John J. G.
Polymers, Inc., Middlebury, Vt. 838,148, pub. 8–22–67. Cl. 1.
Pompeian Mfg. Co., The, Cleveland, Ohio, by Pompeian Olive Oil Corp., Baltimore, Md. 59,202, 12(c) pub. 11–7–67. Cl. 52.
Pompeian Olive Oil Corp.: *See*—
Pompeian Mfg. Co., The.
Pony of The Americas Club, Inc., Mason City, Iowa. 838,545, pub. 8–22–67. Cl. 101.
Portalift Trailer Corp., Corpus Christi, Tex. 838,257, pub. 8–22–67. Cl. 19.
Pratt, Henry, Co., Chicago, Ill. 721,616, canc. Cl. 34.
Pratt & Lambert-Inc., Buffalo, N.Y. 813,838, cor. Cl. 16.
Pretty Products, Inc., Coshocton, Ohio. 838,252, pub. 8–22–67. Cl. 19.
Procter & Gamble Co., The, Cincinnati, Ohio. 838,535, pub. 8–22–67. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 838,537, pub. 8–22–67. Cl. 52.
Propper Mfg. Co., Inc., Long Island City, N.Y. 838,464, pub. 8–22–67. Cl. 44.
Publisher's Vending Services, Inc., Minneapolis, Minn. 721,588, canc. Cl. 23.
Purdue Frederick Co., The, Yonkers, N.Y. 838,233, pub. 8–22–67. Cl. 18.
Puritan Fashions Corp., New York, N.Y. 838,437, pub. 8–22–67. Cl. 39.
Quartz Radiation Corp., Fairfield, N.J. 838,279, pub. 8–22–67. Multiple Class (Classes 21, 26, 34, 38, and 103).
Radican Associates, Inc., Providence, R.I. 838,556, pub. 8–22–67. Cl. 103.
Ralston Purina Co., St. Louis, Mo. 838,483, pub. 8–22–67. Cl. 46.
Randazzo, John J. G., d.b.a. Antonio Alcanta & Cia., and Plessis Import Co., St. Louis, Mo. 838,501, pub. 8–22–67. Cl. 47.
Ranney Refrigerator Co., Greenville, Mich. 721,602, canc. Cl. 31.
Ravel N.Y.: *See*—
Ravel Perfume Corp.
Ravel Perfume Corp., d.b.a. Ravel N.Y., New York, N.Y. 838,515, pub. 12–14–65. Cl. 51
Reid-Meredith, Inc, Lawrence, Mass. 838,455, pub. 8–22–67. Cl. 40.
Relide Clock Co.: *See*—
Icko Wakmann.
Renee-Derm Otto E. Meckelburg KG, Celle, Germany. 838,459. pub. 6–28–66. Cl. 44.
Renelle, Inc., Dayton, Ohio. 721,711, canc. Cl. 52.
Retail Credit Co., Atlanta, Ga. 838,546, pub. 8–22–67. Cl. 101.
Revere Sugar Refinery, Portland, Maine, and Boston, Mass., by Revere Sugar Refinery, Charlestown, Mass. 102,174, 12(c) pub. 11–7–67. Cl. 46.
Rexall Drug and Chemical Co., d.b.a. Rexall Drug Co., Los Angeles, Calif. 838,236–7, pub. 8–22–67. Cl. 18.
Rexall Drug Co.: *See*—
Rexall Drug and Chemical Co.
Ricci, Nina S. A. R. L., Paris, France. 721,641, canc. Cl. 39.
Richardson-Harris, Inc.: *See*—
Avon Products, Inc.
Ridgeway, Stan, Realty, Inc., Silver Hill, Washington, D.C. 838,550. pub. 8–22–67. Cl. 101.
Ries, Jacob, to Jacob Ries Bottling Works, Inc., Shakopee, Minn. 61,278, ren. 11–7–67. Cl. 45.
Ries, Jacob, Bottling Works, Inc.: *See*—
Ries, Jacob.
Rinn Corp., Elgin, Ill. 838,346, pub. 8–22–67. Cl. 26.
Roberts Co., The, City of Industry, Calif. 721,479, canc. Cl. 5.
Robinson, A., Inc. of Altoona, d.b.a. Albudon Products Co., Altoona, Pa. 721,712, canc. Cl. 52.
Rockford Textile Mills, Inc., McMinnville, Tenn. 838,447, pub. 8–22–67. Cl. 39.
Rogers, Howard E., El Centro, Calif. 436,753, ren. 11–7–67. Cl. 46.
Ronrico Corp., Santurce, Puerto Rico. 838,509, pub. 8–22–67. Cl. 49.
Rossiter, Ed, d.b.a. YHP Co., Los Angeles, Calif. 838,392, pub. 8–22–67. Cl. 37.
Roto-Photo Co., Chicago, Ill. 838,394, pub. 8–22–67. Cl. 37.
Royal Crown Cola Co., Columbus, Ga. 838,465, pub. 8–22–67. Cl. 45.
Royal Typewriter Co., Inc., Hartford, Conn. 838,330, pub. 8–22–67. Cl. 23.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N.Y. 834 960, cor. Cl. 13.
SCM Corp.: *See*—
Marchant Calculating Machine Co.
S & S Chemicals, Ltd., Honolulu, Hawaii. 838,526, pub. 4–25–67. Cl. 52.

STEP, Beavercreek, Oreg. 838,408, pub. 8–22–67. Cl. 38.
Sagner, Inc.: *See—*
  Sagner's, A., Son.
Sagner's, A., Son, Baltimore, to Sagner, Inc., Frederick, Md. 433,491, ren. 11–7–67. Cl. 39.
Saia A.G.: *See—*
  Aktiengesellschaft Fur Schaltapparate.
St. Lawrence Chemical Co., Inc., Ogdensburg, N.Y. 430,206. Am. 7(d), Cl. 6.
Sales Art Productions Corp., New York, N.Y. 838,372, pub. 5–10–66. Cl. 34.
Sales and Marketing Executives-International Inc., New York, N.Y. 838,410, pub. 8–22–67. Cl. 38.
Sampson, Herbert F., d.b.a. Sampson Machine Works, Costa Mesa, Calif. 838,188, pub. 8–22–67. Cl. 9.
Sampson Machine Works: *See—*
  Sampson, Herbert F.
San Antonio Winery, Inc., d.b.a. San Antonio Winery, Los Angeles, Calif. 838,500, pub. 5–23–67. Cl. 47.
Sands, Fred, Kansas City, Mo., by R. G. Jones, Dallas, Tex. 432,372, 12(c) pub. 11–7–67. Cl. 38.
Sandusky Foundry & Machine Co., Sandusky, Ohio. 838,309, pub. 8–22–67. Cl. 23.
Sargent & Greenleaf, Inc., Rochester, N.Y. 838,338, pub. 8–22–67. Cl. 25.
Schafer Canned Food Corp., New York, N.Y. 838,474, pub. 8–22–67. Cl. 46.
Schaper Mfg. Co., Inc.: *See—*
  Schaper, William H.
Schaper, William H., Robbinsdale, to Schaper Mfg. Co., Inc., Minneapolis, Minn. 433,163, ren. 11–7–67. Cl. 22.
Schenley Distillers, Inc., New York, N.Y. 838,508, pub. 8–22–67. Cl. 49.
Schiftan, Alfred, Inc., New York, N.Y. 721,695, canc. Cl. 50.
Schmitt'sches, Gustav Adolf, Weingut, Nierstein (Rhine), Germany. 838,502, pub. 8–22–67. Cl. 47.
Schwinn, Arnold, & Co.: *See—*
  Schwinn Bicycle Co.
Schwinn Bicycle Co., from Arnold Schwinn & Co., Chicago, Ill. 838,260, pub. 8–22–67. Cl. 19.
Scientific Industries, Inc., Los Angeles, Calif. 734,917, canc. Cl. 36.
Seaspan Products Corp., New York, N.Y. 838,480, pub. 8–22–67. Cl. 46.
Seeburg Corp., The, Chicago, Ill. 838,389, pub. 8–22–67. Cl. 36.
Sernau, Paul E., Inc., New York, N.Y. 838,395, pub. 8–22–67. Cl. 37.
Sheader, Harold C., and Lorraine Sheader, d.b.a. Sheader Industries, Arvada, Colo. 838,319, pub. 8–22–67. Cl. 23.
Sheader Industries: *See—*
  Sheader, Harold C., and Lorraine Sheader.
Silo Discount Centers, Inc.: *See—*
  Silo, Inc.
Silo, Inc., from Silo Discount Centers, Inc., Philadelphia, Pa. 838,547, pub. 8–22–67. Cl. 101.
Smartee, Inc., New York, N.Y. 838,439, pub. 8–22–67. Cl. 39.
Smead Mfg. Co., The, Hastings, Minn. 838,399, pub. 8–22–67. Cl. 37.
Smith Kline & French Laboratories, Philadelphia, Pa. 433,983, ren. 11–7–67. Cl. 18.
Societe Anonyme Des Caves Associates: *See—*
  Couder, Justin.
Societe Intercontinental des Containers S.I.C, Societe Anonyme, Paris, France. 838,158, pub. 8–22–67. Cl. 2.
Societe Rhodiaceta, Paris, France. 721,477, canc. Cl. 5.
Solarine Co., The: *See—*
  Laco Corp.
Solomons, Paul, d.b.a. S. P. Solomons Decorative Art Co., New York, N.Y. 721,630, canc. Cl. 38.
Spartans Industries, Inc, from E. J. Korvette, Inc., New York, N.Y. 838,441, pub. 8–22–67. Cl. 39.
Spectronics Corp., Westbury, N.Y. 838,265, pub. 11–5–63. Cl. 21.
Sperry and Hutchinson Co., The, New York, N.Y. 838,551, pub. 8–22–67. Cl. 101.
Sperry Rand Corp., New York, N.Y. 838,328, pub. 8–22–67. Cl. 23.
Spinmaster Rod Co., Inc., Miami, Fla. 820,650. Am. 7(d). Cl. 22.
Sportster, Inc., New York, N.Y. 838,424, pub. 8–22–67. Cl. 39.
Squibb, E. R., & Sons, Inc., New York, N.Y. 838,235, pub. 8–22–67. Cl. 18.
Squibb, E. R., & Sons, Inc., New York, N.Y. 838,492, pub. 8–22–67. Cl. 46.
Staff Supermarket Associates, Inc., Jericho, N.Y. 838,162, pub. 8–22–67. Cl. 2.
Staff Supermarket Associates, Inc., Jericho, N.Y. 838,190, pub. 8–22–67. Cl. 9.
Stainless Metal Craft Co.: *See—*
  Fasbinder, Anton.
Standard Brands Inc., New York, N.Y. 838,232, pub. 8–22–67. Cl. 18.
Standard International Corp., Andover, Mass. 838,531, pub. 8–22–67. Cl. 52.
Standard Oil Co., The, Cleveland, Ohio. 838,145, pub. 8–22–67. Cl. 1.
Standard Oil Co., The, Cleveland, Ohio. 838,149, pub. 8–22–67. Cl. 1.
Standard Oil Co. of California, San Francisco, Calif. 838,370, pub. 8–22–67. Cl. 32.
Standard Pyroxoloid Corp., Leominster, Mass. 838,448–9, pub. 8–22–67. Cl. 40.
Standex Laboratories, Inc.: *See—*
  White Laboratories, Inc.
Stanwell Briar Pipes: *See—*
  Nielsen, Poul.
Stetson, John B., Co., to John B. Stetson Co., 232,954, ren. 11–7–67. Cl. 39.
Stetson, John B., Co., to John B. Stetson Co., Philadelphia, Pa. 432,531, 12(c) pub. 11–7–67. Cl. 39.
Stevens-Hepner Co., Ltd., Ontario, Canada. 838,366, pub. 8–22–67. Cl. 29.
Stevens Linen Associates, Inc., Webster, Mass. 721,650, canc. Cl. 42.
Strauss, Hugo, Packing Co., Inc., Brooklyn, N.Y., to Laddie Boy Dog Foods, Inc., Philadelphia, Pa. 239,084, ren. 11–7–67. Cl. 46.
Sun Chemical Corp., New York, N.Y., by The Western Petrochemical Corp., Chanute, Kans. 435,308, 12(c) pub. 11–7–67. Cl. 11.
Sun Life Assurance Co. of Canada, Montreal, Quebec, Canada. 830,778, cor. Cl. 102.
Sun-Maid Raisin Growers of California, Kingsburg, Calif. 235,174, ren. 11–7–67. Cl. 45.
Sun Motor Supply, Inc., Tulsa, Okla. 838,314, pub. 8–22–67. Cl. 23.
Superior Tea & Coffee Co., d.b.a. King Coffee Co., Chicago, Ill. 838,486, pub. 8–22–67. Cl. 46.
Sweetheart Plastics, Inc., Wilmington, Mass. 838,157, pub. 8–22–67. Cl. 2.
Synalloy Corp.: *See—*
  Blackman-Uhler Co.
TEC Seal Corp., Wilmington, Calif. 838,381, pub. 6–20–67. Cl. 35.
T & S Equipment Co., Albion, Mich. 838,331, pub. 8–22–67. Cl. 23.
Taller Modes, Inc., New York, N.Y. 838,429, pub. 8–22–67. Cl. 39.
Tanner, Morris L., d.b.a. Tannerize Laboratories, Chicago, Ill. 838,166, pub. 8–22–67. Cl. 4.
Tannerize Laboratories: *See—*
  Tanner, Morris L.
Terra International Co., Ltd., New York, N.Y. 838,276, pub. 8–22–67. Cl. 21.
Tesco Chemicals, Inc., Atlanta, Ga. 838,337, pub. 8–22–67. Cl. 23.
Textron Inc., Providence, R.I. 838,283, pub. 8–22–67. Cl. 21.
Textron Inc., Providence, R.I. 838,329, pub. 8–22–67. Cl. 23.
Textron Inc., Providence, R.I. 838,334, pub. 8–22–67. Cl. 23.
Thelma Lu's, Inc., Albuquerque, N. Mex. 838,469, pub. 8–22–67. Cl. 46.
Thiokol Chemical Corp., Bristol, Pa. 838,176–8, pub. 8–22–67. Cl. 6.
Thompson-Hayward Chemical Co., Kansas City, Kans. 838,175, pub. 8–22–67. Cl. 6.
3 D of America, Inc., Chicago, Ill. 838,407, pub. 8–22–67. Cl. 38.
Tipp-Ex Fabrication: *See—*
  Dabisch, Wolfgang.
Toa Electric Co., Ltd., Hyogo-Ku, Kobe, Japan. 838,269, pub. 8–22–67. Cl. 21.
Toledo-Beaver Tools, Inc., Toledo, Ohio. 838,311, pub. 8–22–67. Cl. 23.
Tone Mfg. Co., Grand Rapids, Mich. 553,265, canc. Cl. 4.
Tos Kurim, Narodni Podnik, Czechoslovakian, Kurim, Brno, Czechoslovakia. 838,336, pub. 8–22–67. Cl. 23.
Tower Packaging Co., Wheeling, Ill. 838,156, pub. 8–22–67. Cl. 2.
Traveler's Choice International, Inc., Huntington, Ind. 838,548, pub. 8–22–67. Cl. 101.
Treasuretile, Inc., Salem, Oreg. 721,514, canc. Cl. 12.
Trostel, Albert, Packings, Ltd., Lake Geneva, Wis. 838,378, pub. 1–14–64. Cl. 35.
Turtle Wax, Inc.: *See—*
  National Service Industries, Inc.
UHU-Werk H. & M. Fischer, Buehl/Baden, Germany. 838,519, pub. 8–22–67. Cl. 51.
UMC Industries, Inc., St. Louis, Mo. 838,371, pub. 8–22–67. Cl. 33.
Unifranck Lebensmittelwerke G.m.b.H., Ludwigsburg, Germany. 838,472, pub. 8–22–67. Cl. 46.
Union Laboratories, Inc., Morganville, N.J. 838,565. Cl. 12.
Uniroyal, Inc.: *See—*
  Eureka Fire Hose Co.
  United States Rubber Co.
United Aircraft Corp., Sunnyvale, Calif. 838,208, pub. 8–22–67. Cl. 13.
United Color Corp., Racine, Wis. 838,356, pub. 8–22–67. Cl. 26.
United Gilsonite Laboratories, Scranton, Pa. 838,563. Cl. 6.
United Shoe Machinery Corp., Boston, Mass. 838,152, pub. 8–22–67. Cl. 2.
U.S. Industries, Inc., New York, N.Y. 721,564, canc. Cl. 21.
United States Rubber Co., by Uniroyal, Inc., New York, N.Y. 232,631, 12(c) pub. 11–7–67. Cl. 39.
U.S. Vitamin & Pharmaceutical Corp., New York, N.Y. 721,665, canc. Cl. 46.
University Shops, Inc., from Lafeyette University Shop, Inc., Columbus, Ohio. 838,418, pub. 3–21–67. Cl. 39.
Vanderbilt, R. T., Co., Inc., New York, N.Y. 838,147, pub. 8–22–67. Cl. 1.
Varian Associates, Palo Alto, Calif. 838,400, pub. 8–22–67. Cl. 37.
Varian Associates, Palo Alto, Calif. 838,558, pub. 8–22–67. Cl. 107.
Vogarell Products, Inc., Los Angeles, Calif. 721,541, canc. Cl. 18.
Volkswagen of America, Inc., Englewood Cliffs, N.J. 838,251, pub. 8–22–67. Multiple Class (Classes 19 and 50).
Wabasha Roller Mill Co., Wabasha, to International Milling Co., Inc., Minneapolis, Minn. 232,924, ren. 11–7–67. Cl. 46.
Wakmann, Icko, d.b.a. Wakmann Watch Co., to I. Wakmann, d.b.a. Relide Clock Co., New York, N.Y. 432,999, ren. 11–7–67. Cl. 27.
Wakmann Watch Co.: *See—*
  Wakmann, Icko.

Wall Street Professional, Inc., The, New York, N.Y. 838,404, pub. 5–31–66. Cl. 38.
Wallace & Co., New York, N.Y., to Leonard Monheim KG, Aachen, Germany. 65,382, ren. 11–7–67. Cl. 46.
Wallace-Murray Corp., New York, N.Y. 838,312, pub. 3–21–67. Cl. 23.
Wallpaper Council Inc. Wallcoverings Council Inc., New York, N.Y. 799,255. Am. 7(d). Cl. 101.
Webb, C. J., Inc., d.b.a. Bowers Candies, Moorestown, N.J. 838,499, pub. 8–22–67. Cl. 46.
Weinig, J., & Son, New York, N.Y. 838,142, pub. 8–22–67. Cl. 1.
Wells, Inc., Attleboro, Mass. 838,571. Cl. 28.
Wertheimer, L & E, Inc., d.b.a. The Old Spring Distilling Co., Cincinnati, Ohio. 838,505, pub. 8–22–67. Cl. 49.
Westerhausen, Robert A., d.b.a. All Services Co., Fort Wayne, Ind. 838,555, pub. 8–22–67. Cl. 103.
Western Petrochemical Corp., The: *See—*
  Sun Chemical Corp.
Wetherholts, Franth: *See—*
  Wetherholt's Perfume Co.
Wetherholt's Perfume Co., by F. Wetherholts, Chicago, Ill. 432,579, 12(c) pub. 11–7–67. Cl. 51.
Wheel Centre Co., Walnut Creek, Calif. 838,253, pub. 8–22–67. Cl. 19.
White Laboratories, Inc., Kenilworth, N.J., from Standex Laboratories, Inc., Columbus, Ohio. 721,532, canc. Cl. 18.
Williams, Edwin K., & Co. (Va.), Falls Church, Va. 838,549, pub. 8–22–67. Cl. 101.
Williams, Paul G., Jr., Bonne Terre, Mo. 820,529. Am. 7(d). Cl. 23.
Wind-Jammer Industries, Mayfield, Ky. 838,383, pub. 8–22–67. Cl. 35.
Wood, G. H., and Co., Ltd., Toronto, Ontario, Canada. 838,532, pub. 8–22–67. Cl. 52.
Woodstream Corp.: *See—*
  Animal Trap Co. of America.
  Oneida Community Ltd.
Woodward & Lothrop, Inc., Washington, D.C. 838,438, pub. 8–22–67. Cl. 39.
World Color Press, Inc., St. Louis, Mo. 838,552, pub. 8–22–67. Cl. 101.
Wright Industries: *See—*
  Wright, Thomas E.
Wright, Janine, Maplewood, N.J. 838,426, pub. 8–22–67. Cl. 39.
Wright, Thomas E., d.b.a. Wright Industries, Chicago Ridge, Ill. 838,561. Cl. 2.
YHP Co.: *See—*
  Rossiter, Ed.
York Bar Bell Co., Inc., d.b.a. Bob Hoffman's Springs, York, Pa. 838,467, pub. 8–22–67. Cl. 45.

U.S. GOVERNMENT PRINTING OFFICE: O—1967

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 14, 1967 Volume 844 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of September 1967

Examiner affirmed	186
Examiner affirmed in part	18
Examiner reversed	47
Total	251

Classification Order No. 390

Classification Order No. 390, dated Oct. 18, 1967, incorporates changes in the following classes:

7, COMPOUND TOOLS
15, BRUSHING, SCRUBBING AND GENERAL CLEANING
34, DRYING AND GAS OR VAPOR CONTACT WITH SOLIDS
40, CARD, PICTURE AND SIGN EXHIBITING
51, ABRADING
74, MACHINE ELEMENTS AND MECHANISMS
81, TOOLS
108, HORIZONTALLY SUPPORTED PLANAR SURFACES
120, STATIONERY—Abolished
141. FLUENT MATERIAL HANDLING, WITH RECEIVER OR RECEIVER COACTING MEANS
144, WOODWORKING
145, WOODWORKING TOOLS
156, ADHESIVE BONDING AND MISCELLANEOUS CHEMICAL MANUFACTURE
180, MOTOR VEHICLES
197, TYPEWRITING MACHINES
206, SPECIAL RECEPTACLES AND PACKAGES
211, SUPPORTS, RACKS
222, DISPENSING
241, SOLID MATERIAL COMMINUTION OR DISINTEGRATION
248, SUPPORTS
260, CHEMISTRY, CARBON COMPOUNDS
401, COATING IMPLEMENTS WITH MATERIAL SUPPLY—Established

All of the above changes will be incorporated in the Manual of Classification replacement pages dated January 1968.

I. R. LADY,
Acting Patent Classification Administrator, Office of Examining and Classifying Control.

Adjudicated Patents

(C.A. Calif.) Wells Patent No. 2,543,143 (296—26), for TRUCK PARTITION, *Held* invalid. *Evans Products Co.* v. *Preco Inc.*, 378 F.2d 191; 153 USPQ 835.

(C.A.N.C.) Gunter Patent No. 3,006,035 (19—98), for COTTON CARDING MACHINE. Claims 1 to 3 *Held* invalid. *Gunter & Cooke, Inc.* v. *Southern Elec. Service Co.*, 378 F.2d 60; 153 USPQ 655.

(C.A. Ill.) Hemmeter Patent No. 2,094,003 (73—458), for WHEEL BALANCER. Claim 4 *Held* valid and infringed. *Bishman Mfg. Co.* v. *Stewart-Warner Corp.*, 380 F.2d 336; 153 USPQ 496.

New Applications Received During September 1967

Patents	6995
Designs	347
Plant Patents	17
Reissues	19
Total	7378

Issue—November 14, 1967

Patents	1233	—No. 3,351,954	to No.	3,353,186, incl.
Designs	80	—No. 209,189	to No.	209,268, incl.
Plant Patents	3	—No. 2,776	to No.	2,778, incl.
Total	1316			

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 11, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	4-3-64	5-31-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	3-6-64	3-5-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Manager Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	12-22-64	4-9-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	7-31-64	6-12-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	4-3-64	4-16-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-13-64	7-5-63
SECURITY, GROUP 220—S. BOYD, Manager Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-7-66	2-17-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1-6-64	11-29-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-10-64	1-8-62
PHYSICS, GROUP 280—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	10-16-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager Industrial Arts; Household, Personal and Fine Arts.	1-14-66	9-3-65

Total number of pending applications (excluding Designs)	183, 116
Total number of Design applications pending	4, 136
Total number of applications awaiting action (excluding Designs)	132, 541
Total number of Design applications awaiting action	2, 243
Date of oldest new application awaiting action	Jan. 6, 1964
Date of oldest amended application awaiting action	Nov. 29, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during November 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1953.*

Patents .... Numbers 2,528,483 to 2,532,275, inclusive
Plant Patents .... Numbers 986 to 995, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	1-20-66	9-22-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	7-6-65	2-7-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	3-19-65	4-11-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	2-1-66	12-18-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	10-15-65	4-30-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, Including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	9-9-65	10-18-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

In re Henry Kepper

No. 7715. Decided February 2, 1967

[54 CCPA —; 371 F.2d 865; 152 USPQ 436]

1. Patentability—Combining References — Obviousness — Evidence — Same Technological Area.

"* * * it seems to us the teaching of Nelson as to the use of petroleum oil, when applied by one of ordinary skill in the art to the Heath disclosures, was an obvious expedient which was well within the ordinary skill of the worker in the art at the time of appellant's invention. In this connection, it is significant that Heath, Nelson and appellant were working in the same technological area."

2. Same—Particular Subject Matter—"Process for Treating Iron-Containing Ores."

The refusal of certain claims in an application entitled "Process for Treating Iron-Containing Ores," as unpatentable over the prior art, is affirmed.

Appeal from the Patent Office. Serial No. 92,400.

AFFIRMED.

D. M. Mezzapelle for appellant.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, and Rich, Smith, and Almond, *Associate Judges*, and Judge William H. Kirkpatrick [1]

Smith, *J.*, delivered the opinion of the court.

Appealed claims 29, 30, 33, 34, 36 and 38 of appellant's application [2] stand rejected under 35 U.S.C. 103 as being directed to an invention which would have been obvious to a person of ordinary skill in the art in view of:

Heath (1), 2,477,454, July 26, 1949.
Heath (2), 2,596,954, May 13, 1952.
Nelson, 2,692,050, Oct. 19, 1954 [3]

The invention in issue relates to a process for treating iron containing ores whereby the iron oxides (usually in the form of hematite Fe_2O_3) are reduced to a magnetic state (usually to magnetite, Fe_3O_4) to permit magnetic separation of the iron constituents from the non-iron constituents.

Appellant's claimed process comprises a combination of treatment steps which appellant describes in his brief as including:

(1) introducing an iron containing ore into a fluidized bed,

(2) injecting directly into said fluidized bed a liquid hydrocarbon fuel, and

(3) simultaneously introducing a controlled amount of oxygen containing gas for fluidizing said bed and for supporting combustion of the liquid hydrocarbon, said gas containing 40% to 60% of the oxygen required for the complete combustion of said liquid fuel.

Under these conditions, appellant asserts that the partial combustion of the liquid hydrocarbon fuel produces reducing agents directly in the bed of the ore to be reduced and that incomplete combustion of the fuel produces a portion of the heat (and in certain embodiments, a major portion if not all the heat) for maintaining the fluidized bed at reducing temperatures in the range from about 600° C. to 1000° C. Thereafter the reduced ore is removed from the reactor, cooled and the iron fraction magnetically separated from the non-iron fraction.

Appellant in his brief here refers us to his brief on appeal before the Board for a discussion of what is asserted to be the problem in the art which appellant alleges has been solved by the claimed process. The advantages of the claimed process as there discussed by appellant are:

(*a*) Combustion of the hydrocarbon fuel and reduction of the ore are effected in one bed. It is not necessary to maintain two distinct beds or chambers wherein reduction is conducted in one bed and combustion conducted in another bed.

(*b*) By injecting the liquid hydrocarbon fuel directly into the bed, reducing agents are produced in said bed which immediately reduce the hematite to magnetite.

(*c*) The combustion of the liquid hydrocarbon fuel in the bed produces at least a portion of the heat necessary for maintaining the bed within the required reduction temperature range.

(*d*) The installation costs of a plant using direct fuel injection in accordance with this invention is about 50% of the cost of a conventional plant using gas generators.

(*c*) A savings of about 50% is also realized in the power cost of a plant practicing this invention.

(*f*) For a given degree of reduction, by using direct fuel injection, there is a fuel savings of about 20% over a plant using gas generators, since in the latter case, a substantial portion of the heat value in the reducing gases is lost during transfer of said gases from the generator to the reduction zone.

Claim 29 is representative of the claims on appeal and is as follows:

29. A process for reducing the iron containing material in an ore to a magnetizable state which comprises; establishing and maintaining on a perforated constriction plate a fluidized bed of said ore at a temperature in the range of about 800° C. to about 1000° C.; introducing into said bed the ore material to be reduced; introducing into said bed a liquid hydrocarbon fuel, introducing through said constriction plate into said bed an oxygen containing fluidized gas, said gas containing about 40 to 60% of the oxygen required for the stoichiometric oxidation of said liquid hydrocarbon fuel; subjecting said liquid hydrocarbon fuel to incomplete combustion with said oxygen containing gas in the presence of said iron containing material in said fluidized bed thereby producing reducing agents for effecting the reduction of said iron containing material to a magnetizable state; said incomplete combustion providing at least a portion of the heat required for maintaining said fluidized bed at the necessary reducing temperatures; and discharging the thus reduced iron containing material from said bed.

The three patents relied upon by the Board to support the rejection of the claims disclose admittedly different processes from that claimed. The issue presented under 35 U.S.C. 103 requires an evaluation of these differences and a determination of whether the claimed invention as a whole would have been obvious under the conditions of section 103.

Viewing the references as of the time of appellant's invention, we adopt the view of the Heath patents taken by appellant in his brief. In substance this view is that Heath (1) discloses a fluid bed process for reducing the iron oxide constituents in an ore to magnetite in a multi-compartment reactor wherein the ore and the combustible materials are maintained in separate independent beds arranged vertically and in series so that substantially no combustion occurs in the ore reducing zone and substantially no ore reduction occurs in the combustion zone. Reduction occurs when heated hematite particles from the combustion zone are contacted with a fluidizing gas containing "reducing and potential heat characteristics or constituents." From the reducing zone the fluidizing gas passes through the combustion zone wherein any burnable components in the gas are burned to heat the hematite particles to reduction temperature. As stated in Heath (1):

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Serial No. 92,400, filed February 28, 1961, entitled "Process for Treating Iron-Containing Ores."

[3] In addition to the above references the Examiner relied upon:

Davis, 2,204,576, June 18, 1940.
Speed et al., 2,900,236, Aug. 18, 1959.

The Board did not find it necessary to utilize these references to sustain the Examiner's rejection. Nor do we.

> * * * the fundamental feature of the invention revolves about the reducing operation on the ore as carried out in the lower or reducing zone wherein there is substantially no combustion * * *.

The fluidizing gas, supplied to said ore in the reduction bed, has reducing constituents sufficient to reduce the ferric oxide constituents of the ore to F_3O_4 but insuffiicent to reduce those constituents to FeO or Fe.

However, to successfully practice the invention, Heath (1) provides:

> * * * at the same time this control of quantity of reducing constituents is exercised (to reduce Fe_2O_3 to Fe_3O_4 only) it must be recalled that the total volume of supplied gas (both fluidizing gas and reducing gas) must be continued to meet the requirements of maintaining the ore fluidized or in teeter. [Comments in parentheses added.]

Heath (2), a continuation-in-part of Heath (1), teaches that the process of Heath (1) may be practiced in a reactor in which both the combustion reaction and reduction reaction occur in one bed as distinguished from Heath (1), which requires two beds.

According to Heath (2), the reaction is conducted so that the gaseous fuels containing reducing constituents such as hydrogen and carbon monoxide, are introduced into the bottom of the bed and a controlled amount of oxygen bearing air is separately introduced into the bottom of the bed. These two gases mix and burn as they rise through the bottom portion of the bed which extends from the bottom of the bed to a point where no more oxygen exists in the uprising gases. The heat provided by this combustion serves to heat the incoming gases and the incoming solids. As stated in Heath (2):

> The ratio of gaseous fuel to oxygen bearing gases introduced to the bottom of the fluid bed is such that after all the oxygen has been used up in the gas combustion zone, the uprising gas containing hydrogen and steam, and carbon monoxide and carbon dioxide in such ratios that it will reduce ferric oxide in the ore to magnetite, but not to ferrous oxide or metallic iron. This uprising reducing gas from the combustion zone (PC) reduces the hot ore particles in the upper part of the fluid bed, i.e., in the ore reduction zone (R) * * *.

According to Heath (2), "a gas rich in reducing constituents such as H_2 and CO is supplied to the reactor through an inlet pipe * * * at the bottom thereof" and burns when mixed with the oxygen-bearing gas to produce heat, steam, hydrogen, carbon monoxide and carbon dioxide to reduce the iron ore in the bed.

We agree with appellant's conclusory statement that:

> Thus neither Heath (1) nor Heath (2) teach or even contemplate adding liquid hydrocarbon fuel directly in a fluidized bed, for the purpose of producing reducing agents and generating heat therein.

The difference between appellant's claimed process and the process of the Heath patents is that in the claimed process the liquid hydrocarbon fuel is added directly in the fluidized bed while in the Heath patents the fuel is mxed with air and burned outside the bed. The Board in its action on appellant's petition for rehearing recognized this difference and stated:

> It is apparent that essentially, all appellant is doing is modifying the Heath process for reducing iron ore by employing liquid hydrocarbon fuel *in situ* for heating and reduction, said fuel being partially combusted in the presence of a controlled supply of oxygen, to supply the necessary heat and reducing agents for reduction of hematite to magnetite. The modification is indicated to be advantageous over a process in which the heat and reducing agents are generated outside of the reducing area and then delivered to the site, e.g., the "fluidized bed" or ore as in Heath. * * *

Appellant's position is that:

> * * * Nelson does not disclose, nor even suggest, introducing liquid fuel into a fluidized bed, and that the man skilled in the art would not combine the references in the manner suggested by the Board. The skilled man would not read the disclosure of Nelson out of context, as the Board would have us believe, but, rather, would carefully read the entire disclosure, particularly heeding the operating requirements of the system. Therefore, in Nelson the skilled man would at once recognize the enormous difference in gas velocities maintained in the riser * * * as opposed to the fluidized bed * * * and that while these high velocities are required in said riser * * * for mixing and movement of the mixture these same velocities could not be maintained in the fluidized bed.
>
> In fact, it may be safely said that the Nelson patent proves that the man skilled in the art hesitated to introduce fuel directly into the fluidized reduction bed but rather resorted to prior mixing and combustion, outside the bed, at high temperatures (Nelson maintains an average temperature in [the] riser * * * of 1900° F. or about 1040° C.) and high velocities (10 to 100 feet per second) which temperature and velocity could not be tolerated in the fluidized bed.
>
> It must be understood that a fluidized bed reactor cannot be equated to the common industrial combustion furnace or kiln, but rather is a separate and entirely different art having its own peculiar operating characteristics which must be strictly adhered to.

Nelson discloses the reduction of pulverized hematite to magnetite in a riser and a fluidized bed. Air from a compressor passes through a heat exchanger to the riser. Iron ore, ground to particle size for ultimate magnetic separation, is fed from a hopper through a preheating fluidized bed to the riser. Pulverized coal is fed from a hopper through a preheating fluidized bed to the riser downstream of the point where ore enters the riser. The pulverized coal, entrained in air, is partially burned, yielding a small amount of CO for reduction of hematite. Thus, according to Nelson, a lean "producer gas is formed in situ in the reducing zone in the presence of the preheated ore to be reduced" and "the heat which is evolved during the formation of the carbon dioxide is at least partially taken up by the ore." Economy is effected, according to the Solicitor, since "the amount of equipment required to form the lean producer gas is small compared to conventional equipment." The temperature in the riser is 1500°–2500° F. or about 815–1370° C., while that in the fluidized bed is 1200°–2200° F. or about 650–1200° C. Contrary to appellant's arguments, we fail to see why "the man skilled in the art" would "hesitate to introduce fuel directly into the fluidized reduction bed." The temperatures in Nelson's riser and bed appear to be compatible. The velocity in the riser transports the material to the bed and would hardly be used as the velocity of material in the bed.

While Nelson's specific embodiment discloses the use of coal, Nelson also contemplated the use of a petroleum oil. According to Nelson, other "low grade carbonaceous material such as * * * lignite, petroleum oils, pitches, petroleum residuums, etc." may be used as the fuel source for production of the lean producer gas. [1] Thus, it seems to us the teaching of Nelson as to the use of petroleum oil, when applied by one of ordinary skill in the art to the Heath disclosures, was an obvious expedient which was well within the ordinary skill of the worker in the art at the time of appellant's invention. In this connection, it is significant that Heath, Nelson and appellant were working in the same technological area.

It seems to us, therefore, that the differences between the process of the appealed claims and the processes of the art are not such that appellant's invention is patentable under the conditions stated in 35 U.S.C. 103.

[2] The decision of the Board of Appeals is therefore affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE JOHN F. ENGLER

No. 7685. Decided February 2, 1967

[54 CCPA —; 371 F.2d 508; 152 USPQ 432]

1. PATENTABILITY—ANTICIPATION.

"From the above discussion of the inventions of appellant and of Schneider, it is clear that we are here dealing with different inventions. In making this determination we consider (*c*) as an element of appellant's invention and an element of the claimed combination. The fact that Schneider anticipates a combination of (*a*) through (*d*) is of no moment when considering the combination of (*a*) through (*c*) under section 102(a). Schneider does not disclose (*c*). Appellant's invention is therefore not anticipated."

2. SAME—PARTICULAR SUBJECT MATTER—VEHICLE COUPLING DEVICE.

The refusal of certain claims to a device for coupling a tractor to traction apparatus, as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 66,967.

REVERSED.

Ned L. Conley, Murray Robinson for appellant.

Joseph Schimmel (*L. F. Parker*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals [2] affirming the rejection of claims 12 and 13 on two grounds: (1) failure to comply with 35 U.S.C. 112, and (2) anticipation, 35 U.S.C. 102(a).[3] The two issues presented will be considered separately. We will first consider appellant's invention.

The invention relates to an improved drawbar for connecting two surface vehicles. The specification discloses the operation of the drawbar between a "tractor" and a "traction apparatus," or mower in which one end of the drawbar is pivotally connected to the top of the mower frame. Between this pivot point and the end of the mower

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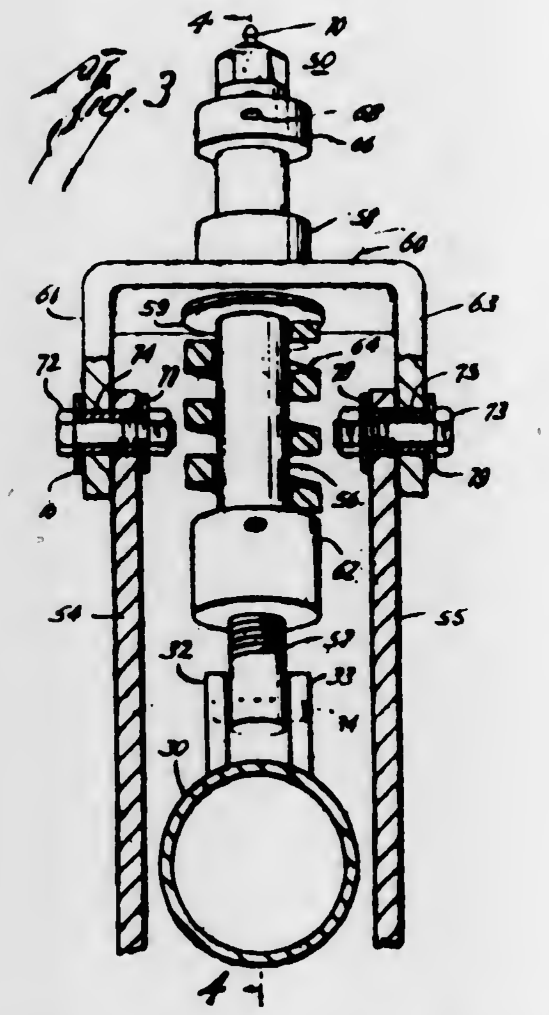
[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Rosa, Examiner-in-Chief, and Hull and Moseley, Acting Examiners-in-Chief. Application Ser. No. 66,967, filed November 3, 1960. We note that the composition of the board is such that more than one acting examiner-in-chief participated in this decision. Appellant has not questioned the authority of this board. For the position of the court concerning the decisions of such boards under these circumstances, as well as the views of Almond, *J.*, and myself, see *In re Wiechert*, 54 CCPA —, — F.2d —, — USPQ —. Eight claims have been allowed.

[3] Based on a British patent to Schneider et al. [Schneider] No. 188,308, application date September 8, 1922. A second patent relied on by the Examiner to show the state of the art was not applied to the claims by either the Examiner or the Board and need not be considered here.

frame, proceeding along the drawbar towards the tractor, structure is provided which is the heart of the controversy. It is shown in FIG. 3 of the application and is herein reproduced.



In the above figure, "ears" 54 and 55 are rigidly attached to the mower frame. Clevis 60 is pivotally affixed to the ears through bushings 74 and 75 and bolts 72 and 73. The hollow cylinder 56 moves vertically in bushing 58 which is fixed to the clevis. Collar 66 and adjustment nut 62 are affixed to opposite ends of the hollow cylinder. Threaded member 52 mates with the adjustment nut and extends into the hollow cylinder. It is pivotally connected to "lips" 32 and 33 which are affixed to the drawbar 30. In operation, a vertical movement of the drawbar, depending on direction, either increases or decreases the tension in spring 64.

We will first consider the rejection based on section 112 and, in doing so, set forth the claims adopting the subdivisions and nomenclature utilized by appellant:

12. A device for coupling a tractor to traction apparatus comprising
(*a*) a drawbar pivotally coupled to said traction apparatus,
(*b*) a clevis pivotally attached to said traction apparatus forwardly of the point of attachment of said drawbar,
(*c*) an aperture in said clevis,
(*d*) a rod pivotally coupled to said drawbar and slidably received through said aperture, and
(*e*) means engaging said rod and said clevis adapted to urge the drawbar downwardly with respect to said traction apparatus.

13. A device as defined by claim 12 wherein said means comprises resilient means.

In regard to the section 112 rejection, the dispute centers on item (*e*). The Board was of the view that the structure in support of the means clause was insufficient to accomplish the recited function. Concerning (*e*), the Board stated:

> Considering the above quoted language in the light of appellant's specification, the "means engaging said rod and said clevis" is his spring 64, nut 62 and (though integral with the clevis and therefore a part of it), lower face 59 of bushing 58. These simple parts are the only ones disclosed as "engaging said rod and said clevis" and therefore must be the means under 35 U.S.C. 112. However, these elements alone by their mere engaging the rod and clevis are not necessarily capable of performing the function of urging the drawbar downwardly. As stated by the Examiner there must be other structural relationships present but not recited to assure accomplishment of the recited result. * * *

The Board correctly observed that section 112, third paragraph, provides that an element in a claim for a combination may be expressed as a means for performing a specific function without the recital of structure. Further, section 112 provides that "such claim shall be construed to cover the corresponding structure" described in the specification. While the Board was also correct in proceeding to the specification, we find that the Board erred in its conclusion.

Item (*e*) must be considered in proper context, i.e., it must be considered in view of the preceding structure defined in the claim. Claim 12 states the drawbar is pivotally connected to the traction apparatus. Forwardly there is a clevis pivotally attached to the traction apparatus and a rod pivotally attached to the drawbar. The rod is slidably received in the clevis aperture. At this point the means-plus-function clause may be considered. Turning to the specification, the "means" are seen to include adjustment nut 62, hollow cylinder 56, spring 64, and bushing 58 as they engage "said rod and said clevis." Considering the functional language, we think the specification makes it clear that the total apparatus operates to "urge the drawbar *downwardly with respect to said traction apparatus*." The position of the spring member in relation to the pivoted drawbar and the traction apparatus achieves this result.

The Board, however, adds that the apparatus does not necessarily perform the above function. It maintained:

> * * * This is considered obvious from the fact that the spring I of Schneider answers to the "means engaging said rod and said clevis" but accomplishes an opposite result.

To explain the Board's position we will now consider the Schneider reference, which also discloses a towbar arrangement. The towbar is pivotally mounted on a trailer. Forward of and below this pivot point there is a second pivot point adapted to receive a clevis. The clevis is affixed to structure wherein a spring acts on a rod urging the rod upwardly. The rod is pivotally connected to the drawbar forward of either previous pivot point. A downward movement of the pivoted drawbar displaces the rod causing an increase in the spring tension which acts to urge the drawbar upwardly.

Returning to the Board's reasoning, the Board was of the view that appellant failed to disclose sufficient structure to utilize a "means" clause in order to accomplish the specified function. It further stated that this was obvious because Schneider, also employing a spring and pivoted drawbar and rod, accomplishes an opposite result. We think that the error in the Board's reasoning is as follows: It failed to look at appellant's *invention*; rather, it evaluated the invention as a list of parts and ignored the relative *position* of these parts in the total combination. However, when considering the invention disclosed in Schneider, the Board clearly looked beyond the individual parts disclosed therein; it considered the respective positions of the parts as it expressly acknowledges that the spring urged the drawbar upward. Once the respective positions of the parts are considered, it is clear that the structure disclosed by appellant urges the drawbar downwardly just as Schneider's drawbar is urged upwardly. We therefore find that appellant has disclosed sufficient structure to satisfy the means-plus-function clause in claim 12. As claim 13 is dependent upon claim 12, and there is no independent objection concerning section 112, the Board's decision as to these claims based on section 112 must be reversed.

Section 102(a)

As to the rejection apparently based on 35 U.S.C. 102(a), the Board's reasoning is not clear. From the briefs and record it seems appellant admits that Schneider discloses a combination which contains elements (*a*) through (*d*). The Board in its opinion noted this admission by appellant. It then resolved the issue presented under section 112. The Board's opinion concluded as follows:

> It is our opinion that the claims fail to comply with the requirements of 35 U.S.C. 112 as urged by appellant and, as presented, are anticipated in all material respects by Schneider * * *.

No other reasoning was advanced by the Board as to why the invention defined by the appealed claims was anticipated. It appears that the Board discarded (*e*) in resolving the issue under section 102(a) in view of its determination that (*e*) failed to satisfy section 112, third paragraph.

[1] From the above discussion of the inventions of appellant and of Schneider, it is clear that we are here dealing with different inventions. In making this determination we consider (*e*) as an element of appellant's invention and an element of the claimed combination. The fact that Schneider anticipates a combination of (*a*) through (*d*) is of no moment when considering the combination of (*a*) through (*e*) under section 102(a). Schneider does not disclose (*e*). Appellant's invention is therefore not anticipated.

[2] The Board's decision is therefore reversed.

REVERSED.

RICH, *J.*, concurring.

It seems to me that the crux of this case lies in the Board's view that to satisfy § 112 the claim must set forth the "other *structural* relationships" (my emphasis) which produce the function of downward urging which is specified in the claim.

The Examiner held this view because he deemed the *functional* language insufficient to distinguish the invention from Schneider. He did not say why. He appears to have felt the only proper way to distinguish from the prior art is by *structural* limitations in spite of the permissive language of § 112, last paragraph.

In my view, since the statute permits a combination invention to be *defined* in terms of means-plus-function definitions of the elements constituting the combination, all that the statute requires is that the *combination* so defined is distinguished from the reference in being new and unobvious. It does not matter whether the distinction appears in one element or all elements nor which element is functionally defined.

Appellant here has defined his invention as the statute permits and, so defined, it is not suggested by Schneider. Rather the contrary, as

Schneider produces the opposite result from that obtained by appellant.

I am unable to ascertain from the Board's opinions why it believed the claims fail to comply with § 112, except the Board's insistence the distinction from the prior art *must* be in *structural* terms, a notion for which I find no supporting authority. That was about the notion appearing in *Halliburton Oil Well Cementing Co.* v. *Walker*, 329 U.S. 1, 71 USPQ 175 (1946), which § 112 was designed to eliminate. See Federico, Commentary on the New Patent Act, 35 USCA 1, 25 (1954).

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,441,134, Brodgen and Brodgen, BOTTLE CARRIER AND PACKAGE; **2,986,857,** H. Ganz, MACHINE AND METHOD FOR PACKAGING ARTICLES; **2,990,997,** A. J. Weiss, PAPERBOARD CARRIER, **filed** Jan. 4, 1963, D.C., S.D.N.Y., Doc. 63–C–31, *Old Dominion Box Co., Inc. and Dacam Corp.* v. *Continental Can Co., Inc.* Order claims dismissed, counter claim dismissed, July 14, 1967.

2,588,699, C. F. Carlson, ELECTROPHOTOGRAPHIC APPARATUS; **3,121,006,** Middleton and Reynolds, PHOTOACTIVE MEMBER FOR XEROGRAPHY, **filed** Aug. 29, 1967, D.C., S.D.N.Y., Doc. 67–C–3302, *Xerox Corp.* v. *Dennison Manufacturing Co., and Dennison Copier Corporation.*

2,611,813, Sharpless and Eichert, Jr., MAGNETIC DATA STORAGE SYSTEM, **filed** Aug. 25, 1967, D.C., N.D. Ga. (Atlanta), Doc. 11165, *Technitrol, Inc.* v. *Collins Radio Co.*

2,637,893, G. Shaw, ARTIFICIAL FILAMENT, **filed** July 11, 1966, D.C., S.D.N.Y., Doc. 66–C–2047, *Gilbert Shaw* v. *James A. Cole Co., Inc.* Filed consent judgment, defendant enjoined, Aug 18, 1967.

2,656,508, W. H. Coulter, MEANS FOR COUNTING PARTICLES SUSPENDED IN A FLUID; **2,869,078,** Coulter and Coulter, FLUID METERING APPARATUS; **2,985,830,** W. H. Coulter et al., SCANNER ELEMENT FOR PARTICLE ANALYZERS, **filed** July 13, 1967, D.C., S.D. Ind. (Indianapolis), Doc. IH67–C–298, *Coulter Electronics, Inc.* v. *Trustees of Indiana University and Indiana University Foundation.*

2,779,374, C. E. Clark, GOLF CLUB COVER; **D. 179,591,** E. L. Clark, same, **filed** Aug. 8, 1967, D.C., S.D.N.Y., Doc. 67–C–3027, *Clarence E. Clark* v. *Castle Sporting Goods, Inc.*

2,869,078. (See 2,656,508.)

2,967,997, R D. McCoy, METHOD AND APPARATUS FOR CHECKING ELECTRONIC ANALOG COMPUTERS, **filed** Aug. 10, 1967, Ct. Cl. Washington, D.C., Doc. 258–67, *Dynamics Corporation of America* v. *The United States.*

2,985,830. (See 2,656,508.)

2,986,857. (See 2,441,134.)

2,990,997. (See 2,441,134.)

3,022,701, R. Portuch, PLASTIC ANCHOR-TYPE FASTENER AND DRIVER MEANS FOR EXPANDING SAME, **filed** Aug. 24, 1967, D.C., S.D.N.Y., Doc. 67–C–3251, *U.S. Expansion Bolt Company* v. *Star Expansion Industries, Inc. et ano.*

3,121,006. (See 2,588,699.)

3,126,683, Richards and Holly, SEPARATOR FEEDER; **3,222,935,** F. Fetzer, STEPPING DEVICE, **filed** Aug. 25, 1967, D.C., E.D. Ill. (Danville), Doc. CV67–123–D, *Hollymatic Corporation* v. *FMC Corporation.*

3,222,935. (See 3,126,683.)

3,225,860, C. R. Fox, SPEAKER ASSEMBLY, **filed** Aug. 17, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1210–AAH, *Metra Electronics Corporation* v. *Craig Panorama, Inc. et al.*

3,245,409, J. R. Martin, SELF-ADJUSTABLE FOUNDATION GARMENT; **3,245,410,** same, **filed** Nov. 3, 1966, D.C., S.D.N.Y., Doc. 66–C–3681, *Flexnit Company, Inc.* v. *Curtis Eddy-Form Co.* Filed stipulation and order of discontinuance, Aug. 24, 1967.

3,245,410. (See 3,245,409.)

3,252,582, S. Kesilman et al., MODULAR DISH WASHER RACK; **D. 201,383,** same, COMMERCIAL DISH WASHER RACK, **filed** Aug. 29, 1967, D.C., S.D.N.Y., Doc. 67–C–3307, *Green Valley Products, Inc.* v. *The General Tire & Rubber Company.*

3,278,059, Ridgeway and Appleman, LIFT AND DUMP APPARATUS FOR REFUSE CONTAINERS, **filed** Aug. 23, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C–828, *Harsco Corporation* v. *N.Y. Sani-Can, Inc.*

3,278,364, P. Dieffenbach, ARTIFICIAL CHRISTMAS TREE, **filed** Aug. 7, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1365, *Percy Dieffenbach* v. *Tomar Industries, Inc.*

3,316,396, Trott and Bulcroft, ATTACHABLE SIGNAL LIGHT FOR DRINKING GLASS; **D. 208,122,** D. H. Trott, SIGNAL LIGHT, **filed** Aug. 24, 1967, D.C., W.D. Mich. (Grand Rapids), Doc. 5708, *Crossbow, Inc. et al.* v. *L. J. Hurton Advertising Specialty Co., Inc.*

3,319,893, Rodgers and Caves, SPRINKLER, **filed** Aug. 8, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1144–TC, *J. Linn Rodgers et al.* v. *Thompson Manufacturing Company.*

3,322,127, C. M. Sachs, ANTI-CREEP BRASSIERE, **filed** Aug. 28, 1967, D.C., M.D. Ga. (Columbus), Doc. 1243, *International Playtex Corporation* v. *Montgomery Ward and Company, Inc.*

3,335,092, K. E. Perry, OVEN CLEANER AND METHOD OF USING THE SAME, **filed** Aug. 10, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1393, *Shelco, Inc.* v. *The Dow Chemical Co. and Harry G. Schierholz and Co.*

D. 179,591. (See 2,779,374.)

D. 201,383. (See 3,252,582.)

D. 201,793, J. K. Rains, SWIMMING POOL, **filed** Mar. 22, 1966, D.C., S.D.N.Y., Doc. 66–C–812, *Hohn K. Rains* v. *Cascade Industries, Inc.* **Transferred,** D.C.N.J (Trenton), Doc. 976–66. Summary judgment; patent held invalid (notice Aug. 30, 1967).

D. 208,122. (See 3,316,396.)

PLANT PATENTS

GRANTED NOVEMBER 14, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,776
NECTARINE TREE

David B. Lowry, P.O. Box 464,
Medford, Oreg. 97501
Filed Feb. 21, 1966, Ser. No. 529,162
1 Claim. (Cl. Plt.—41)

A new and distinct variety of nectarine tree, substantially as illustrated and described, essentially characterized—particularly in comparison to the Sun Grand—by the regular and productive bearing of uniform, medium size, freestone fruit having yellow flesh quite firm when fully ripe; thin, smooth, highly waxed skin of yellow ground color shading more to orange and substantially overspread with a diffused red having distinct spotting; a smaller seed; and a mild flavor which is less acid and not as sweet.

2,777
CATTLEYA ORCHID PLANT

Elizabeth Bacon Fitzgerald, 3150 E. Kenwood Blvd.,
Milwaukee, Wis. 53211
Filed June 20, 1966, Ser. No. 559,688
1 Claim. (Cl. Plt.—68)

A new and distinct variety of Cattleya orchid plant, substantially as shown and described, characterized particularly by a pure white bloom having a cadmium light orange yellow tint on the inner throat of the modified petal, long lasting quality as a plant and as a cut flower, and a sweet, pungent fragrance which is quite strong for an orchid.

2,778
POINSETTIA PLANT

Paul Ecke, P.O. Box 488, Encinitas, Calif. 92024
Filed June 27, 1966, Ser. No. 560,986
1 Claim. (Cl. Plt.—86)

A new and distinct variety of poinsettia plant as illustrated and described, and more particularly characterized by its relatively short height, and essentially by an involucre of bracts which have a deep rich crimson red color faintly tinted with rose bordering on cerise, the bracts being relatively few numerically and unusually large both in length and width, and forming a generally planar wreath of bracts imbricated at adjacent edges, the bracts and foliage leaves having clearly defined venation; said bracts being of varying shapes, and a portion of such bracts being irregularly arranged out of the general plane of the involucre of the bracts; the plant having a large, vigorous root structure, and a short, stiff peduncle requiring no staking support for the mature plant; coupled with naturally late blooming characteristics requiring no treatment with lights to delay optimum development of growth of bracts and inflorescence for the Christmas market, together with exceptionally long-lasting qualities of maintaining an optimum of appearance of bracts, inflorescence and foliage leaves over an exceptionally long period of time.

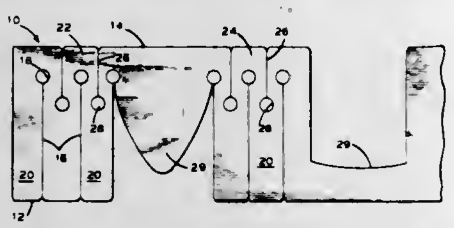
PATENTS

GRANTED NOVEMBER 14, 1967

GENERAL AND MECHANICAL

3,351,954
BONING

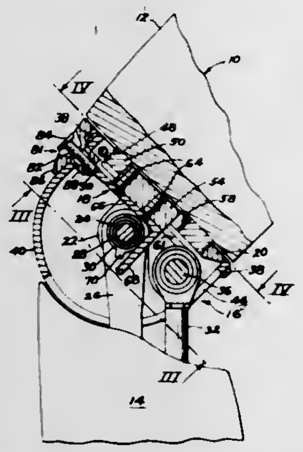
William L. Chalfin, 1435 E. 101st St., Brooklyn, N.Y. 11209, and Edward Christopher Garvey, Massapequa, N.Y.; said Garvey assignor to said Chalfin
Filed June 18, 1965, Ser. No. 464,953
3 Claims. (Cl. 2—255)



1. A boning comprising an elongated strip of non-elastic moderately stiff material having two longitudinal edges, said strip having a first area with a plurality of transverse slits cut therein from one longitudinal edge to a point spaced from the second longitudinal edge thereby to form a plurality of fingers attached to a base portion along the said second edge, said fingers permitting lateral and torsional movement of the boning while maintaining vertical stability, said strip having a second area being uncut to give firmer control in that area and a third area substantially completely cut out for absence of control in that area.

3,351,955
ARTIFICIAL LEG HAVING A KNEE JOINT CONSTRUCTION WHICH SELECTIVELY PERMITS EITHER MANUAL OR AUTOMATIC ROTATION BETWEEN THE STUMP UNIT AND LOWER LEG UNIT

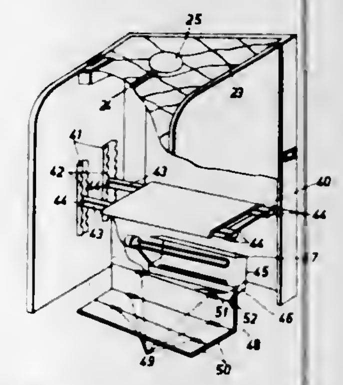
Frank Middleton, 2918 Westport Road, Lexington Park, Peoria, Ill. 61614
Filed Dec. 30, 1964, Ser. No. 422,179
6 Claims. (Cl. 3—22)



1. An artificial leg comprising a stump unit and a lower leg assembly connected through a swingable knee joint, said knee joint comprising a first member secured to said stump of said artificial leg, a second member rotatably mounted on said first member and secured to said leg assembly, lock means operable between said members to hold them against rotation, and release means operable after a preselected rearward swinging movement of said leg assembly relative to said stump whereby said lock means holding said first and second members against rotation is released allowing said leg assembly to rotate relative to said stump unit.

3,351,956
FOLDABLE WARM AIR AND STEAM BATH ASSEMBLY

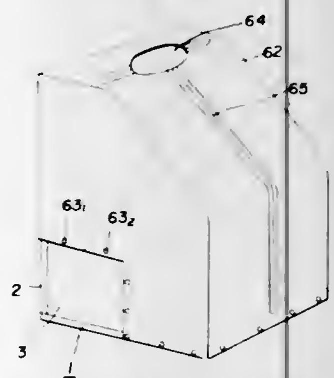
Robert Thöner, Reichenbergerstrasse 18, Bietigheim, Germany
Filed Nov. 9, 1964, Ser. No. 409,646
Claims priority, application Germany, Nov. 8, 1963, T 25,034; July 18, 1964, T 26,617
15 Claims. (Cl. 4—160)



1. A foldable hot air and steam bath apparatus, which includes: a cabin having a substantially rigid rear wall and two substantially rigid side walls, said side walls being foldable relative to said rear wall so as to form therewith a relatively flat box of substantially rectangular cross section, seating means pivotally connected to one of said side walls and tiltable selectively from a substantially horizontal position into an upright position and vice versa, heat and steam producing means likewise arranged within said space and included in an electric circuit, and control switch means likewise arranged in said electric circuit, said control switch means being operable in response to said seating means occupying its substantially horizontal position to close said circuit and also being operable in response to said seating means being moved out of said substantially horizontal position to open said circuit.

3,351,957
PORTABLE STEAM BATH

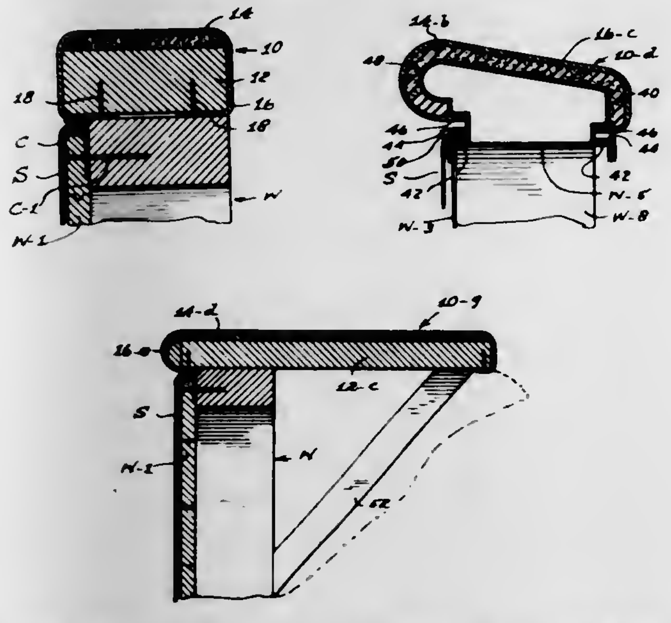
Minoru Ikeda, Kitatama-gun, Tokyo, Japan, assignor to France Bed Company Limited, Tokyo, Japan, a corporation of Japan
Filed Nov. 23, 1964, Ser. No. 413,137
1 Claim. (Cl. 4—164)



A portable steam bath comprising a base plate, a cavity defined on the upper rear portion of said base plate by four walls perpendicular to said base and a top cover, a back plate foldably mounted on the rear upper edge of the rear wall of said cavity, a pair of frames pivotally connected to the upper edges of the opposite side walls and adapted to be secured to said back plate, a cover adapted to define a steam cabinet on said base plate together with said pair of frames and said back plate, said cover being being provided with a neck opening at its upper surface and a slit selectively opened and closed with a slide fastener, the peripheral edge of said cover being fastenable to the periphery of said base plate, to the sides of said cavity and to the periphery of said back plate by means of buttons, a sitting plate mounted above said cavity with a gap therebetween, a foot pedestal mounted upon said base plate in front of said cavity, and a steam generator disposed in said cavity to eject steam into spaces below said sitting plate and said foot pedestal, said steam generator comprising a steam generating chamber with pipes leading to the steam cabinet, a feed water tank to maintain a constant water level in said steam generating chamber; and, an electric heater located at the lower portion of said steam generating chamber and passages between the seat and foot rest and the side walls of said steam cabinet so as to introduce steam into said steam cabinet around the peripheries of said sitting plate and said foot pedestal so that hot steam can sufficiently heat the waist and feet of the human body within the steam bath but is prevented from directly contacting the human body before its temperature has been decreased to a suitable value.

3,351,958
CUSHIONED COPING FOR SWIMMING POOL WALLS

Eugene H. Shields, 45 Hartman Drive, Hamilton Square, N.J. 08690
Filed Aug. 24, 1965, Ser. No. 482,068
17 Claims. (Cl. 4—172)

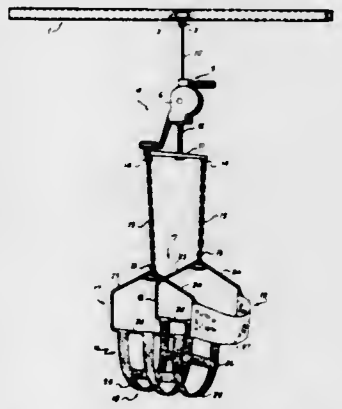


1. In combination with a swimming pool wall having a horizontal top surface, a cushioned coping for said wall comprising a rail member mounted on the top surface of said wall, a resilient sheet cover for said rail member including a sheet of soft resilient material between said rail member and the resilient sheet cover, and means for attaching the edges of said cover to said rail member with said cover in tight enclosing contact with said rail member.

3,351,959
INVALID LIFT

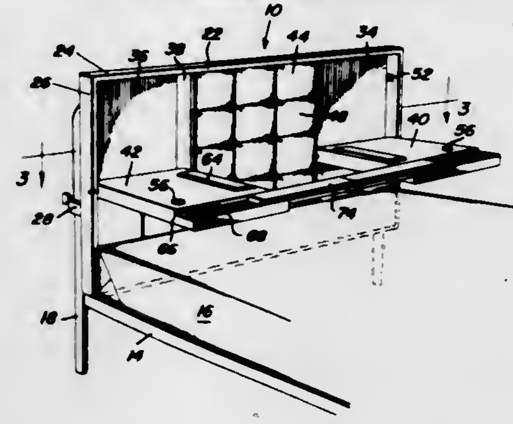
Bobby G. Turpin, Box 13–B, Springtown Star Route, Weatherford, Tex. 76086
Filed Apr. 22, 1966, Ser. No. 544,422
4 Claims. (Cl. 5—83)

1. In combination with an overhead track having a wheeled carriage thereon, the combination of a hand operable hoist having a frame, a reel rotatable on the frame, and a crank acting on the reel, through speed reducing gears, to turn it relatively to the frame, a length of cable wound on said reel and having its free end connected to said carriage whereby said hoist is suspended from said carriage for vertical adjustment relative thereto, a horizontally extending elongated member below said hoist having means intermediate its ends whereby it is pivotally connected to the frame of said hoist for rotative adjustment about a vertical axis, flexible linkage connected to opposite end portions of said elongated member and depending therefrom, and a detachable seat having a pair of light weight side frame removably connected to said flexible linkage and depending therefrom, said side frames each consisting of an elongated member bent intermediate its ends to form a pentagon shaped open frame having a horizontally extending bottom side, a pair of vertically extending sides extending upwardly from the bottom side, and a pair of upwardly converging sides each connected to one of the vertically extending sides in spaced apart relation to the bottom side, and having flexible bottom and back portions, conformable to the body of a patient seated therein, extending between said side frames.



3,351,960
DETACHABLE HEADBOARD WITH ARMRESTS

John W. Burkholder, 5889 Jefferson Ave., Newport News, Va. 23605
Filed Apr. 28, 1966, Ser. No. 545,980
9 Claims. (Cl. 5—317)

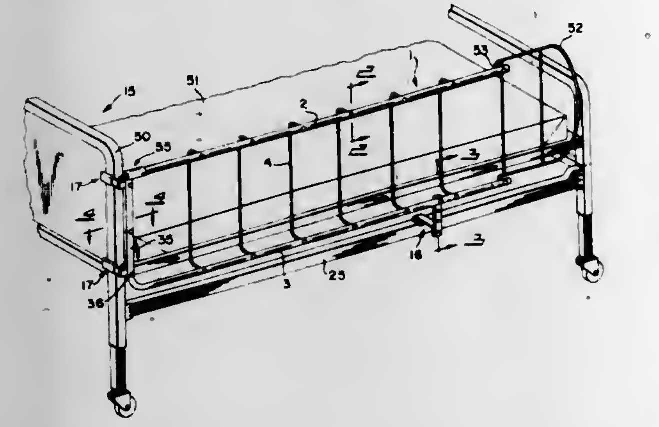


1. A headboard comprising a panel having a surface facing the central portion of a bed, said surface including at least one recess adjacent one edge thereof, an armrest pivotally supported in said recess adjacent the bottom thereof so that the armrest may swing about generally a horizontal axis from a vertical position within the recess to a horizontal position projecting generally perpendicular therefrom towards the center of the bed whereby a person sitting up in bed resting against the headboard may rest his arm on the armrest in a convenient position, and means on said headboard enabling it to be associated with a bed structure, said armrest being provided with a transversely extending recess at the edge thereof remote from the headboard when in horizontal position, a laterally ex-

tending bookrest member supported in said recess and extensible from a retracted position within the confines of the armrest to an extended position in front of a person sitting up in bed alongside of the armrest, and means on the laterally extending member for supporting a book in an inclined position for retaining the book in easy position for reading.

3,351,961
BEDRAIL

William A. Daniels, 7031 Seven Hills Drive, and William A. Daniels, Jr., 942 Simich Drive, both of Seven Hills, Ohio 44131
Filed Nov. 27, 1964, Ser. No. 414,205
21 Claims. (Cl. 5—331)

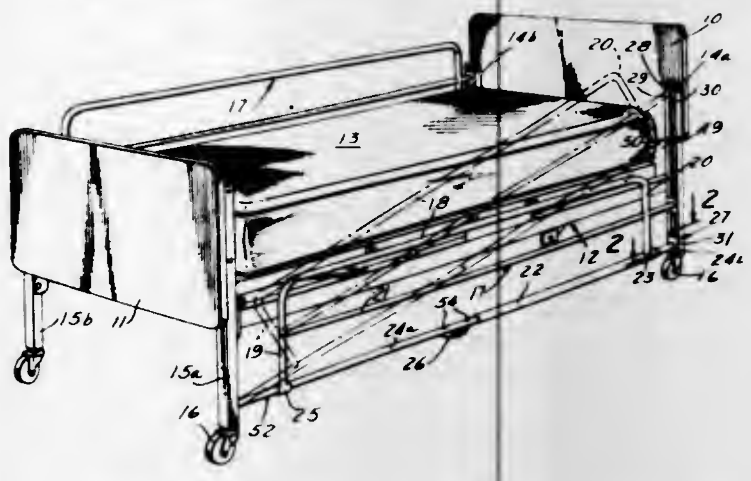


1. A bedrail of the type which is adapted to be clamped to a bed to guard against a person from falling therefrom, comprising upper and lower guard rails, means mounting said guard rails in parallel relationship for movement toward and away from each other, an extension projecting from said lower guard rail in the direction of said upper guard rail, and a latch assembly mounted on the end of said upper guard rail adjacent said extension for releasably securing said upper guard rail to said extension, said latch assembly comprising a channel-shape sleeve member disposed over said end of said upper guard rail and pivoted thereto, a tang projecting inwardly from the outer end of said sleeve member, a slot in the upper end of said extension for receipt of said tang, said tang being spaced from said end of said upper guard rail by a distance sufficient for receipt of said upper end of said extension and for relative lateral movement between said extension and latch assembly to effect disengagement and engagement of said tang in said slot, and a spring means disposed within said upper guard rail and projecting outwardly therefrom to engage said extension and yieldably urge said tang into said slot.

3,351,962
ADJUSTABLE GUARD FRAME FOR BEDS

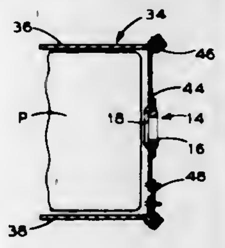
Richard W. Dodrill, San Pedro, and Calvin W. Long, Los Angeles, Calif., assignors to Bedline Inc., Bell Gardens, Calif., a corporation of California
Filed July 1, 1966, Ser. No. 562,219
3 Claims. (Cl. 5—331)

1. An adjustable guard frame for a bed, comprising:
(a) vertical guide rails on one side of the bed, one of said rails being at the head end of the bed and the other at the foot end;
(b) a skeletal frame structure extending generally along said side of the bed and having its ends respectively positioned adjacent said guide rails;
(c) attaching means guidingly connecting each end of the frame structure to the adjacent guide rail for raising and lowering movements, each of said attaching means having locking elements selectively operable into locked and unlocked positions with respect to the associated guide rail; and
(d) manually operable means including a rotatable elongate structure carried by said frame structure and having a rotatable handle member intermediate the ends of the frame structure for selectively actuating said locking elements into locked and unlocked positions, said elongate structure being extensible and retractable to enable longitudinal tilting of the guard frame so as to position one end thereof at an elevated position above that of the other end.



3,351,963
AIR VENT FOR PLASTIC COVER

Paul Rapisarda, 4412 Fort Hamilton Parkway, Brooklyn, N.Y. 11219
Filed Sept. 6, 1966, Ser. No. 577,255
2 Claims. (Cl. 5—347)

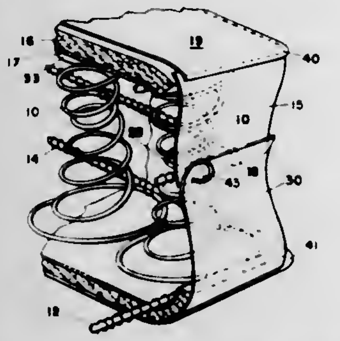


1. An article for providing reinforced air vents in plastic covers and the like comprising a continuous strip of flexible plastic material having a predetermined width, an approximately centrally located row of apertures in said strip, each one of said apertures being spaced from the next adjacent aperture by a preselected distance, and a respective reinforcing means surrounding each one of said apertures for strengthening the edges of said strip which defines said row of apertures, said reinforcing means comprising a grommet for each of said apertures fabricated from a flexible and resilient plastic material, each of said grommets having a raised circular wall defining a through bore which communicates with the respective apertures, the diameter of said through bores being smaller than the diameters of the respective apertures whereby said circular walls extend radially inwardly beyond the edge of the walls defining said apertures to reinforce the same, a radially extending flange on each of said grommets, and a heat seal between each of said flanges and one surface of said continuous strip of material.

3,351,964
INNER SPRING MATTRESS AND HANDLE COMBINATION

Michael D. Anson, 2311 Raleigh Lane, Louisville, Ky. 40206
Filed June 21, 1966, Ser. No. 559,149
4 Claims. (Cl. 5—351)

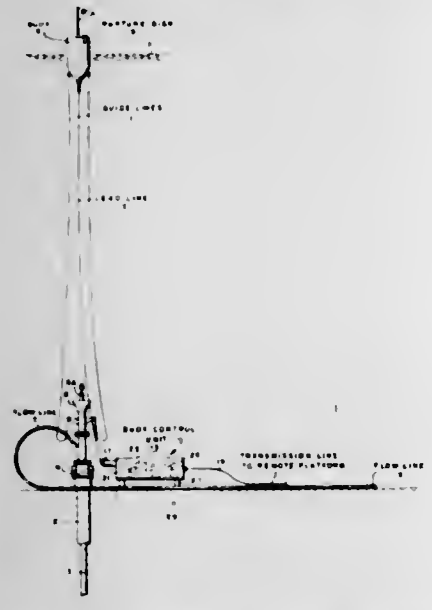
1. A mattress comprising
a top border wire,
a bottom border wire spaced from said top border wire,
a center wire between said top border wire and said bottom border wire,
helical support springs each having its lower end disposed generally in a plane with said bottom border wire and its top disposed in a common plane with said top border wire,
said border wires being in the form of loops tangent to the turns of said helical springs,
said center wire being in the form of a loop slightly smaller than said loop defined by said top and said bottom border wires,



means attaching said coil springs to said top border wire and to said bottom border wire,
sheet-like cover material disposed over said mattress,
a part of said cover extending from said top border wire to said bottom border wire,
means connecting said cover to said center wire,
a handle attached to said center wire,
said handle comprising a ring,
and means attaching said ring to said center border wire.

3,351,965
MARKER BUOY CONTROL

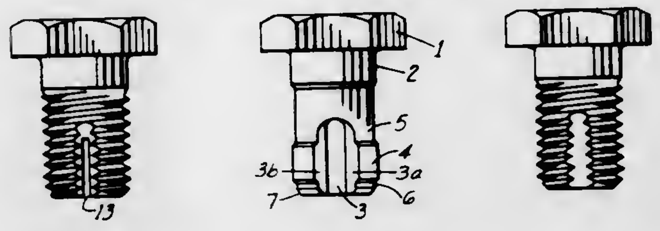
Joseph A. Burkhardt, Houston, Tex., assignor to Esso Production Research Company
Filed Dec. 23, 1965, Ser. No. 515,810
4 Claims. (Cl. 9—8)



1. Apparatus for controlling a water-submerged marker buoy for locating an underwater site, comprising:
a reel;
flexible first fluid conduit means at least partially windable on said reel, adapted for connection at one end thereof to said buoy;
a closure member for said conduit means at the buoy end thereof;
second fluid conduit means; and
control means connected between said first and second conduit means for unwinding said first conduit means from said reel, responsive to given fluid pressure exerted on the interior of said second conduit means to open said closure member and permit said buoy to rise to the surface, and responsive to reclosure of said closure member and to a lower fluid pressure in said second conduit means to rewind said first conduit means on said reel.

3,351,966
METHOD OF MAKING RESILIENT LOCKING FASTENERS

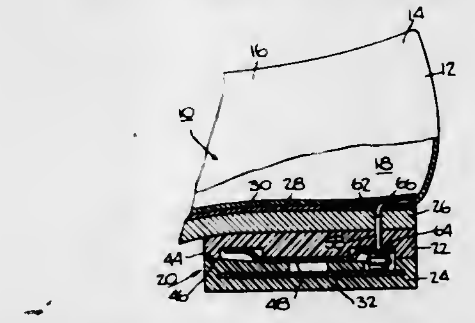
Edward J. Pelochino, 716 S. Burris St., Compton, Calif. 90221
Filed Oct. 20, 1965, Ser. No. 506,425
5 Claims. (Cl. 10—10)



1. The method of making a locking screw fastener having resilient locking segments, comprising: forming in an unthreaded screw blank, a pair of diametrically opposed grooves extending longitudinally of the blank, with at least one side wall of the grooves being disposed at a substantial angle to a plane extending longitudinally of the blank and extending through said grooves, then displacing the blank material to form threads on said stem interrupted by said grooves, said side wall of said grooves providing the end of the thread with a negative angle of rake, and then slotting said threaded blank lengthwise along said grooves to provide said resilient locking segments.

3,351,967
HEEL CONSTRUCTION

Ben V. Dardig, 4 Peter Cooper Road, New York, N.Y. 10010
Filed Feb. 7, 1964, Ser. No. 343,344
7 Claims. (Cl. 12—147)

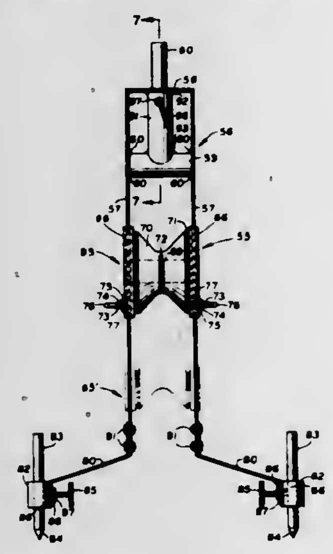


1. In the process of fabricating a heel construction comprising a two member detachable heel secured to the heel portion of a shoe, one member constituting a heel base and a heel base insert plate secured to the heel base, said one member being fixed to the shoe, and the other member constituting a detachable heel lift and a heel lift support plate secured to the heel lift, and means carried by said plates for detachably coupling said members, the method of attaching the heel base and heel base insert plate to the heel portion of the shoe, including the steps of:
(a) locating the heel base insert plate in a heel positioning device;
(b) providing the heel base with the same breast and peripheral configuration as the heel lift;
(c) situating the heel base in the heel positioning device in contact with the heel base insert plate in a predetermined position which position is the same as

the position of the support plate with respect to the heel lift; and
(d) securely fixing the heel base and the heel base insert plate to the heel portion of the shoe;
(e) so that the fixed member is positioned to registrably receive the detachable heel lift in matched registration therewith without trimming.

3,351,968
HOSE GUIDE APPARATUS

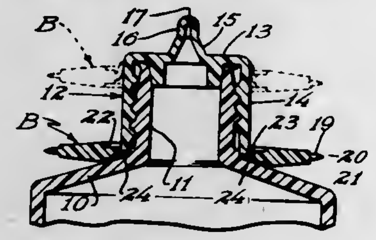
Philip C. Masters, Ashland, Ohio, assignor to The F. E. Myers & Bro. Co., Ashland, Ohio, a corporation of Ohio
Filed Oct. 23, 1965, Ser. No. 502,982
1 Claim. (Cl. 15—104.3)



In an apparatus for cleaning a conduit, said apparatus having a trailing hose, hose guide apparatus comprising, frame means positioned at an entrance to said conduit by adjustment means, said frame means having guide rails spaced and joined by a dowel, said adjustment means having legs attached at one end of said frame means, stakes adjustably attached to said legs to selectively position said frame means relative to said conduit, an adjustable projecting rod at the second end of said frame to further selectively position said frame means relative to said conduit, pulley block means having sleeves slidably engaging and selectively movable along said guide rails, and sheave means rotatably mounted in said pulley block means on a gudgeon and engaging said hose, whereby said hose is nonabrasively guided into said conduit.

3,351,969
FLEXIBLE SCRAPER

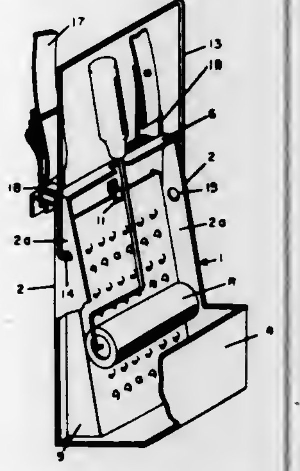
Vincent C. Cline, 98 S. Wheeler St., St. Paul, Minn. 55105
Filed May 19, 1965, Ser. No. 457,053
4 Claims. (Cl. 15—245)



3. A scraper blade comprising:
a generally flat body of resilient material having a thin marginal edge portion and a relatively thick area inwardly of said marginal edge portion,
said body being generally square in outline, the four corners of said body being rounded along a radius of curvature, the radius of curvature of each corner being different from the radius of curvature of the other corners,
and a series of angularly spaced inwardly extending thin resilient tabs extending into said aperture.

3,351,970
VERTICAL PAINT ROLLER TRAY

Howard A. Engh, 3017 Sunset Lane, Franklin Park, Ill. 60131
Filed Mar. 11, 1965, Ser. No. 438,966
7 Claims. (Cl. 15—257.06)

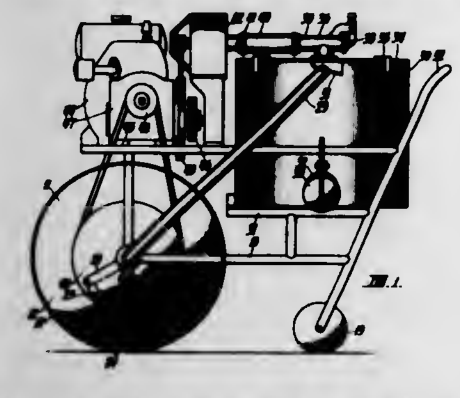


1. A paint receptacle for use in a vertical position with a roller-type applicator, comprising a paint container having oppositely disposed side walls, a pair of connecting end walls and a bottom wall, with such container having an open top end of a size to receive the roller of such an applicator, one of said side walls being extended beyond said open end, the extended portion of said side wall being provided with a raised peripheral edge operative to form a paint retaining wall whereby said extending side wall and said peripheral wall associated therewith may cooperate with said end and bottom walls to function as a paint tray, and a drain board inclined with respect to and extending across said extended side wall in spaced relation with respect thereto, with said drainboard being spaced a greater distance from said extended sidewall within the paint container than adjacent the outer end of such sidewall and of a size to receive the roller of such an applicator whereby the latter may be rolled across said board to remove excess paint from the roller, said board being substantially planar and having openings therein for the passage of paint therethrough, said drainboard being provided with triangularly-shaped walls along its longitudinal edges.

3,351,971
APPARATUS FOR REMOVING EXCESS MOISTURE FROM THE GROUND AND OTHER SURFACES

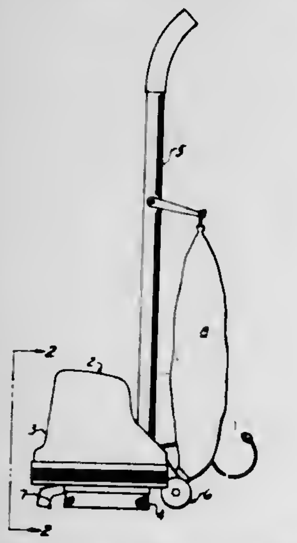
Richard Alfred Hocking, 15 Churchill Way, Kilsyth, Victoria, and John Vurlow, 109 Marrianne Way, Mount Waverly, Victoria, Australia
Filed Apr. 27, 1965, Ser. No. 451,268
Claims priority, application Australia, Apr. 28, 1964, 43,747/64
6 Claims. (Cl. 15—340)

3. Apparatus for removing excess moisture from the ground and other surfaces including a mobile frame, a hollow ground engaging roller supporting one end of said frame, means carried by said frame for rotatably supporting said roller, said roller being formed with perforations in the circumferential wall thereof to admit moisture into the interior of said roller, moisture collecting nozzle means mounted in the interior of said roller, means mounting said nozzle means within said roller for movement of said nozzle means relative to the mounting thereof and relative to said circumferential wall of said roller, the inlet end of said nozzle means terminating relatively adjacent said circumferential wall of said roller in the region thereof contacting the ground, a tank carried by said frame, and suction generating means operatively connected to said nozzle means for drawing moisture within said roller into said nozzle means and delivering such moisture to said tank.



3,351,972
SUCTION POLISHER

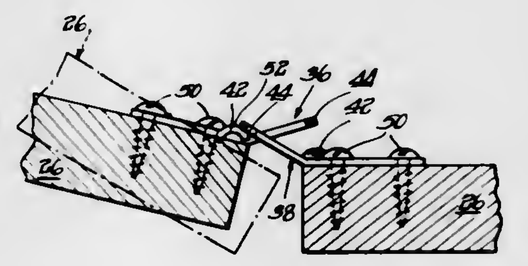
Mark W. Helm, Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed Dec. 28, 1964, Ser. No. 421,174
2 Claims. (Cl. 15—385)



1. A floor conditioning device comprising;
(a) a substantially flat body member defining a support having top and bottom surfaces and front and rear portions,
(b) a continuous integral upstanding wall projecting upwardly from the top surface of said body member and defining a gear enclosure,
(c) an integral depending wall projecting downwardly from the bottom surface of said body member and defining a fan enclosure having an open bottom,
(d) an opening in said depending wall at said rear portion of said body member and defining an air outlet,
(e) a motor and motor casing mounted on said upstanding wall, said motor casing closing the top of said gear enclosure,
(f) said motor having a shaft, said shaft projecting through said body member into said fan enclosure,
(g) a suction fan mounted on said shaft in said fan enclosure,
(h) a closure member secured to said body member and closing said open bottom of said fan enclosure,
(i) an air inlet opening in said closure member, said inlet opening being symmetrical about the rotational axis of said motor shaft,
(j) a speed reducing driving gear train in said gear enclosure drivingly connected with said motor shaft,
(k) a pair of brush mounting shafts rotatably mounted on said body member and drivingly connected with said gear train, said brush mounting shafts projecting downwardly from said body member outside of said fan enclosure and on opposite sides thereof,
(l) a suction nozzle having an elongated inlet mouth, said nozzle being positioned beneath said front portion of said body member,
(m) a flexible hose having one end connected to said inlet opening in said closure member and another end connected to said nozzle,
(n) air inlet and outlet openings in said motor casing above said body member, and
(o) an air circulating motor cooling fan mounted on said motor shaft in said motor casing for circulating air through said motor casing between said inlet and outlet openings.

3,351,973
DOOR ALIGNER

Edwin F. Lawrence, Jr., Rock Falls, Ill., assignor to Lawrence Brothers, Inc., Sterling, Ill., a corporation of Illinois
Filed Oct. 22, 1965, Ser. No. 501,087
6 Claims. (Cl. 16—1)



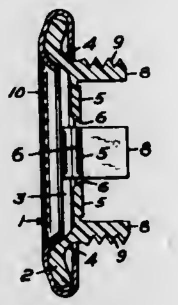
1. An aligner bracket adapted to coact with an identical, invertedly positioned bracket in aligning the lower free corner of a folding door, said aligner bracket comprising: a flat base adapted to be fixed in position on one face of a folding door; a boss member on said base, including a cam surface curving laterally outward from the plane of said base and then curving toward said plane to extend outwardly from plane of said door face when said base is fixed thereto; and a cam finger protruding from said base at a position adjacent said boss member to extend horizontally beyond the vertically free edge of said door, said finger being configurated to engage the curved cam surface of a cooperating complementary aligner bracket with at least initial interference therebetween whereby to align said door upon progressive engagement of the cooperating cam surfaces and fingers.

3,351,974
SELF-SECURING GROMMET

Julius B. Wilhelmi, Nantasket, Hull, Mass., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Dec. 30, 1965, Ser. No. 517,617
6 Claims. (Cl. 16—2)

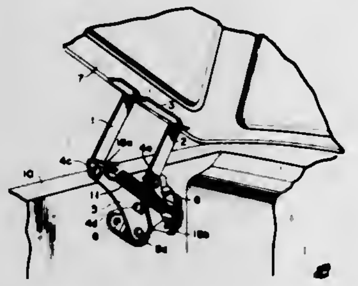
1. A grommet having a means for engaging an apertured workpiece responsive to the passage of an article therethrough comprising a generally flat, circumferentially continuous base portion having an opening therethrough, a plurality of flexible article engaging legs integrally connected to said base portion and extending substantially radially across the opening in said base and terminating in free ends defining an article receiving opening, and a plurality of workpiece engaging legs integrally connected to said base and said article engaging legs and extending generally normally away from said article en-

gaging legs, whereby upon passage of an article through said article receiving opening said article engaging legs will be deflected axially away from said base and said



workpiece engaging legs will be flexed laterally outwardly to engage the edges of the workpiece adjacent the aperture therein.

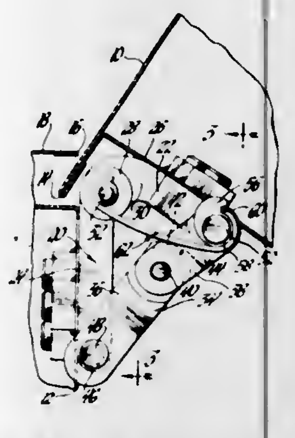
3,351,975
HINGE MECHANISM
Koji Goto, Toyota, Japan, assignor to Toyota Motor Company Limited, Toyota, Japan
Filed Aug. 13, 1965, Ser. No. 479,406
Claims priority, application Japan, Aug. 23, 1964, 39/47,952
2 Claims. (Cl. 16—128.1)



1. A hinge mechanism for opening and closing a cover member, comprising a collapsible quadrilateral linkage including an upper member rigidly adapted to be secured to said cover member, a stationary part, a base member pivotally mounted on said stationary part, a pair of generally parallel front and rear connector members pivotally connected between said upper member and said base member, and a locus member pivotally connected at one end to said rear connector member at a point intermediate the base member and the upper member and at the other end to the stationary part, the locus member guiding said quadrilateral linkage to move the pivotal connection of the upper member and the rear connector member substatially only vertically during opening and closing of said cover member.

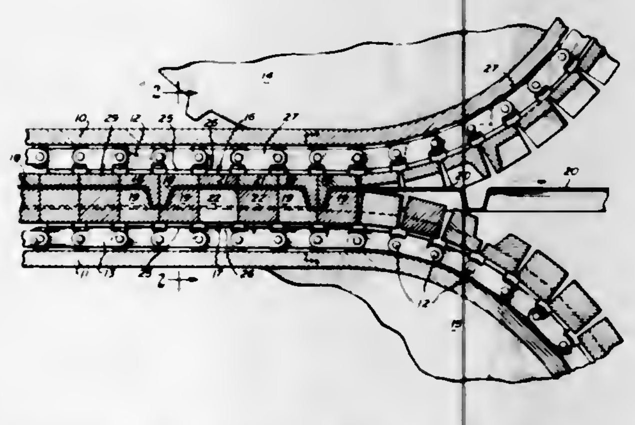
3,351,976
VEHICLE BODY DOOR HINGE AND HOLD-OPEN
Edmond R. Glonet, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 28, 1965, Ser. No. 451,480
5 Claims. (Cl. 16—138)

1. In a vehicle body including a door member adapted to be swingably mounted on a body member, a hinge and hold-open comprising, hinge means swingably mounting said door member on said body member for movement between open and closed positions, a pair of pivotally interconnected toggle links each being pivotally mounted on a respective one of said members, said links during movement of said door member being relatively movable between a generally folded position in the closed position of said door member and a generally unfolded position in the open position of said door member, and coil torsion spring means mounted at one end thereof for reaction on said body and being substantially fully uncoiled to have the other end thereof secured on one of said links



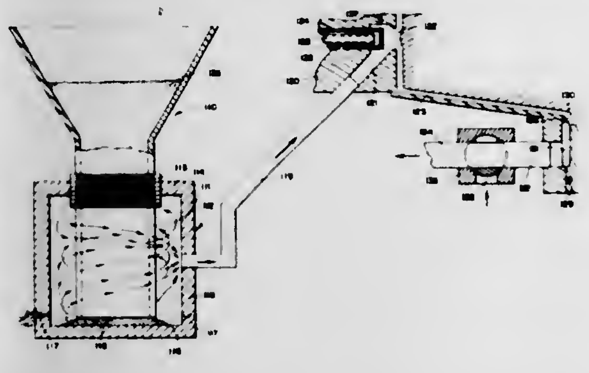
in curled manner about the axis of the pivot thereof on the respective one of said members, the coiling tendency of said spring means applying torque to said one link about said pivot thereof to bias said links to the generally unfolded position thereof to provide a hold-open.

3,351,977
SHAPING APPARATUS
Dale J. Gasch, Neenah, and Ronald D. Pitsch, Omro, Wis., assignors to American Excelsior Corporation, a corporation of Delaware
Filed Aug. 3, 1965, Ser. No. 476,831
1 Claim. (Cl. 18—4)



Apparatus for molding a series of individual concavo-convex molded articles from a strip of moldable material, comprising: a plurality of successive sets of cooperating segmented mold parts, each set internesting successively to mold the individual articles in said series of concavo-convex articles from said strip therebetween; means for arranging the corresponding individual mold parts of said sets for movement in separate paths, said means for arranging including means for bringing said mold parts successively into said internesting cooperation to mold said series of concavo-convex articles therebetween and for separating movement of said parts away from each other after said molding, each said mold part comprising a plurality of separable segments; means for separately mounting said segments for movement to positions adjacent each other during said molding with successive segments of each mold part in contact with each other so as to substantially preclude open spaces therebetween and for separation during said movement of the mold parts away from each other; and means for maintaining said segmented adjacent mold parts in spaced but said internested relationship during said molding of said concavo-convex articles.

3,351,978
APPARATUS FOR MOLDING FOAMED PLASTIC CUPS
Robert A. Kraus and Edmund J. Kraus, Monrovia, Calif., assignor, by mesne assignments, to Cupples Container Company, St. Louis, Mo., a corporation of Missouri
Filed Jan. 18, 1965, Ser. No. 426,234
2 Claims. (Cl. 18—5)



1. Apparatus for molding a cup from foamable plastic pellets comprising

a mold defining a cavity complementary to the cup to be produced,

said cavity defining a bottom portion for the cup at one end thereof and a lip portion for the cup at the opposite end thereof,

said mold having a filling opening therein at the central portion of said one end, said opening communicating with said cavity,

said mold having a relatively narrow aperture communicating wtih said cavity at said opposite end;

conduit means connected to said filling opening;

a container for foamable plastic pellets, said container including

a cylindrical chamber having a bottom, and

a feed tube extending downwardly into said chamber with the lower end of said tube adjacent to but spaced from the bottom of said chamber, said feed tube being adapted to receive a quantity of plastic pellets and cause the pellets to be fed progressively therethrough to the bottom portion of said chamber,

said conduit means communicating with the interior of said chamber;

a source of vacuum connected to said relatively narrow aperture for reducing the pressure within said cavity, thereby to cause the plastic pellets to flow from said container through said conduit means and into said cavity to fill said cavity;

a closure member movable between a retracted position remote from said filling opening and a closed position in which said closure member closes said opening,

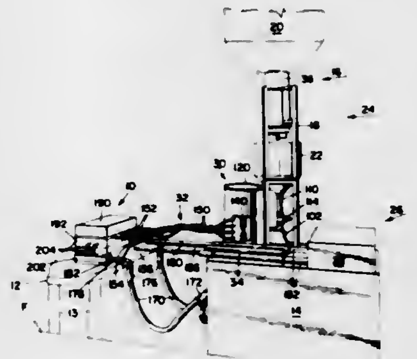
said closure member permitting flow of plastic pellets through said filling opening into said cavity when said closure member is in said retracted position and sealing said filling opening to prevent escape of the pellets from said cavity when said cavity is filled and said closure member is in said closed position;

a fluid passage communicating with said conduit means exteriorly of said cavity adjacent said closure member;

a source of pressurized air connected to said passage for blowing the plastic pellets from said conduit means back toward said container upon movement of said closure member to said closed position;

said container further including air passage means in the cylindrical wall thereof for permitting ingress of air to said chamber, during movement of plastic pellets out of said chamber when the pressure in said cavity is reduced while said closure member is in said retracted position, and egress of air from said chamber, when plastic pellets are blown back toward said container by pressurized air from said source.

3,351,979
APPARATUS FOR WETTING AND FEEDING PLASTIC BEADS INTO A MOLD
Robert B. Buonaiuto, 3 McLean Parkway, Ludlow, Mass. 01056
Filed Sept. 9, 1965, Ser. No. 485,991
7 Claims. (Cl. 18—5)



1. Mold filling apparatus adapted for automatically filling a series of molds with individually blended charges of polystyrene beads comprising:

a pair of metering units for measuring a predetermined charge of polystyrene beads and wetting agent into respective containers in automatic response to the filling of a mold;

a blending unit positioned downstream from said containers;

a release means operably associated with exit controls in communication with said wetting agent and bead containers whereby said measured charge of beads and wetting agent are delivered to said blending unit,

a time delay mechanism coupled between said release means and said pair of metering units whereby said release means is activated upon de-activation of said pair of metering units;

a bead tube in communication with said blending unit adapted for delivering said charge of blended beads into a successive mold; and

whereby said pair of metering units are re-activated and said release means is de-activated automatically repeating the mold filling cycle.

3,351,980
BLOW MOLDING APPARATUS
Karl Hehl, Lossburg, Wurttemberg, Germany, assignor to Arburg Maschinenfabrik Hehl & Sohne
Filed Nov. 29, 1963, Ser. No. 327,584
Claims priority, application Germany, Nov. 28, 1962, A 41,722; Feb. 12, 1963, A 42,311
11 Claims. (Cl. 18—5)

1. A blow molding apparatus for making hollow articles, said apparatus comprising, in combination:

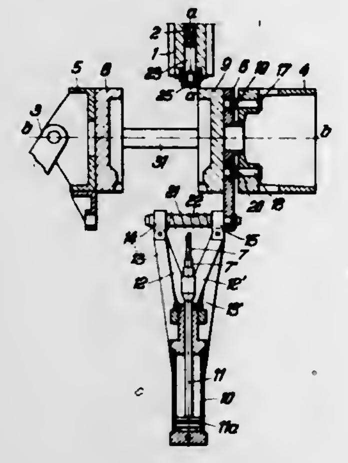
(A) support means;

(B) a tube extrusion unit mounted on said support means;

(C) a mold clamping unit for clamping two mold members which together form a mold for receiving a tubular section extruded by said extrusion unit, said mold clamping unit incorporating

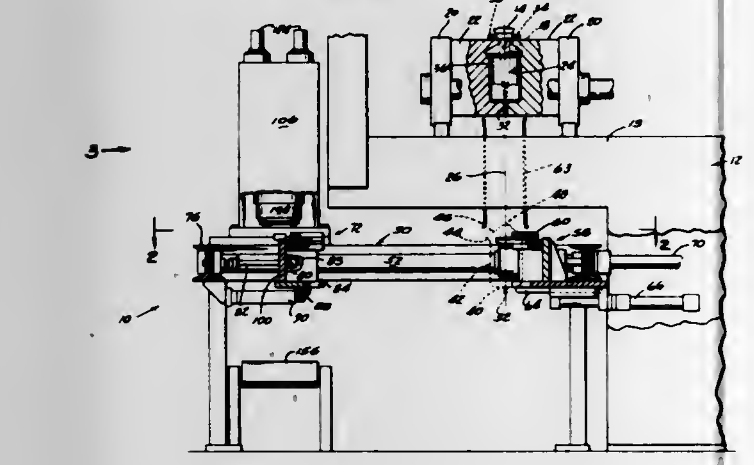
(i) first plate means for holding one of said two mold members and being mounted on said support means, and

(ii) second plate means for holding the outer of the two mold members and being movably mounted on said support means toward and away from first plate means, said plate means being arranged to close about a tubular section extruded by said extrusion unit; and



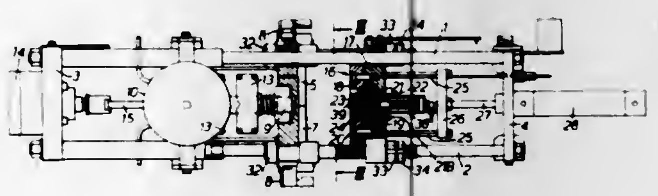
(D) a blow nozzle unit incorporating a blow nozzle movable into and out of an operative position in which said nozzle extends into the interior of a tubular section extruded by said extrusion unit while such tubular section is received by the mold, said blow nozzle unit being mounted on one of said plate means and connectible to the outer of said plate means when said two plate means close about the tubular section extruded by said extrusion unit.

3,351,981
APPARATUS FOR AUTOMATICALLY TRIM FINISHING BLOW MOLDED PLASTIC ARTICLES
Samuel J. Rupert, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Nov. 6, 1964, Ser. No. 409,384
10 Claims. (Cl. 18—5)



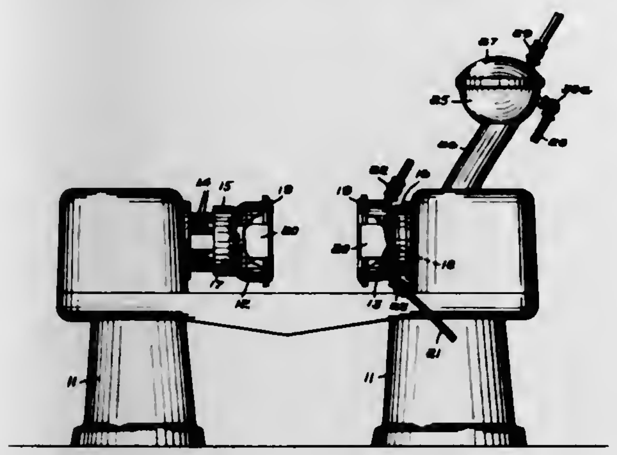
2. In combination with a blow molding machine having a die head and horizontally movable mold sections disposed below said die head and in which said die head is capable of forming a downwardly extending parison located between said mold sections, and in which said mold sections are movable into engagement to pinch the lower end of said parison in a plane corresponding to the parting line of said mold sections and form a mold cavity about said pinched parison, and in which said machine includes means for blowing said parison into conformity with said mold cavity to form an article having a side wall, a top wall and a bottom wall provided with a depending tail formed from the pinched portion of said parison and disposed in said plane; apparatus for removing excess material from said article so as to form a finished container, said apparatus comprising a transfer bracket disposed below said mold sections, means for moving said article downwardly from between said mold sections to a supported position on said transfer bracket in which said tail is located in said plane, means for moving said bracket substantially horizontally in a direction substantially perpendicular to said plane, means on said transfer bracket engageable with one side of said article during movement of said transfer bracket in said direction, a locating bracket engageable with the opposite side of said container in a predetermined position of said transfer bracket so that said article in said position of said transfer bracket is clamped between said brackets, means disposed above and positioned in vertical alignment with said article in said position of said transfer bracket for downward movement into engagement with said article for cutting out at least a portion of said top wall, and means on said brackets positioned for engagement with said tail during movement of said transfer bracket toward said predetermined position thereof for stripping said tail off said bottom wall in a substantially horizontal direction.

3,351,982
INJECTION MOULDING MACHINES
Harold E. Jackson and Michael W. Weeks, Devon, England, assignors to Petrol Injection Limited, Devon, England, a British company
Filed Mar. 22, 1965, Ser. No. 441,765
4 Claims. (Cl. 18—30)



1. An injection moulding machine including a fixed platen and a movable platen, first fluid pressure means operable to move said movable platen towards and away from said fixed platen between respectively closed and open positions of said platen, each of said platens having opposite side edges in each of which is defined a slot, a pair of elongated locking members extending in the direction of movement of said movable platen and mounted to swing transversely relative to said direction of movement, a pair of swing arms each attached at one end to one of said locking members, a fluid pressure operated actuating means interconnecting said swing arms and operable to swing said arms to engage the locking members in the said slots in the said platens when the movable platen is in the said closed position, abutment members carried by each of said locking members and spaced in said direction of movement so that said platens are gripped between the spaced abutments on each locking member when the movable platen is in a closed position and said locking members are engaged in said slots, and in which said movable platen comprises two parts relatively movable in the said direction of movement of the movable platen, and second fluid pressure means operable when the said platens are in said closed position to effect relative movement in said direction of movement between the said relatively movable parts of the movable platen to lock the said platens in said closed position and to urge the said platens against the said abutment members with a force applied to said abutment members at right angles to the direction of movement of said locking members.

3,351,983
APPARATUS FOR INJECTION MOLDING
Hans Grigull, Cologne-Ehrenfeld, Germany, assignor to Leybold Holding AG, Zug, Switzerland, a Swiss joint-stock company
Continuation of application Ser. No. 315,856, Oct. 14, 1963. This application May 23, 1966, Ser. No. 562,024
Claims priority, application Germany, Oct. 12, 1962, L 43,193; May 31, 1963, L 45,002
12 Claims. (Cl. 18—30)



1. An injection molding apparatus comprising: an injection mold including separable mold halves having mating faces defining a mold cavity, mold evacuation means for evacuating said mold cavity; a supply vessel adapted to contain a supply of molding material, means for vacuum sealing said molding material supply vessel, vessel evacuation means for evacuating said supply vessel; vacuum-tight conveyor means for guiding molding material from said supply vessel into said mold cavity, heating means positioned in the vicinity of said conveyor means providing within said conveyor means a heating zone for rendering the molding material into a pliable state before injection thereof into said mold cavity; a degassing vacuum chamber positioned in the path of the molding material between said supply vessel and said conveyor means, chamber evacuation means for evacuating said degassing vacuum chamber, said degassing vacuum chamber being positioned below said supply vessel, the lower portion of said supply vessel having an aperture adapted to permit the dropping of molding material into said degassing vacuum chamber, said degassing vacuum chamber having a larger cross section than that of the aperture in said supply vessel thereby insuring the free fall of molding material through said degassing vacuum chamber; said separable mold halves having means in said mating faces defining a guard vacuum chamber surrounding said mold cavity, said mating faces having parting surfaces defining a wall separating said guard vacuum chamber from said mold cavity with the injection mold in a closed position, and guard vacuum evacuation means independent of said mold evacuation means for evacuating said guard vacuum chamber.

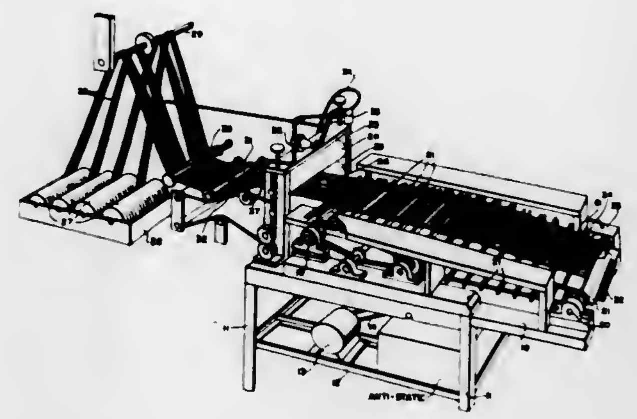
3,351,984
METHOD AND APPARATUS FOR PREPARING CHIGNONS FROM TOW LENGTH FIBERS
Silas M. Wheelock, Wilmington, Del., assignor, by mesne assignments, to Reid-Meredith, Inc., a corporation of Utah
Filed Oct. 5, 1964, Ser. No. 401,402
6 Claims. (Cl. 19—66)

2. An apparatus for preparing chignon length tow fibers from tow length fibers comprising

(a) tow straightening and opening means positioned to receive a tow from a supply source,

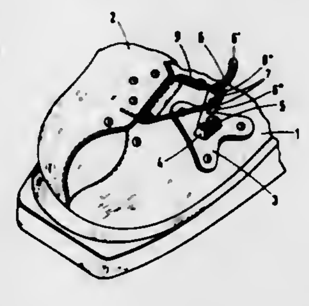
(b) measuring means positioned to receive the opened and straightened tow from said straightening and opening means,

(c) tow combing means positioned to receive a measured length of tow from the measuring means and comb the tow, and



(d) anti-static spraying means positioned above and in advance of said combing means to spray an anti-static solution on the fibers prior to combing same to keep the fibers manageable in chignon lengths.

3,351,985
ADJUSTABLE TIGHTENING LOCK FOR SHOES
Paul Löllmann, Tuttlingen, Germany, assignor to Rieker & Co., Tuttlingen, Germany
Filed June 13, 1966, Ser. No. 557,004
Claims priority, application Germany, Dec. 24, 1965, R 42,310
3 Claims. (Cl. 24—70)

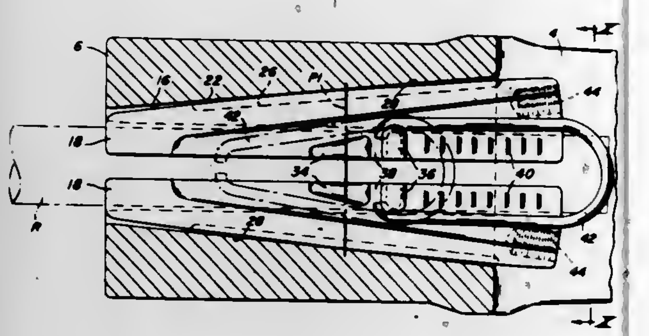


1. An adjustable tightening lock for shoes comprising a tightening lever and pivot means for pivotably connecting said lever at one end to one part of the shoe, said lever having a row of teeth on one side thereof facing said shoe part when the lever is closed, an eye member, pivot means for pivotably connecting said eye member to another part of the shoe, said eye member being adapted to be hooked into one or another of the tooth gaps of said lever, and a spring adapted to pivot said eye member in the upward direction against said one side of the tightening lever so that, when said lever is opened, said eye member will slide under the action of said spring from the tooth gap in which it is hooked into another tooth gap which is more remote from said pivot means of said tightening lever.

3,351,986
WIRE ROPE WEDGE CLAMP
Ray C. Johnson, Holden, Mass., assignor to United States Steel Corporation, a corporation of Delaware
Filed June 8, 1966, Ser. No. 556,231
9 Claims. (Cl. 24—126)

1. A wire rope fitting comprising a socket having a basket portion at the entry end thereof, said basket portion having an axial opening therethrough of rectangular cross-section, said opening having two opposed parallel sides and two opposed tapered sides diverging from the entry end thereof, and a pair of rope gripping jaws in said open-

ing each having two parallel sides and a tapered side, said tapered side of each jaw having a central longitudinal relieved portion with a land on each side thereof adapted to engage one of the tapered sides of said opening, the



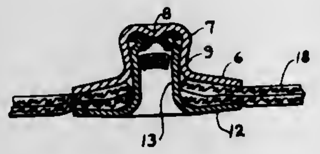
side of said jaw opposite its tapered side having a longitudinal groove therein for receiving said wire rope, said longitudinal groove having spiral channels therein matching the outer contour of said rope.

3,351,987
POST FOR ATTACHING SNAP FASTENER STUD ELEMENTS

Pasquale R. Tarullo, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed Oct. 22, 1965, Ser. No. 501,727

1 Claim. (Cl. 24—219)



A post for attaching the hollowing stud element of a snap fastener unit, said post comprising a base flange and an open ended barrel with a generally cylindrical wall, said wall having an inwardly formed neck adjacent its upper end to provide a flared end section at the open end of the barrel and a convex section below said flared end section, said convex section providing a zone of uniform weakness when endwise pressure is applied to the barrel to cause the barrel to collapse outwardly in said zone, wherein the thickness of said barrel wall including said flared end section is substantially uniform throughout, and wherein the outer corner of said flared end section is relatively sharp to provide a cutting edge for shearing material, the outside diameter of the barrel at said outer corner being substantially the same as the outside diameter of the cylindrical portion of the barrel.

3,351,988
CAMERA SUPPORT CLAMP

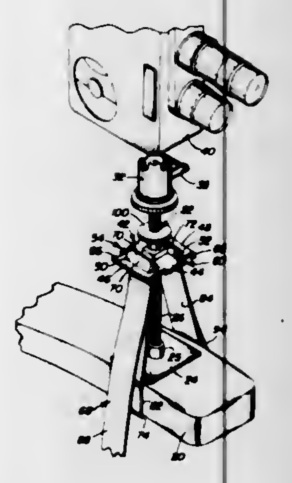
Harry D. Jamieson, 5260 Alzeda Drive,
La Mesa, Calif. 92041

Filed Mar. 27, 1967, Ser. No. 626,131

4 Claims. (Cl. 24—243)

1. A fixture for clamping an article to a support having front, rear and opposite sides, said fixture comprising in combination:

- (A) a foot adapted to be clamped against the support;
- (B) means for clamping one side of the foot against the front side of the support, including:
  - (1) a threaded element having one end thereof rotatably attached to the opposite side of the foot, the other end of the threaded element forming a carrier for the article to be supported and a hand hold for turning the threaded element;
  - (2) a strap bearing device having:
    - (a) a section threaded onto and disposed between the ends of the threaded element;
    - (b) a side section formed integrally with and disposed on one side of the threaded section, said side section having:
      - (i) an elongated slot;
  - (3) a loop having elongated runs extending substantially longitudinally of the slot and disposed on opposite sides of the slot and about the side section, the inside distance between the runs being greater than the thickness of the side section at the slot, whereby the loop is tiltable relative to the side section;
  - (4) a strap having:



    - (a) a portion fixedly attachable to the strap bearing device;
    - (b) a second portion adjustably and fixedly attachable to the strap bearing device;
    - (c) and an intermediate portion bearing against the opposite and the rear sides of the support;
    - (d) said second mentioned portion extending forwardly from one of the sides of the support through the slot alongside a side of both longitudinal runs of the loop and between the loop and the threaded section of the strap bearing device, and then reversely through the slot alongside opposite sides of the runs of the loop and then beyond the strap bearing device;
      - (i) the relative width of the slot with respect to the aggregate thickness of the strap and loop and the width of the loop are: the slot is wider than the thickness of the loop, plus twice the thickness of the strap, and narrower than the width of the loop, plus twice the thickness of the strap.

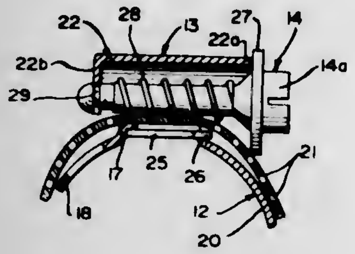
3,351,989
HOSE CLAMP

Maynard H. Cheris, Highland Park, Aloise A. Bigos, Berwyn, and Charles E. Baruffi, Wheeling, Ill., assignors to Sterling Automotive Manufacturing Co., Inc., a corporation of Illinois

Filed Dec. 5, 1966, Ser. No. 599,297

3 Claims. (Cl. 24—274)

1. In a hose clamp of the type comprising an elongated clamping band with spaced screw-thread-receiving slots therein, a housing on the band, and a screw in the housing arranged to have its threads drivingly engage the slots in the clamping band, the improvement comprising, in combination, a flat defined on said band and offset outwardly of adjacent band portions to define spaced transverse abutment shoulders inwardly of the flat, the housing surrounding said flat on the band and defining flat opposed mounting flanges of a thickness substantially equal to the amount of outward offset of the flat from adjacent band portions, said mounting flanges having a length to fit between said spaced transverse shoulders in longitudinal abutting relation with substantially both said shoulders to prevent longitudinal movement of the housing relative to said band and with the flanges in a flat face-to-face relation with the flat on the band and welded thereto.



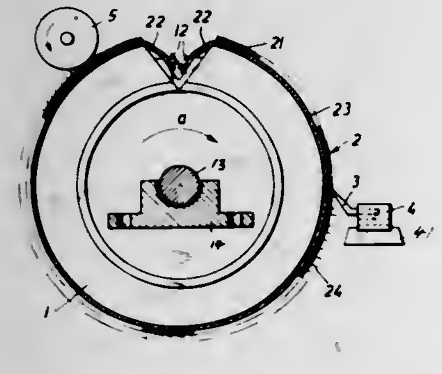
3,351,990
METHOD FOR REMOVING FLOATING YARN ENDS FROM A PILE FABRIC

Alfred Schuster, Mayen, Rhineland, Germany, assignor to Union-Teppich-Fabrik Walter Poser & Co. KG., Mayen, Rhineland, Germany

Filed July 30, 1964, Ser. No. 386,145

Claims priority, application Germany, Aug. 1, 1963, U 10,018

4 Claims. (Cl. 26—15)



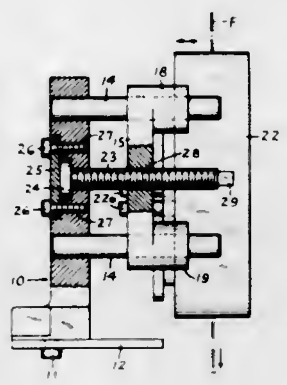
1. The method of removing floating yarn ends located between the tufts of a pile fabric of predetermined dimensions, comprising the steps of engaging the free ends of floating yarns with a pointed tool projecting through the tufts into the proximity of the base of the pile fabric; causing relative rotary movement of said pile fabric and said tool repeatedly substantially in the weft direction of said pile fabric so that the free ends of floating yarns between said tufts in the path of said tool are raised by said tool above the top surface of said tufts; causing relative axial movement of said pile fabric and said tool in the direction of the axis of said relative rotary movement and in the warp direction of the pile fabric during said repeated movements in the weft direction so that the entire pile of said pile fabric is run through by said tool and all free ends of the floating yarns are raised above the top surface of the pile; and cutting off said free ends of said floating yarns at the top surface of said pile.

3,351,991
ADJUSTABLE HEATER BRACKET ASSEMBLY

Beryl A. Boggs, Chester, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Jan. 20, 1966, Ser. No. 521,835

4 Claims. (Cl. 28—62)



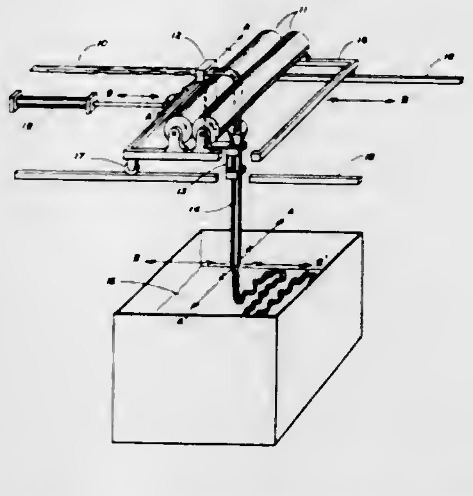
1. An adjustable heater bracket assembly for a heating device having a heating surface for the heat treatment of running yarn, which comprises a frame, a plurality of guide rods extending from said frame, a guide member associated in fixed relation with said heating device, said guide member having openings adapted to slideably engage said guide rods, and adjusting means associated with said frame and guide member for adjusting the lateral distance between said guide member on said heating device, and said frame during operation of said heating device.

3,351,992
METHOD FOR PACKAGING TOW

Whitney B. Carter, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Original application Feb. 4, 1964, Ser. No. 342,347. Divided and this application June 17, 1965, Ser. No. 476,225

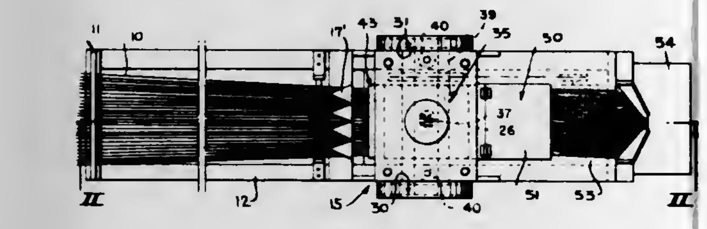
5 Claims. (Cl. 28—72)



1. A process for uniformly depositing a filamentary material into a package form which comprises the steps of feeding the filamentary material from a source of supply, directing the material through a guiding means into the package, simultaneously effecting a plurality of traversing movements between said package and said guide, and adjusting at least one of said plurality of movements responsive to the amount of material in the package.

3,351,993
METHOD FOR CRIMPING OF NATURAL AND SYNTHETIC TEXTILE MATERIALS

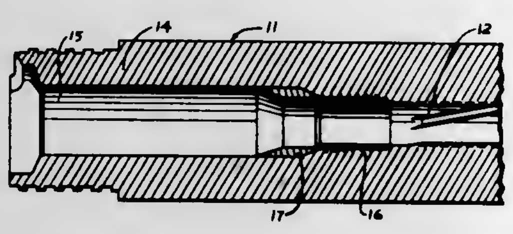
Nathan Rosenstein, West Hartford, Conn., and Abraham J. Rosenstein, New Marlboro, Mass., assignors to Spunize Company of America, Incorporated, Unionville, Conn., a corporation of Connecticut
Application Nov. 9, 1964, Ser. No. 409,633, now Patent No. 3,273,220, dated Sept. 20, 1966, which is a division of application Ser. No. 57,070, Sept. 19, 1960, now Patent No. 3,164,882, dated Jan. 12, 1965. Divided and this application Mar. 2, 1966, Ser. No. 566,451
1 Claim. (Cl. 28—72)



The method of crimping a plurality of individually spaced continuous filament yarns, slivers, rovings, tows and the like, comprising:
(1) arranging a plurality of said materials in a spaced-apart generally parallel web-like relationship,
(2) guiding said web of materials into the nip of a pair of adjacent counter-rotary rollers having a common line of tangency.
(3) feeding said web of materials via said rollers into a common enclosed space closely adjacent the exit of said roller nip, said space having one dimension thereof sufficient to receive said web of materials in said spaced-apart relationship, while retarding the exit of said materials from said space, whereby the component filaments and the like of the individual materials of the web crimp in multi-planar fashion with respect to the longitudinal axis thereof while maintained in said spaced-apart relationship,
(4) heat setting said crimped materials, and
(5) recovering said crimped materials as individual continuous filament yarns, tows and the like which are suitable for fabrication.

3,351,994
METHOD FOR LINING FIREARM BARRELS

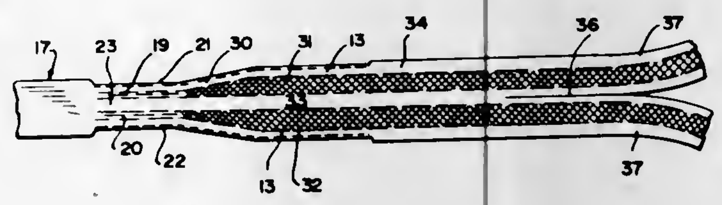
James F. Weller, Bloomfield, Ind., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 19, 1966, Ser. No. 574,285
2 Claims. (Cl. 29—1.1)



1. A method of chambering a firearm barrel for accommodating a smaller size cartridge comprising:
first cutting a groove in a chamber of a firearm barrel,
then placing a liner in said chamber such that a portion of said liner is adjacent said groove, and
then firing a high powered cartridge in said firearm barrel whereby said liner becomes securely locked to said firearm barrel by engagement with said groove.

3,351,995
METHOD OF MAKING EXPANDED METAL

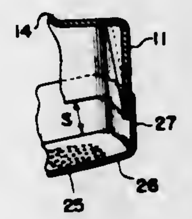
Richard S. Johnson, Racine, Wis., assignor to Modine Manufacturing Company, a corporation of Wisconsin
Filed Oct. 5, 1966, Ser. No. 584,489
4 Claims. (Cl. 29—6.1)



1. The method of making expanded metal, comprising: slitting a sheet of deformable metal with a plurality of spaced slits dividing the sheet into a plurality of strands and connecting bridges; deforming portions of said sheet on opposite sides of said plurality of slits to provide projections; grasping said sheet at said projections and moving said projections relatively apart to expand said sheet laterally at said slits; and moving said sheet longitudinally in a path simultaneously with said grasping and moving apart.

3,351,996
METHOD OF MAKING A RECTANGULAR-MASK ASSEMBLY FOR A SHADOW-MASK TYPE OF COLOR TUBE

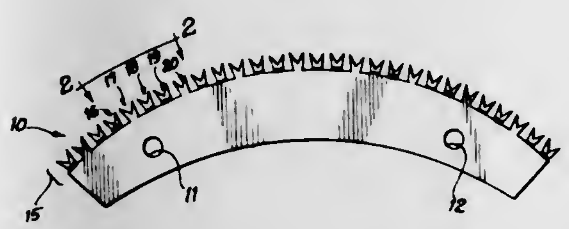
Joseph P. Fiore, Wheeling, Ill., assignor to The Rauland Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 29, 1965, Ser. No. 443,467
8 Claims. (Cl. 29—25.13)



1. The method of making a rectangular-mask assembly for a shadow-mask type of color tube which comprises:
forming a rectangularly shaped mask which has a pattern of apertures disposed over a substantially spherical section bordered by a mounting skirt disposed about the periphery of and extending normal to said spherical section;
stamping from a sheet of metal, having a thickness many times that of said mask, a rectangularly shaped annular frame having principal dimensions large compared to said spherical section and having an outer edge contoured to correspond to the peripheral contour of said spherical section;
folding said outer edge normal to the plane of said frame to provide a mounting skirt of rectangular shape having predetermined dimensions for telescoping with said mounting skirt of said mask;
heating said frame to a temperature that is high compared to the operating temperature of said frame when included within an operating color tube to stress relieve said frame;
restriking said frame to restore said predetermined dimensions;
assembling said mask to said stress-relieved and restruck frame with said mounting skirts in telescoping relation;
and mechanically securing said skirts to one another.

3,351,997
TOOTHED BLADE FOR TIRE RASP

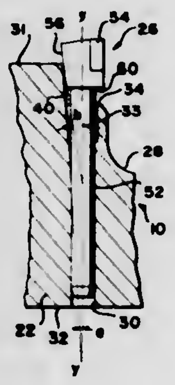
**Peter C. Neilsen, % Neilsen Products Co.
Lake Elmo, Minn. 55042
Filed Mar. 21, 1967, Ser. No. 624,758
6 Claims. (Cl. 29—79)**



1. A toothed blade for a tire rasp comprising a sheet metal member having a convex working edge region with equi-spaced cutting teeth formed in said region, each cutting tooth having an inner base portion, a straight leading edge and a straight trailing edge diverging from each other in outward direction, the outer tooth edges defined by a general V-shaped recess intersecting said leading and trailing edges and forming spaced points at the outer end of the tooth, some of said cutting teeth flush with the body of the member, some offset in one direction and the remainder offset in the opposite direction, the plane surfaces of all said teeth parallel with each other.

3,351,998
ROTARY CUTTING TOOL

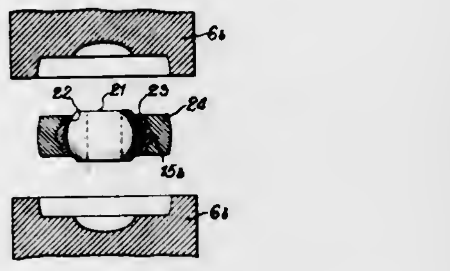
**Werner C. Theiler, Wolf Hill Road, R.F.D. 1,
Huntington, N.Y. 11743
Filed Aug. 13, 1965, Ser. No. 479,462
9 Claims. (Cl. 29—105)**



6. A rotary cutting tool comprising a cutter head mounted for rotary movement about an axis of rotation, said cutter head having a plurality of spaced holes formed therein for receiving tool bits, said cutter head defining a stop surface adjacent one end of each of said holes, a plurality of said tool bits, each of said tool bits including holder means and a cutting tip supported on said holder means, said holder means comprising a head portion and an elongated shank, the elongated shank of each of said holder means being snugly received within one of said holes in the cutter head, the head portion of the holder means being adapted to engage a stop surface on said cutter head, each of said holder means having a wedge surface formed thereon, said body means having a plurality of wedge surfaces each of which cooperates with a wedge surface on one of said holder means for retaining the tool bits in operative position, each of said holes including a relieved portion of elongated dimension adjacent the associated stop surface and extending in a direction away from the adjacent wedge surface.

3,351,999
MANUFACTURE OF SELF-ALIGNED BEARINGS

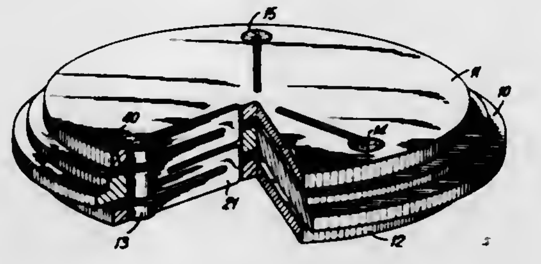
Albert R. McCloskey, Fairfield, Conn., assignor by mesne assignments, to The Heim Universal Corporation, a corporation of Delaware
Continuation of abandoned application Ser. No. 44,763, July 22, 1960. This application Nov. 4, 1965, Ser. No. 518,499
3 Claims. (Cl. 29—149.5)



1. The method of manufacturing self-aligning bearings of the type having an inner member with a convex outer surface and an outer member and an intermediate member each having a concave inner surface, said intermediate member being formed from a ductile tube, comprising cutting an annular groove in the outer surface of said outer member between its ends, assembling the members, and applying deforming pressure to the outer member to cause a buckling of the material in the intermediate and outer members in the area of said groove thereby interlocking said intermediate member and said outer member and to also cause the outer member to fit closely around the intermediate member and the intermediate member to fit closely around the inner member.

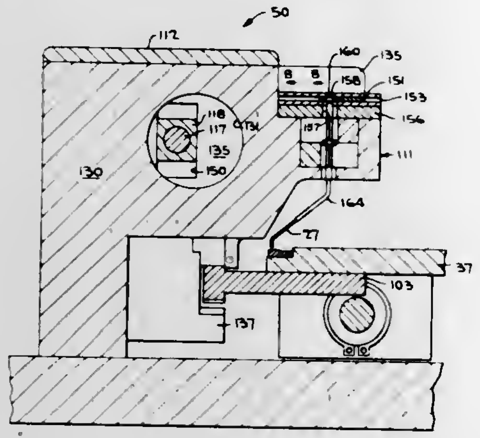
3,352,000
METHOD OF ASSEMBLY OF RESONATOR

Paul Altenburger, Besancon, France, assignor to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 3, 1965, Ser. No. 484,810
5 Claims. (Cl. 29—177)



1. The method of assembling the base and an end of a flat spring to resonators and a base plate comprising (in order) the steps of
(1) longitudinally slotting a button,
(2) inserting the base and end of the flat spring to be assembled in said slot and securing it in the slot,
(3) longitudinally inserting and securing the said button into recesses co-axially formed in the resonator and base plate, and
(4) transversely cutting the button between the resonator and base plate to separate completely the portions of the button to which the end and the base of the spring are attached.

3,352,001
ASSEMBLING APPARATUS
John R. Shaffer, Upper Arlington, Columbus, Ohio, assignor to Western Electric Company, Incorporated, a corporation of New York
Filed Oct. 7, 1965, Ser. No. 493,700
12 Claims. (Cl. 29—203)



1. An assembling apparatus comprising:

a table movable in at least one direction and mounting an article having at least one element threading member, the element being cored with a hole of predetermined diameter;

a tube having a diameter smaller than the diameter of the hole in the cored element for threading the hole in the cored element, said tube including:

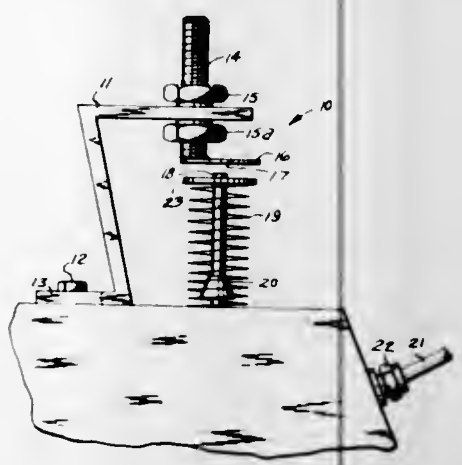
  a first tube section connected to the apparatus and a second tube section connected to the first tube section for receiving and threading cored elements that are threaded by said first tube section, said second tube section extending in said one direction with the longitudinal axis thereof substantially parallel and adjacent the path of movement of the member;

means for threading said first tube section with the cored element that is received by the threading means from a supply of cored elements;

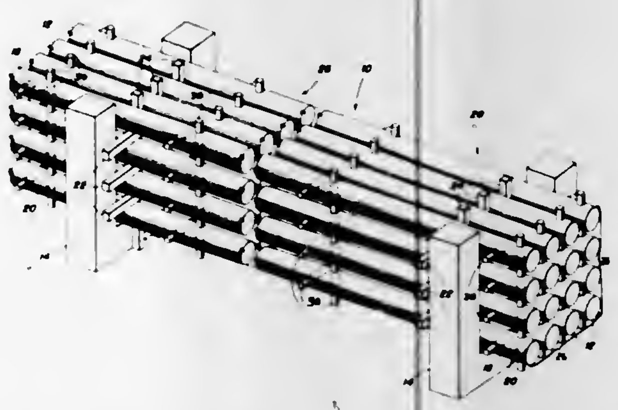
means coupled to the threading means for indexing said table in said one direction a predetermined distance such that the member is in a position to thread the element threaded by the first and second tube sections, the member and said second tube section threading the cored element during further movement of said table in said one direction by operation of the indexing means.

3,352,002
VALVE SPRING COMPRESSOR
Theodore A. Kryk, 1018 Kayton Ave., San Antonio, Tex. 78210
Filed Dec. 7, 1965, Ser. No. 512,611
1 Claim. (Cl. 29—217)

A valve spring compressor, comprising in combination, a Z-configurated frame, said frame having parallel spaced apart legs which are interconnected at their one ends by an angularly extending intermediate leg, one of said legs having a flap for receiving a bolt which is threaded into an opening which normally receives a rocker arm assembly, the opposite of said parallel legs having an opening therethrough, a vertically extending stud extending through said opening, a nut being threadingly engaged upon opposite sides of said leg to said stud, the lower end of said stud having a circular plate secured thereto by a weld, said circular plate being in acentric position relative to said stud, said circular plate having a central opening therethrough so to allow a valve stem to pass therethrough, said stud thereby not interfering with said valve stem, and the lower side of said circular plate normally bearing downwardly to compress a valve spring.



3,352,003
METHOD OF FABRICATING A FUEL ELEMENT CLUSTER
Bruce E. Murtha, Wethersfield, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Original application Nov. 21, 1961, Ser. No. 153,958, now Patent No. 3,212,990, dated Oct. 19, 1965. Divided and this application Dec. 17, 1964, Ser. No. 419,171
5 Claims. (Cl. 29—421)

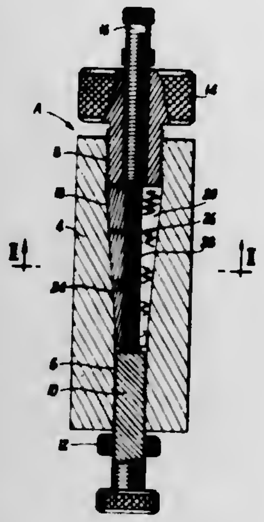


1. The method of assembling a plurality of fuel elements into a rigid assembly comprising providing tubular fuel elements with solid portions at predetermined regions throughout their length and with fissionable material intermediate these portions, assembling the elements in a fixture in a desired array with the elements being in spaced relation and disposed in rows that extend in two directions, providing bores in the solid portions of the elements with the bores being in alignment in each of the rows, inserting an elongated connecting member through the aligned bores in each of the rows and connecting this member with the tubular elements.

3,352,004
PROCESS FOR CLADDING URANIUM RODS
Pierre Baque, Viry-Chatillon, Raymond Darras, Versailles, and Philippe Koch, Marly-le-Roi, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed July 31, 1964, Ser. No. 386,529
Claims priority, application France, Aug. 9, 1963, 944,375; June 27, 1964, 979,201
8 Claims. (Cl. 29—474.3)

1. A process for cladding uranium rods which comprises

(a) applying a thin strip of a cladding metal having a thickness of a few hundredths of a millimeter and selected from the group consisting of zironium, copper, aluminum, niobium and nickel on uranium rod so as to cover said rod;

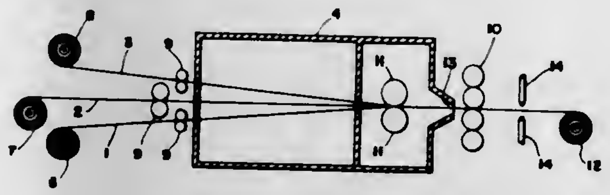


(b) heating said covered rod at a temperature of from 350° to 400° C. in a vacuum of from 10^{-5} to 10^{-6} millimeters of mercury for a time sufficient to degas the covered rod; and

(c) heating said covered rod at a temperature of from 600° to 850° C. in a vacuum of from 10^{-5} to 10^{-6} millimeters of mercury for a time sufficient to produce diffusion of said cladding metal to a predetermined depth within said uranium rod.

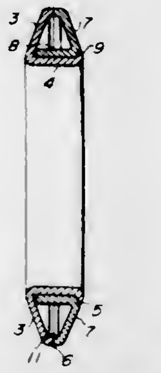
8. A process according to claim 1 which comprises the additional steps after step (c) of cooling the cladded uranium rod and placing said rod in a metallic can.

3,352,005
PROCESS FOR APPLYING CLADDING OF STAINLESS STEEL ON STEEL BASE WITH ALUMINUM BONDING LAYER
Richard C. Avellone, Mayfield Heights, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Filed Sept. 16, 1963, Ser. No. 309,237
9 Claims. (Cl. 29—484)



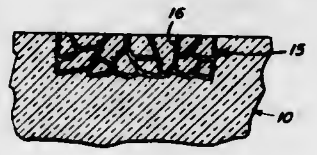
1. A process for cladding a stainless steel sheet on a steel base comprising the steps of applying a stainless steel sheet against a steel base with an intermediate independent sheet of alumium having a thickness of 0.002–0.06 inch so that the independent aluminum sheet is in direct intimate contact with each of the adjacent sheets, maintaining the respective sheets at a temperature of at least 750° F. and below the temperature at which Al-Fe alloy will be formed in the period of contact, and pressing said sheets against each other under sufficient pressure to effect a reduction of 2–30 percent in the thickness of the aluminum sheet.

3,352,006
METHOD OF MAKING HOLLOW RING GASKETS
Tatsuo Satoh, Hiratsuka-shi, and Genshichi Hirata, Tokyo, Japan, assignors to The Yokohama Rubber Company, Limited, Tokyo, Japan, a corporation of Japan
Filed June 29, 1965, Ser. No. 467,862
1 Claim. (Cl. 29—512)



A method of manufacturing hollow ring gaskets for exhaust pipes comprising making a pair of ring members each of which comprise an axially extending ring portion and an outwardly extending flange portion, said pair of ring members being made of mild steel sheet, said ring portion of one ring member being insertable over said ring portion of the other ring member, said one ring member having an annular groove on the exterior thereof at the juncture of said flange and ring portions, said flanges on said ring members being inclined toward each other and having abuttable terminal ends, inserting the ring portion on said one ring member over the ring portion of said other ring member until the terminal ends of the inclined flange abut in sealing relationship, and deforming the end of the ring portion of said other ring member outwardly into said annular groove whereby said pair of ring members are secured together to form a hollow ring gasket with smooth sealing surfaces projecting outwardly in arcs.

3,352,007
METHOD FOR PRODUCING HIGH CRITICAL FIELD SUPERCONDUCTING CIRCUITS
Richard J. Charles, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 13, 1963, Ser. No. 308,892
2 Claims. (Cl. 29—599)



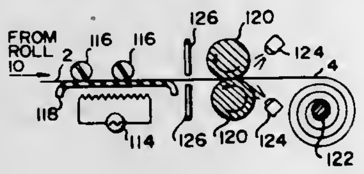
2. A process for producing high critical field superconducting magnets comprising, providing a plurality of phase segregated ceramic bodies of cylindrical configuration in which at least one phase is capable of removal to form a filamentary interconnecting pore network in which the diameter of the individual filaments does not exceed 1000 A., said cylinder being of different diameters so that they can be nested with spaces therebetween such that adjacent walls do not come into contact, covering the cylinders with an acid resistant coating along a spiral line on the inner and outer surfaces of each of the cylinders, acid etching at least one phase from the cylinders along the spiral paths where the acid resisting coating was removed to form the pore network, infusing a superconductive material into the spaces between the nested cylinders and into the pore network of the spirally etched areas forming a superconductive path having high multiplicity, and cooling the body to a temperature below the critical temperature of the superconductive material used.

3,352,008
PROCESS OF BONDING COPPER FOIL TO FOIL CONTAINING SUPERCONDUCTIVE LAYER SUCH AS NIOBIUM STANNIDE

Daniel F. Fairbanks, Winchester, Mass., assignor, by mesne assignments, to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts, newly organized

Original application May 3, 1963, Ser. No. 277,899, now Patent No. 3,309,179, dated Mar. 14, 1967. Divided and this application Jan. 20, 1966, Ser. No. 550,068

3 Claims. (Cl. 29—599)



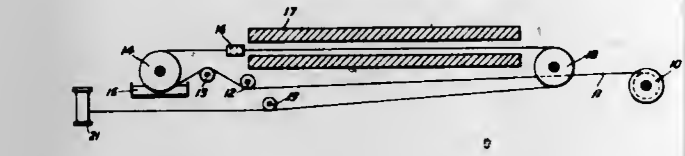
1. A process of cladding a first foil of soft metal to a second foil containing a surface layer of hard superconductive alloy, selected from the group consisting of Nb_3Sn, Nb_3Al, V_3Ga, V_3Si, without breaking up said surface layer or degrading the superconductivity thereof and with the result that the second foil when wound into magnetic solenoids is enabled to carry currents superconductively at levels substantially equal to the short, sample foil performance of the second foil, the process comprising the steps of forming a foil assembly with said first and second foils in face-to-face relation, the superconductive surface layer facing inwardly, with a bonding metal between said foils in the foil assembly, passing the foil assembly between rollers and a heated plate to melt the bonding metal and then passing the foil assembly between a pair of spaced rolls having a spacing at least equal to the combined thickness of the first and second foils and no greater than the combined thickness plus about 10% so that a gentle compression is applied to the foil assembly to spread the bonding metal and drive out included gasses without damaging the superconductive layer, and then cooling the foil assembly.

3,352,009
PROCESS OF PRODUCING HIGH TEMPERATURE RESISTANT INSULATED WIRE, SUCH WIRE AND COILS MADE THEREFROM

Eugene Cohn, Larchmont, Raymond A. De Forest, New City, and Ralph G. Frick, Nanuet, N.Y., assignors to Secon Metals Corporation, White Plains, N.Y., a corporation of New York

Filed Dec. 5, 1962, Ser. No. 243,207

5 Claims. (Cl. 29—605)



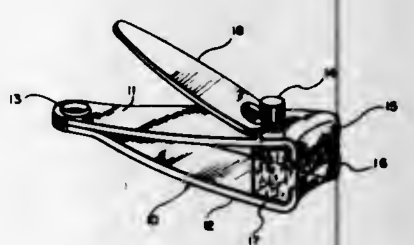
1. The process of producing a coil of insulated wire which comprises coating the wire in unwound form with a slurry consisting essentially of refractory material in a silicone binder for imparting flexibility to the coating thus applied to the wire, heating the coated wire to a temperature within the range of 300° to 1000° F. to produce a coating on said wire containing from 10% to 50% of the silicone binder in the said slurry, thereafter coating the thus coated wire with a second slurry consisting essentially of glass frit and a silicone binder, and heating the thus coated wire to a temperature within the range of from 300° to 1000° F. to produce a glass frit coating containing from 10% to 50% of the binder in said second slurry and to bond said glass frit coating to the underlying coating of refractory material, thereby producing flexible insulated wire having a layer of refractory material on the wire and an overlying layer of glass frit bonded to the refractory layer, which wire can be wound and unwound without cracking the said insulation, winding the thus coated wire onto a storage spool in a partially cured condition, thereafter unwinding the coated coil from the spool and forming the wire into a coil, and heating the formed coil to a temperature of from 700° to 2000° F. to remove substantially all of the carbon content of the residual organic binder and fuse the refractory material and glass frit to produce upon cooling an insulated wound wire resistant to high temperature.

3,352,010
NAIL CLIPPER HAVING RESTRAINING MEANS FOR PREVENTING FLIGHT OF FINGERNAILS

Joseph D. Keller, 1820 Winchester Drive, Winter Park, Fla. 32789

Filed Aug. 19, 1965, Ser. No. 481,004

2 Claims. (Cl. 30—135)



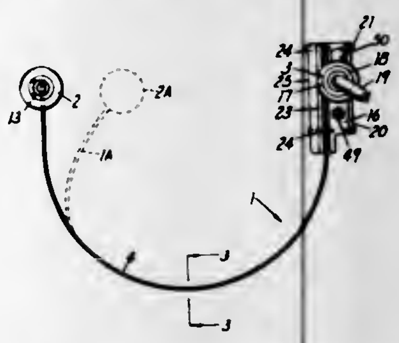
1. In a nail clipper, a pair of jaws having cutting edges disposed in a substantially aligned arrangement and normally biased away from a cutting relationship, means for forcing said jaws together so as to cause said cutting edges to cut a nail placed therebetween from one side of said edges, restraining means formed of a resilient, easily deformable material, means supporting said resilient, easily deformable material on the other side of said edges, adjacent at least one of said cutting edges, so that said material will contact a nail placed between said cutting edges from said one side, said resilient material normally contacting said other side of both of said cutting edges in the normally biased away cutting relationship, thus spanning the space between said cutting edges, said resilient material also functioning to dampen and attenuate a nail cut by said cutting edges, thus to prevent the undesirable flight of the cut nail.

3,352,011
ELECTRICALLY HEATED FLEXIBLE KNIFE

Carl J. Alexander, Moorepark, and Raymond W. Bowers, Three Rivers, Mich., assignors to Wells Manufacturing Corporation, Three Rivers, Mich.

Filed Apr. 22, 1966, Ser. No. 544,601

10 Claims. (Cl. 30—140)



1. A heated knife comprising a blade having a sharpened edge,

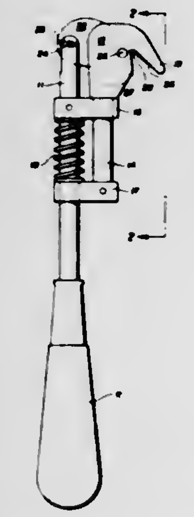
- a pair of side plates secured in sealed relation along opposite sides of the rear edge of said blade and projecting therebehind,
- means sealing the rear edges of said side plates to define a cavity along the rear of said blade, the assembled blade, side plates and sealing means being flexible transversely of their sides to curve the sharpened edge of the blade,
- an elongated thin electric heating element having flexible insulation covering the electrically conducting elements thereof positioned in said cavity and extending therealong in unconnected relation to the surfaces of said cavity,
- a housing secured to one end of said blade and said side plates and sealing said cavity,
- an electrical connection extending in sealed relation through a wall of said housing and electrically connected to said heating element,
- and a handle connected to the end of said blade and said side plates by being connected to said housing.

3,352,012
WIRE CUTTER

Robert O. Link, Rte. 1, Box 1362, and George W. Morse, P.O. Drawer Z, both of Elk Grove, Calif. 95624

Filed Mar. 23, 1965, Ser. No. 442,091

2 Claims. (Cl. 30—246)



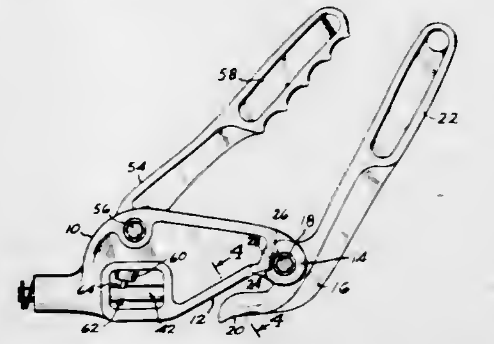
1. A cutting tool for wire and the like comprising a support bar, a handle affixed to one end of the bar and, wire cutting means operatively disposed at the other end of the bar, said wire cutting means including a slide bar, a hook-like cutting jaw fixed to a said slide bar and adapted to engage a wire to be cut, in cooperation with a link-like cutting jaw pivotally connected to said hook-like cutting jaw, said jaws having opposed cutting edges and being movable relative to each other between open wire-receiving and closed wire-cutting positions, a pair of guide members mounting the slide bar for sliding movement along the length of the bar, one of said guide members being fixed to the support bar and receiving the slide bar for sliding movement therein, the other of said guide members being fixed to the end of the slide bar and receiving the support bar for sliding movement thereon, a compression spring having its ends seated against the guide member, pin and slot connection means pivotally connecting said link-like jaw to the support bar said link-like jaw being provided with a curved cutting edge opposed to the cutting edge of said hook-like jaw so that as said hook-like jaw moves away from the handle by the restraining force of a wire to be cut, the pin and slot connection means causes the link-like jaw to pivot with respect to the hook-like jaw to bring the cutting edges of said jaws into a cooperative cutting relationship.

3,352,013
APPARATUS FOR VENTING PNEUMATIC TIRES

John C. Fuller, 5221 SE. Naef Road, Milwaukie, Oreg. 97222, Gordon W. Fuller, 7320 SW. Landau St., Portland, Oreg. 97223, Ralph A. Fuller, 12220 SW. Grant, Tigard, Oreg. 97221, and William I. Fuller, P.O. Box 123, Wilsonville, Oreg. 97070

Filed Mar. 15, 1965, Ser. No. 439,875

5 Claims. (Cl. 30—368)



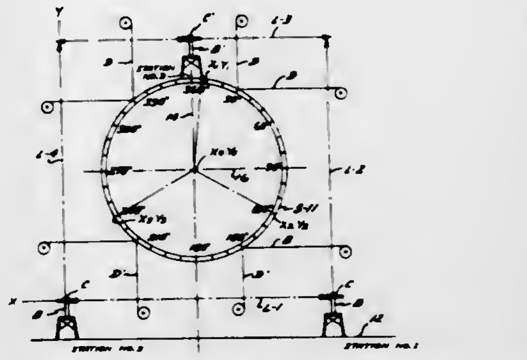
1. Apparatus for venting pneumatic tires, comprising
- (a) a body having a substantially U-shaped head portion defining a recess adapted to confine therein the bead portion of a tire,
- (b) the recess being defined in part by a bearing surface of the head portion adapted to abut against the outer surface of a tire,
- (c) an elongated tire piercing member mounted on the body, said piercing member being movable across the plane of said bearing surface on an axis defining with said bearing surface an included angle of about 32° between a retracted position behind said recess and a tire piercing position into and toward the base of said recess for penetrating a tire inwardly from the outer side thereof outward of the wheel rim portion of the tire angularly to an internal position adjacent the bead of the tire, and
- (d) drive means on the body engaging the piercing member for moving the latter.

3,352,014
OPTICAL METHOD OF HULL MEASUREMENT

Clarence E. Kehke, 12511 Pleasant Place, Garden Grove, Calif. 92641

Filed July 21, 1965, Ser. No. 473,688

3 Claims. (Cl. 33—1)

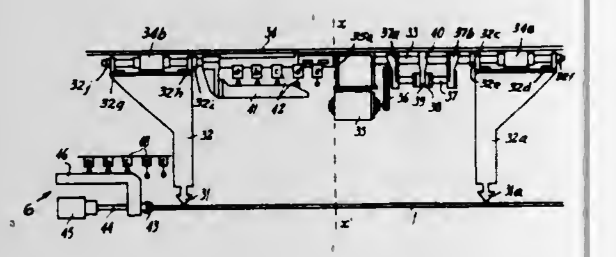


1. A method of determining the eccentricity of a plurality of longitudinally spaced sections of a circular hull at a plurality of equally spaced increments on each of said sections, including the steps of:
- (a) defining said sections by making a plurality of circumferentially extending lines on the exterior surface of said hull;
- (b) dividing each of said lines into a plurality of increments of equal length, with each of said increments being defined between two points marked on said line;

- (c) successively defining a transverse optical square about said hull at each of said sections that extends therethrough;
- (d) determining the horizontal and vertical distances of each of said points on one of said lines from one side of said optical square;
- (e) determining the radius of each of said points on said hull from said measured vertical and horizontal distances;
- (f) determining the average radius of each of said sections; and
- (g) comparing said radius at each of said points with said average radius to determine the eccentricity of said hull at a particular location thereon.

3,352,015
APPARATUS AND METHOD FOR CUTTING GLASS

Pierre Galabert, Rueil-Malmaison, and Marcel Pillon, Le Vesinet, France, assignors to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Apr. 2, 1965, Ser. No. 445,180
Claims priority, application France, Apr. 6, 1964, 969,824
15 Claims. (Cl. 33—32)

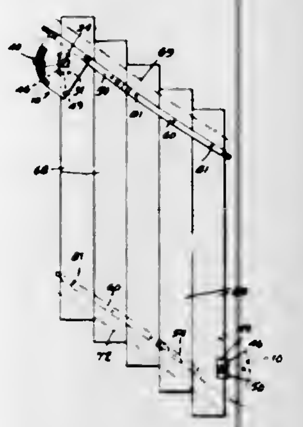


14. In a machine for scribing upon a ribbon of glass moving continuously in the direction of its length, a bridge extending over and transversely of the ribbon, normal to said direction, a plurality of scribers each mounted on said bridge for independent guided translation therealong transversely of the ribbon and for scribing contact therewith, a plurality of motors each carried by a respective one of said scribers, a plurality of wheels each journaled on a respective one of said scribers and each in frictional contact with said bridge, a drive between each said motor and its wheel, means responsive to translation of each said scriber along said bridge and operable to transmit to a remote station, signals indicative of the individual positions of each said scriber on and along said bridge, said last-named means comprising a gaging tape fixed with and extending along said bridge through apertures in each said scriber and parallel with the direction of travel thereof, there being a plurality of uniformly-spaced apertures in and through said tape, a follower, means carried by said bridge and mounting said follower for translation normal to said direction into contact with an edge of the ribbon, means yieldingly urging said follower toward contact with said edge of the ribbon, and means responsive to translation of said follower as aforesaid, and operable to transmit to said station, signals indicative of said translation.

3,352,016
GUIDE FIXTURE

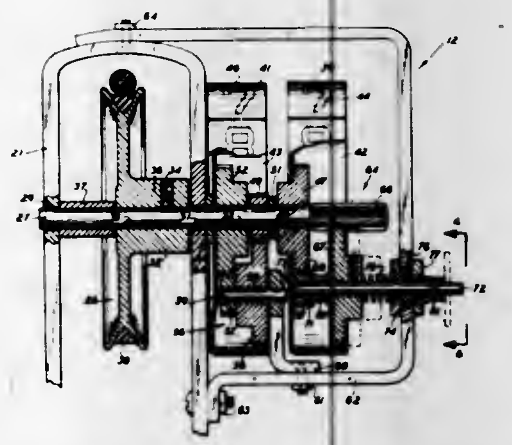
Stephen J. Jablonsky, 120 Rosebrook Drive, Stratford, Conn. 06075
Filed May 19, 1965, Ser. No. 456,948
13 Claims. (Cl. 33—75)

1. A guide fixture, for cutting or marking a work piece having a straight reference line and a substantially planar top surface, comprising a positioning part having a straight reference line for attachment to said work piece with its said reference line in parallel relation to said reference line thereof, an index part for non-rotatable connection to said positioning part, a plate part for disposition in parallel relation to said top surface of the work piece including means for pivotally connecting said plate part to said index part for angular adjustment about a pivot axis normal to said top surface of the material, said plate part including two straight tool guide side edge surfaces forming a right angle enclosing said pivot axis and arranged so that a 45° line bisecting said right angle coincides with said pivot axis, an angle degree scale carried by said plate part between said side edge surfaces at the opposite side of said pivot axis from the corner of said right angle and arranged in concentric relation to said pivot axis, marker index means carried by said index part disposed in indexing relation to said scale and coinciding with a radial line of said pivot axis disposed at a right angle to said reference line of said positioning part, a straight guide bar, and means for securing said guide bar in parallel relation along either of said side edge surfaces with a portion of said guide bar extending outwardly from the edge surface in relation to which said guide bar is secured.



3,352,017
WATER DEPTH INDICATING DEVICE

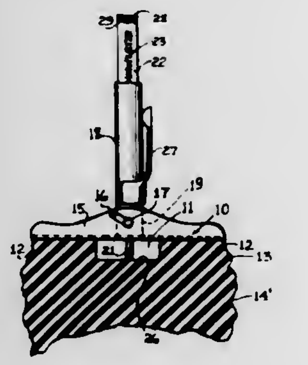
Allen E. Newberg, Box 374, St. James, Minn. 56081
Filed May 27, 1965, Ser. No. 459,219
7 Claims. (Cl. 33—126.5)



1. An apparatus for selectively anchoring a boat and determining the depth of water comprising in combination: a boat anchor, a flexible member attached to the anchor, a frame securable to the boat, a transverse shaft rotatably supported on said frame, a pulley secured to a first portion of said shaft, the flexible member being trained over the pulley whereby movement of the flexible member changes the elevation of the anchor and rotates the pulley which in turn rotates the shaft, a first disc member rotatably supported on a second portion of the shaft, said first disc member including a laterally projected flange having an outer face and numerical indicia circumferentially arranged on the outer face to provide a visual indication of the angular position of the first disc relative to an observer, a second disc rotatably supported on said shaft adjacent said first disc member, said second disc member including a laterally projected flange having an outer face and numerical indicia circumferentially arranged on said face to provide a visual indication of the angular position of the second disc member relative to the observer, first gear train means drivably coupling the first disc member with the second disc member for rotation of the second disc member at a slower speed than the first disc member, a bracket secured to the frame extended around the first and second disc members, and power transmitting means connected to said shaft and first disc member for rotating the first disc member in response to rotation of the shaft whereby the length of the flexible member moved around the pulley is indicated by the numerical indicia on the first and second disc members, said power transmitting means including a second gear train means having a control shaft mounted on the bracket carrying gears of the second gear train means, biasing means for holding the gears of the second gear train means in driving engagement and coacting cam means on the bracket and the control shaft which on movement of the control shaft moves the gears of the second gear train means out of driving engagement whereby the first and second disc members are free to rotate on the shaft carrying the disc members enabling the first and second disc members to be moved to zero positions.

3,352,018
DEVICE FOR MEASURING THE DEPTH OF A GROOVE BETWEEN THE RIBS OF THE TREAD OF A VEHICLE TIRE TO DETERMINE THE AMOUNT OF WEAR OF SUCH RIBS

Albert Mazeika, Chicago, Ill., assignor to Milton Manufacturing Company, Inc., Chicago, Ill., a corporation of Illinois
Filed May 6, 1965, Ser. No. 453,778
2 Claims. (Cl. 33—169)

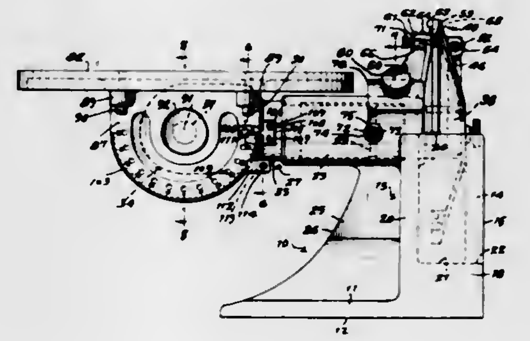


1. A device for measuring the depth of the groove between the ribs of the tread of a vehicle tire to determine the amount of wear of such ribs, comprising

- (a) an elongated bridging member adapted to bridge the groove between the ribs of the tread of the tire and flatly engage the surface of such ribs,
- (b) a tubular service,
- (c) an indicia-bearing plunger slidably positioned in the sleeve,
- (d) a probing pin carried by and extending from one end of said plunger and movable therewith,
- (e) said bridging member having an opening centrally located between its opposite end portions through which said pin may be projected by movement of the plunger in a direction to project said probing pin into said groove,
- (f) means providing pivotal connection between said bridging member and said sleeve to pivotally support said bridging member for movement about a transverse axis with respect to said sleeve when said probing pin is in withdrawn position from said groove and said opening by longitudinal movement of said plunger in an opposite direction to free said bridging member for pivotal movement about said transverse axis into substantial parallel relation with respect to the long axis of said sleeve, and
- (g) friction means carried by said plunger and movable therewith and engaging the inner surface of said sleeve to hold said plunger in an adjusted position relative to said sleeve,
- (h) said means for pivotally connecting said bridging member to said sleeve comprising opposite diagonal slots formed in opposite walls of said bridging member and pivot pins carried by said sleeve and projecting into said slots.

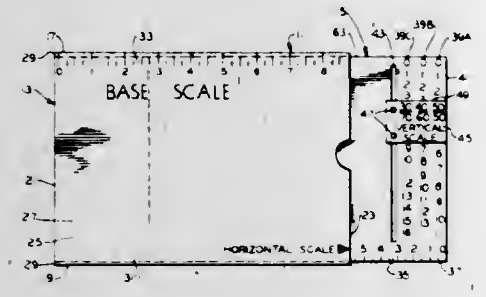
3,352,019
LAYOUT FIXTURE

Peter S. Hardy, Trumbull, Conn., assignor to Peerless Aluminum Foundry Co., Inc., Bridgeport, Conn., a corporation of Connecticut
Filed July 22, 1964, Ser. No. 384,364
13 Claims. (Cl. 33—174)



1. A layout fixture comprising a base having a support-engaging surface, a hub carried by said base having its axis in spaced parallel relation to said support-engaging surface, a shaft member supported by said base including a spindle portion rotatably engaged in said hub, a head portion projecting forwardly from said hub having a pair of parallel side surfaces equally spaced at each side of the axis of said shaft member and having a transverse bearing hole having its axis normal to and intersecting the axis of said shaft member, and a stub shaft portion at the opposite end of said shaft member from said head portion and projecting from said hub, an index dial carried upon said stub shaft portion and including a circumferential calibrated index scale, an index pointer carried by said base and overlying said scale, a work-supporting table, a pair of trunnion members carried by said work-supporting table and respectively disposed at opposite sides of said head portion, a transverse shaft carried by said trunnion members and engaged in said bearing hole of said head portion, releasable means for fixing the position of rotary adjustment of said shaft member, a calibrated index scale carried by one of said trunnion members in concentric relation to the axis of said transverse shaft, an index pointer carried by said shaft member and overlying said last-mentioned index scale, a hand wheel at one end of said transverse shaft, a threaded stud at its opposite end, one of said trunnion members having an opening engaged by said threaded stem and a nut-receiving pocket at the outer side of said trunnion member, a nut non-rotatably engaged in said pocket and having said threaded stud screwed therein, said other trunnion member having an opening of larger diameter than said transverse shaft, and a pressure ring disposed within said opening between said hand wheel and a side surface of said head portion of said shaft member whereby turning of said shaft in one direction causes said pressure ring to be pressed against said head portion and turning of said shaft in the opposite direction causes said pressure ring to be released relatively to said head portion.

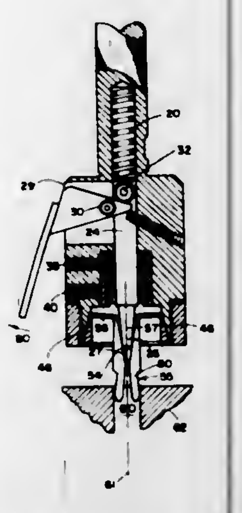
3,352,020
DEVICE TO MOUNT PRINTS ON A BASE
Vernon L. Kipping, 540 Melrose Ave.,
San Francisco, Calif. 94127
Filed Apr. 19, 1965, Ser. No. 448,989
4 Claims. (Cl. 33—174)



1. A print mounting device comprising,
an envelope, said envelope marked along one edge with indicia calibrated in full size units to measure the dimensional difference between a mounting base and a print to be mounted on said base,
a card slidable longitudinally in said envelope, said card marked with indicia providing a horizontal scale on said card, said horizontal scale calibrated in half-size units along one longitudinal edge of said card one transverse edge of said envelope acting as an index for said horizontal scale, said horizontal scale indicating the horizontal width of a margin on said base when said index scale is set to a number on said horizontal scale equal to the horizontal dimentional difference between said base and said print, and
said card transversely marked with indicia providing a vertical scale on said card, said vertical scale calibrated in less than full size units to indicate the vertical width of a margin on said base when said vertical scale is set to a number equal to the vertical dimensional difference between said base and said print, said horizontal scale and said vertical scale relatively positioned to permit the simultaneous horizontal and vertical placement of a print on a mounting base.

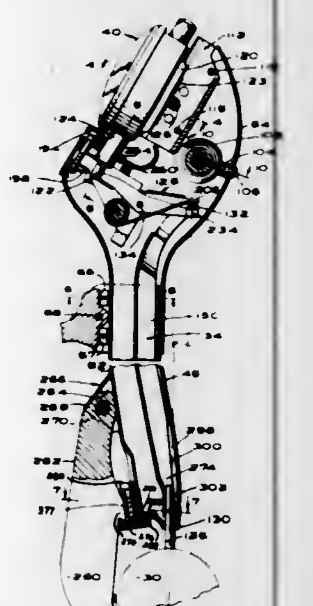
3,352,021
INTERNAL LOCATING DEVICE FOR A COORDINATE MEASURING MACHINE
Robert I. Leach, Clinton, and John H. Lanahan, Whitesboro, N.Y., assignors to The Bendix Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,577
7 Claims. (Cl. 33—174)

5. An internal locating device comprising:
a housing means having a passage formed therein;
a plunger member axially movable within said passage;
a stylus member connected to one end of said housing means in axial alignment with said plunger member, said stylus member having:
a plurality of axially-extending, mutually contacting, rigid probe fingers collectively forming a generally-cylindrical outer surface and a conical inner surface aligned with said plunger member;
a plurality of radially-extending, flat spring members each connected at its radially-inner end to one end of said probe fingers respectively;



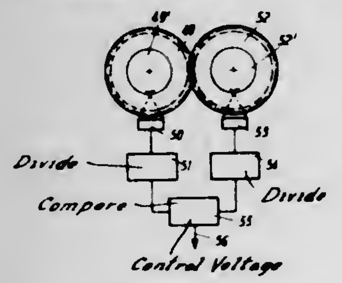
an annular ring member connected to the radially-outer ends of said spring members providing a common connection therefor; and
means for axially moving said plunger member into contactive abutment with said conical inner surface to expand said probe fingers.

3,352,022
UPRIGHT GRINDING GAUGE
James C. Fisk, G–3219 E. Bristol Road,
Flint, Mich. 48507
Filed Oct. 11, 1965, Ser. No. 494,852
25 Claims. (Cl. 33—178)



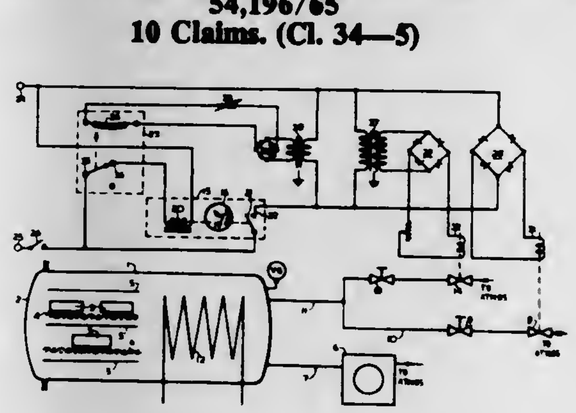
1. A relatively lightweight upright grinding gauge comprising, in combination: a sheet metal body including a head at the upper end and caliper means at the lower end connected together by a tubular barrel of flattened cross-sectional shape providing a relatively narrow front profile, said barrel having an upper portion adjacent the head offset toward the front and a lower portion adjacent the caliper means offset toward the rear with said portions being generally parallel and connected by a diagonally extending intermediate portion, a dial indicator mounted on the top of the head on the opposite side from the barrel and facing the front and angularly upwardly and having an actuating finger disposed within the head, a movable pin contact supported for closely guided axial reciprocation in the lower end of the barrel adjacent the caliper means, first class lever means mounted in the head having one end cooperable with said finger, and a sheet metal plunger of channel-shaped cross-section extending through the barrel spaced from the inner wall surfaces thereof and connected at the lower end to said contact to be guided and shifted thereby and pivotally connected at the upper end to the opposite end of said lever means to be guided thereby and pivot the lever means to actuate said finger upon movement of the contact pin.

3,352,023
METHOD OF MEASURING AND/OR CONTROLLING THE RELATIVE MOVEMENT OF TWO MOVED BODIES
Gunther Budnick, deceased, late of Darmstadt, Germany, by Thea Budnick, heir and legal representative of minor heirs of said Gunther Budnick, Heinrichstrasse 191, Darmstadt, Germany
Original application Feb. 17, 1959, Ser. No. 793,843, now Patent No. 3,204,532, dated Sept. 7, 1965. Divided and this application May 20, 1965, Ser. No. 457,527
Claims priority, application Germany, Feb. 24, 1958, B 47,961
2 Claims. (Cl. 33—179.5)



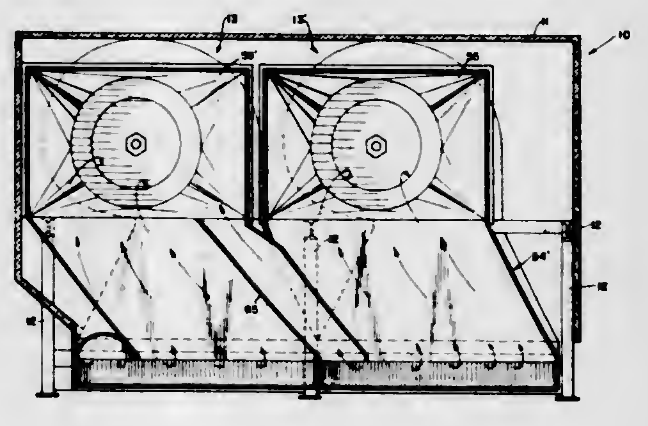
1. In a method of gauging the rotary movement of at least two meshing toothed wheels comprising the steps of generating separate sequences of electrical pulse in response to rotation of each of said wheels, and then electrically comparing the pulse sequences so generated to provide a gauge signal, the improvement which comprises varying the repetition rate of pulses in one of said sequences in accordance with the number of teeth on one of said wheels and varying the repetition rate of pulses in the other of said sequences in accordance with the number of teeth on the other of said wheels prior to comparing the sequences.

3,352,024
FREEZE-DRYING PROCESS
John Douglas Mellor, Greenwich, New South Wales, Australia, assignor to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a body corporate of Australia
Filed Jan. 10, 1966, Ser. No. 519,801
Claims priority, application Australia, Jan. 21, 1965, 54,196/65
10 Claims. (Cl. 34—5)



1. An improved method of freeze-drying frozen food or other heat labile products wherein ice formed within the product is sublimed while the product is maintained under a low gas pressure within a vacuum chamber, the product being heated and the water vapour emitted therefrom being removed during drying; said method being characterised in that, during drying, the product is subjected to repeated cycles of gas pressure variation, each cycle of pressure variation comprising the following steps:
(a) rapidly reducing the pressure to a lower predetermined level,
(b) maintaining the pressure substantially at said lower level for sufficient time to allow the resultant initial rapid sublimation and vapour flow from the product to be substantially completed,
(c) rapidly raising the pressure to a predetermined higher level, and
(d) maintaining the pressure substantially at said higher level for sufficient time so as to allow the product temperature to rise to a given maximum safe level while at the same time inhibiting the diffusion of water vapour therefrom;
and said method being characterised in that the higher and lower pressure levels are such that the difference between the thermal conductivities of the product at the two pressures and in the gas concerned is not substantially less than the difference between the thermal conductivities of the product in said gas at 0.01 torr and at atmospheric pressure.

3,352,025
CROP DRYING APPARATUS
James Donald Brock, Chattanooga, Tenn., assignor to Industrial Boiler Company, Inc., Chattanooga, Tenn., a corporation of Tennessee
Filed Aug. 23, 1965, Ser. No. 481,731
3 Claims. (Cl. 34—212)



1. A crop dryer comprising:
(A) a conveyor mechanism including:
(1) a drive roll,
(2) a driven roll,
(3) a conveyor belt supported by said drive and driven rolls and including at least:
(a) an upper flight, and
(b) a lower flight;
(4) a series of support rolls supporting said upper flight,
(5) support rolls supporting said lower flight;
(B) at least two blowers mounted in side-by-side relationship along and above the length of said conveyor belt's upper flight,
(1) said blowers each having exhaust ducts terminating immediately above said conveyor belt upper flight,
(2) said blowers each having entrance ducts leading from a point immediately beneath said conveyor belt upper flight,
(a) said entrance ducts each defining an aperture therein;
(C) heating means juxtaposed each of said entrance duct apertures,

(1) the heating means on one of said entrance ducts at one end of said crop dryer being spaced from its aperture;

(D) a cross-over duct leading from one of said entrance ducts to the next adjacent entrance duct;

(E) an exhaust blower having its inlet connected to the entrance duct at the end of the crop dryer remote from its said one end, and an outlet communicating with the atmosphere.

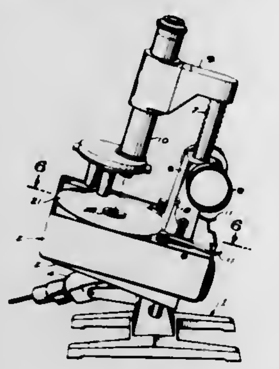
3,352,026

VISUAL-AUDITORY MEANS FOR MICROSCOPES

Charles A. Elwell, Gardena, and Reuben B. Klamer, Los Angeles, Calif., assignors to The Toy Development Center, Inc., a corporation of California

Filed July 6, 1965, Ser. No. 469,823

11 Claims. (Cl. 35—8)



1. A visual auditory means for use with microscopes, comprising:
   - (a) a housing structure adapted for mounting on the stage of a microscope and having an aperture positioned for alignment with the optical system of the microscope;
   - (b) a specimen holder including means for mounting a specimen on its upper side and a journal at its lower side adapted to fit said aperture;
   - (c) a sound record disk rotatably carried by said journal;
   - (d) a drive means engageable with the periphery of said disk and applying a diametrically directed force against said disk and journal to restrain said journal against rotation in said aperture while causing rotation of said disk;
   - (e) and means for playing the sound record on said disk.

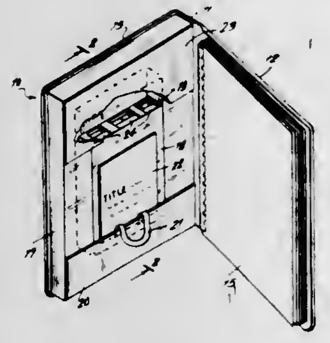
3,352,027

AUDIO TEACHING DEVICE

Louis E. Schwartz, New York Law School, 57 Worth St., New York, N.Y. 10013

Filed Oct. 22, 1965, Ser. No. 501,583

1 Claim. (Cl. 35—8)



An audio-teaching accessory comprising in combination, a first cover member, a second cover member, a rectangular back secured along its opposed long margins to the first and second cover members to form a book-like structure, an instruction book, means to secure the book to the first cover, a recessed portiton in the second cover, a rectangular tape cartridge of greater width than thickness freely received within the recess, a handle member on said tape cartridge of a flexible, ribbon-like material disposed toward the first cover member when the tape cartridge is within the second cover member and tape cartridge retaining panels overlying a portion of the recess.

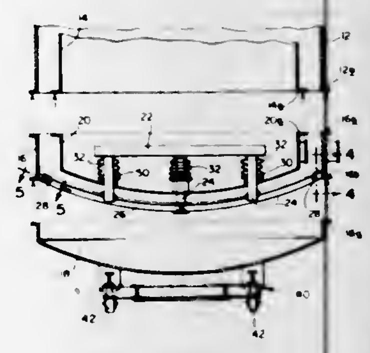
3,352,028

INDUSTRIAL PROCESS AND APPARATUS

Jay L. Richman, Philadelphia, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 4, 1966, Ser. No. 531,898

8 Claims. (Cl. 35—12)



1. A space simulation chamber comprising an inner and a relatively more substantial outer container, each container having a peripheral shell and a removable end wall, the end wall of the inner container having an opening therein, the outer container having spider holding means secured thereto, test object support means in the inner chamber and including a column extending through said opening and a spider secured to said column beneath the end wall of the inner container, and sealing means including bellows sealingly extending from about said opening between the end wall of the inner container and the support means.

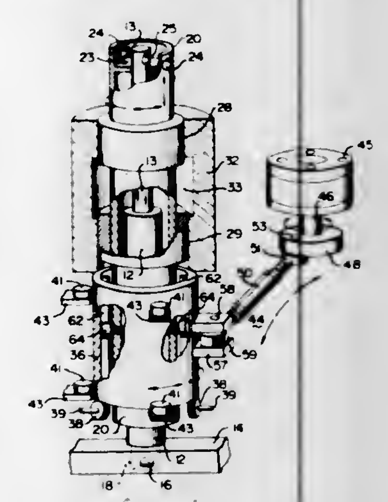
3,352,029

MOTION SYSTEM FOR FLIGHT SIMULATION

Oliver E. Callanen, Falls Church, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware

Filed May 11, 1966, Ser. No. 549,197

10 Claims. (Cl. 35—12)



1. A motion system for general purpose flight simulation comprising a grounded device having pitch, roll and yaw axes; means having an axis coincident with the yaw axis of said device for independently imparting linear motion to said device along said yaw axis and rotational motion to said device about said yaw axis; said motion imparting means including a hydraulic cylinder having a translatable piston rod coincident with said yaw axis, a rotatable tubular member coaxial and substantially coextensive with said piston rod, means coupling said tubular member to said piston rod for common rotation or translation thereof respectively about or along said yaw axis; and further means coupling said motion imparting means to said device.

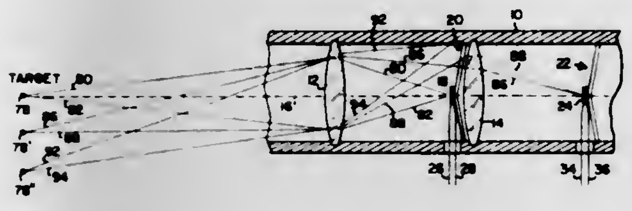
3,352,030

CONTROL APPARATUS

Charles H. Waldhauer, Jr., Glendora, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed July 29, 1965, Ser. No. 475,764

8 Claims. (Cl. 35—25)



1. Apparatus for use in a training system, comprising:
- a movable target means, comprising a source of radiation;
- a converging objective lens and a converging field lens, each having a principal axis and principal focus;
- tubular means, having a longitudinal axis, said objective and field lenses mounted therewithin perpendicular to the longitudinal axis, the principal axes of said lenses coincident with the longitudinal axis and the principal focus of the objective lens lying at a point on the longitudinal axis between the objective and field lenses;
- a first radiation detector mounted to intercept radiation from said source refracted by said objective lens and impinging on said detector at the principal focus of said objective lens;
- a second radiation detector mounted to intercept radiation from said source which is refracted by said objective lens, misses said first detector and impinges on said field lens and is refracted thereby; and
- indicating means, receiving signals produced by said detectors when radiation impinges thereon, and producing output signals indicative of a first condition when radiation impinges on said first detector, and a second condition when radiation impinges on said second detector, said indicating means also producing a signal indicative of a third condition when radiation is not impinging on either detector.

3,352,031

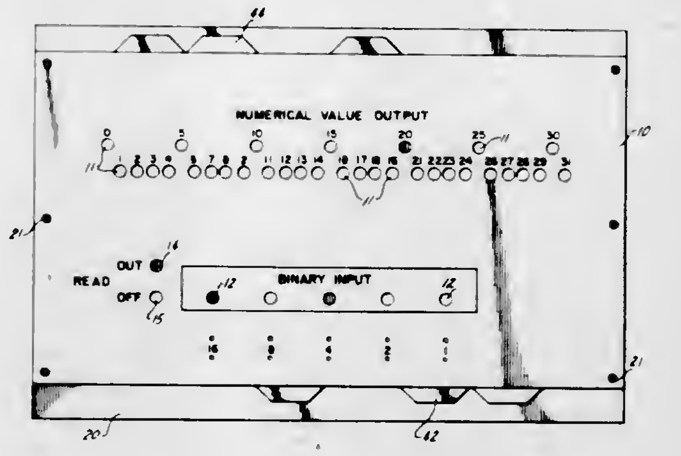
TRAINING AID FOR INDICATING BINARY TO NON-BINARY CONVERSION

Donald D. Lindquist, 1241 E. Hayward, Phoenix, Ariz. 85020

Filed Dec. 6, 1965, Ser. No. 512,596

5 Claims. (Cl. 35—30)

1. A training aid for indicating the non-binary numerical values of selected binary numbers comprising: a first plate having a plurality of openings therein, said openings arranged in two groups, the first of which comprises a plurality of binary digit openings, each corresponding to a different binary digit and the second of which comprises a plurality of non-binary digit openings, each corresponding to a different non-binary number; a second plate secured to said first plate in fixed spaced-apart relationship, said second plate having colored portions visible through and in registry with said openings in said first plate; a plurality of intermediate plates positioned between said first and second plates, each intermediate plate having two positions in the first of which said intermediate plate covers a predetermined binary digit opening in said first plate and in the second of which said intermediate plate uncovers said predetermined binary digit opening; said intermediate plates including a plurality of openings therein registerable with the openings in said first plate to permit, when in registry, the colored portions of said second plate to be viewed through the openings in said first plate; said openings in each intermediate plate being arranged relative to the openings in each other intermediate plate to permit the colored portions of said second plate to be viewed through only one of said non-binary number openings in said first plate for any given positional arrangement of said intermediate plates.



3,352,032

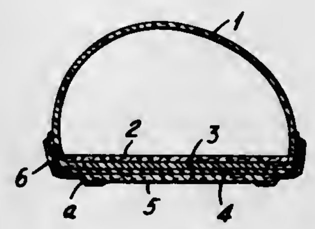
SHOE WITH FABRIC FOXING AND FABRIC SOLE

Hideo Yamaguchi, Kurume, Japan, assignor to Tsukiboshi Gomu Kabushiki Kaisha (The Moon-Star Rubber Ltd.), Kurume, Japan

Filed Dec. 15, 1964, Ser. No. 418,395

Claims priority, application Japan, Jan. 20, 1964, 39/3,488

2 Claims. (Cl. 36—9)

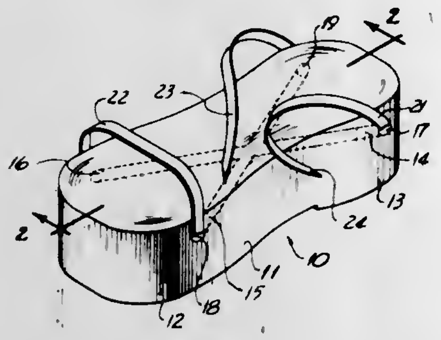


1. A shoe construction comprising an insole, an upper lasted to said insole, a fabric sole forming a bottom exposed tread connected to said insole and said upper, a rubber foxing connected to the lower margin of said upper and to said fabric sole, and a fabric foxing disposed over at least a portion of said rubber foxing.

3,352,033

LIGHT WEIGHT SANDAL

**Raymond C. Colley, 5220 W. Irving St.,
Pasco, Wash. 99301
Filed Dec. 20, 1966, Ser. No. 603,324
5 Claims. (Cl. 36—11.5)**



1. A light weight article of footwear comprising:

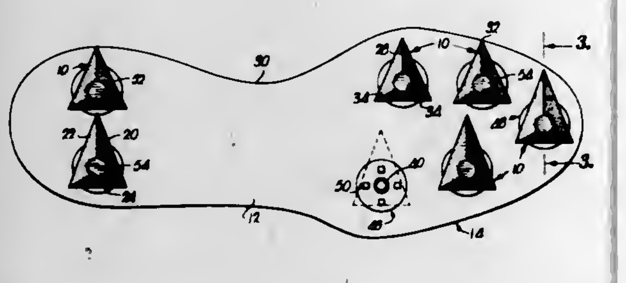
(a) plastic sole conforming generally to the shape of the foot and having an upper surface contoured to conform to the general outline of the bottom of the foot, said sole has two crossing diagonal elongated apertures formed therein that extend from the toe section in which each aperture has an opening in one side of the toe section of the sole and another opening in the opposite side of the heel section of the sole; and

(b) a strap extending through the apertures and forming a continuous loop extending transversely over the toe section with the ends of the strap extending from the openings in the heel section to be joined about the ankle.

3,352,034

ATHLETIC SHOE CLEAT

**William E. Braun, 709 Donovan, Liberty, Mo. 64068
Filed Feb. 23, 1966, Ser. No. 529,531
8 Claims. (Cl. 36—67)**



1. In combination with a shoe having a sole, a cleat attached to the sole of said shoe, said cleat comprising:

a body, said body having:

a base surface facing the bottom of said sole,

a first traction surface generally facing forwardly of the shoe,

a second traction surface generally facing rearwardly of the shoe,

a third traction surface generally facing outwardly away from the instep side of the shoe,

a ground-engaging runner portion extending generally transversely of the sole and formed by the convergence of a pair of said traction surfaces subjacent said base surface,

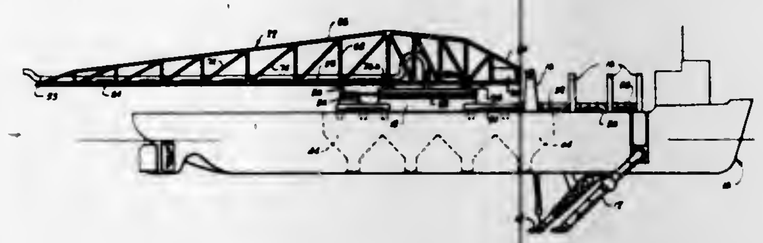
said traction surfaces merging with said base surface adjacent said sole,

said runner portion extending downwardly toward the instep side of the shoe and terminating in a slipper portion capable of rendering the runner portion easily shiftable inwardly along the ground without substantial adhesion to the ground.

3,352,035

DREDGE

**Francis J. Joyce, Morris Plains, N.J., assignor to National Bulk Carriers, Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 89,455, Feb. 15, 1961. This application May 12, 1964, Ser. No. 369,651
2 Claims. (Cl. 37—54)**



1. A self-propelled boom dredge for dredging while under way, said dredge comprising:

(a) a hull;

(b) propulsion means for driving said hull;

(c) an elongated, substantially horizontal boom;

(d) a support mounted amidships on said hull, said boom being attached near one end to said support to be pivotally supported to swing about a vertical axis with respect to said hull;

(e) a discharge pipe extending substantially the length of said boom and supported thereby, said pipe comprising an inverted U-pipe at the end thereof adjacent said support, one leg of said U-pipe being substantially coaxial with said vertical axis and comprising a swivel joint to permit said discharge pipe to swing with said boom, the other end of said discharge pipe being higher than the portion of said discharge pipe between said other end and said U-pipe to retain material in said discharge pipe;

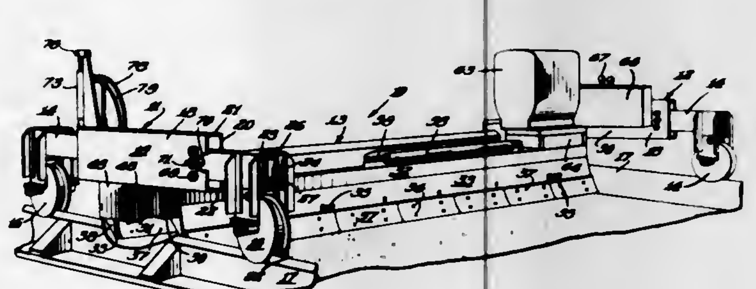
(f) a dredge pump in said hull connected to said swivel joint to force liquid into said discharge pipe; and

(g) a counterbalance attached to said one end of said boom to balance the weight of said boom and discharge pipe with material therein, whereby said boom and discharge pipe with material therein may be swung abeam of the dredge without causing the dredge to list.

3,352,036

TRAIL GRADER

**Harold E. Miller, P.O. Box 98, Milwaukee, Wis. 53201
Filed Nov. 18, 1964, Ser. No. 412,009
17 Claims. (Cl. 37—108)**



1. A trail grader for preparing roadbed and the like surfaces comprising:

a pair of spaced carriage frames each provided with wheels for riding on spaced form rails,

a center beam section comprising a pair of elongated, tubular center beams arranged one within the other in mutually telescopic relation with each being connected at one end thereof to one of said carriage frames,

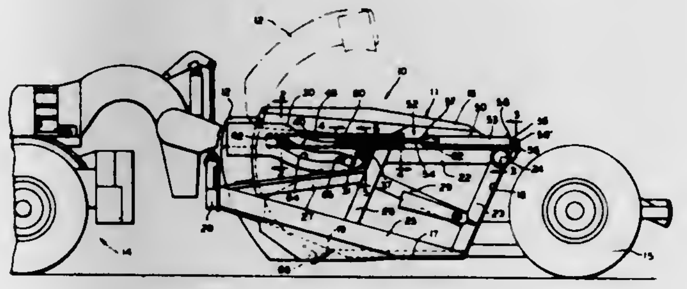
cutting plates affixed to said center section for engaging and preparing such roadbed, and

dual-acting power means interconnecting said center beams to provide selective telescopic change in overall length thereof and to control the spacing of said carriage frames to conform to the spacing of the rails.

3,352,037

POWER OPERATED APRON FOR TRACTOR SCRAPERS

**Allan R. Swanson, St. Joseph, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed June 10, 1965, Ser. No. 462,820
6 Claims. (Cl. 37—129)**

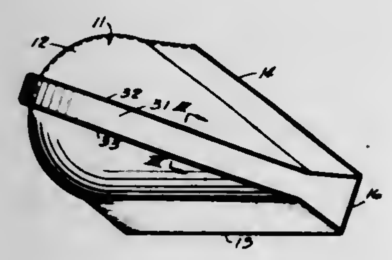


1. In an earth moving scraper having a bowl with an opening at one end thereof and an apron pivotally mounted on said bowl for opening and closing said opening of said bowl, the combination of cam means and cam follower means between said apron and said bowl, power actuating means for effecting relative movement between said cam means and said cam follower means to provide for pivotal movement of said apron about its pivot for opening said opening of said bowl, and said cam means having a first cam path portion providing for substantially constant application of torque of said power actuating means over a predetermined range of initial opening movement of said apron with respect to said opening of said bowl, and a second cam path portion providing for lessening the torque applied by said power actuating means to said apron in the continued opening movement thereof by said power actuating means beyond said predetermined range of initial opening movement of said apron.

3,352,038

PRESTRESSED DRAG SHELL CONSTRUCTION OR BUCKET

**Ernest Kalve, 1934 N. Hoyne, Chicago, Ill. 60647
Filed Nov. 2, 1964, Ser. No. 407,980
13 Claims. (Cl. 37—135)**



1. A dragscraper bucket comprising:

a generally crescent-shaped wall defining an open bottom and a front opening;

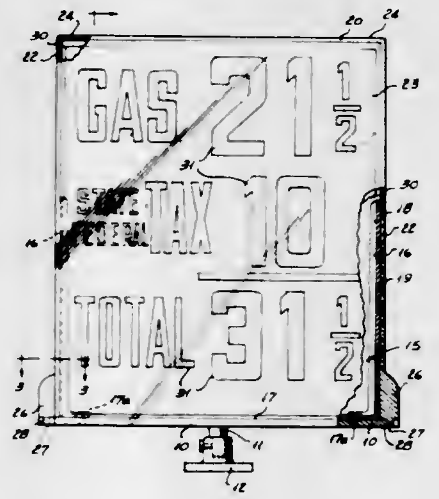
a prestressing band spaced from the periphery of said wall; and

means attaching said band to said periphery and stressing said wall from a neutral position to a normal prestressed position wherein the ends of said wall are urged apart to a predetermined extent such that under load stresses placed on the bucket are substantially neutralized whereby to enable the bucket to be used without cross-bar yoke means between the front ends of said wall.

3,352,039

DISPLAY HOLDERS

**Marinus Ten Hoeve, 323 Calvin Court; Peter De Korte, 329 Calvin Court; and Edward Ten Hoeve, 474 Grandview Ave., all of Wyckoff, N.J. 07481
Filed Oct. 22, 1965, Ser. No. 501,032
10 Claims. (Cl. 40—10)**

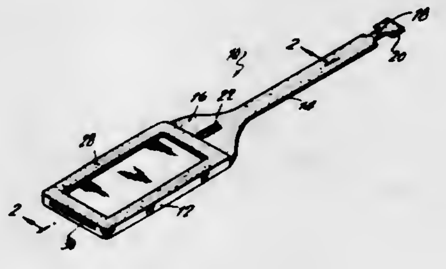


1. In a holder of the class described, a base, a bracket fixed to said base and provided with angularly related end arms having channels disposed in confronting relation for receiving display members, a transparent cover seated on said base and provided with a pocket receiving said bracket and the members, said arms tapering downwardly and outwardly toward said base, said cover having side and end walls defining said pocket, said side walls tapering downwardly and outwardly toward said base and having binding engagement with said arms for maintaining said cover detachably connected to said base.

3,352,040

LUGGAGE TAG

**Simon Javkin, 160 West End Ave.,
New York, N.Y. 10023
Filed Oct. 23, 1965, Ser. No. 503,059
3 Claims. (Cl. 40—21)**

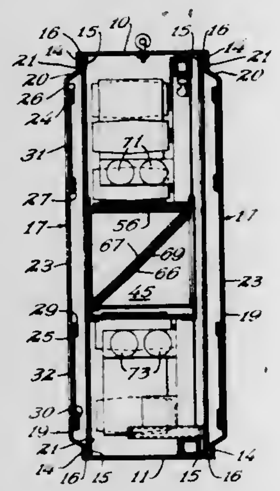


1. A luggage tag comprising an elongated strip of synthetic plastic material, having a plate and a shank, said strip having an opening therein adjacent said plate, said shank having a free end provided with an enlargement, said enlargement being received in said opening for holding said shank in a closed loop arrangement, said plate being provided with indicia retaining means, said plate in-

cluding two rectangular plate portions interconnected by a flexible connecting portion, a first of said plate portions having a series of apertures therein spaced about its periphery, a second of said plate portions having a plurality of resilient locking detents, said connecting portion being folded so that said detents extend through said apertures lockingly holding said second plate portion in overlying relationship to said first plate portion, said opening being in said first plate portion, said second plate portion having a slot therein in alignment with said opening.

3,352,041
TRAVELING MESSAGE SIGN
George H. Lawrence, 1246 N. St. Albans, St. Paul, Minn. 55117
Filed July 13, 1965, Ser. No. 471,644
10 Claims. (Cl. 40—32)

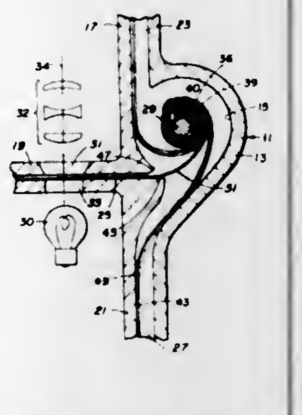
1. A traveling message sign including:



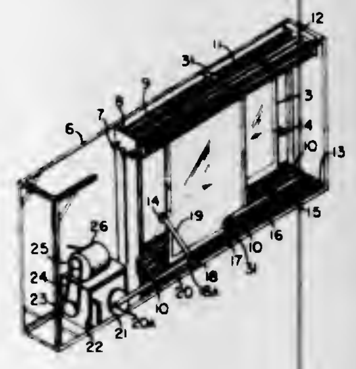
a frame,
a mirror supporting framework supported by said frame,
a pair of mirrors supported by said framework in back to back position on planes at substantially forty-five degrees from the vertical,
an opaque endless tape having apertures therethrough in a predetermined pattern to provide a message,
roller means supporting said tape for movement both above and below said mirrors and on substantially horizontal planes,
illuminating means above the upper portion of said tape and below the lower portion thereof to direct light through the apertures of the tape and into said mirrors, and
means for driving the tape,
said roller means including a roller slidably supported on said frame and about which said tape extends.

3,352,042
FILM STORAGE SYSTEM
Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 25, 1965, Ser. No. 427,797
11 Claims. (Cl. 40—72)

1. A method using a separator for retrieving a predetermined chip included in a file of similar, superimposed chips comprising:
(a) sequentially riffling a common end portion of the superimposed chips in said file by moving said file in a first direction relative to and against said separator so as to locate the end portion of said predetermined chip in a position free from the remainder of said file; and
(b) moving said file in a second direction relative to and against said separator, said moving step comprising deflecting away from said predetermined chip the superimposed segments of all other chips in said file and thereby isolating a lengthwise segment of said predetermined chip in a preselected location separated from the remainder of said chips.



3,352,043
DISPLAY DEVICE
Arthur G. Butts, 3836 Wilson, San Diego, Calif. 92104, and Jerry L. Butts, 757 Grand Ave., Apt. F, Spring Valley, Calif. 92109
Filed July 30, 1965, Ser. No. 476,004
6 Claims. (Cl. 40—78)

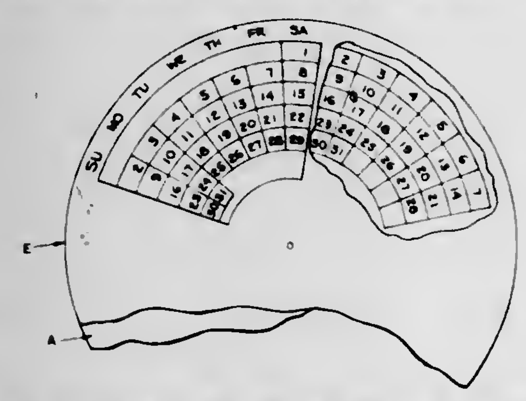


1. In combination:
(A) display element housing means,
(B) a plurality of display elements in parallel space relationship mounted therein,
(C) a plurality of aligned continuous conveyor means for carrying display elements,
(D) transfer means for intermittently moving display elements from one conveyor means to another,
(E) drive assembly means operatively connected to the conveyor means and transfer means for alternately and regularly motivating said conveyor means and transfer means, and
(F) a continuous power source which motivates the drive assembly.

3,352,044
MULTI-YEAR CALENDAR
Douglas L. Chasteen, 308 Mountain Gap Road SE., Huntsville, Ala. 35803
Filed Sept. 7, 1965, Ser. No. 485,166
1 Claim. (Cl. 40—115)

A multi-year calendar comprising independently rotatable, adjacent, and co-axially mounted, first, second, third, and fourth circular members and wherein:
(A) first circular member has a first side divided into 64 equal circular segments and wherein on said first side there is included:

(1) A first circular region extending from the periphery toward the center a fixed distance and the segment spaces thus defined in a circular pattern and when counted from a reference radial position in a first circular direction are designated as follows:
(a) a first segment corresponding to said refence radial position and indicating January,
(b) a second segment space, indicating May,
(c) a sixth segment space indicating April and July,
(d) a ninth segment space indicating February,
(e) a tenth segment space indicating June,
(f) a fourteenth segment place indicating August,
(g) an eighteenth segment space indicating October,
(h) a twenty-second segment space indicating September and December, and
(i) a twenty-sixth segment space indicating March and November,
(2) second, third, fourth and fifth circular regions each being interior of the other in this order, said fifth circular region including leap year designations in segment spaces **9**, **13**, **17**, **21**, **25**, **29**, **33**, **37** and **41**, when counted as aforesaid for this circular member, and wherein said leap year designations are distributed into one of four intra-space positions as follows:



(a) said leap year designations in segment spaces **9**, **25**, and **41** being in a first position,
(b) said leap year designation in segment spaces **17** and **33** being in a second position,
(c) said leap year designations in segment spaces **13** and **29** being in a third position, and
(d) said leap year designations in segment spaces **21** and **37** being in a fourth position;
(3) a sixth circular region adjoining and inward of said fifth circular region and wherein segment spaces counted as aforesaid are designated as follows:
(a) a first segment space indicating Monday,
(b) a fifth segment space indicating Saturday,
(c) a ninth segment space indicating Thursday, and
(d) a sixth-first segment space indicating Wednesday;
(4) a seventh circular region adjoining and inward of said sixth circular region and wherein segment spaces, counted as aforesaid, are designated as follows:
(a) a second segment space indicating Tuesday,
(b) a third segment space indicating Wednesday,
(c) a fourth segment space indicating Thursday,
(d) a sixth segment space indicating Sunday,
(e) a seventh segment space indicating Monday,
(f) a eighth segment space indicating Tuesday,
(g) segment spaces **10** through **59** indicating successive sets of four consecutive days of week wherein the first set commences with Friday and ends with Monday and wherein there is a gap of one day between each set, and
(h) segment spaces **62**, **63**, and **64** indicate Thursday, Friday and Saturday, respectively;
(5) an eighth circular region adjoining and inward of said seventh circular region and wherein segment spaces counted as aforesaid, are designated as follows:
(a) segment space **1** indicating Sunday,
(b) segment space **4** indicating Friday, and
(c) segment space **7** indicating Wednesday;
(B) The periphery of said second circular member coinciding with and being adjacent to the inner boundary of said first circular region of said first circular member and wherein when one side of said second circular member is viewed in terms of 64 equal circular segments said last named one side includes:
(1) a second circular region extending from the periphery toward the center a fixed distance corresponding in area to said second circular region of said first circular member and having segment spaces therein, when counted from a reference radial position in a said first circular direction, as follows:
(a) a first segment space indicating 19, and
(b) a fifth segment space indicating 18;
(2) a third circular region adjoining and inward of said second circular region and having segment spaces therein, when counted from said last named reference radial position as aforesaid, as follows:
(a) a first segment space indicating 0,
(b) a third segment space indicating 3,
(c) a fifth segment space indicating 6,
(d) a seventh segment space indicating 9,
(e) a eleventh segment space indicating 1,
(f) a thirteenth segment space indicating 4,
(g) a fifteenth segment space indicating 7,
(h) a twenty-first segment space indicating 2,
(i) a twenty-third segment space indicating 5, and
(j) a twenty-fifth segment space indicating 8;
(3) fourth and fifth adjacent circular regions, said last named fifth circular region being interior of said fourth desginated region, said fifth circular region includes slots in segment spaces **5**, **9**, **13**, **17**, **21**, **25**, **29** and **33**, when counted as aforesaid for this circular member, and wherein said segment spaces are positioned to provide openings in terms of said space positions as follows:
(a) slots **5** and **21** providing openings for space positions **1** and **3**,
(b) slots **9** and **25** providing openings for space positions **2** and **3**,
(c) slots **13** and **29** providing openings for space positions **2** and **4**, and
(d) slots **17** and **33** providing openings for space positions **1** and **4**;
(4) a sixth circular region inward of and adjoining said fifth circular region and wherein segment space **1**, corresponding with said last named radial reference position is perforated to

display, upon alignment, the days of week indications of said sixth circular region of said first circular member;

(5) a seventh circular region inward of and adjoining said sixth circular region and wherein segment spaces **1–34**, when counted from last named radial reference position as aforesaid, are removed;

(6) an eighth circular region inward of and adjoining said seventh circular region and wherein segment spaces **4–13**, when counted from said last named radial reference position as aforesaid, are removed;

(C) the periphery of said third circular member coinciding with and being adjacent to the inner boundary of said second circular region of said second circular member and wherein when one side of said third circular member is viewed in terms of 64 equal circular segments said last named one side includes:

(1) a third region extending inward from the periphery toward the center a fixed distance corresponding in area to said third circular regions of said first and second circular members and having segment spaces when counted from a reference radial position in a said first circular direction wherein segment space **1** is removed;

(2) a fourth circular region extending inward from said third circular region toward the center a fixed distance corresponding in area with said fourth circular regions of said first and second circular members and having segment spaces, when counted from said last named reference radial position as aforesaid, wherein segment spaces **1–10** indicate numerals 0–9, respectively;

(3) fifth, sixth, seventh and eighth circular regions, corresponding in area to like designated circular regions of said first and second circular members, extending inward toward the center and wherein segment spaces **1–10** of each, when counted from said last named reference radial position as aforesaid, are removed;

(D) the periphery of said fourth circular member coinciding with and being adjacent to the inner boundary of said third circular region of said third circular member and wherein a 1/64 circular segment space opening extends from the periphery inward across circular regions corresponding to circular regions **IV–VIII** of said first, second and third circular members;

(E) a plurality of digits on the second side of said first circular member arranged in 13 columns and 6 rows wherein any adjacent set of 7 columns comprises a 31 day set of monthly calendar numbers and wherein with shift in sets from left to right the first day of the indicated month shifts in day of week position in reverse sequence; and

(F) a fifth circular member co-axially joined with said first, second, third, and fourth circular member, is positioned adjacent to said second side of said first circular member, and wherein said fifth circular member has an aperture through which seven adjacent said columns are selectively viewable as a said set of calendar numbers.

3,352,045

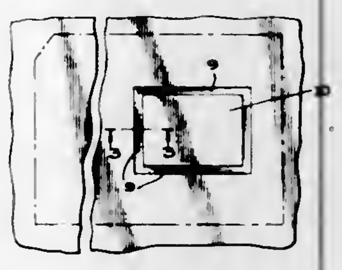
APERTURE CARDS AND THEIR MANUFACTURE

John F. Langan, Atlanta, Ga., assignor to Langan Aperture Cards, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 24, 1964, Ser. No. 398,981

1 Claim. (Cl. 40—158)

A record card having an aperture for projectably mounting sections of microfilm and like projectable transparencies which comprises a flat relatively thin card of fibrous card stock of uniform thickness except for a thinner narrow elongated ledge extending around and forming the edge of said aperture, said ledge being an integral extension of the card stock surrounding the aperture and having a thickness of less than half that of the surrounding stock, said ledge on one side of the card having an abraded surface with a normally tacky pressure sensitive adhesive thereon, and a cover sheet extending over said aperture and being non-tacky on both sides throughout the area of said aperture with its edges overlying and bonded to the surface of said ledge by said pressure sensitive adhesive therebetween, thereby maintaining continuous, said cover sheet having a uniform thickness which does not exceed the difference between the thicknesses of the card stock and ledge, the combined thickness of the superimposed portions of said cover sheet and ledge being no greater than the thickness of the card stock and said superimposed portions being disposed entirely between the planes of the flat surfaces of the card, non-tacky card surfaces comprising in part the surfaces of said card stock and in part the non-tacky surfaces of said cover sheet during handling and distribution of the card, said cover sheet being removable, if desired, by breaking said adhesive bond and leaving said adhesively coated ledge surface exposed pending the replacement of said cover sheet by a projectable transparency.



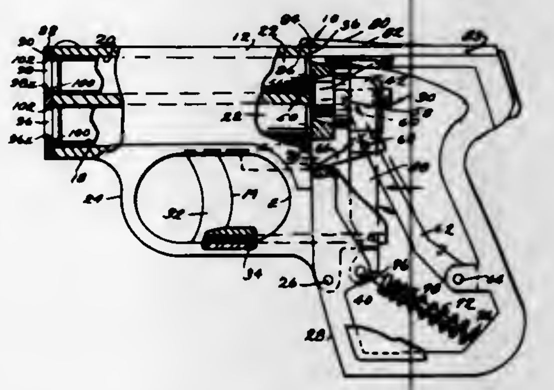
3,352,046

DEFENSIVE WEAPON AND CARTRIDGE THEREFOR

Albert C. Warner and Manton E. Allen, Santa Fe, N. Mex., assignors, by mesne assignments, to Warner Development Limited, Santa Fe, N. Mex., a limited partnership of New Mexico

Filed Jan. 6, 1966, Ser. No. 519,040

16 Claims. (Cl. 42—1)



1. A device of the character described comprising in combination: a barrel means terminating at one end in a muzzle end and at the other end in a breech; at least one cylindrical bore in said barrel extending axially thereof from said breech to said muzzle end thereof, said bore being adapted to slidingly receive completely therewithin a cartridge of a length corresponding to the length of said bore and having a cylindrical exterior surface of substantially uniform diameter throughout its length; a muzzle plate means at the muzzle end of said barrel, said muzzle plate means having restraining means intersecting said bore so as to present a transverse abutment surface adapted to engage the end edge of a cartridge operatively disposed within said bore so as to restrain the cartridge against longitudinal movement relative to said bore toward the muzzle end thereof; trigger means; and firing means adjacent said breech end of said bore and operatively responsive to actuation of said trigger means to fire a cartridge operatively positioned within said bore.

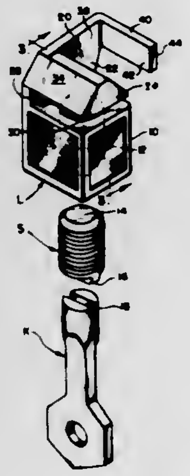
3,352,047

GUN TRIGGER LOCKING DEVICE

Thomas M. McDonnell, 2918 Madison St., Bellwood, Ill. 60104

Filed July 11, 1966, Ser. No. 564,056

2 Claims. (Cl. 42—70)



1. In a unitary safety device adaptable for detachable locking connection, without requiring any mechanical adjustment of parts, to any one of several different types of guns with varying trigger and trigger guard arrangements each having at least one generally vertically disposed trigger surrounded by a looped-shaped trigger guard having a pair of front and rear generally vertical sections interconnected by a bottom generally horizontal section, the combination of:

(a) a body having a vertical opening extending therethrough from top to bottom;

(b) a locking screw threadably positioned within said opening and presenting on its upper end an upwardly facing surface;

(c) a support member upstanding from said body at one side thereof;

(d) a first arm extending horizontally from said support member over said body and presenting on its underside a downwardly facing surface opposite the upwardly facing surface of said locking screw for cooperation therewith to clamp the horizontal section of a gun trigger guard therebetween;

(e) a second arm extending horizontally from said support member in parallel relation with but spaced laterally from said first arm;

(f) said first and second arms each presenting a pair of oppositely facing, generally vertical front and rear abutment surfaces, any single one of which can be disposed for engagement with a rearwardly facing, generally vertical surface of the gun trigger when the device is clamped on the horizontal section of a gun trigger guard to prevent movement of the trigger relative to the trigger guard;

(g) said first arm having depending from its free outer end, a lip presenting an inner vertical surface operable as an abutment to engage a side edge of the trigger guard horizontal section and thereby prevent the device from being slipped laterally off of said trigger guard when the latter is clamped on the former.

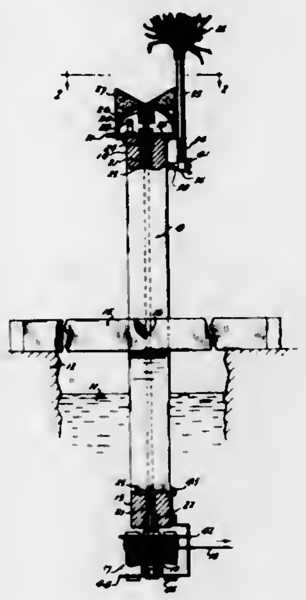
3,352,048

ICE FISHING TIP-UPS

Clarence R. Fleming, Rte. 1, Box 20, Mukwonago, Wis. 53149

Filed Feb. 8, 1965, Ser. No. 430,923

7 Claims. (Cl. 43—17)



1. An ice fishing tip-up comprising:

a mast adapted to extend into the water through a hole in the ice to have one end submerged and the other end visible,

a fish line reel at the submerged end of the mast,

a fish strike indicator at the visible end of the mast,

a motion transmitting connection between said reel and said strike indicator,

said reel comprising side flanges having anti-backlash fins projecting therefrom.

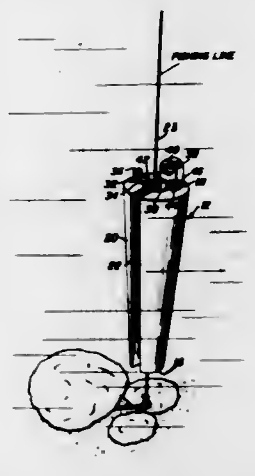
3,352,049

FISHHOOK RELEASING AND RETRIEVING MEANS

Victor A. Agostini, 302 Washington Ave., Bennington, Vt. 05201

Filed Feb. 26, 1965, Ser. No. 435,415

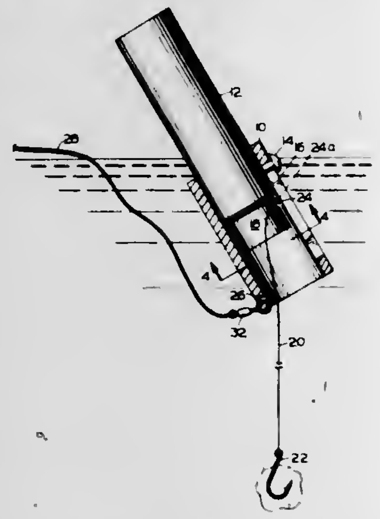
6 Claims. (Cl. 43—17.2)



6. Fishhook releasing and retrieving means comprising an elongated weight having an axial bore and provided along one side with a slot communicating with said bore, the upper end of said weight having an upstanding lug positioned adjacent a side of the weight diametrically opposite said slot, said lug constituting an ear to which the lower end of a weight lifting line can be connected, said upper end being provided with circumferentially

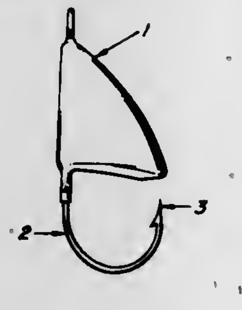
spaced upstanding limit stops, a sleeve mounted for rotation in said bore, said sleeve being provided with an open-ended slot which can be aligned or misaligned with the slot in said weight, said sleeve being provided at its upper end with a radial fingergrip which is shiftably engageable with said upper end of said weight and is located for movement between and is selectively engageable with said limit stops, one of said limit stops comprising a fixed stud, the other of said limit stops comprising a setscrew, said fingergrip being capable of temporary retention in a set position by screwing the head of the setscrew down and into engagement with said fingergrip.

3,352,050
BAIT CASTER
Ralph A. Mowrey, 2008 SE. 8th Ave.,
Camas, Wash. 98607
Filed Dec. 19, 1966, Ser. No. 602,929
10 Claims. (Cl. 43—41.2)



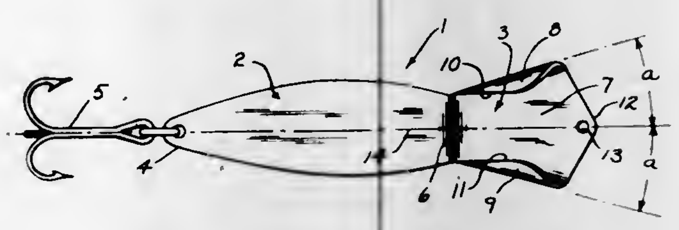
1. A bait casting device comprising a tubular housing open at its forward and rearward ends, a plunger slidably mounted in said housing, said plunger having a forward end arranged to receive fish line in wrapped relation thereon, said plunger having a slidable connection with said housing whereby to project forwardly out of the housing and to be retracted sufficiently to confine the forward end of the plunger interiorly of said housing while the device is being cast, said slidable connection including means for stopping said plunger in its most retracted position with its forward extremity spaced inwardly from the forward end of said housing to provide a space in said housing for receiving a baited fish hook secured to said line.

3,352,051
COMBINATION FISHING LURE AND HOOK GUARD
Francis M. Stewart III, 3307 Hutchens Ave.,
Huntsville, Ala. 35801
Filed Mar. 1, 1965, Ser. No. 436,149
1 Claim. (Cl. 43—42.1)



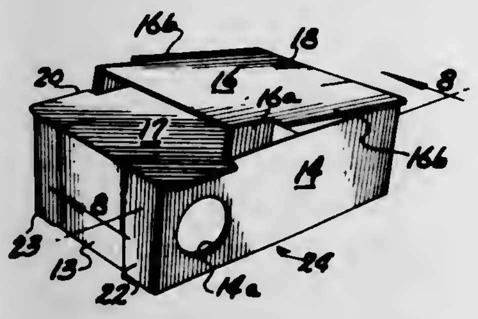
A fish lure comprising:
(A) a fish hook member comprising:
  (1) a straight shank portion,
  (2) an eye on a forward end of said shank portion, and
  (3) a hook portion having a pointed end, said hook portion extending from the rear end of said shank portion;
(B) an elongated body of resilient but of minor compressability, material and varying oblong cross section, said shank portion of said hook member being bonded to one narrow side region of and substantially along the entire length of said resilient body for providing an axis for torsional deflection of said body with respect to said shank and:
  (1) said body being oriented wherein a central plane extending along the length of said resilient body is substantially coincident with the major axis of said oblong cross section and substantially intersects said narrow side region, and an extension of said plane is substantially coincident with said hook portion,
  (2) said body extends rearward with respect to said shank portion from a first end position near said eye, and the width in the direction of said major axis increases gradually in dimension from said first end position for substantially the entire length of the body, and wherein the portion of said width when measured at its point of maximum width between said shank portion and a narrow side of said resilient body opposite said one narrow side is slightly in excess of the distance between the shank and the pointed end of said hook,
  (3) a portion of said opposite end of said body is in near spaced relation with the said point of said hooked portion, and
  (4) the thickness of said body in the direction of the minor axis increases gradually in dimension from said first end rearward over substantially its entire length to a maximum width which is maintained to said opposite end.

3,352,052
FISH LURE
Carvel A. Woll, 215 Division St.,
Chippewa Falls, Wis. 54729
Filed June 2, 1965, Ser. No. 460,645
7 Claims. (Cl. 43—42.06)



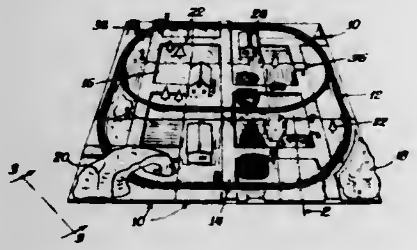
5. In a fishing lure the combination comprising:
an elongate blade section terminating in a tail and extending forward to a neck;
a head section connecting with said blade section at said neck and extending to a forward nose, said head section being funnel shaped with the large end of the funnel at the forward end of the lure, and the funnel configuration being open along one side to spill water therefrom that enters the head section; and
said funnel shaped head being oriented with respect to said blade section such that the surface areas of the funnel configuration diverge from a center line for the blade section, whereby water entering said funnel shaped head rolls the head from side to side upon drawing the lure through the water.

3,352,053
FOLDABLE RODENTICIDE FEEDING BOX AND BLANK THEREFOR
Wilbur G. Anderson, Grand Rapids, Mich., assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed Mar. 28, 1966, Ser. No. 538,014
16 Claims. (Cl. 43—131)



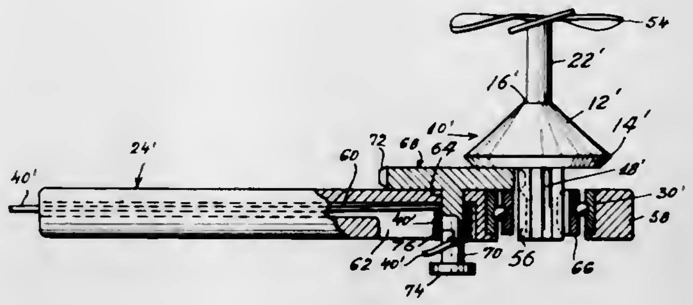
3. A bait box construction formed of foldable sheet material, comprising a bottom panel, pairs of wall panels delimiting and being foldably connected to said bottom panel and extending upwardly therefrom, one pair of wall panels being provided with end flaps which are in interlocking engagement with a second pair of wall panels, and a sectional cover having a pair of sections foldably connected to said second pair of wall panels, each cover section being in interlocking engagement with said wall panel end flaps; said cover sections, when in closed positions, having portions thereof in overlapping engagement, the overlapping cover sections having peripheral portions thereof in interlocking engagement with said one pair of wall panels, one of said wall panels being provided with an opening for access to the interior of said box.

3,352,054
CHANGEABLE TILE LAYOUT INCLUDING ELECTRICALLY CONNECTABLE TRACK
Marvin I. Glass, Chicago, Harry Disko, Park Ridge, and Norman T. McFarland, Urbana, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Feb. 4, 1965, Ser. No. 430,358
3 Claims. (Cl. 46—17)



1. A toy vehicle layout comprising a plurality of rectangular tiles having mutually perpendicular borders and adapted to be placed in side-by-side relation to provide a continuous rectangular layout, each of said tiles having scenery formed thereon and including an integrally formed roadbed section with a track fixed thereto, each of said tiles including a non-planar, contoured upper surface and having at least one edge portion of irregular cross-section corresponding substantially with an irregular edge contour of a plurality of the other tiles to provide for interchangeable mating of the several tiles, the roadbed and track on a plurality of said tiles being similarly disposed both vertically and horizontally with respect to the sides of said tile so as to permit interchangeable mating of the tiles, and means at each of the ends of the track on each tile providing for a mechanical connection between adjoining tiles and an electrical connection between tracks on said adjoining tiles including a metal eyelet disposed through a cross-tie on said track and through said roadbed, and a removable metal conductor having end portions positionable in each of two of said eyelets on adjoining tiles to provide for continuity of the electrical circuit across adjoining tiles.

3,352,055
SPINNING TOP WITH AIDS FOR SPINNING AND LASHING THE SAME
Stanley Pelkowski, 607B Britton St.,
Elizabeth, N.J. 07202
Filed July 26, 1965, Ser. No. 474,704
1 Claim. (Cl. 46—70)

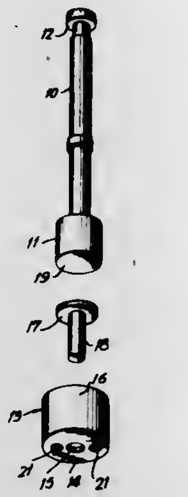


In combination with a top having a tapered body and a post depending from the wide end of the body, said post having spaced ribs therealong, a stem extending upwardly from the narrow end of the body, and flexible means for imparting rotation to the body, a top holder comprising an elongated flat stick, having a hole in one end thereof, ball bearing fitted in said hole, and having an aperture of a size for receiving the depending post of said tapered body, said stick having a recess in one side thereof adjacent the hole therein, and having a central bore through the body thereof intersecting said recess, said stick having a hole in the other side thereof communicating with said recess, a shaft extending through said hole and extending below the one side of the stick, a toothed wheel integral with the upper end of the shaft seated on the surface of said other side of the stick, the teeth of said wheel meshing with the ribs on the post, and a flexible cord extending through the bore of the stick, the inner end of the cord wound around the shaft mounting the toothed wheel whereby upon pulling on the free end of the cord a torque is imparted to the shaft wheel and post on the tapered body for spinning said top, a propeller on the top end of the stem, whereby upon spinning of the body, the body is lifted out of the ball bearing and deposited on a flat supporting surface, and a whip for imparting a force to said top while it is spinning on the supporting surface to cause said top to continue to spin, including an elongated lash cord having circular washers spaced therealong, said lash cord adapted to be pulled across the ribs on the depending post of the tapered body and transmit force to said body.

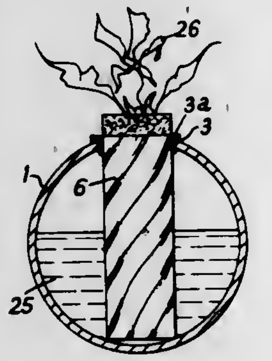
3,352,056
CAP-EXPLODING PROJECTILE
Solomon Marcus, Union, N.J., assignor to De Luxe Reading Corporation, a corporation of New Jersey
Filed Oct. 13, 1965, Ser. No. 495,488
8 Claims. (Cl. 46—200)

1. In a cap-exploding projectile, a shaft provided with a weighty metallic head at its front end, said head having a cylindrical side surface and a flat front surface defining an anvil, a removable bonnet on said head comprising a circular base with a center opening and a skirt extending rearward for frictional fit on the side surface of the head, a metallic hammer having a flat part on said base and a stem extending out of the bonnet through said center opening, the space between said flat hammer part and said

anvil being adapted to receive a cap which explodes when the impact of said stem against a hard surface moves the hammer forcefully against the anvil, said bonnet skirt being composed of tough elastically yieldable plastic material adapted to grip said head frictionally and yet distort outwardly momentarily at the time of the explosion to allow escape of gases without injury to the bonnet or separation of it from the head.



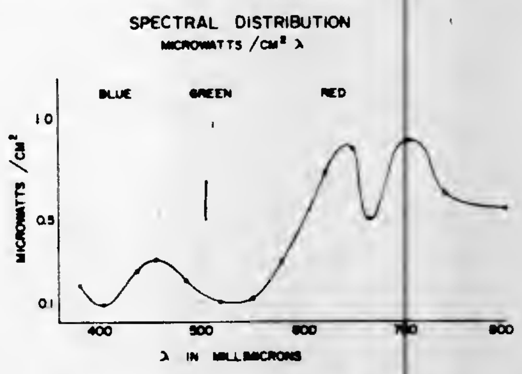
3,352,057
SOIL-LESS CULTIVATION DEVICE
Marcel Ferrand, 13 Rue Oswald Laroque,
Toulon, Var, France
Filed Dec. 14, 1964, Ser. No. 418,038
Claims priority, application France, July 2, 1964, 20,630
1 Claim. (Cl. 47—1.2)



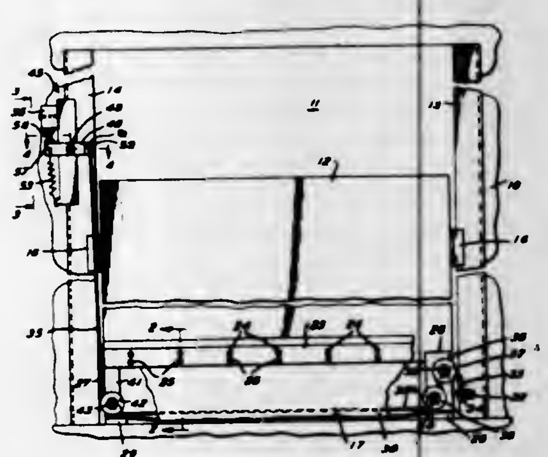
A system for the cultivation of plants comprising:
(a) an elongated horizontal liquid and gas tight container having a plurality of orifices formed at intervals along its upper surface and also having fluid feed and withdrawal means at opposite ends thereof;
(b) a plurality of individual fluid porous plant root receptacles, which are imperforate to roots secured therewithin, inserted in said orifices through fluid tight packings and projecting upwardly from said container;
(c) nutrient fluid within said container and in contact with said porous receptacles immersed therein; and
(d) means adapted to circulate said fluid the length of said container.

3,352,058
ORGANIC FLUORESCENT COLORANTS FOR STIMULATING THE GROWTH OF PLANTS
Elmer J. Brant, Moraga, Calif., assignor of one-half to Harry P. Locklin, Richmond, Calif.
Filed Dec. 8, 1966, Ser. No. 607,118
12 Claims. (Cl. 47—58)

1. In the method for stimulating plant growth by exposing plants to a source of light having growth stimulating wave lengths, the improvement comprising exposing the plants to light intensified in the red region, in which the light is obtained by contacting light from a source with an organic fluorescent colorant.



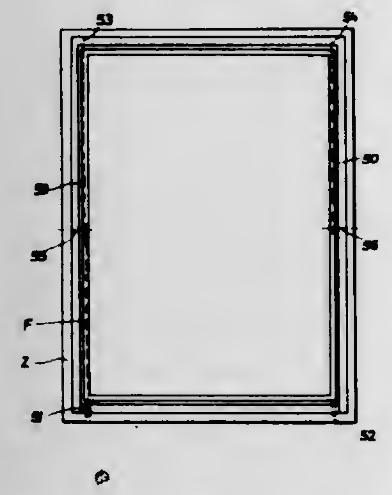
3,352,059
REVERSING EDGE FOR GATES
Louis P. Metz, Abington, Pa., assignor to Guilbert, Incorporated, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 8, 1965, Ser. No. 470,465
14 Claims. (Cl. 49—27)



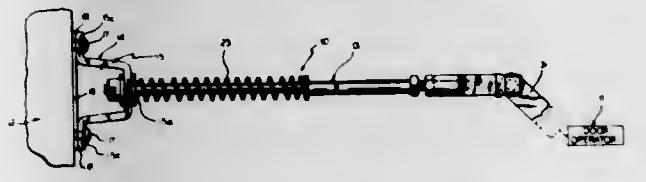
1. In combination with a wall having an opening at a fixed location and a panel mounted for movement transversely with respect to the opening, the means for controlling the positioning of the panel comprising
a flexible sheath mounted on a horizontal edge of the panel,
a movable controlling cable having an end portion fixedly mounted with respect to said opening,
a control member at a fixed location with respect to said opening and having a movable operating portion,
a member actuating said movable operating portion to which another end portion of the cable is connected,
said cable having an intermediate portion extending horizontally within said flexible sheath and deflectable in response to deformation of said sheath, and
guide members for said cable carried by said panel whereby said cable is transferable with respect to said panel upon movement of said panel.

3,352,060
PLASTIC WINDOW AND PROCESS FOR MAKING SAME
Hans Thams, Ellernreihe 64/5, Hamburg, Bramfeld, Germany
Filed Apr. 19, 1965, Ser. No. 449,017
Claims priority, application Germany, Apr. 20, 1964, T 26,045; Apr. 10, 1965, T 28,362
3 Claims. (Cl. 49—192)

1. A plastic tiltable and swingable window comprising a one-piece plastic wing and a one-piece plastic window frame provided with tubes in the profiles thereof which fill the maximum cross-section of the said profiles, movable lock bolts within the upper portion of the tube of each vertical member of the window wing capable of engaging recesses in the upper horizontal member of the window frame for locking, a supporting and tilting bolt at the bottom of one of the vertical members of the window wing which engages a recess in the window frame, a moveable lock bolt within the lower portion of the tube of the second vertical member of the window frame capable of engaging a recess in the window frame and means for moving the lock bolts in the window wing, the said window wing having a curved portion engaging the frame and a flange overlapping the inner profile of the window frame and the said window frame having a profile tightly fitting the curved portion of the said window wing whereby the wing and frame are swingable and tiltable about an axis having the common radius of the tightly fitting profiles.

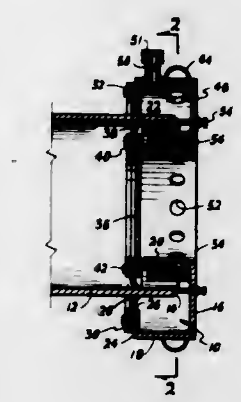


3,352,061
DOOR OVERTRAVEL MECHANISM
William Chan, Brookfield, Jon Gregory De Vine, Cary, and Charles O. Klein, Berwyn, Ill., assignors to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,492
6 Claims. (Cl. 49—507)



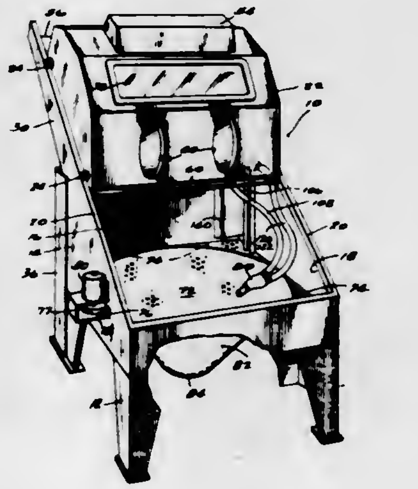
1. A door overtravel mechanism interconnected between a door and a door operator comprising a connecting rod connected at one end to a door operator, a mounting bracket attached to said door and having an opening therethrough for receiving the other end of said rod, and means for impositively attaching said other end of said rod to said bracket including a pair of conical convexo-concavo retainers, one on each side of the bracket and having bores therethrough aligning with said opening and receiving said other end of said rod, said opening being substantially larger than said bores, the convexo sides of the retainers facing each other and being partially received within said opening, a compression spring bottomed on one end against one of the retainers and at the other end against a stop along said rod, a collar received over said other end of said connecting rod and against said other of said retainers, and a spiral pin extending transversely through said rod for preventing movement of said collar therefrom.

3,352,062
SAND BLAST DEVICE
George M. Conover, 725 Shawnee Ave., Bartlesville, Okla. 74003
Filed May 14, 1965, Ser. No. 455,745
7 Claims. (Cl. 51—8)



1. A sand blast device for pipe sections having beveled ends and comprising a housing having an annular chamber for receiving one of the beveled ends therein, sealing means carried by the housing for sealing the chamber around the pipe, adjustable means carried by the housing for facilitating positioning of the beveled end within the chamber, inlet means for admitting an abrasive material into the chamber, means for directing air under pressure into the chamber for impinging the abrasive material against the beveled end, and means for exhausting the air from the chamber.

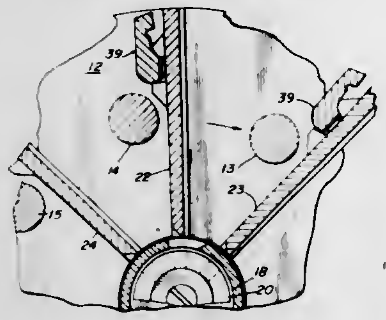
3,352,063
POLISHING APPARATUS
Arthur H. Eppler, 2518 W. Wisconsin Ave., Milwaukee, Wis. 53203
Filed June 10, 1965, Ser. No. 462,948
10 Claims. (Cl. 51—8)



3. In a polishing apparatus of the type in which a carrier liquid containing suspended abrasive is projected into contact with work to be polished, the combination of a housing forming a work treating chamber and having an opening in a rearwardly and upwardly inclined plane, said housing having a hood portion constituting a closure for said opening, means for guiding the hood portion for movement substantially parallel to said plane between a closed position of use and a retracted position, a work support in said housing in a position in which a major portion of its area is exposed in the retracted position of said hood to receive work lowered onto such support, and means for controlling the position of said hood.

3,352,064
LOCK SYSTEM FOR BLASTING-MACHINE BLADES

John E. De Groot and Bernard Fuerst, Grand Rapids, Mich., assignors, by direct and mesne assignments, to The Wheelabrator Corporation, Mishawaka, Ind., a corporation of Delaware
Filed Feb. 1, 1965, Ser. No. 429,281
9 Claims. (Cl. 51—9)

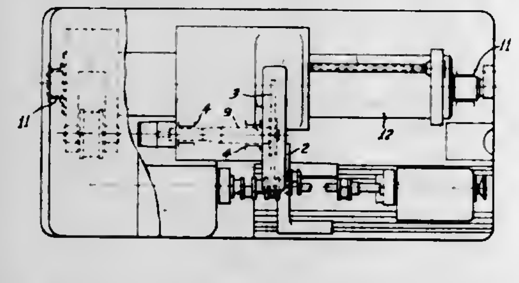


1. In combination with a blasting machine including a rotor having spaced parallel side plates perpendicular to the axis of rotation of said rotor, said plates having opposite substantially radial grooves in the adjacent surfaces of said plates, respectively, said rotor also having blades with the edges thereof received in said grooves, a locking system for disengageably retaining the said blades in the said grooves, comprising:

- means on said side plates forming opposite recesses in said adjacent surfaces;
- an abutment mounted on said blade on the back surface thereof; and
- a locking member having the ends thereof normally rotatably received in the said recesses, and having a central portion normally disposed radially outward from said abutment, said central portion being eccentric with respect to the ends of said locking member whereby said locking member is rotatable between a position wherein said abutment is free to pass underneath said central portion, and a locking position wherein said abutment is engageable with said central portion which includes a radially extending elongate arm integral with the locking member between the side plates automatically to urge the locking member to locking position by centrifugal force effected in response to rotation movement of the rotor and which operates the locking member for rotational movement toward and away from locking position.

3,352,065
MACHINE FOR GRINDING CRANKSHAFTS

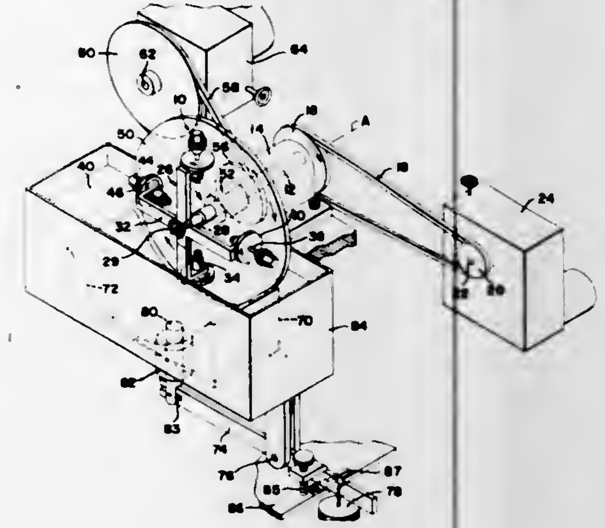
Walter Enkelmann, Weimar, Kammerberg, Germany, assignor to Henschel-Werke A.G., Kassel, Germany, a corporation of Germany
Filed Nov. 19, 1964, Ser. No. 422,480
8 Claims. (Cl. 51—105)



1. A machine for grinding crankshafts comprising a frame, means for rotatably supporting a crankshaft to be ground, means for rotating the crankshaft, grinding means mounted on a torsion-proof rocker shaft and adapted to contact a throw on the crankshaft to be ground, and means for axially displacing the grinding means on the rocker shaft.

3,352,066
LENS MAKING APPARATUS

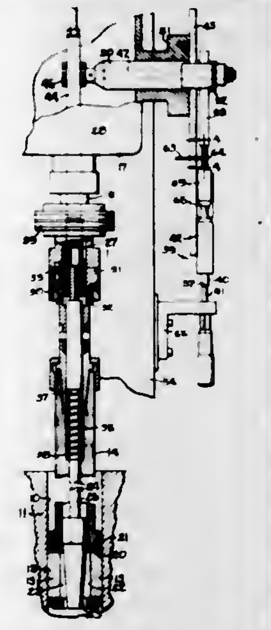
Daniel R. Sabre, 560 Bryn Mawr Ave.,
Bryn Mawr, Pa. 19010
Filed Apr. 2, 1965, Ser. No. 445,098
18 Claims. (Cl. 51—162)



1. Apparatus for generating a surface on a lens blank comprising a lens holder adapted to hold a lens blank, means rotating said lens holder to cause movement of the lens blank about an axis of rotation, means moving said lens holder to cause the lens blank to move in a circular path about an axis intersected by said axis of rotation of the lens blank and to which said axis of rotation of the lens blank is perpendicular, and lens shaping means arranged to contact the lens blank along a lens shaping surface as it is moved in said circular path and rotated.

3,352,067
AUTOMATIC SIZING DEVICE FOR A HONING MACHINE

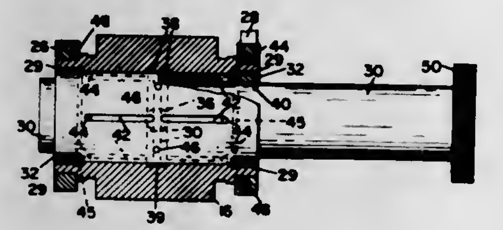
Mark R. Estabrook, Rockford, Ill., assignor to Barnes Drill Co., Rockford, Ill., a corporation of Illinois
Filed Mar. 30, 1965, Ser. No. 443,876
9 Claims. (Cl. 51—165)



7. In a honing machine, the combination of, a support, an expandable honing tool mounted on said support for back and forth reciprocation to hone a work bore, an expander rod support for endwise movement relative to said tool during such reciprocation and operable upon movement in one direction to expand the tool at a rate determined by the rate of expander rod movement, a sizing rod mounted for endwise movement along a path spaced from said expander rod, means for magnifying the movement of said expander rod and transmitting the magnified movement to said sizing rod to move the latter along said path at a rate precisely correlated with but greater than the rate of expander rod movement, a sensing element disposed along said path for engagement with said sizing rod, mechanism for adjusting said element along said path to vary the position in which said sizing rod engages said element, and means operable in response to engagement of said sizing rod and said element to produce a signal indicating that the tool has attained a preselected size.

3,352,068
GRINDING FIXTURE

Leopold A. Rocheleau, 650 N. Main St.,
Leominster, Mass. 01453
Filed June 22, 1965, Ser. No. 465,875
1 Claim. (Cl. 51—225)

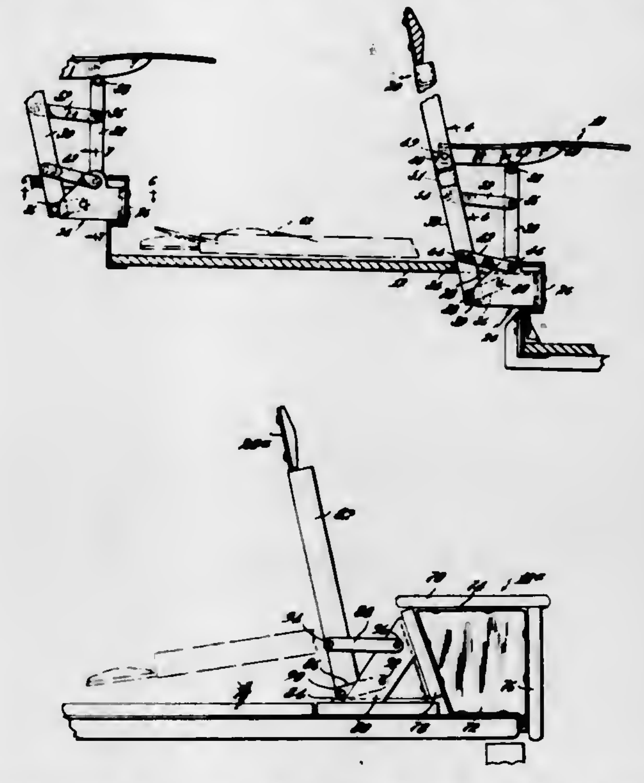


A tool grinding fixture comprising a base, a standard on the base being angularly adjustable with relation to the base, a housing on the standard angularly adjustable therewith, a bore in said housing from end to end thereof, said bore being substantially cylindrical, a cylindrical bushing in the bore terminating generally coextensively with the ends of the housing at the ends of the bore, and a spindle in the bushing, said spindle having a smooth cylindrical outer surface conforming to a like generally cylindrical inner surface for the bushing, means for leading air under pressure through a wall of the housing and circumferentially about the exterior of said bushing comprising a pair of spaced centerally located circumferential grooves in the bore of said housing and an air inlet extending through said housing and communicating with said spaced grooves, and a plurality of groups of air passages between the exterior surface of the bushing and the interior surface of the housing communicating with said grooves, one of said groups of passages extending generally in a longitudinal direction from one of said grooves outwardly toward the closest end of the bushing and the other of said groups of passages extending generally in a longitudinal direction from said other groove toward the other end of the bushing, said passages terminating in ports directed through the interior surface of the bushing against the exterior surface of the spindle and providing a positive air cushion for the spindle, certain of said ports being diametrically opposite each other.

3,352,069
GYMNASIUM STAND WITH FOLDABLE SEATS

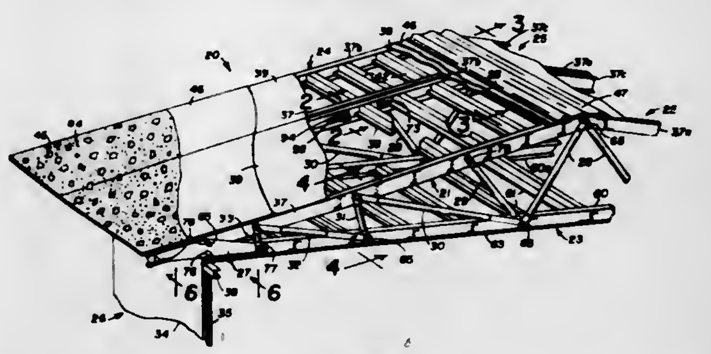
Richard S. Curra, Jr., North Berwick, Maine, assignor to Hussey Manufacturing Company, Inc., North Berwick, Maine, a corporation of Maine
Filed May 25, 1964, Ser. No. 369,665
11 Claims. (Cl. 52—9)

1. In combination with a stand having a plurality of supporting structures supporting decks in vertically subjacent positions for storage and extended in stepped relation for use, seat and seat back assemblies mounted on the decks, means on the supporting structures on which the lower ends of the seat backs rest, and pairs of links connecting the lower portions of the seat backs to the supporting structures, comprising first links pivotally connected at their rear ends to the lower ends of the seat backs and at their forward ends to said supporting structures at a level above their rear ends, and second links connected at their rear and forward ends to the seat backs and supporting structures respectively, above the first links, said seat backs being movable upwardly about the pivots at the forward ends of the links and rearwardly about the pivots at the rear ends of the links to said prone position.



3,352,070
TRUSS TYPE PANEL STRUCTURES

Burt F. Raynes, Chula Vista, Calif., assignor to Rohr Corporation, Chula Vista, Calif., a corporation of California
Filed June 15, 1965, Ser. No. 464,036
13 Claims. (Cl. 52—22)



13. Modular truss-panel structure comprising factory fabricated pitched roof and ceiling panels, and means including struts and gussets connectable on site to said panels for securing the same together, each of said panels comprising spaced longitudinal chords, spaced stiffeners extended between and secured to said chords, and a facing sheet secured to said chords and to said stiffener members, one of said chords for each of said panels having a plurality of panel coupling bolts secured thereto and spaced along the length thereof and extended therefrom laterally outwardly of the panel, and the other of said chords for each of said panels having spaced apertures for receiving and passing therethrough the bolts of a like panel disposed adjacent thereto and on module therewith, said gussets being disposed respectively at the eaves formed by said roof and ceiling panels, each of said gussets having at least two dimpled openings for respectively receiving the panel coupling bolts of a pair of adjacently disposed roof panels and a pair of adjacently disposed ceiling panels, said gusset being disposed between the adjacently disposed chords of said adjacently disposed panels, said adjacently disposed bolted and apertured chords having

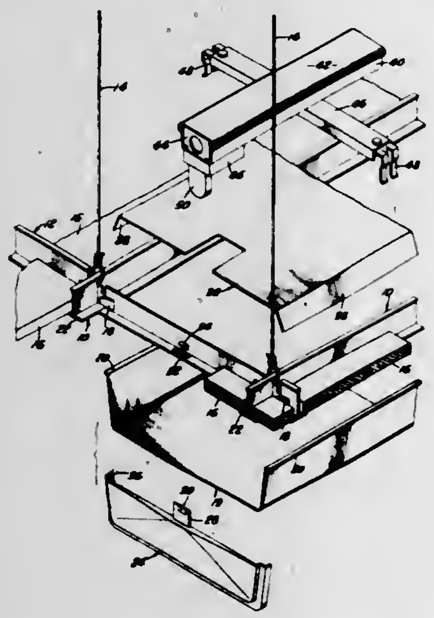
dimpled openings, each of said panel coupling bolts having flat tapered heads seated in the dimpled sidewall of its chord, the dimpled sidewall of one of said gusset openings being seated respectively on and within the dimpled sidewalls of the adjacently disposed roof panel chords and having one of said panel coupling bolts extended therethrough, a pair of dimpled heat insulation washers disposed on the other of said panel coupling bolts and seated respectively on the dimpled sidewalls of the adjacently disposed ceiling panel chords, the dimpled sidewall of the other of said gusset openings being seated on and between said heat insulation washers and having the other of said panel coupling bolts extended therethrough.

3,352,071
FIXTURE FOR USE IN A SUSPENDED GRID CEILING SYSTEM

Ormond S. Sutter, Placentia, Calif., assignor to Lok-Products Co., Fullerton, Calif., a corporation of California

Filed Mar. 8, 1965, Ser. No. 437,957

5 Claims. (Cl. 52—28)



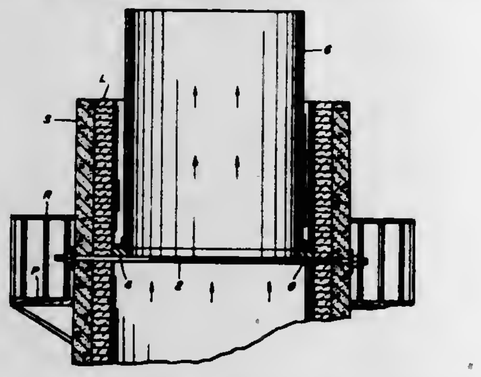
2. In a suspended grid ceiling system of the type having longitudinal flanged runners and cross flanged runners the combination of a diffuser, an end cap fitting over and supporting an end of said diffuser, means forming a slot in one cross runner, a tab on said end cap projecting through said slot, locking means releasably interlocking said tab and last-mentioned cross runner.

3,352,072
TEMPORARY LINER FLUE ASSEMBLY FOR REPAIRING MASONRY STACKS

Claude E. Bole, Gary, Ind., assignor to United States Steel Corporation, a corporation of Delaware

Filed Apr. 16, 1965, Ser. No. 448,676

4 Claims. (Cl. 52—127)



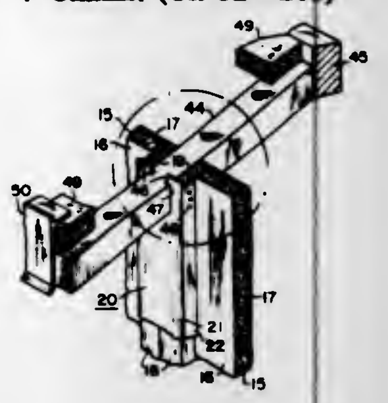
1. A temporary liner flue assembly for the top portion of a masonry stack which comprises a plurality of spaced elongated support members extending through the wall of said stack immediately below said top portion thereof, an annular sealing ring removably disposed on said support members and extending around the inner periphery of said stack, and a cylindrical sleeve removably fitted in said top portion of said stack with one end resting on said sealing ring and its other end projecting upwardly of said stack.

3,352,073
PREFABRICATED BUILDING CONSTRUCTION

Chester D. Hipple, 2639 Linwood Ave., Pittsburgh, Pa. 15214

Filed Apr. 20, 1965, Ser. No. 449,571

7 Claims. (Cl. 52—208)



1. A post and rafter beam construction for a prefabricated building comprising:
- (A) two posts
  - (1) each post forming a part of a separate wall section,
  - (2) said posts abutting each other,
  - (3) each post having a cut out portion adjacent its upper end, said portions forming a slot extending downwardly from the tops of the posts and at right angles to the wall of the building of which the posts are a part, and
  - (4) each post having a longitudinally extending slot in the surface of each post which faces away from the other post,
- (B) a rafter beam extending through said slot adjacent the tops of said posts and supported by the posts in said slot, and
- (C) a connector for holding said posts against each other, said connector comprising,
  - (1) an elongated U-shaped sheet metal piece,
  - (2) the base of said sheet metal piece extending across surfaces of the posts which parallel the wall,
  - (3) the flanges of the U-shaped piece extending to the longitudinally extending slots and having inwardly turned end portions which extend into said slots, and
  - (4) a slot in the connector extending downwardly from the top of the connector and around the sides and bottom of said rafter beam.

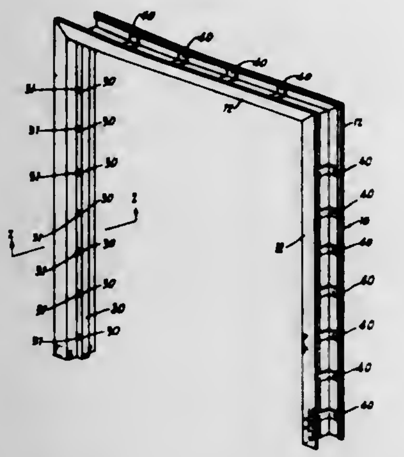
3,352,074
DOOR FRAME FASTENING DEVICE

Jack Schwartzberg, Flushing, N.Y., assignor to Williamsburg Steel Products Company, Brooklyn, N.Y., a corporation of New York

Filed Aug. 13, 1965, Ser. No. 479,452

3 Claims. (Cl. 52—211)

1. A wall buck comprising: a channel of U-shaped cross-section having a base and two side portions, the free ends of each of said side portions formed into channels; a recess of U-shaped cross-section in the base of said U-shaped channel, one of the side portions of said recess having a plurality of openings at prescribed points along its length; a plurality of opposed pairs of reinforcing members positioned along the length of said U-shaped channel and said recess at points aligned with said openings in said recess, one member of each pair having one end thereof inserted into the channel formed at the free end of one of said side portions of said U-shaped channel and the other member of each pair having one end thereof inserted into the channel formed at the free end of the other of said side portions of said U-shaped channel, the free ends of said pairs of reinforcing members extending into said recess in opposed spaced relationship; means interposed between said opposed free ends of said reinforcing members for preventing said free ends of said reinforcing members from being drawn together; and means inserted through said openings in said recess engaging said pairs of reinforcing members for drawing opposed pairs of reinforcing members together.

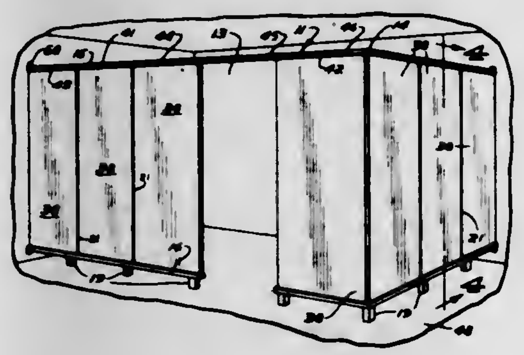


3,352,075
MOVABLE WALL CONSTRUCTION OF PANELS HELD BY CHANNELS AT TOP AND BOTTOM

Frank D. Werner, Minneapolis, and Robert A. Lundquist, Wayzata, Minn., assignors to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota

Filed Nov. 9, 1964, Ser. No. 409,751

1 Claim. (Cl. 52—239)



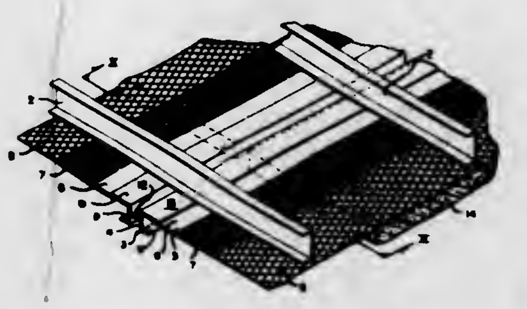
A movable wall construction comprising an upper channel and a lower channel, each provided with a groove and each comprising at least one channel section, a plurality of panels, the bottom of each panel being inserted in the groove of said lower channel, and the top of each panel being inserted in the groove in said upper channel, a plurality of legs, said legs being deployed in a vertical position under said lower channel, each of said channel sections comprising a single piece of metal and having a base, two side walls, two head pieces and two groove defining walls, said base having a width more than twice the thickness of said panels, each edge of said base integrally joined to one of said side walls, said side walls each being integrally joined to one of said head pieces, said head pieces running parallel to said base in a plane distant from said base by at least the thickness of said panel, said head pieces extending a short distance toward the plane defined by the perpendicular bisector of said base, the head pieces each being integrally joined to one of two groove defining walls, said groove defining walls being perpendicular to said base and equidistant from the plane defined by the perpendicular bisector of said base, said groove defining walls being spaced from each other a distance substantially equal to the thickness of said panels, and an inner U-shaped liner inside said lower channel, said liner having a base and a pair of spaced parallel legs attached to the base, the base of said liner resting on the base of the lower channel and the legs of the liner extending toward the head pieces and being positioned outside of the groove defining walls and touching the groove defining walls.

3,352,076
AIRFLOW GRID STRUCTURE FOR AIR DISTRIBUTION THROUGH METAL LATH AND PLASTER CEILINGS

Thomas J. Jones, Wheeling, W. Va., assignor to Wheeling Steel Corporation, Wheeling, W. Va., a corporation of Delaware

Filed Jan. 18, 1966, Ser. No. 521,380

6 Claims. (Cl. 52—303)



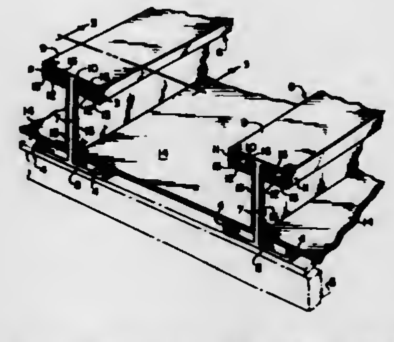
1. An airflow grid structure in a plaster ceiling comprising opposed separate members each having an upright leg and a horizontal wing extending from the top of the leg, the legs being spaced apart and substantially parallel and each wing extending in the direction away from the opposed member, each wing having a foraminous portion attached to a sheet of expanded metal lath in said plaster ceiling, and a separate element spanning the space between the legs and having airflow openings therethrough.

3,352,077
WATER SEAL FOR ROOF CONSTRUCTION

Benjamin H. Slusser, West Hollywood, Fla., assignor to Hurr-I-Cane Awning Shutter Co., Inc., Hialeah, Fla., a corporation of Florida

Filed Apr. 12, 1966, Ser. No. 542,019

3 Claims. (Cl. 52—469)



3. A roof construction of the character described wherein flat aluminum panels are positioned over a roof area and with the panels bent at a right angle upwardly and then outwardly and with the upwardly bent portion having contacting engagement with an adjacent panel, said outwardly bent portions of the panels are provided

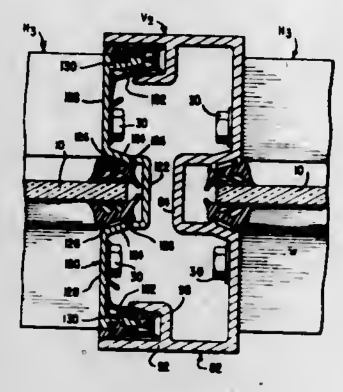
with the recesses forming gutters the marginal edges of the roof panel held closely together by a metal channel cleat that has a close fitment over the terminal edges of the roof panel and enclosing said gutters.

3,352,078
TWO-PIECE FRAME ASSEMBLY WITH EXPANSION JOINT

Harry B. Neal, Atlanta, Ga., assignor, by mesne assignments, to Anaconda Aluminum Company, Louisville, Ky., a corporation of Montana

Continuation of application Ser. No. 202,589, June 14, 1962. This application Feb. 2, 1966, Ser. No. 536,485

1 Claim. (Cl. 52—573)



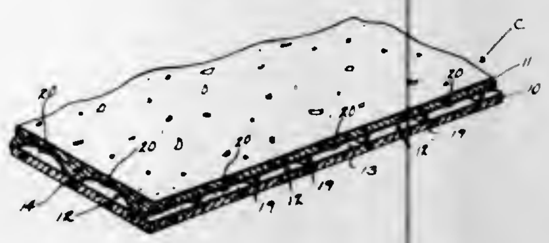
For use in a wall structure having a wall panel member retained and supported by frame members extending along the peripheral edge portions of said panel member; an elongated hollow frame member assembly having a uniform transverse cross-sectional shape in the form of a rectangle wherein two opposite and parallel walls of the rectangle have smooth, unbroken external surfaces and at least one of the other rectangle walls has an externally exposed recess therein adapted to receive a peripheral edge portion of a panel supported by said assembly, said frame assembly comprising a first elongated frame member having a longitudinally extending generally planar central web defining the inner wall of the aforementioned recess, a pair of like intermediate webs integral with and projecting transversely from the opposite longitudinal edges of said central web to define the opposite side walls of said recess, a pair of like right-angled sections each having a face portion integrally joined along one longitudinal edge to one of said intermediate webs, the respective face portions of said right-angled sections lying in a common general plane parallel to the general plane of said central web, a side portion of each right-angled section projecting perpendicularly from the longitudinal edge of its associated face portion remote from the intermediate web and in a direction toward the general plane of said central web, each of said side portions having a smooth unbroken external surface constituting the external surface of one of said opposite and parallel walls of said rectangle throughout the entire extent of such wall and said right-angled sections defining the two adjacent corners of the rectangular transverse cross sectional shape of said frame assembly at the respective ends of one wall of the rectangle, a substantially right-angled flange integrally formed on the surface of each of said side portions which is opposite the smooth unbroken external surface thereof, each respective side portion and the flange formed thereon forming a generally rectangular trough having an open side facing in the direction away from said one wall, one piece detachable second frame member means mounted on said first frame member and cooperating with said side portions to complete the rectangular transverse cross sectional shape of said frame assembly, said second frame member defining the wall of said rectangular transverse cross sectional shape opposite to said one wall, and mounting means on said second frame member including a pair of flanges, there being a flange integrally formed on each longitudinal side edge of said second frame member, said flange projecting into the trough positioned opposite thereto and including means for retaining a resilient glazing strip in position to engage the interior of said trough to detachably mount said one piece second frame member upon said first frame member and permit movement of said second frame member relative to said first frame member in a direction parallel to the respective side portions of said first frame member right-angled sections.

3,352,079
FLOOR FORM STRUCTURE

John G. Strong, Windsor, Wis. 53598

Filed Apr. 30, 1965, Ser. No. 452,104

3 Claims. (Cl. 52—577)



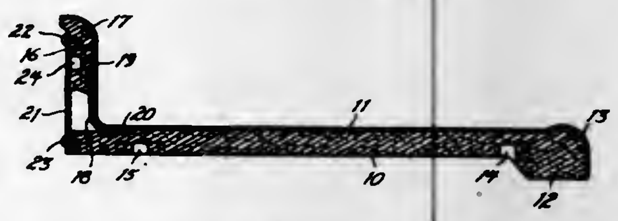
2. A floor form comprising a plurality of separate forms of sheet material and of rectangular shape, said forms being layed side by side and end to end on a horizontal plane to constitute a floor form over which cementitous material may be poured, the sheet material of each form having straight side and end edges defining a generally flat upper surface lying in a horizontal plane, each form having identically shaped equally spaced recesses defined by downwardly extending conically shaped walls terminating in an open lower end, said conically shaped walls and upper flat horizontal surface cooperating when contiguous forms are in register to form passageways interconnecting the region underneath said forms, means for interlocking and supporting said forms in position including, a peripheral channel formed in the respective side and end edges of said form, said channels being provided with spaced slots and said channels being in overlapping relation with the next adjacent forms with said slots being in alignment, a vertically extending fastening member having an upper finger received through said aligned slots of adjacent forms, and said forms providing a surface over which cementitious material may be poured and may flow down into said recesses and when hardened constitute columns within said conically shaped walls and a generally horizontal floor structure over said forms.

3,352,080
LAMINATED COUNTERTOP AND METHOD OF PRODUCING THE SAME

Svend B. Rondum, Bradford, Pa., assignor to Plexowood, Inc., Bradford, Pa., a corporation of Pennsylvania

Filed Jan. 17, 1963, Ser. No. 252,132

12 Claims. (Cl. 52—614)



1. In a countertop, a horizontal member of composite material, a vertical flange of composite material, a strip joining said member and flange, said strip having one edge embedded in the top surface of the horizontal member and the opposite edge embedded in the vertical member and said flange, said member and flange having been formed as a substantially flat unitary member with said strip, said member and flange being separated intermediate the edges of said strip and bent about said strip, said bend defining a corner between the two.

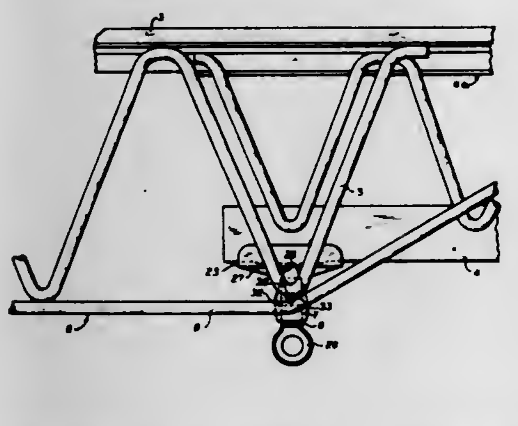
3,352,081
EXTENSIBLE GIRDER CONSTRUCTION AND CLAMPING MEANS THEREFOR

Emil Mauritz Hünnebeck, Burg Klamm, Post Obsteig, Tirol, Austria, assignor to Hünnebeck AG., Zug, Switzerland

Filed July 28, 1964, Ser. No. 385,598

Claims priority, application Luxembourg, Sept. 9, 1963, 44,403

11 Claims. (Cl. 52—632)



1. A combination comprising an extensible girder unit having an inner girder with a first lower chord and having an outer girder with spaced side cheeks each having a second lower chord and struts extending from said second lower chord to an upper chord and corresponding diagonal braces, a relatively long and narrow pressure member provided with two supporting surface sections spaced from each other in the longitudinal direction of said pressure member and an intermediate surface section between said supporting surface sections, said two supporting surface sections elevated relative to said intermediate surface section for engagement with and conveying clamping pressure onto said first lower chord of said inner girder, said pressure member having a bottom side provided with recess means adjacent said intermediate surface section, a rotatable screw bolt having a head detachably engaging said recess means for supporting said pressure member and conveying clamping pressure thereto, and a transverse bridge member including surfaces resting on said second lower chords of said side cheeks of said outer girder and provided with a threaded bore in threaded engagement with said threaded bolt, said surfaces of said bridge member having a contour complementary to said second lower chord, and said bridge member being arranged such, that the axis of said bolt passes through the nodal point of the outer girder.

3,352,082
STRUCTURAL UNIT FOR BUILDINGS

Harold W. Dickinson, % Rafters, Inc., Olivia, Minn. 56277

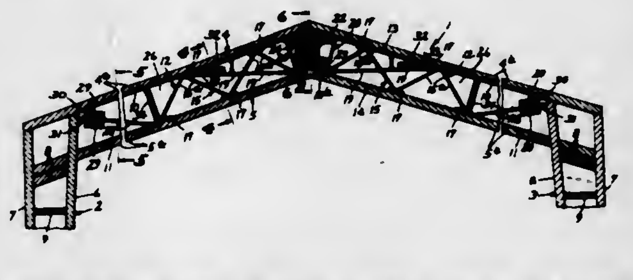
Filed Dec. 10, 1965, Ser. No. 512,864

5 Claims. (Cl. 52—639)

1. A structural unit comprising:

(a) a pair of elongated generally parallel wooden stringers disposed in predetermined spaced apart relationship and having laterally spaced flat sides and opposed longitudinally extending channels generally centrally between said sides,

(b) a truss structure including a pair of longitudinal metallic rod members and cross brace means including an elongated brace rod bent into zig-zag formation to provide a plurality of angularly displaced brace portions having opposite ends welded to longitudinally spaced portions of adjacent ones of said longitudinal rod members,



(c) said longitudinal members each being received in a different one of said channels,

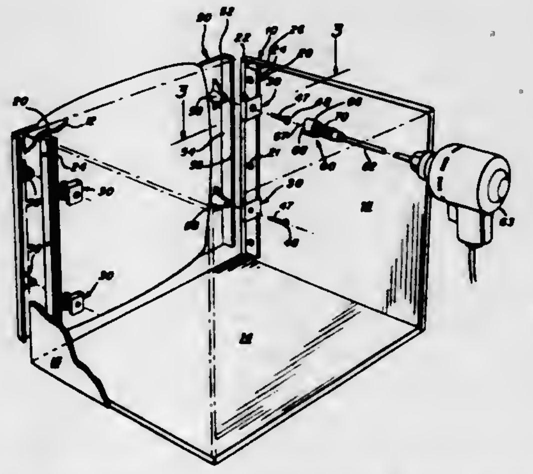
(d) and means secured to said stringers for retaining said longitudinal members in said channels and cooperating with said truss structure to hold said stringers in said predetermined spaced apart relationship.

3,352,083
ESCUTCHEON MOUNTING CLIP

Carlton F. Stute, Riverdale, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware

Filed Dec. 10, 1965, Ser. No. 524,630

4 Claims. (Cl. 52—716)



1. In combination: an enclosure defining an opening; a mounting strip, having two sides, bordering said opening; a frame adjacent said mounting strip for attachment thereto in closing relationship to said opening; a resilient mounting clip having a pair of opposed legs each defining an aperture; a fastener, co-operable with said clip through said apertures, for mounting said clip to said frame, one of said apertures being sufficiently large to allow pivotal movement of said clip with respect to said fastener; said clip having one leg engaging one side of said mounting strip and pivoting thereabout as said fastener urges said frame and said enclosure towards each other, whereby under further urging of said fastener the remaining leg snaps into resilient engagement with the other side of said mounting strip and said frame is drawn into mounted relationship with said enclosure.

3,352,084
STANCHION ASSEMBLY

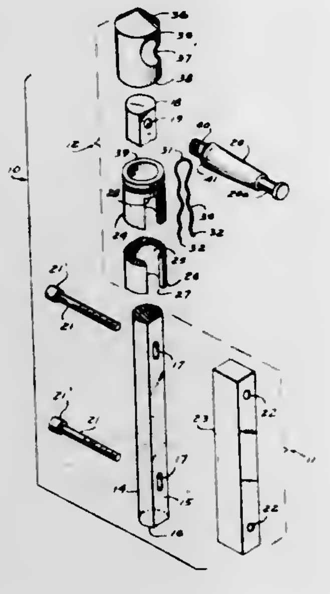
Robert F. Seery, Louisville, Ky., assignor to Julius Blum & Co., Inc., Carlstadt, N.J., a corporation of New York

Filed Jan. 7, 1966, Ser. No. 519,266

5 Claims. (Cl. 52—721)

1. A decorative stanchion assembly for supporting a handrail or the like with respect to a bulkhead, comprising

an elongated post member, a spacer block, means to securely clamp one end of said post member and said block to said bulkhead, with said block and said post extending in parallel longitudinal alignment, a cover tube encompassing said post member, said cover tube having an elongated longitudinally extending clearance slot at one end, the transverse dimension of said slot being slightly in excess of the width of said block, said block being disposed within the clearance slot, said post having a threaded aperture adjacent its other end extending laterally thereof, said cover tube terminating below said aperture, a cap member positioned on the other end of said post, said cap having an aperture in registry with the aperture in said post and a bracket arm having a threaded end movable through said cap aperture and coacting with the threaded aperture in said post.



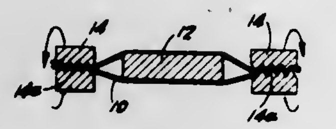
3,352,085

PROCESS OF WRAPPING ARTICLES IN POLYOLEFIN MATERIAL

Joseph W. Pantenburg, San Leandro, Calif., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

Filed June 24, 1965, Ser. No. 466,798

9 Claims. (Cl. 53—32)



1. The process of wrapping an article which comprises placing the article on a thin sheet of stretchable polyolefin film, encircling the article with the sheet, clamping each of the two opposite ends of the sheet encircled around the article by a pair of gripping jaws having on the work surface thereof a strongly adherent, rough metallic coating comprising a major proportion of tungsten carbide, said surface being characterized by a roughness in the range of from about 200 to about 500 microinches R.M.S. and high wear resistance, stretching and simultaneously twisting the clamped ends of the sheet in the same direction beyond the yield point but prior to the break point of the polyolefin film, while maintaining the sheet at ambient room temperature, thereby producing a wrapped article having a permanently twisted closure at each end.

3,352,086

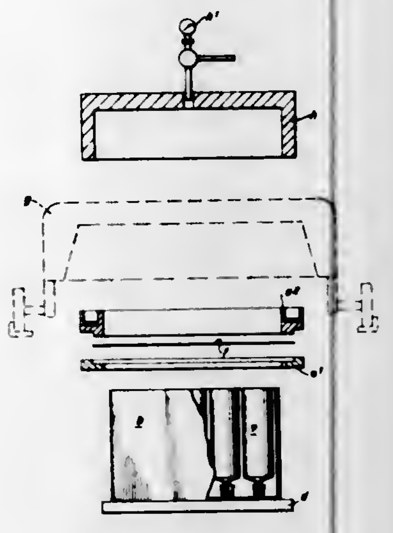
PACKAGING

Hans Bischof, Bollwerkstrasse 10, Binningen, and Karl Gottlieb Hersperger, Pilgerstrasse 28, Basel, Switzerland

Filed Aug. 20, 1964, Ser. No. 390,873

Claims priority, application Switzerland, Aug. 22, 1963, 10,380/63

2 Claims. (Cl. 53—39)



1. A process for packaging articles susceptible to impact and pressure having at least approximately the same length, as for example empty metal tubes, in a container which comprises placing the articles to be packaged vertically side by side according to the capacity of the container, covering the upper end of the articles with a foil of thermoplastic material which retains its shape at room temperature, heating the foil and while it is in the heated condition forcing it by pressure acting on the upper surface thereof into gripping contact with the said ends of the articles while bulging the foil into gaps in or between the articles located beneath the foil, so that after the foil has cooled the ends of the articles are fixed in their relative positions, said covering foil, while still in the heated condition, being turned over the edge of the packaging container to provide a dustproof closure for the container.

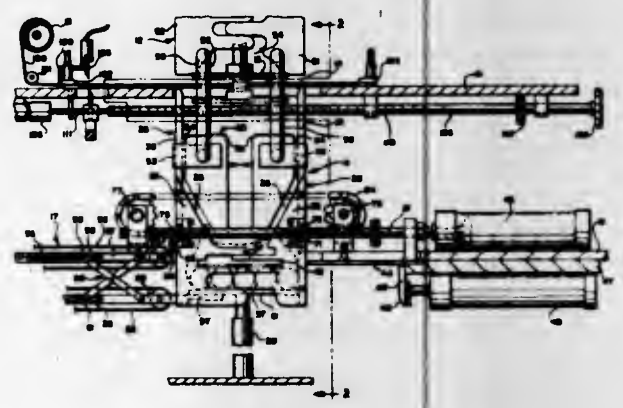
3,352,087

PACKAGING MACHINE

David G. Kobick, 723 Woodmere Drive, Chagrin Falls, Ohio 44022

Original application June 1, 1962, Ser. No. 199,317, now Patent No. 3,242,635, dated Mar. 29, 1966. Divided and this application Dec. 24, 1964, Ser. No. 421,058

4 Claims. (Cl. 53—389)



1. A film supply mechanism comprising:

(a) a frame defining a work station;

(b) a stationary clamp mounted on the frame;

(c) a movable clamp mounted on the frame and movable along a film feed path from a parked position to a film feeding position adjacent the stationary clamp and return, said clamps defining a material tensioning space therebetween when the movable clamp is in the parked position;

(d) said movable clamp having a dimension transverse of the path greater than the work station whereby the material is fully supported transversely as it is fed along said path;

(e) said station being between said clamps when said movable clamp is in its parked position;

(f) first and second shear blades mounted on opposite sides of said path and between said clamps when the movable clamp is in the parked position and near one end of said tensioning space;

(g) said shear blades being between one of said clamps and said station;

(h) supply means connected to said frame on one side of said station and positioned to supply a strip of flexible material to be fed along said path;

(i) means for opening and closing said clamps in timed relationship at appropriate intervals during a material feed cycle; and

(j) a clamp reciprocating mechanism connected to the frame and to the movable clamp to shift the movable clamp from its parked position along said path between the blades of the shear to the stationary clamp and return whereby to feed a portion of such film across the station and tense the material across the station.

3,352,088

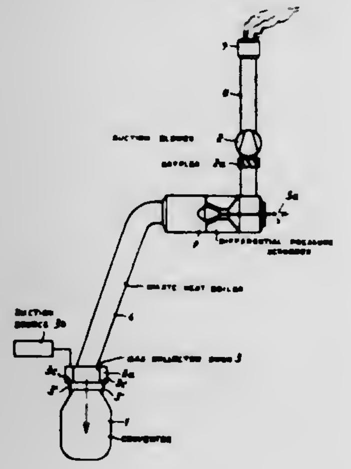
METHOD FOR DRAWING OFF CONVERTER GASES

Hans Suitbert Hoff, Essen, Germany, assignor to Beteiligungs- und Patentverwaltungs-gesellschaft mit beschrankter Haftung, Essen, Germany

Filed Aug. 2, 1965, Ser. No. 476,545

Claims priority, application Germany, Aug. 1, 1964, B 77,945

6 Claims. (Cl. 55—18)



1. A method of drawing off the converter gases which are produced during an oxygen blowing iron refining process and of separating the dust from such gases, comprising the steps of

(a) drawing off said converter gases, under a constant suction, during said refining process including the oxygen blowing phase thereof by means of a suction blower;

(b) removing dust from the drawn off converter gases by means of an unregulated scrubber; and

(c) limiting the intake of air at the mouth of the converter, in consequence of which the need for regulating said blower and said scrubber is eliminated.

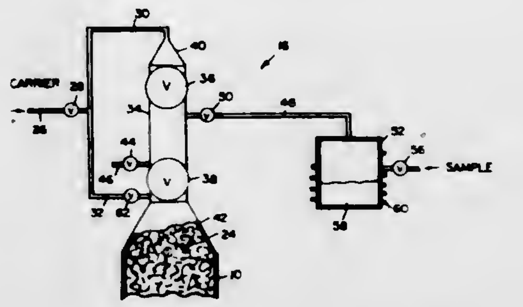
3,352,089

METHOD AND APPARATUS FOR INTRODUCING SAMPLES INTO A GAS CHROMATOGRAPHIC COLUMN

Michael Modell, Bound Brook, N.J., and James M. Ryan, Weston, Mass., assignors, by mesne assignments, to Abcor, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed July 7, 1965, Ser. No. 470,014

18 Claims. (Cl. 55—67)



10. A method of injecting a sample in vaporized form into a chromatographic column which method comprises:

introducing a carrier gas into a chromatographic column to impart an axial coefficient of velocity to sample material in the column;

introducing a vaporized sample into an empty sample chamber external of the chromatographic column, the interior of the chamber characterized and designed to prevent flow disturbance to the flow of vaporized sample from the chamber;

interrupting the flow of carrier gas directly into the column;

introducing carrier gas upstream of the sample chamber and permitting the carrier gas to sweep the vaporized sample from the sample chamber and into the chromatographic column;

closing the sample chamber after injection of the vaporized sample and reintroducing the carrier gas directly into the column;

removing carrier gas from the sample chamber; and repeating this sequence of steps thereby providing for the injection of a vaporized sample into a chromatographic column in non-diluted, concentrated plug-like form.

3,352,090

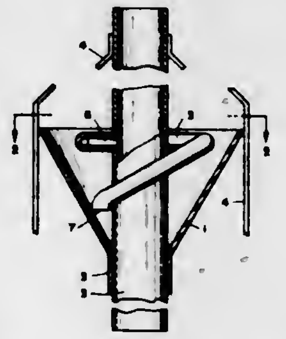
LIQUID-GAS SEPARATOR

Cornelis Stillebroer, Rijswijk, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed July 28, 1966, Ser. No. 568,551

Claims priority, application Great Britain, Aug. 9, 1965, 34,096/65

7 Claims. (Cl. 55—201)



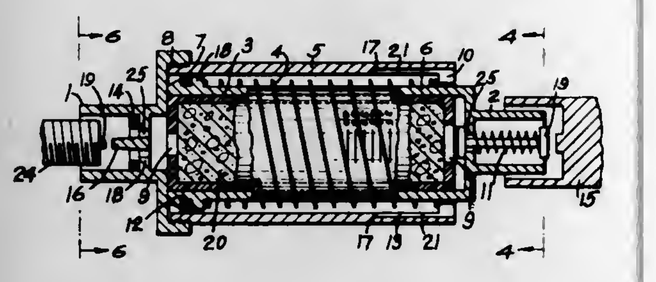
1. A gas anchor for separating gas and liquid, comprising a central liquid discharge tube, a plurality of substantially cup-shaped members arranged about said tube at substantially equal distances between each other, each cup being provided with pressure-drop control means in

the form of at least one flow resistant conduit, said conduit having a length greater than the diameter of said discharge tube to assure a dynamic pressure drop between said cup and the interior of said tube and a cross-sectional area of a sufficient size to permit passage of foreign particles entrapped in said liquid, one end of said conduit terminating within the cup near the lower part thereof, and the other end of said conduit in communication with the interior of said central tube.

3,352,091

AIR FILTER FOR INFLATABLE TIRES

Harry Dvorkin, Inglewood, Calif.
(6243 Morse Ave., North Hollywood, Calif. 91606)
Filed June 22, 1965, Ser. No. 465,864
1 Claim. (Cl. 55—274)



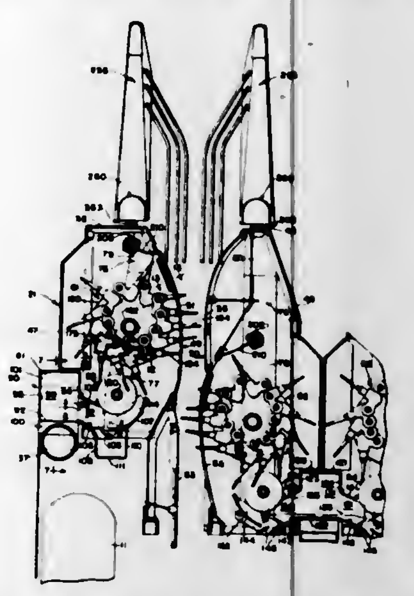
In combination with a tire stem of an inflatable tire and the outlet valve of an air accumulator, a device consisting of an outer receptacle containing a calibrated inner receptacle in a piston-cylinder arrangement, a first fitting on the end wall of said outer receptacle so adapted to be fitted to said tire stem, a second fitting containing a valve means on said inner receptacle end wall so adapted to be fitted to said outlet valve of an air accumulator, said inner receptacle containing a filtering material consisting of the combination of an absorbent for moisture, an absorbent for ozone and a water soluble dye, a spring means in said outer receptacle and surrounding the exterior of said inner receptacle so fastened and so adapted that said spring tends to hold said inner receptacle recessed within said outer receptacle, said device being so constructed that air from said outlet valve of the air accumulator passes through said filtering material and enters said tire stem and additionally said air causes said inner receptacle to protrude from said outer receptacle in an amount which is directly related to the air pressure in said tire stem.

3,352,092

COTTON PICKER

Arthur L. Hubbard, Des Moines, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,129
11 Claims. (Cl. 56—12)

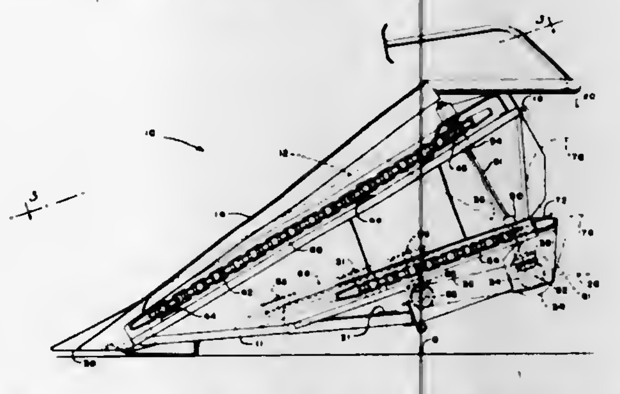
1. A two row cotton harvester comprising: a main mobile frame; a power source for moving the frame over a field; a pair of inner upright casings supported on the frame and having a pair of material outlet openings facing inwardly and toward one another; a pair of outer casings supported on the frame outboard of the inner casings and having a pair of material outlet openings opening outwardly, the outer casings defining with the inner casings a pair of fore-and-aft extending plant passages; harvesting mechanisms within the casings including upright doffing structures offset transversely from the respective openings, the openings being substantially equal to the effective height of the doffing structures; a material container supported on the frame; panel structure defining an inner material-receiving compartment disposed between the inner casings for receiving material therefrom with a portion thereof offset fore and aft from the openings and having overhead and floor panels with the latter having an air port in the aforesaid portion of the compartment and the former having a material outlet in vertical registry with the port; panel structure defining a pair of outer material-receiving compartments outboard of the respective outer casings in material-receiving relation with the respective openings with each compartment having a portion offset fore and aft from the opening and an overhead and floor panel with the latter having an air port offset fore and aft from the openings and in the aforesaid portion and the former having a material outlet in vertical registry with the port; a blower supported on the frame and having three discharge outlets; duct means extending from the outlets to the ports of the inner and outer compartments for directing streams of air vertically from the bottom to the top of the respective compartments and through the respective material outlets; and duct means extending from the outlets to the container.



3,352,093

FORAGE HARVESTER

Edward C. Procter, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed June 8, 1965, Ser. No. 462,188
6 Claims. (Cl. 56—98)

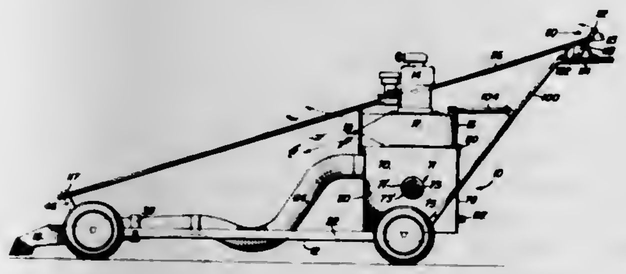


1. A row crop header for a forage harvester of the type having an infeed opening in the front end thereof and feed means disposed in said opening and having a crop material receiving bite for receiving crop stalks from said header and feeding said stalks rearwardly into said harvester, said row crop header comprising a frame adapted to be mounted on the front end of a forage harvester and extending in front of said harvester infeed opening, a central crop divider on said frame, left and right fenders on said frame disposed respectively on opposite sides of said central divider and coacting with said central divider to define left and right generally fore-and-aft extending passages for rows of crop stalks, left and right stalk cutters on said frame adjacent the ground and disposed respectively in said left and right passages, said fenders each having an upper edge and a lower edge respectively defining the upper and lower outboard limits of said left and right passages, said central divider having left upper and lower edges and right upper and lower edges respectively defining the upper and lower inboard limits of said left and right passages, said lower edges of said left and right fenders converging rearwardly at pre-determined angles from the front ends of said fenders to said left and right stalk cutters respectively and converging rearwardly from said stalk cutters to said harvester feed means at angles greater than said pre-determined angles, said left and right lower edges of said central divider diverging rearwardly at predetermined angles from the front end of said divider to said stalk cutters and converging rearwardly from said stalk cutters generally parallel respectively to the adjacent portions of said left and right fender lower edges, said upper edges of said left and right fenders converging rearwardly from the front ends of the fenders along lines passing generally over the inboard sides of the respective left and right stalk cutters, said left and right upper edges of said central divider diverging rearwardly from the front end of the divider to locations spaced forwardly of said stalk cutters and converging rearwardly from said locations generally parallel to the respective upper edges of said left and right fenders, a first pair of stalk gathering endless conveyors on said fenders and respectively having feeding reaches extending along said left and right fender upper edges, a second pair of stalk gathering endless conveyors on said central divider and having feeding reaches respectively extending along the left and right lower edges of the divider from locations in front of said stalk cutters to locations rearwardly of said stalk cutters, and a third pair of stalk gathering endless conveyors having feeding reaches respectively extending along said left and right fender lower edges, said feeding reaches of said third pair of stalk gathering endless conveyors initiating respectively substantially at said left and right stalk cutters and terminating respectively in said material receiving bite of said harvester feed means.

3,352,094

NUT HARVESTING APPARATUS

Eugene A. Lemaire, 1306 E. Kent Drive, Sulphur, La. 70663
Filed Nov. 27, 1964, Ser. No. 414,341
11 Claims. (Cl. 56—328)

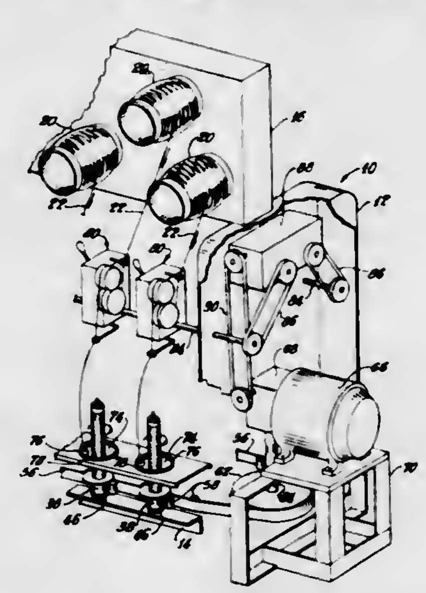


1. A power operated nut harvesting machine comprising an elongated ground-supported mobile chassis, a suction pickup means mounted on said chassis, said suction pickup means including a suction pickup nozzle adjacent one end of said chassis, a suction pipe forming a conduit from said suction nozzle rearwardly to a separator and nut collector chamber secured adjacent the other end of said chassis, said separator and nut collector chamber being subjected to a motor operated source of suction mounted thereon, said source of suction operatively connected to draw nuts and incidental trash from the ground up into said suction nozzle, through said suction pipe, into said separator and nut collector chamber where the nuts are separated from the incidental trash, the trash being discharged with the air being discharged from said source of suction, said separator and nut collector chamber including a baffle chamber communicating with said pickup nozzle, said baffle chamber having a bottom wall, a first exterior baffle within said baffle chamber defining a generally cordate chamber, a second generally cordate interior baffle generally concentrically disposed with said first baffle, said first and second baffle cooperating to form two diverging plenums, said two plenums recombining into a single plenum which terminates within said second cordate baffle, said baffle chamber bottom wall within said second baffle being apertured to define a discharge opening to permit nuts to drop out of the baffle chamber into a collection receptacle removably positioned in said separator and nut collector chamber beneath said baffle chamber, an opening in the top of said separator and nut collector chamber connecting said baffle chamber to said source of suction thereby permitting the trash picked up with the nuts to be drawn into said source of suction, and said source of suction being provided with an outlet means through which separated trash is discharged from the nut harvester.

3,352,095

TWISTER APPARATUS AND DRIVING MEANS THEREFOR

Frederick G. Heumann, Anderson, S.C., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Aug. 13, 1964, Ser. No. 389,251
5 Claims. (Cl. 57—105)



1. Apparatus for driving a strand or yarn collector or the like comprising means for supporting said collector for rotation, and endless and seamless belt means mounted for driving engagement with said rotatable support means, said belt means including a plurality of wraps of a longitudinally extending lineal textile body of glass fiber set in a coating composition.

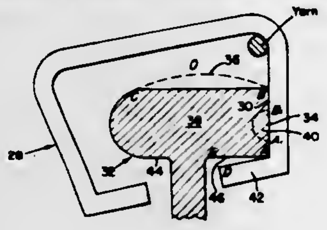
3,352,096

LINEAR CONTACT HORIZONTAL SPINNING RING

Peter F. Grishin, Sanford, N.C., assignor to Roberts Company, Sanford, N.C., a corporation of North Carolina
Filed Nov. 22, 1966, Ser. No. 596,187
10 Claims. (Cl. 57—119)

1. A horizontal spinning ring comprising: a vertical web with a top flange inwardly and outwardly overhanging said web, the inner overhanging portion of said flange

having a traveler-engaging inner surface including a substantially rectilinear inside rim edge, said edge conforming to the shape of an associated rectilinearly contiguous traveler moving about said flange.

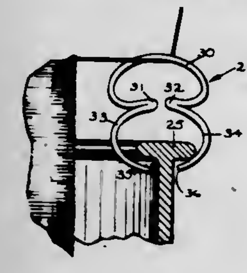


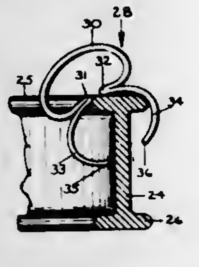
3,352,097
RING TRAVELER

Joseph W. Dubois, North Smithfield, R.I., assignor, by mesne assignments, to Horace L. Bomar and John Donald Marshall, trustees, known as The Carolina Patent Development Trust, Spartanburg, S.C.

Filed Oct. 7, 1966, Ser. No. 585,047

2 Claims. (Cl. 57—125)





1. A traveler for a ring having a horizontally disposed flange which includes a bow, said bow terminating in a pair of opposed shoulders disposed in spaced and aligned relation, and an arcuated horn member extending downwardly from each of said shoulders in the same plane as said bow for encircling said flange.

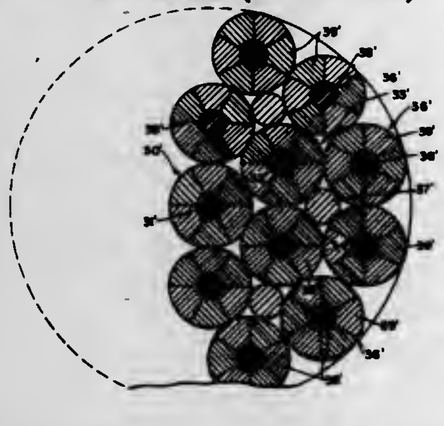
2. A traveler as set forth in claim 1 wherein the horn members are integrally formed in vertically aligned relation with said shoulders and bow and are separately disposed in general elliptical formation with the ends thereof having a distance therebetween less than the width of said flange.

3,352,098
MULTI-ELEMENT WIRE LINE HAVING COMPACTED STRANDS

William J. Gilmore, Manitou Beach, Mich., assignor to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York

Filed Dec. 23, 1964, Ser. No. 420,728

23 Claims. (Cl. 57—147)



1. In a wire line which includes a multiplicity of elements divided into a plurality of groups, each of said groups being disposed symmetrically about the longitudinal axis of the line, said wire line being improved in that each of a plurality of said elements comprises

(a) a center sub-strand comprising a central wire and at least one layer of side-by-side helical wires surrounding the central wire, and

(b) at least one layer of side-by-side helical sub-strands surrounding the center sub-strand, each of said helical sub-strands comprising a central wire and at least one layer of side-by-side helical wires surrounding the central wire, and

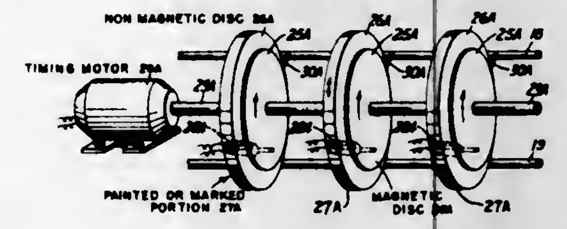
(c) each of said center and helical sub-strands being in an individually pre-reduced condition with the wires thereof deformably compacted together and the outer surface thereof substantially smooth.

3,352,099
MULTIPLE ELAPSED TIME INTERVAL READOUT DEVICE

Robert M. Berler, Westport, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Jan. 20, 1966, Ser. No. 521,782

10 Claims. (Cl. 58—39.5)



1. In an elapsed time measuring and indicating device, in combination

a shaft and means for driving the shaft at a predetermined constant speed;

at least one plate member disposed on the shaft and fixedly connected thereto at a spaced point along its length for rotation thereby;

a disc member freely rotatable on the shaft disposed adjacent and parallel to each plate member, each disc member having a non-indicating idling position and a peripheral portion for providing an indication representing an elapsed time interval when the disc member is rotated from its idling position;

a different electromagnet means for magnetically coupling when energized each disc member to the adjacent plate member for rotation thereby;

a first and second switch means for each of the electromagnet means and the corresponding disc member;

electric circuit means responsive to operation of each of the first switch means to cause energizing of one of the electromagnet means in accordance with the operated first switch means for selectively coupling the corresponding disc member to the adjacent plate member for rotation thereby and away from its idling position at the beginning of an elapsed time interval;

the circuit means being responsive to operation of each of the second switch means to cause de-energizing one of the energized electromagnet means in accordance with the operated second switch means for selectively decoupling the corresponding disc member from the adjacent plate member and permitting the decoupled disc member to return to its idling position at the end of the elapsed time interval; and

window means to provide visual presentation of the peripheral indicating portions of the disc members.

3,352,100
SWITCH MECHANISM FOR CLOCKS

Richard A. Ruegger, Chicago, Ill., assignor to Timett Corp., Chicago, Ill., a corporation of Illinois

Filed July 23, 1965, Ser. No. 474,273

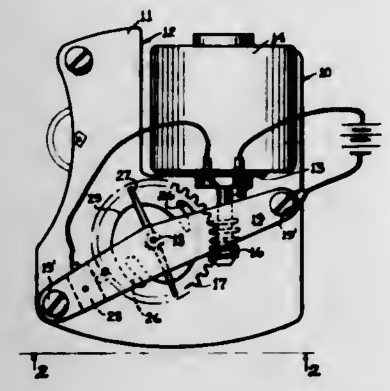
2 Claims. (Cl. 58—41)

1. A switch in the circuit of a spring rewinding mechanism for a clock having a power spring and a battery-powered electric motor rotatably driving a spring rewinding gear, including

(a) a spring-driven clock shaft having one end of the power spring connected thereto for rotating the same in one direction, with the opposite end of the spring connected to the spring rewinding gear,

(b) an elongated first switch means carried by and rotatable with said spring-driven clock shaft,

(c) a stationary second switch means positioned in the path of movement of said first switch means as the latter is caused to rotate with said spring driven clock shaft and contacted thereby to energize the battery-powered motor to rotate the spring rewinding gear in said one direction at a speed greater than the rotation of said shaft and said first switch means, and



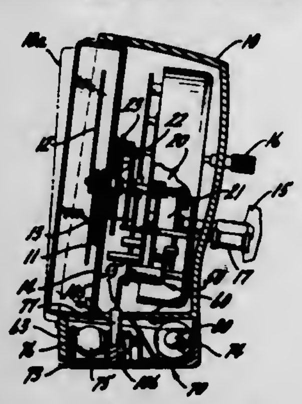
(d) means having a ramp carried by the spring rewinding gear in an elevated position with respect thereto and rotated therewith in said one direction by the energized motor for raising said first switch means out of contact with said stationary second switch means to de-energize the motor of the spring rewinding mechanism, and for supporting said first switch means in its raised position until it is rotated by said spring-driven shaft to one side of said second switch means.

3,352,101
TOUCH CONTROLLED ALARM CLOCK

Eugene M. Michael, Spring Valley, and Gerald R. Toovey, De Pue, Ill., assignors to General Time Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 21, 1966, Ser. No. 529,144

11 Claims. (Cl. 58—50)



1. In a spring wound alarm clock the combination comprising a housing having a timing train, an alarm mechanism having an alarm drive train, spring motor means for applying torque to the timing train and alarm drive train, means for triggering the operation of the alarm drive train when the timing train reaches a pre-set time, means including a movable control member for stopping the alarm drive train to turn off the alarm after the same has sounded, said housing having a recess in the lower portion thereof, a base member secured to the lower portion of the housing, electrical means positioned in said recess for connecting a lamp and a battery in an electrical circuit, switch means coupled to said electrical means, said base member being movable with respect to the housing and outwardly biased for normal support of the housing and having means coupled thereto for operating the control member in response to inward movement of the base member incident to application of downward fingertip pressure applied to the housing, and means for closing the switch means in operative association with said base member in response to inward movement of the base member incident to application of downward fingertip pressure applied to the housing, thereby completing the electrical circuit for purpose of illuminating the dial.

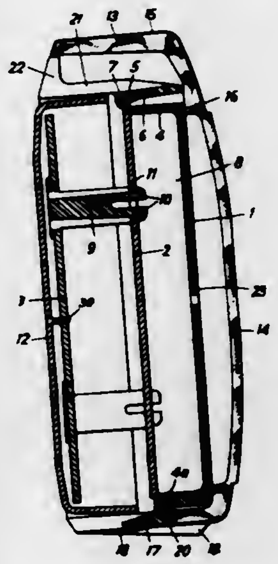
3,352,102
RINGING WATCH PIECE

Jean-Claude Schneider, La Chaux-de-Fonds, Switzerland, assignor to Fabrique d'Horlogerie Chs. Tissot et Fils S.A., Neuchatel, Switzerland

Filed Sept. 13, 1965, Ser. No. 486,709

Claims priority, application Switzerland, Oct. 8, 1964, 13,067/64

7 Claims. (Cl. 58—53)



1. For use in an alarm clock including a movement and a ringing mechanism; the combination comprising an external case including a front wall which is at least partially transparent and a side wall projecting from the periphery of the front wall to define therewith a chamber, a multipiece frame received in said chamber of the case, means removably fixing said frame with respect to said side wall of the case, said frame including three overlying plates including a dial plate engaged against the front wall of the case, an intermediately positioned movement plate and means securing said movement plate to said dial plate to define a compartment for receiving a portion of the movement of a clock, and a rear plate spaced from the side of the movement plate opposite the dial plate to define with the movement plate a space for receiving the ringing mechanism and barrel of a clock, and a dome shaped bell in the case overlying and surrounding said rear plate and attached to said rear plate to substantially close the case at its end opposite said front wall.

3,352,103
CALENDAR WATCH WITH AN INSTANTANEOUS DATE-CHANGE MOTION

Urs Giger, Solothurn, Switzerland, assignor to Eta A.G. Ebauches-Fabrik, Grenchen, Solothurn, Switzerland, a company limited by shares of Switzerland

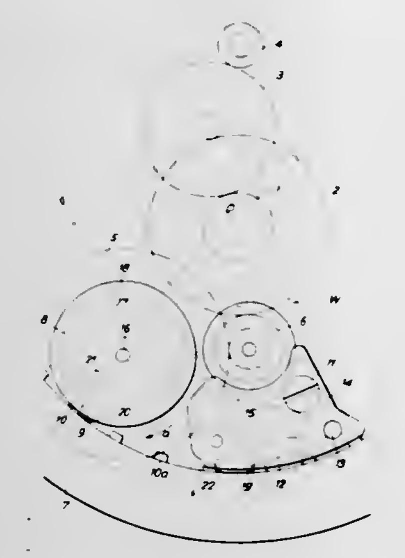
Filed Oct. 18, 1965, Ser. No. 497,217

Claims priority, application Switzerland, Apr. 20, 1965, 5,462/65

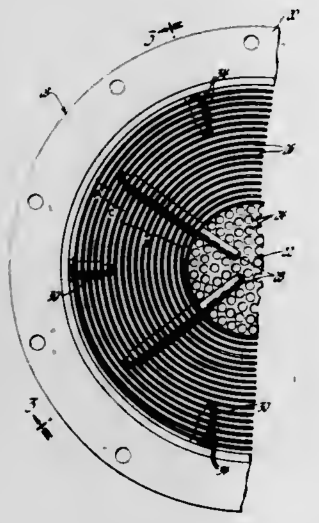
4 Claims. (Cl. 58—58)

1. In a calendar watch having a watch movement and possessing an instantaneous date-change motion, the combination of: a date indicator, a date indicator control wheel capable of being driven by the watch movement, a shaft upon which is mounted said date indicator control wheel, a driving spring cooperating with said date indi-

cator, said driving spring including a hub portion seated upon said shaft, an entrainment member carried by said driving spring engageable with said date indicator, said driving spring being operably mounted upon said date indicator control wheel, said driving spring, said hub portion and said entrainment member being formed of one piece, said date indicator control wheel tensioning said driving spring only when said date indicator is at standstill and then said driving spring brings about forward movement of said date indicator through actuation of said entrainment member, a spring-loaded detent cooperating with said date indicator for temporarily holding the latter in a date-indicating position, a rigid member portion fixedly connected with said date indicator control wheel for operatively connecting said entrainment member with said date indicator control wheel in force-locking manner when said driving spring is fully tensioned in order to disengage said detent from said date indicator.

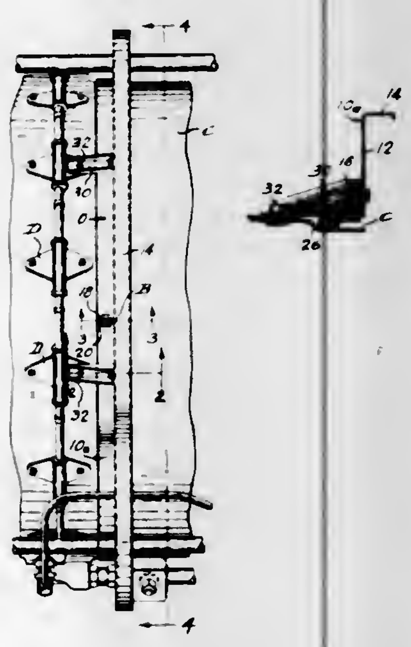


3,352,104
TURBINE INLET SCREEN
Bruno A. Duerr, La Grange Park, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 27, 1966, Ser. No. 560,621
7 Claims. (Cl. 60—13)



1. For an internal combustion engine having an exhaust gas driven turbine, a screen adapted to cover the inlet to said turbine and protect said turbine from potentially damaging particulate matter in the exhaust gases, said screen comprising a rigid rim portion adapted for mounting at the inlet to said turbine, a hub portion disposed within said rim, a plurality of substantially arcuate strip portions radially spaced between said rim and said hub, the spacing between said strip portions providing openings for exhaust gas flow through said screen, said strip portions including a radially inner strip portion, a radially outer strip portion, and an intermediate strip portion disposed between said inner and outer strip portions, and means supporting said strip portions including first spoke means extending radially inwardly from said rim and supporting said outer strip portion and second spoke means extending radially outwardly from said hub and supporting said inner strip portion, said intermediate strip portion being supported by both said first and second spoke means to permit expansion of said screen upon an increase in temperature.

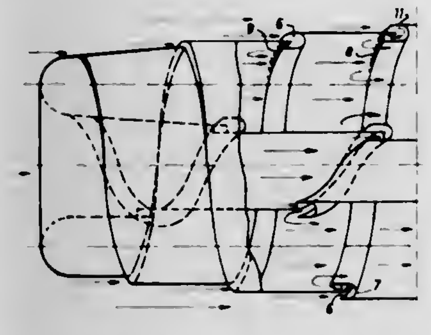
3,352,105
FIREWALL ATTACHMENT
Norman Philip Cox and Wallace James Ritchie, Greenfield Park, Quebec, Canada, assignors to United Aircraft of Canada Limited, Longueuil, Quebec, Canada
Filed Dec. 14, 1964, Ser. No. 418,157
3 Claims. (Cl. 60—39.11)



1. A firewall assembly for use in combination with a gas turbine engine having an engine casing of cylindrical formation, the assembly comprising:

a main firewall body made up of at least two interconnected circumferentially extending segments supported solely by said engine casing,
each of said segments having a main fire resistant web extending in a radial plane of said engine,
connecting flanges extending axially outwardly from each end of said web disposed in abutting relationship with the corresponding flanges of adjacent segments,
a return flange about the inner periphery of each of said segments extending axially in the plane of said engine casing,
a separate resilient sealing strip secured to each of said return flanges, said sealing strip lying substantially within the boundaries of said return flange, said resilient sealing strip provided with an axially extending portion in the plane of said engine casing, said axially extending portion terminating at one end in a bulbous portion, and
adjustable retaining means passing through each abutting pair of said segment connecting flanges, whereby said firewall assembly is attached solely to said engine casing, and such attachment being effectable wholly by adjustment of said retaining means to draw said segments tightly about said engine casing by reducing the internal diameter of said interconnected segments, drawing said sealing strips into sealing contact with said engine casing, said fire resistant web, said return flange and said sealing strip each being circumferentially continuous and forming on said engine casing a circumferentially continuous assembly.

3,352,106
COMBUSTION CHAMBER WITH WHIRLING SLOTS
Marc Pianko, 101 Residence Elysee No. 2, La Celle Saint-Cloud, France
Filed Oct. 21, 1965, Ser. No. 500,082
Claims priority, application France, Dec. 23, 1964, 999,715
4 Claims. (Cl. 60—39.65)

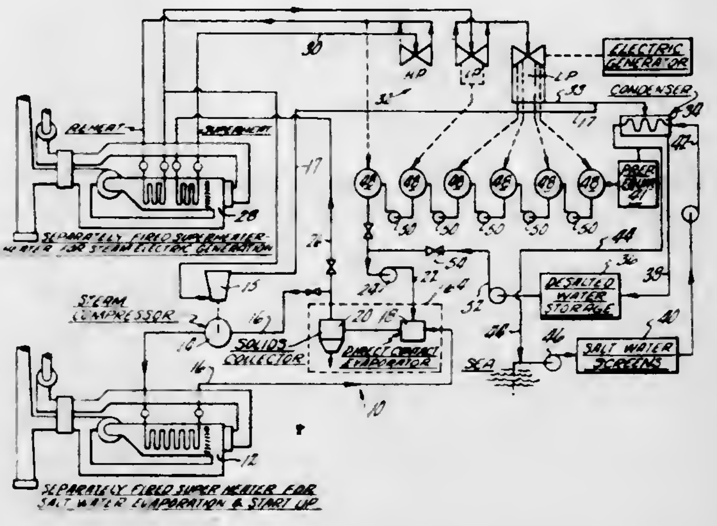


1. A combustion chamber intended for an internal combustion propulsion unit of the type in which a gaseous mixture burns in a primary zone, and utilizing air as the propellent fluid, comprising

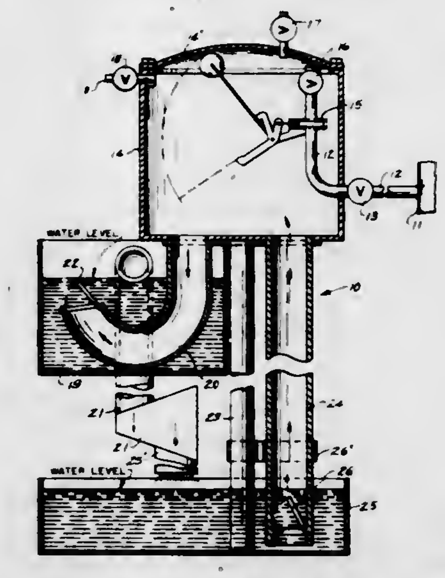
at least one slot with lips generally extending longitudinally of the flame tube and at an angle to the longitudinal axis of said tube,
a deflector along said substantially longitudinal slot which reverses the direction of flow of the primary air entering said slot,
fins along said deflector, which are positioned in the portion lower than said lips of said slot and impress a rotary movement to the combustive air, thereby producing a stirring effect on the mixture, and by the extension of the time of stay of the fluid in the primary zone, the effective stabilization of the flame and the insulation of the reactor, enabling the overall size of the chamber and the technical requirements of the construction materials of the chamber to be reduced,
said flame tube being a substantially annular volume comprised between two cylinders, a plurality of said slots forming an angle with the longitudinal axis of the tube provided both on the inner surface and the outer surface of said annular volume where combustion takes place and where the stationary zones are obtained.

3,352,107
DESALINATION AND POWER GENERATING SYSTEM
Henry J. Blaskowski, Simsbury, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 17, 1965, Ser. No. 514,581
13 Claims. (Cl. 60—64)

9. The process comprising establishing a circulation of steam, imparting heat to said steam at a predetermined location to superheat the same, contacting the thus superheated steam directly with contaminated feedwater and evaporating at least a portion of said feedwater and producing uncontaminated steam, conveying steam from said circulating system in a quantity generally equal to that produced by evaporation of said feedwater, imparting heat to this steam and utilizing a portion of the energy thereof to do useful work, thereafter condensing this steam and conveying the water to a point of use, effecting the condensing of this steam at least in part by conveying the same in indirect heat exchange relation with the contaminated feedwater prior to its contact with said circulating steam.



3,352,108
ATMOSPHERIC PRESSURE PLANT
Joseph James Eddy, 8511 Sharp Ave., Sun Valley, Calif. 91352
Filed Nov. 4, 1966, Ser. No. 592,046
5 Claims. (Cl. 60—108)



1. An atmospheric pressure plant comprising, in combination, a low pressure boiler, a head steam vacuum tank, and L-shaped pipe connecting said boiler to said tank, an automatic floating valve, a steam output regulating valve, a steam control, all said valves being secured on said pipe and adapted to operably cooperate controlled induction of pressure from said boiler into said tank when said tank is flooded with water, a collector tank secured to the bottom portion of said vacuum tank, a J-shaped pipe extending from said vacuum tank into said collector tank for urging steam from said vacuum tank into said collector tank, the end portion of said J-shaped pipe being provided with a regulating valve which is normally closed when said vacuum tank is being primed and normally opened when said steam passes from it, an output pipe downwardly extending from said collector tank, a turbine unit attached to the bottom portion of said output pipe for admitting water therein and generating propulsion means, a water tank beneath said turbine unit, and a water supply means extending upwardly

from said reservoir and terminating within said vacuum tank for providing said tank with heat-generated water supply to be recycled into said collector tank and said turbine unit.

3,352,109
HYBRID THIXOTROPIC ROCKET AND JET FUELS COMPRISING OIL IN WATER EMULSIONS

Kenneth J. Lissant, St. Louis, Mo., assignor to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

Continuation of abandoned application Ser. No. 302,177, Aug. 14, 1963. This application May 4, 1966, Ser. No. 547,581.

12 Claims. (Cl. 60—217)

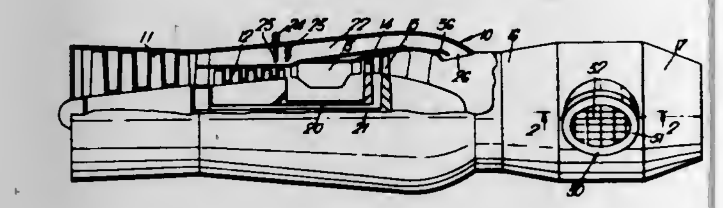
1. A jet and rocket thixotropic hydrocarbon-in-water emulsion fuel comprising (1) water, (2) an emulsifiable hydrocarbon, and (3) an emulsifying agent, said hydrocarbon being present in said emulsion fuel in an amount of at least 80% hydrocarbon by volume of the emulsion, said emulsion having the characteristics of a solid fuel when at rest and the characteristics of a liquid fuel when a force is exerted on it, said emulsion tending to be non-adhesive, said emulsion having a critical shear point sufficient to permit pumping at high rates, and said emulsion having an apparent rest viscosity greater than about 1000 cps.

7. The method of providing jet and rocket power comprising burning the fuel of claim 1 in a reaction motor and utilizing the products of combustion as a source of power.

3,352,110
GAS TURBINE BY-PASS ENGINE

Roger Anthony Cresswell, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company

Filed Jan. 4, 1965, Ser. No. 423,156
Claims priority, application Great Britain, Feb. 5, 1964, 4,988/64
7 Claims. (Cl. 60—229)

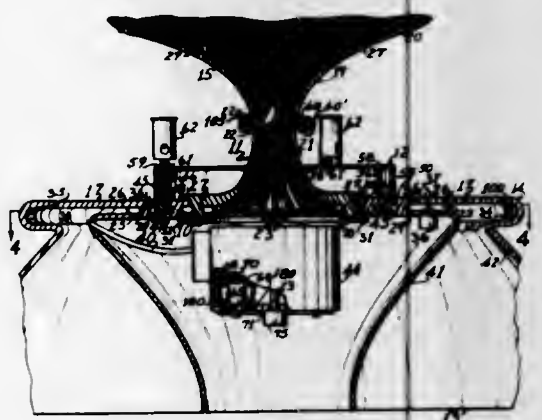


1. A gas turbine by-pass engine comprising compressor means, main combustion equipment, turbine means, an exhaust duct, and a main propulsion nozzle, all arranged in flow series, a by-pass duct having an upstream end for receiving air compressed in the compressor means, said by-pass duct by-passing the main combustion equipment and the turbine means, mixer means having a variable outlet area and communicating the downstream end of the by-pass duct with the exhaust duct, by-pass combustion equipment arranged in the by-pass duct, at least one additional nozzle communicating with the exhaust duct and arranged downstream of the mixer means, and a valve device mounted in the exhaust duct and movable between a first position in which all the gases in the exhaust duct are directed to atmosphere through the main propulsion nozzle and a second position in which all the said gases are directed to atmosphere through the said at least one additional nozzle, said at least one additional nozzle having a fixed total throat area which is matched to the flow of hot gases which occurs therethrough when said valve device is in said second position and said by-pass combustion equipment is operative and said variable outlet area of the mixer means being adjusted to a maximum when the by-pass combustion equipment is operative and to a minimum when the by-pass combustion equipment is inoperative.

3,352,111
ROCKET PROPULSION SYSTEM

Thomas W. Jackson, Atlanta, Ga., assignor to Georgia Tech Research Institute, Atlanta, Ga., a corporation of Georgia

Filed Jan. 28, 1964, Ser. No. 340,607
13 Claims. (Cl. 60—251)



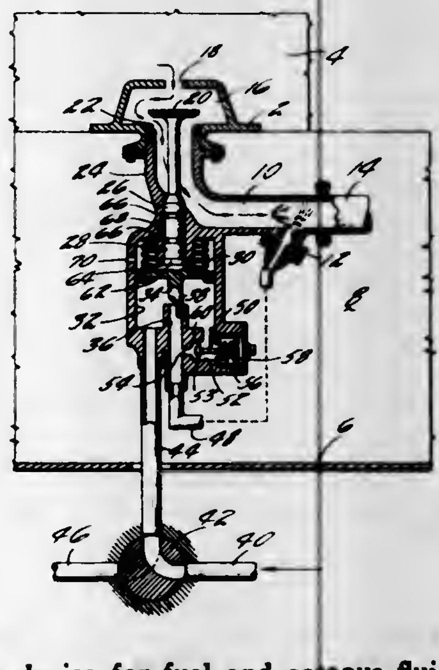
1. In a rocket propulsion system having a combustion chamber, exhaust nozzle and propellant pump, a propellant comrising a plurality of solid particles wherein each particle is substantially spherical, said plurality of particles having the flow characteristics of a low viscosity liquid and the capability of being pumped as a liquid in the absence of a carrier fluid.

4. The invention according to claim 1 wherein a liquid propellant is admixed with the solid particles of propellant.

3,352,112
BLEED CONTROL IN MIXING VALVE FOR A TURBOFAN ENGINE

Terry J. Chase, Thompsonville, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Apr. 21, 1965, Ser. No. 449,731
6 Claims. (Cl. 60—261)

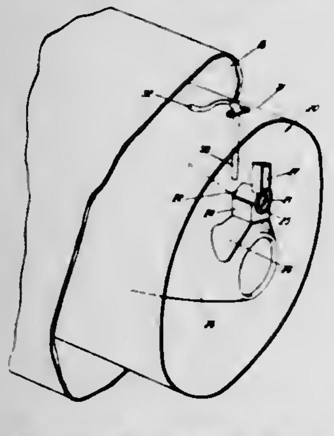


1. A mixing device for fuel and gaseous fluid including an air duct having an inlet, a valve in the inlet, a fuel nozzle directing fuel into said duct, a fuel conduit leading to said nozzle, actuating means for said valve including a plunger, a cylinder, said cylinder forming a part of the fuel conduit, spring means acting on said plunger to keep the valve in closed position, and fuel pressure acting on said plunger to open the valve, and a shut-off valve in the conduit upstream of the cylinder whereby when fuel under pressure is admitted to the conduit the valve is opened for admission of gaseous fluid to the duct.

3,352,113
REHEAT COMBUSTION EQUIPMENT

Nigel Edward Payne, Repton, England, assignor to Rolls-Royce Limited, Derby, England, a British company

Filed June 21, 1965, Ser. No. 465,513
Claims priority, application Great Britain, Aug. 19, 1964, 33,983/64
1 Claim. (Cl. 60—261)

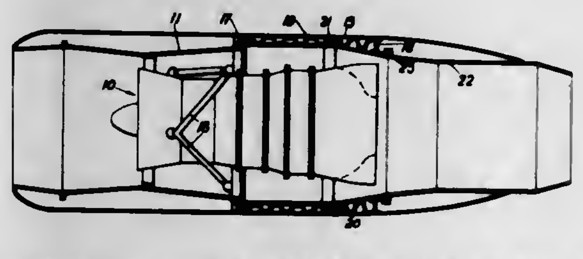


In a gas turbine engine exhaust duct including an exhaust core and a surrounding casing, a reheat combustion equipment assembly comprising means for introducing fuel into the exhaust gases of the engine, a gutter arrangement for providing a sheltered zone in which combustion of said fuel may occur and a device disposed upstream of said means and gutter arrangement for initiating combustion in said equipment, said device comprising an apertured hollow probe extending into said exhaust duct and being radially disposed therein, for introducing additional fuel into said exhaust gases, an igniter for promoting ignition of said additional fuel and a further gutter arrangement comprising a single linear gutter disposed downstream of and aligned with said probe and providing a further sheltered zone in which combustion of said additional fuel may occur, the hot combustion gases from said device initiating combustion in said combustion equipment, said igniter and further gutter being aligned radially and mounted on said exhaust cone and said hollow probe being mounted on said casing and extending over the combined radial extent of said igniter and further gutter and being apertured over said radial extent whereby fuel may be introduced into the gases flowing to said igniter and said further gutter.

3,352,114
MOUNTING MEANS FOR SEPARATELY SUPPORTING A GAS TURBINE ENGINE AND A JET PIPE IN AN ENGINE POD

Geoffrey Light Wilde, Cowers Lane, and Peter Arthur Ward, Willie Williamson, and Charles Barker, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company

Filed Mar. 3, 1966, Ser. No. 531,554
Claims priority, application Great Britain, July 17, 1965, 30,461/65
5 Claims. (Cl. 60—262)



1. An improved mounting means for hanging and suspending a gas turbine engine and a jet pipe assembly therefor within an engine pod comprising:

a substantially cylindrical casing member being coextensive with and forming a part of said engine pod, said cylindrical casing member being of monocoque construction and including annular beam members at its front and rear extremities for carrying the gas turbine engine and jet pipe loads, respectively,

a first plurality of strut means attached to said gas turbine engine, and a second plurality of strut means attached to said jet pipe,

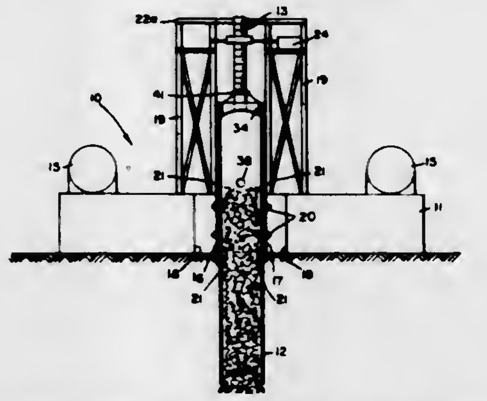
means for removably attaching said first plurality of strut means, and the gas turbine engine carried thereby, to the beam member at the front extremity of said cylindrical casing member, and

separate means for removably attaching said second plurality of strut means, and the jet pipe assembly carried thereby, to the beam member carried at the rear extremity of said casing member, whereby said gas turbine engine and said jet pipe assembly can be separately removed from the engine pod for maintenance or replacement.

3,352,115
MEANS AND METHOD OF POSITIONING MATERIALS UNDER THE GROUND

Joseph M. Jurisich, 1654 Prentiss Ave., New Orleans, La. 70122

Filed July 21, 1965, Ser. No. 473,645
6 Claims. (Cl. 61—35)



5. A method of burying garbage and the like in soft ground comprising,

positioning a hollow open ended shaft over soft ground,

placing a substantial weight on said hollow shaft to drive it downwardly partially into said ground,

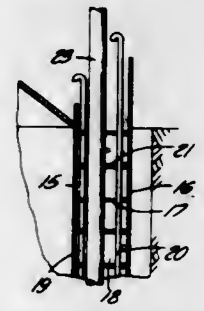
placing said garbage in the portion of said shaft extended above ground in an upwardly extending column of garbage,

and compacting the top of said column to force said column out of said shaft into the soft ground surrounding said shaft.

3,352,116
UNDERGROUND STORAGE VESSEL

Willis D. Waterman, Salina, Kans., assignor to Halliburton Company, Duncan Okla., a corporation of Delaware

Original application Oct. 21, 1964, Ser. No. 405,432, now Patent No. 3,295,327, dated Jan. 3, 1967. Divided and this application May 20, 1966, Ser. No. 551,710
1 Claim. (Cl. 61—41)

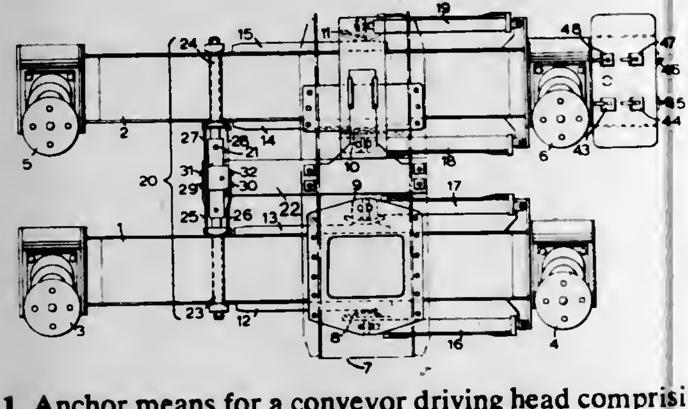


In a structure for installation underground in a liquid-containing shaft in the earth, the combination of: a double wall vessel having a metal liner encircled by a metal shell, the liner and shell defining a space between them, a wall closing the lower end of said space to provide buoyancy in the liquid in the shaft, the lower end of said liner being open, metal reinforcing elements positioned in said space and extending into contact with said liner and said shell to resist collapsing pressure of the liquid in the shaft outside said shell and inside said liner when said vessel is lowered into the shaft, and means for introducing cementitious material into said space to cooperate with the liner and shell and reinforcing elements to form a continuous trussed beam, said means including a plurality of retractable grout pipes extending axially through said space for filling the space from the bottom up.

3,352,117

DRIVING GEAR ANCHOR MEANS FOR MINES

Frank Cowlishaw, Linby, England, assignor to W. E. & F. Dobson Limited, New Basford, Nottingham, England
Filed Nov. 12, 1964, Ser. No. 410,460
4 Claims. (Cl. 61—45)

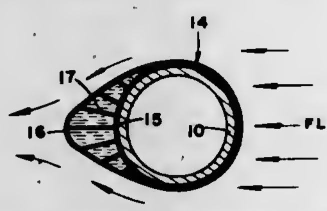


1. Anchor means for a conveyor driving head comprising in combination, a pair of base beams, a hydraulic jack prop on each end of each base beam, a conveyor driving head mounted across the base beams, arcuate abutments on the conveyor driving head at opposite sides of the base beams, bearing bars on opposite sides of the base beams and being in sliding engagement with the arcuate abutments, double acting hydraulic jacks connecting the base beam rear ends to the driving head, a double-ended hydraulic jack comprising a central cylinder carried by the conveyor driving head, a ram projecting from each end of the central cylinder, and bridge extensions on outer ends of the rams and fitting on the base beams, and hydraulic control valve means in hydraulic circuit with the hydraulic jacks.

3,352,118

FRICTIONAL DRAG REDUCER FOR IMMERSED BODIES

Joseph A. Burkhardt, Houston, Tex., assignor to Esso Production Research Company
Filed Aug. 11, 1965, Ser. No. 478,965
8 Claims. (Cl. 61—46)



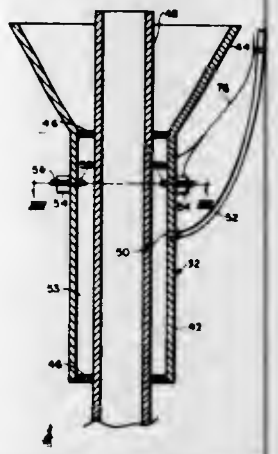
1. A water-based structure including a pile positioned in a body of water and extending above water level comprising:

sleeve means adapted to contain a constant volume fluid surrounding said pile and extending from below to above the water level, said sleeve means comprising an inner well, an outer wall deformable by wave and/or current forces, an elestic means interconnecting said inner and outer walls whereby said outer wall is forced by drag forces to contract toward the leading edge and to elongate from the trailing edge of said pile when said wave and/or current forces act on said pile.

3,352,119

BALLISTIC JACKET-PILE CONNECTION

William F. Manning, Springdale, Conn., assignor to Mobil Oil Corporation, a corporation of New York
Filed Sept. 23, 1965, Ser. No. 489,527
1 Claim. (Cl. 61—46)



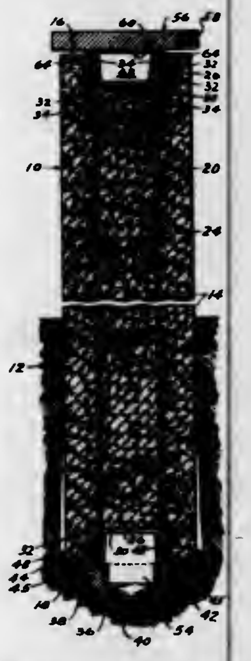
A method for rigidly connecting a pair of telescoped elongated members, one of said members secured to a body beneath the surface of the sea including the following steps:

(a) insert the inner member into the outer member beneath said surface of the sea;
(b) detonate an explosive material to drive a spike through said outer and inner members to fix said inner member relative to said outer member; and
(c) inject a settable cementitious fluid material into an annular space between said inner and outer members until said space is filled whereby the connection allows the cementitious material to form a good bond between said inner and outer members as it sets.

3,352,120

REINFORCED CONCRETE PILE

Harold H. Pelzer, Long Island City, N.Y., assignor to Grace L. Pelzer, Long Island City, N.Y.
Filed Sept. 15, 1965, Ser. No. 487,403
6 Claims. (Cl. 61—56)

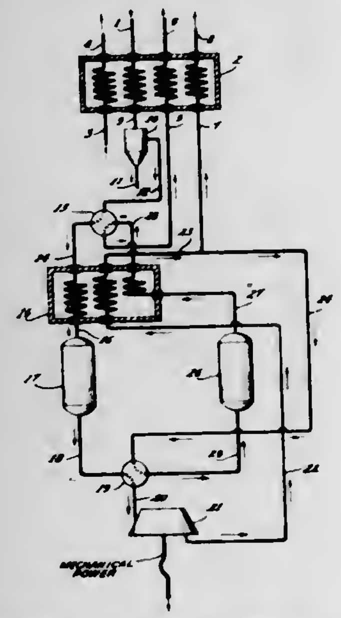


1. In combination with a hammer head having a circular body with depending pairs of spaced plate-like flanges, a reinforced concrete pile, a cylindrical solid body of concrete, a metal H-beam in the center thereof extending from end to end thereof serving as a reinforcement, one end of said H-beam extending beyond one end of said pile, the other end being in alignment with the concrete, said solid body having H-shaped recesses in the ends thereof centrally of the body, the ends of the flanges and the web of the H-beam extending outwardly into and through said recesses, said outwardly extending ends of the flanges and web at one end adapted to support in contacting relation the hammer head which is adapted to receive blows of a hammer, and a pointed driving boot interlocked with the other end of the H-beam underneath the concrete body.

3,352,121

REGENERATIVE ADSORPTION PROCESS

Edward G. Biskis, Emmaus, Pa., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware
Filed Mar. 3, 1965, Ser. No. 436,835
3 Claims. (Cl. 62—18)



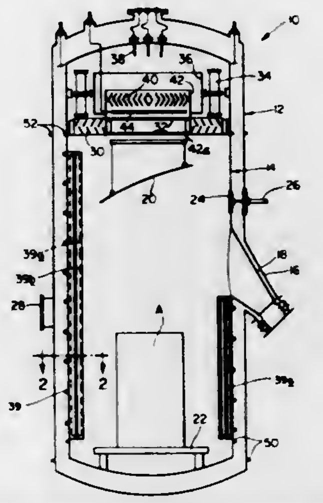
1. A continuous regenerative-adsorptive method for removing gaseous contaminants from a pressurized, impure gas stream which comprises the steps of:

(a) initially cooling the impure gas stream by indirect heat exchange with a plurality of gaseous coolants including purified product gas and gaseous effluent derived from the regeneration of adsorbent material;
(b) removing condensed water from the cooled gas stream;
(c) further cooling the cooled and dried gas stream by indirect heat exchange with said purified product gas and said gaseous regeneration effluent prior to their use in the initial cooling step (a);
(d) passing the dry, cool, impure gas stream through adsorbent material for selective removal of gaseous contaminant;
(e) expanding the purified gas in an expansion engine for further cooling of the gas and for incidental production of mechanical power;
(f) subjecting all the thrice-cooled, purified, and expanded gas to heat exchange in said second cooling step (c);
(g) subjecting the major portion of the purified gas from step (f) to heat exchange in said initial cooling step (a);
(h) by-passing a minor portion of the purified gas from step (f) and utilizing the same for regenerating off-stream adsorbent material;
(i) subjecting the gaseous effluent of regeneration in step (h) to successive heat exchange in steps (c) and (a);
(j) and withdrawing the desired, purified gas after serving its cooling function in step (a).

3,352,122

INDUSTRIAL PROCESS AND APPARATUS

Jerome H. Rothenberg, Dresher, Pa., and Charles B. Hood, Jr., Columbus, Ohio, assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 1, 1966, Ser. No. 530,838
5 Claims. (Cl. 62—45)

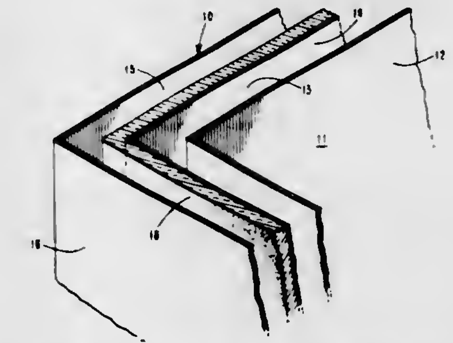


1. A space simulation chamber having working space therein and comprising a sealed outer container, an inner container within the outer container, removable means blocking passage from the outer container, removable means blocking passage from the outer container into the inner container pumping elements in said inner container and including an ion pump, titanium sublimator, cold surfaces and a super-cold pumping surface maintained at a temperature within the range of 2° to 4° Kelvin for pumping helium, shield means comprising pumping surfaces within the inner container positioned to obstruct straight-line movement of gas molecules from position in said inner container remote from the super-cold pumping surface to said super-cold pumping surface and to thereby reserve the pumping powers of said super-cold pumping surface for pumping helium, means maintaining said shield means at a temperature in a range of 10° to 20° Kelvin.

3,352,123

SYSTEM FOR COOLING, TRANSPORTING AND WARMING UP DOUBLE BARRIER LIQUEFIED GAS CARGO TANKS

Walter Eberhard Ulbricht, New York, Donald R. Yearwood, Brooklyn, and Norman K. Basile, Bronx, N.Y., assignors to John J. McMullen, Montclair, N.J.,
Filed Feb. 21, 1966, Ser. No. 529,135
12 Claims. (Cl. 62—55)

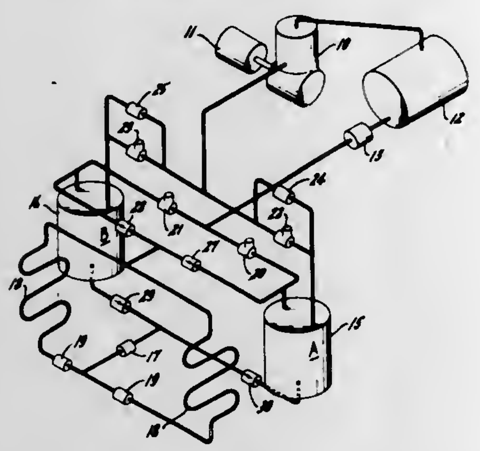


1. A method of cooling a liquefied gas storage tank which has an inner barrier and a spaced outer barrier which defines isolated inner and outer tank spaces and which stores at about ambient pressure cryogenic liquefied gas, the barriers being initially at ambient tempera-

ture, said method comprising the step of cooling said barriers by simultaneously and generally uniformly spraying liquefied gas of the type to be stored into the inner tank space and the space between said barriers.

3,352,124
LIQUID REFRIGERANT RECIRCULATING SYSTEM

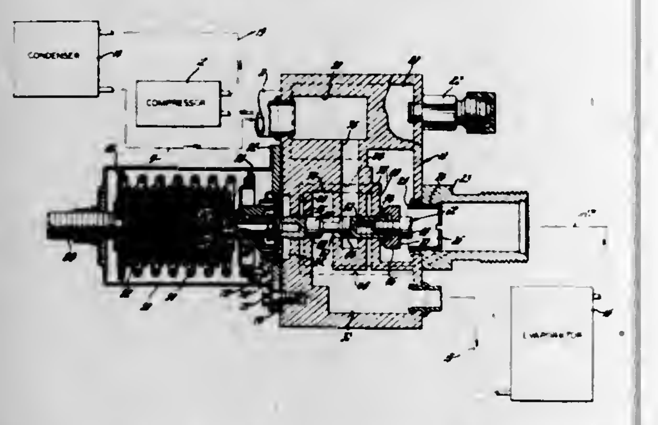
John E. Watkins, 9 N. 3rd Ave.,
Maywood, Ill. 60153
Filed Feb. 11, 1966, Ser. No. 526,761
17 Claims. (Cl. 62—115)



1. A flooded-coil refrigeration system comprising, in combination, an evaporator, means for feeding said evaporator with liquid refrigerant at a flow rate in excess of that which the evaporator is capable of vaporizing, a first and a second pumping tank, a condenser, a compressor discharging pressurized refrigerant into said condenser, and control means for alternately directing the discharge from said evaporator into one of said pumping tanks and directing the vaporized refrigerant from said one pumping tank into said compressor, while discharging the liquid refrigerant from the other of said pumping tanks into said refrigeration system whereby it may be returned to said evaporator.

3,352,125
PRESSURE COMPENSATED POLYPHASE EXPANSION VALVE REFRIGERATION SYSTEM

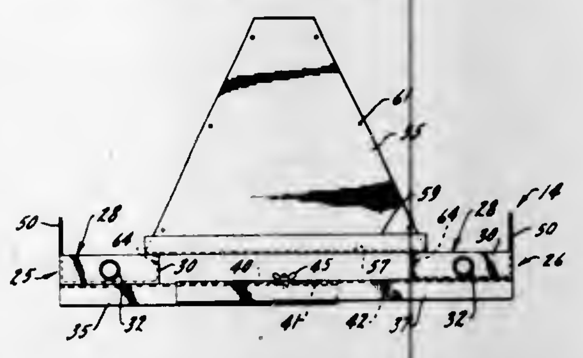
Paul K. Beatenbough, Medina, and Marshall W. Baker, Lockport, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 479,865
5 Claims. (Cl. 62—211)



1. A refrigeration system including a compressor, a condenser, a control valve assembly and an evaporator connected in that order for refrigerant flow, a compressor return flow chamber in said control valve assembly, said evaporator having a refrigerant fluid discharge connected to the inlet of said compressor by way of said compressor return flow chamber, said control valve assembly including an expansion valve controlling refrigerant flow to the evaporator and a secondary valve controlling the flow of refrigerant through said chamber to the compressor, said expansion valve and secondary valve constituting a unit and being movable in one direction as a unit, and means for moving said unit in accordance with a pressure intermediate those upstream and downstream of said secondary valve.

3,352,126
SUPPORT FOR HEAT EXCHANGER

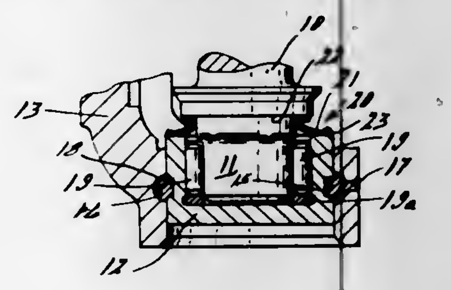
William S. Beshekas, Villa Park, Ill., assignor to Wiklander Metallic Fabricators, Inc., a corporation of Illinois
Filed July 21, 1965, Ser. No. 473,730
2 Claims. (Cl. 62—286)



1. A universal supporting frame for supporting a heat exchanger in a chamber, comprising a pair of spaced support members, said members each having means defining a trough at one end thereof, each said trough having an upstanding flange defining the outer wall thereof, the top of said flange being above the bottom portion of the heat exchanger so as to deflect condensate therefrom into said trough, cross members extending outwardly from said trough and adapted to telescopingly engage complementary cross members on an associated support member, said cross members being apertured, and a fastener being provided through aligned apertures to join respective telescoping cross members to space said troughs of said support members at a predetermined distance for engaging and supporting the bottom portion of a heat exchanger, said troughs disposed beneath said heat exchanger so as to collect condensation therefrom and carry the same away, and shields provided so as to be disposed at the sides of the heat exchanger and in communication with said troughs to collect and redirect condensate from the sides thereof to said troughs.

3,352,127
SEALS

Ralph L. Skinner, Sr., Birmingham, Mich., assignor to Renniks Corporation, Birmingham, Mich., a corporation of Michigan
Filed June 17, 1965, Ser. No. 464,803
8 Claims. (Cl. 64—17)



1. An annular seal of substantially U shape in radial transverse section comprising

a relatively thin Teflon facing bonded over substantially its entire area to a backing of spring metal,

the U shape of said seal defining laterally spaced flanges extending from an intermediate bight portion and said facing being on the outer sides of said flanges and extending continuously therebetween,

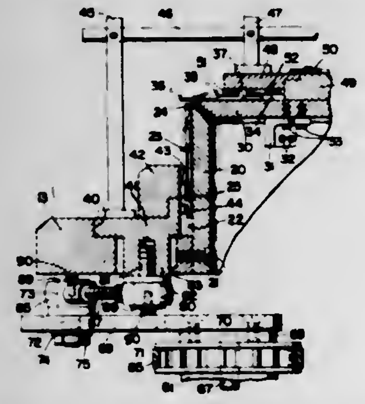
said seal adapted to close the space between opposed annular surfaces and to be compressed from its normal relaxed condition to tension said backing when inserted bodily between said surfaces with the flanges in laterally pressed engagement with said surfaces,

one of said flanges being relatively narrow and cooperating with said bight portion to provide an essentially stiff, high-rate spring member,

the other of said flanges being relatively wide to provide a low-rate cantilever spring member capable of substantial lateral flexure to accommodate variations in spacing between the surfaces being sealed without permanent deformation of said backing while maintaining an effective sealing pressure between said flanges and said surfaces.

3,352,128
KNITTING MACHINE DRIVE MECHANISMS

Sam Mishcon, Belle Harbor, N.Y., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed June 1, 1965, Ser. No. 460,084
2 Claims. (Cl. 66—56)

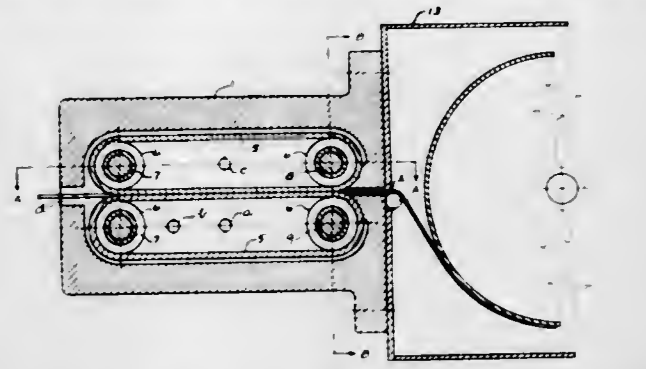


1. In a circular knitting machine for knitting a fabric strip and having a stationary frame, a cylindrical needle supporting bed member having a plurality of adjacent knitting needles endwise shiftably constrained therein and mutually cooperative in knitting a fabric strip, a cylindrical needle cam supporting member, a needle operating cam unit carried by said cam supporting member and including a needle raise cam and a needle draw cam engageable sequentially with a plurality of adjacent ones of said knitting needles, means for securing one of said members on said stationary frame, means for journaling the other of said members on said frame for turning movement coaxially of said secured one of said members, and means for imparting oscillatory movement to said journaled member to shift said cam means sequentially into engagement with each one of said plurality of adjacent knitting needles cooperative in knitting said fabric strip comprising, a crank supported for turning movement on an axis fixed with respect to said frame, a drive shaft journaled in said frame and operatively connected to impart turning movement in one direction to said crank, and a connecting rod pivoted at one extremity to said crank and at the other extremity to said journaled member.

3,352,129
TEXTILE PROCESSING SEALER

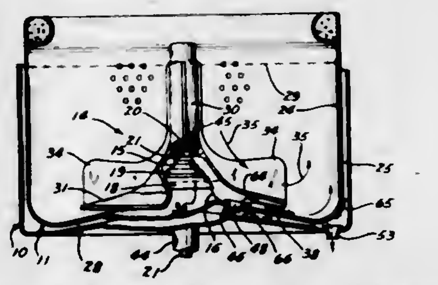
Frank J. Johnson, 505 Shoemaker Ave.,
Jenkintown, Pa. 19046
Filed Sept. 13, 1965, Ser. No. 486,877
3 Claims. (Cl. 68—5)

1. In a processing sealer as described the combination of a housing to enclose mechanism, said housing having entrance and exit openings for unrestricted passage of materials, means for attaching said housing to any material processing machine, said housing having attached thereon side cover plates, said side cover plates provided with shaft bearings, two pair of shafts supported in said bearings, one pair of said shafts parallel to and above the other pair of said shafts, mounted on each end of said shafts an endless belt conveyor, the lower section of belt of said upper conveyor and the upper section of belt of lower conveyor adjacent to each other, means to drive said shafts and said conveyor belts, the said housing provided with two internal semi-annular concave projected sealing members, said sealing members located to contact each of said conveyor belts at position of fabric exit from said housing.



3,352,130
FILTER FOR LAUNDRY MACHINE

William G. Landwier, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Jan. 7, 1966, Ser. No. 519,254
10 Claims. (Cl. 68—18)



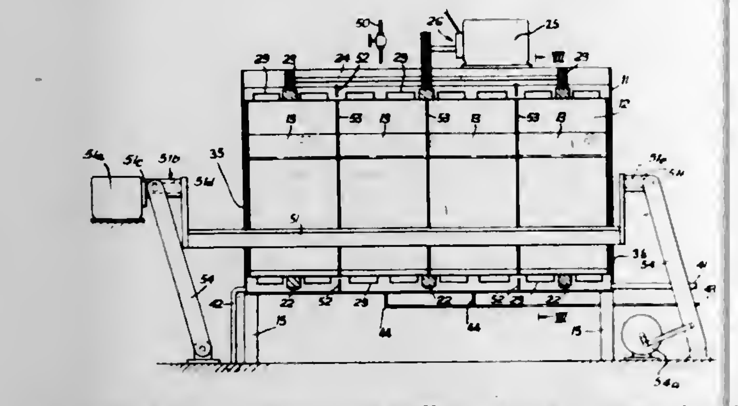
1. In a fabric washing machine, the combination comprising: a fluid container for receiving and containing washing fluids; a perforate basket supported within said container for rotation relative thereto and including a first wall portion defining a plurality of perforations and further including a second wall portion defining at least one opening, said basket being spaced from said container for defining a fluid passage from said perforate first wall portion to said opening; agitator means disposed within said basket and engageable with fabrics contained therein; means associated with said agitator means for inducing fluid flow through said passage and said opening into said basket interior and out through the perforations of said first wall portion into said passage; and filter means associated with said opening for preventing flow of fluid-carried lint into said basket.

3,352,131
LAUNDRY WASHING MACHINES

Geoffrey Smith, Findon, England, assignor to
Polymark (Holdings) Limited
Original application Sept. 17, 1962, Ser. No. 223,891, now Patent No. 3,201,958, dated Aug. 24, 1965. Divided and this application Apr. 12, 1965, Ser. No. 447,367
Claims priority, application Great Britain,
Sept. 21, 1961, 33,828/61
10 Claims. (Cl. 68—58)

1. A laundry washing machine in which articles to be washed travel in a direction opposite to that of a flow of washing medium, comprising a rotatable inner cage to re-

ceive the articles to be washed, an outer casing surrounding the inner cage and intended to receive the washing medium, inlets for washing medium opening into said outer casing, internal peripheral annular division members within the inner cage dividing the inner cage into separate partial components through which the articles are caused to progress and baffle members extending inwardly from the inner cage within each partial compartment, which baffle members are adapted to raise articles within each partial compartment to a high level and then allow them to fall into the washing medium in the lower part of the inner cage.

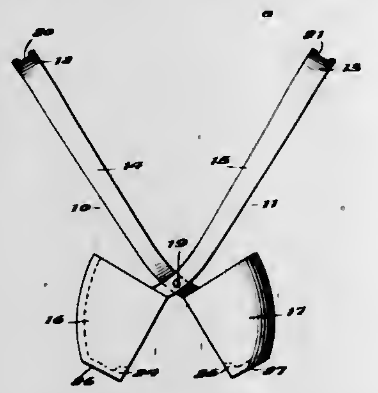


3,352,132
DIAPER RINSING DEVICE

Mary Jeanne Jones and Richard F. Jones III, both of Box 117, R.F.D. 3, Charlottesville, Va. 22902

Filed Sept. 7, 1965, Ser. No. 485,513

5 Claims. (Cl. 68—213)



1. A device for handling soiled diapers comprising two S-shaped members each consisting essentially of an upper handle section, a connecting shank section and a lower, flat-bottomed half-bowl section, said members being pivotally joined to one another at their shank sections to allow for a scissors-like operation so that when said members are in a closed position said half bowls meet to form a flat-based concave vessel adaptable for holding a soiled diaper, said handle sections being hook-shaped to allow the device to be hung by said handles over the rim of a toilet bowl, said handle sections having means for releasably locking them together when the device is in a closed position.

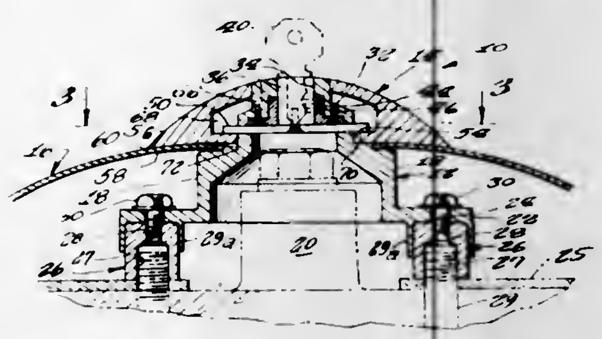
3,352,133
SAFETY HUB CAP AND LOCKING DEVICE

Edward J. Selleck, 955 82nd St., Brooklyn, N.Y. 11228

Filed Feb. 1, 1966, Ser. No. 524,346

1 Claim. (Cl. 70—259)

In a hub cap and wheel locking device, the combination of a spider member, a hub cap and a hub cap cover member provided with lugs, said hub cap cover member being removably secured on one end of said spider member, said hub cap being received between said spider and hub cap cover members and said spider having means for securement of the wheel bolts of an automotive vehicle, said spider member comprising a cylindrical sleeve, a radially outwardly extending flange at one end of said sleeve, openings in said flange providing mounting means to an automobile wheel, a conically tapered end at the opposite end of said sleeve, a central opening in said end, a rotatable lock barrel within a fixed lock sleeve within said central opening, a rotatable bolt having radially outward extending arms secured to one end of said barrel, the ends of said arms extending out of slots in the sides of said end at one end of said sleeve and engaging with the lug means on said cover member and means on said spider to prevent rotation of said hub cap cover member relative to said spider member, said securement means comprising a plurality of special nuts, one of each said nuts being associated with each of said flange openings, each said nut having an internal thread at each opposite end, one of said threads being threadingly engageable with the wheel bolt of an automotive vehicle and the other thread receiving a bolt passed through said flange opening, said flange being provided with retainer caps adapted to fit over said special nuts, said retainer caps being positioned for alignment with said nuts.



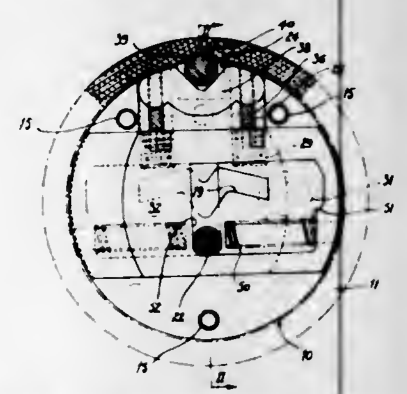
3,352,134
MULTIPLE-COMBINATION SAFETY LOCK

Guy Lett, Paris, France, assignor to Societe Fichet, Societe Anonyme, Paris, France, a corporation of France

Filed Sept. 30, 1965, Ser. No. 491,799

Claims priority, application France, Oct. 7, 1964, 990,597

4 Claims. (Cl. 70—362)



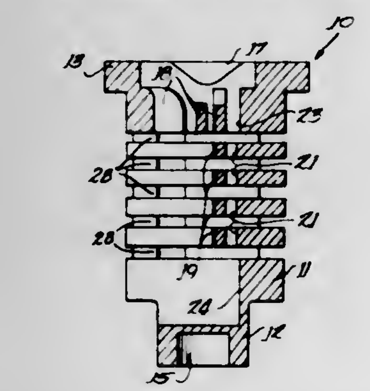
1. A multiple combination safety lock of the kind comprising a cylindrical barrel rotatably mounted in a so-called pump body under the control of an appropriate key having longitudinal ridges, said barrel being adapted to be angularly locked in said body by a blocking cotter radially movable in said barrel in opposition to elastic restoring means, between a blocked position in which it passes into a housing formed for that purpose in said body and a released position in which it escapes from said housing, said blocking cotter being controlled in dependence on a plurality of control members movably mounted in said barrel transversely to the direction of introduction of the key in opposition to elastic restoring means and in response to the contour of said ridges of said key, between a prohibitive position in which they hold said blocking cotter in the blocked position and a withdrawn permissive position in which said cotter can move into the released position, said barrel being provided on one of its transverse faces with an operating foot arranged in an eccentric position on and projecting from said face and adapted to actuate a lock member, characterized in that all the said control members have a generally similar contour and are divided into two separate series, the control members of one of said series having their respective permissive positions located to the right of an axial plane of said barrel while the control members of the other series have their respective permissive positions located to the left of said axial plane, said barrel being constituted by a stack of first plates clamped by longitudinal pins between a front end plate and a rear end plate of the same diameter as said first plates, one of the faces of each plate, with the exception of one of the outer plates, having a diametral groove in which is slidably mounted a small cut-out plate having a central opening and forming one of said control members, and a restoring spring associated with each small cut-out plate, said spring being disposed inside the opening cut in said small plate and being supported, on the one hand, on the outermost inner edge of said opening and, on the other hand, on the bottom of a fixed housing formed at least in part in the associated plate, said springs being alternately arranged on each side of the same axial plane of said barrel, in combination with a key provided with two active longitudinal ridges provided with teeth, each of said teeth being disposed between two notches and ensuring the movement of one of said control members towards its permissive position, when said key is inserted in the lock.

3,352,135
PLATE TUMBLER PLUGS

Roy C. Spain, Salem, Va., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware

Original application Aug. 24, 1965, Ser. No. 482,248. Divided and this application Aug. 10, 1966, Ser. No. 571,554

4 Claims. (Cl. 70—375)



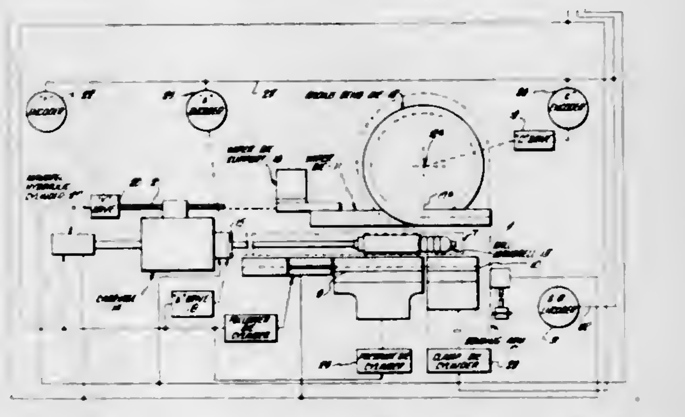
1. A plate-type tumbler plug for a cylinder lock assembly formed as an integral unit assembly in a die casting operation, comprising a generally cylindrical integral key plug having an enlarged flange forming a head at a front end of the plug and a reduced opposite rear end, said plug having a central keyway extending axially into the plug from the flange end and extending through the plug and into and terminating within said reduced end, a plurality of slots extending diametrically through said plug and intersecting said keyway, an enlargement in each of said slots extending partially through the plug and terminating in a shoulder, said enlargements all being positioned at one side of said keyway, centrally located and aligned key supports formed in said keyway, a plurality of longitudinally aligned key guides formed in and projecting into the keyway and spaced from said key supports, said key supports and key guides being formed by a single side core extending into the plug during casting, said core also forming a lateral opening intersecting said keyway, an axially extending surface defining the keyway in the front end of the plug, and an axially extending surface in the rear end of said plug aligned with said first mentioned surface, said axially extending surfaces extend less than said key supports wherein said axially extending surfaces are out of alignment with said key supports so that a proper key, when inserted in the plug, rests only on said key supports intermediate said axially extending surfaces.

3,352,136
METAL FORMING MACHINE

Kenneth W. Clarke, Arcadia, Calif., assignor, by mesne assignments, to Conrac Corporation, New York, N.Y., a corporation of New York

Filed Mar. 22, 1965, Ser. No. 441,548

21 Claims. (Cl. 72—9)



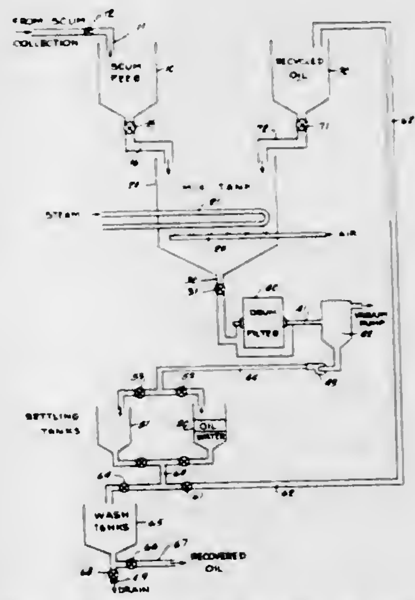
2. In a metal forming machine including means for forming a workpiece subject to springback to a desired shape, means for detecting and generating a signal representative of the actual shape of the formed workpiece, means connected to said latter means to be responsive to the detected signal for computing a reforming control signal proportioned to compensate for the springback of the workpiece and connected to apply said reforming signal to said forming means to reactuate same in response thereto.

3,352,137
PROCESS FOR TREATING AND RECOVERING ROLLING OIL

Geza L. Kovacs, New York, N.Y., assignor to Palm Oil Recovery, Inc., Baltimore, Md., a corporation of Maryland

Filed Aug. 6, 1965, Ser. No. 477,699

3 Claims. (Cl. 72—42)

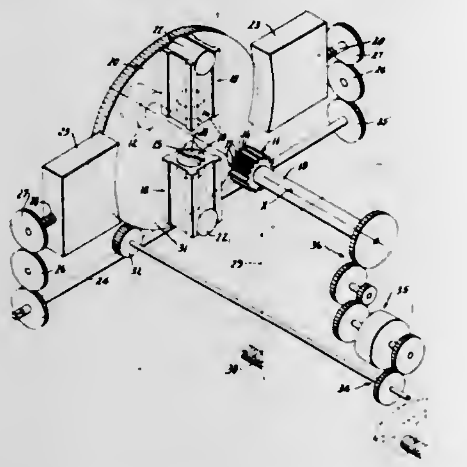


1. The process of recovering fatty oil from the iron particle contaminated oil-water emulsion scum derived from the effluent from a cold rolling steel mill which process comprises:

(1) diluting said scum to reduce its viscosity;

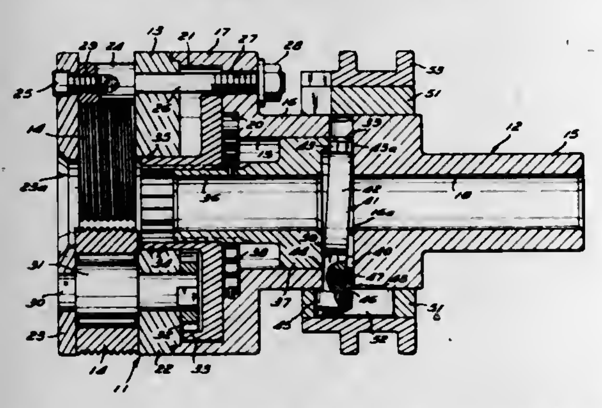
(2) filtering at an elevated temperature the diluted scum to remove iron particles therefrom;
(3) allowing the filtrate to separate into a fatty oil layer and a water layer;
(4) separating said oil layer; and
(5) cycling the desired amount of said separated oil to step (1) as said diluent.

3,352,138
TOOL FOR FORMING TOOTHED PARTS
Edward W. Haug, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Oct. 23, 1965, Ser. No. 502,965
5 Claims. (Cl. 72—76)



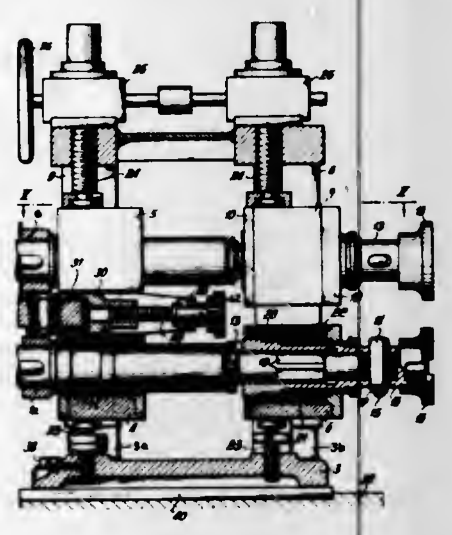
1. A tool for forming teeth by flowing the metal of a cylindrical workpiece and adapted to be advanced progressively relative to the workpiece longitudinally thereof, said tool comprising an elongated rib opposing the periphery of the workpiece and extending generally longitudinally thereof, said rib having a shallow leading end and a higher trailing end, the cross sectional shape of said trailing end being complemental to the shape of an interdental space and portions of the adjacent teeth on the gear to be formed, said leading end having a cross sectional shape substantially complemental to the extreme outer portion of said interdental space, said rib being defined by side surfaces tapering progressively from said trailing end to said leading end and by a top surface tapering progressively from said leading end to said trailing end.

3,352,139
THREADING IMPLEMENT
Edgar H. Cummings, Cleveland, Ohio, assignor to The National Acme Company, a corporation of Ohio
Filed Sept. 18, 1964, Ser. No. 397,419
7 Claims. (Cl. 72—123)



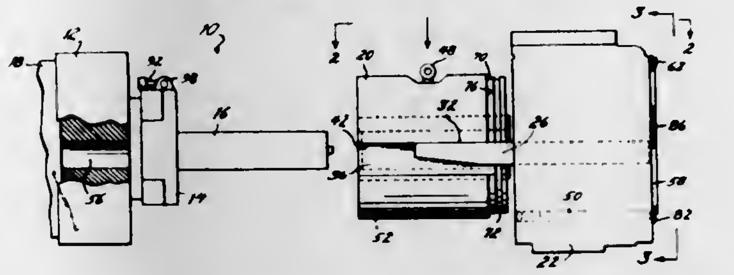
1. In a threading implement having a frame, a plurality of threading members mounted on the frame for engagement with a workpiece, drive means rotatable with respect to the frame in one direction to move the threading members to a released position for disengaging the workpiece and rotatable in the opposite direction to move the threading members to an engaged position for engagement with the workpiece, and spring means urging said drive means in said one direction, the improvement which comprises an operating mechanism for said drive means including:
- clutch means coupled to said drive means for rotation therewith, said clutch means being mounted for limited rotation relative to said frame and in one rotational position being locked against rotation in said one rotational direction under the urging of said spring means;
- and operating means relatively slidable longitudinally of the frame, said operating means in one direction of its relative longitudinal movement releasing said clutch means from its locked position to rotate immediately in one rotational direction along with said drive means under the urging of said spring means without continued movement of said operating means in said one direction;
- said operating means in the opposite direction of its relative longitudinal movement engaging said clutch means to rotate the latter and said drive means in said opposite rotational direction against the urging of said spring means until said clutch means is reengaged in said locked position.

3,352,140
ROLLING MILL CONSTRUCTION
Horst Pawalkat, Leverkusen, Germany, assignor to Theodor Wuppermann GmbH, Leverkusen, Germany
Filed July 17, 1963, Ser. No. 295,651
Claims priority, application Germany, July 25, 1962, W 32,671, W 32,672
12 Claims. (Cl. 72—238)



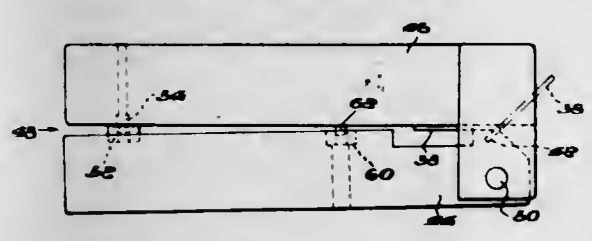
6. A metal rolling mill comprising an upright roll supporting stand defining first and second spaced bearing supports for supporting at least one mill roll, one of said bearing supports including a stationary bearing with a driving sleeve rotatable in said stationary bearing, a mill roll having a working shaft portion rotatably supported in said bearing supports and having one end extending into said driving sleeve and being of a configuration such that it peripherally interengages with said driving sleeve and is rotatable therewith, said driving sleeve including a portion extending outwardly from said upright roll supporting stand adapted to be connected to means for rotating said sleeve, said sleeve having an opening in the portion extending outwardly from said stand alignable with an opening in the end of said mill roll working shaft portion which extends into said sleeve, and a wedge member extending through the opening of said sleeve and the opening of said mill roll working shaft portion to hold said working shaft portion in said sleeve.

3,352,141
EXTRUSION PRESS CONTAINER APPARATUS
Raymond F. Boshold, Springfield, Pa., assignor to Baldwin-Lima-Hamilton Corp., Philadelphia, Pa., a corporation of Pennsylvania
Filed May 10, 1965, Ser. No. 454,535
8 Claims. (Cl. 72—272)



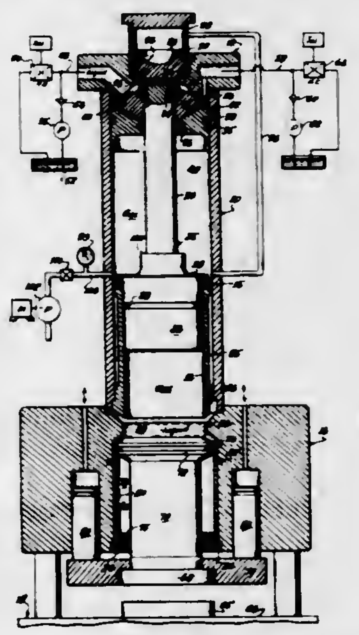
7. In an extrusion press including a one piece container holder open at the ends thereof, a container removably supported within said container holder, a moving crosshead, a stem, mounting structure for supporting said stem on said moving crosshead, said stem being selectively insertable in a container cavity, means to align said container as the container is being inserted into said container holder, said alignment means including at least two transversely spaced apart keys extending from said container, said two keys extending through an opening in one end of said container holder, each key having an alignment surface parallel to an alignment axis, at least two corresponding keyways in the peripheral wall of said container, each said keyway being open in a vertical direction, an alignment surface in each keyway for contacting said key alignment surfaces, means to fasten said container within said container holder, said fastening means including an extension portion on said container protruding through the other opening in said container holder, a groove in said extension portion juxtaposed said other opening when said container is within said container holder, a pair of pivotable elongated members mounted on said container holder adjacent said other openings for selective insertion into said groove, means to fix said members in said grooves, and means for removing said container from said container holder comprising a recess in the outer wall of said container, a shoulder in said recess remote from the ends thereof, and latch means pivotally mounted to said mounting structure, said latch means including engagement means, said latch means being mounted for selective engagement of said engagement means with said shoulder within said recess.

3,352,142
TOOL FOR FABRICATING ATTACHMENT CLIPS
Ivan L. Marra, Butler, Pa., assignor to Fre-Mar Industries, Butler, Pa., a corporation of Pennsylvania
Filed Apr. 23, 1964, Ser. No. 362,151
1 Claim. (Cl. 72—387)



A hand tool for forming sheet metal mounting clips for automobile body moldings, comprising in combination, a base member having a bed portion, at one end thereof; a guide means located adjacent the sides of said bed portion; an elongated arm pivotally mounted by said means; the arm having a flat anvil face extending crosswise of its long axis at 90° thereto, the arm also having a slot extending inwardly of the lower edge of the anvil face; the arm being swingable, in an arc, relative to the bed between, a first open position, and a second position, in which second position the anvil face is spaced from the opposed bed by a distance equal to the thickness of the sheet metal strip used to form the clip; the anvil slot being adapted to receive the end of a sheet metal strip therein when the arm is in said second position; the arm acting to retain the so-engaged strip end against the anvil face, when swung to its second position to bend the so-engaged strip end to form a flange at an angle thereto, means defining a forming tool portion on said base member, and a complementary tool portion on said arm coacting with said means to effect a further forming operation on the strip when the strip is placed suitably in relation therewith.

3,352,143
IMPACT APPARATUS
Leo C. Bollar 5942 Erlanger St.,
San Diego, Calif. 92122
Filed Apr. 2, 1965, Ser. No. 444,994
15 Claims. (Cl. 72—445)



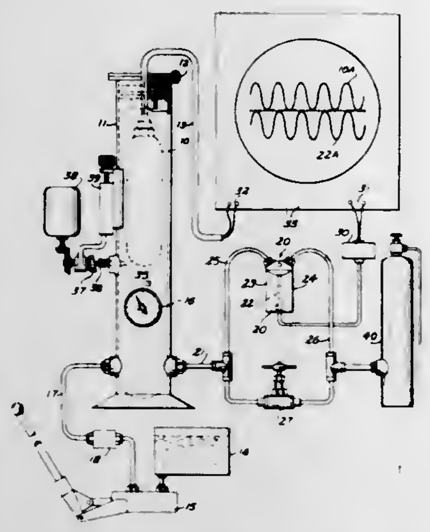
1. In an impact apparatus, the combination of:
- a structure forming a rearward chamber with a guide passage extending forward therefrom;
- an impact ram having a forward impact portion slidingly mounted in the guide passage and a rearward portion extending into the rearward chamber, said rearward portion being of smaller cross-sectional area than the rearward chamber;
- an annular piston slidingly mounted in the rearward chamber and slidingly embracing the ram to cooperate therewith to divide the chamber into a rearward compartment and a forward compartment;
- a rearward body of liquid fluid in the rearward compartment to act on the rear end of the ram to drive the ram;
- a forward body of compressed gaseous fluid in the forward compartment,
- the annular piston being freely movable for transmission of pressure from the forward body of gaseous fluid to the rearward body of liquid fluid to permit the forward body of gaseous fluid to expand to drive the ram forward with consequent rearward retraction of the annular piston; and
- means on the ram to engage the annular piston at the end of an initial portion of the forward stroke of the ram to terminate the retraction of the annular piston thereby to terminate the expansion of the forward gaseous body and to advance the annular piston with the ram over a final portion of the forward stroke of the ram.

3,352,144
HYDROPHONE DYNAMIC CALIBRATION SYSTEM

Thomas McMillian and Lawrence C. Thompson, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed May 21, 1965, Ser. No. 457,873

5 Claims. (Cl. 73—1)



1. A hydrophone calibrating system comprising;

a chamber filled with liquid to receive the hydrophone to be tested;

a pressure pump for elevating the pressure of said liquid to any desired level;

a standard pressure wave-to-signal transducer consisting of a pressure-sensitive diaphragm, and ducts communicating between the spaces respectively, on either side of said diaphragm and the interior of said chamber for flooding both sides of said diaphragm to said pressure level;

a valve in the duct to one side of said diaphragm for selectively isolating said one side;

a reciprocating member in said chamber for creating pressure waves of predetermined amplitude and frequency; and

means for comparing the wave shape of the signals at the terminals of said hydrophone under test with the wave shape of the signal at the terminals of said standard transducer.

3,352,145
AIR GAUGE

William A. Minix, Detroit, Mich., assignor to Freeland Gauge Company, Detroit, Mich.

Filed Aug. 4, 1965, Ser. No. 477,270

10 Claims. (Cl. 73—37.9)

1. In an air flow device for gauging bores or the predetermined dimension of a part, wherein air leakage from a gauge element within said bore or relative to such part is visibly measured and compared with air leakage from said gauge element within a predetermined master bore or part of predetermined dimension, thus providing a range for the selection or rejection of work pieces;

the invention comprising a base;

a manifold mounted on said base having a chamber;

an air pressure responsive gauge, including a needle and a calibrated dial mounted on said base;

a conduit interconnecting said manifold chamber and gauge;

a manually adjustable flow control valve on said base having an inlet and an outlet;

a conduit interconnecting said outlet and said manifold chamber;

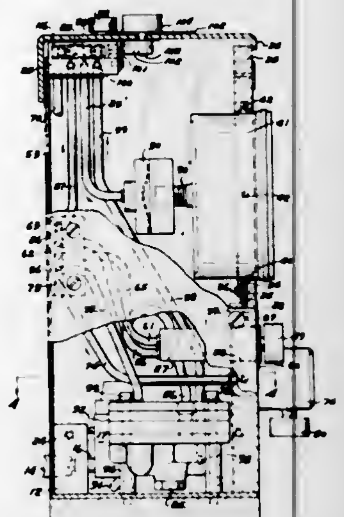
a source of air under regulated pressure connected to said inlet;

a gauge element having an orifice;

a conduit between said manifold chamber and gauge element;

said flow control valve adapted to regulate the range of movement of said needle and in turn the magnification adjustment of said gauge for a predetermined pressure of said air source;

and a manually adjustable air bleed valve on said base having an inlet connected with said manifold chamber and an outlet to atmosphere, being a zero adjustment for said gauge for said predetermined air source;



an adjustable two way valve having an outlet and a pair of inlets;

one inlet and said outlet being interposed in the conduit between said manifold chamber and gauge;

an air pressure responsive booster valve on said base having an inlet connected to said source of air under regulated pressure and a delivery outlet connected to the other inlet of said two way valve to provide a high amplification factor;

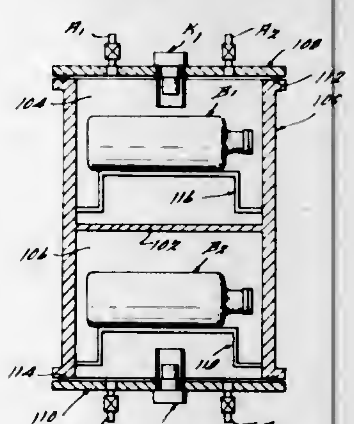
and a control conduit interposed between said manifold chamber and said booster valve for determining a multiple regulated pressure communicated to said gauge proportional to varying pressure conditions in said manifold chamber.

3,352,146
METHOD AND MEANS FOR TESTING THE GAS PERMEABILITY AND CLOSURE LEAKAGE OF CONTAINERS

Georges H. Lyssy, Zollikon, Switzerland, assignor to Hans Sickinger Co., West Bloomfield Township, Mich., a corporation of Michigan

Filed Dec. 8, 1965, Ser. No. 512,413

3 Claims. (Cl. 73—38)



1. In an apparatus for testing the permeability and closure leakage properties of a package, a housing having an experiment chamber and a reference chamber, said

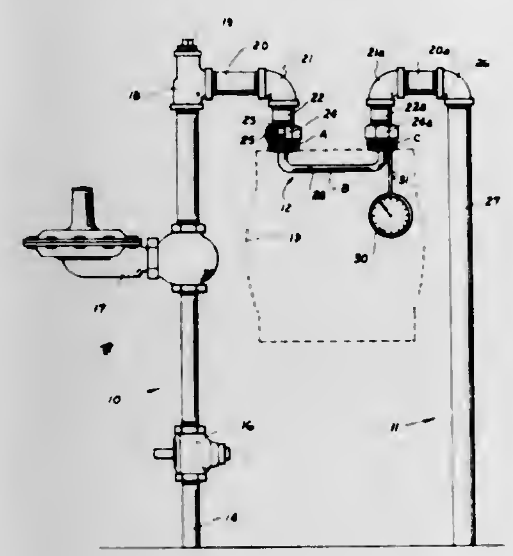
chambers being in thermally conductive contact but sealed from each other and from the outside of the housing, removable gas-tight covers for said chambers, means for causing gas to be fed under pressure into each of said chambers and sealed therein, means in said experiment chamber for supporting a container to be tested therein, a thermal conductivity measuring element mounted on each of said chambers, and a bridge circuit connecting said elements.

3,352,147
CONSTRUCTION HEADER

Tom T. Ligon, P.O. Box 1025, Clemson, S.C. 29631

Filed Mar. 14, 1966, Ser. No. 540,450

2 Claims. (Cl. 73—40.5)



1. An apparatus for aiding in the installation of pipes for connection to a gas meter and for testing the pipes for leakage including: a first stud, means connecting said first stud to a service pipe leading from a gas main for blocking the flow of gas through said pipe; a spacing bar having one end integral with said first stud; a second stud, means for connecting said second stud to a pipe on the consumer side of the meter, said second stud sealing an end of said consumer pipe which is normally connected to said gas meter so that pressure can be applied to the consumer pipe from the opposite end for testing joints in said pipe; said spacing bar having its other end integral with said second stud, said spacing bar being of a preselected length so that the distance between said studs is equal to the distance between the ends of said service pipe and said consumer pipe when connected to a gas meter; and said spacing bar being constructed of rigid material for maintaining said service pipe in a fixed position relative to said consumer pipe; whereby said apparatus aids in aligning said service pipe relative to said consumer pipe during installation of said pipes and seals one end of said pipes enabling such to be tested for leaks.

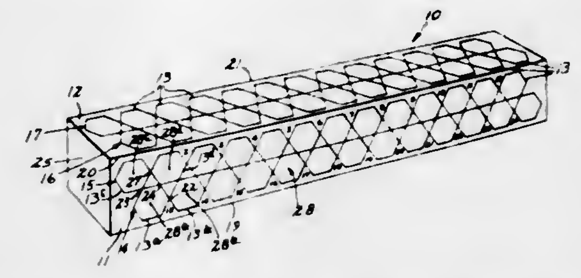
3,352,148
TEST BAR FOR HARDNESS TESTING MACHINES

John David Johnson, P.O. Box 538, Anoka, Minn. 55303

Continuation of application Ser. No. 299,318, Aug. 1, 1963. This application Oct. 7, 1966, Ser. No. 585,207

14 Claims. (Cl. 73—81)

1. An impression test apparatus comprising a bar of metal having a flat face and means on said face delineating a plurality of contiguous geometrical figures substantially covering said face, the center areas of said figures being spaced from each other a distance such that the deformation of the metal in the center area of one geometrical figure by a preselected tool under a preselected load will deform a substantial area of each figure and not deform the metal beyond said one figure, whereby



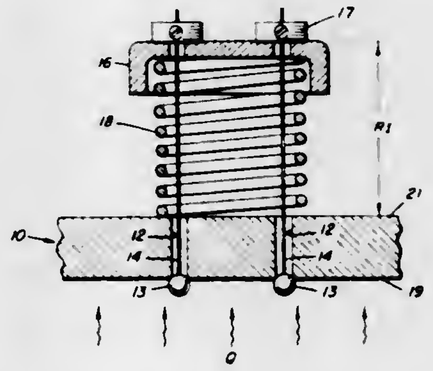
a maximum number of tests can be performed on the face.

3,352,149
EROSION GAGE

Jack G. Sherlock, Oakhurst, and James R. Reames, Ben Lomond, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Dec. 24, 1964, Ser. No. 421,138

5 Claims. (Cl. 73—86)



1. A device for indicating the amount and rate of advance of char comprising in combination:

a mass comprised of an ablative, insulative or like material having a plurality of transverse apertures therethrough, the lower surface of said mass being subjected to a heat source;

a spring retainer having wire means secured thereto, said wire means passing through said apertures;

a spring disposed between said spring retainer and the upper surface of said mass; and

ball means secured to said wire means adjacent the lower surface of said material, said ball means being so dimensioned as to normally prevent passage therethrough said apertures;

whereby, as the surface of said material adjacent said ball means upon subjection to a heat source chars, the ball means and the spring retainer coact under the influence of said spring to move upwardly, thereby providing an indication of the amount of char, and whereby the rate of advance of the char may be determined by successive indications as obtained at predetermined intervals during a predetermined period of time.

3,352,150
STRAIN-GAUGE POTENTIOMETER

Georges L. Fouretier, Paris, France, assignor to Societe d'Etudes et de Realisations d'Installations de Mesure (S.E.R.I.M.), Bagnolet, France, a company of France

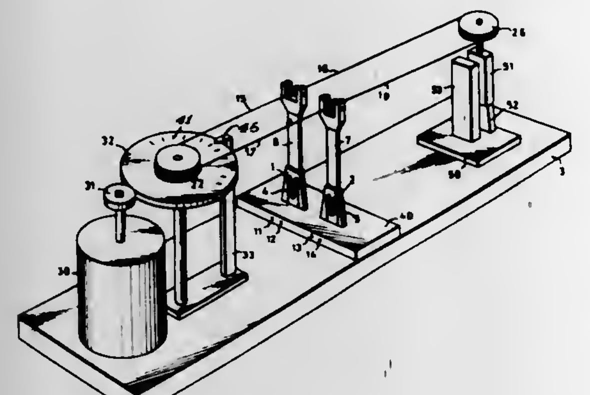
Filed Aug. 7, 1964, Ser. No. 388,128

Claims priority, application France, Aug. 9, 1963, 944,327; Oct. 14, 1963, 950,539

4 Claims. (Cl. 73—88.5)

1. In a self-balancing potentiometer including four resistive wire strain-gauges connected into a Wheatstone

bridge, means for applying an input signal to be measured to said bridge, an electric motor fed by the unbalance signal of said bridge, a pulley driven by said electric motor, a flexible cable means trained around said pulley so as to be driven thereby, and means for subtracting from said input signal a rebalancing signal, a motion to electricity transducer adapted to produce said rebalancing signal comprising a base means, two resilient metal strips of uniform thickness secured at one end thereof to said base means, said strips having the shape of an isosceles trapezoid having two parallel horizontal sides and two oblique lateral sides, said strain gauges being bonded to the two faces of each of said strips, two rigid extension members respectively secured at the other end of said resilient strips and aligned therewith, said extension members having shell-shaped top ends, two transverse spindles disposed across said shell-shaped top ends in the plane of said strips at the point of intersection of the two oblique sides of the trapezoid-shaped strips, a second cable means, a reversing pulley circumvented by said second cable means, means for connecting said first and second cable means which circumvent said driving and reversing pulleys to said spindles to cause said strips to bend in opposite directions from an equilibrium position thereof, whereby the length variation of the resistive wires of the strain gauges is proportional to said rebalancing signal.



3,352,151
MECHANICAL AUTOMATIC-RECORDING APPARATUS FOR TENSILE TESTING OF SHEET METAL

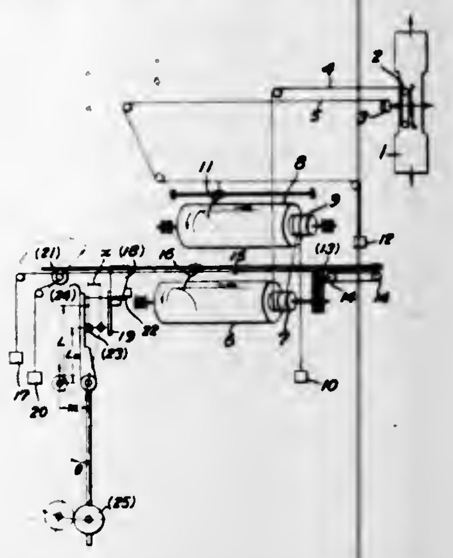
Kiyota Yoshida, Suwa-machi, Tokyo, and Kazuo Yoshida, Narashino-shi, Chiba-ken, Japan, assignors to Rikagaku Kenkyusho, Bunkyo-ku, Japan, and Kawasaki Seitetsu Kabushiki Kaisha, both corporations of Japan

Filed July 22, 1964, Ser. No. 384,488

Claims priority, application Japan, July 31, 1963, 38/37,955; Sept. 28, 1963, 38/51,624, 38/51,625, 38/72,733

4 Claims. (Cl. 73—89)

3. A load value magnifying device for mounting on a testing machine comprising a displaceable load value transmitting member the displacement of which is proportional to the load applied by the machine to a test specimen, first pulley means held stationary with respect to the machine, second pulley means which will move towards and away from the first pulley means with the movement of the transmitting member in one direction and the opposite direction respectively, an elongated flexible member one end of which is held stationary with respect to the machine, one portion of said flexible member extending over said first and second pulley means and another portion of said flexible member extending away from said first and second pulley means while driving a load indicating device such as an input for a recorder so that, on movement of the transmitting member, there will be a corresponding but magnified movement of said other portion of the flexible member, and means applying to said other portion of the flexible member a force directed away from the pulley means.

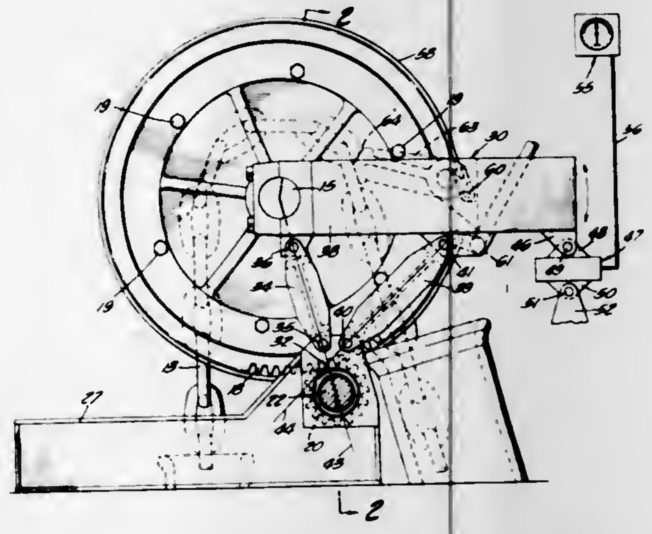


3,352,152
LOAD MEASURING WINDLASS

James G. Abraham, Rolling Hills, Calif., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed Nov. 30, 1966, Ser. No. 597,971

10 Claims. (Cl. 73—143)



1. In a load-measuring windlass, the combination of: a drum adapted to receive an elongated tension member, a yoke, means mounting said drum for rotation on said yoke, a stationary base, a pinion gear, means on said base supporting said pinion gear for rotation about an axis parallel to the rotary axis of said drum, a gear fixed on said drum and meshing with said pinion gear, means on said base supporting said yoke for pivotal movement about an axis parallel to the drum axis and intersecting the pitch point of said meshing gears, and means for measuring the torque load on said yoke.

3,352,153
DRIVE BELT TENSION DETERMINING APPARATUS

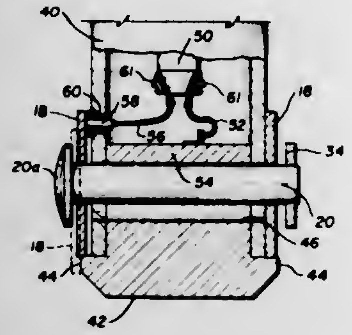
Graham W. Howard, 5996 S. Crocker Way, Littleton, Colo. 80120

Filed Aug. 13, 1965, Ser. No. 479,421

11 Claims. (Cl. 73—144)

1. In a belt tester of the class described having an elongated body portion and a bail normal thereto and extending outwardly from both sides of said body portion, the improvement of a lost motion connection between said

bail and said body permitting limited movement of said bail along said body portion; means temporarily maintaining said bail at either extreme end of said movement; and signal means associated with said means temporarily maintaining said bail for indicating bail movement from one extreme position to the other position.

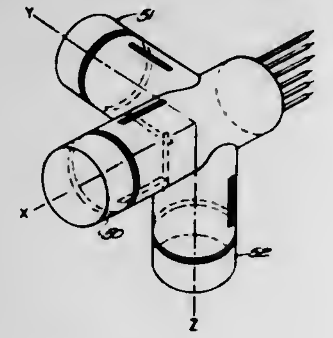


3,352,154
HEATED ELEMENT FLUID FLOW SENSOR

Robert S. Djorup, 20 Lovewell Road, Wellesley, Mass. 02181

Filed June 16, 1965, Ser. No. 464,312

4 Claims. (Cl. 73—189)



4. A fluid flow sensor comprising:

insulative refractory means providing three geometric surfaces of revolution, the axis of each geometric surface of revolution being orthogonal to the axes of the other geometric surfaces of revolution;

each surface of revolution having an adherent electrically conductive ring centered about the axis of revolution, each conductive ring exhibiting a change in electrical resistivity as a function of temperature; and

means providing electrical connections to each ring whereby an electrical current can be caused to flow in each ring.

3,352,155
VALVE AND FLOWMETER ASSEMBLY

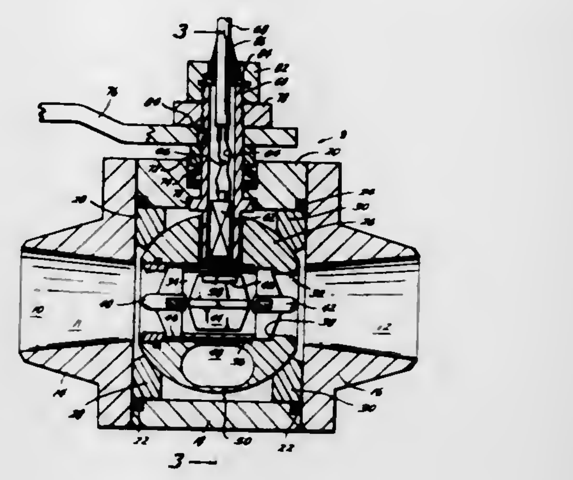
Pierre Marie Penet, Creteil, France, assignor to Societe d'Instrumentation Schlumberger, Paris, France, a corporation of France

Filed Sept. 29, 1965, Ser. No. 491,227

Claims priority, application France, Sept. 28, 1964, 989,899

2 Claims. (Cl. 73—198)

1. A combination valve and flowmeter assembly comprising: a housing having at least one fluid ingress and at least one fluid egress port, a valve mounted for angularly displacement in said housing and including first and second fluid passages disposed at a sufficient angle with respect to one another that fluid flow between the fluid ingress and egress ports is restricted to one of said passages, a hollow shaft having an end thereof extending through said housing and connecting to said valve, said shaft being rotatable to effect angular displacement of said valve until one of said fluid passages allows fluid flow between said ingress and egress ports, a bladed flowmeter mounted in the first passage of said valve for rotation in response to fluid flow through said first passage, means mounted on said flowmeter for producing magnetic flux, and a magnetic flux detector mounted in said end of said shaft for detecting the flux received from said flowmeter and providing a signal indication as to the rate of flow of fluid through said first passage.

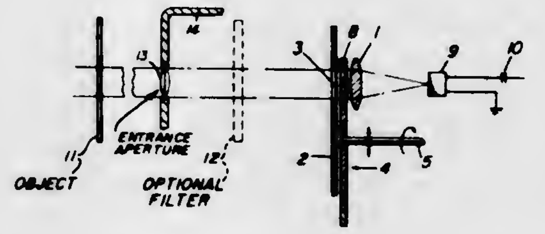


3,352,156
RADIOMETER FOR MEASURING A TEMPERATURE OF SEMI-TRANSPARENT MATERIAL

Richard C. Beitz, New Canaan, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed Feb. 12, 1965, Ser. No. 432,096

4 Claims. (Cl. 73—355)



1. In a radiometer for the measurement of temperature or thickness of semi-transparent substances having absorption bands in a predetermined radiation range, in which there is provided with an entrance aperture, a spectrally nonselective radiation detector and AC processing circuits therefor, the improvement which comprises

(a) a mask having an opening and chopper located closely adjacent to the mask and positioned so that the entrance aperture of the radiometer is imaged on the mask opening and on the plane of the chopper,

(b) the chopper comprising alternate blades of opaque material and material corresponding to that the temperature or thickness of which is to be measured, and

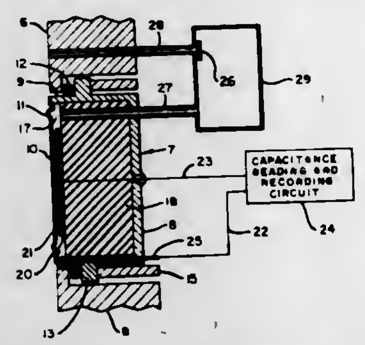
(c) the opaque blades projecting only so far into the beam through the mask opening that transmission of black body radiation through the restricted opening when the opaque blades are in the beam is equal to the transmission through the blades of the semi-transparent material, whereby radiation from objects of the semi-transparent material is chopped but uniform background is not chopped and so does not produce an AC signal from the detector.

3,352,157
INERTIA DIAPHRAGM PRESSURE TRANSDUCER

Henry L. B. Seegmiller, Los Gatos, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed June 17, 1965, Ser. No. 464,879

16 Claims. (Cl. 73—398)



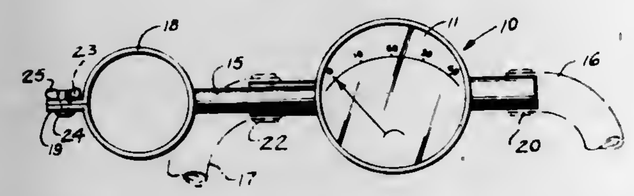
8. A pressure transducer comprising a housing structure, a diaphragm supported by said housing structure and adapted to be subjected on one side directly to a gaseous environment, said diaphragm being substantially freely supported whereby sudden movement of the diaphragm is resisted primarily only by the force of inertia, and means for measuring acceleration of said diaphragm.

3,352,158
PRESSURE GAUGE FOR PUMPS

Clarence Goebel, Rte. 2, Hermleigh, Tex. 79526

Filed Dec. 2, 1965, Ser. No. 511,201

4 Claims. (Cl. 73—420)



1. Pressure gauge for pump comprising an air pressure gauging device, a pipe coupling including a lateral extension and longitudinal extensions perpendicular to said lateral extension, said gauging device removably secured to said lateral extension of said coupling, a pump hose removably secured to said longitudinal extension of said coupling, a clamp including a horizontal, elongated stem projecting from said lateral extension, a flexible, circular ring secured to said stem and having a pair of ends extending therefrom for admitting a pump barrel into said ring, means for securing said pump barrel within said ring thus firmly securing said gauging device to the pump.

3,352,159
AUTOMATIC COTTON LINT SAMPLER

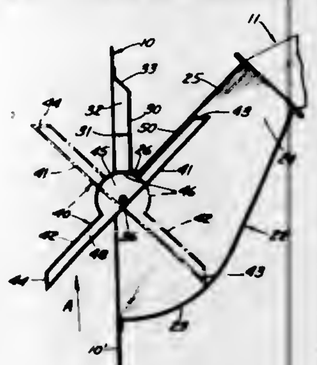
George B. Bruce and Harold R. Smalstig, Bakersfield, Calif., assignors to Brusmatic Inc., Bakersfield, Calif., a corporation of California

Filed Nov. 30, 1966, Ser. No. 597,837

5 Claims. (Cl. 73—422)

1. In combination with a lint flue for pneumatically conveying cotton lint from one station to another; a by-pass conduit joined at one end to one side wall of said lint flue; and a sample-packaging apparatus at the other end of said by-pass conduit, wherein the improvement comprises:

- a valve gate supported for swinging movement about a pivot axis intermediate its ends, said gate being swingable between an open position and a closed position;
- one end portion of said gate being disposed substantially flush with said one side wall of said lint flue downstream (with respect to the airflow) of said pivot axis when the gate is closed, said one end portion swinging to a forwardly inclined position upstream of said pivot axis when the gate is opened;



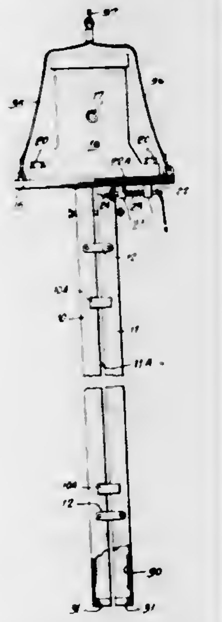
- the other end portion of said gate blocking said by-pass conduit when the gate is in said closed position, and said other end portion swinging back into said by-pass conduit so as to open the same to movement of air-borne lint through the by-pass conduit when the gate is in said open position; and
- means for swinging said gate between said open and closed positions.

3,352,160
CORING APPARATUS

Wadsworth W. Mount, Mountain Ave., Warren Township, Somerset County, N.J. 07060

Filed July 21, 1965, Ser. No. 473,657

3 Claims. (Cl. 73—425.2)



1. A device for obtaining a core sample comprising a plurality of elongated angular members positioned to form an elongated core receptacle between them, a plurality of links each pivotally mounted at each end on an adjacent member to hold the members in spaced-apart relation in one position and moving the members toward one another when the members are longitudinally moved with respect to one another to close the receptacle.

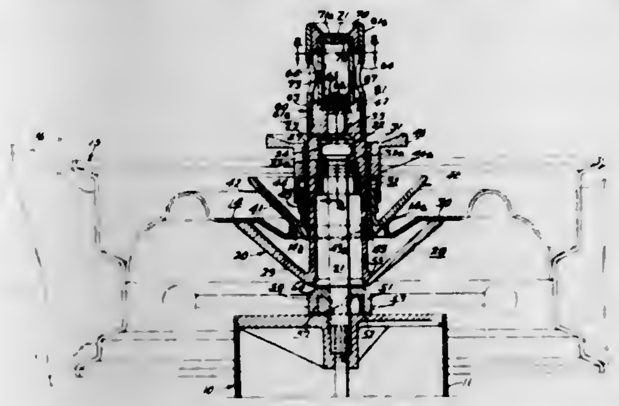
3,352,161
WHEEL BALANCING STAND

Don J. Marshall, Edgewater, Md., assignor to Goodall Semi-Metallic Hose & Mfg. Co., Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 4, 1965, Ser. No. 437,219

16 Claims. (Cl. 73—484)

1. A wheel balancing stand comprising: a base having an upright frame; an upstanding member mounted on and projecting exteriorly of said frame and having at its extended terminus a first bearing means; a spindle having means thereon to receive and engage the hub of a wheel, said spindle including a tubular casing to receive therein said upstanding member; a second bearing means in said tubular casing and registerable with said first bearing means; a locking centering member mounted on said casing superimposed of said spindle and having means to engage and center said hub relative to said tubular casing; a spindle lock mounted about said upstanding member intermediate said spindle and said frame, said lock having an upwardly facing engaging portion and said tubular casing having a downwardly facing portion for engagement with said engaging portion of said lock; an axially stepped cam track element and a cam follower element, one of said elements connected to said spindle lock and the other of said elements connected to said frame, said elements cooperable to raise and lower said spindle lock upon rotation of said spindle lock.

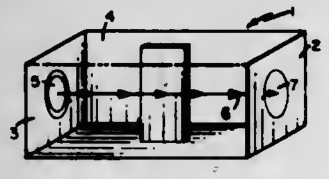


3,352,162
MEANS FOR AND METHOD OF DETECTING ROTATION

Thomas G. Hart, West Acton, Mass., assignor to Avco Manufacturing Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Oct. 29, 1958, Ser. No. 770,507

22 Claims. (Cl. 73—505)



5. In a rotation sensor, a medium, a pair of piezoelectric transducers associated with said medium for establishing a standing acoustic wave therein, piezoelectric detector transducer in communication with said medium, said detector transducer being parallel to the standing wave for detecting forces resulting from interaction between rotation and local movements of the medium due to the standing wave, said rotation having a component at right angles to said local movements, and electronic circuit means for driving said first named transducers and detecting the output of said detector transducer.

3,352,163
CONSTANT DAMPING GYRO SYSTEM

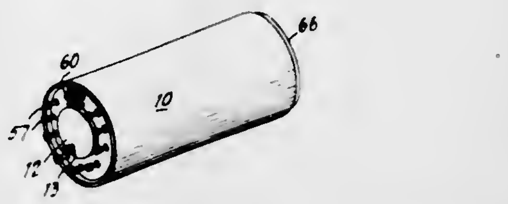
Howard W. Boothroyd, Amherst, Harry E. Ferry, Nashua, and James M. Buzzell, Northwood, N.H., and Thomas W. Nachazel, Chelmsford, Mass., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Oct. 24, 1963. Ser. No. 318,610

11 Claims. (Cl. 74—5.5)

1. In a fluid damped gyro system having a motor-gyro unit sealed within a gimbal and mounted for rotation within a housing containing damping liquid, and having means for maintaining substantially constant damping in said system for variations of temperature, said means comprising:

- (a) a paddle block secured within said housing at one end of said gimbal, and having a plurality of outwardly inclined arms at the end adjacent said gimbal, said arms in conjunction with said housing forming apertures for the flow of damping fluid,
- (b) said gimbal having a plurality of circumferentially spaced cut-outs to receive said arms, said cut-outs being wider than said arms and forming a pair of fluid cavities at each side of said arms, and permitting limited rotation of said gimbal,



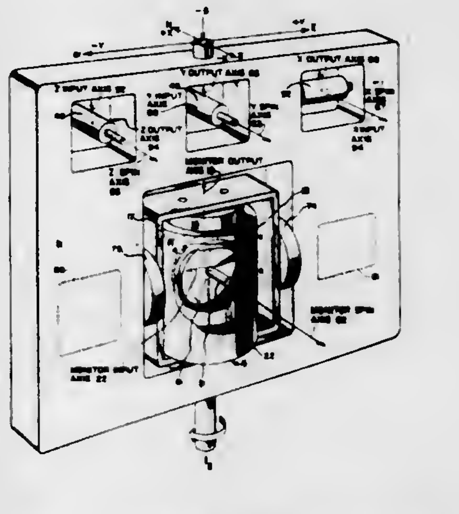
- (c) a plurality of gates longitudinally movable within said apertures for varying the sizes of said apertures, said gates being movable away from said gimbal to cause an increase in the size of said aperatures, and
- (d) means within said housing responsive to volume change in the damping fluid for moving said gates to vary the area of said apertures.

3,352,164
GYRO MONITOR ADAPTIVE MECHANIZATION

Leonard L. Rosen, Anaheim, Calif., assignor to North American Aviation, Inc.

Filed Feb. 23, 1965, Ser. No. 435,409

15 Claims. (Cl. 74—5.34)

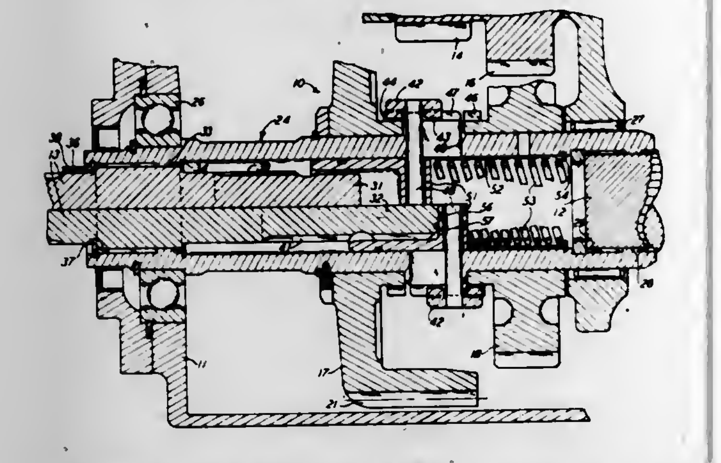


9. In combination with a three gyroscope stabilized platform having three mutually perpendicular input axes defining three degrees-of-angular freedom;

- a monitor gyroscope;
- mounting means for providing said monitor gyroscope with rotational freedom about two of said three input axes;
- positioning means for positioning said monitor gyroscope in any direction with respect to said input axes;
- means for applying a torque to said monitor gyroscope in response to the precession of said monitor gyroscope for nulling said precession to zero;
- means for determining the torque required to maintain said precession nulled and for providing a correction torque to each of the platform stabilizing gyroscopes as a function of said determined torques.

3,352,165
TWO-SPEED POWER-TAKE-OFF DRIVE

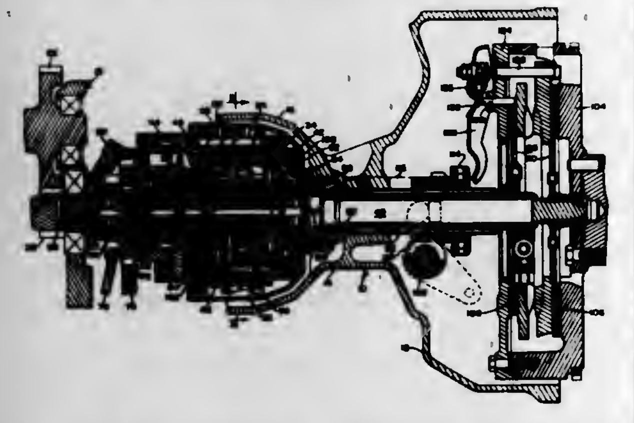
Albin L. Lee, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Oct. 4, 1965, Ser. No. 492,403
3 Claims. (Cl. 74—15.4)



1. A two-speed power-take-off drive for a tractor for selectively drivingly coupling to either one of two different speed implements driven by the tractor, comprising a set of gears including two different gears relatively rotatable within said set at two different speeds and including a clutch element shiftable between said two different gears for alternate meshing with said two different gears and correspondingly be rotatable at the two different speeds, a sleeve mounted on the axis of said clutch element and being alternately rotatably driven by said clutch element at said two different speeds, a power-take-off shaft releasably splined in said sleeve for rotation therewith and extending therefrom and being removable therefrom for end-to-end reversal in said sleeve and with one end of said shaft extending from the spline and into said sleeve a distance farther than the extent of the other end of said shaft into said sleeve and with the difference in the extent being at least the amount said clutch element shifts, and abutment means operative between said one end of said shaft and said clutch element such that when said shaft is splined to said sleeve said shaft shifts said clutch element and rotates at a speed in accordance with whichever end of said shaft is inserted into said sleeve.

3,352,166
VEHICLE PLANETARY TRANSMISSION WITH PTO

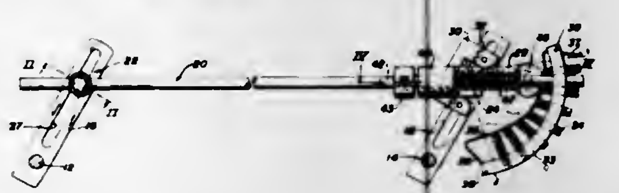
Gordon Le Roy Marquart, Jesup, and Richard Arlo Michael, Waterloo, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 9, 1966, Ser. No. 533,074
10 Claims. (Cl. 74—15.84)



1. A vehicle transmission, comprising: a housing, a planetary gear unit including an input sun gear, a coaxial relatively rotatable output gear, a carrier having planet gear means meshing with the sun and output gears, a clutch selectively engageable to lock up the unit for direct drive and a brake selectively engageable to lock the carrier to the housing for reduction drive; input and output shafts coaxial with and connected respectively to the input sun and output gears and extending in axially opposite directions from said unit; a hollow drive shaft coaxially loosely surrounding the input shaft; a hollow driven shaft coaxially loosely surrounding the output shaft; annular hollow means coaxially loosely surrounding the unit and coaxially interconnecting the drive and driven shafts; first means for driving the input shaft; and second means independent of the first means for driving the drive shaft at a selected speed irrespective of changes between direct and reduction drive in said unit.

3,352,167
MOTION TRANSMITTING LINKAGE WITH VARIABLE TRANSMISSION MEANS

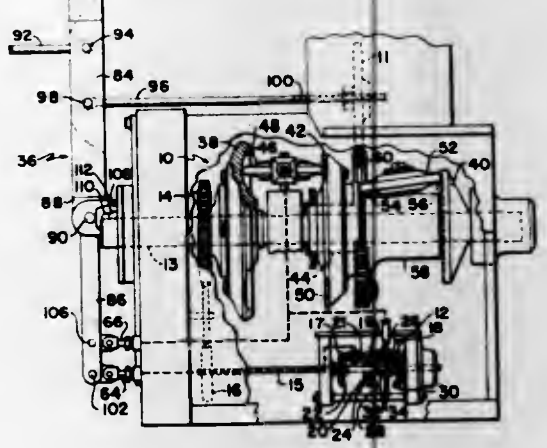
Harry K. Winters, San Rafael, Calif., assignor to Ray Oil Burner Co., San Francisco, Calif., a corporation of Nevada
Filed Sept. 23, 1965, Ser. No. 489,510
6 Claims. (Cl. 74—96)



1. In linkage for transmitting angular motion from one element to another which comprises a lever fixed on each element and a rod connecting said levers, the improvement which comprises a sliding connection between the rod and one lever, and means fixed to and supported entirely by the other lever and operable upon such angular motion to cause the rod to slide whereby its effective length will vary and the rate of motion of the two levers will vary.

3,352,168
MECHANICAL SERVO SYSTEM UTILIZING CASCADED DIFFERENTIAL TOROIDAL DRIVES

Edward P. Tomaszek, Shelton, Conn., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware
Filed Feb. 1, 1966, Ser. No. 524,104
8 Claims. (Cl. 74—190.5)



1. A servo system for positioning an output shaft in response to a positional input signal requiring minimal force, the combination comprising:

first and second variable ratio transmission differentials, each of said differentials having first and second disks angularly fixed to a rotating shaft, a third disk intermediate said first and second disks, said third disk being rotatably mounted with respect to said shaft, said first and third disks having opposed toroidal races, said second and third disks having opposed races, a set of adjustable rollers positioned in traction between the opposed races of said first and third disks, said adjustable rollers being adjustable on the axis of precession to vary the driving ratio between said first and third disks, a set of fixed rollers, and mounting means for mounting said set of fixed rollers in traction between the opposed races of said second and third disks, said mounting means being rotatable on said shaft;

positional input signal means coupling said positional input signal to said adjustable rollers of said first differential for rotating said set of adjustable rollers on said axis of precession;

a first output connection from said mounting means of said first differential to the set of adjustable rollers of said second differential to rotate said rollers on the axis of precession;

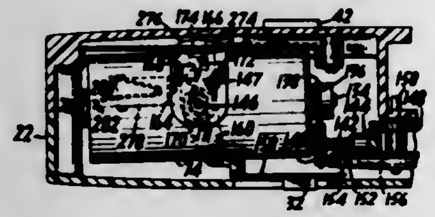
a second output connection from said mounting means of said second differential to said output shaft for positioning said output shaft;

a first feedback connection from said mounting means of said first differential to said positional signal input means tending to null said positional input signal; and

a second feedback connection from said mounting means of said second differential to said positional input signal means tending to null said positional input signal.

3,352,169
REVERSIBLE TWO SPEED TAPE DRIVE

Irwin L. Delin, Southport, Conn., Daniel P. Doncaster, Rye, N.Y., and Robert E. Moll, Fairfield, Conn., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Sept. 26, 1962, Ser. No. 226,234
11 Claims. (Cl. 74—194)

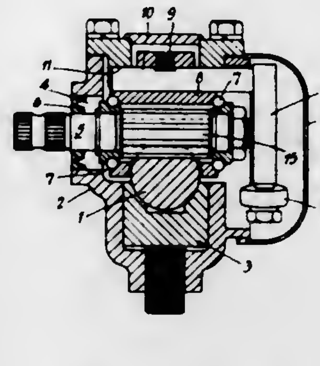


1. A drive, comprising a reversible drive motor, first and second circular drive members driven by the motor, a first driven disk positioned adjacent to the first circular drive member and a second driven disk positioned adjacent to the second circular drive member, a shaft coupled to both of the first and second driven disks, means for selectively urging one of the circular drive members into contact with its associated driven disk and the other of the circular drive members into contact with the other driven disk, whereby the shaft will be driven at one of two different speeds and means for selectively reversing the motor concurrently with said urging so that a change in speed of rotation of the shaft is optionally accompanied by a reversal of the direction of rotation of the shaft.

3,352,170
POWER ASSISTED STEERING OR LIKE CONTROL GEAR

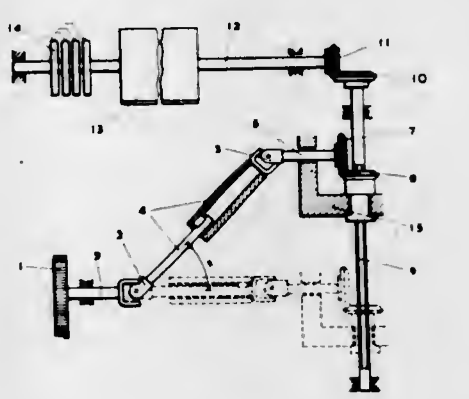
Frederick John Adams, Campton, near Shefford, England, assignor to Hydrosteer Limited, Luton, England, a British company
Filed Mar. 28, 1966, Ser. No. 537,836
Claims priority, application Great Britain, Apr. 8, 1965, 14,911/65
8 Claims. (Cl. 74—388)

1. A steering mechanism of the rack and pinion kind in which the reaction between the rack and the pinion in a steering box through which the rack slides is utilized to operate a valve for controlling hydraulic power assistance to the steering, comprising bearings straddling said rack and in which said pinion is mounted, a rocking element carrying said bearings, a pivot pin forming a bearing between said rocking element and said steering box, a saddle in said steering box for maintaining engagement between said rack and said pinion, an articulated connection connected to said valve, spaced from said pivot pin and affording angular freedom about an axis parallel to that of said pivot pin, and transmitting means for transmitting the rocking movements of said rocking element and said pinion about the axis of said pivot pin, caused by the reaction between said rack and said pinion, to said articulated connection for transmission thereby to said valve.



3,352,171
DRIVE MEANS FOR WELDING BLADES IN WELDING APPARATUS

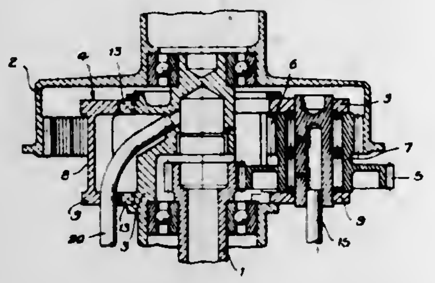
Heinz Skiera, Teipzig, Germany, assignor to Veb Druckmaschinenwerke Leipzig, Leipzig, Germany
Filed July 15, 1965, Ser. No. 472,252
5 Claims. (Cl. 74—393)



1. A drive mechanism for rotary tools for cutting and sealing a moving web of material, said drive mechanism comprising, in combination, a driving gearwheel, an input shaft connected to said driving gearwheel, an intermediate shaft variable in length, a first universal joint connecting said input shaft to said intermediate shaft, a fork end in the first universal joint, an output shaft, a second universal joint connecting said intermediate shaft to said output shaft, a fork end in the second universal joint, the fork ends of said first and second joints on said intermediate shaft being mutually perpendicular, a tool shaft, and a gear train connecting said output shaft to said tool shaft so that the angle of deflection between said intermediate shaft and said output or input shaft can be varied; whereby, when said angle of deflection is not zero the angular speed of said rotary tool is the same as the speed of the web of material while said rotary tool is operating thereon, and is driven between operations at a variable angular speed the amplitude of which is proportional to the angle of deflection.

3,352,172
PLANETARY GEARING WITH A MOVABLE PLANETARY CARRIER

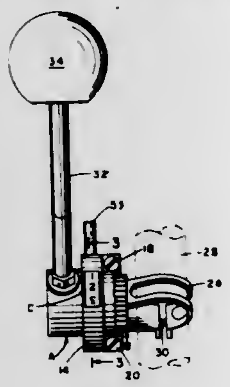
Heinrich Teichmann, Geiselbullach, Germany, assignor to M.A.N. Turbo GmbH., Munich, Germany
Filed Nov. 4, 1965, Ser. No. 506,369
Claims priority, application Germany, Nov. 6, 1964, B 79,230
4 Claims. (Cl. 74—410)



1. In a transmission gear system having a drive gear, a driven gear, and a pair of secondary gears intermediate the drive gear and driven gear, the improvement comprising a frame carrying said secondary gears on radially opposite sides of said drive gear, and said frame being mounted for movement with respect to a first plane lying on the axes of said pair of secondary gears and also for movement with respect to a second plane extending at a right angle to said first plane and parallel to said axes.

3,352,173
VARIABLE TRANSMISSION GEAR SHIFT FOR BICYCLES

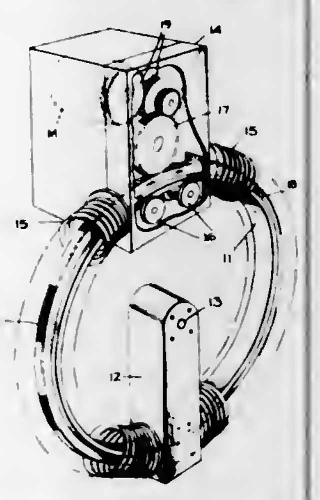
Elmer E. Freeland, 4500 Belle Grove Road, Baltimore, Md. 21225
Filed Sept. 23, 1965, Ser. No. 489,592
2 Claims. (Cl. 74—473)



1. A mounting assembly for the operating lever of a bicycle gear shifting mechanism comprising:
  a securing means for fastening the assembly to a bicycle frame,
  a cylindrical member fixed to said securing means, a two part housing having an inner cylindrical portion fitting and adapted to be rotatably adjustable on said cylindrical member and to be subsequently tightly clamped in adjusted position thereon, means to hold the two part housing together and to clamp the same on cylindrical member, the two part housing having an internal groove therein, an inner member rotatably mounted in said groove and having a portion extending outwardly of said two part housing,
  a hand lever extending from said outwardly extending portion of said inner member for rotating the latter in said two part housing, and
  means for attaching an operating cable to said inner member for reciprocating the same upon rotation of side inner member.

3,352,174
PIVOTAL MOUNTINGS OR CONNECTIONS

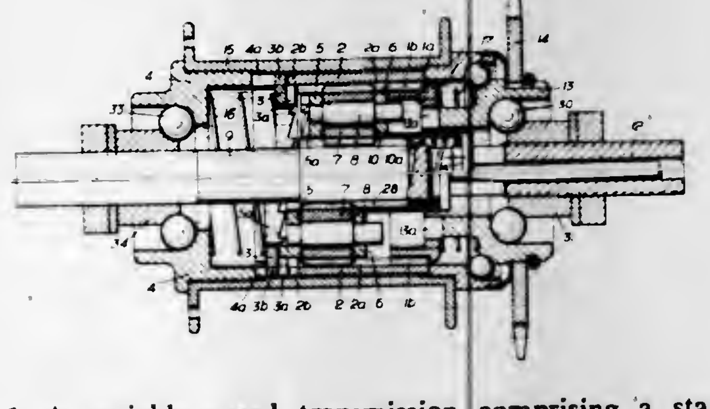
Ronald Frederick West, Aldershot, England, assignor to Minister of Aviation in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed June 3, 1965, Ser. No. 461,122
Claims priority, application Great Britain, June 5, 1964, 23,457/64
16 Claims. (Cl. 74—608)



1. Pivotal connecting means for connecting two units together for relative angular movement, comprising a housing for attachment to one of the two units, guide means in the housing, a circularly curved rigid rail for attachment to the other of the two units, the rail extending through the housing and having concave and convex surfaces which bear firmly outwardly and inwardly upon the guide means in the housing, the rail and the housing being movable relative to another and the guide means constraining that relative movement to an angular movement about the axis or centre of the circular curve of the rigid rail, and two lengths of extensile and contractile flexible metallic bellows which respectively extend fluid-tight over the circularly curved rigid rail between the opposite sides of the housing and parts of the rail which are circumferentially equidistant from the housing when the latter is at an intermediate position on the rail.

3,352,175
SPEED-CHANGE GEARING (GEARING HUB) FOR BICYCLES

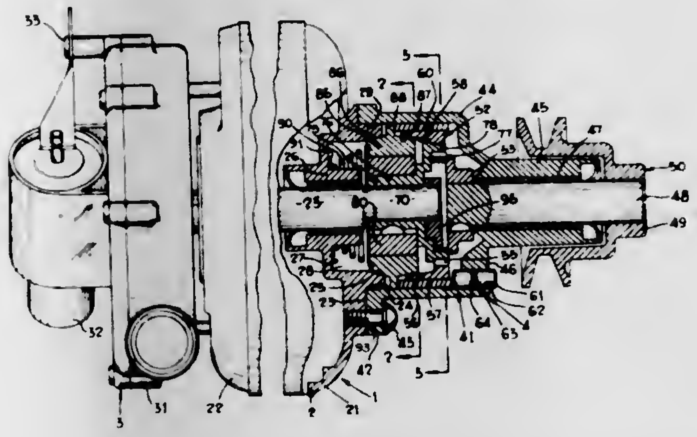
Eduard Bergles, Vaterdorfstrasse 42, Graz, Austria
Filed Apr. 19, 1965, Ser. No. 449,007
Claims priority, application Austria, Apr. 20, 1964, A 3,452/64
5 Claims. (Cl. 74—750)



1. A variable speed transmission comprising a stationary sun gear, a planetary gear assembly including support means rotatable about, and movable axially relative to said sun gear and a plurality of planetary gears rotatable in said support means and meshing with said sun gear to orbit about the latter, an axially fixed ring gear rotatable about said sun gear and having internal teeth meshing with said planetary gears, means for moving said planetary gear assembly axially relative to said sun gear to a selected one of first, second and third positions which respectively correspond to low, intermediate and high speed transmission ratios, driving and driven hub assemblies mounted for rotation independently of each other about the axis of said sun gear, said driving hub assembly including a driving member which is rotatable about said axis and displaceable in the direction thereof, said driven hub assembly including a driven member which is rotatable about said axis and displaceable in the direction thereof, first coupling means rotatably coupling said ring gear to said driving hub assembly by way of said driving member so long as said planetary gear assembly is in either of said first and second positions and being disengaged in response to axial displacement of said driving member by movement of said planetary gear assembly to said third position, second coupling means rotatably coupling said support means of the planetary gear assembly to said driving hub assembly only upon movement of said planetary gear assembly to said third position, third coupling means rotatably coupling said support means of the planetary gear assembly to said driven hub assembly only upon movement of said planetary gear assembly to said first position, and fourth coupling means rotatably coupling said ring gear to said driven hub assembly by way of said driven member so long as said planetary gear assembly is in either of said second and third positions and being disengaged in response to axial displacement of said driven member by movement of said planetary gear assembly to said first position.

3,352,176
LAUNDRY EQUIPMENT POWER PACKAGE

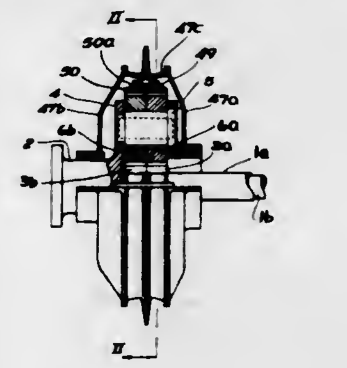
Robert W. Brundage, Belnor, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Apr. 30, 1965, Ser. No. 452,194
9 Claims. (Cl. 74—785)



2. A laundry equipment power package comprising a transmission having a shaft, and an electric motor connected to said transmission to drive said shaft, said transmission comprising an internally toothed ring gear and an externally toothed pinion within said ring gear, said pinion and ring gear having different numbers of teeth and being of a size and eccentric with respect to one another in an amount sufficient to cause teeth of the pinion to enmesh with teeth of the ring gear at one arc and to be unmeshed at the diametrically opposite arc; means driven by said motor and rotatably connected to one of said ring gear and pinion for driving said one of the ring gear and pinion eccentrically with respect to the other and with respect to the transmission shaft; means for selectively braking the other of said pinion and ring gear whereby to cause said driven one of the ring gear and pinion to rotate with respect to the braked one at a rate proportionate to the numbers and differences in numbers of teeth of said pinion and ring gear; and motion-translating means operatively connecting the said driven one with the transmission shaft for converting the eccentric motion of the driven one with respect to the transmission shaft to rotary motion of said shaft, said motion-translating means comprising a transmission plate concentric with the transmission shaft, and pins on one of said transmission plate and driven one of the pinion and ring gear, the other of said transmission plate and driven one having holes positioned to receive said pins and of a size with respect to said pins to accommodate the eccentricity of the driven one.

3,352,177
EPICYCLIC GEARS

Peter Herbert Cleff, Cyril Beavers, and William Walton, all of Wallsend Research Station, Wallsend-on-Tyne, England
Filed Mar. 12, 1965, Ser. No. 439,263
Claims priority, application Great Britain, Mar. 17, 1964, 11,299/64; Sept. 1, 1964, 35,778/64
8 Claims. (Cl. 74—801)



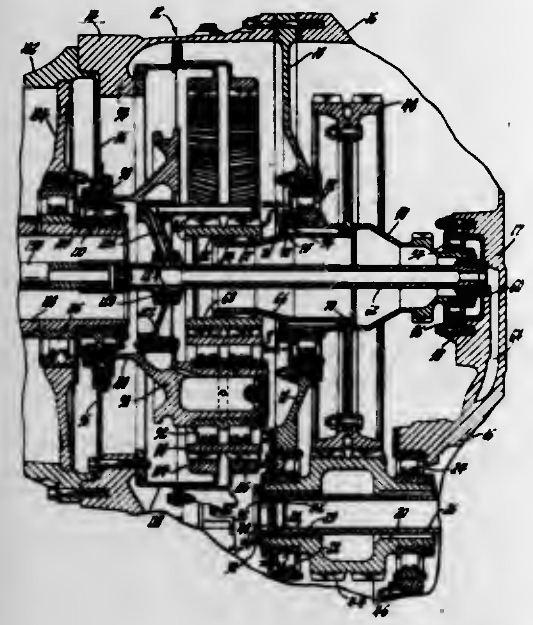
1. In an epicyclic gear including a fixed structure, a sun pinion, an internally toothed annulus coaxial with said pinion, a planet carrier coaxial with said pinion and annulus, a plurality of planet wheels journalled on said planet carrier and meshing with both said sun pinion and said annulus and means retraining a component constituted by one of said three members, namely said sun pinion, annulus and planet carrier from relative rotation in relation to another component constituted by said fixed structure, the improvement which consists in said restraining means comprising a toothed sprocket concentric with and fast to one of said two components and a plurality of pins in the form of cantilevers fixed in the other of said components with their axes parallel with the axis of the component and their projecting ends engaging between the teeth of said sprocket, said pins being slightly flexible under the working load, thereby affording the one component two degrees of freedom transverse to the axis thereof sufficient to ensure equalisation of the load between the several planet wheels while maintaining the necessary circumferential restraint.

3,352,178
PLANETARY GEARING

Milton F. Lindgren and Victor W. Peterson, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 15, 1965, Ser. No. 507,849
8 Claims. (Cl. 74—801)

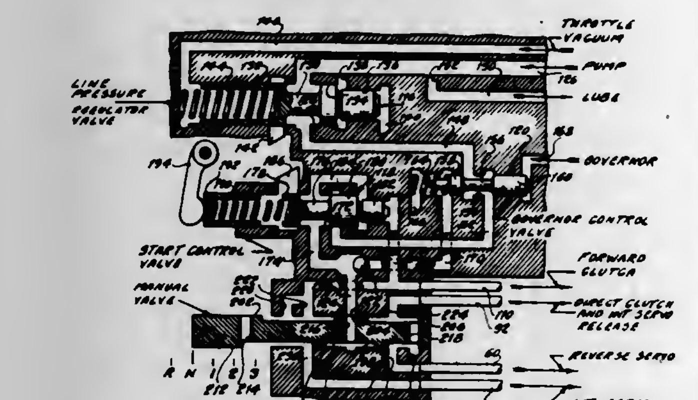
1. A planetary gear set comprising, in combination, a housing having a relatively thin, flexible radially disposed wall, a planet carrier member journaled in said wall, a plurality of planet gears rotatably mounted on said carrier, said planet gears being axially movable with respect to said carrier, a ring gear meshing with said planet gears, means mounting said ring gear in said housing coaxially with said planet carrier and in an axially fixed position with respect to said housing, a sun gear meshing with said

planet gears, and further means mounting said sun gear in said housing coaxially with said planet carrier and with limited freedom of axial movement with respect to said housing whereby said thin, flexible wall deflects axially to allow said carrier to move axially with respect to said housing without loading the teeth of said gears.



3,352,179
MULTIPLE SPEED RATIO POWER TRANSMISSION SYSTEM WITH SEMI-AUTOMATIC CONTROLS

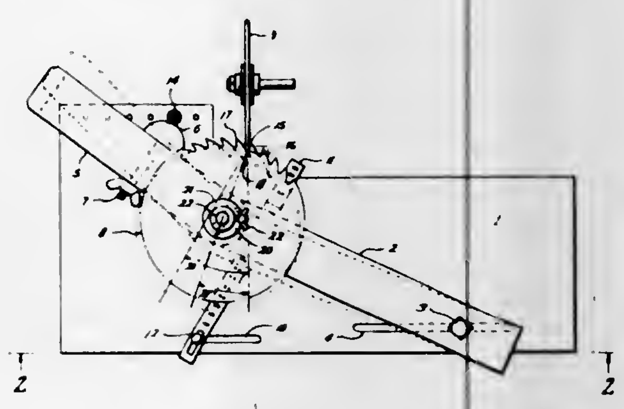
Richard L. Leonard, Farmington, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,489
6 Claims. (Cl. 74—856)



1. In a semi-automatic power transmission mechanism for use in a vehicle driveline having an engine and a driven member, multiple speed ratio gearing defining plural torque delivery paths between the engine and said driven member, clutch and brake servo means for controlling the relative motion of the elements of said gearing, a fluid pressure source drivably connected to said engine, passage structure interconnecting said pressure source and said servo means, a driver controlled manual valve means situated in and partly defining said passage structure for distributing selectively control pressure to said servo means thereby establishing speed ratio changes, a driver controlled start control valve means in fluid communication with said manual valve means for controlling pressure distribution to said servo means and increasing pressure of the fluid distributed to said servos through said passage structure in accordance with driver torque demand, a source of a governor pressure signal that is proportional in magnitude to the driven speed of said driven member, and a branch passage extending from said pressure source to said manual valve means, said branch passage being defined in part by a movable governor control valve, said governor control valve communicating with said governor pressure signal source and shiftable by said governor pressure signal to a position that establishes communication between said manual valve means and said pressure source when the driven speed exceeds a predetermined value.

3,352,180
CIRCULAR SAW GUMMING AND TOOTH SHAPING APPARATUS

Theo Rasmussen, 5217 Ave. P, Galveston, Tex. 77550
Filed Aug. 9, 1965, Ser. No. 478,152
3 Claims. (Cl. 76—42)



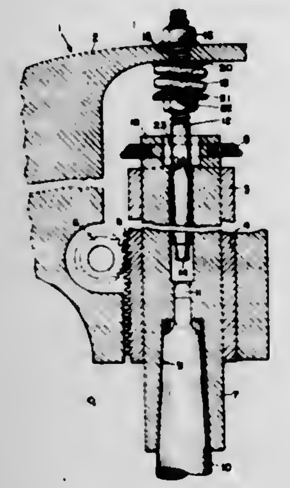
1. An apparatus for jointing, gumming and shaping the saw teeth of a circular saw blade which comprises in combination a portable base plate; adapted to be clamped into position at a location adjacent to a powered driven grinding wheel; a circular saw blade supporting structure mounted on said base plate and including an elongated first arm adjustably attached at one end thereof to said base plate and rotatably attached at the other end thereof to an elongated second arm, said second arm having a semi-circular key piece attached thereto in a plane parallel to said base plate and at the other end of said second arm from the said rotatable attachment to said first arm, and means for clamping the center of said circular saw blade at the point of attachment between said first arm and said second arm; a guide pin attached to said base plate in a position normal to the plane of said base plate and located adjacent to said key piece; adjustable means for stopping the movement of said first arm toward said grinding wheel at a predetermined position; means for supporting the perimeter of said circular saw blade on said base plate during grinding of the teeth of said circular saw blade by said grinding wheel at the point of contact between the said saw blade and said grinding wheel.

3,352,181
TOOL EJECTOR

George B. Hilbrunner, 1215 Howe Road, Kent, Ohio 44240
Filed Aug. 25, 1965, Ser. No. 482,359
2 Claims. (Cl. 77—55)

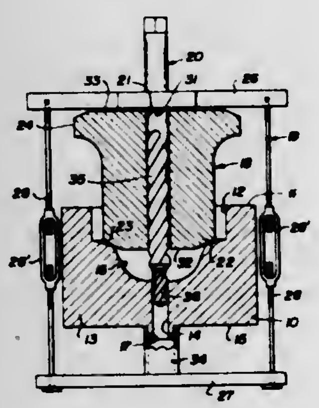
1. A tool ejector device in a machine tool including a frame, a sleeve received for vertical reciprocal movement in said frame, means for causing vertical movement of the sleeve with relation to the frame, a spindle journaled in said sleeve whereby this spindle rotates in relation to said sleeve but is moved vertically therewith, said spindle having a tool receiving socket at one end and having a longitudinally extending bore which connects the other end thereto, the improvement characterized by a vertically extending knockout rod fixedly carried by said frame and being slidably received by the bore in said spindle, said rod having a threaded section provided on its upper end engaging a tapped hole in said frame whereby rotation of said rod varies the relation of the rod with the frame and varies the axial position of the rod relative to the

spindle, a spring secured in encompassing relationship to said rod between said frame and the upper end of said spindle, the upper end of the spring abutting against said frame whereby as said spindle is moved upwardly, the upper end of said spindle being adapted to operatively engage the lower end of said spring whereupon further upward movement of the spindle against the spring affects compression of said spring to allow the lower end of said rod to extend into the tool receiving socket of said spindle.



3,352,182
VALVE GUIDE REAMING ASSEMBLY

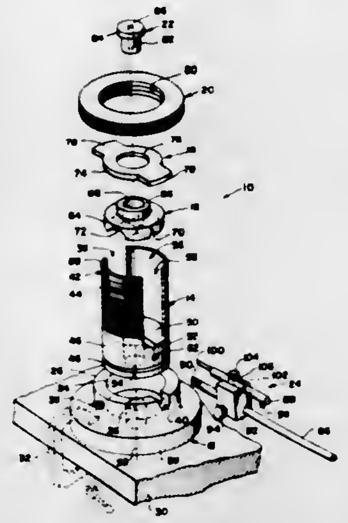
Vernon G. Norum, Box 243, Rosetown, Saskatchewan, Canada
Filed Feb. 23, 1965, Ser. No. 434,464
Claims priority, application Canada, Feb. 29, 1964, 896,821
4 Claims. (Cl. 77—62)



1. An assembly for reaming integral valve guides in a cylinder head with a valve guide drill which includes a pilot guide portion on the guide engaging end thereof, said head including a valve seat, a valve guide and a spring retaining collar on the outer side of said head surrounding said valve guide; said assembly comprising in combination a valve seat engaging block, said block having a truncated cone-shaped facing formed on one end thereof engageable with the associated valve seating, a concentrically positioned axially located guide drilling formed through said block, and clamp means for coacting between said block and the cylinder head for clamping said block in position on the associated valve seating, said block being substantially cylindrical and being provided with a truncated cone-shaped facing on each end thereof, the diameter of one of said facings being seized to engage associated valve seats of one size, the diameter of the other of said facings being seized to engage associated valve seats of another size.

3,352,183
DRILL JIGS

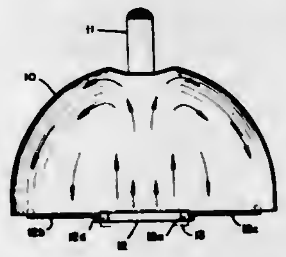
Lewis D. Howsare, 1201 Frank Ave., Jeannette, Pa. 15644
Filed Oct. 22, 1965, Ser. No. 500,644
11 Claims. (Cl. 77—62)



1. A drill jig for rigidly supporting rod-like members with the central axis thereof substantially perpendicular to the central axis of a drill, comprising a base; a housing projecting from said base, having a central axis and side walls and a bottom wall adjacent said base, cooperating to define a cavity, said side walls having slots formed therein which terminate adjacent said bottom wall; a clamping member disposed within said cavity and having at least one groove formed in that face thereof adjacent said bottom wall, said clamping member and said groove cooperating with said bottom wall to rigidly clamp a rod-like member extended through said slots with the longitudinal axis thereof substantially perpendicular to said central axis; flange members projecting from said clamping member into said slots; means for applying a force on that face of said flanges remote from said rod-like member to affect rigid clamping of said rod-like member between said clamping member and said bottom wall; and means detachably carried by said clamping member for guiding a drill along said central axis and hence through the longitudinal axis of said rod-like member.

3,352,184
SAFETY CHANNEL FOR RADIATOR OVERBOIL

Manuel A. Panzardi, 315 W. Palmer Glen, Glendale, Calif. 91204
Filed May 3, 1965, Ser. No. 452,748
3 Claims. (Cl. 81—3.1)



1. In a device for providing a safety channel for automotive radiator overboil when the radiator cap is removed, the combination of a hollow body having a handle attached to the top thereof, said hollow body having a bottom member attached thereto, said bottom member having a hole therein having a shape corresponding to the peripheral shape of the radiator cap so that said bottom member may be placed over said cap and rotated by rotating said hollow body, said hole communicating with the interior of said hollow body and of sufficient size to freely pass said radiator cap therethrough, said hollow

body having a diameter substantially greater than the greatest diameter of the radiator cap so that when the radiator cap is released from the radiator by rotating said hollow body, the radiator cap may be ejected thereinto by fluid pressure in said radiator.

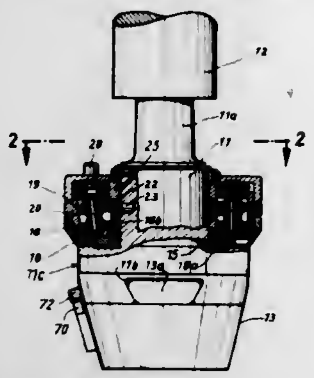
3,352,185
BORING AND FACING HEAD

Emil Wohlhaupter, Erwin Wohlhaupter, and Fritz Eyring, Frickenhausen, Germany, assignors to Emil Wohlhaupter u. Co., Frickenhausen, Wurttemberg, Germany

Filed Oct. 13, 1965, Ser. No. 495,606

Claims priority, application Germany, Oct. 16, 1964, W 37,774

15 Claims. (Cl. 82—2)



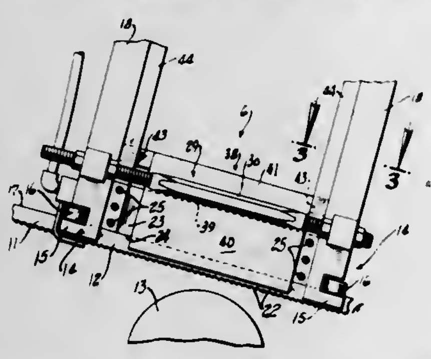
1. A boring and facing head having a shank for driving connection with a machine tool spindle, which includes: a tool carriage adapted to receive and support a tool and movable in a direction transverse to the axis of rotation of said head, and planetary gear transmission means interposed between said shank and said carriage and operable to actuate the latter, said planetary gear transmission means including first central gear means drivingly connected to said shank for rotation therewith and also including second central gear means rotatable relative to said shank, said planetary gear transmission means furthermore including a plurality of planetary gear sets, each of said gear sets having a first planetary gear in continuous mesh with said first central gear means and also having a second gear in continuous mesh with said second central gear means while selectively being movable into and out of driving engagement with the first planetary gear pertaining to one and the same gear set.

3,352,186
BLADE GUIDING AND SUPPORTING STRUCTURE FOR BAND SAWS

Charles E. Cleland, Minneapolis, Minn, assignor to Continental Machines, Inc., Savage, Minn., a corporation of Minnesota

Filed Feb. 11, 1966, Ser. No. 534,272

21 Claims. (Cl. 83—201.15)



1. In a band saw machine having a cutting head with an endless flexible saw band thereon providing a cutting blade one stretch of which is constrained to endwise linear travel through a cutting zone:

(A) saw guide means mounted on the cutting head and engageable with lengthwise spaced portions of said stretch of the saw band to define the cutting zone, and whereby that portion of the band between the guide means constitutes the cutting span of the blade;

(B) a substantially flat backer band having a thickness no greater than that of the toothed edge of the blade, a length substantially corresponding to that of the cutting span of the blade, and a width at least as great as that of the blade;

(C) means mounting the backer band on the cutting head in coplanar relation with the cutting span of the blade and in edgewise engagement with the back edge thereof so that the reaction force between the cutting edge of the blade and work being sawed is transmitted to and borne by the backer band and the latter thus limits edgewise flexure of the cutting span of the blade;

(D) an entering guide having spaced jaws to closely flatwise embrace substantial portions of the backer band and the cutting span to hold the same in coplanar relation during entry of the cutting edge of the blade into work being sawed;

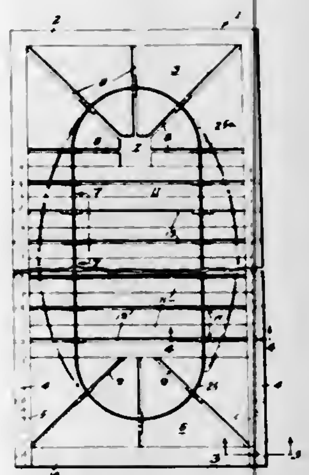
(E) and means fixed with respect to the cutting head mounting the entering guide for movement relative to the backer band and the cutting span in directions substantially normal to the back edge of the cutting span of the blade but in the flat plane of the backer band so that the latter can follow the cutting span of the blade out of the space between the jaws as sawing through a work piece progresses.

3,352,187
INFINITELY VARIABLE HOLDER FOR FLEXIBLE KNIVES, MARKERS OR GUIDES

Elwin T. Knight, 7433 Hennessy Road, Jacksonville, Fla. 32210

Filed Jan. 3, 1966, Ser. No. 518,494

5 Claims. (Cl. 83—657)



1. An infinitely variable holder for flexible knives, markers or guides, comprising in combination,

(a) A rectangular frame including a fixed upper portion, and a separable bottom side, there being a longitudinal groove in each inside face of each side of said frame, said upper portion having a centrally located, square cutout at its lower edge and a series of symmetrically arranged, dove-tail grooves radiating from said cutout,

(b) A lower portion having tongues along its sides and slidable in said grooves in said sides, there being a series of symmetrically arranged, dove-tail grooves radiating from its upper edge whereby when said lower portion is slid up in said frame to abut said upper portion, said upper and lower portions form a square and said dove-tail grooves in said lower portion will also radiate from said square cut,

(c) A series of spacing elements, each one having tongues along its sides and adapted to slide in said grooves in said sides of said frame, there being a dove-tail groove extending from side to side of each spacing element and disposed medially therein,

(d) A series of adjustable, sliding blade holders adapted to slide in said dove-tail grooves in said upper and lower portions and said spacing elements,

(e) A flexible cutting blade having a knife edge adapted to be detachably engaged in said sliding blade holders whereby said blade may be bent and held in varying forms by moving and setting said sliding holders along said dove-tail grooves, and

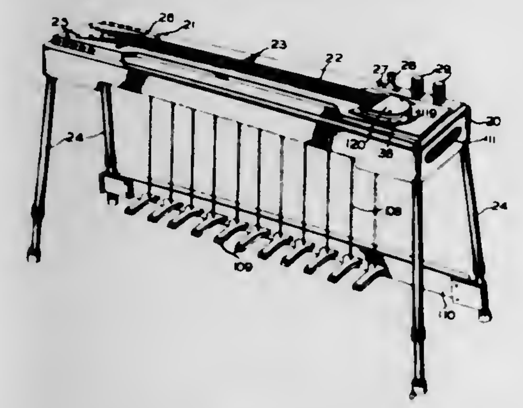
(f) Means in the sides of said frame for securing said bottom side, said lower portion and said spacing elements in preselected positions in said frame.

3,352,188
STRING MOUNTING FOR STEEL PEDAL GUITARS

Clarence L. Fender, Fullerton, Calif., assignor, by mesne assignments, to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York

Filed July 17, 1963, Ser. No. 295,641

15 Claims. (Cl. 84—312)



1. In combination with a lute-type instrument having a plurality of strings, a device for mounting and controlling the tension of said strings comprising
  a rotatable member for each of said strings,
  a fixed fulcrum on said instrument having an edge transversely of said strings,
    each rotatable member being pivotal about said edge,
    each rotatable member having an arcuate surface defined by a cylindrical segment having its axis at said edge,
    each string being wrapped around the arcuate surface of the rotatable member therefor,
      and connected to said rotatable member inwardly of said arcuate surface,
  and means for selectively rotationally positioning said rotatable members about said edge.

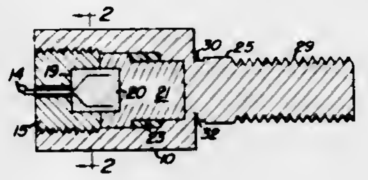
3,352,189
EXPLOSIVE BOLT

Karl R. Brown, Lantz, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed Apr. 29, 1966, Ser. No. 547,077

4 Claims. (Cl. 85—1)

1. A gas sealed propelling arrangement comprising a cylindrical housing and bolt separated by an integral web, said cylindrical housing having a longitudinal coaxial partially threaded bore extending partially therethrough, an externally threaded cylindrical propellant housing encompassed within the cylindrical housing and suitably contoured so as to be compatible with the internally threaded section of the cylindrical housing, said propellant housing having a longitudinal coaxial bore extending therethrough which terminates into a hollowed end, a cylindrical plunger having a reduced diameter section encompassed within the unthreaded section of the cylindrical housing, said cylindrical plunger having a hollowed end abutting the hollowed end of the propellant housing so as to form a well, the other end of said cylindrical plunger abutting the integral web, sealing means positioned circumferentially on the reduced section of the cylindrical plunger, an explosive charge positioned within the well, electric leads passing through the bore of the propellant housing and embedded in the explosive charge in such a manner that the charge is detonated when an electric current is caused to flow through the leads.

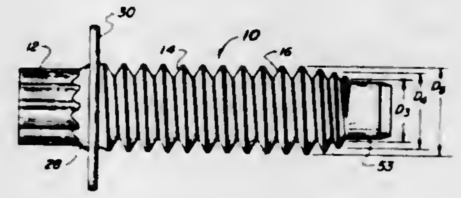


3,352,190
FASTENER HAVING EXTRUDED DRIVING HEAD

Raymond H. Carlson, Rockford, Ill., assignor to Textron Industries, Inc., Rockford, Ill., a corporation of Delaware

Filed Feb. 7, 1966, Ser. No. 525,564

2 Claims. (Cl. 85—9)



1. A fastener device including an elongate, threaded shank portion and:

(a) a longitudinally extruded driving head at one end of said shank portion;

(b) the perimeter of said head being defined by a multiplicity of alternating, convexly curved ribs and intermediate, concavely curved flutes;

(c) said ribs being work-hardened by the extrusion of said head;

(d) the major diameter across said ribs being substantially equal to the pitch diameter of said threaded shank and less than the crest diameter of the threads on said shank;

(e) the minor diameter across said flutes being greater than the root diameter of the threads on said shank whereby said ribbed head has a torsional strength greater than that of the threaded portion of said fastener.

3,352,191
DOWEL

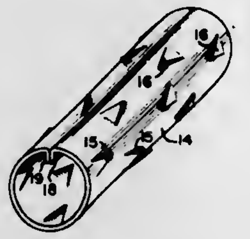
Allan H. Crawford, 72 11th Ave., Amsterdam, N.Y. 12010

Filed Apr. 23, 1965, Ser. No. 450,393

2 Claims. (Cl. 85—14)

2. A one-piece dowel comprising a longitudinally slit tubular shaped, resilient member, said member having a first edge portion along one side of the slit extending at least partially on each side of the transverse centerline of the dowel and projecting substantially radially towards

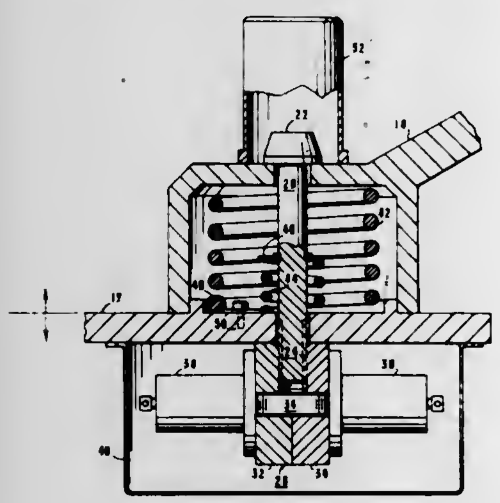
the interior thereof, said first edge portion defining a substantially planar flange for abutting relationship with a second edge portion and thereby prevent collapse of the tubular member upon its insertion into an opening in a workpiece, said member having two groups of inclined projections projecting from an outer surface thereof, one group of said projections being confined to one longitudinal half of the member and projecting in a direction toward



the end of said member remote from said one half, the other group of said projections being confined to the other half of the member and projecting in a direction toward the other end of said member, said projections having penetrating tips for impinging members to be joined together, at least one of said projections having its distal end located at a point between and equidistant or nearly so from said ends to define means for locating the dowel in a pair of holes in members to be joined.

3,352,192
SPLIT NUT SEPARATION SYSTEM

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention by William F. Carr, Santa Monica, Calif.
Filed Oct. 26, 1966, Ser. No. 590,147
7 Claims. (Cl. 85—33)

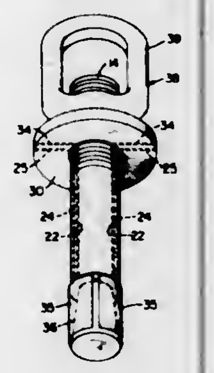


1. A separation system for attaching two objects together in a manner so that they can be separated comprising a separation bolt having a thread at one end, openings in said objects through which said bolt passes, a split nut comprising two halves having threads in opposite faces of said two halves for engaging the threads on said bolt, cross bolt means holding said two halves together, said separation bolt being threaded into the threads of said split nut for holding said two objects together, compression spring means for yieldably biasing said two objects apart against the restraining force of said separation bolt, and means for separating said split nut halves against the retaining force of said cross bolt means to release said separation bolt and to enable said separation spring to separate said two objects.

3,352,193
REMOVABLE ANCHOR BOLT

Lester Lerich, 30 Morningside Drive, Lakewood, Colo. 80215
Filed Oct. 18, 1965, Ser. No. 496,902
3 Claims. (Cl. 85—79)

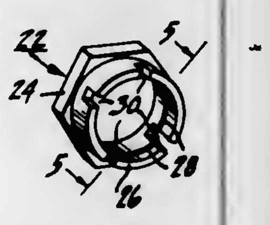
1. An anchor bolt adapted for releasable wedging engagement in a bolt hole comprising a generally cylindrical shank of uniform diameter including a threaded portion at one end and a plurality of wedge-receiving recesses adjacent to the opposite end to be inserted into the hole with an external relatively shallow groove extending rearwardly from each recess lengthwise of said shank and along the threaded portion thereof, an expansion wedge member normally disposed in flush relation within each recess, each wedge member being movable forwardly from the recess into wedging engagement with the wall of the bolt hole and being further movable rearwardly away from wedging engagement into retracted relation within its respective recess, a rearwardly extending narrow elongated guide rod for each of said expansion wedge members, being slidably disposed in a groove and each terminating in a radially and outwardly projecting end portion intermediately along the threaded portion of said shank, and releasable actuating means on the threaded portion of said shank externally of the bolt hole



including a relatively flat washer provided with radial bores therein being spaced and aligned for releasable insertion of the connecting end portions of the guide rods, and a locking member threadedly connected to the threaded portion of said shank behind said washer whereupon tightening said locking member to urge said shank in the direction of withdrawal from the hole said washer is cooperative with said guide rods to urge said expansion wedge members outwardly into wedging engagement with the hole and whereupon loosening of said locking member away from said washer and forcing said shank inwardly at a limited distance through the hole said washer is engageable to retain said expansion wedge members in flush relation within the recesses for removal of said bolt from the hole.

3,352,194
ELASTIC SAFETY NUT

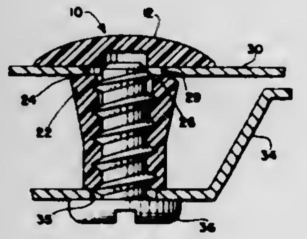
Theodore R. Kausen, Fort Lee, N.J., assignor to Industrial Devices, Inc., a corporation of New Jersey
Filed Apr. 5, 1966, Ser. No. 540,226
5 Claims. (Cl. 85—62)



1. A one-piece molded nut of tough synthetic elastic plastic material comprising an annulus having a wrench grip composed of a plurality of flat side surfaces and integral therewith a tubular apron of synthetic plastic material provided with a plurality of substantially equally spaced longitudinal slots extending completely through the walls of said apron from a free end thereof, said apron having a single helical thread of synthetic plastic material in the form of a single turn which is interrupted by said slots and whose two ends are spaced from each other in the axial direction of said nut.

3,352,195
SELF-RETAINED NUT WITH IMPERFORATE HEAD

Julian V. Fisher, Carpentersville, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Dec. 16, 1965, Ser. No. 514,267
1 Claim. (Cl. 85—80)



A one piece thermoplastic fastener adapted to accept a screw for mounting a first complementary apertured workpiece in spaced relationship to a second apertured workpiece, said fastener including an imperforate head, a noncircular shank depending from said head, said shank having an axially extending bore communicating with the terminal end of said shank opposite said head and traversing the entire axial extent of said shank and extending axially into said head and terminating adjacent the outer surface of said head opposite to said shank, said shank being relieved by a large transverse opening located in said shank at a position spaced from said terminal end of said shank and communicating with said bore, said opening being of substantially greater width than said bore, resilient arm means extending integrally from said shank toward said head and positioned within said opening, said arm means each having an inner surface defining an axial continuation of said bore and an outer surface tapering outwardly from the juncture of the arm means with the shank wall whereby the extremities of said arm means are thicker in radial transverse section than the transverse section of said arm means at their point of juncture with said shank wall, the extremities of said arm means providing shoulder means in spaced opposition to said head and at least a portion of said shoulder means extending laterally beyond the planes defining the outer surfaces of said shank, said arm means being adapted to flex inwardly into said bore during telescopic insertion of said shank into said first complementary non-circularly apertured workpiece and to flex outwardly after passing through said workpiece so as to overlie one surface thereof while the head engages the opposite surface of said workpiece, said bore being adapted to accept said screw when said screw has been telescopically moved through said second workpiece aperture for retaining the second apertured workpiece in juxtaposed relation to the terminal end of said shank and in spaced relation to said first workpiece, said arm means being locked in installed position when said screw fills said bore, said head being substantially larger in radial extent than the aperture in the first workpiece it engages, said head being tapered in thickness toward its outer periphery and relieved centrally by the extension of said bore whereby it is flexible and will intimately contact said panel at its periphery so as to seal the aperture that it surrounds.

3,352,196
SIGHTING DEVICE WHICH SUPERIMPOSES THE IMAGE OF TARGET WITH THAT OF A MISSILE

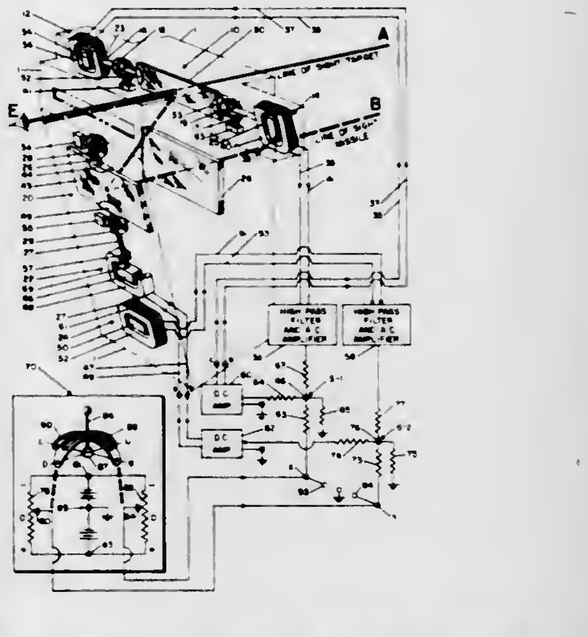
Wardlaw M. Hammond, Jr., Winter Park, Fla., assignor to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland
Filed Sept. 3, 1963, Ser. No. 306,149
6 Claims. (Cl. 88—2.4)

4. A sighting device for visually observing the relative positions of two remote objects, comprising:

(a) a pair of mirror means each pivotally mounted about an axis for optically developing an image of each of said objects and for directing said images to the eye of an observer, the axis of each said mirror being substantially perpendicular to the axis of the other said mirror;

(b) mounting means connected to said mirror means for holding said mirror means in a reference position so that only when said objects are in predetermined relative positions will said images be in superposition;

(c) positioning means coupled to each said mirror means for moving said mirror means out of said reference position into a second position so that when said objects are not in said predetermined relative positions said images may be optically moved relative to each other into superpositions;



(d) detecting means for detecting undesirable vibrations of said mirror means; and

(e) coupling means for coupling said detecting means to said positioning means so as to prevent the undesirable vibrations of said mirror means;

(f) said movement of said mirror means out of said reference position substantially representing the amount of deviation of said objects from said predetermined relative positions.

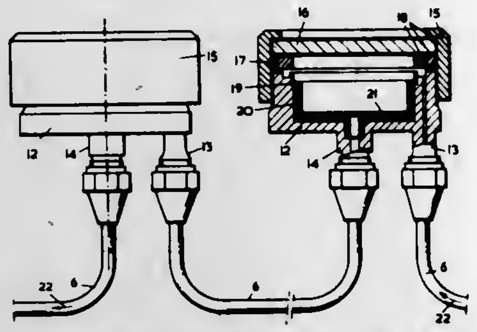
3,352,197
METHOD FOR DETERMINING THE AMOUNT OF PARTICULATE CONTAMINANTS IN A LIQUID BY EMPLOYING SERIES FILTERS

George Wolfgang Porges, Forest Hills, N.Y., and William Albert Edward Staves, Rotterdam, Netherlands, assignors, by mesne assignments, to California Texas Oil Corporation, New York, N.Y., a corporation of Delaware
Filed May 17, 1963, Ser. No. 281,259
2 Claims. (Cl. 88—14)

1. A method for evaluation of the amount and characteristics of particulate contaminants in a liquid stream consisting of the following steps in the order named:

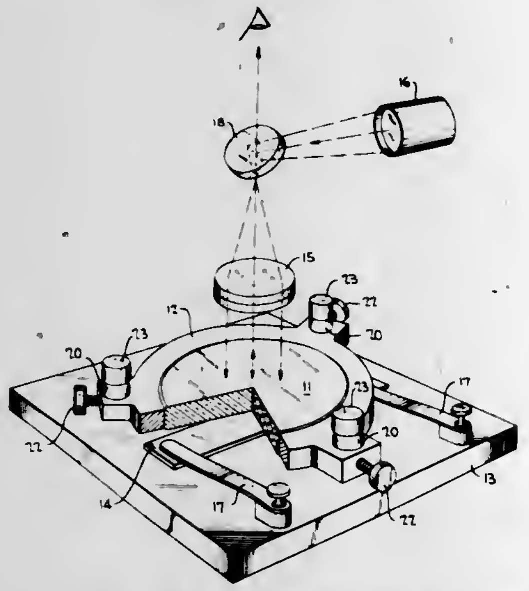
(a) withdrawing a proportional sample of the liquid stream;

(b) passing said sample through first and second filters in series so as to deposit particulate contaminants on the first filter and impregnate the second filter with the thus filtered sample thereby rendering said second filter a standard for comparison with the first filter; and



(c) determining the color difference between the two filters while impregnated with said liquid to indicate the amount and characteristics of the particulate contaminants.

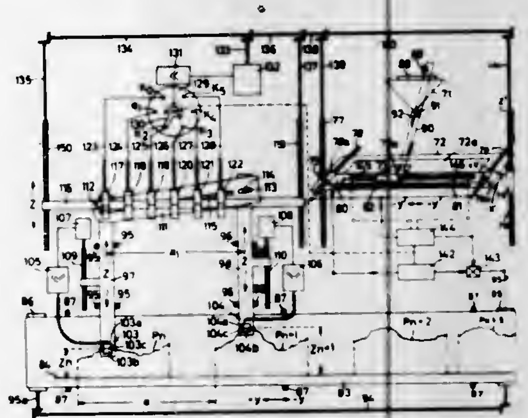
3,352,198
STAGE INTERFEROMETER FOR MICROINTERFEROMETRY
Charles H. Klute, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 30, 1964, Ser. No. 355,973
2 Claims. (Cl. 88—14)



1. An improved stage interferometer for microinterferometry including a fixture for obtaining an optical wedge between flat and specimen, comprising the combination:

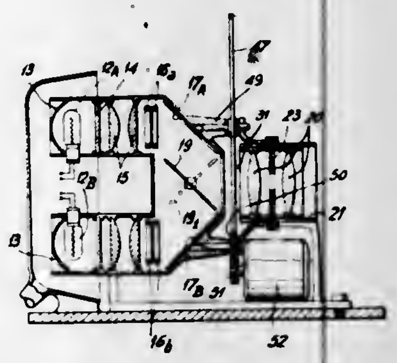
(a) a yoke having an opening to receive an optical flat,
(b) a plurality of boss receiving openings in said yoke, said boss receiving openings spaced around the periphery of said optical flat opening,
(c) a base adapted to receive a specimen which is to be examined,
(d) a plurality of bosses secured to said base, said bosses being placed on said plate so that said bosses can be aligned with said boss receiving openings in said yoke, the diameter of said bosses permitting said yoke to be freely lowered over them,
(e) means to secure said yoke to said bosses after said yoke has been lowered over said specimen, and
(f) means to accurately raise and lower each of said bosses, wherein said means includes a differential screw, said differential screw having a first section with a first screw pitch and a second section with a second different pitch, said first section passing through said boss and threadedly engaging said boss, said second section threadedly engaging said base, with means preventing rotational movement of said boss while allowing said boss to be raised and lowered relative to said base and means to rotate said differential screw.

3,352,199
METHOD AND APPARATUS FOR PRODUCING A DIFFERENTIALLY CORRECTED ORTHOGONAL PICTURE PLAN OF THREE-DIMENSIONAL OBJECTS
Herbert Mondon, Wurttemberg, Germany, assignor to Carl Zeiss-Stiftung, Wurttemberg, Germany, a corporation of Germany
Filed Aug. 4, 1964, Ser. No. 387,406
Claims priority, application Germany, Aug. 8, 1963, Z 10,284
4 Claims. (Cl. 88—24)



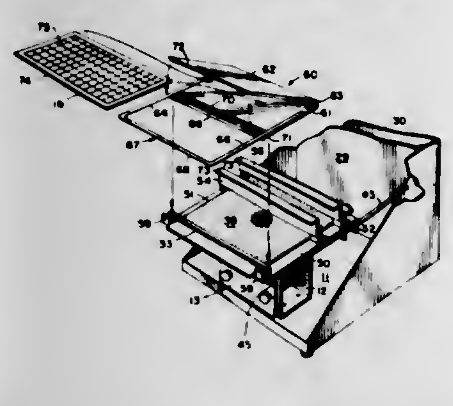
1. An apparatus for producing a differentially corrected orthogonal picture plan from three-dimensional objects, comprising means for producing a central perspective projection of said object and a strip-wise exposure of a photographic layer during a continuous change of the projection distance corresponding to the altitude profile of said object, means for exposing said picture plan in at least $2n-1$ strips, wherein n designates the number of strips for which the corresponding altitude profiles have been measured directly for controlling of the projection scale, and means for determining automatically from the adjacent measured altitude profiles the altitude values for determining said projection scale for the other strips arranged between said first mentioned strips.

3,352,200
APPARATUS FOR PROVIDING MULTI-COLOURED COMPOSITIONS
Michel Camille Berger, Saint-Lambert-des-Bois, Seine-et-Oise, France
Filed Nov. 3, 1964, Ser. No. 408,525
Claims priority, application France, Nov. 13, 1963, 953,595
10 Claims. (Cl. 88—24)



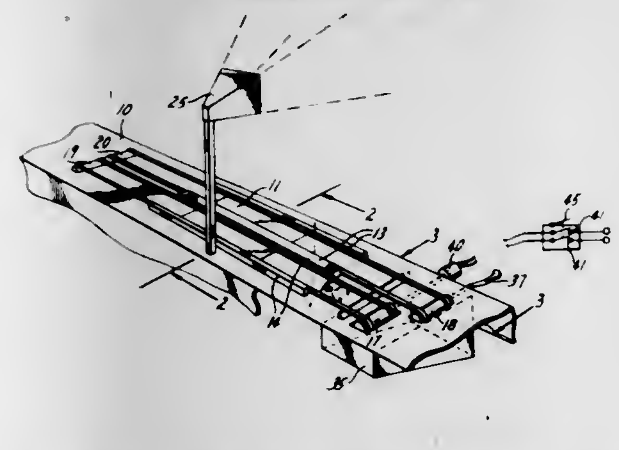
1. Projection apparatus for providing a multi-coloured composition comprising a common surface, and a plurality of projectors each projector having two light sources, two supports for corresponding positive and negative transparent black and white images, a selection device for selecting positive or negative images for projection, a filter holder in which a selected filter may be held, a filter changing mechanism, an adjustable iris, an iris size control, a common projection lens system, and means for arranging the projectors to project simultaneously differently coloured images onto said common surface such that the images are superimposed and form a multicoloured composition.

3,352,201
PROJECTOR VIEWER AND IMAGE SCANNING ASSEMBLY THEREFOR
Philip J. Browscombe, Millington, N.J., assignor to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware
Filed Oct. 8, 1965, Ser. No. 494,213
10 Claims. (Cl. 88—24)



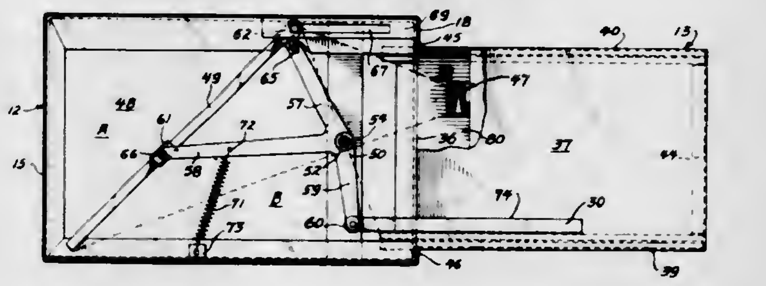
1. A projector comprising means for projecting a light beam, a flat plate extending across the path of said light beam, a pile fabric covering on a flat surface of said plate, a light-transparent, flat plate having one flat surface resting flatly on said covering, the opposite flat surface of said transparent plate adapted to support an image-containing sheet flatly thereon, said first-mentioned flat plate and said covering having an aperture for passage of said light beam therethrough, and means for sliding said light transparent plate over said covering for aligning a selected portion of said image-containing sheet with the light beam projected through said aperture.

3,352,202
ORDER DISPLAY SYSTEM
Arthur F. Woodrow, 5639 E. 5th St., Suite C, Tucson, Ariz. 85711
Filed Oct. 22, 1965, Ser. No. 502,682
2 Claims. (Cl. 88—24)



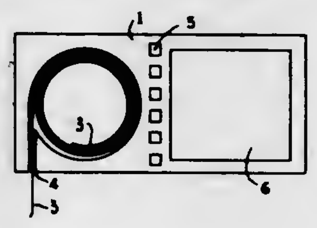
1. An order display system comprising: a counter surface; a Fresnel lens mounted parallel to said counter surface; a light source positioned beneath said counter surface for supplying light to said Fresnel lens; means defining a plurality of elongated tracks extending along said counter surface, said tracks passing over said Fresnel lens, each track adapted to receive a series of discrete transparent documents having order information thereon and to maintain contact between each document and said Fresnel lens; an overhead projecting means positioned above said Fresnel lens and said counter surface for projecting an image of said documents as they pass over said Fresnel lens; document-advancing means for each of said tracks comprising means for gripping each document and transporting said document over and past said Fresnel lens; said means for gripping each document comprising a pair of belts spaced to frictionally engage opposite edge portions of each document, said belts sliding said documents over the counter surface, over the Fresnel lens, and again over the counter surface past the Fresnel lens.

3,352,203
SELF-STORING REAR SCREEN PROJECTOR
Bernard A. Barke, Skokie, and Reinhart P. Oehrke, Chicago, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 24, 1965, Ser. No. 504,357
10 Claims. (Cl. 88—24)



7. In a film exhibiting assembly comprising a casing having a pair of telescopically arranged inner and outer casing sections adapted for movement relative to each other to extend and contract said casing, said sections when disposed in contracted condition defining therebetween a chamber, an optical projector fixed in the inner casing section, said sections having end openings for passage of light projected along the optical axis of said projector, a mirror rockably mounted in the outer casing section and adapted for operably conditioning in intersecting relationship with the optical axis of said projector, mirror holding means for rocking said mirror into and out of operable condition, means for supporting a screen in reflection receiving attitude with said mirror when it is operably conditioned, a cam mechanism secured to the inner casing section for reversibly rocking said mirror holding means as said casing sections are moved relatively outwardly and inwardly to respectively rock said mirror toward operable condition and into said chamber.

3,352,204
FRAME FOR SUPPORTING A TRANSPARENCY AND SOUND REPRODUCING MATERIAL
Marcel Jules Hélène Staar, 4 Ave. Sylviane, Rhode-Saint-Genese, Belgium
Filed Apr. 22, 1964, Ser. No. 361,746
Claims priority, application Belgium, Apr. 29, 1963, 631,650
7 Claims. (Cl. 88—28)

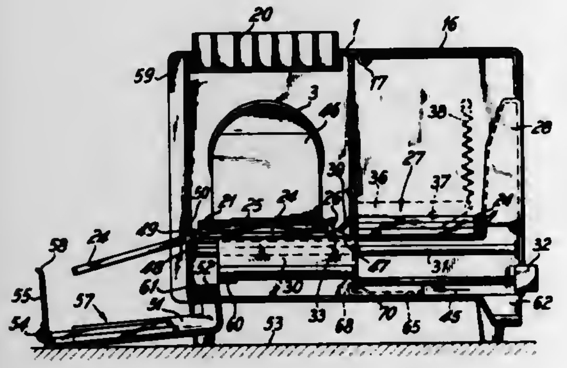


1. A support frame comprising a body having a first aperture of rectangular shape for supporting a film transparency therein, and a second aperture of circular shape

for supporting a roll of material capable of having sound recorded thereon, said body having a passage extending from said second aperture and opening externally of the body to enable reeling and unreeling of the roll of material, said body having a row of perforations separating the apertures inhibiting transfer of heat, said passage being tangential with respect to said second aperture and disposed at a remote position relative to said first aperture.

3,352,205
SLIDE PROJECTOR

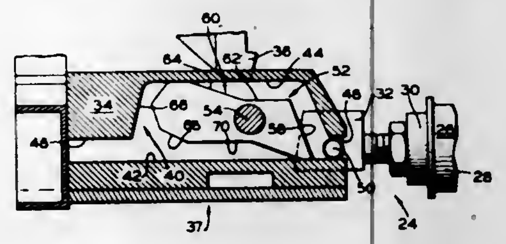
Gerhard Brinkmann, Braunschweig, Germany, assignor to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany
Filed Oct. 19, 1965, Ser. No. 497,857
Claims priority, application Germany, Nov. 13, 1964, V 27,151
27 Claims. (Cl. 88—28)



1. In a photographic slide projector, housing means, optical means carried by the said housing means for projecting an image from a photographic slide situated in an image-projecting position extending across the optical axis of said optical means, supply means and receiving means respectively situated on opposite sides of said optical axis for respectively holding a stack of slides to be supplied to said image-projecting position and a stack of slides to be received from said image-projecting position, said supply means and said receiving means each accommodating a stack of slides at an attitude where one slide can rest by gravity on the next lower slide, slide-support means carried by said housing means for supporting a slide, said slide-support means being carried by said housing means for movement between a projecting position where a slide carried by said slide-support means is in said image-projecting position and a non-projecting position where said slide-support means and a slide carried thereby are situated beyond the optical axis, and slide-changing means movably carried by said housing means for movement from a given starting position to a given end position and then back to said starting position, said slide-changing means when in said starting position thereof receiving a slide from said supply means and during movement from said starting position towards said end position shifting a slide from said supply means to said slide-support means while simultaneously displacing from the latter to said receiving means the slide which has just occupied the image-projecting position, said slide-changing means and slide-support means co-acting to displace said slide-support means with the slide carried thereby from said non-projecting to said projecting position by the time said slide-changing means has reached said end position thereof, said slide-changing maintaining said slide-support means in said projecting position while said slide-changing means remains in said end position thereof and said slide-support means returning to said non-projecting position thereof only when said slide-changing means is displaced from said end position back toward said starting position thereof.

3,352,206
GUN CHARGER DEVICE

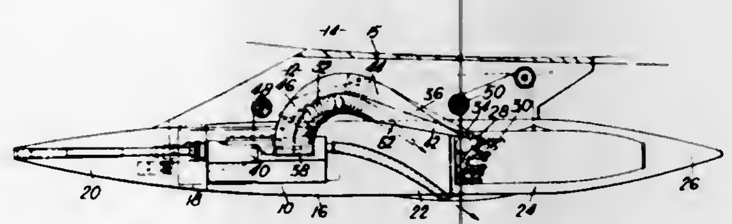
Walter S. Draper III, Palmer, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed May 10, 1966, Ser. No. 549,424
5 Claims. (Cl. 89—1)



1. In combination with a machine gun having a mount and a recoiling mass biased from a rearward seared position therein to a forward position, a charger device for displacing the recoiling mass on the mount to the seared position, said charger device including an actuator mounted on the mount, a piston of said actuator displaceable in forward and rearward strokes in the direction of movement of the recoiling mass on the mount, an actuating block fixed on said piston for displacement therewith in forward and rearward strokes, a supporting member mounted on the mount and adapted to slidingly receive said actuating block, switch means mounted in said supporting member for cooperation therewith to elevate said actuating block towards said recoiling mass to an engaging position at the beginning of the rearward stroke of said piston, maintain said actuating block in the engaging position during a period of travel thereof equal to the distance of displacement of said recoiling mass from the forward to the seared position thereof, and depress the actuating block away from the recoiling mass to a disengaged position at the end of the rearward stroke, and a charging lug on the recoiling mass disposed for engagement by said actuating block when in the engaging position to transfer displacement of said piston in the rearward stroke thereof to said recoiling mass for actuation thereof to the seared position, and wherein said actuating block is disposed free of said charging lug when in the disengaged position.

3,352,207
GUN POD ENCLOSING A GUN AND A CARTRIDGE TANK CONNECTED BY A CARTRIDGE CHUTE ENCLOSED IN A PYLON CONNECTING THE POD TO AN AIRCRAFT

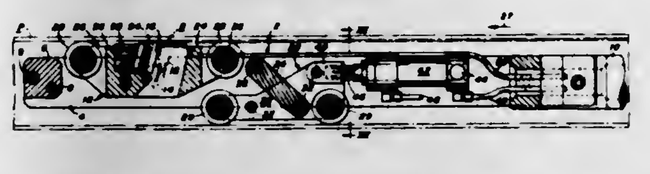
Frank William Proudlove, Lytham Saint Anne's, England, assignor to British Aircraft Corporation (Operating) Limited, London, England, a British company
Filed Mar. 28, 1966, Ser. No. 538,028
Claims priority, application Great Britain, Apr. 8, 1965, 15,001/65
6 Claims. (Cl. 89—37.5)



1. In combination, a gun pod, a gun, a tank, a chute and a pylon, said pylon being adapted to mount said gun pod on an aircraft, said tank being adapted to store cartridges, said gun pod enclosing both said gun and said tank, said chute being adapted to deliver said cartridges from said tank to said gun, a major part of said chute lying outwardly of the general outline of said gun pod and within said pylon, and said pylon being substantially narrower than said gun pod.

3,352,208
INSIDE FLASH TRIMMER

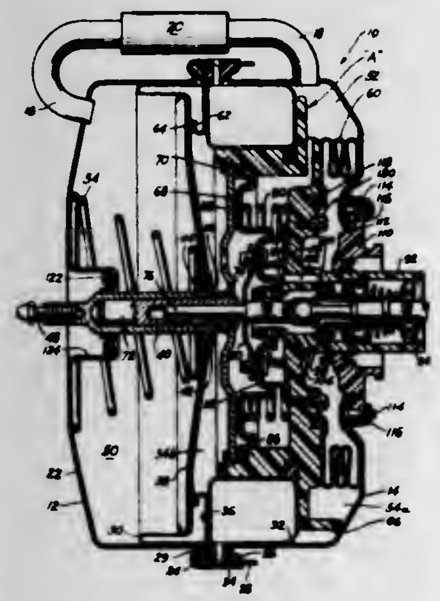
McKinley B. Thomas and William H. Dalebout, Orem, Utah, assignors to United States Steel Corporation, a corporation of Delaware
Filed Nov. 10, 1965, Ser. No. 507,122
1 Claim. (Cl. 90—24)



An inside flash trimmer for welded pipe comprising a pair of spaced parallel side plates, a tool-holder block pivoted between said plates and having rollers spaced therealong adapted to engage the interior of the pipe, a supporting carriage between said plates having rollers spaced therealong adapted to engage the interior of the pipe in a region diametrically opposite that engaged by said first-mentioned rollers, a link disposed between said plates at an oblique angle to the length thereof and pivoted thereto and to said carriage, and power means mounted between said plates adapted to apply thrust to said carriage thereby tending to increase the separation between said carriage and said side plates.

3,352,209
SERVOMOTOR

Maxwell Leslie Cripe, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Indiana
Filed June 17, 1965, Ser. No. 464,735
12 Claims. (Cl. 91—391)



1. A servomotor comprising:

a housing including a front shell and a rear shell;

a means to join said front and rear shell;

a rolling diaphragm having a peripheral bead between said shells to seal the juncture of same, said rolling diaphragm extending inwardly of said shells and being provided with an axially thickened inner portion;

a force transmitting means centrally of said housing and reciprocatorily mounted through said front shell to project inwardly of said housing, said force transmitting means including an adjustable extension on one end and a drilled opening in the other end with a bearing seal operatively connecting the housing and the force transmitting means;

a means including a first annular plate and front and rear snap rings to sealingly join said force transmitting means to said rolling diaphragm adjacent said drilled opening;

a rod having an axial bore in one end thereof reciprocatorily mounted in the drilled opening of said force transmitting means, which rod extends inwardly or rearwardly of said rolling diaphragm towards an inner surface of said rear shell;

a second annular plate operatively connected to said rod adjacent its innermost end;

a hollow, flexible movable wall in said housing behind said rolling diaphragm in said rear shell, said hollow, flexible movable wall being affixed to said housing, said hollow movable wall having a conduit leading to a referenced pressure source to expand said hollow movable wall with a first pressure medium;

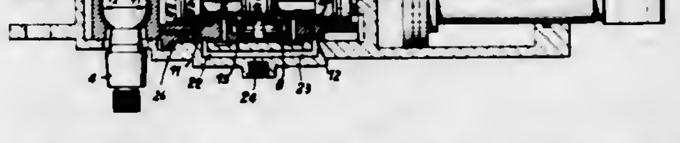
a means to operatively connect said second annular plate and said hollow, flexible movable wall, which means includes a valve housing, a valve mechanism and a reaction mechanism, said valve housing being provided with appropriate passages arranged to be controlled by said valve mechanism to control transition between a suspension pressure source of a second pressure medium and said first pressure source to create a pressure differential across said rolling diaphragm such that the rolling diaphragm is moved forwardly;

a push rod reciprocatorily mounted through said rear shell forwardly to operate said valve mechanism, said push rod arranged to be movable relative to said valve housing and operatively connected to said reaction means; and

means to size the effective area of said hollow, flexible movable wall in accordance with the force produced by said reaction means to limit travel of said push rod to that required to operate said valve mechanism until such time as said first pressure medium is suspending said hollow, flexible movable wall whereupon said push rod may manually follow-through to operate said force transmitting means.

3,352,210
HYDRAULIC SERVO-CONTROL

Rene Lucien, Neuilly-sur-Seine, France, assignor to Recherches Etudes Production R.E.P., Paris, France
Filed Jan. 12, 1966, Ser. No. 520,176
Claims priority, application France, Jan. 19, 1965, 2,464
3 Claims. (Cl. 91—434)

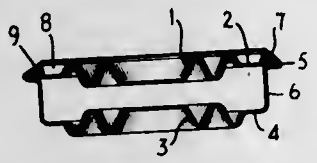


1. A hydraulic jack of the follow-up control type operating on a hydraulic station of the so-called closed centre type, said jack comprising a jack body provided with an internal cylindrical chamber, in the interior of said chamber a moving slide-valve in contact with the internal cylindrical walls of said chamber, said slide-valve being slidably mounted on a guiding member fixed to said body and arranged coaxially in the interior of said chamber, said slide-valve being provided with manual operating means and being completely traversed transversely by a central channel and by a first and a second lateral channel arranged on each side of said central channel, said central channel being in constant communication with a bore in said jack body opening into said cylindrical chamber, said bore being connected to a source of fluid under pressure, said slide-valve comprising an internal space into which open said channel and said first and second lateral channels, said cylindrical chamber comprising a first and a second annular grooves in respective communication with a first and a second chambers provided in the in-

terior of the jack body and separated by a plunger piston, said first and second lateral channels opening at the exterior of said slide-valve respectively into said first and second annular grooves of said hydraulic chamber, clapper-valves slidably mounted on said guiding member and having as their seatings the transverse walls of said internal space of said slide-valve being provided to put into communication with said internal space either the first lateral channel or the second lateral channel, depending on whether the slide-valve is actuated by said manual control means in one direction or in the opposite direction, said slide-valve comprising at its periphery a first and a second annular groove in communication respectively with an orifice formed in said jack body for the evacuation of said fluid under pressure, said first and second annular grooves of said slide-valve being alternatively in communication, depending on the direction of movement of said slide-valve, with that of said first and second annular grooves of said cylindrical chamber which is not subjected to the fluid pressure.

3,352,211
DIAPHRAGM UNIT

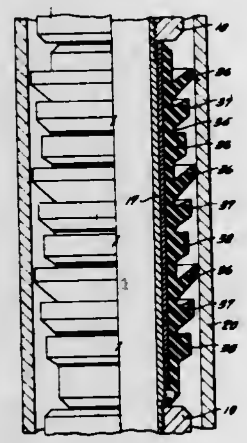
Svend E. Jorgensen and Hans Siegfred, Nordborg, Denmark, assignors to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Apr. 27, 1967, Ser. No. 634,185
5 Claims. (Cl. 92—42)



1. A diaphragm unit comprising, a pair of telescoped dished plate elements disposed opposed to each other, each plate having a rim generally parallel to a common plane intermediate said plate elements, the rim portions being disposed juxtapositioned in registry bearing on one another, one of said plates having a marginal rim edge portion bent reversely over a marginal rim edge portion of the other plate and extending inwardly defining an annular wedge-shaped space converging in a direction outwardly, the bent rim edge portion defining an angle with the other marginal rim portion it overlies having a value in a range of about 15° to about 60°, and a solder filling in said wedge-shaped space securing said marginal edge portions defining an annular seal therebetween.

3,352,212
WELL SWAB DEVICE

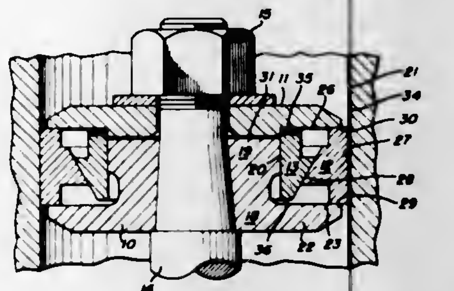
Norman W. Read, Dallas, Tex., assignor, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed May 3, 1962, Ser. No. 192,229
9 Claims. (Cl. 92—192)



1. In a swab sealing device,
a support;
a plurality of upwardly projecting resilient flanges attached to the support;
the said flanges being progressively projected upwardly at a lesser angle to the axis of the support, and are progressively longer and less in radial width from the topmost down.

3,352,213
EXPANSIBLE RECIPROCATING PISTON

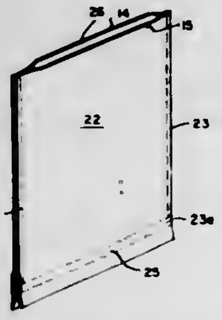
Raymond J. Karol, 13616 Lake Shore Blvd., Cleveland, Ohio 44110
Filed Feb. 17, 1965, Ser. No. 433,309
5 Claims. (Cl. 92—204)



1. An expansible piston disposed for connection to a piston rod and for reciprocal movements within a cylinder bore, said piston comprising a centrally disposed piston support body disposed for connection to said piston rod, said piston support body having first and second opposed end portions and an axially extending outer body surface radially spaced inwardly from said cylinder bore, said first end portion of said piston support body having abutment support flange surface means extending radially from said outer body surface of said piston support body and terminating within the limits of said cylinder bore, said second end portion of said piston support body having clamping means including clamping member means, connecting means for detachably connecting said clamping member means to said second end portion of said piston support body, said clamping member means including abutment clamping flange surface means radially extending from said outer body surface of said piston support body and terminating within the limits of said cylinder bore, said clamping member means having a laterally extending surface spaced from and disposed in face-to-face relation to said second end portion of said piston support body to provide a clearance space therebetween, said abutment clamping flange surface means and said abutment support flange surface means opposing and facing each other, expansible band means having an outer substantially cylindrical surface for slidably engaging said cylinder bore and comprising a first band portion, a second band portion, and an intermediate band portion between said first and second band portions, said intermediate band portion having inner surface cam means radially spaced from and annularly disposed about said outer body surface of said piston support body, said first and second band portions respectively of said band means having first and second abutment opposed end surfaces respectively clamped between said abutment support flange surface means and said abutment clamping flange surface means, said inner surface cam means having first and second terminating ends axially spaced respectively from said abutment support flange surface means and said abutment clamping flange surface means and axially movable cam means disposed between said outer body surface of said piston support body and said inner surface cam means for expanding said band means relative to said cylinder bore, said abutment clamping flange surface means comprising fixed surface driving means engaging said cam means and forcibly driving said cam means against said inner surface cam means of said band means, said connection means upon connecting said clamping member means to said second end portion of said piston support body moving said laterally extending surface toward said second end portion of said piston support body and also axially moving said cam means relative to said inner surface cam means toward said abutment support flange surface means and thereby expanding said band means, said first and second abutment opposed end surfaces of said band means upon being clamped between said abutment support flange surface means and said abutment clamping flange surface means arresting the axial movement of said laterally extending surface before it engages said second end portion of said piston support body to thereby maintain said clearance space, whereby said expandable band means is solidly clamped between said abutment support flange surface means and said abutment clamping flange surface means, said first and second abutment opposed end surfaces of said band means upon being clamped between said abutment support flange surface means and said abutment clamping flange surface means also limiting the axial extent to which said clamping member means may force said cam means against said inner surface cam means of said band means for arresting the expansion of said band means relative to said cylinder bore.

3,352,214
METHOD OF MAKING CONTAINERS

Arnold J. McColgan, Pointe Claire, Quebec, Canada, assignor to W. Ralston & Co. (Canada) Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed May 10, 1965, Ser. No. 454,608
3 Claims. (Cl. 93—35)

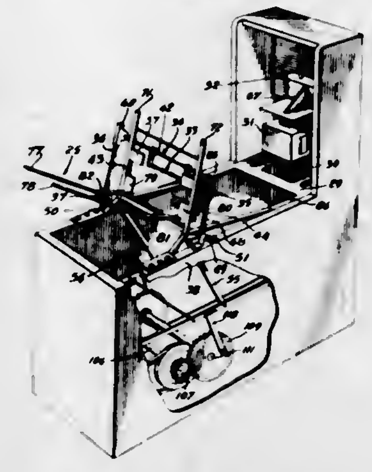


1. A method of making containers comprising the steps of inturning opposite lateral portions of a tubular member having a top face and a bottom face, sealing said inturned portions to one another, sealing said top face to said bottom face across spaced portions extending in one direction across said tubular member, and cutting said tubular member transversely and longitudinally so as to form a plurality of separate containers each having a reinforced edge portion.

3,352,215
FEEDING MECHANISM FOR A CONTAINER FORMING MACHINE

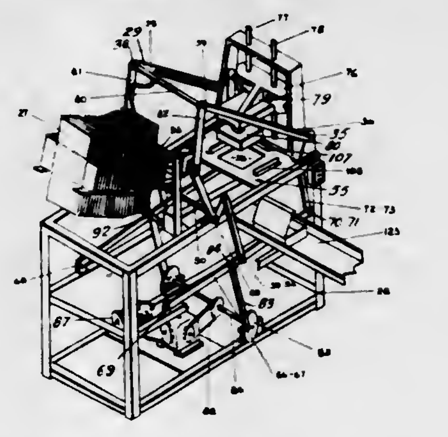
Daniel Wainberg, 745 Guy St., St. Leonard, Montreal, Quebec, Canada
Filed May 29, 1964, Ser. No. 371,191
4 Claims. (Cl. 93—51)

1. In a feeding mechanism for a container forming machine, a machine frame, a magazine adapted to support a plurality of pre-cut blanks in a edgewise position; a container forming mechanism secured to said machine frame; a blank pick-up mechanism secured to said machine frame and comprising a transverse shaft journalled to said machine frame, oscillating arms having their lower ends secured to said transverse shaft, a transverse oscillating shaft engaged by the upper ends of said oscillating arms, a pinion secured to one end of said transverse oscillating shaft, a toothed rack having its lower end pivotally secured to said machine frame and its toothed portion meshing with said pinion, a blank pick-up member secured to said transverse oscillating shaft, and eccentrically operating and oscillating means secured to said oscillating arms and adapted to oscillate said transverse oscillating shaft in a predetermined arcuate path of travel and moving said pinion and its meshing toothed rack therewith, said pinion and intermeshing toothed rack by such movements coincidently imparting a rotary motion to said transverse oscillating shaft in alternate directions so as to control the movements of said blank pick-up member.



3,352,216
FEEDING MECHANISM FOR A CONTAINER FORMING MACHINE

Daniel Wainberg, 745 Guy St., Montreal, Quebec, Canada
Filed July 1, 1964, Ser. No. 379,496
4 Claims. (Cl. 93—51)



1. In a feeding mechanism for a container forming machine, a machine frame, a magazine adapted to support a plurality of pre-cut blanks in an edgewise position; a container forming mechanism secured to said machine frame and including a forming die and plunger; a blank pick-up mechanism comprising a main transverse shaft journalled in said machine frame, parallel arms having their outer ends secured to said main transverse shaft, an oscillating rod secured to the inner ends of said parallel arms, supporting arms having their outer ends secured to the ends of said oscillating transverse rod, an auxiliary transverse shaft secured to said machine frame, lever arms having their inner ends pivotally connected with the other ends of said supporting arms and their outer ends secured to said auxiliary transverse shaft and extending therebeyond to form offset ends, offset bracket arms secured to said supporting arms, a blank pick-up member secured to said offset bracket arms, and eccentrically operated and oscillating means connected to said lever arms and adapted to oscillate said transverse rod through the jackknifing of said pivoted supporting arms and said levers so as to control the movements of said blank pick-up member in such a way that

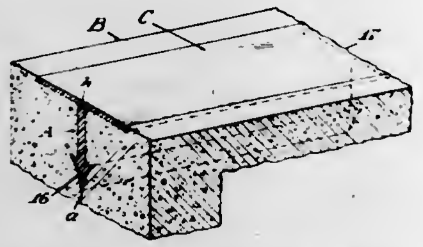
the blank it is carrying and said supporting arms will be maintained in approximately parallel positions in relation to one another from the time of removing the blank from the magazine and until it has been placed flatwise on the forming die.

3,352,217
MEANS FOR FORMING LINES OF WEAKNESS IN CEMENTITIOUS FLOORS, PAVEMENTS AND THE LIKE

Harlan J. Peters, Anaheim, and Lin W. Bowling, Altadena, Calif. (both of 9616 E. Beverly Road, Pico Rivera, Calif. 90660)

Filed Dec. 28, 1964, Ser. No. 421,558

3 Claims. (Cl. 94—18)



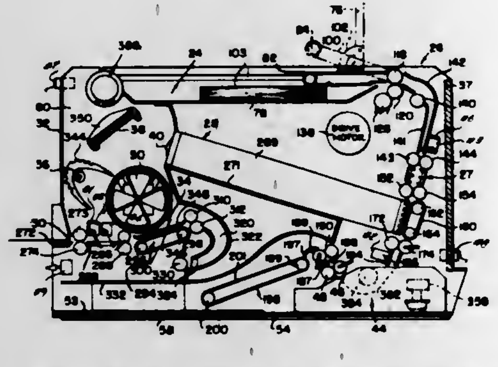
1. A divider strip for cementitious panels comprising an elongate web having an anchoring element extending along one margin thereof throughout its length, and a flange applicator ribbon separably connected to the other margin of said web projecting laterally therefrom throughout the length thereof; said flange applicator comprising a ribbon of hard thin, sheet material capable of being flexed longitudinally; said web and ribbon being unitary and the separable connection therebetween comprising a fragile wall in said web adjacent said ribbon severable by an outward pull imposed on said ribbon, whereby said flange applicator may be stripped from said web.

3,352,218
SHEET FEED APPARATUS

Ralph G. Ostensen, Morton Grove, Ill., assignor to SCM Corporation, New York, N.Y., a corporation of New York

Original application Jan. 3, 1963, Ser. No. 249,248. Divided and this application Aug. 17, 1964, Ser. No. 390,127

17 Claims. (Cl. 95—1.7)



1. In a duplicating machine having means defining a storage compartment containing photosensitive copy paper; means defining a copy paper travel path including a first conveyor means, a copy paper image forming area and a developing station; and means defining a document travel path including a document exposing area, which along with said copy paper image forming area forms an exposing station; the combination of:

(a) means for advancing said copy paper from its storage position in said storage compartment to said first conveyor means;

(b) means for stopping the advancing copy paper with its leading edge at a predetermined position between said storage compartment and said first conveyor means;

(c) means for advancing a document to be copied along said document travel path and through said document exposing zone;

(d) means responsive to the advancement of said document along said document travel path to reinitiate movement of said copy paper to a position when it is picked up by said first conveyor means for advancement through said image forming area in timed relation with movement of said document through said exposure area;

(e) means for moving said copy paper through said developing station; and

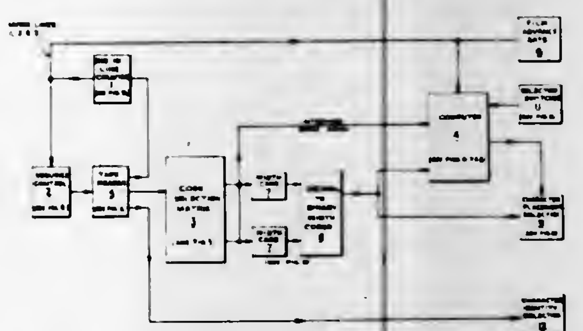
(f) said means for stopping the advancing copy paper comprising circuit means under the control of the copy paper during its movement past said predetermined position for rendering said copy paper advancing means inoperative to advance the next sheet of stored copy paper to said predetermined position.

3,352,219
PHOTOCOMPOSING MACHINES

Wolfgang O. Grube, Leonia, N.J., and Martin M. Cohen, Bronx, N.Y., assignors to Eltra Corporation, a corporation of New York

Filed June 14, 1965, Ser. No. 463,637

19 Claims. (Cl. 95—4.5)



1. A tape controlled photocomposing machine operatively responsive to a control tape having character signals and interword signals grouped thereon to represent composed lines separated by end of line signals, said character signals being for character identity only, said machine comprising, character width means, a tape reader, a justification computation and storage means, means responsive to the decoding of a character identity signal for transmitting the width information for the decoded character from said width means to said justification computation and storage means, means responsive to the decoding of an end of line signal for computing and storing the justification answer for a composed line of character signals, means for decoding the line of character signals a second time, and means responsive to the second decoding of the line of character signals and to the stored justification answer for the line for photographically composing the characters represented by the character signals in a justified line.

3,352,220
PHOTOGRAPHIC CAMERA WITH DEPTH OF FIELD INDICATOR

Rudolf Lang, Grafing, near Munich, and Karl Härtl, Munich, Germany, assignors to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany, a German firm

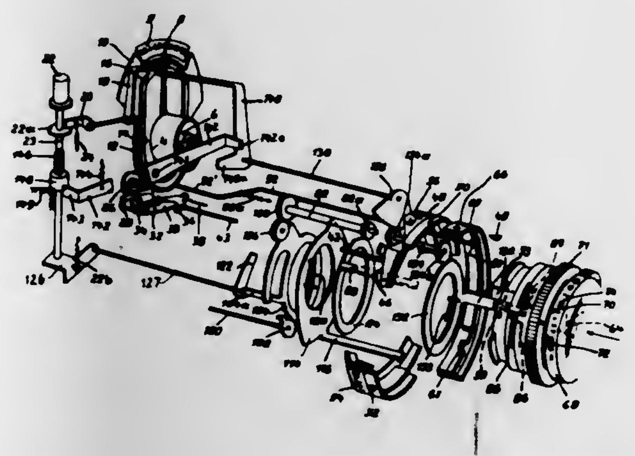
Filed Sept. 22, 1964, Ser. No. 398,231

Claims priority, application Germany, Sept. 27, 1963, C 30,991

10 Claims. (Cl. 95—10)

1. A photographic camera comprising an adjustable diaphragm including a movable aperture control member, a depth of field indicator including a movable setting

member, exposure meter means, a feeler device including a movable abutment adapted to be set in a position corresponding to an indication of said exposure meter means, characterized by the fact that said movable abutment



serves as a stop to limit movement of said setting member of said depth of field indicator, and said movable setting member serves as a stop to limit movement of said aperture control member.

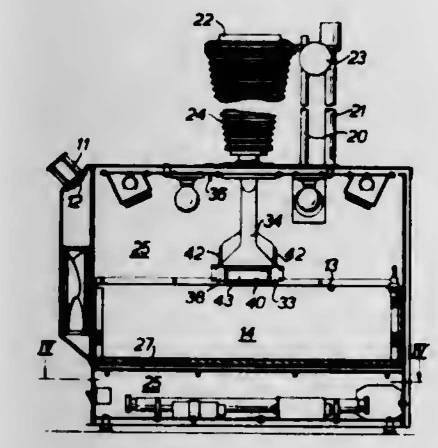
3,352,221
CHROMATOGRAPHY

James Owen Barron and Trevor John Coomes, London, and Ronald David Charles Bone, Upminster, Sussex, England, assignors to Shandon Scientific Company Limited, London, England, a British company

Filed Dec. 28, 1964, Ser. No. 421,168

Claims priority, application Great Britain, Jan. 3, 1964, 436/64

9 Claims. (Cl. 95—11)



1. Apparatus comprising a cabinet, directional ultraviolet flash gun means in said cabinet, support means in said cabinet defining a photographic position, first light filter means for allowing a flash of ultraviolet light only to be directed towards the photographic position, openings in the walls of said cabinet on opposite sides of said photographic position, closure means associated with said wall openings, variable focus camera means directed towards said photographic position, second light filter means screening said variable focus camera means from ultra-violet light in said cabinet, a preparative-layer-chromatography plate extending at opposite end-portions through said wall openings and intermediate its ends through said photographic position, plate support means detachably fitted to said openings and supporting opposite end-portions of said plate and operating means for operating said camera means in synchronism with said flash gun means.

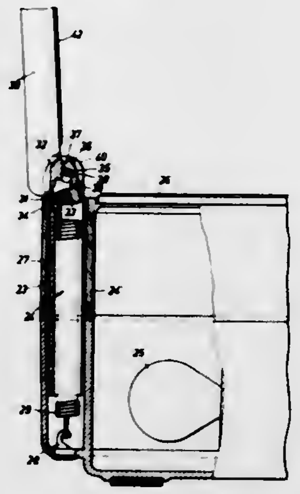
3,352,222
CONTACT PRINTING DEVICES

Werner Salger, Hamburg-Langenhorn, Germany, assignor to Werner Zindler, trading as Lumoprint Zindler KG, Hamburg, Germany

Filed Mar. 17, 1965, Ser. No. 440,541

Claims priority, application Germany, Mar. 28, 1964, L 47,440

8 Claims. (Cl. 95—73)



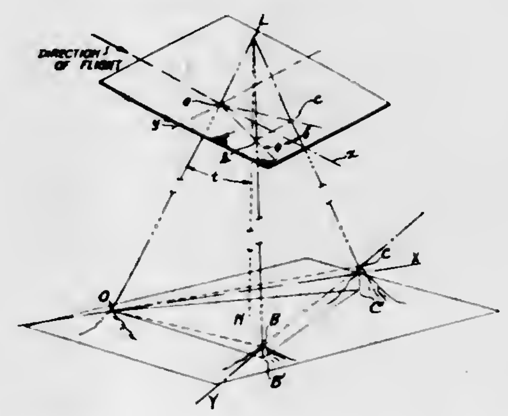
1. A surface exposure device for use in contact printing which comprises, in combination, a housing having a base and side walls having upper edges, a radiation-permeable contact surface mounted upon said upper edges of said side walls, radiation-emitting means disposed in said housing below said contact surface, hinge means mounted on one of said side walls, a contact cover pivotally mounted in said hinge means in such a manner as to be able to press a copy sheet and an original onto one another on said contact surface, said hinge means including a pair of relatively movable elements adapted to selectively grasp said cover in a pivotal connection and permit said cover to be removed from said hinge means upon separating said elements whereupon said contact cover is released from said hinge means and can be removed from said housing.

3,352,223
APPARATUS FOR DETERMINING THE ATTITUDE AND DISTANCE BETWEEN TWO BODIES

Anthony A. Garra, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Sept. 21, 1964, Ser. No. 397,884

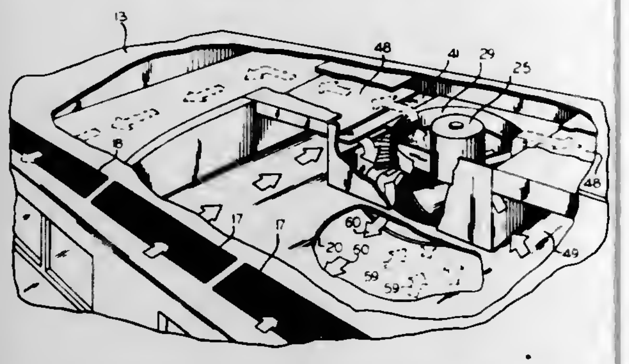
5 Claims. (Cl. 95—12.5)



1. An apparatus for use in an aerospace vehicle for obtaining visual representations of a body and for determining the vehicle attitude and local vertical distance with respect to the body comprising: photographic means including a lens, shutter and a photographic plate, laser means mounted to said photographic means for simul-

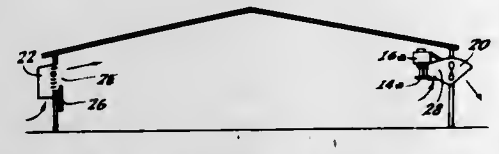
taneously sending three pulses of coherent electromagnetic radiation along three axes arranged so as to define a trihedron having its apex at said lens and having known apex angles, means for simultaneously sending said three pulses and exposing said photographic plate, means for receiving pulses reflected from said body and means for measuring the time elapsed between sending and receiving each of said pulses.

3,352,224
VENTILATING AND AIR CONDITIONING SYSTEM FOR A PASSENGER VEHICLE
Laurance H. Gillick, Wilmette, Ill., assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,702
12 Claims. (Cl. 98—10)



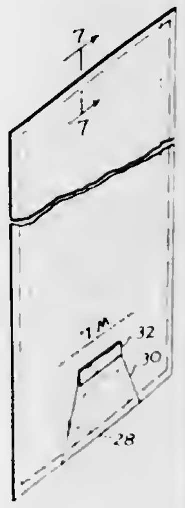
1. In a ventilating and air conditioning system for a vehicle having side and end walls, a ceiling and roof thereover, fresh air intake and exhaust air openings in said roof, a floor, and doors in the side walls defining a passenger compartment, a dual flow circulating fan unit mounted in the ceiling and roof, said fan unit comprising a housing, juxtaposed duct means extending from said housing to said air intake and exhaust air openings, an intake passageway, a discharge passageway, a plenum chamber, a fan unit mounted in said housing having a motor and a dual flow fan blade with separate intake and discharge blades, a fan intake opening communicating with said intake blades and said intake passageway, a fan discharge opening communicating with said discharge blades and said discharge passageway, said intake passageway always in communication with said plenum chamber, opening means in said housing communicating with said adjacent duct means, and damper means for said opening means selectively intercommunicating said plenum chamber and said discharge passageway when closed and intercommunicating the plenum chamber with the exhaust air opening duct means and the discharge passageway with the fresh air intake opening duct means when open.

3,352,225
VENTILATION APPARATUS WITH CONTROL MEANS
Gerald Drandridge ffiske, Dinton, Salisbury, England, assignor to Stockbuildings Limited, Salisbury, England, a company of Great Britain and Northern Ireland
Filed Nov. 23, 1965, Ser. No. 509,273
Claims priority, application Great Britain, Nov. 25, 1964, 47,924/64
8 Claims. (Cl. 98—33)



1. In a building or other enclosed space, the improved ventilation means consisting of at least one fan at a forced draft aperture between the interior and the exterior of said building and a throughflow vent between said interior and exterior but remote from the forced draft aperture whereby the vent and aperture form spaced openings for a flow of ventilation air through said building, an electrical power input to said fan and means for controlling the speed of the fan, said control means including power regulation means to control the speed of the fan in an infinitely variable manner in dependence upon the temperature at said element, there being further provided a throttle device at said throughflow vent and an adjustment device connected to said throttle device to vary the effective area at said vent, control means operatively connected to said adjustment device to cause said area to vary together with and in the same sense as said fan speed.

3,352,226
INFUSION PACKAGE
Silas E. Nelsen, 2715 Center St., Tacoma, Wash. 98409
Filed Mar. 15, 1965, Ser. No. 439,701
8 Claims. (Cl. 99—295)



1. An infusion package comprising

(a) a flexible, liquid-pervious inner container closed along its side and top margins and initially open along its bottom margin for filling with material to be infused,

(b) a flexible, liquid-impervious outer container closed along its side and top margins and initially open along its bottom margin, the outer container having an area larger than the area of the inner container,

(c) the bottom margin of the inner container being secured to the bottom margin of the outer container, thereby anchoring the inner container and locating it in spaced relation to the outer container,

(d) the bottom margin of the outer container being adapted to be sealed after the inner container has been filled with material to be infused, and

(e) the outer container being adapted to be opened at the top thereof for filling the outer container to a predetermined level with a selected solvent and for removing the resulting infusion.

3,352,227
BACON COOKER
Alan L. Litman, 114 Hartwood Drive, Pittsburgh, Pa. 15208
Substituted for abandoned application Ser. No. 309,100, Sept. 16, 1963. This application Nov. 18, 1965, Ser. No. 516,194
9 Claims. (Cl. 99—341)

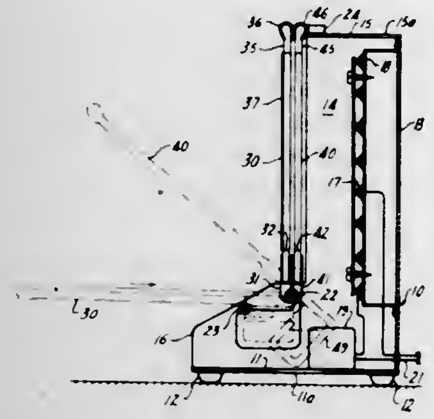
1. Apparatus for broiling thin meat products comprising:

a base;

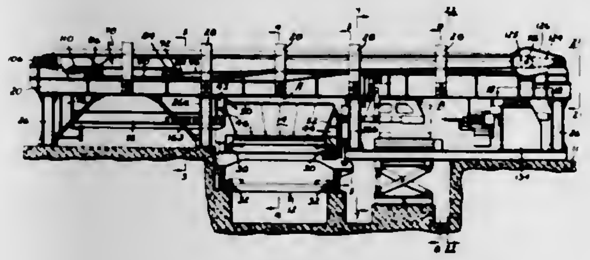
a source of infrared energy supportingly connected to said base for directing infrared energy outwardly therefrom along a path;

meat product support means spaced from said source and positioned in the path of said infrared energy, said support means comprising:

a pair of upwardly-extending, fluid-impervious, infrared-transparent plates having inwardly-facing surfaces that are mutually juxtaposed and interconnected for supporting the meat product therebetween, in the path of said infrared energy, said surfaces of said plates having a plurality of downwardly-directed drainage grooves formed therein, and selectively releasable means for clamping said plates together.

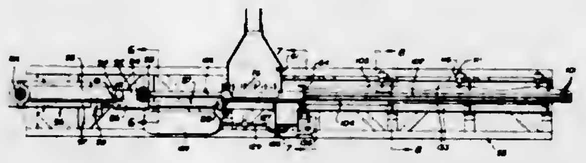


3,352,228
COIL COMPACTING AND STRAPPING APPARATUS
William J. Hill, Holden, Mass., assignor to Morgan Construction Co., Worcester, Mass., a corporation of Massachusetts
Filed May 6, 1964, Ser. No. 365,289
14 Claims. (Cl. 100—12)



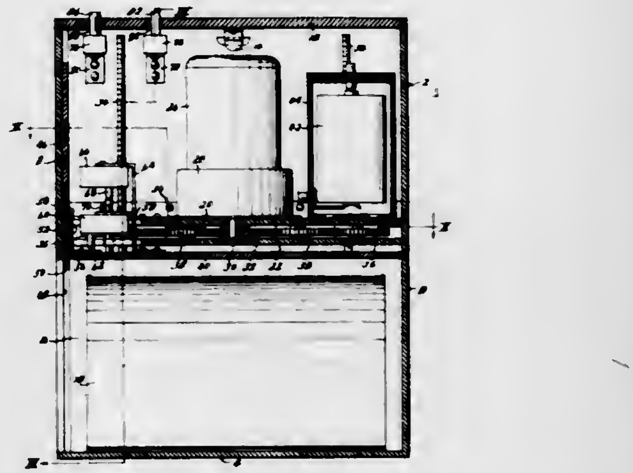
1. In a rolling mill, coil handling apparatus for assembling a plurality of individual rod coils into compacted unitized bundles, said apparatus comprising the combination of: a housing including a coil receiving station and a compacting and strapping station; said coil receiving station provided with coil receiving means including a movable gate for supporting and axially containing a plurality of individual rod coils; coil carrier means associated with said housing for movement between said coil receiving station and said compacting and strapping station, said coil carrier means cooperating with said movable gate when moving towards said compacting and strapping station to collect and carry said individual rod coils to said compacting and strapping station; coil compacting means at said compacting and strapping station; interlocking means for placing said coil carrier means carrying said individual rod coils in cooperative engagement with said coil compacting means, said compacting means when actuated cooperating with said coil carrier means and said movable gate to axially compact said rod coils; strapping means for strapping said compacted coils into a unitized bundle; and bundle removal means for removing said bundle from said coil handling apparatus following the completion of the strapping operation.

3,352,229
HAY WAFER AND METHOD AND APPARATUS FOR MANUFACTURE
George W. Morse, Eschinger and Carroll Roads, Rte. 1, Box 1529, Elk Grove, Calif. 95624
Filed Sept. 7, 1965, Ser. No. 485,214
24 Claims. (Cl. 100—38)



1. In a method for the manufacture of hay wafers or pellets from stem and leaf fragments of dried hay utilizing means forming a die having at least one discharge orifice therein, advancing the stem and leaf fragments of dried hay through the discharge orifice of the die to form the hay wafers or pellets, controlling the advancement of the stem and leaf fragments of dried hay so that a predetermined pressure ranging from 200 to 2000 p.s.i. is applied to the stem and leaf fragments of dried hay before emerging from the discharge orifice in the die, and supplying heat in addition to some heat created by friction to the stem and leaf fragments of dried hay for a period of time ranging from 1 to 120 seconds before they emerge from the discharge orifice of the die so that at least portions of the stem and leaf fragments of dried hay assume a temperature ranging from 212° F. to 350° F. to provide wafers or pellets and having a density between 30 and 40 pounds per cubic foot and to provide wafers which are relatively stable in size and which have good handling characteristics, said application of heat serving to substantially reduce the power required for the manufacture of the hay wafers or pellets.

3,352,230
PRESS FOR TIN CANS
Cecil C. Hunnicutt, Sabetha, Kans., assignor to Instrument Research, Inc., Sabetha, Kans., a corporation of Kansas
Filed Mar. 7, 1966, Ser. No. 532,224
3 Claims. (Cl. 100—53)



1. A press for flattening tin cans comprising:

(a) a housing having therein an internal base and an access opening through which a tin can may be inserted to rest on said base,

(b) a pressure plate carried in said housing for movement therein from an upper retracted position spaced apart from said base whereby said can may be inserted therebetween, to a lowered position adjacent said base, whereby said can is flattened therebetween,

(c) a reversible electric motor carried in said housing and having first and second operating electric circuits operable to cause rotation of said motor in respectively opposite directions respectively to lower or raise said pressure plate,

(d) actuating means carried by said housing and comprising a reversing electric switch having an operating member movable to a first position to close said first operating circuit, or to a second position to close said second operating circuit,

(e) means biasing said switch operating member yieldably to said second position,

(f) manually operable means for moving said switch operating member to said first position against said biasing means,

(g) a door carried for free vertical movement by said housing and lowerable by gravity to close said can insertion opening thereof,

(h) a bracket fixed to said door and normally resting by gravity on the upper surface of said pressure plate, whereby said door is raised and lowered with and by said pressure plate, the lower edge of said door extending slightly below said pressure plate when said bracket is resting on said plate, and

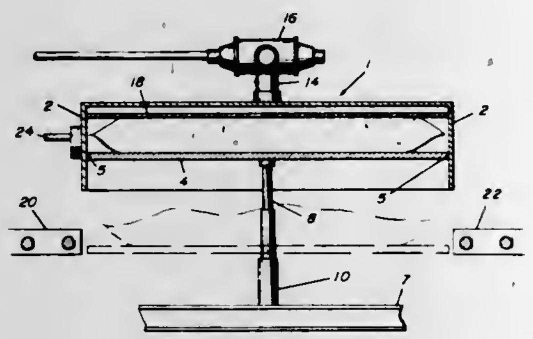
(i) a normally closed safety switch mounted on said pressure plate and connected in series in said first motor operating circuit, said switch having an operating member engageable by said bracket to open said safety switch whenever said door is elevated relative to said pressure plate.

3,352,231
APPARATUS FOR SHAPING BAGS

Ely K. Thomson, Houston, Tex., assignor to Continental Carbon Company, Houston, Tex., a corporation of Delaware

Filed Nov. 12, 1964, Ser. No. 410,382

3 Claims. (Cl. 100—90)



1. Apparatus for shaping bags containing divided solid materials, said apparatus comprising, in combination,

a substantially horizontally disposed container having a closed upper end and an open bottom;

a substantially vertically movable imperforate pressure member adapted for insertion into, and removal from, the open bottom of said container;

the periphery of said imperforate pressure member conforming closely in size and shape to the horizontal cross-sectional area of said container;

a substantially horizontally extending perforated partition fixedly disposed within said container adjacent to but spaced from the upper end of said container;

means for moving bags to be shaped onto and from said imperforate pressure member;

means for moving said imperforate pressure member into and out of the open end of said container;

said means being adapted to discontinue the inward movement of said imperforate pressure member short of the point where it could undesirably crush the bag between it and the under surface of said fixed perforated partition;

the closed upper end of said container having an aperture therein, and

a fluid pump communicating with said aperture and, accordingly, the perforations in said fixed perforated partition;

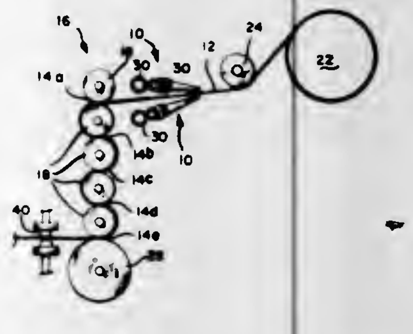
said fluid pump being adapted to produce within said container a partial vacuum of sufficient magnitude to permit ambient air pressure to move said imperforate pressure member toward said fixed perforated partition to an extent which is adequate to shape the bag within the container but inadequate to undesirably crush the same.

3,352,232
CALIPER CONTROL IN THE CONTINUOUS PRODUCTION OF PAPER

John C. Leibelt, 4020 Lake Ave., Wisconsin Rapids, Wis. 54494

Filed June 21, 1965, Ser. No. 465,497

4 Claims. (Cl. 100—92)



1. The combination with a metallic machine calender roll stack which is used to densify a continuously moving web of paper having a variable cross direction temperature and a cross direction caliper to indicate the cross direction thickness of the paper as it leaves the stack, of means for controlling the cross direction temperature of said web as it enters the stack, comprising

a number of nozzles aligned on a common axis in close proximity to the upper surface of the web of paper in corresponding longitudinal position to the caliper, each of said nozzles having an independent control valve and means for delivering air to said nozzles, whereby the temperature at selected points in the cross direction of the paper web can be controlled by directing air from the nozzle against the web according to the thickness indicated by the caliper corresponding to each nozzle.

3,352,233
AUTOMATIC TURNTABLE AND BALE FORMING PRESS

Earl E. Lalonde, Missoula, Mont., and Henrik J. Eklund, Pittsfield, Mass., assignors to Jones Division of Beloit Corporation, Pittsfield, Mass., a corporation of Delaware

Filed May 16, 1966, Ser. No. 550,555

6 Claims. (Cl. 100—215)

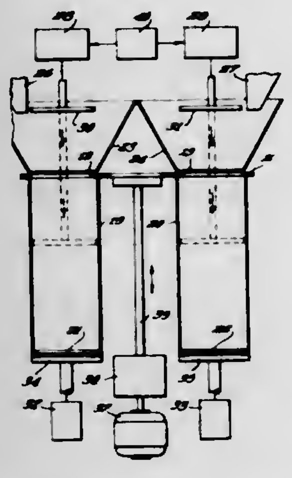
1. A baling press arrangement for forming bales of fibrous material comprising:

a turntable mounted for rotation about an axis, said turntable having a plurality of openings therein radially outwardly of said axis;

a plurality of receptacles, each of said receptacles secured to said turntable in alignment with a corresponding one of said openings;

a pair of delivery means positioned adjacent said turntable opposite a first group of said receptacles for delivering pulp to said first group of said receptacles;

a first pair of piston means each selectively extendable through respective ones of said delivery means and into said first group of said receptacles for compressing the pulp therein to form bales;



drive means connected to said turntable for rotating and indexing said turntable to position a second group of said receptacles in alignment with said delivery means; and

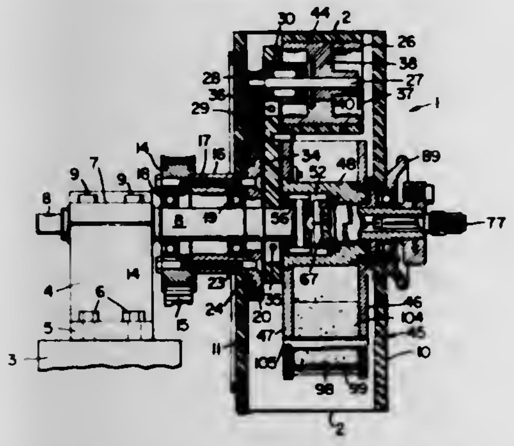
a pair of ejection means for ejecting the bales from said first group of said receptacles.

3,352,234
ELECTROSTATIC PRINTER WITH POWDER FEED STRUCTURE INSIDE STENCIL DRUM

Dickey S. Londahl, Walnut Creek, and Marlin A. Schueler, Danville, Calif., assignors to Unimark Corporation, San Ramon, Calif., a corporation of California

Filed Sept. 26, 1966, Ser. No. 581,872

10 Claims. (Cl. 101—114)



1. In electrostatic printing apparatus that includes a printing screen having a perforated portion adapted to receive thereon printing powder for movement through the openings in said portion into an electrostatic field established in an air gap between said screen and an article to be printed upon for conduction of the powder so moved across said air gap, the combination of:

(a) a horizontally disposed, stationary layer of material over which a bed of printing powder is adapted to be supported, said material being formed with substantially uniformly distributed tortuous adjacent passageways extending therethrough from top to bottom of sufficient size to pass the particles of said powder downwardly therethrough from said bed for substantially uniform discharge from the underside of said layer upon administration of shocks to said layer and body;

(b) said layer having outer edges, and a rigid layer-support connected with said edges supporting said layer with the area thereof inwardly of its edges spaced over said portion of said screen for passage of said powder through said passageways and for discharge and deposit on said portion;

(c) a powder supporting screen disposed between said bed of printing powder and said layer supporting said bed of printing powder over said layer and through the openings of which screen powder passes from said bed to said layer, said screen being inelastic to stretching and held against distortion under the weight of said bed of powder;

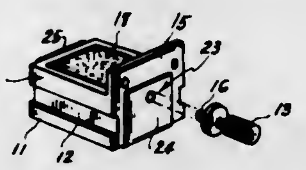
(d) movable shock-administering means operatively connected with said layer for administering shocks thereto and to such bed for causing downward movement of powder of said bed through said passageways and said discharge therefrom under the combined influence of said shocks and gravity.

3,352,235
STENCIL AND PAD INKER CHASE FOR A TAG PRINTING MACHINE

Joseph Sear, 100 Mount Airy Road, Croton-on-Hudson, N.Y. 10520

Filed June 23, 1965, Ser. No. 466,282

1 Claim. (Cl. 101—125)



In combination with a tag printing machine which includes an oscillating printing head provided with a chase-receiving recess wherein said recess extends upwardly into said head and is defined by a top wall and opposed mutually parallel depending side walls at right angles to said top wall, said side walls having opposed longitudinal ridges on the inner surfaces thereof, a chase consisting of a frame rectangular in cross-section complementary to said recess, said frame being composed of a front wall, a rear wall, and side walls thereby enclosing a compartment, said side walls of said frame having longitudinal grooves in the outer surfaces thereof complementary to said ridges, said frame being slidably mounted in said recess with said ridges registering in said grooves, an inked pad of substantially the dimensions of said compartment registering in said compartment, a strip of stencil paper bearing a stencilled legend in substantially the midportion thereof mounted on said frame with said midportion in contact with the bottom face of said pad, one end portion of said strip being turned upward against said rear wall of the frame and the other end portion of the strip being turned upward against said front wall of the frame, means for securing said one end portion of the strip to said rear wall of the frame comprising an adhesive, said front wall of the frame having a threaded hole therein spaced above the lower edge thereof, and means for securing said other end portion of the strip to said front wall of the frame comprising a screw complementary to said threaded hole extending through said strip and registering in said threaded hole.

3,352,236
EXPLOSIVE ENERGY TRANSFER MEANS

George W. Baker and Ryland D. Wiseman, Jr., Dahlgren, Va., assignors to the United States of America as represented by the Secretary of the Navy

Filed Mar. 28, 1966, Ser. No. 538,910

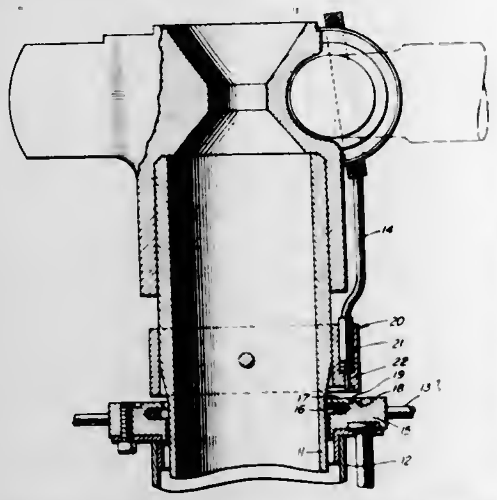
2 Claims. (Cl. 102—24)

1. A means for transferring explosive energy from a first object to a second object comprising

an explosive charge on said first object;

means for igniting said explosive;

a driver plate mounted on said first object adjacent to said explosive charge; and

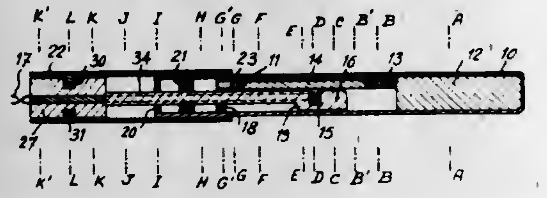


a plurality of pickup probes mounted on said second object, said second object being a shaft and said first object being a collar surrounding said shaft, each pickup probe being in communication with an explosive igniter, whereby the firing of said explosive charge will cause said driver plate to be driven into contact with said pickup probes to fire said igniters.

3,352,237

DETONATOR WITH ADJUSTABLE DELAY AND BUILT-IN SETTING DEVICE

Rene F. Turquois, 8 Rue Djebli, Rabat, Morocco
Filed June 23, 1966, Ser. No. 559,871
Claims priority, application France, June 25, 1965, 22,224; Mar. 1, 1966, 55,793
9 Claims. (Cl. 102—28)


K' L K J I H G' G F E D C B' B A
17 22 30 34 21 23 11 14 16 13 12 10
27 31 20 18 19 15
K' L K J I H G' G F E D C B' B A

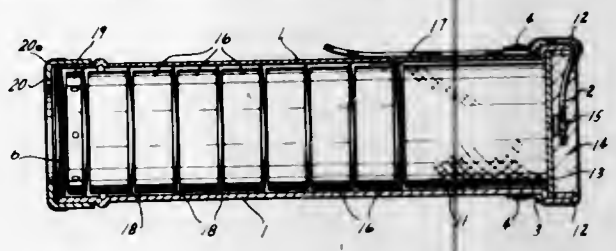
1. A detonator comprising a casing means and a bushing means adapted to telescopically receive said casing means for relative axial movement therebetween, charge means secured in said casing means adjacent one end thereof, relay powder means comprising an elongated column of powder secured in contiguous relation to said charge means for movement with one of said relatively movable means, an ignition bead secured to a bead mounting member within said casing adjacent said relay powder column, means securing said bead mounting member to said bushing means for sliding movement relative to said casing means whereby upon relative telescopic movement of said casing means and said bushing means the position of said ignition bead along the length of said relay powder column is varied.

3,352,238

ATOMIZER AND METHOD FOR DISSEMINATING TOXICANTS

Hal R. Spragg and Luther A. Price, Phoenix, and James M. Wooldridge, Glendale, Ariz., assignors to Universal Match Corporation, a corporation of Delaware
Filed Oct. 12, 1965, Ser. No. 495,255
8 Claims. (Cl. 102—39)

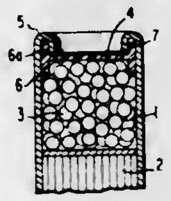
1. A pyrotechnic atomizer for toxicants comprising: a pyrotechnic gas-generating propellant charge; a normally solid toxicant charge element having longitudinal pilot apertures therein, providing an initial conduit for propellant gases flowing therethrough, which apertures are enlarged by abrasion of the charge element by said gases until essentially the entire charge element is consumed; a casing for said propellant and toxicant charges; a flame-front-limiting partition dividing said casing into a gas-generating chamber containing said propellant charge and an atomizing chamber containing said toxicant charge positioned therewithin to provide abrading, limited heat-exchange contact between the propellant gas and the normally solid toxicant charge element to aerosolize said toxicant charge when said propellant is fired without raising the temperature of a substantial portion of said toxicant to its decomposition temperature.



3,352,239

CARTRIDGE CASE

Thomas Schinnerer, Furth, Bavaria, and Hans Umbach, Stadeln uber Nurnberg, Germany, and Ernst Fröbel, deceased, late of Furth, Bavaria, Germany, by Elise Fröbel, Furth, Bavaria, and Ernst Günter Fröbel, Nurnberg, Germany, heirs, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Sept. 7, 1965, Ser. No. 485,642
9 Claims. (Cl. 102—43)



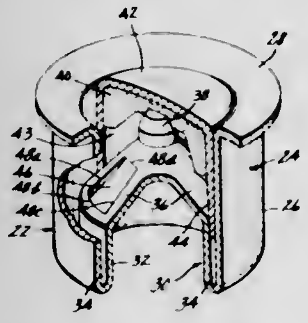
1. A cartridge, comprising: a generally tubular cartridge case having an axis, a forward discharging end and a rearward ignition end; a propellant charge in said case; buckshot in said case forwardly of said charge; a synthetic polymer closure disk closing said case forwardly of said buckshot, having a web portion, a forward tubular portion extending from the rim of said web portion, and a rearward tubular portion extending from the rim of said web portion; said disk being symmetrical with respect to a plane extending through said web portion and perpendicular to the axis of said case so that said disk may be inserted in said case without orientation; said case having a forward U-cross sectional shaped annular portion reversely flanged and engaging said forward tubular portion on opposite sides to provide a labyrinth type forward seal.

3,352,240

PRIMER

George R. Eckstein, Fairfield, Conn., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Nov. 30, 1965, Ser. No. 510,508
5 Claims. (Cl. 102—45)

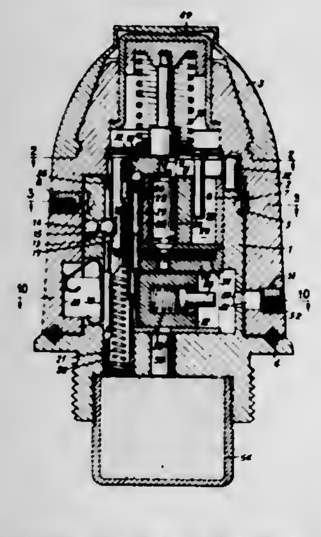
1. In a cartridge having a rear head end adapted to receive a primer in a conventional manner, said primer comprising a one-piece battery cup and anvil member insertable in said cartridge head, said one-piece member comprising a tubular battery cup portion having its rear end open ended and adapted to receive a primer cup in substantially hermetically sealed relationship, an elongated anvil portion integrally formed with the forward extremity of said battery cup portion and projecting rearwardly towards said open end of said battery cup portion, said anvil portion comprising a support wall spaced inwardly from the forward extremity of said battery cup portion and forming an annular recess therewith, an inclined wall portion integrally formed with said anvil support wall which converges rearwardly into an anvil impact end which is substantially centrally located within said battery cup portion adjacent the open end of said battery cup portion, a primer cup having sensitive priming mixture therein inserted into the open end of said battery cup portion, and flash hole blow-out means on said inclined wall portion, said flash hole blow-out means comprising a definable unitary flash hole cover portion which is pre-sheared along the major portion of its periphery and whose peripheral minor portion is integral with the inclined wall portion, the inclined wall portion and the flash hole cover portion forming a substantially imperforate closed end wall which permits air to move therethrough while preventing priming mixture and propellant powder from passing through prior to firing, said partially pre-sheared flash hole cover adapted to hinge outwardly about said unsheared minor portion to form an accurate and definable flash hole opening upon firing of the primer.



3,352,241

PROJECTILE IMPACT FUZE

André Combourieux, Geneva, Switzerland, assignor to Industrial Holding Establishment, Vaduz, Liechtenstein
Filed Mar. 16, 1966. Ser. No. 534,901
Claims priority, application Switzerland, Mar. 18, 1965, 3,820/65
5 Claims. (Cl. 102—76)

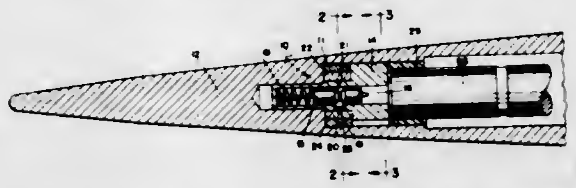


1. Projectile impact fuze having trajectory safety means comprising a balance bar, a spring for actuating said balance bar to control the arming of the fuze, locking means to prevent operation of said balance-bar before firing, manually operated fire conditioning means controlling said locking means, two members movable relative to one another, before firing of the fuze, during the operation of said fire conditioning means, said spring being disposed between said members and said members tensioning said spring during said operation of said fire conditioning means.

3,352,242

THERMALLY INITIATED PYROTECHNIC DELAY TIME FUZE

Charles E. McFann, Woodbine, and Louis J. de Sabla, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 29, 1963, Ser. No. 327,161
5 Claims. (Cl. 102—85.6)

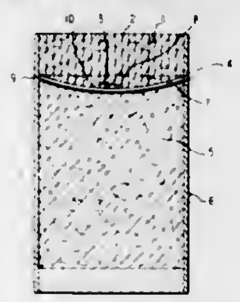


1. In combination with a rocket having an ogive, said ogive having an unbroken streamlined outer surface thereon and a coaxial socket therewithin, a thermally initiated fuze mechanism for said rocket comprising:
a hollow actuator housing having an open end and a closed end,
said housing being disposed in said socket,
a firing pin disposed within said housing,
a fuze disposed adjacent the open end of said housing,
resilient means interposed between said firing pin and the closed end of said housing and normally urging said firing pin toward said fuze,
means on said housing for restraining said firing pin against the urging of said resilient means,
said restraining means including a plurality of detent balls disposed in apertures circumferentially spaced about said housing,
said balls projecting radially inward of the inner surface of said housing and into a circumferential groove formed on said firing pin, and
thermal means on said housing completely surrounding said restraining means and responsive to aerodynamic heating of the ogive for releasing said restraining means whereby said resilient means will drive said firing pin into initiating contact with said fuze.

3,352,243

SOLID FUEL PROPELLANT CHARGE

Heinz Dilchert, Steyerberg, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed July 14, 1965, Ser. No. 471,828
15 Claims. (Cl. 102—101)



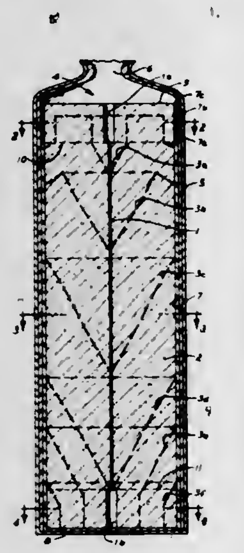
1. A solid fuel end burner propellant charge for rocket engines having an axis extending in the direction of burning, comprising: a first solid block of propellant fuel that is void of any axial through passageways, constituting a starter stage; said first block having a free burning end surface for ignition; said first block having an opposite first bonding end surface axially spaced a substantial distance throughout its entire extent from said burning end surface; a second solid block of propellant fuel having a substantially slower burning characteristic for sustained flight and a second bonding end surface corresponding in shape to said bonding end surface substantially throughout their extent; means holding said bonding end surfaces together throughout their extent; said first bonding end surface having surface portions axially spaced from corresponding axially aligned surface portions of said free

burning end surface at substantially different axial distances than the axial distances between the remaining surface portions of said first bonding surface and the axially aligned corresponding surface portions of said free end surface, to constitute means for transmitting the ignition from said first block to said second block over a predetermined substantial transition period of time corresponding to the time between the ignition of the bonding surface portion with the smallest axial spacing from its corresponding axially aligned free end surface portion and the ignition of the bonding surface portion with the greatest axial spacing from its corresponding axially aligned free end surface portion; said first solid block of propellant fuel constituting starter stage means for producing a starter burning period of time burning substantially only portions of said first block that is of substantially greater duration than said transition period; said second solid block of propellant fuel constituting sustained flight stage means for producing a sustained flight burning period of time burning substantially only portions of said second block that is of substantially greater duration than said transition period; and each of said free bonding and free end surfaces being axially symmetrical.

3,352,244
GAS-GENERATING GRAIN

William H. Holter, Waterford, Danny D. Dunfee, Fairfax, and Roland C. Webster, Annandale, Va., assignors to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia

Filed Oct. 22, 1965, Ser. No. 502,144
13 Claims. (Cl. 102—102)



1. An end-burning grain having an initial ignition surface and a restricted head-end surface at its opposite end and comprising a self-oxidant, gas-generating matrix having a longitudinal recess extending inwardly from its head end, said grain containing a single elongated metal heat conductor longitudinally embedded in the matrix of said grain and communicating with said recess.

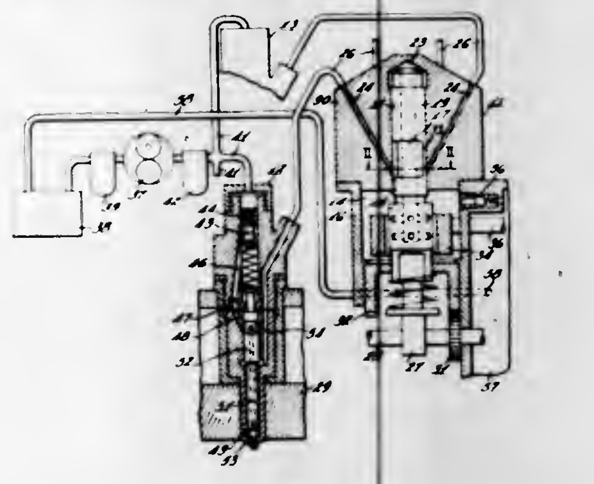
3,352,245
FUEL INJECTION SYSTEM

George D. Wolff, Hazel Crest, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Dec. 9, 1965, Ser. No. 521,237
15 Claims. (Cl. 103—2)

1. A fuel injection system for a multicylinder engine, comprising:

a distributor type fuel injection pump having
  a supply chamber,
  a high pressure chamber,
  a bore opening into said high pressure chamber,
  a plurality of delivery passages,
  a reciprocating plunger in said bore for cyclically pressurizing fuel in said high pressure chamber, and
  means cyclically connecting said delivery passages one at a time to said high pressure chamber and connecting said delivery passages to said supply chamber when the latter are not connected to said high pressure chamber,
a fuel injection nozzle for each engine cylinder, each nozzle having
  a body with a pressure cavity,
  a pressure responsive valve for delivering fuel from said pressure cavity to an engine cylinder associated with said nozzle, first and second branch passageways in said body connected to and extending from said cavity, and

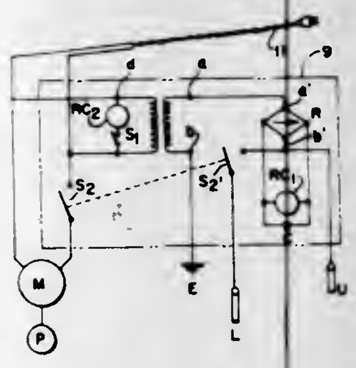


  check valve means in said first passageway permitting flow therethrough in the direction toward said cavity and preventing flow in the opposite direction,
a fuel supply pump delivering fuel from a fuel source to said first passageways of said nozzles,
conduits connecting said second passageways of said nozzles to said delivery passages, respectively, and
conduit means connecting said supply chamber to said source.

3,352,246
AUTOMATIC SUBMERSIBLE PUMP

Mitsuo Inoue, Nishinomiya, Japan, assignor to C.D.M. Kabushiki Kaisha, Kishiwada, Osaka, Japan, a corporation of Japan

Filed Oct. 14, 1965, Ser. No. 495,839
5 Claims. (Cl. 103—25)

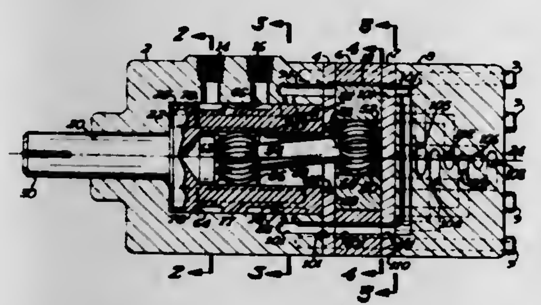


1. In combination, a submersible pump, a motor for driving said pump, and an automatic control device mounted on said pump for controlling the operation of said pump motor in response to changes in the water level around said pump, said automatic control device comprising vertically spaced upper and lower electrodes which when submerged are adapted to be electrically connected to an earth of said control device by conduction through the water in which the pump is immersed, a transformer having a primary circuit which is adapted to be connected to a power supply and a secondary circuit, a rectifier having one input terminal connected to one terminal of said secondary circuit and the other input terminal connected to said upper electrode, the other terminal of said secondary circuit being connected to the earth, a first relay coil connected across the output terminals of said rectifier, a second relay coil, a first switch closed by energization of said first relay coil, said first switch being connected in series with said second relay coil across the transformer primary circuit for energizing said second relay coil when said first switch is closed, said second relay coil, when energized, closing another switch in the motor circuit to actuate said pump motor, and a change-over switch means directly coupled to said motor circuit switch operative to make a connection between said lower electrode and the input terminal of said rectifier which is also connected with said upper electrode in response to the closing of said motor circuit switch, whereby said transformer secondary circuit will remain closed and said pump motor will continue to operate as long as said lower electrode is conductively connected to the earth through the water in which the pump is emerged.

3,352,247
FLUID PRESSURE DEVICE WITH DUAL FEED AND EXHAUST

Wayne B. Easton, South Bend, Ind., assignor to Char-Lynn Company, Eden Prairie, Minn., a corporation of Minnesota

Filed Dec. 8, 1965, Ser. No. 512,398
13 Claims. (Cl. 103—130)

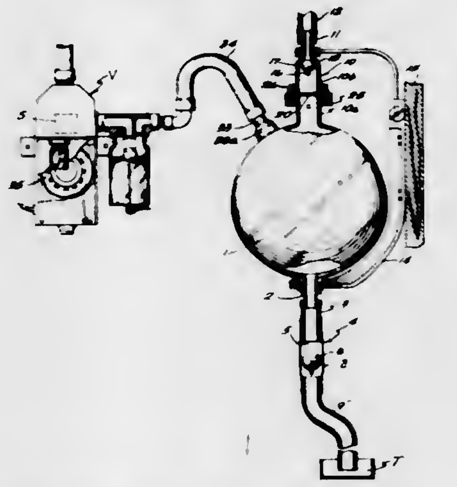


1. A rotary fluid pressure device comprising a casing, fluid inlet and outlet means, a ring member defining a chamber and having a plurality of circumferentially spaced internal teeth, a cooperating externally toothed star member having fewer teeth than said ring member disposed eccentrically relative to the axis of said ring member, one of said members having rotational movement about its own axis and one of said members having orbital movement about the axis of the other of said members with the teeth of said members intermeshing in sealing engagement to form expanding cells on one side of the line of eccentricity and contracting cells on the other side of said line during relative movement between said members, a valve rotatably disposed in said casing, drive means connecting said valve to one of said members for rotation of said valve in synchronism with one of said movements of one of said members, said valve having fluid feeding passages in fluid communication with said fluid inlet means and fluid exhausting passages in fluid communication with said fluid outlet means, said casing having two sets of passages communicating with said ring chamber at points between said ring member teeth, said passages having circumferentially arranged openings for fluid communication with said fluid feeding and exhausting passages of said valve to effect communication between said inlet means and said expanding cells on one side of said line of eccentricity and between said outlet means and said contracting cells on the other side of said line of eccentricity during rotation of said valve, said openings of said first set of passages being alternately arranged relative to said openings of said second set of passages with each of said openings in one of said sets of passages forming a pair with and being disposed on diametrically opposite sides of said casing from one of said passage openings of the other of said sets of passages, the passages of each of said pair of openings having communication with said chamber between the same pair of adjacent ring member teeth.

3,352,248
FLUID CONVEYING APPARATUS

Lloyd F. Bender, Rte. 2, Hayward, Wis. 54843

Filed June 20, 1966, Ser. No. 558,703
4 Claims. (Cl. 103—236)

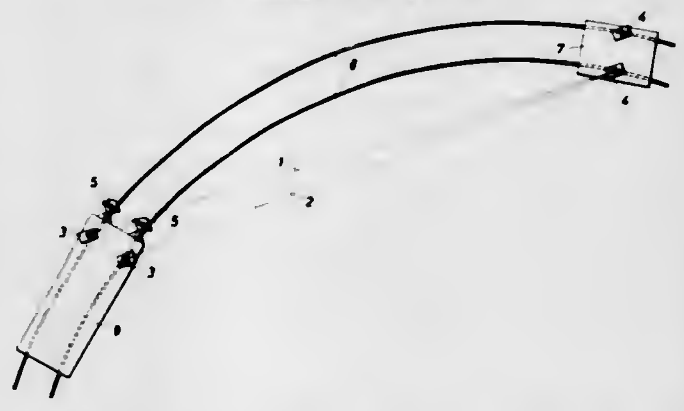


1. Fluid conveying apparatus comprising, a vessel having a fluid inlet conduit and an outlet conduit, means for subjecting said vessel alternately to vacuum and atmosphere, said fluid inlet conduit having a one-way check ball being the sole means to prevent return flow of fluid from said vessel through said inlet conduit, said outlet conduit having a one-way fluid discharge valve which closes when said vessel is subjected to vacuum and opens when said vessel is open to atmosphere, and a disc in said inlet conduit between said one-way check ball and said vessel, said disc having a series of circumferentially spaced apertures therethrough to cause a fluid build up beneath said ball and floating of the latter to facilitate upward movement thereof to the closing position, said multi-apertured disc also acting to distribute the fluid around the vessel as it flows into the vessel.

3,352,249
TRACK ALIGNING APPARATUS

Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna, Austria

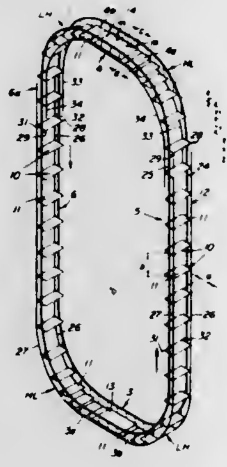
Filed Jan. 4, 1965, Ser. No. 422,912
2 Claims. (Cl. 104—7)



1. A track alignment apparatus comprising two reference lines defining a reference plane in respect of which the track is to be aligned, each reference line having two ends, a first support in a graded track section, a second support in an ungraded track section, one of the ends of the two reference lines being on the first support vertically

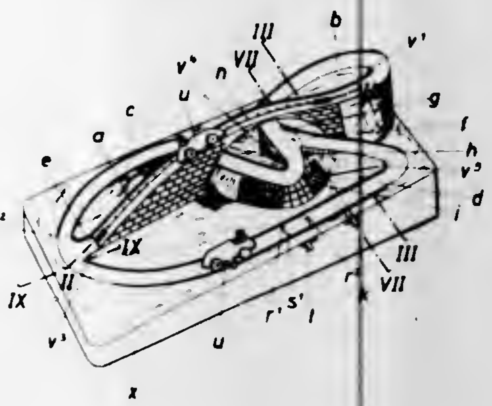
above a respective rail of the track, the other one of the ends of the two reference lines being in a single end point on the second support vertically above one of the track rails, and track grading means arranged between the reference line ends and mounted on said first support and adapted to lift the track in relation to the end portion of the reference lines on the first support.

3,352,250
TRANSPORT APPARATUS
Gabriel Bouladon, Versoix, Geneva, and Paul Zuppiger, Carouge, Geneva, Switzerland, assignors to The Battelle Development Corporation
Filed Mar. 20, 1964, Ser. No. 353,515
Claims priority, application Switzerland, Mar. 22, 1963, 3,667/63; June 6, 1963, 7,126/63
28 Claims. (Cl. 104—25)



1. Transport apparatus comprising a plurality of elevator units each including a rectangular platform, and drive and guide means engaging said elevator units for said platforms to be driven and guided in a horizontal position along an endless path comprising at least two low speed zones situated at different levels, a pair of relatively high speed zones between successive low speed zones, and a varying speed zone connecting each end of each low speed zone with the adjacent end of a relatively high speed zone, said drive and guide means including guide means extending in said low speed zones and engaging said units to guide them for horizontal movement through each said low speed zone with said platforms aligned and closely adjacent each other, said guide means further extending in said relatively high speed zones and engaging said units to guide them for substantially aligned vertical movement through each said relatively high speed zone, and said guide means extending through said varying speed zones connecting said low and relatively high speed zones and engaging said units to guide them for vertical and horizontal movement through each said varying speed zone with the corresponding sides of said platforms maintained substantially parallel to each other and said platforms in stepped relation with difference in elevation of said platforms being at a maximum value at the high speed end of each said varying speed zone and varying progressively to zero at the low speed end thereof, said drive and guide means further including drive means engaging said elevator units for driving said units at low substantially constant speed horizontally through each said low speed zone, drive means for driving said units at relatively high substantially constant speed through each said relatively high speed zone, and drive means for driving said units from one to the other of said low and relatively high speed zones vertically and horizontally through each said varying speed zone at a speed which progressively varies from one of said low and relatively high substantially constant speeds at one end of said varying speed zone to the other of said low and relatively high substantially constant speeds at the other end of said varying speed zone.

3,352,251
TOY TRACK SYSTEM
Alfred Einfalt, Nurnberg, Germany, assignor to Gebruder Einfalt, Blechspielwarenfabrik, Nurnberg, Germany, a firm of Germany
Filed Sept. 8, 1965, Ser. No. 485,715
Claims priority, application Germany, Feb. 6, 1965, E 21,158
10 Claims. (Cl. 104—63)

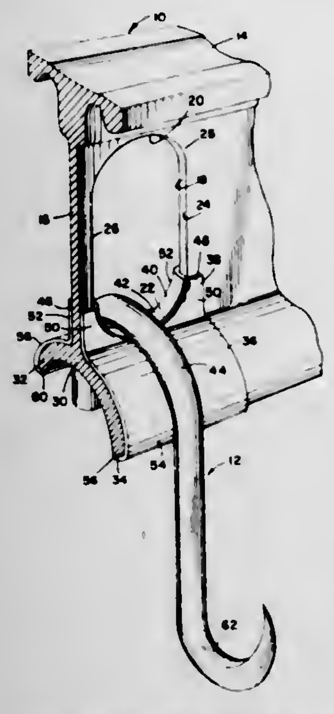


1. A toy track system comprising, in combination, a base structure including an upgrade track portion, several downgrade track portions branched off from an elevated portion of the track system and rejoining the upgrade at the lower end thereof to form on the base structure a continuous track system having several branches; a vehicle traveling on said track system; drive means mounted on the base structure and engageable with said vehicle at the lower end of the upgrade for driving the vehicle to the upper end of the upgrade; switch means for directing the vehicle into a selected one of said downgrades, said vehicle traveling by gravity along the selected downgrade and to the juncture point thereof with the upgrade, said switch means including a switching member movable between a position substantially flush with the track level and a raised position upwardly protruding therefrom, said vehicle having on one of its sides a catch means engageable with said switching member in the raised position thereof; and an actuating means coacting with said switching member for moving the latter into a selected one of said positions, engagement of the switching member with said catch means leading the vehicle into a predetermined one of said downgrades.

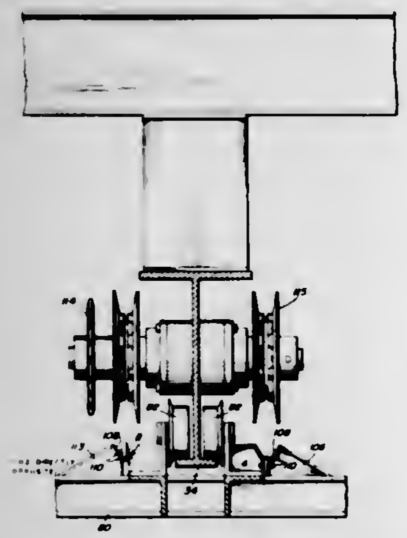
3,352,252
OVERHEAD RAIL DESIGN
William A. Bertolini, Woodside, N.Y., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 28, 1965, Ser. No. 516,968
8 Claims. (Cl. 104—106)

6. An improved meat rail design for preventing meat contamination and comprising a meat rail having a lower flange portion and an upper elongated upright web section of aluminum material provided with an apertured portion having an upright elongated opening defined by side and top and bottom wall portions of the apertured portion, a flexible meat shield of high wear resistant material for receiving a hook for meat, said shield having a saddle portion defined by an upper hook receiving concave central portion engaging the bottom wall of the recess in snug relation and a pair of opposed upright portions joining with the central portion and partially encompassing the side walls of the apertured portion, said

shield having a lower clamping portion joined into one-piece relation with the saddle portion and having a pair of transversely extending clamping sections provided with curved extremities and having snug engagement with the lower flange portion of the rail.

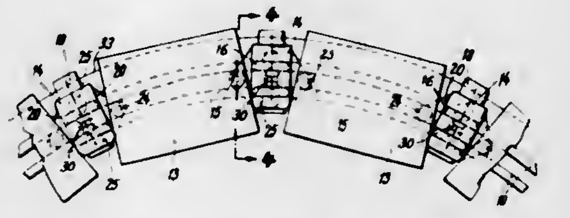


3,352,253
APPARATUS FOR CONVEYING ARTICLES
Johnson W. Lacy and Charles K. Brown, Jr., Richmond, Va., assignors to Concrete Building Units Co., Inc., Richmond, Va., a corporation of Virginia
Filed Oct. 22, 1965, Ser. No. 500,798
4 Claims. (Cl. 104—172)



1. Apparatus for handling and conveying articles comprising an elevated monorail tramline, article carrying racks suspended from and movable along said tramline, a plurality of independently operated endless driving chains arranged end-to-end along said tramline, all of said chains being disposed in such closely adjacent relationship that racks propelled along said tramline by one chain may be picked up at the end of said chain and carried along by an adjacent chain, and means fixedly carried on each of said racks adapted to cooperate with each of said chains, said means being so constructed that upon relative movement of a chain in one direction, said chain will engage and propel said racks, while upon relative movement in the other direction, said chain is released from engagement with racks, so that the chain or racks may move independently of each other.

3,352,254
MONORAIL TRAIN
Ernst Lauber, Thun, Switzerland, assignor to Maschinenfabrik Habegger, Thun, Switzerland
Filed Apr. 9, 1965, Ser. No. 446,893
Claims priority, application Germany, Oct. 21, 1964, M 62,828
7 Claims. (Cl. 105—4)

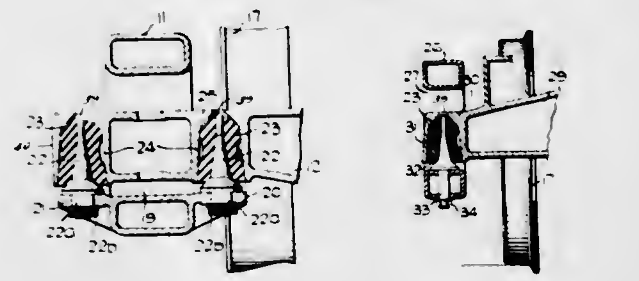


1. A railroad train comprising, in combination, a plurality of successively arranged car bodies having adjacent ends;

(a) a plurality of bogies respectively located between adjacent ends of said car bodies and respectively supporting said car bodies at said ends thereof, each of said bogies having a plurality of rolling means adapted to engage rail means, the axes of said plurality of rolling means of each bogie being located in a single substantially vertical plane extending transverse to the elongation of said train, said plurality of rolling means for each bogie including at least one support wheel turnable about a substantially horizontal axis and adapted to engage a top surface of the rail means and a pair of bracing rolls turnable about substantially vertical axes and respectively adapted to engage opposite side faces of the rail means;

(b) and connecting means connecting each bogie to said adjacent ends of said car bodies tiltable about a substantially vertical axis while substantially preventing tilting of said car bodies relative to said bogie about horizontal axes.

3,352,255
BOGIE WITH ELASTOMERICALLY SPRUNG BOLSTER
Francis Ernest Sheppard, Oadby, England, assignor to Rolls-Royce Limited, Derby, England
Filed Aug. 16, 1963, Ser. No. 302,638
Claims priority, application Great Britain, Aug. 20, 1962, 31,961/62
9 Claims. (Cl. 105—197)



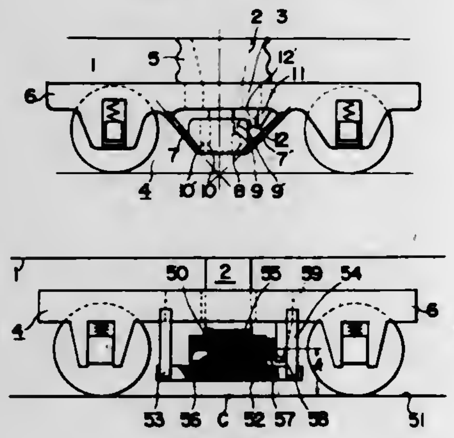
1. A frame comprising two side members, bearing mountings for at least front and back wheel axles provided on the side members, axles mounted in said bearings, wheels on said axles, at least one cross member extending between the side members with ends projecting into throughways formed in the side members each said cross-member being terminally provided with frusto-conical cavities, a swivel bearing supported at least partly by said cross member, and a plurality of spaced bell springs on each side member mounted in said cavities to support the cross-member ends, a frusto-conical center pin within said cavity, each said bell spring having a unitary resilient elastomeric frusto-conical member

formed with coaxial internal and external frusto-conical thrust surfaces, respectively engaging the wall of said cavity and frusto-conical center pin, said bell springs forming the sole connection between said side members and said cross-member.

7. A bogie frame comprising two side members, corresponding axle bearings provided on each of said side members forwardly and rearwardly thereof, front and back axles mounted in said axle bearings, wheels on said axles, a bogie swivel bearing support comprising at least one cross member having its ends intersecting the lines of the side members as seen in plan, each said cross-member being terminally provided with frusto-conical cavities, a plurality of bell springs spaced apart as viewed in plan on each side of said side members a frusto-conical center pin mounted on each said side member within said cavity, said bell springs being interposed between the cross member ends and the side members and forming the sole connection therebetween, each said bell spring having a unitary resilient elastomeric frusto-conical member formed with coaxial internal and external frusto-conical thrust surfaces respectively engaging the wall of said cavity and said center pin, and a swivel bearing carried centrally on said support.

3,352,256
STABILIZING RAILWAY TRUCK

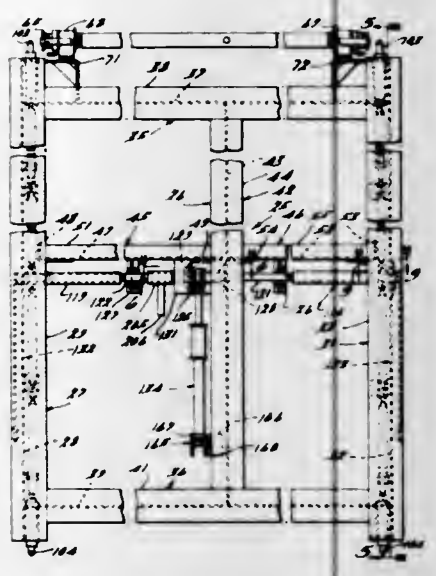
Tooru Saima, Meguro-ku, Tokyo, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Mar. 13, 1964, Ser. No. 351,727
Claims priority, application Japan, Mar. 19, 1963, 38/12,809, 38/12,815
3 Claims. (Cl. 105—199)



1. A railway truck car body assembly which acts as a truck having means to prevent shift of axle weight when it is travelling in one direction and acts as a truck having a low bolster when it is travelling in the opposite direction, comprising a truck frame, a car body, a bolster pin depending fromsaid car body through said truck frame, a traction beam pivotally supported by said truck frame to cooperate with said bolster pin in tractive force transmitting relation, said traction beam being pivotally suspended from the truck frame by means of a pair of converging links having their axes normally crossing each other at a point located on the surface of the rails upon which said car body is adapted to travel, and contact means on said traction beam and on said bolster pin so constructed as to cooperate such that when the truck is travelling in one direction, the effective point of transmitting the tractive force between the truck frame and car body is substantially on the surface of the rails on which said truck is running, whereas when said truck is travelling in the opposite direction, said point is shifted to a location which is at a higher vertical level than the surface of said rails, said contact means comprising an abutting surface on the upper outer side and another abutting surface on the lower inner side of said bolster pin, said traction beam being provided with an upper and lower abutting surface each adapted to cooperate with the corresponding abutting surfaces of said bolster pin, said upper and lower abutting surfaces of each of said bolster pin and traction beam being vertically spaced from each other.

3,352,257
ADJUSTABLE BULKHEAD

Robert F. Lehnert, Detroit, James R. Bennett, New Boston, John P. Moorhead, Northville, and Kenneth R. Jenkins, Detroit, Mich., assignors to Evans Products Company, Plymouth, Mich., a corporation of Delaware
Filed Feb. 9, 1965, Ser. No. 431,300
26 Claims. (Cl. 105—376)

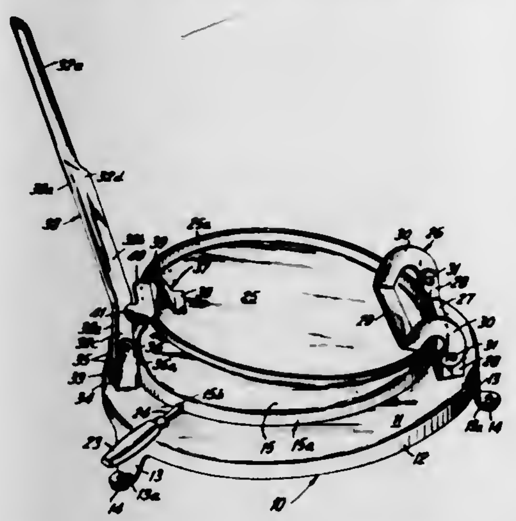


1. A locking mechanism for retaining a device in a preselected position, said locking mechanism including a locking member, means supporting said locking member upon said device for movement into and out of engagement with a cooperating locking member, a torsion member supported upon said device for rotation, means operatively connecting said torsion member to said locking member for operating said locking member upon rotation of said torsion member, said torsion member having a radially extending bore formed therein, an operating handle journaled for rotation upon said torsion member contiguous to said bore, said operating handle being rotatable from an at-rest position to a locking mechanism actuating position, a pin supported for reciprocation by said operating handle, said pin being juxtaposed to said bore and out of engagement with said bore when said operating handle is in its at-rest position, and motion transmitting means for reciprocating said pin into engagement with said bore upon rotation of said operating handle from its at-rest position toward its locking mechanism actuating position for simultaneous rotation of said torsion member and said operating handle upon continued rotation of said operating handle to its locking mechanism actuating position.

3,352,258
MACHINE FOR MAKING TORTILLAS AND THE LIKE

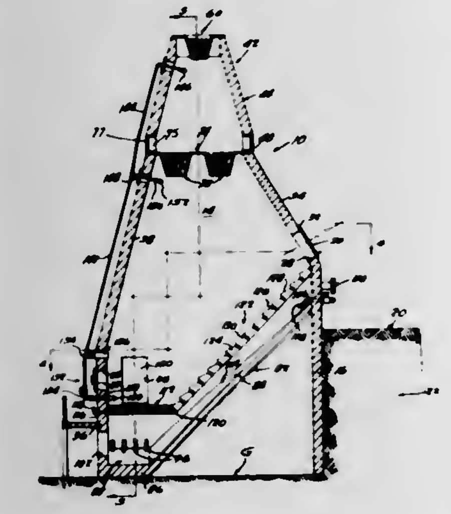
Manuel R. Lassaulx, 244 Ejercito Nacional Ave., Mexico City, Mexico
Filed Sept. 8, 1965, Ser. No. 485,763
9 Claims. (Cl. 107—15)

1. Apparatus for making tortillas comprising a base, a flat disk, means mounting said disk on said base so that said disk can be oscillated in its plane about an axis transverse thereto, a flat-bottomed cover, means pivotally mounting said cover on said base independently of the mounting of said disk so that said cover can be pivoted away from said disk to permit a ball of tortilla dough to be placed on said disk and may then be moved towards general parallelism with said disk to compress the ball between said disk and said cover and to permit flattening of the dough by simultaneous oscillation of said disk.



3,352,259
MUNICIPAL INCINERATOR

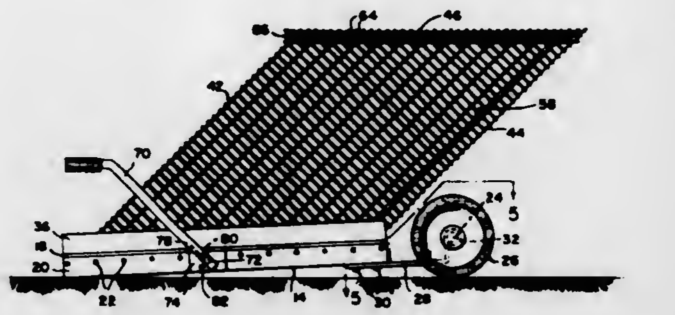
Louis A. Salmon, 12 Pond St., Lynn, Mass. 01904
Filed July 30, 1965, Ser. No. 476,093
5 Claims. (Cl. 110—7)



1. A device of the character described, comprising a support, a closed hollow housing mounted on the support, burner means within the lower part of the housing, an ash pit in the housing beneath the burner means, horizontal grate means mounted within the housing and interposed between the ash pit and the burner means, air draft inlet opening means formed in one wall of the housing and opening to the space between the ash pit and said horizontal grate means, outlet stack means on the upper end of the housing, inlet opening means formed through another wall of the housing opposite to said one wall for introducing incinerable material to the horizontal grate means and the ash pit, a stepped avalanche grate declining within the housing from a point beneath said last-named inlet opening means to the adjacent side of said horizontal grate means, an imperforate slide disposed beneath said avalanche grate and extending the length thereof, said slide extending downwardly from said other wall to the adjacent side of the ash pit, said ash pit having a bottom wall which declines from one end of the housing to the other end of the housing, an adjacent end wall of the housing being formed with an opening at the depressed end of the ash pit bottom wall, a disposal trough having an elevated end adapted to receive material from the depressed end of the ash pit bottom wall, and water pressure means comprising nozzles adapted to force water and entrained material downwardly along the ash pit bottom wall from the elevated end of the bottom wall to said trough.

3,352,260
LEAF BURNER

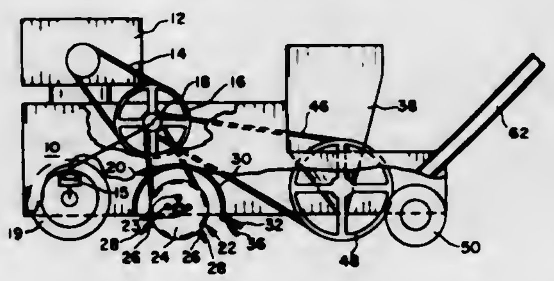
John W. Drayton, 220 Darby Road, Paoli, Pa. 19301, and Henry Reid Blynn, 423 Conestoga Road, Wayne, Pa. 19087
Filed Sept. 23, 1965, Ser. No. 489,717
16 Claims. (Cl. 110—19)



1. A portable burner for leaves and other rubbish comprising a base structure including a bottom tray, a pair of spaced side walls extending upwardly from said tray, a rear wall extending upwardly from the rear end of said tray and intersecting said side walls, and a top wall extending between said side walls and forwardly from said rear wall, said walls and said tray defining a burning chamber therein and an opening facing forwardly through which material may be delivered into the burning chamber, said opening slanting upwardly and rearwardly at a substantial angle relative to the bottom tray.

3,352,261
COMBINATION AGRICULTURAL MACHINE

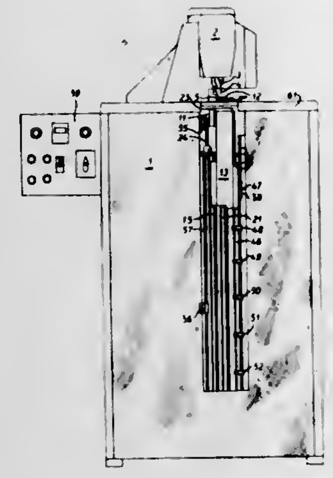
Larry W. Bonnell, 432 Midland Ave., Rye, N.Y. 10580
Filed Mar. 9, 1965, Ser. 438,296
4 Claims. (Cl. 111—8)



1. A combination agricultural machine comprising a chassis, a motor mounted on said chassis, a main drive shaft mounted on said chassis and operatively connected to said motor, drive wheels in operative connection with said main drive shaft, clutch means for disconnecting the driving connection between said motor and drive wheels, a rotary rasp device provided with separate driving means connected to said main drive shaft, said rotary rasp having a plurality of projections thereon, each of said projections excavating no more than 1¼ inches into the earth's surface, a power hopper located on said chassis, separate driving means connecting said power hopper to said main drive shaft, a roller, and a pair of arms each secured at one end to said chassis and at the other end to said roller, and means on said chassis and removably connected to said arms for permitting said roller to be adjusted to various selected positions relative to said chassis whereby in at least one of said selected positions

said roller is located directly under said chassis causing one end of said chassis to be elevated and in another selected position of said roller the latter acts as an earth compacting roller.

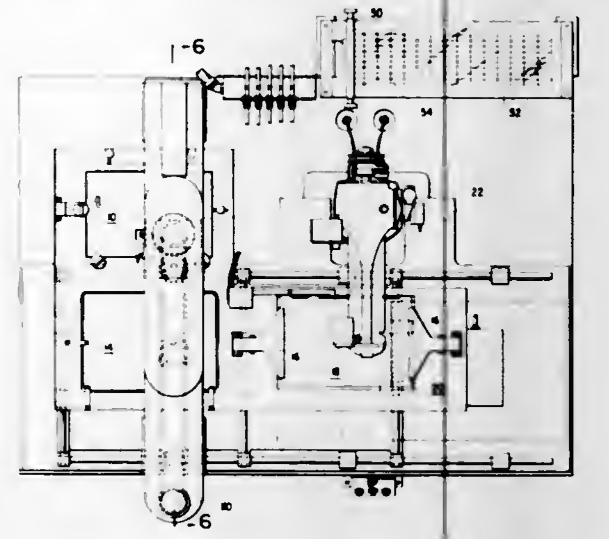
3,352,262
AUTOMATIC FABRIC FEEDER DEVICE FOR SEWING MACHINES
Luigi Bono, Pavia, Italy, assignor to Necchi Società per Azioni, Pavia, Italy
Filed Apr. 8, 1965, Ser. No. 446,522
Claims priority, application Italy, Apr. 10, 1964, 7,715/64
17 Claims. (Cl. 112—2)



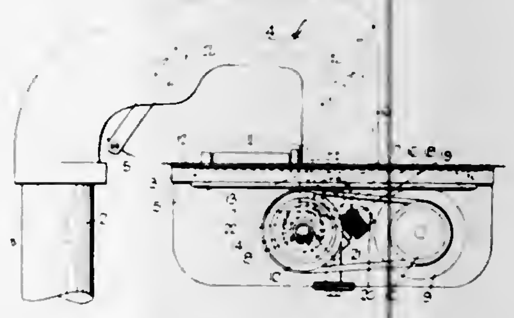
15. In a fabric sewing machine which includes a sewing needle and an automatic fabric feeder for advancing a fabric under said needle in a feed direction, said feeder comprising: first and second carriages each comprising a fabric holding clamp and each being independently reciprocable toward and away from each other during machine operation, drive means to reciprocably drive said carriages along said feed direction and means to maintain said carriages spaced apart a fixed distance relative to each other, release means to permit said carriages to move relative to each other during machine operation, and means to automatically re-establish said fixed distance subsequent to said carriages having moved relative to each other.

3,352,263
AUTOMATIC APPARATUS FOR SEWING MACHINES AND THE LIKE
Kenneth D. Adams, Long Valley, and Edward H. Kay, Stockholm, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 20, 1965, Ser. No. 481,314
7 Claims. (Cl. 112—2)

1. In combination, a sewing machine having a point of stitch formation and means for supporting and moving a work piece relative to the point of stitch formation in a path defined by a pattern line conforming to a desired configuration, said means comprising a work support, means for mounting said work support for universal movement relative to and in a plane containing the point of stitch formation, a pattern member mounted for movement with said work support and having a pattern line, a tracer mechanism for generating a varying electrical control signal in response to the relative position of said tracer mechanism laterally of the pattern line, said tracer mechanism being of the type adapted to scan a line by sweeping to and fro substantially perpendicularly across said line, means for producing a program signal, and means responsive to said program signal for disabling said tracer mechanism and for programming discrete angular variations in the direction of moving said work support, said last named means including a normally disengaged clutch means, an auxiliary motor operable for altering the direction of movement of the pattern member through said clutch means, means for enabling said clutch means when said tracer mechanism is disabled, and means for applying signals representing discrete angles to said auxiliary motor.



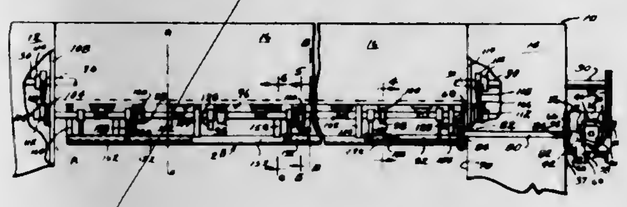
3,352,264
FABRIC LINKING MACHINES
Denis Matthews, Sutton-in-Ashfield, England, assignor to Matthews & Birkhamshaw Limited
Filed Feb. 3, 1965, Ser. No. 430,131
Claims priority, application Great Britain, Feb. 5, 1964, 4,785/64
3 Claims. (Cl. 112—25)



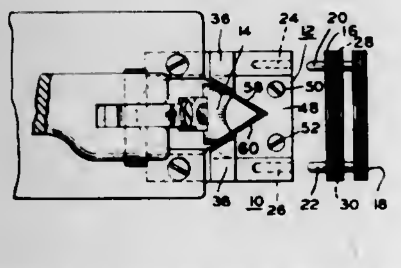
1. A linking machine having in combination a channelled ring carriage with a front wall, a series of die cast segmental blocks fitting in said channel ring carriage in mutual end to end relation forming a ring-like assembly of said blocks, each said block having an upper forwardly projecting portion projecting over said front wall of said channelled ring carriage and a series of radial substantially straight points cast in said upper forwardly projecting portion of said channelled ring carriage with a predetermined pitch spacing and projecting beyond said front wall of said channelled ring carriage, and screws removably securing said blocks to said channelled ring carriage, whereby any of said blocks can be removed with their own series of points cast in them and be replaced by other similar blocks having their own series of points similarly cast in them with the same or different pitch spacing.

3,352,265
BACKING FABRIC LATERAL SHIFTING ARRANGEMENT FOR TUFTING AND LIKE MACHINES
James A. Cobble, Sr., Harrison, and James A. Cobble, Jr., East Chattanooga, Tenn., assignors to Southern Machine Company, Inc., Chattanooga, Tenn., a corporation of Tennessee
Filed Apr. 21, 1965, Ser. No. 449,709
8 Claims. (Cl. 112—79)

1. In apparatus for serially inserting a plurality of loops of yarn in a prefabricated backing fabric, said apparatus including at least one generally vertically reciprocable yarn carrying needle which is reciprocable between a lower position wherein it projects into and through said backing fabric and an upper position wherein it is completely withdrawn from said backing fabric, and rotatable means located upstream and downstream from the path of reciprocation of said needle for guiding and advancing the backing fabric to and beyond said path of reciprocation of said needle, the improvement comprising: means engageable with the needle entering side of said backing fabric intermediate said upstream and downstream guiding and advancing means for shifting the portion of said backing fabric between said upstream and downstream guiding and advancing means which is within and adjacent the path of reciprocation of said needle laterally when said needle is withdrawn from said backing fabric to thereby, in association with said needle, effect the insertion of a row of yarn loops in which said row of yarn loops deviates from parallelism in zig-zag formation with the longitudinal direction of advance of said backing fabric from the downstream guiding and advancing means to the upstream guiding and advancing means; means intermittently reciprocating said means for shifting out of engagement with said backing fabric portion and back into a succeeding portion of said backing fabric; and means for cyclically controlling the sense and magnitude of lateral shifting of said backing fabric by said shifting means to thereby impose a repeating pattern upon said row of yarn loops, wherein the means intermittently reciprocating said means for shifting comprises means for disengaging said shifting means cyclically from said backing fabric, and means for displacing said shifting means upstream upon each disengagement to thereby reposition said shifting means for engagement with the backing fabric.

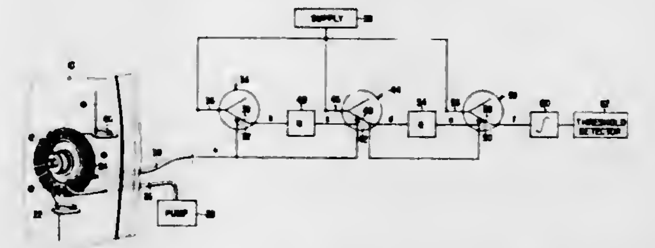


3,352,266
PINKING KNIFE
Angelo Micale, 995 Nassau St., North Brunswick, N.J. 08902
Filed June 4, 1965, Ser. No. 461,410
4 Claims. (Cl. 112—122)



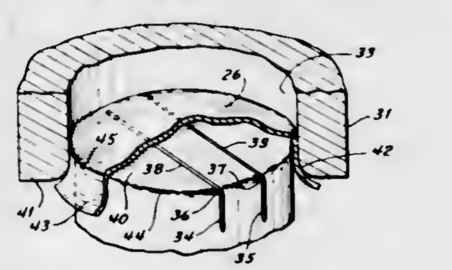
1. In a pinking attachment for a sewing machine having an upper moveable knife and a fixed shearing plate, the combination of an upper replaceable V-shaped blade and a lower replaceable shearing plate insert, said insert having a V-shaped cutting edge cooperating with the cutting edge of said blade, said insert cutting edge being longer than said blade cutting edge whereby bunching of the material during the pinking operation is eliminated, said blade having means thereon enabling said blade to be secured to said upper moveable knife, said insert having means thereon enabling said insert to be secured to the lower shearing plate, said insert holding means having upright members adjacent to the open end of said V-shaped cutting edge, said shearing plate insert V-shaped cutting edge extending below the upright members and said upright members guiding said upper blade during a pinking operation.

3,352,267
CONTROL CIRCUIT USEFUL WITH SEWING MACHINES
Robert C. Brandriff, Williamstown, and Charles G. Pickett, Dover, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 29, 1965, Ser. No. 510,227
11 Claims. (Cl. 112—218)



1. Circuit apparatus for use in controlling the modulation of a train of pulses comprising a first pair of signal translating channels connected in parallel and adapted to receive said pulse train, one of said channels being provided with a first NOT logic element, and also one of said channels being provided with means for delaying its respective signal by substantially the duration of a reference time period, a first OR logic element adapted to receive the output signals from both said channels to produce a logical sum signal, a second NOT logic element adapted to receive the output logical sum signal from said first OR logic element, a second pair of channels connected in parallel and adapted to receive the output signal from said second NOT element, and one of said second pair of channels being provided with means for delaying its signal by a duration substantially the same as said reference time period, and a second OR logic element adapted to receive the signals from both channels of said second pair of channels for producing a second logical sum signal.

3,352,268
METHOD FOR FORMING CLOSURE CAPS
Stanley J. Koll, Keansburg, N.J., assignor to American Flange & Manufacturing Co., Inc., New York, N.Y., a corporation of Delaware
Original application Apr. 24, 1963, Ser. No. 275,303. Divided and this application Oct. 21, 1965, Ser. No. 510,432
5 Claims. (Cl. 113—121)



1. The method of manufacturing lightweight metal closure caps of the type adapted to be formed over a lip bordering the opening of a container neck, said cap having a top portion and a laterally depending skirt which comprises forming a blank having a substantially circular periphery but with an ear extending outwardly from said periphery for a portion of the same, supporting a circular central portion of said blank, forming an annular peripheral portion surrounding said central portion laterally with respect to said supported center portion,

and simultaneously with said forming, scoring said lateral portion with a continuous score extending from the free end edge of said lateral portion throughout the extent of the same.

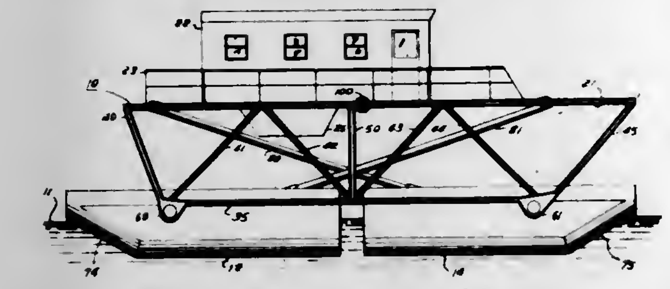
3,352,269

FLOATING WORK PLATFORM

William W. Dollison, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware

Filed Oct. 23, 1964, Ser. No. 406,203

17 Claims. (Cl. 114—.5)



1. A variable draft floating platform comprising in combination: a deck for supporting equipment and personnel; a plurality of elongated float chambers providing the sole buoyancy means for said deck, each of said chambers having a long dimension substantially greater than the maximum cross-sectional dimension; structure interconnecting said float chambers and said deck whereby said deck is supported above the surface of the water when said float chambers are floating in a body of water including a pivotal connection with each of said float chambers located at a point between the middle and the end of the long dimension of said chambers permitting the long dimension of each of said chambers to be rotated without changing the displacement of said chambers between a horizontal position for minimum draft operation and a vertical position for maximum draft operation; said float chambers when in said horizontal and vertical positions providing a support maintaining said deck at the same elevation above the surface of the water, and when in said vertical position extending below the surface wave action of the body of water and providing a stable wave transparent support for said deck; and means operatively connected with said deck and with each of said float chambers for positively mechanically moving each of said chambers between said horizontal and said vertical positions and for locking each of said chambers in a position ranging from vertical to horizontal.

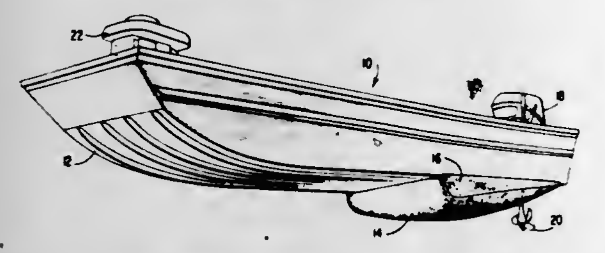
3,352,270

AIR LUBRICATED PLANING HULL

Peter R. Payne, Silver Spring, Md., assignor to Peter R. Payne Inc., Rockville, Md.

Filed Aug. 19, 1966, Ser. No. 573,580

2 Claims. (Cl. 114—67)



1. An air lubricated planing hull comprising porous inflatable membrane means secured to the bottom of said hull and pressurized air supply means mounted on said hull and adapted to supply air to said membrane means to inflate said membrane means at a constant pressure while air is permitted to pass through said membrane means to provide a film of lubricating air between said membrane means and the water.

3,352,271

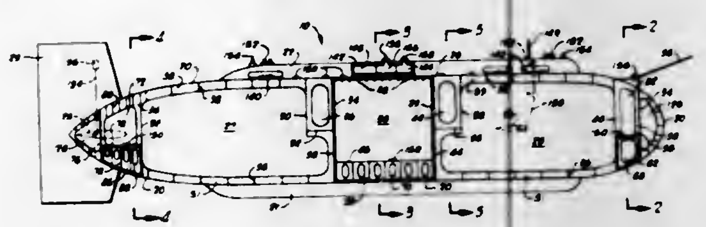
SUBMERSIBLE BARGE

Tamiro Watari, Kobe-shi, Japan, assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed May 20, 1966, Ser. No. 551,626

Claims priority, application Japan, Jan. 31, 1966, 41/5,477

7 Claims. (Cl. 114—74)



1. A submersible barge for transporting liquid cargo and having a fluid distribution and control system comprising:

a hull member;

pressure-resistant cargo space compartmented amidships in said hull;

nonpressure-resistant cargo tanks compartmented fore and aft in said hull;

ballast tanks located fore and aft in said hull;

trim tanks located fore, aft and amidships in said hull;

a fairwater superstructure disposed on said hull;

first means in said fairwater for connecting and controlling the flow of liquid cargo to and from the cargo space;

second means in said fairwater for connecting and controlling the flow of sea water to and from the nonpressure-resistant cargo tanks, oppositely to the flow of said liquid cargo;

third means in said fairwater for connecting and controlling the flow of sea water to and from the trim tanks; and

fourth means in said fairwater for connecting and controlling the flow of air under pressure to said ballast tanks, said trim tanks and said pressure-resistant cargo space.

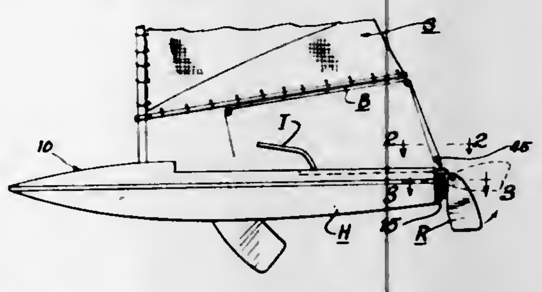
3,352,272

NAUTICAL RUDDER MOUNTING

Jack H. Brazier, Fort Myers, Fla., assignor to Sears, Roebuck & Co., Chicago, Ill., a corporation of New York

Filed Dec. 17, 1965, Ser. No. 514,498

6 Claims. (Cl. 114—165)



1. The combination, a rudder for small nautical craft and mounting means therefor, comprising

(a) a support adapted to be affixed to a boat transom,

(b) bracket means carrying said rudder on a horizontal axis, whereby the rudder may be adjustably secured between a lowered operative position and an elevated inoperative position,

(c) means rotatably mounting said bracket on a vertical axis on said support comprising an elongated, substantially vertical pintle carried by said support, the mounting means for the bracket comprising bearing members engaging said pintle,

(d) said rudder having a transverse perforation adjacent on extremity thereof, and

(e) clamp means cooperating with said perforation for securing said rudder to said bracket, said clamp means permitting angular adjustment of said rudder about said perforation as an axis while frictionally retaining the rudder in angularly adjusted position,

(f) a pulley fixed to said bracket coaxially with said pintle and

(g) a block mounted on said pulley and adapted to swivel on an axis coaxial with said bracket, said block being adapted to receive a boom sheet.

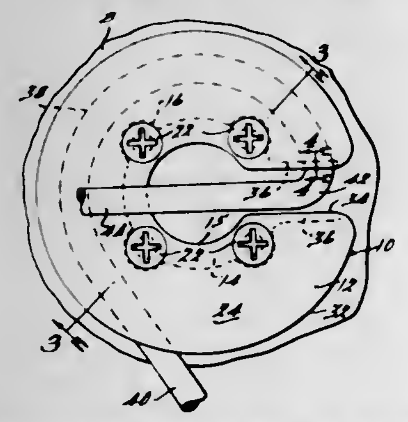
3,352,273

CLEAT

Alexander G. Herreshoff, Grosse Pointe, Paul J. Rich, Orchard Lake, and Ralph J. Johnson, Livonia, Mich., assignors to Algonac Marine Foundry, Inc., Algonac, Mich., a corporation of Michigan

Filed Nov. 2, 1965, Ser. No. 506,082

9 Claims. (Cl. 114—218)



1. A boat cleat for securing a line or the like, including a body having a central opening and a pair of generally parallel flanges of substantially equal diameter extending radially outwardly from said opening, said flanges being provided with a pair of outwardly divergent adjacent faces defining a groove therebetween which is open to the outer periphery of said body, one of said flanges having a slot therethrough extending inwardly into said central opening from the outer periphery of said body, and means disposed between said opening and said groove for mounting said body with the other of said flanges disposed against a mounting surface, the other of said flanges having means providing for the drainage of water from the opening.

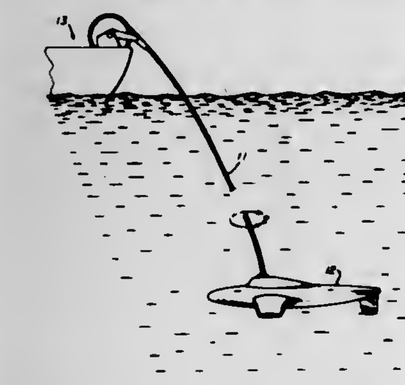
3,352,274

HIGH SPEED FAIRED TOWING CABLE

Dale E. Calkins, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 3, 1966, Ser. No. 533,380

6 Claims. (Cl. 114—235)



1. An elongate load bearing cable for towing an object underwater at high speeds comprising:

an elongate leading edge tension member of sufficient length to connect said object and a vessel on the surface of a body of water capable of withstanding the towing load of an underwater object,

an elongated trailing edge member of relatively flexible material,

means for slidably engaging said leading edge member with said trailing edge member continuously along a plane parallel to the elongate dimension of said cable,

said engaged leading and trailing edge members having an overall streamlined hydrofoil cross-sectional shape,

said hydrofoil cross-section having an inherent hydrodynamic center,

said plane being located forward of said hydrodynamic center of said hydrofoil cross section.

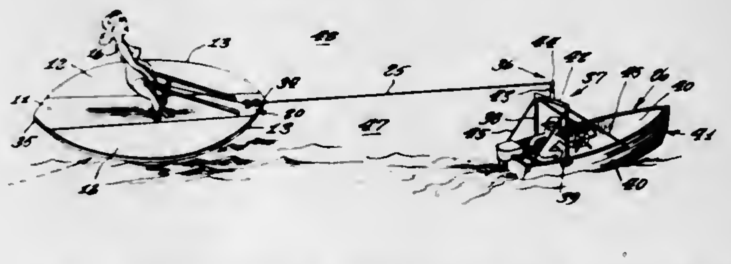
3,352,275

AQUAERO BOAT GLIDER

Homer C. Wilson, Thida, Ark. 72165

Filed Aug. 8, 1966, Ser. No. 570,862

4 Claims. (Cl. 114—235)



1. In a boat glider, a combination of a longitudinal central panel, a pair of floats, each one of said floats being adjacent one side of said central panel, holding means upon said central panel for a rider to ride upon said central panel, and means for securing said glider to a tow line from a boat, said means for holding said glider comprises a pair of upwardly, rearwardly extending straps, a handle across the rear end of said straps, a pair of upper extending braces connected to said handle straps to said central panel and said handle providing a means for being grasped by the hands of said rider, said means for securing said glider to said tow rope of said boat comprising a lock mechanism, said lock mechanism comprising a pair of levers pivotally connected together by means of a pin secured to forward portion of said central panel, each of said levers having a jaw configurated at its forward end, each of said levers having a rear and pivotally connected by means of a pin to a link, each of said links being connected to a pin at the forward end of a control line, said control line extending rearwardly and having a control knob at the rear end thereof, a compression spring between the rear ends of said levers, said spring normally urg'ng said rear ends of said levers apart, and said jaws of said levers normally grasping the knob at the rear end of said tow rope.

3,352,276

PONTOON BOAT CYCLE DRIVE

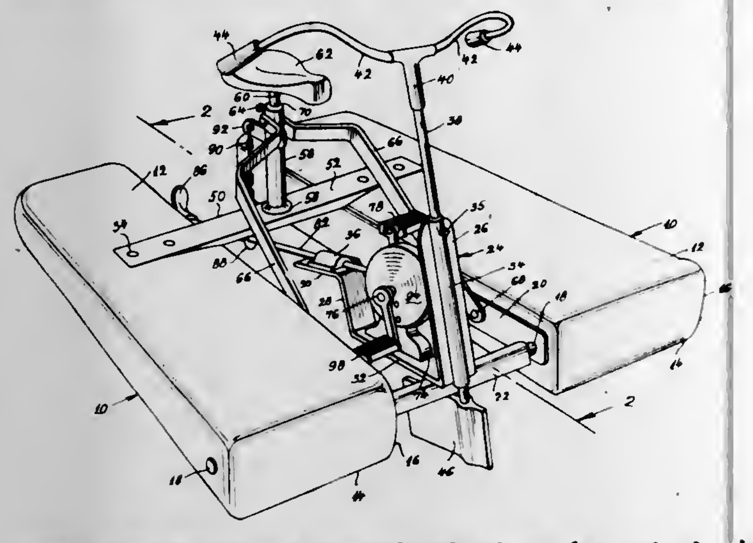
John J. Zimmerman, 101 N. Louisiana, Morton, Ill. 61550

Filed Apr. 3, 1967, Ser. No. 627,897

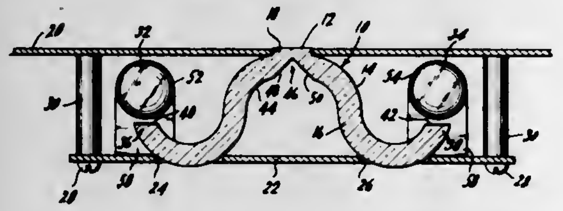
10 Claims. (Cl. 115—26)

1. In a water bicycle of the character described, a pair of spaced pontoons, a rod connecting one end thereof, a flat bar connecting the pontoons adjacent the other end thereof, an upright sleeve supported on the rear flat bar, an adjustable seat mounted in said sleeve and extending thereabove, a U-shaped bracket supported on the connecting rod at said one end of the pontoons, a sleeve supported on one leg of the bracket, adjacent said connecting rod, a steering shaft rotatably mounted within the sleeve, handle bars for the steering shaft, a rudder fixed on the bottom end of the steering shaft between the pontoons, a bearing member on the other leg of the bracket, a pro-

peller shaft rotatably supported at one end in said bearing member, extending to the other end of the pontoons, between the pontoons a propeller fixed on the end of said propeller shaft, and means supported on the bight portion of the U-shaped bracket for operating the propeller.

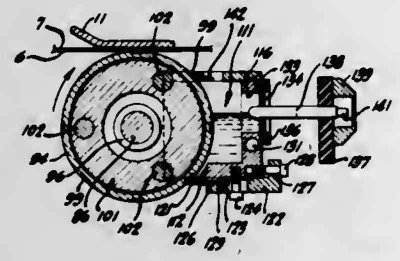


3,352,277
VISUAL INDICATOR
Hans Schmidt, Westhill, Ontario, Canada, assignor to Clavitone Sound Corporation Limited, Rexdale, Ontario, Canada
Filed Nov. 5, 1965, Ser. No. 506,494
2 Claims. (Cl. 116—114)



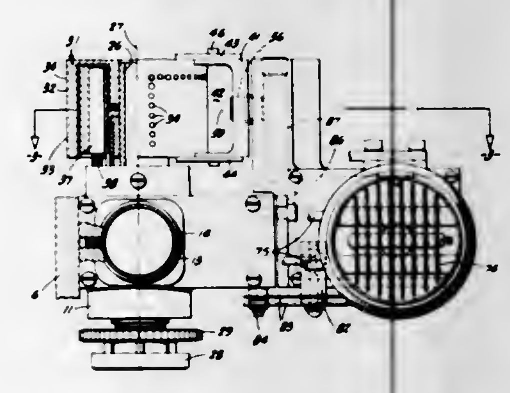
1. A visual signal indicator comprising a body fabricated of a light-transmitting plastic and formed with an appropriate shape respectively presenting a first body end and a second body end to a light source and having an intermediate body area in an advantageous position for viewing, said intermediate body area having two light-absorbing surfaces located thereon in the path of travel of the light transmitted through said body which are illuminated by the absorption of said transmitted light to present visible signals on said intermediate body area, and said first and second body ends having light-coloring means thereon for providing the light passing therethrough with distinctive colors.

3,352,278
HOT MELT GLUE APPLICATOR
Glynn H. Lockwood, Carmel, Calif., assignor to The Tensor Corporation, a corporation of California
Filed Feb. 1, 1965, Ser. No. 429,264
5 Claims. (Cl. 118—7)



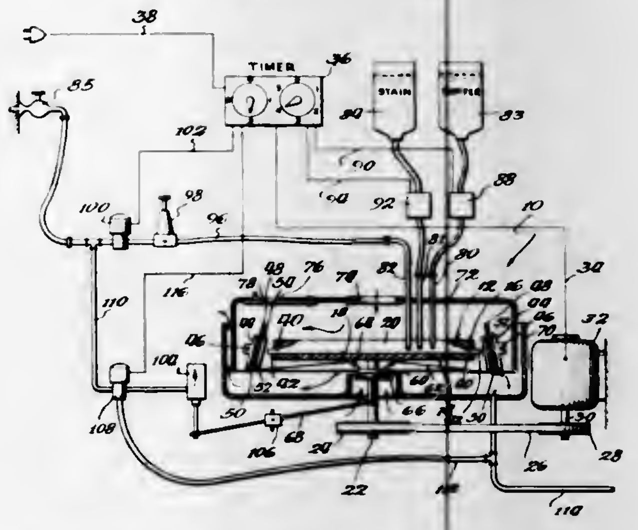
1. A hot melt glue applicator comprising a frame, a glue reservoir open at the top and on one end, means for mounting said glue reservoir on said frame, an applicator wheel, means for journalling said applicator wheel on said frame in position to form a wall for said one end of said reservoir, said applicator wheel being shaped to define an annular volume, a heater, means for mounting said heater stationarily on said frame within said volume, to transmit heat through said applicator wheel to said reservoir, means responsive to temperature mounted on said frame and extending into the interior of said reservoir, and means controlled by said temperature responsive means for supplying said reservoir with hot liquid glue.

3,352,279
ADHESIVE APPLICATOR
Glynn H. Lockwood, Carmel, Calif., assignor to Lockwood Technical, Inc., a corporation of California
Filed Sept. 15, 1965, Ser. No. 487,527
7 Claims. (Cl. 118—7)



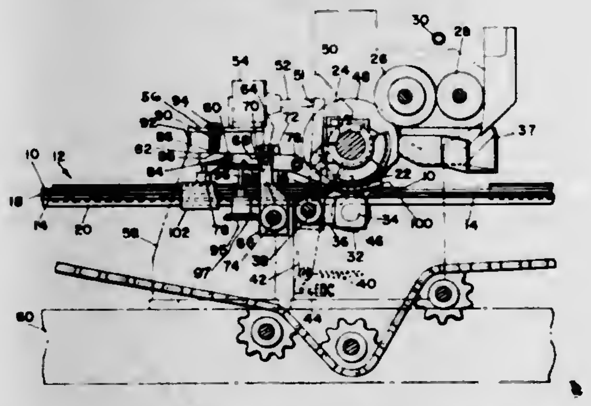
1. An adhesive applicator comprising a first frame, an applicator wheel rotatably mounted on said first frame, a second frame for holding a bath of liquid adhesive around a portion of the periphery of said wheel, means on said first frame for receiving a body of solid adhesive, a heating grid spanning the bottom of said receiving means for supporting said body, means on said first frame for receiving liquid adhesive from said grid, pivot means for supporting said second frame on said first frame for relative rotation about a fixed axis, and means concentric with said axis for conducting liquid adhesive from said receiving means to said holding means.

3,352,280
CENTRIFUGAL APPARATUS FOR SLIDE STAINING
Roy Hughes, Aberdeen, Wash., and Walter R. Hogg, Miami Springs, Fla., assignors to Coulter Electronics, Inc., Hialeah, Fla., a corporation of Illinois
Filed May 1, 1964, Ser. No. 364,232
20 Claims. (Cl. 118—9)



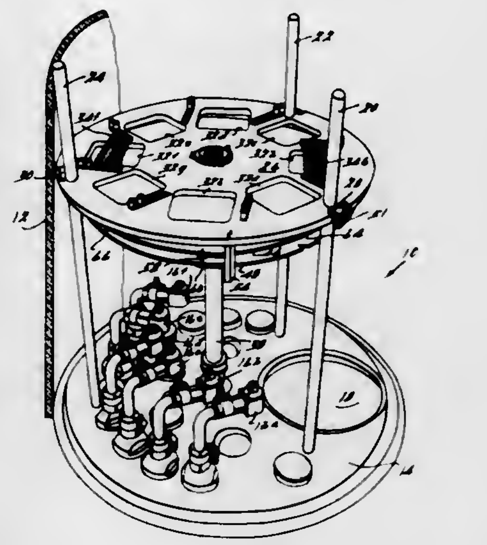
1. A slide staining apparatus comprising a disc arranged for rotation on a vertical axis, said disc having fluid guide means associated therewith to conduct fluid applied to the upper surface of said disc to predetermined points on the peripheral edge thereof by centrifugal force when said disc is rotating and to permit the discharge of said fluid at said points, a plurality of slide holders each adapted to receive a slide therein with a surface of the slide generally parallel with and facing said axis, said holders being coupled for rotation with said disc, said holders being spaced about said peripheral edge at points that correspond to said discharge points, means for rotating the disc whereby the fluid is transmitted from said guide means to said holders to engage said slide surfaces during rotation, and means for permitting the drainage of said fluid from said slide surfaces while the disc is rotating.

3,352,281
PACKAGING MACHINE AND CONTROL MEANS THEREFOR
John W. Scully, Raynham, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts
Filed Apr. 13, 1965, Ser. No. 447,853
18 Claims. (Cl. 118—12)



1. In a packaging machine of the character described, in combination, adhesive applying mechanism including rotary adhesive applying elements, means for advancing a carton blank into operative relation to said applying mechanism, normally inoperative means associated with said rotary elements for moving the carton blank out of operative relation to said rotary elements, and means responsive to stopping of the machine for actuating said normally inoperative means to move the carton blank out of operative relation to the applying mechanism whereby to prevent adherence of the blank to the same during prolonged stoppage of the machine.

3,352,282
VACUUM DEPOSIT DEVICE INCLUDING MEANS TO REGISTER AND MANIPULATE MASK AND SUBSTRATE ELEMENTS
Otto R. Schweitzer, Rochester, N.Y., assignor, by mesne assignments, to The Bendix Corporation, Detroit, Mich., a corporation of Delaware
Filed July 23, 1965, Ser. No. 474,353
5 Claims. (Cl. 118—49)

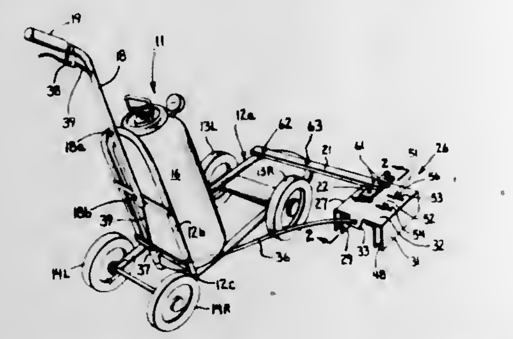


5. In a vacuum evaporation coating apparatus having an evaporation source, first and second coaxial drive shafts, a substrate mounting plate having a plurality of openings formed therein rotatably mounted on said first drive shaft, a mask plate having a plurality of openings formed therein adapted to selectively register with the openings in said substrate mounting plate, drive means connected to said first drive shaft and to said mask plate, said drive means adapted to convert a predetermined rotary motion of said drive shaft to axial motion of said mask plate and to rotate said mask plate in conjunction with said first drive shaft after said initial predetermined rotary motion is exceeded, a shutter plate rotatably mounted on said second drive shaft, port means formed in said shutter plate adapted for selective registration with an opening in said mask plate, an abutment formed on said shutter plate, a sector plate secured to said second drive shaft and adapted to be rotated in one direction into engagement with said abutment wherein said sector plate is in registration with said port means and wherein additional rotation of said sector plate in said one direction causes said shutter plate to rotate with said sector plate.

3,352,283
STRIPING DEVICE
Burns R. Maus, Dallas, Tex., assignor, by mesne assignments, to Cooper-Stanley Company, Inc., Arlington, Tex., a corporation of Texas
Filed Sept. 22, 1965, Ser. No. 489,299
1 Claim. (Cl. 118—301)

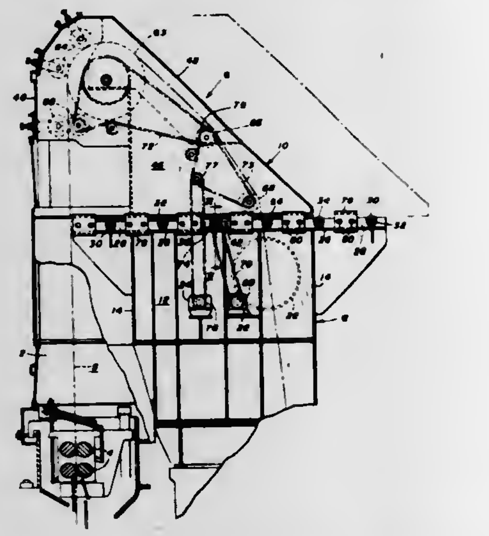
A striping device comprising:
a frame;
groundwheels supporting said frame and rotating on fixed parallel axes;
a paint supply;
a striping head coupled to said supply and mounted to said frame, said striping head being outboard of said wheels and extending in front of a vertical plane tangent the forwardmost point of the most forward one of said wheels,
said striping head including a downwardly opening shell having horizontally spaced parallel vertical side walls in planes perpendicular to said axes, said shell having a front wall joined at its ends to said side walls, and said shell having a roof with lateral and front margins joined to said side and front walls, respectively, the lower marginal edges of said side walls having upwardly inclined portions near the front margins of said shell and meeting the lower marginal edge of said front wall lying in a first horizontal plane above a second horizontal plane containing the principal portions of the lower marginal edges of said side walls, said shell opening rearwardly;
a handle connected to said frame and extending upwardly and rearwardly therefrom;
a control lever on said handle;
a spray nozzle in said striping head, said spray nozzle being mounted to a bracket to the said roof of said shell, said spray nozzle being disposed outside of said shell, thereby facilitating adjustment and replacement of said spray nozzle, said spray nozzle discharging paint into said shell in a wide oval pattern directed principally along a plane inclined downwardly and forwardly and intersecting said second plane along a line located closer to the front marginal edges of said side walls than to the rear marginal edges of said side walls;

a supply line between said supply and said nozzle;
a control valve in said line;
a cable connecting said valve to said lever;
means pressurizing said supply;
and baffles, each having a pair of horizontally spaced upstanding fasteners projecting upwardly through slots in said roof of said shell, said slots extending parallel to said axles, whereby said baffles are movable inwardly from positions meeting said side walls, to facilitate precise location of the painted stripe and precise establishment of the width thereof, one side wall of said head being the outermost point on the striping device to enable painting a stripe parallel to vertical abutments as close thereto as desired;



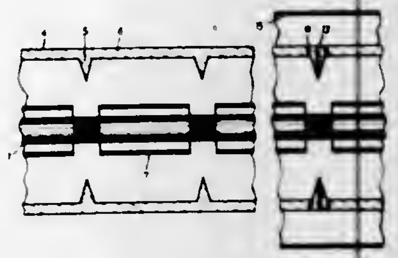
and an arm affixed to said frame and extending laterally therefrom and having guide apertures therein slidingly receiving a pair of upstanding guide bars affixed to said striping head and mounting said striping head to said frame permitting relative vertical movement and tilting of said striping head with respect to said frame whereby said striping head rests on the surface being painted and is vertically supported thereby independently of said frame to produce a sharp edged painted line.

3,352,284
RETRACTABLE EXHAUST HOOD FOR A PROCESSING VESSEL
Joseph B. Pasko, Jr., Gary, Ind., assignor to United States Steel Corporation, a corporation of Delaware
Filed July 22, 1965, Ser. No. 474,009
3 Claims. (Cl. 118—429)



1. In an exhaust hood for collecting fumes arising from a processing vessel, the combination with a lower chamber portion connected to said vessel and projecting upwardly therefrom, of an upper chamber portion retractably mounted on said lower portion, means for retracting said upper portion from normal position overlying said lower portion and restoring it thereto, said chamber portions having opposed side walls, flanges secured to the lower edges of the upper portion side walls and to the upper edges of the lower portion side walls, and brackets spaced along the flanges on the upper edges of said lower portion side walls and secured thereto, said brackets slidably receiving said flanges on the lower edges of the upper portion side walls.

3,352,285
APPARATUS FOR APPLYING RING-SHAPED MARKINGS TO ELECTRIC CURRENT CONDUCTORS
Gunther Buhmann, Ludwigsburg, Germany, assignor to International Standard Electric Corporation, New York. N.Y., a corporation of Delaware
Filed Apr. 6, 1965, Ser. No. 446,065
Claims priority, application Germany, June 2, 1964, St 22,248
8 Claims. (Cl. 118—624)

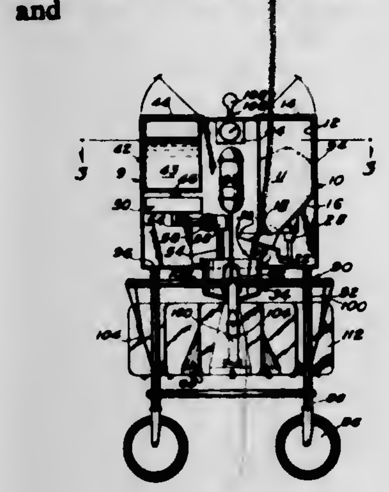


1. Apparatus for providing continuous high speed annular color coding of a conductor comprising means to move said conductor along a predetermined path, a tube member coaxial with said conductor, spray producing means to introduce particles of coloring matter into said tube and surrounding said conductor, a plurality of tubular sections spaced apart a distance equal to the width of the color code, said tubular sections being disposed within said tube member and surrounding said conductor to mask portions of said conductor not to be color coded, a plurality of electrodes for charging said particles and means to provide a potential difference between said tube and said conductor for deposition of said particles on the surface of said conductor, said electrodes being disposed on the inside surface of said tube member, each electrode comprising a group of tapered members annularly disposed and each having channels radially directed towards said conductor through which said colored material is introduced within said tube member, each said electrode being disposed adjacent a space between said tubular sections.

3,352,286
PORTABLE ANIMAL FEEDER
Emory J. Pickelsimer, 990 Glendale Drive, East Point, Ga. 30044
Filed Dec. 27, 1966, Ser. No. 604,904
6 Claims. (Cl. 119—51.11)

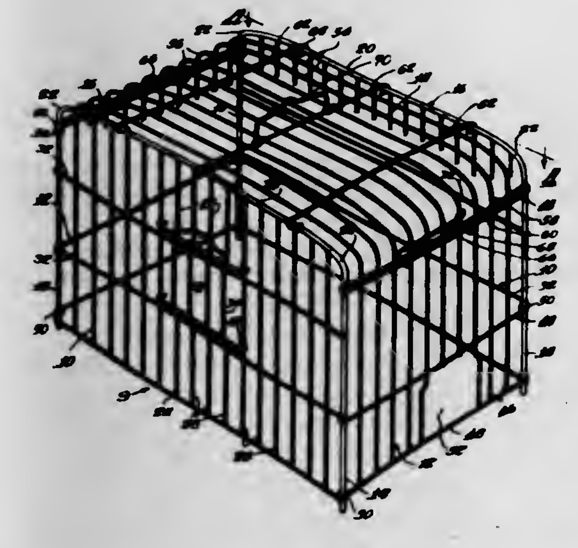
1. Apparatus for automatically dispensing animal food comprising:
a portable supporting frame,
an upper housing rigidly mounted on said frame,
a lower housing supported by said frame, means for vertically adjusting said lower housing with respect to said upper housing,
said upper housing including:
  a feed hopper for storing and dispensing solid food,
a reservoir positioned in spaced relationship with said feed hopper for storing and dispensing liquid,
a mixing compartment centrally located below said feed hopper and said reservoir defining an opening in its lower surface and constructed to receive solid food from said feed hopper and liquid from said reservoir,

vibrating means connected to said feed hopper for controlling the dispensing of solid food from said feed hopper to said mixing compartment,
valve means connected to said reservoir for controlling the flow of liquid from said reservoir to said mixing compartment,
heating means connected between said reservoir and said valve means for heating the liquid as it is dispensed from said reservoir to said mixing compartment, and



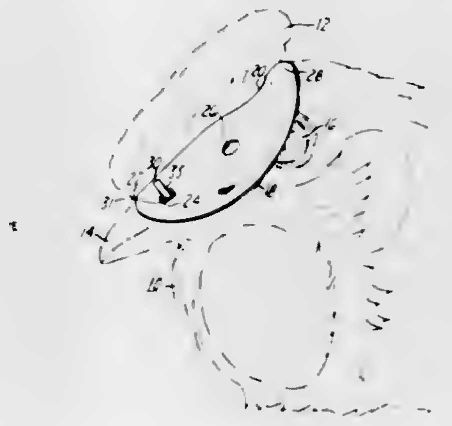
agitating members disposed in said mixing compartment for mixing together the food and liquid,
said lower housing comprising:
  a food delivery compartment defining an opening in its upper portion disposed below the opening of said mixing compartment,
a plurality of feeding tubes extending generally radially outwardly of said food delivery compartment at spaced intervals thereabout and communicating therewith, and
a generally radially outwardly extending partition positioned between each of said feeding tubes.

3,352,287
COLLAPSIBLE BIRD CAGE
Arthur F. Klingberg, McHenry, Ill., assignor to Beco Products Corporation, Chicago, Ill., a corporation of Illinois
Filed May 11, 1966, Ser. No. 549,271
5 Claims. (Cl. 119—17)



1. A collapsible bird cage comprising a cage body formed of a pair of spaced side walls and a pair of spaced end walls pivotally connected to permit collapsing of said cage body while the side and end walls remain connected, the top of the end walls terminating below the top of the side walls to provide a space between the top of the end walls and the top of the side walls, a detachable and removable top having its opposite ends depending below the plane of the top, said depending ends occupying the space above the top of the end walls of the cage body and terminating adjacent the top of the opposite end walls of the cage body, hook means between the cage body and the top for detachably hooking and supporting said top to said cage body, said top when hooked to said cage body supporting said top and maintaining said cage body in extended and set-up position, said depending portions extending for engagement of said hook means with said end walls, said top when detached from said cage body permitting said cage body to be collapsed.

3,352,288
POULTRY HELMET
Henry Van Kampen, Rte. 1, Box 5102, San Marcos, Calif. 92069
Filed Jan. 3, 1966, Ser. No. 518,083
9 Claims. (Cl. 119—97)

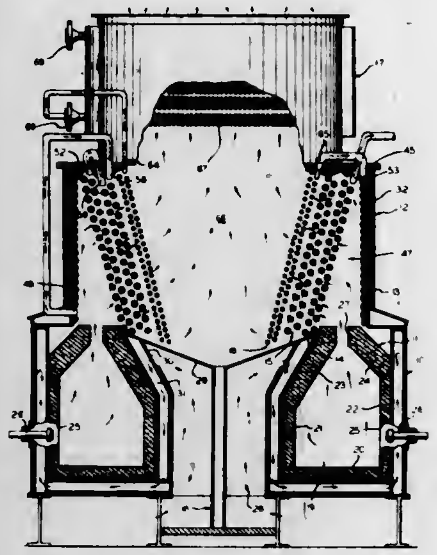


1. A poultry helmet comprising,
a thin substantially opaque flexible member,
said member having a narrow slot means therein with an opening at one end and a closed portion at the other end for sliding and mounting said opening along the base of the comb of the poultry to position said member around the comb,
and securing means for securing fastening portions of said member adjacent said open end of said slot to the beak of the poultry and holding said member around the comb of the poultry.

3,352,289
STEAM GENERATOR
Richard Cunningham, Jr., and J. D. Kimmel, Houston, Tex., assignors to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,101
12 Claims. (Cl. 122—240)

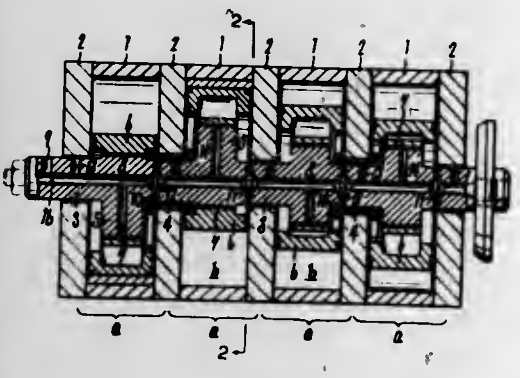
1. In a steam generator, an upstanding coil pedestal support, an annular firepot housing having an annular firepot therein arranged about said pedestal support, a plurality of combustion throats and burners at the lower end of the firepot and a choke at the upper end of the firepot for discharging flue gases upwardly, a coil housing above said firepot housing, a cylindrical wall coil along the inner surface of said coil housing, first, second and third conically shaped coils of successively smaller diameter and arranged successively inwardly of each other and spaced inwardly of said wall coil and having their smaller ends extending downwardly and defining with said wall coil an annular substantially triangular in cross section flue gas receiving chamber above said firepot choke, said coil housing and coils being arranged relative the firepot so that the flue gases discharged from

said choke enter said flue gas receiving chamber wiping said wall coil and then traversing inwardly through said conical coils to the center thereof, and a flue gas collector above said coil housing receiving the flue gases after they have passed inwardly through said conically shaped coils.



3,352,290
MULTI-STAGE ROTARY PISTON ENGINE

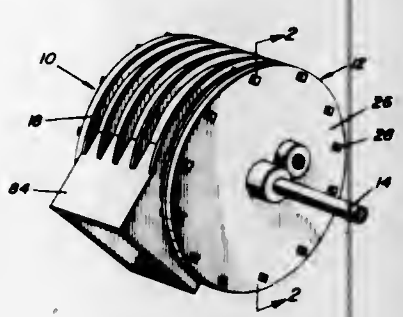
Takashi Kuroda, Hiroshima-shi, Japan, assignor to Toyo Kogyo Company Limited, Hiroshima-ken, Japan
Filed July 27, 1965, Ser. No. 475,199
Claims priority, application Japan, Aug. 13, 1964, 39/46,676
5 Claims. (Cl. 123—8)



1. A multi-stage rotary piston-type internal combustion engine in which each stage has an annular center casing and side walls closing the center casing and defining a combustion chamber therein, a polygonally shaped rotary piston rotatably positioned within each combustion chamber, and the stages being in side-by-side abutting position; a crankshaft comprising, in combination, a plurality of aligned, joined sections, one for each stage, an eccentrically positioned crank pin on each section adapted to be rotatably positioned within the piston for the respective stage, each of the joined sections having a lubrication oil bore extending axially therethrough and each section having at least one radial branch bore connected to the said axial oil bore and radially extending through the crank pin portion for rotary piston journal lubrication, each of the joined sections having an annular recess on the end face of the section extending radially from the said axial oil bore, the recesses matching with the corresponding opposed recess on the adjacent section at the joint to define a radially inwardly facing annular groove, a plurality of crown gear teeth on the ends of each section and surrounding the said annular recess and engaged with corresponding teeth on the next adjacent section forming a coupling between the adjacent crankshaft sections, means for holding said corresponding teeth engaged, and an annular seal within each of the said annular grooves for sealing the said coupling to avoid lubrication oil leakage therethrough.

3,352,291
ROTARY INTERNAL COMBUSTION ENGINE

Harry D. Brown, 2263 Broadway, Grand Junction, Colo. 81501
Filed Nov. 17, 1965, Ser. No. 508,260
3 Claims. (Cl. 123—16)



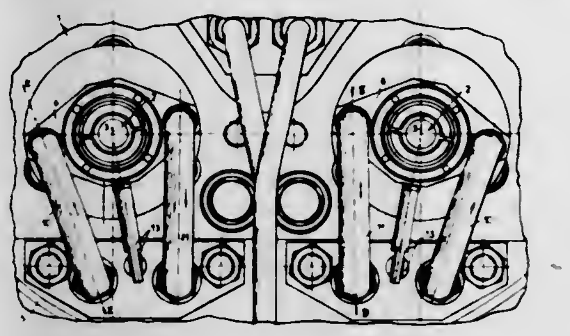
3. In an internal combustion engine, an annular housing having side walls, a rotor rotatably mounted in eccentric relation within said housing to form a peripheral chamber therein, said rotor having a plurality of radial slots, each of said side walls having an annular race, a pair of circumferentially spaced arcuate passages formed in said side walls communicating with said slots in the rotor and a transfer passage tangentially extending from one of the arcuate passages to the annular race, a piston slidably mounted within each of the slots to form piston chambers therein, bearing means slidably mounted within said annular races on the side walls and pivotally connected to each of said pistons for displacing fluid within said peripheral chamber and imparting reciprocating movement to the pistons in response to rotation of the rotor, a fluid inlet connected to the side walls in communication with the other of the arcuate passages, an exhaust outlet connected to the housing in communication with said peripheral chamber, and ignition means mounted by the housing for communication with the peripheral chamber circumferentially spaced from the outlet.

3,352,292
DEVICE FOR CONNECTING COOLED VALVES OF MACHINES OR THE LIKE, AND ITS VARIOUS APPLICATIONS

Karl Kühn, Saint-Germain-en-Laye, France, assignor to Societe d'Etudes de Machines Thermiques, Saint-Denis, Seine, France, a corporation of France
Filed July 29, 1965, Ser. No. 475,830
Claims priority, application France, July 31, 1964, 983,919
8 Claims. (Cl. 123—41.41)

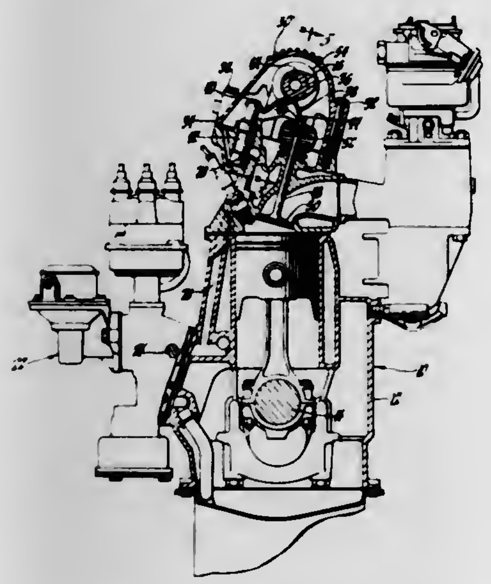
8. A fluid-cooled machine construction comprising at least one main cooling circuit system including a machine casing, fluid-cooled movable valve means provided with coolant inlet and outlet means respectively, valve box means in said machine casing for accommodating said valve means, coolant feed and return duct-like cavity means in said casing through which flows said cooling fluid, deformable coupling pipe means connected at one end thereof to said coolant inlet and outlet means, respectively, and feed piping means and return piping means directly connecting the other end of said deformable coupling pipe means, respectively, to said main cooling circuit system, said feed piping means and return piping

means extending into and being rigidly connected to said valve box means and opening endwise oppositely to their ends connected to said deformable coupling pipe means, into said associated feed duct-like cavity means and return duct-like cavity means respectively, and inner cooling circuit means provided in said valve box means and including flow restricting means, said flow restricting means consisting of a cross-sectionally reduced passageway located immediately adjacent and downstream of the inlet of said feed piping means and adapted to produce the pressure head inducing the flow of coolant into said feed piping means.



3,352,293
CAMSHAFT CONSTRUCTION

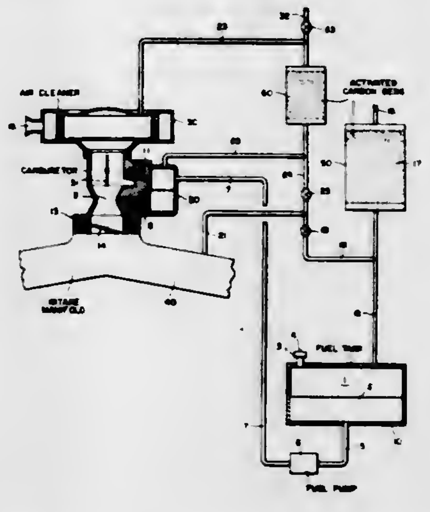
Richard E. Hulten, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 28, 1965, Ser. No. 475,405
4 Claims. (Cl. 123—90)



1. In combination in an internal combustion engine having an engine block,
a plurality of rocker arms,
a valve for each rocker arm movably supported in said engine block and having a valve tip contacting one end of the associated rocker arm for actuation thereby,
a lash adjuster for each rocker arm mounted in said engine block and contacting the other end of the associated rocker arm,
a rocker cover removably mounted on said block and enclosing said rocker arms, said valves and said lash adjusters and
a camshaft rotatably journaled in said rocker cover and having a plurality of cams one engaging each of said rocker arms for actuation thereof,
whereby removal of said rocker cover from said engine block disengages said camshaft from engagement with said rocker arms.

3,352,294
PROCESS AND DEVICE FOR PREVENTING EVAPORATION LOSS

William F. Biller, East Brunswick, and Charles W. Skarstrom, Montvale, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed July 28, 1965, Ser. No. 475,475
2 Claims. (Cl. 123—136)



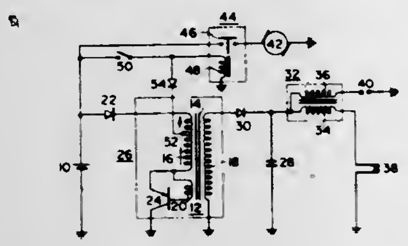
1. In a system for containing and subsequently consuming the vapors normally escaping to the atmosphere from the fuel supply for an internal combustion engine having an intake manifold for distributing a mixture of fuel and air to individual cylinders of said engine, a carburetor having air and fuel inlets for supplying a mixture of air and fuel to an inlet on said intake manifold, a fuel bowl associated with the carburetor for supplying fuel to said fuel inlets, an air horn on the carburetor for mounting an air filter at the air inlet to said carburetor, and means including a fuel tank for maintaining a substantially constant fuel level in said fuel bowl: the improvement in said system which comprises a pair of absorbent beds enclosed in separate closed containers, a first conduit connecting at its opposite ends with said fuel tank above the usual fuel level therein and one side of one of said containers, an atmospheric vent at an opposite side of said one of said containers, a second conduit, connecting at its opposite ends with said first conduit, intermediate its ends, and one side of the other of said containers, means connected at an opposite side of said other container for selectively opening or closing a vent from said other container to atmosphere, third and fourth conduits separately connected at their opposite ends with said intake manifold, and the top of said fuel bowl, respectively, and at spaced apart locations on said second conduit between opposite ends thereof, valve means in said second conduit for alternatively or simultaneously opening and closing communication of suction in said intake manifold by way of said third conduit with said one container and said tank or with said other container and said fuel bowl, and a fifth conduit connected at its opposite ends with the air horn of said carburetor and said other container between said selective venting means and said other container.

3,352,295
IGNITION DEVICE FOR INTERNAL COMBUSTION ENGINE

Takao Miki, Himeji, Japan, assignor to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan
Filed Aug. 23, 1965, Ser. No. 481,753
Claims priority, application Japan, Aug. 27, 1964, 39/67,787
6 Claims. (Cl. 123—179)

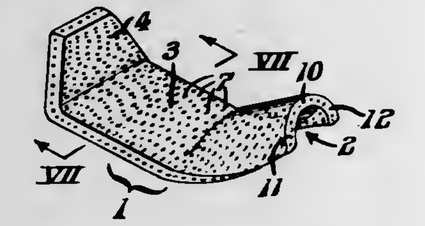
1. An ignition device for use with an internal combustion engine having an electric starting motor, said device comprising a soure of direct current, transformer means having a primary winding energized by said source and a

secondary winding, an ignition voltage generator means connected to said transformer for generating an ignition voltage each time the engine is to be ignited through utilization of a secondary voltage across said secondary winding of said transformer means, a normally open switch element connected to said source and capable of being closed during starting of said starting electric motor to complete a circuit for energizing said starting electric motor, said switch element being connected in parallel circuit to one portion of said primary winding of said transformer means, and a semiconductor diode connected in said parallel circuit of said switch element and said one portion of said primary winding and so poled that a current is permitted to flow from said source through said closed switch element into the remaining portion of said primary winding whereas a current is prevented from flowing from said source through said one portion of said primary winding to said starting electric motor, the improvement which comprises another semiconductor diode connected in said parallel circuit of said switch element and said one portion of said primary winding and so poled that a current is permitted to flow from said source into said one portion of said primary winding whereas a voltage induced across said one portion of said primary winding is prevented from causing a current to circulate through said parallel circuit.



3,352,296
RIGID ARCHERY BOW STRINGING DEVICE

Vincent G. Burger, Sr., 3516 Grant Ave.,
Philadelphia, Pa. 19114
Filed Mar. 3, 1965, Ser. No. 436,794
3 Claims. (Cl. 124—23)



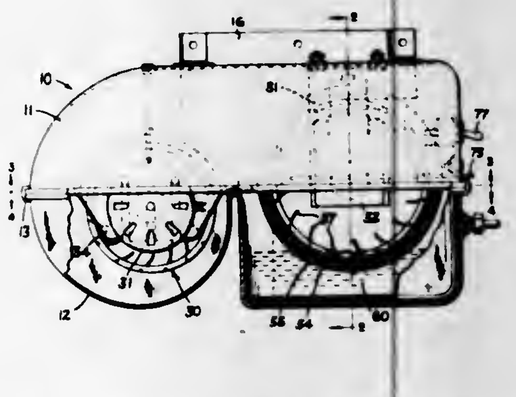
1. As an article of manufacture, a bow stringing device comprising a rigid unitary member having

(a) a substantially flat hold-down mid-portion forming means for receiving the underside of an archer's shoe,
(b) an upstanding flange forming means at the one end for abutting the side of the archer's shoe, and
(c) said mid-portion extending outwardly and upwardly to form a generally convex opening facing downwardly to form a bow-tip receiving socket at the other end.

3,352,297
HUMIDIFIERS

Warner W. Martin, Olmstead Falls, and Clifton D. Sweet, Jr., Berea, Ohio, assignors to The Lau Blower Company, Dayton, Ohio, a corporation of Ohio
Continuation of application Ser. No. 258,338, Feb. 13, 1963. This application Apr. 7, 1967, Ser. No. 629,331
20 Claims. (Cl. 126—113)

1. A humidifier adapted to increase the amount of water vapor in air using a water supply having various salts and the like in solution, said humidifier comprising a housing, a reservoir in said housing, inlet means to said reservoir through which a supply of water can be connected, means defining an air inlet into said housing and an air outlet from said housing, evaporator means mounted in said housing between said inlet and said outlet to cause substantially the entire air flow therethrough to pass through said evaporator means, said evaporator means including a porous non-absorbent evaporator material formed of a plurality of integrally interconnected relatively thin strands arranged three dimensionally to form a random arrangement of interconnected pores providing passages through which the air will readily flow and on which strands a portion of the salts will collect and accumulate during evaporation of water therefrom tending gradually to decrease the size of the passages, said pores being sufficiently large to maintain an effective flow of air through said evaporator material and thus to maintain an effective rate of evaporation for a substantially long period of operation even in the presence of accumulated salts on said strands, said evaporator means also including a mounting for said evaporator material defining a path of movement thereof which extends through the water in said reservoir, fan means operatively associated with said housing to induce a flow of air between said inlet and said outlet and through said evaporator material, and drive means operatively connected to said mounting means for said evaporator material to move said material along said path at a predetermined speed, the porosity of said material being coordinated and correlated with the operation of said drive and fan means for substantially eliminating transfer of water and salts into the air passing through said material and for maintaining some water present on said evaporator material to accumulate a portion of the salts thereon and the remaining portion of salts in said reservoir thus preventing accumulation on said evaporator material of all of the salts in the water.

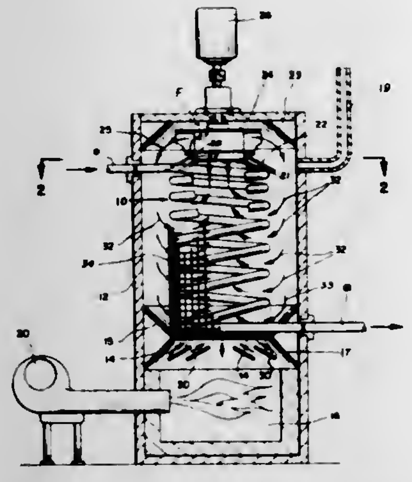


3,352,298
HEATER

Henry F. Hope, 195 Welsh Road,
Huntingdon Valley, Pa. 19006
Filed May 24, 1966, Ser. No. 552,598
9 Claims. (Cl. 126—350)

1. A liquid heater including:
a casing,
an open spiral coil mounted within said casing for conducting the liquid to be heated through said casing,
the helices of said coil defining an unobstructed inner space and being spaced from, and coacting with, the wall of said casing to provide an outer space,
the helices of said coil being spaced apart to provide passages inter-connecting said inner and outer spaces,
a source of heat disposed adjacent one end of said coil for generating heated gases, and

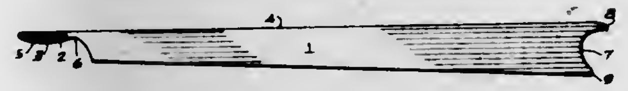
a suction fan registering with said inner space at the other end of said coil,



whereby said heated gases are sucked by said fan through said inner space and are propelled into said outer space.

3,352,299
CYTOLOGIC PAN-SCRAPER

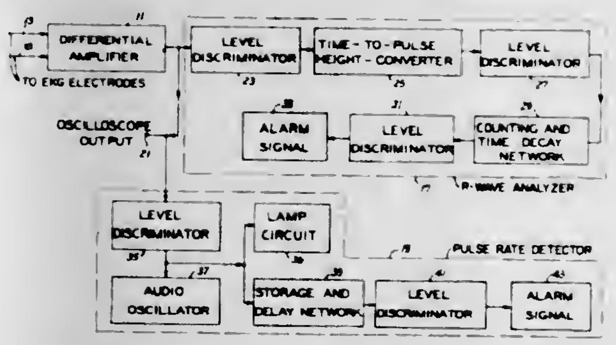
Nuri Sagiroglu, % Department of Cytopathology and Cellular Research, University of Ankara, Hacettepe School of Medicine, Ankara, Turkey
Filed Nov. 25, 1964, Ser. No. 413,894
5 Claims. (Cl. 128—2)



1. A new cytological instrument which comprises a main portion having a straight plane, upper, lower, and side walls, the front extremity of the instrument being concave downwardly approximately two-thirds of the vertical dimension of said instrument, said concavity extending forwardly in the shape of a slender convex portion, the lower end of said slender convex portion being aligned with the lower end of the main portion of said instrument, whereby said slender portion is adapted to being inserted into a body opening to serve as a scraper at its convex upper wall, the concavity serving as a stop.

3,352,300
CARDIAC MONITOR

Fred A. Rose, 202 N. Paterson, Madison, Wis. 53703
Filed Oct. 28, 1964, Ser. No. 407,022
21 Claims. (Cl. 128—2.06)

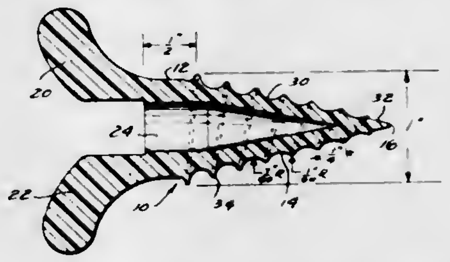


1. A cardiac monitor for indicating the occurrence of irregularities in a patient's electrocardiac signal comprising:

means for sensing when said cardiac signal exceeds a predetermined level, said level being chosen so that normally it is exceeded only by the cardiac R-wave;
a capacitor;
means, responsive to said sensing means, for charging said capacitor when a cardiac wave exceeds said predetermined level;
means, responsive to the voltage on said capacitor, for detecting when a cardiac wave exceeds said predetermined level for longer than a predetermined period; and
means, responsive to said detecting means, for producing an alarm signal when each of a succession of cardiac waves exceeds said predetermined level for longer than said predetermined period whereby cardiac arrythmias producing long waves will initiate said alarm signal.

3,352,301
MECHANICAL JAW SPREADER

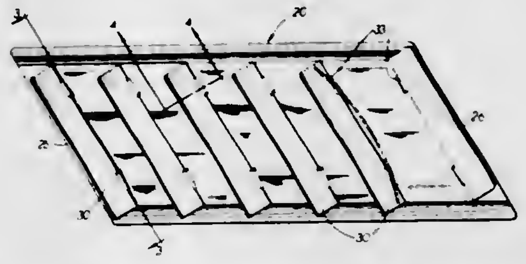
Louis Abelson, 585 McLean Ave., Yonkers, N.Y. 10705
Filed Aug. 19, 1965, Ser. No. 481,029
2 Claims. (Cl. 128—12)



1. A jaw spreading device comprising a substantially conical element having a sharply tapered protuberance defined by the cone apex adapted to be received between the teeth of the upper and lower jaw, a raised rib extending from a point adjacent the cone apex to the base along a substantially helical multiturn path, said conical element wall having its surface between each turn of the helical raised rib portion in the form of a smoothly and gently rounded concave surface which merges at each side thereon with the raised reversely rounded rib, a substantially rectangular neck portion having a plurality of substantially flat opposite sides at the termination of the helical path, the dimension of one pair of sides being substantially equal to the minor diameter of the terminal concave surface so that said surface flows smoothly into said flat side, and means to rotate the conical element whereby by positioning the cone apex between the teeth of the upper and lower jaws of an individual the jaws are progressively spread as the teeth follow along the smoothly and gently rounded surface of the helix of the element and are firmly held in the spread position by the flattened opposite sides.

3,352,302
FILING TRAY

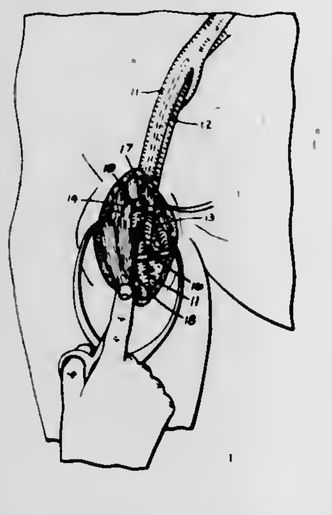
Joseph D. Lear, Snyder, and Eric M. Holt, East Aurora, N.Y., assignors to Posting Equipment Corporation, Buffalo, N.Y.
Filed May 17, 1965, Ser. No. 456,256
2 Claims. (Cl. 129—16)



2. An index device comprising a tray structure having a flat base with two parallel margins, opposing sides extending upwardly from said margins of the base, said sides each forming an obtuse angle with base, a plu-

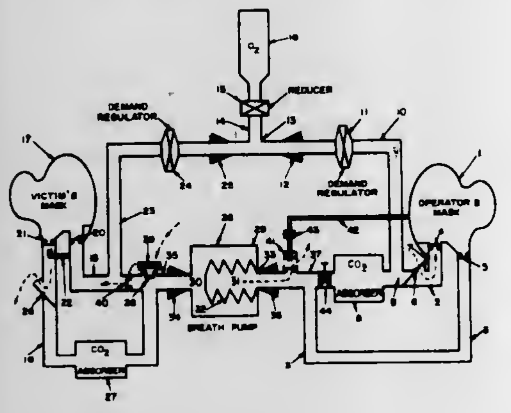
rality of thin rectangular spacers all arranged in spaced parallel relation to each other and in angular relation to the margin of said base, means for mounting each spacer on said base for limited pivotal movement relative to the vertical, and groups of rectangular cards disposed between pairs of spacers and extending from side to side of said tray on the base thereof for pivotal movement on said tray base under guidance of said spacers, said cards contacting the obtuse sides of the tray for additional support in extreme angular positions.

3,352,303
METHOD FOR BLOOD CLOT LYSIS
Lawrence J. Delaney, Newton Center, Mass.
(447 W. Elm St., Brockton, Mass. 02401)
Filed July 28, 1965, Ser. No. 475,337
15 Claims. (Cl. 128—24)



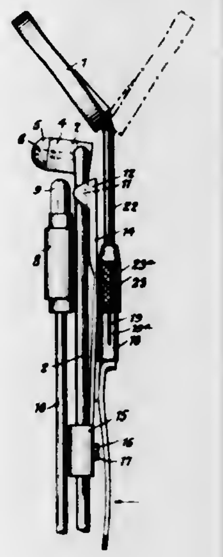
13. The method of lysis of blood clots in vivo comprising lysing the clots by the step of applying sonic vibration energy to the blood clot by a continuous propagation path which couples from a source outside the body sufficient energy into the blood clot to cause lysis of the clots.

3,352,304
MASK-TO-MASK RESUSCITATION SYSTEMS
Roscoe G. Bartlett, Jr., Lime Kiln, Md. 21763
Filed Nov. 30, 1964, Ser. No. 414,768
30 Claims. (Cl. 128—145.8)



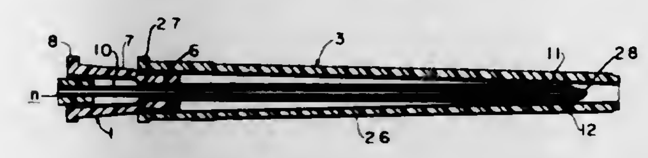
1. In a resuscitation system of the type in which the rescuer's respiratory discharge is utilized to revive the victim, the combination of
a first facemask for use by said rescuer, said facemask including
a supply and discharge line which communicate with the facemask area,
valve means positioned in said lines for permitting a unidirectional flow of gas to take place from said supply line into said facemask area and out said discharge line during each breathing cycle of said rescuer;
a second facemask for use by said victim, said second facemask including
an inlet and outlet line which communicate with said facemask area,
a first check valve positioned in said inlet line for permitting a unidirectional flow of gas to take place from said inlet line into the facemask area of said second facemask,
a normally closed, pressure-compensated check valve positioned in said outlet line for permitting a unidirectional flow of gas to take place from said facemask area out said outlet line,
said pressure-compensated check valve remaining closed whenever gas is forced from said inlet line through said first check valve into the facemask area of said second facemask during the resuscitation attempt;
first and second air loops interconnecting said supply and discharge lines and said inlet and outlet lines, respectively;
a source of compressed oxygen,
said source of compressed oxygen being coupled to said first and second loops;
means for releasing fresh oxygen from said source into said first loop in accordance with the breathing requirements of said rescuer; and
a breath pump coupled to said first and second loops,
said breath pump being operated by the breathing action of said rescuer to intermittently release oxygen from said source into said second loop and to force the oxygen so released and any other gas mixture within said second loop into said inlet line through said first check valve and into the facemask area of said second facemask.

3,352,305
MULTIPLE FLUID DENTAL INSTRUMENT WITH MIRROR ACTUATED VALVE
Hyman Freedman, 200 W. 58th St., New York, N.Y. 10019
Filed Sept. 22, 1964, Ser. No. 398,197
9 Claims. (Cl. 128—173.1)



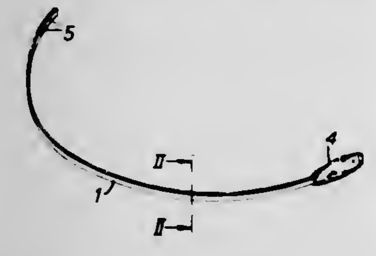
1. A dental tool having a water tube provided with a vent opening, a spray head to which air and the water from the water tube is supplied for atomization of the water from said water tube, a valve of a springy material movably mounted thereover and a mirror attached to the valve and caused to open the valve when pressure is imposed on the mirror.

3,352,306
INTRAVENOUS CATHETER ASSEMBLY
Sidney Hirsch, 501 Broadway, Cedarhurst, N.Y. 10012
Filed Dec. 23, 1963, Ser. No. 332,658
1 Claim. (Cl. 128—214.4)



In an intravenous catheter assembly comprising a stylet of uniform cross sectional configuration throughout its length provided at one end with a sharp point capable of penetrating the flesh and puncturing a vein, said stylet rigidly terminating at its other end in a handle-forming element, a coupling-socket removably seated upon one end of said element in such a manner that it can be manually removed from the handle-forming element but when so seated will be firmly joined with said element whereby to move unitarily in all directions with said element, and a flexible catheter-tube rigidly integral at one end with the coupling socket and extending outwardly therefrom in telescopic disposition around the stylet and terminating a short distance inwardly from the sharp point of the stylet so that when the coupling socket is in seated position the sharp point will protrude outwardly from the catheter tube a generally annular substantial length of the catheter tube at the distal end thereof forming a tip portion having inside and outside transverse dimensions respectively less than the inside and outside transverse dimension of the remainder of the catheter tube, and a wall thickness less than the wall thickness of the remainder of the catheter tube which remainder comparatively loosely surrounds the stylet, the inside diameter of the tip portion being substantially the same as the outside diameter of the stylet so that the tip portion of the catheter tube snugly engages the adjacent portion of the stylet whereby the tip portions of the catheter tube and stylet can unitarily be pushed axially through the flesh and into a lumen without shirring, fragmenting, wrinkling and the like at the tip portion of the catheter tube.

3,352,307
MEDICAL APPLICATORS
Arnall Irving William Henry Bloxham, Willsden House, Rhiwbina Hill, Cardiff, England
Filed June 8, 1964, Ser. No. 373,297
6 Claims. (Cl. 128—269)

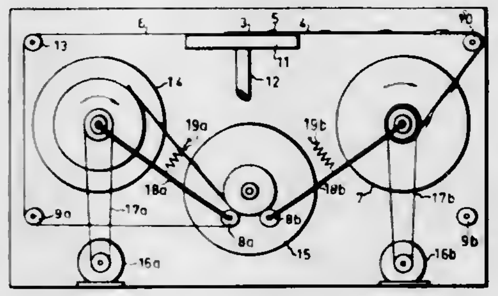


6. An applicator for cleaning or treating sinus cavities, comprising a flat-sided resilient strip having a natural curvature at right angles to the width of the strip which is substantially greater than the thickness thereof, so that the strip is relatively flexible in a plane containing the curvature and relatively stiff in a direction perpendicular thereto, the side edges of an end section of the strip being formed with angled incisions to provide barb-like reverse teeth lying within the width and thickness of the strip and which are adapted to retain a swab covering said end section.

ERRATUM

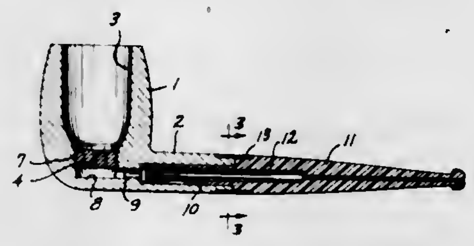
For Class 129—16 see:
Patent No. 3,352,302

3,352,308
METHOD AND APPARATUS FOR FORMING A BAND OF TOBACCO
Åke N. Lindgren, Vallingby, Sweden, assignor to Arenco Aktiebolag, Vallingby, Sweden
Filed Feb. 8, 1965, Ser. No. 431,052
Claims priority, application Sweden, Feb. 27, 1964, 2,391/64
3 Claims. (Cl. 131—20)



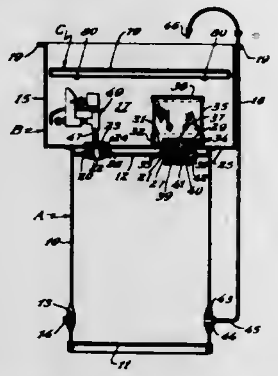
1. A method of producing a band of tobacco consisting of natural tobacco leaves or parts of leaves, which are pasted together in a row with a certain overlap on the top face of a conveying belt comprising reeling a finite conveying belt on a first rotating reel as it is simultaneously reeled off a second reel, placing a band of tobacco on said conveying belt during the reeling thereof, then, when said conveying belt is completely reeled up, reeling said conveying belt in the opposite direction and removing said band of tobacco from said belt as it is unreeled from said first reel and placing another band of tobacco on said conveying belt as it moves in said opposite direction.

3,352,309
SANITARY SMOKING PIPE
Arthur A. Kaul, 961 Chehalis Ave., Chehalis, Wash. 98532
Filed Dec. 14, 1964, Ser. No. 417,991
1 Claim. (Cl. 131—224)



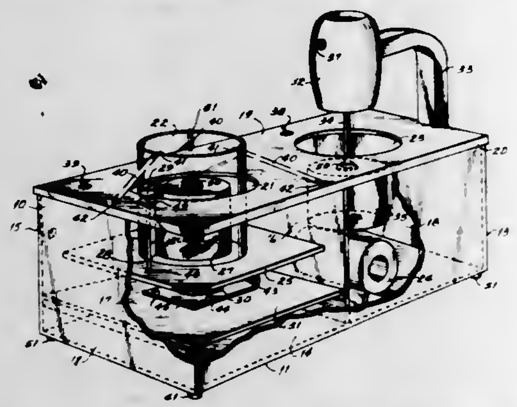
In a smoking pipe, a one-piece bowl and stem stub unit, said bowl having an open upper end portion providing a cavity of circular cross section, with a lower portion having a smaller cross-sectional area than the cross section of the upper portion of the cavity, the inner wall of such portion of smaller cross-sectional area having an internal thread at a location spaced above the bottom of such cavity, and a tobacco-supporting grate of uniform thickness and having a smaller diameter than that of said upper portion, of hard, noncombustible, nonmetallic, impervious material having a plurality of perforations therethrough distributed over its area, insertable in the lower portion of the bowl cavity and having an external thread engageable with said internal thread of the bowl cavity wall by inserting said grate into the upper portion of said bowl and screwing it downward for securing said grate in the bowl cavity at a location spaced above its bottom.

3,352,310
PARTS WASHER
**Robert E. Doyscher, 1335 Edgerton St.,
St. Paul, Minn. 55104
Filed Mar. 15, 1965, Ser. No. 439,702
4 Claims. (Cl. 134—56)**



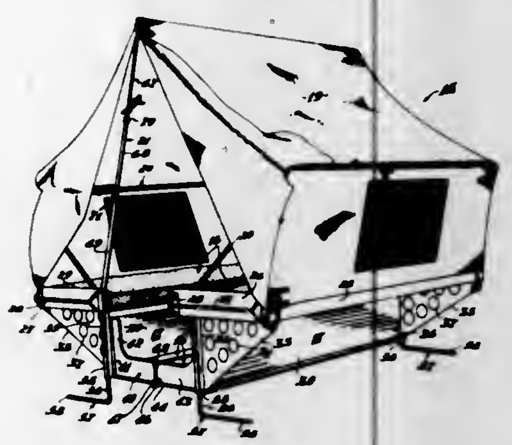
1. A parts washing apparatus including a fluid reservoir, a receptacle, a drain passage connecting said receptacle to said reservoir, and a fluid conduit connected to said reservoir and terminating above said receptacle, a source of air under pressure, a conduit connecting said air supply to said reservoir, an air valve in said conduit a pivotal arm supported by said valve for moving said valve between open and closed positions, a vent in said conduit between said valve and said reservoir, a normally open vent valve pivotal between a normally open position in which said vent is open, to a closed position in which said vent is closed, said pivotal arm being engageable with said vent valve when said air valve is open to hold said vent valve closed.

3,352,311
VIBRA-WATCH AND JEWELRY CLEANER
**Francis J. Murphy, 6911 16th St., Tampa, Fla. 33610
Filed Apr. 22, 1965, Ser. No. 450,091
1 Claim. (Cl. 134—86)**



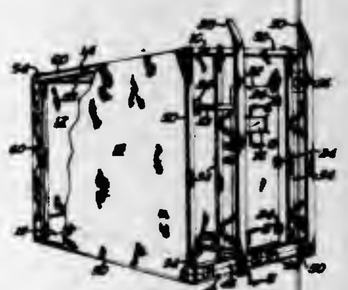
In a jewelry cleaner, the combination which comprises:
(a) a supporting rectangular shaped case having a horizontally disposed base,
(b) a cover positioned parallel to the base and spaced upwardly therefrom, said cover having spaced openings therethrough,
(c) a floating tray positioned beneath a first opening in said cover, a receptacle on said tray, means for vibrating said receptacle and tray, radially disposed springs uniformly connecting the rim of said receptacle to said cover for holding said receptacle in position in said first opening in said cover by urging said receptacle against said tray,
(d) a foraminous basket for retaining the jewelry to be cleaned in a liquid in said receptacle,
(e) a vertically disposed shaft adapted to extend through a second opening in the cover and mounted to spin a second jewelry retaining basket,
(f) and a resistor heater positioned beneath said second opening for drying said jewelry.

3,352,312
COLLAPSIBLE CAMPING UNIT
**William G. Martin, 7235 Shawnee Run Road,
Cincinnati, Ohio 45243
Filed Nov. 16, 1965, Ser. No. 508,059
9 Claims. (Cl. 135—1)**



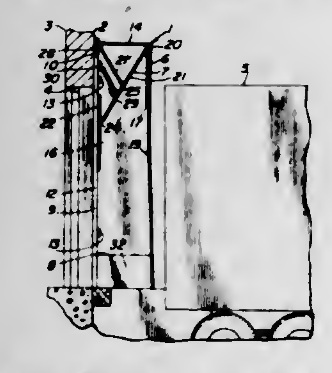
1. A camping unit adapted to be folded into a casing, said unit when erected comprising,
a pair of laterally spaced horizontal casing halves,
a pair of vertical panels hinged to and depending from the adjacent edges of said casing halves,
a pair of horizontal floor panels hinged to the lower edges of said vertical panels and to each other,
a tent and means mounted on said casing halves for supporting said tent over said casing halves,
said floor panels being pivotable to lie against said vertical panels, said vertical panels being pivotable to lie against said casing halves, and
means for joining said casing halves together to enclose said panels, tent, and tent supporting means when said unit is collapsed.

3,352,313
FOLD-A-DOOR FISH HOUSE
**Martin J. Kroening, 1073 16th Ave. SE.,
Minneapolis, Minn. 55411
Filed Dec. 23, 1965, Ser. No. 515,942
8 Claims. (Cl. 135—1)**



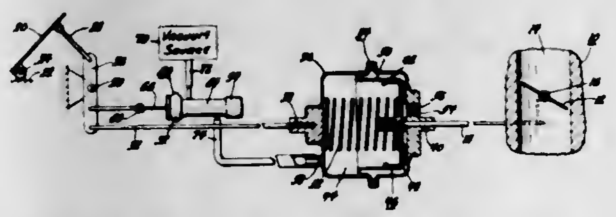
1. A collapsible ice fishing house comprising:
(a) a front wall section having a door pivotally mounted therein;
(b) a solid floor section pivotally connected to the front wall section, said floor section and said front wall section being made of a rigid material;
(c) flexible and deformable side, top and end wall sections integrally connected to one another and connected to the edges of the front wall section and floor section to make a complete enclosure;
(d) a rigid support member connected to the top and end wall sections at the junction thereof within the enclosure;
(e) removable support means adapted to be positioned between the rigid support member within the enclosure and the front wall and floor sections to support the enclosure in an erected position;
(f) and spacer means pivotally connecting the solid floor wall section to the front wall section and spacing the same therefrom so that when the floor section is pivoted toward the front wall section the space therebetween will enclose the rigid support member together with the flexible side and top wall sections of the enclosure.

3,352,314
LOADING DOCK SHELTER
**Cyril P. Frommelt and Sylvan J. Frommelt, Dubuque, Iowa, assignors to Dubuque Awning & Tent Co., Dubuque, Iowa, a corporation of Iowa
Filed Feb. 24, 1967, Ser. No. 618,428
10 Claims. (Cl. 135—5)**



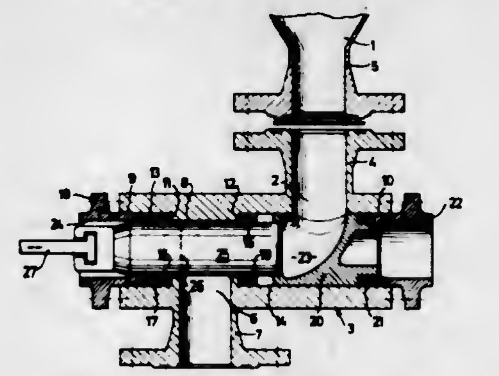
1. A loading dock shelter comprising
(a) a cover extending along the top and sides of a door of a warehouse,
(b) lever means connected to the upper portion of said cover and mounted on said warehouse for yieldingly holding the upper portion of said cover in extended relation to said warehouse, and
(c) means for supporting the lower portion of said cover,
(d) said last mentioned means consisting of resilient cushion means, compressible in all directions, connected to the lower portion of said cover and disposed in abutting engagement with said warehouse for yieldingly holding said lower portion of said cover in extended relation to said warehouse.

3,352,315
MANUAL AND POWER CONTROL MECHANISM AND METHOD
**George E. Kellogg, Miamisburg, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 14, 1964, Ser. No. 403,743
8 Claims. (Cl. 137—1)**



3. A throttle valve control system comprising
an accelerator pedal,
a throttle valve,
link means connected with said accelerator pedal and said throttle valve and movable by said accelerator pedal throughout the entire range of accelerator pedal movement and when so moved moving the throttle valve at a first rate of movement in relation to movement of said accelerator pedal,
and link means moving means connected with and forming a part of said link means and having control means operatively sensing the movement of said accelerator pedal causing said first rate of movement of said throttle valve,
said link means moving means being actuated under control of said control means and only in a minor portion of the entire range of movement of said accelerator pedal and when so actuated moving said link means and therefore moving said throttle valve at a second rate of movement superimposed on said first rate of throttle valve movement in relation to movement of said accelerator pedal.

3,352,316
GATE VALVE WITH STRIPPER RINGS FOR PLASTIC MELTS
**Willy Zahn, Offenbach (Main), Germany, assignor to Hans J. Zimmer Verfahrenstechnik, Frankfurt am Main, Germany
Filed May 27, 1965, Ser. No. 459,326
Claims priority, application Germany, June 6, 1964, Z 9,264
2 Claims. (Cl. 137—242)**

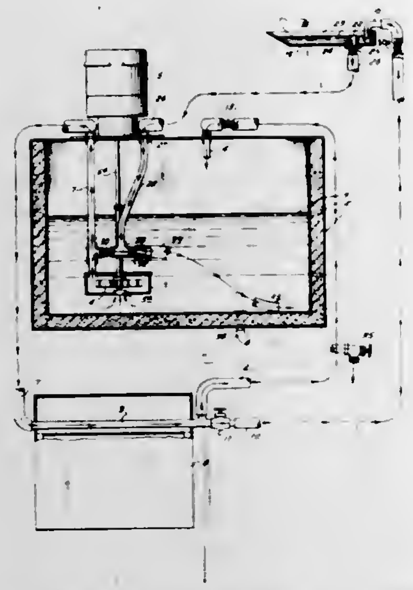


1. A valve useful for controlling the flow of plastic melts comprising a valve housing having a bore, a piston having a uniform outer surface slightly spaced from the bore of the housing along its entire length and being axially movable in said bore, fluid inlet means communicating with said bore, fluid outlet means communicating with said bore, means at one end of said bore in intimate sliding contact with the uniform outer surface of said piston for sealing the bore from the exterior, means at the other end of said bore in intimate sliding contact with said outer surface for sealing the inlet means from the outlet means when said uniform outer surface is in contact with both of said sealing means, said sealing means at said other end being out of contact with said piston when said plastic melts are being passed from said inlet means to said outlet means, both of said sealing means defining the sole guide means for the movement of said piston, stripper means at both ends of said bore in direct engagement with said sealing means and in sliding contact with said piston for removing fluid from said uniform outer surface as said piston moves axially in said bore, said stripper means comprising support rings with carbon ring inserts, means operatively connected to said piston for moving said piston axially in said bore and separate means are provided for each pair of said sealing means and said stripper means for securing said sealing means and said stripper means in place within said valve housing.

3,352,317
DAMPENING FLUID COOLING AND CIRCULATING APPARATUS FOR LITHOGRAPHIC OFFSET PRESS DAMPENING DEVICE
**Harold P. Dahlgren, Dallas, Tex., assignor to Dahlgren Manufacturing Company, Inc., Dallas, Tex., a corporation of Texas
Filed Dec. 9, 1964, Ser. No. 417,183
3 Claims. (Cl. 137—339)**

1. In a device for circulating dampening fluid in a lithographic printing press, a reservoir for dampening fluid; a pump disposed below the level of fluid in the

reservoir; a discharge conduit from the pump through the wall of the reservoir; a refrigeration unit; an elongated dampening fluid container; conduit means connected to the discharge conduit passing through the refrigeration unit and extending to a point adjacent the container; a dispersal conduit having spaced perforations through the wall thereof attached to the conduit means and being disposed in the container; a return conduit communicating with the

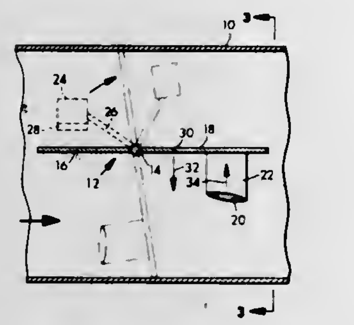


container and the reservoir; means to maintain a predetermined level of fluid in the container; a venturi connected in the return conduit below the level of the fluid in the reservoir; a restricted passage between the discharge conduit and the return conduit, said restricted passage being arranged to discharge fluid directly into the entry end of the venturi; and flow restriction means between the pump and the dispersal conduit to cause back pressure in the discharge conduit.

3,352,318
CHECK VALVE

Arthur Yanowitz, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Dec. 22, 1966, Ser. No. 604,020
6 Claims. (Cl. 137—484.2)

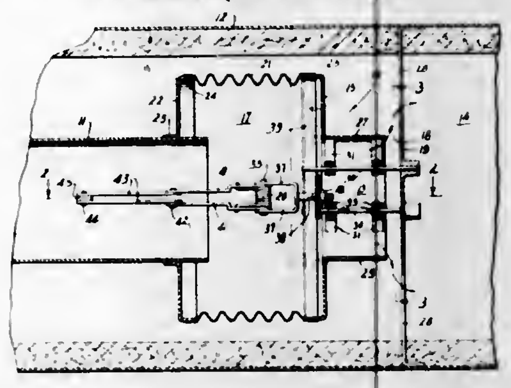


1. A low pressure drop check valve for a gas duct comprising a duct closure member, pivot means supporting said closure member within said duct, said member being statically unbalanced upon said pivot means so as to be in a normally closed position when no gas is flowing in said duct, and airfoil means mounted upon said closure member responsive to flow of gas in said duct for providing a force in opposition to the static unbalance of said closure member to thereby place said closure member in substantially dynamic balance when gas is flowing in said duct, and stop means cooperative with said pivot means for limiting the degree of opening of said closure member.

3,352,319
FLOW CONTROLLER

Walter W. Kennedy, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois

Filed June 30, 1965, Ser. No. 468,200
5 Claims. (Cl. 137—503)

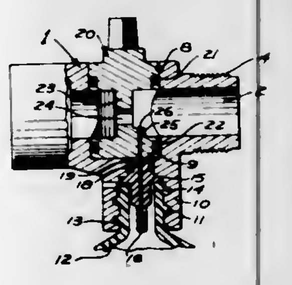


1. In a flow controller, the combination of, a duct for carrying a flow of gas and having an outlet end for discharging the gas, a first disk substantially larger than said duct having a central opening telescoped onto said outlet end and secured thereto, a similar second disk spaced outwardly from said outlet end and having a central opening alined therewith and defining an outlet, an axially flexible sleeve joined at its ends to the outer portions of said disks and cooperating with the latter to form an axially expansible and contractible chamber for carrying the flow of gas from said duct through said outlet, a valve plate supported outside said chamber adjacent and in alinement with said outlet in the path of the gas discharged therethrough and cooperating with the outlet to define a restricted passage for the flow of air away from the outlet, said second disk being movable from a retracted position in which said outlet is spaced from said valve plate to an extended position in which the outlet is closely adjacent the plate thereby to vary the area of said passage in accordance with the position of such second disk, and a spring yieldably urging said second disk toward said retracted position whereby variations in the pressure differential acting on said second disk expand and contract said chamber to move said second disk toward and away from said valve plate thereby automatically varying the area of said passage to maintain the volume of flow through the latter substantially constant.

3,352,320
SHOWER HEAD VALVE

Alfred L. Camp, Brea, Calif., assignor to Irving Terry, Los Angeles, Calif.

Filed Jan. 14, 1965, Ser. No. 425,518
3 Claims. (Cl. 137—604)



1. A shower head valve, comprising:

(a) a valve body having an inlet, an outlet, a flow passage therebetween, a valve core socket traversing in said flow passage and an eccentrically located port extending axially from the bottom of said socket;

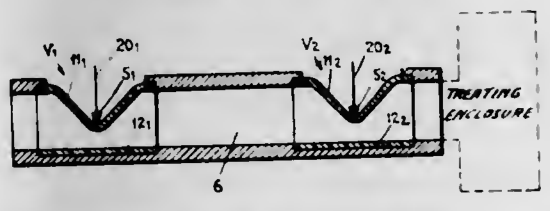
(b) a valve core rotatable in said socket and including a web movable between a position coplanar with the axis of said flow passage and a position at right angles thereto, said web having an orifice therein, adapted to align with said flow passage, said valve core having a cylindrically shaped base portion sealingly received in the bottom of said socket with an eccentrically located axially extending aspirator passage formed therein at the downstream side of said web adjacent said orifice, in the region of negative pressure, said aspirator passage being movable on rotation of said valve core into and out of registry with said eccentric port to alternately establish and interrupt communication between said port and the flow passage;

(c) and means for supplying a fluid to said eccentric port for flow through said aspirator passage and entrainment in water flowing through said orifice.

3,352,321
FLEXIBLE GATE DEVICE PRESSURE LOCK ARRANGEMENT USING SAME

Marcel J. P. Aupoix, Paris, France, assignor to Societe Generale du Vide, Choisy-le-Roi, Seine, France, a corporation of France

Filed Nov. 14, 1963, Ser. No. 323,788
Claims priority, application France, Nov. 27, 1962, 916,727, Patent 1,348,508; Dec. 6, 1962, 917,736, Patent 83,216
2 Claims. (Cl. 137—613)



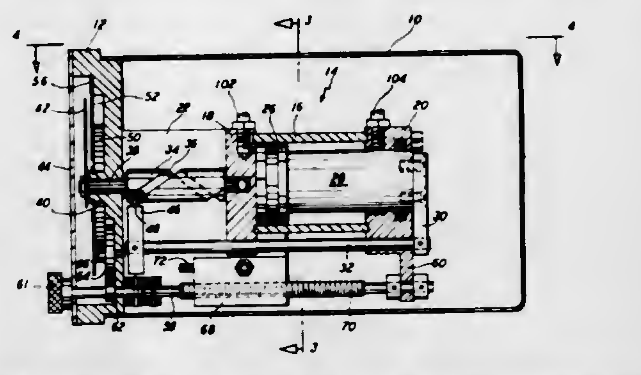
1. The combination with a treating enclosure for animal skins and the like large flat articles of a gate device for transferring said articles between said enclosure and the exterior, said gate device comprising: a conduit in the form of a flat tube having one end connected to said enclosure, and having an elongated cross section with dimensions corresponding to those of said articles for freely passing said articles through the conduit in flat conditions; said conduit having at least one tubular section interposed in an intermediate region of said conduit spaced from both ends thereof and comprising a flexible broad sidewall portion deformable into tight sealing engagement with an opposite broad sidewall portion to seal said conduit; and actuator means engageable with an outer surface of said flexible broad sidewall portion along a line generally transverse of the conduit for deforming it into engagement with said opposite broad sidewall portion and sealing the conduit, said one broad sidewall portion of the flexible conduit section having an undeformed dimension as measured longitudinally of the conduit which is substantially greater than the corresponding dimension of said opposite broad sidewall of the conduit section, and means connecting the respective ends of said one broad sidewall portion to said conduit so as to place said one broad sidewall of the conduit section under longitudinal compression so that it is normally deflected and thereby reduce the force required to bring it into sealing engagement with said opposite broad sidewall portion by said actuator means.

3,352,322
AIR OPERATED TIMER

Rudolf P. Strick, West Roxbury, Mass., assignor to Henry v. d. Benken, West Roxbury, Mass.

Continuation of application Ser. No. 354,396, Mar. 24, 1964. This application Nov. 1, 1966, Ser. No. 591,351
10 Claims. (Cl. 137—624.11)

1. A timer for actuating an instrumentality for a predetermined period of time comprising: an arm mounted for movement; a control member positioned in alignment with the arm; means for initially maintaining the arm in an idle position; drive means actuable to concomitantly actuate the instrumentality and move the arm away from its idle position at a predetermined speed; control means actuable in response to the engagement of the arm with the control member after the arm has travelled a predetermined distance to concomitantly terminate the movement of the arm and deactuate the instrumentality; means for moving the control member to adjust the distance between the control member and the arm in its idle position to thereby adjust the distance of travel of the arm at said predetermined speed; indicia; a pointer mounted for move-

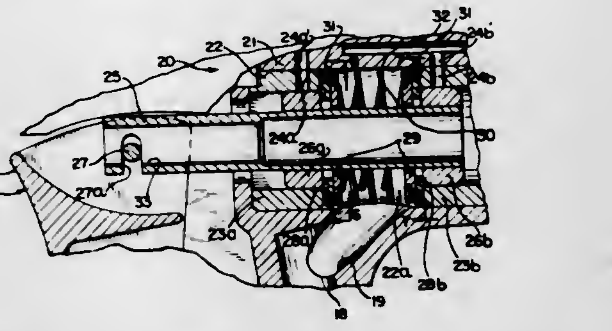


ment that is registerable with the indicia; means operative concomitantly with the movement of the control member to adjust the position of the pointer with respect to the indicia a hand mounted for movement alongside the pointer; means for initially maintaining the hand in an idle position; means responsive to actuation of the drive means to move the hand away from its idle position at a speed that is commensurate with the speed of the arm; means operative in response to actuation of the control means to terminate the movement of the hand; and means so constructing and arranging the aforesaid parts that the hand is in alignment with the pointer when the movement of the hand is terminated.

3,352,323
VALVE FOR REVERSIBLE PNEUMATIC TOOL

John L. Wickham, Baltimore, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland

Filed Oct. 21, 1965, Ser. No. 499,733
5 Claims. (Cl. 137—625.26)



1. A valve for a reversible pneumatic tool, comprising:

(a) a valve body having a chamber;

(b) a pair of axially-spaced bushings fixedly retained in the chamber;

(c) means pressuring the chamber intermediately of the bushings;

(d) each of the bushings having a port formed therein spaced from the chamber, one for "forward" operation of the tool and the other for "reverse";

(e) a valve stem;

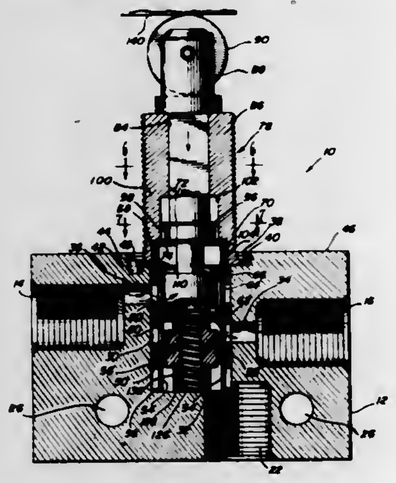
(f) a pair of axially-spaced spools fixedly secured to the stem, one within each of the bushings;

(g) whereby the assembly of the stem and its spools is slidably guided in the bushings for longitudinal reciprocation, and whereby the spools close off the

ports, respectively, in the closed position of the valve;
- (h) a pair of sealing rings in the intermediate pressurized chamber; and
- (i) means biasing each of the sealing rings in the closed position of the valve into face-sealing engagement with the respective axial end faces of a spool and a corresponding bushing, thereby maintaining effective sealing in the closed position of the valve;
- (j) whereby when the valve stem is moved axially in one direction, one of the spools moves away from its sealing ring and then uncovers the port formed in its respective bushing, thereby communicating the intermediate pressurized chamber with the port; and
- (k) whereby the other of the spools unseats its respective sealing ring from its respective bushing, continues to block the intermediate pressurized chamber from effectively communicating with its respective port, and uncovers its respective port sufficiently, however, to facilitate a secondary discharge from the valve.

3,352,324
CONTROL VALVE STRUCTURE AND LINKAGE THEREFOR

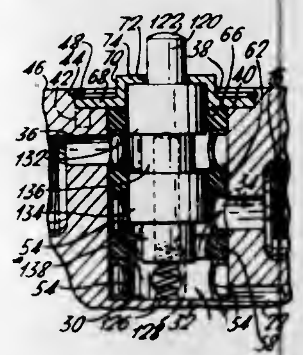
Seymour F. Stryker, Evanston, Ill., assignor to Air-Mite Devices, Inc., Chicago, Ill., a corporation of Illinois
Filed May 10, 1965, Ser. No. 454,462
5 Claims. (Cl. 137—625.69)



1. A valve having a body provided with a valving cavity, a plurality of alternately stacked annular packing members and perforated spacers co-axially engaged and mounted in said cavity to define a passageway, a plurality of ports in said body opening to said cavity, a plunger disposed in said passageway defined by said annular packing members and spacers and provided with a plurality of valving surfaces, such that upon reciprocation of said plunger, said valving surfaces are adapted to engage said packing members upon movement of the plunger selectively to establish different paths of communication between the ports, a push rod, an extension on the plunger engaged by the push rod such that the plunger may be moved axially, spring means for biasing the plunger in opposition to said push rod to an axial position with the plunger disposed toward the outer end of said cavity, an annular recess portion surrounding the said valving cavity to define a shoulder at the entrance thereof in said body, a cup-shaped push rod housing having an open end and an aperture in the opposite end thereof, an annular surface formed on the open end of said housing, said housing being partially received in said annular recess with the annular surface on the housing seated on the annular shoulder formed by said recess and a portion of the said push rod disposed in and protruding from the aperture in said housing, means associated with said push rod housing and said body removably to lock said housing in the annular recess to retain the valve elements in assembled relationship in said valve cavity and thereby to provide access to said valve elements upon disengagement of said last named means and the removal of said housing.

3,352,325
CONTROL VALVE STRUCTURE

Seymour F. Stryker, Evanston, Ill., assignor to Air-Mite Devices, Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 17, 1966, Ser. No. 528,184
2 Claims. (Cl. 137—625.69)

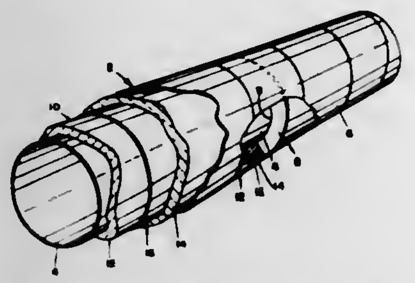


1. A valve having a body with a valving cavity opening to one surface of said body, an annular gallery in said body surrounding the entrance to the cavity to thereby define a shoulder therein, a plurality of alternately stacked annular packing members and annular perforated spacers, co-axially engaged in the cavity to define a passageway, a plurality of ports in the said body opening to said cavity and adapted to be selectively connected for the valving operation, a plunger disposed in said passageway defined by said packing members and annular perforated spacers, movable axially therein and having the valving surfaces for engaging said annular packing members, the packing members being arranged relative to the ports and plunger such that the axial movement of the plunger selectively establishes communication between different ports, spring means for biasing the plunger to a first axial position with the plunger disposed toward the outer end of the valving cavity, a cup-shaped retainer member having an open end defining an annular surface and an aperture in the opposite end thereof, said retainer being received in said gallery with a portion of said annular retainer surface seated on the annular shoulder defined by said gallery and the inner portion of said retainer surface being effective to retain said annular packing members and perforated spacers in stacked relation, a reduced diameter end portion on said plunger received in and protruding from said retainer aperture when said retainer surface is disposed in said gallery, said reduced diameter end portion adapted to be engaged by external actuating means to bias said plunger away from the first axial position, means associated with said valving body and said retainer removably to lock said retainer in said gallery to maintain the valve elements in assembled relation in the said valving cavity end thereby adapted to provide access to said valve elements upon disengagement of said means and removal of said cup-shaped retainer.

3,352,326
PREFABRICATED DUCTS FOR AIR CONDITIONING SYSTEMS

Einar H. Gustafson, Riverside, Ill., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 401,467
2 Claims. (Cl. 138—149)

1. Prefabricated conduit for use in air conditioning systems comprising: a first duct adapted to communicate with a source of fluid; a second duct having an inner dimension greater than the outer dimension of said first duct, said first duct being spacedly disposed within said second duct; at least one collar-like support around said first duct adapted to maintain said first duct in coaxial relationship with said second duct, said support being dimensioned for relatively free movement on said first duct; and insulating means comprising first and second layers of insulation with at least one layer of metal foil therebetween, said insulating means being around said first duct on opposite sides of said support, said insulating means trapping said support therebetween whereby said support is held against longitudinal movement.

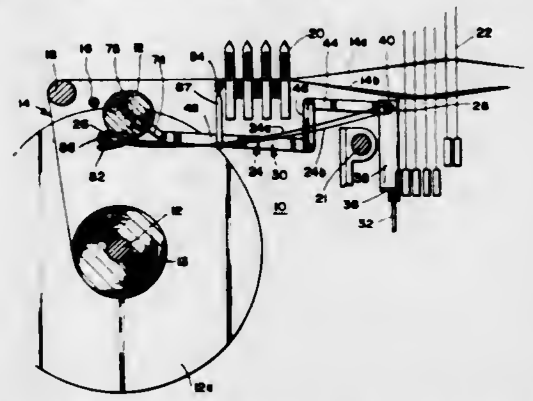


3,352,327
APPARATUS FOR CLEANING TEXTILE MACHINERY

Milton H. Irons, East Providence, and Philip F. Maguire, Providence, R.I., assignors to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,613
19 Claims. (Cl. 139—1)

1. On a loom comprising:
- (I) an upper portion comprising:
  - (A) a whip roll,
  - (B) drop wires, spaced from said whip roll,
  - (C) a layer of textile strands which:
    - (1) extend:
      - (a) over said whip roll,
      - (b) through said drop wires,
    - (2) produces lint,
- (II) a beam located below said upper portion comprising:
  - (A) a shaft which:
    - (1) is mounted on said loom,
    - (2) is in spaced relation to said upper portion,
    - (3) is substantially parallel to said layer of textile strands,
  - (B) textile strands which:
    - (1) are temporarily wound on said shaft,
    - (2) supply strands for said layer,
    - (3) form a cylindrical surface which:
      - (a) is coaxial with said shaft,
      - (b) initially is in close proximity to said upper portion,
      - (c) recedes from said upper portion as said textile strands are payed off to to supply said layer,

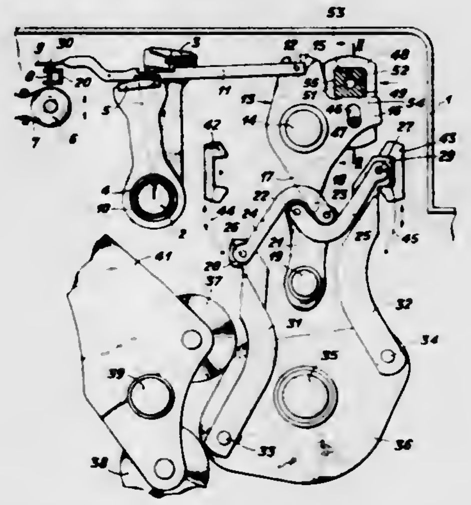
a lint collector comprising:
- (III) an endless belt:
  - (A) comprising:
    - (1) an upper flight,
    - (2) a lower flight,
  - (B) which:
    - (1) substantially underlies said layer,
    - (2) has one end of said flights interposed between said upper portion and said cylindrical surface,
    - (3) is adapted to arrest said lint on the upper flight,
- (IV) means for moving lint arrested by said upper flight to at least one predetermined location adjacent said one end,
- (V) clearing means for gathering and collecting lint from said belt comprising:
  - (A) means engaging at least one of said flights at said at least one location for gathering said lint from said belt,
  - (B) means adjacent to and cooperative with said gathering means for collecting said gathered lint into an expanding package,



- (VI) means adapting said clearing means to expand between said upper portion and said receding cylindrical surface as said clearing means gathers said lint.

3,352,328
LOOM DOBBY

Erwin Pfarrwaller, Winterthur, Switzerland, assignor to Gebruder Sulzer Aktiengesellschaft, Winterthur, Switzerland
Filed Mar. 19, 1965, Ser. No. 441,203
Claims priority, application Switzerland, Apr. 3, 1964, 4,281/64
8 Claims. (Cl. 139—68)



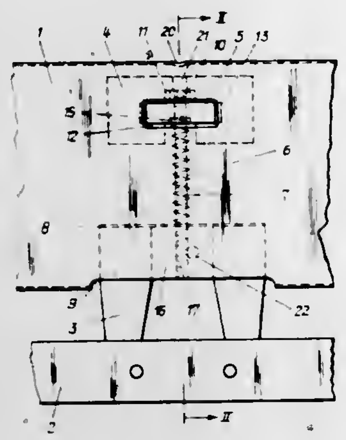
1. A loom dobby comprising two reciprocating lifting beams, a plurality of pairs of heddle frame lifters, a separate movable linkage coupled to each of said pairs of lifters, each said linkage including a member shiftable between two end positions in each of which a separate lifter of the pair coupled to that linkage is engageable with a separate one of said beams, said shiftable members being arranged in spaced aligned arrangement, a separate brake plate disposed between each two adjacent ones of said aligned members, a rod on which said brake plates are engaged, and resilient means to stress said aligned members and brake plates together.

3,352,329
HEDDLE FRAME

Bernhard R. Koch, Horgenberg, Switzerland, assignor to Grob & Co. AG, Horgen, Switzerland
Filed Oct. 14, 1965, Ser. No. 495,954
Claims priority, application Switzerland, Apr. 15, 1965, 5,330/65
6 Claims. (Cl. 139—92)

2. A mounting for a heddle carrying rod whereby the rod is adjustably mounted on a hollow frame stave of a

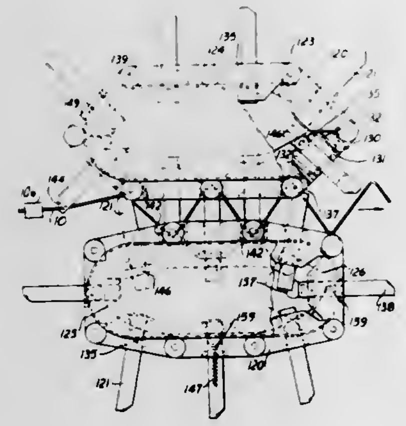
heddle frame, said hollow frame stave having spaced parallel walls, said walls being provided with window openings, said mounting comprising a bearing member secured to and between said walls within said hollow frame stave in registry with at least one of said window openings, a bearing block supported in a recess in said



bearing member, said bearing block having a recess for receiving a screw, a beaded screw extending into the hollow frame stave through an aperture in one edge thereof, said screw being arranged to extend through an opening in said bearing member and into said groove in the bearing block.

3,352,330
WEB BENDER FOR FORMING A CONTINUOUS V-CONTOURED WEB

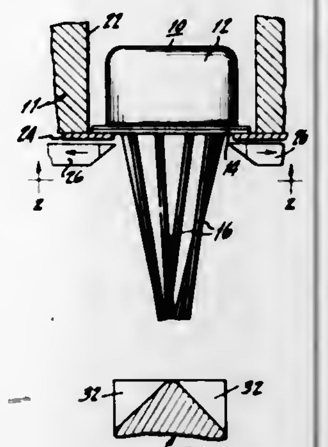
Richard Allan Gordon Cape, Lachine, Quebec, Canada, assignor to Dominion Bridge Company, Limited, Montreal, Quebec, Canada
Original application Jan. 17, 1961, Ser. No. 83,228, now Patent No. 3,158,731, dated Nov. 24, 1964. Divided and this application Nov. 20, 1964, Ser. No. 412,693
17 Claims. (Cl. 140—105)



1. A web bender for forming a continuous V-contoured web comprising means to feed a wire web into the said bender, two co-planar sets of web-engaging tongues, means defining a path for each set along which the tongues of that set are movable from opposite sides into a common central zone, and means for advancing the said tongues within the said central zone from opposite sides and through the said zone, with the tongues of one set alternating with the tongues of the other set and moving the V-contoured web out of the said zone, means for mounting the tongues of each set for longitudinal sliding movement transversely across the respective path of movement of the set in the said plane of the set.

3,352,331
WIRE COMBING

Joseph Swyt, Plainfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 31, 1965, Ser. No. 483,914
2 Claims. (Cl. 140—147)



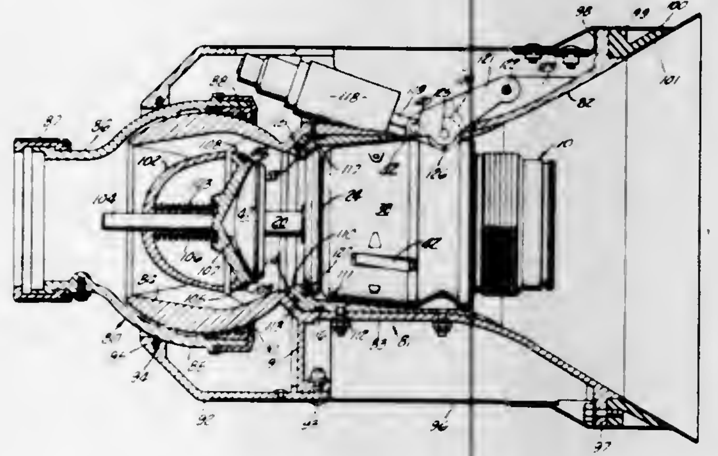
1. A method of combining the lead wires of a device including a member and a plurality of leads arranged around a circle, said leads extending substantially unidirectionally from said member, the free ends of some of said leads being bunched, said method comprising:

passing at least one finger radially inwardly between each pair of adjacent leads and adjacent to said member until the leading ends of pairs of fingers extending past opposite sides of leads substantially meet within said lead circle, and

maintaining the relative disposition of said fingers and moving said fingers towards the ends of said wires for spreading said wires.

3,352,332
PROBE WITH SLIDING SEALED NOZZLE

Robert C. Swatek, Glendora, John W. Schulz, Pasadena, and Thomas P. Taquino, Sierra Madre, Calif., assignors to Schulz Tool and Manufacturing Co., San Gabriel, Calif., a corporation of California
Filed Dec. 18, 1964, Ser. No. 419,445
7 Claims. (Cl. 141—349)



1. In a probe adapted to cooperate with a drogue in an in-flight aircraft refueling system at extreme temperatures,

(a) a probe housing;

(b) a cylindrical retractible sleeve slidably engaged in a cylindrical opening in said housing and having a valve seat formed at its outer end;

(c) a valve secured to said housing on a stem extending through said sleeve, said sleeve being adapted to cooperate with said valve;

(d) means normally urging the sleeve in a direction to cause it to seat with the valve;

(e) the sleeve being adapted to be retracted on the probe housing upon engagement with a drogue so as to open the valve;

the improvement comprising:

(f) elastomeric split-ring bearing means between said sleeve and said housing in slidable engagement with said sleeve;

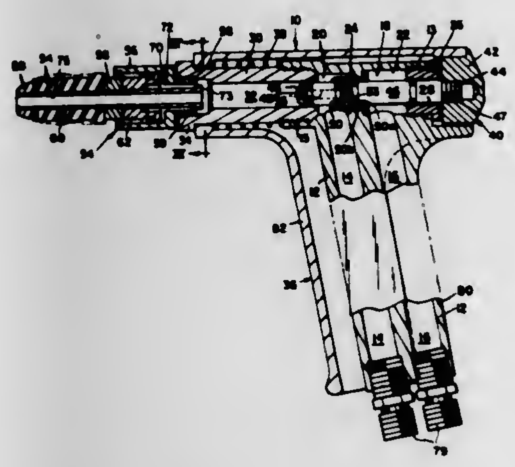
(g) a predetermined thermal expansion gap between the ends of said split-ring,

(h) said split-ring being T-shaped in cross section, the T having a relatively long bar extending axially and a relatively short leg extending radially,

(i) said T-leg extending into an annular groove in said housing to lock said split-ring axially in place, there being clearance for thermal expansion of said leg radially outwardly in said last groove.

3,352,333
SPRAY GUN FOR CLEANING TUBES HAVING RADIALLY EXPANSIBLE MEANS FOR SEALINGLY ENGAGING SAID TUBE

James A. Glasgow and Harley E. Linthicum, Springfield, Ohio, assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Mar. 31, 1965, Ser. No. 444,192
4 Claims. (Cl. 141—383)



1. Fluid delivery means comprising a body member having at least one passage for connection with a source of fluid under pressure and outlet means for transmitting fluid from the body member; valve means selectively communicating the passage and the outlet means; and nozzle means associated with the body member outlet, said nozzle means including fluid actuated piston means slidably mounted therein said piston being slidable in response to fluid flowing from said body member and an elongated resilient sleeve in axial alignment with said piston, said sleeve being radially expansible in response to pressure applied axially thereto by said piston, said radial expansion accomplishing said sealing action.

3,352,334
POWER SAW MOUNTING APPARATUS

Douglas C. Hunn, Minneapolis, Minn., assignor to The Mill-Cut Corporation, a corporation of Minnesota
Filed June 22, 1965, Ser. No. 465,926
5 Claims. (Cl. 144—129)

1. Power saw mounting apparatus comprising:

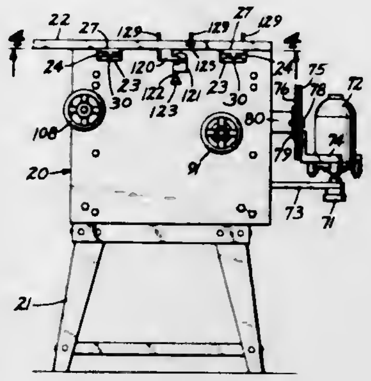
(a) a flat substantially horizontal work surface mounted on a base for limited horizontal movement in a first direction having an opening therein for the projection of a work tool therethrough;

(b) a carriage having an arbor mounted thereon and perpendicular thereto with a tool receiving chuck at one end thereof and motor means operatively connected to said arbor for rotation of said arbor;

(c) first means mounting said carriage for limited vertical movement with said chuck positioned so a tool therein will project substantially through the center of said opening in said work surface;

(d) first control means attached to said carriage for moving said carriage vertically;

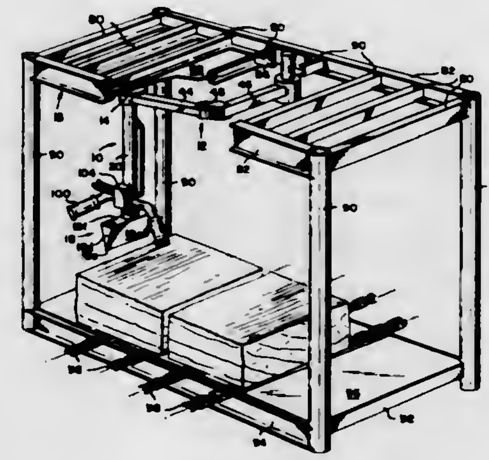
(e) second means mounting said first mounting means and said carriage for limited rotation about a substantially horizontal axis displaced vertically below said work surface; and



(f) second control means attached to said carriage and said work surface for rotating said carriage until said arbor makes a desired angle with said work surface while simultaneously moving said work surface in said first direction so the axis of said chuck remains substantially centered in said opening.

3,352,335
WOOD BLOCK SPLITTING DEVICE

Pentti U. Koski, Aberdeen, Wash., assignor of one-half to Olli R. Koski, Aberdeen, Wash.
Filed Nov. 10, 1965, Ser. No. 507,114
14 Claims. (Cl. 144—195)

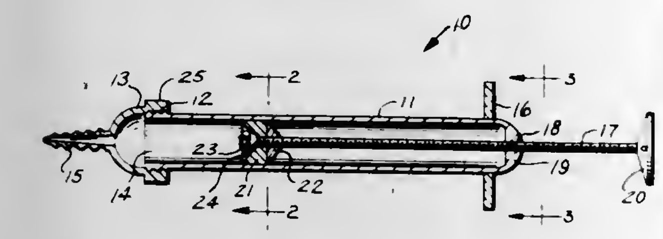


1. An apparatus for mounting to an overhead structure which comprises a cutter assembly adapted for overhead mounting comprising a knife having a lower cutting edge and an hydraulic mechanism for vertically raising and lowering said knife including a vertical hydraulic cylinder and an hydraulic piston rod attached to said knife and slidable longitudinally within said hydraulic cylinder; means connected to an upper section of said cutter assembly mounting said cutter assembly to said overhead support structure at an offset overhead mounting point such that said cutter assembly may be pivoted about the overhead mounting point; and means attached to an upper section of said cutter assembly for transferring compressive cutting force to said overhead support structure.

3,352,336

METHOD OF GLUING OR REGLUING A JOINT

David W. Smith, 1250 Martin Ave.,
New Kensington, Pa. 15068
Filed Aug. 11, 1965, Ser. No. 478,807
1 Claim. (Cl. 144—310)

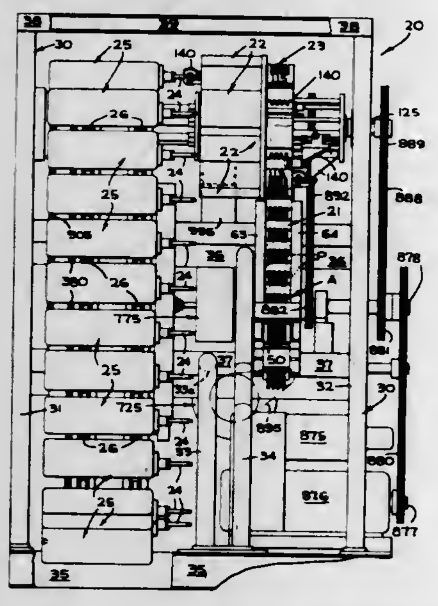


The method of gluing together at least two members forming an unexposed joint using a pressure glue injector having means for providing the pressurized passage of glue through an exteriorly self-cutting threaded tubular nozzle consisting of the steps of drilling a passage through one joint member into the interior of the unexposed joint to be glued, threadably engaging the injector nozzle with the prepared drilled passage to cut a complementary thread in the passage by rotating the thread cutting nozzle into the passage to tightly hold the nozzle therein and seal the passage, injecting glue under pressure through the nozzle and the passage into the unexposed joint, and thereafter removing the threaded nozzle of the glue injecting instrument from the drilled and threaded passage.

3,352,337

PINEAPPLE PEELING, CORING AND TRIMMING MACHINE

Leslie Vadas, Los Gatos, Calif., assignor to FMC Corporation, a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 414,121
18 Claims. (Cl. 146—6)

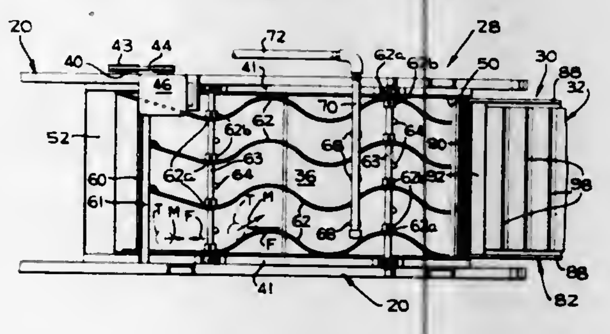


13. In a machine for the two stage peeling of pineapples or the like, a support structure; processing head mounted on said structure for movement along a closed path; said head having a fruit support spindle and a cutter mounted for movement longitudinally of said spindle in peeling contact with a fruit thereon; and cutter control means including a cam mechanism operatively connected between said support structure and said cutter; said cutter control means comprising means for advancing the cutter radially against the fruit at a starting position at one end of the fruit, means for moving said cutter longitudinally of said spindle to make a contour peeling cut as said head moves along a first portion of its closed path, means for retracting said cutter radially from the fruit, means for returning the cutter longitudinally to its starting position, means for again advancing the cutter radially against the fruit, means for again moving said cutter longitudinally of said spindle to make a contour cut in the flesh of the previously peeled fruit as said head moves along a second portion of its closed path, means for again retracting the cutter radially from the fruit, and means for again returning the cutter longitudinally to its starting position.

3,352,338

FRUIT PROCESSING APPARATUS

Katsuji Hirahara, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 16, 1965, Ser. No. 448,785
10 Claims. (Cl. 146—50)

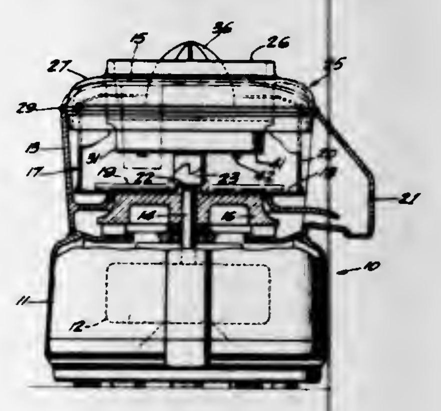


3. A machine for removing the skins from easily damaged fruit of the type wherein means are provided for treating the fruit in a caustic bath for loosening the skins, a skin remover for the treated fruit comprising an endless belt having a downwardly inclined upper reach and providing a friction surface, fruit abutment means for retarding motion of the fruit down the upper reach of said belt, and means for receiving skinned fruit from said belt; the improvements wherein the friction surface of said belt is free of substantial projections and skin piercing elements over most of its area for firmly engaging the skins and wiping them free of the fruit, and wherein said fruit retarding means comprises baffle means providing a plurality of upstanding fruit abutment faces arranged generally longitudinally along the upper reach of said belt but which abutment faces also have a limited lateral extent so that the fruit ricochets from successive faces while tumbling down the belt at a relatively rapid rate.

3,352,339

FRUIT JUICING ADAPTER FOR VEGETABLE JUICING MACHINES

Douglas F. Moline, Arcadia, Calif., assignor to Acme Juicer Mfg. Company, a corporation of California
Filed Jan. 10, 1966, Ser. No. 519,734
4 Claims. (Cl. 146—76)

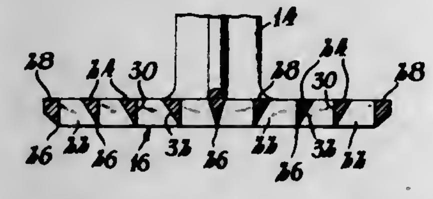


1. A fruit juicing adapter for a vegetable juicing machine having a vertical cylindrical housing formed with a rim, a vertical rotary shaft, a vegetable comminuting cutter removably positioned on said shaft, and a cover seated on said rim, comprising; a frame formed to seat on said rim, a gear train carried by said frame, a juice extracting device driven by said gear train, and means to detachably secure said gear train to said shaft.

3,352,340

FOOD PROCESSING DEVICE

Harold D. Hulterstrum, Baraboo, Wis., assignor to Flambeau Plastics Corporation, Baraboo, Wis., a corporation of Wisconsin
Filed June 4, 1965, Ser. No. 461,299
1 Claim. (Cl. 146—213)

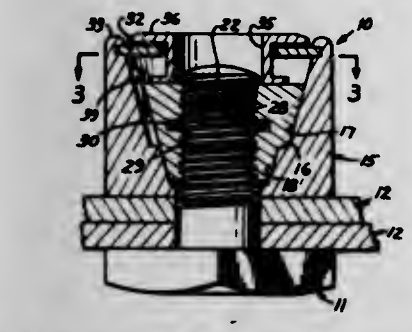


An improved potato masher type food processing device comprising a base having a central portion and opposite side portions, an upright handle unitary with said base and being affixed to said central portion, apertures defined in said side portions, substantially upright walls defining and separating said apertures, and knife-like lower edges on each of said upright walls, said apertures having a restricted upper end portion, and said apertures also being slanted upwardly and laterally of said central portion so that said food is directed laterally and away from said central portion and from said handle.

3,352,341

FAST-ACTION NUT ASSEMBLY

Arthur R. Schertz, Taft, Calif., assignor of fifty percent to Eva N. Schertz, Taft, Calif.
Filed Oct. 20, 1965, Ser. No. 498,738
3 Claims. (Cl. 151—19)

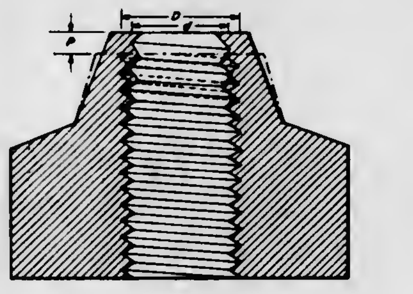


1. A fast-action threaded nut assembly comprising an outer nut ring having a generally conical axial bore therethrough the surface of which is inclined to the axis of said nut ring by an angle ranging between 10 and 20 degrees, said conical bore including a pair of frusto-conical sections the larger end of one of which opens through the upper end of said nut ring and the smaller end of which merges with the other edge of a radially narrow inwardly projecting shoulder the inner end of said shoulder merging with the larger end of the other of said frusto-conical sections and the smaller end of the latter terminating at the inner edge of a radially narrow inwardly projecting annular guide flange sized to have a loose sliding fit over the crests of a threaded shank for said nut assembly, a plurality of arcuate segments formed with helical threads crosswise of their interior surfaces and having a pair of frusto-conical exterior surfaces interconnected by a radially narrow shoulder and complemental to and seated against the conical axial bore through said nut ring, the threads of said segments being mateable with the complemental helical thread of a shank adapted for use with said nut assembly, spring means common to said arcuate segments and effective to expand said segments outwardly and toward the larger diameter end of said conical bore through said nut ring, and means to prevent any substantial relative rotary movement between said segments and said nut ring during wrenching of said nut assembly, said means for preventing any substantial relative rotary movement between said arcuate segments and said nut ring comprises narrow ribs extending axially of said one frusto-conical section with the inner ends thereof terminating at said annular shoulder interconnecting said pair of frusto-conical sections and having their inner edges tapering substantially similarly to the taper of the smaller one of said frusto-conical sections.

3,352,342

LOCK NUT

Harvey Jacobson, 45 E. 72nd St.,
New York, N.Y. 10021
Filed Nov. 26, 1965, Ser. No. 509,850
2 Claims. (Cl. 151—21)

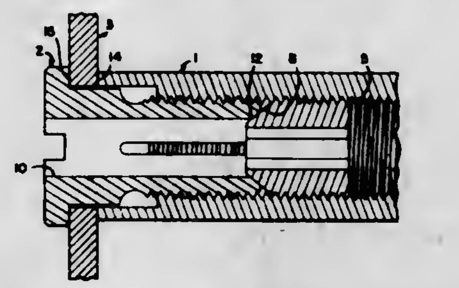


1. A lock nut comprising,
(a) a non-circular body portion,
(b) an annular collar on one face of the body, the body and collar having a continuous threaded, transverse bore,
(c) the external wall of the collar being tapered to define a progressively thinner, resilient wall portion from the body to the opposite end of the collar,
(d) the pitch of the thread in the body portion being substantially constant,
(e) the pitch of the thread in the collar being progressively greater with respect to the thread in the body from the body to the opposite end of the collar.

3,352,343

MECHANICAL CONNECTION

Robert I. Stitt, El Sobrante, Calif., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Filed Apr. 7, 1966, Ser. No. 540,867
2 Claims. (Cl. 151—31)



1. A mechanical locking screw assembly comprising, in combination, a supporting shaft provided with an aperture having internal threads therein, a locking screw provided with external threads threaded into said shaft aperture, an abutment surface in the form of an external camming chamfer adjacent one edge of said locking screw, an adjustable dowel screw provided with external threads complementary to the threaded aperture in said supporting shaft and having an aperture through its center, an abutment surface in the form of an internal camming chamfer on the inside of said dowel screw aperture adjacent the threaded end, said dowel screw having a

longitudinal slot adjacent the threaded end, the threaded portion of said dowel screw being threaded into said supporting shaft aperture to a selected position, a hex aperture in said locking screw for receiving a hex wrench through the aperture in said dowel screw for tightening the locking screw against said dowel screw whereby the camming chamfer on said locking screw will cooperate with the camming chamfer on said dowel screw to wedge the dowel screw threads against the supporting shaft threads to lock the position of the dowel screw relative to the supporting shaft, said hex aperture passes completely through said locking screw, whereby a free oil passage will be defined by the aperture in said supporting shaft, said dowel screw and said hex aperture.

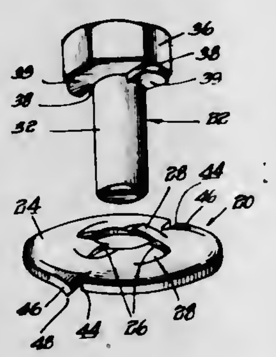
3,352,344

DISHED LOCK WASHER

James C. Lanius, Jr., Elgin, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Aug. 18, 1965, Ser. No. 480,673

2 Claims. (Cl. 151—35)



1. A locking device including a dished, axially resilient peripherally continuous annular washer of sheet metal having an uninterrupted inner margin adapted to be positioned about a rotary threaded fastener element and beneath a clamping surface associated therewith, substantially axially extending abutment means integral with and spaced circumferentially around said inner washer margin in the vicinity of the washer crown in a position to be engaged by corresponding abutment means on said clamping surface of a rotary threaded fastener as an incident to rotary tightening of said fastener, circumferentially disposed cam surfaces along the washer crowns sloping from a high point adjacent to the top of one abutment means toward a low point and defining the inner extent of said abutment means surface, the inclination of said cam surfaces with respect to the washer axis extending in the same general direction and being of greater inclination than the thread convolutions of said rotary threaded fastener with which the locking device is to be used whereby to increase the effectiveness of the washer to resist loosening after said complementary threaded fastener has been rotated in a tightening direction to urge said washer abutment means in the direction of said rotation and to partially collapse said washer, the outer peripheral margin of said washer having a plurality of symetrically located, substantially radially disposed interruptions therein, said interruptions forming at least a part of relatively sharp work engaging teeth, said teeth having axially deflected substantially radially arranged edges distributed in the concave portion of the washer and which face in a direction opposite to the direction of fastener tightening, the deflection of said portions being such as to permit relative rotary movement of the sharp teeth over the surface of a workpiece upon initial tightening of an associated rotary threaded fastener, and to resist substantially all retrograde rotary movement of said washer relative to said workpiece by reason of said teeth becoming imbedded in said workpiece surface, in response to rotary forces acting in a direction tending to loosen the associated rotary threaded fastener as the abutment means on said rotary fastener impresses an additional axial and collapsing force to the washer as they move up the cam surface of said washer which in turn causes progressively greater imbedment of said work engaging teeth.

3,352,345

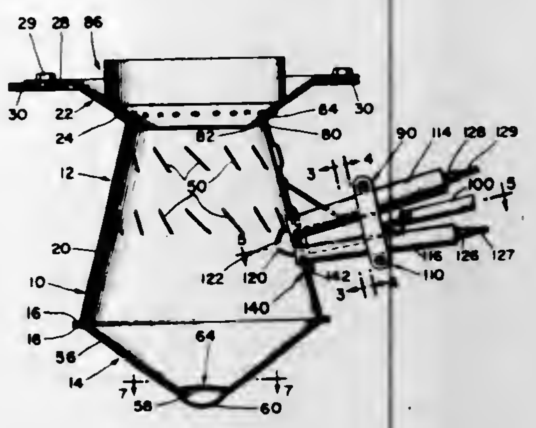
COMBUSTION DEVICE CONSTRUCTION

Harmon B. McLendon, Studio City, Calif.

(24352 Highlander Road, Canoga Park, Calif. 91304)

Filed Sept. 9, 1964, Ser. No. 395,238

5 Claims. (Cl. 158—28)



1. A combustion apparatus comprising:

means forming an upwardly open combustion chamber including a closed lower end and a concave side wall provided with openings formed therein spaced from said closed lower end for admitting air into the chamber, said openings being provided with guide means for forming an air layer swirling downwardly generally circumferentially adjacent said side wall, said side wall having fuel receiving and electrode receiving ports formed therein between said lower end and the uppermost of said openings;

a fuel supply and ignition assembly including an igniter element in said air layer; and a fuel introducing means having an opening aligned with the fuel receiving port in the side wall, said igniter element being located circumferentially upstream relative to said air layer of the fuel receiving port;

and means for supplying pressurized air to said openings and ports.

3,352,346

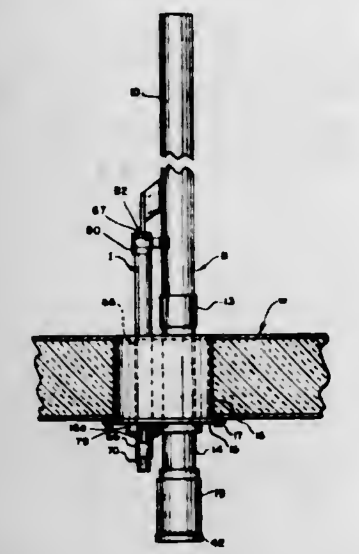
RIBBON BURNER AND ELECTRODE ASSEMBLY

Hiram E. Temple, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York

Filed Feb. 18, 1964, Ser. No. 345,705

5 Claims. (Cl. 158—115)

1. A ribbon burner assembly comprising: an assembly comprising an elongate, tubular burner member having longitudinally extending burner port means, means for supplying fuel gas to said tubular member and burner port means, and electrode rod means, axially withdrawable from said burner member and having an electrode with an outer edge parallel to and slightly spaced from said burner port means; means for supplying an electric charge to said rod means; axially extending key and keyway means, mounted by said burner member and electrode rod means assembly in predetermined angular position to prevent rotation of said electrode rod means in at least one direction relative to said burner means and thereby position said electrode edge relative to said port means, said key means being on the electrode rod means and including an axially extending leg having an arrow-shaped head, and said key receiving means comprising a ring-shaped member with a slot of a width to pass the arrow-shaped head; the electrode rod means in proper position being gravity biased by the offset weight of the electrode to engage the leg with the side of the slot so that the head prevents axial movement of the electrode rod means.



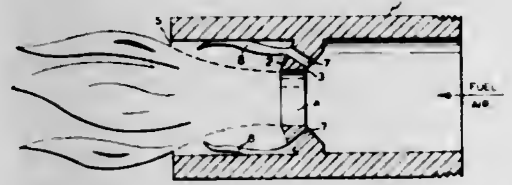
3,352,347

CERAMIC REFRACTORY FLAME RETENTION NOZZLE

James T. Robson, Cleveland Heights, Ohio, assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 30, 1963, Ser. No. 320,609

5 Claims. (Cl. 158—116)



1. In a flame retention nozzle comprising a unitary, non-perforate tubular housing having a fuel inlet end and a flame discharge end, said nozzle having disposed within its interior, between said two ends, and generally at right angles to the long axis of said housing, a perforate diaphragm integral with said tubular housing, said diaphragm having a centrally located aperture having a diameter at least one third the inside diameter of said tubular housing, said diaphragm having a multiplicity of perforations therethrough smaller than said centrally located aperture, said multiplicity of perforations distributed generally symmetrically around said aperture, said nozzle composed of a ceramic refractory.

3,352,348

VACUUM EVAPORATOR OF THE EJECTOR PUMP TYPE

Jerome G. Daviau, 50 Main St., Waterville, Maine 04901

Filed June 3, 1966, Ser. No. 565,028

10 Claims. (Cl. 159—5)

9. Apparatus for evaporating liquid from a solution comprising:

a chamber for receiving the solution from which the liquid is to be evaporated, and an entrainment channel for removing the vaporized liquid from the chamber;

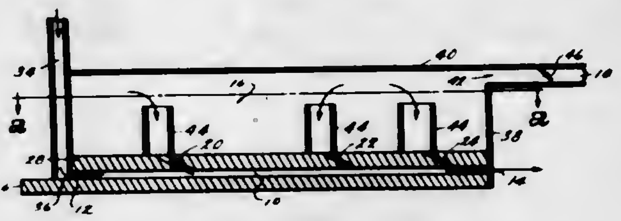
an inlet means communicating with one end of the entrainment channel for admitting a motive liquid to said channel;

an outlet means leading from an opposite end of said entrainment channel, said outlet means being in substantial axial alignment with said inlet means;

a wall common to the bottom of said chamber and the top of said entrainment channel;

at least one opening through said wall whereby the liquid may be vaporized and the vapor drawn from the chamber by the entraining action of the motive liquid; and

an upright pipe means surrounding each last named opening for maintaining a separation of the solution which remains in the chamber from the entrainment channel.



3,352,349

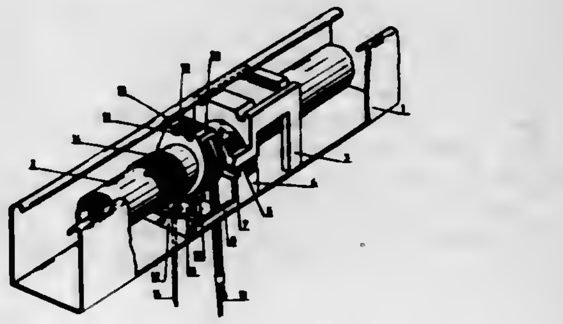
VENETIAN BLIND

Petrus J. Hennequin, Rotterdam, Netherlands, assignor to Hunter Douglas International Ltd., Montreal, Quebec, Canada, a corporation of Quebec

Filed Nov. 30, 1964, Ser. No. 414,637

Claims priority, application Netherlands, Dec. 17, 1963, 301,963

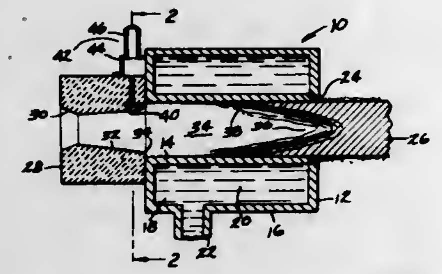
3 Claims. (Cl. 160—171)



1. A Venetian blind comprising an operating shaft which is rotatable and simultaneously axially displaceable for winding and unwinding thereon a lift cord means for raising and lowering the slats of the blind, a ladder carrier member resiliently gripping the surface of said shaft with a frictional fit therebetween, said carrier member having ladder means secured thereto for tilting the slats of the blind pursuant to rotation of said member, a radially protruding abutment means integral with said member, a first fixed abutment means located in the rotative path of the radially protruding abutment means and engageable therewith for stopping rotation of said carrier member in either of opposite directions, a second fixed abutment means comprising a partition and a wall member respectively facing the respective opposite axial ends of said carrier member and engageable therewith for restricting axial movement of said member in either axial direction, said first and second fixed abutment means comprising a unitary assembly of parts with said first abutment means extending axially between said partition and a wall member and being connected thereto, the frictional fit between said member and said shaft being such that said shaft can rotate and move axially independently of said carrier member when the latter is stopped by virtue of said member engaging said fixed abutment means, and said frictional fit being such that said member is carried along by said shaft when said member is free of said first fixed abutment means.

3,352,350
HORIZONTAL CONTINUOUS CASTING VENTING METHOD

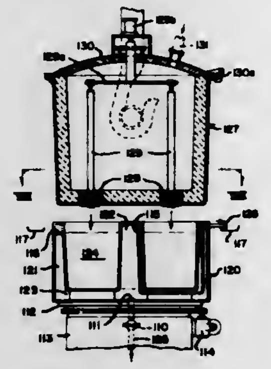
James E. Dore, Milford, Conn., and Avery L. Kearney, Birmingham, Mich., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Original application Oct. 22, 1963, Ser. No. 317,883, now Patent No. 3,286,310, dated Nov. 22, 1966. Divided and this application May 25, 1966, Ser. No. 568,722
2 Claims. (Cl. 164—82)



1. A method of continuous casting horizontally comprising the steps of:
- A. continuously introducing molten metal into the inlet end of the mold cavity of an open ended horizontal continuous casting mold,
- B. continuously withdrawing a solidified ingot from the outlet end of said mold cavity, and
- C. withdrawing vapor or gases which collect in an upper portion of said inlet end of said horizontal mold cavity while said molten metal passes through said mold cavity and solidifies therein.

3,352,351
SLOW POURING AND CASTING SYSTEM FOR FERROUS AND OTHER METALS

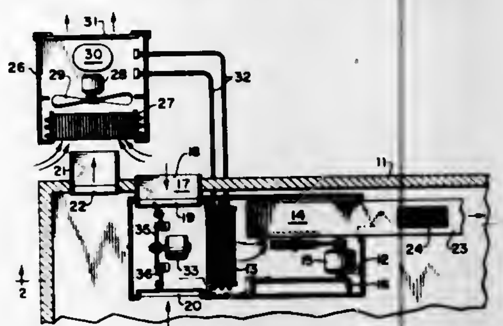
Adolf Heinrich Wilhelm Sickbert, Wattenscheid-Eppendorf, Germany, assignor to Midvale-Heppenstall Company, Nicetown, and Heppenstall Company, Pittsburgh, Pa., both corporations of Pennsylvania
Original application Dec. 19, 1963, Ser. No. 331,731, now Patent No. 3,268,958, dated Aug. 30, 1966. Divided and this application May 5, 1966, Ser. No. 547,991
3 Claims. (Cl. 164—335)



1. Slow pouring and casting apparatus for metals, comprising, in combination, an annular mold having an annular mold cavity, said annular mold having double walls and a central core portion interconnected for passage of cooling fluid therethrough, means for exhausting air at least from the upper interior of said central core portion, means for introducing cooling fluid into the interior of said mold, means for discharging cooling fluid from said mold, a teeming ladle having a plurality of teeming nozzles in the bottom thereof in uniformly angularly spaced arrangement spaced from the center of said teeming ladle, a plurality of stopper rods for said nozzles connected to a common stopper rod operating assembly, means for selectively rotating the mold about an axis through the central core, and means for raising said stopper rods a selected distance regulate the rate of teeming through said nozzles, whereby molten metal in said teeming ladle may be teemed at a predetermined rate into said annular mold cavity and solidified substantially at the same rate.

3,352,352
AIR CONDITIONING SYSTEM

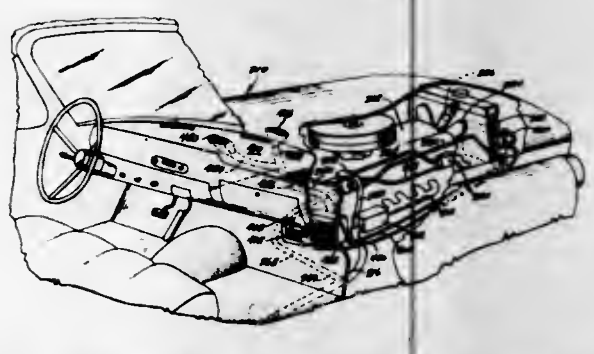
Charles E. Walters, Birmingham, Ala., assignor of fifty percent to Allen Trask, Utica, N.Y.
Filed July 21, 1966, Ser. No. 566,989
6 Claims. (Cl. 165—16)



1. In an air conditioning system for an enclosed structure, said system including means for cooling, means for re-circulating, means for ventilating, and means for heating the air within said structure, control circuits for said means including, a first thermostat sensing air temperature within said structure, said thermostat having a first setting means for controlling said heating circuit means and a second setting means for controlling said cooling circuit means arranged for the setting of a temperature satisfaction range between which said first thermostat does not call for either heating or cooling, a second thermostat sensing air temperature within said structure having its setting within the said satisfaction temperature range of said first thermostat, said second thermostat being arranged to control said circuits to operate said ventilation means in response to a temperature rise above its setting, and a third thermostat sensing outdoor air temperature cooperating with said second thermostat in its control circuit and set to close on temperature drop at a temperature less than the setting of said second thermostat whereby cooling may be effected by the call of said second thermostat where outdoor air temperature is lower than the indoor temperature.

3,352,353
AUTOMOBILE ACCESSORY APPARATUS

Thomas D. Stevens and Robert B. Hughes, Minneapolis, Minn., assignors of one-fourth each to Joseph L. Stevens, St. Paul, John D. Skildum, Minneapolis, Frank J. Hughes, Hopkins, and Robert B. Hughes, Minneapolis, Minn.
Filed Sept. 7, 1965, Ser. No. 489,797
21 Claims. (Cl. 165—41)

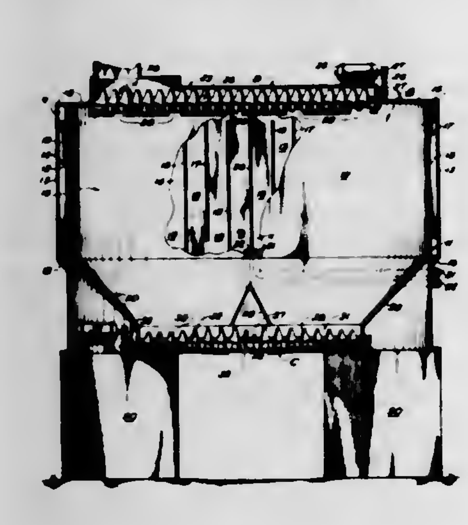


17. In combination with an automotive vehicle having a passenger compartment and having a combustion engine which discharges exhaust thereof from said engine,
- (a) condensing means to condense water from said engine exhaust,

- (b) exhaust directing means to direct at least a portion of the engine exhaust through said condensing means,
- (c) water evaporating, air cooling heat exchange means,
- (d) air circulating means to cause air for said passenger compartment to be put into heat exchange relationship with said heat exchange means and be moved to said passenger compartment,
- (e) means to collect water from said condensing means and bring said water into evaporative heat exchange relationship with said heat exchange means, and
- (f) vacuum pump means arranged to cause a pressure reduction at a portion of said heat exchange means where water is evaporated from said heat exchange means, with said vacuum pump means arranged to exhaust to an intake manifold of said vehicle whereby said water as it is evaporated into said vacuum pump means is directed into said intake manifold.

3,352,354
BIN STORING A HOT ASPHALT MIX

James D. Brock, Chattanooga, Tenn., assignor to Industrial Boiler Company, Inc., Chattanooga, Tenn., a corporation of Tennessee
Filed Sept. 26, 1966, Ser. No. 581,970
10 Claims. (Cl. 165—169)

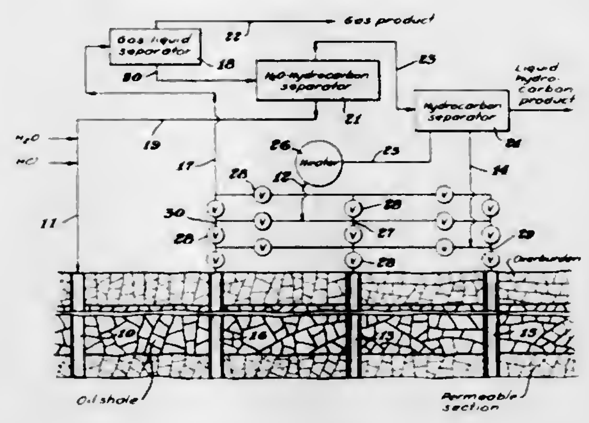


1. In a bin storing a hot asphalt mix; wall means for defining a chamber for receiving a hot asphalt mix in said chamber as said hot asphalt mix is distributed along a first path by a distributing means; said distributing means including a housing having a plurality of apertures of progressively increasing size positioned in sequence along said first path, and said distributing means including conveyor means for conveying said hot asphalt mix along said housing past said plurality of apertures; and conveying means for conveying along a plurality of second paths substantially parallel to said first path amounts of said hot asphalt mix which progressively increase along each of said second paths toward a discharge opening; said conveying means including a spiral conveyor which progressively increases in diameter along each of said second paths.

3,352,355
METHOD OF RECOVERY OF HYDROCARBONS FROM SOLID HYDROCARBONACEOUS FORMATIONS

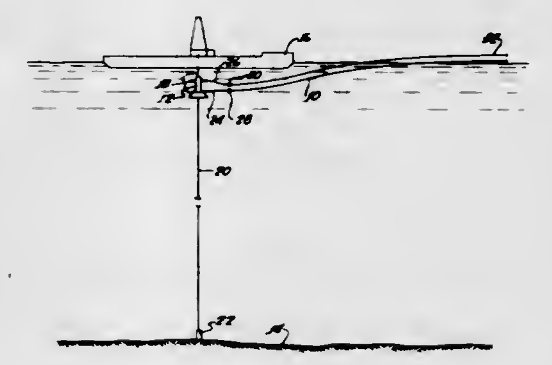
Maurice W. Putman, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 23, 1965, Ser. No. 466,379
9 Claims. (Cl. 166—2)

1. A method for the production of hydrocarbons from naturally occurring solid hydrocarbonaceous formations which comprises providing at least four wells into said formation wherein at least three of said wells are spaced from one another around the periphery of a portion of such formation and at least one such well is located centrally within said portion of such formation, providing a substantially horizontal permeable section within said formation which joins all of said wells, injecting water continuously into said central well, injecting into at least one of said peripheral wells a hydrocarbon at a temperature greater than 600° F., injecting into at least one other of said wells an unheated hydrocarbon, withdrawing from at least one other of such wells the hydrocarbons thus produced and injecting into at least one central well a low viscosity oil-immiscible fluid, subsequently alternating said flows by injecting said heated hydrocarbon into the wells originally used for removal of the hydrocarbon product, injecting unheated hydrocarbons into the wells originally receiving heated hydrocarbons and removing product hydrocarbons from those wells originally receiving unheated hydrocarbons.



3,352,356
METHOD FOR CONNECTING A FLOW LINE TO AN UNDERWATER WELL

Charles E. Wakefield, Jr., Long Beach, Calif., assignor to Atlantic Richfield Company, a corporation of Pennsylvania
Filed May 7, 1965, Ser. No. 454,020
5 Claims. (Cl. 166—.5)



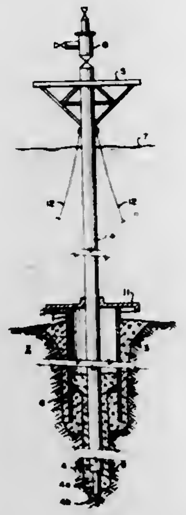
1. A method for connecting a flow line to a production head arranged and constructed for positioning at a well in a formation underlying a body of water, said production head being initially supported from a structure on said body of water, comprising the steps of:
- floating on said body of water said flow line,
- positioning one end of said floated flow line adjacent said production head,
- operatively connecting said end of said flow line to said production head adjacent said structure, and
- lowering said production head and said connected flow line end from said structure to said well.

3,352,357

FLEXIBLE MARINE CONDUCTOR WITH CELLAR PIPE

Wouter H. Van Eek, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 19, 1965, Ser. No. 497,730
Claims priority, application Great Britain, Nov. 20, 1964, 47,427/64
14 Claims. (Cl. 166—.5)



1. A pipe system for an underwater well comprising a conductor pipe extending between a level located above the water level and a depth located below the bottom of a body of water, a pipe string within said conductor pipe and a cellar pipe surrounding the conductor pipe to form an annular space between said pipes and extending from a level located above the bottom of the body of water but below the water level to a depth below the bottom of the body of water which is no greater than the depth of the conductor pipe, said cellar pipe being cemented over at least part of its length to the formation underlying the bottom of the body of water.

3,352,358

WATERFLOOD EMPLOYING VISCOUS AQUEOUS SOLUTIONS

Sherrod A. Williams, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 3, 1965, Ser. No. 452,910
1 Claim. (Cl. 166—9)

A method for the recovery of oil from an oil-containing subterranean formation having an injection means comprising at least one injection well and a production means comprising at least one production well completed therein, comprising:

(a) injecting through said injection means and into said subterranean formation a slug of from 0.01 to about 5 percent pore volume of fresh water through said injection means and into said subterranean formation;

(b) injecting therebehind a slug of from 5 to 15 percent pore volume of viscous flooding water comprising water having incorporated therein from 0.05 to 0.5 percent by weight of a water-soluble polyvinyl alcohol sulfate through said injection means into said subterranean formation; and

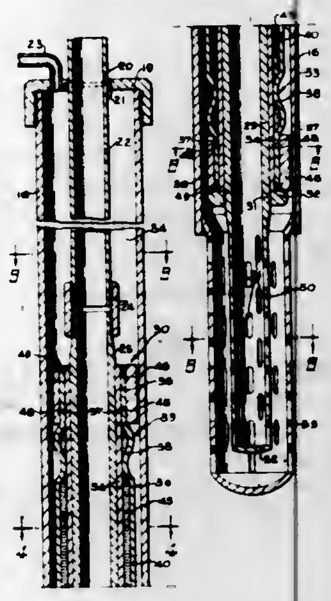
(c) injecting therebehind an aqueous driving liquid comprising a slug of from 0.01 to about 5 percent pore volume of fresh water followed by an electrolyte-containing water, whereby oil is displaced within and is moved through said subterranean formation, and is produced to the surface through said production means.

3,352,359

APPARATUS FOR STEAM TREATING A DEEP WELL

Wayne N. Sutliff and Meryl W. Sutliff, Bakersfield, Calif., assignors to St. Louis Janitor Supply Co., doing business as Navy Brand Manufacturing Company, St. Louis, Mo., a corporation of Missouri

Filed June 10, 1965, Ser. No. 462,925
4 Claims. (Cl. 166—53)



1. An apparatus for steam treating a deep well having a casing, with said well extending into an oil bearing stratum below said casing, said apparatus comprising: a pipe adapted to be extended downwardly through said casing to conduct steam under high temperature and pressure to the portion of said well beneath said casing; and a thermo-responsive packer mounted on a lower portion of said pipe and positioned within a lower portion of said casing when said pipe is so extended downwardly, said packer including an expansible thin walled annular hollow sealed jacket of relatively soft metal surrounding and snugly fitting said steam pipe and closely spaced from said casing, and a body of thermo-responsive material substantially occupying the space within said jacket having a high co-efficient of thermo-expansion, said packer responding to being heated by super-heated steam delivered downwardly through said pipe by expanding into tight sealing engagement with said casing thereby packing off the lower end of the space within said casing surrounding said pipe above said packer.

3,352,360

FREE POINT INDICATOR

John H. Kirby II, 7030 N. Stardust Circle, Rte. 6, Box 644, Tucson, Ariz. 85702

Continuation of abandoned application Ser. No. 497,694, Oct. 19, 1965, which is a continuation of abandoned application Ser. No. 424,063, Jan. 7, 1965, which in turn is a continuation of abandoned application Ser. No. 193,776, May 10, 1962. This application Dec. 5, 1966, Ser. No. 599,320
3 Claims. (Cl. 166—55.1)

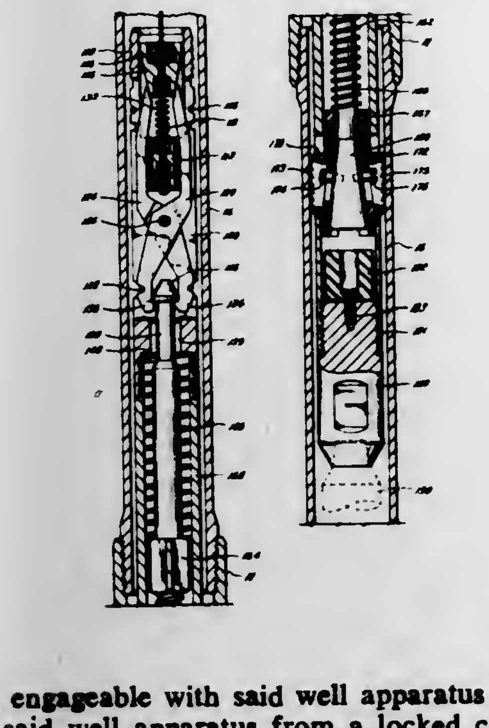
1. A device for determining the stuck point of a tubular structure disposed in a well bore and for severing the tubular structure, said device including in combination,

a well apparatus coupled to a flexible line and having means for engaging said tubular structure, said well apparatus including explosive means, said well apparatus having a locked and unlocked condition,

means coupled to the flexible line for providing upward and downward movement of said well apparatus in the tubular structure,

registration means coupled to the flexible line for recording the tension on the flexible line and for recording the depth of said well apparatus in the well bore,

lifting means coupled to the tubular structure for applying tension thereto, and



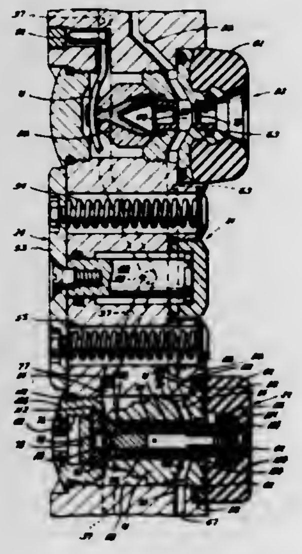
means engageable with said well apparatus for changing said well apparatus from a locked condition to an unlocked condition and for detonating said explosive means whereby the tubular structure is severed.

3,352,361

FORMATION FLUID-SAMPLING APPARATUS

Harold J. Urbanosky, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Mar. 8, 1965, Ser. No. 437,827
20 Claims. (Cl. 166—100)



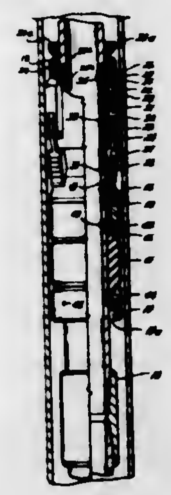
1. Apparatus for use in a well bore containing a column of well liquids comprising: packing means for sealing a section of a well bore; sample-admitting means on said packing means including an opening therein normally admitting well liquids and adapted to be placed in fluid communication with earth formations containing connate fluids; and selectively-operable means for closing said opening against further entrance of well liquids when said packing means are sealingly engaged with an earth formation and for isolating well liquids trapped within said sample-admitting means from such an earth formation.

3,352,362

WELL PACKER APPARATUS

Maurice P. Lebourg, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Dec. 21, 1964, Ser. No. 419,742
15 Claims. (Cl. 166—140)



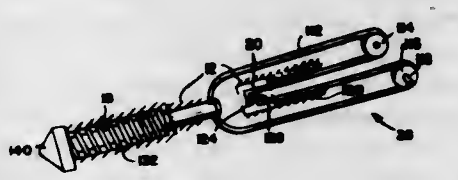
13. A well tool comprising: a mandrel; slip means on said mandrel shiftable outwardly to engage a well conduit wall and shiftable inwardly to disengage from a well conduit wall; an annular member releasably coupled for movement with said mandrel; expansible and contractible expander means carried by said annular member, said expander means being movable transversely relative to said mandrel and said annular member between expanded and contracted positions, said expander means being movable longitudinally in one direction relative to said slip means when in said expanded position for shifting said slip means outwardly and movable to said contracted position to permit inward shifting of said slip means; support means between said expander means and said mandrel for normally supporting said expander means in said expanded position; and means responsive to longitudinal movement of said mandrel in said one direction for disabling said support means, thereby enabling movement of said expander means to said contracted position and inward shifting of said slip means.

3,352,363

APPARATUS FOR POSITIONING A TOOL MEMBER WITHIN WELL TUBING AT A DESIRED LOCATION

John D. Bennett, Richardson, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed June 1, 1965, Ser. No. 460,080
13 Claims. (Cl. 166—214)



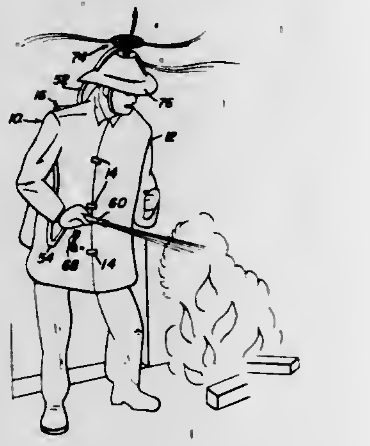
1. A tool hanger for positioning a tool member at any desired location in elongated tubing within a well comprising a body member having means adapted to support the tool member, a running tool engageable with said

body member for supporting the same as the tool hanger is run down the well, means carried by said body member for gripping the internal side wall of the well tubing, said gripping means being movable between a retracted position in which there is no contact with the well tubing and an extended position in which the gripping means frictionally engages any portion of the internal wall of the well tubing with sufficient frictional engagement to support the body member and the tool member supported thereon whereby said gripping means is not limited to engagement with collars or recesses at the joints of the well tubing, spring means biasing said gripping means to said extended position thereof and providing the force necessary to produce said frictional engagement, latch means engageable with said gripping means for holding the same in said retracted position against the bias thereof, and trigger means for releasing said engagement between said latch means and said grip means in response to movement of the tool hanger in the direction out of the well tubing so that said spring means moves said gripping means to its extended position to set the tool hanger at a location a set distance from where said outward movement of the tool hanger is performed.

3,352,364

JACKET-TYPE SPRINKLING AND SPRAYING DEVICE

Clarence J. De Coste, 58 Shore Road,
East Providence, R.I. 02915
Filed Sept. 17, 1965, Ser. No. 487,989
4 Claims. (Cl. 169—1)

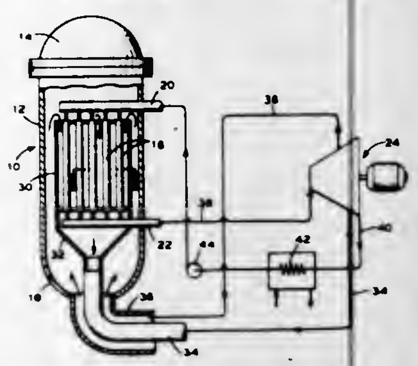


1. A portable fire fighting device comprising means for containing a quantity of fire fighting fluid in charged pressurized condition, means for supporting said containing means on the body of the user of the device, means for controlling the flow of fluid from said containing means, and means communicating with said flow control means for directing a flow of fluid from said containing means, said containing means including jacket means adapted to be worn by the user of the device, and a fluid receiving chamber integral with said jacket means, said fluid control means comprising valve means in communication with said chamber, means for controlling the rate of fluid flow through said valve means, and said chamber including selectively closable charging port means therein for allowing the fluid therein to be charged, said directing means comprising a pair of hose means, each said hose means communicating at one end with said valve means, a first of said hose means including nozzle means on the other end thereof, said nozzle means adapted to be held in the user's hand for directing and regulating the fluid flow through said first hose means, the second hose means communicating at the other end thereof with fluid sprinkler means, said sprinkler means mounted on supporting means adapted to be worn on the user's head.

3,352,365

NUCLEAR REACTOR SYSTEM

Donald Carroll Schluderberg and Robert William Carlson, Lynchburg, Va., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed June 26, 1964, Ser. No. 378,152
4 Claims. (Cl. 176—55)

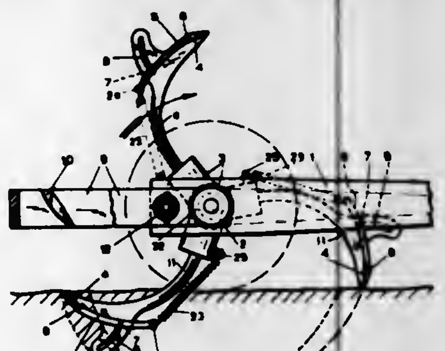


1. A nuclear reactor plant comprising a nuclear reactor having a plurality of fissionable material bearing fuel elements arranged within said reactor as a core to undergo a self-sustaining fission-type chain reaction, a neutron moderating material surrounding said fuel elements to control said chain reaction, prime mover means operatively associated with said reactor, means for passing a coolant fluid in heat exchange relation with said fuel elements to remove heat generated by said chain reaction, means for passing said heated fluid through said prime mover means to produce work, means for extracting a portion of said fluid from said prime mover means, means for cooling said moderator material including means for circulating the extracted fluid through said moderating material throughout substantially the entire extent of said core to reheat the fluid, said fluid being reheated comprising the primary source of cooling effect on said moderating material, means for returning said reheated fluid to said prime mover means to produce additional work, and means for returning said fluid from said prime mover means to said reactor.

3,352,366

MACHINES FOR CULTIVATING THE SOIL

Herbert Vissers, Nieuw-Vennep, Netherlands, assignor to Landbouwwerktuigen- en Machinefabriek H. Vissers N.V., Nieuw-Vennep, Netherlands, a company of the Netherlands
Filed Oct. 6, 1964, Ser. No. 401,846
7 Claims. (Cl. 172—94)

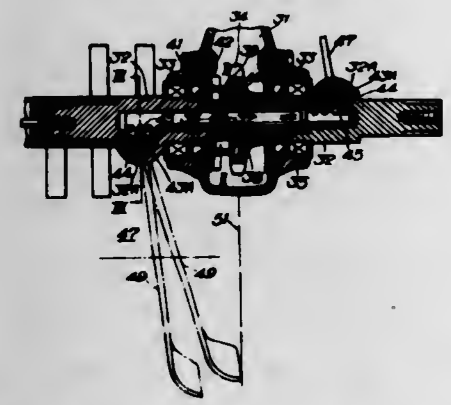


1. In a rotary cultivator including a frame rotatably supporting a horizontal shaft having a plurality of arms extending generally radially therefrom and carrying digging blades on their free ends, the improvement wherein each said blade comprises a forward cutting edge part rigid with the respective arm and a rear blade part separate from said forward part, means pivotally mounting the forward edge portion of said rear blade part to the rear edge portion of said forward cutting edge part, means connected with said rear part and normally retaining said rear part in an operative position wherein its blade surface is contiguous with the cutting edge surface of said forward part and constitutes in combination the digging blade, and means operative as each blade lifts from the earth to swing said rear part from said operative position to separate said part from the slice of soil dug up by said blade and cause the slice to dump from the rear of the blade.

3,352,367

DEVICE FOR TILLING BENEATH THE TRANSMISSION CASING OF A ROTARY CULTIVATOR

Hidehisa Honda and Jun Sakai, Kita-Adachi-gun, Saitama-ken, Japan, assignors to Kabushiki Kaisha Honda Gijutsu Kenkyujo, Saitama-ken, Japan, a corporation of Japan
Original application Dec. 20, 1963, Ser. No. 332,143, now Patent No. 3,246,704, dated Apr. 19, 1966. Divided and this application Jan. 27, 1966, Ser. No. 547,138
Claims priority, application Japan, June 24, 1963, 38/45,515
4 Claims. (Cl. 172—96)



1. Cultivator apparatus of the class described, comprising: an elongated cultivator shaft for supporting cultivator blades, said shaft extending transversely of the direction of travel of the cultivator and above the ground being cultivated; a transmission for driving said shaft in rotation about its longitudinal axis during said travel of said cultivator, said transmission including a casing surrounding and enclosing central axially spaced portions of said shaft; a blade support member connected to said shaft for rotation therewith immediately adjacent to said casing; an elongated cultivator blade having a portion extending transversely of said shaft and including a free end portion engageable with the ground being cultivated, the other end portion being connected to said support member for pivotal movement about an axis spaced from and effectively perpendicular to the rotational axis of said shaft; cam means within said casing and driven along with said shaft; and axially slidable rack and pinion means within said shaft, said rack and pinion means driving said other end portion of said blade to cause said pivotal movement, said pivotal movement positioning said blade beneath said transmission while said blade is in engagement with said ground and moving said blade to clear otherwise interfering portions of said cultivator apparatus while said blade is out of engagement with said ground.

3,352,368

PIVOTED TRIGGER MEANS FOR POWER-OPERATED REVERSIBLE TOOL

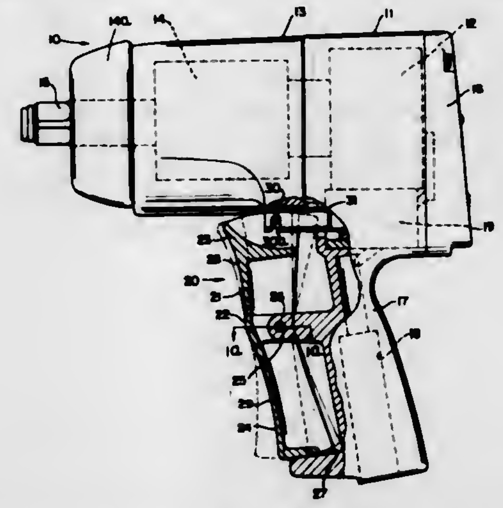
George E. Maffey, Jr., Timonium, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md.
Filed Aug. 30, 1965, Ser. No. 483,650
8 Claims. (Cl. 173—169)

1. In a portable power-operated reversible tool, the combination of:

(*a*) a housing including a portion providing a handle for the tool;

(*b*) said handle having respective ends and a boss means intermediate said ends, and said handle further having a recessed front face running substantially the full length of said handle between said respective ends; and

(*c*) a single elongated manually-manipulatable trigger member having an intermediate portion pivotably mounted on said boss means within said recessed front face of said handle, said trigger member further having respective leg portions emanating from its pivotably-mounted intermediate portion and terminating adjacent to said respective ends of said handle;



(*d*) reversible control means within the housing, connected to said trigger member for energizing the tool for "forward" and "reverse" operation, respectively;

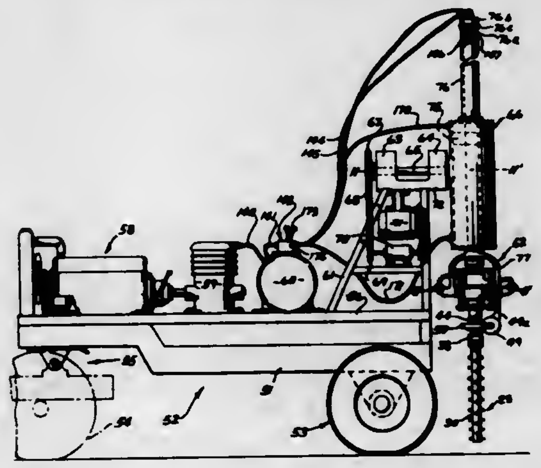
(*e*) said respective leg portions of said trigger member being selectively retractable within said handle for actuating said reversible control means, with one of said respective portions, when retracted, facilitating "forward" operation of the tool, and with the other of said respective portions, when retracted, facilitating "reverse" operation of the tool; and

(*f*) means normally biasing said trigger member to a "neutral" position intermediate its "forward" and "reverse" positions.

3,352,369

SONIC METHOD AND APPARATUS FOR DRIVING ANCHORS, ANCHOR POSTS AND THE LIKE

Albert G. Bodine, Jr., Los Angeles, Calif.
(7877 Woodley Ave., Van Nuys, Calif. 91406)
Filed Mar. 19, 1965, Ser. No. 441,209
15 Claims. (Cl. 175—56)



1. In a system for driving a stem in the earth, the combination of:

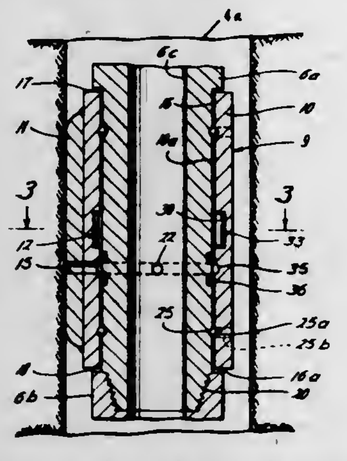
a mechanical acoustically vibratory system characterized by elastically compliant and mass elements interconnected so as to establish a resonant frequency of vibration, said system including said stem as a predominantly lumped-mass longitudinally vibratory mass element thereof;

a vibratory mass element intercoupled with said stem and arranged for opposed-phase vibration relative thereto;

elastically compliant means connected between and acting upon said stem and said vibratory mass element; and

a vibration generator acoustically coupled to a vibratory portion of said system and operable at said resonant frequency of vibration, said generator comprising a portion of one of said mass elements of said system.

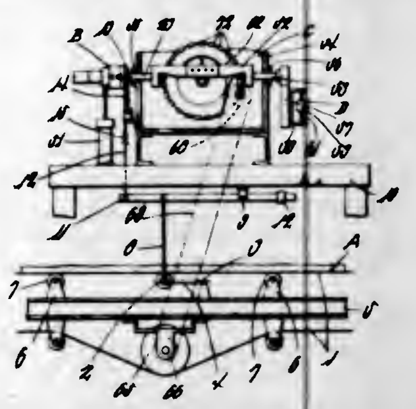
3,352,370
DIRECTIONAL DRILLING TOOL
Herman G. Livingston, P.O. Box 1040,
Liberty, Tex. 77575
Filed Aug. 31, 1964, Ser. No. 393,095
5 Claims. (Cl. 175—73)



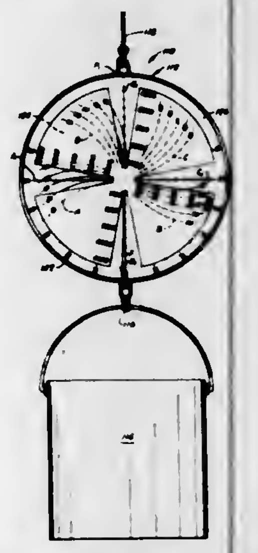
1. A directional drilling device for automatically altering the direction of an inclined well bore including,
- (a) a rotatable drill string having a fluid passage extending longitudinally therethrough and having a drilling bit affixed to the lower end thereof,
- (b) a hollow mandrel rotatably mounted on said rotatable drill stem,
- (c) a projection on said hollow mandrel,
- (d) fluid discharge vent means in said projection at an angle relative to said mandrel,
- (e) fluid passage means in said hollow mandrel communicating with said fluid discharge vent means, and
- (f) fluid conduit means in said drill string connecting said longitudinal fluid passage therein for conducting fluid through said fluid discharge vent means to be discharged therefrom at an angle relative to said mandrel whereby said projection is urged to engagement with the inner wall of the well bore and thereby urges said drill string and drilling bit laterally to change the direction of the inclined well bore.

3,352,371
INTEGRATING CONVEYOR SCALE WITH MISALIGNMENT PREVENTION ARRANGEMENT
Koichi Tanaka, 54 8-chome, Hon-machi, Toyonaka,
Osaka Prefecture, Japan
Filed Sept. 9, 1966, Ser. No. 578,194
Claims priority, application Japan, Oct. 30, 1963,
38/58,727
7 Claims. (Cl. 177—16)

1. A weighing apparatus, comprising a horizontal rotatable shaft, a pendulum fixed to said shaft for producing a counter torque on said shaft proportional to the angle of rotation of said shaft when said shaft is turned, a balance beam rotatably mounted on said shaft, a load supporting structure, means coupling said load supporting structure and said balance beam and tending to rotate said balance beam around said shaft when a load is on said load supporting structure, a servo-motor coupled to said balance beam, position detecting means coupled to said balance beam and to said servo-motor for actuating said servo-motor to produce a torque proportional to the displacement of said balance beam, said servo-motor being coupled to said shaft for rotating said shaft when it is driven for producing a torque on said shaft proportional to the weight being weighed, the shaft rotating until said pendulum produces a counter torque equal to said servo-motor produced torque, whereby said balance beam is maintained in the horizontal position being balanced on said shaft.



3,352,372
COMPUTING SCALE
Stanley C. Gerlach, 1625 NW. 43rd St.,
Oklahoma City, Okla. 73118
Filed Dec. 20, 1965, Ser. No. 514,955
8 Claims. (Cl. 177—40)



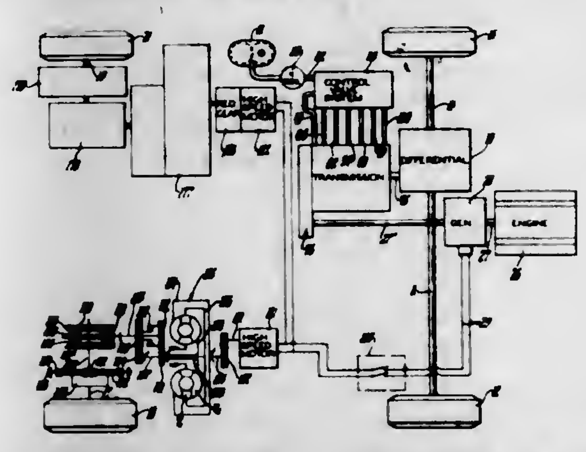
1. A computing scale for indicating the actual unit volume of a preselected unit weight of material, said scale including:

a shaft rotatably mounted in said scale, said shaft being rotatable in proportion to the force exerted on said scale by a specified volume of the material;

a disk connected to and rotatable with said shaft, said disk having a plurality of curvilinear lines thereon generally radiating from said shaft, each of said curvilinear lines indicating an actual unit volume of the material being weighed; and,

a plate mounted on said scale overlying said disk and having a center coaxial with said shaft, said plate having a radially extending index thereon and having a plurality of spaced graduations along said index, each of said graduations indicating a preselected unit weight of the material, one of said graduations, said index, and one of said curvilinear lines being in apparent intersection to indicate the actual unit volume of the material being weighed.

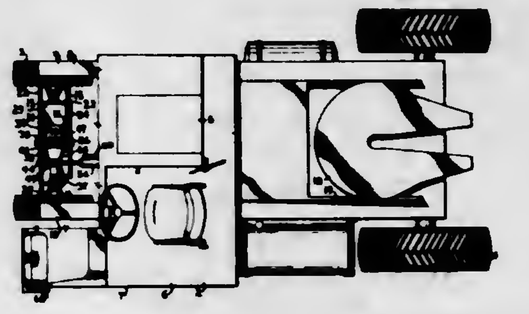
3,352,373
VEHICLES WITH PLURAL AXLES AND MEANS TO PROVIDE MAXIMUM TRACTIVE EFFORT FOR EACH AXLE AT THE SAME SPEED
Robert M. Tuck, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 11, 1963, Ser. No. 329,624
15 Claims. (Cl. 180—44)



14. In a vehicle; a plurality of longitudinal spaced driving axle means each having traction means subjected to different normal tractive torque limits while propelling the vehicle without slip at the same speed; a prime mover means including a driving member, a plurality of drive train means corresponding to said traction means, said driving member being operatively connected to drive each of said drive train means for driving the corresponding traction means, each said drive train means including infinitely varying torque multiplying and apportioning means having a relation which is a function of the relation between said tractive torque limits for inifinitely varying the torque multplication and apportioning the torque to each of said traction means in a substantial range of operation in relation to their normal tractive torque limits and to drive each of said traction means at substantially the same driving speed for substanitally coextensive non-slip vehicle drive of the plurality of traction means in said substantial range of operation up to said tractive torque limits.

3,352,374
TRAILER TRACTOR
Frank H. Vivian, Ottawa, Kans., assignor to Ottawa Steel Products, Ottawa, Kans., a corporation of Kansas
Filed Oct. 18, 1965, Ser. No. 497,010
1 Claim. (Cl. 180—79.2)

A fifth wheel type tractor for moving semi-trailers having an elongate vehicular frame, a body, a pair of driving wheels, a manually operated steering wheel, and a vehicle steering and wheel mounting mechanism including:
- (a) a transverse frame member having a pair of spaced-apart frame plates adjacent the forward end of said frame and body, a plurality of reinforcing members extending between and secured to the frame plates, a bearing bore in each frame plate with said said openings being horizontal and aligned on an axis parallel to the longitudinal axis of the tractor, and abutment members secured to said frame plates in opposed relation on facing interior surfaces thereof with the abutment members on each side of and in radial relation to the bearing bores and equally spaced from the top thereof;
- (b) an axle assembly removably mounted in vertical spaced relation below and parallel with the transverse frame member and having a pair of horizontally spaced-apart stiffeners in opposed relation and mounted between said spaced-apart stiffeners, a pair of bearings secured in the bearing housing adjacent each end thereof, and a reinforcing rib fixed on the bearing housing between the adjacent interior surfaces of the frame plates and adapted to engage the abutment members in response to pivotal movement of said axle assembly;
- (c) an elongate mounting pin, said pin extending through the bearing bores in each frame plate and through the pair of bearings mounted coaxially in the bearing housing, said mounting pin being retained therein whereby the axle assembly is freely rockable about said mounting pin with the rocking limited by the travel of the reinforcing rib between the respective abutment members on the frame plates, said mounting pin being removable whereby said axle assembly is removable;
- (d) a pair of a horizontal axle assembly extensions each having one end fixedly mounted between opposed ends of the stiffeners and having a vertical bore in the other end thereof, said vertical bores being equally spaced from the mounting pin;
- (e) a pair of stub axles each having a yoke portion with a pair of horizontal arms with aligned coaxial vertical bores in one end thereof;
- (f) a king pin retained in the vertical bores in the horizontal arms of the yoke portion and in the vertical bore in the respective axle assembly extension to pivotally mount the stub axles on the respective axle extension;
- (g) a pair of laterally spaced steerable wheels rotatably mounted on the stub axles, said spaced steerable wheels having a spacing of approximately three-fourths of the spacing of the driving wheels and the spacing between the center of each steerable wheel and the king pin being approximately equal to the spacing between each king pin and the mounting pin, whereby the king pins are positioned approximately at the quarter points of the axle assembly;

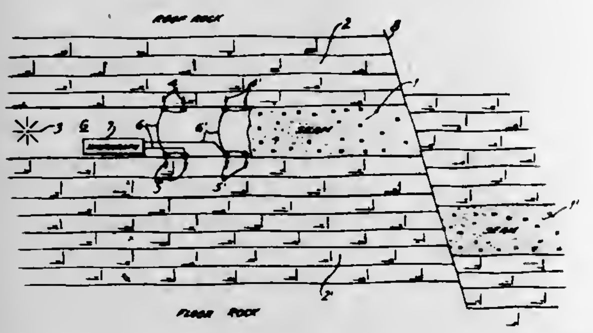


- (h) tires mounted on the spaced steerable wheels, said tires extending forwardly beyond the body;
- (i) a power steering means operatively connected to one of the stub axles and having a hydraulic cylinder mounted on the vehicular frame in offset relation to and parallel with the longitudinal axis of the vehicular frame, a cylinder rod operative in the hydraulic cylinder and extending toward said axle assembly, an L-shaped control arm having one end pivotally and removably mounted on the cylinder rod and the other end fixed to one horizontal arm of said one of the stub axles, and a linkage connecting the yoke portions of the respective spaced steerable wheels, said hydraulic cylinder being positioned to be cleared by the tires during maneuvering; and
- (j) a full power steering system having a control pump responsive to manual operation of said steering wheel, a hydraulic valve, a reservoir, and a hydraulic pump operatively connected to said hydraulic cylinder, whereby turning the steering wheel in a first direction turns the spaced steerable wheels in a first direction and turning the steering wheel in a second direction turns the spaced steerable wheels in a second direction.

3,352,375

METHOD AND ARRANGEMENT FOR DETECTING FAULTS TRAVERSING A MINERAL STRATUM

Theodor Krey, Hannover, Germany, assignor to Seismos G.m.b.H., Hannover, Germany
Filed Mar. 4, 1963, Ser. No. 262,610
Claims priority, application Germany, Mar. 7, 1962, S 78,369; Sept. 8, 1962, S 81,370
8 Claims. (Cl. 181—.5)

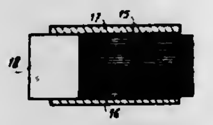


1. The method of detecting faults traversing a mineral stratum of small thickness surrounded by beds of material having a different density and elasticity than that of said mineral stratum of small thickness, particularly a coal seam, by seismic exploration below ground, comprising the steps of: generating at a selected first point near the upper boundary and simultaneously at a second point opposite said first point and near the lower boundary of the stratum and at one side of any existing fault traversing said stratum a vibration for generating waves including asymmetrical boundary waves traveling along said upper and lower boundaries, respectively, of said stratum in at least one direction and returning along said stratum in opposite direction as reflected boundary waves when a fault exists which traverses said stratum and causes such reflection, said boundary waves traveling along said upper boundary being offset 180° in phase relative to said boundary waves traveling along said lower boundary of said stratum; and seismographically recording exclusively said boundary waves at said one side of any existing fault, the occurrence in said recording of a reflected boundary wave indicating the existence of a fault traversing said stratum.

3,352,376

STACK OF FOILS USED AS AN ACOUSTIC RELAY

Jacques Dory, Paris, France, assignor to Corporation Realisations Ultrasoniques
Filed June 28, 1965, Ser. No. 467,572
Claims priority, application France, July 2, 1964, 980,446, Patent 1,411,069
5 Claims. (Cl. 181—.5)



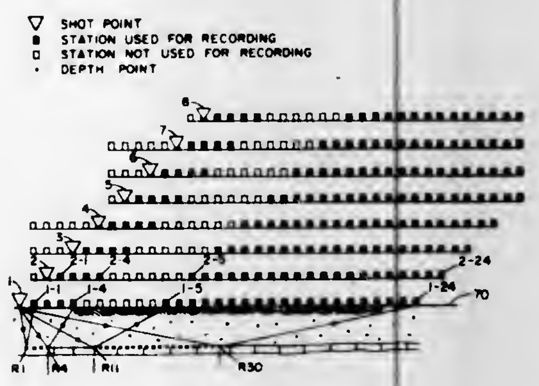
1. In an acoustic coupling for transmitting acoustic, particularly ultrasonic, vibrations from one element to another, the improvement comprising:

a multi-layer stack of foils having input terminal edges adapted to receive from said one element vibrations to be transmitted;
means extending in one direction for rigidly mounting said foils to extend in said one direction;
said foils being fixedly secured together at least at said terminal edges and being acoustically insulated one from the next over at least a substantial portion of their surfaces to cause the said received vibrations to be transmitted substantially solely within said foils along the length thereof; and
the thickness of each of said foil being substantially smaller than the wavelength of the vibrations to be transmitted to obtain only pure echoes by preventing wall effect echoes in any said foil.

3,352,377

MULTIPLE COVERAGE SEISMIC EXPLORATION UTILIZING TWO GROUPS OF DETECTORS SEPARATED BY A GAP

Ronald A. Cetrone, Dallas, Clyde W. Kerns, Irving, and Jack L. Wilson, Houston, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed Jan. 17, 1966, Ser. No. 521,071
4 Claims. (Cl. 181—.5)



1. A method of seismic exploration for producing *m*-fold subsurface coverage data including improved multiple reflection residual moveout among common depth point signals by recording *n* signal channels per shot in a multichannel recording system, said method comprising:

(a) locating a spread of detector stations at equal intervals along a profile and a shotpoint offset from one end of the spread,
(b) connecting to the channels of the recording system the first (n/m) detector stations away from the last-located shotpoint, and after skipping one or more detector stations connecting the next

$$\left(n-\frac{n}{m}\right)$$

stations to the recording system,
(c) generating seismic waves at the last-located shotpoint,
(d) detecting and separately recording the resultant waves reflected from subsurface horizons and received at each of said detector stations,
(e) advancing the shotpoint in one direction along the profile ($n/2m$) station intervals,
(f) repeating steps (b), (c), (d) and (e), and transferring the unused detector stations from the trailing end of the spread to the leading end of the spread to advance the spread, and
(g) thereafter repeating step (f) until exploration of the profile shall have been completed.

3,352,378

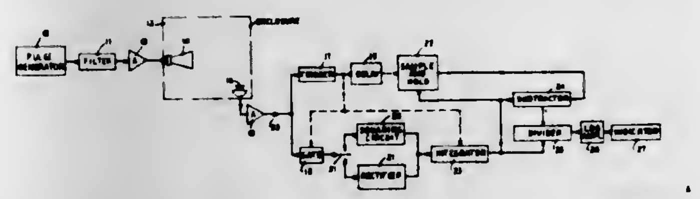
APPARATUS FOR AND METHOD OF DETERMINING THE ACOUSTICAL REVERBERATION TIME OF AN ENCLOSURE

Manfred R. Schroeder, Gillette, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 16, 1966, Ser. No. 534,907
11 Claims. (Cl. 181—0.5)

1. Apparatus for measuring automatically the reverberation time of an enclosures which comprises:

a source of an impulse of energy having a predetermined frequency range and a relatively short time duration,
means for exciting said enclosure with said impulse of energy at a first predetermined point,

means for detecting at a second predetermined point within said enclosure an output signal representative of the impulse response of said enclosure,
means for selectively processing said output signal,
means for developing a signal which is the instantaneous integral of said processed signal,
means for sampling and storing said integrated signal after a predetermined interval of time has elapsed,

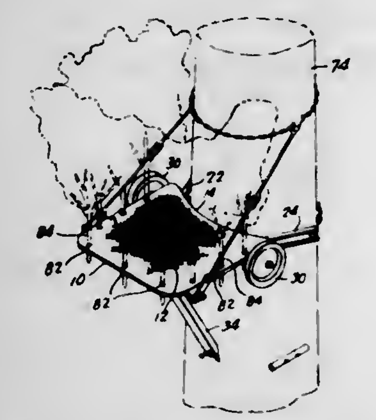


means for developing a signal proportional to the difference of said stored signal and the instantaneous integral of said processed signal,
and means responsive to said difference signal and the instantaneous integral of said processed signal for developing a signal indicative of the reverberation time of said enclosure.

3,352,379

COMBINATION TREE STAND AND GAME CART

Harley B. Riggs, 4202 S. Brook St., Louisville, Ky. 40214
Filed Feb. 17, 1967, Ser. No. 616,844
6 Claims. (Cl. 182—20)



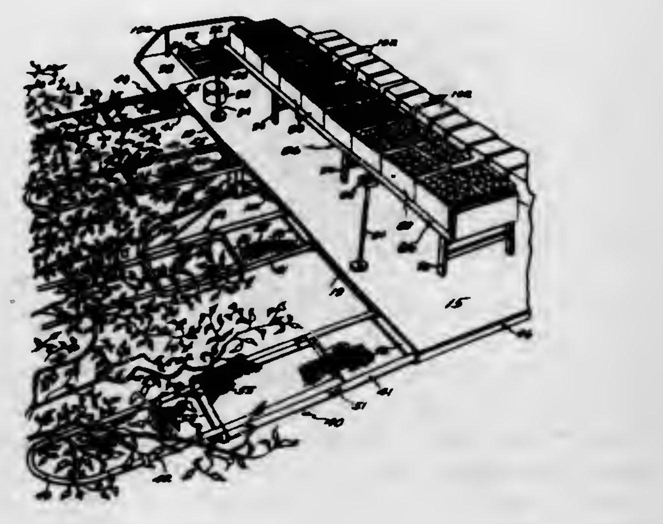
1. A combination tree stand and game cart comprising: a platform; a pair of side members secured to said platform by a rod and an axle; a strut pivoted on said platform and underlying said axle; a pair of wheels on said axle outside said platform; tension means for securing said rod to a tree trunk; means for securing the free ends of said side members to said tree trunk, and means on the free end of said strut for engaging said tree trunk.

3,352,380

SCAFFOLD WITH CATWALKS FOR PENETRATING TREE FOLIAGE

Alfred N. Barney, 224 Everett Road, Easton, Conn. 06425
Filed Jan. 10, 1966, Ser. No. 519,481
5 Claims. (Cl. 182—131)

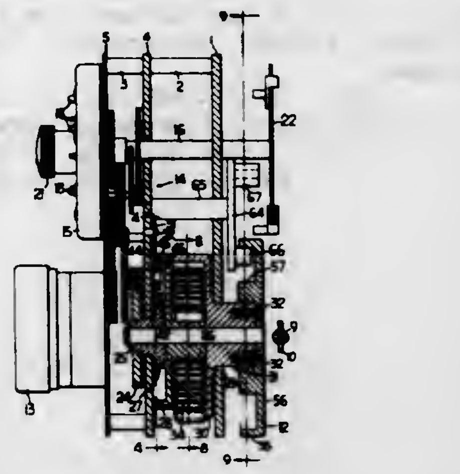
1. In a vehicle borne scaffold affording to a crew of tree tending workmen simultaneous access to selective positions penetrating or flanking a tree at selective heights, the combination of, a vehicle chassis wheeled to roll in traveling direction alongside a tree, a rigid integral platform superimposed on said chassis elongated in said direction of chassis travel and having its overall width bounded by a substantially continuous straightaway edge, a straight row of narrow relatively elongate catwalks spaced apart sidewise along said straightaway edge of the platform, track means on said platform guiding said catwalks to move endwise in mutually parallel paths substantially perpendicular to said straightaway edge of the platform, and means to cause said movements of said catwalks independently to selective extents of projection outboard of the overall width of the platform, whereby any selected portion of the length of the platform can be presented to the tree and catwalks selected at will can be projected into or in flanking relation to the spread of the branches of the tree.



3,352,381

TIME CONTROLLED ACTUATOR

John L. Harris, Whitefish Bay, Wis., assignor to Deltrol Controls Corporation, Milwaukee, Wis.
Filed Mar. 21, 1966, Ser. No. 536,019
9 Claims. (Cl. 185—40)



1. In a time controlled actuator, a motor, an operating member, a spring arranged to drive said operating member, motion transmitting means between said motor and spring for causing the motor to wind the spring, said motion transmitting means including a clutch, means for releasing the clutch when the spring is wound to a predetermined tension to release the motor from the load of spring winding, means for preventing back-up of the spring when the clutch is released, a movable stop member arranged to restrain the operating member in a predetermined position, said stop member being movable to a release position permitting movement of the operating member by the spring, a timing mechanism also driven by said motor, and means actuated by the timing mechanism for moving said stop member to the release position at a predetermined time.

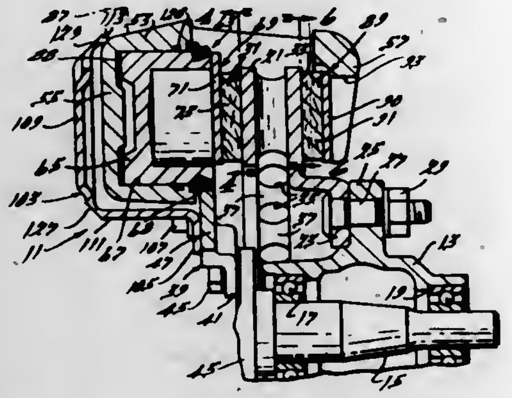
3,352,382

CALIPER-TYPE DISC BRAKE WITH YIELDABLE SUPPORT

Edward J. Hayes, Livonia, and Talivaldis Sturis, Plymouth, Mich., assignors to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware

Filed Apr. 11, 1966, Ser. No. 541,732

26 Claims. (Cl. 188—73)



1. A disc brake for use with a rotor having braking faces on opposite sides thereof, said brake comprising a housing having generally opposed legs lying on opposite sides of the rotor, fluid motor means carried by one of said legs for pressing a first brake shoe means into frictional engagement with a first rotor face, said fluid motor means, where energized, biasing said housing in one direction to press a second brake shoe means against a second rotor face opposite said first face, yieldable means having a fixed first portion and a second portion remote from said first portion in supporting engagement with and biasing said housing in said one direction, said yieldable means having first and second spaced pivot means intermediate said first and second portions allowing relative translation between said first and second portions in said one direction normal to said rotor faces.

3,352,383

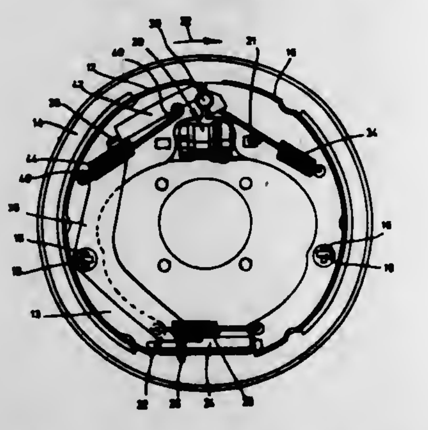
VEHICLE DRUM BRAKE ADJUSTER

George Eric Thompson, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company

Filed Mar. 4, 1966, Ser. No. 531,855

Claims priority, application Great Britain, Mar. 5, 1965, Ser. No. 9,376/65

7 Claims. (Cl. 188—79.5)



4. An internal shoe drum brake assembly comprising a backplate, a pair of arcuate, webbed brake shoes arranged on said backplate with each end of each shoe in facing relationship with a co-operating end of the other said shoe, shoe actuator means between one pair of facing ends of said shoes for moving said shoes towards a braking position, an adjustable abutment between the other pair of facing ends of said shoes and including a rotatable member and a non-rotatable member, said members having screw threaded connection one with the other, a unitary lever extending substantially alongside the web of one shoe and pivotally connected thereto intermediate the lever ends, a pawl at one end of said lever, a ratchet wheel in the rotatable member of said adjustable abutment, said pawl co-operating with said ratchet wheel, an elongated strut attached at one end to part of the brake assembly independently of said one shoe and adjacent said actuator means, said strut having its other end free and overlying a portion of said one shoe, an engagement between said free end of the strut and the other end of said lever, spring means coupled to each shoe for normally maintaining said shoes in a retracted position and including a shoe return spring for effecting and maintaining said engagement between said strut and said lever at least during the initial stage of brake actuation when relative movement occurs between the free end of the elongated strut and said one shoe end adjacent the actuator means and adjustment takes place in the length of said adjustable abutment responsive to excessive angular movement of said lever about said pivotal connection, whereby upon overloading of said screwthread connection said shoe spring yields to break off said engagement and interrupt adjustment.

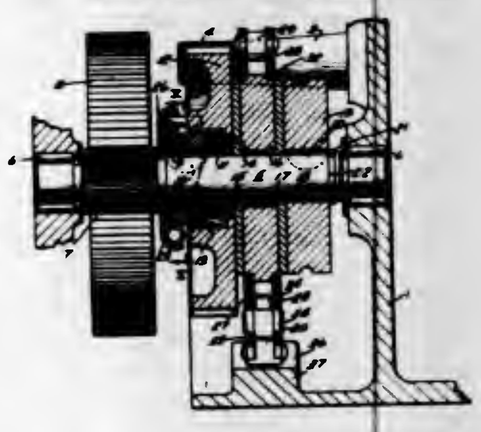
3,352,384

SPRING APPLIED, ONE WAY DISC BRAKE

Howard C. Stevens, Jr., Muskegon, Mich., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Feb. 3, 1965, Ser. No. 429,980

8 Claims. (Cl. 188—82.7)



1. In a unitary load brake assembly mountable as a unit in hoisting mechanism and the like,

a shaft having a journal at each end,

a pinion on said shaft adjacent one journal,

a helical cam member keyed to said shaft,

a complemental helical cam member floating on said shaft,

a brake gear keyed to said complemental cam member,

a friction disc free on said shaft for confronting relationship on one side with said gear,

a cage having openings in the sides thereof,

a ratchet wheel in said cage and arranged for face to face contact on one side with the other side of said friction disc,

a pawl in said cage engageable with the teeth of said ratchet wheel,

means to cause engagement and disengagement of said pawl with the ratchet wheel,

a second friction disc for face to face contact with the other side of said ratchet wheel,

a flange for face to face contact with said second friction disc,

means preventing movement of said flange in a direction away from said second friction disc,

a spring holder around said shaft adjacent said pinion, and

a preloaded spring in said holder normally urging said cam members together to cause braking contact with said friction discs.

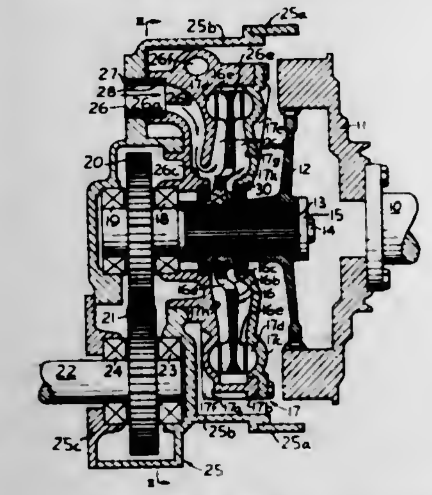
3,352,385

HYDRODYNAMIC RETARDER

Lowell E. Johnson, East Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Nov. 22, 1965, Ser. No. 508,890

11 Claims. (Cl. 188—90)



1. In a hydrodynamic retarder comprising a bladed rotor mounted on a rotatable shaft and a stationary housing enclosing said rotor to form a chamber adapted to be filled with a fluid, said housing having stator pockets arranged adjacent the bladed portion of said rotor in said chamber, a fluid passage means formed through said housing, the entire length thereof being of uniform cross-sectional area for communicating fluid to said chamber, said passage means comprising a circularly shaped inlet and a substantially oval shaped outlet, said outlet arranged adjacent to said shaft remote from said stator pockets.

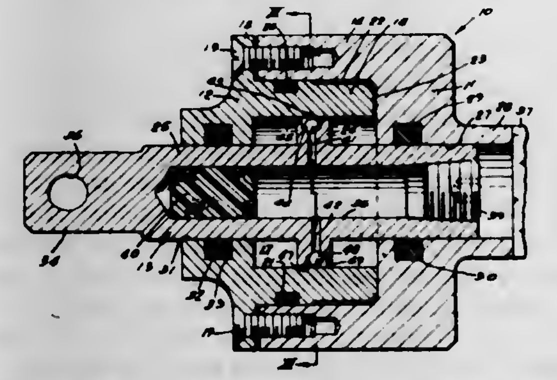
3,352,386

PISTON-TYPE HYDRAULIC DAMPER

Claude Martin, Buffalo, Edward J. Krollman, Boston, Robert E. King, Orchard Park, and Rollin Douglas Rumsey, Buffalo, N.Y., assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan

Filed May 14, 1965, Ser. No. 455,769

12 Claims. (Cl. 188—96)



1. A piston type hydraulic damper of the character described comprising:

a housing including a pair of generally cup-shaped members each of which has a closure head end portion and an axially extending tubular flange, said tubular flanges being of differential diameter and being assembled one within the other with the head end portions at opposite ends of the assembly whereby the inner of said flanges and the head end portions define a working chamber;

each of said end portions having a bearing bore of smaller diameter coaxially aligned and opening from said working chamber;

a piston unit comprising a piston rod extending through said chamber and in guided bearing engagement in said bearing bores and having a piston flange intermediately thereon dividing said working chamber into subchambers, the piston rod having a hollow interior chamber and passage means associated with said piston flange for displacement of hydraulic damping fluid between said interior and said working chamber on both sides of said flange;

valve means controlling said displacement in the relative working reciprocations of the piston and housing;

one end portion of the piston rod projecting substantially beyond the head end portion of one of said members and having means thereon for attaching the projecting portion of the piston rod to one of two opposed spaced relatively moveable members to be damped;

means on the head end portion of the other of said housing members for attaching the damper to the members to be damped;

means for filling said hollow interior chamber comprising a filler opening in the end of said piston rod exposed for access outside said housing adjacent to said last mentioned attaching means and a filler plug screwed thereinto and adapted to place hydraulic fluid filled through the opening into said hollow interior chamber under pressure; and

a compressible pressurizing body mounted in said hollow interior chamber and adapted to be compressed by the pressurized hydraulic fluid to maintain replenishing pressure thereon to maintain the working chamber filled through said passage means.

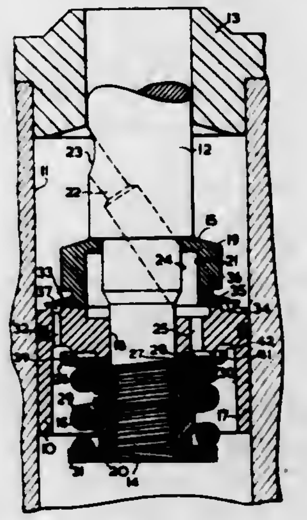
3,352,387

SHOCK ABSORBER FLUID FLOW VELOCITY REDUCING MEANS

George Bertram Powell, Solihull, England, assignor to Girling Limited, Birmingham, England, a British company

Filed July 30, 1965, Ser. No. 476,043

2 Claims. (Cl. 188—96)

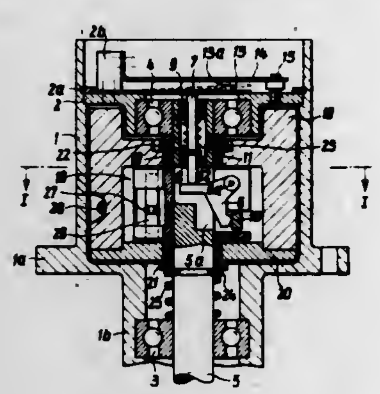


1. An hydraulic damper comprising a cylinder, a piston slidable in said cylinder and dividing it into first and second spaces, a piston rod axially attached to said piston, an end wall on said cylinder closing said first space, a gland in said end wall, said piston rod extending through said first space and being slidable through said gland, an annular chamber in the piston, a passage in the piston rod connecting said chamber with said first space in the cylinder, a one-way valve allowing flow of liquid under pressure from said annular chamber to said second space and comprising at least one annular ring-shaped shim cooperating with a seating in said piston, means for rigidly holding the inner edge of said shim against an abutment on the piston, resilient means comprising a spring and a thrust washer engaged by the spring and urging said shim into engagement with the seating, and an annular flange on said washer surrounding and spaced radially

from the periphery of said shim and extending axially towards the piston whereby on movement of the outer edge of the shim away from the seating liquid passing through the valve is caused to flow radially between the shim and the seating and is then deflected axially by said flange and its veloctiy of flow is reduced.

3,352,388
APPARATUS FOR PREVENTING THE SKIDDING OF VEHICLE WHEELS

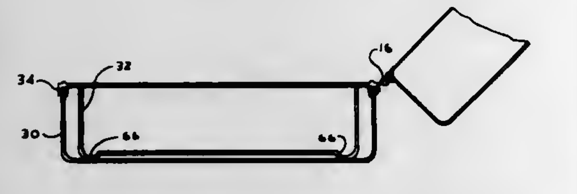
Heinz Leiber, 2 Im Emklert, 6906 Leimen, Germany
Filed May 11, 1966, Ser. No. 549,205
Claims priority, application Germany, May 14, 1965, G 43,597
3 Claims. (Cl. 188—181)



1. An apparatus for preventing the skidding of vehicle wheels, comprising
  a housing adapted to be secured to a brake plate of a vehicle,
  an auxiliary shaft rotatably mounted in said housing, and adapted to be rotated by the vehicle wheel,
  a spring-biased tappet member axially movable in said auxiliary shaft,
  a rotary mass mounted for rotation about the axis of said auxiliary shaft,
  a first double-armed shifting lever, having a first rotary axis disposed spaced apart from and perpendicularly to the axis of said auxiliary shaft and engaging said tappet member,
  a second double-armed shifting lever, having a second rotary axis disposed parallel to the axis of said auxiliary shaft and engaging said first lever and adapted to be moved by said rotary mass,
  said first and second rotary axes of said first and second levers, respectively, forming an unchangeable system, rotating about said axis of said auxiliary shaft when the vehicle wheel rotates, and
  said tappet member being axially shifted by movement of said levers upon a rotary motion of the rotary mass relative to said auxiliary shaft.

3,352,389
CARRYING CASE CONSTRUCTION

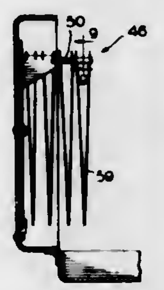
Wingfield L. Chubb, Beverly Shores, Ind. 46301
Filed Sept. 27, 1965, Ser. No. 490,454
7 Claims. (Cl. 190—49)



1. A carrying case for instruments, articles and the like, comprising two sections, hinge means pivotally connecting said sections, each section having an outer shell formed by a panel and four walls joined to one another and to said panel, said walls having a straight marginal edge, a substantially rigid frame secured to said walls and having a body and two members connected to said body and extending along the internal and external sides of the marginal edges of said walls, a lip on the inner member with a sharp edge for engaging the adjacent wall for securing said frame on the walls, a flange on said frame forming an inwardly extending shoulder, a flexible inner shell formed by a contoured panel and four walls joined to one another and to said panel, said panel having protrusions thereon for urging said shell toward the flange on said frame for engaging the inner surface of said outer shell and holding the inner shell in spaced relation to said outer shell, liner material on the surface of said inner shell, a yieldable outwardly extending flange on the marginal edge of the walls of said inner shell, and spaced lugs on said last mentioned flange for snapping beneath the shoulder on said frame for holding said inner shell in place in said outer shell and clamping the margin of said liner.

3,352,390
ATTACHÉ CASE WITH SUSPENSION FOLDER DEVICE

Joseph Zalkind, 15 E. 18th St., New York, N.Y. 10003; Minnie B. Zalkind and Sheldon S. Zalkind, executors of said Joseph Zalkind, deceased
Filed June 24, 1965, Ser. No. 466.754
7 Claims. (Cl. 150—1.6)

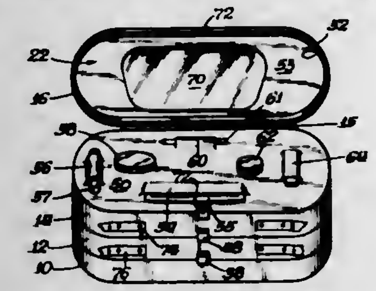


1. A device of the class described for carrying a plurality of suspension folders, comprising an openable and closable case having a pair of hingedly joined sections having main panels and being effective to form an enclosure when said case is closed, a suspension means comprising a device detachably securable to the main panel of one section and having a top, bottom and side, and comprising spaced side bars adjacent the top and sides, foldable into position to enable closure of said case, and unfoldably movable to a position normal to said main panel, bracket members carried by said device to which said side bars are pivoted and said brackets having upper edges coextensive with upper edges of respective side bars in unfolded position of said side bars and having means engageable by said side bars to maintain alignment thereof with respective upper edges of said brackets when said side bars are in said unfolded position.

3,352,391
WOMEN'S HANDBAGS

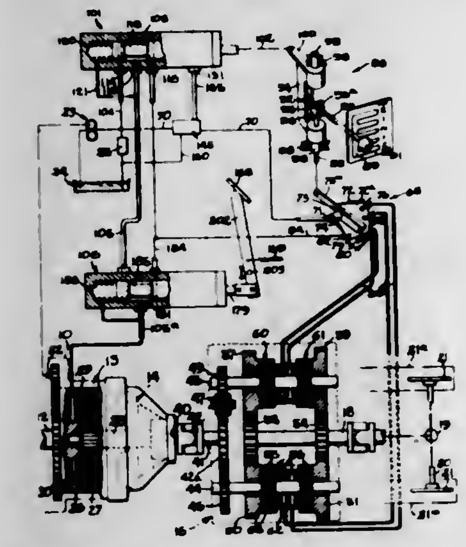
Ernest Vaughan, Berwyn, Ill. 60402
Filed Aug. 4, 1965, Ser. No. 477,244
3 Claims. (Cl. 190—51)

1. A woman's handbag comprising: a plurality of bag sections, each of said sections having a substantially planar surface on one side thereof and a recess in the other side thereof, two of said sections being hinged together with the recesses mutually facing each other, and at least one other section being hinged to one of said two sections with the recess of said other section facing the planar surface of said one section, and clasp means for releasably latching adjacent sections in closed position.



3,352,392
CLUTCH AND TRANSMISSION WITH DUAL MODULATING FLUID CONTROLS

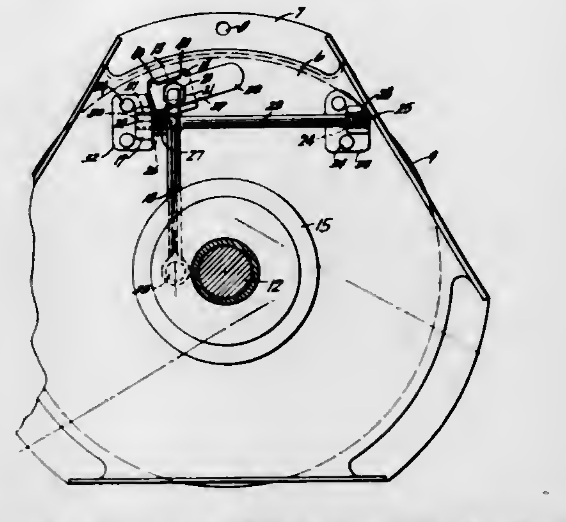
James B. Black and Leonard H. Adams, Rockford, Ill., assignors to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed July 19, 1965, Ser. No. 473,104
15 Claims. (Cl. 192—3.5)



1. In a system for driving a load from a prime mover including a multi-drive ratio transmission and a modulated clutch drivingly connected between the prime mover and the load, a modulating actuator connected for engaging said modulated clutch when supplied with pressure fluid and to a degree proportional to the pressure of the fluid supplied thereto, a source of pressure fluid, a first fluid conduit connecting said modulating actuator and said pressure fluid source, first and second pressure regulators individually adjustable between the open and closed positions and connected in said first conduit, a plurality of fluid actuators adapted when supplied with pressured fluid in preselected patterns to set said transmission in the drive ratios, a first control member including a handle movable between a plurality of positions each corresponding to one of the drive ratios of the transmission, said handle being movable between a first point and a second point when disposed in each of said positions, a second control member including means for adjusting said second pressure regulator, a selector valve connecting said plurality of fluid actuators and said pressure fluid source and including means to permit pressure fluid flow to selected ones of said actuators in a pattern corresponding to the positioning of said handle, a fluid flow sensor actuated to a first condition when fluid is flowing through said selector valve and to a second condition when no flow is occurring thereby indicating said fluid actuators have set the transmission in the drive ratio corresponding to the positioning of said handle, and means for adjusting said first pressure regulator toward the closed position in response to said handle being moved toward the first point within any of said positions and adjusting said regulator toward the open position in response to said handle being moved toward the second point within any of said positions and in response to said flow sensor being actuator to said second condition whereby said modulated clutch is disengaged as an incident to shifting the drive ratio of the transmission and only reengaged after the shifting is completed.

3,352,393
FRICTION CLUTCH

W. Vincent Thelander, Cave Creek, Ariz. 85331
Filed Jan. 7, 1966, Ser. No. 519,361
10 Claims. (Cl. 192—68)



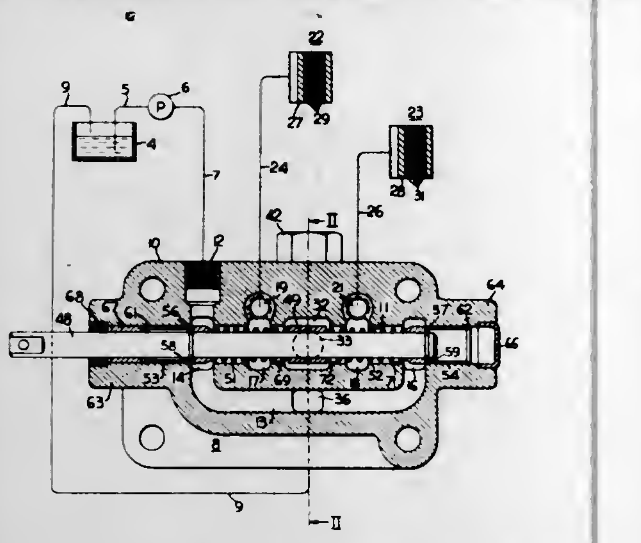
1. In a friction clutch comprising a clutch plate adapted to be held in frictional engagement with a fly-wheel, a pressure plate for holding said clutch plate in engaged position, a back plate turning with the fly-wheel having holes provided therein through which drive lugs on the pressure plate project rearwardly, release levers pivoted on the back plate and extending substantially radially inwardly relative thereto, a bearing operatively engaging the inner ends of said levers and disposed centrally relative to said clutch and mounted for axial movement to and from clutch engaging position, and a fork engaging said bearing on diametrically opposite sides and oscillatable to transmit movement thereto, the improvement which consists in pivoting said levers on the back plate inwardly from their outer ends and arranging the same so that their outer ends apply spring pressure to said pressure plate through said drive lugs from a source of spring pressure disposed outside said clutch, a preloaded torsion bar disposed in transverse relation to each of said release levers serving both as a pivot pin for said lever and as the outside source of spring pressure active through said release lever to transmit spring pressure through the outer end thereof to the pressure plate, and means connected with said fork to transmit movement through said bearing to the inner ends of said release levers to disengage said clutch.

3,352,394
CLUTCHES WITH CONTROL VALVE

Donald W. Longshore, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Aug. 2, 1965, Ser. No. 476,597
5 Claims. (Cl. 192—87.19)

1. In combination a control valve assembly comprising an elongated body having a longitudinally extending bore therein, inlet and outlet ports in said body which communicate with said bore, an actuating rod slidably disposed in said bore, said rod including a spool slidably mounted therein and actuable between three positions, a neutral position, a first clutch actuating position, and a second clutch actuating position, a pair of springs mounted about

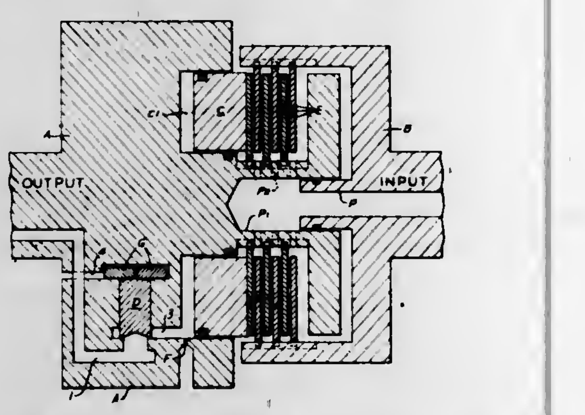
said rod and spaced apart by said inner spool, piston members slidably mounted on said rod in abutting relation to the outer end of said springs, means adjacent the ends of said rod for retaining said pistons in abutting relation to said springs, one of said outlet ports being located about said inner spool when said spool is positioned in said neutral position, said pistons and said spool being of the same diameter as said bore, said inlet having a branch passage extending to a port about one of said pistons, the other of said pistons being located in said inlet, a second outlet port connected to said bore in spaced relation to said first outlet, a third outlet port connected to said bore in spaced relation to said first outlet and on the other side thereof, a pair of fluid actuated clutches, said second and third outlets being hydraulically connected with said fluid actuated clutches, hydraulic pressure means connected to said inlet, sump means connected to said first outlet, said valve being so constructed that when said actuating rod is positioned in a neutral position pressure fluid moves through said inlet, bore, and outlet to sump and when said operating rod is moved in one direction pressure fluid moves through said inlet and bore against the bias of one said springs to gradually actuate one of said clutches and when said rod is moved in the opposite direction pressure fluid moves through said inlet and branch passage to the other of said clutches for gradually actuating same against the bias of the other of said springs.



3,352,395
FRICTION CLUTCH HAVING CENTRIFUGALLY OPERATED VALVE MEANS

Conrad R. Hilpert, Winnebago, Ill., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin

Filed Feb. 18, 1966, Ser. No. 528,422
7 Claims. (Cl. 192—103)

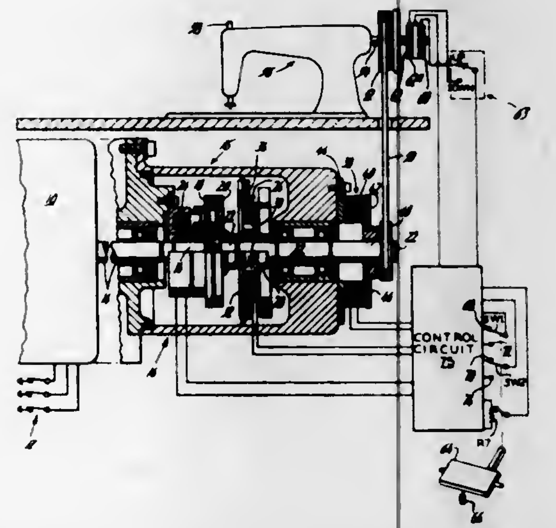


1. Centrifugally controlled, friction clutch mechanism comprising; a rotatable driving member and a rotatable driven member; slippingly engagable friction clutch means between said members for establishing a slippable drive connection therebetween; hydraulically operated means for causing variable engagement of said friction clutch means; pressure fluid, centrifugally operated, control valve means in one of said members and responsive to speed changes thereof; compensating pin means located at the radially inner end of said centrifugally operated control valve means and bearing against the latter for compensating for the change of centrifugal force acting on the latter due to the change of radial location thereof, externally actuated, fluid pressure control means for supplying pressure fluid to said centrifugally operated control valve means for control thereof, and passage means placing said centrifugally operated control valve means in operative communication with said hydraulically operated means to cause variable actuation of the latter and consequent continuously controlled, slipping engagement of said friction clutch means in accordance with the rotation speed of said one of said members.

3,352,396
DRIVE AND STOP CONTROL FOR A DRIVEN MACHINE

John B. Moseley, Norfolk, Conn., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware

Filed June 22, 1965, Ser. No. 465,902
5 Claims. (Cl. 192—142)

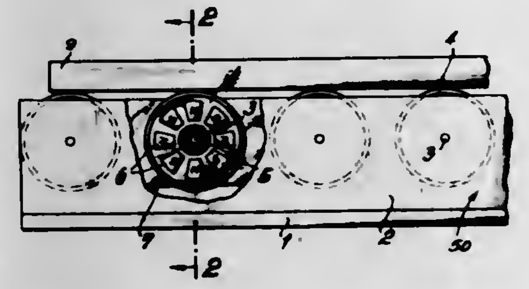


1. A drive machine operable at variable speeds having a control for arresting the main shaft of a driven machine at a predetermined position, comprising in combination:
a magnetic clutch having an input and an output shaft forming part of said drive machine,
means drivingly coupling said output shaft to said main shaft to operate said main shaft at a preset speed,
a faced disc of magnetic material on said input shaft,
a faced disc of magnetic material on said output shaft,
a control circuit adapted to be switched to "ON" and "OFF" conditions,
means including a clutch coil
for varying the magnetic attraction between said discs to vary the speed of said output shaft,
said control circuit including circuit means for establishing a reference current to monitor the current supplied to said clutch coil and maintain said preset speed of said main shaft,
a tachometer generator
associated with said output shaft adapted to generate a variable current to said clutch coil dependent upon the speed of said output shaft,
control means
for said circuit normally deactivated but activated when said control circuit is switched to "ON" condition,
a magnetic brake
for engaging said output shaft, said brake being normally activated but being deactivated when said control circuit is switched to "ON" condition,
means including said tachometer generator
to temporarily hold said circuit control means activated when said control circuit is switched to "OFF" condition,
means governed by said control means
to cause temporary application of said brake when said control circuit is switched to "OFF" condition,
and means on said main shaft
when it arrives at said predetermined position to cause reapplication of said brake to thereby arrest said main shaft at said predetermined position.

3,352,397
DEVICE FOR CONTROLLING THE SPEED OF MOVEMENT OF AN OBJECT

Klaus Becker and Paul Mertens, Wetter, Ruhr, Germany, assignors to Demag-Zug G.m.b.H., Wetter, Ruhr, Germany

Filed July 7, 1965, Ser. No. 470,137
Claims priority, application Germany, July 8, 1964, D 44,873; Oct. 24, 1964, D 45,716; Mar. 4, 1965, D 46,683
10 Claims. (Cl. 193—35)



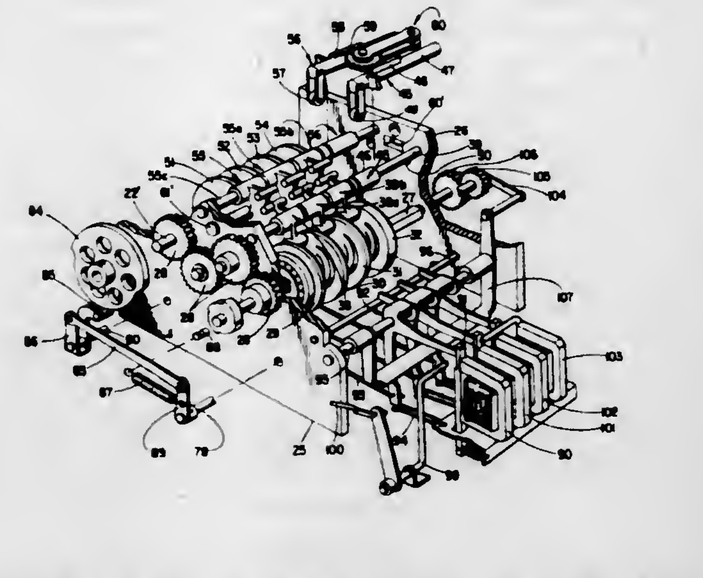
1. A device for controlling the speed of movement of an object, comprising a trackway, an object movable along said trackway, roller means between said object and said trackway providing roller movement of said object along said trackway, said trackway, said object and said roller means including magnet means on at least one thereof and magnetically conductive plate means on one of the others thereof which are maintained in spaced out-of-contact relationship during movement of said object along said trackway and which define a magnetic field which is cut by the relative movement between said magnet means and said plate means upon movement of the object along the trackway and a rate which is varied by the rate of relative movement between said object and said trackway for retarding the advance of said object along said trackway.

3,352,398
CHARACTER SELECTION MECHANISM WITHOUT RETURN TO HOME POSITION

B. Todd Crutcher III and Ronald D. Dodge, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 29, 1966, Ser. No. 561,474
16 Claims. (Cl. 197—16)

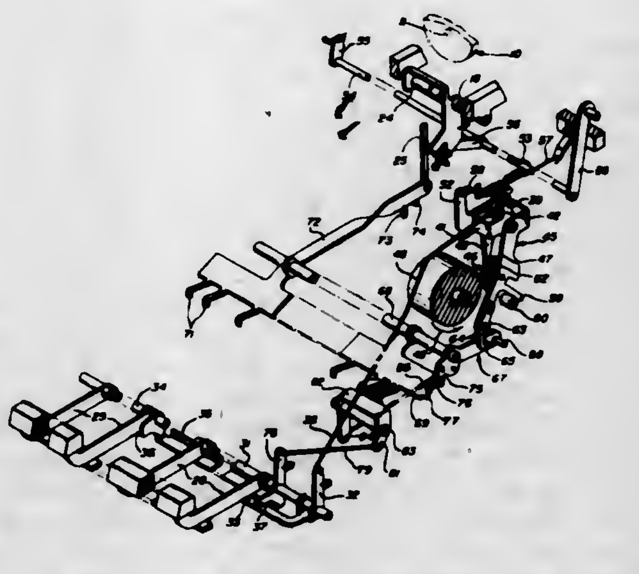
1. A high speed selection mechanism comprising:
two sets of cam means with each of said sets of cam means being mounted for axial movement;
each of said sets of cam means having a plurality of profiles;
means to simultaneously rotate said two sets of cam means the same amount during each actuation of said rotating means to produce first and second cycles of operation;
the profiles on one of said sets of cam means being the same as the profiles on the other of said sets of cam means but displaced therefrom an amount equal to the amount of rotation of said sets of cam means during each of the cycles of operation;
first follower means adapted to be selected for cooperation with the profiles on said one set of cam means to determine the axial position of said one set of cam means during each of the first cycles of operation;
second follower means adapted to be selected for cooperation with the profiles of said other set of cam means to determine the axial position of said second set of cam means during each of the second cycles of operation;
and means responsive to the axial positions of each of said sets of cam means.



3,352,399
PLURAL SPACE BAR OPERATED MECHANISM FOR CONTROLLING PROPORTIONAL ESCAPEMENTS

Theodore N. Madison, Thompsonville, Conn., assignor to Royal Typewriter Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 7, 1965, Ser. No. 485,228
3 Claims. (Cl. 197—84)



1. In a machine having a normally arrested escapement member in control of a spring urged carriage and releasable to effect carriage movement over two or three space units,

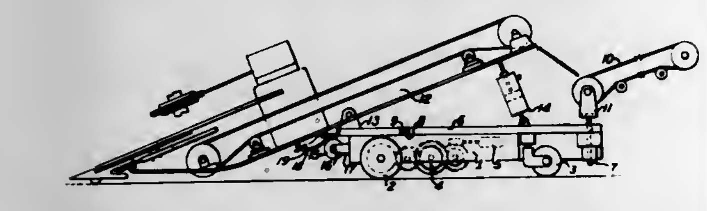
a first and a second depressible space bar lever,
a continuously driven power roll,
a single rockably supported power arm,
an eccentric cam roll cam pivoted on said power arm adapted when rotated into engagement with said power roll to rock said power arm,
an escapement member release bail linked to said power arm and operative thereby,
control means responsive to depression of either of said space bar levers to rotate said cam into engagement with said power roll,
first means associated with said escapement member actuatable by said bail to effect two units of spacing,
second means associated with said escapement member adapted when actuated to effect an additional unit of spacing,
conditioning means positionable from a first position in the path of said bail to a second position out of the path of said bail, said conditioning means when actuated by said bail acting on said second means to effect said additional unit of spacing,
means drive connecting said conditioning means to said power arm to position said conditioning means to one of its said positions incident to depression of said first space bar lever,
and means disabling said drive connecting means incident to depression of said second space bar lever.

3,352,400
AUTOMOTIVE CONTINUOUS ACTION FACILITY FOR UNLOADING BULK MATERIALS

Evgeny Gavrilovich Ugodin, Abram Vladimirovich Lepsky, and Jury Vladimirovich Kamshitsky, Moscow, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovatelsky Institute Zheleznodorozhnogo transporta, Moscow, U.S.S.R.

Continuation of application Ser. No. 401,351, Oct. 5, 1964. This application June 16, 1966, Ser. No. 558,143

9 Claims. (Cl. 198—9)



1. An automotive continuous-action facility for unloading bulk materials from railroad freight cars, said facility comprising: a carriage including drive and running wheels; a receiving conveyor; an unloading conveyor mounted on said carriage; a disk-type pick-up device attached to the receiving conveyor for feeding material thereto; a horizontally swingable frame positioned above said carriage and having one end attached to the receiving conveyor and another end pivotably attached to the carriage; a hydraulic mechanism mounted on the carriage for swinging the pick-up device together with the receiving conveyor, said mechanism including a double-acting hydraulic cylinder, which is hinged to the receiving conveyor and is capable of traveling transversely within a limited distance; brackets mounted on said carriage; a piston rod for said hydraulic cylinder having ends which are fixedly secured to said brackets; rests positioned on the ends of said hydraulic cylinder; a pin fitted in a middle portion of said hydraulic cylinder, a slide block carried by said pin and traveling in a slot provided in said receiving conveyor; limit switches fitted on the carriage to control the hydraulic mechanism for regulating the degree of swinging of the pick-up device and receiving conveyor; vibratory gathering head means on the pick-up device for ripping material; means to drive the pick-up device; and means for driving the drive wheels of the carriage.

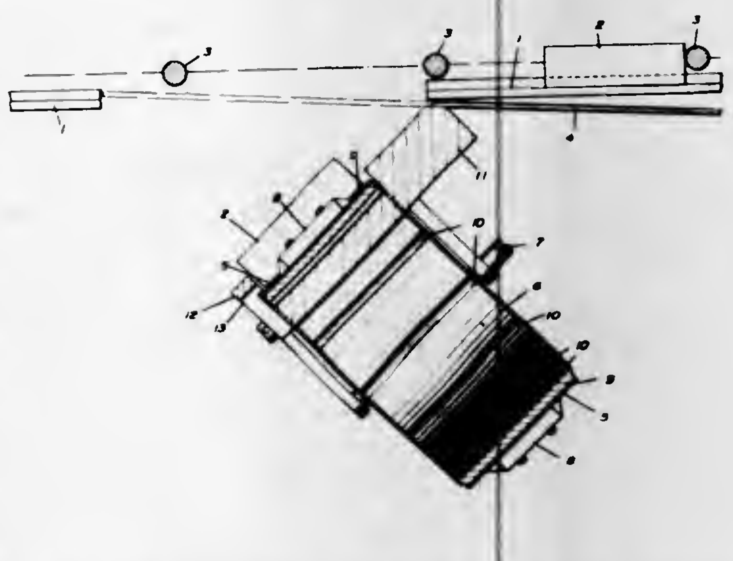
3,352,401
TRANSPORT MEANS AND A TRANSVERSELY LOCATED DISCHARGE CONVEYOR

Henning E. Danielsson, Kalmar, Sweden, assignor to Arenco Aktiebolag, Vallingby, Sweden

Continuation of application Ser. No. 332,425, Dec. 23, 1963. This application July 15, 1966, Ser. No. 566,179

Claims priority, application Sweden, Jan. 23, 1963, 724/63

3 Claims. (Cl. 198—20)



1. A transport means comprising a horizontal conveyor for match boxes, comprising a horizontal support member, a pair of parallel spaced chains, and a plurality of dog rods fixed transversely between said chains at spaced intervals, said support member having an aperture therein, a transversely located discharge conveyor in a plane below said aperture of said first conveyor having a moving box supporting surface sloping to one side, said discharge conveyor comprising a stand, two rollers obliquely journalled in said stand having recesses therein, an endless band running over said obliquely journalled rollers, dog ribs mutually joined with each other two by two on both sides of said band, said dog ribs on the outside of said band cooperating with the match boxes transported and those on the inside of said band cooperating with said recesses, and a box guiding rail fixedly mounted on said stand extending along the lower edge of said band and having a free space between said rail and the sloping plane of said band, said space having a height permitting splints or matches, pieces of veneer and similar small objects, which accompany the match boxes, to slide off said band.

3,352,402
APPARATUS FOR HANDLING OBJECTS

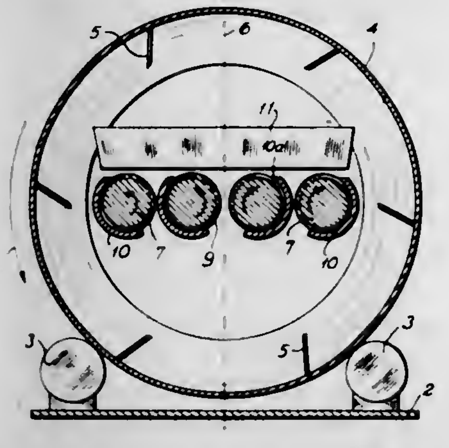
Elo Sorensen, Virum, near Copenhagen, Denmark, assignor to Carmo Aktieselskab, Espergaerde, Denmark

Filed July 15, 1966, Ser. No. 565,484

Claims priority, application Denmark, July 16, 1965, 3,668/65

4 Claims. (Cl. 198—33)

1. An apparatus for handling objects, comprising a drum for containing objects to be handled, said drum including internal longitudinal carrier vanes, said drum being supported for rotation about a substantially horizontally disposed longitudinal axis, and at least one rotatable spindle extending through the central part of the said drum substantially parallel with the longitudinal axis of the drum, each spindle including an external helical conveying rib, and a guard member encircling each spindle along a part of its circumferential surface, said guard member having a supporting edge for the conveyed objects disposed a specific distance beyond the vertical diametral



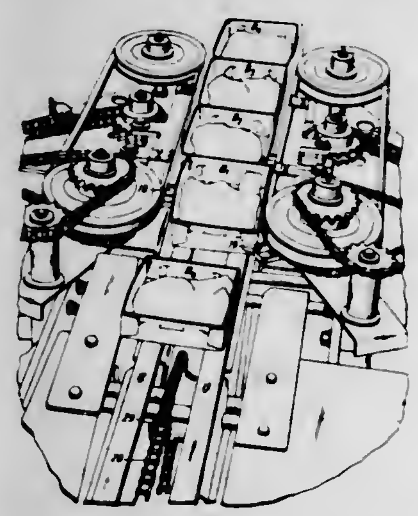
plane of the spindle viewed in the direction of rotation of the spindle.

3,352,403
DEVICES FOR ACCELERATING AND TIMING ARTICLES

William E. Blake, Bristol, England, assignor to Kliklok Corporation, New York, N.Y., a corporation of Delaware

Filed July 12, 1966, Ser. No. 564,584

3 Claims. (Cl. 198—34)



1. A device for accelerating rectangular articles, such as folding boxes supplied to it, to a predetermined velocity and for delivering such articles at such velocity in timed and spaced order, the device comprising, in combination, a bottom conveyor for frictionally engaging and advancing said articles; a pair of lateral belts bordering said bottom conveyor on opposite sides, said belts defining between them a track within which articles on said bottom conveyor are advanced; a pair of endless timing conveyors comprising lugs extending into the space between said belts on one side and the other, respectively, with respect to the track center, the lugs of each timing conveyor being uniformly spaced by less than double the length of the articles to be handled and more than the single length of said articles, the lugs of one timing conveyor being staggered with respect to the lugs of the other timing conveyor, as a result of which one lug on one side lies in advance of a certain article and the next lug on the other side bears against the side of said certain article, the width of the track being such that said next lug presses the article into engagement with the opposite belt; an outfeed conveyor in line with said track and overlapping the terminal portion of said bottom conveyor, said outfeed conveyor comprising lugs extending into the path of boxes for receiving and further advancing articles released by the lugs of said timing conveyors; and drive means for driving said bottom conveyor at a linear rate higher than that of the timing conveyors for driving said belts at a linear rate not less than that of the timing conveyors, and for driving said outfeed conveyor at a rate higher than that of the bottom conveyor.

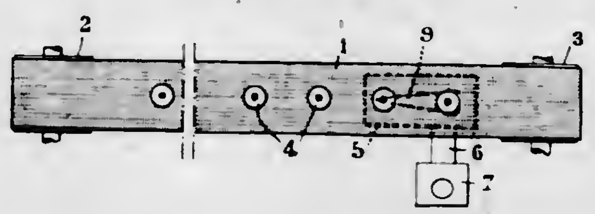
3,352,404
DEVICES FOR STABILIZING LIGHT OBJECTS ON CONVEYOR BELTS

Antoine Di Settembrini, Moulin de la Drille, Epouville, France

Filed Dec. 16, 1966, Ser. No. 602,233

Claims priority, application France, Dec. 20, 1965, 42,948, Patent 1,470,334

1 Claim. (Cl. 198—52)



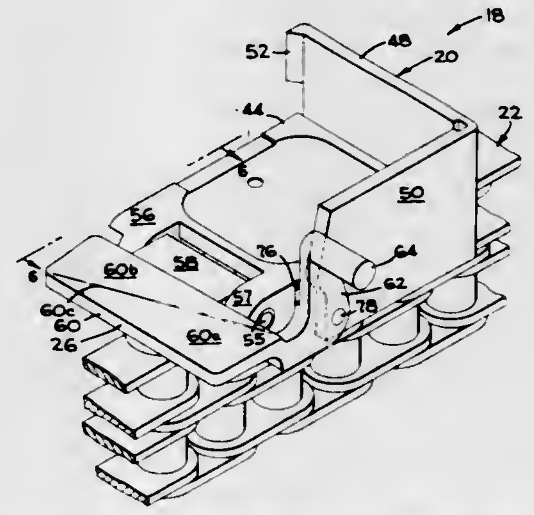
A device for placing in a stable position light objects, notably plastic bottles, on a movable air-pervious conveyor belt, comprising a suction box disposed beneath said conveyor belt and having an upper face, means for creating a suction in said box, and an opening formed in said upper face of the suction box which is adjacent to said conveyor belt, said opening having the shape of an elongated isosceles triangle with the vertex in the direction of travel of said conveyor belt, and delivery means adapted to drop the objects vertically upon said conveyor belt above said suction box opening in the area corresponding to the minor base of said triangular opening, that is in the zone of said opening where the strongest suction is produced.

3,352,405
CARTON TRANSPORTING MECHANISM

John L. Gartin, San Jose, and Robert K. Gellatly, Santa Clara, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed July 8, 1966, Ser. No. 563,776

10 Claims. (Cl. 198—131)

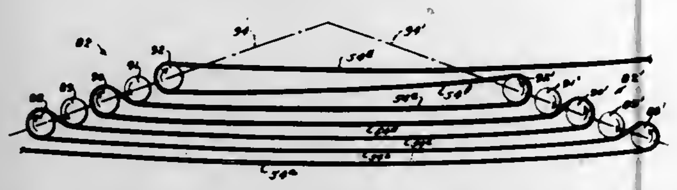


1. A carton transporting mechanism comprising a continuously driven endless transport conveyor, a carrier body on said conveyor, a first and a second upstanding wall on said carrier body, said walls being normal to each other, means defining a corner abutment secured to a vertical edge of said first wall and having a carton engaging surface defining an obtuse angle with said first wall, a gate pivotally mounted on said carrier body about a pivot axis parallel to said first wall and being selectively movable between an open position permitting a carton to enter said carrier body and an upstanding closed position opposite said first

wall, resilient means operatively connected between said gate and said carrier body for holding said gate in either selected position, and means for opening and closing said gate.

3,352,406
BELT TAKE-UP AND STORAGE UNIT FOR EXTENSIBLE BELT CONVEYORS

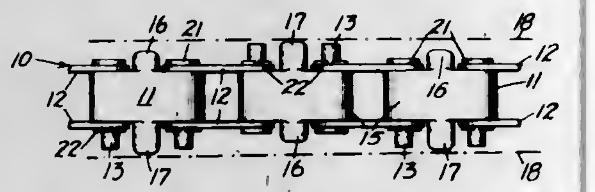
John B. Long, Oak Hill, W. Va., assignor to Marmon-Herrington Company, Inc., Oak Hill, W. Va., a corporation of Indiana
Filed Mar. 4, 1964, Ser. No. 349,382
15 Claims. (Cl. 198—139)



1. A unit for storing and paying out conveyor belt to permit variations in spacing between two belt terminal points including means for supporting a plurality of vertically spaced belt runs with the uppermost run thereof shorter than any other run thereof and each succeeding run below the uppermost run thereof longer than the next preceding run thereabove.

3,352,407
CONVEYOR MEDIUM

Edward L. Wright, Plainfield, N.J., assignor to Customline Control Products, Inc., Linden, N.J., a corporation of New Jersey
Filed Nov. 10, 1966, Ser. No. 593,558
10 Claims. (Cl. 198—189)

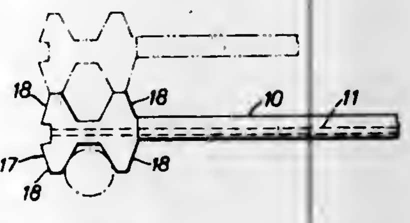


1. A conveyor medium comprising an arrangement of coupled molded links and plate links joined by coupling pins, each of said molded links comprising a body having projecting teeth at end portions of one surface thereof and alined with bores at end portions of said molded links, said plate links having apertures at end portions thereof, said apertures being spaced equally to the spacing of the bores in said molded links, one side of each molded link including centrally thereof a projecting member, the other side of the molded link having centrally thereof a projecting guide member, projecting a greater distance from the surface of the link than said first named projecting member, both of said projecting members extending the full vertical thickness of the body of the molded link, and means at end portions of said coupling pins for retaining the assemblage of said links against displacement from said coupling pins.

3,352,408
CABLE BELT

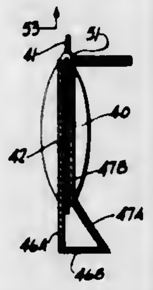
Charles Thomson, Surrey, England, assignor to Solar Thomson Engineering Company Limited
Filed Apr. 13, 1966, Ser. No. 542,303
Claims priority, application Great Britain, Apr. 13, 1965, 15,859/65
8 Claims. (Cl. 198—201)

1. A conveyor belt adapted to be supported and driven by cables, comprising a belt made of flexible material, a plurality of transversely-extending resilient spring steel straps in said belt each of which projects at both ends from the belt, and two cable-locating members formed separately from the belt and being of a material which is more elastic than the material of said belt, said straps extending through said cable-locating members and fixing same in an abutting relationship against the edges of the belt, said cable-locating members each having two pairs of parallel ribs projecting in opposite directions therefrom to define two cable-receiving grooves which are substantially continuous for the length of the belt.



3,352,409
ARTICLE DISPLAY PACKAGE

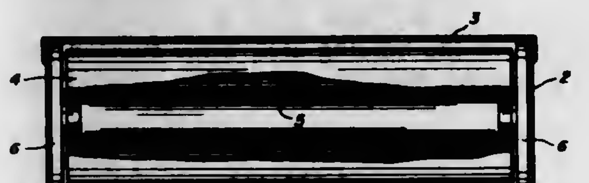
Martin Link, Wayne, N.J., assignor to Union Camp Corporation, a corporation of Virginia
Filed Sept. 4, 1964, Ser. No. 394,632
3 Claims. (Cl. 206—45.14)



1. An article of manufacture comprising
(a) a card type package formed of blank foldable material including
(b) a front panel,
(c) a base panel hingedly connected along one edge thereof to one end of said front panel about a fold line,
(d) a lower rear panel connected along a transverse fold line to the other edge of said base panel,
(e) and an upper rear panel connected along a fold line to said lower rear panel,
(f) said blank being folded about its respective fold lines so that the front and upper rear panels thereof are disposed in back to back relationship with the base panel angularly folded relative its connected front panel and lower rear panel to define a supporting base for said folded blank,
(g) said front and upper rear portions having complementary cut out portions to define a window therebetween,
(h) means for securing said front and upper rear portions in back to back relationship to define a slideway about the periphery of said window,
(i) a container for containing a fluid substance, said container having laterally extending flange portions in the slideways at the sides of said window,
(j) said container being sized so as to be wholly disposed within the perimeter of said window with its opposed portions of the flanges slidably received within the slideway defined between said contiguous panels,
(k) and means for opening and closing said slideways to permit or prevent the removal of the container therefrom,
(l) said latter means including coincidental fold lines disposed intermediate the ends of said contiguous panels to extend transversely thereof adjacent the upper end of said window whereby folding said contiguous panels about said coincidental fold line opens and closes the slideway accordingly to permit the sliding of said container in and out of said slideway.

3,352,410
WRAPPING MATERIAL ROLL PACKAGE AND ROLL SUPPORT THEREFOR

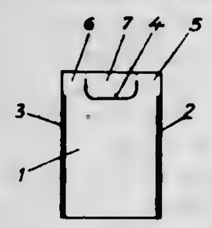
Mark Salladay, 24 Murdock St., Canonsburg, Pa. 15317, and Carl F. Jones, 53 Highland Park, Bethel Park, Pa. 15102
Filed Feb. 28, 1966, Ser. No. 530,547
3 Claims. (Cl. 206—52)



1. A separate roll supporting member for supporting the end of a roll of wrapping material with a hollow central core in a carton comprising:
a base panel designed to fit the end of a carton in which the roll is to be placed, said panel having spaced front and back walls,
a stud projecting outwardly from the front wall of said panel at right angles thereto, said stud being of a diameter to be received in the hollow core of the roll, and
a shoulder on said front wall about the base of the stud where it joins the panel of slightly larger diameter than the interior of the core,
the panel, stud and shoulder being integrally formed from plastic, said front and back walls being joined to each other about the periphery of the panel, said walls having spaced bracing means integral therewith and located between the walls, joining the walls together at various positions between the stud and the periphery of the panels.

3,352,411
SUPPLY BLOCK CONSISTING OF COMMODITY BAGS MADE FROM PLASTIC MATERIAL

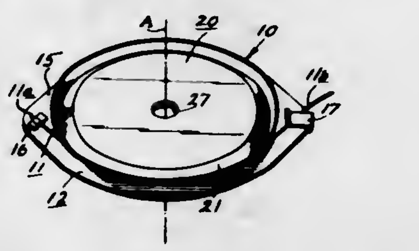
August Schwarzkopf, Lengerich, Germany, assignor to Windmoller & Holscher, Lengerich, Germany
Filed Oct. 15, 1965, Ser. No. 496,340
Claims priority, application Germany, Nov. 30, 1964, W 38,062
3 Claims. (Cl. 206—57)



1. An assembly of commodity bags, each bag comprising a flat plastic tube section closed on all sides except for an opening provided for filling said bag when it is in use, a front wall and a back wall formed by said tube section, at least one waste portion formed in each of said front and back walls adjacent said opening, each of said waste portions being defined by a substantially U-shaped line in said front and back walls respectively, the base extension of said U-shaped line extending toward the center of the respective wall, the major part of said line being an uninterrupted cut through said wall so as to divide said waste portion from its respective wall and a minor part of said line being otherwise weakened so as to keep said waste portion connected to its respective wall but in an easily tearable condition, the waste portions of all of said bags being welded together to form one single block, so that when a single bag is severed along said line from the respective waste portion, said waste portion will remain in said block, while simultaneously by said severing, gripping means for carrying said bag are formed integral with said bag walls adjacent said filling opening.

3,352,412
PACKAGE FOR FLEXIBLE MATERIAL

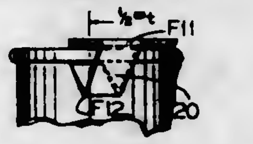
Walter J. Draving, Willow Grove, and Joseph E. Nerz, Philadelphia, Pa., assignors to Micro-Miniature Parts Corporation, Willow Grove, Pa., a corporation of Pennsylvania
Filed Dec. 1, 1965, Ser. No. 510,898
20 Claims. (Cl. 206—59)



1. A package for receiving at least one length of flexible material therein, said package comprising: at least one element having a core including a peripheral wall and an axis substantially parallel to said peripheral wall; said package including a member circumscribing the periphery of said one element, connected to said one element and having a resilient portion overlapping and radially spaced therefrom to define a flexible material receiving pocket therebetween; said element having an extension extending radially a distance sufficient to overlie said pocket and to cooperate with said resilient overlapping portion of said member whereby free movement of flexible material from said pocket is impeded.

3,352,413
WRAPPER TYPE CAN CARRIER AND IMPROVED TAB CONSTRUCTION THEREFOR

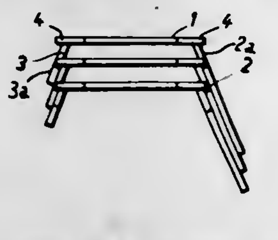
Joseph C. Spery, 527 Madison Ave., Suite 1412, New York, N.Y. 10021
Filed July 13, 1965, Ser. No. 471,595
7 Claims. (Cl. 206—65)



1. A can carrier comprising:
(a) opposed sides and connected top and bottom panels defining a closed quadrilateral figure having open end portions,
(b) means defining can retaining tab blanked out of one of said panels of said blank and folded inwardly thereof to engage the ends of said cans,
(c) and means for retaining said one panel against the ends of said cans to retain said can retainer tabs in operative position against the end of said cans,
(d) said latter means including a holding tab blanked out of the plane of said one panel adjacent the outer edge of said one panel,
(e) said holding tab being inwardly bent about a foldline disposed at an angle with respect to the outer edge of said one panel,
(f) said holding tab having formed intermediate the ends thereof an angularly disposed foldline relative to the side of said tab about which said holding tab

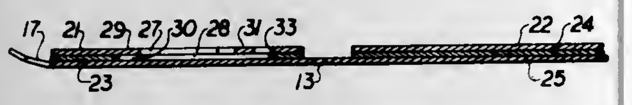
is reversely folded so that the free end thereof is laterally offset with respect to the connected portion of the tab, the free edge of the lateral offset portion being coincident with the outer edge of the panel and engages the chime end of the can at the tangent point thereof.

3,352,414
CLAMPABLE CLOSURE SEAL FOR BAND-LIKE ENCLOSURE HOOPS
Xaver Kuoni, Zurich, Switzerland, assignor to Borbe-Wanner A.G., Zurich, Switzerland
Filed Nov. 26, 1965, Ser. No. 509,926
Claims priority, application Switzerland, Dec. 1, 1964, 15,473/64
16 Claims. (Cl. 206—65)



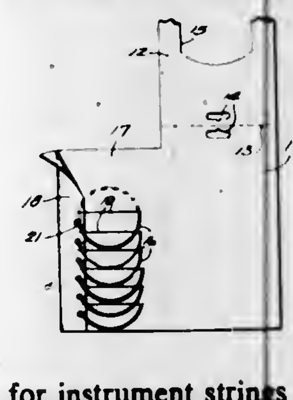
1. A stack of clampable closure seals for band-like enclosure hoops wherein the stack is formed of at least two similarly constructed open-ended channel-shaped closure seals, each open-ended channel-shaped closure seal having a back portion with two lengthwise extending marginal sides, a side portion connected with each lengthwise extending marginal side of said back portion, said side portions and said back portion being formed as an integral element, each open-ended channel-shaped closure seal being provided with holding means cooperating with the holding means of a neighboring open-ended channel-shaped closure seal for keeping the stack intact, said holding means of each open-ended channel-shaped closure seal comprising retaining means provided at its back portion and retaining means provided at at least one side portion in close proximity to said back portion, said retaining means at said back portion of a given open-ended channel-shaped closure seal cooperating with the retaining means at said one side portion of the neighboring open-ended channel-shaped closure seal of the stack to prevent separation of said two open-ended channel-shaped closure seals from one another in every direction except in a direction parallel to the lengthwise direction of the back portion of said open-ended channel-shaped closure seals.

3,352,415
PACKING FOLDER FOR ELECTRICAL COMPONENTS
William G. Seeley, Williamstown, Harold V. May, Pittsfield, and Jacob H. Martin, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Sept. 14, 1966, Ser. No. 579,301
11 Claims. (Cl. 206—78)



1. A shipping package comprising at least two multi-ply supporting sheets of semi-rigid material joined along one edge as a leaved folder, each of said multiple-ply supporting sheets having mounting compartments therein, a plurality of component containers having extended flanges along at least two opposing sides thereof and designed to substantially enclose a variety of electrical components of non-uniform configuration, said multiple-ply supporting sheets each comprise a front sheet, at least one central sheet and a back sheet; said mounting compartments comprising a front sheet aperture designed to receive the body and lead members of said component within its peripheral edges, and at least one central sheet aperture, said central sheet aperture being at least wider than said front sheet aperture and underlying said front sheet aperture so as to provide a lip of said front sheet which extends over portions of at least two opposing edges of said central sheet aperture, said lip accommodating the extended flanges of the component containers between itself and said back sheet which forms a bottom portion of said mounting compartment; and said back sheet also providing a cover for said folder package and a pliable binding area, said area permitting said folder in its closed configuration to accommodate components having a thickness equal to or less than the maximum width of the binding area while substantially maintaining a spaced parallel relationship of said leaf members.

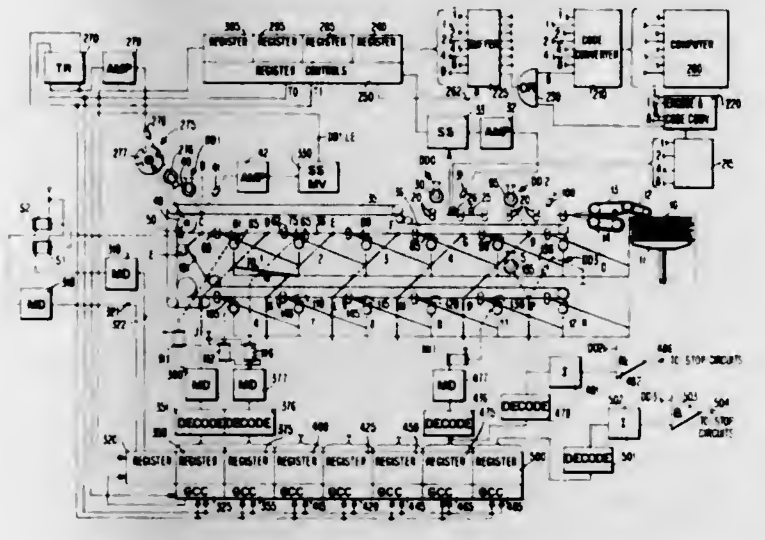
3,352,416
INSTRUMENT STRING PACKAGE
Thomas S. Lo Duca, 3038 W. Walnut St., Milwaukee, Wis. 53208
Filed Apr. 25, 1966, Ser. No. 545,041
2 Claims. (Cl. 206—79)



1. A package for instrument strings each disposed in a circular loop comprising a back panel of rectangular form, a frontal panel marginally coextensive therewith and hinged thereto at the top thereof and having a large aperture therein for view of the contents of said package, a laterally hinged fold on the back panel, a relatively narrow reversible fold on the free edge of said laterally hinged fold, said laterally hinged fold having a plurality of transverse slits for receiving looped instrument strings, and said narrow reversible fold having a plurality of curvate slits spaced in the free margin of said reversible fold to receive adjacent portions of said coiled instrument strings serving as detents against dislodgment of said coiled strings.

3,352,417
DOCUMENT SORTING APPARATUS
Alfred Cutaia, Rochester, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 4, 1963, Ser. No. 306,448
14 Claims. (Cl. 209—74)

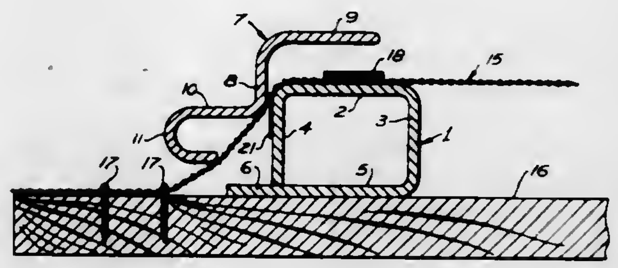
9. Document sorting apparatus comprising:
(a) first, second and third document paths,
(b) means for transporting documents along said first, second and third paths,
(c) a plurality of receptacles disposed adjacent to said second and third predetermined paths,
(d) a first plurality of data storage registers for storing data identifying the receptacles into which documents are to be distributed while being transported in said first path,
(e) a second plurality of data registers for storing identifying data while documents are being transported in said second and third paths,
(f) means for entering said identifying data into said first plurality of registers whereby the identifying data first entered therein will be first available therefrom,
(g) means for transferring said identifying data first available from said first plurality of storage registers to the first register of said second plurality of registers upon the associated document reaching a predetermined point in said first transport path,
(h) means for determining when said associated document has reached said predetermined point in said first transport path,
(i) means responsive to the identifying data in said first register of said second plurality of registers for diverting the associated document from said first document path into said second or third document path depending upon said identifying data,
(j) means operable in synchronism with movement of said document transporting means for transferring said identifying data from register to register of said second plurality of registers as documents reach predetermined positions in said second document path,



(k) means operable in synchronism with movement of said document transporting means for transferring said identifying data from register to register of said second plurality of registers as documents reach predetermined positions in said third document path,
(l) first means for examining the identifying data in said second plurality of registers as documents reach said predetermined positions in said second document path,
(m) second means for examining the identifying data in said second plurality of registers as documents reach said predetermined positions in said third document path,
(n) means operative in response to said first examining means for diverting documents from said second document path into said receptacles disposed adjacent thereto, and
(o) means operative in response to said second examining means for diverting documents from said third document path into said receptacle disposed adjacent thereto.

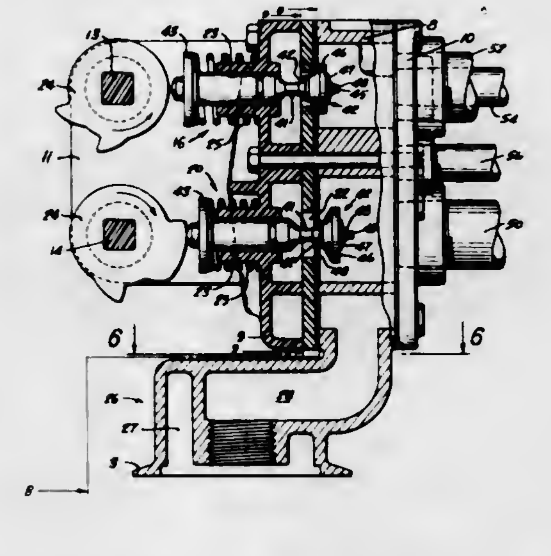
3,352,418
REMOUNTABLE SEPARATOR SCREEN
Douglas M. Swallow, Milton, Ontario, Canada, assignor to Southwestern Engineering Company, Los Angeles, Calif., a corporation of California
Original application Nov. 26, 1963, Ser. No. 325,956, now Patent No. 3,291,164, dated Dec. 13, 1966. Divided and this application Oct. 17, 1966, Ser. No. 587,200
2 Claims. (Cl. 209—403)

1. A separator screen comprising:
(a) an inner circular hollow frame including cylindrical inner and outer walls and circular top and bottom walls extending radially therebetween, said bottom wall projecting radially outward beyond said outer wall to form a first flange;
(b) an outer circular frame confronting said inner frame, said outer frame including
  (1) a cylindrical wall confronting a portion of said outer wall,
  (2) a circular inner second flange overlying said top wall,
  (3) a folded outer third flange forming a semicircular bead, the extremity of which confronts said first flange;



(c) a screen wedged between and held in tension by said confronting frames; and
(d) a yieldable means between one of said frames and said screen in the region of emergence of said screen therefrom to minimize stress concentration of said screen in said region.

3,352,419
DUAL CAM SHAFT CONTROL VALVE FOR AUTOMATIC WATER SOFTENER
James S. Entringer, Elm Grove, Lawrence P. Marks, Brown Deer, and Harold D. Ritchie, Menomonee Falls, Wis., assignors, by mesne assignments, to Culligan, Inc., North Brook, Ill., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 389,962
7 Claims. (Cl. 210—140)



1. An automatic water softener comprising a water softener tank having a single opening therein, said opening having a raised flange portion, a control valve having a complementary flange portion, a rapid disconnect means including clamping means surrounding said flange portions to connect the control valve to said softener tank, a separable base plate defining a portion of the control valve, said plate having openings therein for receiving all external plumbing connections for said water softener tank and control valve, whereby said control valve can be separated from the base plate without disturbing any ex-

ternal plumbing connections to said valve and said control valve can be removed from the softener tank by disconnecting the rapid disconnect means, a plurality of poppet-type valves in said control valve for controlling the flow of liquid through said water softener tank, a knife edge seat for each poppet-type valve, said control valve including a central manifold body and a valve body containing said plurality of poppet-type valves, each poppet-type valve controlling a port in one side of said valve body, said manifold body being positioned between and secured to both the ported side of the valve body and the base plate, said valve body having a plurality of interconnecting chamber and passageways and said manifold body having a plurality of wall portions defining chambers interconnecting the external plumbing connections in said base plate and the chambers, passageways and ports in said valve body to said water softener, said poppet-type valves providing a raw water inlet valve, a service valve, a by-pass valve, a brine valve, a backwash drain valve and a drain valve; said base plate having an inlet opening, a service outlet opening, a brine opening, and a drain opening; said manifold body including a first chamber of the manifold body communicating with said inlet opening, a by-pass valve inlet passageway in the valve body, and said raw water inlet valve and port; a tank inlet chamber communicating with a tank inlet, an outlet passageway in the valve body and said backwash drain valve and port; a tank outlet chamber communicating with a tank outlet, an inlet passageway in the valve body, and said drain valve and port; an outlet chamber communicating with said service outlet opening, said by-pass valve and port, and said service valve and port; a brine chamber communicating with said brine opening and said brine valve and port; and a drain chamber communicating with said drain opening and a drain passageway in the valve body; and said valve body having a first chamber of the valve body communicating with the inlet passageway and said service valve and port; a second chamber of the valve body communicating with the outlet passageway in the valve body, said raw water inlet valve and port, and said brine valve and port; a by-pass valve chamber communicating with the by-pass valve inlet passageway and said by-pass valve and port; and an interconnecting drain chamber communicating with the drain passageway, said drain valve and port, and said backwash drain valve and port.

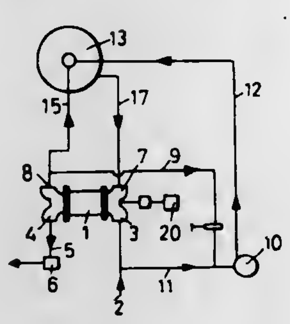
3,352,420

ARRANGEMENT FOR SUPPLYING AIR UNDER PRESSURE TO WASTE WATER, MORE PARTICULARLY IN THE PAPER AND CELLULOSE INDUSTRY, FOR SUBSEQUENT PURIFICATION BY FLOTATION

Milos Krofta, 58 Yokun Ave., Lenox, Mass. 01240

Filed June 22, 1965, Ser. No. 465,964

2 Claims. (Cl. 210—205)



1. An arrangement for dissolving air under pressure into waste water, more particularly for the paper and cellulose industry for a subsequent clarification by flotation comprising, a pressure exchanger, a pressure vessel, and a high pressure pump, said pressure exchanger comprising a drum driven externally thereof by a centrally located drive shaft, said drum including a plurality of pipes arranged axially parallel to each other, a pair of spaced end walls mounted on said shaft and being connected to the ends of said pipes, a housing for said drum including a pair of stationary covers which form closures, sealing means interposed between said end walls and said stationary covers, each cover being provided with a pair of kidney-shaped connections which are in communication with said pipes, means for feeding waste water having dissolved air therein to one of said connections in one of said covers, means communicating with one of said connections in the other of said covers and adapted to be connected to a flotation clarifier, means communicating said pressure vessel with each of the other connections in said covers, means for diverting a portion of the waste water to said high pressure pump, and means providing communication between said pressure vessel and said high pressure pump, the first and second mentioned means in conjunction with said pressure exchanger constituting a closed low pressure circuit, and the third mentioned means in conjunction with the pressure vessel and the pressure exchanger constituting a closed high pressure circuit, the high pressure being maintained by the high pressure pump.

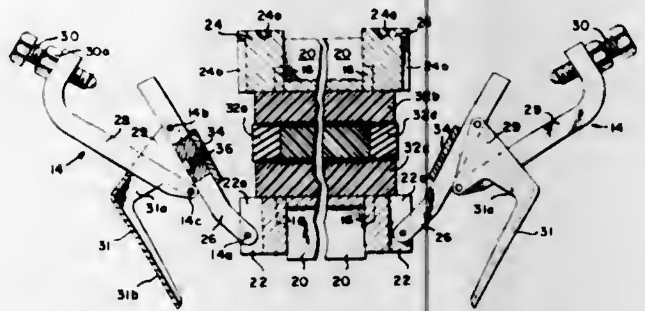
3,352,421

DIALYZER CLAMP ASSEMBLY

James E. Cary, Edmonds, Wash., assignor to Sweden Freezer Manufacturing Co., Seattle, Wash., a corporation of Washington

Filed Oct. 23, 1965, Ser. No. 503,007

11 Claims. (Cl. 210—238)



1. A dialyzer clamp assembly which comprises a base peripheral frame and a top peripheral frame adapted for receiving a dialyzer; and a plurality of adjustable toggle clamping means connected to one of such frames and adapted to compressibly contact the other frame, each of said toggle clamping means comprising a retaining lever pivotally hinged to one of said frames and a toggle clamp having a handle hinged to said retaining lever and a toggle link adapted to compressibly contact the other frame and pivotally hinged to said handle at a toggle knee, and the toggle knee adapted to urge said retaining lever against said other frame when said other frame and said toggle clamping means is in a clamping position.

3,352,422

APPARATUS FOR DIALYSIS, HEAT OR GAS EXCHANGE HAVING PUMPING AND AGITATING MEANS

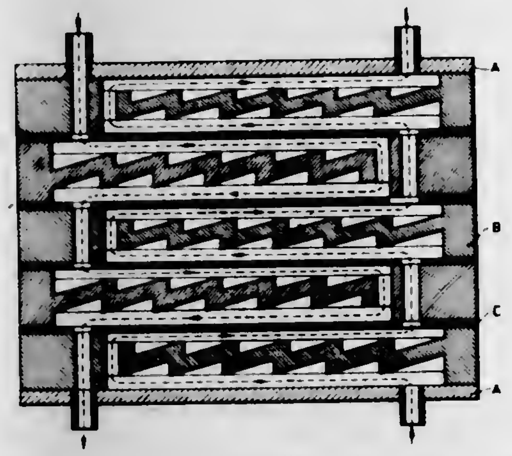
Göran Hedén, Karolinska Institutet, Solnavagen 1, Stockholm, Sweden

Filed Jan. 20, 1966, Ser. No. 521,902

Claims priority, application Great Britain, Jan. 20, 1965, 2,508/65

7 Claims. (Cl. 210—321)

1. Apparatus for dialysis, heat exchange or gas exchange, comprising, in combination: at least two plates separated by an exchange membrane; there being a groove in each opposite surface of said plates; a passage leading to one end of each groove for introducing fluid to the groove and a passage leading from the other end of each groove for withdrawing fluid from the groove; and the



cross-sectional area of each groove transverse to the flow path alternately gradually increasing and steeply decreasing along substantially the entire length of said groove in a direction opposite to the direction of flow, such cross-sectional area profile constructed to cause a pumping action upon the rocking of said apparatus.

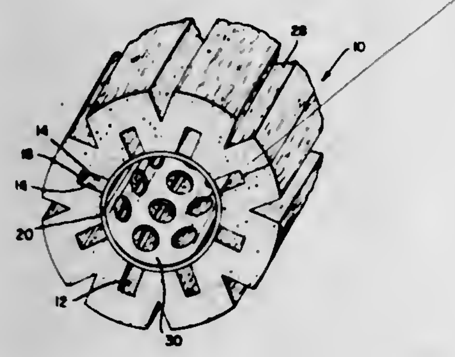
3,352,423

FILTER AND COALESCER ELEMENT

James W. Osterman, Santa Clara, Calif., assignor to Filters, Inc., San Jose, Calif., a corporation of California

Filed Apr. 8, 1965, Ser. No. 446,488

3 Claims. (Cl. 210—496)



1. A liquid filter and coalescer element comprising a hollow cylindrical body of fibrous material, the fibers of said material being oriented to extend predominantly parallel to the longitudinal axis of said cylindrical body; a plurality of spaced apart grooves on the inner surface of said body and extending generally parallel to the fiber orientation and to the longitudinal axis of said cylindrical body substantially throughout the length thereof, said grooves having a depth of the order of one half the thickness of said body of fibrous material; a plurality of spaced apart slits on the outer surface of said cylindrical body and extending generally parallel to said grooves and being disposed to extend intermediate said grooves so that the innermost portion of each of said slits is interdigitated between the innermost portions of adjacent ones of said grooves; and means for causing the liquid to be filtered and coalesced to flow substantially in a radial direction through the element.

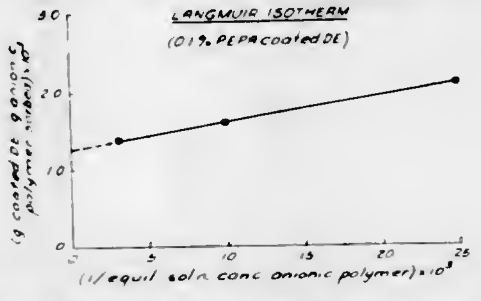
3,352,424

COATED FILTER AIDS

Kenneth W. Guebert and Irby C. Jones, Jr., Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Feb. 7, 1964, Ser. No. 343,207

6 Claims. (Cl. 210—502)



1. An article of manufacture comprising an anionic-type filter aid having an adherent water-insoluble coating of a normally water-soluble organic cationic polyelectrolyte, said coating having a multiplicity of freely available cationic charge sites.

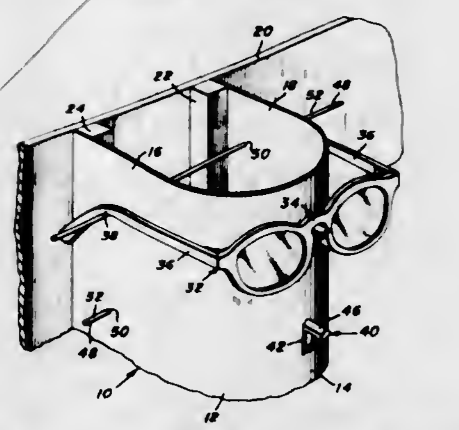
3,352,425

EYEGLASS FRAME DISPLAY STRUCTURE

Jacob Burke, Professional Bldg., East Grand Forks, Minn. 55744

Filed July 14, 1965, Ser. No. 471,981

10 Claims. (Cl. 211—13)



1. An eyeglass frame display device comprising means for supporting at least one frame in fully open and horizontal position, said support means including at least one bridge suporting means for contact support of an eyeglass frame bridge and at least one bow supporting means for contact support of an eyeglass frame bow, said bridge supporting means and bow supporting means having support contacting surfaces, said surfaces lying in a single horizontal plane whereby said frames can be supported in an open and horizontal position, said support means comprising an upstanding elongate U-shaped member, said member having a bottom portion and two substantially parallel wall portions, a plurality of said bridge supporting means spaced longitudinally along the mid region of said bottom portion, and a plurality of said bow supporting means spaced longitudinally along said wall portions.

3,352,426

EXERCISING DEVICE

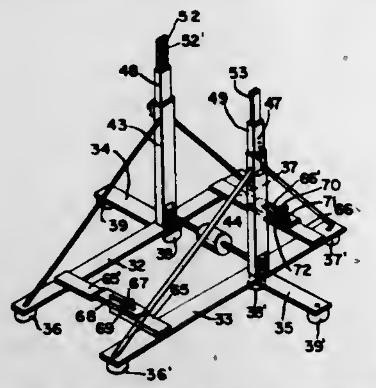
Harold S. Carlson, 147 Columbia Court, Grand Forks, N. Dak. 55201

Filed July 14, 1965, Ser. No. 472,063

2 Claims. (Cl. 211—22)

1. A bicycle stand invention comprising a pair of elongated base frame members, a pair of vertical columns with one mounted upright on one of said columns and the other mounted upright on the other of said columns, each column having a sleeve at its upper end, a pair of flanges attached to the rear axle of the rear wheel of a

bicycle on opposite sides, said flanges having vertical rod portions adapted to be telescoped into said sleeve portions of said columns, means to adjust said columns toward and away from one another, said columns each having a plurality of portions in sliding relation to one another, spring biased pin means to lock said portions in an adjusted position, a roller having a shaft extending between said columns and adapted to engage the underside of the tire of the rear wheel, rotatable means within said columns and carrying the ends of said shaft with said rotatable means acting to raise and lower said shaft and thereby raise and lower said roller, rubber supports beneath said horizontal frame members, laterally extending horizontal frame members extending laterally from said first mentioned horizontal frame members and having rubber supports therebeneath.

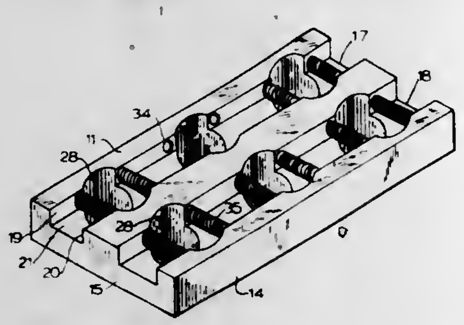


3,352,427
VOLUMETRIC FLASK RACK

Wallace C. Lawrence, 5 Goodyear Circle, Durham, N.C. 27707, and William C. Neely, Rte. 6, Box 366A, Raleigh, N.C. 27609

Filed Aug. 12, 1965, Ser. No. 479,089

3 Claims. (Cl. 211—74)



1. A rack for receiving a plurality of volumetric flasks comprising a hexahedronal shaped housing, said housing having at least one trough located in a selected surface thereof, said trough including sides and a floor being extensions of said selected surface, said housing having a plurality of wells one for each flask spaced along said trough and extending inwardly from said trough and said selected surface of said housing, said wells each being defined by side and bottom surfaces and springs mounted in said trough so as to overlie a portion of each said well thereby adapting said rack to securely receive said volumetric flasks.

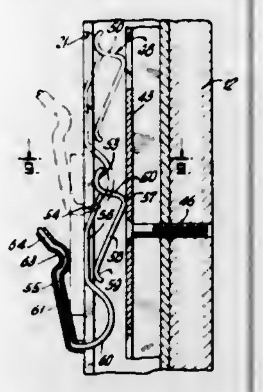
3,352,428
ADJUSTABLE MOUNTING ASSEMBLY

August Sak, 23 W. 85th St., New York, N.Y. 10024, and Edison A. Price, 17 King St., New York, N.Y. 10014

Filed Oct. 23, 1965, Ser. No. 503,884

16 Claims. (Cl. 211—87)

1. An adjustable mounting assembly comprising a mounting panel having a plurality of transversely spaced longitudinally extending vertical slots formed therein, each of said slots being bordered by at least one inwardly projecting longitudinally extending lip having a rearwardly directed front first face, means defining a forwardly directed second face disposed rearwardly of said first face and extending along the length thereof and a mounting element registering with at least one of said slots and adjustable along the length thereof and including a shank and a cam member located at the inner end of said shank and responsive to pressure on said shank to tilt said cam member into locking engagement with said first and second faces to restrict the vertical movement of said mounting element, said shank projecting forwardly from said cam member through said slot and terminating in an upwardly directed resiliently supported leg disposed along the front face of said panel.

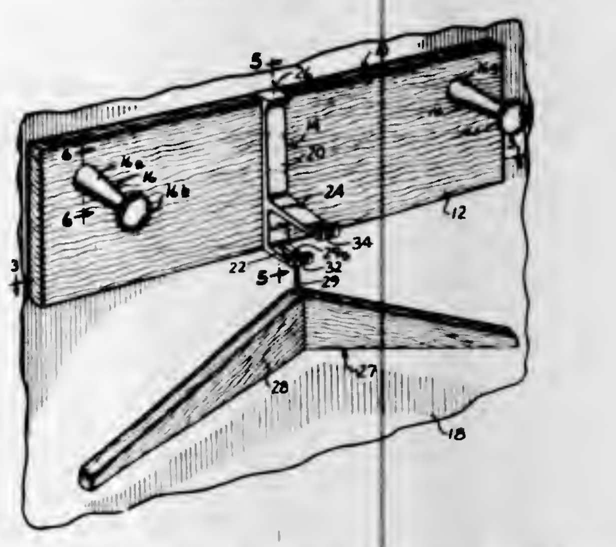


3,352,429
SURFACE-MOUNTED HAT AND COAT RACK

Raymond A. Magnuson, Hinsdale, Ill., assignor to Vogel-Peterson Co., Elmhurst, Ill., a corporation of Illinois

Filed Oct. 24, 1965, Ser. No. 504,818

2 Claims. (Cl. 211—113)



1. A hat and coat rack intended primarily for support upon a vertical surface such as a wall and for receiving garment hangers having T-topped or Y-topped stems, said rack comprising in combination

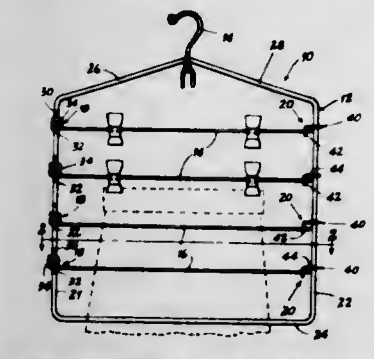
- (a) a mounting plate adapted to be secured to the vertical surface, and
- (b) a hanger bracket secured to said plate intermediate its ends, said bracket having
  - (1) a hook rigid therewith located adjacent the lower edge of said plate and projecting outwardly from said plate,
    - (A) said hook having a bifurcated outer end portion terminating in an upwardly directed tip and defining a vertical slot for receiving the stem of a garment hanger with the hanger stem cross-head resting upon the upper surface of the hook and engageable with said tip to limit movement of the hanger with respect to the hook, and
    - (B) the length of said hook together with the thickness of said plate locating said hook tip for limiting to an acute angle the maximum rotational movement, until it engages the vertical supporting surface, of a hanger about an axis defined by its stem when the latter is received in said slide.

3,352,430
SWINGING ARM CLOTHES RACK

Gene A. McAtee, St. Louis, Mo., assignor to Lee-Rowan Company, St. Louis, Mo., a corporation of Missouri

Filed Oct. 14, 1965, Ser. No. 495,863

1 Claim. (Cl. 211—119)



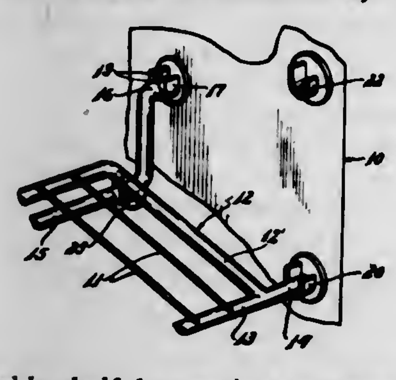
A wire clothes hanger having a wire clothes supporting means disengageable for easy access, said hanger comprising a body portion of a pair of vertical parallel support arms connected at the top and bottom, said body portion being formed of a piece of integral wire stock and a hook element connected to the top of said body portion, and at least one wire clothes supporting rod hingedly connected to one of the vertical support arms by a hinge means and engageable in latched relation at an opposite end with the second vertical support arm inwardly thereof, said hinge means being supported on the first vertical support arm by upper and lower swage elements formed from the arm and comprising a coiled extension of said clothes supporting rod formed of a plurality of turns on the end of the rod and hinging the rod to swing in a horizontal plane concentrically engaging the first vertical support arm in bearing relation, and said wire clothes supporting rod being held in latched relation with the second vertical support arm by a latch element comprising a continuous loop of wire welded to said arm, said latch element comprising a closed loop wire member bent into upwardly and backwardly extending loops, said backwardly extending loop being fixed to said second vertical arm inwardly of said arm, and upwardly extending loop receiving a free end of said clothes supporting rod in supporting relation.

3,352,431
REFRIGERATOR ADJUSTABLE SHELF

Harold H. Smith, Detroit, Mich., assignor to American Motors Corporation, Detroit, Mich., a corporation of Maryland

Filed Jan. 21, 1966, Ser. No. 522,253

1 Claim. (Cl. 211—176)



An adjustable shelf for use in a refrigerator, and comprising;

a shelf member,

means for swingably supporting the back of said shelf member,

means for selectively supporting the front of said shelf so that said shelf may be disposed in and moved from one horizontal plane to optional higher standing and lower hanging horizontal planes and to be locked therein,. and in which the shelf member inincludes front edge extensions receptive in said selective supports for horizontal support of said shelf in combination with said swingable supporting means, and

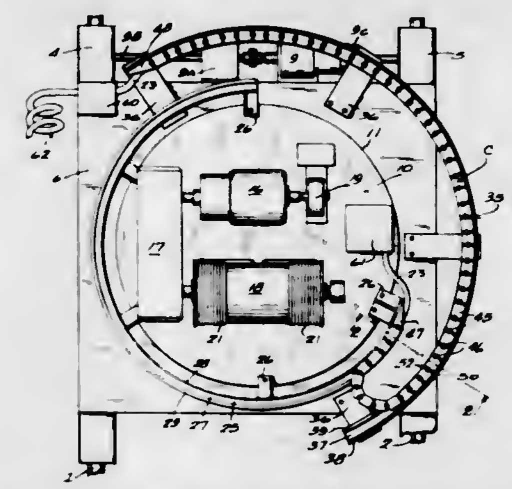
said swingable supporting means is rotatable through an arc of substantially 180° for optional free hanging and upstanding support of said shelf thereon.

3,352,432
CRANE WITH CABLE CARRIER APPARATUS

Max J. Dechantsreiter, Milwaukee, Wis., assignor to Harnischfeger Corporation, West Milwaukee, Wis., a corporation of Wisconsin

Filed Aug. 30, 1966, Ser. No. 576,098

10 Claims. (Cl. 212—21)



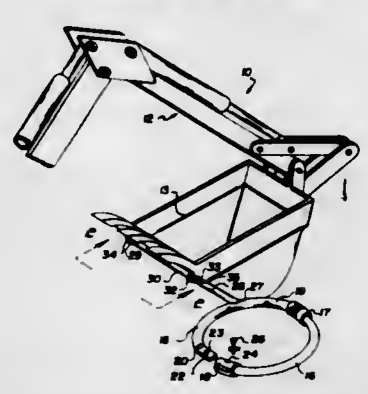
1. A crane comprising, a non-rotatable member, a turntable rotatable on said member about a vertical axis, a horizontal and arcuate track means secured to said member, a horizontal and arcuate track means fixed to said turntable and adjacently concentric with and rotatable relative to said track means on said member; a vertically disposed, electrical cable carrying, flexible, link chain carrier supported on said track means and positioned to flex about vertical axes; said carrier connected at one end to said turntable and at the other end to said member; and generally semi-spherical shoes on the lower side of said link chain carrier for supporting the latter on said track means.

3,352,433
POLE SETTING APPARATUS

Gordon G. Moore, 1176 Glendale Drive, Williams Lake, British Columbia, Canada

Filed June 6, 1966, Ser. No. 555,325

3 Claims. (Cl. 214—3)



1. Pole setting apparatus for use with powered equipment having a vertically swingable boom said boom having a work unit fixed at its free end, said apparatus

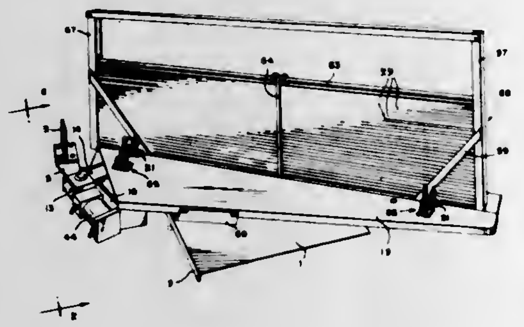
comprising a loop member formed of a pair of hingedly interconnected semi-circular parts swingable relative to each other between loop closed and loop open positions and being adapted when in said closed position to slidably embrace a pole to be set, means for releasably locking said parts in said loop closed position, an elongated shaft rigidly connected at one end to one of the parts, said shaft extending in the plane of the loop formed when the parts are arranged in a loop closed position, means connected to the work unit for rotatably and slidably receiving the shaft, said means being arranged so that the shaft extends in a horizontal position transversely of the longitudinal axis of the boom and a cable for connecting the shaft and the pole for lifting the latter when the boom is swung upwardly.

3,352,434
STICK PLACER APPARATUS

Warren H. Zuercher, Seattle, Wash., assignor to Stetson-Ross Machine Company, Inc., Seattle, Wash., a corporation of Washington

Filed Feb. 3, 1965, Ser. No. 430,122

7 Claims. (Cl. 214—6)



1. A stick placer apparatus for placing an elongated stick or the like at a predetermined position on a stack comprising; means to support an elongated stick in a first position in a substantially horizontal plane above said stack; swingable pusher means for engaging said stick in said first position and moving the same off of said support means to a drop position with one end thereof being allowed to drop to said stack, means on said pusher means to support the other end of said stick while said pusher means is in the drop position, means to move said pusher means between said first and drop positions, the other end of said stick being released upon return of the pusher means from the drop to the first position.

3,352,435
ARTICLE STACKER

Gunter Reinecke, Wuppertal-Elberfeld, Germany, assignor to Benz & Hilgers G.m.b.H., Dusseldorf, Germany, a corporation of Germany

Filed Oct. 19, 1966, Ser. No. 587,738

Claims priority, application Germany, Oct. 26, 1965, B 84,251

3 Claims. (Cl. 214—6)

1. An apparatus for boxing-in into a folding carton of a plurality of prismatic packages disposed side by side and on top of each other, comprising

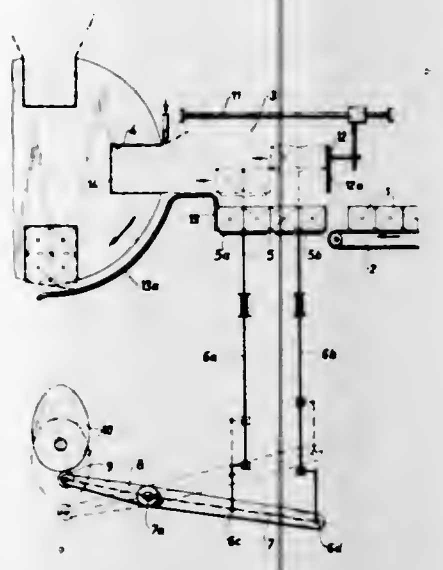
a conveyor belt,

a collecting table including a plurality of table portions and disposed at one end and in the plane of said conveyor belt, said table portions being adapted to receive packages to be boxed in into a folding carton,

linkage means for each of said table portions, means for lifting said table portions to different levels,

said lifting means comprising a common control lever operatively connected with each of said linkage means and through the latter with said table portions,

said linkage means comprising vertical rods, the lower end of which is connected with said control lever by pivots,



said pivots on said control lever being spaced apart such that one of said table portions disposed adjacent said folding carton receiving packages being lifted to the level of the lower edge of said folding carton, and

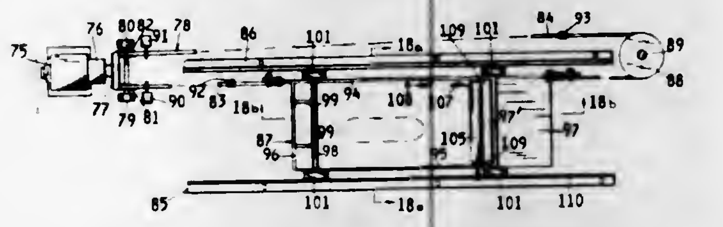
the other of said table portions being liftable further for the height of one of said packages.

3,352,436
AUTOMOBILE STORAGE MEANS

Harold J. Le Vesconte, 315 N. Louise St., Apt. 308, Glendale, Calif. 91206, and Douglas P. Davis, 911 E. Elmwood Ave., Burbank, Calif. 91506

Original application Oct. 7, 1963, Ser. No. 314,365. Divided and this application June 8, 1965, Ser. No. 465,831

7 Claims. (Cl. 214—16.1)



1. An automobile parking means adapted to be permanently installed on the floor surface of a space constituting a continuation of the surface of a driveway affording access of an automobile to that space and into and out of which space an automobile is to be moved to and from incident to the storage thereof in the space; said parking means including in combination, an automobile propelling and securing means, means confining movement of said propelling and securing means to movement in a fixed path on said floor surface, said propelling and securing means comprising a rectangular hollow frame, said hollow frame having a pair of spaced parallel longitudinal members joined by a pair of spaced transverse members, one of said spaced transverse members being inclined to provide a ramp permitting reduced resistance to a vehicle wheel entering the space defined by said hollow frame, a pair of spaced parallel arms pivotally mounted to respective longitudinal members and having a transversely extending roller mounted therebetween, said roller being mounted at the opposite ends of said parallel arms from said pivot, said parallel arms being biased toward

a normally vertical position, a transverse rigidly mounted vertical plate member spaced from said roller and the distance between said vertical plate and said transverse roller being greater than the diameter of an automobile tire when said arms are pivoted to a horizontal position, power means for moving said propelling and securing means along said path with resultant propulsion of an automobile engaged thereby along the floor surface of the space and the driveway, manually operable means for actuation of said power means to cause movement of said propelling and securing means and an automobile in engagement therewith toward the position on said path from which it is remote at the time of such actuation.

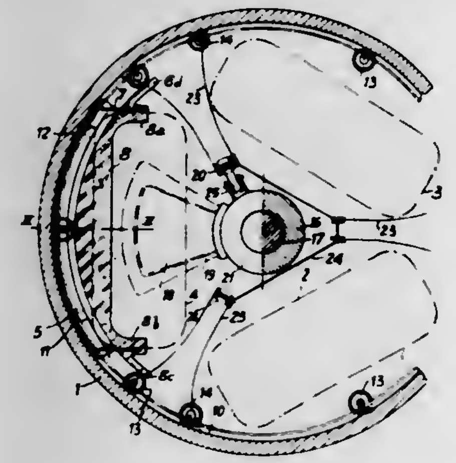
3,352,437
GARAGE FOR MOTOR VEHICLES

Christian Beau, 31 Rue de Louvois, Chaville, Seine-et-Oise, France, and Gerard Beau, 17 Rue de l'Ancienne Comedie, Paris 6, Seine, France

Filed June 14, 1965, Ser. No. 463,620

Claims priority, application France, June 16, 1964, 978,371, Patent 1,429,273

7 Claims. (Cl. 214—16.1)



1. In a multi-level motor-vehicle parking garage comprising an external enclosing wall with, at each level, brackets rotatable about a vertical axis and movable platforms to be handled by means of forks and to receive vehicles and to be placed on the said brackets and a horizontal passage at one level for the placing of a vehicle on to a movable platform, vertical handling means provided with forks to receive a movable platform and operating in the spaces that are left unencumbered at each storage level, the combination of means of rotation of the bracket at each storage level including a horizontally disposed rail of general circular form, rollers with vertical axes positioned regularly around the external enclosing wall, at the same distance from the vertical axis of the said circular rail, at least one bracket having a horizontal supporting surface to receive the mobile platforms and channeled to permit the passage of the forks of the vertical handling means, at least two revolving rollers fixed to the bracket and, supported on the circular rail, a supporting surface of the bracket rotatable about the vertical axis of the rails and, supported on the vertical-axis rollers and means for displacing the brackets on the circular rail.

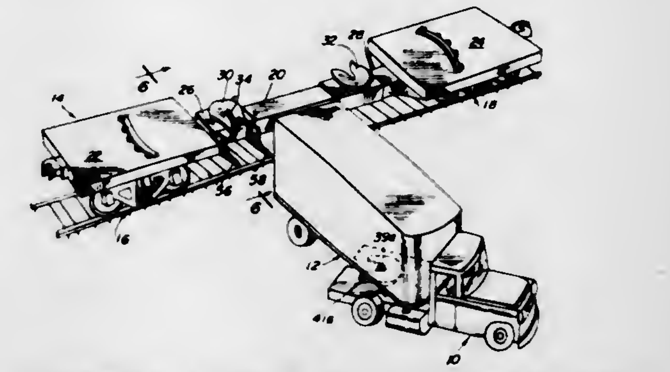
3,352,438
TRANSPORTATION SYSTEM AND METHOD

Robert E. Davidson, 6201 S. Hermitage Ave., Chicago, Ill. 60636

Filed June 11, 1965, Ser. No. 463,119

9 Claims. (Cl. 214—38)

1. The method of loading a road vehicle having a pair of wheels rotatably mounted on a vertical axis beneath the rear of the vehicle onto a rail car which comprises the steps of pushing the rear wheels of the vehicle onto a holder on the side of the rail car so that the axis of the wheels extends lengthwise of the car and so that the rear end of the vehicle is over the rail car, and of then moving the front end of the vehicle arcuately around its rear end until the entire vehicle is on the rail car.



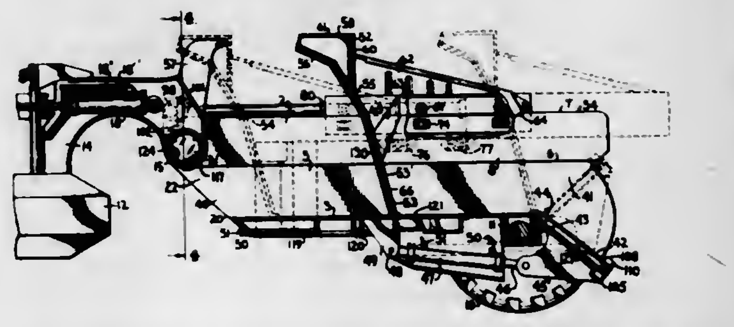
6. In combination, a rail car and a road vehicle, means on the rail car for holding the wheels of a road vehicle so that the axis of the wheels extends along the side of the car, means on the road vehicle for pivotally anchoring its rear end over the rail car, a wheel carriage carrying an axle transverse to the length mounted on the vehicle, means for holding the axle of the wheel carriage normal to the length of the vehicle, and means for releasing said holding means so that the body may be rotated onto the rail car.

3,352,439
EJECTOR TYPE LOAD HAULING WAGON

Thomas Lee Richard Hardwick, Leawood, Kans. (4001 E. 137th St. Terrace, Grandview, Mo. 64030)

Filed Nov. 22, 1965, Ser. No. 508,930

9 Claims. (Cl. 214—82)



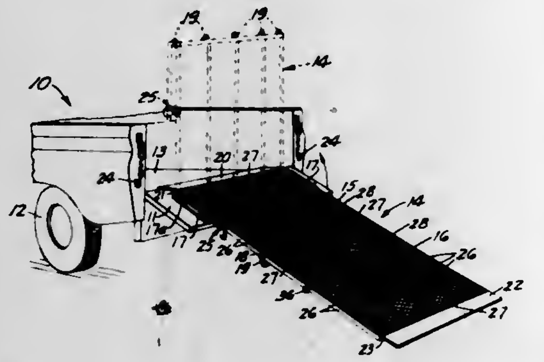
1. In combination with a load hauling vehicle having a body with an open top, spaced side walls, a bottom and an open front end, a tractor having a gooseneck structure including a transversely extending draft bar carried by said gooseneck of a length substantially the same as the width of the inside of said side walls of said body, and means securing the ends of said draft bar to the inside of the front open end of said side walls of said body to prevent lateral displacement thereof, said last named means including flange means for detachably securing said draft bar to said side walls.

4. In a rear dump wagon which comprises a wagon body having a bottom and upstanding side walls and an open rear end, the combination of a tailgate normally closing the rear end of the body, means hinging the tailgate at its normally lower end on the rear end of the body for downward swinging movement from a closed position, means for selectively urging said tailgate into said closed position, wedge members having normally forwardly and outwardly sloping surfaces on said tailgate and spaced upwardly from said normally lower end, wedge means on said side walls at the rear thereof, said wedge members being adapted to engage said side wall wedge means when the tailgate is closed to urge said side walls toward each other into a predetermined relation and to prevent spread of said side walls under stress of load in said body.

8. In an ejector type load hauling vehicle, the combination comprising a body open at the top and having side walls having front and rear ends and a bottom, said side walls having a top forming rails thereon, an ejector assembly including side channel members movable longitudinally of the rails on the body side walls and a pusher plate extending into the body in closely spaced relationship to the side walls and bottom, said pusher plate having a normal position at the front of the body, rollers mounted on said side channel members and engaging said rails for supporting the ejector assembly on the body for movements longitudinally thereof, elongated housings extending alongside said channel members and rigidly secured thereto, elongated hydraulic cylinders having front and rear ends and mounted at both of said ends in said housings and movable therewith, said cylinders having extensible rods with free ends connected to said side walls near the front ends thereof, and fluid supply means for said cylinders for effecting longitudinal movements of said ejector assembly relative to the body.

3,352,440
LOADING RAMP

Merton Wilson, Hutchinson, Minn., assignor, by mesne assignments, to Earl Industries, Inc., Sherburn, Minn., a corporation of Minnesota
Filed Mar. 7, 1966, Ser. No. 532,316
7 Claims. (Cl. 214—85)



1. A foldable ramp adapted to be attached to the tail gate of a truck, said ramp comprising:

upper and lower, generally rectangular ramp portions, each of said ramp portions including a rigid frame and a ramp load supporting surface affixed to said frame;

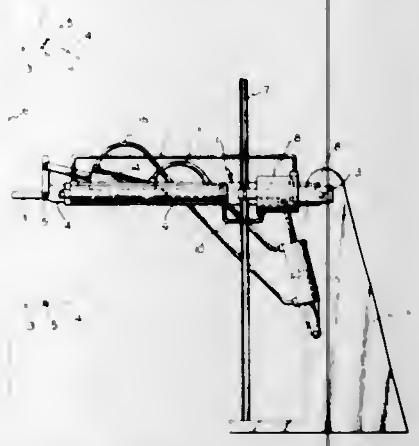
means for attaching said upper ramp portion to a tailgate; and

a hinge assembly hingedly connecting said upper and lower ramp portions to permit positioning said ramp portions in edge abutting and co-planar relation and to permit folding said ramp portions into generally opposed, spaced relation adapted to sandwich the tailgate of a truck therebetween.

3,352,441
CRANE BOOM

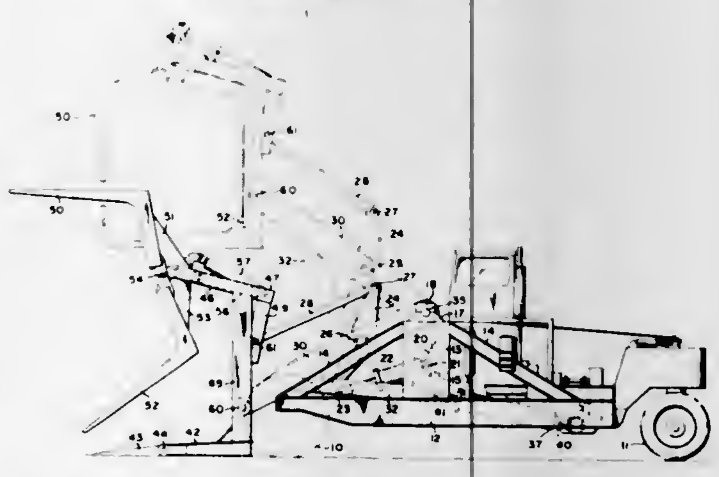
Lars Anders Gustaf Alden, Vaderbrunn, Nykoping, Sweden
Filed Oct. 18, 1965, Ser. No. 497,125
Claims priority, application Sweden, Oct. 28, 1964, 12,959/64
7 Claims. (Cl. 214—130)

1. A crane boom comprising a fulcrum, a guide located adjacent said fulcrum of said boom, a free end portion extending away from the fulcrum of said boom and extensible in relation to the remaining portion of said boom, said free end portion being adapted at the pivoting of said boom to move in a path uniform with another path formed by said guide, two double-acting hydraulic operating cylinders having working chambers communicating in pairs through direct conduits, one operating cylinder being interposed between said boom and said guide while the other operating cylinder is interposed between said boom and said extensible free end portion, the effective cross sectional area of the operating cylinder coacting with said guide being so much larger than that of the operating cylinder coacting with said free end portion as the distance of said free end portion from said fulcrum is greater than the distance of said guide from said fulcrum.



3,352,442
MATERIAL-HANDLING VEHICLE

John E. Magnuson, Seattle, Wash., assignor to Pacific Car and Foundry Company, Renton, Wash., a corporation of Washington
Filed Nov. 2, 1965, Ser. No. 506,053
4 Claims. (Cl. 214—767)



2. In combination with a vehicle main frame, a load handling head, a boom extending between the frame and the head with its inner end pivoted to the frame for vertical swing movement through an arc extending more or less equal distances above and below the horizontal plane occupied by said frame pivot and with its outer end pivoted to the head for vertical tilting movements of the head, the boom having a depending crank arm which when the boom is in its lowermost position occupies a transverse vertical plane approximately coinciding with a perpendicular dropped from the boom's frame pivot, a double-acting hydraulic jack pivoted by one end to the crank and by the other end to the frame for swinging the boom, an upright walking-beam fulcrumed to the boom for rocker movement about an axis paralleling said two boom pivots and located intermediate the same, pivoted links extending one forwardly from the upper end of the walking beam to the head and the other rearwardly from the lower end of the walking beam to the frame, one of said links comprising a double-acting hydraulic jack generally paralleling the boom and serving by contraction and extension to impart tilting movements to the head, the other link having a fixed length, the two pivots of said latter link together with the pivot at the related end of the boom and the fulcrum of the walking-beam being so

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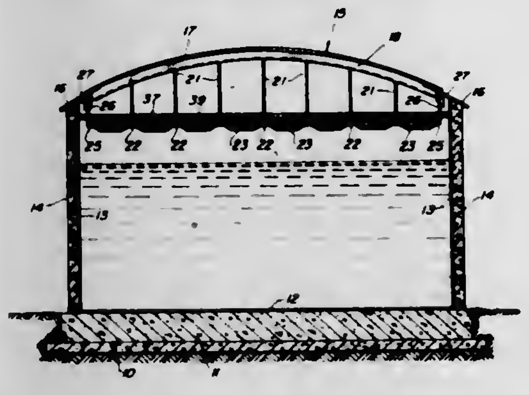
related that a pantograph assembly is produced causing the head to maintain any tilt which is given thereto regardless of the swing movements to which the boom is subjected, the head having a general C-shape when viewed from the side, said C-shape providing a deck section on which the handled load is carried with a back wall section rising from the rear end of the deck and an overhead section extending forwardly from the upper end of the back wall section in overhanging relation to the deck section, two arms pivotally mounted at the outer end of said overhead section for swing movement about a coinciding transverse horizontal axis one arm to draw the load onto the deck and hold the same thereon and the other arm to sweep the load off the deck, and independent double-acting hydraulic jacks for operating the arms in their swing movement.

3,352,443
INTERNAL SUSPENDED INSULATING CEILING FOR STORAGE TANKS

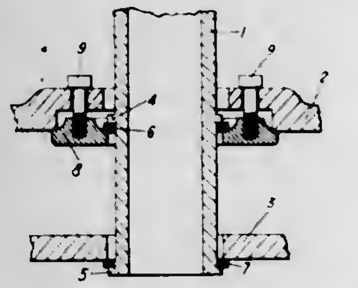
Stanley E. Sattelberg, Naperville, and Yuksel A. Selcukoglu, Chicago, Ill., assignors to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed Dec. 15, 1965, Ser. No. 514,029
17 Claims. (Cl. 220—9)



1. An enclosed tank having a metal shell with a metal bottom, a metal wall and a metal roof, the bottom and wall each having a layer of insulation applied thereto and the roof comprising a noninsulated metal plate supported upon the top edges of the wall, and an insulated fixed-position ceiling suspended by means attached to the inside of the roof, said ceiling conforming about its periphery to the internal horizontal configuration of the tank at the ceiling location and being suspended in the tank above .he intended full capacity level of the tank.

3,352,444
SELF-TIGHTENING PRESSURE VESSEL CLOSURE

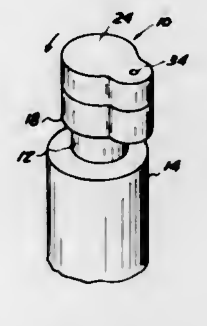
Harold Henry Anderson, Glasgow, Scotland, assignor to G. & J. Weir Limited
Filed Dec. 28, 1965, Ser. No. 516,971
Claims priority, application Great Britain, Dec. 30, 1964, 52,757/64
19 Claims. (Cl. 220—14)



1. A seal for use in sealing an annular space defined by first and second members held rigidly relative to each other, said seal including an annular protrusion outstanding from the periphery of one of said members, an endless metal seal ring abutting one side of the protrusion and an annular closure plate abutting against the seal ring and the other of said members, said ring having parallel bearing faces, said faces being perpendicular to the direction of any force acting on the plate tending to open the space, to ensure that any force within the space trying to open the space forces the plate into closer engagement with the ring.

3,352,445
CAPTIVE CLOSURE FOR A CONTAINER

Solomon Cochin, 2124 Michigan Ave., Detroit, Mich. 48216
Filed July 18, 1966, Ser. No. 566,078
3 Claims. (Cl. 220—30.5)



1. Closure means for a container having a cylindrical, externally threaded neck open at its extreme end, comprising:

- (a) a collar member having an internally threaded bore for engaging the threaded neck of said container, said collar being movable in directions parallel to the axis of said neck between first and second axially spaced positions and having a first laterally projecting lug;
- (b) a cap member having a top portion and an annular portion depending from said top portion, said annular portion being internally threaded so that said cap can be threadably mounted on the neck of said container to sealingly engage the open end of said neck, said cap member having a second laterally projecting lug;
- (c) pin means connecting said first lug to said second lug so that said cap member is pivotal from a lateral position clear of the open end of said neck to an axial position over the open end of said neck when said collar is in said first position, and said neck interferes with the movement of said cap member from said lateral position toward said axial position when said collar member is in said second position, and said cap member being axially movable on said neck by rotating said cap member and said collar member together as a unit on said neck.

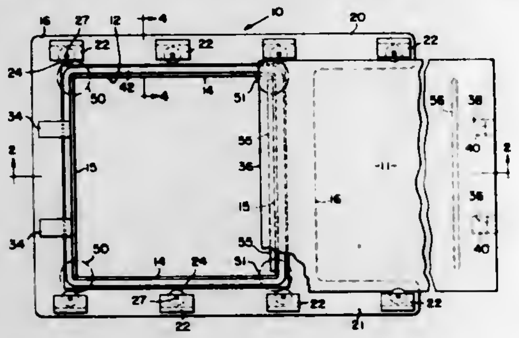
3,352,446
CLOSURE APPARATUS FOR PRESSURE CHAMBER

Edgar L. Anderson, Penfield, and Norman E. Lauterbach, Pittsford, N.Y., assignors to Wilmot Castle Company, Rochester, N.Y., a corporation of New York
Filed June 9, 1965, Ser. No. 462,653
13 Claims. (Cl. 220—41)

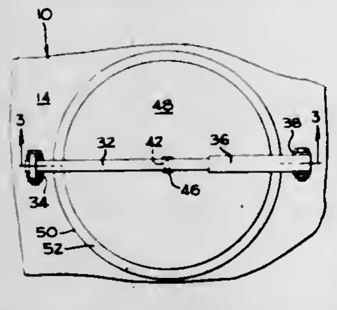
1. Improved apparatus for combination with a pressure vessel member having an opening and a door member for closure of said opening, said improvement comprising in combination therewith:

- (a) means between said members adapted for supporting door member for movement between open and closed positions with said opening,
- (b) inflatable seal means between said members around said opening when in said closed portions, and
- (c) means between said members including a shoulder

on at least said door member responsive to movement of said door member to said closed position inflating at least a portion of said seal into sealing relationship with said members thereby to seal said members in presure tight relationship around said opening.

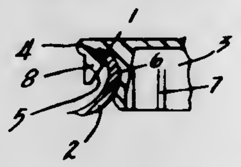


3,352,447
CONTAINER CLOSURE
Herbert S. Hahn, Lansing, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,182
12 Claims. (Cl. 220—46)



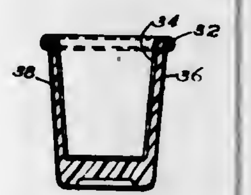
1. In a container having an opening provided in a wall thereof; seal engaging means provided on said wall and circumscribing said opening; said seal engaging means including a gasket: lid means mounted on said wall for pivotal movement between a sealing position and an open position; said lid means including resilient seal means arranged to be urged into sealing contact with said gasket when said lid means is pivoted to said sealing position.

3,352,448
RESILIENT CLOSURE
Jay G. Livingstone, 715 W. Market St., Akron, Ohio 44303
Filed Nov. 15, 1965, Ser. No. 507,762
10 Claims. (Cl. 220—60)



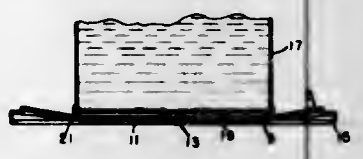
1. A fitment of resilient composition to fit over an outwardly flaring annular container wall which wall defines an opening into a container, the outside bottom of which fitment is of larger area than the end of the container wall, there being in the undersurface of the fitment a groove shaped to form a snug fit with the end portion of the container wall to a depth sufficient to hold the fitment on the container wall, the fitment being relatively thin at the bottom of the groove and relatively thick outside of the groove, the undersurface of the fitment tapering up into the groove over an area at least as large as the area of the end of the container wall so that when the container wall is pressed against the tapering area the resiliency of the fitment permits the portion of the fitment outside of the groove to flare outwardly and the end of the wall is guided into the groove by the tapering area, the fitment making contact with only that portion of the outer surface of the outwardly flaring portion of the wall of the container which is adjacent the rim of the container wall.

3,352,449
SLIP COVERS FOR RECEPTACLES FOR FOOD
Paula Jackson, 4609 N. Dover St., Chicago, Ill. 60640
Filed July 26, 1965, Ser. No. 474,574
1 Claim. (Cl. 220—63)



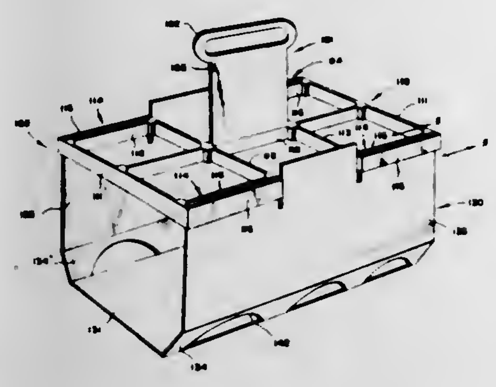
A slip cover assembly for dishes, bowls, cups, drinking glasses, platters, or the like, comprising an assembly having an upper cover and a lower cover, the upper cover having a central food receiving cavity in its upper surface, the exterior of said upper cover conforming closely to the inside of a food receptacle, on which the upper cover is intended to be used, the upper cover extending over the peripheral edge of said receptacle, and inward under said peripheral edge, whereby the said upper cover is removably retained on the receptacle, and the said lower cover having an upper cavity, closely conforming to the outside of said receptacle, and extending upward about the peripheral edge of said upper cover and said receptacle, to be removably retained on said receptacle and said upper cover, both of said covers being constructed of thin, transparent, tough, flexible film of resilient plastic, both covers being imperforate fitting closely against the edge and outer surfaces of said receptacle, and adhering thereto by virtue of the air pressure or the suction which tends to prevent the removal of the slip coverings, at right angles to the surface of the receptacle, the said slip covers revealing all the shape and decoration of the receptacle, through the transparent covering and protecting the receptacles, against contamination by food or dust, and being removable from the receptacle to be discarded, and to save the necessity of washing the receptacle.

3,352,450
TRAY FOR PAINT CAN
Julia Rawlins, Box 24, Pottersville, N.Y. 12860
Filed Mar. 10, 1966, Ser. No. 533,278
1 Claim. (Cl. 220—85)



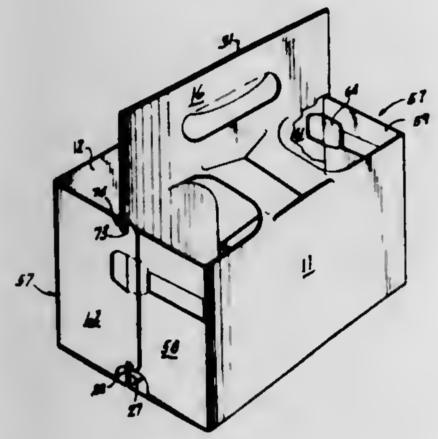
A tray for use with a paint can for collecting excess paint flowing and dripping down the sides of the paint can, said tray having an annular portion and a center portion, said annular portion being formed as a descending slope inwardly directly to said center portion, said annular portion having alternating raised portions of convex configuration and spaces, said raised portions being at a higher level than said spaces, said tray further having a channel groove formed therein and a rolled-under rim, said channel groove and rim having coplanar lower portions, said channel groove separating said annular portion from said center portion, said channel groove functioning as a collecting reservoir for the excess paint, and said center portion carrying a magnet to hold in disposed relationship on said tray a paint can having a metal bottom.

3,352,451
CONTAINER CARRIER
Glenn E. Struble, Hamilton, Ohio, assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 5, 1965, Ser. No. 430,620
20 Claims. (Cl. 220—102)



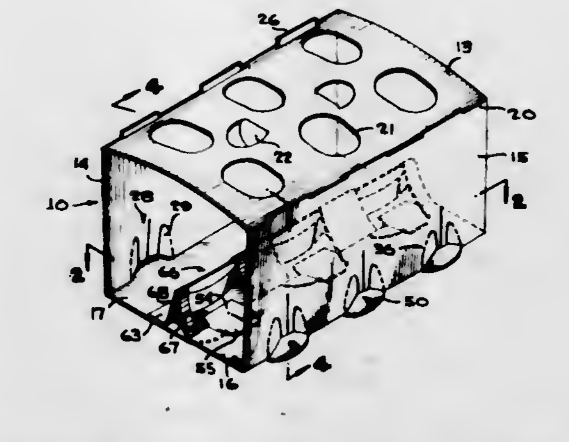
1. A container carrier comprising
rigid support means,
locking means integral with said rigid support means having
- a first channel passing completely through said rigid support means in a vertical direction,
- a second channel parallel to said first channel passing partially through said rigid support means in a vertical direction,
- a handle connected to said rigid support means,
- separator means connected to said rigid support means,
- and paperboard supporting means hanging from said rigid support means having opposite end portions of said paperboard supporting means engaging said locking means and locked to said rigid support means thereby.

3,352,452
BOTTLE CARRIER
Earl J. Graser, Monroe, La., assignor, by mesne assignments, to Olinkraft, Inc., West Monroe, La., a corporation of Delaware
Filed July 6, 1965, Ser. No. 469,597
2 Claims. (Cl. 220—111)



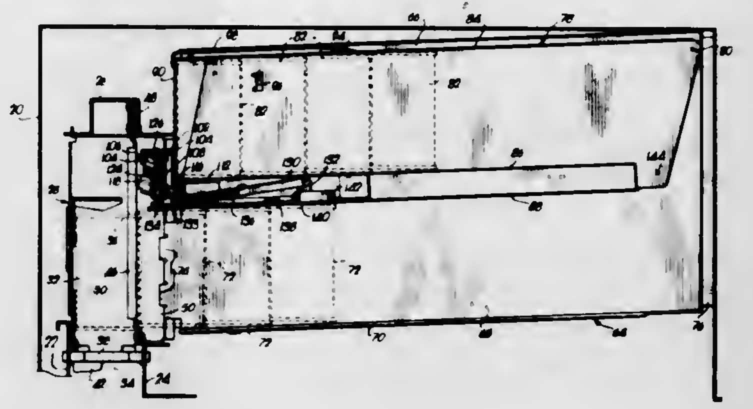
1. A basket-style article carrier fabricated from a single blank of packaging material which is susceptible of straightline gluing and operative in the erect condition to receive a plurality of articles comprising opposed side walls joined to opposed end walls, a centrally disposed handle member, a bottom wall, a longitudinal partition hinged to the bottom wall and fixed to said handle member, each said end wall defining a pair of overlapping panels connected by a locking flap, and lock means for detachably connecting said opposed end walls to the handle member when the carton is in the erect condition.

3,352,453
CARRIER WITH CENTER DIVIDER
Arthur J. Weiss, Bergenfield, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 5, 1963, Ser. No. 270,837
16 Claims. (Cl. 220—115)



1. A carrier for containers comprising top, and bottom panels, said bottom panels comprising an inner panel and an outer panel; a divider for said carrier comprising a substantially wedge-shaped member carried by said inner panel, said member having a plurality of sets of container-receiving recesses therein.

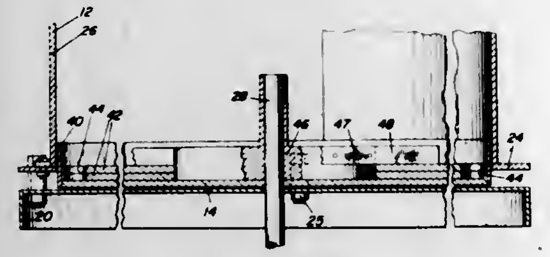
3,352,454
DOUBLE DEPTH ARTICLE RELEASE MECHANISM FOR VENDING MACHINE
Herman R. Craven, Prairie Village, Kans., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Apr. 18, 1966, Ser. No. 543,368
8 Claims. (Cl. 221—105)



1. In a dispensing machine:
a dispensing station for receiving an article to be dispensed, and having means presenting an opening for manual removal of said articles therethrough,
said station being provided with means defining an entrance for passage of articles thereinto;
a primary article-supporting and delivery structure adjacent said station for successively feeding articles supported thereby to said station through said entrance;
a secondary, shiftable article-supporting and delivery structure for successively feeding articles supported thereby to said station after exhaustion of said first structure;

means mounting said secondary structure for movement from a normal, article-storing position clearing the articles supported by said first structure to an article-feeding position where the secondary structure is disposed to direct articles therefrom toward said entrance;
means coupled with said secondary structure and operable after exhaustion of the first structure for shifting the secondary structure form said normal position to said article-feeding position;
a shiftable member mounted for movement along a path of travel toward and away from a disposition in blocking relationship to said entrance; and
consumer actuated means coupled with said member for shifting the latter to said disposition during dispensing of an article from said station,
said secondary structure shifting means including means biasing the secondary structure toward said article-feeding position, and a device for releasably maintaining said secondary structure in said normal position against the action of said biasing means,
said device having an article sensor for detecting delivery to said station of the last to be delivered article from said primary structure, a shiftable component mounted for movement into said path in response to said detection of delivery of the last to be delivered article from said primary structure, whereby subsequent dispensing of the last-mentioned article causes engagement of said member and said component, and means responsive to said engagement for releasing said secondary structure for movement to said article-feeding position under the action of said biasing means.

3,352,455
SORTER FOR NON-MAGNETIC AEROSOL VALVES AND OTHER CLOSURES HAVING ATTACHED TUBES, ETC.
Kazmier Wysocki, 293 Hudson St., Hackensack, N.J. 07307, and Thomas J. Benichasa. Hackensack, N.J.; said Benichasa assignor to said Wysocki
Filed July 8, 1966, Ser. No. 563,755
12 Claims. (Cl. 221—167)

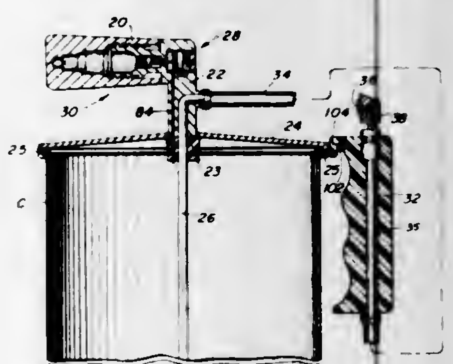


1. A sorter for delivering oriented and aligned valve bodies having dip tubes from a bin containing a randomly arranged mass thereof to a discharge point comprising, in combination, a disc rotatable about an inclined axis and forming a part of the bottom of the bin; a plurality of circumferentially spaced, valve body receiving pockets formed in the surface of said disc and being of greater diameter than the body of the valves; a pick-off chute positioned adjacent and extending to the surface of said disc to engage the depending dip tubes of valve bodies received in said pockets when elevated by rotation of said disc, and inclining downwardly to remove the valve bodies from the disc pockets and convey them by gravity to the discharge point; and means for rotating said disc to effect gravity deposit of the valve bodies into the disc pockets from the bin and the depending of the dip tubes from their bodies in the pockets to orient them by gravity during rotary elevating movement of the pockets to said pick-off chute; and means positioned adjacent the upper end of said pick-off chute and operable to assist the orientation of elevated valve bodies in said pockets.

3.352,456
COMBINED PRESSURE REGULATING AND CARTRIDGE PIERCING ASSEMBLY
John W. Swineford, Glenshaw, Pa., assignor to Goss Gas, Inc., Glenshaw, Pa., a corporation of Pennsylvania
Filed Jan. 3, 1966, Ser. No. 518,251
6 Claims. (Cl. 222—5)

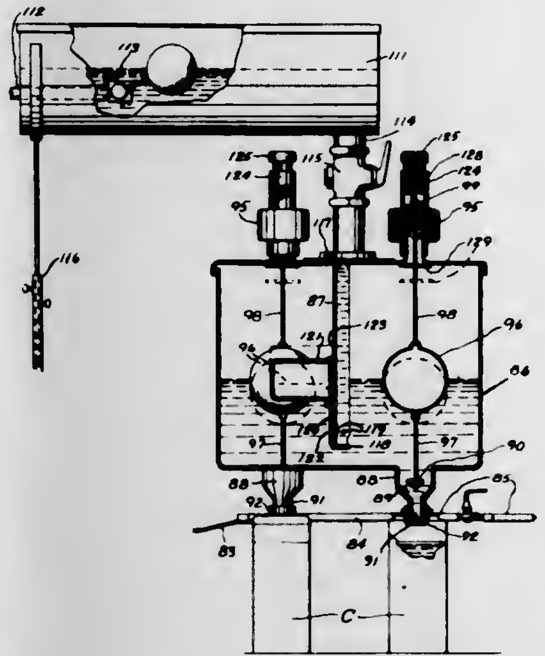
1. In combination, an elongated housing having a cavity therein for receiving a compressed gas cartridge, at least one conduit in the wall of said housing extending parallel to and adjacent said cavity, threads surrounding a portion of said cavity, a combined pressure regulator and cartridge piercing unit comprising an elongated body threadedly received within said cavity, a longitudinal passageway in said unit adapted to receive compressed gas from said cartridge, a wall extending transversely of said longitudinal passageway and dividing the same into a first chamber and a second chamber, said transverse wall having an opening therethrough providing communication between said first and second chambers, at least one outlet conduit in said elongated body connecting said second chamber to said conduit in the wall of said housing, means in said first chamber for piercing said cartridge when the pressure regulator and cartridge piercing unit is threaded into said cavity, valve means for controlling the flow of gases from said first chamber into the second chamber through the opening in said transverse wall, and means in said second chamber for operating said valve means to regulate the flow of gases into said second chamber in response to the pressure of gases within said second chamber.

3,352,457
AEROSOL DISPENSING ATTACHMENT
Gerald T. Tracy, Clarendon Hills, and Richard D. Zenger, Lisle, Ill., assignors to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 15, 1965, Ser. No. 496,585
9 Claims. (Cl. 222—52)



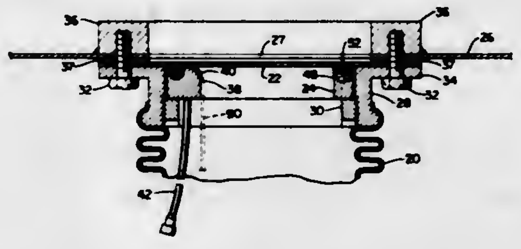
1. A dispenser unit for removable attachment to a can adapted to hold fluent material therein, said unit comprising, in combination,
(a) a main body unit, including a combination seal support and seal ring assembly adapted to closely surround an opening in the top of said container and bear on the top panel of said container to form a gas-tight seal between said main body and the top of said container;
(b) means for attaching said dispenser to said can, said means being attached to said main body;
(c) a regulator body attached to said main body;
(d) a cover for said regulator body, said regulator body and said cover combining to define therein means for receiving a high pressure gas cylinder;
(e) a gas pressure regulator including a low pressure gas chamber disposed in said regulator body;
(f) a gas pressure passage extending through said combination seal support and seal ring assembly and adapted to connect said low pressure chamber with the interior of said can;
(g) product passage means extending through said combination seal support and seal ring assembly and adapted to communicate with exterior product dispensing conduit means,
(h) flexible product dispensing conduit means connected to said product dispensing passage; and
(i) an applicator unit, including a dispensing valve means therein, operatively attached to said flexible product dispensing conduit means.

3,352,458
CONTAINER FILLING APPARATUS
Ward C. Cramer, 81 Woburn St., Medford, Mass. 02155
Filed May 14, 1964, Ser. No. 367,501
9 Claims. (Cl. 222—66)



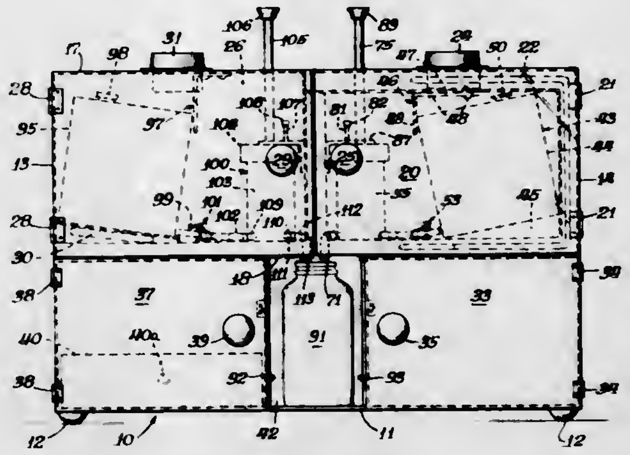
1. In a container filler, a delivery tank having a downwardly opening outlet and a delivery valve in control of said outlet, a surge tank located above said delivery tank and including an inlet for placing it in communication with a large volume liquid supply source and a float-controlled valve in control of said inlet, a conduit effecting gravity communication between said tank and including a float-controlled shut-off valve in said delivery tank, a float within said delivery tank and connected to said dedelivery valve and operable to open said delivery valve when a predetermined liquid level exists in said delivery tank, electrically operated means to close and hold closed said delivery valve, means to control the volume delivered by said delivery valve when it opens under the influence of said float when said electrically operated means is de-energized, and means to control said delivery valve for a series of cycles, each including an open interval in which said electrically operated means is de-energized and a closed interval in which said electrically operated means is energized, the valve opening, the cycle, and the liquid head being so related that the volume of liquid flowing into the delivery tank during each cycle is equal to that flowing through the outlet during an open interval of said delivery valve.

3,352,459
ROLL BAR EXPLOSIVE CUTTER MECHANISM
William H. Sustrich, 4022 W. Eastman Ave., Denver, Colo. 80236, and Gus Francis, 29 Palo Club Circle, Denver, Colo. 80209
Filed Sept. 12, 1966, Ser. No. 578,640
25 Claims. (Cl. 222—85)



1. Apparatus for rapidly voiding containers of fluids comprising: at least a first explosive cutter to be located at a first position on a container for cutting out a first portion thereof; activating means for said first explosive cutter; at least a second explosive cutter to be located at a second position on said container for cutting out a second portion thereof; activating means for said second explosive cutter; at least one of said explosive cutters operative to partially cut out its respective portion to leave the portion attached to said container by a hinge portion; and actuating means operative by movement of said respective cut out portion for actuating the activating means for the other explosive cutter.

3,352,460
STORAGE AND DISPENSING DEVICE FOR LIQUID INFANT FORMULA
Ben B. Herring, 229 S. Chase, Lombard, Ill. 60148
Filed Mar. 28, 1966, Ser. No. 537,752
5 Claims. (Cl. 222—129.4)

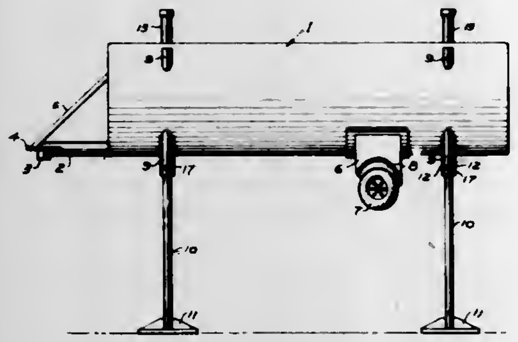


1. A sanitary device for the storing and dispensing of infant formula of the type having at least two liquid parts, one liquid part of which must be kept refrigerated until used, comprising a generally vertically disposed cabinet having an upper part and a lower part, a first refrigerator chamber on one side of the lateral center of said upper part and a second chamber on the other side of the lateral center of said upper part, said chambers having a common vertical wall adjacent the lateral center of the cabinet, a bottle receiving chamber in said lower part of the cabinet disposed beneath the common vertical wall between the first and second chambers in the upper cabinet part and extending a distance to each side thereof, a liquid dispensing means in said first refrigerator chamber, a liquid dispensing means in said second chamber, a liquid container in said first refrigerator chamber adjacent said dispensing means in said chamber, a liquid container in said second chamber adjacent to said dispensing means in said chamber, each of said containers tilted within said chambers and connected at their bottoms to said dispensing means, a dispensing nozzle extending downwardly

from each dispensing means in each of the first and second chambers into the top of the bottle receiving chamber in the lower part of the cabinet, and a bottle in said bottle receiving chamber directly below said dispensing nozzles whereby the arrangement of the chambers and the tilting of the containers produces a sanitary dispenser which avoids residues of liquid formula parts in the dispensing means to thereby avoid the dispensing of stale or spoiled infants' formula.

3,352,461
TRANSPORTABLE WATER TOWER

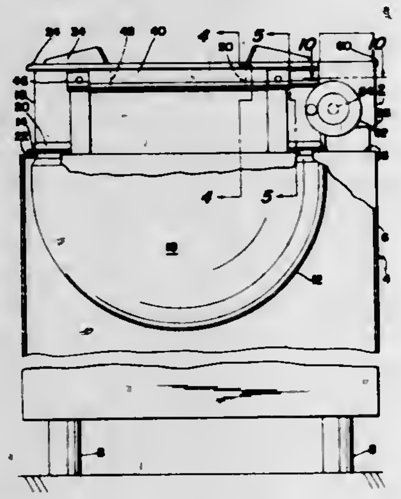
Adolfo Dascanio, Los Angeles, Calif., assignor to Southwest Welding & Manufacturing Co., Alhambra, Calif., a corporation of California
Filed Apr. 19, 1966, Ser. No. 543,613
5 Claims. (Cl. 222—160)



1. A transportable water tower comprising:
(a) an elongated water tank having a horizontal axis;
(b) a spout at its forward end;
(c) a trailer hitch carried by said spout for supporting the forward end of said tank;
(d) a trailer wheel mounting structure secured to said tank, said tank and spout forming the sole connection between said mounting structure and said trailer hitch;
(e) means for supporting said tank in a raised position;
(f) and trailer wheels connected to said mounting structure for supporting said tank for transportation, said wheels being suspended from said mounting structure when said tank is raised.

3,352,462
COOKING APPARATUS

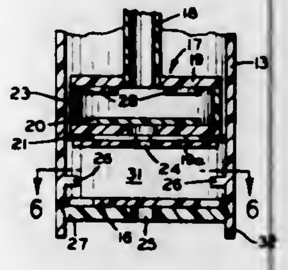
James R. Mecredy, Lakewood, and Robert M. Wolaver, South Euclid, Ohio, assignors to The Cleveland Range Company, Cleveland, Ohio, a corporation of Ohio
Filed May 27, 1966, Ser. No. 553,394
17 Claims. (Cl. 222—166)



1. In a cooking apparatus for handling and/or preparing relatively large quantities of food items or the like, said apparatus comprising a support frame, a kettle having an open top portion and a closed lower portion, pivot means operably connecting the kettle wall adjacent the upper top thereof, to the top of the frame for pivotal movement of the kettle about a horizontal axis, said frame being of a generally hollow construction with the top portion of the kettle projecting upwardly therefrom and with the lower portion of the kettle projecting downwardly within said frame, and a generally self-contained drive gear mechanism mounted adjacent the top of said frame and entirely above the lower portion of said kettle, said drive gear mechanism being disposed laterally adjacent one side of said pivot means and operably connected thereto for pivoting the kettle from a generally vertically oriented position into a generally horizontally oriented position about said horizontal axis for discharging the contents therefrom, whereby a substantially constant mechanical speed is imparted to the kettle throughout its entire range of pivotal movement thereof.

3,352,463
FLUID DISPENSER

Robert M. Berler, 3 Bruce Lane, Westport, Conn. 06880
Filed Oct. 20, 1965, Ser. No. 498,615
10 Claims. (Cl. 222—321)



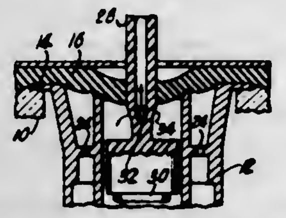
1. A liquid pump adaptable for pumping liquid through the top of a container comprising a cylinder affixed to the filler aperture at the top of the container and arranged to extend into the liquid to be dispensed, said cylinder having a closure near the bottom, said closure being provided with an opening to permit liquid to flow therein from the surrounding container; a disc valve positioned over and arranged to close said opening as fluid pressure from fluid contained in said cylinder moves said valve downward into contact with said closure thereby blocking said opening; means to restrict the upward movement of said disc valve in said cylinder; a manually reciprocative dispending tube through which liquid is dispensed from the interior of said cylinder extending into said cylinder; a plunger affixed to the lower end of said tube comprising a chamber into which liquid entering said cylinder through said disc valve passes through an opening in the bottom of said chamber and from which it is dispensed through said tube; a free-floating closure disc confined in said chamber to close the opening in the bottom of said chamber on the upstroke of said plunger; and means in said chamber to prevent said disc from blocking the passage into said tube as said plunger is depressed.

3,352,464
PRESSURE FLUID METERING AND DISPENSING CONTAINER VALVES

John Frangos, Brooklyn, N.Y., assignor to Revlon, Inc., New York, N.Y., a corporation of Delaware
Filed June 15, 1966, Ser. No. 557,799
7 Claims. (Cl. 222—402.2)

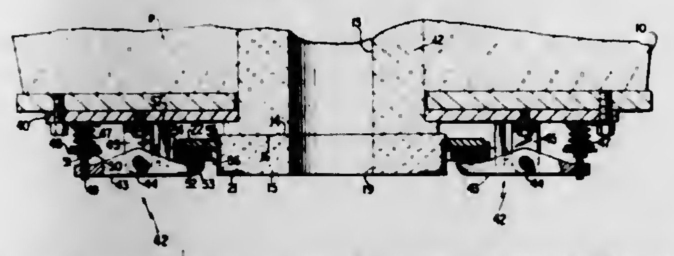
6. A metering valve for releasing pressurized fluid from a container in measured amounts comprising a metering chamber within said container and having communication therewith for the passage of fluid from the container to the chamber, a yieldable gasket, aligned with said chamber, having an opening therethrough, a valve stem, extending

through said opening and having a terminal orifice therein, said valve stem having a peripheral cam face adapted upon limited movement to depress said gasket into contact with said metering chamber to close the same and upon further movement to align said orifice with said metering chamber and resilient means normally positioning said terminal orifice outside said metering chamber, beyond the outer face of said yieldable gasket.



3,352,465
REFRACTORY CLOSURE MEMBER FOR BOTTOM POUR VESSELS

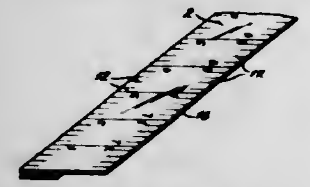
James T. Shapland, Churchill, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed May 6, 1965, Ser. No. 453,730
5 Claims. (Cl. 222—512)



1. In a bottom-pour vessel for teeming steel, having a nozzle in the bottom thereof and a panel slidable on said bottom to control flow through said nozzle, the improvement comprising a row of levers of the first class pivotedly attached to the bottom of said vessel on each side of said panel normal to the path thereof, a rail on each side of said panel parallel to said path engaged and supported by the inner ends of the adjacent levers, a bearing surface on each side of said panel engaged and supported by the adjacent rail, and means urging the outer end of each lever downward.

3.352,466
SHADE EDGER

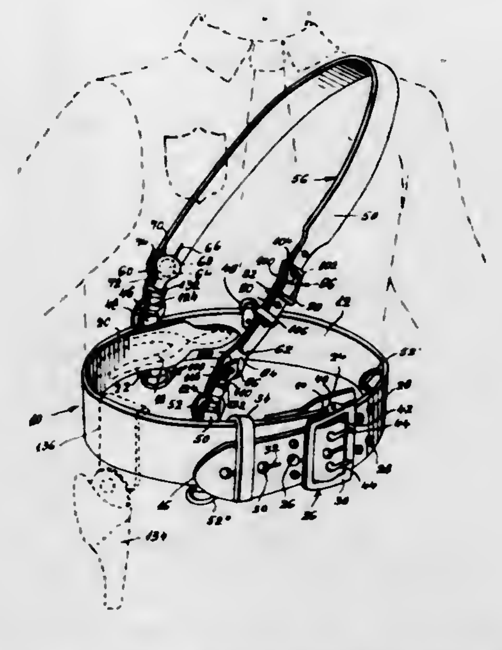
Jack S. McAllister, 467 N. 73rd St., Centreville, Ill. 62206
Filed Dec. 7, 1964, Ser. No. 416,374
7 Claims. (Cl. 223—38)



1. A shade edger adapted to form a single turn sewing hem of substantial width and a batten pocket with a fold along the pull edge of the shade, comprising an upper and a lower edger blade and a spacer-stop member intermediate said upper and lower blades, said blades being long and relatively narrow and having parallel edges, and said spacer-stop member defining a stop line at a uniform and predetermined distance from said blade edges, said blades being spaced apart along said edges a distance sufficient to form a gap with a mouth defined by said edges to admit an edge of the shade cloth, the stop line defined by the spacer-stop member being spaced from one of the mouth-defining edges of said blades a distance which determines the desired width of the sewing hem and the said stop line being spaced from a blade edge in the opposite direction from the said mouth-defining edge a distance to define the width of the batten pocket from the fold to the inner edge of the sewing hem.

3,352,467
RELEASABLE SHOULDER STRAP FOR SAM BROWNE BELTS

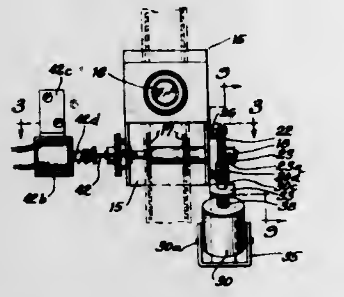
Henry Parlante, Flushing, and Frank Parlante, Brooklyn, N.Y. (both % Courtlandt Boot Jack Co., Inc., 270 Lafayette St., New York, N.Y. 10012)
Filed July 5, 1966, Ser. No. 562,683
1 Claim. (Cl. 224—5)



A belt of the Sam Browne type comprising a waist-encircling body of leather, a leather shoulder strap and coacting means on the body and on the ends of the shoulder strap for fastening the shoulder strap ends to the waist-encircling body, said shoulder strap ends adapted to break away from the waist-encircling body automatically when pulling pressure is exerted thereupon, the coacting means on the body including opposed metal rings hingedly mounted on the top edge of the body, the coacting means on the ends of the shoulder strap including spring metal clips hingedly mounted on the ends of the shoulder strap, each spring metal clip including a rectangular shaped body folded upon itself midway its ends forming a bulged-out body folded upon itself midway its ends forming a bulged-out body portion open at the sides and closed by an elongated closed loop at one end, said body being open at the other end, the open end being formed with inturned ends, in releasable engagement with each other, the ends terminating in outwardly flaring curved end edges to facilitate separation of the engageable ends when pressure is brought to bear against the flaring end edges, the hinged mounting of the spring metal clips including a leather strap folded upon itself and having one end secured to one end of the shoulder strap, the other end of the folded strap being secured to a headed lug on the said end of the shoulder strap, a metal ring hingedly secured to said folded strap, a looped end of one of the clips hingedly secured to said metal ring, a strap extension having one end detachably secured to the other end of the shoulder strap, a length of strap folded upon itself and having one end secured to one side of the other end of said strap extension, the other end of the folded strap looped around said other end of the strap extension and secured to the other side of said other end of the strap extension, and a metal ring hingedly secured to said latter folded strap, the looped end of said other clip hingedly secured to the latter metal ring.

3,352,468
SLIDE FILM ADVANCE MECHANISMS

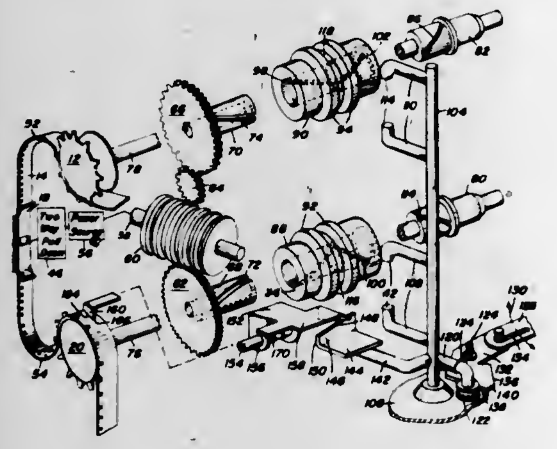
Robert L. Shoemaker, 1017 Elm St.,
Winnetka, Ill. 60093
Filed May 24, 1965, Ser. No. 457,990
9 Claims. (Cl. 226—47)



1. An apparatus for periodically advancing a slide film in a projector the distance of one slide, comprising a unit adapted to build up a storage of power during the intervals between film advances and operable to advance the film, a control for checking the operation of the unit during said intervals and releasing the unit for operation when the film is to be advanced, and means limiting the advance to said distance, said unit being a motor operating through a worm pinion and a gear to wind a spring, and the motor advancing with the pinion when the spring becomes wound and the gear presents strong resistance as a result, and switch means disconnecting the motor on its advance.

3,352,469
AUTOMATIC LOOP-FORMING AND THREADING MECHANISM

Fred W. Woodhouse and William S. Owen, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 19, 1962, Ser. No. 188,770
4 Claims. (Cl. 226—91)



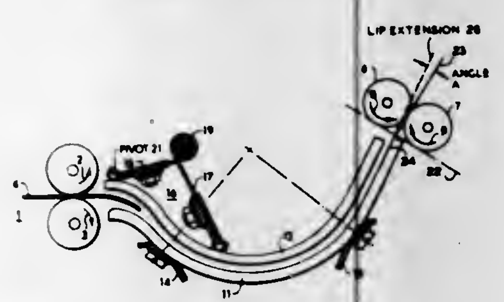
1. An automatic film-threading mechanism for motion picture apparatus which includes a film advancing means mounted on a shaft and adapted to move a film, a driving means including a shaft substantially coaxially arranged relative to said shaft of said advancing means for normally driving said shaft of said advancing means to move a unit length of said film in a given period of time, a film feeding means located after said advancing means, and coupled to said driving means for intermittently advancing past a projection aperture the same unit length of film in a given period of time that is moved by said advancing means, the combination comprising:

(a) loop-forming means located intermediate said film feeding means and said film advancing means during threading of the apparatus for guiding the film in a curved path as it travels successively from said advancing means, to said film feeding means,

(b) means concentrically arranged relative to said drive shaft of said driving means and said shaft of said advancing means and movable from a normal position to an operative position for momentarily reducing the rotational speed of said advancing means relative to said driving means to shorten the length of film beteen said advancing means and said film feeding means.

3,352,470
ADJUSTABLE GUIDES FOR WEB THREADING APPARATUS

Robert H. Powers, Rochester, N.Y., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Aug. 9, 1965, Ser. No. 478,244
2 Claims. (Cl. 226—91)



1. A web processor assembly comprising:

(a) an upper guide member;

(b) a lower guide member positioned with respect to said upper guide member to provide a narrow conduit through which said web may pass to be processed, said lower guide member having a lip portion over which said web passes upon leaving said conduit;

(c) means for conveying said web to be processed into said narrow conduit;

(d) a pair of exit rollers for conveying said web out of said narrow conduit, said exit rollers having a first imaginary plane associated therewith, tangent to each exit roller of said pair of exit rollers and a second imaginary bite plane associated therewith and tangent to each roller of said pair of rollers along their line of contact and perpendicular to said first plane and intersecting said first plane along a given line of intersection;

(e) lower guide member positioning means for positioning said upper lip of said lower guide member substantially at said given line of intersection of said first and second planes, said upper lip being positioned relative to said exit rollers so that its extension line forms an acute angle between 5° and 20° with second plane;

(f) support means partially defining said conduit;

(g) a cross brace member having at least one elongated slot formed therein adapted to receive a machine screw;

(h) means for mounting said support means upon said cross brace member;

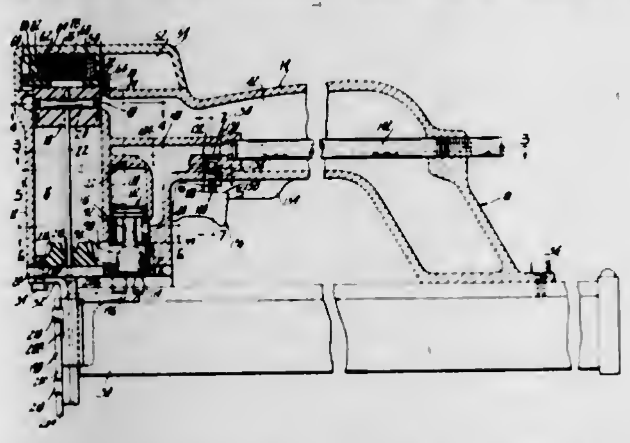
(i) a housing having a tapped hole formed therein; and

(j) a machine screw positioned within said elongated slot of said cross brace member and said tapped hole of said housing for mounting said cross brace member to said housing.

3,352,471
FASTENER DRIVING APPARATUS

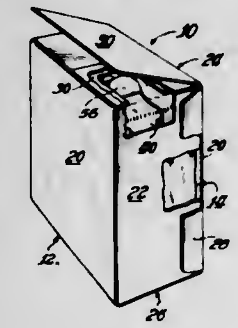
Edward I. Fisher, Westerly, R.I., assignor to Bostitch Incorporated, East Greenwich, R.I., a corporation of Rhode Island
Filed Oct. 5, 1965, Ser. No. 493,110
23 Claims. (Cl. 227—7)

1. A pneumatic driving tool comprising a cylinder having an open end, a piston disposed in said cylinder for axial movement between first and second positions including a driving stroke in a direction away from the open end of said cylinder, a fastener driving element secured to said piston at one end thereof, a piston stop spaced above said open end of said cylinder including a first surface portion for engaging the piston surface opposed to said one end to provide an annular seal between said piston stop and said piston when said piston is disposed in said first position, means defining an exhaust passage having an orifice disposed for communication with said opposed surface of said piston inside the area of said annular seal, a reservoir chamber for supplying fluid pressure to said cylinder through the open upper end thereof in a piston driving stroke, a first port adjacent said open end of said cylinder, said piston when in said first position having a surface portion protruding beyond said open end of said cylinder for blocking communication between said reservoir chamber and said cylinder through said first port, said first port being fully open during the driving stroke of the piston away from said piston stop, and control means maintaining a normal pressure differential across said piston when the latter is disposed in said first position urging said piston into said first position operable to change said normal pressure differential into one resulting in movement of said piston away from said piston stop whereby said piston is moved through a driving stroke under the action of the pressure in said reservoir chamber.



3,352,472
CONTAINER FOR FROZEN PRODUCT

Jan G. Cummings, Altona, and Richard N. Maskell, Chicago, Ill., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 576,287
11 Claims. (Cl. 229—14)



1. A container for confining a normally liquid product in a frozen state, the combination comprising:

(a) an exterior box of paperboard having opposed interconnected pairs of parallel major and minor side walls, and opposed parallel top and bottom walls;

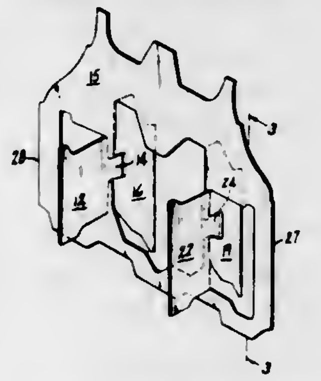
(b) each major side wall of the box having approximately equal horizontal and vertical dimensions, and each minor side wall of the box having a horizontal dimension that is approximately one-half that of the major side wall;

(c) an interior bag of a plastic film material disposed within the paperboard box and supported by the side walls thereof, and confining said product;

(d) said bag being filled with liquid product to a height relative to the box to below the top wall thereof, so that the liquid product, when subjected to freezing conditions, can freeze initially about the horizontal perimeter and thereafter freeze along a vertically located central core which expands as a hump against the top wall of the box.

3,352,473
PARTITION STRUCTURE TO SEPARATE ARTICLES

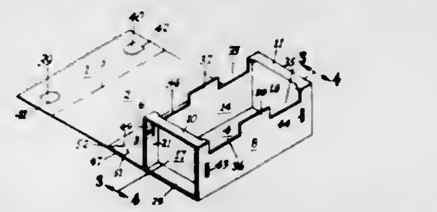
Earl J. Graser, Monroe, La., assignor, by mesne assignments, to Olinkraft, Inc., West Monroe, La., a corporation of Delaware
Filed Mar. 24, 1966, Ser. No. 537,210
3 Claims. (Cl. 229—15)



1. A combined longitudinal and transverse partition structure fabricated from a single blank of cellulosic board material and useful to provide a cushion between frangible articles packaged in groups comprising a main body portion defining a single ply longitudinal partition, a pair of cooperating flaps each separately connected to the main body by an individual hinge and each flap defining a transverse partition, a first flap being rotatable about its hinge to a position generally normal to the main body and projecting from a first side of the longitudinal partition, a second flap being rotatable about its hinge to a position generally normal to the main body and projecting from a second side of the longitudinal partition, tab means formed integrally with and constituting a continuous part of one of the flaps and defining a cutout from the other flap operative when both said flaps are in the normal position to overlay a portion of the other flap effective to block rotation of both said flaps in a predetermined direction.

3,352,474
RECESSED END CARTON

James H. Racer, Cincinnati, Ohio, assignor to Senco Products, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed May 5, 1966, Ser. No. 547,854
6 Claims. (Cl. 229—16)



1. A one-piece carton structure comprising a bottom wall, front and rear wall projecting upwardly from the opposite side edges of said bottom wall, a pair of strap members projecting rearwardly from the upper edge of said front wall at the opposite ends thereof, a second rear wall connected along its upper edge to the opposite ends of said strap members and projecting downwardly therefrom, said second rear wall being juxtaposed to the inner surface of said first named rear wall, a top wall connected

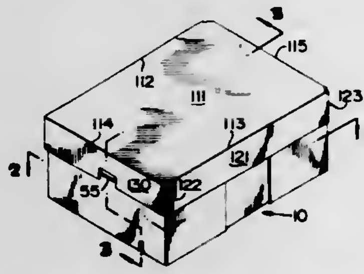
to the upper edge of said first named rear wall and an outer front wall connected to the opposite side edge of said top wall, end walls connected to the inner side edges of said strap members, said inner end walls projecting downwardly from said strap members and spaced inwardly from the end of said front, rear, and bottom walls by a distance substantially equal to the width of said strap members, flap members hingedly connected to the opposite side edges of said end walls, said flap members being struck from adjoining areas of the front wall and the second rear wall of the carton, said flap members projecting outwardly toward the adjacent ends of said front and rear walls and juxtaposed to the inner surfaces thereof, and attachment means securing said flaps to the wall surfaces to which they are juxtaposed, said attachment means comprising displaceable tongues formed in said outer front wall adjacent the opposite ends thereof, said first named front wall and the end flaps juxtaposed thereto having mating tongue receiving slots formed therein, whereby said flaps may be secured to the wall surfaces to which they are juxtaposed.

3,352,475
CORRUGATED CARTON

Michael J. Centanni, New Orleans, La., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Nov. 19, 1965, Ser. No. 508,658

7 Claims. (Cl. 229—34)



1. A carton blank comprising a sheet material body, said body including a generally polygonally shaped bottom panel defined by a plurality of fold lines, a first pair of walls joined to said bottom panel along a first pair of said plurality of fold lines, a second pair of walls joined to said bottom panel along a second pair of said plurality of fold lines, each of said second pair of walls including a pair of end panels foldable into overlying relationship to each other along a first fold line in generally spaced parallel relationship to one of said second pair of fold lines, a first pair of reinforcing panels joined to each of said first end panels along a third pair of fold lines, a second pair of reinforcing panels joined to each of said second end panels along a fourth pair of fold lines, said reinforcing panels being foldable along said third and fourth pairs of fold lines into overlying relationship with opposite surfaces of said side walls and a tear strip disposed adjacent and generally parallel to said first fold line in at least one of said first end panels and its associated reinforcing panels.

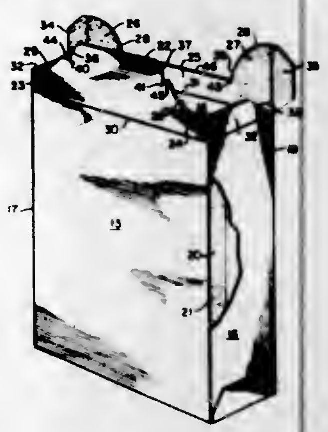
3,352,476
CARTON

Marshall I. Williamson, New York, N.Y., assignor to Federal Paper Board Company, Inc., Bogota, N.J., a corporation of New York

Filed Aug. 24, 1965, Ser. No. 482,051

3 Claims. (Cl. 229—39)

1. A carton blank having front and back face panels connected by fold lines with an intermediate side panel, one of the face panels having a second side panel connected thereto by a fold line and the second face panel supporting a glue lap, and foldable end flaps connected by score lines with the opposite ends of the respective face panels, the flaps on the opposite ends of the second face panel having each a wide mid-section whose width corresponds with that of the side panels and also having wing sections which are narrower, and the flaps connected to the opposite ends of the first face panel having wide wing sections whose width corresponds to the side panels and also having each a mid-section which is narrower, a narrow flap connected by a fold line with each end of each side panel, said narrow flaps each having one sloping end, and an ear member having sloping ends connected to each of the wide wing sections, with one sloping end of said ear adjacent the sloping end of the narrow flap.

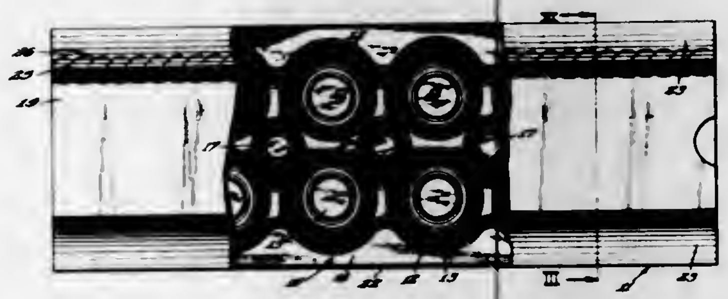


3,352,477
EGG CARTON

Alfred Eisenberg, 200 Hibbard Road, Wilmette, Ill. 60091

Filed July 21, 1965, Ser. No. 473,744

9 Claims. (Cl. 229—40)



1. In an egg carton and in combination with a closure sleeve therefor,

a cellular molded carton having a plurality of egg holding pockets therein having ovate bottoms and steeply inclined side walls extending upwardly therefrom,

an outer rim extending about the carton outwardly of the outer side walls of said pockets and defining the upper outer margin of the carton pockets,

a plurality of centerposts spaced along the center of the carton and forming upward continuations of the side walls of adjacent pockets of certain clusters of four pockets, and terminating at an elevation above the tops of the eggs contained in said pockets,

and at least one bridge extending across the carton and upwardly of said rim and terminating at the plane of termination of said centerposts and engaging the inside of the closure sleeve and retaining the closure sleeve from tilting with respect to the carton.

3,352,478
MERCHANDISE CONTAINER

Gerald L. Wood, Kansas City, Mo., assignor to Hallmark Cards, Incorporated, Kansas City, Mo., a corporation of Missouri

Filed June 6, 1966, Ser. No. 555,576

5 Claims. (Cl. 229—44)

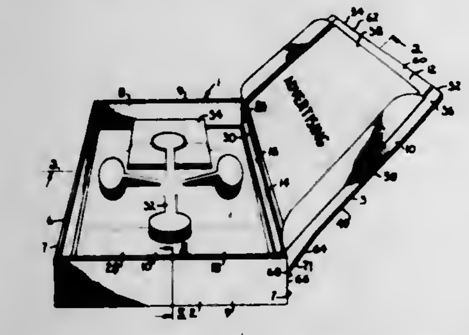
1. A container comprising:

(a) a box portion having an interior surface,

(b) means in said box portion for lining at least a portion of said interior surface,

(c) closure means hingedly connected to said liner means and engageable in a cooperative manner with said box portion to provide an enclosed container, said closure means including first and second portions connected by at least one fold line, said portions being secured in overlying relation whereby one of said portions defines an exterior surface of said closure means and said other portion defines an interior surface of said closure means,

(d) said box portion including a bottom panel and upstanding opposed side walls retained to said bottom panel, said liner means including a base portion and a wall portion with said base portion in overlying relation to said bottom panel and said wall portion being adjacent one of said side walls, said closure means being hingedly connected to the wall portion of said liner means,



(e) said liner and closure means being integrally formed and connected by a fold line, and

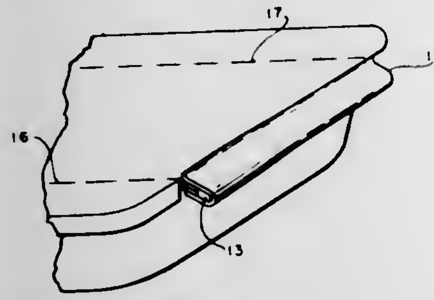
(f) said second portion of the closure means including means for providing a lip portion, said lip portion extending rearwardly of said fold line between said closure means and said liner means in overlying relation to the side wall of said box portion adjacent said wall portion, said lip portion being engageable with the exterior surface of said side wall to brace said closure means in a rearwardly inclined open position, said container including cooperative means on said box portion and said liner means to prevent movement of said wall portion of the liner means away from its adjacent side wall when the closure means is swung to said open position.

3,352,479
PACKAGE OPENER FOR SEALED PACKAGES

Thomas J. Mohs, Avon, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed May 12, 1965, Ser. No. 455,680

13 Claims. (Cl. 229—51)



1. A container comprising:

(a) a base;

(b) a plurality of sides on said base;

(c) a lip at the upper end of at least one of said sides having a tearable portion;

(d) a closure member in sealing engagement with the outer surface of the lip, having a tearable portion; and

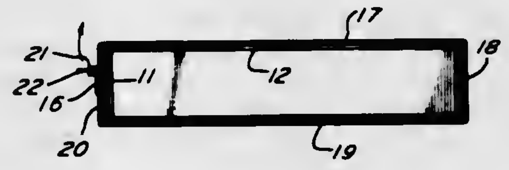
(e) a U-shaped rigid container opening member extending along a portion of said lip, at least a portion of one leg of which engages the inner surface of the lip, with at least a portion of the other leg engaging the outer surface of an edge portion of the closure member whereby on twisting the opening member upward, said tearable portion of the lip is first torn from the remainder of said lip, and then said tearable portion of the closure member is torn from the remainder of said closure member.

3,352,480
QUICK-OPENING SHRINK FILM PACKAGE AND PACKAGING METHOD

Harold M. Forman, 2510 Grant Road, Broomall, Pa. 19008

Filed May 4, 1966, Ser. No. 547,509

9 Claims. (Cl. 229—51)



1. A package which comprises:

(a) an item to be wrapped

(b) a piece of axially oriented thermoplastic film in tensioned, heat-shrunk juxtaposition to said item, said film including at least one heat-sealed edge;

(c) an elongated cutting member, the proximal portion of which is positioned between said item and said film and the distal end of which protrudes outwardly through said heat-sealed edge; and

(d) anchoring means for retaining said cutting member against displacement with respect to said film;

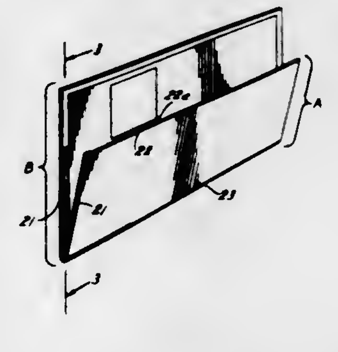
opening of said package being effected by pulling the distal end of said cutting member toward the proximal end thereof to cause progressive cutting of said film.

3,352,481
SOCIAL CORRESPONDENCE CARD CONSTRUCTION

Fred Kirchof, P.O. Box 1223, Scottsdale, Ariz. 85252

Filed Apr. 13, 1966, Ser. No. 542,316

1 Claim. (Cl. 229—92.1)



A social correspondence card construction which is adapted to be releasably self-sealed and which presents the appearance of a sealed private communication to the recipient thereof, comprising:

(a) a rectangularly shaped card substantially free of perforation and having upper and lower edges and being divided by a transverse scored fold line located closer to the bottom edge than to the top edge into

  (1) an upper panel, having substantially continuous sides, and

(2) a lower panel having substantially continuous sides, adapted to fold upwardly against said upper panel along said fold line;

(b) a writing area on said card including
 (1) the entire area of said lower panel, and
 (2) that portion of said upper panel which is masked by said lower panel when said lower panel is folded upwardly as aforesaid;

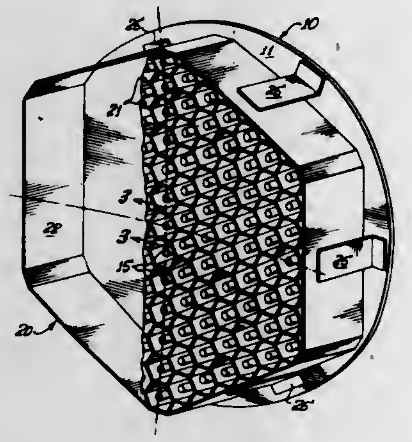
(c) a writing-free area on said card defined by that portion of said upper panel which remains visible when said lower panel is folded upwardly as aforesaid, said writing-free area including
 (1) A decorative emblem area horizontally located generally closer to the center of said card than to the sides thereof, and
 (2) a return address area;

(d) colored areas on said card for concealing self-sealing adhesive bands comprising
 (1) a border situated along the periphery of said card and extending inwardly thereof at least a distance corresponding to the thickness of said self-sealing adhesive bands, and
 (2) a lower portion of said decorative emblem area;

(e) self-sealing adhesive bands situated
 (1) along the sides of said card from the bottom edge upwardly to substantially the lower portion of said writing-free area,
 (2) along the lower portion of said decorative emblem area, and
 (3) along the lower edge of said card in a position to register with said lower portion of said decorative emblem area when said lower panel is folded upwardly as aforesaid;

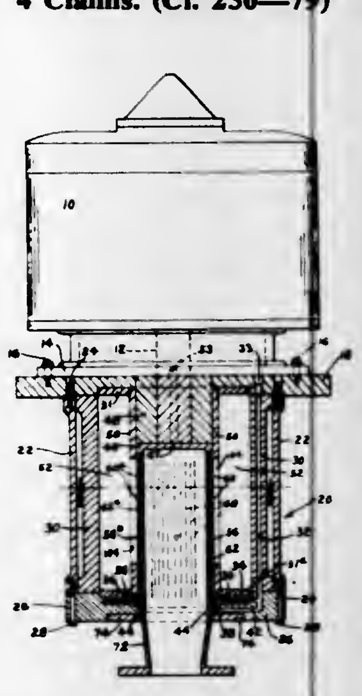
said bands, after sealing, being mutually releasable at the point of sealing without damage to the card substrate.

3,352,482
ION SPUTTER PUMPING COLLECTOR
Alvin T. Forrester, Los Angeles, and Julius Perel, Altadena, Calif., assignors to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California
Filed Sept. 13, 1965, Ser. No. 486,937
15 Claims. (Cl. 230—69)



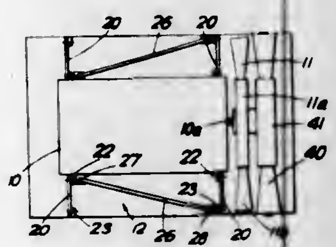
1. An ion sputter pump comprising:
(a) tubular grid means of reactive source material;
(b) collector means within said tubular grid means and electrically insulated therefrom;
(c) means for directing a collimated ion beam into said tubular grid means; and,
(d) means for connecting a source of DC potential between said tubular grid means and said collector means to establish electric field therebetween for deflecting the ions of said beam into impingement with the interior surface of said tubular grid means to cause sputtering of said reactive source material.

3,352,483
COMPRESSOR APPARATUS
John L. Allen, 1960 Commonwealth Ave., Boston, Mass. 02166
Filed Apr. 7, 1966, Ser. No. 540,960
4 Claims. (Cl. 230—79)



1. Compressor apparatus comprising supporting means having an impeller housing, a hollow valve plug in said housing fixedly supported by said means and having a peripheral groove extending completely around said plug, an impeller rotatably mounted in said housing and outside said plug, said impeller and plug having provision whereby they communicate to permit fluid to pass between them, said supporting means having a first passage therein adapted to communicate with an outside source of fluid, said means having a branch passage communicating with and extending angularly from said first passage and communicating with said plug groove, said plug having an interior passage therein extending angularly from said plug groove and having holes extending from its periphery inwardly and communicating with said interior passage, and actuating means operably supported by said supporting means and connected to said impeller.

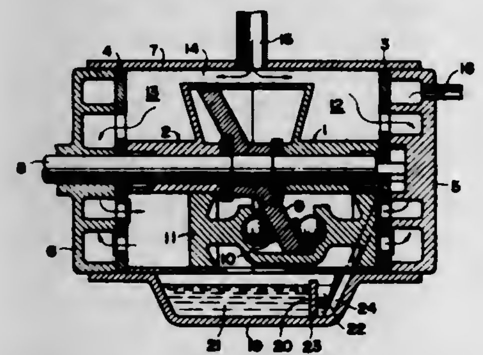
3,352,484
AIR MOVING APPARATUS
Alberto Jorge Morris, Dursley, England, assignor to R. A. Lister & Company Limited, Dursley, England, a British company
Filed Dec. 8, 1965, Ser. No. 512,325
14 Claims. (Cl. 230—116)



1. Air moving apparatus comprising:
(a) an internal combustion engine,
(b) an impeller carried on the engine crankshaft so that the engine and impeller together form a unit,
(c) the impeller having blades which project radially beyond the engine as viewed axially of the impeller,
(d) a cylindrical nacelle wall surrounding the engine and impeller unit,
(e) the tips of the blades being disposed close to the nacelle wall,

(f) the engine being spaced from the nacelle wall on all sides to provide an air flow path between the engine and the wall,
(g) mounting members extending from the engine to the nacelle wall to support the engine and impeller unit within the nacelle wall,
(h) bearing members disposed outside the nacelle wall,
(i) the bearing members being separately formed from the nacelle wall and
(j) the bearing members engaging the external surface of the nacelle wall at locations where mounting members engage the inner surface of the wall, in such manner that the nacelle wall is relieved of substantial mounting loads.

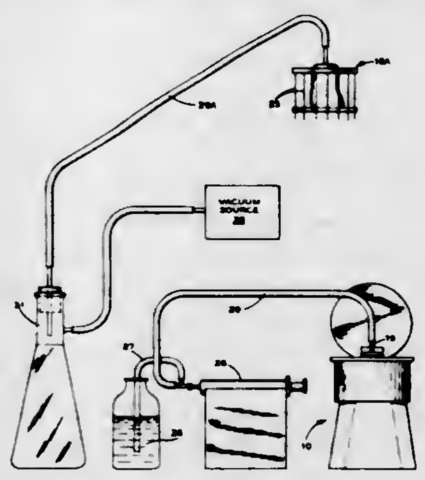
3,352,485
SWASH PLATE COMPRESSOR FOR USE IN AIR CONDITIONING SYSTEM FOR VEHICLES
Akira Niki, Kariya, Shōzō Nakayama, Chita-gun, and Takeshi Toriyama, Kariya, Japan, assignors to Toyoda Automatic Loom Works, Ltd., Kariya, Aichi Prefecture, Japan
Filed Oct. 22, 1965, Ser. No. 501,378
2 Claims. (Cl. 230—186)



1. A swash plate type compressor for use in an air-conditioning system for vehicles and the like, comprising a pair of cylinder blocks connected in series, an outer cylindrical casing enclosing said cylinder blocks, cylinder heads disposed within opposite ends of said outer casing, valve plates interposed between said cylinder heads and said cylinder blocks, the remote end portions of said pair of cylinder blocks each having a chamber therein, the adjacent portions of said cylinder blocks each having a longitudinal suction channel therein, the suction channels being aligned and connecting said chambers, said outer casing having an inlet port therein opening into said longitudinal suction channel, an oil sump beneath the cylinder blocks, and said cylinder blocks each having a circumferential oil return channel thereon and extending between the chamber in the cylinder block and the oil sump for leading the oil separated from the refrigerant gas directly into said oil sump.

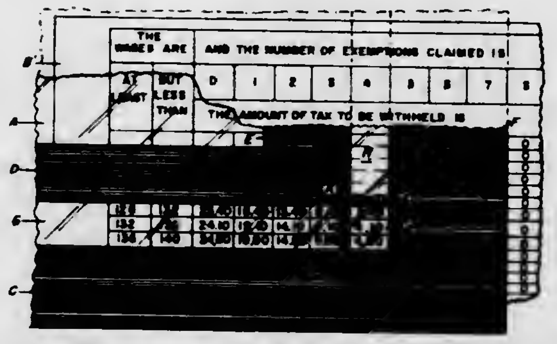
3,352,486
APPARATUS FOR WASHING PARTICLE MATTER
Mary B. Gibbs, Hyattsville, Md., assignor to Clay-Adams, Inc., New York, N.Y., a corporation of New York
Filed Apr. 30, 1965, Ser. No. 452,320
6 Claims. (Cl. 233—26)

1. Cell washing means for use with a plurality of test tubes, each test tube carrying a centrifuged blood specimen portion deposited at the lower end thereof, said washing means comprising means for supporting said test tubes in an upstanding arrangement, manifold means movable towards and away from said supporting means, said manifold means comprising a plurality of transfer tubings depending therefrom and in communication therewith, said transfer tubings being in a vertical arrangement, said manifold means being movable toward said supporting means with said transfer tubings in respective alignment with said supported test tubes for introducing said transfer tubings into the respective test tubes, said tubings having a length to locate the lower ends thereof at a point within said test tubes adjacent the deposit



therein, said manifold means including inlet means for admitting washing solution therein and the distribution thereof via said transfer tubings to the lower end portion of each test tube for washing the deposit therein.

3,352,487
VISUAL CHART READER
Merrill K. Olson, 1700 S. Williams Ave., Sioux Falls, S. Dak. 57105, and Opie C. Ter Meer, 990 N. Vista, Rialto, Calif. 92376
Filed Nov. 23, 1965, Ser. No. 509,372
1 Claim. (Cl. 235—89)



THE WAGES ARE
AND THE NUMBER OF EXEMPTIONS CLAIMED IS
AT LEAST
BUT LESS THAN
0
1
2
3
4
5
6
7
8
THE AMOUNT OF TAX TO BE WITHHELD IS

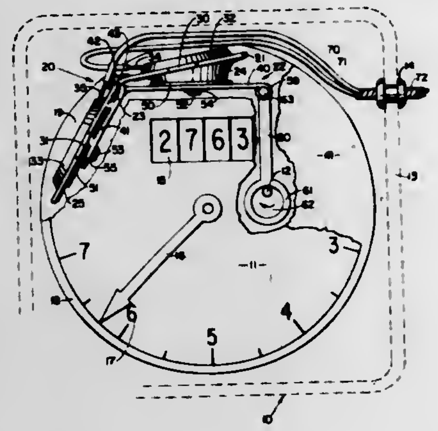
A visual chart reader for use with a chart having vertical aligned indicia and horizontally aligned indicia comprising a one-piece flat transparent sheet adapted to overlay said chart and to be freely shiftable in any direction with respect to said chart, said sheet having a first pair of spaced parallel opaque areas forming between their opposed edges a vertical transparent column, and a second pair of spaced parallel opaque areas forming between their opposed edges a horizontal column, said first and second columns being in right angular relation and meeting to form a corner and a narrow opaque stripe extending transversely across each of said columns adjacent said corner to form a rectangular window, the sides of said window being aligned with the sides of said vertical and horizontal columns respectively.

3,352,488
FLUIDIC TELEMETERING APPARATUS FOR QUANTITY METERS
George B. Greene, Lafayette, Calif. (% Greene Engineering Co., 2 Giant Road, Richmond, Calif. 94806)
Filed Oct. 24, 1966, Ser. No. 588,993
8 Claims. (Cl. 235—91)

1. Fluidic telemetering apparatus for quantity meters, comprising: first and second variable volume transmitter chambers located at a quantity meter; first and second variable volume receiver chambers located at a remote counter registration device; a first conduit interconnecting

the interior of said first transmitter chamber with the interior of said first receiver chamber; a second conduit interconnecting the interior of said second transmitter chamber with the interior of said second receiver chamber; means connected to said quantity meter for recurrently varying the volumes of said transmitter chambers in opposite sense and at a rate determined by the rate of operation of said quantity meter, the volumes of said receiver chambers being thereby varied in opposite sense at a rate determined by the rate of operation of said quantity meter; and means connected to said counter for converting the recurrent variation in volume of said receiver chambers into recurrent movements, whereby said counter is caused to indicate the quantity measured by said meter.

7. Registration means for use in fluidic telemetering apparatus for quantity meters, comprising: counter means; actuator means for actuating said counter means; fixed means fixed with respect to said counter means; movable means rockable with respect to said fixed means about pivot means; first and second variable volume receiver chambers comprising flexible wall means extending between said fixed means and said movable means and located on opposite sides of said pivot means; and link means linking said actuator means with said movable means, whereby said counter means may be advanced by the recurrent variation of the volumes of said receiver chambers in opposite sense.



8. A transmitter for use in fluidic telemetering apparatus for quantity meters, comprising: fixed means adapted to be affixed to a quantity meter; movable means adapted to be rocked with respect to said fixed means about pivot means; first and second flexible wall means each defining with a part of said fixed means and a part of said movable means a transmitter chamber, said transmitter chambers being located on opposite sides of said pivot means; conduit means providing access to the interiors of said transmitter chambers; and means adapted for coupling said movable means with a movable element of said meter whereby to rock said movable means in synchronism therewith.

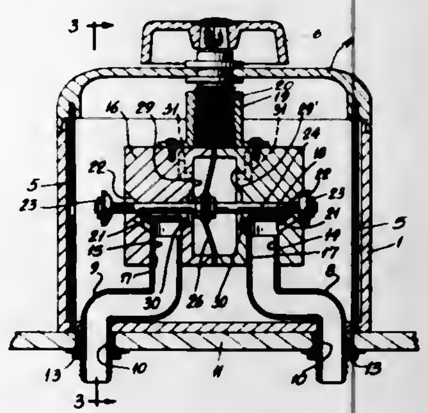
3,352,489
THERMOSTATIC MIXING VALVE

Maurice Coulombe, 4296 Charles Bedard Place, Charlesbourg, Quebec, Canada, and Yvon Bureau, 518 5th St., Limoilou, Quebec, Canada

Filed Dec. 27, 1965, Ser. No. 516,431

8 Claims. (Cl. 236—12)

1. A thermostatic mixing valve comprising a block having hot and cold liquid inlet ports, a casing surrounding said block, inlet tubes extending through said casing and communicating with said respective inlet ports, said block having oppositely disposed axially aligned valves in communication with said inlet ports and opening into said casing, a valve stem slidable within said block and extending therethrough and connected to the two valves at both ends thereof, whereby axial movement of said valve stem will open one valve and will close the other, a pressure chamber surrounding the middle portion of said valve stem and made in said block, a fluid-tight diaphragm separating said pressure chamber into two half-chambers, each inlet port communicating with its associated half-chamber for feeding fluid from the respective inlet ports to said separate half-chambers, bleeding passageways connecting each half-chamber with said casing, each bleeding passageway having a valve seat, the two valve seats being spacedly disposed and axially aligned, a common double needle valve member for said two valve seats of said bleeding passageways, said needle valve member being axially displaceable to close one bleeding passageway while opening the other bleeding passageway, and vice versa, and a temperature responsive element immersed in the liquid of said casing, and connected to said needle valve member to displace the same in accordance with temperature variations of said liquid in said casing.

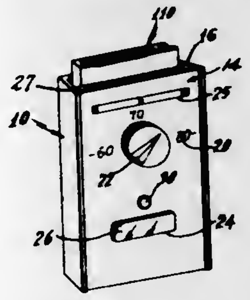


3,352,490
AUTOMATIC SET-POINT CONTROL FOR THERMOSTATS IN ROOM-HEATING SYSTEMS

James W. Dalzell and John E. B. Thorsteinsson, Brandon, Manitoba, Canada, assignors to Pioneer Electric Brandon Limited, Brandon, Manitoba, Canada, a Canadian corporation

Filed Aug. 28, 1964, Ser. No. 392,735

21 Claims. (Cl. 236—68)



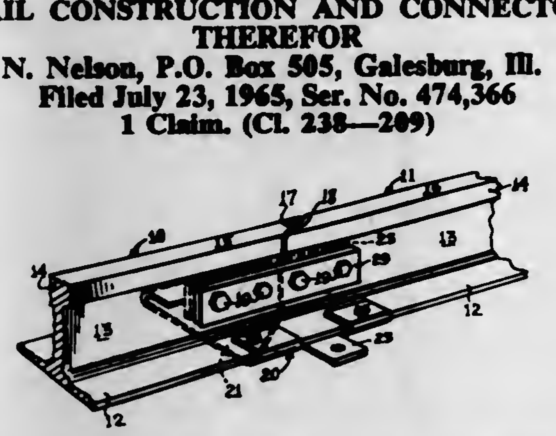
1. A heating system for a confined space for the comfort of people occupying such space, including thermostatic control means for controlling system operation by establishing a first set-point to maintain a first average temperature in said space and means for automatically modifying the control effected by said thermostatic means by establishing a second set-point to maintain a second average temperature in said space, said heating system including separate heaters at different locations in the space, said thermostatic means including a plurality of individual thermostats spaced apart in said space and connected in control of said separate space heaters, respectively, and a means for modifying the response of each said thermostat to the ambient temperature at its location, said modifying means including a photocell in said space arranged to respond to the ambient light, and means controlled by said photocell to produce local heating in said thermostats during periods of darkness to effect individual but coordinated set-back thereof, said modifying means including said photocell and said local heating means being responsive to the ambient light level of the space in one manner when the space is in darkness to establish said second set-point and in a different manner when exposed to a minimum level of ambient light at and above the level provided by customary ambient artificial lighting means in said space when used by active people for establishing said first set-point above said second set-point.

3,352,491
RAIL CONSTRUCTION AND CONNECTOR THEREFOR

Permil N. Nelson, P.O. Box 505, Galesburg, Ill. 61401

Filed July 23, 1965, Ser. No. 474,366

1 Claim. (Cl. 238—209)



A rail connector for a rail having a base flange, a vertical leg member and a head, an oblique rail joint vertically extending between the adjacent ends of rails disposed in end-to-end relationship comprising:

(a) a base plate extending beneath and in contact with the entire horizontally aligned base flanges of the adjacent ends of the rails,

(b) said base plate providing at corresponding opposite corners U-shaped clamps so disposed with respect to the vertically extending oblique rail joint that certain diagonally opposite cornered clamps embrace a base flange of one rail, and with the other diagonally disposed clamps embracing the ends of the base flanges of both rails,

(c) connecting members integrally formed from said base plate extending laterally therefrom in opposite directions from between adjacent corners clamps and in vertical alignment with the oblique rail joint between the adjacent ends of the rail and adapted to lie in facial abutment on and be connected to a rail supporting tie,

(d) retaining bars extending in the direction of the longitudinal length of the rails on either side of their vertical leg members across the oblique vertically extending abutting surfaces thereof, and extending beyond the ends of said base plate, and

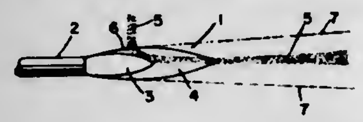
(e) means for connecting said retaining bars to either side of said vertically extending oblique joint between the adjacent ends of the rails.

3,352,492
METHOD OF AND APPARATUS FOR DEPOSITING METAL POWDER

Arthur T. Cape, Los Angeles, Calif., assignor to Powder Melting Corporation, Burbank, Calif., a corporation of California

Filed Aug. 2, 1960, Ser. No. 47,053

2 Claims. (Cl. 239—85)



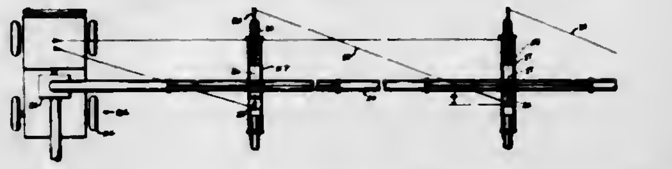
1. Apparatus for applying surfacing material to a work piece including a torch having a tip from which a flame jet system is projected against the work piece, means for adjusting the rate of flow of gas to the flame jet system, a powder holder at a higher level than the torch tip, a nozzle with a discharge end outside the tip face and adjacent to the flame system and extending in a direction having a substantial vertical component, a passage connecting the powder holder and the nozzle and through which powder flows by gravity from the holder to the nozzle, valve means movable into different positions to obstruct totally or partially the flow of powder through the passage, manually-actuated means on the torch operably connected to the valve means for operating said valve means, a stop with which a portion of the valve means comes into contact to limit the movement of the valve means toward open position, said stop being adjustable to change the maximum opening of the valve means, and said stop including manually-operated means outside of the torch for adjusting the maximum opening of the valve means and the resulting powder flow in accordance with adjustment of the rate of flow of gas to keep the powder flow within the carrying capacity of the flame jet system.

3,352,493
SELF PROPELLED IRRIGATOR

Charles Curtis, El Paso County, Colo., assignor to Enresco, Inc., a corporation of Colorado

Filed Oct. 1, 1965, Ser. No. 492,138

4 Claims. (Cl. 239—177)



4. A self propelled overhead irrigation apparatus which includes a plurality of spaced movable support members, a water supply conduit carried by the supports and having means connected to one end of said conduit for connection to a water source, and drive means operatively connected to each support, the improvement comprising:

a plurality of control means operatively connected to each of said drive means;

a tension member directly interconnecting said control means and a point on said irrigation apparatus which is outboard of the respective support.

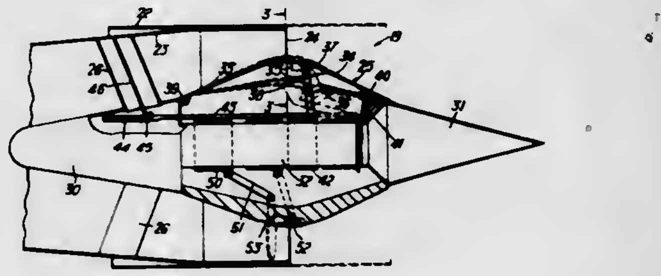
3,352,494
SUPERSONIC JET PROPULSION NOZZLE

Francis Jeffrey Colville, Sutton-in-Ashfield, Norman Roberts, Hucknell, and David Morris Brown, Allestree, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company

Filed July 26, 1965, Ser. No. 474,795

Claims priority, application Great Britain, Aug. 25, 1964, 34,817/64

6 Claims. (Cl. 239—265.13)



2. A supersonic jet propulsion nozzle comprising: a substantially cylindrical nozzle casing having a downstream end; a bulbous plug mounted in said casing and defining with said casing a throat; said plug and said casing being movable axially relative to each other as desired between at least two positions, one position in

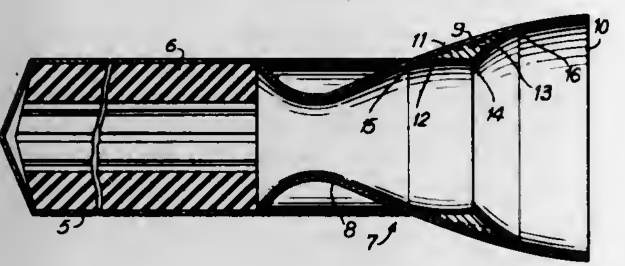
which said throat is at the downstream end of said casing and defines a convergent nozzle and the other position in which said throat is upstream of said downstream end of said casing and defines a convergent-divergent nozzle; transversely movable portions on said plug for varying the area of said throat in each of said one and said other positions of said plug relative to said casing; and silencing means, independent of and angularly spaced relative to said movable portions, for substantially increasing peripheral area over which jet gases mix with ambient air to substantially reduce the noise created by jet gases passing through said nozzle.

3,352,495
NOZZLE CONSTRUCTION

Edward L. Fischer, Kinnelon, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Jan. 29, 1965, Ser. No. 428,989

1 Claim. (Cl. 239—265.15)



A variable nozzle for a rocket engine in which a propellant is burned to produce a jet of hot gases comprising a wall forming a throat with a large exit area, said nozzle having a maximum area ratio, consisting of the exit area divided by throat area, required for best operation of the rocket engine at high altitudes, a ring attached to said nozzle wall remotely from said throat to produce a minimum area ratio required at low altitudes, said ring being composed of an ablative material which will be eroded by the hot gases of the jet at a predetermined rate, and said ring of ablative material having a wave shape formed by intersecting curved surfaces adjacent to and remote from the throat for producing an apex positioned inwardly from the wall of the nozzle which progressively increases in diameter as the ablative material erodes while maintaining its wave shape.

3,352,496
AEROSOL CONTAINER SYSTEM

Benjamin B. Lipske, Downers Grove, Ill., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware

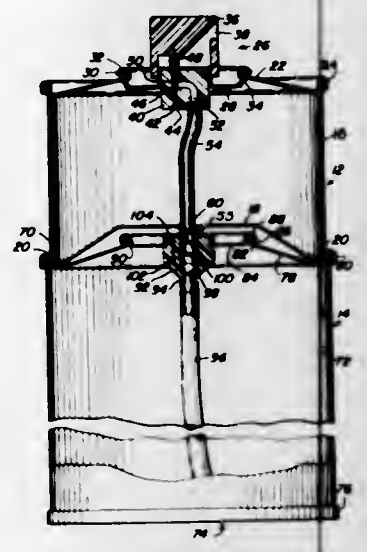
Filed Feb. 14, 1966, Ser. No. 527,354

10 Claims. (Cl. 239—304)

1. An aerosol dispensing unit, comprising, in combination,

upper and lower containers, said upper container comprising,
- (a) a main body portion including side wall, and top and bottom end wall portions,
- (b) an aerosol dispensing valve assembly disposed in said top end wall, said valve including
  - (1) valve means for allowing propellant disposed in said upper container to escape,
  - (2) expansion chamber means for allowing expansion of said propellant as said propellant is discharged to the outside of said container,
- (c) upper attachment means disposed in said bottom wall portion of said upper container in a gas-tight relation thereto, said upper attachment means including
  - (1) locking means for engaging complementary attachment means therewith in liquid-tight relation, and
  - (2) a central opening extending entirely through said upper attachment means, and
- (d) conduit means connecting said expansion chamber means to said upper attachment means in a substantially gas-tight relation,

and a lower container being adapted to hold a product to be dispensed by vacuum therefrom, said lower container comprising,
- (aa) a principal body portion including side wall. and top and bottom end wall portions.



- (bb) lower attachment means, including a central opening therein, disposed in said top end wall and including locking means adapted to receive said upper attachment means to form a substantially liquid-tight seal between said upper and lower attachment means, and
- (cc) a dip tube, including a central opening therein, attached to said lower attachment means, and extending into the lower portion of said container, said central openings being disposed in communicating relation with each other,

said upper and lower containers being attached to each other by engagement of said upper attachment means to said lower attachment means, whereby an aerosol unit is provided which is adapted to contain a propellant in the upper container and a product in the lower container, and wherein said product will pass from the lower container through said dip tube and said conduit means to said expansion chamber upon opening said dispensing valve.

3,352,497
POWERIZED SPRAY GUN

Louis D. Abramson, 2 Pagoda St., Milton, Mass. 02186

Filed Mar. 11, 1965, Ser. No. 439,043

3 Claims. (Cl. 239—332)

1. A powered spray device for emitting a fiine spray comprising

a container for a quantity of sprayable fluid having an upper end and forming a lower chamber,

a cap having depending sidewalls shaped to engage said upper end of said container and forming an upper chamber,

a cover within said container and cap and defining said upper chamber from said lower chamber,

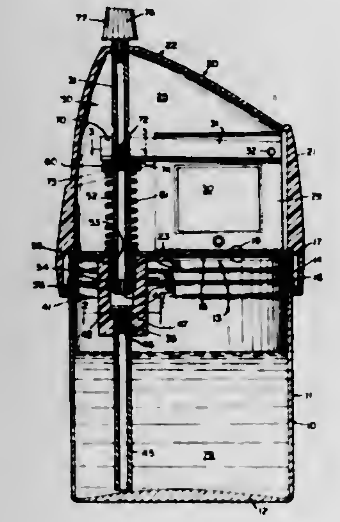
a collar supported by said cover and projecting downwardly into said lower chamber, said collar having an opening extending vertically therethrough with said opening having upper, lower and intermediate sections with the intermediate section having a narrower diameter than diameters of the upper and lower sections,

a lower tube positioned within said lower chamber with its upper end secured in said lower section,

a lower valve positioned within said collar including a lower flat float horizontally positioned within said lower section for vertical movement to and from a position closing the upper end of said lower tube, means limiting the upward movement of said lower flat float, and a sleeve member having an opening extending therethrough positioned within the upper end of said lower tube with said sleeve member opening positioned to be closed by said lower flat float,

an inwardly extending annular shoulder forming said intermediate section of the opening of said collar and positioned to limit the upward movement of said lower flat float,

tube means comprising an upper tube and an intermediate tube continuous with one another and positioned within said upper chamber, said intermediate tube having its lower end positioned within said upper section of the opening in said collar,



an upper valve positioned within said tube means at the junction of said upper and intermediate tubes including a sleeve within said tube means and a flat float horizontally positioned within the passage extending longitudinally of said tube means for vertical movement to and from a position closing the passage through said sleeve,

means for limiting the upward movement of said flat float,

means for vertically reciprocating said tube means including a solenoid having a vibratable armature supported within said cap with one end of said armature projecting toward said tube means,

flange means projecting from said tube means for engagement by said end of said armature,

a spring engaging said flange means and tensioning it toward said end of said armature, and

means providing a passage from the upper end of said tube means through said cap and terminating in a nozzle.

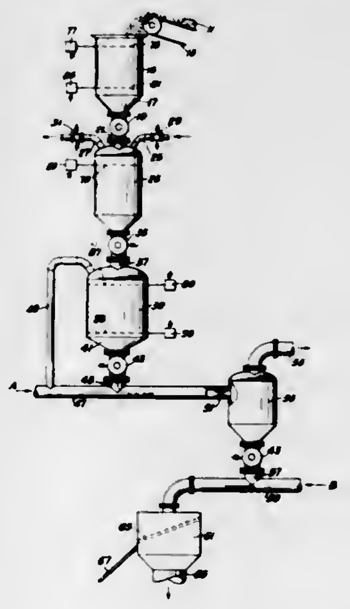
3,352,498
EXPLOSIVE SHATTERING METHOD AND APPARATUS

Elwood V. Schulte, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Dec. 16, 1965, Ser. No. 514,273

8 Claims. (Cl. 241—1)

1. The method for continuously comminuting friable material comprising the steps of:
- (a) filling a first vessel with a first quantity of friable material;
- (b) discharging said first quantity of material into a second vessel;
- (c) pressurizing with a gas said second vessel and simultaneously commence refilling said first vessel with a second quantity of said material;
- (d) discharging the pressurized first quantity of material from said second vessel into a third vessel whereby, the pressures in said second and third vessels become substantially equal;
- (e) terminating the flow of said first quantity of material into said third vessel and simultaneously terminating the flow of said second quantity of material into said first vessel and simultaneously commence discharging said second quantity of material from said first vessel into said second vessel and simultaneously commence discharging the first quantity of material at a selected rate from said third vessel into a conduit wherein flows pressurized gaseous fluid, said material being conveyed in said conduit toward a fourth vessel;
- (f) passing said flowing material flowing through a velocity increasing section in said conduit and thereafter discharging into said fourth vessel wherein the pressure is lower than the pressure in said conduit ahead of said section, said material being subjected to the effect of explosive shattering forces and disintegrating the discrete particles of said material;



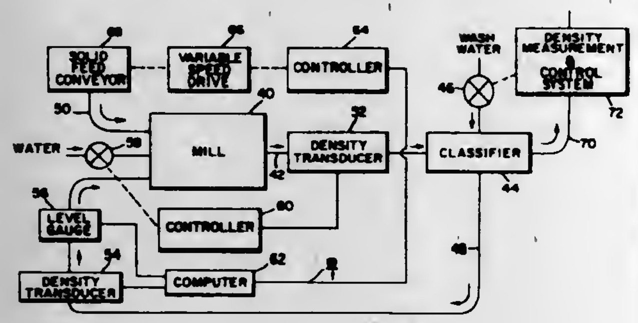
- (g) terminating the discharging of said second quantity of material from said first vessel and simultaneously pressurizing the material in said second vessel;
- (h) discharging the pressurized second quantity of material from said second vessel into the third vessel, the pressures in said second and third vessels being substantially equal, and simultaneously commence refilling said first vessel with a third quantity of said material and simultaneously commence discharging said second quantity of material from said second vessel into said third vessel, the remainder of said first quantity of material in said third vessel continuing to selectively discharge from said third vessel into said conduit;
- (i) terminating the flow of said third quantity of material into said first vessel and simultaneously commence discharging said third quantity of material into said second vessel;
- (j) pressurizing said third quantity of material in said second vessel; and
- (k) thereafter continuing said sequence of steps while said material continually discharges into said fourth vessel at a selective rate and is therein comminuted into particles of discrete size.

3,352,499
GRINDING CIRCUIT CONTROL

Ross L. Campbell, Jr., Rochester, N.Y., assignor to The Industrial Nucleonics Corporation, a corporation of Ohio

Continuation of abandoned application Ser. No. 19,665, Apr. 4, 1960. This application Dec. 4, 1964, Ser. No. 418,375

4 Claims. (Cl. 241—21)



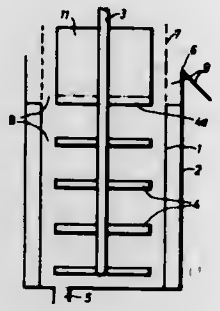
1. The method of controlling the solids concentration and throughput of a slurry produced by a closed circuit wet-grinding mill wherein new solids of varying grindability and a liquid are added at individually controllable rates to the input of said mill to form said slurry and underflow returning from a classifier is added to said input, said method comprising the steps of measuring the density of said slurry at the output of said mill, varying the rate at which said liquid is added in accordance with said density measurements, measuring the mass per unit time of said classifier underflow, and varying the rate at which said new solids are added in accordance with said mass per unit time measurement.

3,352,500
APPARATUS FOR THE PRODUCTION OF AQUEOUS DISPERSIONS OF SOLIDS INSOLUBLE IN WATER

Hans Heinz Mölls and Reinhold Hörnle, Cologne-Flittard, Hans Raab, Cologne-Stammheim, and Erich Müller, Bergisch-Neukirchen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

Filed Oct. 7, 1964, Ser. No. 402,213

1 Claim. (Cl. 241—74)



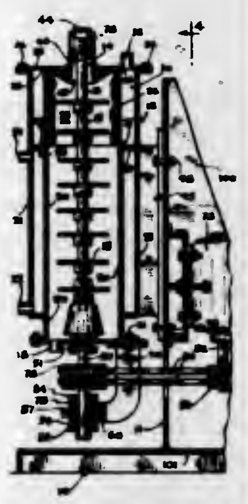
Apparatus for continuously dispersing solids in a liquid medium which comprises a hollow vessel having a sieve therein, which sieve divides said vessel into a grinding zone and a residence zone; an inlet opening in said hollow vessel in the grinding zone portion thereof and an outlet at the residence zone portion thereof; wherein said residence zone is defined by said sieve, said outlet and walls along all other surfaces thereof, whereby to exclude air from contact with the contents of said residence zone; said outlet being disposed at a point of said apparatus which is the highest point in said residence zone and higher than said inlet and being operatively associated with an outlet tube having a multiple bend therein, which tube has an exit which is disposed at a point lower than said outlet, but higher than said inlet.

3,352,501
GRINDING APPARATUS

Alfred F. Krumholz, Sr., Glenview, Ill., assignor to Chicago Boiler Company, Chicago, Ill., a corporation of Illinois

Filed Mar. 31, 1965, Ser. No. 444,361

8 Claims. (Cl. 241—74)



1. Apparatus for the deagglomerating and dispersing of particulate solids in a liquid by a means of a grinding medium comprising: an upright vessel for a mixture of the grinding medium liquid and solids therein, a top plate means at the top of said vessel and detachable therefrom, a bottom plate means on said vessel, an impeller shaft means extending vertically downward from said top plate means and journaled for rotation in said top plate means, a screen means in said vessel adjacent an outlet from said vessel for screening the grinding medium from the mixture of particulate solids and the liquid, a drive shaft means extending upwardly from the bottom plate means and adapted to be rotated, coupling means for coupling said drive shaft means to said impeller shaft means for rotating said impeller shaft means with said drive shaft means, sealing means for sealing said drive shaft means for preventing the flow of particular solids, grinding medium or liquid, downwardly along said drive shaft means and from said vessel, and drive means for driving said shaft.

3,352,502
ROTARY IMPACT BREAKERS

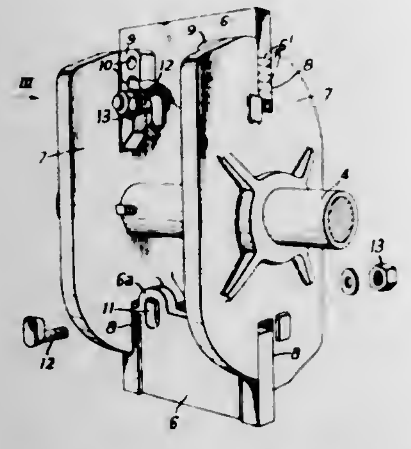
Frederick William Parker, Leicester, England, assignor to Frederick Parker Limited, Leicester, England, a British company

Filed Jan. 11, 1965, Ser. No. 424,736

6 Claims. (Cl. 241—192)

3. A rotary impact breaker comprising a casing provided with an inlet and an outlet, at least one shaft rotatably mounted in said casing, a rotor carried by said shaft, at least one hammer fitted in said rotor and arranged, on rotation of the rotor, to strike against pieces of stone fed into the casing and to throw them against the inner surface of the latter so that they are broken up and reduced in size, the hammer being mounted with a sliding fit within at least one slot in the rotor so as to be adjustable outwardly in a direction away from the axis of the rotor, whereby the breaking edge of the hammer, notwithstanding wear thereof, can be maintained in approximately the same position in relation to the periphery of the rotor, and a removable locking device for securing the hammer in position, characterized in that the rotor

is formed with a number of spaced apertures disposed alongside the hammer and arranged at different distances from the axis of the rotor, and the hammer is formed with at least one aperture alignable with any one of the apertures in the rotor, the two aligned apertures receiving a removable locking device which comprises a first part which is located in one of two alternative positions in one of the two aligned apertures, and a second part, offset from the first part, which is located in the other of the two apertures, whereby the hammer can be secured in a number of positions at difference distances from the rotor axis, there being two such positions for each aperture in the rotor obtained by locating the first part of the locking device in its two alternative positions.



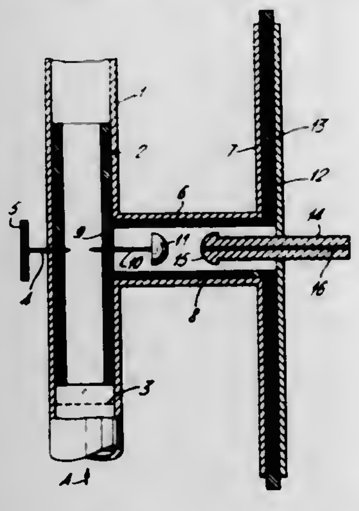
3,352,503
APPARATUS FOR ELECTRO-HYDRAULIC CRUSHING

Nicholas George Maroudas, London, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Feb. 1, 1965, Ser. No. 429,464

Claims priority, application Great Britain, Feb. 6, 1964, 5,070/64

4 Claims. (Cl. 241—301)



1. Electro-acoustic discharge crushing apparatus comprising a containing vessel, a first pair of electrodes defining a spark discharge gap in said containing vessel, such electrodes being adapted to be immersed in a liquid medium contained in the said vessel, a capacitor having first and second plates, a second pair of electrodes defining a gas spark gap, a connection from one of said first pair of electrodes to one of said second pair, connections from the other two electrodes to said capacitor plates, the circuit comprising the two spark gaps and the capacitor having an inductance of not more than 0.1 microhenry and the capacitance being such that the energy thereof is discharged in a time of not more than about one microsecond.

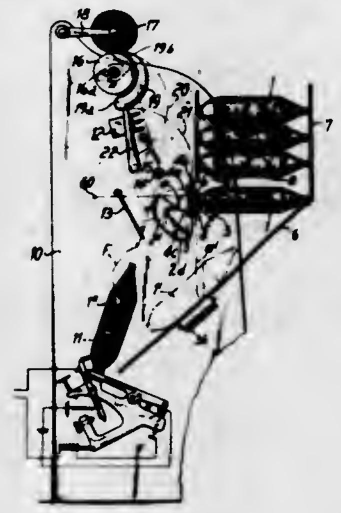
3,352,504
APPARATUS FOR SEIZING THE YARN ENDS OF SPINNING COPS OR SIMILAR YARN COILS

Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany

Filed July 25, 1966, Ser. No. 567,599

Claims priority, application Germany, July 24, 1965, R 41,165

5 Claims. (Cl. 242—35.6)



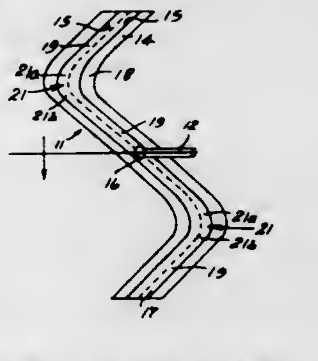
1. Apparatus for readying of cops and the like yarn coils having an inner starting portion of yarn limited in length by the coil windings superimposed thereon and having an outer end portion of a yarn length wound from near the coil tip to the coil foot, comprising an air-current nozzle, means for accommodating the cop in a position wherein the coil foot is located coaxially in front of said nozzle for subjecting the coil to a substantially axial air current for drawing the end portions of yarn into said nozzle, a yarn-clamping device situated near the coil-foot location when the cop is in said position and adapted for clamping the yarn portions in the air current, said device having a clamping force smaller than the rupture strength of the cop yarn, and means causing relative motion between the cop and said yarn-clamping device so as to increase the length of the outer end yarn portion by partly unwinding the outer yarn length whereby the starting yarn portion of limited length is pulled out of said clamping device so that only the outer end portion remains clamped because of its increased length.

3,352,505
TEXTILE APPARATUS

Walter Parker, Wilmslow, England, assignor to Ernest Scragg & Sons (Holdings) Limited

Filed Apr. 26, 1965, Ser. No. 450,871

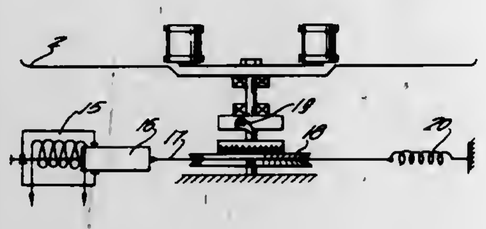
17 Claims. (Cl. 242—43)



1. In a cam drive, in combination, a driven cam follower reciprocable in opposite strokes between the opposite end positions; and drive cam means rotatable in a predetermined direction and having an endless cam track for engaging and reciprocating the cam follower, said endless cam track having at least one pair of inclined main cam track portions for driving said cam follower during the main part of said opposite strokes, and having a con-

necting cam track end portion between said pair of main cam track portions, said connecting cam track portion being composed in the direction of rotation of said drive cam means of a first leading cam track section for decelerating the movement of said driven cam follower befor it reaches one end position thereof and a second trailing cam track portion for accelerating the movement of said driven cam follower after it passes through said one end position thereof, said cam track sections being so shaped that deceleration occurs at a faster rate than the acceleration.

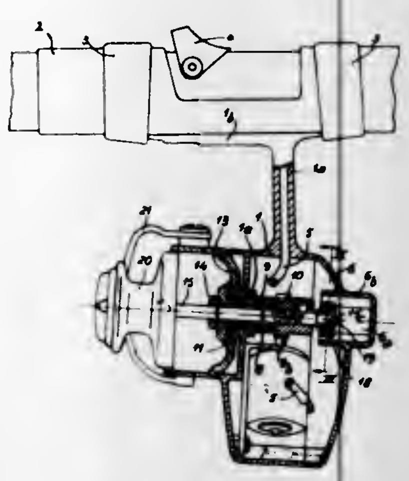
3,352,506
FILM WINDING DEVICE
Alexandr Dmitrievich Bodrov, Vasily Vasiljevich Petrov, and Iosif Moiiseevich Fonar, Moscow, U.S.S.R., assignors to Nauchno-Issledovatelsky Kinofotoinstitute, Moscow, U.S.S.R.
Filed June 1, 1964, Ser. No. 371,660
2 Claims. (Cl. 242—55.18)



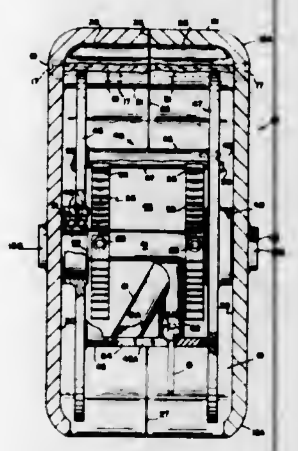
2. A movie projector winding device comprising an operating circuit, an unwinder, said unwinder including a stationary part and a circular array of rollers mounted thereon, said rollers guiding the film during its unwinding from the inside of a roll of said film, a rotatable disc encircling said stationary part, said disc being horizontally disposed and adapted to support said roll of film thereon, pressing rollers for pressing the inner convolutions of the roll of film against said disc to impart rotation to said disc while the film is being unwound, axles supporting said pressing rollers and fixed to said stationary part of said unwinder, means mounting said axles for pivotal movement in respective vertical planes so that a film turn, coming off the inside of said roll and approaching said guide rollers, can be pressed edgewise against the surface of said disc without pressing the remainder of said roll against the disc; a winder including a movable disc, a spring core, means on the latter said disc to accommodate said spring core detachably thereon for winding the film thereon; and means for imparting initial torque to said rotatable disc upon actuation of the drive of the projector, said means for imparting initial torque comprising a solenoid including a core, means electrically connecting said solenoid with said operating circuit; a one-way clutch transmitting the initial torque to said rotatable disc; a transmission connecting said core with said clutch; and a spring returning said core to idle position after said rotatable disc receives the initial torque.

3,352,507
MOTOR DRIVEN FISHING REELS
Louis Henri Armand Boussageon, Boite Postale No. 3, Chabeuil, France
Filed Jan. 21, 1965, Ser. No. 426,858
Claims priority, application France, Feb. 3, 1964, 661, Patent 1,426,103; Mar. 9, 1964, 663, Patent 87,357
2 Claims. (Cl. 242—84.21)

1. A fishing reel comprising a casing of elongated transverse cross-section having a major axis and a minor axis, a reel attachment foot secured to said casing and extending substantially in the direction of said major axis for attachment of the reel to a fishing rod, a front section of said casing being in circular configuration of a determined radius, a forwardly open cup-shaped winding member rotatably carried by said casing substantially concentric with said front section and having a diameter substantially equal to that of said front section, a rear edge portion of said winding member and a forward edge of said front section forming a very narrow slit, a normally non-rotatable spool coaxial with and at least partly disposed within said winding member, a pick-up element on said winding member adapted to engage and wind said line onto said spool when the winding member is rotated, means within said casing for rotating said cup-shaped member comprising a gear connected to the winding member, and an electric motor having an output worm directly engaging said gear and means supporting said motor to extend substantially in the direction of the major axis of said casing.



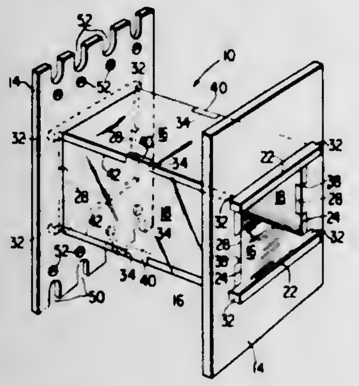
3,352,508
SELF-REWINDING RIGGING DEVICE
Bernard G. Hadley, Rte. 2, Box 768, Creswell, Oreg. 97426
Filed Nov. 12, 1965, Ser. No. 507,431
5 Claims. (Cl. 242—107)



1. In a cable rigging device having a length of pick-up cable provided with a cable fitting at one of its ends and carried upon a spring powered drum rotatably mounted within a protective housing, the improvement comprising,

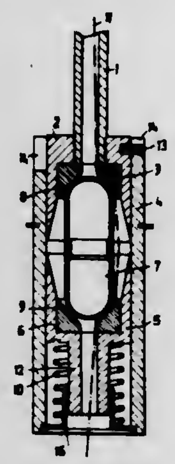
pick-up cable attaching means secured to the interior of said drum and thereat in register with an elongated opening in said cable drum and comprising inwardly extending first and second tubular members in mutual open communication at their innermost ends whereby attachment of the pick-up cable to the drum is achieved by passage of the cable fitting through said elongated opening and said first tubular member into said second tubular member.

3,352,509
MULTI-PIECE COIL BOBBIN
Hans A. Kort, Lake Geneva, Wis., assignor to Sola Basic Industries, Inc., Milwaukee, Wis.
Filed Dec. 15, 1965, Ser. No. 513,966
1 Claim. (Cl. 242—118.4)



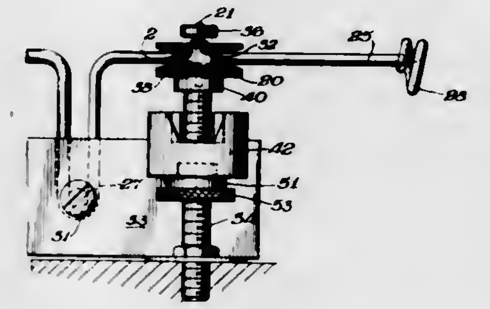
A multi-piece bobbin of the knock-down type for wire coils comprising a pair of end pieces, each having a substantially central opening with tabs projecting inwardly into the opening from opposite sides thereof; a pair of side members for the core portion of said bobbin, each having a pair of lateral tabs at both ends thereof extending directly outward from a continuous surface of said side members for engaging the outer faces of said end pieces; and a second pair of side members for said core portion adapted to fit between said first-mentioned side members and provided with notches in the end portions thereof adapted to interengage with said tabs on the end pieces to clamp and retain the end pieces in predetermined spaced relation on said core portion with said second pair of side members confined within said openings of said end pieces; each of said first-mentioned side members being further provided with a notch intermediate said laterally extending tabs, and each of said second pair of side members being further provided with an outwardly extending tab adapted to interengage with said last-mentioned notches to retain the second pair of side members in spaced relationship.

3,352,510
YARN BRAKE
Gustav Franzen, Neersen, Germany, assignor to Palitex Project Company G.m.b.H., Krefeld, Germany, a company of Germany
Filed June 2, 1965, Ser. No. 460,657
Claims priority, application Germany, June 5, 1964, N 25,064
7 Claims. (Cl. 242—149)



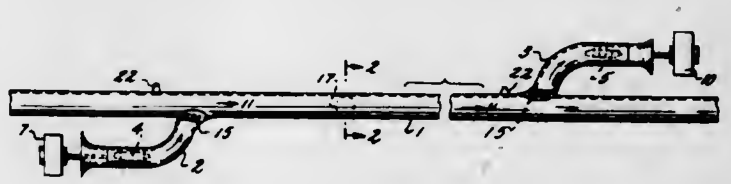
1. A yielding resilient brake comprising a housing providing entry and exit ends for the yarn and containing a braking member, co-axially aligned annular seating members in said housing between which seating members said braking member is disposed and with which said braking member produces a first stage of braking in co-operation with the seating member at the entry end and a second stage of braking with the seating member at the exit end, the said braking member being a rigid member and that one of said annular seating members co-operating therewith at the exit end being yieldingly slidable supported in the housing for movement relatively to the other seating member in the direction of travel of the yarn.

3,352,511
YARN TENSIONING DEVICE
Kennard R. Wiggins, Nottingham, Pa., assignor to Enterprise Machine & Development Corp., a corporation of Delaware
Filed Apr. 27, 1965, Ser. No. 451,154
8 Claims. (Cl. 242—155)



1. In a yarn tensioning device, a pulley, means mounting said pulley for rotation whereby said yarn may be driven over said pulley, a peripheral groove in said pulley, the grooved portion of said pulley being a smooth working surface, a sticky track being in the base of the pulley groove, and said track having surfaces which slope from a point in the center of said groove downwardly toward the sides of said groove to provide a pair of troughs with each trough having a smooth surface and a sticky surface whereby a yarn driven over said pulley may be wedged in one of said troughs between said smooth surface and said sticky surface for tensioning both smooth and sticky yarn.

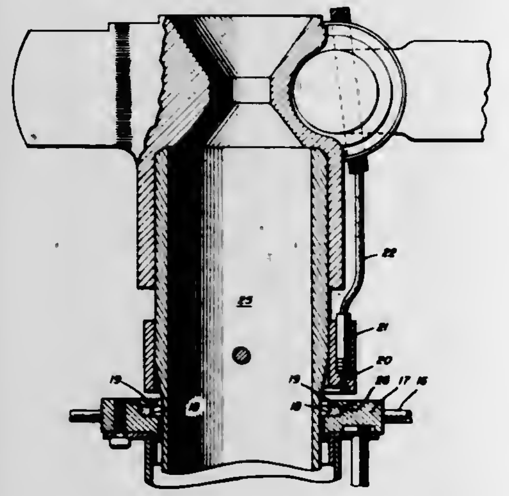
3,352,512
EXPRESS TRANSPORTATION SYSTEMS
Mitchell E. James, Sr., 5 Carroll St., Bangor, Maine 04401
Filed May 25, 1964, Ser. No. 369,998
4 Claims. (Cl. 243—2)



1. In a transportation system, in combination, tubular passageway means of indeterminate length, vehicle means movable in said passageway means substantially in sealing relation thereto, said passageway means including means for decelerating said vehicle means comprising a plurality of longitudinally spaced radially movable pistons for frictional engagement with the exterior of the vehicle means when projected radially inwardly, and actuating means for moving said pistons inwardly and for retracting them outwardly away from said frictional engagement, said vehicle means including an outer spherical shell provided with access closure means for said substantially sealing engagement with the interior of the

passageway means for movement therein, hemispherical load-carrying structure carried within said spherical shell and means for supporting it thereon for free gyratory relative movement with respect thereto in response to equilibrium forces generated by movement of the vehicle means, at least one compressor means having outlet means in communication with the interior of the passageway means for introducing air under pressure thereto in one direction without obstructing said vehicle means, suction means including inlet means in communication with the interior of the passageway means spaced downstream of said compressors for assisting the flow of air without obstructing said vehicle means, and means for sensing the approach of a vehicle means to said outlet and inlet to activate said compressor means and suction means to propel said vehicle means in said passageway means.

3,352,513
HELICOPTER ROTOR SHAFT AND ROTOR BLADE SEVERING MEANS
George W. Baker and Ryland D. Wiseman, Jr., Dahlgren, Va., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 25, 1966, Ser. No. 538,902
3 Claims. (Cl. 244—17.15)



1. In a helicopter having at least one rotor shaft and hub and a plurality of rotor blades attached thereto, and further having a personnel escape system including a crew's compartment, at least one parachute deployable from said crew's compartment, and means for encapsulating said crew's compartment;

means for jettisoning said rotor blades comprising;

a shaped explosive charge ring disposed circumferentially about said rotor shaft and oriented toward said shaft;

a driver plate in juxtaposition to said explosive charge ring and adapted to be moved thereby;

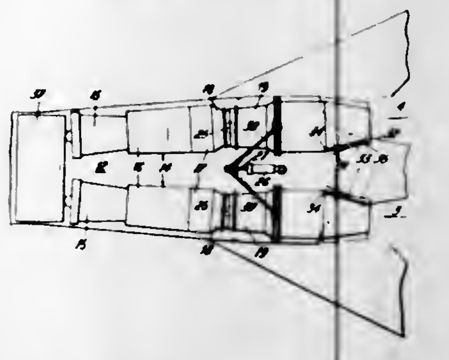
at least one energy probe fixedly attached to and rotating with said rotor shaft, each pick-up probe being in communication with an explosive ignitor;

explosive means on said rotor adjacent all except one of said rotor blades;

explosive powder train means communicating with said explosive ignitor and said explosive means on said rotor; and

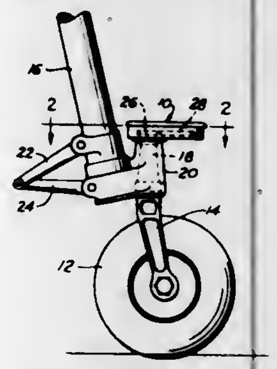
means for causing said shaped explosive charge ring to fire, whereby said shaped charge will sever said rotor shaft and will drive said driver plate into said pick-up probes, firing said ignitors and said explosive powder trains and, hence, causing said explosive means on said rotor to sever all except one of said blades from said hub allowing said blades to fly free, the remaining blade to fly free carrying said hub and the severed portion of said shaft.

3,352,514
JET PROPELLED AIRCRAFT WITH VARIABLE AREA JET NOZZLE
Addison Charles Maguire, Alvaston, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Jan. 26, 1966, Ser. No. 523,134
Claims priority, application Great Britain, Feb. 19, 1965, 7,407/65
13 Claims. (Cl. 244—56)



10. An aircraft provided with at least one jet engine, means including a generally horizontal pivotal axis extending transversely of the aircraft's longitudinal axis for moving the engine as a unit relative to the aircraft between a forward propulsion position in which it directs jet exhaust gases rearwardly of the aircraft and a direct lift position in which it directs jet exhaust gases substantially parallel to the yaw axis of the aircraft, said engine having an exhaust gas outlet nozzle and the aircraft having a surface disposed adjacent the nozzle when the engine is in its forward propulsion position so that the effective area of the nozzle is determined by the position of the nozzle with respect to the said surface, and means including a second pivotal axis extending generally parallel to the yaw axis of the aircraft for moving said nozzle relative to the remainder of said engine towards and away from said surface.

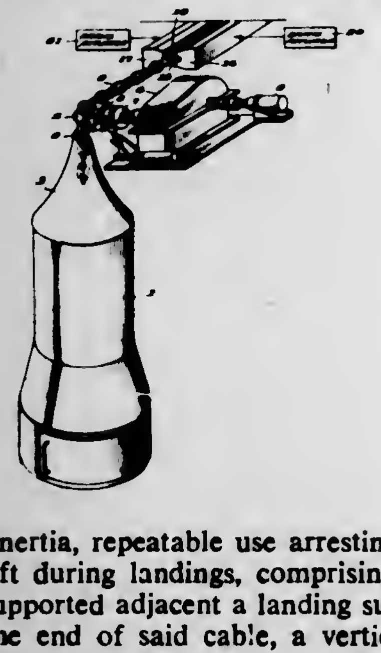
3,352,515
CASTERED WHEEL CENTERING MECHANISM
Franklin C. Albright, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 7, 1966, Ser. No. 532,282
9 Claims. (Cl. 244—103)



1. In an aircraft landing wheel assembly having a supporting member, a wheel, and a wheel-carrying member operatively connected to said supporting member for relative angular movement with respect thereto, a centering mechanism for returning said wheel-carrying member and wheel to a predetermined position comprising a housing operatively connected to said supporting member, a primary gear located in said housing and operatively connected to said wheel-carrying member for concomitant angular movement therewith, a secondary gear meshing with said primary gear and having a pitch diameter twice as large as the pitch diameter of said primary gear, said secondary gear having two angular positions relative to said primary gear at which said

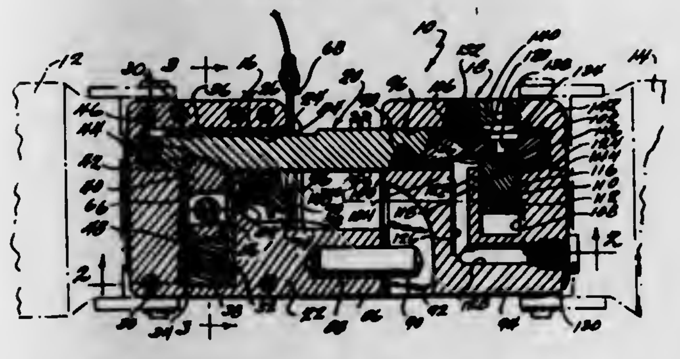
wheel will be in said predetermined position, and means operatively connected to said secondary gear for opposing angular movement thereof and urging same to one of said two angular positions.

3,352,516
WILDCAT ARRESTING GEAR
Martin A. Jackson, Bradshaw, Md., assignor to Van Zelm Associates Inc., Baltimore, Md., a corporation of Maryland
Filed Mar. 11, 1966, Ser. No. 533,684
10 Claims. (Cl. 244—110)



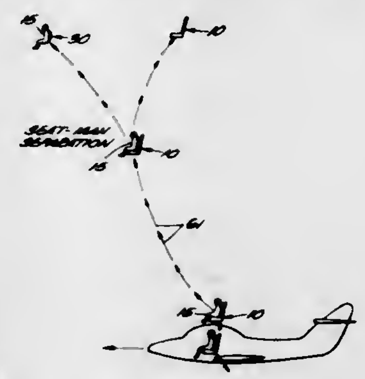
1. A low inertia, repeatable use arresting gear for arresting aircraft during landings, comprising an arresting cable to be supported adjacent a landing surface, a chain secured to one end of said cable, a vertically arranged chain locker located adjacent said landing surface for the stowage of said chain, said chain locker having an opening in the top thereof for the vertical ingress and egress of said chain, chain sprocket means for aligning said chain with said opening in said stowage locker and guiding and positioning said chain adjacent said arresting cable, means to absorb the kinetic energy of said chain to retard said chain during an arrestment, and power means to engage said chain to return said chain to said chain stowage locker after an arrestment.

3,352,517
AUTOMATIC LAP BELT MECHANISM
John Timothy Greenslade, Scottsdale, Ariz., assignor to Rocket Power, Inc., Mesa, Ariz., a corporation of Arizona
Filed Oct. 20, 1965, Ser. No. 498,588
16 Claims. (Cl. 244—122)



1. A lap belt mechanism for use in conjunction with an ejectable seat for pilots or the like comprising a first section adapted to be connected to a first lap belt portion, a second section adapted to be connected to a second lap belt portion, a rigid member having first and second end portions cooperable with said first and second sections respectively, manually operable means for releasably connecting the first end portion of the said member with said first section in generally fixed relation, and normally connected means connecting the second end portion of said member with said second section in generally fixed relation operable during the seat ejecting procedure when said manually operable means is connected for effecting a gas pressure propelled movement relatively between said second section and said member in a direction away from each other and a release of the second end portion of said member with said second section whereby said sections are releasably propelled apart by a positive action during the ejecting procedure to permit separation of the pilot from the seat.

3,352,518
PERSONNEL EJECTION SYSTEM FOR AIRCRAFT
John F. Turner, Granada Hills, Wallace F. Ziegler, Glendale, Lloyd E. Thompson, Van Nuys, and Andrew R. Jessen, Glendale, Calif., assignors to Walter Kidde & Company, Inc., Belleville, N.J., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 502,834
12 Claims. (Cl. 244—122)

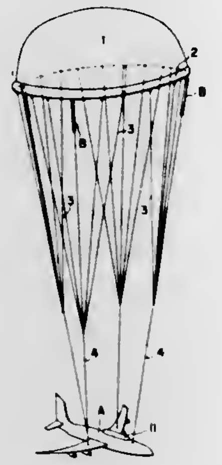


1. A personnel escape system for an aircraft comprising, a personnel seat mounted in the aircraft for ejection upwardly, means for ejecting the seat from the aircraft including a thrust producing means mounted on said seat for imparting substantial force thereto for urging said seat a substantial distance upwardly from said aircraft, said thrust producing means positioned to produce an upwardly and forwardly directed thrust from below and behind the seat with such thrust directed slightly below the location of the center of gravity of the combined man and seat, said thrust producing means imparting a thrust for only a short duration for minimizing any tumbling and rolling that tends to occur by reason of misalignment between the direction of thrust and said center of gravity, means for causing separation between the seat and man subsequent to the termination of said thrust, a parachute secured to the man, means for rapidly and automatically deploying said parachute after at least a substantial delay following said seat-man separation, said parachute deploying means arranged to deploy the parachute laterally from the man, means connected between said seat and said parachute deploying means for initiating the operation of said parachute deployment means, and means initiated by the ejection of the seat from the aircraft for automatically causing the operation of said seat-man separating means and said means connected between said seat and said parachute deploying means at a predetermined time after such initiation.

3,352,519
PARACHUTE ASSEMBLY FOR AIRCRAFT
Tatsusaburo Hibi, 2735 2-chome, Nishisugamo, Toshima-ku, Tokyo-to, Japan
Filed Sept. 8, 1965, Ser. No. 485,705
Claims priority, application Japan, Apr. 16, 1965, 40/22,633
3 Claims. (Cl. 244—139)

1. A parachute assembly for aircraft, comprising a canopy, an annular flexible tube secured to the outer peripheral edge of said canopy, compressed fluid reservoirs

connected to said annular tube and adapted to admit compressed fluid therein into said tube to inflate the latter when the parachute is ejected into the amtosphere, a plurality of groups of shroud lines secured to said flexible tube, each of said groups of lines being connected at the free or lower end to a single suspending line, said fluid reservoirs being connected between at least some of the shroud lines and said annular tube, valve means between said fluid reservoirs and said annular tube, control means connected to said valve means for opening said valve means when said shroud lines and fluid reservoirs are pulled taut between the annular tube and the aircraft, means for connecting the suspending lines to the body of an aircraft, and a housing disposed on the body of aircraft and adapted to enclose therein said canopy, annular tube, shroud lines and suspending lines in folded condition, said housing being adapted to permit the folded canopy, annular tube and shroud lines to be ejected out of the housing in an emergency.

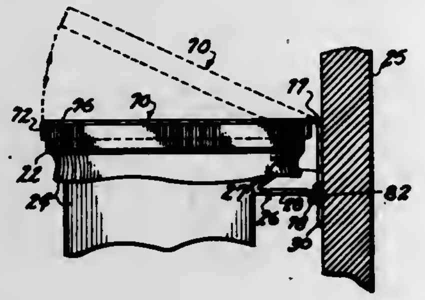


3,352,520
BAG HOLDER

Robert L. Bumgarner and Arthur O. Knutson, Miami, and Thomas B. Royal, Homestead, Fla., assignors to Homeline Corporation, Miami, Fla., a corporation of Florida

Filed Apr. 22, 1965, Ser. No. 450,090

11 Claims. (Cl. 248—99)



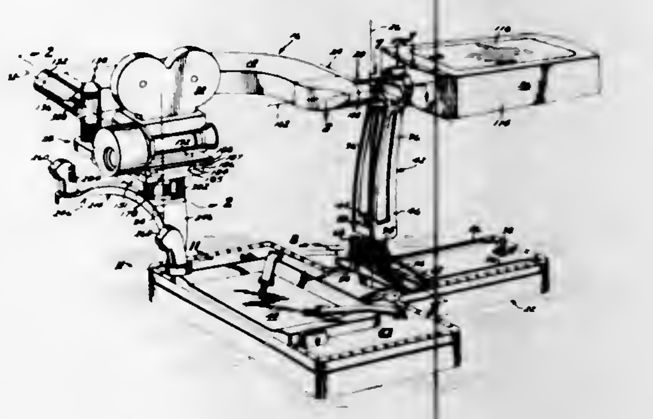
1. A receptacle comprising: a loop coated with a material having a high coefficient of friction; a stretchable and retractable plastic bag having an opening therein and a portion adjacent the opening, which portion is inserted through, and stretched and folded over said loop so as to frictionally engage said loop, said bag opening being smaller than the opening defined by the loop, but large enough to prevent the bag from tearing when it is brought into engagement with the loop, said bag portion contracting when in engagement with said loop so as to increase the frictional engagement between the bag and the loop, the friction between the bag and the loop being sufficient to prevent the bag from disengaging the loop; and means for supporting said loop.

3,352,521
UNIVERSAL MOUNT

Nelson Tyler, Van Nuys, Calif., assignor to NTT Enterprises, Inc., Hollywood, Calif., a corporation of California

Filed Jan. 21, 1966, Ser. No. 522,104

25 Claims. (Cl. 248—123)



1. A universal mount for continuous aiming of an instrument at a target object which is moving relative to said mount, said mount comprising:

elongated means having a forward extremity and a rearward extremity;

rearward support means adapted for connection to a supporting platform and mounting said rearward extremity of said elongated means for tilting about a normally horizontal rearward tilt axis and for rotation about a normally vertical rearward pan axis; and

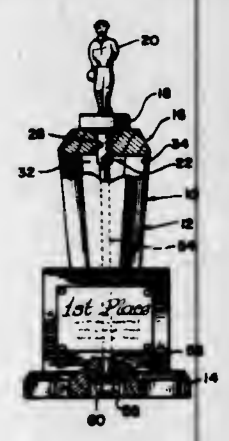
forward support means adapted for supporting said instrument and mounted to said forward extremity of said elongated means for tilting about a normally horizontal forward tilt axis and for rotation about a normally vertical forward pan axis whereby said forward support means can be tilted upwardly about said forward tilt axis to track a target object with said instrument, and said forward support means and said elongated means simultaneously tilted upwardly about said rearward tilt axis to maintain said instrument at a convenient height despite its tilted position relative to said forward tilt axis, said forward support means being arranged and located for substantially balancing the masses of said instrument and said forward support means about said forward tilt axis.

3,352,522
TROPHY AND FASTENER

Donald F. Bogosh, 2646 Willow, Franklin Park, Ill. 60131

Filed Apr. 12, 1965, Ser. No. 447,256

7 Claims. (Cl. 248—158)



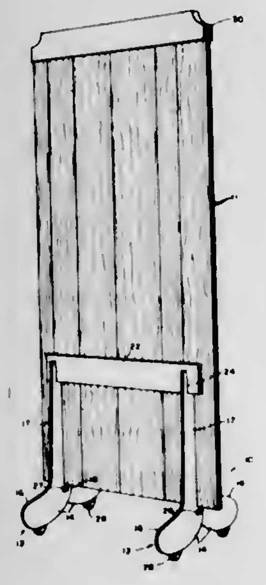
1. A trophy structure comprising a trophy base, a base stand underneath the base, a figure base above the trophy base and a figure mounted on the figure base, means interconnecting the stand and figure base with the trophy base including a one-piece integral bushing extending in the trophy base, said bushing having a hollow shaft and a flange, said stand having connecting means lockingly received in the hollow shaft and said figure base having coupling means lockingly received through the flange into the shaft portion, said flange having polygonal shaped structure having a plurality of flat sides and corners interconnected with one another with a groove in each flat side to define a plurality of tab means spaced apart from one another in a peripheral path and defining between two successive tab means a space for interlocking the trophy base with each tab means.

3,352,523
DISPLAY STAND

Arthur Vandersys, Portland, Oreg., assignor to Evans Products Company, Portland, Oreg., a corporation of Delaware

Filed Nov. 26, 1965, Ser. No. 509,995

1 Claim. (Cl. 248—165)



In combination,

a vertically-extending panel of plywood or the like;

two pairs of substantially identical L-shaped plywood members for supporting said panel, one of each of said pairs of supporting members being positioned adjacent each of the side edges of said panel,

each of said supporting members comprising a substantially-vertical leg, a pivotable ground-engaging toe, and a rearwardly-extending heel, each of said legs having a vertically-extending slot formed in the top thereof, each of said toes having a rocker-shaped bottom surface,

each of said pairs of supporting members being pivotally connected together through said rearwardly-extending heels and with said heels overlapping one another, said toes extending oppositely with respect to each other, and said legs extending vertically in substantially parallel relation, said panel resting on said heels;

stop means in the form of a resilient bumper attached to the rear of each of the upper portions of said legs for engaging the opposed faces of said panel; and

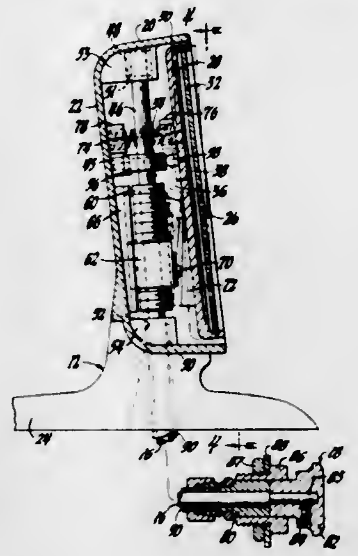
a plywood crosspiece removably received in said slots in the legs of those of said supporting members in contact with a common face of said panel, said crosspiece tying said legs together, whereby the weight of said panel on said heels causes said toes to rotate upwardly and brings said stop means into contact with said opposed faces of said panel.

3,352,524
REMOTELY ADJUSTABLE REAR VIEW MIRROR

David A. Rossi, New Baltimore, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 23, 1965, Ser. No. 515,982

6 Claims. (Cl. 248—278)



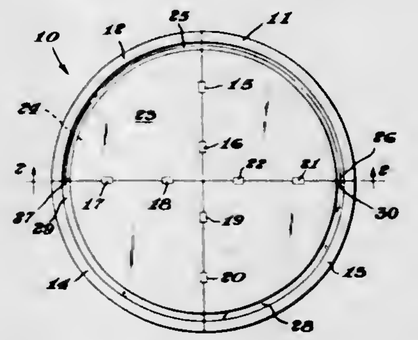
1. A remotely adjustable rear view mirror comprising, a housing, a mirror support, means universally pivotally securing said mirror support eccentrically to the housing, a shaft rotatably supported in said housing and located between said housing and said mirror support, first cooperating camming means on said shaft and said mirror support for positioning said mirror support about a vertical axis, second cooperating camming means on said shaft and said mirror support for positioning said mirror support about a horizontal axis, means for biasing said first cooperating camming means and said second cooperating camming means into continuous engagement, a remotely located actuator for selectively positioning said mirror support about horizontal and vertical axes, and drive means interconnecting said shaft and said actuator through which rotational movement is transmitted to said shaft from said actuator.

3,352,525
STRUCTURE BASE

Fred J. Lowes, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Sept. 22, 1965, Ser. No. 489,119

3 Claims. (Cl. 248—346)

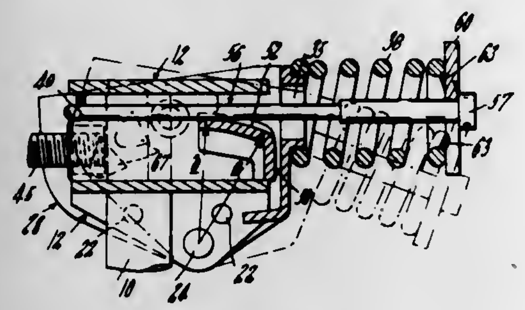


1. A structure base, the base having a generally homaloidal upper surface and a lower surface, the upper surface defining at least generally peripherally disposed upwardly facing grooves, each groove having a first end and a second end, the first end of the groove having a depth equal to the thickness of a strip of building material to be deposited therein, the second end of the groove having negligible depth, the groove smoothly tapering in depth from the first end to the second end, the groove sub-

tending an angle equal to 360°/*n* wherein *n* is equal to the number of strips to be simultaneously deposited on the base to form the structure.

3,352,526
CHAIR IRON

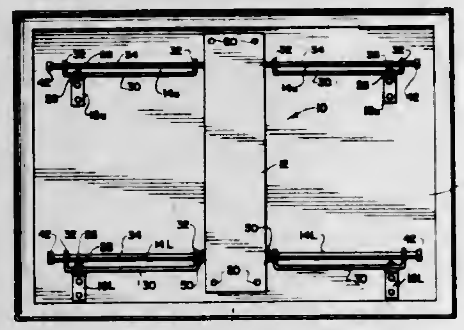
George Albert Anderson, Gardner, Mass., assignor to Collier-Keyworth Company, Gardner, Mass., a corporation of Massachusetts
Filed Nov. 2, 1965, Ser. No. 506,079
11 Claims. (Cl. 248—380)



1. A chair iron comprising:
a support member;
a tilting member pivotally mounted on said support member for tilting movement from an at-rest position with respect thereto;
spring means secured to one of said members;
flexible connecting means connecting said spring means to the other of said members to provide a force applied at a position spaced from said pivot to urge said tilting member to its at-rest position; and
means for increasing said force at an increasing rate as the extent of tilting movement increases including a member having a surface against which said connecting means bears, the spacing between said surface and said pivot increasing in one direction along said surface.

3,352,527
ADJUSTABLE WALL MOUNT

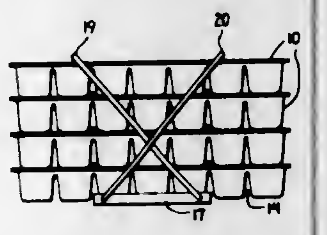
Cecil L. Merett, 1051 S. Decatur St.,
Denver, Colo. 80219
Filed Aug. 25, 1966, Ser. No. 575,177
10 Claims. (Cl. 248—480)



1. An adjustable wall mount for mirrors and the like which comprises: at least one set of three bracket-forming means each of which includes a vertically-disposed planar surface and at least one outturned ear presenting a horizontal bearing surface, the vertically-disposed surface of one of said bracket-forming means being adapted for attachment to a wall surface with the ear projecting forwardly therefrom, and the vertically-disposed surfaces of the remaining pair of bracket-forming means being adapted for attachment to the rear face of an object to be hung in horizontally-spaced relation on opposite sides of its vertical centerline with the ears projecting rearwardly; and, a pair of rigid telescopable arms corresponding to each set of three bracket-forming means, the adjacent extremities of said arms being pivotally connected to the forwardly-projecting ear of the bracket-forming means adapted for attachment to the wall surface for swinging movement in a common horizontal plane, and the remote ends of said telescopable arms being pivotally attached to the rearwardly-projecting ears of the remaining pair of bracket-forming means, said arms in telescoped position cooperating with said bracket-forming means to suspend the object supported thereby in close proximity to the adjacent wall surface, and said arms in extended position cooperating with said bracket-forming means to suspend said object in spaced relation to said wall surface.

3,352,528
ICE TRAY ASSEMBLY

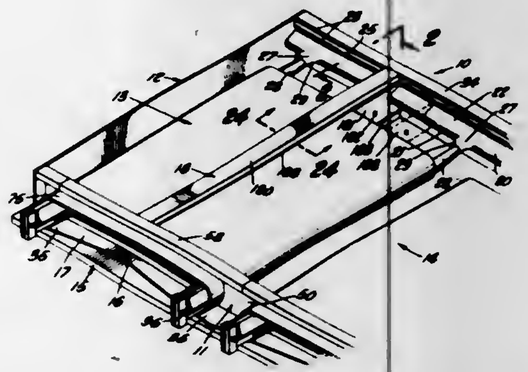
William B. Bernstrom, 1810 Brownsboro Road, Louisville, Ky. 40206, and Robert L. Jones and Dennis H. Jones, both of 10301 Taylorsville Road, Jeffersontown, Ky. 40029
Filed Apr. 26, 1965, Ser. No. 450,793
5 Claims. (Cl. 249—126)



1. An ice-cube molding assembly comprising a pan, a stack of trays, each being formed to include a plurality of ice-molding pockets and having means for retaining it in vertical alignment with upper and lower trays, and a pair of bails spanning said stack and pivotally attached to the ends of said pan in spaced relation to one another.

3,352,529
MOLD APPARATUS FOR HOLLOW BUILDING ELEMENTS

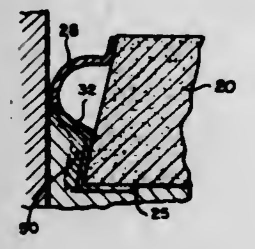
Wilson E. Haas, 63–770 Dillon Road,
Palm Springs, Calif. 92262
Filed Oct. 22, 1965, Ser. No. 501,106
17 Claims. (Cl. 249—142)



15. A device for casting hollow core concrete panels comprising
a pair of longitudinal form means, a first of said form means including a plurality of tapered projections extending therefrom, and a second of said form means having a plurality of elongated apertures therein, and
collapsible hollow mold means inserted in said apertures, each of said mold means including tapered mold extensions protruding into said projections of said first form means and substantially forming a seal therewith for preventing seepage of concrete into said first form means and said mold means.

3,352,530
BOTTOM RING FOR A HOT TOP

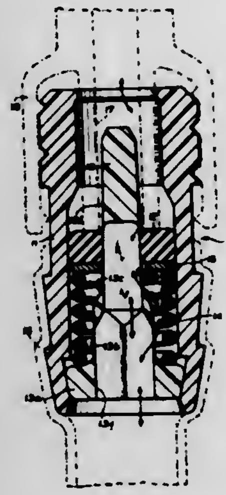
Darold W. Thiem, 650 N. Sunnyslope Road,
Elm Grove, Wis. 53122
Filed Nov. 18, 1963, Ser. No. 324,565
2 Claims. (Cl. 249—202)



1. A wiper strip for a refractory ring, the combination thereof forming a bottom ring for a hot top used in pouring molten metal in an ingot mold, comprising a strip of metal having a base leg and an edge leg, said edge leg having a multi-walled section integral therewith and forming a continuation along the full length of the wiper strip for producing a first chill effect when engaged by molten metal rising in the ingot mold and a second chill effect in the event that the molten metal burns through the first wall.

3,352,531
CHECK VALVE

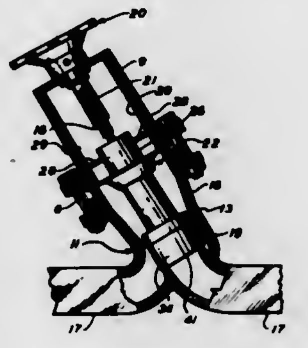
Louis E. Kilmarx, Massapequa Park, N.Y., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Apr. 2, 1964, Ser. No. 356,835
5 Claims. (Cl. 251—149.6)



1. A check valve assembly comprising a tubular housing having in the bore thereof inwardly from its outer end an inwardly facing shoulder, an annular deformable elastic sealing member in said bore and providing therewith a fluidtight fit, spring means biasing the annular sealing member into engagement with the shoulder, a hollow pin closed at its outer end within the housing bore, the annular sealing member normally engaging over the outer closed end portion of said pin with a fluidtight fit, said closed outer end portion of the pin and said annular sealing member being axially movable, one relatively to the other, and the hollow portion of the pin inwardly of the annular sealing member when in engagement with said shoulder having a transverse passage providing open communication between the hollow portion of the pin and the housing bore, whereby relative axial movement between the annular sealing member and the pin, through a predetermined distance greater than the axial dimension of the sealing member will establish open communication for fluid through the bore of the housing.

3,352,532
CORROSION RESISTANT VALVE

Walter G. Mooney, 31 Brook Terrace, Wayne, N.J. 07470; Lloyd K. Dutton, 7 Westerholt Ave., West Paterson, N.J. 07506; and Francis K. Lynch, Jr., Awosting Road, Hewitt, N.J. 07421
Filed Feb. 26, 1965, Ser. No. 435,642
6 Claims. (Cl. 251—268)



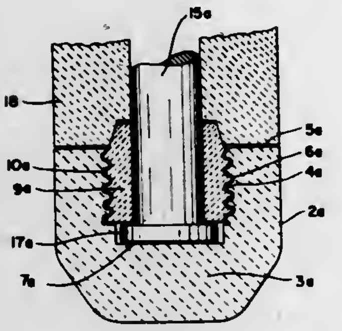
1. A corrosion resistant valve comprising:
(a) a corrosion resistant housing with a flow-passage therethrough,
(b) a bonnet attached to the housing,
(c) a valve seat in the flow-passage,
(d) a corrosion resistant valve stem in the housing,
(e) a pin attached to the valve stem extending laterally therefrom, and disposed in sliding contact with an axial groove in the bonnet for permitting axial movement of the valve stem without torsional movement,
(f) means in the bonnet engaged with the one end of the valve stem to move it axially to and from the valve seat,
(g) a flexible, corrosion resistant, concave diaphragm
(h) a relatively thick inner portion of the diaphragm attached to the valve stem,
(i) a relatively thin outer portion of the diaphragm seized between the housing and the bonnet,
(j) an intermediate portion of the diaphragm extending in an upward and outward direction, tapered from the inner thick portion to the outer thin portion,
(k) a corrosion resistant cap attached to the other end of the valve stem,
(l) a generally flat face on the cap engageable with the valve seat,
(m) a rigid core in the valve stem, and the valve stem defining a protective sheath for the core,
(n) a radial enlargement on the bottom of the rigid core inside the valve stem, and opposite the flat face,
(o) a cavity between the other end of the valve stem and the inside of the cap and positioned generally opposite the area of engagement of the face of the cap with the seat,
(p) a resilient filler in the cavity.

3,352,533
STOPPER FOR A LADLE OR SIMILAR RECEPTACLE

Crawford B. Murton, Monchen-Gladbach, Germany, assignor to Vesuvius Crucible Company, Swissvale, Pa., a corporation of Pennsylvania
Original application Sept. 8, 1958, Ser. No. 759,670, now Patent No. 3,281,904, dated Nov. 1, 1966. Divided and this application Nov. 13, 1964, Ser. No. 410,863
2 Claims. (Cl. 251—356)

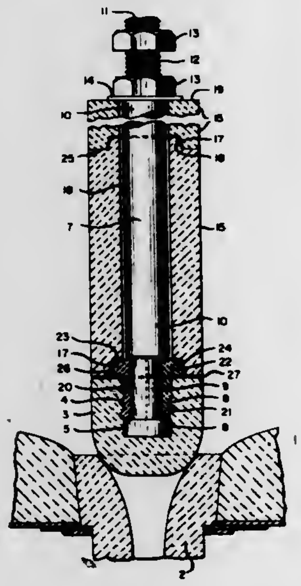
1. A stopper for a ladle or similar receptacle comprising a refractory head having a well extending downwardly thereinto, a rod having a lateral projection at its bottom inserted downwardly into the well, insert means separate from the rod and head inserted downwardly into the well above the lateral projection at the bottom of the rod

into position to overlie at least a portion of the lateral projection at the bottom of the rod and seat thereon and thereby withdrawal of the rod from the well and connected with the head whereby to attach the rod to the head and protective sleeve means surrounding the rod above the head vertically supported by said insert means.



3,352,534
STOPPER FOR A LADLE OR SIMILAR RECEPTACLE

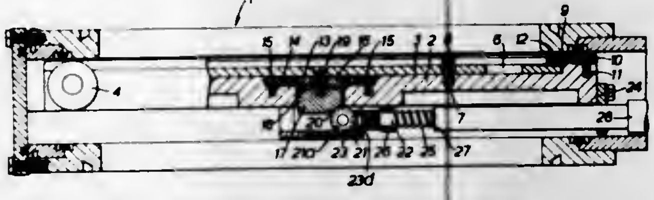
Theodore H. Harley, Fox Chapel Borough, Pa., assignor to Vesuvius Crucible Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Dec. 18, 1964, Ser. No. 419,423
4 Claims. (Cl. 251—356)



1. A stopper for a ladle or similar receptacle comprising a stopper head having a downwardly extending well therein open at the top thereof and terminating above the bottom thereof, a stopper rod having a flange at its bottom forming an integral permanent part of the stopper rod entering the well of the head, the flange being small enough to be introduced downwardly into the well from the top thereof, sleeve means disposed about the rod above the head and holddown means applied to the rod above the sleeve means, the sleeve means having a bore of greater transverse dimension that the rod flange so that the sleeve means may be introduced over the rod from the bottom of the rod before the bottom of the rod is inserted into the well of the head, avoiding the necessity of removing the holddown means, and insert means applied to the head entering the well above the rod flange maintaining the rod and head assembled, the transverse dimension of the upper portion of the rod which lies within the sleeve means being of the same order as the transverse dimension of the rod flange and the rod having a portion of reduced transverse dimension between the upper portion thereof and the flange, the insert means entering such portion of reduced transverse dimension of the rod.

3,352,535
CAM ACTUATED GATE VALVE

Basil Dixon Power, Horsham, England, assignor to Edwards High Vacuum International Limited, Crawley, England, a British company
Filed June 8, 1965, Ser. No. 462,374
Claims priority, application Great Britain, June 8, 1964, 23,626/64
8 Claims. (Cl. 251—204)



1. A gate valve including a valve housing, a valve seat defining a valve aperture, a closure member of composite construction and laterally traversable means for moving said closure member across said aperture, said closure member comprising in combination:

(a) a first substantially flat member capable of withstanding full atmospheric pressure;

(b) a second substantially flat member adapted to abut said first member in face-to-face relationship and being formed with at least one pressure relief aperture which ensures substantial pressure equalisation across said second member;

(c) connecting means between said first and second members to allow limited movement away from said position of face-to-face relationship;

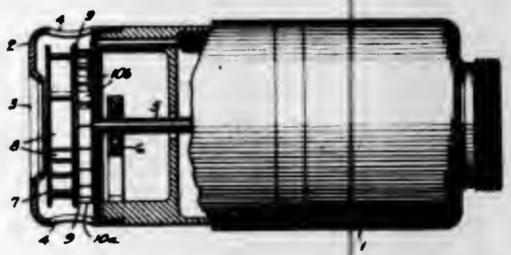
(d) control means associated with said connecting means controllably to effect said limited movement;

(e) first sealing means between the periphery of said second member and said valve seat for compression therebetween on said limited movement; and

(f) second sealing means comprising a flexible annular sealing member attached to the periphery of said first member and extending inwardly to said second member to provide an effective seal between the peripheries of said first and said second members when said limited movement is effected.

3,352,536
SELF-REGULATING TURBINE

Nils T. Almquist, assignor to the United States of America as represented by the Secretary of the Army
Filed June 11, 1952, Ser. No. 292,874
4 Claims. (Cl. 253—59)



2. In a self-regulating turbine the combination of a driving turbine and a retarding turbine, said turbines being affixed to each other on a single shaft, and valve means integral with said turbines and rotatable therewith, the valve means spilling air from said driving turbine to said retarding turbine to create a force in opposition to the force of said driving turbine and thereby control the speed of the driving turbine after a predetermined speed has been obtained.

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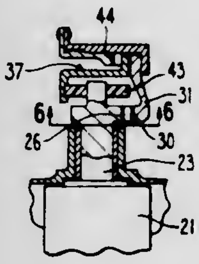
3,352,537
VANE OPERATING MECHANISM FOR FLUID FLOW MACHINES

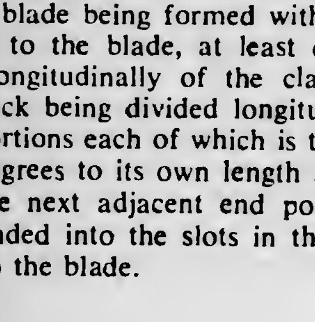
James Alexander Petrie, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Dec. 12, 1966, Ser. No. 600,914
Claims priority, application Great Britain, Dec. 29, 1965, 55,140/65
5 Claims. (Cl. 253—78)



1. A vane operating mechanism for fluid flow machines comprising a ring which is formed on one side thereof with gear teeth, means for rotating the ring about its axis and through a predetermined angular range, a plurality of angularly spaced apart pivotally mounted vanes which are arranged about the said axis, a radially extending rotatable spindle connected to each said vane, rotation of a said spindle effecting pivotal movement of the respective vane, each spindle being provided with gear teeth which are in mesh with the gear teeth on the ring, at least one spring which urges the gear teeth of the spindles axially towards and into mesh with the gear teeth of the ring, and a track member against which said at least one spring bears, a roller being associated with and carried by each said spindle, each roller engaging the said track member.

3,352,538
BLADED ROTORS FOR USE IN GAS TURBINE ENGINES

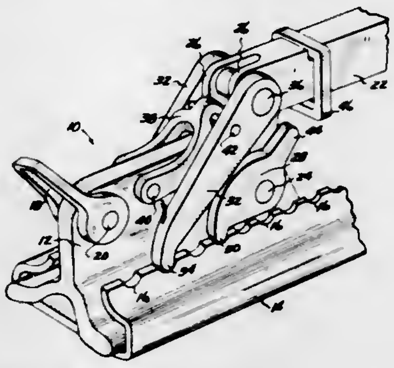
Wilfred H. Wilkinson, Turnditch, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed May 25, 1967, Ser. No. 641,378
Claims priority, application Great Britain, June 28, 1966, 28,829/66
8 Claims. (Cl. 253—77)



1. A bladed rotor comprising a rotor disc, a plurality of blades mounted on the periphery of the disc, at least one flank of each blade being formed with slots therein, a clapper secured to the blade, at least one bundle of fibres extending longitudinally of the clapper, at least one end of the pack being divided longitudinally into a plurality of end portions each of which is turned through substantially 90 degrees to its own length and in the opposite sense to the next adjacent end portion, the end portions being bonded into the slots in the blade to secure the clapper to the blade.

3,352,539
CABLE JACK

Ray H. Witt, Bloomfield Township, Mich.
(28240 Grand River, Farmington, Mich. 48024)
Filed Feb. 1, 1966, Ser. No. 524,259
4 Claims. (Cl. 254—71)



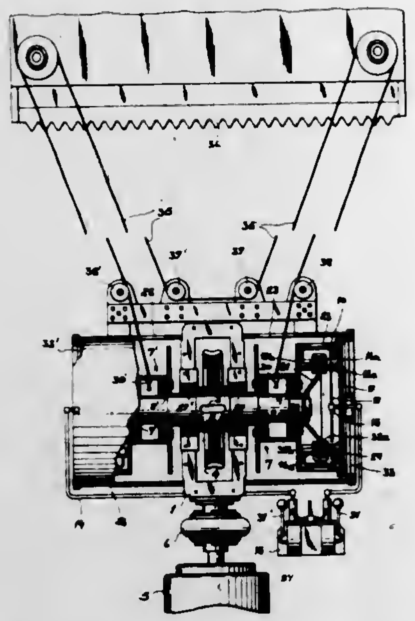
1. A holddown device comprising:
a notched rack;
a guide body slidably mounted in said rack;
an actuating lever pivotally secured on a first pivot axis to said guide body, said actuating lever having mounted thereon a pawl release cam;
a first pawl pivotally secured on said first pivot axis to said lever and said guide body, said first pawl being provided with a first tongue normally engaging a first notch in said rack while the holddown is under load, and being further provided with a release boss;
a second pawl pivotally secured on a second pivot axis to said lever, said second pawl being provided with a second tongue and normally engaging a second notch in said rack while said holddown is under load;
said first and second pawls normally permitting relative motion between said guide body and said rack in only a single direction;
whereby said guide body may be selectively rendered free to slide in either direction within said rack by a two-stroke cycle of said actuating lever, said first stroke bringing said pawl release cam into a pawl releasing position, and said second stroke of said actuating lever bringing said pawl release cam into abutting engagement with said release boss to thereby cam and hold said first pawl out of engagement with said rack, said first pawl simultaneously camming said second pawl out of rack engaging position during said second stroke.

3,352,540
DRAG-LINE WINCH

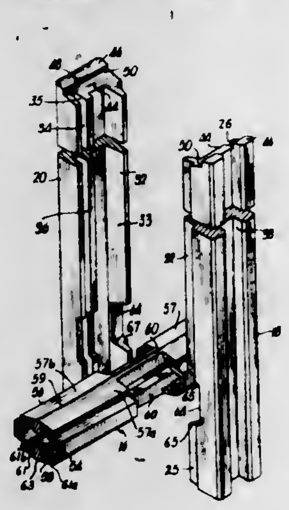
Alfred Schlechter, Essen-Heisingen, Germany, assignor to Firma E. Wolff, Maschinenfabrik und Eisengiesserei G.m.b.H., Essen, Germany
Original application July 7, 1964, Ser. No. 380,859, now Patent No. 3,291,450, dated Dec. 13, 1966. Divided and this application June 21, 1966, Ser. No. 559,265
Claims priority, application Germany, Dec. 19, 1963, W 35,849
The portion of the term of the patent subsequent to Dec. 13, 1983, has been disclaimed
2 Claims. (Cl. 254—185)

1. A drag-line winch, comprising a frame; a shaft rotatably journaled in said frame at a central portion of the shaft; a pair of cable reels coaxial with said shaft and journaled on opposite ends thereof for independent rotation thereabout; a generally cup-shaped carrier member coaxially rigid with each of said reels, said member having an end wall extending generally transversely of said shaft beyond a respective extremity thereof and an apertured annular peripheral wall surrounding said extremity; a clutch mechanism for each reel including a disk rigid with the respective extremity of the shaft and co-operating coupling means supported on the respective

end wall, each of said coupling means including a pair of axially shiftable brake shoes in said member flanking each of said disks and engageable therewith while being provided with a fluid-responsive actuating element for said shoes including a hydraulic cylinder having an input connection at a location of said end wall in line with the shaft axis; a source of hydraulic fluid for each of said cylinders provided with a respective conduit terminating at said input connection; respective control means individual to each reel for selectively admitting hydraulic fluid from said source to the respective input connection via the respective conduit to urge the respective shoes into frictional contact with the respective disk; respective restoring means for disengaging said shoes from said disks in the unoperated condition of the respective control means; and drive means between said reels for continuously rotating said shaft.

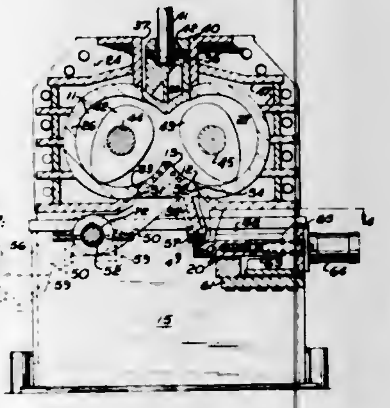


3,352,541
RAILING ASSEMBLY
Wenzel W. Thom, Wichita, Kans., assignor of one-half to Cecil D. Jones, Wichita, Kans.
Filed Oct. 2, 1964, Ser. No. 401,111
2 Claims. (Cl. 256—21)



1. A railing assembly comprising:
an elongated rail having a pair of spaced, longitudinally extending, outwardly facing side surfaces, and a longitudinally extending face joining the normally lowermost edges of said side surfaces, said side surfaces being located to diverge as said face is approached presenting a rib having a transversely dovetail configuration;
a pair of elongated, separate members cooperable to define a post and supporting the rail in intersecting relationship thereto, each member having an upper extremity provided with a normally, generally upwardly facing first surface and a second surface extending generally upwardly from said first surface, said second surfaces being located on said members to generally face one another when said members are disposed to define said posts and to diverge as said first surfaces are approached presenting a transversely dovetail configured groove extending laterally across said post at said upper extremity thereof, said first and second surfaces being located to cause said groove to be configured to complementally receive said rib; and
fastening means maintaining said members in post-defining disposition and said second surfaces in engagement with said side surfaces.

3,352,542
MIXING MACHINE
James Toshio Matsuoka, Brecksville, Ohio, assignor to Stewart Bolling & Company, Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 29, 1966, Ser. No. 561,420
10 Claims. (Cl. 259—41)

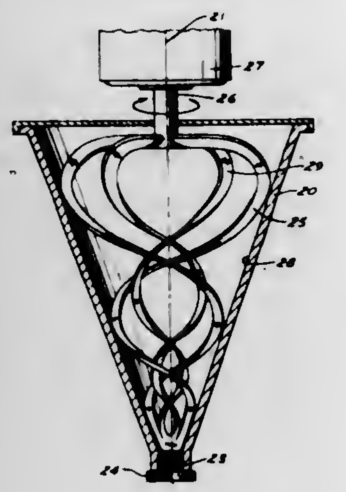


1. In a material mixing machine and the like, means forming a mixing chamber having a discharge opening in one of the walls thereof, means forming two elongated seating surfaces along opposite sides of said opening, a door movable into and out of registration with said opening, means forming closure surfaces along opposite sides of said door and adapted to engage said seats respectively when said door is moved into registration with said opening, means for moving said door to and from said seating surfaces along said two sides of said discharge opening comprising, arm means extending to one side of said door, bearing means at the extended portions of said arm means forming a pivot for said arms about an axis generally parallel to said seating surfaces along said discharge opening, said bearing means including a journal member rotatable supporting said arm means, abutment means rigidly supporting said journal member at a level fixed relative to said two seating surfaces and guiding said member for movement in opposite directions laterally with respect to said seating surfaces along said two sides of said discharge opening, and means to swing said door and arms about said pivot means to and from said discharge opening.

3,352,543
VERTICAL MIXER
Howard H. Niederman, Pasadena, Calif., and William Paul Jensen, Springfield, Va., assignors to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia
Filed June 10, 1966, Ser. No. 556,733
14 Claims. (Cl. 259—44)

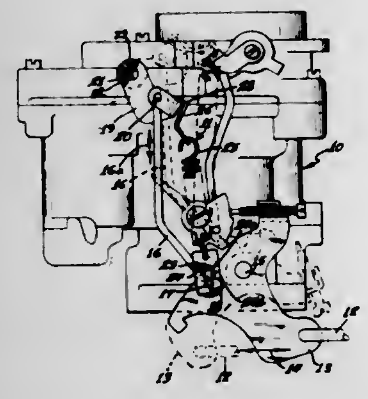
1. Mixing apparatus comprising
a receptacle having a substantially vertical axis and an interior surface concentrically disposed about said axis throughout the length thereof,

a mixing blade set having an axis of rotation coincident with said receptacle axis and comprising
first blades of helical ribbon configuration tracing a first envelope in close proximity to said interior surface,
second blades of helical ribbon configuration in fixed relationship to said first blades and tracing a second envelope of radius correspondingly less than said first envelope and entirely within said first envelope,
a motor,
a hollow shaft coincident with said receptacle axis and driven by said motor, said shaft being fixedly attached to and terminating at the upper portion of said blades, said blades being free of support throughout their entire length, and



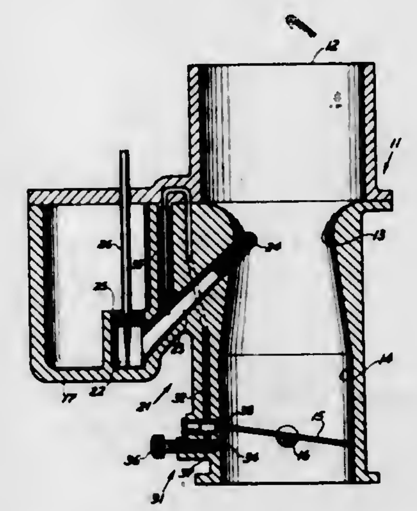
means for sensing a condition in the receptacle inserted through said hollow shaft and communicating with the interior of said receptacle.

3,352,544
COMPENSATING DEVICE FOR CARBURETORS
Paul D. Norcross, 1811 Warner Ave., Chicago, Ill. 60613
Filed Dec. 19, 1966, Ser. No. 603,038
4 Claims. (Cl. 261—34)



1. In combination with a carburetor adapted for use with an engine having accelerator means operably connected to the carburetor, the carburetor having
an accelerator plate pivotally mounted thereon and operably connected to the engine accelerator means,
a connecting rod pivotally mounted on the accelerator plate spaced apart from the pivotal mounting of the accelerator plate on the carburetor whereby rotation of the accelerator plate about the pivotal mounting in response to actuation of the accelerator means provides the connecting rod with a reciprocating, substantially vertical movement,
an acceleration pump affixed in the carburetor, the pump adapted to inject fuel into the carburetor in response to the accelerator means,
an acceleration pump shaft operably connected to the acceleration pump and rotatably mounted in a shaft receiving bore in the carburetor and
a lever arm connected, at one end, to the acceleration pump shaft, and at the other end, to the connecting rod whereby the acceleration pump is operably connected to the accelerating means and is responsive to the reciprocating movement of the connecting rod,
a compensating device comprising
an attachment member attached to the accelerator plate substantially at the pivotal connection of the connecting rod to the accelerator plate,
a lever arm attachment member attached to the lever arm and
bias means connecting said attachment member to said lever arm attachment member urging said attachment member and said lever arm attachment member together whereby the acceleration pump shaft is urged downwardly in the receiving bore during reciprocating movement of the connecting rod cradling the acceleration pump shaft downwardly in the bore thereby permitting immediate response of the acceleration pump to the accelerating means and compensating for wear in the acceleration pump shaft receiving bore.

3,352,545
CARBURETOR CONSTRUCTION
John F. Denine, 180 Lincoln St., Hudson, Mass. 01749
Filed May 31, 1966, Ser. No. 554,045
12 Claims. (Cl. 261—41)



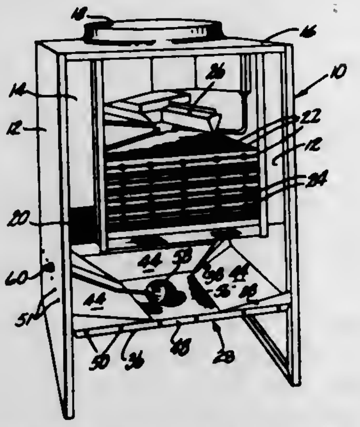
1. A carburetor for use in an internal combustion engine and comprising a mixing conduit, a fuel reservoir, a rotatable throtle shaft extending into said mixing conduit, a throttle valve mounted on for rotation with said throttle shaft, venturi means in said mixing conduit anterior to said throttle valve, a primary fuel supply system adapted to discharge fuel from said fuel reservoir to said mixing conduit adjacent said venturi means in response to engine demands, a metering means adapted to regulate the amount of fuel passing from said fuel reservoir to said main supply system, an idle fuel system adapted to discharge fuel from said fuel reservoir through an idle port which opens into said mixing conduit posterior to said throttle valve when in a substantially closed position, and said idle fuel system including an adjustment means extending into said idle port so as to regulate the rate of fuel flow therethrough, and wherein said adjustment means is composed of a relatively porous material.

3,352,546
COOLING TOWER SUMP

John B. Greenfield, Jackson, Mich., assignor to Acme Industries, Inc., Jackson, Mich., a corporation of Delaware

Filed May 16, 1966, Ser. No. 550,307

7 Claims. (Cl. 261—111)



1. In combination with heat exchanger apparatus utilizing means for flowing a dispersed liquid stream downwardly, gas inlet means for introducing a gas into contact with said liquid, a vertically disposed support structure having a lower portion, a sump mounted within the lower portion of said support structure vertically below said dispersed liquid stream to receive the same, said sump including a peripheral edge and a center and formed of a one-piece sheet of bendable material, a plurality of formed sections of deformed sheet material defined in said sheet, each of said sections comprising a pair of intersecting sheet portions each having a vertical dimension and a longitudinal dimension, each of said sections extending from the peripheral edge of said sump to substantially the center thereof, the portions comprising a common section converging to intersect with each other in the direction of the vertical dimension and decreasing in vertical dimension toward the center of said sump forming said sump into a funnel-like shape, generally triangular shaped wall portions extending between each of said formed sheet sections and converging toward the center of said sump, said sump center being vertically related below said peripheral edge, and a drain outlet defined in said sheet material forming said sump at said sump center.

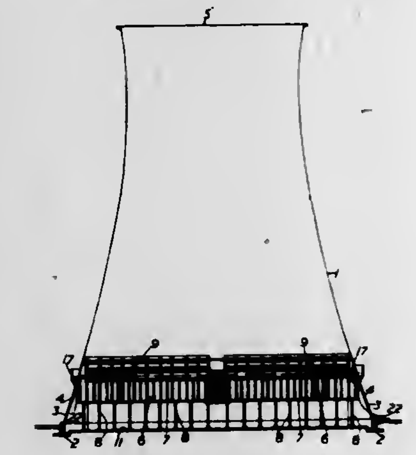
3,352,547
COOLING TOWERS

Graham Charles Parkinson, West Byfleet, England, assignor, by mesne assignments, to The L. T. Mart Company Limited, Kansas City, Mo., a corporation of Delaware

Filed Aug. 12, 1964, Ser. No. 389,054

Claims priority, application Great Britain, Sept. 19, 1963, 36,938/63

4 Claims. (Cl. 261—112)



1. In a water cooling tower comprising an upwardly tapering shell having an open top and means forming an air inlet opening around its bottom, and, within said shell, a packing over which water being cooled splashes downwards and a draught of air produced by convection flows upwards, the improvement comprising a shroud ring extending around the inside of the bottom of said shell just above said opening, said shroud ring including a substantially vertical inside surface terminating in a sharply defined lower edge and wherein said packing comprises rings of concentric louvres, means supporting said louvres in layers one above the other extending around said shell and at least the outer ones of said louvers being arranged to deflect the falling water outwards onto the inside surface of said shroud ring so that it runs vertically down said inside surface and flows smoothly in the same direction from said lower edge of said ring to form a substantially continuous curtain of water over said opening.

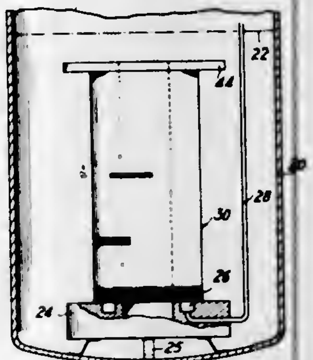
3,352,548
GAS AND LIQUID CONTACT APPARATUS

Pierre Godet, l'Isle-Adam, and Alain Dieudonné, Asnieres, France, assignors, by mesne assignments, to Oleostin, Paris, France, a corporation of France

Filed Sept. 23, 1964, Ser. No. 398,618

Claims priority, application France, Oct. 9, 1963, 950,114

3 Claims. (Cl. 261—124)



1. Apparatus for bringing gas and a liquid into contact more especially for deodorizing edible oils, comprising a source of gas, a vessel containing the liquid, a substantially vertical sleeve in said vessel, openings at the top and bottom of said sleeve, a stack of plates in the sleeve and spaced from the sleeve wall, and gas injection means located in said plates and connected to the source of gas, said gas injection means comprising first and second plates, duct forming aligned orifices being provided in said first and second plates and communicating with said source of gas, and nozzle forming indentations being provided in each second plate between said orifices and the edge of said second plate.

3,352,549
COMPOSITE CARBONACEOUS MEMBERS FOR FURNACE ROLLS AND OTHER HIGH TEMPERATURE MEMBERS

Martin N. Ornitz, Wilkinsburg, and Ray H. English, McCandless Township, Allegheny County, Pa., assignors to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Oct. 29, 1964, Ser. No. 407,516

19 Claims. (Cl. 263—6)

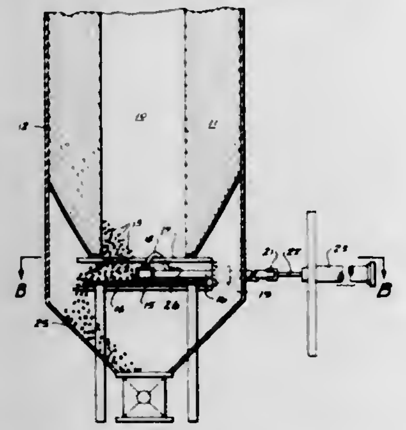
1. Composition for composite members to engage metallic work for a heat treating furnace conveyor unit and the like, comprising, in combination, an admixture of carbon and metal and boron compounds other than boron oxide, the weight of metal therein being in the neighborhood of 25% by weight, the weight of boron compound therein being in the neighborhood from about 1% to about 20% by weight, the balance consisting essentially

of carbon, said metal being selected from the group consisting of silicon, titanium, zirconium, chromium and alloys and metal mixtures thereof in which at least one of said named metals predominates.

3,352,550
SHAFT KILN DISCHARGE MECHANISM

Carl E. Rossi, Ludington, Mich., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 27, 1965, Ser. No. 490,366
2 Claims. (Cl. 263—29)

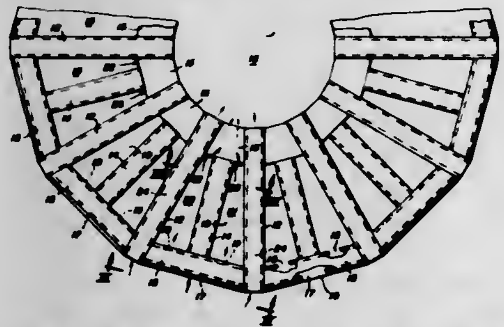


1. In a shaft kiln for burning refractory materials having a vertical column wherein said materials are burned, said shaft kiln having a feed end at the top of the column and a discharge end at the base of the column enclosed in a collecting chamber, a discharge mechanism within said collecting chamber comprising a table with a rectangular top larger than the opening at the base of the column perpendicular to said vertical column to support said materials in the column inside said collecting chamber, a hollow drag bar which reciprocates across said table having an orifice on each end, a guide track at each end of said drag bar slidably attached to said drag bar to stabilize it during its reciprocating motion, a pair of hollow push rods attached at one end to said drag bar and having a coupling at the opposite end and having orifices at each end, a pair of hydraulic cylinders and pistons provide reciprocating motion across the width of the column at the discharge end of the shaft kiln to said hollow push rods, there being attached by said couplings to said push rods, a cooling liquid supply, a pair of flexible hoses connecting the orifices on said drag bar to the orifices on said push rods, another pair of flexible hoses connecting the orifices on the coupling end of said push rods and said cooling liquid supply.

3,352,551
COIL SEPARATOR

Frank Kennedy and Edwin C. Klein, Johnstown, Pa., assignors to United States Steel Corporation, a corporation of Delaware

Filed Nov. 12, 1965, Ser. No. 507,321
4 Claims. (Cl. 263—47)

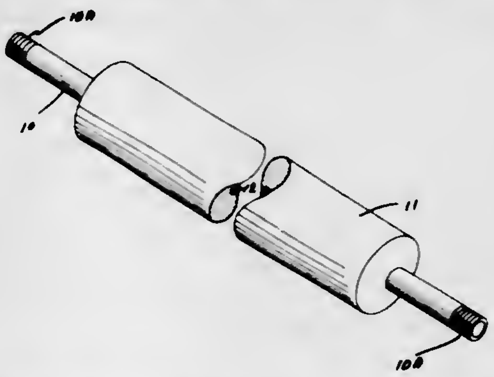


1. A coil separator comprising an annular bottom member formed of a plurality of spaced-apart straight-sided metal plates each having opposite sides parallel with the sides of the two adjacent plates, inverted open-ended radially extending channels between each pair of said plates welded thereto, inverted outer peripheral channels welded to the respective plates near the outer edges thereof and having inner and outer flanges, and inverted intermediate radial channels welded to the respective plates and extending from the peripheral channel on each to a point spaced inwardly from the inner edge of the plate, said channels having webs lying in the same plane to support a coil thereabove and distribute the weight load, said first-named radial channels affording passageways to conduct gases over the top of a coil therebeneath, said peripheral channels having gas inlets in their outer flanges and gas outlets in their inner flanges at opposite sides of said second-named radial channels to enable gases to flow into the areas bounded by said first and second-named radial channels and said peripheral channels to contact the bottom of the coil thereabove, said radial channels forming throats above the inner edge of each plate, the throats above each plate having a combined cross-sectional area substantially equal to that of the passageway through one of said first-named radial channels.

3,352,552
REFRACTORY-COATED OXYGEN LANCE

Edward Walter Koenig, Denver, Colo., and Gerald R. Cope, Johnstown, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 8, 1965, Ser. No. 470,547
2 Claims. (Cl. 266—34)



1. An oxygen lance construction comprised of an elongate, open-ended, tubular, metal member, the material of which said metal member is constructed being capable of reacting with phosphoric acid, and a hard refractory sheath firmly anchored to and surrounding all exterior surfaces of said metal member, said refractory sheath being made from a paste-like batch containing phosphoric acid in an amount sufficient to provide the equivalent of 15–25% of 75% phosphoric acid based on the weight of the solids in the paste, the solids consisting essentially of refractory material selected from the group consisting of high alumina materials and zircon.

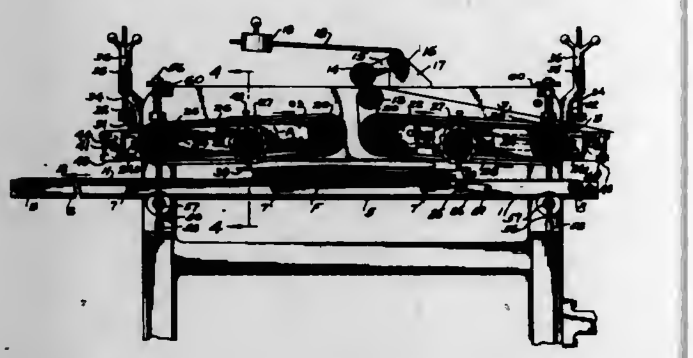
3,352,553
CONTINUOUS FORMS FOLDER MACHINE

David Preston, St. Louis, Mo.
(1128 S. Garrison Ave., Carthage, Mo. 64836)

Filed Oct. 14, 1965, Ser. No. 496,033
9 Claims. (Cl. 270—79)

1. In a machine for making continuous zigzag folds in a strip of flexible material, a table-like support, stop members above said support and spaced apart lengthwise thereof and facing each other, means intermediate said stop members to feed a strip of material toward said support from above and thereby loop the strip as it contacts said support, each stop member having upstanding teeth at intervals along its length, a roller extending alongside each stop member, belt means associated with the rollers

and including flights facing the table and moving past the rollers away from the space intermediate the rollers for engaging the strip as it leaves said feeding means and guiding the strip toward said stop member alternately, each of said rollers having spaced circumferential grooves receiving the teeth of the associated stop member to engage looped portions of the strip adjacent the stop member and then thrust the stop member engaging portion of the strip loop toward the adjacent stop member and toward the table to flatten the loop into a sharp fold.



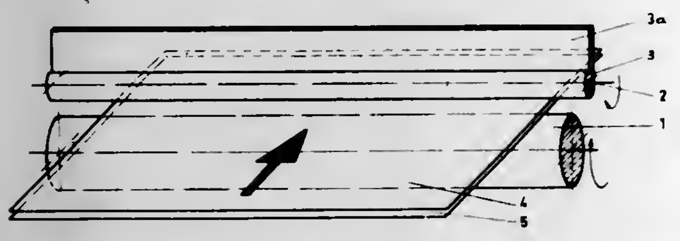
3,352,554
DEVICE FOR SEPARATING TWO SUPERIMPOSED MOVING SHEETS

Ulrich Menzi, Regensdorf, Switzerland, and Helmut Grigereit, Kaufbeuren, Germany, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

Filed July 5, 1966, Ser. No. 562,694

Claims priority, application Switzerland, July 6, 1965, 9,463

9 Claims. (Cl. 271—64)



1. A device for separating two superimposed sheets comprising
   (a) a rotatable feed cylinder over which the sheets to be separated are intended to be passed,
   (b) a rotatable shaft spaced from and axially parallel to the feed cylinder,
   (c) an outwardly projecting elastic flap mounted on the shaft,
   (d) a switch actuatable by the sheets when at least a part of the sheets has passed over the feed cylinder,
   (e) drive means for rotating the shaft one revolution, when the switch is actuated, in a direction counter to the direction of rotation of the feed cylinder whereby the flap presses the sheets against the feed cylinder and is deformed such that the sheet adjacent the feed cylinder will continue in its original direction of travel and the sheet remote from the feed cylinder will be deflected into a different direction of travel.

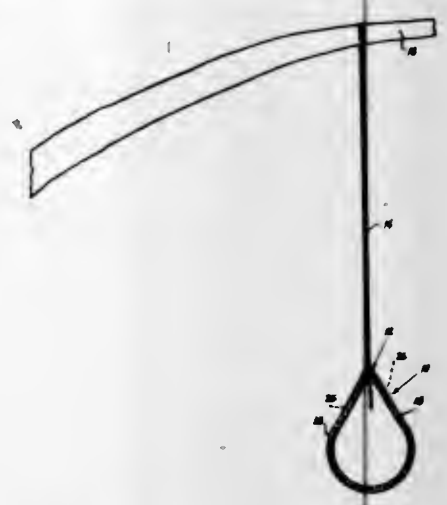
3,352,555
ELASTIC TUBE SWING SEAT

Paul W. Phillips, 5304 Sonora Way, Carmichael, Calif. 95608

Filed July 20, 1965, Ser. No. 473,462

10 Claims. (Cl. 272—85)

1. In a swing, seat forming means including a continuous elastic tube having a continuous internal passage, an elongated tensile member disposed within said internal passage and of substantially lesser thickness than said internal passage and of substantially greater length than the periphery of said tube, means connecting said tensile member to said tube in at least one location and means secured to the exterior of said tube for securing said tube to another tensile member.

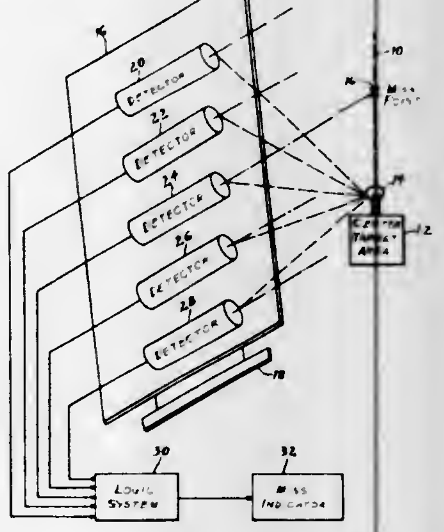


3,352,556
TRAJECTORY MISS INDICATOR SYSTEM

Herbert Chaskin, Flushing, N.Y., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 19, 1965, Ser. No. 4[illegible]4,147

9 Claims. (Cl. 273—101.[illegible])

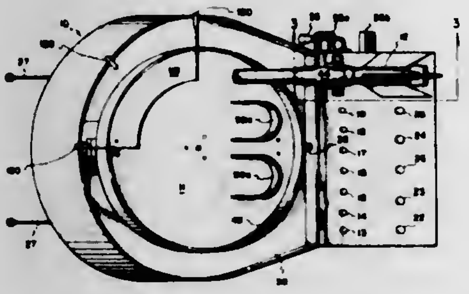


5. In a weapon firing simulation device, the combination comprising;
   a target having an inner area and a plurality of predetermined outer areas,
   a selectively operable light source mounted at the optical center of the said inner area,
   a triggering device selectively coupled to said light source whereby said light source is operated upon a line of sight coincidence between said triggering device and one of said target areas,
   a single light responsive detecting device optically coupled to the said target inner area whereby a direct hit on said target may be selectively indicated,
   a plurality of light responsive detecting devices arranged about said single light responsive detecting device and each optically coupled to respective ones of said predetermined outer target areas, and comparison means receiving data from said plurality of light responsive detection devices whereby an indication of the relative miss of the said target inner area may be selectively determined.

8. The combination of claim 5 wherein said comparison means comprise logic means operatively coupled to the outputs of each of said light responsive detection devices and indicator means operatively connected to said logic means to indicate the relative mangitude and angle of a target miss.

3,352,557
SPACE VEHICLE SIMULATING GAME

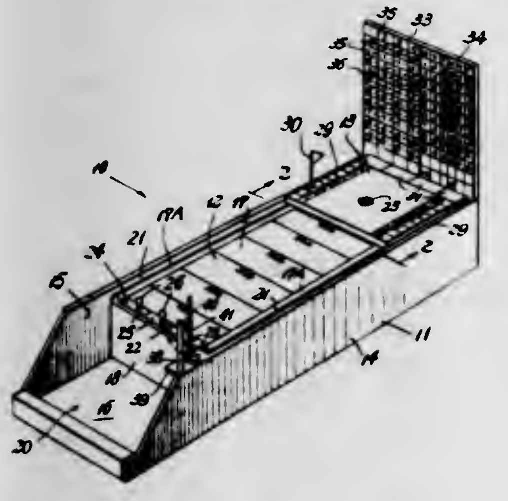
Pat Maher, Miles City, Mont.
(65 Grove Ave., Salt Lake City, Utah 84115)
Filed Aug. 30, 1966, Ser. No. 582,787
9 Claims. (Cl. 273—110)



1. An orbit game, comprising a circular orbit guide, including a peripheral raceway providing an orbit path; means mounting the center of said orbit guide to orbit about a central axis; means for driving said orbit guide a spherical capsule, means for projecting said spherical capsule into said peripheral raceway for orbiting within said orbit guide; means, responsive to player manipulation, for blocking the orbit path of said capsule; and means for receiving said capsule after its orbit path has been blocked, said means comprising safe recovery areas.

3,352,558
SIMULATED GOLF GAME BOARD WITH ADJUSTABLE GREEN MEMBER

John T. Lucas, 933 Success Ave.,
Bridgeport, Conn. 06610
Filed Dec. 29, 1964, Ser. No. 421,788
5 Claims. (Cl. 273—134)

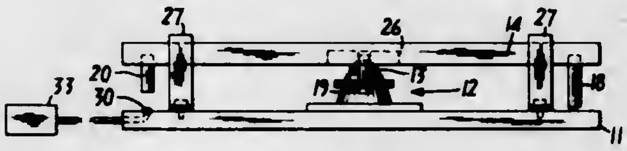


1. A game device in which the game of golf can be authentically simulated comprising:

(a) a game board including means defining a raised platform portion to simulate a fairway portion of a golf course and a well portion adjacent one end of said platform portion,
(b) means indicating distances on said fairway portion,
(c) means defining a slideway extending longitudinally of said platform portion,
(d) a slide member adapted to be slidably adjusted along said slideway, said slide member simulating the green portion of a golf course,
(e) game tokens adapted to represent players movable over said game board,
(f) and indicating means for randomly signifying the lie of an imaginary ball in driving toward the green by a given player and strokes taken to putt a hole after reaching the green by the respective players,
(g) said indicating means including a die,
(h) said die having markings on the faces thereof to represent yardage when used to indicate drives and strokes when a player is on the green,
(i) and means for effecting the throw of the die,
(j) said means including a ledge mounted adjacent the end of said platform portion and within the well portion of said board,
(k) and means positioned adjacent said ledge to knock said die placed on said ledge into said well to effect the throw of the die.

3,352,559
GOLF SWING TRAINING DEVICE

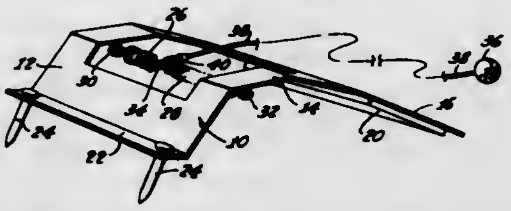
Erling A. Larsen, 360 Cedar Ave.,
Ridgewood, N.J. 07450
Filed July 20, 1964, Ser. No. 383,701
4 Claims. (Cl. 273—187)



1. A device for aiding a golfer in learning to maintain proper balance and develop coordinated body movement when stroking a golf ball, said device comprising: a base; a pedestal mounted on the base; a ball member carried on top of the pedestal; a footboard on which the golfer may stand supported centrally on the ball member and lying in a plane spaced above said base, means permitting the front portion and one side portion of said footboard to tilt significantly downward from a horizontal plane toward said base in response to unbalanced stance forces exerted thereon by a golfer standing thereon and executing a golf swing; means for preventing the rear and other side portion of said footboard from tilting significantly downward from a horizontal plane toward said base in response to unbalanced stance forces exerted thereon by said golfer standing thereon and executing a golf swing, said last mentioned means comprising stop members extending between said base and said footboard and connected with one and engageable with the other; and means for preventing any pronounced rotation of said footboard about an axis perpendicular to said base and passing through the intersection of the longitudinal and transverse axes of said footboard.

3,352,560
GOLF PRACTICE APPARATUS

Denton A. Potter, 1741 Granville Ave.,
West Los Angeles, Calif. 90025
Filed Feb. 23, 1965, Ser. No. 434,488
5 Claims. (Cl. 273—200)



1. A golf swing practice unit constructed to be anchored on the ground and including: a casing having a rectangular shape in plan and having a raised essentially flat horizontal

central portion of sheet material with an opening therein, said casing further having essentially flat rear and forward end portions of sheet material sloping down from said central portion in a mutually opposed inclined relation with respect to the plane of said central portion, and said casing further having a transverse rim at the forward end of said forward end portion; a pair of anchoring spikes affixed to said rim and extending therethrough substantially parallel to the plane of said forward end portion to anchor said casing on the ground; resilient means affixed to the central portion of said casing and extending transversely across said opening; a golf ball; and a line tethering said golf ball to an intermediate point on said resilient means.

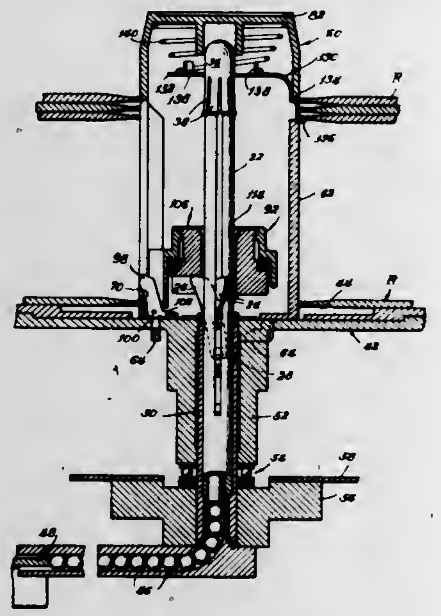
3,352,561

ADAPTER FOR RECORD CHANGER SPINDLE

John F. Arent, Benton Harbor, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan

Filed June 24, 1965, Ser. No. 466,761

18 Claims. (Cl. 274—10)



1. For use with a record changer center spindle of the type having a plurality of spindle record supporting fingers which normally extend outwardly through openings in the spindle body and are movable downwardly from a normal upper record supporting position to release one record at a time to a turntable for playing, the improvement comprising an adapter which is mounted over said center spindle for handling records of the type having a large centerhole, said adapter including, in combination, an adapter body, an adapter finger support member mounted within said adapter body so as to be vertically slidable therein, a plurality of vertical openings in said adapter body, a plurality of adapter record supporting fingers mounted on said finger support member for vertical movement therewith, said adapter fingers being aligned with said vertical openings in said adapter body so that they normally project outwardly through said vertical openings to support a plurality of records on an upper storage portion of said adapter, and means associated with said finger support member for mounting the same on the upper ends of said center spindle record supporting fingers so as to be vertically supported thereon when said adapter is operatively mounted over said center spindle, said adapter fingers being retractably mounted on the finger supporting member whereby when said spindle fingers are lowered during a record change cycle said adapter fingers will be lowered therewith and be retracted into the adapter body to release one record to the turntable for playing.

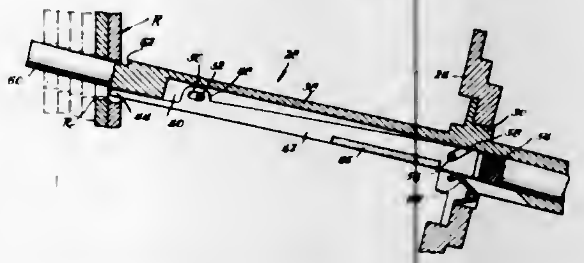
3,352,562

RECORD CHANGER SPINDLE

Robert J. Hammond, Stevensville, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan

Filed Sept. 3, 1965, Ser. No. 484,859

10 Claims. (Cl. 274—10)



1. The combination of a record changer spindle of the type which is fixedly secured to a turntable for conjoint rotation therewith, and means for supporting a plurality of records in a position where said spindle rotates with respect to said records the improvement comprising, in combination, a rotatable spindle body with an upper end acting as a bearing surface, said means for supporting a plurality of records maintaining said records in a storage position with the centerhole of the record adjacent said bearing surface radially offset with respect to said spindle body so that a portion of said centerhole is exposed and with said adjacent record bearing against said upper end of said spindle body, the amount of offset being such that said adjacent record requires a short generally radial movement relative to said body in order to permit it to slide down said spindle body to a turntable for playing, an opening in the side of said spindle body which extends up to said upper end thereof, a record feeding member carried by said rotatable spindle body in said opening for axial movement relative to said spindle body between an extended position wherein said feeding member projects axially beyond said upper end and to at least the radial distance of said side of the upper end of the spindle body from the axis of said spindle body and a normal retracted non-projecting position, and means for temporarily moving said feeding member to its extended position when said feeding member is adjacent said exposed portion of the record centerhole of said adjacent record whereby said feeding member will be extended into said record centerhole and as said spindle body rotates will move said adjacent record generally radially over said upper end of said spindle body and thereby permit the record to fall down said spindle body to the turntable for playing.

3,352,563

SELF-ADJUSTING TENSION TYPE, LOW FRICTION SEAL

Henry J. Flair, Franklin Park, Ill., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed July 12, 1965, Ser. No. 471,482

3 Claims. (Cl. 277—27)

1. A seal device comprising:

a body having a bore;

an elastomeric sleeve disposed in said bore;

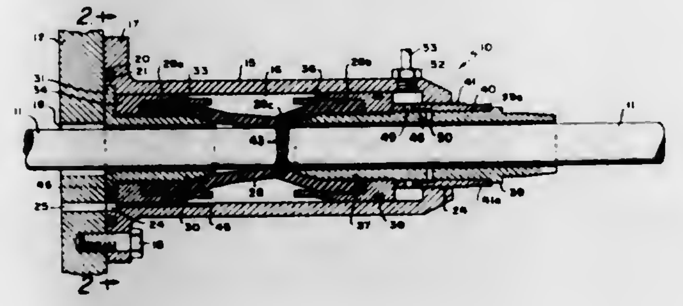
anchoring means securing one end of said sleeve against movement within said bore;

a tubular member having an inside diameter sufficient to pass an elongated cylindrical member movable axially through said sleeve;

a ferrule clamping the other end of said sleeve to one end of said tubular member, said ferrule providing fluidtight relation between said other end of said sleeve and said body;

said tubular member presenting an axially facing annular shoulder spaced from said ferrule;

a hollow externally threaded adjustment screw rotatably mounted on said tubular member between said ferrule and said shoulder, said screw being threadedly engaged with said body whereby rotation of said screw will effect axial movement of said tubular member and ferrule to adjustably stretch said sleeve into constrictive engagement of the mid-portion thereof with a cylindrical member passing therethrough; and



said body and said anchoring means defining fluid passage means for subjecting the internal and external surfaces of said sleeve on one side of said constrictive engagement to like fluid pressures.

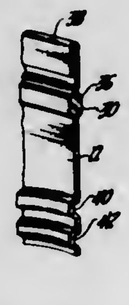
3,352,564

GASKET CONSTRUCTION

Ralph H. Johnson, Livonia, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 9, 1965, Ser. No. 446,989

8 Claims. (Cl. 277—180)



1. A cylinder head gasket for use between the cylinder head and block of an internal combustion engine and comprising

a single piece of sheet metal having a plurality of spaced cylinder openings located centrally of said gasket, a plurality of cylinder head bolt holes located near the edges of said gasket, at least one cooling water hole and at least one oil drain hole, said gasket including

embossed beads surrounding the periphery of each of the cylinder openings and adapted to seal the cylinders from the engine water jacket,

water jacket sealing means extending around all the cylinder openings and cooling water holes and separating them from the bolt holes and the oil holes, said sealing means comprising a line of spaced perforations and a unitary bead of elastomeric material formed in a continuous strip along both sides of flat portions of said sheet metal body and joined through said perforations and

folded portions along the outer edges of said gasket and adapted to limit the compression of said cylinder opening embossed beads and said water jacket sealing means.

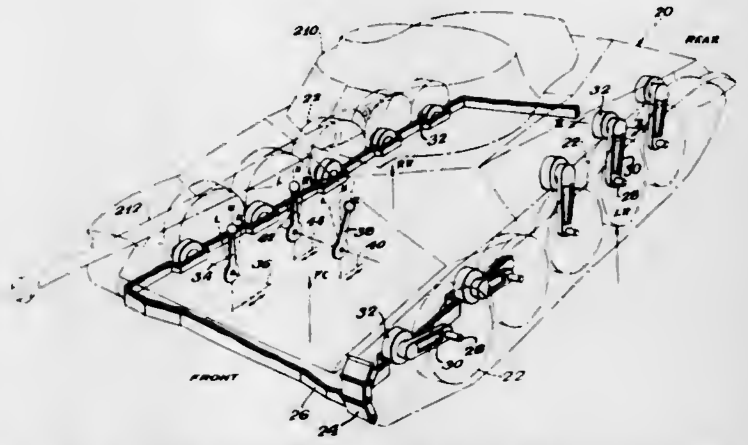
3,352,565

SERVOMECHANISM AND VEHICLE SUSPENSION EMPLOYING SAME

Ralph K. Reynolds, Saratoga, Calif., assignor to International Harvester Company, a corporation of Delaware

Filed Apr. 28, 1965, Ser. No. 451,405

19 Claims. (Cl. 280—6)



1. In a multi-wheel vehicle having wheel suspension means, including rotary actuator means, connecting a plurality of the wheels to the vehicle body for sustaining the body in a desired attitude:

shaft members carried by the vehicle, one member of which, with means associated therewith, forms an interconnecting structure in one of said wheel suspension means;

a follow-up mechanism carried by the vehicle and connected to a plurality of the shaft members for causing said one shaft member to operate in accordance with a second one;

said follow-up mechanism comprising telescopically related valve rotor parts associated with, and connected to different ones of, the shaft members; said valve parts in communication with high and low pressure fluid sources having fluid directing grooves and ports therein whereby said parts are effective for selectively applying pressure fluid from the high-pressure source or exhausting pressure fluid to the low-pressure source;

power means in the follow up mechanism comprising a load sustaining, rotary actuator and connected to move with said one shaft member and the associated valve rotor part to duplicate the motion of, and take a corresponding position to, the second shaft member and its associated rotor part, said interconnecting structure formed by the one shaft member and its associated means in said one wheel suspension means interconnecting said rotary actuator and the track wheel of that suspension means;

means hydraulically interconnecting the power means with, for controlled operation by, the valve parts; and

means for rotating the second shaft member.

3,352,566

COMPOSITE METAL AND PLASTIC SKI AND METHOD FOR MAKING SAME

Michael E. Kennedy, Mercer Island, Wash., assignor to Peter Kennedy, Incorporated, Seattle, Wash., a corporation of Washington

Filed May 13, 1966, Ser. No. 559,667

47 Claims. (Cl. 280—11.13)

1. A ski, said ski comprising:

(A) a skeleton frame and a body;

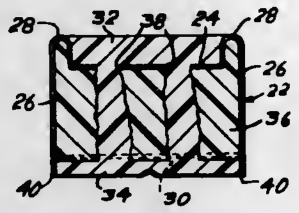
(B) said frame in a lateral cross-sectional view presenting the general configuration of a U;

(C) said U having a base and downwardly directed legs;

(D) said legs being substantially parallel and substantially at right angles to the base;

(E) said base and said legs at their junctions forming humps so that the base portion is recessed below the hump;

(F) said humps being of varying height with respect to the recessed base;

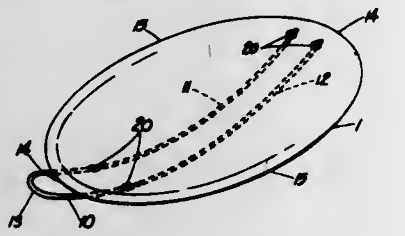


(G) said humps being of greater height at the central portion of the ski and of less height at the ends of the ski; and,

(H) said body being bonded to said frame and encompassing part of said frame.

3,352,567
PRE-STRESSED SNOW COASTER

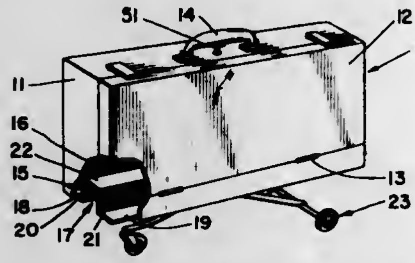
Roger I. Swanson, 624 S. Edward,
Mount Prospect, Ill. 60056
Filed Sept. 3, 1965, Ser. No. 484,950
10 Claims. (Cl. 280—12)



1. A snow coaster comprising:
a generally concave shell of resilient material;
a flexible U-shaped runner; and
means for attaching said U-shaped runner to the outer surface of said shell, the legs of said U-shaped runner forming separated elongated members on which said coaster is adapted to slide, said attaching means permitting relative sliding movement of said members with respect to said shell in a direction corresponding generally to the elongated reach of said members.

3,352,568
EXTENSIBLE AND RETRACTABLE WHEEL ASSEMBLY FOR LUGGAGE

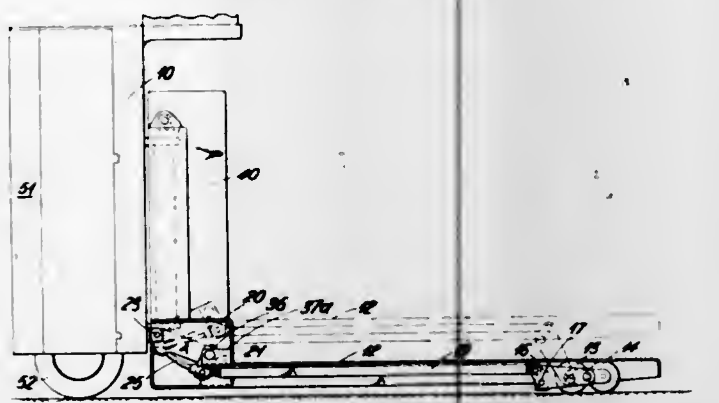
John C. Ahlf, 626 Baylor St.,
Pacific Palisades, Calif. 90272
Filed Aug. 31, 1966, Ser. No. 576,264
2 Claims. (Cl. 280—35)



1. A retractable wheel assembly for a luggage case comprising in combination: partition means dividing said luggage case into upper and lower portions; wheel means receivable in said lower portion; a generally U-shaped bracket secured within said lower portion of said luggage case, said wheel means including a pair of levers each having an end portion received within said bracket and secured thereto by means of a pivot pin for permitting pivoting movement of said wheel means between a raised position within said lower portion and a lowered position beneath said lower portion; locking means including a bar slidably mounted within said bracket, said end portions of said levers including notches defined therein for receiving said bar to accordingly lock said wheel means in their raised and lowered positions; and actuating means for said locking means for permitting said wheel means to pivot between said raised and lowered positions in response to operation of said actuating means.

3,352,569
INDUSTRIAL TRUCKS

Cecil Goodacre, Basingstoke, England, assignor to Lansing Bagnall Limited, Basingstoke, England, a British company
Filed May 12, 1966, Ser. No. 549,573
Claims priority, application Great Britain, May 14, 1965, and May 9, 1966, 20,583/65
2 Claims. (Cl. 280—43.12)

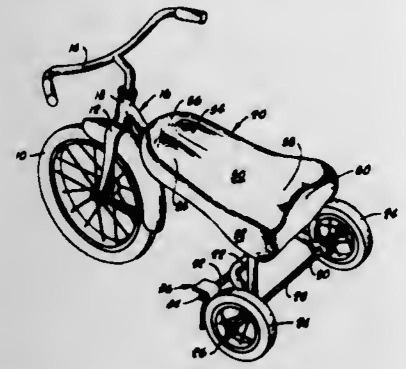


1. An industrial truck comprising a body portion, wheels beneath the body portion which are spaced laterally, a load-carrier device having a root portion attached to the body portion by means which permit up and down movement relative thereto, the remainder of the load-carrier device extending away from the body portion near ground level, means for raising and lowering the said root portion of the load-carrier relatively to the body portion, two wheeled ground supports spaced apart laterally at the outer part of the load-carrier and linkages on the load-carrier to which the ground supports are attached to raise and lower the said outer part of the load-carrier relatively to the ground supports when the root portion is raised and lowered, each linkage connecting operating means common to both linkages to the ground support to which the linkage is appropriated and being divided into two parts, one part being movable with, or forming a part of, the operating means and the other part being connected to the ground support and being movable independently of the first part, each linkage also being provided with a lever connecting the two parts and arranged for rocking movement by relative movement between the two parts, the two levers being interconnected by a cross link for rocking movement in unison whereby the two second mentioned parts may be moved together in the same sense by the operating means or, when the truck is on uneven ground, may move in unison independently of the operating means but in opposite senses.

3,352,570
VELOCIPEDE USABLE AS TRICYCLE OR SCOOTER

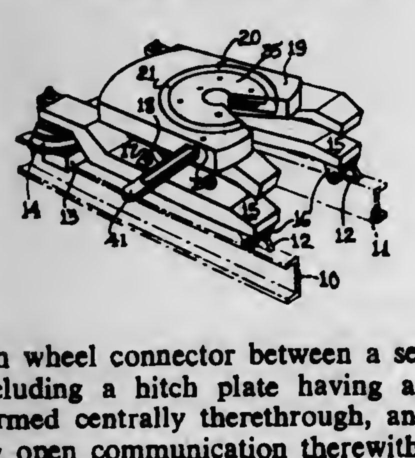
Carl E. Cordrey, 4710 N. Libby,
Oklahoma City, Okla. 73122
Filed Oct. 20, 1965, Ser. No. 498,957
8 Claims. (Cl. 280—282)

1. A velocipede comprising:
a front wheel;
a pair of horizontally spaced rear wheels;
a frame interconnecting the front wheel and the rear wheels; and
a seat supported on said frame and having a pair of side-by-side shin receiving depression therein, and further having a wide, relatively flat buttocks-supporting portion adjacent the edge thereof nearest said rear wheels and to the rear of said shin receiving depressions whereby a rider may sit upon said seat, or alternately, may kneel upon said seat to use the velocipede as a scooter said shin receiving depressions being disposed on opposite sides of the front to rear center line of said interconnecting frame whereby two persons may coast on said velocipede simultaneously by placing a shin in one of said depressions so that the weight of the two persons are balanced on the opposite sides of the front to rear axis of said frame.



3,352,571
FIFTH WHEEL CONNECTOR

Permil N. Nelson, P.O. Box 505, Galesburg, Ill. 61401
Filed Oct. 15, 1965, Ser. No. 496,601
4 Claims. (Cl. 280—435)



1. A fifth wheel connector between a semi-trailer and tractor, including a hitch plate having a semi-circular opening formed centrally therethrough, and an entrance way having open communication therewith for receiving a connecting stud post carried by the trailer, and pivotal jaw members having inner portions extending into the opening and pivoted out of the opening by the connecting stud post, and outer free ends movable into the entrance way for locking the connecting stud post of the trailer in the opening, wherein the improvement comprises,

(a) means connected to said jaw members yieldably holding the inner portions thereof in said opening and the outer free ends thereof out of said entrance way,

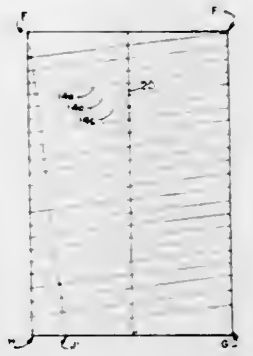
(b) said jaw members adjacent their outer free ends providing flat outer wall surfaces extending at right angles to their confronting ends with said surfaces in longitudinal alignment when the outer free ends of said jaw members are pivoted into said entrance way by the connecting stud post of the trailer,

(c) a latch bar movable tangentially with respect to said opening and through said entrance way into contact with said flat outer wall surfaces of said jaw members when jaw members are pivoted by the connecting stud post of the trailer for locking said jaw members against pivotal movement out of said entrance way, and

(d) a notch formed in one of said outer free ends of one of said jaw members engaging one end of said latch bar and holding the same against movement through said entrance way when said outer free ends of said jaw members are pivoted by said spring member out of said entrance way.

3,352,572
WRITING PAD

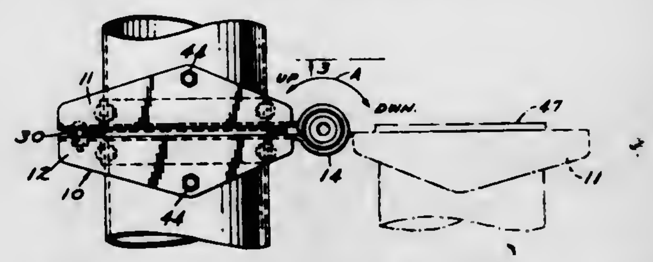
Julius A. Swenson, 7217 Wayne Drive,
Annandale, Va. 22003
Filed Sept. 24, 1965, Ser. No. 489,998
3 Claims. (Cl. 283—45)



1. A portable writing pad comprising a plurality of assembled superposed sheets adapted to be written upon in succession with each sheet adapted to produce a body of written material skewed to the edges of said pad, each of said sheets being of rectangular shape having a pair of elongated side edges extending in spaced parallel relation to one another and also having parallel top and bottom edges extending at right angles to said side edges, each of said writing sheets in said pad having a plurality of writing lines thereon extending in parallel relation to one another between said side edges, said writing lines each defining an angle of between 1° and 9° to said top and bottom edges.

3,352,573
HINGED PIPE CONNECTORS

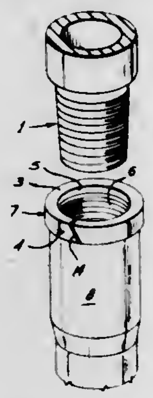
Walter L. Canning, Birmingham, Mich., assignor to Alex F. Walker & Associates, Inc., Royal Oak, Mich., a corporation of Michigan
Filed June 17, 1966, Ser. No. 558,366
6 Claims. (Cl. 285—2)



1. A hinged connector for truck exhaust pipe stacks for lowerably erecting a top pipe above a bottom pipe so as to extend the stack above the truck body for road travel and to lower the stack for moving under low obstructions comprising,
a bottom portion connectable to a bottom pipe,
a top portion connectable to a top pipe,
a hinge portion between said top and bottom portions, and
securing means normally holding said top and bottom portions closed relative to one another,
each said top and bottom portion including
a plate having an aperture, an annular flange surrounding said aperture, paired side flanges spaced from said annular flange, and staggered hinge arm loops;

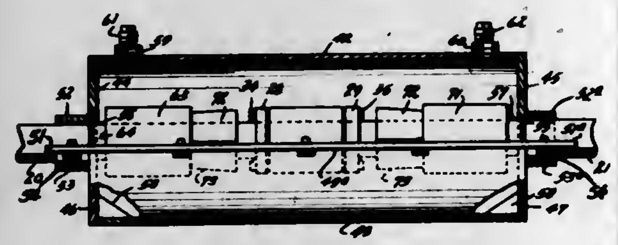
said annular flange and said side flanges having bolt holes for receiving bolts to connect to a pipe;
said plates being oppositely disposed relative to one another with their flanges extending in opposite directions; and
each said plate having a plane side facing one another.

3,352,574
PROTECTIVE RINGS FOR PIPE COATINGS
Arthur L. Brian, 4707 Knotty Oaks Trail, Houston, Tex. 77045
Filed Feb. 12, 1965, Ser. No. 432,225
3 Claims. (Cl. 285—3)



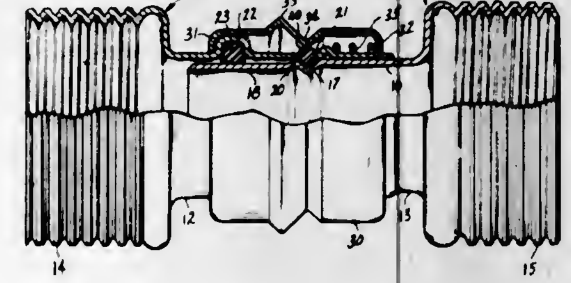
1. A length of threaded pipe comprising:
a first section having an externally threaded pin portion;
a second section having a box portion or coupling internally threaded so as to receive the threads of said pin portion and be threadedly engaged therewith, said threads starting at a point inward of the terminal end of said box portion, thereby providing a smooth inner cylindrical wall adjacent said terminal end having a diameter no less than the root diameter of said internal threads,
said box portion or coupling being of tubular configuration defining an outer wall, an annular end generally perpendicular to said outer wall, and said inner wall parallel to said outer wall; and,
a removable protective ring fitting against said end and against at least a portion of each said inner and outer walls adjacent said end, but leaving said threads uncovered,
said ring protecting said pin portion against damage upon makeup of the pipe length, and remaining on said length after makeup of said sections.

3,352,575
PIPE COUPLING FOR HIGH-PRESSURE GAS AND OIL UNDERWATER PIPE LINES, AND PROCESS OF INSTALLING SAME
Ronald A. Daspit, 2401 Delille St., Chalmette, La. 70043
Filed Jan. 7, 1965, Ser. No. 423,906
11 Claims. (Cl. 285—45)



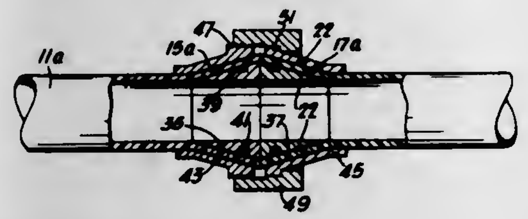
1. A pipe coupling for high-pressure gas and oil underwater pipe lines for coupling end sections of the pipe across a division between said sections comprising
(a) an inner pipe coupling means bridging the adjacent ends of the pipe sections, fluid seal means sealingly disposed between said coupling means and each of said pipe sections, said coupling permitting limited relative axial movement of said pipe sections,
(b) an outer pipe coupling means completely enclosing the inner pipe coupling means and radially and axially spaced therefrom,
(c) means for securing the outer pipe coupling means to the pipe sections against axial movement thereon, under normal axial forces acting thereagainst,
(d) pipe keeper means fixed to each of said pipe sections between the inner and outer coupling means in the axial space between the inner and outer coupling means, and
(e) said outer coupling means having the end portions thereof disposed in the path of possible movement of the pipe keeper means as said pipe sections move axially under abnormal axial force acting thereon to engage said pipe keeper means and arrest the said axial movement of the pipe sections.

3,352,576
TUBE COUPLING HAVING SPLIT RING LOCKING MEANS
Thomas Thorne-Thomsen, Godfrey, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Aug. 24, 1965, Ser. No. 482,045
6 Claims. (Cl. 285—169)



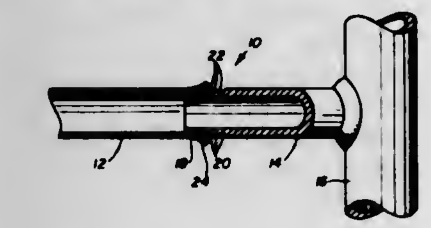
1. A quick-connect and dis-connect coupling device comprising
(A) a male member having a groove in the outer periphery thereof,
(B) a female member formed to fit about said male member, said female member having at least one slot in the outer periphery thereof in juxtaposition to said groove,
(C) a shell member mounted on said female member and including a restricted portion in juxtaposition to said groove, said restricted portion having a tapered wall,
(D) a locking member mounted upon said female member and within said shell member, said locking member being made of resilient material and comprising a split ring having at least one tooth thereon projecting through said slot and into said groove and being held in place by said restricted portion,
(E) means biasing said shell member toward a position where said restricted portion is in juxtaposition to said locking member,
thereby preventing separation of said male and female member until said restricted portion is moved out of juxtaposition to said locking member whereby said tooth may be withdrawn from said groove, the axial width of said slot being greater than the thickness of said tooth whereby during assembly said male member engages said tooth and moves said split ring axially away from said restricted portion and then expands said split ring said tapered wall of the restricted portion guiding said split ring into locking position without movement of said shell member.

3,352,577
COUPLING ARRANGEMENT FOR FILAMENT REINFORCED THERMOSETTING RESIN TUBULAR MEMBERS
Jonas Medney, Oceanside, N.Y., assignor to Koppers Company, Inc., a corporation of Delaware
Filed June 27, 1967, Ser. No. 649,215
3 Claims. (Cl. 285—246)



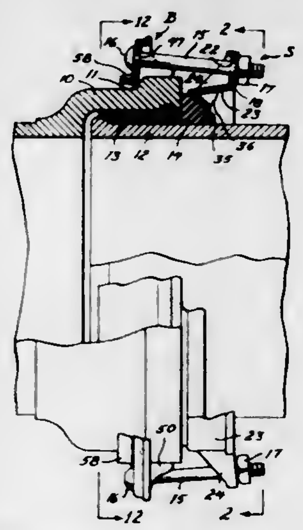
1. The combination comprising:
(a) a first filament wound thermosetting resin tubular member having a flared one end;
(b) a second filament wound thermosetting resin tubular member having a flared one end arranged coaxially in juxtaposition to the said flared one end of said first tubular member;
(c) a first annular frusto-conical member disposed in said flared one end of said first tubular member;
(d) an adhesive bonding said first annular frusto-conical member to said first tubular member;
(e) a second annular frusto-conical member disposed in said flared one end of said second tubular member;
(f) an adhesive bonding said second annular frusto-conical member to said second tubular member;
(g) an outer first annular member surrounding contiguously the outer surface of said flared one end of said first tubular member;
(h) an adhesive bonding said outer first annular member to said first tubular member;
(i) an outer second annular member surrounding continguously the outer surface of said flared one end of said second tubular member;
(j) an adhesive bonding said outer second annular member to said second tubular member;
(k) means connecting said first outer annular member to said second outer annular member for moving the flared one end of said first tubular member into abutting relation with the flared one end of said second tubular member; and
(l) a resilient annular ring disposed between the outer surface of said inner frusto-conical member and the inner surface of said flared one end of each of said first and second tubular members.

3,352,578
WELDED PIPE JOINTS
Donald J. Burke, Tulsa, Okla., assignor to Continental Industries, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed July 23, 1965, Ser. No. 474,263
2 Claims. (Cl. 285—286)



1. A pipe joint for welding a length of tubing to a length of pipe, the joint comprising:
a length of tubing; and
a length of pipe to be welded to the tubing, the tubing and pipe each having an inner bore therethrough, the tubing being flared at one end providing an enlarged end portion thereon, the pipe having a reduced diameter portion at one end, of an outside diameter substantially equal to the internal diameter of said tubing bore, the reduced diameter portion of the pipe end fitting snugly within the tubing bore, the outer diameter of said tubing and said pipe being substantialy equal in the areas removed from said flared and reduced ends, said pipe having at least one raised annular ring portion having a V-shaped cross-section, said ring portion abutting the inner surface of said flared end portion of said tubing, the wall thickness of said tubing being substantially equal to the wall thickness of the reduced diameter portion of said pipe end and substantially less than the thickness of the pipe wall adjacent said reduced end portion, said annular ring portion providing an area easily heated to a welding temperature whereby said annular ring portion and said tubing wall are concurrently brought to welding temperature and welding material deposited in the area of said flared end portion and said annular ring and adhered thereto.

3,352,579
BELL AND SPIGOT CLAMP
Howard L. Hoke, Bradford, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Dec. 23, 1964, Ser. No. 420,540
5 Claims. (Cl. 285—337)



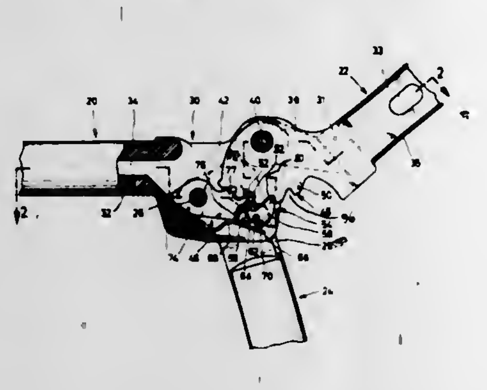
3. A bell and spigot repair clamp comprising a bell ring, a spigot ring, and clamping bolts for drawing said rings together, said bell ring comprising a plurality of arcuate sections each including a radial body portion having spaced enlargements, each of which is formed with a bolt hole for a clamping bolt, a radial reinforcing web for each enlargement integral with said radial body, an outer axial flange extending in one direction and integral with said radial body and an innermost axial flange extending in a direction opposite to the first said axial flange, said last mentioned flange on the several sections defining the tension edge of said ring, interlocking teeth on adjacent sections extending outward on said radial body substantially from a line of curvature which is in arcuate continuation with said tension edge, adjacent sections being formed with aligned bolt holes radially outwardly of said tension edge to receive bolts passing through said aligned bolt holes to maintain said interlocking teeth in engagement and secure the sections in assembled relation, said spigot ring comprising a plurality of arcuate sections each including an axially extending main body portion, an outer radial flange integral with said main body portion and formed with a plurality of spaced enlargements with each enlargement having a bolt hole for a clamping bolt, a pair of radial webs integral with said enlargement and said body portion with each web being located at one side of the bolt hole in

that enlargement and a pair of webs integrally joined at their outer ends by a band, an inner radial flange integral with said main body portion, there being a plurality of axially and radially extending reinforcing webs integral with said main body portion and inner flange. interlocking teeth on the overlapping ends of adjacent sections located radially outward of the inner radial flange thereof, said overlapping ends being formed with aligned bolt holes radially outwardly of said teeth and a bolt pasing through each set of aligned bolt holes for maintaining said teeth in interlocking engagement and said sections in assembled relation.

3,352,580
ADJUSTABLE JOINT

Rudolf Kurz, deceased, late of Bietigheim-Bissingen, Germany, by Helene Kurz, legal guardian of minor heir, Bietigheim-Bissingen, Germany, Walter Neubert, Bissingen, Germany, and Helmut Lechler, Heutingsheim, Germany; said Neubert and said Lechler assignors to Rudolf Kurz, a minor and son of said Rudolf Kurz, deceased

Filed Apr. 27, 1965, Ser. No. 451,357
19 Claims. (Cl. 287—14)



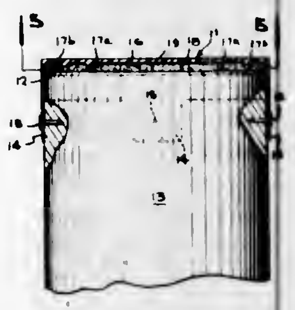
1. An adjustable joint, comprising a first and a second member; pivot means connecting said members; a ratchet rigid with said first member and having teeth separated by tooth spaces; a pawl pivotally secured to said second member and having a pallet normally extending into one of said spaces to prevent pivotal movement of one of said members in one direction; a control element pivotally mounted on said pawl and normally extending into another tooth space, the pivot axes of said pawl and said control element being parallel with the axis of said pivot means; and resilient means mounted on said second member for biasing said pallet and said control element into the respective spaces.

3,352,581
WOODEN POLE HAVING PLASTIC POLE TOP COVER WITH PRESERVATIVE

George T. Robbins, 207 Jackson Ave., Colonial Heights, Va. 23834, and Robert L. Ware, 8604 Oakcroft Drive, Richmond, Va. 23229

Filed Dec. 24, 1964, Ser. No. 421,057
2 Claims. (Cl. 287—20.95)

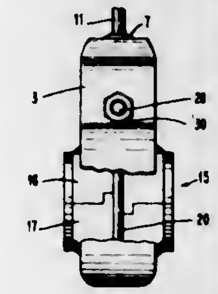
2. In combination, a wooden pole having a circular head portion, a pole top cover of electrically non-conductive material for use with preservative compounds in protecting wooden poles from the adverse elements comprising, a flat disc-like body provided at its outer peripheral rim with an annular depending band, means associated with the band for affixing the cover to a wooden pole including a plurality of downwardly depending flanges adapted to rest against the exterior of the wooden pole so that fastening means may be inserted therethrough at desired times, the disc-like body having a top surface and an interior surface, the interior surface lying within the confines of the depending annular band, spacer means located in conjunction with the interior surface of the disc-like body adapted to maintain the interior surface spaced from the pole top when the cover is in place, the spacer means being a plurality of concentric uninterrupted raised annular rings projecting from the interior surface of the disc-like body, a preservative compound positioned between the interior surface of the disc-like body and the circular head portion of the pole, the annular rings being in contact with the circular head portion of the pole to prevent migration of the preservative compound.



3,352,582
SWIVEL TYPE HOSE CLAMP FOR CONNECTION TO THE HOSE OF A GASOLINE DISPENSING APPARATUS

Paul A. Mankin, North Muskegon, and Lowell F. Nelson, Muskegon, Mich., assignors to John Wood Company, East Orange, N.J., a corporation of Delaware

Filed Sept. 12, 1966, Ser. No. 579,459
3 Claims. (Cl. 287—89)

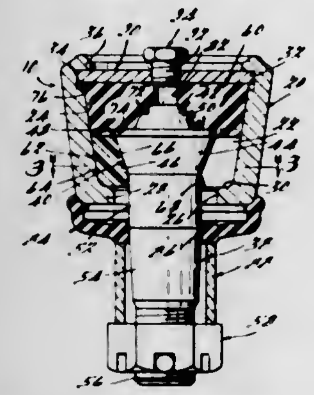


1. A swivel type hose clamp comprising two counterpart outer half sections, said half sections having inner surfaces adapted to be adjacent each other when said clamp is assembled; a substantially hemispherical recess at one end of each of said outer half sections, said two substantially hemispherical recesses forming a substantial spherical recess when said outer half sections are assembled together; a substantially spherical ball member of an outer diameter adapted to fit with freedom of movement in said substantially spherical recess of said outer half sections; an opening in said substantially spherical ball means adapted to receive the outer end of a flexible cable and a second larger communicating opening adapted to receive and hold the outer end of said flexible cable; matching spherically curved recesses in each of said outer half sections; two counterpart hollow hose clamp sections forming a substantially spherical outer surface and a cylindrical inner opening therethrough when assembled together, said cylindrical inner opening being adapted to fit tightly around the dispensing hose of a gasoline dispensing apparatus, and said substantially spherical outer surface of said hose clamp sections being adapted to fit with freedom of turning movements in said substantially spherically curved recess of said outer half sections; a groove around the outer surfaces of said hose clamp sections; and a snap ring positioned in said groove for holding said hollow hose clamp sections tightly clamped around the outer surface of said dispensing hose.

3,352,583
JOINT FOR STEERING LINKAGE AND THE LIKE

De Lane D. Patton, Worthington, Ohio, assignor to Columbus Auto Parts Company, Columbus, Ohio, a corporation of Ohio

Filed June 24, 1965, Ser. No. 466,770
13 Claims. (Cl. 287—93)

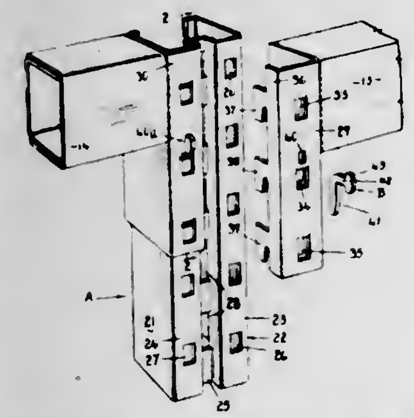


1. In a flexible joint construction,
a housing defining a central cavity and having an open end at one end of said cavity,
a stud member extending through said opening and having a head section disposed within said cavity,
said head section comprising a frusto-conical portion and a hemispherical portion which define a radial shoulder portion therebetween,
first and second seat members disposed within said cavity for supporting said head section of said stud member,
one of said seat members being engaged with said shoulder portion and said hemispherical portion of said head section for limiting axial and angular movement of said stud member relative to said housing,
closure means closing one end of said housing, and
a generally axially extending resilient embossed portion on one of said seat members interposed between the main body of one of said seat members and said closure means, said portion being substantially axially aligned with said shoulder portion of said head section and being compressible upon assembly of the joint construction whereby to urge said one seat member into engagement with said shoulder portion.

3,352,584
LOCKING PIN DEVICE FOR PALLET RACK

Teofil Engel, Ville St. Michel, Quebec, Canada, assignor to Redirack Industries Limited, Weston, Ontario, Canada, a corporation of Canada

Filed Dec. 16, 1964, Ser. No. 418,610
1 Claim. (Cl. 287—189.36)



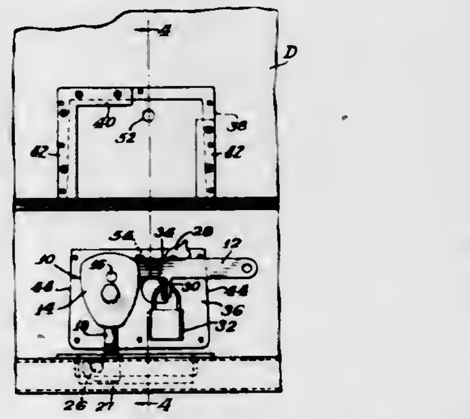
In a knock-down type pallet rack having upright column members formed with modularly spaced lug-receiving-slots and horizontal rail members having at each end thereof a connecting bracket connectable to the upright column members by means of complemental lugs carried by the bracket which engage with a sliding fit into the said slots, each bracket having an aperture located between a pair of lugs and registering with one of the slots in the upright column when the bracket is connected thereto, a locking pin insertable in said registering slot and aperture and held therein by gravity to lock the horizontal members against accidental dislodgement by an externally applied force acting on a rail member, said locking pin comprising
- (a) a main body portion,
- (b) a support portion at right angles to the main body portion, the angle between the body portion, and the support portion forming a pivot for the locking member,
- (c) a head on the free end of the support member engageable with the edges of said slots,

the main body being heavier and longer than the combined length and weight of the support portion, said main body portion acting as a counterweight whereby on inserting the main body portion through said slot and aperture the main body portion will rotate into and remain in a vertical position by gravity with the support portion lying across the upright column and the bracket, thereby locking the upright column and the bracket against accidental vertical displacement.

3,352,585
DOOR LOCK WITH SAFETY DEVICE

Flay D. Crosswell and John W. Binns, Marion, Ohio, assignors to Overhead Door Corporation, Hartford City, Ind., a corporation of Indiana

Filed Aug. 2, 1965, Ser. No. 476,586
7 Claims. (Cl. 292—92)



1. A life saving door locking device which enables an individual to rapidly open a door from the side opposite to its locked side, said device comprising a retainer plate fixedly mounted on the locked side of said door, a lock plate normally partially engaged by said retainer plate, a locking means mounted on said lock plate for locking said door in a closed position, means movably carried by said door for normally engaging said lock plate and means accessible only from said opposite side for disengaging said engaging means from said lock plate whereby said door may be moved to the open position from said opposite side without unlocking said locking means.

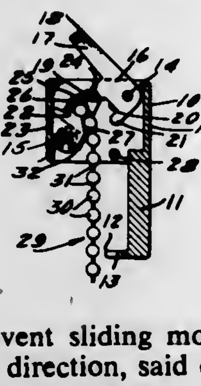
3,352,586
LOCKING DEVICE FOR SLIDING WINDOWS AND DOORS

Alfred Hakanson, San Pedro, Calif., assignor to M. Paulyne Hakanson, San Pedro, Calif.

Filed Sept. 20, 1965, Ser. No. 488,481
6 Claims. (Cl. 292—225)

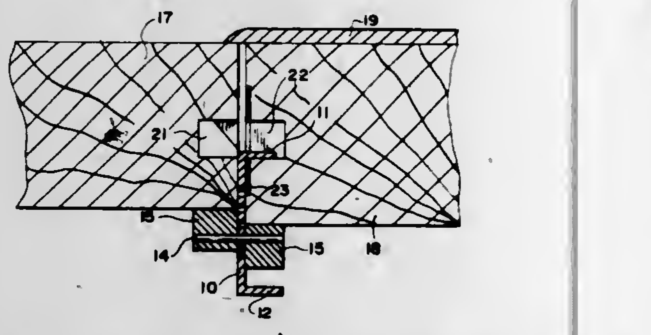
6. A locking device for sliding windows and doors comprising a housing, a lock member pivotally mounted on said housing, said lock member having an elongated latch, a control member slidably mounted on said housing, a coil spring extending between said control member and said lock member, said spring normally urging said con-

trol member upwardly along said housing so that said control member prevents the rotation of said lock member to hold said latch in upward position, said housing being attached to a movable frame, a corrugated member fixedly mounted with respect to said movable frame, said corrugated member having a plurality of corrugations dimensioned to removably receive and hold the end of said latch to prevent sliding movement of said movable frame in either direction, said control member being slidable downwardly against the urging of said spring, said control member pivoting said lock member to move said latch downwardly out of engagement with said corrugated member and release said movable frame for sliding movement in either direction.



3,352,587
DOOR LOCK

Robert M. Harvey, 3430 N. Lake Shore Drive, Chicago, Ill. 60657
Filed Aug. 22, 1966, Ser. No. 574,027
4 Claims. (Cl. 292—289)

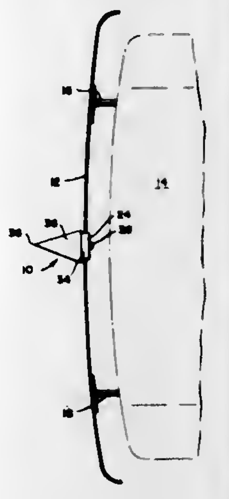


1. A door lock for use in combination with a door hinged to a frame to swing between a closed position in the frame and an open position out of the frame and in which the frame is formed with a recess facing the free edge of the door when it is closed, comprising an elongated strip of sheet material to fit between the free edge of the door and the frame when the door is closed, an outwardly extending projection on one end of the strip fitting into the recess in the door frame, the strip being of a length to project beyond the faces of the frame and door, an elongated pin, means to connect the pin to the projecting portion of the strip at different positions in the length thereof with one end of the pin extending over the free edge of the door, and a block formed with an eccentric opening therein to fit over the pin, the block being turnable to different positions on the pin to engage the face of the door adjacent to its free edge to hold the door against opening.

3,352,588
BUMPER WITH IMPACT ATTACHMENT

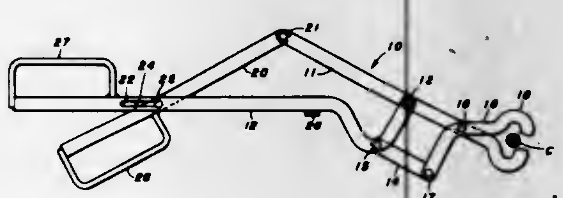
Floyd S. Stancliffe, 5584 Sunny Oaks Drive, San Jose, Calif. 95123
Filed Oct. 20, 1965, Ser. No. 498,483
3 Claims. (Cl. 293—65)

1. An attachment for a vehicle which comprises
an elongated bumper adapted for mounting to the vehicle at spaced positions,
means forming an impact-receiving edge spaced outwardly from said bumper, and
rigid means connecting said impact-receiving edge to said bumper at a position substantially centered between said spaced bumper mounting positions so that substantially fixed spacing is maintained between said bumper and said impact receiving edge when the latter is engaged by an object and the impact force resultant from such engagement is transferred to said bumper near its center whereby said bumper will resiliently deflect in response to the transferred impact.



3,352,589
HAND GRAPPLE

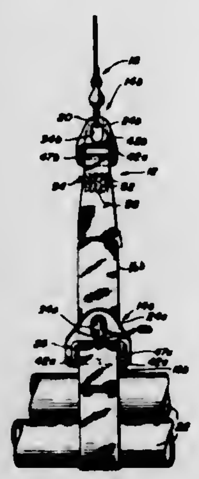
Lambert J. Kilboy, 9625 Ridgeway, Evergreen Park, Ill. 60642, and John Litecky, Jr., 8406 Burley Ave., Chicago, Ill. 60617
Filed Dec. 28, 1965, Ser. No. 516,844
4 Claims. (Cl. 294—16)



1. A grapple comprising
a pair of scissor arms connected to one another at a first pivotal connection,
appropriate grasping means connected to each of said scissor arms for grasping an article therebetween,
a locking arm connected to the first of said scissor arms at a second pivotal connection, said locking arm having a sliding pivotal connection with the second of said scissor arms,
said sliding pivotal connection between said second scissor arm and said locking arm including a pin mounted on one of said arms and the other of said arms having a slot therein, said pin being inserted through said slot,
one end of said slot being properly positioned so that when said second scissor arm and said locking arm are rotated about said pin to bring the pin into a straight line with said first and second pivotal connections, said pin will be held compressed against said end of the slot, and
means for limiting the rotation in one direction of said locking arm with respect to said second scissor arm, said limiting means so acting when said locking arm is in such a position that it will also be held from rotation in the other direction by said pin compressed against said end of said slot.

3,352,590
END TERMINAL FOR FABRIC SLING

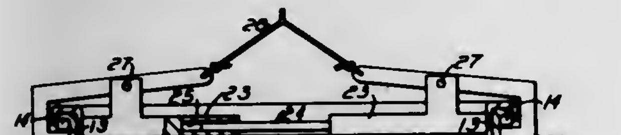
George Barthule, Wheeling, Ill., assignor to Liftex Slings, Inc., Libertyville, Ill., a corporation of Illinois
Filed June 14, 1965, Ser. No. 463,578
4 Claims. (Cl. 294—74)



1. A webbing sling which comprises
two terminal hard steel eye plates each having a web attachment opening therein,
an elongated fabric web having one end inserted through said opening in one of said plates and the opposite end inserted through said opening in the other plate and said ends being looped back on themselves,
means securing the ends of each web loop together to thereby attach the web to said plates at opposite ends of the sling,
and a plastic rub strip having an externally rounded channel mounted on said rim of each opening substantially completely therearound and receiving the rim in the channel, said rub strip comprising a plurality of transverse sections in end-to-end abutting relation, and said sections are cemented to said plate.

3,352,591
CLAMP FOR GRASPING STORAGE DRUMS

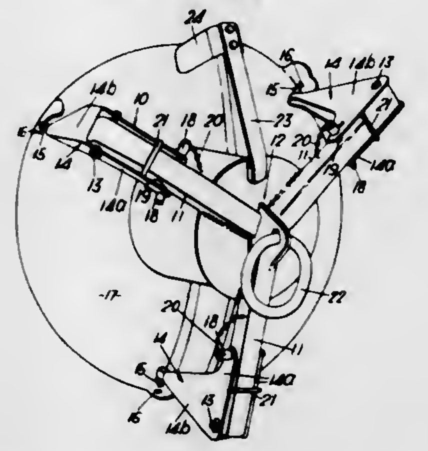
James C. Casey, Hayden Lake, Idaho 83835
Filed Nov. 15, 1965, Ser. No. 507,785
2 Claims. (Cl. 294—81)



1. A clamp for grasping and lifting an upright storage drum having cylindrical side walls and a recessed upwardly facing end surface bounded by a circular rim having an outwardly protruding bead, comprising:
first and second spaced elements opposed to one another having inwardly directed surfaces to respectively engage the drum side walls immediately below the bead;
support means movably carrying said first and second elements to locate said elements relative to the rim end surface and rim of the drum, said support means comprising a bar adapted to rest on the drum end surface, one end of said bar being in contact with the inner surface of the drum rim;
said first and second elements being pivotally connected to said bar at opposite longitudinal ends thereof for pivotal motion about horizontal axes perpendicular to the longitudinal axis of said bar;
lifting means operatively connected to said first and second elements to move the inwardly directed surfaces thereof toward one another to cause thereby the inwardly directed surfaces of said first and second elements to engage the side walls of the drum when a lifting force is exerted on said lifting means;
and a lever pivoted on said bar coaxially with the pivoted element at the end of said bar opposite to the end thereof in contact with the drum rim, said lever having a portion thereof adapted to engage the inner surface of the top rim, said lever being operatively connected to said lifting means whereby said portion of said lever is brought into engagement with the rim when a lifting force is exerted on said lifting means.

3,352,592
HOISTING SLING

Leonard John Rodgers, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Jan. 19, 1966, Ser. No. 521,683
Claims priority, application Great Britain, Feb. 4, 1965, 4,863/65
2 Claims. (Cl. 294—81)



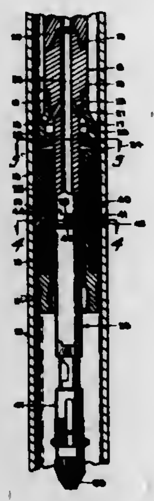
1. A hoisting frame comprising a hub, at least three fixed arms extending radially at equiangular intervals from the hub, a respective L-shaped double lever pivotally mounted at the radially outer end of each respective arm about an axis extending circumferentially with respect to the hub, each said lever having a first lever arm extending downwardly from the respective pivot axis and a second lever arm extending radially inwardly from said pivot axis, a respective radially outwardly projecting element provided on each respective first lever arm, a respective locking pin, and pin-receiving apertures at the radially inner end of each said second lever arm and in the respective fixed arm, said apertures being aligned and the pin being receivable in said apertures to lock the respective double lever relative to the fixed arm when the respective projecting element is in a position in which it is engageable with an article to be hoisted, the lever arms being movable independently when the locking pins are disengaged from said apertures to positions in which the article to be hoisted is not so engageable with said article, and means for attachment of a hoist to the frame.

3,352,593
WELL BORE PACKER, MILLING AND REMOVING TOOL

Derrel D. Webb, Houston, Tex., assignor to Houston Engineers, Inc., Houston, Tex., a corporation of Texas
Filed Oct. 22, 1965, Ser. No. 501,287
7 Claims. (Cl. 294—86.25)

1. A tool for milling and removing a well bore packer of the type having holding means and a packing member engaging the inner wall of a well casing to prevent flow of fluid by the packer, said tool comprising an elongated hollow mandrel having an enlarged upper portion and a reduced lower portion, said lower portion terminating in

a shoulder merging into said upper portion intermediate the length of said mandrel, means on the upper end of said mandrel for detachably connecting the same to a drill string, screw threads on said enlarged portion adjacent said shoulder, a hollow end mill threadedly engaging said screw threads to detachably secure said mill on said mandrel with said mill extending downwardly around said reduced portions and having cutting elements on the lower edge, at least one extension mandrel detachably connected to the lower end of said reduced portion, means for preventing relative rotation between said mandrel and said extension mandrel, a packer engaging and removing device detachably secured to the lower end of said extension mandrel, means for preventing relative rotation between said device and said extension mandrel, said device comprising an elongated body round in cross section having a reduced upper section, an enlarged intermediate section and a still larger lower section, there being a shoulder between said intermediate and lower sections providing an upwardly facing abutment, a hollow packer engaging member slidably received on said body above said lower section, said engaging member having resilient radially removable jaws biased toward outermost position, said reduced upper section having a vertical groove and an offset recess intermediate the length of said groove communicating therewith, and an internal lug on said engaging member slidably received in said groove, whereby upon lowering said tool into a well said engaging member will engage the upper end of a packer and move upwardly on said body to a position opposite said reduced upper section, further downward movement causing said jaws to retract and permit downward movement of said device through the packer with said jaws expanding below said packer, upward movement of said tool and body serving to move said intermediate enlarged section into said engaging member to prevent retraction of said jaws and engage the same with the packer and said abutment engaging the lower end of said engaging member to withdraw the packer from the well after removal of said holding means and packing member by said end mill.



3,352,594
TRUCK BODY

Eldon F. Miller, Leawood, Kans., assignor to Hesse Carriage Company, Kansas City, Mo., a corporation of Missouri

Filed Nov. 10, 1965, Ser. No. 507,152

8 Claims. (Cl. 296—3)

1. A truck body for carrying tires in an upstanding position, said body comprising:

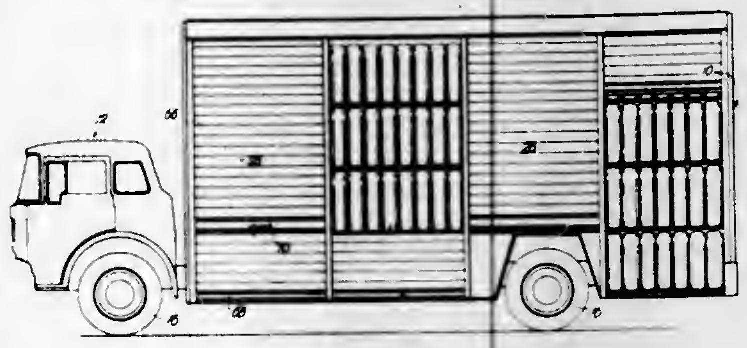
a bed;

a framework on said bed;

a plurality of vertically spaced, inwardly inclined, tire-receiving shelves carried by said framework;

a longitudinally extending bar corresponding to each shelf, each shelf and the bar corresponding thereto being in engagement with each of the tires carried by said shelf at spaced-apart points thereupon whereby to retain said tires upon said shelf;

a longitudinally extending rod corresponding to each shelf and disposed thereabove; and



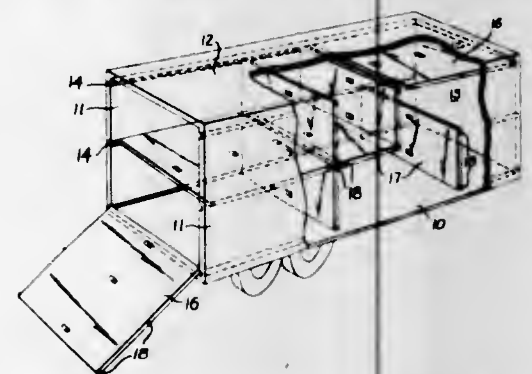
at least one locking plate carried by each rod and slidable longitudinally thereof, said plates being engageable with the tires on a corresponding shelf whereby to retain the same in upstanding, side-by-side relationship.

3,352,595
LADING SEPARATING APPARATUS

Frank A. Bezlaj, Matteson, Ill., assignor to Unarco Industries, Inc., a corporation of Illinois

Filed Sept. 20, 1965, Ser. No. 488,601

9 Claims. (Cl. 296—24)



1. Lading separating apparatus in combination with a generally rectangular body adapted to receive lading comprising a plurality of vertically spaced parallel tracks extending along the sidewalls of the body, the tracks being inwardly opening channels, a panel of a length substantially to span the space between the sidewalls, follower members movably carried by the panel and movable to one position in which they clear the tracks and to a second position in which they engage the tracks to support the panel for sliding movement therealong, the followers being pins slidably carried by the panel and adapted to project beyond the ends of the panel to fit slidably in the channels, and cooperating latch means on the panel and the body to latch the panel in any one of a plurality of selected positions in the body, the latch means comprising a plurality of spaced openings in the webs of each channel and the follower pins being movable to a third position in which they engage the openings.

3,352,596
COLLAPSIBLE SHELTERING TRAILER

Eduardo Maass Escoto, Mexico City, Mexico, assignor to Kombi Flex, S.A., a corporation of Mexico

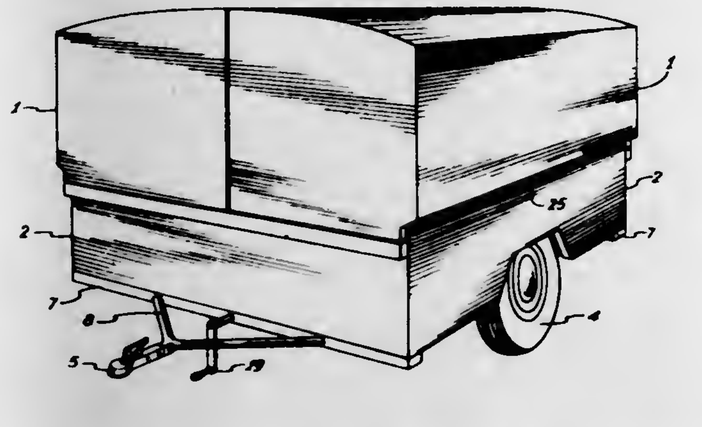
Filed Oct. 24, 1965, Ser. No. 504,736

Claims priority, application Mexico, Nov. 14, 1964, 79,804

5 Claims. (Cl. 296—27)

1. A collapsible trailer providing a shelter portion when opened, said trailer comprising a box serving as a base for the trailer and having a floor; a pair of shell

members each having a side wall, front and rear walls and a roof portion; the side wall of each shell member being hinged to opposite sides of the box and rotatable with respect thereto to a closed position to provide a cover for the box or to an opened position wherein the roof portions of the shell members serve as opposite sides of the shelter portion; a rigid center roof section; and a pair of rigid roof panels each hinged to opposite sides respectively of the center roof section and to an adjacent one of said shell members and elevating means



connected at one end thereof to said box and operatively connected with said roof section for elevating said roof section and said roof panels from an initial position enclosed within said shell members to a final position disposed outwardly thereof during rotation of said shell members from said closed position to said opened position thereof to provide a roof structure over the shelter portion when the shell members are rotated to the opened position.

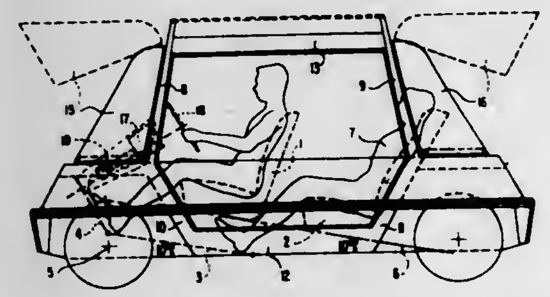
3,352,597
MOTOR VEHICLE

Béla Barényi, Stuttgart-Vaihingen, and Bruno Sacco, Sindelfingen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed July 14, 1964, Ser. No. 382,481

Claims priority, application Germany, July 23, 1963, D 42,064

11 Claims. (Cl. 296—28)



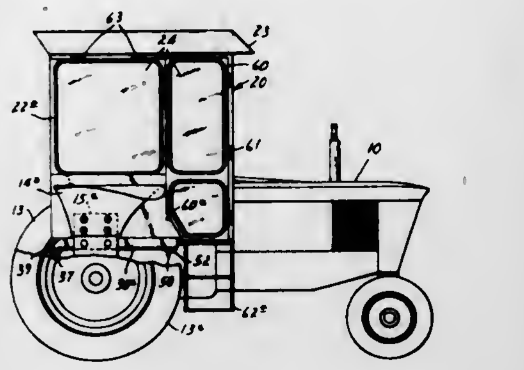
1. A passenger motor vehicle, especially a compact vehicle with rear engine, having front and rear axle means, a body with two doors, and four seating places within said body and distributed over two seat rows, comprising a single centrally arranged driver-seat provided in the first row, three passenger seats provided in the second row, said driver-seat being elevated considerably with respect to said passenger seats, and floor means including a floor board and a foot pedal board angularly disposed with respect to said floor board, said floor means located so that the line defined by the intersection of the plane of said floor board and the plane of said foot pedal board lies approximately above said front axle means and is parallel thereto, said driver-seat being located behind and above said intersection of said floor board and said foot pedal board so as to provide for the most convenient seating position for the normal driver, said floor board rising in the direction of said foot pedal board from a point approximately below the rear edge of said driver-seat, the remaining portion of said floor board extending substantially horizontally, whereby ample room for the feet of passengers is provided below the elevated driver-seat.

3,352,598
TRACTOR CAB MOUNTING APPARATUS

Charles Merton Anderson, Rte. 2, Mankato, Minn. 56001

Filed Dec. 2, 1966, Ser. No. 598,768

4 Claims. (Cl. 296—35)



1. Apparatus for mounting in a pivotably movable and vertically adjustable fashion, an enclosed operator protecting cab on a tractor of the type wherein an operator position is located generally above the rear axle housing of said tractor and between the rear wheels and rear fenders thereof, comprising:

(a) a first pair of longitudinally disposed angle members rigidly secured to the opposite bottom side edges of said cab in a generally parallel relationship;

(b) a second pair of longitudinally disposed horizontally positioned angle members rigidly secured to the inner surfaces of said fenders in a generally parallel relationship, said first pair of angle members being located directly above said second pair of angle members with said cab in a normal operator protecting position;

(c) a front pair and a rear pair of threaded anchor pins extending vertically through openings in the front and rear ends of said second pair of members;

(d) means threadedly attached to a lower portion of each of said anchor pins to lock said anchor pins in selected positions with respect to said second pair of angle members, each of said anchor pins thereby extending upwardly from said associated angle member of said second pair a selected distance;

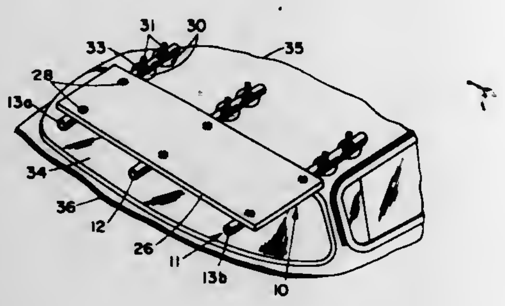
(e) a sleeve member securely attached to the upper end of each of said rear pair of anchor pins, said sleeve member having a bore therein lying at right angles to said anchor pin and generally parallel to the rear axle of said tractor;

(f) mounting means including bolt means extending through openings in the rear ends of said first pair of angle members and through said bore of said sleeve for pivotally securing said cab to said tractor, said front pair of anchor pins extending upwardly through openings in said first pair of angle members; and

(g) further means threadedly attached to an upper portion of said front pair of anchor pins to lock said first pair of angle members a selected distance above said second pair of angle members.

3,352,599
AUTOMOBILE RAIN SHIELD AND SUPPORTING MEANS THEREFOR

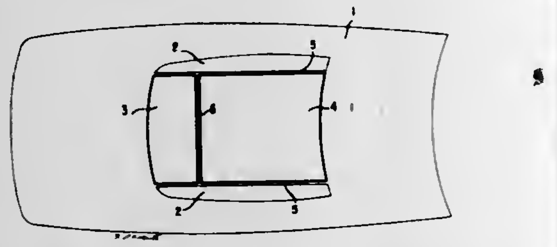
John P. Francis, 20 Boston St., Haverhill, Mass. 01830
Original application July 13, 1965, Ser. No. 471,764, now Patent No. 3,281,182, dated Oct. 25, 1966. Divided and this application May 24, 1966, Ser. No. 569,774
3 Claims. (Cl. 296—95)



1. A rain shield for the windshield of a motor vehicle secured to the roof top thereof comprising a removably attached rain shield panel, longitudinally disposed rain shield supports, each of said supports having a front portion and a rear portion, said front portion including longitudinally extending upper, bottom, and opposing side walls forming each of said supports, said rear portion of each of said supports having an upper wall, opposed side walls having a smaller vertical height than said side walls of said front portion, and an open bottom, said rain shield panel being removably attached onto the upper surface of said upper wall of said supports, roof engaging means mounted on the roof top and extending upwardly between the said opposing smaller side walls and engaging the underside of the said upper wall of the rear portion of said rain shield support in supporting said support therefrom and over the roof top and the windshield area, said support having the rear portion of the said bottom wall of said front portion thereof in frictional supporting engagement with the roof top, said rain shield supports supporting said removably attached rain shield panel over the windshield area and in very close spaced relationship relative to the roof top in providing weather protection to the windshield area.

3,352,600
VEHICLE ROOF

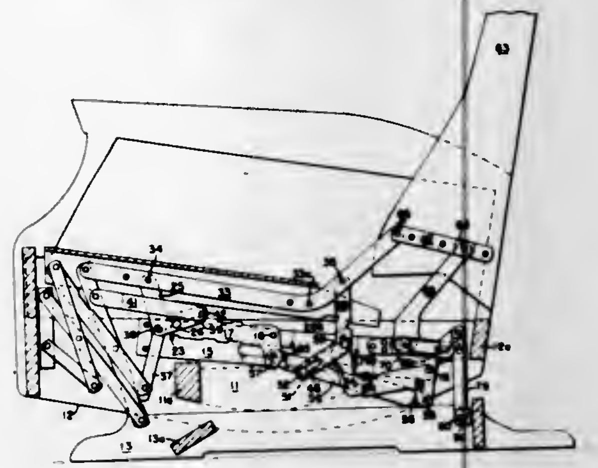
Karl Wilfert, Stuttgart-Degerloch, and Béla Barényi, Stuttgart-Vaihingen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Aug. 9, 1962, Ser. No. 215,833
Claims priority, application Germany, Aug. 16, 1961, D 36,813
5 Claims. (Cl. 296—137)



1. A motor vehicle roof structure composed of a plurality of separate parts, at least one of said parts being relatively movable to some other parts, comprising two lateral roof parts, and at least one movable roof part inserted between said lateral roof parts and forming an intermediate portion of the terminal edge portion on one of the respective ends of the roof, said terminal edge portion further comprising edge portions on said two lateral roof parts disposed laterally of said intermediate portion.

3,352,601
CHAIR

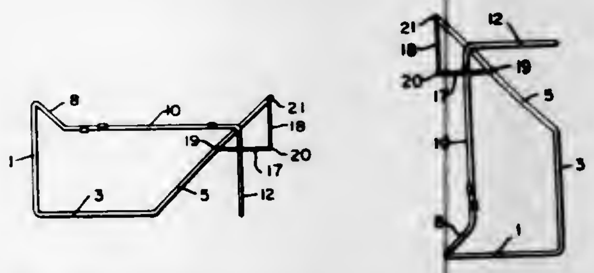
Izchak Cycowicz, Brooklyn, N.Y., assignor to Mohasco Industries Inc., Amsterdam, N.Y.
Filed May 19, 1966, Ser. No. 551,257
7 Claims. (Cl. 297—85)



1. A rocker-recliner chair having a base, a chassis mounted on said base for rocking movement and reclining movement relative to said base, a footrest operatively connected to said chassis, linkage means operable upon reclining movement of said chassis to actuate said footrest and prevent rocking movement of said chair and operable upon rocking movement of said chair to prevent reclining movement of said chair and actuation of said footrest, said prevention of rocking movement occurring substantially simultaneously with the initiation of reclining movement of said chassis, and said prevention of reclining movement occurring substantially simultaneously with the initiation of rocking movement of said chassis.

3,352,602
CONVERTIBLE CHAIR AND TABLE

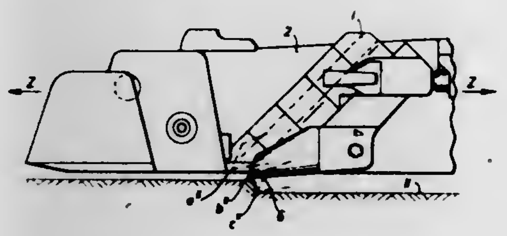
Svend Erik Bjerregaard Svendsen, Kastruplundgade 22, Copenhagen, Espergaerde, Denmark
Filed Jan. 15, 1965, Ser. No. 479,358
12 Claims. (Cl. 297—130)



1. An article of furniture comprising a pair of substantially flat table-tops respectively situated substantially in mutually perpendicular planes which intersect each other at a given line, said table-tops respectively having edge portions spaced from said line of intersection and said table-tops respectively extending from said edge portions thereof away from said line of intersection, a seat situated in the region of said line of intersection between said edge portions of said table-tops and having a seat plate and a brackrest, and frame means for carrying said table-tops and seat and for supporting said table-tops in one position where one table-top is vertical and the other horizontal and in a second position where the other table-top is vertical and said one table-top is horizontal and for supporting said seat with said seat plate thereof substantially parallel to and at an elevation lower than whichever table-top is in a horizontal position and with said backrest extending upwardly from said seat plate at a portion thereof distant from whichever table-top is horizontal.

3,352,603
COAL PLANER WITH HINGE-MOUNTED CUTTER HOLDER

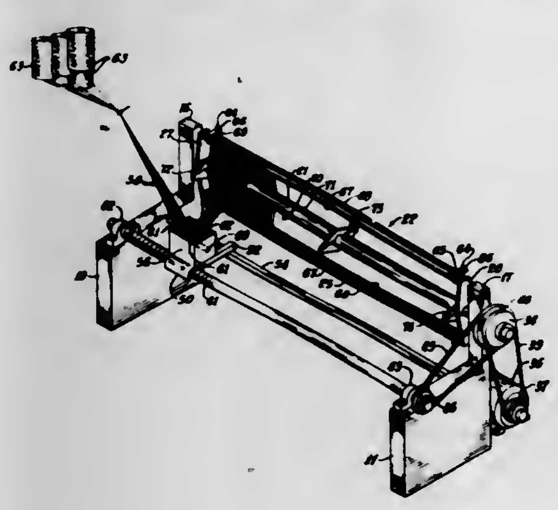
Walter Hohm, Lunen, Westphalia, Germany, assignor to Gewerkschaft Eisenhutte Westfalia, a corporation of Germany
Filed Feb. 2, 1965, Ser. No. 429,832
Claims priority, application Germany, Feb. 7, 1964, G 39,788
2 Claims. (Cl. 299—34)



1. A mining planer arrangement which comprises a carriage means disposed for movement back and forth along a path extending across the mine floor parallel to the mine face and situated in front thereof, a cutter holder pivotally connected to said carriage means for movement therewith, and a cutter supported by said cutter holder and having a leading edge positioned for extractive engagement with a selected portion of the mine face and mine floor to remove mineral therefrom as the carriage means moves along said path in a forward direction, said cutter holder being disposed for pivotal adjustment motion about an axis parallel to the mine face and inclined to the mine floor to correspondingly adjust the depth of extractive engagement therewith of said cutter leading edge, said leading edge and the forward termination of said pivot axis being within a common plane perpendicular to said mine face to allow pivoting of said cutter holder toward the mine floor to increase the depth of extractive engagement of said leading edge therewith without increasing the depth of extractive engagement of said leading edge into the mine face.

3,352,604
METHOD AND APPARATUS FOR MAKING BRUSH SEGMENTS

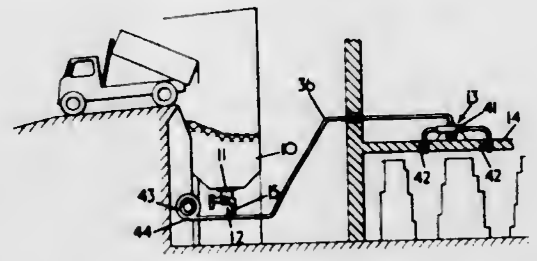
Glee J. Melcher, Spokane, Wash., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Original application Dec. 28, 1961, Ser. No. 162,842, now Patent No. 3,233,270, dated Feb. 8, 1966. Divided and this application Oct. 24, 1965, Ser. No. 513,894
8 Claims. (Cl. 300—1)



3. Apparatus for making brush segments including a generally planar, rectangular reel, means for delivering bristle forming strand material and wrapping such material in successive overlying layers around the reel, and rods associated with the reel extending lengthwise between the edges thereof for holding each of such layers apart along the center of the generally planar sides of the reel, the rods being removably fixed in spaced relation to the reel and means temporarily holding brush segment base members on the reel.

3,352,605
APPARATUS FOR DISTRIBUTING PARTICULATE MATERIAL INTO A MULTI-INLET RECEIVER

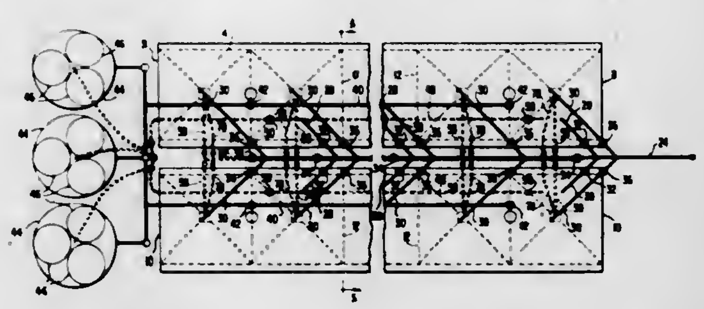
Richard McCandless, Newtownards, Northern Ireland, assignor to Coal Industry (Patents) Limited, London, England, a company of Great Britain
Filed June 6, 1966, Ser. No. 555,477
5 Claims. (Cl. 302—28)



1. An apparatus for distributing particulate material into a multi-inlet receiver comprising a plurality of feed conduits each communicating with an inlet of said receiver, feed means for automatically and repeatedly feeding said material into each of said conduits in predetermined increments; said feed means comprising a pipe, flow control means at two locations spaced apart in the lengthwise direction of the pipe for controlling the flow of material along the pipe, and means for repeatedly and successively actuating said flow control means to close one control means while the other is open.

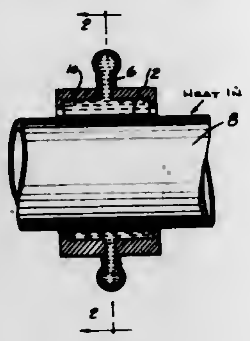
3,352,606
BULK MATERIAL HANDLING SYSTEMS

Howard O. Page and Ocie D. Atteberry, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Aug. 19, 1964, Ser. No. 390,552
6 Claims. (Cl. 302—52)



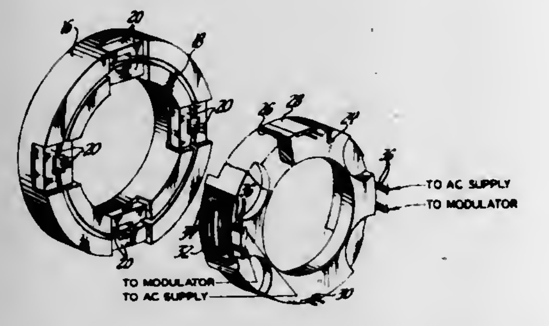
1. Apparatus for filling and emptying a tank of dry pulverulent material comprising: a tank having inwardly sloping sides terminating in a base, a discharge pipe extending upright in the tank and having one end spaced above said base, said base including a porous plate, means for pumping air through the plate toward the end of the discharge pipe, a manifold surrounding said discharge pipe adjacent said one end, means for supplying air to the interior of said manifold, means on the discharge pipe for deflecting air from the manifold toward said sides, a fill pipe having one end in said tank, a header pipe, said fill pipe and said discharge pipe each having their respective opposite ends communicating with said header pipe, and means for pumping air through said header pipe, whereby the tank is filled and emptied through the common header pipe.

3,352,607
HYDRO-GASEOUS BEARING
Joseph J. Boyd, Atlanta, Ga.
(96 Elder St., Fairburn, Ga. 30213)
Filed May 4, 1966, Ser. No. 547,507
18 Claims. (Cl. 308—9)



1. A hydro-gaseous bearing which comprises:
(A) two co-acting surfaces;
(B) a liquid between said two surfaces, the temperature of one of said surfaces being such as to heat the liquid to the spheroidal state, thereby forming a vapor interface between it and said liquid to provide relatively frictionless lubrication between the two surfaces.

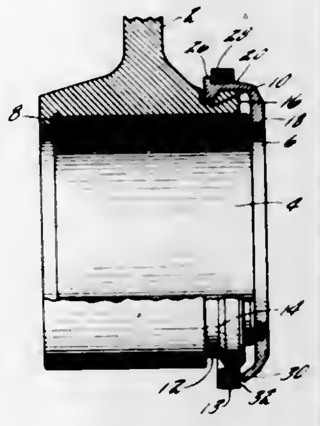
3,352,608
DITHERING SUSPENSION SYSTEM
Richard J. Ivers, Arlington, Mass., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 16, 1965, Ser. No. 448,723
4 Claims. (Cl. 308—10)



1. Dithering apparatus comprising first and second members, bearing means for permitting relative rotation of the first and second members about an axis, means carried by one of the members for producing magnetic fields at spaced points on said one member, conductor means carried by the other of the members at corresponding points thereon, and means for producing an in-phase alternating current in the conductor means thereby to produce a periodically reversing radial force with respect to the axis tending to displace said one member relative to the other.

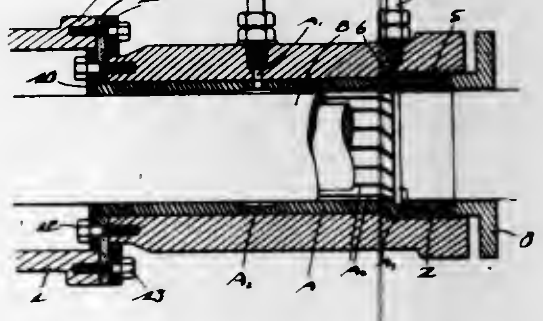
3,352,609
THREADLESS ELEMENT-RETAINING ASSEMBLY
Victor A. Di Ramio, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 7, 1965, Ser. No. 512,108
6 Claims. (Cl. 308—22)

6. In apparatus wherein a rotating shaft is supported in a bearing carried in a recess in a housing, means for retaining the bearing in the recess comprising:
a shoulder on the outer surface of the housing surrounding the recess, the inner edge of the shoulder being inclined outwardly toward the recess opening,
an annular retaining ring loosely encircling the shaft and abutting the exposed end of the bearing, the retaining ring having a plurality of locking fingers peripherally disposed thereon each of which includes a shoulder engagement lug at the distal end thereof, the inner edge of each engagement lug being cooperatively inclined with respect to the shoulder, the locking fingers being bent axially inward toward the housing with the inclined surface of lugs engaging the inclined surface of the shoulder,



an annular locking ring closely encircling the bent locking fingers to prevent their disengagement with the housing,
and means for maintaining the locking ring in a fixed axial position with respect to the housing including a plurality of deformable retaining tabs integral with the retaining ring and peripherally disposed thereon intermediate the locking fingers, the free end of the retaining tabs bearing on the outer end of the locking ring.

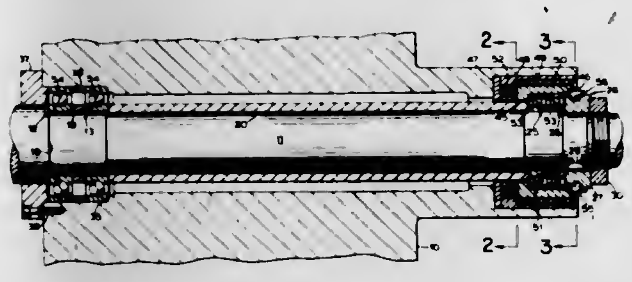
3,352,610
BEARING FOR IMPELLER SHAFT
Yuichiro Furukawa, 151 Higashi-ichibacho, Ikeda, Japan
Filed Feb. 4, 1965, Ser. No. 430,342
1 Claim. (Cl. 308—122)



A bearing arrangement comprising
a cylindrical bushing having defined therein a center annular groove and a pair of end annular grooves and a plurality of parallel grooves interconnecting said center and pair of end grooves,
said parallel grooves having sections extending axially from said center groove, and sections extending at predetermined angles to the axis of said cylindrical bushing in the vicinity of said pair of end grooves,
means for applying lubricating fluid to said center groove whereby said axially extending sections carries said fluid to said sections extending at predetermined angle for substantially even distribution to said end grooves,
means for removing said fluid from at least one of said end grooves,

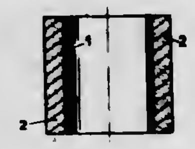
a substantially smooth and hard shaft insertable in said bushing, said bushing being of synthetic resin expandable by said fluid whereby said fluid is held under pressure and evenly distributed between said shaft and said bushing,
a hollow housing means for holding said bushing and said shaft, and
means for sealing said bushing and said shaft within said housing.

3,352,611
PRELOADING MECHANISM FOR MACHINE TOOL SPINDLE BEARINGS
William B. Seidel, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 1, 1965, Ser. No. 484,285
5 Claims. (Cl. 308—189)



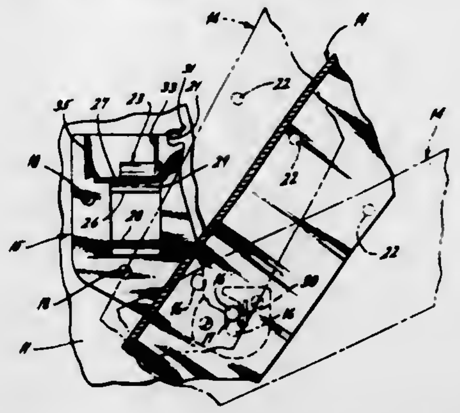
1. In a machine tool:
(a) a spindle,
(b) a bearing to support the spindle for rotation in an axis,
(c) means for producing a predetermined axial preload on the bearing,
(d) a wedge member shiftable axially relative to the spindle and operable thereby to alter the loading on the bearing produced by said means, and
(e) a wedge actuating unit mounted on the spindle, said actuating unit having a member movable radially with respect to the spindle axis to operate the wedge member on rotation of the spindle.

3,352,612
SELF-LUBRICATING BEARING
Michel Eudier, Paris, France, assignor to La Metallurgie Francaise des Poudres-Metafram, Paris, France
Filed July 20, 1964, Ser. No. 383,731
Claims priority, application France, Sept. 13, 1963, 947,517
5 Claims. (Cl. 308—240)



1. A sintered porous metal powder self-lubricating shaft bearing comprising a shaft, a fine pored layer of sintered metal powder in contact with and extending the length of contact of the bearing with the shaft and a sintered metal powder layer of larger pores in contact with the outer surface of said fine pored layer extending the length thereof along the shaft and adjacent and open to the atmosphere, said fine pored layer supporting a vacuum within the bearing impregnated with a liquid lubricant.

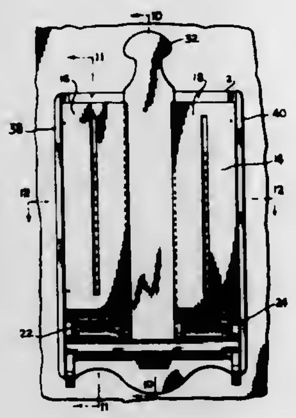
3,352,613
CABINET STRUCTURE
William J. Morris, Woodbury, and Robert C. Simmons, Merchantville, N.J., assignors to Philco Ford Corporation, a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 529,772
8 Claims. (Cl. 312—8)



5. In combination with cabinet structure having a shelf-like support member pivotally mounted therein for movement between a retracted position stored within the structure, and an operative position in which it extends at least partially from said structure, combined hinging and latching apparatus for effecting such mounting of said member, comprising: a pair of spaced bracket means each of which is carried by an associated corresponding side wall of said cabinet structure, each bracket means being provided with a hinging slot defining a pivot for said shelf-like member; at least one of said bracket means including a portion formed unitarily therewith and cooperable with a portion of said shelf-like member to retain said member in its stored position within the cabinet; and at least one of said bracket means further being provided with detent means formed unitarily therewith and movable between a first position in which it prevents pivotal movement of said member beyond said extended operative position, and a second position in which it permits disassociation of said shelf-like member from the hinging slots of said bracket means and consequently removal of said member from said cabinet structure as said member is moved between the recited retracted and operative positions.

3,352,614
TILTABLE HOLDER AND DISPENSER
Andrew W. Andersen, 266 Secatogue Lane,
West Islip, N.Y. 11795
Filed Oct. 23, 1965, Ser. No. 503,915
1 Claim. (Cl. 312—42)

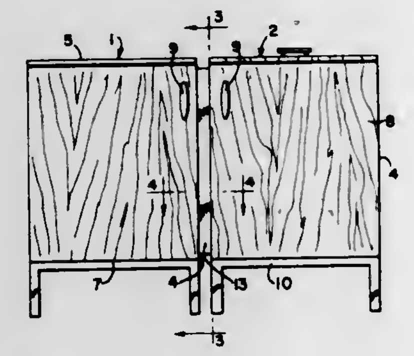
A dispensing device for cigarette packages, matchbooks and the like, comprising a back panel, a dispenser, said back panel being secured to a vertical wall member, and hinged removable mounting means for hingedly removably mounting said dispenser on said back panel, said dispenser being provided with a plurality of vertically extending cigarette package or the like compartments, the front, side and bottom walls of which are portions of said dispenser and the rear walls of which are portions of said back panel, said front and side walls extending down toward said bottom walls to define a package removal space therebetween, said dispenser also being provided with at least one vertically extending matchbook compartment the front, side and floor wall-members of which are portions of said dispenser and the rear wall of which is a portion of said back panel, said floor wall being forwardly downwardly inclined with respect to the vertical and having a protrusion on its lowermost edge, a matchbook removing space being defined between said front and side wall members and said protrusion, said hinged removable mounting means comprising at least two coaxial hinge pins secured to said back panel, said hinge pins each removably engaging said dispenser at a substantially T-shaped hinge slot provided in a side wall thereof, one such hinge slot for each hinge pin, the base



of each T-shaped hinge slot extending horizontally rearwardly, whereby said dispenser is hingedly removably mounted on said back panel.

3,352,615
CONNECTING STRUCTURE

Raymond C. Sandin, Winnetka, Ill., assignor to General Electric Company, a corporation of New York
Filed Aug. 1, 1966, Ser. No. 569,228
4 Claims. (Cl. 312—111)



1. Connecting means for joining first and second rectilinear modular units whereby said units appear as a single cabinet, each of said modular units having at least two side walls, a top wall, and a front wall, said connecting means comprising:

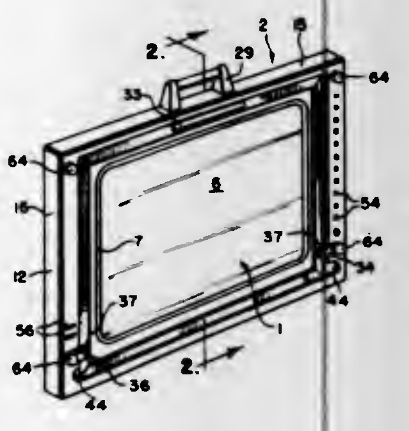
(a) trim means interposed between the adjacent side walls of said first and second units in abutting relation thereto, said trim means thereby spacing said first and second units a predetermined distance apart;

(b) said trim means having an inverted substantially L-shaped configuration, with the horizontal leg of said trim means being disposed a predetermined distance below the spaced top wall of said first and second units and extending from the vertical leg of said trim means to the rear wall of said unit, and the vertical leg of said trim means being disposed a predetermined distance behind the front walls of said first and second units, and extending from the horizontal leg of said trim means to the bottom of said units; and

(c) means securing said trim means to at least one of said units, said trim means upon being interposed between said first and second units thereby bridging the space between said first and second units, whereby said first and second units and said trim means appear to be a single cabinet, while any variation in height between the top walls of said first and second units is virtually indiscernible because of the discontinuity of said top and front walls brought about by spacing said first and second units a predetermined distance apart.

3,352,616
ARTIST'S PALETTE

Harrison K. Linger, 7412 Springvale Drive, Louisville, Ky. 40222
Filed Oct. 27, 1966, Ser. No. 589,922
27 Claims. (Cl. 312—231)



1. A combination artists's palette and case therefor, comprising:

(a) a palette having first and second opposite sides, at least said first side thereof being adapted to receive materials thereon for use by an artists;

(b) a case adapted to receive said palette for use, storage and transportation, said case including a bottom surface and a peripheral side wall;

(c) a resilient sealing gasket fixedly disposed in said case inwardly of said side wall;

(d) said gasket having a peripheral configuration complementary to the periphery of said palette, whereupon placement of said palette in said case, said palette and said gasket are adapted to be in continuous juxtaposition, with said palette, said gasket and said case thereby cooperating to form a chamber therebetween; and

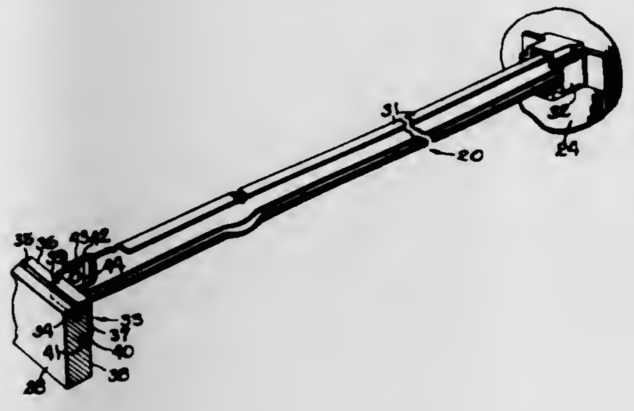
(e) means carried by said case for biasing said palette into sealing relationship with said gasket and thereby rendering said chamber substantially air-tight, whereupon placement of said palette in said case with said first side thereof facing into said chamber, the air-tight condition achieved thereby is effective to retard the drying out and deterioration of any materials remaining thereon.

3,352,617
DRAWER SLIDE

Carl J. Dargene, Rockford, Ill., assignor, by mesne assignments, to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed Oct. 9, 1963, Ser. No. 314,925
14 Claims. (Cl. 312—343)

1. A guide unit for controlling movement of a drawer along a fixed line of travel between open and closed positions relative to a drawer containing area defined by a horizontal front support and a track support in rearwardly spaced opposed relation to said front support, a track member having a rear end portion with which said track support cooperates to provide a horizontal axis about which said track member has downward rocking movement to effect movement of the forward end of said track member into a downward position conforming to an operative position of said track member wherein said

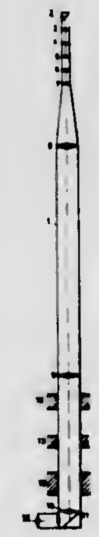
track member extends along a fixed line in rearwardly projecting relation to said front support, said track member being sufficiently shorter than the distance between said front support and said track support measured lengthwise of said line as to permit the forward end of said track member to clear said front support while undergoing movement into said downward position, a track extension member pivotally connected to said forward end of the track member for swinging movement relative to said track member between a forwardly extended position



and a rearwardly retracted position, said extension member engaging said front support and swinging relative to said track member from said rearwardly retracted position to said forwardly extended position as said track member is undergoing movement into said downward position, and said extension member having engagement with said front support to limit vertical movement of said track member relative to said front support while said track member is in said downward position and said extension member is in said forwardly extended position.

3,352,618
PERISCOPE FOR USE IN SUBMARINES

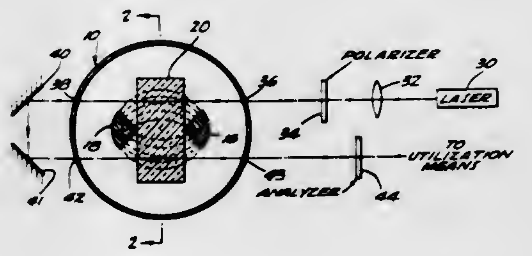
Abraham C. S. Van Heel, Delft, Gerardus J. Beernink, The Hague, and Hendrik J. Raterink, Delft, Netherlands, assignors to The Kingdom of the Netherlands represented by the Underminister of Defence
Filed Nov. 3, 1960, Ser. No. 67,136
Claims priority, application Netherlands, Dec. 22, 1954, 193,440
1 Claim. (Cl. 350—16)



In a periscope having a tube having a rigidly mounted lower section and an upper section, an optical system of lenses of which an upper part is located in the upper section of the periscope and a lower part is located in the lower section and an image at an eye piece at the end of the lower section, said periscope vibrating on application of substantially lateral stress to said upper section and when vibrating having separate optical axes for the lower lens section and for the upper lens section, said vibrating causing an oscillation of the image at said eye piece, said separate optical axes intersecting at a point intermediate between said lower lens section and said upper lens section, a lens means in said upper section to form an intermediary image at a point approximately at the point of intersection of said optical axes whereby said oscillation of the image at said eye piece of said vibrating periscope is substantially stopped.

3,352,619
LECHER-LINE CRYSTAL LIGHT MODULATOR

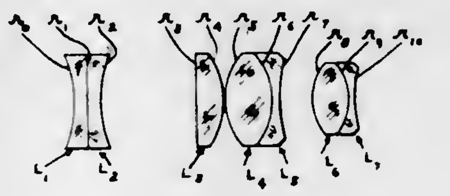
Gerhard K. Megla, Raleigh, N.C., assignor to Hoffman Electronics Corporation, a corporation of California
Continuation of application Ser. No. 227,181, Oct. 1, 1962. This application Apr. 27, 1966, Ser. No. 545,680
13 Claims. (Cl. 350—150)



1. Light modulating apparatus, comprising:
a polarized light source means,
a Lecher-line resonant system including a pair of spaced and parallel electrical conductors, each of said conductors having an electrical length of an odd multiple of a quarter wavelength, and
a crystal which exhibits the electro-optical effect mounted between said spaced electrical conductors as a capacitive load for receiving and modulating rays from said light source means.

3,352,620
WIDE ANGLE EYEPIECE WITH LARGE EYE RELIEF

Wright H. Scidmore, Langhorne, and Robert J. Wolfe, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Apr. 3, 1964, Ser. No. 357,331
3 Claims. (Cl. 350—220)



1. A precision eyepiece comprising, from front to rear, a reticular lens, a plano-convex singlet field lens convex to the rear, a cemented doublet center lens and a cemented doublet eye lens conforming substantially to the following table in which dimensions are in terms of inches, and proceeding from front to rear L_1 to L_7 designate the lenses, r_0 to r_{10} the radii of curvature of the surfaces,

d_0 to d_6 the axial thicknesses l_1 to l_3 the axial separations, n_0 to n_6 the indices of refraction, ν_0 to ν_6 the Abbe dispersion numbers and C.A.$_0$ to C.A.$_{10}$ the clear apertures:

LENS DATA TABLE

				n_d	ν	C.A.
L_1-L_2	$r_0=-3.183$					C.A.$_0$ = 1.245
		$d_0=.080$		$n_0=1.5838$	$\nu_0=46.0$	
	$r_1=\pm\infty$					C.A.$_1$ = 1.245
		$d_1=.080$		$n_1=1.5838$	$\nu_1=46.0$	
	$r_2=+3.183$					C.A.$_2$ = 1.245
			$l_1=.674$			
L_3	$r_3=\pm\infty$					C.A.$_3$ = 1.651
		$d_2=.386$		$n_2=1.620$	$\nu_2=60.3$	
	$r_4=-1.481$					C.A.$_4$ = 1.703
			$l_2=.008$			
L_4-L_3	$r_5=+1.481$					C.A.$_5$ = 1,641
		$d_3=.560$		$n_3=1.620$	$\nu_3=60.3$	
	$r_6=-2.185$					C.A.$_6$ = 1.546
		$d_4=.101$		$n_4=1.720$	$\nu_4=29.3$	
	$r_7=+13.908$					C.A.$_7$ = 1.424
			$l_3=.008$			
L_6-L_7	$r^8=+1.260$					C.A.$_8$ = 1.546
		$d_5=.460$		$n_5=1.620$	$\nu_5=60.3$	
	$r_9=-1.435$					C.A.$_9$ = 1.424
		$d_6=.078$		$n_6=1.720$	$\nu_6=29.3$	
	$r_{10}=+4.567$					C.A.$_{10}$ = .978

Equivalent focal length, F=1.000

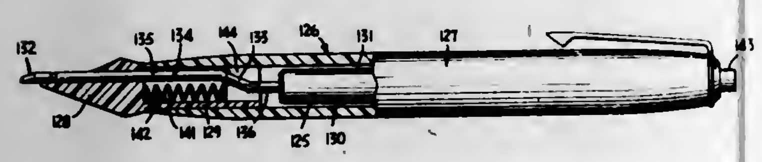
3,352,621
BALL POINT WRITING INSTRUMENT

Hans Reinhard Fehling, Zug, Switzerland, and Alfred Dennis Street, Pinner, England, assignors to I.R.C. Limited, London, England, a company of Great Britain

Filed Feb. 16, 1965, Ser. No. 433,015

Claims priority, application Germany, Mar. 20, 1964, J 25,501

8 Claims. (Cl. 401—109)



1. In a ball point writing instrument including a holder, a reservoir of writing fluid within the holder and a writing extremity eccentrically disposed at the forward end of the holder, a tubular member having a cranked portion, a forward portion extending parallel to the axis of the holder in eccentric relation thereto and communicating with the writing extremity to supply writing fluid thereto, and a rearward portion extending axially within the holder to communicate with the reservoir of writing fluid, the forward and rearward portions being joined by the cranked portion, and including spring means within the holder engaging the cranked portion of the tubular member to urge it in one direction, and means within the holder for selectively moving the writing extremity to projected and retracted positions.

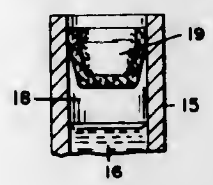
3,352,622
BALLPOINT PENS

Friedrich Schachter, 6333 W. Harrison St., Forest Park, Ill. 60130

Filed Sept. 29, 1964, Ser. No. 400,107

8 Claims. (Cl. 401—141)

1. Stopper means for preventing back leak of fluid content in the reservoir of a ball pen, said means comprising a porous stopper member of fibrous material positioned above and separated from the level of said fluid by an air space and adhering frictionally to the wall retaining it; said stopper member including the whole extent of its peripheral zone of contact with the wall retaining it being pervious to air but impervious to both water and organic components of the fluid content, said stopper member being cup-shaped, and being composed of cellulosic material.

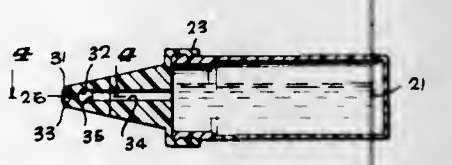


3,352,623
LUBRICANT DISPENSER

Edward Sanet, Los Angeles County, Calif. (251 Dundee Road, Stamford, Conn. 06903)

Filed July 2, 1965, Ser. No. 469,199

13 Claims. (Cl. 401—183)



1. A fluid dispenser for lubricating the cutting edge of a razor blade comprising:
- an elongated flexible tubular case adapted to contain a quantity of lubricating fluid;
- a bifurcated blunt nosed tip closing one end of said tubular case for slidably receiving the blade;
- an open ended lubricating chamber formed in said tip in communication with the bifurcation of said tip; and
- said tip having a passage means disposed between said lubricating fluid and said lubricating chamber so as to communicate said lubricating fluid under pressure to the cutting edge of the blade.

CHEMICAL

3,352,624
TWO-TONE DYEING OF WOOL AND $CA(OH)_2$ MODIFIED WOOL BLEND WITH SOLUTION OF POLYSULFONATED AND MONOSULFONATED DYES AND ARYL SULFONIC ACID-ALDONE REACTION PRODUCT

Arthur J. I. Harding, 190 S. Park Drive, Spartanburg, S.C. 29302, and Willard L. Morgan and Kermit S. La Fleur, Spartanburg, S.C.; said Harding and said Morgan assignors, by mesne assignments, to Arthur J. I. Harding, Spartanburg, S.C.

No Drawing. Filed Aug. 27, 1962, Ser. No. 219,730

3 Claims. (Cl. 8—15)

1. In a process for obtaining novel multicolor effects in wool in a single dyebath which comprises the step of dyeing a mixture of wool, consisting essentially of a mixture of normal wool having normal dyeing properties and of wool pretreated to enhance its receptivity to dyestuffs, in an aqueous dyebath containing
   (a) a dyestuff containing a total of at least 3 sulfonic acid and reactive groups,
   (b) a dyestuff containing a total of less than 2 sulfonic acid and reactive groups, and
   (c) an amount, greater than 0.5 percent calculated on the weight of the wool, which is insufficient to reserve the dyestuff, of a water-soluble condensation product of an aryl sulfonic acid and an aldone,

at an initial dyebath pH in the presence of the wool of less than 5, the improvement which comprises using as the wool having enhanced receptivity to dyestuffs, wool treated with an aqueous dispersion of calcium hydroxide at a pH above 9.5 but below 12 at a temperature from 110° to 180° F. for less than 15 minutes, under conditions whereby the scale structure of the fibers is retained in a substantially undamaged condition and the fibers have a dry tensile strength and an elongation which are at least about as high as corresponding untreated wool.

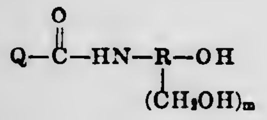
3,352,625
HYDROXYMETHYLATED, FLUOROACYLATED AMINOHYDROXY AROMATIC COMPOUNDS

Domenick Donald Gagliardi, East Greenwich, R.I., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 12, 1963, Ser. No. 301,622

3 Claims. (Cl. 8—116.2)

1. The reaction product produced by the acid catalyzed reaction of an fibrous substrate having active hydrogen in the surface therewith with a methylolperfluoroacylaminohydroxy aromatic reactant, corresponding to the formula:



$$Q-\overset{\overset{\displaystyle O}{\|}}{C}-HN-\underset{\underset{\displaystyle (CH_2OH)_m}{|}}{R}-OH$$

where R is an aromatic residue selected from the group consisting of benzene and naphthalene nuclei; Q is an alkyl group having three to twenty-one carbon atoms in which at least 70 percent of the 5–43 hydrogen atoms have been replaced with fluorine atoms; and *m* is the integer 1 or 2.

3,352,626
RELAXATION AND CRIMP STABILIZATION OF ACRYLONITRILE POLYMER FIBERS THROUGH TREATMENT WITH AQUEOUS SOLUTIONS OF ACETONITRILE, PYRIDINE OR DIOXANE

Yoshimasa Fujita and Nobuhiro Tsutsui, Okayama, Japan, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Oct. 9, 1963, Ser. No. 315,023

Claims priority, application Japan, Oct. 12, 1962, 37/45,342

8 Claims. (Cl. 8—130.1)

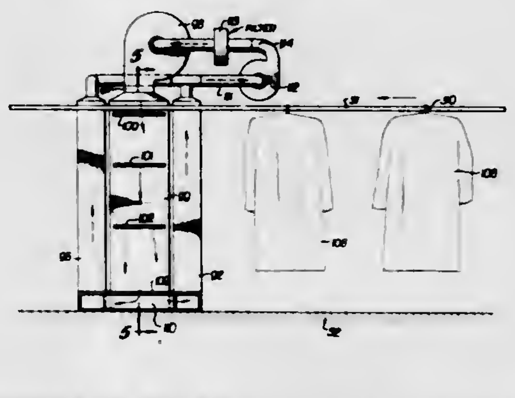
1. The method of relaxing dried filamentary material comprising a polymer containing at least 80% by weight of acrylonitrile, said method comprising treating the said dried filamentary material with a treatment material selected from the group consisting of aqueous acetonitrile, aqueous pyridine, and aqueous dioxane containing from 20% to 50% by weight of water at an elevated temperature below that at which about 50% shrinkage occurs.

3,352,627
LINT FREE LAUNDRY SYSTEM

Jack B. Indreland, Tarzana, Calif., assignor to Atlas Coverall & Uniform Supply Co., Los Angeles County, Calif., a partnership

Filed Mar. 30, 1962, Ser. No. 183,879

4 Claims. (Cl. 8—137)



1. A method of cleaning garments constructed of synthetic fabrics comprising washing said garments, hanging said garments while wet on supporting hangers, passing the garments while on hangers through an atmosphere of filtered air at a temperature of from about 270° F. to about 310° F. whereby simultaneously to relax wrinkles and folds in the garments and dry the garments in a wrinkle and fold-free condition, removing said garments from said atmosphere and air washing each garment on its respective hanger in turn by blowing thereon blasts of filtered air at a velocity productive of a whipping action on said garments.

3,352,628
IODINE VAPOR GENERATOR AND METHOD OF USING IT TO TREAT AND DISINFECT A FLUID

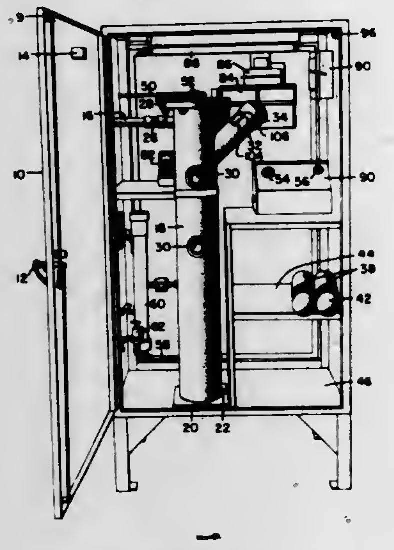
Herman S. Starbuck, 8105 Remington, Cincinnati, Ohio 45242

Filed May 3, 1965, Ser. No. 452,712

16 Claims. (Cl. 21—58)

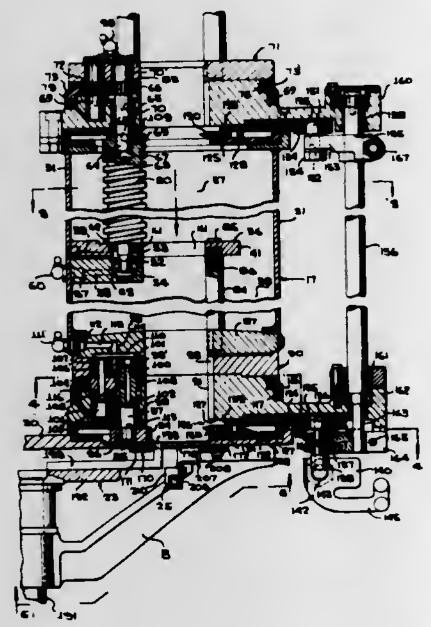
16. A method for treating and disinfecting a mass of fluid, said method comprising: passing a controlled flow of pressurized atmospheric air through a heater and

elevating the temperature of the air to a value between 90° F. and 120° F.; conveying the heated air to a container charged with iodine-bearing material in solid particle form, to vaporize iodine released by the particles as the air sweeps therethrough; collecting the iodine-bearing exhaust air from the container and piping said exhaust air to the fluid mass to be treated; terminating the flow of air through the cylinder at prescribed intervals of time, and throughout a brief period of interruption; delivering to the said fluid mass during such brief period of interruption, and through the same piping, a flow of the heated air untreated by the iodine-bearing particles; then resuming delivery of the iodine-treated air to the said fluid mass through said same piping.



3,352,629
CAN COVER STERILIZER ON CAN CLOSING MACHINE

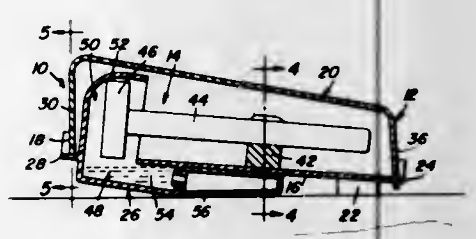
Bjarne J. Iverson, Oak Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,803
11 Claims. (Cl. 21—80)



1. Apparatus for feeding and sterilizing container covers comprising a housing, a plurality of spaced apart vertically extending screws in said housing for supporting covers in spaced relationship, means for rotating said screws for conveying the covers in the housing, means for distributing a sterilizing media in said housing whereby covers conveyed in spaced relationship by said screws are sterilized, means for introducing covers into said housing, means for feeding sterile covers out of said housing, first control means for preventing covers from being introduced to said plurality of screws, second control means for preventing covers from being fed out of said housing by said feeding means, means coupling said first and second control means for automatically actuating one of said control means upon the actuation of the other of said control means, and means for actuating at least one of said first and second control means.

3,352,630
RAZOR STERILIZER

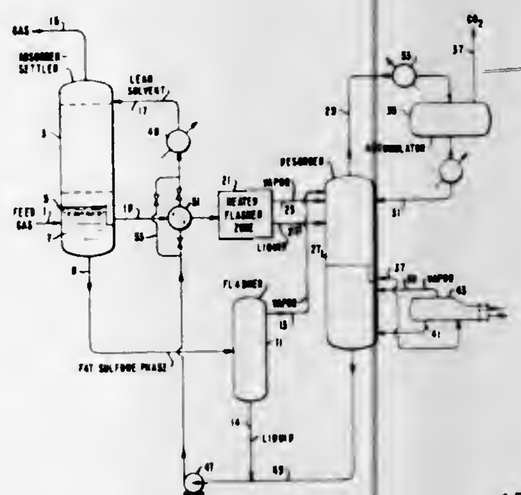
George A. Fischer, 2261 Broadmoor, Palm Springs, Calif. 92262, and Robert H. Ricciardi, 74-030 Aster Drive, Palm Desert, Calif. 92260
Filed Jan. 14, 1964, Ser. No. 337,599
10 Claims. (Cl. 21—90)



1. A sterilizer for a safety razor or the like comprising an enclosure having means for stabilized support thereof in two positions, means within said enclosure for holding the razor in predetermined relation to the enclosure, pocket means mounted on the enclosure and adapted to contain a predetermined volume of a liquid solution for submerging a portion of the razor therein only when the enclosure is in one of said two positions.

3,352,631
METHOD OF SEPARATING CARBON DIOXIDE FROM GASEOUS MIXTURES

Keith E. Zarker, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Jan. 31, 1964, Ser. No. 341,581
10 Claims. (Cl. 23—2)



1. The process of separating carbon dioxide from a gaseous mixture containing initially from 15 to 50% by volume of carbon dioxide which comprises contacting said mixture in an absorption zone with a liquid absorbent composition comprising from 5 to 20 percent by weight water, from 15 to 60 percent by weight of ethanolamine selected from the group consisting of monoethanolamine, diethanolamine and mixtures thereof and the balance being a cyclotetramethylene sulfone under absorption conditions sufficient to produce an effluent product gas containing less than 2000 parts per million of carbon dioxide; recovering a fat absorbent composition from said absorption zone as two separate liquid phases, a fat amine phase and a fat sulfone phase; separately regenerating said phases by reducing the pressure on said fat sulfone phase to a pressure lower than that maintained in said absorption zone whereby a first reject effluent comprising carbon dioxide is released and a lean sulfone stream is obtained, and by both reducing the pressure to a pressure which is lower than that maintained in said absorption zone and adding heat to said fat amine phase to raise said phase to a temperature which is higher than said absorption zone whereby a second reject effluent comprising carbon dioxide is released and a lean amine stream is obtained; combining said lean amine and said lean sulfone streams; and recycling said combined stream to contact additional quantities of said gaseous mixture.

3,352,632
PRODUCTION OF LEAD TITANATE AND LEAD ZIRCONATE FOR CERAMIC BODIES

Hiromu Sasaki, Osaka, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Mar. 16, 1964, Ser. No. 352,339
Claims priority, application Japan, Mar. 19, 1963, 38/14,821
6 Claims. (Cl. 23—51)

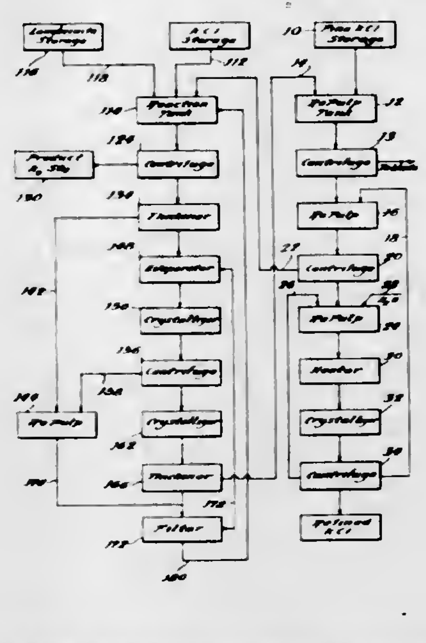
1. A process for making finely divided compound powder of $PbMO_3$, wherein M represents at least one element selected from the group consisting of titanium and zirconium, which comprises synthesizing a double oxalate of $PbMO(C_2O_4)_2 \cdot nH_2O$ by means of chemical reaction in aqueous solution of a nitrate of M, a water-soluble lead salt, and oxalic acid, filtering and drying said double oxalate, decomposing said double oxalate by heating at an elevated temperature with liberation of water vapor and other gases, and recovering the thereby-produced powdered $PbMO_3$.

4. A process for making $Pb(Ti,Zr)O_3$ as a finely divided powder which comprises synthesizing a double oxalate of $Pb(Ti,Zr)O(C_2O_4)_2 \cdot nH_2O$ by reaction in aqueous solution of a water-soluble lead salt, oxalic acid, and nitrates of titanium and zirconium, filtering and drying said double oxalate, and converting the double oxalate into finely divided $Pb(Ti,Zr)O_3$ powder by heating the said oxalate at an elevated temperature to decompose the same with evolution of water vapor and other gases.

3,352,633
PROCESS FOR MAKING PURIFIED POTASSIUM CHLORIDE AND POTASSIUM SULFATE FROM SULFATE-CONTAMINATED POTASSIUM CHLORIDE AND LANGBEINITE

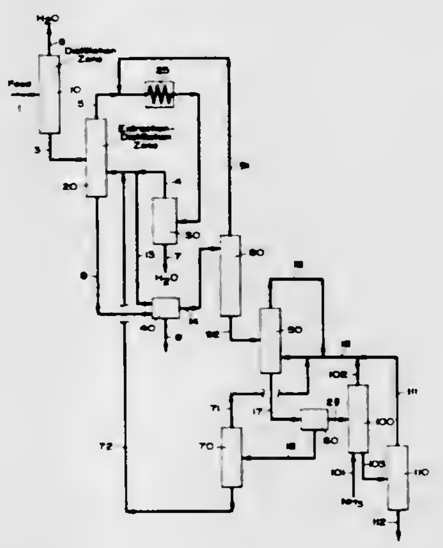
Alfred F. Nylander, Redwood City, Calif., assignor to International Minerals & Chemical Corporation, a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,131
4 Claims. (Cl. 23—89)

1. A method for making purified potassium chloride and potassium sulfate from langbeinite and a fine sylvite flotation concentrate fraction containing in excess of about 2% by weight of sulfate as sulfate salts, comprising repulping said fraction with a brine which is saturated with potassium chloride, unsaturated with sulfate salts, and has a magnesium ion content of at least 2%, separating said brine from said fraction, dissolving said fraction in hot aqueous liquid to produce a liquor substantially saturated with potassium chloride, cooling said liquor to recrystallize said potassium chloride therefrom, separating said purified potassium chloride as product, mixing said liquor with langbeinite and potassium chloride, maintaining the resulting mixture at an elevated temperature to produce potassium sulfate and magnesium chloride by reaction of langbeinite and potassium chloride, separating crystallized potassium sulfate from the mother liquor, cooling the mother liquor and separating crystallized solids therefrom to obtain the aforesaid brine.



3,352,634
PURE MAGNESIUM CHLORIDE PREPARED BY THE SIMULTANEOUS EXTRACTION AND AZEOTROPIC DRYING OF A SALT MIXTURE

Fred J. Buchmann, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed May 25, 1965, Ser. No. 458,729
8 Claims. (Cl. 23—91)



1. Process for the removal of water of hydration from hydrated magnesium chloride which comprises contacting the same in an extraction-distillation zone in the presence of a magnesium chloride solvent under temperature and pressure conditions to remove overhead as an azeotropic distillation the water of hydration together with some magnesium chloride solvent, withdrawing the magnesium chloride solution from the extraction-distillation zone and filtering the same in order to remove undissolved impurities therefrom, thereafter treating the solution in a second distillation zone under conditions to remove overhead a portion of said magnesium chloride solvent, withdrawing the remainder of the magnesium chloride solution from the bottom of said second distillation zone and

contacting the same in a precipitation zone with ammonia whereby an insoluble magnesium chloride hexammoniate forms, separating the precipitate and thereafter treating the magnesium chloride ammoniate in a first stage of a decomplexing zone with ammonia so as to remove all traces of said magnesium chloride solvent therefrom, subjecting the partially decomplexed ammoniate in a second stage of said decomplexing zone to temperature and pressure conditions to remove ammonia and to produce anhydrous magnesium chloride.

3,352,635

PROCESS FOR THE PREPARATION OF METAL OXIDES HAVING AN ENLARGED PORE VOLUME

William Dean Machin, London, England, and Douglas Sargent Montgomery, Ottawa, Ontario, and Basil Ian Parsons, Kars, Ontario, Canada, assignors to Her Majesty the Queen in right of Canada as represented by the Minister of Mines and Technical Surveys, Ottawa, Ontario, Canada

Filed Sept. 27, 1963, Ser. No. 312,184
Claims priority, application Canada, May 31, 1963, 876,935
11 Claims. (Cl. 23—142)

1. A process for the preparation of a highly porous, substantially pure metal oxide of a metal selected from the group consisting of aluminum, iron, cobalt, chromium, nickel, calcium and silver and mixtures thereof, said oxide having a pore size range within the limits of 0.1 to 100 microns, said process comprising:

(a) intimately mixing a finely divided fusible salt of a metal selected from the group consisting of aluminum, iron, cobalt, chromium, nickel, calcium and silver with at least one water soluble organic polymer possessing functional groups capable of reacting with the cation of said metal, said polymer being selected from the group consisting of polyvinyl alcohols, polyacrylamides and copolymers containing vinyl alcohols and acrylamides, said polymer further being soluble in said fused salt, being stable at the drying temperature of said fused salt but being combustible at the calcining temperature of said metal oxide, said polymer being present in an amount of 0.5 to 65% by weight;

(b) melting said mixture of said salt and said polymer, thereby forming a hydrated co-ordinate compound thereof;

(c) heating and dehydrating said mixture until said coordinate compound decomposes, thereby yielding said metal oxide in highly porous form; and

(d) calcining said oxide at a maximum temperature of 600° C., thereby to remove therefrom any residue remaining therein.

3,352,636

PROCESS FOR PRODUCING ALUMINA GEL

Charles P. Wilson, Jr., and Brownell Carr, Cincinnati, Ohio, and Frank G. Ciapetta, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed July 9, 1964, Ser. No. 381,567
3 Claims. (Cl. 23—143)

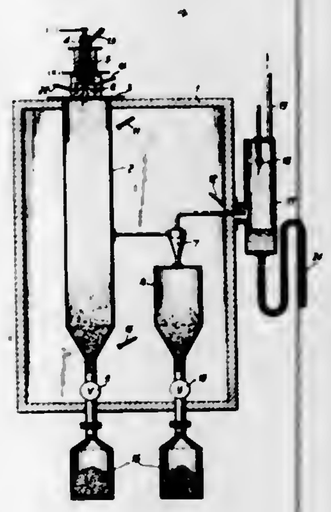
1. A process for preparing alumina gel having a mercury pore volume in the range of 2.0 to 3.7 cc./g. and pore diameter in the range of 100 to 1500 angstroms, which consists in preparing a soluble aluminum salt solution containing about 65 to 100 g./l. of alumina and selected from the group consisting of the chloride, the nitrate and the sulphate, contacting said solution in a mixing device with sufficient sodium carbonate solution to increase the pH to about 3.95, partially evolving CO_2 from the partially neutralized slurry, gelling the slurry by increasing the pH in a second stage neutralization to about 5.4 to 6 by adding further sodium carbonate as a fine dispersion, homogenizing the resulting alumina gel slurry, maintaining the pH at about 5.4 to 6 and spray drying the slurry, thereafter wet collecting the product, washing, drying and recovering the product.

3,352,637

PROCESS AND APPARATUS FOR THE MANUFACTURE OF NITRIDE POWDERS OF THE ELEMENTS ALUMINUM, BORON, SILICON OR ZIRCONIUM

Gero Heymer, Knapsack, near Cologne, and Heinz Harnisch, Lovenich, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, a corporation of Germany

Filed June 1, 1964, Ser. No. 371,356
Claims priority, application Germany, May 30, 1963, K 49,863
11 Claims. (Cl. 23—191)



1. In a process for the manufacture of a nitride of at least one element selected from the group consisting of aluminum, boron, silicon, and zirconium by reacting a gaseous chloride of the said element and gaseous ammonia in contact with a further gas at high temperatures, the improvement which comprises heating a gas serving as a heat transfer agent in an electric arc at a temperature of at least 2500° C., rapidly mixing said heated gas with the aforesaid chloride and ammonia in a mixing zone whose walls are maintained at a temperature of at most 500° C. so as to avoid corrosion of the walls of the reaction chamber, the resulting mixture having a minimum temperature of about 1500° C., cooling the resulting reaction products, collecting said reaction products, and isolating the nitride therefrom in loose powdered form.

3,352,638

PROCESS FOR MANUFACTURING MAGNETIC OXIDE

John S. Perlowski and William E. Sillick, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Jan. 30, 1964, Ser. No. 341,238
5 Claims. (Cl. 23—200)

1. A method of making gamma Fe_2O_3 which comprises introducing a charge of alpha $Fe_2O_3.H_2O$ into a fluidizing bed reactor, fluidizing the charge by introducing air under pressure, heating the charge during fluidization to 600–800° F. to drive off the water of hydration, purging the reactor and continuing fluidizing with an inert gas, substantially completely reducing the alpha Fe_2O_3 to Fe_3O_4 by continuing fluidizing with a reducing gas, again purging the reactor and continuing fluidizing with an inert gas while cooling the charge to 550–700° F., continuing fluidizing within the latter temperature range with an inert

gas-air mixture to oxidize Fe_3O_4 to gamma Fe_2O_3, and continuing the oxidation until a rapid temperature drop indicates completion of the oxidation.

3,352,639

PROCESS FOR THE OXIDATION OF $TiCl_4$ TO PRODUCE TiO_2

John Peter Wikswo, Ridge Drive, Va., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 17, 1965, Ser. No. 433,491
10 Claims. (Cl. 23—202)

1. A process for producing titanium dioxide which comprises reacting titanium tetrachloride with an oxygen containing gas in the presence of a gaseous mixture consisting essentially of carbon monoxide and hydrogen sulfide, the hydrogen sulfide being present in an amount of about .002 to .06% by volume of the total gas, the volumetric ratio of carbon monoxide to titanium tetrachloride being about 0.1 to 3.0:1, at a temperature of about 1400° C. to 1850° C., the oxygen being employed in a stoichiometric excess of about 5 to 120% by volume, and a volumetric space velocity of the total gas being about 15 to 45.

3,352,640

BISMUTH DISELENIDE AND A METHOD FOR ITS PREPARATION

Meyer Shea Silverman, Norristown, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 16, 1964, Ser. No. 360,407
6 Claims. (Cl. 23—204)

1. Bismuth selenide, having bismuth to selenium atomic ratio of about 1:2.

3,352,641

RECOVERY OF IODIDE IONS FROM ANION EXCHANGE RESINS USED TO EXTRACT IODINE

Hiromichi Nakamura, Tokyo, Hiroshi Katoo, Sakusabemachi, Nobuaki Minejima, Mutsuzawa-mura, and Hiroshi Shimizu, Akira Satoo, Masashi Nozaki, and Yuu Doochi, Tokyo, Japan, assignors to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Feb. 24, 1967, Ser. No. 618,312
4 Claims. (Cl. 23—216)

1. In the extraction of iodine from an aqueous solution containing iodide salts by means of anion exchange resins, in which the principal quantity of iodide ions absorbed by the resin has been eluted therefrom by an aqueous solution of sodium hydroxide, the method for recovering the residual iodide ions from the resin which comprises contacting the resin with an elutriant from the class consisting of acidic and neutral sodium chloride solutions, adding to the eluate chlorine gas and sufficient mineral acid to bring the pH of the eluate down to between about 0.5 and about 3.0, whereupon the iodine is crystallized out of solution, and filtering off the iodine crystals.

3,352,642

STABILIZATION OF OZONE

Lawrence J. Heldt, Arlington, and Vincent R. Landi, Brookline, Mass., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed June 29, 1964, Ser. No. 378,990
15 Claims. (Cl. 23—222)

1. The process of stabilizing ozone comprising the step of storing said ozone in a container, the walls of said container being lined with a highly alkaline material.

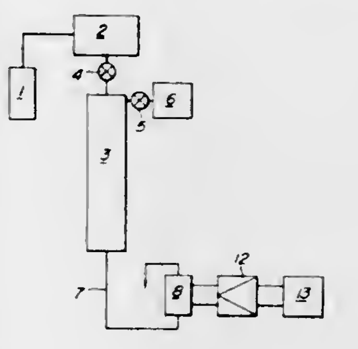
11. A composition for storing ozone under stabilized conditions comprising water, ozone and a hydroxyl ion-yielding base in a concentration of at least 10^{-2} N.

3,352,643

LIQUID CHROMATOGRAPHY AND CHROMATOGRAPHS

Noboru Ando, Yoshie Tanizaki, and Fumie Hasegawa, Tokyo, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Sept. 2, 1964, Ser. No. 394,002
21 Claims. (Cl. 23—230)



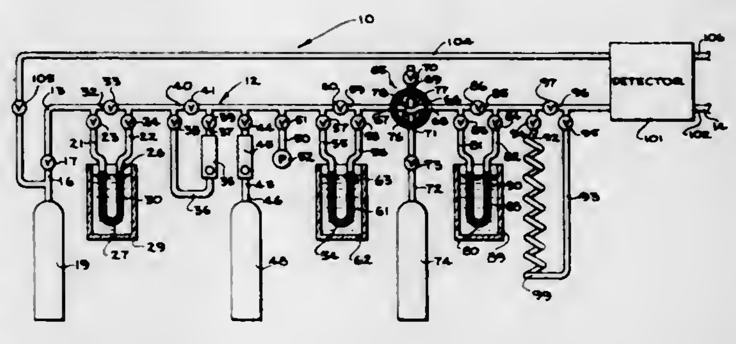
1. A liquid chromatographic process for the analysis of a liquid sample which comprises introducing a carrier liquid at a constant flow rate into a chromatographic column and through a streaming potential detector which communicates with the lower portion of said columns, measuring the streaming potential of the carrier liquid at said constant flow rate, adding a specific amount of a liquid sample to the upper portion of said column, and analyzing said liquid sample by measuring the streaming potential specific to said sample after the variation in flow rate of said carrier liquid resulting from the addition of said liquid sample has become constant.

3,352,644

ANALYSIS OF HYDROGEN

Ihor Lysyj, Canoga Park, Calif., assignor to North American Aviation, Inc.

Filed Sept. 18, 1964, Ser. No. 397,542
4 Claims. (Cl. 23—232)



1. A method for determining the respective concentrations of impurities in a sample source of hydrogen comprising the steps of:

passing an impure sample stream from a sample source of hydrogen at a known volume rate into a trap for a known period of time; thereby

trapping impurities from the stream in the trap;

purifying an upstream portion of the stream of said sample hydrogen, subsequently passing the thus purified upstream portion from the sample hydrogen source at a known volume rate through the trap for use as a carrier gas to pick up the impurities contained in the trap; and

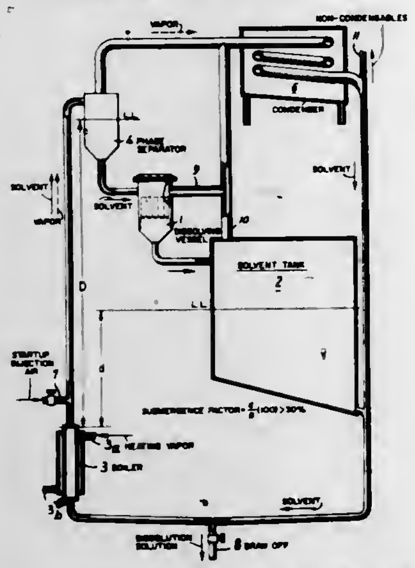
passing said purified stream now laden with impurities from the trap into a calibrated chromatographic column and detector to;

thereby analyze the hydrogen sample for impurities.

3,352,645

APPARATUS FOR DISSOLVING NUCLEAR MATERIALS

Pierre Faugeras, Montrouge, Pierre Michel, Courbevole, and Xavier Talmont, Antony, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed July 6, 1964, Ser. No. 380,489
Claims priority, application France, July 22, 1963, 942,246
5 Claims. (Cl. 23—272.6)



1. Nuclear safe dissolving apparatus, characterized in that it comprises a nuclear-safe dissolving vessel of limited subcritical volume in which the fuel to be dissolved is placed and which is connected to a nuclear-safe flat tank having a subcritical maximum capacity dependent on the criticality of the liquid being processed and a plane of symmetry parallel to and midway between its most extensive flat sides for containing the solvent and having a solvent content which can vary according to the dissolving conditions, said tank being placed at a level which is lower than that of the dissolving vessel, a boiler of limited subcritical volume connected to said tank which supplies a vapor-liquid mixed phase of said solvent and puts said solvent into circulation, said boiler being placed at a level which is lower than that of said tank and being displaced with respect to said tank, a phase separator connected to said boiler and to said dissolving vessel placed at the top of the apparatus and a vapor condenser connected to said phase separator and to said boiler, the axes of symmetry of said dissolving vessel, said boiler, said phase separator and said vapor condenser lying in the plane of symmetry of said solvent containing tank.

3,352,646

PROCESS FOR PRODUCING $N_2O_3 \cdot 11.8HF$

Richard S. Siegel, Scarsdale, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Jan. 29, 1965, Ser. No. 429,183
3 Claims. (Cl. 23—356)

1. A process for producing $N_2O_3 \cdot 11.8HF$ comprising intimately mixing liquid hydrogen fluoride with sodium nitrite, fractionally distilling the mixture and collecting that portion of the mixture which boils off at a temperature ranging from about 66° C. to about 70° C.

3,352,647

BEARING MATERIAL

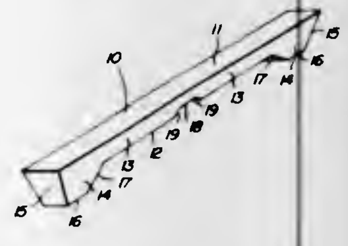
Robert J. MacDonald, Moreland Hills, and James F. Ward, Cleveland Heights, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Aug. 22, 1966, Ser. No. 579,470
15 Claims. (Cl. 29—182.1)

1. A composite bearing material comprising: a copper base substrate; a phase of metals consisting of tin diffusion resistant materials selected from a group consisting essentially of zinc, cadmium, and nickel and of corrosion resistant materials having a lesser degree of affinity for the copper of said substrate than said tin resistant materials and comprising lead and tin; said tin diffusion resistant metal being segregated into a generally tin-free form providing a barrier layer between the lead-tin phase and said copper, said barrier layer establishing an intermetallic formation with said copper.

3,352,648

SELF-PALLETIZING, INTERLOCKING, COPPER INGOT

Billie L. Harper, Vanadium, and William D. Craghead, Jr., Silver City, N. Mex., assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed Jan. 29, 1965, Ser. No. 428,902
7 Claims. (Cl. 29—187)

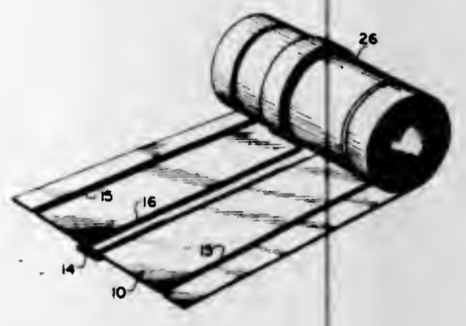


1. A self-palletizing, interlocking ingot, comprising an elongate body portion, having flat top and bottom surfaces and mutually opposite flat, side surfaces interconnecting said top and bottom surfaces and converging from the top surface to the bottom surface; a pair of legs formed integrally with said body portion at opposite ends thereof and having flat feet surfaces, respectively; flat end surfaces extending and inwardly inclined from the said top surface to the respective feet surfaces; flat, confronting, leg surfaces diverging downwardly from opposite ends of the bottom surface to the respective feet surfaces; and mutually opposite, flat, side surfaces for each of said legs, these side surfaces converging downwardly to the respective feet surfaces and forming, with the said side surfaces of the body portion, respective, flat, continuous surfaces.

3,352,649

ANTI-SPLASH ROOF VALLEY

Alfred A. Tennison, Jr., P.O. Box 7, Texarkana, Tex. 75501
Filed Oct. 22, 1965, Ser. No. 502,072
7 Claims. (Cl. 29—190)



1. An anti-splash roof valley for the roof of a building-comprising an elongated strip of malleable sheet material, an inverted V-shaped portion located centrally of said strip, an inverted, generally V-shaped rib in said material of lesser height than said portion and substantially paralleling said portion in closely spaced relation thereto, said strip being formed in a coil of undetermined length, said

V-shaped portion being bent to a position generally paralel with said strip of material and overlying said rib, whereby a predetermined length of material can be removed from said coil and the V-shaped portion bent to upstanding position with said rib constituting a tool guide and support for bending said portion so that a continuous valley without joints can be applied on said roof.

3,352,650

METALLIC COMPOSITES

David Goldstein, Adelphi, William J. Buehler, Bethesda, and Raymond C. Wiley, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed July 19, 1965, Ser. No. 473,249
12 Claims. (Cl. 29—191)

1. A composite comprising a refractory metal component embedded in a nickel-titanium alloy matrix, said refractory metal being selected from the group consisting of tungsten, rhenium, molybdenum, alloys of tungsten and molybdenum, alloys of tungsten and rhenium, and alloys of molybdenum and rhenium, and said nickel-titanium alloy comprising 53–62 weight percent nickel with the remainder essentially titanium.

3,352,651

SELF-KINDLING CHARCOAL BRIQUETS

Julian Scott Davidson, Anaheim, Calif.
(115 SE. 12th St., Pendleton, Oreg. 97801)
No Drawing. Filed Aug. 6, 1965, Ser. No. 477,956
2 Claims. (Cl. 44—10)

1. As an article of manufacture, a charcoal briquet rendered self-kindling by treatment with melted 2,2,4-trimethyl-1,3-pentanediol; said compound penetrating the briquet as a liquid and thereafter solidifying into a narrow band beneath the surface thereof.

2. As an article of manufacture, a charcoal briquet rendered self-kindling by immersion treatment with a heated solution of stearic acid in kerosene containing a small, effective quantity of white gasoline; the kerosene being confined to a subsurface layer in the briquet by partial solidification of the stearic acid upon cooling.

3,352,652

METHOD OF PRODUCING FUEL GAS

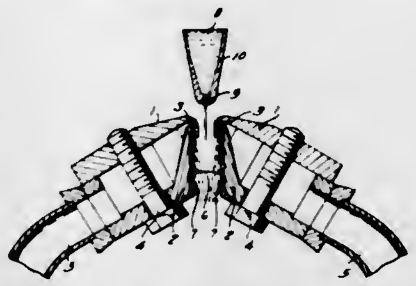
Robert W. Belfit, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Jan. 21, 1964, Ser. No. 339,085
19 Claims. (Cl. 48—197)

1. A method of producing non-explosive fuel gas which comprises (a) extracting a primary fuel selected from the group consisting of methyl acetylene, allene, and mixtures thereof, from a fluid mixture containing the same into a selective extractant therefor to produce an extractant containing up to about 80 mole percent of said primary fuel dissolved therein, (b) providing a diluent having two components, the first component being selected from the group consisting of propane, propylene, and mixtures thereof, the second component consisting of at least one hydrocarbon selected from the group consisting of saturated and ethylenically unsaturated hydrocarbons containing four carbon atoms, said first and second components being present in a mole ratio of from about 0.8 to about 19 moles of said first component per mole of said second component, (c) mixing said diluent and said extractant having said primary fuel dissolved therein in a mole ratio from about 0.333 to about 1.1 moles of diluent per mole of primary fuel, and (d) distilling the combination thus formed, thereby to separate extractant therefrom and thus produce a non-explosive fuel gas containing from about 0.333 to about 1.1 moles of diluent per mole of primary fuel.

3,352,653

BLAST NOZZLE FOR FORMING SILICATE FIBERS

Sebastian Speth, Duisburg, Germany, assignor to Grunzweig & Hartman AG, Ludwigshafen (Rhine), Germany
Filed Mar. 30, 1964, Ser. No. 355,641
Claims priority, application Germany, Apr. 1, 1963, G 37,408
4 Claims. (Cl. 65—1)



1. In an apparatus for making silicate fibers such as glass fibers and mineral wool from molten silicates such as glass and silicate minerals, in combination, a pair of elongated substantially coextensive nozzle means located beside each other at approximately the same elevation and defining between themselves an elongated gap, said nozzle means both directing curtains of hot fluid downwardly through said gap; and elongated trough means located over said gap and having bottom outlet means extending along and aligned with said gap so that molten silicate in said trough means will flow through said outlet means thereof to drop through said gap into the downwardly moving curtains of hot fluid to be converted into silicate fibers, said pair of nozzle means having wall portions which are respectively directed toward each other and define at least part of said gap and which at least directly adjacent said gap consist essentially of nickel.

3,352,654

METHOD FOR HEAT TREATMENT OF VITREOUS FIBERS

Robert C. Nordberg and Hector R. Barrios, La Mirada, Calif., assignors to Hitco, a corporation of California
Original application June 20, 1960, Ser. No. 37,493, now Patent No. 3,188,066, dated June 8, 1965. Divided and this application Feb. 18, 1964, Ser. No. 352,411
5 Claims. (Cl. 65—23)

1. The method of heat treating leached vitreous silica fibers coated with carbonaceous material which includes the steps of heating at a first temperature sufficient to remove the carbonaceous material but insufficient to heat shrink the fibers, and then heating at a second temperature, higher than the first, sufficient to heat shrink the fibers.

3,352,655

METHOD OF CONTROLLING HEAT APPLICATION TO GLASS TO REPAIR SCORED REGIONS

Herbert W. Barch, Natrona Heights, and Richard V. Posney, Freeport, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Apr. 8, 1964, Ser. No. 358,381
3 Claims. (Cl. 65—28)

1. In the art of repairing a glass sheet having a scored region susceptible to breakage during thermal treatment wherein said glass sheet is heated above the strain point and cooled below the strain point for said thermal treatment, the improvement comprising applying to said scored region only a heat absorbing composition having a higher rate of heat absorption than that of glass prior to said thermal treatment, heating said sheet to a temperature between its strain point and its melting point, whereby said heat absorbing composition absorbs heat from the hot atmosphere at a faster

rate than the main body of the glass sheet and transfers sufficient of said absorbed heat into said scored region during said heating to cause the area immediately adjacent to the scored region to be of a higher temperature than the main body of the glass sheet and continuing said heating of said main body of the glass sheet at said temperature range until said scored region heals.

3,352,656
METHOD OF MAKING GLASS-CERAMICS BY DEVITRIFICATION IN A SINGLE STAGE

Peter William McMillan and Graham Partridge, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company

No Drawing. Filed May 16, 1966, Ser. No. 550,182

4 Claims. (Cl. 65—33)

1. A method of making a glass-ceramic article which includes forming the article in a glass consisting of, as major constituents, silicon dioxide, aluminium oxide, lithium oxide and optionally magnesium oxide within the following ranges in percentages by weight:

SiO_2	60–66
Al_2O_3	18–20
Li_2O	5.0–6.0
MgO	0–3.0

and further consisting of at least one nucleating agent selected from the group consisting of tungsten oxide, molybdenum oxide, phosphorus pentoxide, vanadium oxide, and titanium oxide, the major constituents together with the nucleating agent totalling at least 90 percent of the glass, said method including the step of heat-treating said glass article by raising its temperature substantially directly in a single stage to a value of the temperature at which devitrification takes place, holding said article at said value of the temperature for a sufficient period to devitrify said glass to a predominantly crystalline glass-ceramic material, and allowing it to cool to room temperature.

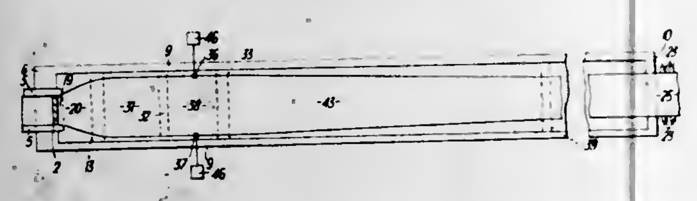
3,352,657
METHOD OF ATTENUATING A RIBBON OF GLASS ON A MOLTEN METAL BATH

Harold Charnock, Upholland, near Wigan, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed Mar. 30, 1964, Ser. No. 355,700

Claims priority, application Great Britain, Apr. 2, 1963, 13,063/63

5 Claims. (Cl. 65—65)



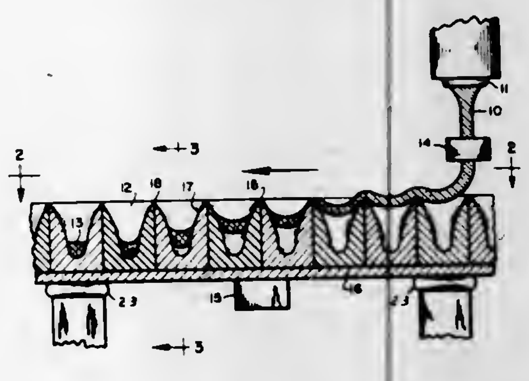
1. In a method of producing flat glass of desired thickness during which glass in ribbon form is advanced along a bath of molten metal and tractive effort is applied to the ultimate ribbon of glass of desired thickness, the steps of thermally conditioning the advancing ribbon of glass so that the viscosity of the glass is in the range of from 10^5 to 10^8 poises, applying a tractive forward effort to the glass in ribbon form at a point on the bath sufficiently rearwardly of the point of application of the first-mentioned tractive effort and of less tractive thrust than said first-mentioned tractive effort to permit attenuation of the ribbon while within said viscosity range, continuing the advance of the ribbon of glass with the edges of the ribbon unconstrained on the bath, and thermally regulating the advancing glass to maintain the viscosity of the ribbon in said range of viscosities over a sufficient length of the ribbon to ensure that the unconstrained ribbon is progressively attenuated during its travel along the bath to said desired thickness without undesirable loss of width by said tractive effort applied to the ultimate ribbon.

3,352,658
METHOD OF FORMING CHARGES OF MOLTEN GLASS

Warren R. Knapp, Addison, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Apr. 13, 1964, Ser. No. 359,237

10 Claims. (Cl. 65—70)



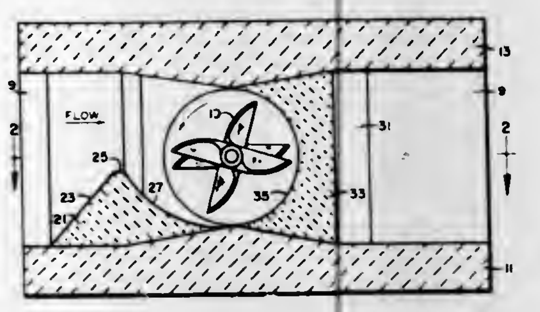
1. The method of forming charges of molten glass which comprises depositing a stream of molten glass across a plurality of receptacles having rim portions defining edges of upwardly open cavities and maintaining said receptacles with said cavities oriented upwardly for a time sufficient to allow portions of said stream of glass to be drawn downwardly over said rim portions solely by gravity into said cavities and to be severed from said stream by said rim portions while contacting only said receptacles to form charges of molten glass in said cavities.

3,352,659
APPARATUS FOR BLENDING GLASS

Villem Rahe, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed June 15, 1964, Ser. No. 375,189

4 Claims. (Cl. 65—178)



1. In a channel for the flow of molten glass, which channel includes sidewalls and a bottom wall, improved flow control means comprising:

a stirrer rotatable in said channel about a vertical axis,

an inwardly projecting portion on one said sidewall on the upstream side of said stirrer, said inwardly projecting portion occupying a region of said channel at which said stirrer would otherwise tend to produce a vortex, and

a deflecting wall extending between said sidewalls on the downstream side of said stirrer, said deflecting wall being spaced from said bottom wall of said channel so as to form a passage for the flow of molten glass and extending upwardly at least to the surface of said molten glass and across substantially the width of said channel between said sidewalls, said deflecting wall having an upstream surface which is arcuate in horizontal cross-section and which is closely spaced from the horizontal ends of said stirrer during rotation thereof.

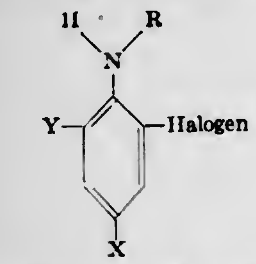
3,352,660
METHOD OF PROMOTING MATURATION OF COTTON PLANTS

Price H. Parham, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,334

16 Claims. (Cl. 71—70)

1. The method of promoting maturation of cotton plants (genus Gossypium) and promoting uniform ripening of cotton bolls which comprises applying to the plants, after boll formation and growth are substantially complete but before a substantial proportion of bolls have cracked, a 2-halo-nitroaniline of the formula:



wherein R is selected from the group consisting of hydrogen and methyl, and X and Y are members selected from the group consisting of halogen and nitro, at least one of X and Y being nitro.

3,352,661
DEFOLIATION OF PLANTS WITH FATTY ALKYL ISOTHIOCYANATES

Herbert Q. Smith, Trenton, N.J., assignor to Pennsalt Chemical Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,232

7 Claims. (Cl. 71—72)

1. The process of treating plants to obtain a defoliative effect which comprises contacting said plants with a defoliating amount of a material characterized by the structure R—NCS where R is an alkyl radical containing 10 to 18 carbon atoms.

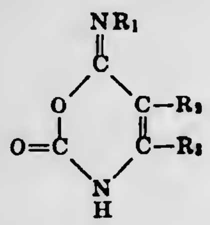
3,352,662
METHOD OF INHIBITING GROWTH OF UNDESIRED VEGETATION

Hein L. Klopping, Wilmington, and Harvey M. Loux, Hockessin, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 6, 1964, Ser. No. 343,112

16 Claims. (Cl. 71—88)

1. The method of inhibiting growth of undesired vegetation comprising applying to the locus to be treated a herbicidally effective amount of a compound of the formula:



where

R is selected from the group consisting of hydrogen; alkyl of 1 through 10 carbon atoms; substituted alkyl of 1 through 8 carbon atoms wherein said substituent is selected from the group consisting of bromine, chlorine, hydroxy, alkoxy, alkoxycarbonyl, and cyano; aryl of 6 through 10 carbon atoms; substituted phenyl wherein said substituent is selected from the group consisting of chlorine, bromine, fluorine, alkoxy of 1 through 5 carbon atoms, alkyl of 1 through 6 carbon atoms, nitro, trifluoromethyl, 1,2-tetramethylene, and 1,2-trimethylenylene; aralkyl of 5 to 13 carbon atoms, substituted aralkyl of 5 through 13 carbon atoms wherein said substituent is selected from the group consisting of chlorine, nitro, alkyl and alkoxy; alkenyl of 3 through 8 carbon atoms; alkynyl of 3 through 8 carbon atoms; cycloalkyl of 3 through 12 carbon atoms; substituted cycloalkyl of 3 through 12 carbon atoms wherein said substituent is selected from the group consisting of bromine, fluorine, methoxy and alkyl, cycloalkenyl of 4 through 12 carbon atoms; substituted cycloalkenyl of 4 through 12 carbon atoms wherein said substituent is selected from the group consisting of bromine, chlorine, methoxy, and alkyl; cycloalkyl alkyl of 4 through 13 carbon atoms; cycloalkenyl alkyl of 5 through 13 carbon atoms; (substituted cycloalkyl)alkyl of 4 through 14 carbon atoms wherein said substituent is selected from the group consisting of bromine, chlorine, methoxy and alkyl; and (substituted cycloalkenyl)alkyl of 5 through 14 carbon atoms wherein said substituent is selected from the group consisting of bromine, chlorine, methoxy, and alkyl;

R_2 is selected from the group consisting of hydrogen, chlorine, bromine, methyl, ethyl, n-propyl, isopropyl, n-butyl, sec.-butyl, tert.-butyl, methoxy, ethoxy, n-propoxy, isopropoxy, n-butoxy, sec.-butoxy, and tert.-butoxy; and

R_3 is selected from the group of alkyl of 1 through 5 carbon atoms, chloroalkyl of 1 through 4 carbon atoms, and bromoalkyl of 1 through 4 carbon atoms; with the proviso that R_2 and R_3 can be joined together to form $—(CH_2)_n—$ where n is a positive whole number from 3 through 5; and acid salts of said compound.

3,352,663
METHOD OF DESTROYING A WEED

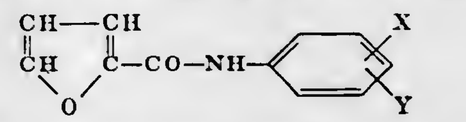
Heinz Eberhard Freund, Friedrich Arndt, and Reinhart Rusch, Berlin, Germany, assignors to Schering, A.G., Berlin, Germany

No Drawing. Filed June 1, 1964, Ser. No. 371,824

Claims priority, application Germany, June 26, 1963, Sch 33,461

10 Claims. (Cl. 71—2.5)

1. A method of destroying a weed which comprises applying to portions of said weed above ground a herbicidal amount of a compound having the formula



wherein X is a member of the group consisting of hydrogen, halogen, nitro, lower alkyl, lower alkoxy, and ω-trifluoro-(lower)-alkyl, and Y is a member of the group consisting of hydrogen, halogen, and lower alkyl.

3,352,664
VISCOSITY STABLE INSECTICIDAL AND HERBICIDAL COMPOSITIONS

Kenneth Gordon Nolan, Yardley, Pa., and Ilse Beatrice Frederick and D. Lyle Goleman, Trenton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,537

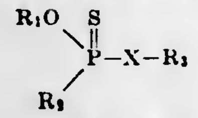
15 Claims. (Cl. 71—110)

1. A pesticidal composition adapted for use in aerial distribution and having a stable viscosity over a temperature range between about 40° F. and 120° F. consisting

of at least 5% but not more than about 95% by volume of:

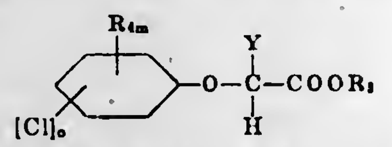
(1) a toxicant selected from the group consisting of

[A] a phosphate insecticide of the structure:



wherein R_1 is lower alkyl; R_2 is selected from the group consisting of lower alkyl, aryl and alkoxy; R_3 is a substituent selected from the class consisting of lower alkyl, substituted alkyl, nitro-substituted phenyl, chloro-substituted phenyl and a 5- to 6-membered heterocyclic; and X is a substituent selected from the group consisting of oxygen and sulfur; and

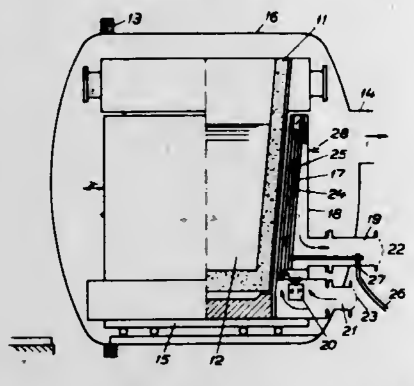
[B] a phenoxyacetic acid ester herbicide of the structure:



wherein R_4 is selected from the group consisting of alkyl, chloroalkyl and chlorophenyl; R_5 is a substituent selected from the group consisting of hydrogen, alkyl and alkoxy-alkyl; Y is a substituent selected from the group consisting of hydrogen and alkyl; *n* is an integer from 1 to 3 and *m* is an integer from 0 to 1; and

(2) from 95% to about 5% by volume of an aromatic diluent additive possessing the following properties:
- (a) a mixed aniline point of above about 30° F. but not more than about 95° F.;
- (b) an aromatic content ranging from about 60% to about 100%;
- (c) a specific gravity at 60°/60° F. exceeding about 0.880 but not more than about 1.5;
- (d) an evaporation rate not exceeding about 25% in six hours at 25° C. and 48% relative humidity (R.H.); and
- (e) a flash point above about 125° F.

3,352,665
DEGASSING OF MELTS
Sven-Einar Stenkvist, Croton-on-Hudson, N.Y., and Bertil Hanås, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Feb. 1, 1965, Ser. No. 429,396
Claims priority, application Sweden, Feb. 5, 1964, 1,378/64
3 Claims. (Cl. 75—49)



1. Method for degassing melts of metal or metal alloys, which comprises placing the melt in a container, placing the container in a vacuum tight tank, evacuating said tank to a pressure of less than 20 torr, stirring said melt by means of an electromagnetic stirrer fed with a multiphase current of a frequency less than 10 cycles per second, and during a first interval of the stirring feeding a relatively low power to the stirrer, during an intermediate interval of the stirring feeding a larger power to the stirrer than during said first interval, during a last interval of the stirring feeding a further increased power to the stirrer.

3,352,666
PRECIPITATION HARDENING STAINLESS STEEL ALLOY
George H. Foster, Westfield, and Lawrence Mattek, East Brunswick, N.J., and William W. McCandless, Newtown, Pa., assignors, by mesne assignments, to Xaloy Incorporated, New Brunswick, N.J. a corporation of California
No Drawing. Filed Nov. 27, 1964, Ser. No. 414,443
3 Claims. (Cl. 75—125)

1. A hard, wear-resistant and corrosion-resistant precipitation hardening stainless steel alloy consisting essentially of the following ingredients in the proportions stated below.

Ingredient:	Weight percent
Carbon	0.01–1.20
Manganese	0.50–1.00
Silicon	0.50–1.00
Chromium	15.0–18.0
Nickel	3.0–5.0
Copper	3.0–5.0
Boron	0.50–1.25
Iron	Balance

3,352,667
PREVENTION OF HYDROGEN-EMBRITTLEMENT IN OXYGEN-BEARING COPPER
Dilip K. Das, Bedford, and George Freedman, Wayland, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
No Drawing. Filed Sept. 29, 1964, Ser. No. 400,246
9 Claims. (Cl. 75—153)

7. Dispersion-hardened copper containing boron oxide dispersed throughout the copper matrix, said boron oxide being present in an amount up to about 0.9%, up to about 0.06% elemental boron in solid solution in the copper, and substantially no oxygen in a form available for reaction with hydrogen.

3,352,668
METHOD FOR PRODUCING A BEARING MATERIAL
Robert J. MacDonald, Moreland Hills, and James F. Ward, Cleveland Heights, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Aug. 22, 1966, Ser. No. 574,057
9 Claims. (Cl. 75—208)

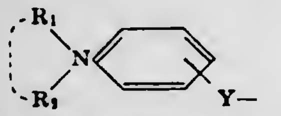
1. The method of forming a barrier layer in a bearing material comprising the steps of: forming a copper base substance; applying thereto a molten phase of corrosion resistant material including tin and a metal resistant to tin diffusion having a greater affinity for copper than tin; and permitting the tin diffusion resistant material to migrate into said substrate, for a sufficient time, prior to solidification, to segregate said latter material into a substantially tin-free layer and to establish an inter-metallic reaction with said copper.

3,352,669
PHOTOCONDUCTIVE MEMBER AND PROCESSES OF PREPARING AND USING SAME
William J. Murphy, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
No Drawing. Filed Jan. 31, 1964, Ser. No. 341,774
10 Claims. (Cl. 96—1.5)

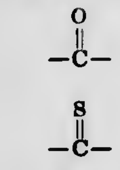
1. A photoconductive member comprising an electrically conductive supporting substrate, a barrier layer in electro-chemical contact with and directly overlying at least a portion of said supporting substrate, and a substantially vitreous photoconductive insulating layer comprising amorphous selenium substantially permanently affixed to said barrier layer, said barrier layer obtained by contacting said supporting substrate with an aqueous mineral acid solution comprising a member selected from the group consisting of H_2CrO_4, CrO_3, their water soluble salts, and mixtures thereof.

3,352,670
SUPERSENSITIZERS FOR OPTICALLY SENSITIZED PHOTOCONDUCTIVE LAYERS
Robert F. Coles, North St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Feb. 14, 1964, Ser. No. 344,811
7 Claims. (Cl. 96—1.7)

2. In a light sensitive recording element having an optically sensitized photoconductive zinc oxide layer and being suitable for use in electrolytic electrophotography, the improvement which comprises from about 0.0001% to about 1.5% by weight of zinc oxide of a supersensitizer in said layer comprising an organic compound which is a complexing agent for zinc ion and which contains the radical



where R_1 and R_2 are selected from the group consisting of hydrogen, alkyl, alkaryl, and atoms necessary to form a heterocyclic ring having from 5 to 6 members; Y is a radical selected from the group consisting of



$$-\overset{O}{\overset{\|}{C}}-$$

$$-\overset{S}{\overset{\|}{C}}-$$

$$-SO_2-$$

$$-CR_3{=}N-(N{=}CH)_n-$$

$$-CHR_3-NH-$$

where R_3 is selected from the group consisting of hydrogen, alkyl, alkaryl and aryl; and *n* is selected from 0 and 1.

3,352,671
ACTIVATED PHOTOCONDUCTORS AND RECORDING ELEMENT THEREWITH
Michael Michalchik, Bethpage, N.Y., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of New York
No Drawing. Filed Dec. 28, 1964, Ser. No. 421,631
17 Claims. (Cl. 96—1.8)

1. An electrophotographic composition comprising a binder dissolved in a volatile solvent containing a photoconductor and an amine selected from the group consisting of N,N-dibenzylethanol amine, N-methyl-N-benzylethanol amine, and N,N-diethanolbenzyl amine, the total solids in the composition being from about 10% to about 60% by weight based on total weight, the ratio of photoconductor to binder being from about 1.5/1 to about 9/1, and the total amine in the composition being from about 0.02% to about 0.08% by weight based on the weight of photoconductor.

3,352,672
PHOTOGRAPHIC DIRECT POSITIVE COLOR PROCESS AND ELEMENT
John C. Hoppe, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 9, 1964, Ser. No. 358,538
18 Claims. (Cl. 96—3)

4. A photographic element comprising a support with superposed red, green and blue light-sensitive direct positive hydrophilic colloid silver halide emulsion layers wherein the silver halide forms latent images predominantly inside the silver halide grains, said emulsions having incorporated therein a cyan dye-forming coupler, a magenta dye-forming coupler and a yellow dye-forming coupler respectively, said couplers being nondiffusible during development in the presence of an alkaline color developing composition containing an aromatic primary amino color developing agent, capable of forming diffusible dyes complementary to the color of the spectral sensitivity of the respective silver halide emulsion layers in the presence of said alkaline color developing composition by reaction with color development oxidation product of said color developing agent and having a formula selected from the group consisting of

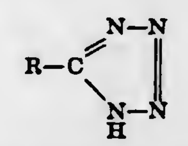
DYE LINK-(COUP-BALL)$_n$

and

BALL-LINK-(COUP-SOL)$_n$

wherein:
- (1) DYE is a dye radical exhibiting selective absorption in the visible spectrum and containing an acidic solubilizing group;
- (2) LINK is a connecting radical selected from the group consisting of an azo radical, a mercuri radical, an oxy radical, an alkylidene radical, a thio radical, a dithio radical and an azoxy radical;
- (3) COUP is a coupler radical selected from the group consisting of a 5-pyrazolone coupler radical, a phenolic coupler radical and an open-chain ketomethylene coupler radical, said COUP being substituted in the coupling position with said LINK;
- (4) BALL is a photographically inert organic ballasting radical of such molecular size and configuration as to render said couplers nondiffusible during development in said alkaline color developing solution;
- (5) SOL is selected from the group consisting of a hydrogen atom and an acidic solubilizing group when said color developing agent contains an acidic solubilizing group, and SOL is an acidic solubilizing group when said color developing agent is free of an acidic solubilizing group; and
- (6) *n* is an integer of 1 to 2 when LINK is an alkylidene radical, and *n* is *l* when said LINK is a radical selected from the group consisting of an azo radical, a mercuri radical, an oxy radical, a thio radical, a dithio radical and an azoxy radical;

and a 5-substituted tetrazole being incorporated in at least one of said silver halide emulsion layers, said 5-substituted tetrazole having the formula

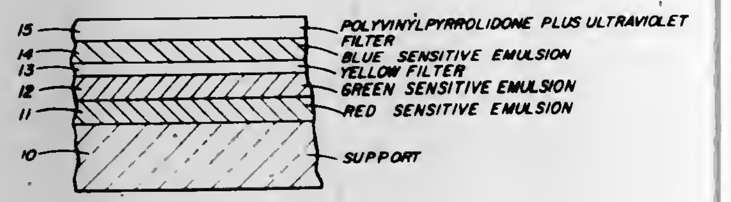


wherein R is an organic radical selected from the group consisting of an alkyl radical, an aryl radical, an alkoxy radical, a cycloalkyl radical, an acyl radical, an amino radical and a heterocyclic radical having at least one atom in a cyclic ring selected from the group consisting of a nitrogen atom, an oxygen atom and a sulfur atom.

3,352,673
MULTILAYER COLOR PHOTOGRAPHIC ELEMENT
James L. Graham, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 28, 1963, Ser. No. 319,332
16 Claims. (Cl. 96—22)

1. A multilayer photographic element comprising a support having thereon a plurality of differentially sensitive photographic silver halide emulsion layers and an

ultraviolet light-absorbing layer positioned in the said element to provide effective protection from undesirable ultraviolet radiation during exposure, said ultraviolet light-absorbing layer comprising a water-permeable poly-N-vinyllactam colloid having dispersed therein an unballasted material capable of absorbing ultraviolet light but transmitting substantially all visible light rays and which is substantially nondiffusible when dispersed therein but substantially diffusible in aqueous, alkaline solutions so that the said photographic element is provided with effective protection from undesirable ultraviolet radiation during exposure, without retaining said ultraviolet absorber and processing chemicals after processing which cause stain in the said element.



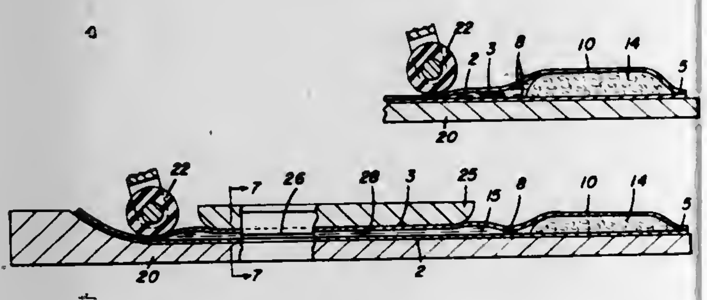
3,352,674

PROCESS AND PRODUCT FOR IMAGE TRANSFER PHOTOGRAPHY

Donald M. Harvey, Webster, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Jan. 20, 1964, Ser. No. 338,773

17 Claims. (Cl. 96—29)



1. The method of processing a photographic product of the type comprising a first strip of sheet material having a photosenstive image area on one face thereof and a second strip of sheet material overlying said one face and having a transfer-image-receptive image area corresponding to and substantially coextensive with said photosensitive area and lying in substantial face-to-face contact therewith, said image areas being adapted for conjoint photographic processing in the presence of an appropriate processing liquid, said method comprising:

exposing said photosensitive image area to form a latent image therein;

injecting a predetermined quantity of a free-flowing processing liquid between said image areas while confining said liquid between predetermined portions of said strips including at least those portions bearing said image areas;

subjecting said confined liquid to, and maintaining it for a predetermined period under, a positive pressure sufficient to separate and to positively hold said image areas spaced apart from one another throughout their extent for the duration of said period;

at the end of said period,

releasing said confined liquid; and

pressing said image-area-bearing portions of said strips together, with said image areas once again in intimate face-to-face contact with one another.

3,352,675

PHOTOPOLYMERIZATION OF VINYL MONOMERS BY MEANS OF FERRIC SALTS OF ORGANIC ACIDS

Edward Cerwonka, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,973

11 Claims. (Cl. 96—35.1)

1. A light-sensitive photographic element comprising a base coated with a water-soluble colloidal carrier having dispersed therein an ethylenically unsaturated monomer containing the group $CH_2{=}C{<}$ and ferric salt of a benzilic acid as the sole polymerization catalyst.

3,352,676

PROCESSING OF COLOR PHOTOGRAPHIC MATERIALS

Bernhard Morcher, Leverkusen, Heinz Meckl, Cologne-Flittard, and Helmut Häseler, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,157

Claims priority, application Germany, Nov. 3, 1962, A 41,528

4 Claims. (Cl. 96—56)

1. In a process for the production of photographic color images which comprises the steps of (1) imagewise exposing a photographic material comprising at least one silver halide emulsion layer which contains a color coupler capable of reacting with the oxidation product of a color-forming developer to form a dye; (2) developing the said material to form a silver and a color image, and (3) thereafter treating the said material with an aqueous bath containing both a silver halide solvent and a silver bleaching agent, the improvement which comprises subjecting the said material between said steps 2 and 3 to an aqueous solution containing iodide ions.

3,352,677

TRANSPARENTIZING BASE STOCK OF TRACING PAPERS AND INTERMEDIATE DIAZOTYPE PAPERS BY USE OF POLYPROPENES

Joseph F. Kosalek, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 24, 1963, Ser. No. 290,185

3 Claims. (Cl. 96—75)

1. A process for the production of light-sensitive diazo material having a transparentized paper base which comprises impregnating paper base stock with a solution of a resin consisting essentially of polypropene in an organic solvent selected from the class consisting of solvent naphtha, xylene and toluene, winding the paper while wet with said solution in a roll, allowing it to stand for a period of at least four days, drying, wetting one surface with an aqueous solution to prevent curl, and applying to the opposite surface an aqueous light-sensitive diazo compound solution.

3. Light-sensitive diazo material having as a base, paper transparentized by impregnating with a resin consisting essentially of polypropene deposited from a solu-

tion thereof in a solvent selected from a class consisting of solvent naphtha, xylene and toluene and a light-sensitive diazo compound coated on one surface of said base.

3,352,678

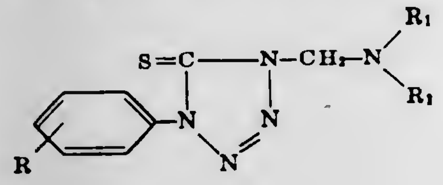
DIFFUSION TRANSFER PHOTOGRAPHIC MATERIALS

Fumihiko Nishio, Odawara-shi, Kanagawa-ken, and Reiichi Oi and Tatsuya Tajima, Ashigarakami-gun, Kanagawa-ken, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa-ken, Japan, a corporation of Japan

No Drawing. Filed Sept. 24, 1963, Ser. No. 311,232
Claims priority, application Japan, Oct. 5, 1962, 37/43,019
14 Claims. (Cl. 96—76)

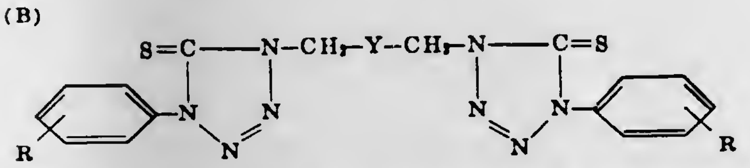
1. In a diffusion transfer photographic composition containing a first member selected from the group consisting of a light sensitive silver halide composition, an image receiving composition, and a developer; the improvement comprising at least one toner having a formula selected from the group consisting of

(A)

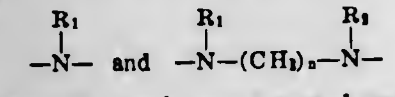


and

(B)



wherein R represents a member selected from the group consisting of a lower alkyl group, hydrogen, and a halogen atom; Y represents a member selected from the group consisting of



$$\underset{|}{\overset{R_1}{-N-}} \text{ and } \overset{R_1}{-N}-(CH_2)_n-\overset{R_2}{N-}$$

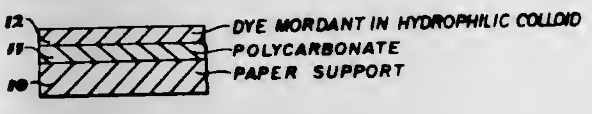
wherein R_1 and R_2 each represents lower alkyl, aryl, aralkyl, a —SO_3M-substituted alkyl, a SO_3M-substituted aryl, a SO_3M-substituted aralkyl, a COOM-substituted alkyl, a COOM-substituted aryl, a COOM-substituted aralkyl, where M represents H, Na, K, or NH_4, an amino substituted alkyl, an amino substituted aryl, and an amino substituted aralkyl; and wherein R_1 and R_2 together may form a divalent alkylene radical and R_1 and R_2 together with an adjacent nitrogen atom may form a heterocyclic ring; and *n* is a positive integer less than 10.

3,352,679

PHOTOGRAPHIC ELEMENT COMPRISING POLYCARBONATE RESIN COATED PAPER

Wilho M. Salminen, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Oct. 9, 1963, Ser. No. 314,940
18 Claims. (Cl. 96—77)



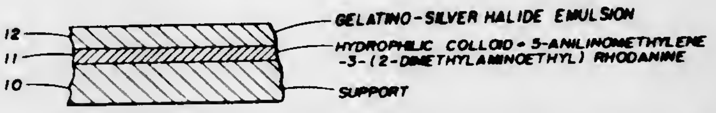
1. A sheet for receiving photographic dyes comprising a paper support having thereon a polycarbonate resin coating, and a hydrophilic organic colloid layer containing a mordant for said dyes over the polycarbonate resin coating.

3,352,680

SENSITIZING AND FILTER DYES FOR PHOTOGRAPHIC ELEMENTS

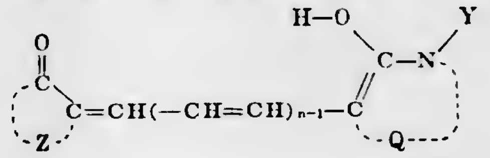
Robert C. Taber and Leslie G. S. Brooker, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 4, 1964, Ser. No. 364,451
9 Claims. (Cl. 96—84)

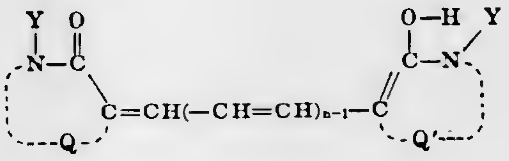

12
11
10
GELATINO-SILVER HALIDE EMULSION
HYDROPHILIC COLLOID + 5-ANILINOMETHYLENE -3-(2-DIMETHYLAMINOETHYL) RHODANINE
SUPPORT

1. A photographic element comprising a support, at least one layer containing light-sensitive silver halide grains and at least one hydrophilic colloid layer containing a dye selected from those having the formulas:

I

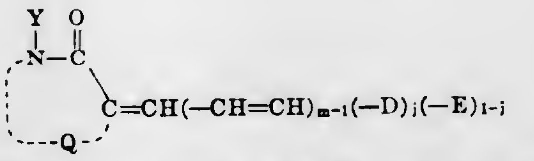


II

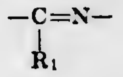


and

III

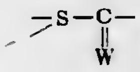


wherein Z represents the nonmetallic atoms required to complete a 5- to 6-membered heterocyclic nucleus selected from the class consisting of a 2-pyrazolin-5-one nucleus, a 2-isoxazolin-5-one nucleus, a 2-indolinone nucleus, a barbituric acid nucleus, a thiobarbituric acid nucleus, a rhodanine nucleus, a 3H-imidazo[1,2-a]pyridin-2-one nucleus, a 5,7-dioxo-6,7-dihydro-5H-thiazolo [3,2-a]pyrimidine nucleus, a 2-thio-2,4-oxazolidinedione nucleus, a thianaphthenone nucleus, a 2-thio-2,5-thiazolidinedione nucleus, a 2,4-thiazolidinedione nucleus, a thiazolidinone nucleus, a thiazolin-4-one nucleus, a 2-imino-2,4-oxazolidinedione nucleus, a hydantoin nucleus, a thiohydantoin nucleus, and a 2-imidazolin-5-one nucleus; *n* represents an integer of from 1 to 3; Q and Q′ each represent a group selected from the class consisting of a



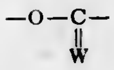
$$\underset{R_1}{\underset{|}{-C}}=N-$$

group, a



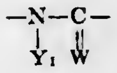
$$-S-\underset{W}{\underset{\|}{C}}-$$

group, a



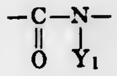
$$-O-\underset{W}{\underset{\|}{C}}-$$

group, a



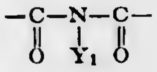
$$-\underset{Y_1}{\underset{|}{N}}-\underset{W}{\underset{\|}{C}}-$$

group, a



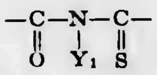
$$-\underset{O}{\underset{\|}{C}}-\underset{Y_1}{\underset{|}{N}}-$$

group, a



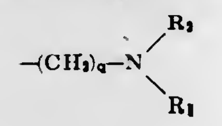
$$-\underset{O}{\underset{\|}{C}}-\underset{Y_1}{\underset{|}{N}}-\underset{O}{\underset{\|}{C}}-$$

group and a



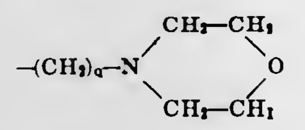
$$-\underset{O}{\underset{\|}{C}}-\underset{Y_1}{\underset{|}{N}}-\underset{S}{\underset{\|}{C}}-$$

group; R_1 represents a group selected from the class consisting of the hydrogen atom, an alkyl group, an aryl group, an amino group, a carbonamido group, a sulfonamido group, a sulfamoyl group, and a carbamoyl group; W represents an atom selected from the class consisting of sulfur, selenium and oxygen; Y and Y_1 each represent a group selected from the class consisting of the hydrogen atom, an alkyl group, an aryl group, a

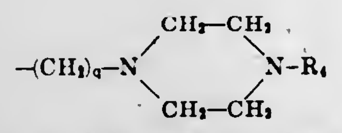


$$-(CH_2)_q-N\begin{matrix}R_3\\R_2\end{matrix}$$

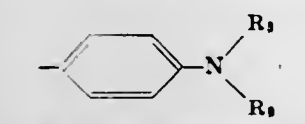
group, a



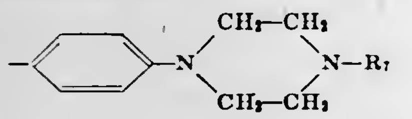
group, and a



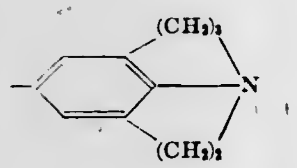
group, such that at least one of the groups Y and Y_1 contains a group with a tertiary nitrogen atom; *q* represents an integer of from 2 to 4; R_2, R_3 and R_4 each represents an alkyl group; *m* represents an integer of from 1 to 2; D represents a group selected from the class consisting of a



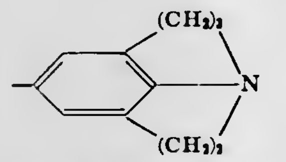
group, the 4-(N-pyrrolidinyl)phenyl group, the 4-(N-morpholino)phenyl group, a



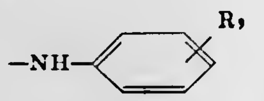
group, the



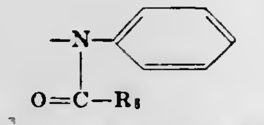
group and the



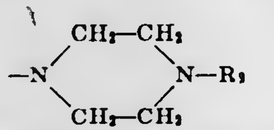
group; R_5 and R_6 each represent a group selected from the class consisting of an alkyl group and an aryl group; R_7 represents an alkyl group; *j* represents an integer of from 0 to 1; E represents a member selected from the class consisting of a



group, a



group, the N-pyrrolidinyl group, the N-morpholino group and a



group; R_9 represents a member selected from the class consisting of the hydroxyl group, a halogen atom, an alkoxy group, and an alkyl group; and R_8 represents a group selected from the class consisting of an alkyl group, and an aryl group.

3,352,681

COLOR PHOTOGRAPHIC LIGHT-SENSITIVE ELEMENT CONTAINING ULTRAVIOLET ABSORBER

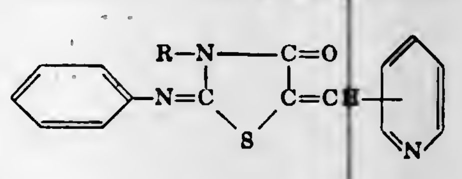
Reiichi Ohi and Kazuo Shirasu, Ashigara-Kamigun, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Ashigara-Kamigun, Kanagawa, Japan

No Drawing. Filed Sept. 12, 1966, Ser. No. 578,444

Claims priority, application Japan, Sept. 13, 1965, 40/55,636

10 Claims. (Cl. 96—84)

1. A color photographic light-sensitive element having incorporated in at least one layer of photographic light-sensitive emulsion layers, intermediate layers, protective layers, subbing layer and backing layer of a support a compound represented by the general formula



wherein R represents an alkyl group having from 8 to 18 carbon atoms.

3,352,682

PHOTOGRAPHIC SILVER HALIDE EMULSION CONTAINING FINELY DIVIDED INERT PARTICLES DISPERSED IN A SYNTHETIC COLLOID MEDIUM AND A SILVER HALIDE DEVELOPER

Albert Edward Harris and Edward Cyril Dodd, Ilford, England, assignors to Ilford Limited, Ilford, England, a British company

No Drawing. Filed Sept. 9, 1964, Ser. No. 395,319

Claims priority, application Great Britain, Sept. 13, 1963, 36,192/63

1 Claim. (Cl. 96—95)

A photographic material which comprises a film support and a layer of a gelatino silver halide photographic emulsion, the said emulsion containing (1) hydroquinone and (2) finely divided silica dispersed in polyvinyl alcohol, the silica being present in a proportion sufficient to provide 0.4 to 0.6 g. of silica per square metre of the emulsion layer.

3,352,683

PYRIDINES AND POULTRY FEEDSTUFFS AND ADDITIVES THEREOF CONTAINING PYRIDINES

Paul Schmidt, Therwil, Basel-Land, Max Wilhelm, Allschwil, Kurt Eichenberger, Therwil, Basel-Land, and Eduard Schumacher, Dornach, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 20, 1967, Ser. No. 624,209

Claims priority, application Switzerland, Feb. 8, 1961, 1,472/61; Oct. 13, 1966, 14,792/66

23 Claims. (Cl. 99—2)

1. A member selected from the group consisting of 1-(5-nitrofuryl)-2-R-2-R′-ethylene, wherein R is a member selected from the group consisting of hydrogen, lower alkyl, phenyl and phenyl substituted by a member selected from the group consisting of lower alkyl, lower alkoxy, halogeno, trifluoromethyl, nitro, oxy, lower alkanoyloxy, amino, mono- and di-lower alkylamino and lower alkanoylamino, and R′ is a member selected from the group consisting of pyridyl-2 and quinolyl-2 and such substituents substituted by not more than two members selected from the group consisting of lower alkyl, lower alkoxy, halogeno, oxy, lower alkanoyloxy, nitro, amino, mono- and di-lower alkylamino, trifluoromethyl, and therapeutically useful acid addition salts thereof.

3,352,684

METHOD OF INCREASING PRODUCTION OF SALABLE EGGS

Don I. Gard and Joseph E. Wachtstetter, Greenfield, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Aug. 3, 1964, Ser. No. 387,199

7 Claims. (Cl. 99—4)

1. A process for increasing the number of salable eggs for food consumption and hatching purposes laid by hens during their productive lifetime which comprises administering a progestational agent to sexually immature hens in an amount sufficient to delay the onset of sexual maturity in said hens up to forty-two days, said amount being the equivalent of from 0.5 to 2.0 mg. of chlormadinone acetate per bird per day, the administration of said progestational agent to said hens being initiated during the period beginning just prior to the onset of sexual maturity of said hens to the time when the flock of said hens is in 10% egg production.

3,352,685

PROCESSES FOR PREPARING BLOOD MEAL

Earl H. Hess, Lancaster, Pa., assignor to Victor F. Weaver, Inc., Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 19, 1963, Ser. No. 331,962

13 Claims. (Cl. 99—7)

1. A process for preparing blood meal by heating at least at boiling temperatures a material consisting essentially of whole blood for a period of time sufficient to coagulate the solids therein, said whole blood being in admixture with an effective amount of acid sufficient to maintain the pH of the mixture more acidic than a pH of 6.7 thereby forming a granular solid, separating the granular solid from the supernatant liquid, and drying the separated granular solid to form a dry stable product.

3,352,686

PROCESS OF MAKING PRECOOKED DEHYDRATED PASTA PRODUCT

John J. Mancuso, Astoria, and Anthony C. Capossela, North Tarrytown, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

Filed Mar. 30, 1964, Ser. No. 355,770

10 Claims. (Cl. 99—85)

1. The process of making a pre-cooked dehydrated pasta product which comprises water cooking a pasta shape to a cooked condition by immersion in boiling water, quenching the cooked pasta product to terminate the cooking step, thereafter immersing the quenched cooked pasta having a moisture content of about 60–65% in an excess of soak water at a temperature of from about 35° to 125° F. for a period of time sufficient so as to increase the moisture content thereof to 70–80% and swell the product substantially in volume, and dehydrating the soaked swollen pasta product by circulation of hot drying air at a temperature not exceeding 210° F. and at a rate whereat moisture is evaporated from the interior of the product at a rate substantially equal to that from which the moisture is removed from its exterior, whereby the product is dried in a substantially unpuffed condition.

3,352,687

PREPARATION OF FROZEN QUICK-COOKING LEGUMES

Louis B. Rockland, Pasadena, and Eugene A. Metzler, Glendale, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Apr. 26, 1965, Ser. No. 451,080

5 Claims. (Cl. 99—98)

1. A method for preparing quick-cooking products from edible dry legume seeds which comprises subjecting the seeds while they are in contact with an aqueous hydrating medium to a vacuum, then releasing the vacuum, repeating the cycle of vacuum application and release until the skins of the seeds are swollen by entry of the medium into the seeds, holding the seeds in contact with the said medium at ambient temperature and atmospheric pressure for a period long enough for the cotyledons to swell until they fill the swollen skins, and freezing the resulting hydrated products, wherein the said aqueous hydrating medium contains sodium chloride in a concentration of about from 1 to 3%, a chelating agent in a concentration of about from 0.1 to 5%, and has a slightly alkaline pH.

3,352,688

BAKE STABLE BAKERY FILLING PRODUCT AND METHOD

Blase T. Messina, Chicago, Ill., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware

No Drawing. Filed July 13, 1966, Ser. No. 564,748

28 Claims. (Cl. 99—131)

1. The process of producing a new and useful food composition comprising forming with a liquid base including water, sugar, and flavoring, a water-insoluble alginate gel normally subject to heat liquefaction in the presence of a sufficient quantity of a water-dispersible material selected from the class consisting of guar gum and locust bean gum, to inhibit the heat liquefaction of said alginate gel.

3,352,689

SUGARLESS GUM

Anthony George Bilotti, Queens Village, N.Y., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Feb. 14, 1966, Ser. No. 527,060

8 Claims. (Cl. 99—135)

1. A sugarless chewing gum composition having improved taste and texture characteristics consisting essentially of an intimate admixture of the following:

- (a) from about 20 to about 50 parts by weight of gum base;
- (b) from about 3 to about 15 parts by weight of gum acacia-in-water, said gum acacia-in-water system containing from about 30% to about 60% by weight gum acacia powder;
- (c) from about 20 to about 50 parts by weight of sorbitol;
- (d) from 0 to about 10 parts by weight gum acacia powder;
- (e) from about 20 to about 50 parts by weight mannitol; and
- (f) about 0.5 to about 5 parts by weight of flavoring and artificial sweeteners.

6. A method for the preparation of a sugarless chewing gum having improved taste and texture characteristics which comprises the steps of

- (a) blending at a temperature maintained below 70° C. from about 3 to about 15 parts by weight of gum acacia-in-water wherein the gum acacia is present in an amount from about 30% to about 60% by weight, about 20 to about 50 parts by weight of gum base, and artificial sweeteners to a substantially uniform blend;
- (b) thereafter adding from about 20 to about 50 parts by weight sorbitol and mixing the sorbitol with said blend;
- (c) adding from about 0 to about 10 parts by weight gum acacia powder and from about 20 to about 50 parts by weight mannitol;
- (d) blending the combined ingredients at a temperature of about 35° C. to about 50° C. to a substantially uniform mixture; and
- (e) adding flavoring and blending to form said sugarless chewing gum.

3,352,690

CURING OF VANILLA BEANS

Richard J. Kaul, 4 Burchfield Ave., Cranford, N.J. 07016

No Drawing. Filed Apr. 27, 1964, Ser. No. 362,926

8 Claims. (Cl. 99—140)

1. The method of producing cured vanilla beans from green vanilla beans, comprising,

enclosing the loosely-packed green beans in a space surrounded by a substantially water vapor-impermeable covering,

subjecting the beans to elevated temperature and an atmosphere of high humidity within said covering for a period of time until enzymatic action and associated curing reactions have been substantially completed;

removing said covering, and

thereafter drying the beans in a separate step.

3,352,691

PREVENTION OF PINK COLOR IN WHITE ONIONS

Kwoh H. Li, Chicago, Robert H. Bundus, Riverside, and Peter P. Noznick, Evanston, Ill., assignors to Beatrice Foods Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed June 19, 1964, Ser. No. 376,577

23 Claims. (Cl. 99—154)

1. A method for inhibiting discoloration of comminuted white onions comprising applying cysteine material thereto and heating the resulting mixture to a temperature between 160–190° F.

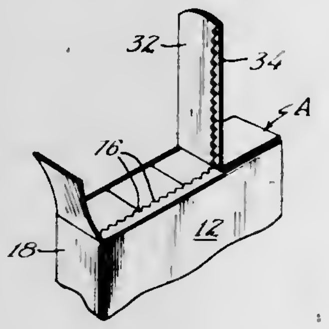
3,352,692

BUTTER CARTON

Lawrence S. Wysocki, Chicago, Ill., assignor to Hoerner-Waldorf Corporation, St. Paul, Minn., a corporation of Delaware

Filed Nov. 30, 1966, Ser. No. 598,043

10 Claims. (Cl. 99—179)



1. A butter carton or the like comprising:

a pair of similar rectangular main panels,

a first side panel hingedly connecting opposed edges of said main panels,

second and third side panels each hingedly connected to the edge of one of said main panels parallel to said opposed edges and folded into face contact to provide a tubular body,

said second side panel lying outwardly of said third side wall panel,

closure flaps hingedly connected to said first and second side wall panels and folded in coplanar relation,

closure flaps on said main panels folded to overlie said side wall closure flaps and secured together in face contact,

registered fold lines extending across said main panel closure flaps normal to the lines of fold connecting said last named closure flaps to said main panels and spaced from said first side panel a distance greater than the length of the closure flap hinged to said first side panel,

weakened lines of separation in said main panel closure flaps extending along the lines of fold connecting said main panel closure flaps to said main panels from the ends of these flaps adjacent said first side wall panel to said registered fold lines.

ends of said main panel closure flaps projecting beyond the plane of said side wall panel to provide a projecting tab,

wherein when the portions of said main panel closure flaps are separated along said weakened lines of separation, the closure flap securedto said first side wall is entirely exposed,

said first side wall closure flap being substantially free of adhesive connection to said main panel closure flap.

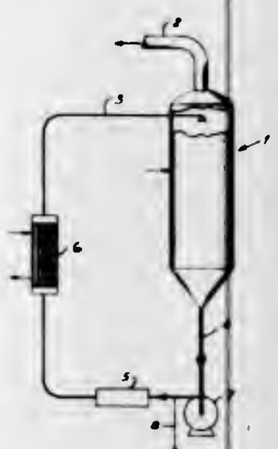
3,352,693

CONCENTRATION OF THIXOTROPIC COMPOSITIONS

Zeki Berk, Haifa, Israel, assignor to Technion Research and Development Foundation Ltd., Haifa, Israel, a corporation of Israel

Filed Oct. 31, 1963, Ser. No. 325,834

3 Claims. (Cl. 99—205)



1. A method of concentration of a thixotropic solution which comprises the steps passing a body of the said solution through a zone, subjecting said solution in said zone to ultrasonic vibration sufficient to decrease the viscosity of said body, passing said treated body through a heating zone to raise the temperature thereof sufficiently to produce vapors, then passing said heated body through an evaporator to remove such vapors and to concentrate said solution without scorching thereof.

3,352,694

LOW TEMPERATURE METALLIZING PAINT AND METHOD OF MAKING SAME

Leonard Reed, San Jose, and Donald C. Figone, San Francisco, Calif., assignors, by mesne assignments, to Varian Associates, a corporation of California

No Drawing. Filed June 17, 1963, Ser. No. 288,454

10 Claims. (Cl. 106—1)

1. A metalizing paint for producing a vacuum-tight metalized surface on ceramic, said metalizing paint having a sintering temperature of about 1000° C. comprising:

a vehicle including a binder and a solvent;

a plurality of metal powders dispersed in said vehicle, said metal powders consisting essentially of approximately 85% to 90% by weight of a refractory metal selected from the group consisting of tungsten molybdenum and rhenium, and approximately 10% to 15% by weight of at least one other metal selected from the group consisting of nickel, copper, cobalt and iron; and

a plurality of "glassy" phase producing powders dispersed in said vehicle.

3,352,695

SILVER POLISH CONTAINING DI-n-HEXADECYL DISULFIDE

Joseph Iaciofano, Cranston, R.I., assignor to Gorham Corporation, Providence, R.I.

No Drawing. Filed Jan. 18, 1965, Ser. No. 426,418

14 Claims. (Cl. 106—5)

1. A silver polish comprising 40–70% water, 10–20% of an abrasive, 1–3% of a wetting agent and 4–10% di-n-hexadecyl disulfide.

3,352,696

METHOD OF MANUFACTURING PUNCTURE SEALING COMPOSITIONS

Temple E. Wallace, deceased, late of El Paso County, Tex., by Norma E. Wallace, executrix, 406 E. Baltimore Drive, El Paso County, Tex. 79902

No Drawing. Filed July 15, 1964, Ser. No. 383,558

1 Claim. (Cl. 106—33)

The method of manufacturing a composition for sealing punctures in elastomeric articles comprising

adding from about 2 to about 4.25 parts by weight asbestos fibers to from about 59.6 to about 60.7 parts by weight of an aqueous solution comprising from 0 to about 89 weight percent of a polyhydric alcohol containing from 2 to 3 carbon atoms, the balance consisting essentially of water;

agitating the asbestos containing mixture for at least five minutes;

adding to the mixture from about .4 to about 1.5 parts by weight of a rust inhibiting composition selected from the group consisting of alkali metal bichromates, alkali metal nitrates, and a mixture of triethanolamine and phosphoric acid;

agitating the mixture for a period of at least eight minutes;

adding to the mixture from about 0.5 to about 1.5 parts by weight dry blend of natural gums comprising about 50 weight percent of gum arabic and about 50 weight percent of gum karaya;

agitating the mixture for a period of at least ten minutes;

mixing together in dry form, from about 0.2 to about 0.5 part by weight of an alkali metal carboxymethyl cellulose salt with from about 0.2 to about 0.5 part by weight of methyl cellulose; then

adding the dry blend of the cellulose ether compounds to said mixture;

agitating the mixture for at least ten minutes;

permitting the mixture to become quiescent;

adding to said mixture from about 31.3 to about 37.4 parts by weight of an aqueous solution comprising from 0 to about 60 weight percent of a polyhydric alcohol of 1 to 2 carbon atoms, the balance consisting essentially of water, said aqueous solution being added to said mixture at a temperature of said solution of from about 110° F. to about 150° F., and in an amount such that the total weight of both alcohol and water in the final composition is from about 92 to about 97 weight percent of the final composition, and such that the total weight of alcohol in said composition does not exceed 53 weight percent of the composition;

adding from about 0.2 to about 0.5 part by weight of alum to said mixture; and

agitating said mixture for at least five minutes.

3,352,697

CERAMIC DIELECTRICS

Shinobu Fujiwara, Minami-Akita-gun, Akita-ken, Shigekazu Hayashi, Tokyo, and Kiyoto Kawakami, Nikahomachi, Yuri-gen, Akita-ken, Japan, assignors to TDK Electronics Co., Ltd., Tokyo, Japan

Filed May 12, 1964, Ser. No. 366,765

3 Claims. (Cl. 106—39)

1. Ceramic dielectric consisting of a sintered mixture of $SrTiO_3$, Bi_2O_3 and TiO_2 in the weight proportion $SrTiO_3{:}Bi_2O_3{:}TiO_2=22{:}58{:}20$.

3,352,698

METHOD OF MAKING GLASS CERAMIC AND PRODUCT

Peter William McMillan, Stafford, and Donald Christopher Lawton, Seabridge, Newcastle, England, assignors to The English Electric Company Limited, London, England, a British company

No Drawing. Filed Jan. 9, 1967, Ser. No. 607,881

Claims priority, application Great Britain, Nov. 30, 1962, 45,318/62; May 29, 1963, 21,558/63

6 Claims. (Cl. 106—39)

1. In a method of making a glass-ceramic product including the steps of melting glass batch materials to form a glass, said materials including ZrO_2 as a nucleating agent, and heat-treating the resulting glass by heating it to a crystallization temperature in the range 900–1,100° C. until a product which is at least partially microcrystalline is obtained, the improvement which comprises selecting batch materials to form a glass consisting essentially of, in percentages by weight:

SiO_2	59.0–62.0
Li_2O	4.4–5.7
K_2O and Na_2O	3.3–4.2
ZnO	5.1–5.3
Al_2O_3	17.8–18.6
CaO	0–5
B_2O_3	0–5

and adding materials to the batch to form in the glass ZrO_2 in the range 1.5–7.5 weight percent and MoO_3 in the range 1.5–5.0 weight percent, whereby the presence of MoO_3 enables ZrO_2 in the range given to be completely dissolved in the glass and to act as a nucleating agent, and whereby the resulting glass-ceramic produced is opaque, has a coefficient of thermal expansion not exceeding 25×10^{-7} (20–500° C.) and has a cross-breaking strength not less than that of the glass before devitrification.

3,352,699

CALCIUM SILICATE BRICK DEVELOPMENT

John St. C. Wheeler, 1229 Mississauga Road N., Port Credit, Ontario, Canada

No Drawing. Filed Oct. 15, 1964, Ser. No. 404,155

14 Claims. (Cl. 106—89)

8. A brick product manufactured from a mixture of 10 to 15% by weight of water and 85 to 90% by weight of dry ingredients comprising by weight 5 to 6.5% of calcium hydroxide, 2 to 5% of Portland cement, the total content of calcium hydroxide and cement being not less than 8.5%, 10 to 25% of recycled, hardened product in the form of synthetic tobermorite compounded from a mixture of lime, silica and water, shaped and then hardened in an autoclave regime and crushed to a size of less than ¼ inch and the remainder crushed siliceous material with an FM sizing of finer than 185 containing not less than 65% silica, with in the order of 5% to 20% of the dry ingredients being ground siliceous material containing at least 98% available silica and ground to

100% pass a 150 mesh screen, the mixture being shaped and cured to form a hardened brick product of fine texture, high impact resistance, superior hardness and excellent acid resistance.

3,352,700

WASTE SULPHITE LIQUOR ADHESIVE COMPOSITION

John Biskup, Chatham, Norman R. Migdol, Carteret, and Edward C. Scholl, Ramsey, N.J., assignors to Congoleum-Nairn Inc., Kearny, N.J., a corporation of New York

No Drawing. Filed Nov. 1, 1963, Ser. No. 320,832

8 Claims. (Cl. 106—123)

1. An adhesive having a light coloration, excellent initial tack and good bonding strength consisting essentially of a uniform mixture of about 52 to 75.7 percent of waste sulfite liquor, about 25 to 45 percent of mineral filler and about 0.3 to 3 percent of a salt selected from the group consisting of mono-basic and dibasic phosphate salts of lithium, sodium, potassium, rubidium, cesium, ammonium, calcium, barium, magnesium, beryllium and strontium.

3,352,701

PROCESS OF APPLYING d-LIMONENE VARNISHES TO AN IMAGE BEARING SURFACE

Paul C. Goetz, 1333 Avalon St., Beaumont, Calif. 92223, and Carlos C. Goetz, Avenida Luiz Bivar 36-V-E, Lisbon, Portugal

No Drawing. Filed Mar. 12, 1964, Ser. No. 351,514

5 Claims. (Cl. 106—237)

4. The process of protecting or restoring or enhancing the beauty of image-bearing surfaces of objects of art consisting essentially in applying thereto a solution of varnish resins in a mixture of d-limonene and dipentene, wherein the amount of d-limonene is at least fifty percent of the solvent, drying to remove substantially all of the solvent and reducing the residuals to not more than substantially half of the residuals of 100% dipentene solvent.

3,352,702

PROCESS FOR MANUFACTURING BASIC REFRACTORY BRICKS

Karl Leitner, Günther Josef Mlaker, Otto Moll, and Norbert Franz Skalla, Radenthein, Austria, assignors to Osterreichisch-Amerikanische Magnesit Aktiengesellschaft, Radenthein, Carinthia, Austria, a corporation of Austria

No Drawing. Filed Mar. 15, 1965, Ser. No. 439,930

10 Claims. (Cl. 106—281)

1. A process for the manufacture of basic refractory bricks, bricks and tamping mixtures containing an organic binder which comprises sintering basic refractory grain material to a sinter grade of at least 90%, heating coarse grain material of said basic refractory grain material greater than 0.1 mm. in size to a temperature of from 100° to 200° C., said grains being separately heated in fractional amounts according to grain size, combining said heated coarse grain fractions, thorougly mixing therewith an organic binder which has been heated to a tempertaure of from 100 to 200° C., heating fine grain material of said basic refractory grain material less than 0.1 mm. in size to a temperature of from 100 to 200° C., subsequently mixing the heated uncoated fine grain with the previously made mixture of binder and coarse grain and shaping the resulting mixture into the desired shape.

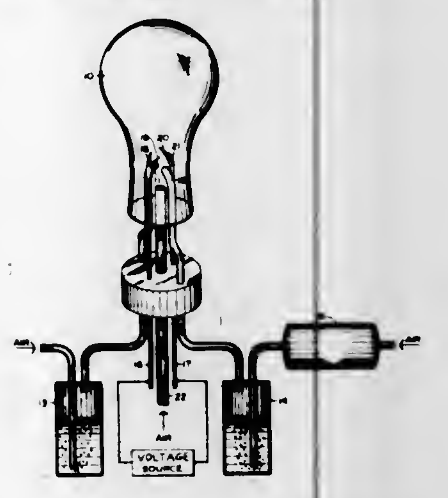
3,352,703

METHOD FOR PRODUCING LIGHT-DIFFUSING COATINGS OF TITANIA ON GLASS

Joseph J. Domicone, Elmira, and William C. Smith, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Jan. 24, 1964, Ser. No. 339,933

8 Claims. (Cl. 117—17)



1. The method of forming a light-diffusing coating on a glass surface which comprises injecting finely divided titania into a electric arc in the vicinity of said surface, and subsequently collecting said titania on said surface.

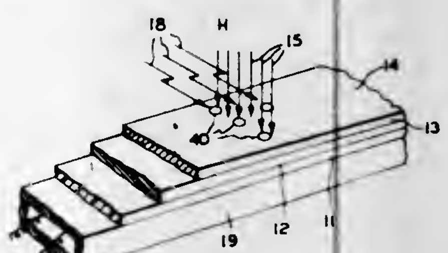
3,352,704

MICROWAVE PROCESS AND APPARATUS

Harold C. Anderson, Rockville, Md., assignor to Litton Systems, Inc., Silver Spring, Md.

Original application Apr. 10, 1961, Ser. No. 101,741, now Patent No. 3,281,856, dated Oct. 25, 1966. Divided and this application July 2, 1964, Ser. No. 380,014

7 Claims. (Cl. 117—36.8)



1. A recording member for providing a surface deformation pattern of a microwave signal comprising a base member, a layer of spin resonance material supported by said base member and characterized by possessing numerous unpaired subatomic charged particles therein, and a layer of thermoplastic material combined with said base member and said spin resonant layer and in heat conducting relationship therewith, and characterized by responding to heat in the spin resonant layer to provide a change in the physical shape of the surface of the thermoplastic material corresponding to the heated areas.

3,352,705

METHOD OF PRODUCING A WATER RESISTANT PIGMENTED COATING ON PAPER OR PAPERBOARD, AND THE PAPER OR PAPERBOARD THUS OBTAINED

Geert Moes, Hoogezand, and Antonius Hendrik Zijderveld, Veendam, Netherlands, assignors to W. A. Scholten's Chemische Fabrieken N.V., Groningen, Netherlands, a corporation of the Netherlands

No Drawing. Filed Dec. 22, 1965, Ser. No. 515,732

Claims priority, application Netherlands, Jan. 31, 1961, 260,654

12 Claims. (Cl. 117—62.2)

1. A method of producing a water resistant amylaceous pigment coating on paper or paperboard which comprises applying to said paper or paperboard a pigmented aqueous solution of a starch derivative, obtained by hydrolyzing starch at a temperature of between 60 and 300° C with an inorganic acid in the presence of urea in an amount of from 5 to 50% by weight calculated on the basis of starch used and less than 50% of water, calculated on the weight of the mixture, to such an extent that a 25% aqueous solution of the starch derivative has an apparent viscosity not lower than 10 centipoises at 25° C., and reacting said starch derivative with an aldehyde reagent capable of rendering the same insoluble, said aldehyde reagent being selected from the group consisting of aldehydes, aldehyde donors and melamine-aldehyde precondensates and the pH during the insolubilization reaction being from about 6 to about 9.

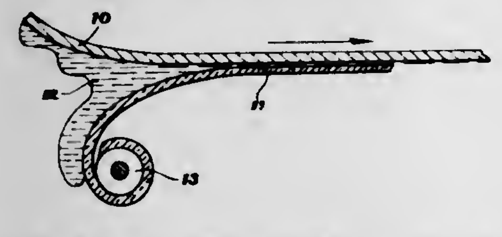
3,352,706

METHOD FOR SMOOTHING A COATED WEB

James S. Alkofer, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Feb. 23, 1962, Ser. No. 175,070

6 Claims. (Cl. 117—64)



1. The method of smoothing a fluid coating on a web which includes continuously moving a web having a fluid coating thereon over a path, thereafter at a position spaced from the position where the fluid coating was applied to the web engaging an unsupported end of a sheet of thin flexible material with the still fluid coating over a substantial area in the direction of travel of the web, said material being wet by the fluid coating and held thereagainst substantially by the wetting action alone, holding the other end of the sheet of material against movement, and continuously moving the web and fluid coating past the material to smooth the coating on the web.

3,352,707

GLASS HAVING DUAL PROTECTIVE COATINGS THEREON AND METHOD FOR FORMING SUCH COATINGS

John Edward Pickard, Selma, Ind., assignor to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana

No Drawing. Filed Jan. 31, 1964, Ser. No. 341,739

19 Claims. (Cl. 117—72)

1. A coated glass article of improved strength and lubricity having a tin oxide coating adhered directly to a surface of said glass article and a substantially water-insoluble polyvinyl alcohol coating on said tin oxide coating.

3,352,708

GLASS HAVING DUAL PROTECTIVE COATINGS THEREON AND METHOD FOR FORMING SUCH COATINGS

Kenneth C. Lyon, Dunkirk, John E. Pickard, Selma, and Addison B. Scholes, Muncie, Ind., assignors to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana

No Drawing. Filed Mar. 2, 1964, Ser. No. 348,821

21 Claims. (Cl. 117—72)

1. A coated glass article of improved durability and lubricity having a titanium oxide coating adhered directly to a surface of said glass article and a substantially water-insoluble polyvinyl alcohol coating on said titanium oxide coating.

3,352,709

METHOD OF REPELLING WATER FROM A TRANSPARENT MEMBER

Keith Gunnar, Bellevue, Wash., and Robert S. Hansen, Ames, Iowa, assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

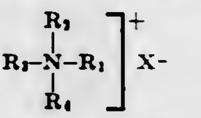
No Drawing. Filed Jan. 4, 1963, Ser. No. 249,322

8 Claims. (Cl. 117—124)

1. A method of effecting a hydrophobic coating of increased strength and life-time upon the surface of a transparent member, comprising:

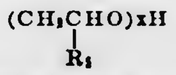
(a) preparing a water-repellent solution by dissolving together in a suitable solvent a combination of the following two co-acting water-repellent chemical solutes:

(1) a solute represented generally as Group A:



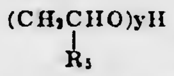
$$\left[\begin{array}{c} R_3 \\ | \\ R_2-N-R_1 \\ | \\ R_4 \end{array}\right]^{+} X^{-}$$

wherein R_1 represents an aliphatic radical of from 12 to 22 carbon atoms, inclusive; R_2 represents a radical of the class consisting of methyl and aliphatic radicals, the latter comprising 12 to 22 carbon atoms, inclusive; R_3 represents a radical of the class consisting of methyl and



$$\begin{array}{c} (CH_2CHO)xH \\ | \\ R_5 \end{array}$$

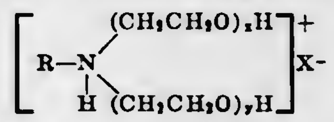
radicals; R_4 represents a radical of the class consisting of methyl and



$$\begin{array}{c} (CH_2CHO)yH \\ | \\ R_5 \end{array}$$

radicals; *x* and *y* each represents a certain number the sum of which is 2 to 15, inclusive; R_5 represents a radical consisting of the class of H and methyl radicals; X represents an anion;

(2) a solute represented generally as Group B:



$$\left[\begin{array}{l} \qquad (CH_2CH_2O)_xH \\ R-N \\ \quad | \\ \quad H\ (CH_2CH_2O)_yH \end{array}\right]^{+} X^{-}$$

wherein R represents a radical selected from the group consisting of an aliphatic radical of from 8 to 22 carbon atoms, inclusive; and a mixture of aliphatic radicals of from 8 to 22 carbon atoms, inclusive; *x* and *y* each represents a certain number the sum of which is 0 to 50, inclusive; X represents an anion; and,

(b) applying the water-repellent solution upon the surface of the transparent member.

3,352,710

PRODUCTION OF BONDED NON-WOVEN FABRICS

Hans Wolf and Erwin Drescher, Ludwigshafen (Rhine), Gerhard Faulhaber, Mannheim, Hans Wilhelm, Ludwigshafen (Rhine), Hans Reinhard, Limburgerhof, and Ernst Penning, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Apr. 1, 1964, Ser. No. 356,665

Claims priority, application Germany, Apr. 13, 1963, B 71,514

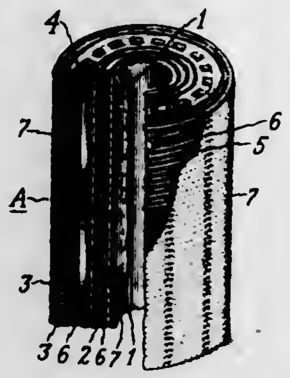
4 Claims. (Cl. 117—140)

1. A bonded non-woven fabric containing as the binding agent an interpolymer of (a) 97.5 to 55% by weight of an ester selected from the group consisting of acrylates and methacrylates of alkanols having 1 to 8 carbon atoms in the alkanol component; (b) 2 to 10% by weight of a compound selected from the group consisting of N-methylolacrylamide and N-methylolmethacrylamide; and (c) 0.1

to 4% by weight of a copolymerizable monomer containing two olefinic double bonds, the percentages being in reference to the whole interpolymer.

3,352,711
METHOD OF MAKING ELECTRICAL COILS

Frank S. Nichols and Eugene K. Steele, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York
Original application Dec. 1, 1959, Ser. No. 856,434, now Patent No. 3,138,773, dated June 23, 1964. Divided and this application Feb. 17, 1964, Ser. No. 345,217
8 Claims. (Cl. 117—201)



1. The method of treating electrical coils for improving their resistance to electrical impulse conditions while providing for high resistance to short circuit conditions which comprises applying to the coil a liquid suspension of fusible synthetic resin particles and thereafter fusing the resin particles deposited on the surfaces of the coil.

3,352,712
METHOD OF STABILIZING SEMI-CONDUCTOR DEVICES HAVING EXPOSED SURFACES OF A HYDROPHILIC OXIDE

Murray A. Polinsky, Somerville, and George F. Damon, Chatham, N.J., assignors to Radio Corporation of America, a corporation of Delaware
No Drawing. Filed Aug. 28, 1964, Ser. No. 392,911
10 Claims. (Cl. 117—201)

1. A method of treating a material having an exposed hydrophilic surface of silicon dioxide thereon to render said surface hydrophobic, said method comprising the steps of
heating said surface to dry it,
contacting said surface with a heated liquefied sulfonic acid selected from the group consisting of benzene sulfonic acid and ethane sulfonic acid to produce a reaction between said oxide surface and said silicon dioxide rendering said surface hydrophobic,
removing excess of said sulfonic acid from said surface, and
drying said surface.

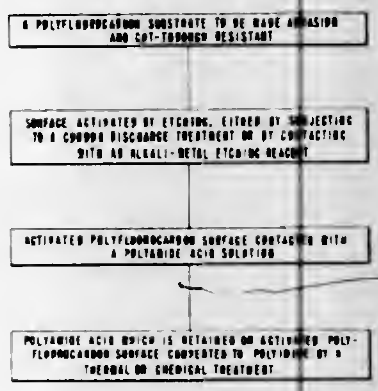
3,352,713
BARRIER-FREE CONTACTING OF CERAMIC BODIES

Rudolf Schofer and Erich Fenner, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Feb. 13, 1963, Ser. No. 258,675
Claims priority, application Germany, Feb. 16, 1962, S 78,061
2 Claims. (Cl. 117—212)

1. A method of contacting in barrier-free manner ceramic thermistors made of ferroelectric basic material, comprising subjecting a ceramic body, which is to be contacted, to negative, less than ambient pressure, and subjecting said body, while it is under negative pressure, successively and without interruption, to the following steps, namely (a) treating with a glow discharge areas of the body which are intended for the contacting; (b) vaporizing on said areas a first layer of a common metal selected from the group consisting of aluminum and zinc; and (c) vaporizing upon the first layer a second layer of a well solderable metal selected from the group consisting of copper and silver.

3,352,714
POLYFLUOROCARBON SUBSTRATE COATED WITH POLYAMIDE AND METHOD

Arthur William Anderson, Wilmington, and Lowell Ray Perkins, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 13, 1961, Ser. No. 95,019
The portion of the term of the patent subsequent to Apr. 20, 1982, has been disclaimed
29 Claims. (Cl. 117—213)


A POLYFLUOROCARBON SUBSTRATE TO BE MADE ABRASION AND CUT-THROUGH RESISTANT
SURFACE ACTIVATED BY ETCHING, EITHER BY SUBJECTING TO A CORONA DISCHARGE TREATMENT OR BY CONTACTING WITH AN ALKALI-METAL ETCHING REAGENT
ACTIVATED POLYFLUOROCARBON SURFACE CONTACTED WITH A POLYAMIDE ACID SOLUTION
POLYAMIDE ACID WHICH IS RETAINED ON ACTIVATED POLYFLUOROCARBON SURFACE CONVERTED TO POLYIMIDE BY A THERMAL OR CHEMICAL TREATMENT

21. In a process for the formation of a duplex composite structure, one component of which is a polyimide which has been formed from a solution of a polyamide acid, said polyamide acid having an inherent viscosity at 30° C. as a 0.5% solution in N,N-dimethylacetamide of 0.3–5, the steps which comprise exposing the surface of a polyfluorocarbon substrate to an alkali-metal etching reagent so as to activate it to make the polyimide adherable to it, contacting said treated surface with the solution of a polyamide acid and converting said polyamide acid to said polyimide.

3,352,715
BATTERY COMPRISING ALTERNATING LAYERS OF NOBLE METAL AND SALT-CONTAINING SUBSTANCE

Solomon Zaromb, 376 Monroe St., Passaic, N.J. 07055
Filed Oct. 22, 1963, Ser. No. 318,052
5 Claims. (Cl. 136—83)

1. A battery pile comprising at least two bi-polar electrodes, each of said electrodes consisting of the same noble metal, said electrodes being separated by a solid substance consisting essentially of a salt, said salt selected from the group consisting of aluminum bromide, gold bromide, and platinum bromide, a source of energy for heating said salt, and means for applying energy to said salt so as to cause at least partial melting thereof and render said salt conductive and to thereby activate said pile.

3,352,716
METHOD OF GENERATING ELECTRICITY FROM AMMONIA FUEL

Olle Lindström, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed May 7, 1963, Ser. No. 278,732
Claims priority, application Sweden, May 18, 1962, 5,589/62
20 Claims. (Cl. 136—86)

14. In a method of supplying a fuel cell with fuel, the steps of cracking ammonia, feeding the hydrogen and nitrogen formed by such cracking to the fuel cell, consuming the hydrogen only partly in the fuel cell, burning the non-consumed hydrogen, supplying the heat of such burning to the cracking step, and maintaining the supply of hydrogen to the fuel cell at such a value that the burning of the hydrogen not consumed therein supplies substantially exactly the total energy needed for such cracking.

3,352,717
CATHODE FOR DEFERRED ACTION BATTERIES

Leonard J. Burant, Milwaukee, and Kenneth R. Jones, Mequon, Wis., assignors to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed Sept. 19, 1963, Ser. No. 309,923
7 Claims. (Cl. 136—90)

1. In a deferred action battery having a cell with anode and cathode electrodes, said cathode electrode being formed of a first material which is reduced to a second material having less resistivity during operation of said cell, the improvement in combination therewith comprising a cathode electrode having a portion of its surface formed of said first material and the remainder of its surface formed of said second material, whereby said battery exhibits a substantially flat voltage-time characteristic for moderate battery currents within the current capacity of said battery.

3,352,718
SEA WATER-ACTIVATED PRIMARY BATTERY

William N. Carson, Jr., Schenectady, N.Y., and William H. Fischer, Boulder, Colo., assignors to General Electric Company, a corporation of New York
Filed July 23, 1963, Ser. No. 297,119
3 Claims. (Cl. 136—91)

1. A sea water-activated primary battery which comprises liquid container means having at least one electrode arrangement consisting of a magnesium anode electrochemically associated with a cathode fabricated from a chloride compound selected from the class consisting of silver chloride and cuprous chloride, and a depolarizing agent for the magnesium anode selected from the class consisting of water-soluble fluoride salts, acids which do not oxidize magnesium, and mixtures thereof, said depolarizing agent having a concentration in sea water electrolyte employed to activate said battery of at least from 0.1 molar solution of said electrolyte up to a maximum concentration therein of pH2 for said acid depolarizing agent, in order to resist passivation and polarization in the battery by continuously producing a protective film on said magnesium anode during battery operation.

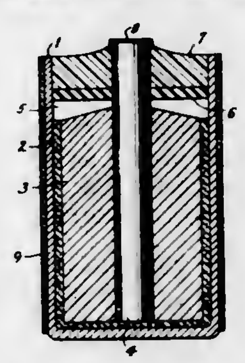
3,352,719
METHOD OF MAKING SILVER CATALYZED FUEL CELL ELECTRODE

Burnett M. Schneider, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
No Drawing. Filed Nov. 5, 1965, Ser. No. 506,592
5 Claims. (Cl. 136—120)

1. The method of making a silver catalyzed fuel cell electrode comprising the steps of immersing a porous substrate material into a first solution comprising silver (I), and alkali citrate; maintaining said solution at a pH such that silver citrate remains in solution; drawing said first solution into the porous substrate; removing said substrate from said first solution; drying said substrate; and immersing said dried substrate into a second solution comprising a reducing agent selected from the group consisting of hydrazine and lower alkyl substituted hydrazines to reduce the silver (I) to silver adhering to the walls of said substrate's pores.

3,352,720
POLYMERIC DEPOLARIZERS

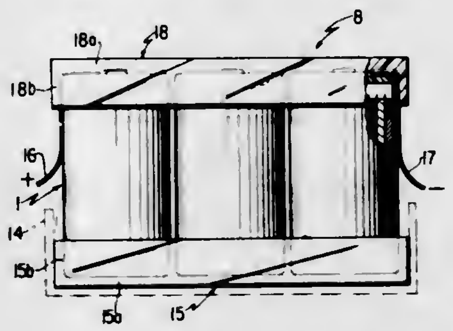
Glenn R. Wilson, 24 Concord Ave., and Elizabeth A. McElhill, 100 Memorial Drive, both of Cambridge, Mass. 02138
Filed Mar. 9, 1964, Ser. No. 350,452
8 Claims. (Cl. 136—137)



1. A voltaic cell comprising an anode material, a cathode depolarizer material, and an electrolyte, in which said cathode depolarizer material is a complex compound of halogen molecules with the nitrogen atoms of a polymeric amine in which the nitrogen-containing repeating units contain amino nitrogen atoms with a degree of substitution greater than secondary, wherein said nitrogen atoms are part of an aromatically unsaturated heterocyclic ring.

3,352,721
METHOD OF MAKING A BATTERY

Yves Jacques Felix Lecouffe, Courbevoie, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a company of France
Filed May 14, 1965, Ser. No. 455,885
Claims priority, application France, June 3, 1964, 976,903
6 Claims. (Cl. 136—175)



1. That improvement in the process of manufacturing a battery comprising providing a mold and a group of cells, depositing a layer of resin into said mold, allowing the layer to harden, then juxtaposing said cells in spaced relationship on said layer in said mold and thereafter depositing additional resin into said mold over said first layer to a desired depth to embed corresponding ends of the juxtaposed cells therein and form with said first layer a plate-like body, allowing said layers to set so that said plate-like body provides a rigid support for the said ends of said cells and maintains them as a unit and in spaced-apart condition to provide for air circulation between the cells, and then electrically interconnecting the cells to form the battery.

3,352,722
METHOD FOR GROWING SINGLE CRYSTALS

Frederick E. Wang, Beltsville, Albert M. Syeles and Wellman L. Clark, Silver Spring, and William J. Buehler, Bethesda, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 27, 1965, Ser. No. 475,295
8 Claims. (Cl. 148—1.6)

1. A method for growing a single crystal from a poly-

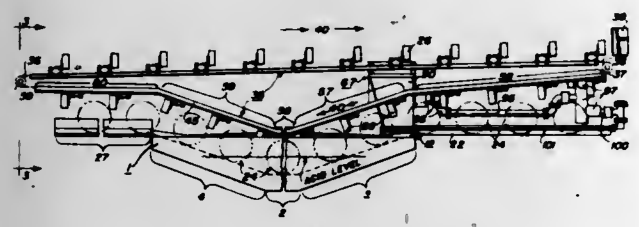
crystalline substance selected from the group consisting of metals, single phase metallic alloys and semi-metals which comprises:
- (a) heating the substance to a temperature that is below its melting point in an inert atmosphere,
- (b) cooling the substance, and
- (c) repeating (a) and (b) at least once per minute.

3,352,723
METHOD OF CLEANING USED STEEL DRUMS OF ORGANIC RESIDUES

Harold Smull, Wynnewood, Pa., assignor to Universal Container Corporation, Louisville, Ky., a corporation of Kentucky

Filed July 17, 1962, Ser. No. 211,947

3 Claims. (Cl. 148—6.15)



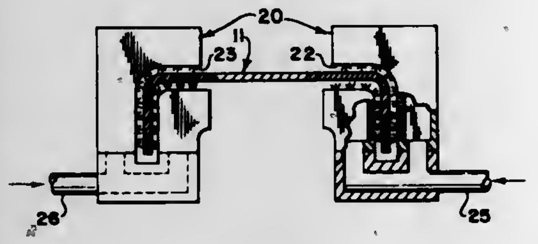
1. The method of reconditioning used steel drums having layers of organic matter adhering to the interior surfaces thereof, which comprises subjecting such steel drums and such adherent layers of organic matter to an aqueous sulfuric acid of a concentration of between 80% and 98% by weight at a temperature between 350° F. and 600° F. for a length of time sufficient for the acid to react with the organic matter and to form water as a result of such reaction and to enter the interface between the steel and such organic matter adhering thereto and there to react with the steel surface just sufficiently to generate a small amount of gaseous hydrogen and to cause such hydrogen to break the bond between the surface of the steel and such organic matter and simultaneously to etch said steel surface.

3,352,724
HEAT TREATMENT OF STRUCTURAL SECTIONS

Lewis F. McNitt, Bay Village, and Edmund L. Melgun, Cleveland, Ohio, assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed June 14, 1965, Ser. No. 463,652

2 Claims. (Cl. 148—144)



1. The method of heat treating a low carbon steel channel form comprising, preheating the web area to a temperature of not lower than about 400° F. and the flange sections to about 900° F. unaffecting a molecular change therein, substantially immediately thereafter heating the flanged portions and desired area thereabout only to a temperature of from 1600–1700° F., substantially immediately applying a quench to cause hardening sufficient to form a martensitic structure in the said area, thereafter again applying heat at a temperature of about 900° F. to the said desired higher heated area to draw the temper of said flanges, and thereafter again quenching.

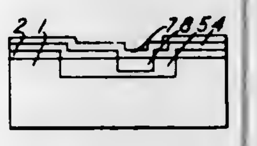
3,352,725
METHOD OF FORMING A GALLIUM ARSENIDE TRANSISTOR BY DIFFUSION

George Richard Antell, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 28, 1965, Ser. No. 467,361

Claims priority, application Great Britain, July 14, 1964, 28,953/64

7 Claims. (Cl. 148—186)



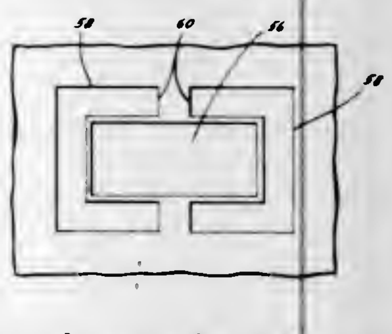
1. A method of manufacturing a gallium arsenide transistor which includes the steps of diffusion a P type material into a body of N type gallium arsenide to form a P type base region, and diffusing silicon under arsenic pressure into part of the base region to form an N type emitter region.

3,352,726
METHOD OF FABRICATING PLANAR SEMICONDUCTOR DEVICES

Robert L. Luce, Harleysville, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware

Filed Apr. 13, 1964, Ser. No. 359,159

2 Claims. (Cl. 148—187)



1. The method of constructing an integrated, composite transistor device, which comprises:
- (a) providing openings in a masking oxide layer on the surface of a body of semiconductive material of given conductivity type;
- (b) simultaneously diffusion-generating in said body through use of said openings a coplanar grouping of closely spaced regions of conductivity type opposite that of said body, which grouping, as viewed in the plane of the diffusant-exposed surface of said device, comprises a central region of generally rectangular configuration, disposed in interdigitating relation with opposed C-shaped regions;
- (c) limiting the time of said diffusion to control the lateral spread of said diffusant to define zones of such adjacency as to permit transistor action therebetween; and
- (d) making electrical connection to said two C-shaped regions and to said central region respectively to permit their operation as the dual emitters and common collector of said integrated device.

3,352,727
PROPELLANT COMPOSITIONS

Robert A. Cooley, Rosewood Heights, Ill., assignor to Chromalloy Corporation, St. Louis, Mo., a corporation of New York

No Drawing. Filed Mar. 16, 1962, Ser. No. 180,329

7 Claims. (Cl. 149—19)

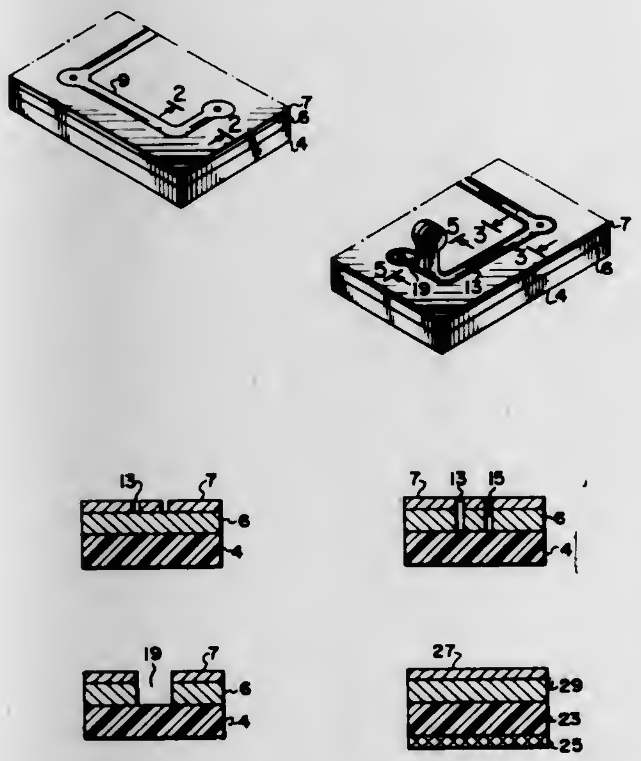
1. A solid propellant composition consisting essentially of ammonium nitrate, butadiene acrylic acid, guanidine nitrate, ammonium oxalate, sodium barbiturate, carbon black and a burning rate temperature coefficient reduction agent selected from the group consisting of triethylene glycol dinitrate and di-n-octyl decyl adipate.

3,352,728
MATERIAL AND METHOD FOR MAKING STENCIL MASTERS

Charles H. Stein, Westwood, and William R. Krause, Secaucus, N.J., assignors to Keuffel & Esser Co., Hoboken, N.J., a corporation of New Jersey

Filed Dec. 13, 1963, Ser. No. 330,455

6 Claims. (Cl. 156—3)



1. Material for making a stencil master for photographic reproduction comprising:
- (a) a base sheet transparent to visible and actinic light;
- (b) a peel layer on a surface of said base sheet, said peel layer comprising polyvinyl alcohol and sufficient strength with a limited adhesion to said base sheet whereby said peel layer may be peeled from said base sheet as a continuous film, said peel layer further being soluble in a predetermined solvent; and
- (c) a scribe layer on said peel layer, said scribe layer consisting essentially of finely divided pigment uniformly dispersed in a continuous layer of an alkyd resin whereby groove portions of said scribe layer may be readily removed from said peel layer by a scribe, said scribe layer further being insoluble in said predetermined solvent;
  - at least one of said peel layer and said scribe layer being opaque to actinic light.

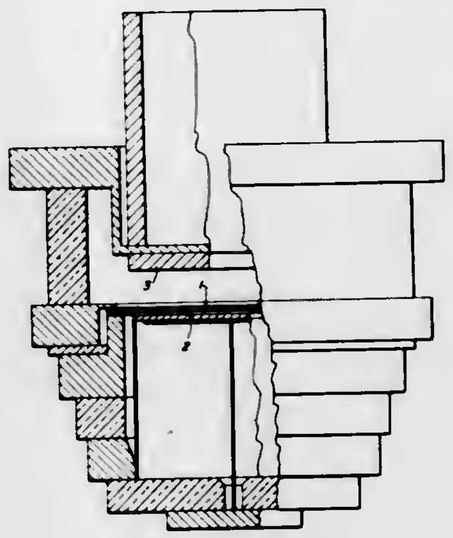
6. The method of making a stencil master for photographic reproduction comprising:
- (a) providing material according to claim 1;
- (b) scribing an outline in the scribe layer, thereby exposing the peel layer beneath the scribed outline;
- (c) applying to the thus-exposed peel layer a solvent for said peel layer, which solvent is a non-solvent for said scribe layer, thereby dissolving the peel layer in a pattern corresponding to the scribed outline and extending said scribed outline to the base sheet; and
- (d) peeling away from said base sheet areas of said peel layer enclosed within said outline, thereby removing areas of superposed scribe and peel layers and forming a stencil master comprising transparent window areas in an actinically opaque background.

3,352,729
METHOD OF MANUFACTURING STRONG RETICULATED ELECTRODES

August J. Kling, Scotia, and James E. Beggs, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Dec. 30, 1963, Ser. No. 334,306

4 Claims. (Cl. 156—3)



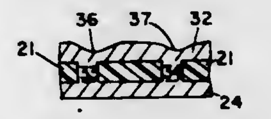
1. A method of making a strong, composite, reticulated electrode structure whose reticulation consists of a network of fine interconnected bars comprising the steps of applying a photo-resist to a thin refractory metal sheet of electrode material having a thickness of the order of 0.006 inch or less and of the order of the bars of the reticulation, exposing several areas of sheet material to the same reticulated pattern, developing said photo-resist, etching away the material around the pattern with an etchant leaving positives of said reticulated pattern formed of said sheet material, superimposing in registry as laminations said positives made from the same pattern, and thermally bonding said laminations in such registry to form an electrode.

3,352,730
METHOD OF MAKING MULTILAYER CIRCUIT BOARDS

Charles J. Murch, Jr., Reeds Ferry, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Aug. 24, 1964, Ser. No. 391,510

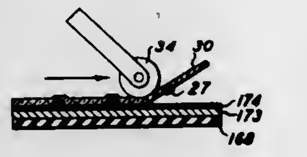
9 Claims. (Cl. 156—3)



1. The method of making a multilayer circuit board comprising the steps of:
- bonding a layer of insulation material to a sheet of metallic foil, said layer having at least one opening therethrough,
- depositing a coating of electrically conductive material on said layer of insulation to thereby totally cover and fill said opening and totally cover said layer of insulation whereby a layer of said multilayer circuit board and a solid homogeneous interconnection between said deposited coating and said sheet of metallic foil are formed in a single step, and
- etching a circuit configuration in said coating of electrically conductive material, whereby said etched circuit is electrically and mechanically interconnected by a solid homogeneous interconnection to said sheet of metallic foil.

3,352,731
THIN FILM PRINTED CIRCUIT

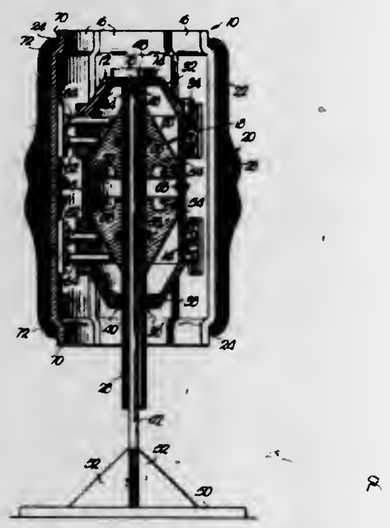
Frederick A. Schwertz and Edward F. Mayer, Pittsford, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Nov. 20, 1963, Ser. No. 324,966
3 Claims. (Cl. 156—11)



1. A method of forming an electrical component on a carrier support comprising
forming a pattern of non-adhesive material in the shape of the component to be formed on an adhesive surface of a transfer support,
bringing said pattern of non-adhesive material and the adhesive surface of the transfer support into contact with an adhesively strippable donor film overcoating a layer of material on a carrier support from which the component is to be formed,
separating the carrier and transfer supports to transfer the donor film not lying under the pattern of non-adhesive material from the carrier support to the transfer support,
applying a chemical etchant to the component material to remove said material from the carrier support except in the areas under the chemically resistant donor film thereby forming the electrical component on the carrier support.

3,352,732
STATIC BALANCING METHOD

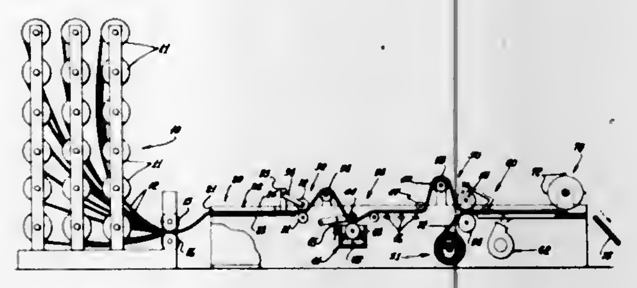
Wayne B. Darr, N. Main St., Seneca, Mo. 64865
Filed Mar. 1, 1965, Ser. No. 435,842
17 Claims. (Cl. 156—75)



1. The method of balancing a tubular, flexible, unbalanced member having a pair of spaced ends and a circumferentially extending center stretch between said ends, said method comprising the steps of:
supporting the member with the ends thereof in axial alignment with each other;
mounting the supported member for free movement about an axis passing therethrough to permit the member to attain static equilibrium, whereby the member shifts to a disposition where the heavy portion thereof contributing to the unbalanced condition presents the lowermost extremity of the member; and
counterbalancing said heavy portion by securing a weight on the member adjacent one of said ends, remote from said center stretch and located in generally opposed relationship to said extremity.

3,352,733
METHOD AND APPARATUS FOR MAKING A CARPET UNIT

Benjamin A. Kruce, 1833 Midvale Drive, Pomona, Calif. 91766
Filed Sept. 29, 1965, Ser. No. 491,346
3 Claims. (Cl. 156—94)



1. A method of making a carpet strip comprising:
assembling in parallel slightly spaced side-by-side relation a plurality of narrow elongated flat-bottomed elements of rubbery base material having filamentary cords embedded therein, the upper ends of the cords projecting upwardly from the base to form a pile;
continuously coating the bottom surfaces of said assembled elements with an adhesive by forcing said bottoms into rolling pressure contact with a liquid adhesive coated surface; and
rollingly pressing the coated bottoms onto a backing sheet to form a unitary carpet strip.

3,352,734
PROCESS FOR THE PRODUCTION OF NON-WOVEN FABRICS

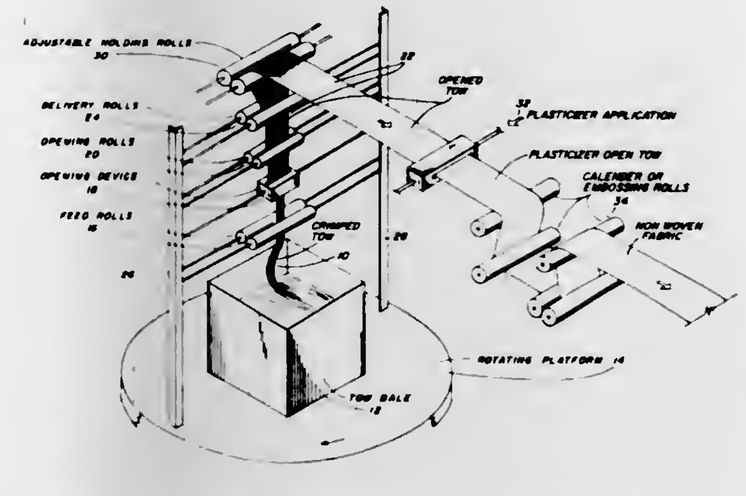
James Eric McIntyre, Ralph John Basil Marsden, and Hendry Wilson Dempster, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Aug. 19, 1963, Ser. No. 303,183
Claims priority, application Great Britain, Aug. 30, 1962, 33,383/62
6 Claims. (Cl. 156—180)

1. A process for the production of non-woven fabrics comprising the steps of treating amorphous undrawn polyester filaments of meltspun polyethylene terephthalate with a birefringence up to 50×10^{-3} with a liquid which is a solvent for the amorphous polyester but which does not dissolve crystalline polyester when placed in contact with it at the temperature of application said solvent being selected from the group consisting of methylene chloride, chloroform, ethylene dichloride, 1,2-dichloroethylene, sym-tetrachloroethane, sym-tetrabromoethane, bromoform and chloroacetonitrile, bringing the filaments into contact with each other at a temperature from 0° C. to ambient temperature while the solvent is present on the surface thereof, and evaporating the solvent to leave a bond between the filaments, said bond consisting of at least partially crystalline polyester derived from the polyester filaments.

3,352,735
METHOD OF PREPARING LAYERED NON-WOVEN PRODUCTS FROM CONTINUOUS FILAMENTARY TOW MATERIALS

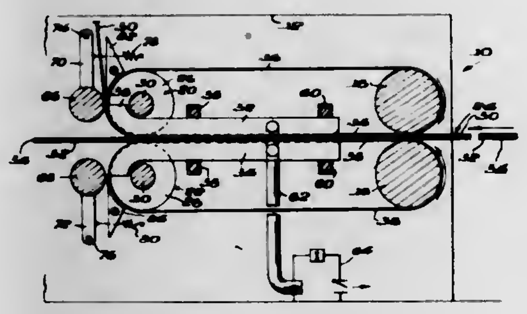
Robert C. Harrington, Jr., and James L. Smith, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 307,442, Sept. 9, 1963. This application Oct. 25, 1966, Ser. No. 589,462
4 Claims. (Cl. 156—180)

1. A method for the production of non-woven fabric comprising the steps of delivering from a source of supply a tow of substantially parallel continuous filaments, holding a portion of said tow substantially in the plane of its direction of feed, simultaneously folding the tow upon itself, transporting the folded tow to a subsequent treatment zone, and in that zone applying a plasticizer to said tow so that the lateral tensional strength of the folded tow is materially enhanced.



3,352,736
APPARATUS FOR DETECTING AND HANDLING DEFECTIVE BOX BLANKS

Henry E. Kulwicki, Baltimore, Md., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Sept. 24, 1964, Ser. No. 398,900
9 Claims. (Cl. 156—350)

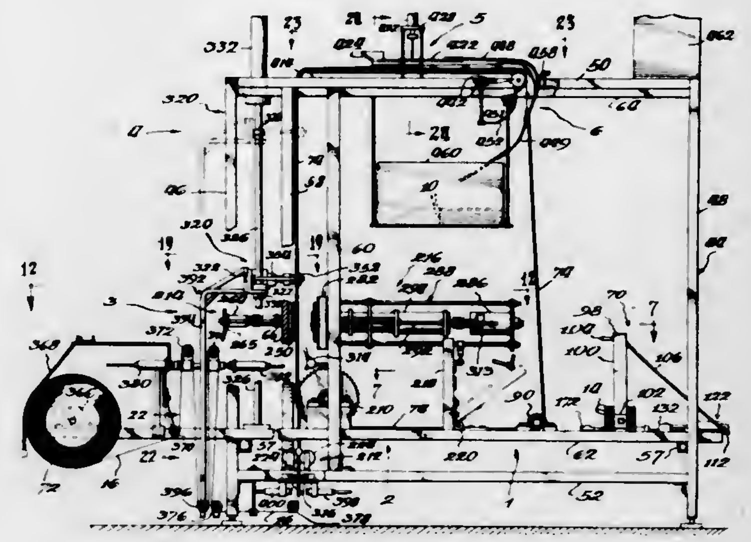


1. Apparatus for detecting defective paperboard box blanks having one or more liners unsuitably bonded to the corrugated medium therebetween comprising,
a receiver for said box blanks,
means within said receiver for applying a controlled pulling force on at least one of said liners in a direction away from said corrugated medium so that liners unsuitably bonded to said corrugated medium are separated therefrom,
sensing means to detect the separation of said liner from said corrugated medium, and
means to convey said separated liner away from said corrugated medium.

3,352,737
MACHINE FOR MANUFACTURING A COLOSTOMY DRAINAGE DEVICE

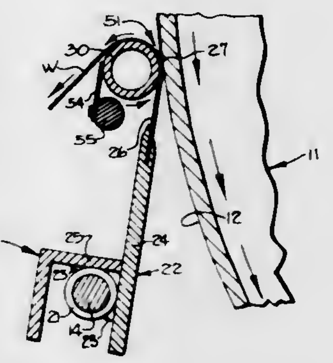
Ralph C. Jordan, Palos Hills, Ill., assignor to The Marsan Manufacturing Co., Inc.
Filed Jan. 8, 1964, Ser. No. 336,478
11 Claims. (Cl. 156—514)

1. In a machine for manufacturing a colostomy drainage device or the like, said device including a flexible tubular body and a retainer gasket thereon, the combination of means for supporting flexible tubing, means for mounting an annular retainer gasket on the outer wall surface of a supported tubing, means for severing a portion of said supported tubing wall in the region bounded by said gasket to provide an opening therein, and means for mounting the severed wall portion on the opposite inner wall surface of said supported tubing.



3,352,738
APPARATUS FOR CREPING PAPER

Gregory W. Doll, 118 Oakwood Drive, Lenoir, N.C. 28645, and Brendan L. Doll, Patterson, N.C. 28661
Filed Nov. 1, 1963, Ser. No. 320,732
5 Claims. (Cl. 156—585)



1. Apparatus for the production of creped paper comprising
(a) a rotatable drying cylinder adapted to receive a web of paper to be creped thereon and to carry the web of paper forwardly therewith,
(b) an elongate, horizontally disposed doctor blade having a working edge disposed in contiguous relation to said cylinder for removing the web of paper from the cylinder and for creping the paper web as it is removed, and
(c) means cooperating with said drying cylinder and doctor blade for further creping the paper web after it is removed from the drying cylinder by said doctor blade, said means comprising
    (1) an elongate rotatable roll positioned against said doctor blade on the opposite side thereof from said drying cylinder and having a portion thereof extending above the working edge of said doctor blade and spaced from said drying cylinder, said roll cooperating with said doctor blade and a portion of said cylinder to define a paper creping pocket having its bottom closed by said doctor blade for accumulating and further creping the paper web removed by said doctor blade, and

(2) means operatively connected to said roll for rotating the same in the same rotative direction as said drying cylinder is rotated so that the adjacent surfaces of the roll and drying cylinder are traveling in opposite directions and the roll removes the thusly creped paper web from the paper creping pocket in the opposite direction from which the web enters the pocket.

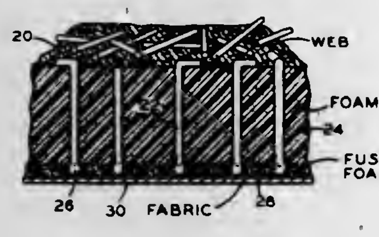
3,352,739

FOAM AND FIBER COMBINATION PRODUCT AND METHOD OF MAKING SAME

Sidney Daniel Blue, Larchmont, N.Y., assignor to Reeves Brothers, Inc., New York, N.Y., a corporation of New York

Filed Nov. 9, 1962, Ser. No. 236,657

2 Claims. (Cl. 161—81)



1. In combination, a sheet of heat fusible flexible polyurethane macrocellular foamed plastic, a web of polyolefin fiber in contact with one side of said sheet and fibers of which pass through and have ends protruding from the other side of said plastic sheet, said fibers having a melting temperature lower than that of said heat fusible foam, a superficially fused layer of said foamed material on the fiber protruding side of said sheet and said fiber ends in said fused layer being fused into ball shapes to fix said fiber ends in place, and a thin sheet of material bonded to said fiber protruding side of said plastic at least in part by said fused foam layer.

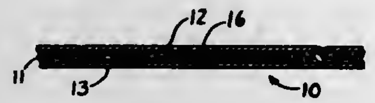
3,352,740

INDEX STRIPS

Eugene T. Fleischhauer, Charlottesville, Va., assignor to Acme Visible Records, Inc., Crozet, Va., a corporation of Delaware

Filed Oct. 2, 1963, Ser. No. 313,225

1 Claim. (Cl. 161—112)



Flexible index strips in continuous hingedly connected sheet laminate form for use on back printers comprising a compressible, resilient, flexible impact cushioning core portion comprised of rubber bonded cellulose fibers sheet material faced with a relatively thin, tough, printable paper web and backed with a relatively thin, tough paper web both having a relatively high modulus of elasticity and strength, said laminate being formed with a series of longitudinally extending apertures adjacent its opposed marginal edges and longitudinal score lines defining marginal portions embracing said apertures, and transverse score lines between said longitudinal score lines extending completely through said facing web and core to define a plurality of separable elongated relatively narrow strips.

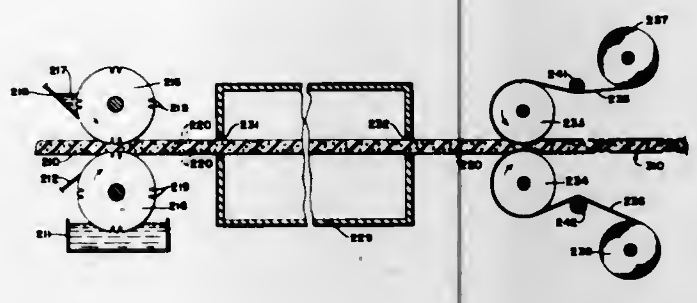
3,352,741

CONTOURED ORNAMENTATION OF LAMINATED RESILIENT MATERIALS

Philip Miller, Yonkers, N.Y., assignor to Hicks and Otis Prints, Incorporated, Norwalk, Conn., a corporation of Connecticut

Filed Dec. 13, 1963, Ser. No. 330,357

6 Claims. (Cl. 161—120)



1. An embossed sheet material comprising a sheet of liquid permeable, compressible and restorable material, each surface thereof including relatively depressed areas, said sheet being of reduced thickness in said areas, the surface portions of said reduced thickness portions being coated with an adhesive material, said sheet material in said reduced thickness portions having compressed cell structure maintained in said compressed state by said adhesive material, at least part of the undepressed areas of said sheet material being free of said adhesive material, a first layer of laminar material adhered to one surface of said sheet material, and a second layer of laminar material adhered to the other surface of said sheet material, each of said layer of laminar material conforming to the contours of said sheet material in said relatively depressed areas thereof, and each of said layer of laminar material being at least partially raised above the surface of said sheet material in the undepressed areas thereof thereby exhibiting a puckered effect in said undepressed areas.

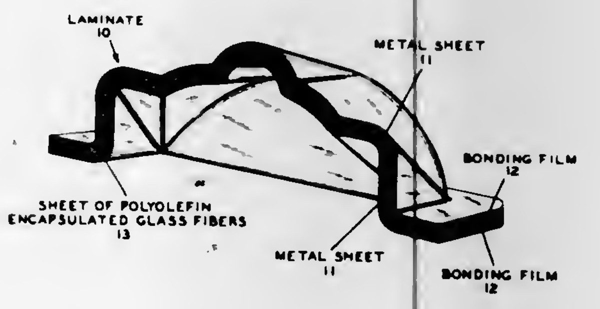
3,352,742

LAMINATES

Alexander Zunich, Lincolnwood, and Donald Shade and Frank A. Mulec, Chicago, Ill., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 6, 1963, Ser. No. 263,202

11 Claims. (Cl. 161—125)



1. A new article of manufacture comprising a drawn laminate structure having a plurality of layers of thin sheet metal and interposed therebetween and bonded thereto core layers being sheets of polyolefin encapsulated glass fibers.

3,352,743

CONSUMABLE PRODUCT FOR INGOT HOT TOPS AND THE LIKE

Walter George Pusch, Somerset, and William Lafayette Stafford, Martinsville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 9, 1964, Ser. No. 410,019

12 Claims. (Cl. 161—162)

1. A consumable refractory and insulating product for use with ingot molds in pouring and casting metal ingots comprising a permeable, composite integrated body composed of a refractory liner section of at least about ⅛ inch in thickness and having an apparent density of about 80 to about 130 lbs./cu. ft. juxtaposed and united to an insulating backing section of at least about ¼ inch in thickness and having an apparent density of greater than about 18 lbs./cu. ft.; said refractory liner section consisting essentially of approximately 80% to approximately 96% by weight of granules of at least one alkaline earth metal carbonate selected from the group consisting of calcium carbonate, magnesium carbonate and dolomite, approximately 2% to approximately 8% by weight of organic resin, approximately 1% to approximately 4% by weight of starch, and approximately 1% to approximately 6% by weight of inorganic binder; and, said insulating backing section consisting essentially of approximately 35% to approximately 70% by weight of wood fiber, 0 to approximately 30% by weight of rice hulls, and approximately 40% by weight of clay.

3,352,744

SELF-EXTINGUISHING PHENOLIC RESIN COMPOSITIONS AND LAMINATES PREPARED THEREFROM

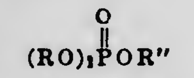
Curtis Elmer, Kirkwood, Mo., and Jerome J. Mestdagh, Lockport, Ill., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 21, 1965, Ser. No. 457,859

3 Claims. (Cl. 161—264)

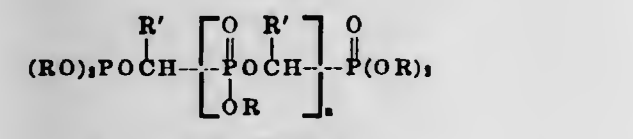
1. A flame retardant laminate consisting of at least 2 sheets of cellulosic paper impregnated with 25–75 weight percent of a phenolic resin system based on the weight of the cellulosic paper and wherein the phenolic resin system has been advanced to an infusible state; said phenolic resin system consisting of in admixture (1) a phenolic resin prepared by the process of (*a*) reacting 100 parts by weight of a phenol with 5–70 parts by weight of styrene at 25–145° C. under acidic conditions; (*b*) reacting the product of Step (*a*) with 10–150 parts by weight of a vegetable drying oil at 150–180° C. under acidic conditions; and (*c*) reacting the product of Step (*b*) with about 15–55 parts by weight of an aldehyde at 70–100° C. under basic conditions, and (2) 5–60 weight percent based on the weight of (1) of a chlorinated polyphenyl having no flash point below its boiling point and (3) 3–40 weight percent based on the weight of (1) of a phosphate of the group consisting of:

(a)



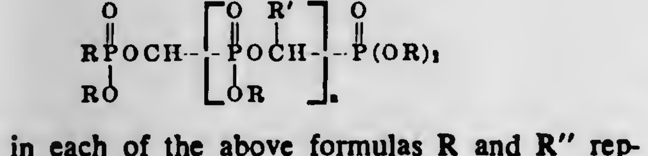
$$(RO)_2\overset{O}{\overset{\|}{P}}OR''$$

(b)



$$(RO)_2PO\overset{R'}{\overset{|}{C}}H-\left[-\underset{OR}{\underset{|}{\overset{O}{\overset{\|}{P}}}}O\overset{R'}{\overset{|}{C}}H-\right]_n-\overset{O}{\overset{\|}{P}}(OR)_2$$

(c)



$$R\underset{RO}{\underset{|}{\overset{O}{\overset{\|}{P}}}}OCH-\left[-\underset{OR}{\underset{|}{\overset{O}{\overset{\|}{P}}}}O\overset{R'}{\overset{|}{C}}H-\right]_n-\overset{O}{\overset{\|}{P}}(OR)_2$$

wherein in each of the above formulas R and R″ represent a haloalkyl radical containing 2–3 carbon atoms, R′ represents an alkyl radical containing 1–3 carbon atoms, and *n* represents an average numerical value of 0–4.

3,352,745

PROCESS OF SEPARATING FIBROUS PULP INTO SPRINGWOOD AND SUMMERWOOD FIBERS BY CENTRIFUGING

Gustaf E. Malm, Sundsvall, Sweden, assignor to Svenska Cellulosa Aktiebolaget, Sundsvall, Sweden

Filed Feb. 27, 1961, Ser. No. 91,890

Claims priority, application Sweden, Feb. 29, 1960, 2,033/60

1 Claim. (Cl. 162—55)

The process which comprises de-fiberizing wood into cellulosic pulp as an aqueous slurry containing a heterogeneous mixture of springwood and summerwood fibers, treating the slurry in a centrifugal separator to separate the mixture into fiber fractions respectively containing predominantly springwood and summerwood fibers of comparatively lower and higher apparent specific gravity, then making a paper-like sheet by re-combining the pulp fractions in a predetermined manner.

3,352,746

MANUFACTURE OF CALCIUM SILICATE INSULATING PRODUCTS

Stanley E. Williams, North Plainfield, Robert B. Dunbar, Martinsville, and John C. Rademaker, Plainfield, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 5, 1964, Ser. No. 365,157

7 Claims. (Cl. 162—153)

1. An improved method of manufacturing gelled and molded, low density hydrated calcium silicate heat insulating bodies with reduced shrinkage, said method comprising the steps of:

- (a) forming an expanded water-containing hydrated calcium silicate gel reaction product by maintaining a dilute aqueous slurry containing lime and diatomaceous earth silica at temperatures of approximately 120 to 210° F. for periods of approximately ½ to 3 hours;
- (b) consolidating and shaping the water-containing expanded hydrated calcium silicate gel reaction product by molding the dilute aqueous slurry forming a low solids density body of expanded hydrated calcium silicate gel and entrained water of substantially final dimensions;
- (c) steam indurating the consolidated and shaped water-containing body further reacting the lime and diatomaceous earth silica reactants and thereby producing a porous, durable hydrated calcium silicate bonded matrix; and
- (d) the improvement of reducing the shrinkage of the molded hydrated calcium silicate body comprising, in combination with the foregoing steps, providing the diatomaceous earth silica reactant in a ratio of fine diatomaceous earth having a surface area averaging about 6.5 to 10.0 square meters per gram and coarse diatomaceous earth having a surface area averaging about 4.5 to 6.0 square meters per gram in proportions of from approximately 4 parts by weight of the said fine diatomaceous earth to approximately 3 parts by weight of the said coarse diatomaceous earth ranging up to 0 parts by weight of the said fine diatomaceous earth to 1 part by weight of the said coarse diatomaceous earth.

3,352,747

APPARATUS FOR REPLACING AN ENDLESS BELT IN A PAPERMAKING ROLLER PRESS ASSEMBLY

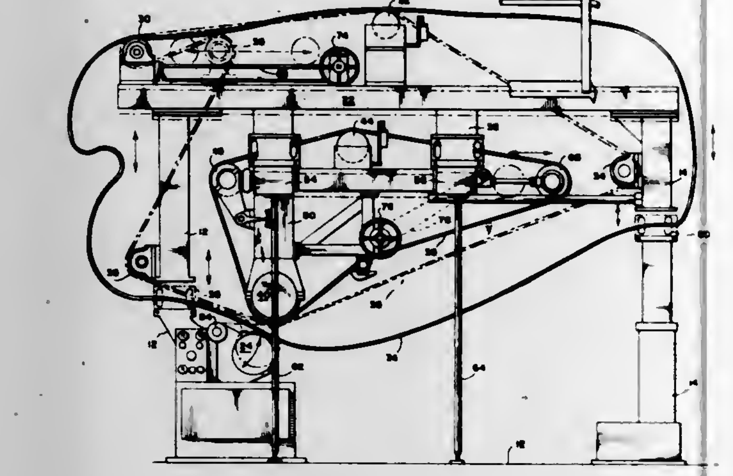
William Lithgo, Gene Roberts, Russell L. Smith, and Dale E. Wills, Middletown, Ohio, assignors to Diamond International Corporation, a corporation of Delaware

Filed Apr. 23, 1964, Ser. No. 361,942

12 Claims. (Cl. 162—274)

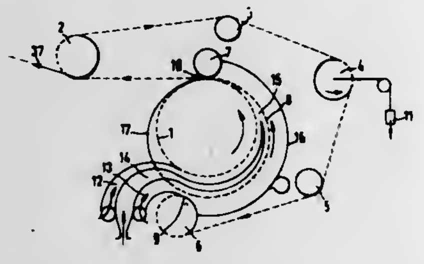
1. In a roller press assembly frame comprising a plurality of rollers, superstructure for supporting said rollers

upon a foundation including at least two pillars and an endless belt passing about said rollers, the improvement comprising a removable section in one of said pillars between said rollers and said foundation, a beam extending from said superstructure upon which to drape an endless belt, and means to temporarily support said one pillar from said extending beam while said removable section is removed.



3,352,748
APPARATUS FOR PRODUCING WEBS OF FIBROUS MATERIALS, IN PARTICULAR OF PAPER AND CARDBOARD WEBS

Milos Krofta, 58 Yorkun Ave., Lenox, Mass. 01240
Filed Sept. 11, 1964, Ser. No. 395,842
2 Claims. (Cl. 162—318)



1. Apparatus for producing webs of fibrous materials, in particular of paper and cardboard webs, comprising a support member, a hollow metal screen cylinder rotatably mounted on said support member and having cylindrical imperforate end portions in an eccentric relationship with said cylinder, an endless screen belt in an arcuate path of at least 100° relative to said screen cylinder and converging to a narrow gap therebetween and means for supplying fibrous mixtures to said cylinder and to said screen belt respectively, said means comprising a pair of spaced curved converging channel members, the walls of said channel members forming a chamber therebetween for supplying gaseous pressure medium, said chamber extending an arcuate path of at least 66° between the cylinder and the screen belt and having an outlet opening for gas.

3,352,749
DRAINAGE CONTROL ELEMENTS FOR PAPER MACHINES

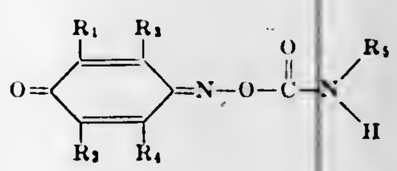
James H. Perry, Worcester, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed Apr. 7, 1966, Ser. No. 540,895
9 Claims. (Cl. 162—352)

1. In a paper-making machine having a traveling screen for supporting water-wet pulp during the drainage of water therefrom and transversely extending plates arranged longitudinally and contacting said screen to control the drainage of water from said pulp, the improvement wherein said plates have a smooth, hard, porous ceramic screen contacting face portion.

3,352,750
ALKYL - SUBSTITUTED - BENZOQUINONE - 4-OXIMINYL N - ALKYL CARBAMATES AND USE AS FUNGICIDES

George A. Buntin, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Apr. 2, 1964, Ser. No. 356,933
9 Claims. (Cl. 167—30)

1. A compound of the formula



wherein R_5 is selected from the group consisting of methyl and ethyl; and R_1, R_2, R_3 and R_4 are selected from the group consisting of hydrogen, alkyl containing from one to five carbon atoms and cycloalkyl containing from three to eight carbon atoms, providing that at least one of R_1, R_2, R_3 and R_4 is selected from the group consisting of alkyl and cycloalkyl.

3,352,751
HEXACHLOROPHENE DERIVATIVES FOR TREATING FASCIOLIASIS

Antony M. Akkerman and Josephus F. Michels, Amsterdam, Netherlands, assignors to N.V. Nederlandsche Combinatie voor Chemische Industrie, Amsterdam, Netherlands, a limited-liability company of the Netherlands
No Drawing. Filed Sept. 30, 1963, Ser. No. 312,318
Claims priority, application Netherlands, Oct. 3, 1962, 283,922
8 Claims. (Cl. 167—53)

6. A method of treating animals infected with fascioliasis, consisting essentially in administering to an animal infected with fascioliasis therapeutically effective amounts of a composition having as its essential active ingredient a compound selected from the class consisting of the monophosphoric acid ester of hexachlorophene and the pharmacologically acceptable salts thereof.

3,352,752
INTESTINAL ADSORBENT COMPOSITIONS

Bruno Puetzer, White Plains, Leonard Mackles, New York, and Alexander V. Finn, Ozone Park, N.Y., assignors, by mesne assignments, to Tintex Corporation, % Revlon, Inc., New York, N.Y., a corporation of Delaware
Filed July 25, 1963, Ser. No. 297,544
17 Claims. (Cl. 167—55)

1. A therapeutic composition for oral administration comprising an intestinal adsorbent which comprises at least five percent (5%) by weight of magnesium silicate, said magnesium silicate being finely divided and having a surface area of about 48 to over 200 square meters per gram and having been synthesized by reacting magnesium oxide with silica in the presence of water at an elevated temperature and subsequently filtering and drying the magnesium silicate, and pectin.

3,352,753
PHARMACEUTICAL COMPOSITIONS OF CORTICOSTEROIDS IN GELLED ALCOHOL

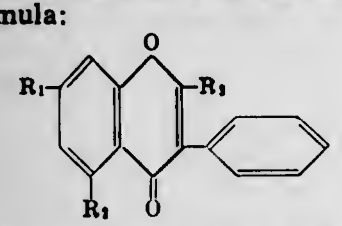
Leonard J. Lerner, New Brunswick, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 19, 1965, Ser. No. 441,300
3 Claims. (Cl. 167—77)

1. A topically administrable composition comprising a corticosteroid intimately blended with ethyl alcohol and gelling agents.

3,352,754
THERAPEUTIC COMPOSITIONS COMPRISING ISOFLAVONE COMPOUNDS

Jean Maurice Gazave, Paris, France, assignor to Sarec S.A., Geneva, Switzerland, a company of Switzerland
No Drawing. Filed Jan. 17, 1961, Ser. No. 83,159
Claims priority, application Belgium, Jan. 19, 1960, 586,723
13 Claims. (Cl. 167—81)

3. The method of treating vascular, inflammatory and vitamine-P deficiency disorders, which comprises administering to the disordered organism from about 5 mg. to about 500 mg. per diem of an isoflavone compound of the general formula:



wherein R_1 is selected from within the group consisting of hydroxyl and alkoxy radicals, R_2 is selected from within the group consisting of hydrogen and a hydroxyl radical, and R_3 is selected from within the group consisting of hydrogen and substituted and unsubstituted carboxyl radicals.

3,352,755
ACID DYE COMPOSITION FOR HUMAN HAIR

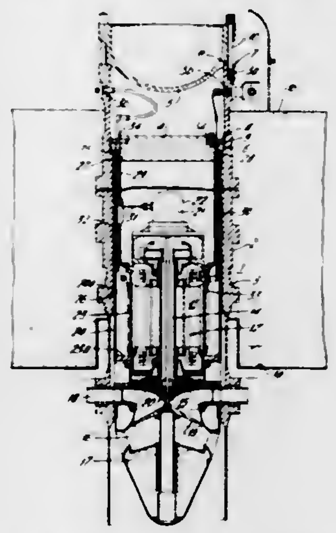
Louis L. Lerner, Chicago, and Helen E. Oberstar, Glen Ellyn, Ill., assignors to The Gillette Company, Boston, Mass., a corporation of Delaware
No Drawing. Filed Aug. 4, 1961, Ser. No. 129,251
2 Claims. (Cl. 167—88)

1. A hair dye composition consisting essentially of an acid dye, a water soluble salt selected from the class consisting of the chlorides, bromides, sulfates, acetates, borates, nitrates, citrates, lactates, bromates and chlorates of alkali metals, alkaline earth metals, ammonia, lower alkylamines containing from 1 to 4 carbon atoms, and mono-, di-, and tri-alkanolamines in which each alkanol group contains from 2 to 3 carbon atoms, said salt being chemically inert to the hair and to the remaining ingredients of the composition, the ratio of dye to salt being from 1:1 to 1:20000 by weight, and a free base in an amount sufficient to produce a pH of 8.5 to 12.5 in an aqueous solution containing the composition.

3,352,756
ARRANGEMENTS FOR CLOSING PENETRATIONS IN THE WALLS OF REACTOR PRESSURE CONTAINING STRUCTURES

George Edward Lockett and Geoffrey Coast, Dorchester, England, Michel Coudray and Pierre Vitry, Paris, France, and Enea Torielli, Milan, Italy, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Mar. 22, 1965, Ser. No. 441,726
Claims priority, application Great Britain, Apr. 7, 1964, 14,387/64
9 Claims. (Cl. 176—40)

1. In combination with a nuclear reactor pressure vessel having a penetration through the pressure vessel wall to permit removal of a plant component within the pressure vessel, a nuclear reactor pressure vessel penetration closure device comprising: an outer closure member, mounting means for removably mounting said outer closure member onto the pressure vessel to close off the said penetration, and a leak tight seal operatively associated with said outer closure member so that the said mounting means and the said leak tight seal seal off pressure differences within the vessel and a massive non-sealing inner removable closing member, second mounting means for mounting and locking said inner member inwardly of said outer member and forming an interspace therebetween, the inner member having means associated therewith non-sealably connected to the pressure vessel wall, a passageway in the last said means for restricting the flow of fluid from the pressure vessel to the interspace, said passageway including means for allowing pressure fluid to flow from said vessel to said interspace and for limiting the flow through the restrictor upon failure of the outer closure member.

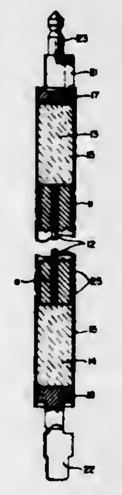


ERRATUM

For Class 176—55 see:
Patent No. 3,352,365

3,352,757
FUEL ELEMENT

John B. Dee, Rancho Santa Fe, and Massoud T. Simnad, San Diego, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 30, 1965, Ser. No. 491,539
8 Claims. (Cl. 176—68)



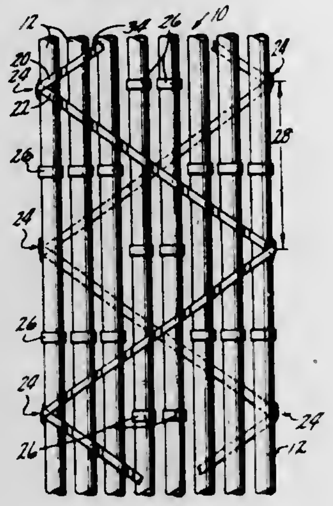
1. A fuel element for use in a nuclear reactor, including in combination, a solid elongated generally cylindrical fuel body, a sealed elongated generally cylindrical metallic container enclosing said fuel body, said fuel body having an outer diameter sufficiently less than the inner diameter of said container so as to provide a thermal insulating gap therebetween throughout the operating range of tempera-

tures of said fuel element, means disposed intermediate each end of said fuel body and the corresponding end of said metallic container for insulating the ends of said container, and spacer means disposed intermediate said container and the cylindrical surface of said fuel body to maintain said insulating gap between said fuel body and said container.

3,352,758
FUEL ASSEMBLY FOR NUCLEAR REACTOR

Andrew J. Anthony, Tariffville, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 14, 1965, Ser. No. 513,730
8 Claims. (Cl. 176—78)



1. A fuel assembly for a nuclear reactor comprising in combination a plurality of parallel spaced tubular elements at least some of which contain a fissionable material and retained in bi-directional rows, said fuel elements in each of the rows in one of said directions being banded together by bands that extend about the tubes with said bands extending diagonally across the row of tubes in a manner so as to prevent any substantial movement between successive bands longitudinally of the tubes.

3,352,759
PROCESS FOR PRODUCING CIS-SUCCINIC ACID OF GAUCHE FORM

Tadataka Hara, Tokyo, Japan, assignor to Kaken Kagaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Nov. 15, 1966, Ser. No. 594,602
Claims priority, application Japan, Jan. 14, 1959, 34/534; June 6, 1959, 34/20,893
5 Claims. (Cl. 195—37)

1. A process for producing cis-succinic acid of Gauche form, which comprises cultivating a strain of Saccharomyces genus in an aqueous, malt juice-containing solution under aerobic conditions at a temperature of from about 20° to about 35° C. for 72–120 hours, extracting cis-succinic acid of Gauche form with ether under day light shielding conditions, and distilling the ether extract in vacuo while shielding it from day light to give the crystals of cis-succinic acid of Gauche form.

3,352,760
PROCESS FOR PRODUCING 11 ALPHA HYDROXY STEROIDS

Claude Vezina, Oka, Quebec, Surendra Nath Sehgal, St. Laurent, Quebec, and Kartar Singh, Beaconsfield, Quebec, Canada, assignors, by mesne assignments, to Wisconsin Alumni Research Foundation, Madison, Wis., a corporation of Wisconsin

No Drawing. Filed July 6, 1964, Ser. No. 380,636
5 Claims. (Cl. 195—51)

1. A process for the production of 11α-hydroxy steroids, which comprises incubating a steroid having an eleven methylene group under aerobic conditions with the albino mutant, NRRL 2969 of *Aspergillus ochraceus,* its secondary sterigmata or the oxygenating enzymes derived therefrom, and recovering the 11α-hydroxylated steroids from the reaction mixture.

3,352,761
FERMENTATION MEDIA FOR INDUSTRIAL FERMENTATIONS COMPRISING AMYLOPECTIN AS ESSENTIALLY THE SOLE CARBOHYDRATE SOURCE

William Moses, Haworth, N.J., assignor to S. B. Penick & Company, New York, N.Y., a corporation of Delaware

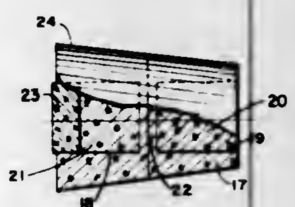
No Drawing. Filed June 12, 1964, Ser. No. 374,825
6 Claims. (Cl. 195—80)

1. The method of producing neomycin in enhanced yield from the fermentation of a neomycin-producing Streptomyces species which comprises using a fermentation medium having amylopectin as substantially the sole source of carbohydrate, a nitrogen source and salts.

3,352,762
DISINFECTANT-CONTAINING STOPPER FOR PROLONGED AEROBIC FERMENTATIONS

Bernard A. Weiner, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture

Filed Aug. 10, 1964, Ser. No. 388,731
1 Claim. (Cl. 195—127)



A contamination-inhibiting, repeatedly puncturable stopper assembly for receiving a periodically removed and replaced needle-like electrode, said assembly comprising:

(a) a puncturable stopper having a pair of opposing deep wells bored from each end for containing a sterilant in at least one of said wells;
(b) a puncturable, membrane-like partition separating said wells;
(c) a vaporizable sterilant in one of said wells and
(d) a tightly-fitting, puncturable member inserted in and closing the well containing the sterilant.

3,352,763
DRY CLEANING SOLVENT PURIFYING APPARATUS

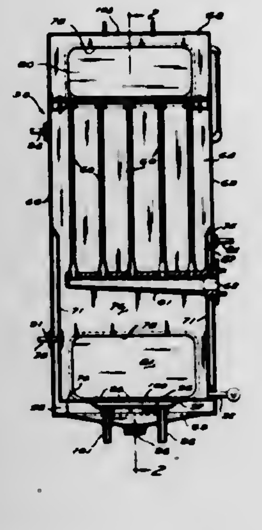
Sebough S. Shields, Cleveland Heights, Ohio, assignor to Noubar S. Abdalian, Euclid, and Robert V. Abdalian, Cleveland Heights, Ohio

Continuation of application Ser. No. 73,608, Dec. 5, 1960. This application Dec. 17, 1964, Ser. No. 421,150
5 Claims. (Cl. 202—200)

1. In combination with a dry-cleaning apparatus, a solvent purifier comprising:

(a) sides and a base defining a solvent purifying chamber having a top vapor outlet;
(b) a filter outlet manifold extending horizontally in the chamber and providing a solvent outlet;
(c) filters in said chamber and communicating with said outlet manifold;
(d) members secured to the sides and defining a steam jacket spaced external of lower portions of the chamber and below and contacting the base, said jacket extending above said manifold and terminating below the major portions of the filters;

(e) a dish-like supplemental liner connected to the base to define a steam and trap cavity therebetween;
(f) said base having openings therethrough providing communication between said cavity and said chamber;
(g) a first steam conduit connected to said jacket space and a second steam supply conduit connected to said cavity;

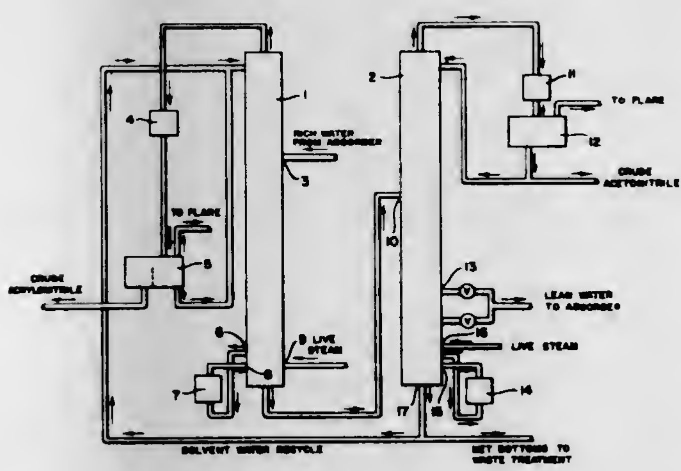


(h) drain conduits connected to the jacket and said cavity;
(i) a plurality of valves with one of said valves connected to each of the conduits;
(j) steam supply means connected to the first and second steam conduits; and,
(k) said steam jacket space being defined in part by said base around said supplemental liner.

3,352,764
ABSORPTION AND DISTILLATION PROCESS FOR SEPARATING CRUDE UNSATURATED NITRILES FROM ACETONITRILE WITH SELECTIVE SOLVENT RECYCLE

Clarence M. Tyler, Berea, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed May 2, 1966, Ser. No. 546,839
6 Claims. (Cl. 203—42)



1. In the process for separating acetonitrile from an α-β monoolefinically unsaturated nitrile in solution, the improvement comprising:

(a) absorbing a mixture comprising acetonitrile and said unsaturated nitrile in a solvent
(b) feeding the liquid obtained from (a) into a stage in the upper half of a multiplicity of intercommunicative extractive distillation stages
(c) condensing vapors removed overhead from said stages, removing crude unsaturated nitrile from the condensed overhead vapors withdrawn from the uppermost of said extractive distillation stages
(d) withdrawing a liquid from the lowest of said extractive distillation stages and introducing it into a stage in the upper half of a multiplicity of intercommunicating countercurrent contacting stripping stages
(e) withdrawing overhead vapors from the uppermost of said countercurrent stages, condensing said vapors and recovering crude acetonitrile from the condensed acetonitrile vapors
(f) withdrawing from the lower section of said countercurrent stages a first lean solvent stream and returning said stream to (a) and
(g) withdrawing from the lowest of said countercurrent stages a second solvent stream, recycling the major portion of said second stream to a stage in the upper half of said extractive distillation stages and disposing of the remainder.

3,352,765
EXTRACTIVE DISTILLATION OF SULFOLANE WITH AN ISOPARAFFINIC HYDROCARBON ENTRAINER

Paul F. Warner and James L. Willis, Phillips, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,174
7 Claims. (Cl. 203—70)

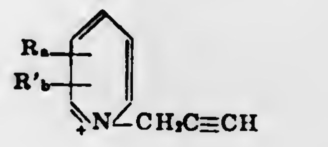
1. A process for treating a mixture of a sulfolane and by-product oil formed in the production of sulfolane so as to remove the by-product oil therefrom which comprises subjecting said mixture of sulfolane and by-product oil to extractive distillation in a zone wherein an isoparaffinic hydrocarbon which is substantially immiscible in said sulfolane and having a boiling point in the range of about 335 to 525° F. and a flash point in the range of 125 to 200° F., 760 mm. Hg, is employed therein as the entraining agent in the extraction distillation zone, and thereafter recovering by-product oil-free sulfolane as a product of the process, said extractive distillation being carried out at a kettle temperature in the range of 280 to 290° F., an overhead temperature in the range of 245 to 255° F., and a pressure of about 20 mm. Hg absolute pressure.

3,352,766
BRIGHT NICKEL PLATING PROCESS

Frank Passal, Detroit, Mich., assignor to M&T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,132
11 Claims. (Cl. 204—49)

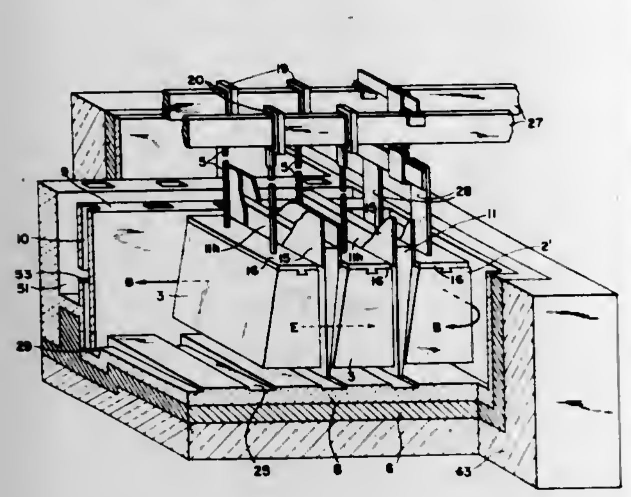
1. The process for electrodepositing nickel which comprises electrodepositing nickel from an aqueous acidic nickel electroplating bath containing a secondary brightener and, as a primary brightener, an effective amount of a compound having a cation of the structure



wherein R is an alkyl group, R′ is a hydroxy alkyl group, *a* is an integer 0–5, *b* is an integer 0–4, when *a* is 0–1, *b* is 1–4, and *a* plus *b* is less than 6.

3,352,767
MULTICELL ELECTROLYTIC FURNACE WITH SUSPENDED ELECTRODES AND METHOD OF ALUMINUM PRODUCTION

Giorgio Olah de Garab, Milan, Italy, assignor of seventy percent to Montecatini Edison S.p.A., and thirty percent to Giuseppe de Varda, both of Milan, Italy
Filed Nov. 5, 1963, Ser. No. 321,577
Claims priority, application Italy, Nov. 10, 1962, 22,215/62
19 Claims. (Cl. 204—67)



1. A furnace for electrolytic production of aluminum, comprising a vat adapted to contain a fluoride bath of dissolved alumina, a series of electrodes rigidly suspended in said vat including a plurality of terminal electrodes and at least one bipolar intermediate electrode between said terminal electrodes, consecutive electrodes of said series defining mutually spaced faces of contrary polarity, said bipolar intermediate electrode comprising a permanent portion with a face having lateral and bottom edges and a consumable portion of respectively different polarity, said consumable portion having projections extending beyond a plurality of the edges of the faces of said permanent portion so that the electrolytically active area of said consumable portion is larger than the electrolytically active area of the opposed and confronting electrodic face of the next adjacent electrode of said series.

19. In a process of producing aluminum by electrolysis of alumina in a fused salt bath in which an electric current is passed serially through a solid anodic surface, an intervening electrolysis gap of fused bath, through an intervening intermediate bipolar solid electrode providing opposite anode and permanent cathode polar surfaces, a second electrolysis gap of said bath; and eventually through a permanent cathodic surface, the anodic surfaces being consumable in the electrolysis, the improvement comprising replacing the consumed anodic surface during the electrolysis operation with carbonaceous material so as to form a polar surface greater in width and length than corresponding parallel dimensions of the permanent polar surface opposed thereto, and so that the electric current defines a cathodic current density greater than the corresponding anodic current density.

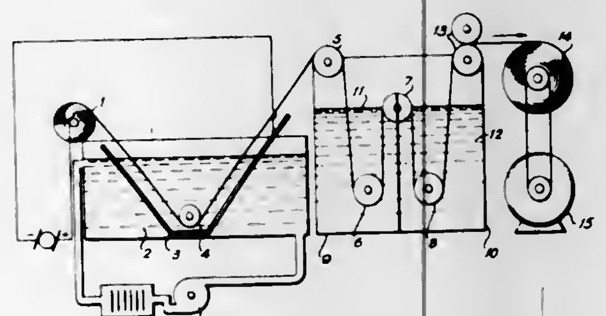
3,352,768
ACETYLENE DICARBOXYLIC ACID PROCESS

Leon Katz, Springfield, N.J., and Max E. Chiddix, Easton, Pa., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 3, 1964, Ser. No. 372,410
7 Claims. (Cl. 204—79)

1. In a process for producing acetylene dicarboxylic acid wherein 2-butynediol-1,4 is electrolytically oxidized in an aqueous sulfuric acid solution and the dicarboxylic acid is recovered from the sulfuric acid solution; the improvement which comprises contacting the sulfuric acid solution after oxidation with a water insoluble organic solvent boiling in the range of from 100 to 180° C. at atmospheric pressure selected from the class consisting of esters and ketones to extract the acetylene dicarboxylic acid from the sulfuric acid solution, separating the solvent containing the dicarboxylic acid from the sulfuric acid solution and recovering the dicarboxylic acid from the solvent by vaporization to thereby improve the efficiency of the process, to eliminate salting of the sulfuric acid solution, to eliminate drying of the solvent containing extract and to permit reuse of the sulfuric acid solution in a subsequent oxidation.

3,352,769
PROCESS FOR PRODUCING MICROPERFORATED STAINLESS STEEL SHEETS

Samuel Ruben, 52 Seacord Road,
New Rochelle, N.Y. 10804
Filed Jan. 11, 1967, Ser. No. 615,288
13 Claims. (Cl. 204—143)



1. An electrically controlled process for producing microperforated stainless steel which comprises connecting a sheet of stainless steel having a thickness between approximately .0005" and .005", containing intergranular iron chromium precipitates and containing as essential elements a preponderance of iron and a lesser but significant amount of chromium as the anode in an electrolytic cell having a non-polarizing electrolyte and a cathode and discharging direct current through said cell so as to anodically dissolve intergranular iron chromium precipitates in said sheet and to thereby produce a multiplicity of light transmitting microperforations through said sheet, the microperforations being primarily due to electrochemical action.

13. A microperforated stainless steel product produced by the process of claim 1.

3,352,770
ELECTROCHEMICAL MACHINING OF SMALL DIAMETER HOLES IN HIGH TEMPERATURE SUPERALLOYS

Joseph H. Crawford, Cincinnati, Ohio, and Robert D. Halverstadt, New Canaan, Conn., assignors to General Electric Company, a corporation of New York
Filed Nov. 2, 1966, Ser. No. 623,147
3 Claims. (Cl. 204—143)

1. An electrolytic material removal method for producing a small diameter cavity in a metallic workpiece selected from the group consisting of high temperature superalloys based on the elements Fe, Ni or Co, the steps of:

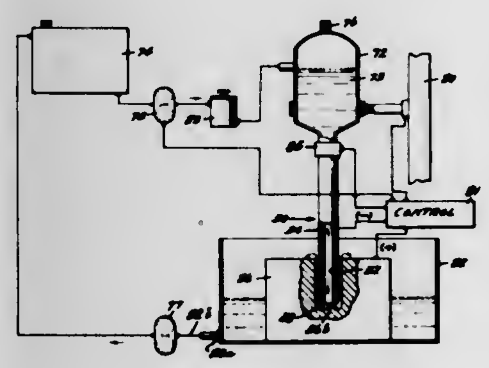
placing in spaced relationship with a surface of the workpiece a hollow electrode having
- (a) an outer lateral surface coated with a dielectric material;

- (b) a coated electrode cross-sectional diameter of 0.02–0.3"; and
- (c) a tip at one end open to the hollow interior of the electrode, the tip being uncoated on that portion which faces the workpiece surface;

passing an aqueous sulfuric acid electrolyte through the electrode and from the tip toward and in contact with the workpiece surface;

passing a predominantly direct electrical current between the electrode and the workpiece with the electrode being cathodic with respect to the workpiece; and then

moving the workpiece and electrode one toward the other at a rate of at least 1" per hour to remove material from the workpiece across a gap between the workpiece and the electrode tip to produce a cavity having walls in spaced relationship with the coated outer surface of the electrode,



the gap being controlled to provide unrestricted, low pressure flow of electrolyte from the tip through the cavity produced by
- (a) maintaining the electrolyte flow capacity through the gap and into the cavity produced at no greater than equal to the electrolyte flow capacity of the space between the walls of the cavity and the coated outer surface of the electrode, while
- (b) maintaining the electrolyte pressure at between 5–35 p.s.i.g., and
- (c) adjusting the power input within the range of about 0.8–5 amps and about 4–13 volts

to avoid high velocity and high pressure of the electrolyte leaving the gap between the electrode tip and the workpiece and cavitation and erratic movement at the tip of the electrode.

3,352,771
POLYMERIZATION OF HALO ACRYLATE MONOMERS USING ULTRAVIOLET LIGHT AND HYDROXY SUBSTITUTED BENZOPHENONE ABSORBERS

Harry D. Anspon, Kansas City, Mo., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 17, 1964, Ser. No. 352,635
6 Claims. (Cl. 204—159.23)

1. Process for polymerizing halo-acrylate monomer to produce flaw-free massive polymeric structures, which comprises adding to the monomer 0.001 to 0.1% by weight of a hydroxy substituted benzophenone ultra violet absorber which is soluble therein, placing the monomer in a mold appropriate to the desired structure and transparent to radiation, and irradiating with ultra violet light having a spectrum such that 70 to 95% of the effective radiation is absorbed and the remainder penetrates entirely through the monomer, whereby polymerization to a substantially uniform degree throughout is obtained.

3,352,772
TRIPHENYL-ARSINE, -STIBINE, -BISMUTHINE AS PHOTOPOLYMERIZATION INITIATORS FOR ORGANIC MONOMERS

Tzu J. Mao, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
No Drawing. Filed June 25, 1964, Ser. No. 378,062
5 Claims. (Cl. 204—159.24)

5. A process for the production of polymeric material which comprises irradiating a polymerizable ethylenically unsaturated organic monomer taken from the group consisting of methylstyrene, vinyl acetate, methyl vinyl ketone and vinyl butyrate with ultraviolet light in the presence therein of a small but effective amount of the initiator taken from the group consisting of triphenylbismuthine, triphenylstibine, and triphenylarsine.

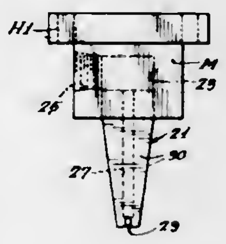
3,352,773
METHOD OF DEGRADING POLYSACCHARIDES USING LIGHT RADIATION AND A WATER-SOLUBLE METAL OR NITROGEN BASE SALT OF NITROUS OR HYPONITRIC ACID

Anthony M. Schwartz, Washington, D.C., and Charles A, Rader, Laurel, Md., assignors to Gillette Research Institute, Inc., Washington, D.C., a corporation of Delaware
No Drawing. Filed Sept. 16, 1964, Ser. No. 397,028
5 Claims. (Cl. 204—160.1)

1. In the conversion of polysaccharides to saccharides of lower molecular weight by irradiating the polysaccharide with light rich in frequencies of about 355 millimicrons, the improvement which consists in carrying out the irradiation in the presence of a water-soluble metal or nitrogen base salt of nitrous or hyponitric acid in an amount equivalent to from about 0.04 to about 5 parts by weight of sodium nitrite based on 100 parts by weight of the polysaccharide.

3,352,774
APPARATUS FOR ELECTROLYTICALLY TAPERED OR CONTOURED CAVITIES

Lynn A. Williams, Winnetka, Ill., assignor to Anocut Engineering Company, Chicago, Ill., a corporation of Illinois
Original application Feb. 20, 1961, Ser. No. 90,438, now Patent No. 3,257,300, dated June 21, 1966. Divided and this application Jan. 17, 1966, Ser. No. 534,931
3 Claims. (Cl. 204—224)



1. In an electrolytic machining apparatus for forming tapered or contoured cavities in an electrically conductive and electrochemically erodible workpiece, the apparatus having means for supporting the workpiece and an electrode for movement relatively toward each other, means for pumping an electrolyte between the workpiece and the electrode, and means connected for passing an electrolyzing current between the workpiece and the electrode, the electrode comprising an electrode body made of a conductive material having at one end thereof a working tip, electrolyte passages extending through said body from the opposite end thereof to said tip, a transverse slot in said tip interconnecting said passages, the external surface of said body flaring outwardly away from said tip to be

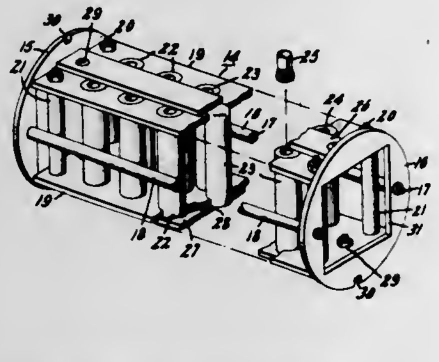
shaped complementally to the contour of the cavity to be formed, means for forming a plenum chamber secured to said body at said opposite end and in communication with said passages, and an inlet connection to said plenum chamber.

3,352,775
TUBE-TO-TUBE REACTOR

John E. McNamara, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Feb. 15, 1965, Ser. No. 432,659

4 Claims. (Cl. 204—313)



1. A corona reactor comprising:
- means capable of guiding a stream of fluent material during displacement through said reactor defining generally a flow path for said stream,
- an electrode unit including an array of first electrodes and second electrodes mounted within said guiding means and said fluent stream so that said electrodes are transversely disposed to said flow path,
- means mounted within said guide means capable of deflecting said fluid during displacement including at least one dielectric barrier between said electrodes and cause substantially complete turbulence in said stream of fluid, and means for effecting a corona discharge across said first electrodes and said second electrodes, said first electrodes and said second electrodes being spaced from one another so that a corona discharge substantially fills the spaces between said electrodes and substantially surrounds said electrode unit.

3,352,776
PROCESS FOR THE PREPARATION OF BINDER OILS

Ralph Burgess Mason, Denham Springs, and Glen Porter Hamner, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 24, 1965, Ser. No. 458,457

2 Claims. (Cl. 208—125)

1. A non-catalytic, liquid phase process for upgrading residua having an initial boiling point of 900° F.+, a molecular weight ranging from 400 to 6,000 and A.P.I. gravities of 0 to 20° which comprises:
- (A) heating an intimate blend of said residua and an organic solvent selected from the group consisting of aromatic solvents, partially hydrogenated aromatic solvents or completely hydrogenated aromatic solvents, each having a boiling range of about 150 to about 800° F. at temperatures of 650 to 850° F., for an average residence time of 0.5 to 6 hours during which said heating in the absence of said solvent is for no longer than 10 minutes to produce light products boiling up to 650° F., a product stream containing a side stream low sulfur, low metals, low Conradson carbon fuel oil component having a boiling range of 650 to 900° F. and a 900° F.+ bottoms stream binder oil precursor component;
- (B) filtering said product stream to remove insolubles therefrom;
- (C) recycling said 900° F.+ bottoms binder oil precursor component of said product stream to said heating step (A) to increase the Conradson carbon content thereof to a value greater than 40; and
- (D) withdrawing from said recycle step (C) a binder oil product having a combination of a Conradson carbon greater than 40 and a softening point ranging from 200–280° F. said steps (A), (B), and (C) being carried out in an essentially oxygen-free atmosphere.

3,352,777
OXIDATION OF MERCAPTANS

Allen K. Sparks, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 9, 1964, Ser. No. 417,202

13 Claims. (Cl. 208—206)

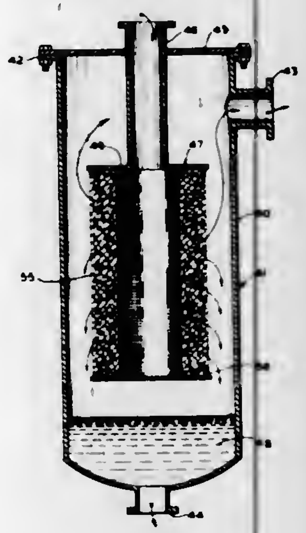
1. In the oxidation of a mercapto compound by reaction thereof with an oxidizing agent in contact with a phthalocyanine catalyst, the method of increasing the rate of oxidation of the mercapto compound which comprises effecting said oxidation in the presence of a salt having a cation selected from the group consisting of a metal in the left-hand column of Group I and in the left-hand column of Group II of the Periodic Table and an anion selected from the group consisting of sulfate, halogen, nitrate, nitrite, carbonate, acetate and benzoate.

3,352,778
SHAPED FIBERS

Joseph A. Brink, Jr., Kirkwood, Mo., and William W. Sugg, O'Fallon, Ill., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Aug. 17, 1965, Ser. No. 480,365

12 Claims. (Cl. 210—23)



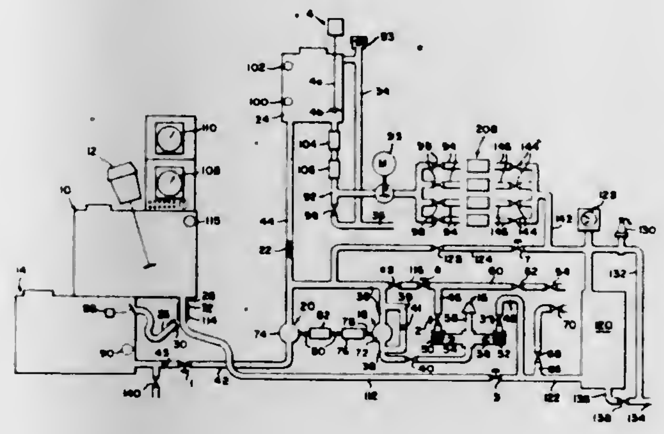
6. A process for coalescing a fluid containing two immiscible liquids which comprises passing said fluid at flow rates up to about 10 gallons per minute per square foot of fiber bed through a filter unit comprising a housing, a fiber bed containing helically convoluted polymeric fibers having a percent of convolution of at least about 100, a percent of elongation to break of at least about 25, an essentially rectangular cross section along their length with a width of from about 10 to about 100 mils and a thickness of from about 1 to about 10 mils, and a cross sectional area of from about 10 to about 1,000 square mils, said fiber bed having a percent of voidage of from about 55 to about 80, and means for retaining said fiber bed in said housing; and separately removing said liquids from said filter unit.

3,352,779
HEMODIALYSIS SYSTEM

Avery J. Austin, Seattle, and Robert S. Patch, Bainbridge Island, Wash., assignors to Sweden Freezer Manufacturing Co., Seattle, Wash., a corporation of Washington

Filed Oct. 23, 1965, Ser. No. 503,003

23 Claims. (Cl. 210—23)



1. A dialysis system comprising, dialysis stations, means for supplying dialysate concentrate, means for supplying controlled-temperature diluent, reservoir means for storing a dialysis solution, mixing means communicating with said reservoir means for intermittently mixing said dialysate concentrate with said controlled-temperature diluent in predetermined proportions to provide said dialysis solution and to maintain a dialysis solution volume in said reservoir means within predetermined limits, and means for selectively passing dialysis solution from said reservoir means to said dialysis stations.

2. A dialysis system according to claim 1 in which said dialysate concentrate supply means comprise dialysate concentrate mixing means for mixing water with dialysate chemicals to form a dialysate concentrate solution, and dialysate concentrate storing means for storing a supply of said solution.

3. A dialysis system according to claim 2 and having quick disconnect means for alternatively detachably coupling the dialysate concentrate mixing means to the dialysate concentrate storing means or to a water supply, said quick disconnected means being constructed to preclude connection of said water supply to said dialysate concentrate storing means.

3,352,780
FIRE RESISTANT-EXTREME PRESSURE AND HYDROLYSIS RESISTANT LUBRICANT COMPRISING POLYCHLORINATED DIPHENYL AND TRIARYL PHOSPHATES

Georges Gaston Groslambert, Etterbeek, Belgium, assignor to Labofina, Soc. An., Brussels, Belgium, a corporation of Belgium

Filed June 23, 1965, Ser. No. 466,192

6 Claims. (Cl. 252—33.3)

1. A fire resistant, substantially non-sludging, substantially non-corrosive fluid consisting essentially of polychlorinated diphenyl containing about .5 to 5% by weight of a tri-monocarbocyclic aryl phosphoric acid ester and stabilizing amounts of an antioxidant and of a rust inhibitor.

5. The composition of claim 1 containing as a rust inhibitor a small quantity of a compound of the group consisting of an alkaline earth metal sulfonate, a higher alkyl succinic acid and mixtures thereof.

3,352,781
STABILIZATION OF SILICONE FLUIDS

Fritz A. Buehler, Erlton, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,787

12 Claims. (Cl. 252—37.2)

6. A high temperature silicone fluid composition comprising a major proportion of a silicone fluid having the unit structure

$$R_nSiO_{4-n/2}$$

wherein R is selected from the group of alkyl, aryl, alkaryl, aralkyl, halogenated derivatives thereof, and mixtures of the said groups, and *n* is 1 to 3, and a minor proportion sufficient to provide stability thereto of (1) a sulfur compound selected from the group consisting of diphenylthiourea, thiophenol, diphenyldisulfide, tetraethylthiuramdisulfide and sodium mercaptobenzothiazole and (2) an iron-containing compound selected from the group consisting of finely-divided iron oxide and salts of aliphatic carboxylic acids.

3,352,782
LUBRICATING COMPOSITIONS CONTAINING POLYAMINE SALTS

Jay Brasch, Elizabeth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

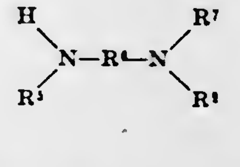
No Drawing. Filed Nov. 22, 1963, Ser. No. 325,757

12 Claims. (Cl. 252—47.5)

1. A process for preparing an oil-soluble additive having sludge dispersing properties which comprises reacting 1 mole of the chlorosulfate of a C_2 to C_5 olefin polymer having a total of from 30 to 250 carbon atoms with from about 0.25 to 3.0 moles of a polyamine at a temperature in the range of from 0 to 200° C. for from about 0.5 to 10 hours, said polyamine being selected from the group consisting of ethylene diamine, an amine of the formula:

$$H_2N(CH_2)_n-[NH(CH_2)_n]_m-NH(CH_2)_nNH_2$$

wherein *n* is 2 to 3 and *m* is zero to 10, and an amine of the formula:



$$(H)(R^5)N-R^6-N(R^7)(R^8)$$

wherein R^5 is selected from the group consisting of hydrogen and C_1 to C_5 alkyl radical, wherein R^6 is a divalent alkylene radical, wherein R^7 and R^8 are alkyl radicals, and wherein the sum of the carbon atoms in R^6, R^7, and R^8 is from 3 to 10.

11. A lubricating oil composition comprising a major amount of a lubricating oil and from 0.001 to 20 wt. percent of an oil-soluble additive prepared by the process of claim 1.

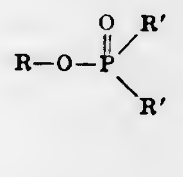
3,352,783
HYDRAULIC FLUID

Robert S. McCord, Pacific Palisades, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,588

8 Claims. (Cl. 252—78)

1. A composition consisting essentially of an aryl dialkyl phosphinate having the formula



$$R-O-\overset{O}{\overset{\|}{P}}(R')R'$$

where R is an aryl group selected from the class consisting of phenyl and naphthyl, and R' is an alkyl group containing from 4 to 8 carbon atoms, and from about 0.5% to about 10% by weight of a material selected from the group consisting of polyalkyl methacrylates wherein the alkyl groups contain an average of from about 3 to 10 carbon atoms, and having an average molecular weight in the range from about 7,000 to about 12,000 polyalkylene glycols, wherein the alkylene groups contain from 2 to 3 carbon atoms, and having a range of viscosity of about 1,400 to about 23,000 centistokes at 100° F., urethane polymer liquids, and liquid methyl phenyl silicone polymers having a viscosity in the range of about 450 to about 575 centistokes at 100° F., said material being compatible with said phosphinate and effective to increase the viscosity index to at least 75.

3,352,784

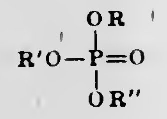
FIRE RESISTANT HYDRAULIC FLUID AND LUBRICANT COMPOSITION

Donald H. Nail, Los Angeles, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

No Drawing. Filed Nov. 4, 1964, Ser. No. 408,753

10 Claims. (Cl. 252—78)

1. A fire resistant hydraulic fluid and lubricant consisting essentially of a mixture of about 10 to about 90% by weight of a phosphate ester having the formula



$$R'O-\overset{OR}{\underset{OR''}{P}}=O$$

wherein R is a radical selected from the group consisting of phenyl, cresyl and xylyl, and R' and R'' are radicals selected from the group consisting of phenyl, cresyl, xylyl, and an alkyl radical of from about 4 to about 12 carbon atoms, and about 10 to about 90% by weight of a chlorinated diphenyl ether containing in the range from about 1 to about 6 chlorine atoms per molecule and a combined chlorine content in the range of about 15 to about 59% by weight.

3,352,785

STABLE DISHWASHING COMPOSITIONS CONTAINING SODIUM DICHLOROISOCYANURATE

Duncan S. Corliss, Roselle, N.J., Russell R. Keast, Yardley, Pa., and John S. Thompson, Princeton Junction, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 18, 1965, Ser. No. 465,182

8 Claims. (Cl. 252—99)

1. A dishwashing detergent composition having good stability against loss of available chlorine which contains as essential ingredients:

(a) from 10 to 50% by weight of an alkali metal silicate having an M_2O to SiO_2 mol ratio of 0.5:1 to 1.5:1, wherein M is sodium or potassium,

(b) from 10 to 30% by weight of a member selected from the group consisting of sodium hydroxide or potassium hydroxide,

(c) from 2 to 6% by weight of sodium dichloroisocyanurate,

(d) from 20 to 60% of a polyphosphate selected from the group consisting of sodium polyphosphates and potassium polyphosphates having an R_2O to P_2O_5 mol ratio of 1:1 to 2:1, wherein R is sodium or potassium, and

(e) from 0.5 to 5% by weight of a low-foaming nonionic surface active agent compatible with said sodium dichloroisocyanurate.

3,352,786

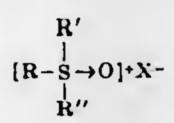
SULFOXONIUM COMPOUNDS

Jim S. Berry, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Original application Apr. 2, 1962, Ser. No. 184,549, now Patent No. 3,196,184, dated July 20, 1965. Divided and this application Nov. 16, 1964, Ser. No. 411,639

4 Claims. (Cl. 252—106)

1. A bacteriostatic composition consisting essentially of a detergent surface active agent selected from the group consisting of anionic, nonionic and cationic surfactants and from 1% to about 20% of a high molecular weight sulfoxonium compound corresponding to the structural formula:



$$[R-\overset{R'}{\underset{R''}{S}}\rightarrow O]^{+}X^{-}$$

wherein R is an alkyl radical containing from 10 to 20 carbon atoms,

R' and R'' each are selected from the group consisting of lower alkyl, benzyl, chlorinated benzyl and alkyl benzyl wherein the alkyl substituent contains from 1 to about 4 carbon atoms,

and wherein X represents an anionic substituent.

3,352,787

INHIBITION OF PLASTIC CRAZING

Charles M. Bodach, Morton Grove, Ill., assignor, by mesne assignments, to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Dec. 11, 1963, Ser. No. 329,878

10 Claims. (Cl. 252—108)

1. The method of washing a stressed acrylic base sheet which comprises applying thereto an aqueous solution of a polyethoxylated non-ionic surfactant which normally exhibits crazing properties when applied to stressed acrylic base sheets and from $\frac{1}{20}$ to 5 times the weight of the nonionic surfactant, of a water-soluble ionic surfactant selected from the group consisting of alkyl benzene sulfonates having from 6 to 20 carbons in the alkyl group, xylene sulfonates, lignosulfonates, tall oil salts, petroleum sulfonates, lauryl alcohol sulfate, and diisobutyl phenoxy ethoxy dimethyl benzyl ammonium chloride.

3,352,788

ACTIVATED CARBON COMPOSITIONS

John R. Conlisk, Harford, Md., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 26, 1965, Ser. No. 482,901

8 Claims. (Cl. 252—161)

1. A composition of matter consisting essentially of an activated carbon powder granulated with a temporary surface active liquid binder, selected from the group consisting of anionic, cationic and nonionic detergents the volume of liquid binder present in said composition being withn the range of 40 percent to 105 percent of the available pore volume.

3,352,789

STABILIZATION OF CHLOROFLUOROALKANES

Edward R. Degginger, Syracuse, N.Y., and William A. Knapp, Montclair, and Hans E. Zuern, Parsippany, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 10, 1964, Ser. No. 336,862

7 Claims. (Cl. 252—171)

1. A composition resistant to reaction with primary and secondary alcohols which consists essentially of at least one of a chlorofluoroalkane of the group consisting of trichlorofluoromethane, trichlorotrifluoroethanes and

tetrachlorodifluoroethanes and from about 0.1 to about 5% by weight based on the chlorofluoroalkane at least one of an unsaturated organic compound of the group consisting of anethole, indene, dimethyl hexadiene, piperylene, meta-diisopropenylbenzene, 1,3,5-triisopropenylbenzene, 1-(p-methoxyphenyl)-2-nitro-1-propene and 1-methoxy-1,3-butadiene.

3,352,790

PROCESS AND COMPOSITIONS FOR DRY CLEANING

Jeal Sugarman, Flushing, N.Y., and Fred E. Woodward, Watchung, Plainfield, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 21, 1964, Ser. No. 346,414

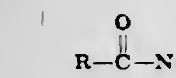
16 Claims. (Cl. 252—171)

1. A dry cleaning detergent composition comprising

(a) from about 90 to 99.8 parts by weight of a dry cleaning solvent and,

(b) as the detergent from about 0.2 to about 10 parts by weight of a phosphate ester of a nonionic surface active agent, said ester being selected from the class consisting of mono- and di-phosphate esters and mixtures thereof, in their free acid form, sodium salt form or amine salt form; said non ionic surface active agent having the molecular configuration of a condensation product of

(1) an organic compound containing a reactive hydrogen atom selected from the group consisting of R—OH, R—SH, R—COOH, $R—NH_2$,



$$R-\overset{O}{\overset{\|}{C}}-NH_2$$

and $R—SO_2NH_2$ compounds, wherein R is a hydrocarbon radical of from 8 to 60 carbon atoms, and

(2) at least one mole of an alkylene oxide containing 2 to 4 carbon atoms and up to about 75–95 weight percent of total combined alkylene oxide, the upper limit of 75% for ethylene oxide, an 85% upper limit for propylene oxide and the 95% upper limit for butylene oxide.

3,352,791

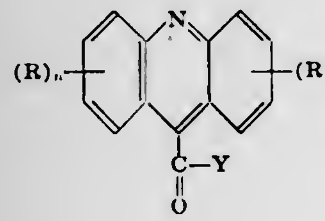
GENERATION OF LIGHT BY THE REACTION OF PEROXIDE WITH HETEROCYCLIC DERIVATIVES

Desmond Sheehan, Norwalk, Rose Ann Clarke, Greenwich, and Michael McKay Rauhut, Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

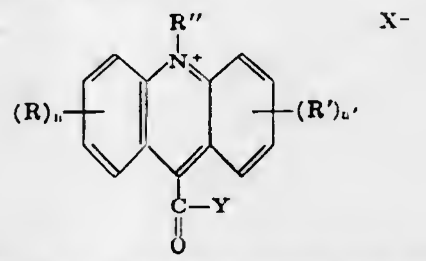
No Drawing. Filed Jan. 22, 1965, Ser. No. 427,459

12 Claims. (Cl. 252—188.3)

1. A chemiluminescent reactant comprising a compound selected from the group consisting of (1) an acridine-9-carboxylic acid compound represented by the formula:



and (2) a salt of acridine-9-carboxylic acid compound represented by the formula:



in which R and R' are each substituents selected from the group consisting of (1) halogen, (2) alkyl, aryl, aryl fused in the manner of benz-substituents, acyl, alkenyl, aroyl, dialkylamino, alkoxy, diarylamino, acylamino, arylsulfonylamino, aryloxy, alkylthio, and arylthio; in which Y is selected from the group consisting of (1) a halogen and (2) an anhydride-forming group; in which *n* and *n'* each represents a number less than 5; in which R'' is selected from the group consisting of hydrogen, alkyl, aryl, acyl, and aroyl substituents; and in which X^- is an anion; said chemiluminescent reactant including at least one additional ingredient necessary to produce chemiluminescent light.

3,352,792

ODOR INHIBITING COMPOSITION

John B. Clark, Whiting, Ind., and Hulda Clark, Whiting, Ind. (325 N. Clark St., Bloomington, Ind. 47401); said John B. Clark assignor to said Hulda Clark

No Drawing. Filed July 6, 1964, Ser. No. 380,645

1 Claim. (Cl. 252—193)

A deodorant for animal litter consisting essentially of a homogeneous mixture of approximately $\frac{1}{20}$ of one part by weight of magnesium carbonate and 100 parts by weight of borax.

3,352,793

COOLING WATER TREATMENT AND COMPOSITIONS USEFUL THEREIN

Reed S. Robertson, Glen Ellyn, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Feb. 5, 1964, Ser. No. 342,799

5 Claims. (Cl. 252—389)

2. A treated industrial cooling water which comprises a major portion of an industrial cooling water having a tendency to corrode and foul metal surfaces in contact therewith, and a minor portion of a composition present in an amount sufficient to inhibit said tendency, said composition consisting essentially of 10–90% by weight of a water-soluble chromate compound selected from the group consisting of chromate and dichromate salts, 5–40% by weight of water-dispersible natural tannin having been modified by reaction with a material selected from the group consisting of an alkali metal sulfite, an alkali metal bisulfite, ammonium bisulfite, ammonium sulfite, an alkali metal haloacetate, an alkali metal halopropionate, an alkali metal halobutyrate, ammonium cyanide, an alkali metal cyanide, ammonium thiocyanate, an alkali metal thiocyanate, nitric acid and sulfuric acid, and 10–70% by weight of a water-soluble sulfonate compound selected from the group consisting of lignosulfonates and naphthalene sulfonate.

3,352,794

PROCESS FOR MAKING A TEMPERATURE SENSITIVE COLOR REVERSIBLE PIGMENT AND RESULTING PRODUCT

Daniel A. Abdo, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

No Drawing. Filed July 7, 1964, Ser. No. 380,928

8 Claims. (Cl. 252—408)

1. A composition of matter having reversible temperature-dependent color characteristics comprised of an im-

pure iodide of silver and mercury wherein the molecular ratio of silver iodide to mercuric iodide varies from 4.0 to 80.0 and the impurity is a compound providing a source of nitrate ions.

7. A process for making a reversible temperature-dependent color characteristic composition comprising the steps of (a) reacting ionized silver nitrate and potassium iodide which results in a distinguishable precipitate, (b) aging the precipitate until an olive drab color results, (c) reacting the precipitate with mercuric iodide, and (d) cycling the temperature of the reaction product of step (c) below its decomposition temperature thus setting the color changes of the reaction product.

3,352,795

MOLYBDENUM OXIDE POLYMERIZATION CATALYST

John W. Shepard, Yokohama, Japan, and Edwin F. Peters, Lansing, and Omar O. Juveland, South Holland, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Feb. 16, 1966, Ser. No. 527,804

5 Claims. (Cl. 252—442)

1. As a composition of matter, a catalyst useful for the polymerization of 1-alkenes to normally solid polymers, which comprises (a) a minor amount of an oxide of molybdenum in a sub-maximum valence state, supported on (b) a major amount of a high surface area alumina, said oxide in combination with said alumina having been contacted with a hydrogen halide in the vapor phase at a first temperature of about 300° C. for at least about 0.25 hour and at a second temperature of about 500° C. for at least about 0.25 hour and (c) a member of the group consisting of sodium, lithium and calcium.

3,352,796

CATALYST FOR HYDROCARBON CONVERSIONS

Charles Newton Kimberlin, Jr., and Elroy Merle Gladrow, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 11, 1962, Ser. No. 222,924

10 Claims. (Cl. 252—455)

1. An improved process for preparing crystalline alumino-silicate zeolite catalyst for use in fluidized bed operation which comprises maintaining a silica hydrosol at a pH in the range of 4.8 to 6.5 to allow said silica hydrosol to convert to a hydrogel, reverting said hydrogel to a hydrosol and admixing therewith a crystalline alumino-silicate zeolite, subjecting the admixture of silica and crystalline alumino-silicate zeolite to spray drying to form a material comprising zeolite embedded in a siliceous mixture and characterized by high porosity and spherical particle structure thereby being obtained.

3,352,797

THALLIUM OXIDE GLAZE CONTAINING AN ADDITIVE OF RUTHENIUM OXIDE

Kee Hyong Kim, Niagara Falls, N.Y., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 27, 1965, Ser. No. 428,525

14 Claims. (Cl. 252—514)

1. A conductive composition suitable for electric resistors comprising a mixture of thallium oxide and ruthenium dioxide intimately dispersed in a glassy matrix, the glass comprising said matrix being selected from the group consisting of borosilicate and phosphate glasses.

3,352,798

CROSS-LINKING COATING POLYMERS WITH POLYSULFONAZIDES

David S. Breslow and Frank E. Piech, Wilmington, Del., assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed June 17, 1964, Ser. No. 375,947

12 Claims. (Cl. 260—2)

1. A process of cross-linking a polymer selected from the group consisting of nitrocellulose, ethyl cellulose, saturated alkyd resins, triallyl pentaerythritol ethers, triallyl pentaerythritol esters, chlorinated natural rubber, poly(ethylene oxide), and vinylidene chloride-acrylonitrile copolymers, which comprises heating said polymer at a temperature of from about 100° C. to about 250° C. in admixture with from about 0.1% to about 25% by weight of a polysulfonazide cross-linking agent having the formula $R(SO_2N_3)_x$ where x is an integer greater than 1 and R is an organic radical inert to the cross-linking reactions.

3,352,799

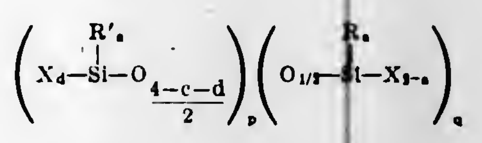
ORGANOSILICONCARBODIIMIDE POLYMERS AND PROCESS FOR THEIR PREPARATION

Johann F. Klebe and James G. Murray, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed June 22, 1966, Ser. No. 559,397

5 Claims. (Cl. 260—2)

1. A process for the preparation of poly(organosilicon) carbodiimides which comprises forming a mixture of (1) a silicon compound containing silicon-halogen bonds, said silicon compound selected from the class consisting of halosilanes of the formula $R_a—Si—X_{4-a}$ and halo-organosiloxanes of the formula



$$\left(X_d-\overset{R'_c}{\overset{|}{Si}}-O_{\frac{4-c-d}{2}}\right)_p\left(O_{1/2}-\overset{R_a}{\overset{|}{Si}}-X_{3-a}\right)_q$$

and (2) a bis(triorganosilyl)carbodiimide of the formula $R''_3—Si—N=C=N—Si—R''_3$ wherein R, R′ and R″ are members of the class consisting of alkyl, cycloalkyl, aryl, aralkyl, alkaryl, alkenyl, cyanoalkyl and halohydrocarbon; and X is a halogen, a has a value of 1 or 2, c has a value of from 1 to 3, d has a value 0 or 1, the sum of $c+d$ being from 1 to 3 and p and q are integers having a value of at least 1 and heating the mixture to a temperature of from about 75° C. to 300° C. to cause said silicon compound and said bis(triorganosilyl)carbodiimide to react to produce said poly(organosilicon)carbodiimides.

3,352,800

POROUS SYNTHETIC ION EXCHANGE CATALYSTS AND PREPARATION THEREOF

Robert B. Smith, Pitman, and William E. Garwood, Haddonfield, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,618

9 Claims. (Cl. 260—2.2)

1. A method for producing an ion exchange resin that comprises forming a synthetic aromatic polymer selected from the group consisting of phenolic-aldehyde resins, cracking coke, and cross-linked vinyl aromatic polymers in and on a three-dimensional crystalline aluminosilicate, leaching out at least a part of the alumina content with strong mineral acid, and introducing ionic groups into the polymer.

3,352,801

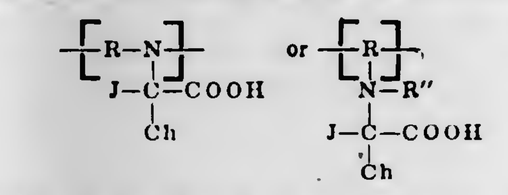
SEQUESTERING ION EXCHANGE RESINS

Le Roy A. White, Root Road, Somers, Conn. 06604

No Drawing. Filed Mar. 16, 1964, Ser. No. 352,370

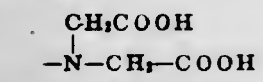
14 Claims. (Cl. 260—2.2)

1. An ion exchange chelating resin having a plurality of repeating units therein having the formula



Wherein Ch is selected from the group of chelating components consisting of

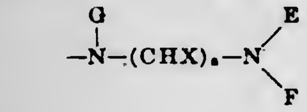
(1)



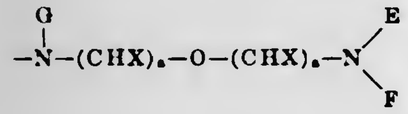
$$-\overset{CH_2COOH}{\overset{|}{N}}-CH_2-COOH$$

and the following having 2 or 3 amino or ether coordinating groups and 2 or more acid groups:

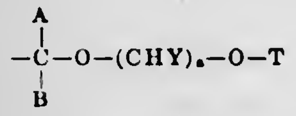
(2)



(3)

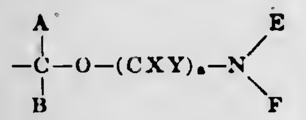


(4)

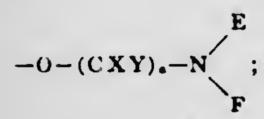


(5) $-O-(CHY)_a-O-T;$

(6)

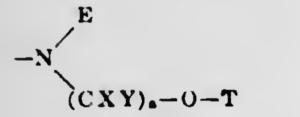


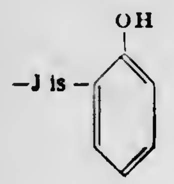
(7)



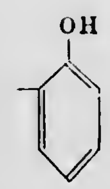
; and

(8)

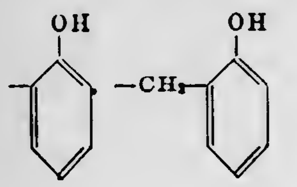


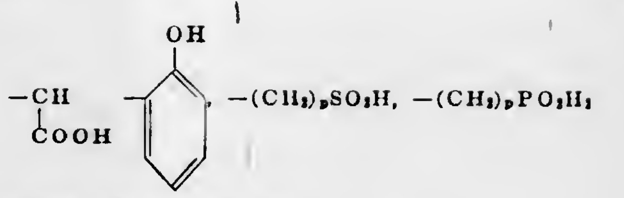


—H or —COOH; —R″ is —H or a lower alkyl group; a is an integer of 1–3; —X is —H or not more than one unit of $-(CH_2)_6COOH$ per sequestering molecule; —K is —H or

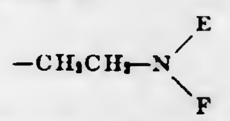


—E, —F and —G are —H, CH_2COOH, $-CH(COOH)_2$, $-CH_2CH_2OH$, $-CH_2CH_2OCH_2CH_2OH$,

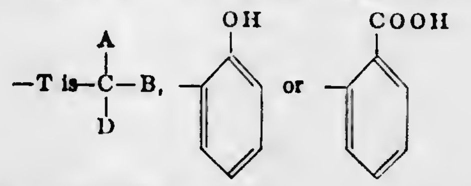




or not more than one unit of

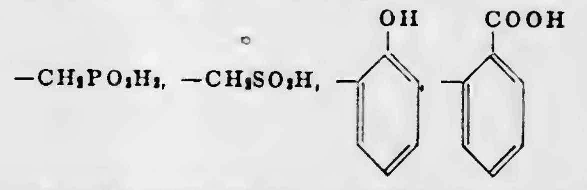


per sequestering molecule; p is an integer of 0–2;

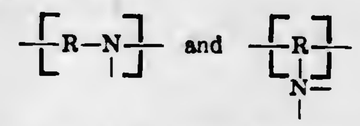


—Y is —H, —COOH or —OH;

—A, —B and —D are —CHOH-COOH, CH_2COOH, —COOH, —H, $-SO_2OH$, $-PO_3H_2$,



or not more than one unit of $-(CHY)_a-O-T$ per sequestering molecule; and



signify repeating amine or imine groupings in the chelating resin.

3,352,802

RIGID RETICULATED STRUCTURE AND METHOD OF USE THEREOF

William R. Powers, Penns Grove, N.J., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 28, 1964, Ser. No. 348,298

4 Claims. (Cl. 260—2.5)

1. A process for producing a rigid, reticulated polyvinyl foam body, comprising the steps of: permeating a body of plasticized vinyl halide polymer foam containing a large number of cell membranes with an explosive gas selected from the group consisting of acetylene, methane, ethane, propane, ethylene and dimethylether and oxygen-enriched air, igniting said gas mixture and thereby propagating a flame front through said body to remove said cell membranes and produce a reticulated polyvinyl foam, removing said plasticizer by contacting the reticulated body with a fluid capable of leeching said plasticizer from said reticulated foam body.

3,352,803

PREPARATION OF FOAMED POLYURETHANE ELASTOMERS FROM (A) A POLYETHER, (B) DICYCLOHEXYLMETHANE DIISOCYANATE OR HEXAMETHYLENE DIISOCYANATE, (C) HYDROGEN PEROXIDE, (D) WATER, AND (E) A CATALYST

Wilfrid Henry Hogg, Sutton Coldfield, Cedric Hartle, Romily, and Peter Merriman, Birmingham, England, assignors to Dunlop Rubber Company Limited, a British company

No Drawing. Continuation of application Ser. No. 393,384, Aug. 31, 1964. This application Apr. 12, 1967, Ser. No. 630,460

Claims priority, application Great Britain, July 7, 1960, 23,731/60

16 Claims. (Cl. 260—2.5)

1. A method of producing a foamed polyurethane elastomer which comprises mixing a polyurethane pre-

polymer having terminal isocyanato groups, being the reaction product of a polyether containing at least two —OH groups in the molecule and dicyclohexylmethane diisocyanate with hydrogen peroxide, with water and with a catalyst selected from the class consisting of triethylene diamine, dialkyl tin diesters of fatty acids having from 3 to 5 carbon atoms in each alkyl group and divalent tin soaps, and allowing the water to react with the polyurethane prepolymer to expand the prepolymer into a foamed condition, and simultaneously effect cross-linking of the foamed prepolymer.

9. A method of producing a foamed polyurethane elastomer which comprises mixing a polyurethane prepolymer having terminal isocyanato groups, being the reaction product of a polyether containing at least two —OH groups in the molecule and hexamethylene diisocyanate with hydrogen peroxide, with water and with a catalyst selected from the class consisting of triethylene diamine, dialkyl tin diesters of fatty acids having from 3 to 5 carbon atoms in each alkyl group and divalent tin soaps, and allowing the water to react with the polyurethane prepolymer to expand the prepolymer into a foamed condition, and simultaneously effect cross-linking of the foamed prepolymer.

3,352,804
PENTAERYTHRITOL MODIFIED EPOXY RESINS

Jack Blatchley Harrison, Leslie Donald Hignett and James Keith Gentles, Liverpool, England, assignors to Goodlass Wall & Co. Limited, Liverpool, England, a British company
No Drawing. Continuation of application Ser. No. 179,490, Mar. 13, 1962. This application May 19, 1966, Ser. No. 551,467
Claims priority, application Great Britain, Mar. 15, 1961, 9,451/61
11 Claims. (Cl. 260—18)

1. A process for the production of a modified epoxy resin which comprises the steps of heating an epoxide resin having an epoxide equivalent in the range of 190 to 210 and having terminal epoxide groups with pentaerythritol in proportions such that there are at least two epoxide groups for each hydroxyl group of the pentaerythritol to a temperature in the range of 180° C. to 230° C. for a period of at least 5 hours and cooling the product so formed, the modified resin produced thereby having an epoxy equivalent which is not more than 850 and a hydroxy equivalent not in excess of 240.

6. A coating composition comprising at least one reactive compound selected from the group consisting of diisocyanates, diisocyanate polyhydric alcohol adducts, interreaction of polymeric fatty acids and polyamines and a modified epoxide resin, obtained by a process which comprises the steps of heating an epoxide resin having an epoxide equivalent in the range of 190 to 210 and having terminal epoxide groups with pentaerythritol in proportions such that there are at least two epoxide groups for each hydroxyl group of the pentaerythritol to a temperature in the range of 180° C. to 230° C. for a period of at least 5 hours and cooling the product so formed, the modified epoxide resin so produced having an epoxide equivalent of not more than 850 and a hydroxyl equivalent of 210 to 240.

3,352,805
POLISH CONTAINING BIS(2-BUTOXYETHYL) 2-BUTOXYETHYLPHOSPHONATE

Daniel A. Lima, Westport, Conn., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 13, 1966, Ser. No. 549,809
1 Claim. (Cl. 260—28.5)

In a floor polish composition of the emulsion type consisting essentially of a major portion of a water-insoluble polymer, including a waxy material, and a minor proportion of an ammonia-soluble leveling resin, and from 1 to 2% leveling agent, based on the total polish, the improvement which consists in using as the leveling agent bis(2-butoxyethyl) 2-butoxyethylphosphonate.

3,352,806
PROCESS FOR PREPARING AQUEOUS CARBOXY CONTAINING COPOLYMER SOLUTIONS

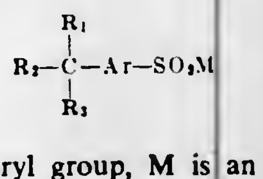
Darrell D. Hicks, Louisville, Ky., assignor to Celanese Coatings Company, a corporation of Delaware
No Drawing. Filed Dec. 29, 1964, Ser. No. 421,999
15 Claims. (Cl. 260—29.4)

1. A process for preparing aqueous carboxy containing copolymer solutions which comprises forming a solution of a mono ethylenically unsaturated carboxylic acid monomer, a different mono ethylenically unsaturated monomer copolymerizable therewith and a water soluble non-volatile polyhydric alcohol which is a solvent for the monomers and the copolymer of said monomers, heating the solution to copolymerize the monomers and to form a carboxy containing copolymer at a temperature sufficiently low to prevent any significant reaction between the alcohol, the monomers and the carboxy containing copolymer reaction product and forming a carboxy containing copolymer dissolved in the alcohol, and adding to the copolymer-alcohol solution water, and at least one member of the group consisting of ammonia and an amine in sufficient amount to render the carboxy copolymer water soluble.

3,352,807
PROCESS OF PREPARING STABLE UNOXIDIZED POLYETHYLENE EMULSIONS

Arthur F. Helin and Gerald J. Mantell, Kansas City, Mo., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Apr. 19, 1965, Ser. No. 449,265
22 Claims. (Cl. 260—29.6)

21. An aqueous emulsion containing unoxidized polyethylene particles having an inherent viscosity of at least 0.40 with said particles having associated thereon an emulsifier comprising at least 50 weight percent of an alkali metal salt of an α-C substituted alkylaryl sulfonate having the structure



$$R_2-\overset{R_1}{\underset{R_3}{C}}-Ar-SO_3M$$

wherein Ar is an aryl group, M is an alkali metal, R_1 is selected from the group consisting of hydrogen and aliphatic hydrocarbon radicals, R_2 and R_3 are aliphatic hydrocarbon radicals with the total number of carbon atoms in all of the groups R_1, R_2 and R_3 together totaling a number from 7 to 17, and said particles having a size providing a "Spectronic 20" light transmission reading of at least 40 based on the sample of said emulsion diluted to 0.06 percent solids.

3,352,808
GRAFT COPOLYMERS OF STYRENE AND BUTADIENE ONTO POLYVINYL LACTAM HOMOPOLYMERS

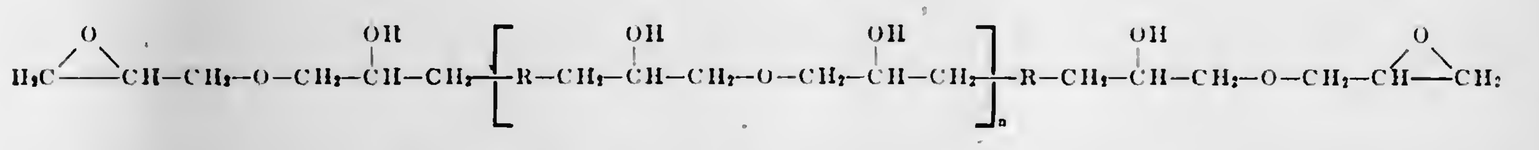
Marvin R. Leibowitz, Eldson, and Frederick Grosser, Midland Park, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 9, 1963, Ser. No. 307,366
8 Claims. (Cl. 260—29.7)

1. The process of producing interpolymers of an N-vinyl lactam with styrene and butadiene which comprises subjecting a mixture of styrene and butadiene in an aqueous solution of a water-soluble homopolymer of an N-vinyl lactam to polymerization conditions in the presence of a water soluble emulsifying agent and a water soluble hydroperoxide polymerization catalyst, the ratio of homopolymer of N-vinyl lactam to styrene and butadiene being in the range of 5:95 to 60:40 by weight and the ratio of styrene to butadiene being in the range of 5:95 to 50:50.

3,352,809
POLYGLYCIDYL ETHER OF A POLYHYDRIC COMPOUND WITH A MINOR AMOUNT OF A POLYEPOXIDE FORMED BY THE REACTION OF DIGLYCIDYL ETHER WITH A POLYHYDRIC PHENOL

Robert L. Carlyle and Glenn E. Gaumer, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Nov. 5, 1963, Ser. No. 321,433
5 Claims. (Cl. 260—30.4)

1. An epoxy resin composition characterized by an improved ability to suspend finely divided solids comprising a polyglycidyl ether of a polyhydric phenol or a polyhydric alcohol having intimately mixed therewith from 0.5 to about 30 weight percent of a different polyepoxy polyhydric ether having the general formula

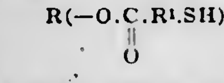


wherein R is a polyhydric phenol moiety and *n* is an integer such that the molecular weight of said polyepoxy polyhydric ether is from about 370 to about 4000.

3,352,810
EPOXY RESIN COMPOSITIONS

Grant McLay Cameron and Angus John Duke, Cambridge, England, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Sept. 14, 1965, Ser. No. 487,317
Claims priority, application Great Britain, Oct. 2, 1964, 4,030/64
5 Claims. (Cl. 260—30.8)

1. Curable compositions comprising (1) a 1,2 - epoxy resin having a 1,2 - epoxy having an epoxide content of about 3.8 to 5.88 epoxide equivalence per kilogram and selected from the group consist of polyglycidyl esters, polyglycidyl ether and amino polyepoxides (2) a curing agent therefor, and (3), as a flexibilizer, an ester of a mercaptocarboxylic acid with a polyol wherein said ester is of the general formula



$$R(-O.\underset{\underset{O}{\|}}{C}.R^1.SH)_n$$

where R denotes a hydrocarbyl group of at least 7 consecutive atoms said chain containing at least 3 carbon atoms and the atoms of the chain selected from the group consisting of carbon and oxygen, said hydrocarbyl group containing no consecutive oxygen atoms, R^1 denotes an alkylene group and *n* denotes an integer of at least 2 and at most 6.

3,352,811
POLYTETRAFLUOROETHYLENE DISPERSIONS

Mille Stand, 500 E. 83rd St., New York, N.Y. 10028
No Drawing. Filed Jan. 23, 1967, Ser. No. 610,754
3 Claims. (Cl. 260—31.2)

1. A fluid composition in the form of a dispersion of from 5 to 18% polytetrafluoroethylene in a liquid medium, which medium consists essentially of a mixture of

(1) polymeric perhalogenated carboxylic acid of 0.5% to 3.0% by weight having the general formula:

$Cl(CF_2CFCl)_xCF_2COOH$ (where *x* has an integer value within the range of 5 to 8)

(2) trichlorotrifluoroacetone of 0.75% to 4.0% by weight

$CCl_2F—CO—CClF_2$, and

(3) the remainder a methyl ketone having a boiling point less than 102 degrees centigrade.

3,352,812
CONCRETE JOINT SEALANT CONTAINING CARBON BLACK, ZINC OXIDE AND POLYSULPHIDE ALDEHYDE COPOLYMER

Thomas M. Parham, Jr., Colonial Heights, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 10, 1964, Ser. No. 388,715
11 Claims. (Cl. 260—31.8)

1. A one-component polysulfide sealant consisting essentially of a normally solid elastometric high molecular weight copolymeric polysulfide having the formula

$$(CH_2S_2)_m—(CH_2CH_2OCH_2CH_2S_2)_n$$

wherein *n* and *m* are integers, and 10% to 25% by weight carbon black, with 2% to 17% by weight zinc oxide, both based on the weight of polysulfide, provided that the combined amounts of carbon black and zinc oxide are sufficient to substantially eliminate plastic flow of the polysulfide at ambient temperatures in the sealant composition, but are not so great as to necessitate temperatures that degrade the polysulfide when the sealant composition is heated to its flow point.

3. A one-component polysulfide sealant composition according to claim 1 containing 5 to 10% by weight plasticizer based on the weight of polysulfide.

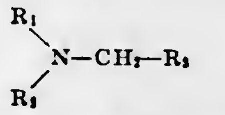
3,352,813
CURABLE COMPOSITIONS COMPRISING A POLYGLYCIDYL ETHER OF A NOVOLAC RESIN, A TERTIARY AMINE, AND A DIALKYL PHTHALATE

Barry James Hayes, Dorking, England, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Mar. 22, 1966, Ser. No. 536,296
Claims priority, application Great Britain, Apr. 8, 1965, 14,965/65
7 Claims. (Cl. 260—31.8)

1. A curable composition of matter consisting essentially of

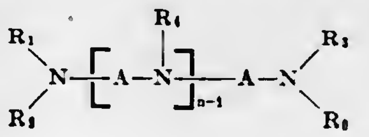
(a) a polyglycidyl ether of a novolac resin;

(b) as curing agent a tertiary amine selected from the group consisting of (1) monoamines of the formula



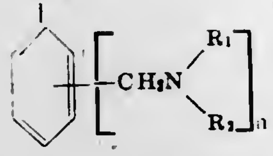
$$\genfrac{}{}{0pt}{}{R_1}{R_2}\!\!>N-CH_2-R_3$$

wherein R_1 and R_2 each are alkyl groups with 1 to 3 carbon atoms, and R_3 is a member of the group consisting of alkyl of at most 6 carbon atoms, hydroxyalkyl of at most 6 carbon atoms, aralkyl, cycloalkyl and aryl group, (2) polyamines of the formula



$$\genfrac{}{}{0pt}{}{R_1}{R_2}\!\!>N-\left[A-\overset{R_4}{\overset{|}{N}}\right]_{n-1}-A-N\!\!<\genfrac{}{}{0pt}{}{R_3}{R_5}$$

wherein R_1 and R_2 each are alkyl groups with 1 to 3 carbon atoms, A is an alkylene radical of 2 to 3 carbon atoms, R_4, R_5 and R_6 each are members selected from the group consisting of hydrogen and alkyl group with 1 to 3 carbon atoms, and *n* is an integer of at least 1 and at the most 3, and (3) polyamines of the formula



where R_1 and R_2 each are alkyl groups with 1 to 3 carbon atoms and *n* is an integer of at least 1 and at the most 3; and (c) a dialkyl ester of ortho-phthalic acid, in which each alkyl group contains from 2 to 8 carbon atoms, said tertiary amine being present in an amount of at least 8 parts of tertiary amine per 100 parts by weight of resin.

3,352,814
METHOD FOR MAKING CERAMIC BODIES

Glenn A. Collins, Jr., and Frederick L. Phelps, Jr., North Wales, Pa., assignors to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware

No Drawing. Filed June 28, 1963, Ser. No. 291,246

10 Claims. (Cl. 260—41)

1. A method for manufacturing a unitary solid body from inorganic solid particulate material comprising the steps of mixing said inorganic solid particulate material with an aqueous liquid containing dissolved phosphate in an amount of from about .5 to 4 mols per liter, dissolved metal in an amount of from about .2 to 4 mols per liter, and dissolved material selected from the group consisting of chromate and molybdate, said dissolved material in an amount of from about .3 to 3 mols per liter, said particulate material being substantially insoluble in said aqueous liquid and, comprising 50 to 98% by weight of said resulting mixture, shaping said mixture to form a self-sustaining unitary solid body therefrom, and then heating said body to water-insolubility, said solid particulate material being sufficiently refractory to withstand said heating.

5. A method as set forth in claim 1 wherein said aqueous liquid has admixed therein polytetrafluoroethylene in an amount of about 10 grams to 1000 grams per liter.

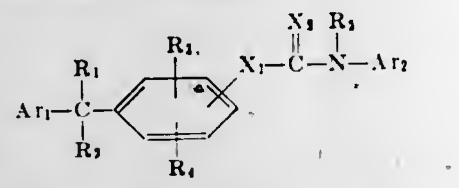
3,352,815
ARALKYL-PHENYL N-ARYL-THIOCARBAMATES

William Laszlo Bencze, New Providence, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

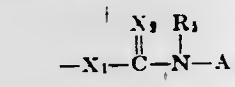
No Drawing. Filed Mar. 8, 1965, Ser. No. 438,066

10 Claims. (Cl. 260—455)

1. A compound of the formula



in which each of Ar_1 and Ar_2 stands for an aryl radical, each of R_1 and R_2 for a monovalent aliphatic radical and, when taken together, for a divalent aliphatic radical, each of R_3 and R_4 for a member selected from the group consisting of hydrogen, lower alkyl, halogeno and the group



$$-X_1-\overset{\overset{X_2}{\|}}{C}-\overset{\overset{R_5}{|}}{N}-Ar_2$$

one of X_1 and X_2 is sulfur and the other is a member selected from the group consisting of oxygen and sulfur and R_5 for a member selected from the group consisting of hydrogen, an aliphatic radical and an araliphatic radical.

3,352,816
STABILITY OF POLYOLEFINES

Gerhard Meyer, Obernburg, Erhard Siggel, Seckmauern uber Hochst, Odenwald, Albert Schopf, Hering uber Hochst, Odenwald, and Helmut Magerlein, Erlenbach, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany

No Drawing. Filed Jan. 26, 1965, Ser. No. 428,199

Claims priority, application Germany Jan. 31, 1964, V 25,288

15 Claims. (Cl. 260—45.7)

1. A process for improving the stability of a high molecular weight poly-α-monoolefine which comprises: dispersing said poly-α-monoolefine as a finely divided powder in a mixture of water and a water-soluble lower alkanol as a dispersing agent containing a small amount of a bisulfite selected from the group consisting of alkali metal-, alkaline earth metal- and ammonium-bisulfites; heating said dispersion with agitation at a temperature of about 20° C. up to the boiling point of the dispersing agent for a period of time sufficient to enhance the oxidation-resistance of the poly-α-monoolefine; and separating the poly-α-monoolefine from the dispersion.

3,352,817
STABILITY OF POLYOLEFINES

Gerhard Meyer, Obernburg, Erhard Siggel, Seckmauren uber Hochst, Odenwald, Albert Schopf, Hering uber Hochst, Obenwald, and Helmut Magerlein, Erlenbach, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany

No Drawing. Filed Jan. 26, 1965, Ser. No. 428,201

Claims priority, application Germany, Jan. 31, 1964, V 25,292

17 Claims. (Cl. 260—45.7)

1. A process for improving the stability of a high molecular weight poly-α-monoolefine which comprises: dispersing said poly-α-monoolefine as a finely divided powder in an inert hydrocarbon liquid containing a small amount each of

(A) a boron compound selected from the group consisting of boron halides and boron halide etherates; and

(B) an organic peroxide;

heating said dispersion with agitation at an elevated temperature up to the boiling point of said inert hydrocarbon liquid for a period of time sufficient to enhance the oxidation-resistance of said poly-α-monoolefine; and separating the poly-α-monoolefine from said dispersion.

3,352,818
STABILITY OF POLYOLEFINES

Gerhard Meyer, Obernburg, Erhard Siggel, Seckmauern uber Hochst, Odenwald, Albert Schöpf, Hering uber Hochst, Odenwald, and Helmut Mägerlein, Erlenbach, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG, Wuppertal-Elberfeld, Germany

No Drawing. Filed Jan. 26, 1965, Ser. No. 428,238

Claims priority, application Germany, Jan. 31, 1964, V 25,294

14 Claims. (Cl. 260—45.7)

1. A process for improving the stability of a high molecular weight poly-α-monoolefine which comprises: dispersing said polyolefine as a finely divided powder in an inert organic liquid selected from the group consisting of hydrocarbons and lower alkanols containing a small amount of an organic hypochlorite selected from the group consisting of t-alkylhypochlorites and secondary hypochlorites with an aromatic substituent; heating said dispersion with agitation in the preesnce of UV-rays and at a temperature of about 20° C. up to the boiling point of said inert organic liquid for a period of time sufficient to enhance the oxidation-resistance of said poly-α-monoolefine; and separating the poly-α-monoolefine from said dispersion.

3,352,819
POLYETHYLENE COMPOSITIONS

Richard L. Alexander and Francis E. Brown, Orange, Tex., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 29, 1963, Ser. No. 327,084

5 Claims. (Cl. 260—45.9)

1. A composition comprising polyethylene, a minor but stabilizing amount of 4,4'-methylenebis-(2,6-ditertiarybutyl phenol) which normally causes yellow discoloration of polyethylene and a stabilizing amount of the monosoduim salt of 4-{[4-(N-ethyl-p-sulfobenzylamino)-phenyl]-[4 - (N - ethyl - p - sulfoniumbenzylamino) - phenyl]-methylene}-(N,N dimethyl-$\Delta^{2,5}$-cyclohexadienimine).

3,352,820
ABS POLYMERS STABILIZED WITH A METAL SULFIDE AND ONE OR MORE PHENOLIC, AMINE OR PHOSPHITE ANTIOXIDANTS

Carl V. Bawn, Naugatuck, Conn., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 31, 1962, Ser. No. 234,561

13 Claims. (Cl. 260—45.75)

1. A gum plastic composition stabilized against discoloration and thermal degradation, this composition comprising an acrylonitrile-butadiene-styrene polymeric material, effective amounts of a phenolic antioxidant and an antioxidant selected from the group consisting of organic phosphites and organic amines, and a stabilizing amount of a sulfide of a metal selected from the group consisting of zinc, calcium, barium, beryllium, magnesium, strontium and cadmium.

3,352,821
TiO_2 DELUSTERED POLYAMIDE STABILIZED WITH A MANGANESE COMPOUND AND AN OXY COMPOUND OF PHOSPHORUS

Winston Costain, Manchester, and Harold John Palmer and Trevor Raymond White, Pontypool, England, assignors to Imperial Chemical Industries Limited, London, and British Nylon Spinners Limited, Pontypool, England, both British corporations

No Drawing. Filed Sept. 3, 1963, Ser. No. 306,313

Claims priority, application Great Britain, Sept. 3, 1962, 33,683/62

7 Claims. (Cl. 260—45.75)

1. Titanium dioxide delustred synthetic linear polyamides of improved resistance to the degradative effects of exposure to light containing a manganese compound in an amount calculated as mangaese of from 5 parts to 100 parts per million parts by weight of the polyamide, and at least one oxy compound of phosphorus selected from the group consisting of orthophosphates, pyrophosphates and complex phosphates in a proportion such that for each manganese ion in its divalent form there are more than 1.5 and up to 7.0 equivalent or stoichiometric amounts of an anion derived from said oxy compound of phosphorus.

3,352,822
POLYURETHANE ELASTOMERS STABILIZED WITH PHENYLTHIOUREAS AND ACID ANHYDRIDES

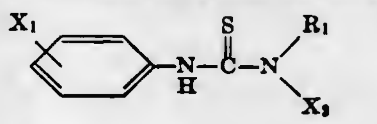
Reizo Yamadera and Hiroshi Ono, Shiga-gun, Shiga-ken, and Toshimi Matsui, Tsuruga, Japan, assignors to Toyo Spinning Co., Ltd., Kita-ku, Osaka, Japan

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,646

Claims priority, application Japan, Feb. 26, 1964, 39/10,551

11 Claims. (Cl. 260—45.85)

1. A composition which comprises (a) linear polyurethane elastomer subject to discoloration by combustion gases or ultra-violet light and (b) a stabilizing amount of at least one compound selected from the group consisting of (1) a phenylthiourea of the formula



wherein

X_1 represents a member selected from the group consisting of hydrogen, halogen, alkyl, aryl and aralkyl,

X_2 represents a member selected from the group consisting of hydrogen, alkyl, aryl and aralkyl, and

R_1 represents hydrogen and alkyl of 1 to 4 carbon atoms, and

(2) an aliphatic monocarboxylic acid anhydride.

3,352,823
PROCESS FOR CURING EPOXY RESINS WITH METHYL POLYBORATE

Daniel T. Haworth, Milwaukee, and Gilbert F. Pollnow, Oshkosh, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

No Drawing. Filed Oct. 3, 1961, Ser. No. 142,526

4 Claims. (Cl. 260—46.5)

1. A process for curing an epoxy resin having a 1,2-epoxy equivalency of greater than unity which comprises reacting said epoxy resin with a curing agent having the general formula

$$[(CH_3O)_3B]_2(B_2O_3)_3$$

3,352,824
STABILIZED POLYMERS OF ALKYLENE OXIDES

Otto Mauz, Frankfurt am Main, and Hasso Hertel, Offenbach (Main), Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

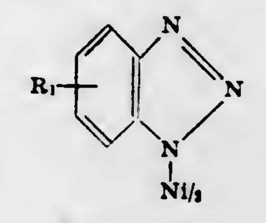
No Drawing. Filed June 22, 1965, Ser. No. 466,095

Claims priority, application Germany, June 24, 1964, F 43,252

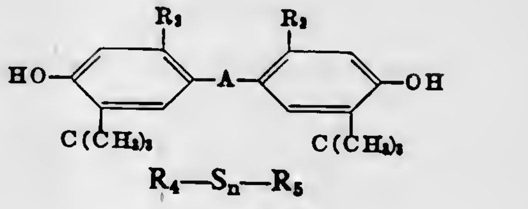
4 Claims. (Cl. 260—45.75)

1. A composition of matter comprising a polymer of an alkylene oxide and a mixture comprising 0.1 to 5 percent by weight of at least one compound of Formula *a*, 0.01 to 5 percent by weight of at least one compound of Formula *b*, and 0.01 to 5 percent by weight of at least one compound of Formula *c*, all percentages being calculated on the polymer,

(*a*)



(*b*)



(*c*) $R_4—S_n—R_5$

in the formulae R_1 represents a member selected from the group consisting of a hydrogen atom, a halogen atom, an alkyl-, alkoxy-, and acylamine group; A represents a member selected from the group consisting of an —S— group and a —(CH_2)—group, R_2 and R_3 represent alkyl radicals containing 1 to 4 carbon atoms; *n* is an integer within the range of 1 to 4; R_4 and R_5 represent a member selected from the group consisting of alkyl radicals containing 4 to 30 carbon atoms and the group

$$-(CH_2)_m-COO.R_6$$

R_6 representing an alkyl radical containing 4 to 30 carbon atoms, and *m* is an integer within the range of 1 to 4.

3,352,825

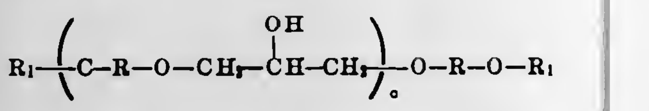
PREPARATION OF GLYCIDYL POLYETHERS

Herbert P. Price, Louisville, Ky., assignor to Celanese Coatings Company, New York, N.Y., a corporation of Delaware

Filed Apr. 28, 1966, Ser. No. 552,998

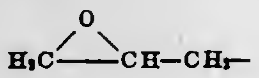
15 Claims. (Cl. 260—47)

1. A process for preparation of a linear polymeric glycidyl polyether of a dihydric phenol represented by the general formula



$$R_1-\left(-C-R-O-CH_2-\overset{\displaystyle OH}{\overset{|}{C}}H-CH_2-\right)_n-O-R-O-R_1$$

wherein R represents the nuclear of said dihydric phenol. R_1 represents the residue



and *n*, which indicates the predetermined extent of polymerization, represents an average value of from about 0.25 to about 15, which comprises

(1) bringing together said dihydric phenol and an excess of epichlorohydrin, in a mol ratio of from about 3 to about 10 mols of epichlorohydrin per mol of said dihydric phenol,

(2) condensing, at a temperature of from about 50° C. to about 150° C. in the presence of from about 0.01 to about 0.3 mol, per mol of said dihydric phenol of a compound selected from the group consisting of alkali metal and ammonium salts of inorganic monobasic acids as catalyst, only from about 1.05 to about 1.8 mols of epichlorohydrin per mol of said dihydric phenol, said condensation being controlled so as to give an intermediate condensate having a free phenolic hydroxyl content in the range of from about 0.2 to about 0.95 phenolic hydroxy group per mol of said dihydric phenol initially present, said intermediate condensate being known by the equation

$$OH=\frac{n}{n+1}$$

wherein OH represents the phenolic hydroxyl content of said intermediate condensate and *n* is as defined hereinabove, to give on dehydrohalogenation said predetermined extent of polymerization as indicated by *n*,

(3) removing excess epichlorohydrin from said intermediate condensate, and then

(4) dehydrohalogenating said intermediate condensate, using caustic alkali, to give said linear polymeric glycidyl polyether.

3,352,826

INCREASED HEAT DISTORTION ETHOXYLINE RESINS

Wayne F. McWhorter and John E. Kuhn, Louisville, Ky., and Harold C. Klassen, New Albany, Ind., assignors, by mesne assignments, to Celanese Coatings Company, a corporation of Delaware

No Drawing. Filed June 23, 1958, Ser. No. 744,004

5 Claims. (Cl. 260—47)

1. A composition of matter which when heat cured yields a product having a high heat distortion value comprising (a) a glycidyl polyether of a polyhydric compound selected from the group consisting of a polyhydric phenols and polyhydric alcohols, said glycidyl polyether having an epoxy equivalency greater than 1, (b) from 0.5 to 10 weight percent based on the glycidyl polyether of a BF_3-organic base complex, said BF_3 complex being an addition product of boron trifluoride with a compound selected from the group consisting of aromatic and aliphatic amines, amides, ethers and phenols, having only hydrocarbon substituents in addition to their amino, amido, ether and phenolic hydroxyl groups, and (c) 1 to 3 weight percent based on the glycidyl polyether of a triaryl phosphite free of other reactive groups.

3,352,827

PRODUCTION OF HYDROXY-CONTAINING COPOLYMERS BY SLURRY COPOLYMERIZATION OF DICARBOXYLIC ACIDS IN THE PRESENCE OF A MONOEPOXIDE

Kazys Sekmakas, Chicago, Ill., assignor to De Soto, Inc., a corporation of Delaware

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,744

13 Claims. (Cl. 260—72)

1. A method of producing non-gelled, solvent-soluble hydroxy-containing copolymers comprising providing an organic solvent containing at least one vinyl unsaturated monomer in solution therein and having dispersed therein discrete particles of monoethylenically unsaturated dicarboxylic acid which is poorly soluble in said solvent and present in an amount of from 2–50% by weight, based on the total weight of polymerizable monomers, subjecting said monomer and said dicarboxylic acid in said organic solvent to conditions of elevated temperature and esterification catalysts favoring an esterification reaction between said acid and monoepoxide in the presence of a free-radical generating polymerization catalyst and an organic monoepoxide containing a single oxirane group as the sole functional group thereof, said organic monoepoxide being present in an amount sufficient to convert at least 30% of the available carboxyl groups in said acid to hydroxy ester groups.

11. A method of producing non-gelled, solvent-soluble hydroxy-containing copolymers which are thermosetting per se comprising providing an organic solvent having dissolved therein a monoethylenically unsaturated amide in an amount of from 2–7% by weight, based on the total weight of polymerizable material and at least one other monoethylenically unsaturated monomer and having dispersed therein discrete particles of monoethylenically unsaturated dicarboxylic acid which is poorly soluble in said organic solvent, said dicarboxylic acid being present in an amount of from 2–50% based on the total weight of polymerizable material, said organic solvent further containing aldehyde, and reacting said monomers and said dicarboxylic acid in said organic solvent at a temperature in excess of 200° F. and in the presence of an alkaline catalyst and a free-radical generating polymerization catalyst and in the further presence of an organic monoepoxide containing a single oxirane group as the sole functional group thereof to esterify at least 30% of the carboxyl groups of said dicarboxylic acid.

3,352,828

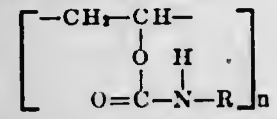
POLYVINYL CARBAMATES CONTAINING NF_2 GROUPS AND PROCESSES FOR PRODUCING SAME

Anthony J. Passannante, Metuchen, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 21, 1960, Ser. No. 77,463

8 Claims. (Cl. 260—77.5)

1. A polyvinyl carbamate containing NF_2 groups characterized by the recurring unit:



$$\left[\begin{array}{l}-CH_2-CH-\\ \qquad\quad\;\; |\\ \qquad\quad\;\; O\quad H\\ \qquad\quad\;\; |\quad\;\; |\\ \qquad O=C-N-R\end{array}\right]_n$$

wherein *n* is about 30 to 10,000 and R is a difluoramino substituted radical selected from the group consisting of alkyl radicals having 2 to 6 carbon atoms with NF_2 substituent groups and of a multi NF_2-furyl adduct having 4 to 6 NF_2 groups attached to the carbon atoms in the furan ring.

4. A process for modifying polyvinyl alcohol to form as a product a polyvinyl carbamate having NF_2 constituents which comprises (I) reacting in the presence of a liquid organic solvent selected from the group consisting of nitrobenzene, acetonitrile, tetrahydrofuran, dimethyl formamide, and mixtures thereof (i) a polyvinyl alcohol with (ii) sufficient isocyanate-N_2F_4 adduct to react more than 50% of the hydroxyl groups in said polyvinyl alcohol, said isocyanate-N_2F_4 adduct being selected from the group consisting of (A) alkyl isocyanates having 2 to 6 carbon atoms with 1 NF_2 group per carbon atom and (B) furyl isocyanate having an NF_2 group linked to each carbon atom and (II) recovering as a resulting product a polyvinyl carbamate containing NF_2 groups.

3,352,829

POLYURETHANE FORMING COMPOSITIONS CONTAINING SULFUROUS ACID ESTERS AS RETARDING AGENTS

Friedrich Blomeyer and Wilfried Zecher, Cologne-Stammheim, and Hans Holtschmidt, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 9, 1965, Ser. No. 431,437

Claims priority, application Germany, Feb. 12, 1964, F 41,985

14 Claims. (Cl. 260—77.5)

1. A method of retarding the reaction between an organic isocyanate and an organic compound containing active hydrogen containing groups as determined by the Zerewitinoff method which comprises mixing said isocyanate and said active hydrogen containing compound with an ester of sulphurous acid having the formula R_2SO_3 wherein R is alkyl or aryl.

6. An improved coating composition which comprises a mixture of an organic polyisocyanate, an organic compound containing active hydrogen containing groups as determined by the Zerewitinoff method and an ester of sulphurous acid having the formula R_2SO_3 wherein R is alkyl or aryl.

3,352,830

POLYURETHANES FROM 1-ISOCYANATO-3-ISOCYANATOMETHYL-3,5,5-TRI-ALKYLCYCLOHEXANE

Karl Schmitt, Herne, and Fritz Gude, Wanne-Eickel, Germany, assignors to Scholven-Chemie Aktiengesellschaft, Gelsenkirchen-Buer, Germany, a corporation of Germany

No Drawing. Filed July 16, 1965, Ser. No. 472,700

Claims priority, application Germany, July 21, 1964, Sch 35,501

5 Claims. (Cl. 260—77.5)

1. Polyurethane of 1-isocyanato-3-isocyanatomethyl-3,5,5-trialkylcyclohexane and an alcohol containing at least 2 hydroxy groups.

3,352,831

POLYAMIDES FROM 3-AMINO-METHYL-3,5,5-TRIALKYL-1-CYCLOHEXYLAMINE

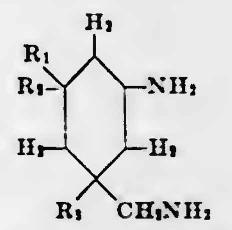
Karl Schmitt, Herne, Westphalia, and Josef Disteldorf and Günther Keller, Wanne-Eickel, Germany, assignors to Scholven-Chemie Aktiengesellschaft, Gelsenkirchen-Buer, Germany, a corporation of Germany

No Drawing. Filed Dec. 3, 1962, Ser. No. 243,182

Claims priority, application Germany, Dec. 6, 1961, H 44,328

9 Claims. (Cl. 260—78)

1. A resinous condensation product of cyclohexylamine of the formula:



wherein R_1, R_2, and R_3 are each alkyl and a dicarboxylic acid, said product being an amorphous polyamide.

3,352,832

COPOLYMERS OF N-SUBSTITUTED MALEIMIDES

Dennis Arthur Barr, Welwyn, Eric Nield, Stevenage, and John Brewster Rose, St. Albans, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 12, 1963, Ser. No. 323,108

Claims priority, application Great Britain, Nov. 16, 1962, 43,400/62

12 Claims. (Cl. 260—78)

1. A substantially colorless and substantially water-insensitive moldable copolymer consisting essentially of copolymerized units of:

(i) at least one N-aryl maleimide which is N-phenyl maleimide or a derivative thereof in which at least one of the aromatically bound hydrogen atoms has been substituted by a halogen atom, a nitro group, a nitrile group or an alkyl or alkoxy group containing from 1 to 4 carbon atoms,

(ii) at least one monoethylenically unsaturated alpha-olefin hydrocarbon containing not more than eight carbon atoms, and

(iii) at least one other copolymerizable monomer,

and in which the total amount of the copolymerized N-aryl maleimide units is not less than the total molar amount of the alpha-olefin units, and the total amount of the copolymerized units of the other copolymerizable monomer is not more than 25 mole percent.

3,352,833

ACID STABILIZATION AND BASE REACTIVATION OF WATER-SOLUBLE WET-STRENGTH RESINS

Ralph H. Earle, Jr., Claymont, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Dec. 31, 1963, Ser. No. 334,908

The portion of the term of the patent subsequent to Mar. 28, 1984, has been disclaimed

15 Claims. (Cl. 260—78)

1. A process which comprises (1) reacting a polyalkylene polyamine having two primary amine groups and at least one secondary amine group with a dicarboxylic acid selected from the group consisting of diglycolic acid and C_3 to C_8 saturated aliphatic dicarboxylic acids to form a water-soluble long chain polyamide containing secondary amine groups, the mole ratio of polyalkylene polyamine to dicarboxylic acid being from about 0.8 to 1 to about 1.4 to 1, (2) reacting the polyamide in aqueous solution with epichlorohydrin in a mole ratio of epichlorohydrin to secondary amine groups of said polyamide of from about 0.5 to 1 to about 1.8 to 1 to form an aqueous

solution of a water-soluble cationic thermosetting resin, (3) reacting the resin thus formed, in aqueous solution, with from about 0.3 equivalent to about 1.2 equivalents per equivalent of epichlorohydrin, of a water-soluble acid until the epoxide groups are converted substantially to the correspodning halohydrin groups.

3,352,834

CONDENSATION PRODUCTS OF 3-AMINOMETHYL-3,5,5-TRIALKYL-1-CYCLOHEXYLAMINE AND ALIPHATIC DICARBOXYLIC ACID AND CYCLIC CARBOXYLIC ACID

Karl Schmitt, Herne, and Josef Disteldorf, Wanne-Eickel, Germany, assignors to Scholven-Chemie Aktiengesellschaft, Gelsenkirchen-Buer, Germany, a corporation of Germany

No Drawing. Filed Nov. 10, 1964, Ser. No. 410,283
Claims priority, application Germany, Nov. 14, 1963, Sch 34,163
12 Claims. (Cl. 260—78)

1. Poyamide polymer of 3-aminomethyl-3,5,5-trialkyl-1-cyclohexylamine with (1) aliphatic dicarboxylic acid and (2) cycloalkane dicarboxylic acids said polymer being a non-crystalline polyamide.

3,352,835

POLYAMIDES FROM 3-AMINOMETHYL-3,5,5-TRIMETHYL-1-CYCLOHEXYLAMINE AND A SECOND DIAMINE AND PREPARATION THEREOF

Karl Schmitt, Herne, Westphalia, and Fritz Gude, Wanne-Eickel, Germany, assignors, by mesne assignments, to Scholven-Chemie Aktiengesellschaft, Gelsenkirchen-Buer, Germany, a corporation of Germany

No Drawing. Filed Jan. 28, 1965, Ser. No. 429,207
Claims priority, application Germany, Jan. 30, 1964, H 51,532
7 Claims. (Cl. 260—78)

1. A polyamide of a mixture consisting essentially of a first amine comprising 3-(amino-methyl)-3,5,5-trimethyl-1-cyclohexylamine and a second amine of the formula

$$H_2N—(CH_2)_x—NH_2$$

where x=2–10 with a dicarboxylic acid.

3,352,836

POLYAMIDES FROM 3-AMINOMETHYL-3,5,5-TRIALKYL-1-CYCLOHEXYLAMINE

Karl Schmitt, Herne, and Fritz Gude, Wanne-Eickel, Germany, assignors to Scholven-Chemie Aktiengesellschaft, Gelsenkirchen-Buer, Germany, a corporation of Germany

No Drawing. Filed Jan. 28, 1965, Ser. No. 429,208
Claims priority, application Germany, Jan. 30, 1964, Sch 34,550
15 Claims. (Cl. 260—78)

1. A polyamide of a mixture consisting essentially of 3-aminomethyl-3,5,5-trialkyl-1-cyclohexylamine, a dicarboxylic acid and at least one diamine selected from the group consisting of branched aliphatic diamines, branched and straight chained aromatic diamines and branched and straight chained alicyclic diamines.

3,352,837

SULPHUR-CONTAINING RESINOUS PRODUCTS AND THEIR PREPARATION

Jean-Baptiste Signouret, Billiere, France, assignor to Societe Nationale des Petroles d'Aquitaine, Paris, France

No Drawing. Filed July 14, 1965, Ser. No. 472,027
Claims priority, application France, July 23, 1964, 982,774
7 Claims. (Cl. 260—79)

1. A process for the preparation of resinous condensation products soluble in molten sulphur, which comprises reacting a halo-epoxy alkane having from 3 to 17 carbon atoms and hydrogen sulphide simultaneously with an aqueous solution of an alkali metal or alkaline earth metal polysulphide at temperatures of from 50° to 100° C. and in the proportions of at least one mole of the hydrogen sulphide per mole of the polysulphide reactant.

7. A resinous product having the formula

$$H—(S—CH_2—CHOH—CH_2S)_p—H$$

in which p is a number the mean value of which is from 4 to 24, said product having a molecular weight of from 500 to 3000, being soluble in molten sulphur in a proportion of at least 15% by weight at a temperature of about 150° C., melting below 100° C. and having a sulphur content of 40% to 55% by weight.

3,352,838

METHYLOLATED UREA AND MELAMINE ETHERIFIED WITH BUTANOL AND POLYETHYLENEGLYCOL AS EMULSION POLYMERIZATION AGENTS

Rosemarie Toepfl, Basel, Luzius Schibler, Riehen, and Arthur Maeder, Therwil, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Dec. 4, 1964, Ser. No. 416,145

Claims priority, application Switzerland, Dec. 12, 1963, 15,217/63

2 Claims. (Cl. 260—80.73)

1. A process for the emulsion polymerization of unsaturated polymerizable compounds, wherein the emulsifier used is a water-soluble curable ether of a member selected from the group consisting of (1) a methylolmelamine, whose methylol groups are etherified with a monohydric alcohol containing at least 4 carbon atoms and further with a polyethyleneglycol and (2) a methylolurea whose methylol groups are etherified with a monohydric alcohol containing at least 4 carbon atoms and further a polyethyleneglycol.

3,352,839

DIOLEFIN POLYMERIZATION CATALYSTS USING A METALLIFEROUS COMPONENT, A CATALYST REGULATOR AND AlX_3

Marvin H. Lehr, Akron, Ohio, assignor to Goodrich-Gulf Chemicals, Inc., Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Aug. 10, 1962, Ser. No. 216,047

6 Claims. (Cl. 260—94.3)

1. A process for producing a substantially all 1,4 addition polybutadiene product comprising polymerizing monomeric 1,3-butadiene in a substantially dry, inert atmosphere, at a temperature below about 100° C. and in the presence of a reaction solubilizing inert hydrocarbon polymerization medium, with a catalyst composition comprised of an aluminum trihalide; a metaliferous component selected from the group consisting of metals and compounds of metals of beryllium, magnesium, cobalt, nickel, titanium, vanadium, chromium, manganese, iron, platinum and palladium; an alkali metal halide; and a thiophene catalyst regulator component selected from the group consisting of thiophene and aliphatic hydrocarbon substituted thiophene, the components of said catalyst being present in a ratio such that, on a molar basis, the aluminum trihalide constitutes at least about twice the amount of the metalliferous component, at least about twice the amount of the alkali metal halide component, but no more than about twice the amount of thiophene

catalyst regulator component employed, and at least about one mole of aluminum trihalide is present for every 300 moles of said butadiene.

3,352,840

REMOVAL OF DEPOSITS FROM POLYMERIZATION REACTORS

Celal M. Oktay, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed June 24, 1964, Ser. No. 377,713

7 Claims. (Cl. 260—94.7)

1. In a process wherein a conjugated alkadiene is converted to a cross-linkable polymer in the presence of a lithium catalyst and polymer deposits having lithium atoms directly bonded to carbon atoms accumulate on reaction zone surfaces concomitantly with the conversion, the improvement which comprises removing said deposits from said surfaces by contacting with an inert liquid hydrocarbon containing impurities selected from the group consisting of water, organic sulfur compounds, organic nitrogen compounds and organic oxygen compounds, said impurities being present in amounts sufficient to inactivate said polymer deposits.

3,352,841

PROCESS FOR SEPARATING AND RECOVERING FATS AND SOLIDS

Lee R. Lyon, Kansas City, Mo., assignor to Lycoil, Inc., Kansas City, Mo., a corporation of Missouri

Filed Mar. 22, 1965, Ser. No. 441,683

3 Claims. (Cl. 260—112)

1. The process of treating material from slaughter of poultry and animals for recovery of oils and protein solids therefrom consisting of the steps: moving material resulting from the slaughter of poultry and animals from a place of slaughter, reducing the size of the solids in said material to a particle size not exceeding approximately one inch, moving the material having reduced solids in a stream, subjecting said stream of material to heat by introducing steam into said stream to raise the temperature of said material to approximately 180° F. to 190° F. to reduce the viscosity of the oils therein, centrifugally separating said material having reduced solids into a flowable liquid phase and a solid phase with a large portion of the fats normally associated with the solids being displaced therefrom and forming part of the liquid phase, said solid phase being a wet cake, adding water to said wet cake making a mixture that is pumpable, moving said mixture in a stream, centrifugally separating said mixture into a liquid phase and a solid phase wherein a substantial portion of the fat remaining in the mixture is displaced into the liquid phase, and removing water from the solid phase from said second named centrifugal separation to form a low fat content cake.

3,352,842

PROCESSING OF OFFAL OR THE LIKE FOR OBTAINING SEPARATED FAT AND PROTEIN MATERIAL THEREFROM

Lee R. Lyon, Kansas City, Mo., assignor to Lycoil, Inc., Kansas City, Mo., a corporation of Missouri

Filed Mar. 16, 1964, Ser. No. 352,017

7 Claims. (Cl. 260—112)

1. The process of treating raw poultry and animal offal and recovering oils and low fat content protein solids therefrom consisting of the steps: conveying raw fresh offal from a slaughtering point, reducing the size of solids in said offal, moving said offal in a stream, subjecting the offal with the reduced size particles to heat by introducing steam into said stream to raise the temperature to approximately 180° F. to 190° F. to reduce the viscosity of the oils contained in the solids, centrifugally separating said heated offal into a flowable liquid phase and a solid phase, with the fats normally associated with the solids being largely displaced therefrom and forming a part of the liquid phase, and drying said solid phase from said centrifugal separation to remove water and form a cake having a fat content of less than 15% by weight on a dry basis.

3,352,843

PHE²-ORN⁸-OXYTOCIN

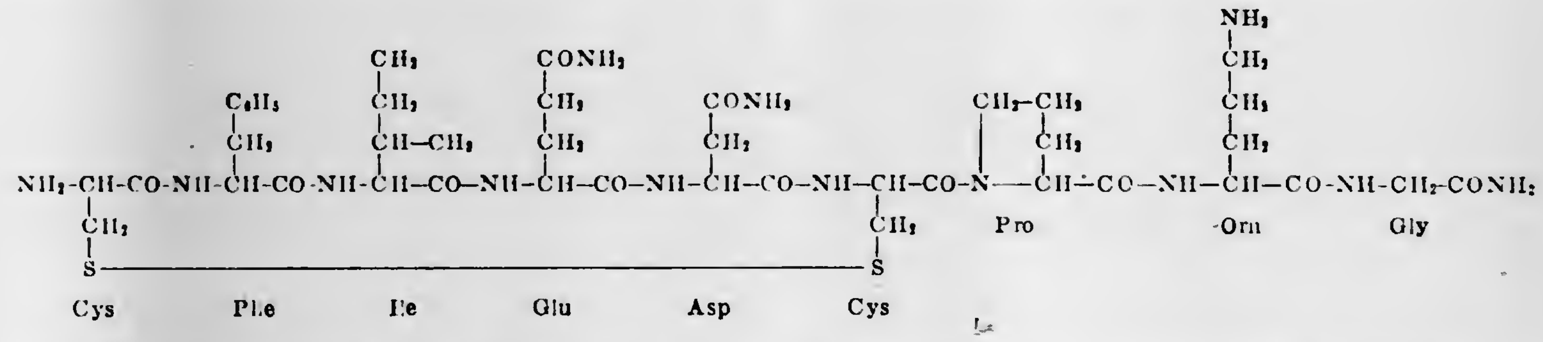
Roger Boissonnas, Bottmingen, René Huguenin, Reinach, Basel-Land, Botond Berde, Basel, and Walter Schalch, Riehen, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Aug. 27, 1964, Ser. No. 392,595

Claims priority, application Switzerland, Aug. 30, 1963, 10,772/63, 10,773/63

3 Claims. (Cl. 260—112.5)

1. The polypeptide of the formula:



$$NH_2\text{-}CH\text{-}CO\text{-}NH\text{-}CH\text{-}CO\text{-}NH\text{-}CH\text{—}CO\text{—}NH\text{-}CH\text{—}CO\text{—}NH\text{-}CH\text{—}CO\text{—}NH\text{—}CH\text{—}CO\text{-}N\text{—}CH\text{—}CO\text{—}NH\text{—}CH\text{—}CO\text{-}NH\text{-}CH_2\text{-}CONH_2$$

and its physiologically acceptable acid addition salts wherein all the amino acid groupings except glycine are of L-configuration.

3,352,844

NLEU⁴-LYS¹⁷-LYS¹⁸-α^{1-25}-ACTH-VAL²⁵-AMIDE

Roger Boissonnas, Bottmingen, Stephan Guttmann, Allschwil, and Janos Pless, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel Switzerland

Filed Jan. 25, 1965, Ser. No. 427,599
Claims priority, application Switzerland, Jan. 31, 1964, 1,111/64
1 Claim. (Cl. 260—112.5)

A compound selected from the group consisting of L-seryl-L-(tyrosyl-L-seryl-L-norleucyl-L-glutamyl-L-histidyl-L-phenylalanyl-L-arginyl-L-tryptophanyl-glycyl-L-lysyl-L-prolyl-L-valyl-glycyl-L-lysyl-L-lysyl-L-lysyl-L-lysyl-L-prolyl-L-valyl-L-lysyl-L-valyl-L-tyrosyl-L-prolyl-L-valinamide and its physiologically acceptable acid addition salts.

3,352,845

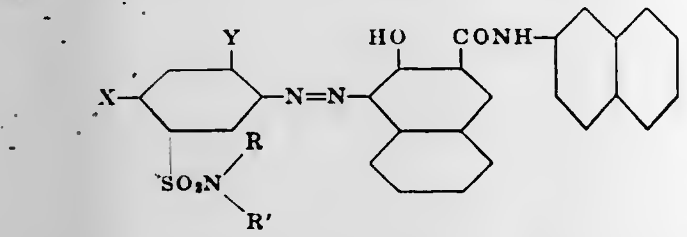
METHOD FOR PRODUCING AZOIC PIGMENT

William H. Armento, Albany, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

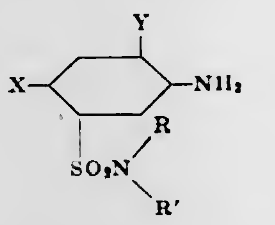
No Drawing. Filed Oct. 1, 1964, Ser. No. 400,938

6 Claims. (Cl. 260—152)

1. In a process for producing azoic dyes and pigments of the formula:



where Y represents a member of the group consisting of $—CH_3$ and $—OCH_3$; X represents a member of the group consisting of H, Cl, F and Br; and R and R' each represent a member of the group consisting of H, lower alkyl of 1 to 4 carbon atoms, cyclohexyl, phenyl, chlorophenyl and anisyl and together may represent a 5-atom alkylene group, including an oxygen interrupted alkylene group of 5 atoms, of piperidine or morpholine; wherein 3 - hydroxy-N-(2-naphthyl)-2-naphthamide dissolved in aqueous caustic soda is coupled with a diazotized 3-aminobenzene sulfonamide of the formula:



where X, Y, R, R' are as defined above; the improvement which comprises dissolving 1 mole of 3-hydroxy-N-(2-naphthyl)-2-naphthamide in an aqueous alcoholic solution of caustic soda having a concentration within the range of 3.4% to 6.5% and containing 1 mole of caustic soda and from 2 to 10 moles of a water soluble aliphatic hydroxy compound selected from a group consisting of lower aliphatic alkanols of from 1 to 4 carbon atoms, lower alkylene diols of from 2 to 4 carbon atoms and monoethers of said diols with a lower aliphatic alkanol of 1 to 4 carbon atoms.

3,352,846

MONOAZO PYRIMIDINE DYES

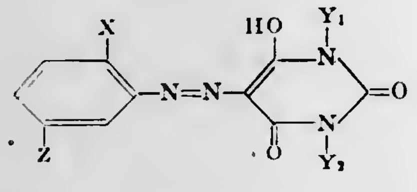
Gerhard Luetzel, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Apr. 13, 1965, Ser. No. 447,893

Claims priority, application Germany, Apr. 21, 1964, B 76,438

3 Claims. (Cl. 260—154)

1. An azo dyestuff having the general formula:



wherein X is a member selected from the group consisting of a chlorine atom and a methoxy group, Y_1 and Y_2 are members selected from the group consisting of hydrogen atoms an dmethyl groups and Z is a member selected from the group consisting of $—SO_2—NH_2$,

$—SO_2—NH—CH_2—CH_2—OH$

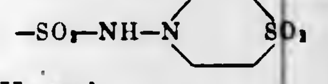
$—SO_2—NH—CH_2—CH_2—SO_3H$

$—SO_2—NH—CH_2—COOH$

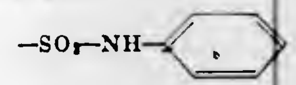
$—SO_2—NH—CH_2—CH_2—Cl$

$—SO_2—NH—CH_2—CH_2—NH_2$

$—SO_2—NH—CH_2—CH_2—CN$



$—SO_2—NH—CH_3$ and



3,352,847

PROCESS FOR THE MANUFACTURE OF 4-AMINO-3-NITROAZOBENZENES

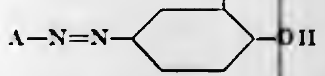
Hans Wilhelm Liechti, Oberwil, Basel-Land, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Sept. 1, 1964, Ser. No. 393,761

Claims priority, application Switzerland, Sept. 11, 1963, 11,221/63

6 Claims. (Cl. 260—208)

1. A process for the manufacture of a 4-amino-3-nitro-azobenzene which consists of heating a 4-hydroxy-3-nitro-azobenzene of the formula



wherein A represents a benzene or naphthalene radical with ammonia.

3,352,848

PROCESS FOR THE MODIFICATION OF POLYSACCHARIDES

Cla Christoffel and Eric A. Borel, Waedenswil, Artur Blumenthal, Zurich, Ulrich Schobinger, Zug, and Karl Mueller, Waedenswil, Switzerland, assignors to Blattmann & Co., Waedenswil, Switzerland, a partnership

Filed Feb. 2, 1965, Ser. No. 429,769

Claims priority, application Switzerland, Feb. 5, 1964, 1,352/64

11 Claims. (Cl. 260—209)

1. A process for the preparation of phosphorus and nitrogen containing chemical derivatives of polysaccharides, which comprises dehydrating a pulverulent mass of a high molecular polysaccharide by heating said mass under vacuum until the mass contains so little moisture that no pasting will occur in it in the ensuing treatment; then while excluding oxygen from the dehydrated mass heating it further in the presence of a phosphorus compound condensable with said polysaccharide and being selected from the group consisting of primary, secondary and tertiary orthophosphates, pyrophosphates, hypophosphates, metaphosphates, polymetaphosphates, ortho-, pyro- and metaphosphoric acids and mixtures thereof, and also in the presence of a nitrogen compound condensable with said polysaccharide and being selected from the group consisting of urea, thiourea, mono- and polymethylol ureas, formamide, trimethylamine, triethanolamine, hexamethylene tetramine, alkaline reacting inorganic ammonium compounds, and mixtures thereof, to a temperature sufficient to effect condensation of said phosphorus and nitrogen compounds with said polysaccharide; and thereafter cooling the reaction mass while still excluding oxygen from it, to recover the condensation product in a finely divided form.

3,352,849

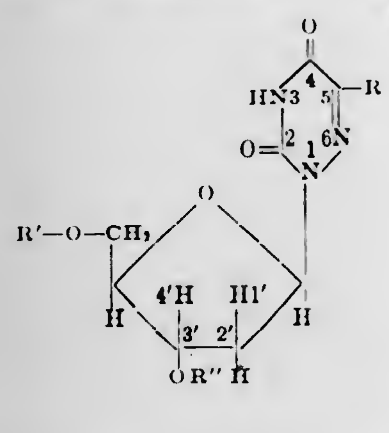
6-AZA-2'-DEOXYURIDINES

Tsung-Ying Shen, Westfield, William V. Ruyle, Scotch Plains, and Robert L. Bugianesi, Colonia, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 24, 1965, Ser. No. 505,030

19 Claims. (Cl. 260—211.5)

1. A compound of the formula



wherein R may be halogen, halogen substituted lower alkyl, amino, loweralkyl substituted amino or benzylamino; and R' and R'' may be the same or different, each representing hydrogen, lower alkanoyl, benzoyl, substituted benzoyl, or pyranyl.

3,352,850

SYNTHETIC PENICILLINS

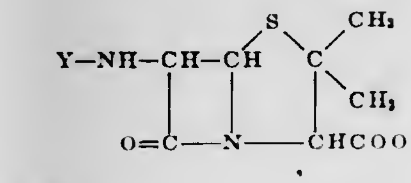
Frank Peter Doyle, Betchworth, and John Herbert Charles Nayler, Dorking, England, assignors to Beecham Group Limited, Brentford, England, a British company

No Drawing. Filed Mar. 26, 1963, Ser. No. 267,911

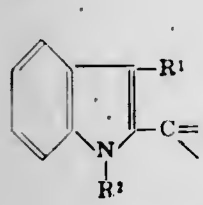
Claims priority, application Great Britain, Feb. 16, 1960, 5,519/60

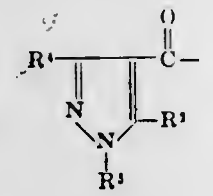
13 Claims. (Cl. 260—239.1)

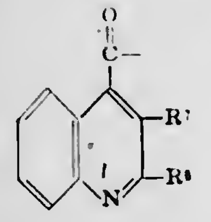
1. An acid of the formula:



wherein Y is:







in which R^1 and R^2 are each (lower)alkyl, phenyl, chlorophenyl, dichlorophenyl or benzyl and at least one of R^1 and R^2 is (lower)alkyl; R^3 and R^4 are each (lower) alkyl, phenyl, chlorophenyl or dichlorophenyl and R^5 is hydrogen, (lower)alkyl, phenyl, chlorophenyl or dichlorophenyl but at least one of R^3, R^4 and R^5 is (lower)alkyl or hydrogen; R^7 is (lower)alkyl, (lower)alkoxy, chloro, bromo, phenyl or carbalkoxy and R^6 is hydrogen, (lower) alkyl or phenyl and no more than one of R^6 and R^7 is phenyl, or R^6 and R^7 taken together from benz or trimethylene; and non-toxic pharmaceutically acceptable salts thereof.

3,352,851

α-UREIDOPENICILLINS

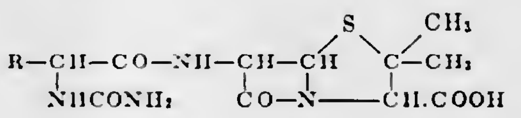
George Robert Fosker, Horsham, England, assignor to Beecham Group Limited, Brentford, England, a British company

No Drawing. Filed July 8, 1965, Ser. No. 470,565

Claims priority, application Great Britain, July 29, 1964, 30,093/64

3 Claims. (Cl. 260—239.1)

1. An α-ureidopenicillin selected from the group consisting of an acid of the formula:



wherein R is hydrogen, phenyl, meta-hydroxy-phenyl, meta-chlorophenyl, alkyl of 1 to 6 carbon atoms, furyl or thienyl and its non-toxic salts including its sodium, potassium, calcium, aluminum and ammonium salts including non-toxic substituted ammonium salts formed with amines selected from the group consisting of tri(lower)alkylamine, procaine, dibenzylamine, N-benzylbeta-phenethylamine, 1-ephenamine, N,N'-dibenzylethylenediamine, dehydroabietylamine, N,N' - bis - dehydroabietylethylenediamine and N-(lower)alkylpiperidines.

3,352,852

SYNTHETIC PENICILLINS

Lee C. Cheney, Fayetteville, N.Y., assignor, by mesne assignments, to Beecham Group Limited, Brentford, Middlesex, England, a corporation of Great Britain and Northern Ireland

No Drawing. Application Dec. 20, 1962, Ser. No. 245,982, which is a division of application Ser. No. 847,874, Oct. 22, 1959. Divided and this application Feb. 14, 1966, Ser. No. 527,111

3 Claims. (Cl. 260—239.1)

1. The process of preparing an antibacterial composition comprising a mixture of the levo and dextro isomers of potassium α-phenoxyethylpenicillin, said dextro isomer when in pure form decomposing at about 230 to 231° C. and exhibiting $[\alpha]_D^{24}$ of about +251° (c.=1 percent in water), said levo isomer when in pure form decomposing at about 238 to 239° C. and exhibiting $[\alpha]_D^{24}$ of about +218° (c.=1 percent in water), and said isomers being present in said mixture in a weight relation to one another expressable as 60 to 80% ±5% by weight of the levo isomer and conversely 20 to 40% ±5% by weight of the dextro isomer which comprises the consecutive steps of adding with agitation to mycelium-free *Penicillium chrysogenum* fermentation broth prepared without added precursor about five moles of racemic α-phenoxypropionyl chloride for each mole of 6-aminopencillanic acid therein, said addition being made at a rate slow enough to enable the pH to be maintained at about 7.5, acidifying said reaction mixture to about pH 2, extracting the levo and dextro isomers of α-phenoxyethylpenicillin therein into about one-half volume of methyl isobutyl ketone, converting said acid penicillin to the solid potassium salt by stirring said methyl isobutyl ketone solution with concentrated aqueous potassium acetate buffer and collecting said solid salt.

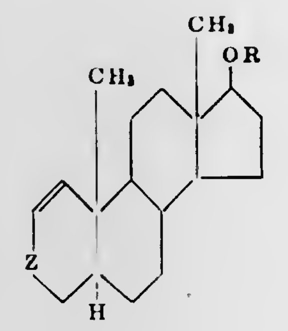
3,352,853
17β-(SUBSTITUTED-OXY)-3-OXYGENATED-5α-ANDROST-1-ENES

Paul M. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 13, 1965, Ser. No. 455,602

5 Claims. (Cl. 260—239.55)

1. A compound of the formula



wherein Z is a member of the class consisting of carbonyl, β-hydroxymethylene and β-(lower alkanoyl)oxymethylene radicals, and R is selected from the group consisting of tetrahydropyran-2-yl and p-tertiary-butylphenoxyacetyl radicals.

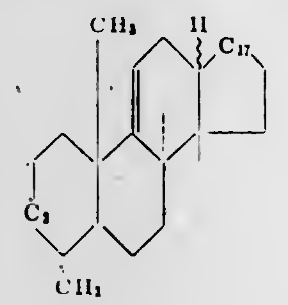
3,352,854
STEROID DERIVATIVES

Patrick A. Diassi, Westfield, and Gerald W. Krakower, Elizabeth, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

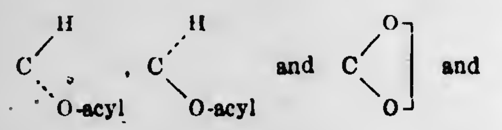
No Drawing. Filed May 11, 1965, Ser. No. 455,002

25 Claims. (Cl. 260—239.55)

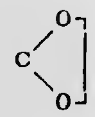
1. A compound having the formula



wherein C_3 is selected from the group consisting of C=O



is selected from the group consisting of C=O and



wherein the acyl is a hydrocarbon carboxylic acid of less than twelve carbons.

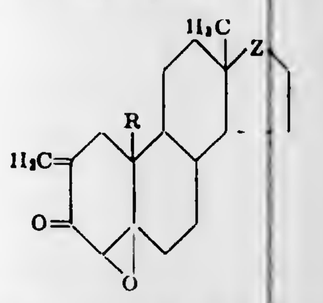
3,352,855
17-OXYGENATED 4-HALO-2-METHYLENE (ANDROST/ESTR)-4-EN-3-ONES AND INTERMEDIATES

Ivar Laos, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

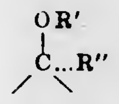
No Drawing. Filed Feb. 23, 1966, Ser. No. 529,195

8 Claims. (Cl. 260—239.55)

8. A compound of the formula



wherein R is selected from the group consisting of hydrogen and the methyl radical and Z is selected from the group consisting of the carbonyl radical and radicals of the formula



$$\overset{OR'}{\overset{|}{C}}\cdots R''$$

in which R′ is selected from the group consisting of hydrogen and lower alkanoyl radicals of the formula

$$-COC_nH_{2n+1}$$

and R″ is selected from the group consisting of hydrogen and lower alkyl radicals of the formula

$$-C_nH_{2n+1}$$

n in the last two formulas being a positive integer less than 8.

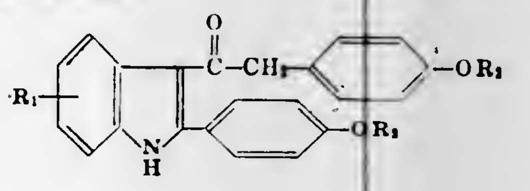
3,352,856
2-(p-ALKOXYPHENYL)-3-SUBSTITUTED INDOLES

Jacob Szmuszkovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,203

16 Claims. (Cl. 260—240)

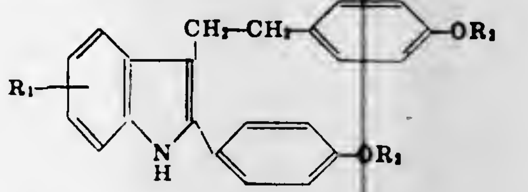
1. A p-alkoxybenzyl 2-(p-alkoxyphenyl)indol-3-yl ketone of the formula:



II

wherein R_1 is selected from the group consisting of hydrogen, fluorine, chlorine, bromine, iodine, alkoxy having from 1 to 3 carbon atoms, inclusive, and alkyl having from 1 to 3 carbon atoms, inclusive, and wherein R_2 is an alkyl group having from 1 to 3 carbon atoms, inclusive.

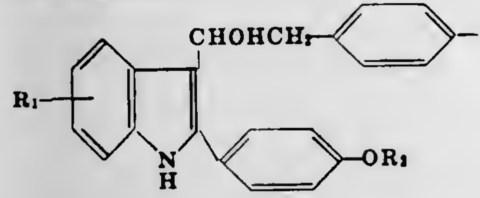
5. A 3-(p-alkoxyphenethyl)-2-(p-alkoxyphenyl)indole of the formula:



III

wherein R_1 is selected from the group consisting of hydrogen, fluorine, chlorine, bromine, iodine, alkoxy having from 1 to 3 carbon atoms, inclusive, and alkyl having from 1 to 3 carbon atoms, inclusive, and wherein R_2 is an alkyl group having from 1 to 3 carbon atoms, inclusive.

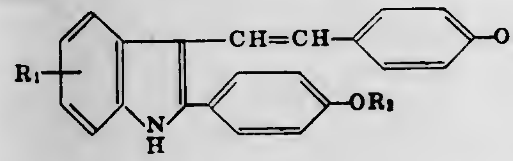
9. An α-(p-alkoxybenzyl)-2-(p-alkoxyphenyl)indole-3-methanol of the formula:



IV

wherein R_1 is selected from the group consisting of hydrogen, fluorine, chlorine, bromine, iodine, alkoxy having 1 to 3 carbon atoms, inclusive, and alkyl having from 1 to 3 carbon atoms, inclusive, and wherein R_2 is an alkyl group having from 1 to 3 carbon atoms, inclusive.

13. A 2-(p-alkoxyphenyl)-3-(p-alkoxystyryl)indole of the formula:



V

wherein R_1 is selected from the group consisting of hydrogen, fluorine, chlorine, bromine, iodine, alkoxy having 1 to 3 carbon atoms, inclusive, and alkyl having from 1 to 3 carbon atoms, inclusive, and wherein R_2 is an alkyl group having from 1 to 3 carbon atoms, inclusive.

3,352,857
SOLUBILIZED CYANINE AND MEROCYANINE SENSITIZING DYES

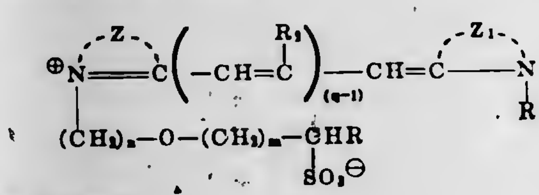
Leslie G. S. Brooker and Grafton H. Keyes, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 19, 1962, Ser. No. 180,854

5 Claims. (Cl. 260—240.6)

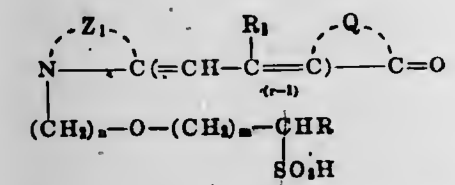
1. A solubilized dye for photography selected from those having the formula:

(1)

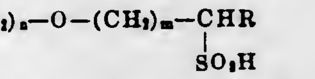


and the formula:

(2)



wherein Z, Z_1 and Z_2 each represents the nonmetallic atoms necessary to complete a heterocyclic nucleus selected from the class consisting of a thiazole nucleus, a benzothiazole nucleus, a naphthothiazole nucleus, an oxazole nucleus, a benzoxazole nucleus, a naphthoxazole nucleus, a selenazole nucleus, a benzoselenazole nucleus, a naphthoselenazole nucleus, a pyridine nucleus, a quinoline nucleus, an isoquinoline nucleus, an imidazole nucleus, a benzimidazole nucleus, a naphthimidazole nucleus, and a lepidine nucleus; R represents a member selected from the class consisting of hydrogen and alkyl having from 1 to 4 carbon atoms; *q* represents an integer of from 1 to 3; *n* represents an integer of from 2 to 4; *m* represents an integer of from 2 to 4; *r* represents an integer of from 2 to 3; R_1 represents a member selected from the class consisting of alkyl having from 1 to 4 carbon atoms, carboxyalkyl having from 2 to 5 carbon atoms, carbalkoxyalkyl having from 3 to 5 carbon atoms, sulfoalkyl having from 1 to 4 carbon atoms, hydroxyalkyl having from 1 to 4 carbon atoms, alkoxyalkyl having from 2 to 5 carbon atoms, alkoxyalkyl having from 2 to 5 carbon atoms, sulfoalkoxyalkyl having the formula:



$$-(CH_2)_n-O-(CH_2)_m-\underset{SO_3H}{\underset{|}{C}}HR$$

in which *n*, *m* and R are as defined, phenyl, lower alkylphenyl, and halophenyl; Q represents a heterocyclic nucleus selected from the class consisting of a pyrazolone nucleus, a 2,4,6-triketohexahydropyrimidine nucleus, a 2,6-diketo-4-thiohexahydropyrimidine nucleus, an indandione nucleus, a rhodanine nucleus, a hydantoin nucleus, a thiohydantoin nucleus, and a 2-thio-2,4-oxazolidinedione nucleus; R_2 represents a member selected from the class consisting of hydrogen, lower alkyl, lower alkoxy, phenyl, hydroxy phenyl, halophenyl, lower alkyl substituted phenyl, lower alkoxy substituted phenyl, lower alkyl mercapto, phenylmercapto, lower alkyl substituted phenylmercapto, thienyl, indolyl, furyl, pyrryl and pyrrocolyl; such that when *r* is the integer 3, R_3 is hydrogen.

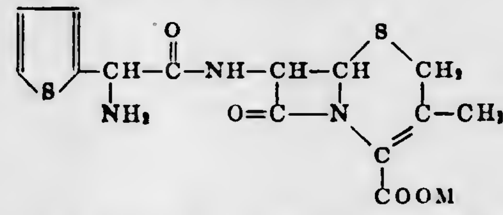
3,352,858
ANTIBACTERIAL AGENTS OF THE CEPHALOSPORIN CLASS

Leonard Bruce Crast, Jr., North Syracuse, and John Michael Essery, Liverpool, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 7, 1966, Ser. No. 540,835

8 Claims. (Cl. 260—243)

1. A compound of the formula



wherein A is hydrogen, hydroxyl, (lower)alkanoyloxy, benzoyloxy, a quaternary ammonium radical or, when taken together with M, a monovalent carbon-oxygen bond; and

M is hydrogen, a pharmaceutically acceptable nontoxic cation, an anionic charge when A is a quaternary ammonium radical, or, when taken together with A, a monovalent carbon-oxygen bond.

3,352,859
PROCESS FOR IMPROVING CRYSTAL QUALITY OF A CEPHALOSPORIN ANTIBIOTIC

Harvey M. Higgins, Jr., Danville, Edwin O. Davisson, Greenwood, and Diane (DeBerry) Carver, Brownsburg, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Mar. 24, 1967, Ser. No. 625,576

8 Claims. (Cl. 260—243)

1. A method which comprises adding acetone to a solution of cephaloridine in a water/acetone mixture containing at least 20 percent acetone by volume in the presence of minor proportions of (a) methyl isobutyl ketone and (b) methylene dichloride, chloroform, or mixtures thereof to crystallize cephaloridine from such solution.

3,352,860
PROCESS FOR THE MANUFACTURE OF ORGANIC NITROGEN-HALOGEN COMPOUNDS

Karl Hass and Hans G. Epler, Ranzel, and Ferdinand Langenhoff, Troisdorf, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bez. Cologne, Germany, a corporation of Germany

No Drawing. Filed Aug. 13, 1964, Ser. No. 389,466

Claims priority, application Germany, Aug. 17, 1963, D 42,276

16 Claims. (Cl. 260—248)

9. Process for the production of N,N′-dichloro-hydantoin which comprises reacting dichloroxide dissolved in

chloroform with hydantoin at a temperature of about 20–25° C. for a time sufficient for the reaction to go substantially to completion.

11. Process for the production of N,N′,N″-trichloroisocyanuric acid which comprises reacting dichloroxide dissolved in chloroform with anhydrous cyanuric acid at a temperature of about 20–25° C. and for a time sufficient for the reaction to go substantially to completion.

3,352,861

PROCESS FOR THE RECOVERY OF ACETOGUANAMINE

Clyde H. Bell, Chattanooga, Tenn., assignor to Velsicol Chemical Corporation, Chattanooga, Tenn., a corporation of Tennessee

No Drawing. Filed Dec. 15, 1965, Ser. No. 514,098

5 Claims. (Cl. 260—249.9)

1. An improved process for the recovery of crystalline acetoguanamine from a system containing acetoguanamine and water which comprises separating the water and the acetoguanamine from each other at a temperature above about 35° C.

3,352,862

3,5,6-SUBSTITUTED URACILS

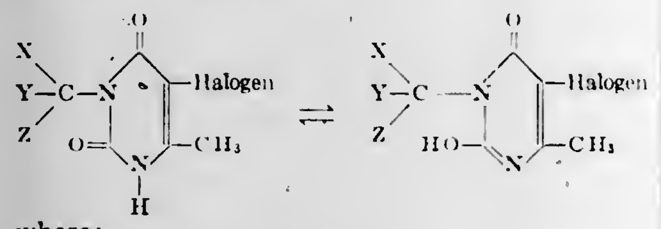
Harvey M. Loux, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Aug. 17, 1962, Ser. No. 217,521, now Patent No. 3,235,357, dated Feb. 15, 1966. Divided and this application Dec. 27, 1965, Ser. No. 516,687

9 Claims. (Cl. 260—260)

1. A compound selected from the group consisting of

(a) compounds of the formula



where:

X is methyl or ethyl

Y is hydrogen or methyl, and

Z is an alkyl group of 1 through 6 carbon atoms; and

(b) the sodium, potassium, lithium, and alkyl quaternary ammonium salts of the compounds of (a).

3,352,863

3,5-DISUBSTITUTED URACILS

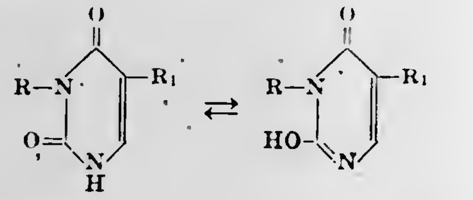
Edward J. Soboczenski, Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Sept. 6, 1962, Ser. No. 221,890, now Patent No. 3,235,358, dated Feb. 15, 1966. Divided and this application Dec. 27, 1965, Ser. No. 516,720

5 Claims. (Cl. 260—260)

1. A compound selected from the group consisting of

(a) compounds of the formula



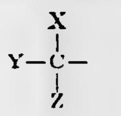
where R is phenyl,

substituted phenyl wherein said substituent is selected from the group consisting of alkyl of 1 through 4 carbon atoms and methoxy,

cycloalkyl of 3 through 12 carbon atoms, substituted cycloalkyl of 3 through 12 carbon atoms wherein said substituent is selected from the group consisting of alkyl of 1 through 4 carbon atoms and methoxy,

cycloalkenyl of 5 through 12 carbon atoms,

substituted cycloalkenyl of 5 through 12 carbon atoms wherein said substituent is selected from the group consisting of alkyl of 1 through 4 carbon atoms and methoxy, or



$$Y{-}\overset{X}{\underset{Z}{C}}{-}$$

wherein

X is methyl or ethyl

Y is hydrogen or methyl

Z is alkyl of 1 through 6 carbon atoms;

R_1 is halogen; and

(b) the sodium, potassium, lithium, and lower alkyl quaternary ammonium salts of the compounds of (a).

3,352,864

THEOPHYLLINYL-7-n-PROPANE-ω SULFONIC ACID AND SALTS THEREOF

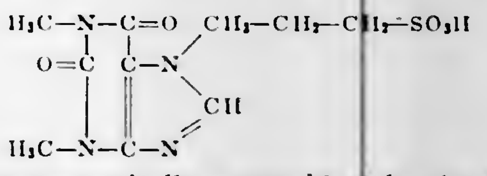
Pierre J. Guiroy, Paris, France, assignor to Les Laboratoires Bruneau et Cie, Paris, France, a company of France

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,923

Claims priority, application France, Oct. 8, 1963, 949,882; Jan. 7, 1964, 959,572

2 Claims. (Cl. 260—253)

1. A compound selected from the class consisting of theophyllinyl-7-n-propane-ω-sulfonic acid having the formula:



and the pharmaceutically acceptable salts thereof.

3,352,865

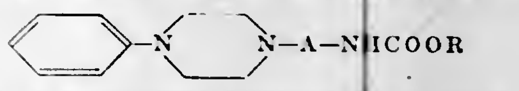
ALKYL PHENYLPIPERAZINYL-ALKYLCARBAMATES

John J. Lafferty, Levittown, and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 4, 1966, Ser. No. 584,098

5 Claims. (Cl. 260—268)

1. A chemical compound selected from the group consisting of a free base and salts thereof with pharmaceutically acceptable acids, said free base having the formula:



in which A is an alkylene group of from 2 to 6 carbon atoms and R is lower alkyl of from 1 to 4 carbon atoms.

3,352,866

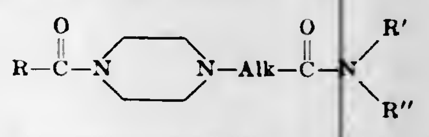
4-ALKANOYL-1-PIPERAZINEALKANAMIDES

Clinton A. Dornfeld, Glenview, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 21, 1966, Ser. No. 559,086

8 Claims. (Cl. 260—268)

1. A compound of the formula



wherein Alk is lower alkylene; R is selected from the group consisting of alkyl and alkenyl containing up to 17 carbon atoms; R′ is selected from the group consisting of hydrogen, lower alkyl, phenyl, tolyl, xylyl, halophenyl, and alkoxyphenyl; and R″ is selected from the group consisting of hydrogen and lower alkyl.

3,352,867

PROCESS FOR PRODUCING GAMMA PHASE LINEAR QUINACRIDONE

Kazuo Adachi, Masakatsu Hoshikawa, and Kazuaki Ohira, Tokyo, Japan, assignors to Tekkosha Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Feb. 28, 1966, Ser. No. 530,330

Claims priority, application Japan, June 14, 1965, 40/35,161

11 Claims. (Cl. 260—279)

1. A process for producing gamma phase linear quinacridone which comprises:

oxidizing a 6,13-dihydroquinacridone selected from the group consisting of alpha crystal phase 6,13-dihydroquinacridone, beta crystal phase 6,13-dihydroquinacridone and a mixture thereof, in 2-pyrrolidone as a dispersion medium at an elevated temperature.

3,352,868

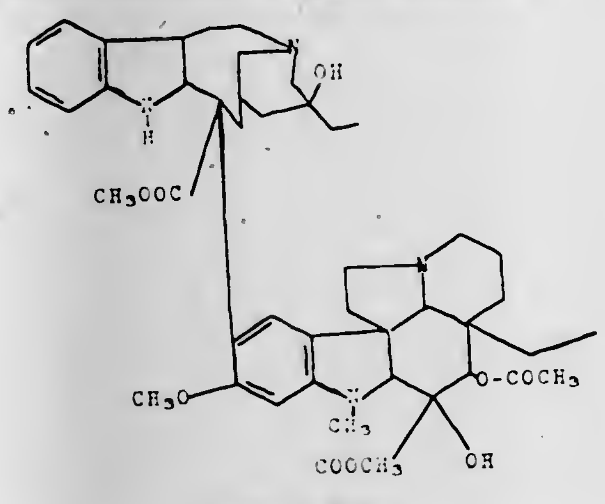
DIHYDROVINBLASTINE

Norbert Neuss and Marvin Gorman, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

Filed Apr. 1, 1964, Ser. No. 356,588

2 Claims. (Cl. 260—287)

1. Dihydrovinblastine having the formula



3,352,869

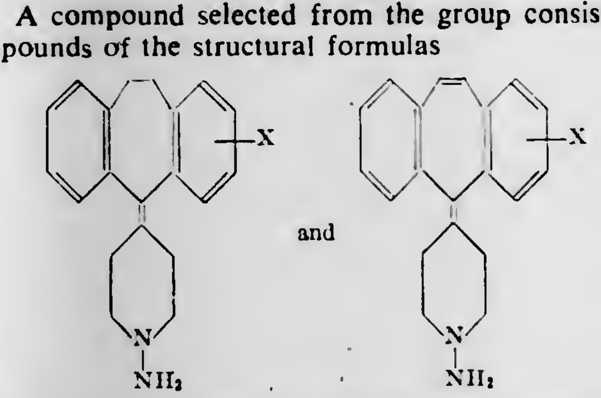
SUBSTITUTED AND UNSUBSTITUTED 4-(5H-DIBENZO[a,d]CYCLOHEPTEN - 5 - YLIDENE) - 1-(AMINO OR NITROSO)PIPERIDINES

Edward L. Engelhardt, Gwynedd Valley, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed May 18, 1965, Ser. No. 456,852

4 Claims. (Cl. 260—293)

1. A compound selected from the group consisting of compounds of the structural formulas



and non-toxic salts thereof, wherein X is selected from the group consisting of hydrogen and halogen.

4. 4-(5H-dibenzo[a,d]cyclohepten-5-ylidene)-1-nitrosopiperidine.

3,352,870

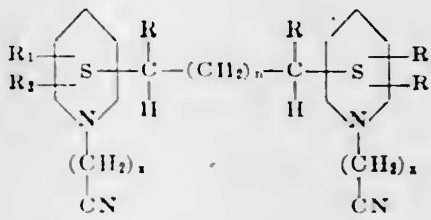
DI-(N-CYANOALKYLPIPERIDYL)ALKANES

Francis E. Cislak, William H. Rieger, and John H. Chapman, Indianapolis, Ind., assignors to Reilly Tar & Chemical Corporation, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed May 24, 1965, Ser. No. 458,485

5 Claims. (Cl. 260—293)

1. Di-(N-cyanoalkylpiperidyl)alkanes whose formula is:



wherein R, R_1, R_2, R_3, and R_4 are selected from the class consisting of hydrogen and lower alkyl; *x* is a small integer from 1 to 3; *n* is a small integer from 1 to 4.

3,352,871

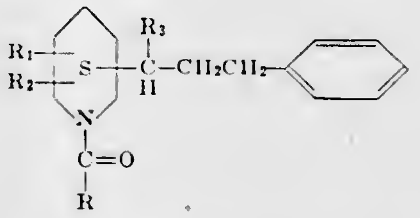
FATTY ACID PHENYLALKYLPIPERIDIDES

Francis E. Cislak, Indianapolis, Ind., assignor to Reilly Tar & Chemical Corporation, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,719

5 Claims. (Cl. 260—294.7)

1. Phenylalkylpiperidides of the formula



wherein R_1, R_2, and R_3 are selected from the class consisting of hydrogen and lower alkyl, and R is selected from the class consisting of alkyl and alkenyl radicals having from 1 to 29 carbon atoms.

3,352,872

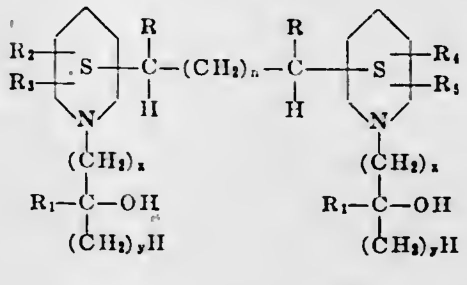
DI-(N-HYDROXYALKYLPIPERIDYL)ALKANES

Francis E. Cislak, Charles K. McGill and George W. Campbell, Jr., Indianapolis, Ind., assignors to Reilly Tar & Chemical Corporation, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Apr. 19. 1965, Ser. No. 449,311

6 Claims. (Cl. 260—294.7)

1. Di-(N-hydroxyalkylpiperidyl)alkanes whose formula is:



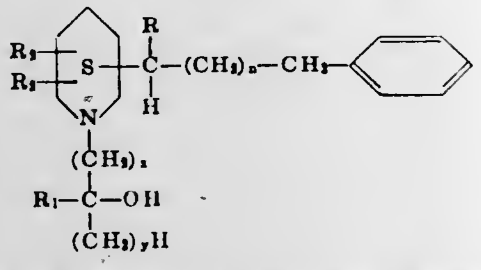
wherein R, R_1 ,R_2, R_3, R_4, and R_5 are selected from the class consisting of hydrogen and lower alkyl; *x* is a member of the group consisting of 0, 1, 2, 3, and 4; *y* is selected from the group consisting of 0, 1, and 2; *n* is selected from the class consisting of 0, 1, 2, 3, and 4.

3,352,873
N-HYDROXYALKYL-PHENYLALKYLPIPERIDINES

Francis E. Cislak, Charles K. McGill and George W. Campbell, Jr., Indianapolis, Ind., assignors to Reilly Tar & Chemical Corporation, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Apr. 19, 1965, Ser. No. 449,312
5 Claims. (Cl. 260—294.7)

1. N-hydroxyalkyl-phenylalkylpiperidines of the formula:



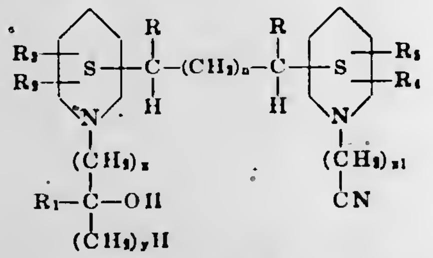
wherein R, R_1, R_2, and R_3 represent a member of the class consisting of hydrogen and lower alkyl; *x* is selected from the class consisting of 0, 1, 2; 3, and 4; *y* is selected from the class consisting of 0, 1, and 2; *n* is selected from the class consisting of 1, 2, 3, and 4.

3,352,874
N-HYDROXYALKYLPIPERIDYL, N'-CYANOALKYLPIPERIDYL ALKANES

Francis E. Cislak, William H. Rieger and John H. Chapman, Indianapolis, Ind., assignors to Reilly Tar & Chemical Corporation, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed June 14, 1965, Ser. No. 463,904
4 Claims. (Cl. 260—294.7)

1. N - hydroxyalkylpiperidyl, N' - cyanoalkylpiperidyl alkanes whose formula is:



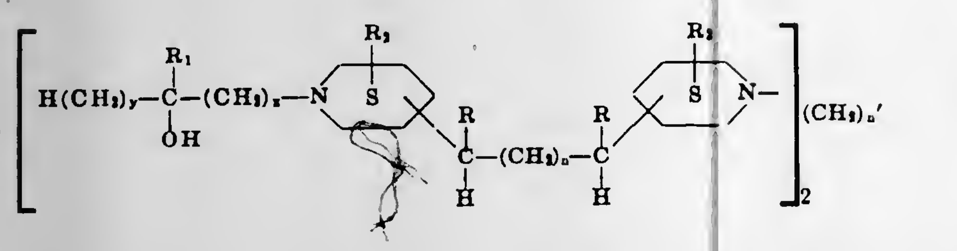
wherein R, R_1, R_2, R_3, R_4, and R_5 represent a member of the class consisting of hydrogen and lower alkyl; *x* is an integer from 0 to 4; *y* is an integer from 0 to 2; x_1 is an integer from 1 to 3; *n* is an integer from 0 to 4.

3,352,875
METHYLENEBIS[(N-HYDROXYALKYL-PIPERIDYL) ALKYL] PIPERIDINES

Charles K. McGill, Indianapolis, Ind., assignor to Reilly Tar & Chemical Corporation, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed July 28, 1965, Ser. No. 475,577
5 Claims. (Cl. 260—294.7)

1. Methylenebis[(N - hydroxyalkyl - piperidyl)alkyl] piperidines whose formula is



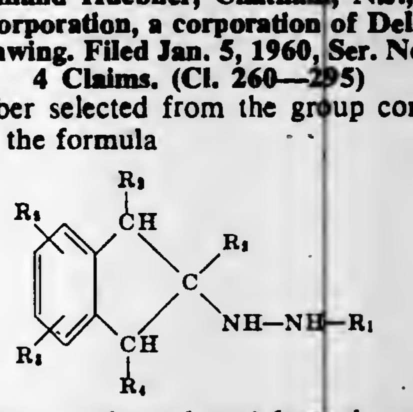
wherein R, R_1, and R_2 are selected from the group consisting of hydrogen and lower alkyl; *x* is a small integer from 0 to 4; *y* is a small integer from 0 to 2; *n* is a small integer from 0 to 4; *n'* is a small integer from 1 to 6.

3,352,876
2-INDANYL-HYDRAZINES AND SALTS THEREOF

Charles Ferdinand Huebner, Chatham, N.J., assignor to Ciba Corporation, a corporation of Delaware

No Drawing. Filed Jan. 5, 1960, Ser. No. 485
4 Claims. (Cl. 260—295)

1. A member selected from the group consisting of a compound of the formula



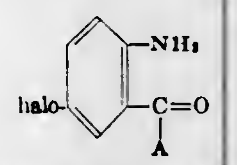
in which R_1 is a member selected from the group consisting of hydrogen, lower alkanoyl, the acyl radical of nicotinic acid, the acyl radical of isonicotinic acid and the acyl radical of 3-(5-methyl-1,2-oxazolyl)-carboxylic acid, each of the radicals R_2, R_3 and R_4, is a member selected from the group consisting of hydrogen, lower alkyl, phenyl and phenyl-lower alkyl, and each of the radicals R_5 and R_6 is a member selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, halogeno and trifluoromethyl, and a therapeutically acceptable acid addition salt thereof.

3,352,877
PROCESS FOR PREPARING 5-HALO-2-AMINOPHENYL-3-ARYL KETONES

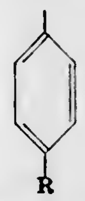
Charles W. Den Hollander, Midland Park, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed May 1, 1964, Ser. No. 364,298
6 Claims. (Cl. 260—296)

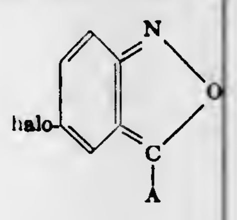
3. A process of producing a benzophenone compound of the formula:



wherein A is selected from the group consisting of pyridyl and



R is selected from the group consisting of hydrogen and halogen, from an anthranil of the formula:



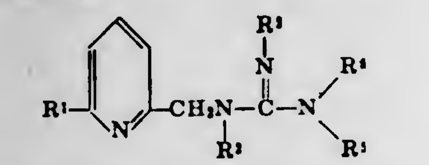
wherein A is as above which comprises treating said anthranil in an inert organic solvent with hydrogen gas in an amount sufficient to convert said anthranil to said benzophenone in the presence of a catalyst comprising, as the sole catalytic components, palladium and an iron containing material selected from the group consisting of hydroxides, carbonates and basic carbonates of iron in the ferric state, the gram atomic proportion of palladium to iron being from about 3 to about 8 g. atoms of palladium to about 1 g. atom of iron.

3,352,878
CERTAIN PYRIDYLMETHYL GUANIDINE DERIVATIVES

William F. Minor, Fayetteville, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 18, 1965, Ser. No. 440,948
12 Claims. (Cl. 260—296)

1. A member selected from the group consisting of bases of the formula



in which R^1 is a member selected from the group consisting of hydrogen and methyl, R^2 represents (lower)alkyl and R^3, R^4 and R^5 each represent a member selected from the group consisting of hydrogen and (lower)alkyl; and the nontoxic, pharmaceutically acceptable acid addition salts thereof.

3,352,879
METAL CHELATES OF HYDANTOINS AND THEIR USE IN MAKING 5-SUBSTITUTED HYDANTOINS

Herman L. Finkbeiner, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,428
20 Claims. (Cl. 260—299)

1. The metal chelate of a 5-carboxyhydantoin wherein the metal is selected from the group consisting of magnesium, zinc and calcium.

8. The process of producing a metal chelate of a 5-carboxyhydantoin which comprises reacting a solution of an hydantoin having two hydrogen atoms on the ring carbon atom in the 5-position, with a metal alkyl carbonate, said metal being selected from the group consisting of magnesium, zinc and calcium.

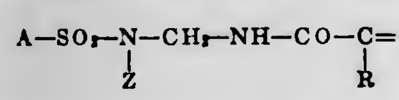
12. The process of producing a 5-substituted hydantoin which comprises reacting an alkylating agent with a solution of a metal chelate of a 5-carboxyhydantoin wherein the metal is selected from the group consisting of magnesium, zinc and calcium, acidifying the reaction mixture to form a water-soluble salt of the metal and separating the 5-substituted hydantoin from the reaction mixture.

3,352,880
UNSATURATED METHYLENE-CARBONAMIDE-SULPHONAMIDES AND PROCESS OF PRODUCING THEM

Erwin Müller, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 23, 1964, Ser. No. 420,766
Claims priority, application Germany, Jan. 10, 1964,
F 41,710/64
13 Claims. (Cl. 260—301)

1. A compound of the formula



$$A{-}SO_2{-}\underset{Z}{N}{-}CH_2{-}NH{-}CO{-}\underset{R}{C}{=}CH_2$$

wherein

A is a member selected from the group consisting of chloro-phenyl, dichlorophenyl, lower alkyl phenyl, nitrophenyl and halogenated lower alkyl;

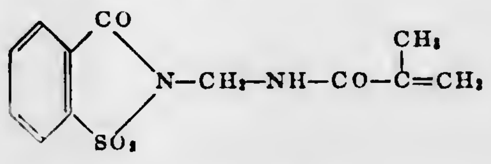
R is a member selected from the group consisting of hydrogen and methyl;

Z is a member selected from the group consisting of hydrogen, lower alkyl, cyclohexyl, lower alkyl sulfonyl, lower alkoxy carbonyl and carbonyl,

A being defined as phenyl when

Z is defined as lower alkyl sulfonyl and carbonyl radicals, the carbon atoms of the carbonyl radical being bonded to A in ortho position to the sulfo group.

5. A compound of the formula



3,352,881
2,2'-SUCCINYL BIS(4-THIAZOLECARBOXYLIC ACID)

Miklos Bodanszky, Princeton, and John T. Sheehan, Middlesex, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Mar. 4, 1964, Ser. No. 355,142, now Patent No. 331,864, which in turn is a division of application Ser. No. 206,155, June 29, 1962, now Patent No. 3,201,457, which in turn is a division of application Ser. No. 137,495, Sept. 12, 1961, now Patent No. 3,065,240, which in turn is a division of application Ser. No. 47,129, Aug. 3, 1960, now Patent No. 3,040,054, dated June 19, 1962. Divided and this application Feb. 2, 1967, Ser. No. 641,388
1 Claim. (Cl. 260—302)

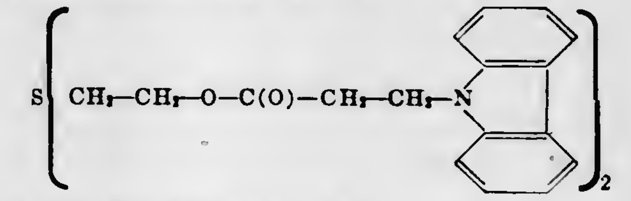
2,2'-succinyl bis(4-thiazolecarboxylic acid).

3,352,882
NOVEL CARBAZOLE DERIVATIVES

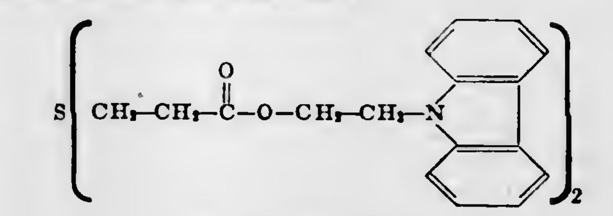
Cornelio Caldo and Salvatore Algieri, Terni, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

Filed Sept. 11, 1962, Ser. No. 222,912
Claims priority, application Italy, Sept. 14, 1961,
16,548/61
1 Claim. (Cl. 260—315)

A heterocylic thioester selected from the group consisting of thioester of the formula



and the thioester of the formula



3,352,883
PRODUCTION OF DIACETONE-2-KETO-1-GULONIC ACID

Eitaro Hashii, Osaka, Japan, assignor to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Mar. 16, 1964, Ser. No. 352,326
Claims priority, application Japan, Mar. 16, 1963,
38/14,533
2 Claims. (Cl. 260—340.7)

1. In a process for the production of diacetone-2-keto-1-gulonic acid, wherein diacetone sorbose is catalytically oxidized with an alkali metal hypohalogenite and the re-

action mixture is subjected to centrifugal separation in successive centrifugal separation steps, the procedure comprising adding sodium hydrogensulfite and a mineral acid to the supernatant obtained by the first stage centrifugal separation of the reaction mixture resulting from the oxidation step of the diacetone sorbose.

3,352,884

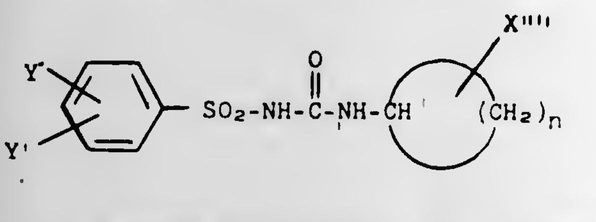
1 - BENZENESULFONYL - 3 - (OXOCYCLOALKYL)-UREAS AND THE CYCLIC ALKYLENE KETALS THEREOF

Gunther S. Fonken, Charleston Township, Kalamazoo County, Milton E. Herr, Kalamazoo Township, Kalamazoo County, and Herbert C. Murray, Barry Township, Barry County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Feb. 1, 1965, Ser. No. 429,648

10 Claims. (Cl. 260—340.9)

1. A compound of the formula:



wherein *n* is a whole number from 4 to 11, inclusive; Y and Y' are selected from the group consisting of hydrogen, lower-alkyl of 1 to 8 carbon atoms, inclusive, lower-alkoxy of 1 to 8 carbon atoms, inclusive, lower-alkanoyl of 2 to 8 carbon atoms, inclusive, and halogen; and X'''' is selected from the group consisting of keto, and cyclic lower-alkylene ketal, in which lower-alkylene is an alkylene substituent of 2 to 8 carbon atoms, inclusive.

10. 1 - (p - tolylsulfonyl) - 3 - (4-oxocycloheptyl)urea cyclic ethylene ketal.

3,352,885

PROCESS FOR THE PRODUCTION OF 7-AMINO-3-PHENYL-COUMARINE COMPOUNDS

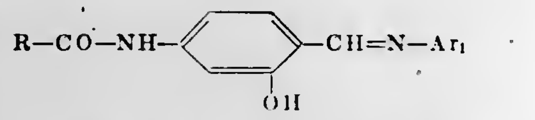
Carl-Wolfgang Schellhammer, Opladen, Karl-Walter Müller, Leverkusen, and Roderich Raue, Leverkusen-Wiesdorf, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Mar. 2, 1965, Ser. No. 436,669

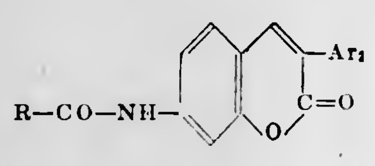
Claims priority, application Germany, Mar. 7, 1964, F 42,238

6 Claims. (Cl. 260—343.2)

1. A process for producing 7-amino-3-phenyl-coumarine compounds comprising heating a compound of the formula



wherein R is lower-alkyl and Ar_1 is an aromatic radical with phenylacetic acid or the corresponding substituted compound having as a ring substituent at least one member selected from the group consisting of alkyl, chloro, methoxy, acetylamino, nitro, methylsulfonyl, sulfonamide and trimethylammonium-phenyl acetic acid in the presence of a water-removing agent and alkali metal salts of carboxylic acids to obtain a compound of the formula



wherein Ar_2 denotes a phenyl radical, removing the acyl moiety and recovering the resulting product.

3,352,886

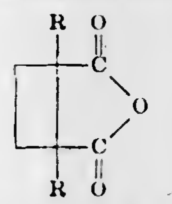
MANUFACTURE OF CIS-1,2-CYCLOBUTANE-CARBOXYLIC ANHYDRIDE

Janice L. Greene, Warrensville Heights, and Kathleen B. Fuller, Tiffin, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

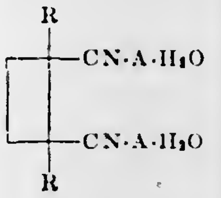
No Drawing. Filed Aug. 20, 1964, Ser. No. 391,033

10 Claims. (Cl. 260—346.3)

1. The process for preparing a cis-1,2-cyclobutanedicarboxylic anhydride having the structure



wherein R is a member selected from the group consisting of hydrogen, a lower alkyl group and a halogen comprising reacting a compound corresponding to the formula



wherein R has the foregoing designation and A is a member selected from the group consisting of HSO_4^- and $H_2PO_4^-$ with a substantially equimolar proportion of water.

3,352,887

METHOD OF PRODUCING PHTHALIC ANHYDRIDES

Harry Lister Riley, Oxford, and Andrzej Romanski, Sheffield, England, assignors to United Coke and Chemicals Company Limited, Rotherham, England

Original application Jan. 3, 1961, Ser. No. 79,971, now Patent No. 3,226,338, dated Dec. 28, 1965. Divided and this application Sept. 16, 1965, Ser. No. 487,828

Claims priority, application Great Britain, July 3, 1959, 22,973/59

The portion of the term of the patent subsequent to Dec. 28, 1982, has been disclaimed

1 Claim. (Cl. 260—346.4)

A method of producing phthalic anhydride which comprises passing a mixture of naphthalene vapor and air in contact with a fluidized bed containing a catalyst comprising particles of silica gel having a pore size of from about 40 to 60 A. and a maximum sieve size of about 50 B.S. carrying a liquid deposited glass composed of a mixture of vanadium pentoxide and potassium pyrosulphate having a molar ratio of K_2O:V_2O_5 between 1.0 and 6.0 and a softening temperature below 320° C., and said glass amounting to from about 1 to 35 percent by weight of the total mass of particles.

3,352,888

ORGANOMETALLO-SEMICONDUCTING MATERIALS

Yoshio Matsunaga, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,341

5 Claims. (Cl. 260—396)

1. An organometallo molecular complex of the formula:

$$\left[D\right]^{+}\left[A\right]^{-}_{1}$$

wherein D is a metallocinium moiety selected from the group consisting of ferricinium and cobalticinium and A is a tetrahalogeno-p-diphenoquinone moiety selected from the group consisting of tetrachloro-p-diphenoquinone and tetrabromo-p-diphenoquinone.

3,352,889

STEROIDAL 6-CHLORO-4,6-DIENES

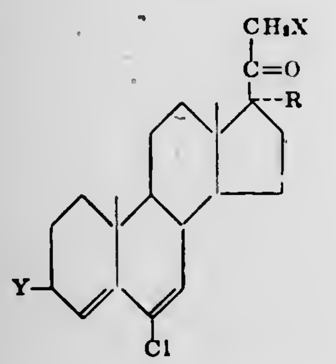
Yvon Lefebvre, Pierrefonds, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 1, 1963, Ser. No. 299,158

Claims priority, application Canada, Oct. 27, 1962, 861,132

14 Claims. (Cl. 260—397.2)

1. A 6-chloropregna-4,6-diene of the following general structural formula



in which X is selected from the group consisting of hydrogen and fluorine; Y is selected from the group consisting of hydroxyl and acetoxy; and R is selected from the group consisting of hydrogen, acetoxy, and straight-chain lower alkyl groups containing from 1 to 4 carbon atoms.

11. 3β-acetoxy-6-chlorocholesta-4,6-diene.

3,352,890

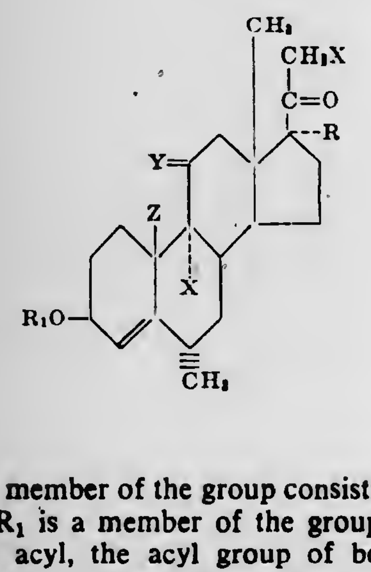
METHOD OF SELECTIVELY REDUCING THE 3-OXO RADICAL OF 3-OXO-6-ALPHA-METHYL-PREGN-4-EN-20-ONE COMPOUNDS

Ralph I. Dorfman, Bjarte Loken, and Marcel Gut, Shrewsbury, Mass., assignors to Worcester Foundation for Experimental Biology, a non-profit foundation of Massachusetts

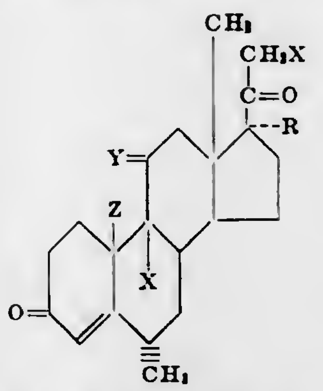
No Drawing. Filed Feb. 6, 1964, Ser. No. 343,151

17 Claims. (Cl. 260—397.4)

2. The method of producing a compound having the formula



wherein R is a member of the group consisting of hydroxy and acyloxy, R_1 is a member of the group consisting of hydrogen and acyl, the acyl group of both R and R_1 being a carboxylic acid acyl having from 1 to 10 carbon atoms, X is a member of the group consisting of hydrogen chlorine and fluorine, Y is a member of the group consisting of =O, beta hydroxy and H_2, and Z is a member of the group consisting of hydrogen and methyl, comprising selectively reducing a compound having the formula



wherein R, X, Y and Z have the same significance as defined above, by dissolving the compound to be reduced in a liquid medium a lower hydrocarbon ether and a small quantity of water, and adding to said solution only sufficient alkali metal borohydride to reduce the 3-keto group, and where R_1 is acyl, further acylating the reduction product with a carboxylic acid acyl group having from 1 to 10 carbon atoms.

3,352,891

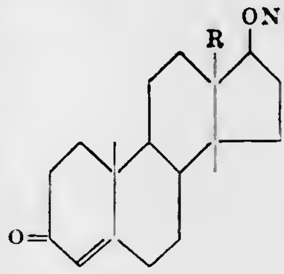
19-NORSTEROIDAL-17-NITRATES

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 11, 1966, Ser. No. 526,716

10 Claims. (Cl. 260—397.4)

1. A compound selected from the group consisting of those having the formula:



wherein R is lower alkyl.

3,352,892

HYDROLYSIS OF 17-20,20-21-BISMETHYLENE DIOXY-STEROIDS OF THE PREGNANE SERIES

Gerlof Vollema, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 22, 1966, Ser. No. 573,814

Claims priority, application Netherlands, Sept. 9, 1965, 65—11,741

4 Claims. (Cl. 260—397.45)

1. In a process for the hydrolysis of a 17-20,20-21-bismethylenedioxy-steroid of the pregnane series by treatment with an acid, the improvement which comprises performing said conversion in the presence of a compound having at least one group selected from a phenolic hydroxyl group, an esterified and etherified phenolic hydroxyl group, which compound is further not substituted by a group hampering the ortho and para substitution relating to the relative hydroxyl group.

3,352,893

METHOD OF PRODUCING HYDROXY ALUMINUM DISALICYLATE

James M. Holbert, Lookout Mountain, and Benjamin H. Gross, Chattanooga, Tenn., assignors to Chattem Drug & Chemical Company, a corporation of Tennessee

Filed Feb. 13, 1963, Ser. No. 258,312

7 Claims. (Cl. 260—448)

1. A method for producing the compound hydroxy aluminum disalicylate which comprises reacting a solu-

tion of two molecular proportions of salicylic acid in a mixture of water and an alkanol containing from 2 to 4 carbon atoms per molecule with one molecular proportion of an aluminum alcoholate whose alkoxide groups each contain from 2 to 4 carbon atoms, the amount of water present being in sufficiently large excess to provide for hydrolysis of any intermediate alkoxides produced, the reaction being carried out at a temperature sufficiently high so that the exothermic reaction between said alcoholate and said salicylic acid causes evolution of the alkanol from the reaction mixture, thereby controlling the reacton temperature, and recovering the precipitated hydroxy aluminum disalicylate so produced.

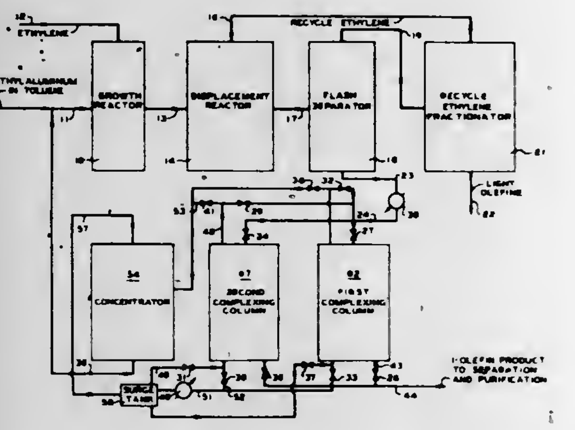
3,352,894

PROCESS FOR SEPARATING ORGANOMETALS FROM 1-OLEFINS

Donald L. Crain and Roger F. Kleinschmidt, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 12, 1963, Ser. No. 301,292

8 Claims. (Cl. 260—448)



1. A process for separating organometals from 1-olefins which comprises contacting an organometal having the formula R_nM, where R is an alkyl radical containing from 2 to 6 inclusive, carbon atoms, M is a metal selected from the group consisting of aluminum, boron, beryllium, magnesium and zinc, and *n* is equal to the valence of the metal M, in admixture with 1-olefins with a polymer containing Lewis base groups having present therein atoms selected from the group consisting of oxygen, sulfur, selenium, nitrogen, phosphorus, and arsenic, said polymer being immiscible with said organometal and said 1-olefins; and thereafter separately recovering said 1-olefins.

5. In a process in which ethylene is reacted with an organometal having the formula R_nM, wherein each R is an alkyl radical containing from 2 to 6, inclusive, carbon atoms, M is a metal selected from the group consisting of aluminum, boron, beryllium, magnesium and zinc, and *n* is equal to the valence of the metal M, so as to form a mixture of an R_nM compound in which R is an alkyl radical containing no branching nearer the metal M than the 3 position, and M and *n* are as defined above, and higher 1-olefins, the improvement which comprises contacting said mixture of an R_nM compound and 1-olefins with a polymer containing Lewis base groups having present therein atoms selected from the group consisting of oxygen, sulfur, selenium, nitrogen, phosphorus and arsenic, thereby forming a complex of said R_nM compound with said polymer; and separately recovering said 1-olefins.

3,352,895

HYDROXYALUMINUM GLYCERATE AND METHOD OF MAKING SAME

James M. Holbert, Lookout Mountain, and Benjamin H. Gross, Chattanooga, Tenn., assignors to Chattem Drug & Chemical Company, a corporation of Tennessee

Filed July 9, 1964, Ser. No. 381,449

5 Claims. (Cl. 260—448)

1. The compound hydroxyaluminum glycerate having the empirical formula $C_3H_7AlO_4$.

3,352,896

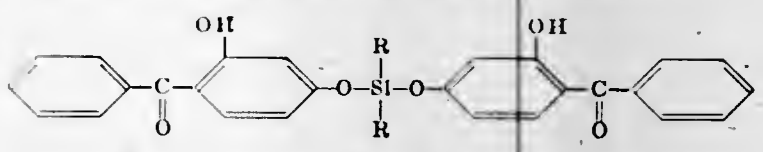
BIS(3-HYDROXY-4-BENZOYLPHENOXY)SILANES

Hans Dressler, Pitcairn, and Kenneth G. Reabe, Delmont, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed June 17, 1964, Ser. No. 375,968

3 Claims. (Cl. 260—448.8)

1. A composition of matter having the formula:



wherein R is a member selected from the group consisting of phenyl and alkyl having from 1–12 carbon atoms.

3,352,897

N-ALKOXY AMIDES OF 4-HALOPHENOXY-ALKYLCARBOXY ACIDS

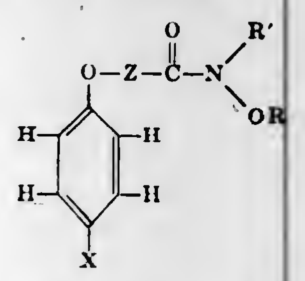
Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Apr. 10, 1963, Ser. No. 271,869

The portion of the term of the patent subsequent to Feb. 2, 1982, has been disclaimed

14 Claims. (Cl. 260—453)

1. A compound of the formula



wherein X is a halogen atom, R′ is selected from the group consisting of hydrogen and unsubstituted alkyl groups containing from one to ten carbon atoms, R is an unsubstituted alkyl group containing from one to ten carbon atoms, and Z is an unsubstituted alkylene group containing from one to four carbon atoms.

3,352,898

PROCESS FOR PRODUCTION OF BUNTE COMPOUNDS

John C. James, Melrose, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Oct. 27, 1964, Ser. No. 406,904

4 Claims. (Cl. 260—453)

1. In the process wherein a bis(aminoalkyl)disulfide acid addition salt is reacted with sodium bisulfite at a temperature between 0° C. to 100° C. to produce a thiosulfuric acid ester, the improvement wherein the molar ratio of sodium bisulfate to said bis(aminoalkyl)disulfide acid addition salt is from about 5:1 to about 30:1 and said acid addition salt and said bisulfite are reacted in a solution comprising hydrogen peroxide in amounts corresponding to a molar ratio of hydrogen peroxide to said bis (aminoalkyl)disulfide acid addition salt from about 0.5:1 to about 10:1.

3,352,899

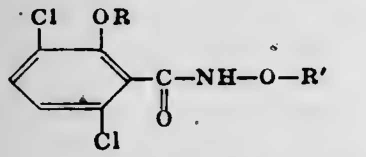
SUBSTITUTED BENZOHYDROXAMATES

Kanji Taniguchi, Fujisawa-shi, Mitsuo Asada, Oiso-machi, Naka-gun, and Reiji Sakimoto, Takaoka-shi, Japan, assignors to Nippon Soda Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan

No Drawing. Filed June 4, 1965, Ser. No. 461,541

6 Claims. (Cl. 260—453)

1. A compound having the general formula



wherein R represents methyl or ethyl and R′ represents methyl, ethyl, propyl, allyl, or $—CH_2—C\equiv CH$.

3,352,900

ESTERS OF 2-SUBSTITUTED ETHYLTHIOL-CARBONIC ACID

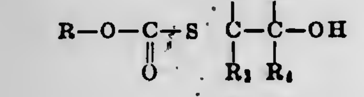
Walter I. Kimoto and Edward A. Swakon, Hammond, Ind., and Edmund Field, Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed July 17, 1963, Ser. No. 295,817

8 Claims. (Cl. 260—455)

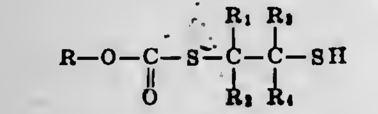
1. A process for the preparation of diesters of monothiolcarbonic acid selected from the group consisting of:

(A)



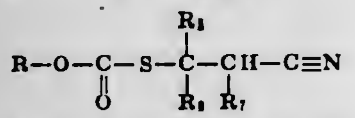
$$R-O-\underset{\underset{O}{\|}}{C}-S-\overset{R_1}{\underset{R_3}{C}}-\overset{R_2}{\underset{R_4}{C}}-OH$$

(B)



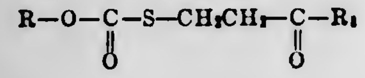
$$R-O-\underset{\underset{O}{\|}}{C}-S-\overset{R_1}{\underset{R_3}{C}}-\overset{R_2}{\underset{R_4}{C}}-SH$$

(C)



$$R-O-\underset{\underset{O}{\|}}{C}-S-\overset{R_5}{\underset{R_6}{C}}-\underset{R_7}{CH}-C\equiv N$$

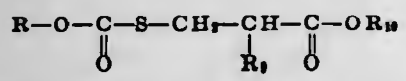
(D)



$$R-O-\underset{\underset{O}{\|}}{C}-S-CH_2CH_2-\underset{\underset{O}{\|}}{C}-R_8$$

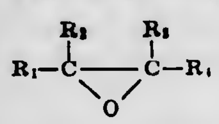
and

(E)

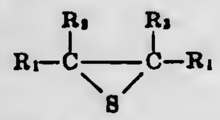


$$R-O-\underset{\underset{O}{\|}}{C}-S-CH_2-\underset{R_9}{CH}-\underset{\underset{O}{\|}}{C}-OR_{10}$$

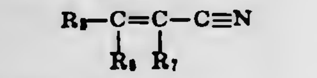
which comprises reacting carbonyl sulfide, an alcohol having the formula ROH wherein R is selected from the group consisting of alkyl, cycloalkyl and aralkyl hydrocarbon groups; and a hydrogen acceptor compound selected from the class consisting of an olefin oxide having the formula



an olefin sulfide having the formula

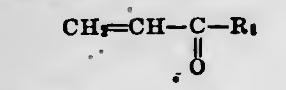


an acrylonitrile having the formula



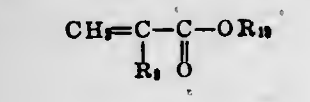
$$R_8-\underset{R_6}{C}=\underset{R_7}{C}-C\equiv N$$

a vinyl ketone having the formula



$$CH_2=CH-\underset{\underset{O}{\|}}{C}-R_8$$

and an ester of an α-methylene carboxylic acid having the formula



$$CH_2=\underset{R_9}{C}-\underset{\underset{O}{\|}}{C}-OR_{10}$$

wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7 and R_9 are selected from the class consisting of hydrogen and alkyl, cycloalkyl, aryl, aralkyl and alkaryl hydrocarbon groups; R_8 is selected from the class consisting of alkyl, cycloalkyl, alkaryl and aralkyl hydrocarbon groups; and R_{10} is selected from the class consisting of alkyl, cycloalkyl, aralkyl, alkaryl and aryl hydrocarbon groups; at a temperature in the range of 20 to 200° C. and in the presence of a base catalyst selected from the class consisting of alkali metal hydroxides, alkali alkoxides of said ROH alcohols, tertiary amines and tetraalkyl guanidines.

3,352,901

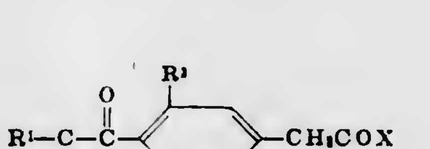
(2-ALKYLIDENEACYL)PHENYLACETIC ACIDS, ESTERS, AND AMIDES

Everett M. Schultz, Ambler, and James M. Sprague, Gwynedd Valley, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 7, 1963, Ser. No. 263,434

15 Claims. (Cl. 260—476)

1. A product having the structural formula



wherein

R^1 is selected from the group consisting of lower-alkyl, mononuclear aryl-lower-alkyl and mononuclear aryloxy;

R^2 is selected from the group consisting of hydrogen and lower-alkyl;

R^3 is selected from the group consisting of hydrogen, halogen and lower-alkyl; and

X is selected from the group consisting of hydroxyl, -O-(alkali metal), -O-(alkaline earth metal), lower-alkoxyl, amino and 1,1-di-lower-alkyl-hydrazino and the nontoxic, pharmacologically acceptable acid addition salts thereof.

3,352,902

SULFOMETHYLATION OF HUMIC ACIDS, LIGNITES, AND COALS AND PRODUCTS THEREOF

Spiros E. Moschopedis, Edmonton, Alberta, Canada, assignor to Canadian Patents and Development Limited, National Research Council, Ottawa, Ontario, Canada

No Drawing. Filed Jan. 13, 1964, Ser. No. 337,169

9 Claims. (Cl. 260—507)

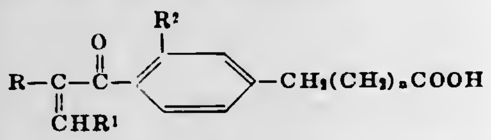
1. A process for solubilizing humic acids, lignites and pre-oxidized sub-bituminous coals comprising reacting said materials in alkali solution with alkali hydroxymethane sulfonate at elevated temperatures of the order of 100° C. until sulfomethylation is substantially complete, separating the insoluble matter, precipitating the soluble sulfomethylated product with concentrated acid, washing the precipitate with mineral acid solution of concentration at least about 10% to remove mineral matter, and recovering the water-soluble product.

9. A water-soluble demineralized derivative of humic acids, lignites and pre-oxidized sub-bituminous coals, containing $—CH_2.SO_3.M$ radicals where M is a cation from the group hydrogen, alkali metal and ammonium, and halogen radicals from the groups chlorine and bromine in amounts of about 20 to 25% by wt. and produced by reaction in alkali solution with alkali hydroxymethane sulfonate at temperatures of the order of 100° C. without degradation beyond the humic acid stage.

3,352,903
(α-ALKYLIDENEACYL) PHENYLALKANOIC ACIDS

Everett M. Schultz, Ambler, and James M. Sprague, Gwynedd Valley, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Jan. 22, 1963, Ser. No. 253,042
7 Claims. (Cl. 260—515)

1. A compound having the formula:

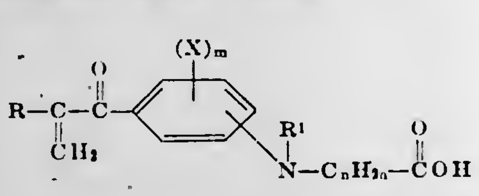


wherein R is lower alkyl, carboxy substituted lower alkyl, trifluoromethyl substituted lower alkyl, phenylmercapto substituted lower alkyl, 4-morpholinyl substituted lower alkyl, cyclohexyl, cyclopentyl, p-tolyl or phenyl; R^1 is hydrogen or lower alkyl; R^2 is hydrogen, halogen, lower alkyl or lower alkoxy and *n* is an integer having a value of 1–2; and the nontoxic, pharmaceutically acceptable salt and lower alkyl esters thereof.

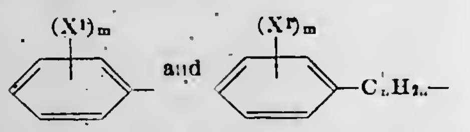
3,352,904
N-CARBOXYALKYL-(2-METHYLENEALKANOYL) ANILINE COMPOUNDS

John B. Bicking, Lansdale, and James M. Sprague, Gwynedd Valley, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Feb. 28, 1964, Ser. No. 348,256
12 Claims. (Cl. 260—518)

1. A compound of the formula:



wherein R represents a member selected from the group consisting of lower alkyl, cycloalkyl, trifluoromethyl substituted lower alkyl,



wherein the radical X^1 is a member selected from the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy, R^1 is a member selected from the group consisting of hydrogen, lower alkyl and lower alkanoyl, X is a member selected from the group consisting of hydrogen, halogen, lower alkyl and, taken together, two X radicals on adjacent carbon atoms of the benzene ring may be combined to form an hydrocarbylene chain containing four carbon atoms between their points of attachment, *m*, in each occurrence, is an integer having a value of 1–3 and *n*, in each occurrence, is an integer having a value of 1–5.

3,352,905
OXIDATION OF LOWER ALIPHATIC ALDEHYDES

Ralph O. Kerr, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Sept. 7, 1965, Ser. No. 485,603
10 Claims. (Cl. 260—530)

1. A process for the oxidation of lower aliphatic aldehydes to the corresponding acids which comprises contacting at a temperature above 150° C. reaction concentrations of a gaseous mixture of said aldehyde and oxygen with a catalytic active composition consisting essentially of a complex of vanadium, phosphorus, oxygen and a third metal component selected from the group consisting of iron, cobalt and nickel, and mixtures thereof, and wherein the relative atomic proportions of said complex are from 0.15 to 0.50 atom of vanadium to about 0.30 to 0.70 atom of phosphorus to about 0.05 to 0.35 atom of said third metal component.

10. A catalytic active composition useful for the vapor phase oxidation of aliphatic aldehydes to aliphatic acids consisting essentially of a complex of vanadium, phosphorus, oxygen and a third metal component selected from the group consisting of iron, cobalt and nickel, and mixtures thereof, and wherein the relative atomic proportions of said complex are from 0.15 to 0.50 atom of vanadium to about 0.30 to 0.70 atom of phosphorus to about 0.05 to 0.35 atom of said third metal component, and an inert carrier.

3,352,906
HABIT MODIFICATION AND PREPARATION OF SINGLE CRYSTAL TRIGLYCINE SULFATE

Charles R. Parkerson, Arlington, and Harry H. Wieder, Riverside, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Feb. 4, 1963, Ser. No. 256,175

4 Claims. (Cl. 260—534)

1. A method for habit modification and preparation of relatively large but thin single crystal plates of triglycine sulfate and deuterated triglycine sulfate having highly desirable crystal habit for use in ferroelectric devices, comprising:

(a) cutting a seed crystal of triglycine such that the distance between the (101) faces of the crystal determines the thickness of the crystal to be grown,
(b) planting said seed crystal in a suitably agitated saturated triglycine sulfate solution containing at least one impurity for preventing growth in the crystallographic [001] direction chosen from Rb^+, Cs^+, and Tl^+ ions,
(c) programming the temperature of said saturated solution downward for a suitable period of time consistent with crystal growth until the crystal grows to the desired size substantially only in two dimensions with substantially no growth in the crystallographic [001] direction.

3,352,907
PRODUCTION OF MUCOCHLORIC ACID

Franz Reicheneder and Karl Dury, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 4, 1964, Ser. No. 419,163

Claims priority, application Germany, Dec. 7, 1963, B 74,587

9 Claims. (Cl. 260—539)

1. A process for the production of mucochloric acid which comprises reacting chlorine in an aqueous neutral to acid medium at about 30° to 130° C. with an organic compound selected from the class consisting of saturated and olefinically unsaturated aliphatic and heterocyclic compounds having exactly 4 carbon atoms connected directly to each other in an unbranched linear chain, the inner two carbon atoms of said chain being substituted solely by members selected from the group consisting of hydrogen and chlorine and the outer two carbon atoms of said chain being substituted by at least one hydrogen atom and members selected from the group consisting of oxygen, nitrogen, chlorine, hydroxy, alkoxy of 1 to 4 carbon atoms, amino, lower alkyl amino, imino and lower alkyl imino.

3,352,908
PRODUCTION OF DIISOPROPYL CARBODIIMIDE

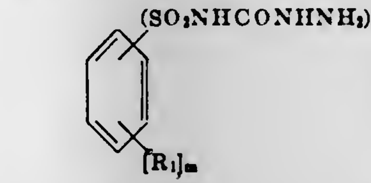
George T. White and Keith B. Mullin, Asheville, N.C., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 29, 1964, Ser. No. 363,630
1 Claim. (Cl. 260—551)

The improved process of producing diisopropyl carbodiimide which consists of introducing into a reaction zone diisopropyl thiourea, lead oxide and water, heating said reaction mass to the refluxing temperature of the system to produce diisopropyl carbodiimide, recovering said diisopropyl carbodiimide from said reaction mass by distillation in the presence of water obtaining a mixture of water and said diisopropyl carbodiimide as a distillate from said distillation, and separating said water and said diisopropyl carbodiimide by decantation.

3,352,909
NOVEL 4-(ORGANOSULFONYL)SEMICARBAZIDES

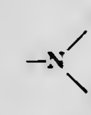
Adnan A. R. Sayigh, North Haven, and Henri Ulrich, North Branford, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed May 13, 1965, Ser. No. 455,626
6 Claims. (Cl. 260—554)

1. A 4-organo sulfonyl semicarbazide selected from the group consisting of compounds having the formulae:



and $R_2SO_2CONHNH_2$

wherein R_1 is selected from the group consisting of lower-alkyl, lower-alkenyloxy, halo, nitro, lower-alkoxycarbonyl, lower-alkylthio, 3-aminoureido and



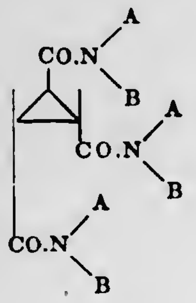
$$-N\begin{matrix}R_3\\R_4\end{matrix}$$

wherein R_3 and R_4 taken individually represent lower-alkyl and R_3 and R_4 taken together with the attached N atom represent a member selected from the group consisting of pyrrolidino, 2-methylpyrrolidino, 2,2-dimethylpyrrolidino, 3-ethylpiperidino, 4-isopropylpiperidino, N-methylpiperazino, N-ethylpiperazino, morpholino, and hexamethyleneimino, *n* is an integer from 1 to 2, and *m* is an integer from 0 to (6–*n*) and wherein R_2 is selected from the class consisting of cycloalkyl from 4 to 8 carbon atoms, inclusive, and alkyl from 1 to 12 carbon atoms, inclusive.

3,352,910
TRANS-1,2,3-CYCLOPROPANETRICARBOXAMIDES AND THEIR SYNTHESIS

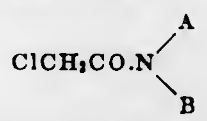
Lowell R. Smith, St. Louis, and Angelo John Speziale, Creve Coeur, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Nov. 13, 1964, Ser. No. 411,116
8 Claims. (Cl. 260—557)

1. A trans-1,2,3-cyclopropanecarboxamide of the formula



wherein A is alkyl of from 1 to 4 carbon atoms and wherein B is selected from the group consisting of phenyl and alkyl of from 1 to 4 carbon atoms.

6. A method of making a compound of claim **1** which comprises reacting potassium tert.butoxide with an α-chloroacetamide of the formula



$$ClCH_2CO.N\begin{matrix}A\\B\end{matrix}$$

wherein A is alkyl of from 1 to 4 carbon atoms and wherein B is selected from the group consisting of phenyl and alkyl of from 1 to 4 carbon atoms in the presence of an inert organic solvent.

3,352,911
HALOACETANILIDES

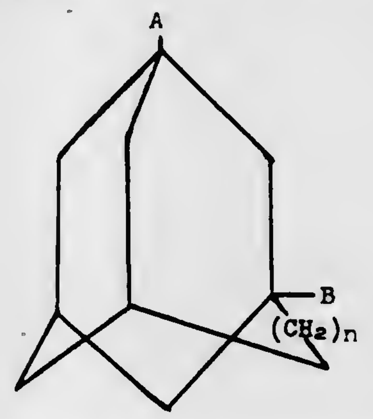
Stanley J. Strycker, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed June 8, 1964, Ser. No. 373,494
4 Claims. (Cl. 260—562)

1. A compound selected from the group consisting of 2,2,2 - trichloro - 2′ - methoxy - 4′ - nitroacetanilide, 2,2-dichloro - 2′ - hydroxy - 4′ - nitroacetanilide and 2,2,2-trichloro-2′-hydroxy-4′-nitroacetanilide.

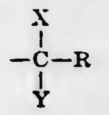
3,352,912
ADAMANTANES AND TRICYCLO[4.3.1.1$^{3.8}$] UNDECANES

William W. Prichard, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 18, 1964, Ser. No. 376,259
10 Claims. (Cl. 260—563)

1. A compound selected from the group consisting of those of the formula

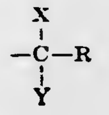


where
n is 0 or 1 with the proviso that when *n* is 0,
A is



$$-\overset{\displaystyle X}{\underset{\displaystyle Y}{\overset{|}{\underset{|}{C}}}}-R$$

and B is hydrogen, and when *n* is 1,
B is

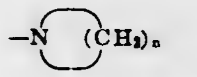


$$-\overset{\displaystyle X}{\underset{\displaystyle Y}{\overset{|}{\underset{|}{C}}}}-R$$

and A is hydrogen, and

wherein

X and Y are each hydrogen, methyl, or ethyl; and
R is



where *n* is an integer of from 2 through 6;
—NR_1R_2; or
—$N{=}CHR_3$

wherein

R_1 is hydrogen; alkyl of 1 through 6 carbon atoms; mono-substituted alkyl of 1 through 6 carbon atoms where the substituent is hydroxy, alkoxy of 1 through 2 carbon atoms, $-NH_2$, $-NHR_4$, or $-NR_4R_5$ where R_4 and R_5 are each alkyl of 1 through 4 carbon atoms; alkenyl of 2 through 6 carbon atoms; alkynyl of 2 through 6 carbon atoms; cyclopropyl; cyclobutyl; cyclopropylmethyl; or cyclobutylmethyl;

R_2 is R_1; chlorine; bromine; formyl; $-CH_2COOH$; $-CH_2COOCH_3$; or $-CH_2COOC_2H_5$ with the proviso that when R_1 is alkenyl or alkynyl having the unsaturated bond in the 1-position, R_2 is alkyl of 1 through 6 carbon atoms or mono-substituted alkyl of 1 through 6 carbon atoms where the substituent is hydroxy, alkoxy of 1 through 2 carbon atoms, $-NH_2$, $-NHR_4$, and $-NR_4R_5$; and

R_3 is hydrogen, alkyl of 1 through 5 carbon atoms, phenyl, naphthyl or furyl; and non-toxic, acid-addition salts of the compounds of said formula.

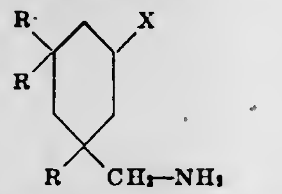
3,352,913

3 - AMINOMETHYL - 3,5,5 - TRIALKY - 1-CYCLOHEXYLAMINE AND CYCLOHEXANOL COMPOUNDS

Karl Schmitt, Herne, Westphalia, Josef Disteldorf, Wanne-Eickel, and Werner Hübel, Herne, Westphalia, Germany, assignors, by mesne assignments, to Scholven-Chemie Aktiengesellschaft, Gelsenkirchen-Buer, Germany

No Drawing. Filed July 15, 1964, Ser. No. 382,922
Claims priority, application Germany, Oct. 18, 1961, H 43,916
3 Claims. (Cl. 260—563)

1. Compound of the formula:



wherein each R is lower alkyl and X is selected from the group consisting of amino and hydroxy.

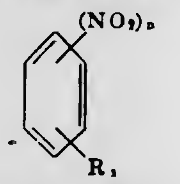
3,352,914

1,2-BIS(DIFLUORAMINO)ALKYLENE AROMATIC COMPOUNDS

Donald D. Perry, Morristown, and Joseph A. Castellano, Wayne, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Sept. 27, 1965, Ser. No. 491,505
14 Claims. (Cl. 260—570.5)

1. A compound of the formula:



wherein *n* is an integer from 0 to 3, *x* is an integer from 1 to 2, and R is a difluoraminoalkyl radical of from 2 to 6 carbon atoms.

3,352,915

PROCESS FOR THE PREPARATION OF NITROGEN-AND FLUORINE-CONTAINING ETHERS

William H. Graham, Huntsville, Ala., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 19, 1963, Ser. No. 268,510
4 Claims. (Cl. 260—584)

1. A process for the preparation of bis(difluoramino) dimethyl ether which comprises reacting difluoraminomethanol with concentrated sulfuric acid.

3,352,916

AMINATED POLYOXYALKYLENE FATTY AMINES

John D. Zech, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,125
7 Claims. (Cl. 260—584)

1. A composition prepared by reacting

a polyoxyalkylene derivative of an amine having a 10 to 20 carbon atom aliphatic radical,

said derivative containing from 2 to 20 moles of alkylene oxide units selected from the group consisting of ethylene oxide units and propylene oxide units for each equivalent of amino hydrogen in said amine, and

an aminating agent selected from the group consisting of ammonia, primary alkyl amines and secondary alkyl amines, said primary and secondary alkyl amines containing from 1 to 6 carbon atoms, in the presence of a Raney metal hydrogenation catalyst and at a temperature from about 175° C. to about 275° C.

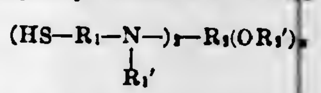
3,352,917

DIAMINE OXYALKYL COMPOUNDS

John C. James, Melrose, Robert J. Wineman, Concord, and Morton H. Gollis, Brookline, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Nov. 25, 1964, Ser. No. 413,953. Divided and this application May 19, 1966, Ser. No. 600,278
2 Claims. (Cl. 260—584)

1. Compounds selected from the class consisting of mercaptoalkyl oxyalkyl diamines of the formula



$$(HS{-}R_1{-}\underset{R_1'}{N}{-})_x{-}R_2(OR_2')_x$$

where each R is saturated aliphatic hydrocarbon,

each R′ is selected from the class consisting of hydrogen and saturated aliphatic hydrocarbon,

and *x* is an integer of from 1 to 3,

at least one of the oxy O and amino N atoms is exocyclic,

and N is separated from other hetero atoms by at least two carbon atoms;

and acid addition salts of said amines with protonic acids;

wherein each of said saturated aliphatic hydrocarbon radicals contains up to 18 carbon atoms.

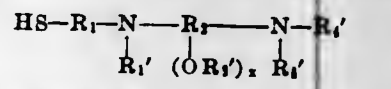
3,352,918

DIAMINE OXYALKYL COMPOUNDS

John C. James, Melrose, Robert J. Wineman, Concord, and Morton H. Gollis, Brookline, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Nov. 25, 1964, Ser. No. 413,953. Divided and this application May 19, 1966, Ser. No. 600,280
2 Claims. (Cl. 260—584)

1. Compounds selected from the class consisting of mercaptoalkyl oxyalkyl amines of the formula



$$HS{-}R_1{-}\underset{R_1'}{N}{-}\underset{(OR_2')_x}{R_2}{-}\underset{R_3'}{N}{-}R_3'$$

where each R is saturated aliphatic hydrocarbon,

each R′ is selected from the class consisting of hydrogen and saturated aliphatic hydrocarbon, and

x is an integer of from 1 to 3,

at least one of the oxy O and amino N atoms is exocyclic, and

N is separated from other hetero atoms by at least two carbon atoms; and

acid addition salts of said amines with protonic acids; wherein each of said saturated aliphatic hydrocarbon radicals contains up to 18 carbon atoms.

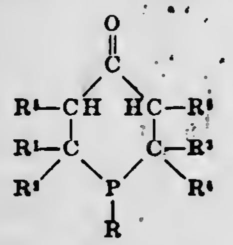
3,352,919

4-PHOSPHORINANONES AND METHOD OF PREPARING SAME

Richard Parke Welcher, Old Greenwich, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 18, 1965, Ser. No. 433,768
13 Claims. (Cl. 260—586)

1. A 4-phosphorinanone of the formula

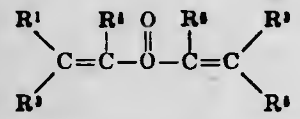


wherein R is alkyl having from 1 to 18 carbon atoms, cycloalkyl, aryl; R^1, R^2, R^3 and R^4 each represents a member selected from the group consisting of hydrogen, lower alkyl, phenyl, chloro-substituted phenyl, lower alkyl-substituted phenyl, cyclohexyl and lower alkoxyalkyl, provided that not more than two of the groups R^1–R^4 are hydrogen; and R^5 and R^6 each represents a member selected from the group consisting of hydrogen, lower alkyl and phenyl.

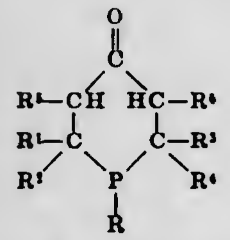
11. The method which comprises bringing a primary phosphine of the formula

$$RPH_2$$

into intimate contact with a divinyl ketone of the formula



and recovering the resulting 4-phosphorinanone product of the formula



R in the above formulae representing a member selected from the group consisting of alkyl, having from 1 to 18 carbon atoms, cycloalkyl, and aryl; R^1, R^2, R^3 and R^4 each represent a member selected from the group consisting of hydrogen, lower alkyl, phenyl, chlorosubstituted phenyl, lower alkyl-substituted phenyl, cyclohexyl and lower alkoxyalkyl; and R^5 and R^6 each represent a member selected from the group consisting of hydrogen, lower alkyl and phenyl.

3,352,920

NOVEL D-NOR-PROGESTERONES AND PROCESSES FOR THEIR MANUFACTURE

Jerrold Meinwald, Ithaca, N.Y., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 25, 1965, Ser. No. 435,363
2 Claims. (Cl. 260—586)

1. A member selected from the group consisting of 16-X-D-nor-progesterone, wherein X is a member selected from the group consisting of hydrogen, hydroxy, and lower alkanolyloxy, and 1-dehydro analogs thereof.

3,352,921

PROCESS FOR MAKING 2-HYDROXY-4 OR 5-ALKYLBENZOPHENONES USING SODIUM IODIDE

John Mather, Harrogate, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Aug. 26, 1964, Ser. No. 392,322
Claims priority, application Great Britain, Sept. 20, 1963, 37,050/63
2 Claims. (Cl. 260—591)

1. In a process for the production of 2-hydroxy-4 or 5-alkylbenzophenones, wherein the alkyl group is branched and contains 4–24 carbon atoms, comprising reacting benzotrichloride with an m- or p-alkyl phenol containing the required branched alkyl group in aqueous alkaline medium, the improvement which comprises carrying out the reaction in presence of sodium iodide in an amount sufficient to increase the yield of said 2-hydroxy-4 or 5-alkylbenzophenones.

3,352,922

NOVEL D-NOR-ESTRATRIENES AND PROCESSES FOR THEIR MANUFACTURE

Jerrold Meinwald, Ithaca, N.Y., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 25, 1965, Ser. No. 435,364
3 Claims. (Cl. 260—586)

1. 3-OR-16X-D-nor-1,3,5(10)-estratriene wherein R is a member selected from the group consisting of hydrogen, lower alkanoyl, and lower alkyl; and wherein X is a member of the group consisting of keto, (H,β-hydroxy), (H,β-lower alkanoyloxy), (α-methyl, β-hydroxy) and (α-ethinyl, β-hydroxy).

3,352,923

NOVEL D-NOR-PREGNANES AND PROCESSES FOR THEIR MANUFACTURE

Jerrold Meinwald, Ithaca, N.Y., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 25, 1965, Ser. No. 435,365
7 Claims. (Cl. 260—586)

1. A member selected from the group consisting of 9α - X - 11 - Y-16α-Z-21-R-D-nor-4-pregnene-3,20-dione and the 1-dehydro analogs thereof wherein X is a member selected from the group consisting of hydrogen, fluorine, chlorine, and bromine; Y is a member selected from the group consisting of β-chlorine, keto and β-hydroxy, and when Y is chlorine, X is a member selected from the group consisting of chlorine and bromine; Z is a member selected from the group consisting of hydrogen and hydroxy; and R is a member selected from the group consisting of hydroxy and lower alkanoyloxy.

3,352,924

CARBONYLATION REACTIONS

Elroy Merle Gladrow and William Judson Mattox, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 23, 1963, Ser. No. 253,266
15 Claims. (Cl. 260—604)

1. A process for carbonylation of olefinic compounds comprising carbonylating said olefinic material with carbon monoxide and hydrogen at a temperature in the range of 150 to 450° F. and a pressure in the range of 500 to 5000 p.s.i.g. in the presence of a crystalline metallic alumino-silicate catalyst having a chemical formula represented in terms of mols as:

$$0.9 \pm 0.2Me_{2/n}O:Al_2O_3:xSiO_2$$

where Me is a metal selected from the group consisting of cobalt, rhodium and mixtures of each of these metals with 0.1 to 50 mol percent of an alkali metal, *n* is the valence of the particular metal and *x* is an integer from 2 to 12.

3,352,925

PRODUCTION OF MONO- AND DI-SUBSTITUTED PHOSPHINES

Lyle A. Hamilton, Pitman, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Apr. 28, 1964, Ser. No. 363,291

11 Claims. (Cl. 260—606.5)

1. A method for producing mono- and di-substituted phosphines in preference to tri-substituted phosphines by the reaction of phosphine with an alcohol comprising contacting phosphine with said alcohol under reaction conditions in the presence of a dehydrated crystalline metal aluminosilicate having pores of a diameter large enough to pass mono- and di-substituted phosphines, but too small to pass tri-substituted phosphines.

3,352,926

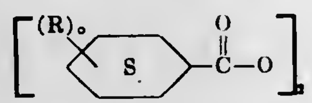
PEROXIDE CATALYSTS AND POLYMERIZATION PROCESSES EMPLOYING THE SAME

James E. Guillet and Edmund B. Towne, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application July 27, 1961, Ser. No. 127,107, now Patent No. 3,222,327. Divided and this application Jan. 15, 1965, Ser. No. 435,108

9 Claims. (Cl. 260—610)

1. A diacyl peroxide having the formula:



where R is a member selected from the group consisting of alkyl, cycloalkyl, alkaryl and halogen, and *n* is an integer from 0 to 2, inclusive.

3,352,927

METHOD FOR THE PREPARATION OF XYLENOL

Donald L. De Vries, South Holland, and Patrick W. Ryan, Chicago Heights, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 27, 1964, Ser. No. 340,490

6 Claims. (Cl. 260—629)

1. In a method for the production of 3,5-xylenol the step which consists essentially of contacting 4-halo-metaxylene at a temperature of about 300 to 500° C. with an amount of aqueous solution, containing about 0.2 to 15 moles of alkali metal hydroxide per liter, sufficient to supply about 0.2 to 10 moles of alkali metal hydroxide per mole of halo-metaxylene.

3,352,928

FLUORINATED ALCOHOL AND ETHER DERIVATIVES THEREOF

Everett E. Gilbert and Benjamin Veldhuis, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 14, 1965, Ser. No. 487,334

1 Claim. (Cl. 260—633)

1,1,3,3-tetrafluoro-2-propanol.

3,352,929

PREPARATION OF CONDENSATION PRODUCTS FROM ISOPROPANOL AND ACETYLENIC COMPOUNDS

Joseph K. Hoffman, Morristown, N.J., assignor, by mesne assignments, to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Original application Sept. 12, 1960, Ser. No. 55,164. Divided and this application Feb. 8, 1966, Ser No. 525,828

4 Claims. (Cl. 260—635)

1. A process for reacting at a temperature of from about 30° C. to about 200° C., isopropanol and 2-methyl-3-butyn-2-ol, in the presence of a catalyst selected from the group consisting of di-t-butyl peroxide, t-butyl hydroperoxide and dicumyl peroxide to produce a reaction product mixture containing cis- and trans-dimethylhexenediol and removing unreacted materials from said product mixture.

4. A process for preparing cis- and trans-dimethylhexenediol which comprises reacting isopropanol with 2-methyl-3-butyn-2-ol at a temperature of from about 140° C. to about 160° C. and in the presence of free radicals produced from a compound selected from the group consisting of di-t-butyl peroxide, t-butyl hydroperoxide, and dicumyl peroxide, to produce a reaction product mixture containing cis- and trans-dimethylhexenediol and removing unreacted materials from said product mixture.

3,352,930

PROCESS FOR HYDRATING PROPYLENE

Maurice Louis Mention, deceased, late of Melle, Deux-Sevres, France, by Jeanne Pauline Deminier, Melle, Deux-Sevres, France, heir, legal guardian of minor heirs, and administratrix of Madeleine Germaine Mention, Jean-Paul Henri Mention, Melle, Deux-Sevres, and Yvonne Louise Verdier, nee Mention, Bagneux, France, heirs, and Georges Gobron, Melle, Deux-Sevres, France, assignors to Les Usines de Melle, Deux-Sevres, France, a company of France

No Drawing. Filed Jan. 24, 1964, Ser. No. 340,104

Claims priority, application France, Feb. 7, 1963, 924,047

4 Claims. (Cl. 260—641)

1. A continuous process for the production of isopropanol which consists of passing a stream of propylene through a liquid hydration bath containing sulfuric acid, water and isopropanol, at an absolute pressure of from 1.5 kg./cm.^{2} to 6 kg./cm.^{2}, at a temperature of from 70° C. to 80° C., the weight ratio of sulfuric acid to the total sulfuric acid plus water in said hydration bath being from 70% to 80%, recovering the gases leaving said hydration bath and washing said gases with water to substantially separate the isopropanol from unreacted propylene in said gases, said recovering and washing being effected at the aforesaid pressure, while continuously adding water to said hydration bath to maintain the weight ratio of the sulfuric acid at from 70% to 80%, as aforesaid.

3,352,931

CATALYTIC OLIGOMERIZATION OF BUTADIENE

Ernest A. Zuech, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,144

9 Claims. (Cl. 260—666)

1. A process for oligomerization of a conjugated diene having from 4 to 7 carbon atoms therein which comprises contacting said diene in an oligomerization zone under oligomerization conditions with a preformed catalyst system consisting essentially of the product formed by reacting (a) a nickel compound, (b) an alkali metal hydride and (c) a polyene electron donor at a temperature in the range of 0 to 100° C.

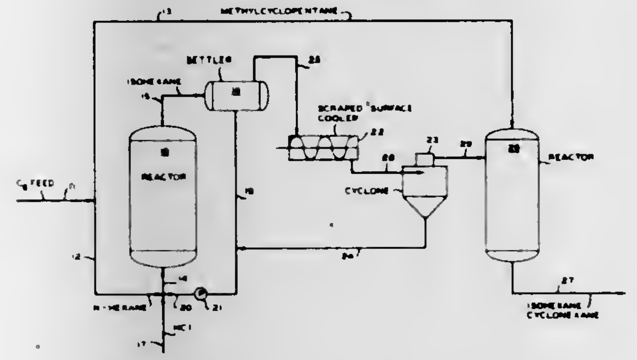
3,352,932

TWO-STAGE ISOMERIZATION

Earl H. Gray, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 21, 1965, Ser. No. 515,331

7 Claims. (Cl. 260—666)



1. Process of isomerization comprising contacting a first isomerizable compound, n-hexane, with an isomerization catalyst for a period of time sufficient to effect isomerization of said first compound, substantially separating said catalyst from the resultant isomerizate, and contacting said resultant isomerizate containing residual catalyst with a second isomerizable compound, methylcyclopentane, under conditions whereby said second compound is isomerized.

3,352,933

ISOMERIZATION OF 2-PHENYL ALKANES

Harold A. Sorgenti, Philadelphia, Pa., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 7, 1965, Ser. No. 512,197

3 Claims. (Cl. 260—668)

1. A process for the treatment of a 2-phenyl alkane stream boiling in the detergent alkylate range containing at least 85 weight percent monoalkylbenzenes to produce a stream containing reduced 2-phenyl alkane content without substantially decreasing the monoalkylbenzene content of the total alkylate which comprises adding to said 2-phenyl alkane stream benzene to provide a volume ratio of benzene to 2-phenyl alkane of 1:1 to 10:1, adding to said 2-phenyl alkane stream a paraffin hydrocarbon having approximately the same number of carbon atoms as the alkyl group in said phenyl alkane to provide a volume ratio of paraffin to 2-phenyl alkane of 1:1 to 10:1, adding aluminum chloride catalyst of such concentration and of such activity to provide a catalyst severity of at least 0.10 when the subsequent reaction is carried out at 135° F. and at least 0.05 when the subsequent reaction is carried out at 220° F., said severity decreasing linearly as the temperature increases in said range of 135° F. to 220° F., and reacting the resulting mixture at a temperature in the range of 135° F. to 220° F. until a substantial amount of the 2-phenyl alkane has been isomerized to other isomers.

3,352,934

USE OF HYDROGEN AS A MOLECULAR WEIGHT CONTROL IN ALKALI-METAL POLYMERIZATION OF DIOLEFINS

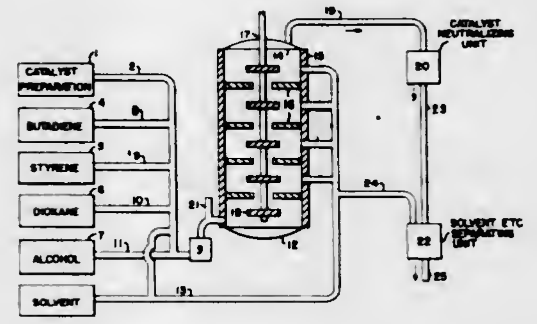
William Thomas House and Richard Louis Ray, Baton Rouge, La., and Wayne Hoover, Alexandria, Va., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Nov. 6, 1964, Ser. No. 412,581

(Filed under Rule 47(a) and 35 U.S.C. 116)

6 Claims. (Cl. 260—669)

3. In a process for producing a liquid polymer oil which comprises charging a mixture of 50 to 100 parts of conjugated diolefin, 50 to 0 parts of a vinyl aromatic hydrocarbon, about 1 to 100 parts of an ether having 2 to 8 carbon atoms chosen from the group of alkyl ethers and cyclic diethers having the oxygen atoms separated by at least two carbon atoms and about 1.0 to 2.0 parts by weight of finely divided alkali metal catalyst, all based on monomers, to a reaction zone, the step of controlling the molecular weight of the polymer by dissolving hydrogen in an amount of 10 to 10,000 p.p.m., based on monomers, in the monomers in the reaction zone.



3,352,935

DEHYDROHALOGENATION PROCESS

John E. Mahan, Robert E. Reusser, and Carl W. Kruse, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,274

14 Claims. (Cl. 260—677)

6. A process for producing olefins by the dehydrohalogenation of alkyl halides which comprises contacting said alkyl halide, in a reaction zone at a temperature in the range of 125 to 500° C., with a catalyst comprising oxidized charcoal, produced by heating an activated charcoal in air above 300° C. for a period of time ranging from 1 second to 1 hour, and a potassium compound.

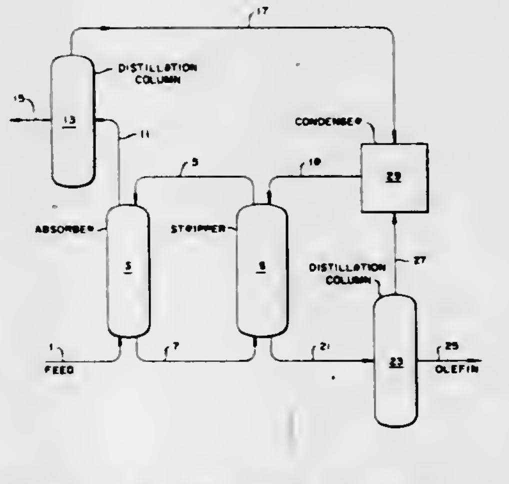
3,352,936

SEPARATION PROCESS

Robert S. Slott, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Sept. 30, 1964, Ser. No. 400,310

13 Claims. (Cl. 260—677)



1. A process for the recovery of olefins from a first hydrocarbon feed stream containing olefins comprising:

(1) introducing said feed stream into a solution of mercuric salt thereby selectively retaining olefins from said first feed in said solution and removing the unretained portion of said first feed stream; and

(2) subsequently introducing into said solution a second stream containing an exchange olefin which differs from the olefins contained in the first feed by at least two carbon atoms, whereby said exchange olefin displaces olefins retained from said first feed stream by said solution and recovering said olefins from said first feed stream.

3,352,937

COMPOUNDS DERIVED FROM ALLYL-ADDITION OF OLEFINS TO ACETYLENE

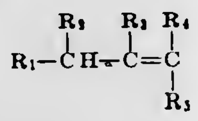
Paolo Chini, Milan, and Martino Dolci and Marcello de Maldè, San Donato Milanese, Italy, assignors to SNAM S.p.A., Milan, Italy, a company of the Italian Republic

No Drawing. Filed May 26, 1964, Ser. No. 370,337

Claims priority, application Italy, Aug. 1, 1963, 16,001/63, Patent 702,588

9 Claims. (Cl. 260—680)

1. A process for the preparation of non-conjugated dienes by allyl-addition to acetylene of olefins having the general formula:



$$R_1-\overset{\overset{R_2}{|}}{C}H-\overset{\overset{R_3}{|}}{C}=\underset{\underset{R_5}{|}}{\overset{\overset{R_4}{|}}{C}}$$

wherein R_1, R_2, R_3, R_4, and R_5 are selected from the group consisting of hydrogen, alkyl, aryl, cycloalkyl, halogen, hydroxyl, and esterified carboxyl, the reaction being carried out at a temperature between 200° C. and 500° C. within a reaction vessel, in which the surface, which is in contact with the reagents, is of a material selected from: glass and from materials jacketed in the reaction zone with glass.

3,352,938

OLEFIN DOUBLE-BOND ISOMERIZATION USING A MIXTURE OF PLATINUM GROUP METALS AS A CATALYST

Larry Plonsker, Royal Oak, and John M. McEuen, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 31, 1964, Ser. No. 422,520

9 Claims. (Cl. 260—683.2)

1. A process for the preparation of a straight-chain β-olefin having from 4 to about 24 carbon atoms from the corresponding straight-chain α-olefin, said process comprising contacting said α-olefin with from about 5 to about 10 weight percent of an isomerization catalyst containing about 5 weight percent of a ruthenium-palladium mixture, said mixture consisting substantially of 1 part ruthenium and from about 5 to about 10 parts of palladium dispersed on a finely divided activated charcoal, said process being carried out at atmospheric pressure in an inert atmosphere and at about the reflux temperature of the system.

3,352,939

OLEFIN ISOMERIZATION PROCESS

Walter E. Breckoff, Royal Oak, and John M. McEuen, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Feb. 1, 1965, Ser. No. 429,655

16 Claims. (Cl. 260—683.2)

1. A process for the isomerization of an olefin which comprises contacting said olefin with (a) a catalytic quantity of a catalyst consisting substantially of charcoal having dispersed thereon a Group VIII metal of the second and third long periods of the Periodic Table and (b) a promoter quantity of a paraffinic aldehyde having from 2 to about 12 carbon atoms, and being solely composed of carbon, hydrogen and oxygen.

3,352,940

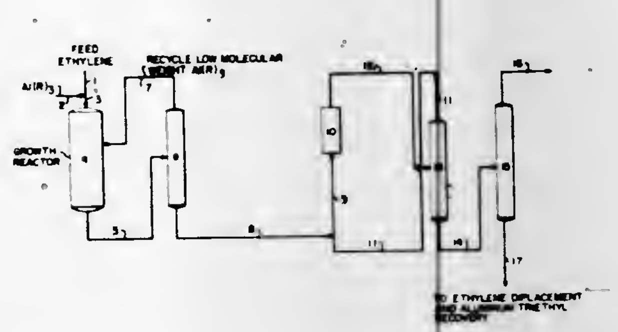
PROCESS FOR PRODUCTION OF N-α-OLEFINS BY THE ALKYL METAL TECHNIQUE

Ronald Vander Linden and Joseph Serratore, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Feb. 11, 1963, Ser. No. 257,729

5 Claims. (Cl. 260—683.15)

1. In a process for the preparation of normal alpha olefins which comprises feeding a C_2–C_3 olefin and a lower molecular weight aluminum trialkyl wherein each of said alkyls contains from 2 to 6 carbons atoms into a growth reaction zone at elevated temperatures and pressures, reacting in said zone said C_2–C_3 olefin and lower molecular weight aluminum trialkyl, and recovering from said zone an aluminum trialkyl growth product, the improvement which comprises separating said growth product into a lower molecular weight aluminum trialkyl fraction comprising a predominance of C_2–C_8 aluminum trialkyls and a higher molecular weight aluminum trialkyl fraction comprising a predominance of C_{10}, and higher, aluminum trialkyls, subjecting said lower molecular weight aluminum trialkyl fraction to further growth in a growth reaction zone and passing said higher molecular weight aluminum trialkyl fraction to a displacement zone.


FEED ETHYLENE
RECYCLE LOW MOLECULAR WEIGHT Al(R)3
Al(R)3
GROWTH REACTOR
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
TO ETHYLENE DISPLACEMENT AND ALUMINUM TRIETHYL RECOVERY

3,352,941

CATALYST REGENERATION WITH HYDROGEN IN AN ISOMERIZATION PROCESS

William Schoen, Houston, Tex., and John A. Ridgway, Jr., La Porte, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,629

12 Claims. (Cl. 260—683.74)

6. In a hydrocarbon conversion process wherein saturated hydrocarbon feed is contacted with a particulate, solid catalyst consisting essentially of aluminum chloride reacted with hydroxyl groups of surface-hydroxyl-containing adsorbent solid, in the presence of hydrogen chloride, under conditions to obtain hydrocarbon conversion reaction, and wherein said catalyst undergoes an activity decrease during said conversion reaction, the improvement which comprises discontinuing hydrocarbon conversion over said catalyst, treating said catalyst of decreased activity with hydrogen gas, at a temperature of from about 150° F. to about 450° F., at a hydrogen gas pressure of from about 50 p.s.i. to about 3000 p.s.i., for a time in the range of about 6 to 72 hours to obtain a treated catalyst having significantly better catalytic activity than said catalyst of said decreased activity and resuming hydrocarbon conversion over said catalyst to obtain said better catalytic activity as a result of said treating.

3,352,942

POLYAMIDES FROM 3-AMINO METHYL-3,5,5-TRIMETHYL-CYCLOHEXYLAMINE AND AN AMINO ACID

Karl Schmitt, Herne, and Fritz Gude, Wanne-Eickel, Germany, assignors to Scholven-Chemie Aktiengesellschaft, Gelsenkirchen-Buer, Germany, a corporation of Germany

No Drawing. Filed Jan. 25, 1965, Ser. No. 428,577

Claims priority, application Germany, Jan. 29, 1964, Sch 34,541

12 Claims. (Cl. 260—857)

7. A polyamide of a mixture consisting essentially of polycaprolactam, adipic acid, and 3-(aminomethyl)-3,5,5-trimethyl cyclohexylamine.

3,352,943

AIR DRYING POLYESTERS

Pasquale J. Apice, Cresskill, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 15, 1965, Ser. No. 507,655

6 Claims. (Cl. 260—871)

1. An air drying polyester comprising polymeric condensation reaction products of ethylenically unsaturated dicarboxylic acids and dihydric alcohols and having from about 4 to 70 weight percent residue of 4-hydroxymethyl-4-(α-hydroxy-Δ^3-tetrahydrobenzyl)cyclohexene therein.

3,352,944

BLEND OF BUTADIENE-STYRENE BLOCK COPOLYMER WITH CIS-POLYBUTADIENE

Robert C. Wheat, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Jan. 3, 1964, Ser. No. 335,652

1 Claim. (Cl. 260—876)

An elastomeric composition comprising (A) a block butadiene-styrene copolymer produced by copolymerization of butadiene and styrene in the presence of a hydrocarbon diluent and an organolithium catalyst, said block copolymer being composed of two blocks, one being a copolymer of a butadiene and styrene and the other being a homopolymer of styrene, the total amount of styrene employed in the preparation of the copolymer being in the range of 10 to 50 parts by weight per 100 parts by weight total monomers to be polymerized and (B) a solution polymerized polybutadiene rubber in which at least 80 percent of the monomer units in the polymer conform to the cis-1,4 structure, the concentration of said block butadiene-styrene copolymer being in the range of 10 to 50 weight percent of said elastomeric composition.

3,352,945

FORMALDEHYDE-PROPYLENE GRAFT COPOLYMERS AND PROCESS FOR THEIR SYNTHESIS

Attilio Palvarini, Milan, Edgardo Horak, Seveso, Milan, and Franco Milizia, Cesano Maderno, Milan, Italy, assignors to Snia Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy, a company of the Italian Republic

No Drawing. Filed Oct. 26, 1964, Ser. No. 406,540

Claims priority, application Italy, Nov. 7, 1963, 22,711/63, Patent 708,144

4 Claims. (Cl. 260—897)

1. A process for producing graft copolymers of formaldehyde and olefins having a melting point of between about 170°–175° C. containing at least 90% formaldehyde, comprising:

(a) dissolving an amorphous polypropylene starting material having 4 or more monomer units selected from the group consisting of atactic amorphous polypropylene, amorphous ethylene-propylene copolymer, both having an intrinsic viscosity, measured in Decalin at 135° C., of 0.5 to 1.5, and of oil tetramer propylene, in an organic solvent selected from the group consisting of n-hexane and n-heptane,
(b) introducing into said solution a formaldehyde monomer,
(c) introducing a catalyst for formaldehyde polymerization into said solution to cause copolymerization of said monomer formaldehyde and said dissolved polypropylene starting material to form a precipitant; and
(d) separating the precipitant from the solution.

3,352,946

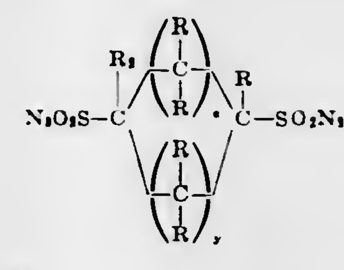
DISULFONYLAZIDE CROSSLINKED POLYPROPYLENE - POLYETHYLENE - ETHYLENE/PROPYLENE RUBBER BLENDS

Jimmy S. Dew, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 15, 1965, Ser. No. 507,686

3 Claims. (Cl. 260—897)

1. An improved crosslinked polypropylene blend composition which comprises a mixture of crystalline polypropylene, a crystalline ethylene polymer, and 2 to 10 weight percent of an amorphous, elastomeric, vulcanizable copolymer of ethylene and propylene, the weight ratio of said polypropylene to said polyethylene being in the range of 15:1 to 0.67:1; said mixture crosslinked with a compound selected from an azide of the formula



wherein *x* is a positive integer ranging from 2 to 9, inclusive; *y* is a positive integer ranging from 0 to 9, inclusive; the sum of *x* and *y* ranges from 3 to 10, inclusive; wherein each R is selected from the group consisting of hydrogen and 1 to 3 carbon alkyl radicals and wherein the total number of carbon atoms in the molecule preferably does not exceed 20.

3,352,947

POLYOL POLY(HYDROGEN ALKYL PHOSPHITE) MONOMERS

Baak W. Lew, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 14, 1964, Ser. No. 337,517

8 Claims. (Cl. 260—928)

1. A polyol poly(hydrogen alkyl phosphite) monomer containing from 1 to 6 carbon atoms in each of the said alkyl groups.

3,352,948

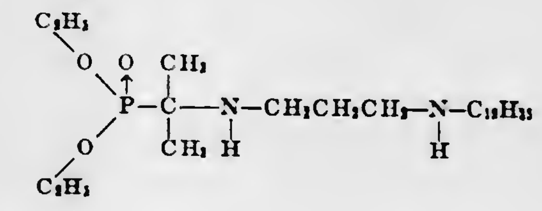
O,O-DIESTERS OF AMINO PHOSPHONIC ACIDS

Fred K. Kawahara, Park Forest, Ill., and Russell H. Brown, Munster, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Original application Dec. 21, 1961, Ser. No. 161,294. Divided and this application Dec. 8, 1964, Ser. No. 423,622

2 Claims. (Cl. 260—944)

1. A compound of the formula:



$$(C_2H_5O)_2\overset{\overset{O}{\uparrow}}{P}-\underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}}-\underset{\underset{H}{|}}{N}-CH_2CH_2CH_2-\underset{\underset{H}{|}}{N}-C_{12}H_{25}$$

3,352,949

METHYL CRESYL OR XYLYL S-α ARALKYL DITHIOPHOSPHATES

Fred K. Kawahara, Park Forest, Ill., and Russell H. Brown, Munster, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Original application Nov. 17, 1961, Ser. No. 153,201. Divided and this application Dec. 8, 1964, Ser. No. 424,159

3 Claims. (Cl. 260—964)

1. Methyl cresyl and methyl xylyl S-α aralkyl dithiophosphates.

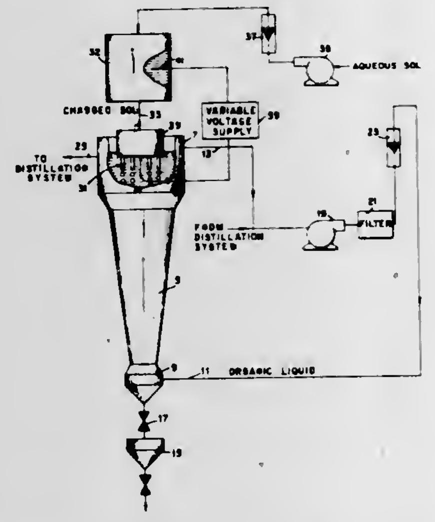
3,352,950

ELECTRICAL POTENTIAL METHOD FOR DISPERSION OF METAL OXIDE MICROSPHERES

Dennis M. Helton, Clinton, and Raymond G. Wymer, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Dec. 21, 1966, Ser. No. 603,692

2 Claims. (Cl. 264—.5)



1. In a method of forming gel microspheres by introducing a stream of an aqueous sol selected from the group consisting of thoria, urania, plutonia, and zirconia into a drying liquid, the improvement comprising establishing an electrical field with an applied voltage in the range of 500 to 2000 volts and passing a thin stream of said sol at a flow rate of between 0.2–1.2 milliliters per minute through said electrical field as it is introduced into said drying liquid thereby forming sol droplets of a size from 50–500 microns.

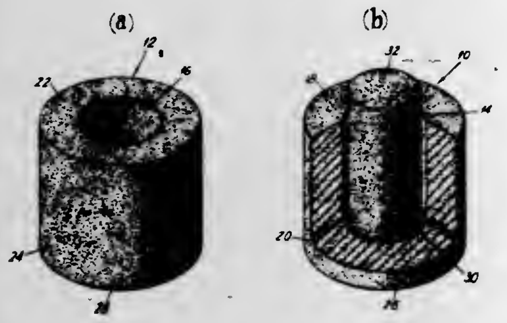
3,352,951

METHOD FOR INDUCTION SINTERING REFRACTORY CARBIDE ARTICLES

Raymond V. Sara, North Olmsted, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed Feb. 5, 1965, Ser. No. 430,567

9 Claims. (Cl. 264—25)



1. A method for providing a high density refractory carbide article comprising preforming said refractory carbide article to a desired shape, encapsulating said article in a capsule of electrically conductive material having a higher melting point than said article, said material being selected from the group consisting of tantalum carbide or a mixture of about 75% by weight of hafnium carbide and about 25% by weight tantalum carbide, sintering said article and said capsule for an effective time at a temperature just below the melting point of said article in an inert atmosphere, said sintering being accomplished by an inductive heating means, cooling said capsule and said article, and recovering said article from said capsule.

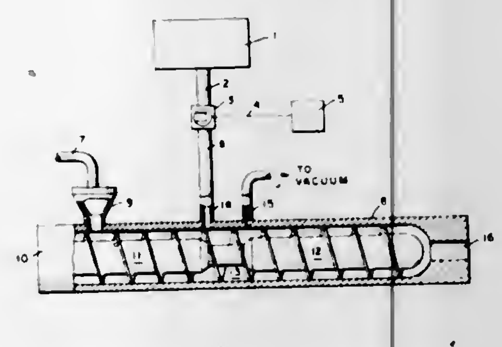
3,352,952

METHOD OF COLORING THERMOPLASTICS

John A. Marr, Meriden, Conn., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed June 22, 1964, Ser. No. 376,809

3 Claims. (Cl. 264—40)



1. In the manufacture of thermoplastic polymers, a method of measuring and transferring a masterbatch composition from an atmospheric zone into an always sealed process zone which comprises the steps of

(a) feeding said masterbatch downwardly through a vertically extended conduit having an upper and lower portion separated by a ball-shaped valve member having a housing into a chamber of said ball-shaped valve member,

(b) continually rotating said ball-shaped valve member at a r.p.m. at least great enough to produce a product containing uniform dispersion of said masterbatch, said rotation being first through 180° thereby discharging said masterbatch from said chamber into said lower portion of said conduit and then through another 180° wherein said chamber is again in contact with said upper portion of said conduit and is again charged with masterbatch, said rotation of said ball-shaped valve member including passing said composition through a zone which is out of contact with said atmospheric zone and said process zone, and

(c) passing said masterbatch downwardly through said lower portion of said conduit into the molten thermoplastic polymer stream contained in the extruder of said process.

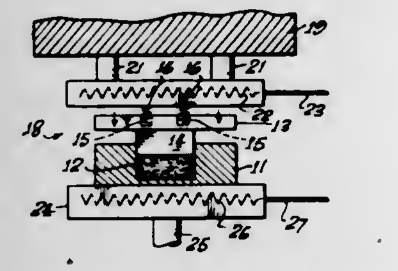
3,352,953

PRESSURE-MOLDING METHOD

Arnold L. Zavitz, Upland, and Ramon D. Vanderveer, Pomona, Calif., assignors to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware

Filed May 27, 1965, Ser. No. 459,412

8 Claims. (Cl. 264—71)



1. A controlled semi-compression component encapsulating method comprising the steps of: positioning the components to be encapsulated in a die having cooperating cavity and plunger portions, pre-heating the die to a predetermined temperature, supplying the die with a premeasured amount of low density molding compound, positioning pre-calibrated spring members on the plunger portion of the die, placing the die in a pressing apparatus, actuating the apparatus to substantially fully compress the spring members to apply pressure to the molding compound by the plunger, applying heat to the die whereby the molding compound becomes fluid and permitting the spring members to extend and move the plunger portion further into the cavity to compact the compound within the die, actuating the apparatus to substantially fully recompress the spring members to apply further pressure to the compound, and allowing the compound to cure.

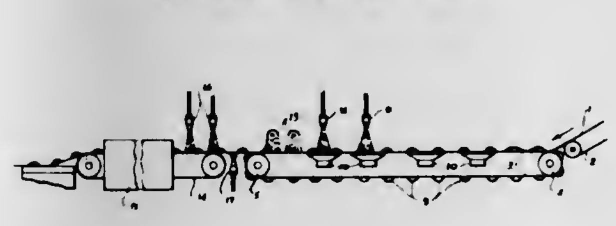
3,352,954

METHODS OF MAKING THREE DIMENSIONAL CONTOURED ARTICLES FROM NONWOVEN FABRICS OF FIBROUS MATERIALS

Archibald H. Smith, 78 De Long Ave., Dumont, N.J. 07628

Filed June 7, 1965, Ser. No. 461,957

8 Claims. (Cl. 264—90)



1. The method of making three dimensional contoured articles from nonwoven fabrics of fibrous materials which comprises draping a web of such nonwoven fabric consisting of unbonded fibers onto a surface having a plurality of three dimensional contoured forms protruding beyond the general plane of the surface, said forms being of foraminous material and being spaced to allow the web to sag into the spaces between adjacent forms while being loosely supported by said forms, shaping the web to conform to the contours of said forms solely by applying suction to the under side of said web through said foraminous forms, the upper side of said web being uncovered applying a fiber bonding agent to the upper side of said web while said web continues to be held in shaped form by application of suction, and thereafter setting and curing said bonding agent.

3,352,955

PROCESS OF BONDING A POLYURETHANE RESIN TO A METAL SURFACE HAVING A CURED EPOXY RESIN COATING

Kenneth A. Pigott and William Archer, Jr., New Martinsville, W. Va., assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Mar. 5, 1962, Ser. No. 177,255

1 Claim. (Cl. 264—135)

A method of tightly bonding a polyurethane plastic to a metal surface which comprises coating a metal member with a glycidyl polyether of a dihydric phenol having a 1,2-epoxy equivalency greater than 1, heating said coated metal member until a temperature of from about 80° C. to about 150° C. is reached and said glycidyl polyether is solidified and substantially cured, placing said heated coated metal member into a cavity of an injection molding device and injecting into said cavity and in contact with said heated coated member under heat and pressure a polyurethane plastic, said polyurethane plastic being the reaction product of an organic compound containing active hydrogen atoms which are reactive with —NCO groups, an organic polyisocyanate and a chain extending agent having a molecular weight less than 500 and containing active hydrogen atoms selected from the group consisting of amino groups, hydroxyl groups and carboxyl groups.

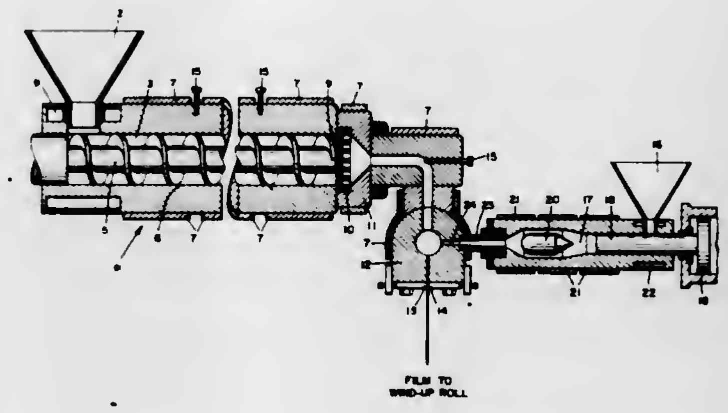
3,352,956

METHOD OF PREPARING GEOMETRICALLY UNIFORM ROLLS OF PLASTIC FILM

Werner T. Meyer, Scarsdale, N.Y., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed July 22, 1964, Ser. No. 384,341

3 Claims. (Cl. 264—176)



1. In a process for the formation of rolls of film of thermoplastic resins wherein resin is continuously extruded through a die at a temperature above its softening point, the improvement which comprises periodically injecting a minor amount of the same resin being extruded into the die, said resin being injected into the die at time intervals varying from 10 seconds to one minute at a temperature substantially identical to the resin temperature in the die and at a pressure not exceeding about 10% in excess of the die pressure, where the total amount of resin injected into the die per injection does not exceed 10 vol. percent of the resin being extruded into film during the injection time interval.

3,352,957

PROCESS FOR SPINNING CELLULOSIC FIBERS

Nicolas Drisch and Paul Herrbach, Paris, France, assignors to Chimiotex S.A., Geneva, Switzerland, a corporation of Switzerland

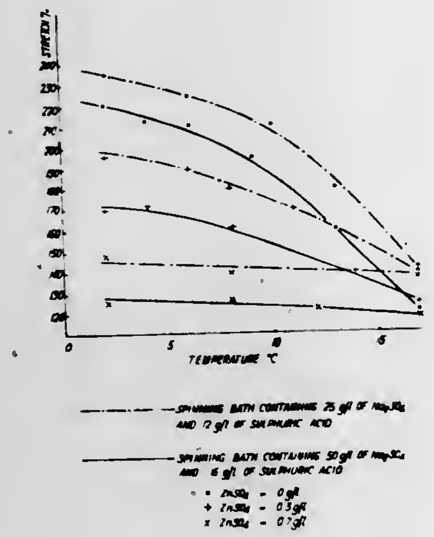
Filed Nov. 4, 1963, Ser. No. 321,063

Claims priority, application France, Nov. 6, 1962, 914,533; Dec. 12, 1962, 917,772

5 Claims. (Cl. 264—196)

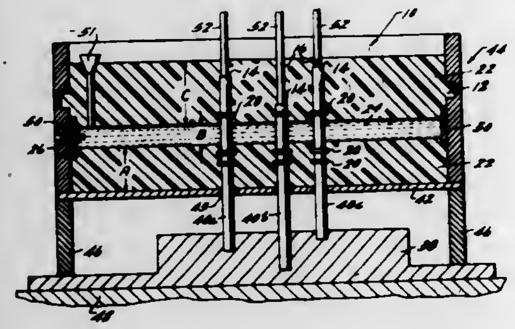
1. A process for the production of filaments of regenerated cellulose having a wet tenacity of at least 4 g./d. and an elongation in the wet state of less than 3% under a load of 0.5 g./d. which comprises spinning a viscose having a viscosity of at least 400 poises, a gamma index of at least 45 and containing a cellulose having a DP of at least 500 into a spinning bath containing less than 40 g./l. of sulphuric acid, from 10 to 100 g./l. of sodium sulphate and less than 1 g./l. of zinc sulphate, while maintaining the bath at a temperature below 10° C., withdrawing the filaments from the spinning bath, removing the excess solution from said filaments by pressure, then passing the filaments into a second cold bath having the same com-

position as said spinning bath, and then through a third bath containing hot dilute acid, while stretching the filaments by at least 100% at a stage prior to their removal from the second bath.



3,352,958
METHOD FOR MAKING ELECTRODE HOLDER

James D. Andrews, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Original application July 24, 1962, Ser. No. 211,965, now Patent No. 3,314,875, dated Apr. 18, 1967. Divided and this application Oct. 19, 1966, Ser. No. 606,478
4 Claims. (Cl. 264—255)

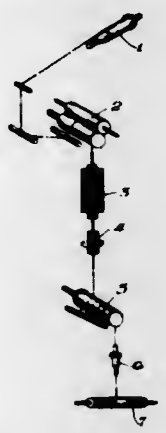


1. A method for making an electrode holder for a plurality of replaceable electrodes comprising the steps of:

locating a portion of each of a plurality of electrode patterns in a casting mold so that one end of each pattern protrudes from the mold and a shoulder portion of each pattern is within the mold,
  (a) each pattern being particularly positioned with respect to a portion of the mold which forms an electrode holder positioning means,
  (b) each pattern carrying within the mold an releasable electrode holding means;
casting a material which can be solidified into a substantially rigid shape into the mold to cover each shoulder portion and electrode holding means and to form the electrode holder positioning means;
solidifying the material into a substantially rigid form;
and then removing the pattern electrodes to establish a plurality of electrode chambers, each the shape of its respective pattern electrode removed and each in a particular position with respect to electrode holder positioning means, each electrode chamber having supported from its walls releasable electrode holding means and having stop means formed as a result of solidifying the material around the shoulder portion of the patterns.

3,352,959
PROCESS FOR CRIMPING THREADS OF FIBER-FORMING POLYOLEFINS

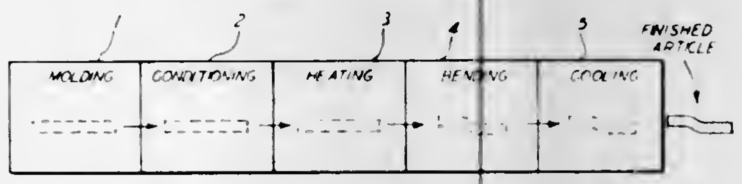
Hans Hoyer, Frankfurt am Main, Egidius Welfers, Niederhofheim, and Heinz Köpke, Sulzbach, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
Filed Mar. 2, 1964, Ser. No. 348,519
Claims priority, application Germany, Mar. 5, 1963, F 39,172
4 Claims. (Cl. 264—282)



1. In a process for crimping thread of fiber-forming polyolefins in which said thread passes in the following order through a first set of conveyor rollers, a heating device, a rotating twist tubule, a second set of conveyor rollers and a winding roller, the improvement which comprises applying subatmospheric pressure to said thread between said second set of conveyor rollers and said winding roller for cooling said thread to temperatures ranging from 20° to 60° C. and shoving it toward said winding roller and rotating said winding roller slowly enough to wind said thread upon it in a relaxed condition free of tension whereby it is shrunk about 20% to 40% before being wound upon said winding roller.

3,352,960
PLASTIC TUBE BENDING METHOD

Jack E. McLaughlin, Yuba City, Calif., assignor to Andermac, Inc., Yuba City, Calif., a corporation of California
Filed Aug. 18, 1965, Ser. No. 480,605
3 Claims. (Cl. 264—322)



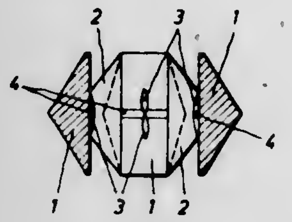
1. The method of forming a bend in a tubular piece of cured, thermoplastic material of a type adapted to absorb moisture of vapor, that comprises the steps of:

(a) positioning and maintaining said tubular piece in air having a constant predetermined relative humidity and a constant predetermined temperature substantially below the heat distortion temperature of said material until said material is saturated by aborption to a degree that is the equivalent of a moisture content relative to said material of said piece of approximately 2% by weight at 80° F.;
(b) then and while said piece has said moisture content, heating said piece to a temperature above said heat distortion temperature and bending said piece to the desired form at said temperature thereabove; and
(c) thereafter, permitting said piece to cool to atmospheric temperature.

ELECTRICAL

3,352,961
CABLE CLAMP

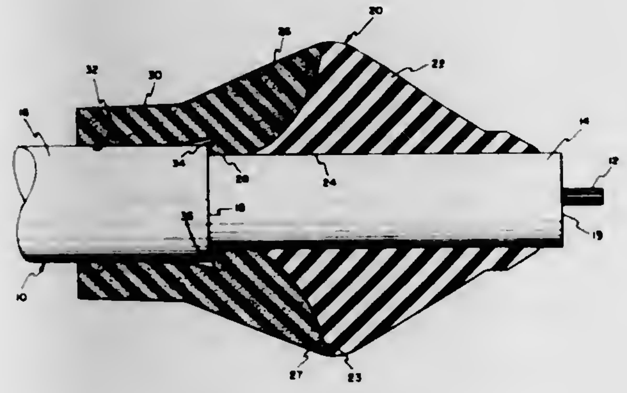
Hans Simon, Bruchhausener Strasse 5463, Unkel (Rhine), Germany
Filed Jan. 25, 1965, Ser. No. 427,723
9 Claims. (Cl. 174—65)



1. A strain and tension relieving cable clamp for electrical housings having a wall provided with an opening for said cable adapted for use with electrical machines and apparatus, comprising a clamping and holding body formed of thermoplastic synthetic material for frictionally engaging the cable, said body being composed of a plurality of jaws grouped around a central orifice and shaped as double wedges forming opposed double cones on the external surface, each of said jaws being connected one to the other by foldable relatively thin foil-like walls.

3,352,962
CONSTRUCTION IN INSULATED HOUSING FOR TERMINATING SHIELDED HIGH VOLTAGE CABLE

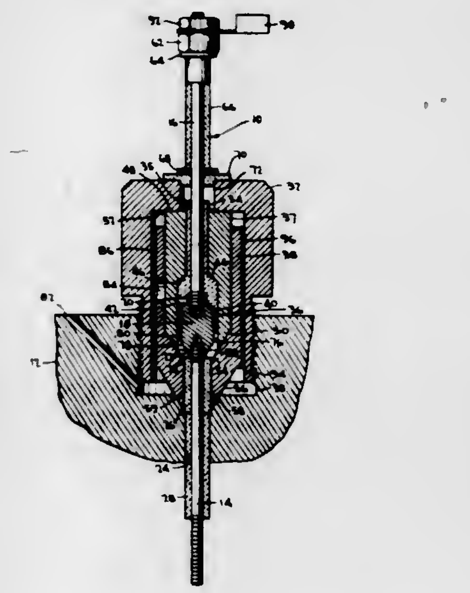
Robert R. Brown, Bernardsville, and Leonard E. Daum, Morristown, N.J., assignors to Elastic Stop Nut Corporation of America, Union, N.J., a corporation of New Jersey
Filed Jan. 18, 1965, Ser. No. 426,338
5 Claims. (Cl. 174—73)



1. A composite housing for terminating a high voltage cable, said cable having an electrical conductor, insulation covering said conductor, and an electrically conductive shield surrounding the insulation, a portion of said insulation being exposed, said shield having a terminal rim; said housing comprising an inner member molded of electrically insulating elastomeric material having a resilient portion for cooperating with the exposed insulation to firmly grip the same to increase the dielectric strength of the creep path along the insulation; and an outer member of resilient electrically conductive elastomeric material molded around said inner member aong at least a portion of the length of said inner member and having a portion for cooperating with said shield to attain an effectual electrical connection therewith; said members being contiguous and joined by molding in a single assembly and the junction between said members being continuous and void free; said outer member having an outer hollow for engaging said shield and an inner hollow for engaging said insulation, and an undercut groove establishing a cavity and a shoulder in said outer member between said hollows, said shoulder tapering inwardly from said outer hollow to said inner hollow in a direction away from said inner member for allowing intimate contact between the exposed insulation of the cable and the inner member and for contacting the inner edge of said terminal rim of said shield along at least a portion of the shoulder such that any air trapped within the housing will be confined to said cavity and surrounded by electrically conductive material having sufficient electrical conductivity to reduce the electrical stresses across the trapped air.

3,352,963
HIGH PRESSURE, HIGH TEMPERATURE ELECTRICAL LEAD-THROUGH FITTING

Horace J. Homrig, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Jan. 13, 1967, Ser. No. 609,129
12 Claims. (Cl. 174—151)



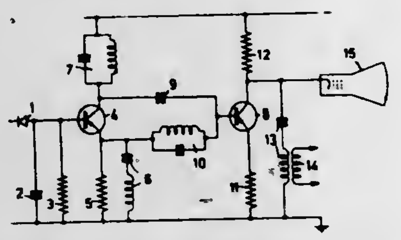
1. A fitting for conducting electric current through a wall of a high pressure, high temperature vessel comprising:

a low pressure side conductor rod and a high pressure side conductor rod,
a connector,
means securing said conductor rods to opposite ends of said connector in axial alignment,
a bearing ring mounted in coaxial relation over said low pressure side conductor rod,
insulator means between said ring and said low pressure side conductor rod,
a loading nut having screw threads thereon and a central bore extending therethrough, said nut including an internal radial shoulder in said bore,
means clamping said bearing ring between said connector and said nut shoulder in fluid sealing relation,
a sealing collar mounted in coaxial relation over said bearing ring, said high pressure side conductor rod extending through an opening in said collar, and
insulating means between said collar opening and said high pressure rod, said collar and said bearing ring having substantially mating sealing surfaces therebetween.

3,352,964

CIRCUIT ARRANGEMENT FOR THE COMMON AMPLIFICATION OF THE VIDEO-SIGNAL AND THE I.F. AUDIO-SIGNAL IN TELEVISION RECEIVERS

Engelmundus Johannes Hoefgeest, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 30, 1964, Ser. No. 363,848
Claims priority, application Netherlands, May 15, 1963, 292,832
9 Claims. (Cl. 178—5.8)

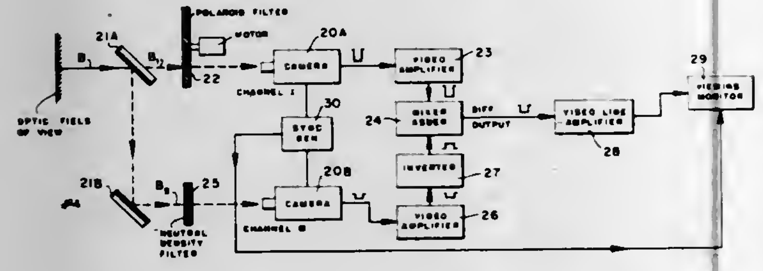


1. A television circuit for the common amplification of a video signal and an intermediate frequency audio signal, comprising a source of said signals, first and second transistors, means coupling said signals to the base of said first transistor, impedance means connected to the collector and emitter of said first transistor, said impedance means having a frequency response whereby said first transistor operates as a common collector amplifier for said video signal and a common emitter amplifier for said intermediate frequency audio signal, means coupling the intermediate frequency signal from said collector of said first transistor and the video signal from the emitter of said first transistor to the base of said second transistor, and output circuit means connected to the collector of said second transistor whereby said second transistor operates as a common emitter amplifier for said video and intermediate frequency signals.

3,352,965

METHOD AND MEANS FOR ENHANCING CAMOUFLAGED TARGET DETECTION UTILIZING LIGHT POLARIZATION TECHNIQUES

Paul C. Driver and Robert E. Fowler, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 9, 1964, Ser. No. 350,949
16 Claims. (Cl. 178—6)



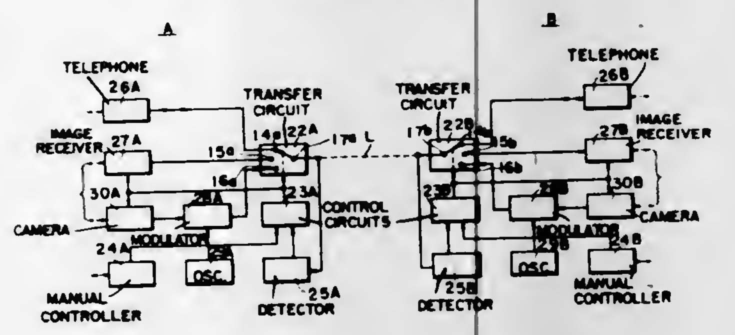
10. In a passive method for detecting and identifying a target disposed in a cluttered background, the steps of:
filtering surface reflected light rays through a polarizer for obtaining quantities of image intelligence;
converting filtered surface reflected polarized light rays to quantities of image intelligence bearing electronic pulses;
canceling from said pulses undesired intelligence initiated through filtered nonpolarized light effects; and
converting said pulses to an electronic visual display wherein the desired intelligence is presented as optic field images.

13. A television system for providing an electronic visual display of an optic field of view disposed therein subjects capable of reflecting a beam of light having both polarized and unpolarized light ray components comprising in combination:
means for directing said light beam along a first and a second light beam path;
a polarizer disposed in said first path for selectively transmitting light rays having a predetermined polarization orientation;
means for converting image intelligence contained within said preselected light rays to a first series of video output signals;
means for converting image intelligence contained within said beam as it is directed along said second path to a second series of video output signals irrespective of component ray polarization;
a signal inverter for establishing an inverted phase relationship between said first and said second series of video output signals;
means for electronically adding said series of video output signals for providing a series of differential output signals;
an electronic display device; and
means for driving said display device in accordance with image intelligence contained in said series of differential signals to provide an electronic image reproduction of said optic field, wherein said optic field subjects reflecting polarized light rays having a predetermined orientation are displayed in significant contrast with respect to remaining subjects of said optic field.

3,352,966

TELEVISION TELEPHONE SYSTEM UTILIZING ONE TELEPHONE LINE

Norikazu Sawazaki, Yokohama-shi, Tsutomu Honma, Kawasaki-shi, and Motoi Yagi, Zushi-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Apr. 27, 1964, Ser. No. 362,621
Claims priority, application Japan, Apr. 30, 1963, 38/22,866, 38/22,867
1 Claim. (Cl. 178—6)

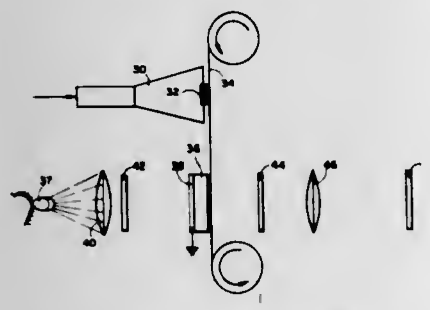


A television telephone system for sending and receiving both image and speech signals over the same telephone line comprising
a telephone for communicating speech over a telephone line;
an image receiver operating to store received image signals magnetically at a low speed and repeatedly reproducing them at a high speed to display on a fluorescent screen of a tube as a quiescent picture;
an image transmitting means including a camera operating to convert a static picture image of one frame into image signals having the bandwidth compressed by scanning at a low speed, a carrier wave oscillator to oscillate a carrier of a permissible frequency for said telephone line, and a modulator acting to modulate said carrier by the image signals supplied by said camera;
a manual controller adapted to control transmission of the modulated image signals;
a carrier wave detector circuit to detect the received image signals;
a transfer circuit for switching over said telephone line to said telephone, said image receiver and said image transmitting means respectively; and
a control circuit to control the transferring operation of said transfer circuit in response to commands coming from said manual controller and from said carrier wave detector circuit.

3,352,967

IMAGE PROJECTION SYSTEM HAVING ELECTRICALLY CHARGED TAPE AND ELECTRO-OPTICAL CRYSTAL

Carl A. Wiley, Corona Del Mar, Calif., assignor to North American Aviation, Inc.
Filed May 6, 1964, Ser. No. 365,453
11 Claims. (Cl. 178—6.6)

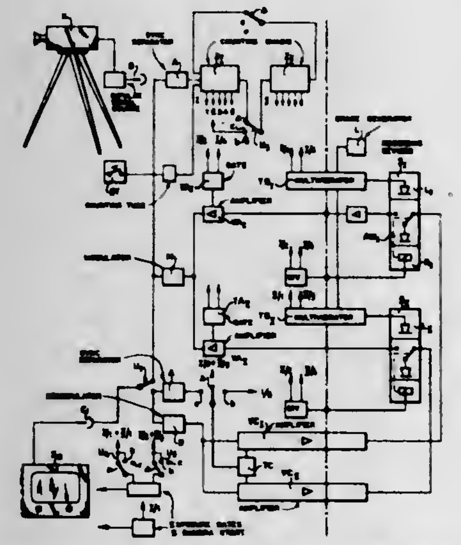


1. Means responsive to an electrostatic charge pattern for providing a visual display image corresponding to said pattern comprising
a plate of electro-optic material, a face of which is coated with a transparent, electrically-conductive film and adapted to be subjected to linearly polarized light;
a light-polarization analyzer arranged to be subjected to an emergent beam of said light emerging from a face said material; and
a dielectric tape having a face containing said charge pattern, said face of said tape being spaced proximate to a face of said material opposite said coated face for producing a bi-refringence pattern in said material corresponding to said charge pattern.

3,352,968

ARRANGEMENT FOR STORING INDIVIDUAL TELEVISION PICTURES

Heinz F. Walter and Hans D. Müller, Karlsruhe, Germany, assignors to Siemens Aktiengesellschaft, Berlin and Munich, Germany, a German corporation
Continuation of application Ser. No. 178,998, Mar. 12, 1962. This application June 13, 1966, Ser. No. 557,325
Claims priority, application Germany, Mar. 23, 1961, S 73,111
12 Claims. (Cl. 178—6.6)

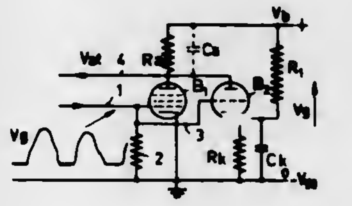


1. An arrangement for storing individual television pictures such as X-ray pictures, comprising camera means, means operatively connected to said camera means for converting the camera output signals into spaced field synchronizing impulses, storage means, means operatively conducting said camera output signals to said storage means, at least one counting chain controlled by said field impulses and stepped along in timing with the field impulse frequency, and means for decoupling from the members of said counting chain isolated impulses, which are rigid in phase with respect to the field impulses, said isolated impulses constituting control pulses for the control of operational functions of said arrangement and being connected to said conducting means.

3,352,969

VIDEO AMPLIFIER IN WHICH BANDWIDTH IS A FUNCTION OF SIGNAL AMPLITUDE

Marcel Johan Marie Konings, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 20, 1964, Ser. No. 390,792
Claims priority, application Netherlands, Aug. 21, 1963, 296,951
8 Claims. (Cl. 178—7.1)

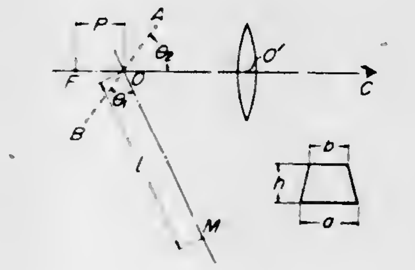


1. A video amplifier comprising first and second amplifier devices each having a common electrode, an input electrode and an output electrode, an output circuit connected in common to the output electrodes of said first and second devices, a source of video signals, means applying said video signals to said input electrodes, and means applying different bias voltages to said common electrodes, whereby the bandwidth of signals in said output circuit is dependent upon the amplitude of video signals applied to said input electrodes.

3,352,970

CATHODE RAY TUBES AND APPARATUS USING THE SAME

Yukio Koyanagi, Fujisawa-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Mar. 27, 1964, Ser. No. 355,301
Claims priority, application Japan, Apr. 12, 1963, 38/19,304; Apr. 15, 1963, 38/19,543; June 24, 1963, 38/33,599, 38/33,600; July 1, 1963, 38/49,832; July 5, 1963, 38/50,488, 38/50,489; Dec. 28, 1963, 39/21
2 Claims. (Cl. 178—7.85)



2. A cathode ray tube apparatus comprising a cathode ray tube, said tube comprising a closed bulb having an electron gun therein, said gun projecting an electron beam

at a portion of the inner surface of said bulb spaced therefrom along a central axial line of said electron beam, an electroconductive film layer on said inner bulb surface adjacent the point where said electron beam impinges on said inner surface, and a fluorescent screen provided on said film layer, said fluorescent screen being inclined to the axial line of said electron beam at an acute angle with the side of said fluorescent screen remote from said electron gun being positioned near said central axial line of said electron beam, an optical system disposed inclined to said fluorescent screen for compensating for the trapezoidal distortion of raster, said optical system being formed by an optical lens satisfying an equation

$$\frac{l}{P}=\frac{\cos \theta_1}{\cos \theta_2}$$

where θ_1 is the angle of inclination of the optical axis relative to the electron beam axis, θ_2 is the angle of inclination of the optical axis relative to said fluorescent screen, P is the distance between the center of said fluorescent screen and the focal point of said optical lens, and l the distance between said center of the fluorescent screen and the center of deflection of the electron beam.

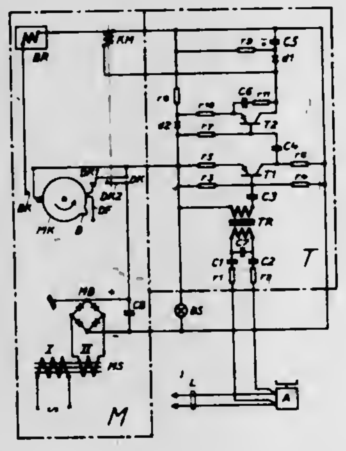
3,352,971
SYSTEM FOR CHARGING AMOUNTS RECORDED BY CONSUMPTION AND SERVICE-METERS

Nils Emil Nilsson, Essingebrogatan 12, and Arne Ingemar Olofsson, Nybohovsbacken 91, both of Stockholm, Sweden

Filed Feb. 8, 1963, Ser. No. 257,181

Claims priority, application Sweden, May 2, 1962, 4,889/62

8 Claims. (Cl. 179—2)



1. A payment control system for a public utility supplying a measurable quantity of service or a product wherein a subscriber is permitted a predetermined use of the service or consumption of the product before a payment for the use or consumption, said system comprising:

a central collection station and at least one subscriber station;

a signal channel connecting said central collection station to said subscriber station;

a consumption meter means at said subscriber station for measuring the consumption of said measurable quantity;

alarm means, at said subscriber station, actuatable by said consumption meter means for indicating when a predetermined quantity of said measurable quantity has been consumed;

a control signal transmission means at said central collection station for transmitting a control signal via said signal channel to said subscriber station;

control signal receiving means associated with the subscriber station for deactuating said alarm means, said control signal receiving means being connected to said signal channel; and

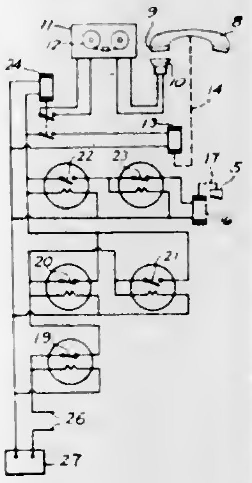
a switching means actuatable by said consumption meter means, after said alarm means is energized and after said consumption meter means indicates the consumption of an additional quantity, for suspending delivery of at least part of the service or product.

3,352,972
TELEPHONE ALARM AND REPORTING APPARATUS

David D. Brown and Leslie B. Manker, Portland, Oreg., assignor, by mesne assignments, to Tel-A-Matic, Inc., a corporation of Oregon

Filed Dec. 30, 1963, Ser. No. 334,223

8 Claims. (Cl. 179—5)



1. In an emergency alarm and reporting system for a building and the like, having an emergency condition responsive electric circuit including detectors strategically located therein, and a source of electric power, alarm and reporting apparatus adapted for actuation by said circuit and for use in combination with a card dialer type of telephone having a transmitter-receiver handset, a cradle type switch element on which the handset normally rests when the telephone is not in use, said cradle type switch element responsive to raising and lowering of the handset for controlling the service connection of the telephone with an automatic exchange station, and a dialing mechanism including a start button and a dial card containing a number series to automatically connect the telephone to the preselected receiving station responding to the number series dialed, comprising:

a housing on which said telephone is unrestrictedly seated;

means connected to the emergency detectors circuit and carried by said housing for raising the cradle type switch element to thereby close the telephone circuit;

a message reproducer in circuit with the emergency detectors for operation when the emergency detectors close the circuit to thereby reproduce a preselected message for transmission over the telephone; and

means connected to the emergency detectors circuit and carried by said housing for depressing the telephone start button to thereby place the dial card into position for automatically dialing a preselected number series on said dial card to transmit said message to the receiving station responding to the number series dialed;

said means for raising the cradle type switch element, message reproducer, and means for depressing the start button, each arranged to function in time-controlled sequence in the order herein set forth after the initial actuation thereof when the emergency detectors circuit is closed.

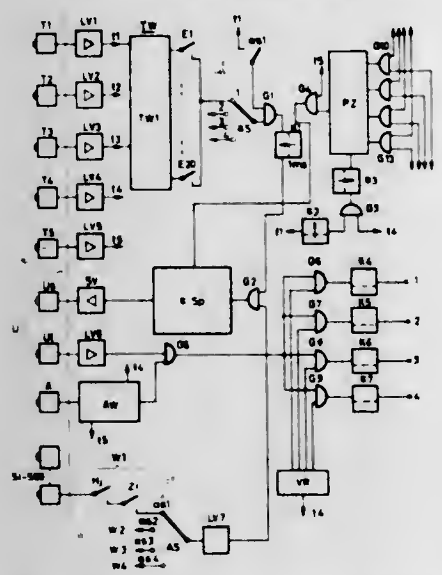
3,352,973
SYSTEM FOR TRANSMISSION OF INFORMATION RECORDED ALONG ENDLESS MAGNETIC TRACKS

Camillo Bodenstein, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Jan. 15, 1963, Ser. No. 251,533

Claims priority, application Germany, Jan. 29, 1962, S 77,759

7 Claims. (Cl. 179—6)



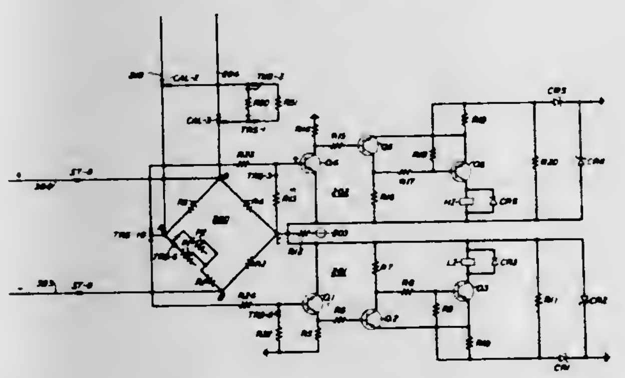
1. In a circuit arrangement for the selective control by a plurality of teletype subscribers of information data subdivided into individual texts stored on storage means and transmission of respective selected text sections to corresponding teletype subscribers, the combination of a magnetic storer subdivided into a plurality of storage sections, each subscriber being provided with a permanently assigned section of such storer, other of said sections being arranged to store respective texts for common use by individual subscribers, means operative upon call by a subscriber for a certain text section to duplicate, in a single cycle of the magnetic storer, the text from the selected section, in the corresponding permanently assigned section of the subscriber involved, and transfer means cooperable with the last-mentioned section to transmit the text in such permanently assigned section to such subscriber at the normal transmitting speed there employed for subscriber transmission.

3,352,974
TRAFFIC LOAD DETECTING ARRANGEMENT

George Minchenko, Reynoldsburg, Ohio, assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 19, 1965, Ser. No. 426,562

11 Claims. (Cl. 179—8)



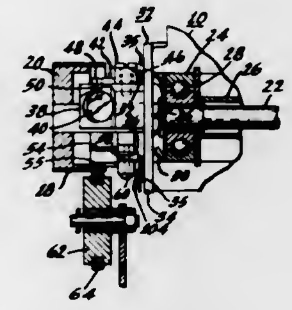
11. An arrangement for ascertaining the occupancy of units of equipment comprising an impedance network, means controlled by said equipment for changing the impedance of said network in accordance with the number of occupied equipment units, a first trigger circuit operated in response to a first impedance change in said network when a first predetermined number of said units are occupied, a second trigger circuit operated in response to a second impedance change in said network when a second predetermined number of said units are occupied, and control means effective when said first trigger circuit is operated in response to said first impedance change for alternately connecting said first and second trigger circuits to said network.

3,352,975
MOTION PICTURE APPARATUS WITH MAGNETIC AND OPTICAL SOUND REPRODUCING MEANS

Bjorn F. Floden, Palmyra, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 10, 1963, Ser. No. 272,061

9 Claims. (Cl. 179—100.2)



1. Apparatus for reproducing sound from a film having a magnetic sound track as said film is advanced around a rotatable member with said magnetic sound track overhanging said rotatable member, said apparatus comprising, in combination,

(a) a magnetic head,

(b) means for mounting said head in a stationary position adjacent that portion of said film which passes around said rotatable member, said head being spaced from and out of contact with said portion of said film and facing said magnetic sound track of said portion, and

(c) means for deflecting said film and pressing said track against said head.

3,352,976
REVERSIBLE TILTING DRIVE MECHANISM IN A MAGAZINE TYPE MAGNETIC TRANSDUCING APPARATUS

Osamu Gonmori, Gunma-ken, Japan, assignor to Sanyo Electric Co., Ltd., Moriguchi-shi, and Tokyo Sanyo Electric Co., Ltd., Gunma-ken, Japan, both corporations of Japan

Filed May 13, 1963, Ser. No. 279,894

Claims priority, application Japan, May 14, 1962, 37/19,434; July 11, 1962, 37/29,262; and Feb. 11, 1963, 38/6,928

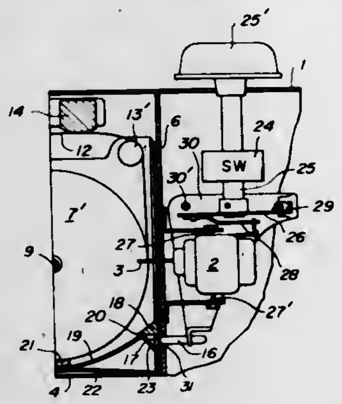
5 Claims. (Cl. 179—100.2)

1. In a magazine type magnetic recording and reproducing machine including a body casing having a receiving station for receiving a detachable tape magazine containing a pair of tape reels mounted in superposed relation and including a braking device for normally applying a brake to said tape reels, a reversible drive mechanism comprising:

a driving motor tiltably mounted within said body casing, said driving motor having an extended driving shaft projecting into said tape magazine receiving station between said pair of superposed tape reels when said tape magazine is in position in said receiving station;

tilting means for tilting said driving motor about an axis perpendicular to the driving shaft of said motor so as to selectively bring said driving shaft into contact with one of said tape reels in order to wind the tape in one direction or the other of said tape reels in order to wind the tape in the opposite direction;

a motor switch for energizing said driving motor;

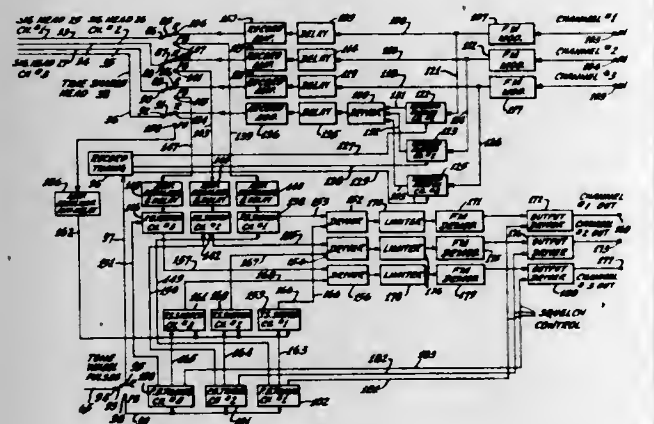


control means connected to said motor switch and said tilting means for simultaneously operating said motor switch to energize said driving motor and said tilting means to bring said driving shaft into contact with one or the other of said tape reels; and brake releasing means connected to said control means for releasing said brake from said tape reels simultaneously with the tilting and energization of said driving motor.

3,352,977

HELICAL SCAN TRANSDUCER APPARATUS UTILIZING TIME SHARING HEAD TO MINIMIZE DISTORTION DURING EDGE CHANGEOVER

Fred E. Shashoua, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Continuation of application Ser. No. 272,755, Apr. 12, 1963. This application Feb. 15, 1967, Ser. No. 616,413
22 Claims. (Cl. 179—100.2)



1. In a system for recording electrical signals including a plurality of recording devices, means moving said devices in a circular path about a predetermined axis, means moving a record medium along a path oblique to said axis and in a helical path around the circular path of movement of said devices with each of said devices scanning over a different succession of tracks extending diagonally across said medium,

said system comprising, in combination,

means to continuously apply a plurality of signals to all but one of said devices with a different signal being applied individually to each device,

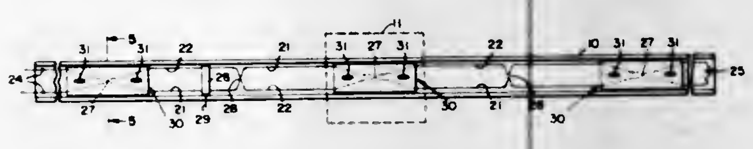
means to produce a further signal composed of regularly occurring intervals of each of said plurality of signals,

and means to apply said further signal to said one device.

3,352,978

AUTOMATED STORAGE APPARATUS

Elmer C. Hartman, Fairport, N.Y., assignor to Hartman Metal Fabricators, Inc., Waterloo, N.Y., a corporation of New York
Filed Sept. 7, 1965, Ser. No. 485,408
13 Claims. (Cl. 191—2)



1. In a conveyor control mechanism having a signal source defined by a pair of conductors which cross one another at predetermined points along their lengths,

(a) a first, elongate member for supporting said conductors,

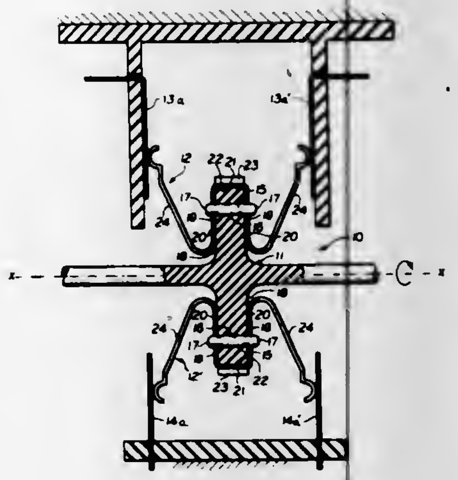
(b) a second member mounted on said first member for adjustment longitudinally thereof, and

(c) means on said second member engaging said conductors adjacent a point where they cross one another, and operative upon the longitudinal adjustment of said second member relative to said first member to shift the last-named point longitudinally of said first member.

3,352,979

SWITCH CONTACT ASSEMBLY

Edward L. Grayson, West Orange, N.J., and Bernard J. Perry, Manchester, N.H., assignors to RCL Electronics, Inc., Maplewood, N.J., a corporation of New Jersey
Filed Sept. 30, 1966, Ser. No. 583,369
10 Claims. (Cl. 200—11)

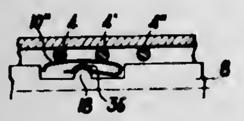


1. A rotatable switch contact assembly which comprises a pair of spaced, electrically conductive surfaces, a rotatable hub member disposed for rotation relative to said conductive surfaces about an axis generally perpendicular to said conductive surfaces, a dowel member operatively connected to said hub member and carried thereby, a W-shaped, bifurcated, electrically conductive contact member for electrically connecting said conductive surfaces, said contact member being disposed in operative engagement with said hub member and with said dowel member for fastening said contact member to said hub member to be carried thereby, said contact member being disposed on said hub member in relation to said spaced conductive surfaces to contact both of said conductive surfaces and thereby electrically connect same when said hub member is rotated into a predetermined angular position.

3,352,980

SLIDABLE SWITCH ACTUATOR CONTACTS AND STRUCTURE ASSOCIATED THEREWITH

Godefroy Marie Christian du Temple de Rougemont, 46 Rue de la Faisanderie, Paris, and Max M. Stapfer, 35 Ave. de Guyenne, Antony, France
Filed Oct. 11, 1965, Ser. No. 494,401
Claims priority, application France, Oct. 14, 1964, 991,333
4 Claims. (Cl. 200—16)

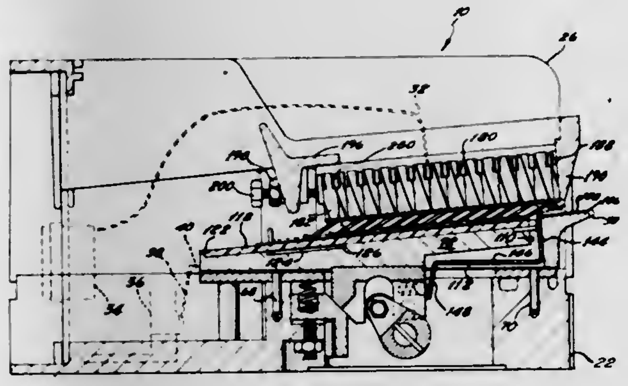


1. An electric push-button switch comprising an elongated casing of insulating material having a lengthwise passageway therethrough, a plurality of fixed contacts extending into said passageway and spaced therealong, a selector slidably mounted in said passageway and having at least one recess having a bottom and an opening toward said contacts, a flexible J-shaped movable contact element disposed in said recess with its longer arm adapted to wipe over said fixed contacts and to bridge two adjacent ones of said fixed contacts, its shorter arm adapted to bear against said bottom of said recess, and means including an arcuate portion of said shorter arm forming a pivot whereby said element will rock as its longer arm moves past one or the other of said two adjacent fixed contacts, said arcuate portion of the shorter arm of said element being formed substantially at the center of said J-shaped element and bearing on the bottom surface of said recess.

3,352.981

CARD READER

Glenn R. Ekers, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed July 22, 1963, Ser. No. 296,812
15 Claims. (Cl. 200—46)

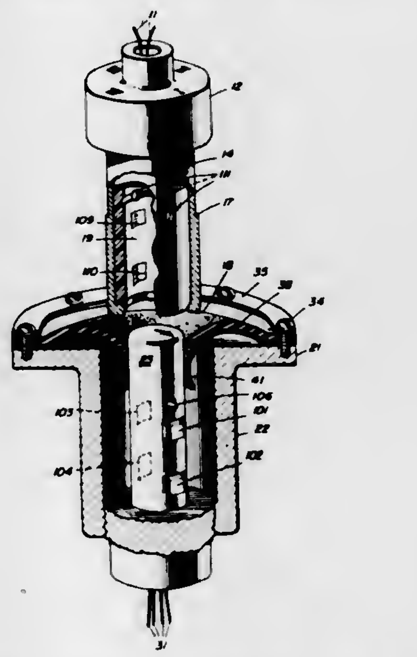


15. An electrical switch of the type utilized to make or break multiple circuit paths the combination including a bank of contact spring members connected to electrical leads to provide input and output circuit paths, said bank of contact spring members including an insulating block with portions of said members affixed in said block and a portion of each member extending out of said block along an axis disposed at an angle relative to a lower surface of said block with the ends of said contact members defining contact surfaces disposed substantially in a common plane, a flat insulating member having conductive strips thereon, means angularly inclined supporting said insulating member with the upper surface thereof having said conductive strips thereon parallel to the plane of said contact surfaces and further means for driving said inclined means so that the conductive strips are caused to engage said contact surfaces and wipe the contact surfaces under an increasing wedging pressure.

3,352,982

ELECTROMAGNETIC RADIATION PROOF ELECTRICAL CONNECTORS

Mark F. Walther, Newburg, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 15, 1965, Ser. No. 440,041
9 Claims. (Cl. 200—51.07)



1. An electrical connector apparatus that provides for safe connection of its component parts in high energy radio frequency fields comprising

first connector having an annular chamber

first electrical contact means positioned in said annular chamber

said first electrical contact means electrically tied to a first electrical circuit means

second connector having an internal chamber

stud means positioned substantially in the center of said internal chamber and extending substantially the full length of said internal chamber,

second and third contact means electrically and mechanically fastened to said stud means

second electrical circuit means electrically coupled to said third contact means and

barrier means electrically and mechanically attached to the wall of said internal chamber and in electrical contact with said stud means for enclosing said second and third electrical contact means,

whereby the mating of the first connector with the second connector brings the annular chamber into intimate contact with the stud means and the first and third electrical contacts physically together to provide a complete electrical connection between the first and second electrical circuit means.

3,352,983

PRESSURE SWITCH AND ELECTRICAL SWITCH THEREFOR

Johannus J. Cools, Nijmegen, Netherlands, assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed June 29, 1965, Ser. No. 474,201
19 Claims. (Cl. 200—83)

1. A pressure switch comprising, in combination,

a switch assembly including a contact supporting member, an actuated member, and a toggle spring acting between said contact supporting member and said actuated member and mounted for overcenter operation to produce movement of the contact supporting member to either one of two positions, said toggle spring acting to hold said contact supporting member in either of said positions and passing overcenter as the contact supporting member moves from one position to the other,

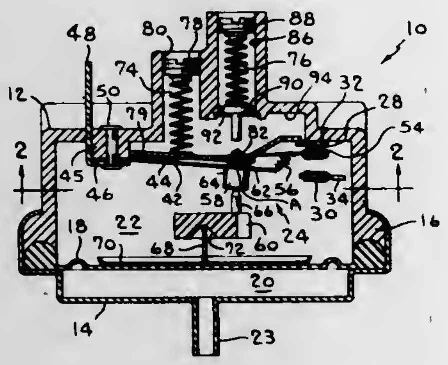
diaphragm means,

means connecting said diaphragm means to said actuated member and defining an actuating point through which the actuating force of said diaphragm means is applied to said actuated member,

spring means connected to and exerting a force on said actuated member in opposition to the force of said diaphragm means,

said toggle spring exerting a force component on said actuated member at said actuating point parallel to the force direction of said spring means and diaphragm means, and

the characteristics of said spring means and toggle spring being such that in movement from either of said positions to the other the combined spring rates of said spring means and toggle spring become negative before the toggle spring passes overcenter to thereby initiate switching before said toggle spring force component reverses in direction and dynamically switches said contact carrying member from one position to another.



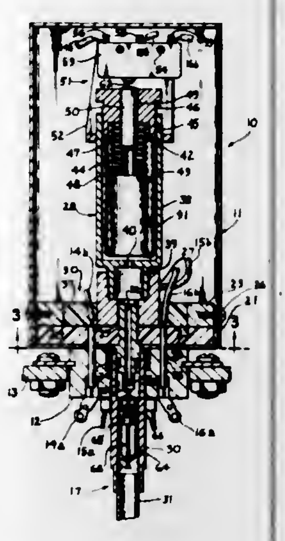
3,352,984
PRESSURE ACTUATED SWITCH AND PLUG ASSEMBLY

Brian R. Reuter, Houston, Tex., assignor to Consolidated Engineering Company, Houston, Tex.

Filed Apr. 14, 1966, Ser. No. 544,353

10 Claims. (Cl. 200—83)

1. A pressure actuated switch and plug assembly supporting therein a switch arm having a pivoted end, upper and lower, spaced apart contacts, and at least first, second and third conductors extending respectively from said pivoted end and from said contacts, and a snap action plunger having outwarly a contact point, a bellows housing having a bellows across the housing interior, a bored gland adjustably threadable downwardly into said bellows housing to bear upon a spring provided between said gland and said bellows, a closure plunger extending sealably through said gland bore, an insulative base to receive said bellows housing therein, said conductors connecting with respective conductor prongs extending from said base, an insulative plug supported to connectably receive said prongs therein to contact respective predetermined circuit completing means extending therefrom, a compressed gas conduit connecting upwardly through said base into said bellows housing, a compressed gas communication tube successively connected with said bellows housing and with said base and extending downwardly therebelow into said compressed gas conduit, whereby said bellows moves upwardly and downwardly responsive respectively to increase and decrease of compressed gas pressure so that said closure plunger respectively contacts said point to urge said snap action plunger to pivot said arm to said upper contact to complete first and second conductor circuit, and said snap action plunger acts downwardly and pivots said arm to lower contact to complete first and third conductor circuit.

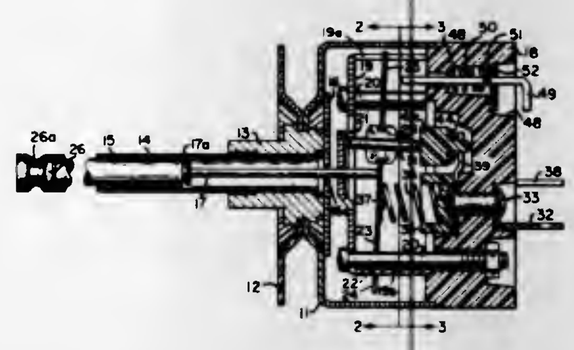


3,352,985
TAMPER-PROOF FLAME SENSOR CONTROL

M. R. Jayaram, Long Beach, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 18, 1966, Ser. No. 551,064

6 Claims. (Cl. 200—137)



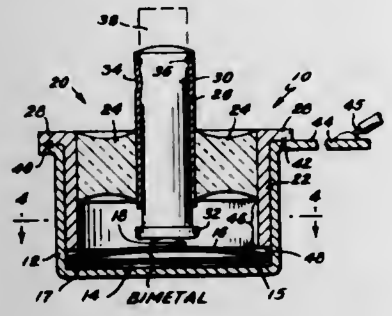
1. A control device comprising a support, control means on said support and having a fixed member and a second member movable into and out of engagement with said fixed member, condition responsive means mounted on said support and having first actuator means spaced from said second member, a lever positioned between said first actuator means for movement thereby and said second member for movement thereof, one end of said lever being pivoted on abutment means on said support but being movable away from said abutment means, slip friction means between said lever and said second member, resilient means engaging said lever for yieldably holding said lever against said abutment and in operating contact with said first actuator means, motion transmitting means between said lever and said second member to provide immediate movements of said second member upon changes in direction of movement of said first actuator means, and second actuator means arranged to move said lever toward said first actuator means and so positioned that if said second actuator means is held in its lever first actuator position, said actuating means is positioned to move said lever away from said abutment means against the force of said resilient means to actuate said second member.

3,352,986
VIBRATION RESISTANT CONSTRUCTION FOR THERMALLY RESPONSIVE ELECTRICAL SWITCHES

John Doherty, Jr., Assonet, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Continuation of application Ser. No. 241,349, Nov. 30, 1962. This application Oct. 6, 1965, Ser. No. 502,807

4 Claims. (Cl. 200—138)



4. A sealed and calibrated thermally responsive electrical switch comprising a cup-shaped electrically and thermally conducting metallic housing having an open end and having a radially extending flange around the rim of said open cup end; a metallic header sleeve disposed in telescoping relation within said housing said sleeve having a radially extending flange at one end welded in sealed relation to said housing flange and having an opposite end spaced from the bottom of said housing; a metallic tube; a glass material sealed to said tube and sleeve mounting said tube in coaxial, electrically insulating relation to said housing; a terminal rod having a contact at one end disposed with a sliding fit in said tube, said rod being welded in sealed relation to said tube to hold terminal contact at a selected location within said housing for calibrating said switch; an annular, electrically and thermally conducting spring of undulating shape disposed within said housing against said housing bottom; and a composite, dish-shaped snap-acting bimetallic member having a contact centrally supported thereon, said member being engaged near its periphery by said spring to hold said member contact in firm electrical engagement with said terminal contact for closing a circuit between said housing and terminal rod, said member being responsive to selected temperature conditions to move ino inverted dish-shape with snap-action to disengage said member contact from said terminal contact for opening said circuit and to engage an additional portion of said member periphery with said opposite end of said header sleeve so that, while said circuit is open, said member is firmly held at its periphery between said spring and opposite sleeve end.

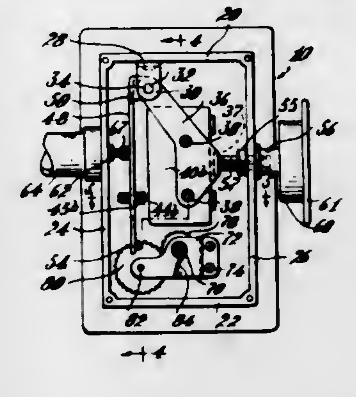
3,352,987
TEMPERATURE CONTROL DEVICE INCLUDING TWO SWITCHES WITH THEIR RESPECTIVE ACTUATORS

John S. Machado, Woburn, and Robert D. Reis, Hingham, Mass., assignors to United Electric Controls Company, Watertown, Mass., a corporation of Massachusetts

Continuation of application Ser. No. 395,789, Sept. 11, 1964. This application Aug. 25, 1966, Ser. No. 575,496

2 Claims. (Cl. 200—140)

1. A control comprising a support, a bracket pivotally mounted on the support for angular movement about a predetermined axis, a pair of switches secured to the bracket side-by-side, said switches embodying switch-actuating pins facing in the same direction, a rigid actuator plate mounted on the support in confronting relation to said switch-actuating pins for angular movement about said predetermined axis, a pair of screws adjustably mounted on said rigid actuator plate with one screw opposite each of the actuator pins, an adjustable part mounted on the support in engagement with the bracket operable to move the bracket about its pivot relative to said rigid actuator plate, a device containing an expandable fluid, said device embodying an actuator part engaged with said rigid actuator plate which is movable by expansion of the fluid in said device to move said rigid actuator plate toward said switches, said screws being adjustable on said rigid actuator plate so that an end of one projects beyond the end of the other, a scale on the support, a spindle mounted on the support with its axis at right angles to the plane of the scale, an indicator fixed to the spindle parallel to the surface of the scale for angular movement about the axis of the spindle along the scale, a first gear fixed to said spindle, a second gear in mesh with said first gear, a pin fixed to said second gear in a position to engage the distal end of said rigid actuator plate, said rigid actuator plate being displaceable in response to the temperature-responsive device to effect rotation of said second gear and hence movement of said indicator, and a spring coiled about said spindle, said spring biasing the spindle in a direction to hold said rigid plate engaged with said actuator plate away from the switches.

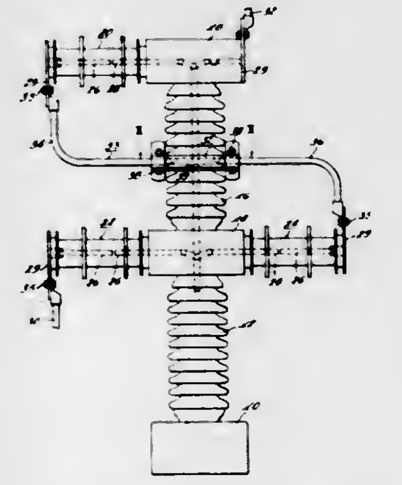


3,352,988
MEANS FOR MOUNTING AND ELECTRICALLY INTERCONNECTING CIRCUIT INTERRUPTING DEVICES

Zygmunt A. Wachta, Boston, Mass., and Herbert Maximilian Pflanz, Nuenen, Netherlands, assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

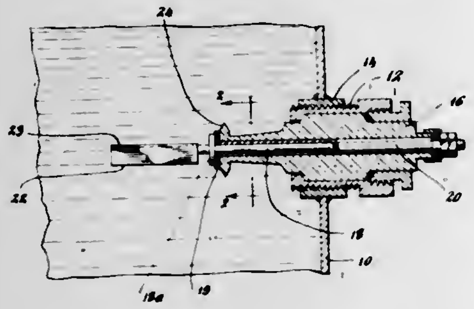
Filed Apr. 9, 1965, Ser. No. 446,833

1 Claim. (Cl. 200—144)



In electric circuit interrupting apparatus, in combination, a support, a first tubular insulator mounted on said support, a first housing mounted on said first insulator, a second tubular insulator mounted on said first housing, said second insulator having annular indentations on the exterior surface thereof, a second housing mounted on said second insulator, a pair of switches mounted on opposite sides of said first housing, a third switch mounted on a side of said second housing in alignment with one of said pair of switches, said switches being operable by operating mechanism located within said insulators and said housings, each switch having a terminal which is spaced outwardly from said insulators, a unitary conductive member located externally of said switches and said insulators for electrically connecting the terminal on said third switch with the terminal on one of said pair of switches, said conductive member having a portion disposed within one of said indentations on said second insulator, and means comprising a pair of electrically conductive clamping members for mechanically connecting said conductive member to said second insulator, one of said pair of clamping members enclosing said portion of said conductive member.

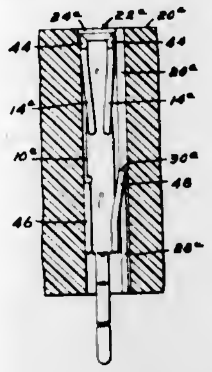
3,352,989
ELECTRODE ASSEMBLY FOR INSERTION IN A FLUID CONTAINER
Michael J. De Leonardis, 164 E. Lincoln, Ave., Valley Stream, N.Y. 11580
Filed Oct. 22, 1965, Ser. No. 501,557
2 Claims. (Cl. 200—166)



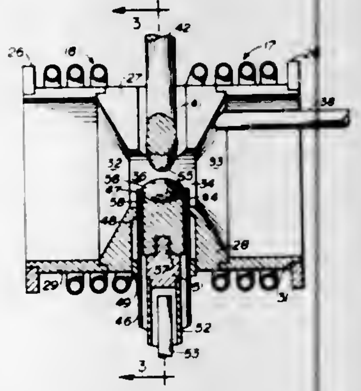
1. An electrode assembly comprising, a conductive blade member, a conductor connected to said blade, said conductor having a laterally extending flange adjacent its inner end, a gasket positioned around the conductor and against said flange, a plurality of concentric insulators surrounding the conductor with the inner ends of both abutting against the gasket, the inner one of said insulators being characterized by being resilient and capable of stretching and contracting to compensate for wide variations in temperature and the expansion and contraction of said conductor without being deformed or cracking, and the outer one of said insulators being characterized by being wear resistant, non water absorptive and impervious to super heated steam, and means for mounting the assembly in the wall of a boiler or the like with the blade and a portion of the conductor and the surrounding concentric insulators extending into the boiler and with the blade spaced from the boiler wall.

3,352,990
TOP INSERTABLE, RELEASABLE AND REMOVABLE CONTACT
Edward Kirby, Los Angeles, Calif., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 582,113
1 Claim. (Cl. 200—166)

An electrical connector comprising an insulating housing and a metal contact, said housing having a front face and a rear face, a contact receiving cavity extending from said front face through said rear face, one wall of said housing adjacent said cavity having a first slot intersecting said front face and extending toward said rear face, said wall having a second slot intersecting said rear face and extending toward said front face to intersect said first slot, said second slot being wider than said first slot whereby a shoulder is formed at the intersection of said slots facing said rear face, said contact being disposed in said cavity, said contact having a base portion adjacent said slotted wall, a resilient spur extending from said base portion into said second slot and engaging behind said shoulder so as to limit movement of said contact in the direction of said front face, said spur having its free end of greater width than said first slot and intersecting said first slot so as to be engaged by a tool inserted into said first slot at said front face and movable toward said rear face, and said contact having an element engaging said housing adjacent said cavity to limit movement of said contact in the direction of said rear face.



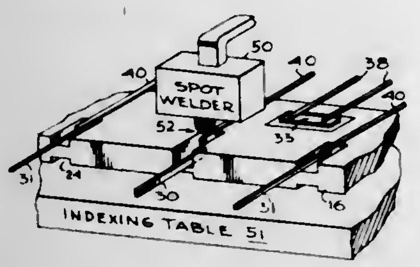
3,352,991
METHOD AND APPARATUS FOR MELTING METALS BY INDUCTION HEATING
Philip Gordon Clites, Silverton, Oreg., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 9, 1965, Ser. No. 438,435
9 Claims. (Cl. 219—10.79)



1. Inductive heating apparatus comprising solenoidal work coil means, a radiofrequency power source adapted to energize said coil means, a conductive sleeve element disposed within said work coil, provided with a longitudinal slit and including a constricted medical portion for concentrating flux from said coil, said medial portion providing an intensified heating zone within said sleeve, cold crucible mold means defined adjacent said heating zone, means for feeding a conductive material to be melted into said heating zone to accumulate in said mold means out of physical and electrical conductive contact across said slit in said conductive sleeve flux concentrator.

3,352,992
FABRICATING METHODS FOR ELECTRICAL CONNECTING STRUCTURES
John S. Davis, Glendale, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Original application Jan. 2, 1964, Ser. No. 335,135. Divided and this application Oct. 4, 1966, Ser. No. 601,246
4 Claims. (Cl. 219—58)

1. The method of providing circuit connections between a plurality of terminal members affixed in respective notches of a metallic bar but electrically isolated therefrom and a corresponding plurality of conductors positioned along the surface of the bar in contact with the respective terminal members, the terminal members being aligned substantially parallel to the surface of the bar, comprising the steps of:



moving a spot welder along the bar in a path parallel to the surface and substantially transverse to said conductors, and

energizing the spot welder as it traverses each conductor-terminal member pair in order to establish electrical and mechanical connection therebetween.

3,352,993
METHOD FOR ELECTROSLAG WELDING
Haruyoshi Suzuki, Nerima-ku, Tokyo, and Keizo Ishizaki, Suginami-ku, Tokyo, Japan, assignors to Yawata Welding Electrode Co., Ltd., Chuo-ku, Tokyo, Japan, a company of Japan
Filed Feb. 7, 1966, Ser. No. 525,465
Claims priority, application Japan, Feb. 6, 1965 40/6,272
6 Claims. (Cl. 219—73)

1. In the process for electroslag welding of base metals by pasing an electric current through a slag pool via an electrode, one end of which is immersed in the pool to form a weld, and feeding the electrode through a nozzle into the slag pool as it is consumed therein, the improvement which comprises employing as the nozzle a consumable nozzle having thereon an insulating layer, comprising an electroslag welding flux having a composition by weight of from about 20 to 50% silicon dioxide, from about 5 to about 40% calcium oxide, up to about 25% magnesium oxide, up to about 25% manganous oxide, up to about 15% aluminum oxide, and up to about 40% calcium fluoride.

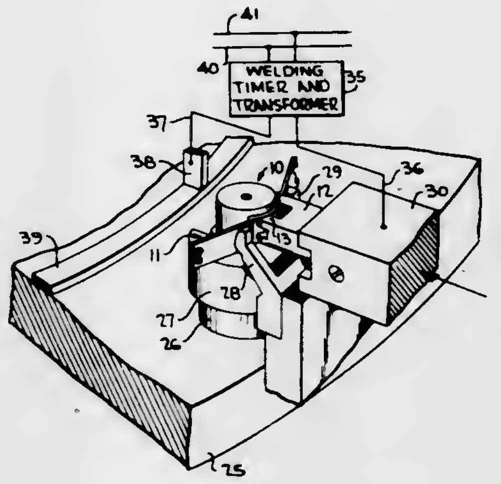
3,352,994
METHOD OF MAKING AN ELECTRODE COMPONENT
Chester O. Merchant, Owensboro, Ky., assignor to Kentucky Electronics Inc., Owensboro, Ky., a corporation of Kentucky
Original application Jan. 28, 1966, Ser. No. 523,715, now Patent No. 3,317,770, dated May 2, 1967. Divided and this application Sept. 9, 1966, Ser. No. 590,134
2 Claims. (Cl. 219—93)

1. The method of making a cathode ray tube electrode comprising a cylinder through which an electron beam passes and a generally flat mounting strap having a contact surface of conforming contoured shape welded adjacent the outer cylindrical surface of the electrode, comprising the steps of:

embossing the strap in a plurality of separate zones in the conforming contoured shape portion with each zone spaced from the edges of the strap and surrounded by a substantial portion of the strap material to thereby form raised surface portions on the inner face meeting the electrode and indenting opposed recessed surface portions on the opposite face,

pressing said strap against the outer cylindrical surface of said electrode to contact it initially at substantially only the raised surface portions,

dividing a welding head into a plurality of separate contact terminal end areas contoured to match the outer surface of said strap with each terminal end area spanning a single one of said recessed surface portions to mate therewith within the respective zones,

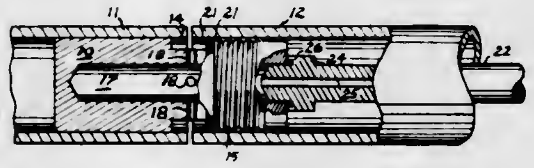


mating the position of the welding head terminal ends with the plurality of embossed portions within the separate zones in pressure contact with the surface of the strap as it engages the electrode,

applying only sufficient welding energy to the head to form welds between said raised surface portions and the electrode only within said zones,

and terminating the application of the welding energy when substantially face to face contact is reached between the conforming shape of the strap and the electrode member is reached and before the raised portions penetrate through the electrode while confining the welds in their entirety within said zones while being surrounded by non-welded areas in face to face contact, thereby preventing significant welding current from flowing through the strap except near the end areas of the welding head.

3,352,995
BUTT WELDING TOOL FOR FLASH REMOVAL AND WORK HARDENING
Hubert G. Lesley, % The Aid Corporation, Clayton, Ga. 30525
Filed June 18, 1964, Ser. No. 376,068
13 Claims. (Cl. 219—97)



1. An axially movable body for use in internally cleaning, hot working and aligning a welded joint between adjacent ends of axially aligned hollow tubular metallic members, said body defining a recess constructed and arranged to bridge the adjacent ends during the welding

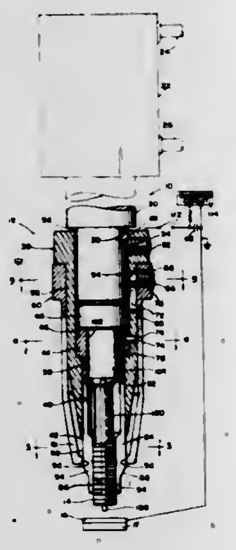
operation and the welded joint after the welding operation; means mounted within said recess for removing weld material protruding from the welded joint into said recess upon axial movement of said body with respect to the welded joint, said means for removing weld material comprising a plurality of offset arcuate scarfing knives; means for simultaneously supporting the welded joint during axial movement of said body with respect to the welded joint; and means for communicating a heat conducting medium between said body and the welded joint said means for communicating comprising a cast helical passageway extending around said body.

3,352,996
COLLAPSIBLE STUD WELDER COLLET

Albert Neumeier, Milwaukie, Oreg., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon

Filed Jan. 20, 1964, Ser. No. 338,987

11 Claims. (Cl. 219—98)



1. In a stud welding machine,
a workpiece support,
holder means for holding a stud,
a resilient drive for moving the holder means rapidly toward the support to move a stud held by the holder means toward a workpiece held by the support with sufficient speed to cause rebound of the holder means from the support after movement of the stud toward the workpiece stops,
means for creating an electric current through the holder means, the stud and the workpiece as the holder means is driven toward the support,
and actuator means operable to actuate the holder means to grip the stud tightly while the holder means is moved toward the workpiece and operable by inertia after the stud has engaged the workpiece to release the stud before the rebound of the holder means occurs.

3,352,997
METHOD OF REFINING SURFACE-CONTAMINATED METALS

Thomas E. Butler, Chatham, N.J., assignor to Union Carbide Corporation, a corporation of New York

Filed Feb. 9, 1965, Ser. No. 431,272

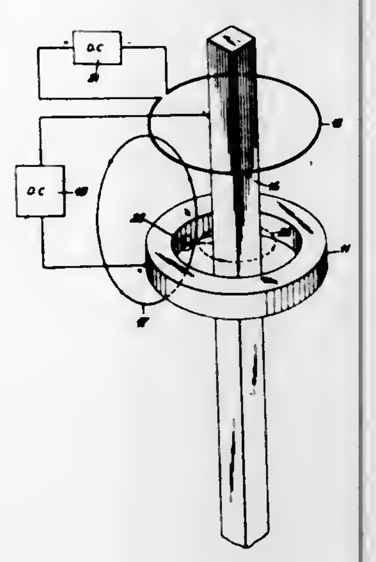
3 Claims. (Cl. 219—123)

1. A method for cleaning a surface-contaminated metal article which comprises:

(1) arranging the article to be cleaned in circuit with an electrode and a source of direct current, the article to be cleaned being connected as a cathode and the electrode being connected as an anode

(2) establishing an arc between the electrode and surface-contaminated metal article and

(3) moving the arc over the surface of the metal article while continuously moving said metal article relative to said electrode to thereby remove impurities therefrom without causing melting at the surface of the metal article.



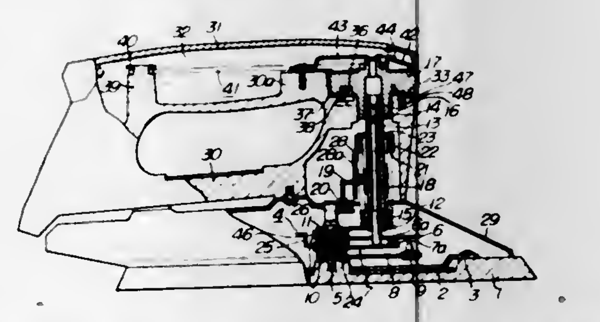
3,352,998
ELECTRIC IRON

Toshio Yai, Hirakata-shi, and Seiji Takashima, Amagasaki-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Oct. 4, 1965, Ser. No. 492,622

Claims priority, application Japan, Oct. 8, 1964, 39/80,114, 39/80,115, 39/80,116; Oct. 21, 1964, 39/83,147; Nov. 11, 1964, 39/88,317

5 Claims. (Cl. 219—252)



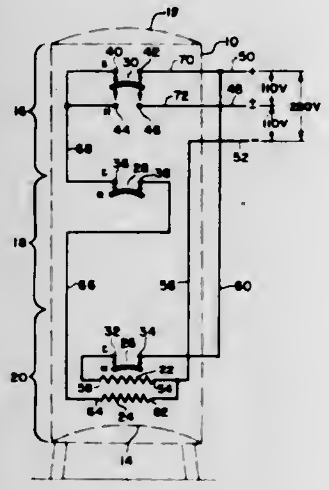
1. An electric iron comprising a sole plate to be heated by a plate heater, a thermostat thermally conductively mounted on said sole plate, a cover shell for covering said thermostat and mounted to the sole plate and a handle mounted to said cover shell, said thermostat consisting of upper and lower contact arms each having a contact provided in opposed relation to another for engagement and disengagement, a bimetal strip provided at its free end with a bimetal insulator provided in opposed relation to the free end of said upper contact arm, a supporting member to which said upper and lower contact arms and said bimetal strip are integrally secured by caulking at their root portions in juxtaposed relation with insulating layers intervening therebetween and a thermo-adjustment shaft for adjusting the space between the free end of said upper contact arm and said bimetallic insulator, said thermostat being provided with a slide ring fitted on said thermo-adjustment shaft and having a slide pin mounted to the side thereof, a guide member formed into a spiral lead which is adapted to rotate integrally with said thermo-adjustment shaft more than one circle to cause a vertical movement of the slide ring, a manually operative circuit switch consisting of a fixed contact arm extending from a terminal plate electrically conductively connected to said upper contact arm and having a fixed contact and a movable contact arm assembled integrally with said thermostat, while being electrically insulated therefrom, having a movable contact thereon and made of a flexible material, and a guide plate disposed between said thermo-adjustment shaft and said manually operative circuit switch and adapted to change the movement of said slide pin caused by the rotation of said guide member into a vertical movement so as to have said pin slide vertically within a controlled range, said slide pin opening said manually operative circuit switch when it reaches the lowermost position.

3,352,999
ELECTRIC WATER HEATER CIRCUIT

Edward L. Macolcz, Shorewood, and Allyn H. Fitzpatrick, Greendale, Wis., assignors to General Electric Company, a corporation of New York

Filed Apr. 28, 1965, Ser. No. 451,486

5 Claims. (Cl. 219—321)



1. In an electric water heater, an arrangement for energizing a pair of electrical heating elements from a three-wire, single-phase system which includes a neutral line and first and second outer lines, comprising:

(a) a water tank having a lower water inlet portion, an upper water outlet portion and a middle portion,

(b) a first electrical heating element disposed within said water tank in said lower portion, said first electrical heating element having first and second terminals,

(c) a second electrical heating element disposed within said water tank below said upper portion, said second electrical heating element having first and second terminals,

(d) means connecting said first terminals of said first and second electrical heating elements to the first outer line,

(e) a first thermally responsive switch connecting said second terminal of said first electrical heating element to the second outer line, said first thermally responsive switch being normally closed, and opening when water in said lower portion of said tank reaches a first predetermined temperature,

(f) a second thermally responsive switch connected to said second terminal of said second electrical heating element, said second thermally responsive switch being normally closed, and opening when water in said middle portion of said tank reaches a predetermined temperature approximately the same as said first predetermined temperature,

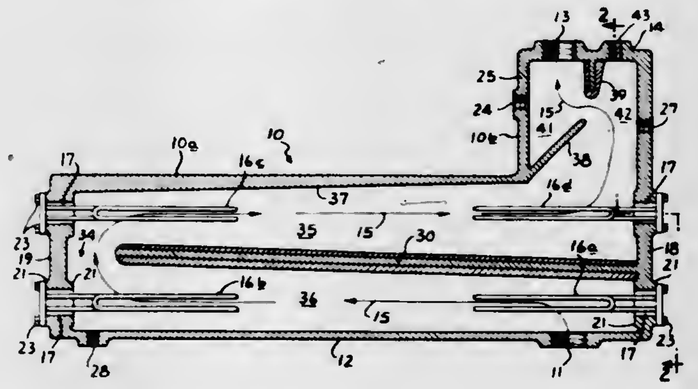
(g) a third thermally responsive switch connected in series with said second electrical heating element and said second thermally responsive switch, said third thermally responsive switch being of a double-throw type normally connecting, through said second thermally responsive switch, said second terminal of said second electrical heating element to the second outer line; and connecting said second terminal of said second electrical heating element to the neutral line through said second thermally responsive switch when water in said upper portion of said tank reaches a predetermined temperature approximately the same as said first predetermined temperature, whereby said second electrical heating element is provided with two levels of energization for automatic flexibility of recovery of water temperature within said tank.

3,353,000
CAST VESSEL FOR AN ELECTRIC HOT WATER HEATING BOILER

Curtis C. Tomlinson, Michigan City, Ind., assignor to Weil-McLain Company, Inc., Michigan City, Ind., a corporation of Indiana

Filed Mar. 2, 1965, Ser. No. 436,470

6 Claims. (Cl. 219—321)



1. In an electric hot water heating boiler having a cast water vessel of generally L-shaped construction, including an elongated horizontal portion having first and second ends and a raised portion, a water inlet at the bottom of said horizontal portion adjacent said first end, an outlet at the top of said raised portion, an internal baffle integrally formed with said vessel, extending longitudinally within said horizontal portion and defining upper and lower chambers therein, means defining a passageway between said chambers adjacent said second end, said baffle sloping upwardly toward said passageway, the upper internal surface of said horizontal portion sloping upwardly from said passageway toward said raised portion, said upwardly sloping baffle serving to strip and direct air from water flowing through said lower chamber via said passageway to said sloping upper internal surface, the latter surface further serving to strip and direct air from water flowing in said upper chamber toward said raised portion, a plurality of immersion heating elements mounted in said horizontal portion, said heating elements being disposed on opposite sides of said baffle and within said upper and lower chambers, means defining an air vent at the top of said raised portion and air separation means in said raised portion for diverting water through said outlet and separated air through said air vent.

3,353,001
ELECTRIC WATER HEATER CIRCUIT

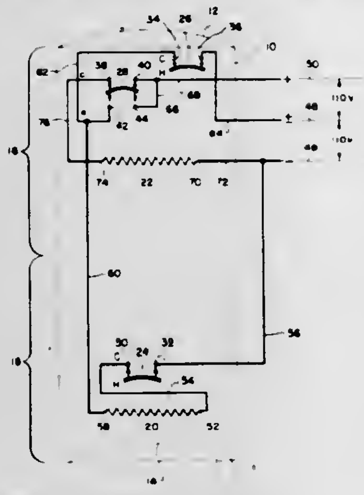
Edward L. Macolcz, Shorewood, and Allyn H. Fitzpatrick, Greendale, Wis., assignors to General Electric Company, a corporation of New York

Filed Apr. 28, 1965, Ser. No. 451,490

5 Claims. (Cl. 219—321)

1. In an electric water heater, an arrangement for energizing a pair of electrical heating elements from a three-wire single-phase system which includes a neutral line and first and second outer lines, comprising:

(a) a water tank having a lower water inlet portion and an upper water outlet portion,
(b) a first electrical heating element disposed within said water tank in said lower portion, said first electrical heating element having first and second terminals,
(c) a second electrical heating element disposed within said water tank in said upper portion, said second electrical heating element having first and second terminals,
(d) a first thermally responsive switch connecting said first terminal of said first electrical heating element to the first outer line, said first thermally responsive switch being normally closed; and opening when water in said lower portion of said tank reaches a predetermined temperature,
(e) a second thermally responsive switch connecting said second terminal of said first electrical heating element to the neutral line, said second thermally responsive switch being normally closed; and opening when water in said upper portion of said tank reaches a second predetermined temperature approximately the same as said first predetermined temperature,

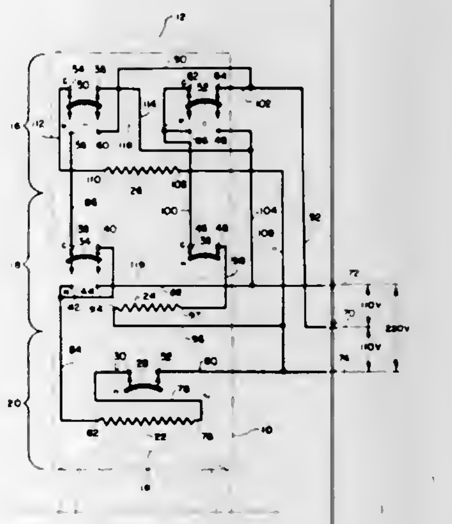


(f) means connecting said first terminal of said second electrical heating element to the first outer line, and
(g) a third thermally responsive switch being of a double-throw type normally connecting said second terminal of said second electrical heating element to the second outer line; and connecting said second terminal of said first electrical heating element to the second outer line when water in said upper portion of said tank reaches a third predetermined temperature, the third predetermined temperature being at least as high as said second predetermined temperature, whereby said first electrical heating element is provided with two levels of energization for automatic flexibility of recovery of water temperature within said tank.

3,353,002
ELECTRIC WATER HEATER CIRCUIT

Edward L. Macoicz, Shorewood, and Allyn H. Fitzpatrick, Greendale, Wis., assignors to General Electric Company, a corporation of New York
Filed Apr. 28, 1965, Ser. No. 451,489
4 Claims. (Cl. 219—321)

1. In an electric water heater, an arrangement for energizing three electrical heating elements from a three-wire single-phase system which includes a neutral line and first and second outer lines, comprising:
(a) a water tank having a lower water inlet portion, an upper water outlet portion and a middle portion,
(b) a first electrical heating element disposed within said water tank in said lower portion, said first electrical heating element having first and second terminals,
(c) a second electrical heating element disposed within said water tank in said middle portion, said second electrical heating element having first and second terminals,
(d) a third electrical heating element disposed within said water tank in said upper portion, said third electrical heating element having first and second terminals,
(e) means connecting said first terminals of said second and third electrical heating elements to the first outer line,
(f) a first thermally responsive switch connected to said first terminal of said first electrical heating element in series with said first electrical heating element and the first outer line, said first thermally responsive switch being normally closed, and opening when water in said lower portion of said tank reaches a first predetermined temperature,
(g) a second thermally responsive switch connected to said second terminal of said second electrical heating element in series with said second electrical heating element, said second thermally responsive switch being normally closed, and opening when water in said middle portion of said tank reaches a predetermined temperature approximately the same as said first predetermined temperature,

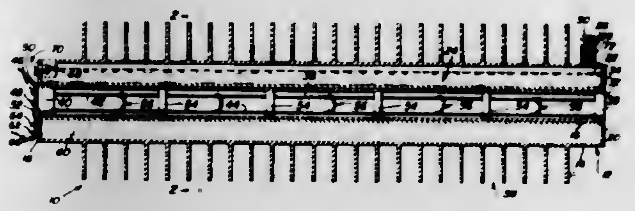


(h) a third thermally responsive switch connected in series with said second electrical heating element and said second thermally responsive switch, said third thermally responsive switch being of a double-throw type normally connecting, through said second thermally responsive switch, said second terminal of said second electrical heating element to the neutral line; and connecteing said second terminal of said second electrical heating element to the second outer line when water in said upper portion of said tank reaches a predetermined temperature approximately the same as said first predetermined temperature, whereby said second electrical heating element is provided with two levels of energization for automatic flexibility of recovery of water temperature within said tank,
(i) a fourth thermally responsive switch connected in series with said third electrical heating element, said fourth thermally responsive switch being of a double-throw type normally connecting said second terminal of said third electrical heating element to the second outer line; and connecting said second terminal of said first electrical heating element to the neutral line, when water in said upper portion of said tank reaches a predetermined temperature approximately the same as said first predetermined temperature, and

(j) a fifth thermally responsive switch connected in series with said first electrical heating element, said fifth thermally responsive switch being of a double-throw type normally connecting, through said fourth thermally responsive switch, said second terminal of said first electrical heating element to the neutral line; and connecting said second terminal of said first electrical heating element to the second outer line when water in said middle portion of said tank reaches a predetermined temperature approximately the same as said first predetermined temperature, whereby the electric water heater is provided with automatic flexibility of recovery, with the heat being provided in that portion of the tank where it is most useful.

3,353,003
ELECTRIC HEATING UNIT

Leonard A. Somero, Box 259A, New Ipswich, N.H. 03071
Filed July 15, 1965, Ser. No. 472,190
8 Claims. (Cl. 219—341)

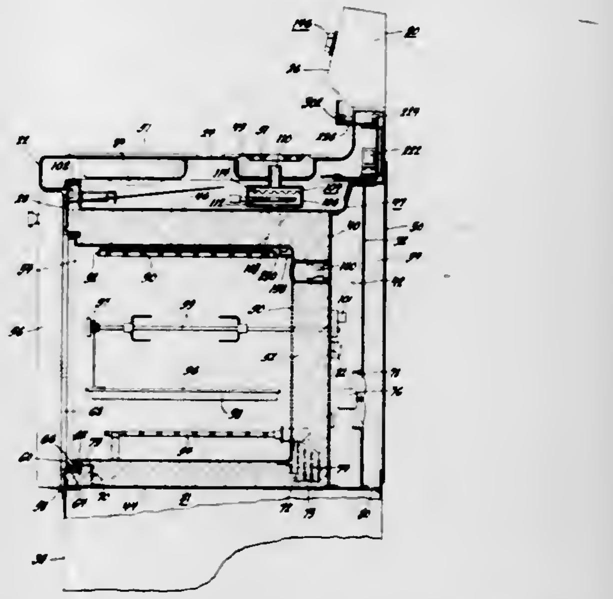


1. An electric heating unit comprising an axially elongated annular housing having heat radiating fins extending radially therefrom between opposite axial ends, end covers secured to the annular housing closing the axial ends thereof, dielectric end supports projecting in axial alignment from said end covers spaced radially inwardly of said annular housing, an inner tubular member supported on said end supports in heat conductive relation to the annular housing enclosing a gas-tight chamber, a plurality of insulative support elements mounted in axial spaced relation within the inner tubular member, a pair of spaced electrically conductive rods extending through said support elements within the gas-tight chamber between the end supports, heating elements connected to said rods between the support elements in a parallel circuit arrangement, a fluid heating medium disposed within the annular housing to a level above the inner tubular member, and a thermal sensing device mounted on one of said end covers projecting into the annular housing below the inner tubular member.

3,353,004
DOMESTIC ELECTRIC APPLIANCE

Donald F. Alexander, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 9, 1964, Ser. No. 402,803
18 Claims. (Cl. 219—398)

1. In combination with an oven having first heating means for heating in said oven and second heating means for eliminating smoke from said oven, low temperature roasting control means for controlling said first heating means in sequential cooking and warming or browning and tenderizing operations, said control means including
(a) high and low voltage power supply means in cycling control relationship to said first heating means,
(b) high temperature control means settable in one manner to effect the cycling of said first heating means through said high and low voltage power supply means in the cooking and browning portions of said operations at a high temperature in said oven,
(c) said high temperature control means settable in another manner to effect the cycling of said first heating means through said high and low voltage power supply means in the warming and tenderizing portions of said operations at a low temperature in said oven,
(d) low temperature control means settable to effect the cycling of said first heating means through said high and low voltage power supply means in said tenderizing portion of said browning and tenderizing operation and variable to adjust accurately the value of said low temperature in said oven,
(e) timer operated means for sequentially placing first said high temperature control means in effective cycling control relationship with said first heating means for a short period of high temperature during which meat is adapted to be browned and then placing said low temperature control means in effective cycling control relationship with said heating means for a long period of low temperature during which meat is adapted to be tenderized,



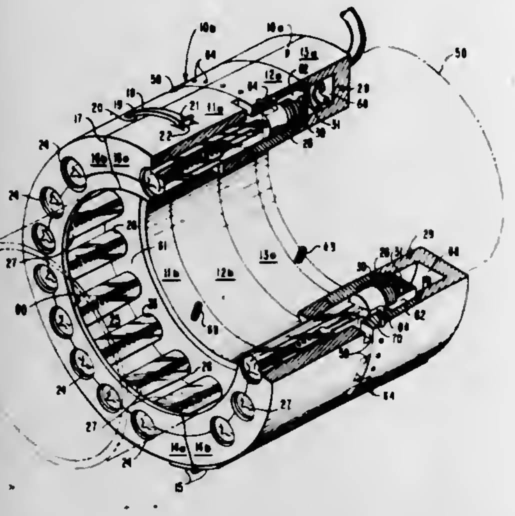
(f) said timer operated means controlling said high and low voltage power supply means to supply only low voltage power to said first heating means when said low temperature control means is in effective cycling control relationship with said first heating means,
(g) said timer operated means controlling said second heating means to negate its effectiveness for eliminating smoke from said oven when said low temperature control means is in effective cycling control relationship with said first heating means,
(h) and user operable means connected to said low temperature control means for setting said low temperature control means to vary the low temperature in said oven in accordance with the desired doneness to be achieved during said tenderizing.

3,353,005
BRAZING FURNACE

James C. Sisson and Edward C. Sparrow, Jr., Sacramento, Paul N. Eckles, Carmichael, Fred H. Meissner, Orangevale, and Woodrow A. Burnham, Carmichael, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed July 6, 1965, Ser. No. 469,510
10 Claims. (Cl. 219—411)

1. A brazing furnace comprising:
a hinged pair of similar half-cylinders forming, when closed, an annular enclosure;
an array of uniformly spaced infra-red radiating generators disposed about the inner periphery of said annular enclosure; and
an annular reflecting depression in the inner periphery of said annular enclosure, said depression being cir-

cumferentially formed in said inner periphery and located therein with respect to said generators so as to direct the radiation from said generators in an annular band within said annular enclosure, said annular band being narrower than said annular enclosure,



whereby when articles are placed centrally inside said enclosure, the areas of said article within said annular band are subjected to an intense heat from the reflected infra-red radiation from said generators.

3,353,006
METHOD AND DEVICE FOR DESTROYING CREDIT CARDS

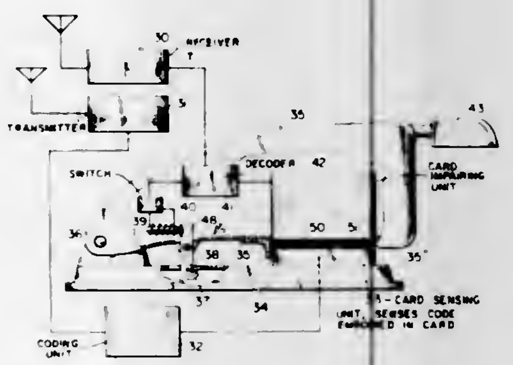
Harold V. Pollock, 1422 W. 28th St., Minneapolis, Minn. 55405, and John M. Diehl, Madison, Wis.; said Diehl assignor to said Pollock

Filed June 11, 1963, Ser. No. 287,119

2 Claims. (Cl. 235—61.7)

1. Means to ascertain the validity of a credit card when it is presented for payment and to select an alternative between permitting further use of said card without restriction and impairing further usefulness of said card and to then carry out the selected one of said alternatives, which comprises:

a plurality of outlying stations,
a central station, and
at each of said outlying stations:
  a receiver for receiving signals transmitted from said central station,
  a transmitter for transmitting signals to said central station,
  a device to receive a credit card,
  latch means in said device to lock it closed to prevent removal of said credit card from the device,
  means in said device to imprint indicia from said credit card unto a form,
  a card sensing unit in said device to sense a code embodied in said card,
  a card impairing unit in said device to impair the usefulness of said card,
  switch means in said device to operate said latch means,
  a coding unit,
  a decoding unit,
  said coding unit being disposed to receive information from said card sensing unit corresponding to the code embodied in said card and to convert said information into a suitable electromagnetic signal suitable for transmittal of said information as modulation of radio frequency carrier waves, and
  means to introduce said signal from said coding unit to said transmitter,
  said decoding unit being adapted to receive a signal from said receiver, said signal carrying information indicating an alternative between the two actions: usefulness of the card is to be impaired and usefulness of the card is not to be impaired,
  said decoding unit adapted to introduce a signal corresponding to the first alternative to said card impairing unit to cause operation of said unit and to introduce a signal corresponding to the other alternative to said switch means to cause said device to be unlatched,
said central station embodying:
  a receiver for receiving signals from said outlying stations,
  a transmitter,



  a comparer, and
  a memory,
  said memory containing sets of information each of which corresponds to information embodied as a code in each of a plurality of credit cards,
  said comparer being disposed to receive from the output of said receiver a signal carrying information corresponding to a code embodied in the credit card received in the device at the outlying station and to ascertain whether or not said information corresponds to one of the sets of information contained in said memory and to send to said transmitter a signal indicating one of the alternatives of: said information corresponds and said information does not correspond,
  the transmitter disposed to receive said signal from said comparer and to transmit to the receiver in an outlying unit a signal corresponding thereto.

3,353,007
FEED CONTROL DELAY MEANS

Jerry A. Combs, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

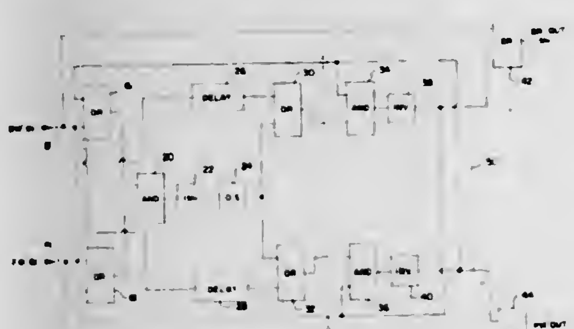
Filed May 13, 1963, Ser. No. 280,058

9 Claims. (Cl. 235—61.11)

1. In a device of the class described, constructed and arranged to control the feeding of record media in the forward and backward directions, and to cause a delay in exercise of said control when there is a change in the direction of feeding, the combination comprising

first signal input means on which a signal to cause backward movement of the record media may be introduced into said device;
second signal input means on which a signal to cause forward movement of the record media may be introduced into said device;
a first OR gate, one of the inputs of which is connected to the first signal input means;
a second OR gate, one of the inputs of which is connected to the second signal input means;
a first AND gate having two inputs, which are connected to the outputs of the first and second OR gates;

first signal inverting means, the input of which is connected to the output of said first AND gate;
monostable multivibrator means, capable of producing a signal of predetermined duration, the input of which monostable multivibrator means is connected to the output of the first signal inverting means;
third and fourth OR gates, one input of each of which is connected to the output of the monostable multivibrator means;
second and third AND gates, one input of each of which is connected to the output of the third and fourth OR gates, respectively;
second and third signal inverting means, the inputs of which are connected to the outputs of the second and third AND gates, respectively;
fifth and sixth OR gates, one input of each of which is connected to the output of the second and third signal inverting means, respectively, the outputs of the fifth and sixth OR gates serving as outputs of said device for the backward control signal and the forward control signal, respectively;



means connecting the first signal input means to a second input of the fifth OR gate;
means connecting the second signal input means to a second input of the sixth OR gate;
first delay means connecting the first signal input means to a second input of the fourth OR gate;
second delay means connecting the second signal input means to a second input of the third OR gate;
means connecting the output of the second signal inverting means to a second input of the second OR gate, and to a second input of the third AND gate; and
means connecting the output of the third signal inverting means to a second input of the first OR gate, and to a second input of the second AND gate,
whereby said device is capable of immediate transmission of a record media moving signal when the desired direction of movement of the record media is the same as the direction in which the record media was last moved, and whereby said device is capable of delaying a record media moving signal for a predetermined time interval when the desired direction of movement of the record media is opposite to the direction in which the record media was last moved.

3,353,008
CALCULATING MACHINE USING PULSE ACTUATED COUNTERS

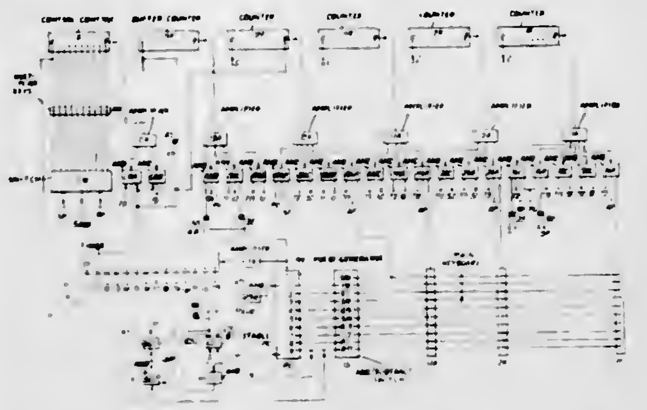
Norbert Kitz, John George Lloyd, and Hugh Lyon Mansford, London, England, assignors to Bell Punch Company Limited, London, England, a British company

Filed May 1, 1962, Ser. No. 192,042

Claims priority, application Great Britain, May 1, 1961, 15,669/61

7 Claims. (Cl. 235—160)

1. A calculating machine comprising a plurality of ordered pulse-operated counting devices, each counting device having minimum and maximum capacity counting states, an electronic pulse generator adapted to produce groups of pulses, means for applying pulses from successive ones of said groups of pulses to said counting devices successively in descending order, pulses from a single group being applied to a single counting device until such device passes from the maximum counting state to the minimum counting state, common carry storage means coupled to said counting devices and responsive to a



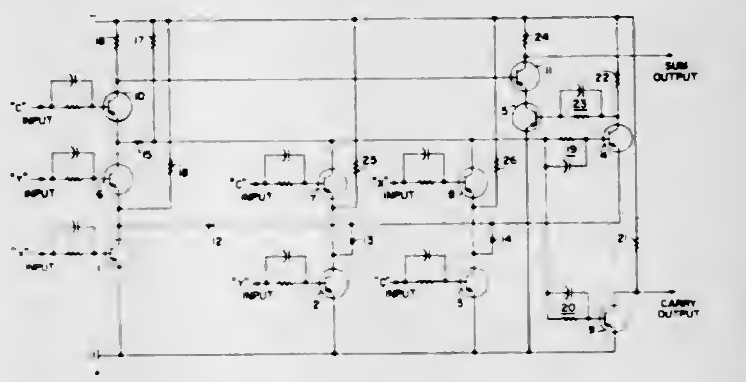
change in any of said counting devices from said maximum capacity state to said minimum state for producing a carry indication, and means responsive to a carry indication produced by said carry storage means for applying the remainder of said single group of pulses to the next higher ordered counting device with respect to the device producing a carry indication.

3,353,009
SOLID STATE BINARY ADDER

Gerald L. Mohnkern, Las Cruces, N. Mex., assignor to the United States of America as represented by the Secretary of the Army

Filed Apr. 15, 1965, Ser. No. 448,550

2 Claims. (Cl. 235—168)

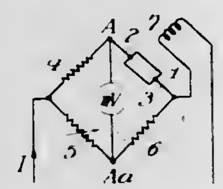


1. A binary adder comprising:
(a) a voltage source;
(b) a first input section including a first plurality of series connected transistors connected across said voltage source;
(c) a second input section including a second plurality of series connected transistors connected across said voltage source;
(d) a third input section including a third plurality of series connected transistors connected across said voltage source;
(e) a plurality of binary input means connected respectively to each of said transistors;
(f) biasing means coupled to each of said transistors whereby a binary "one" applied to one of said transistors will initiate conduction thereof;
(g) a first output transistor connected in series with at least one of said transistors of each of said input sections;
(h) said first output transistor having its base connected in series with at least two series connected transistors in each of said input sections;

(i) a second output transistor connected in parallel with said first output transistor the state of which controls the carry output;
(j) a third output transistor the state of which controls the sum output;
(k) a fourth output transistor connected in series with said third output transistor;
(l) said fourth output transistor being controlled by said first output transistor, whereby when said first output transistor is in one state, said fourth output transistor is in the opposite state;
(m) said series connected third and fourth transistors connected across said voltage source; and
(n) said third output transistor having its base connected in series with said first input section.

3,353,010
ANALOG COMPUTERS UTILIZING GEOMETRICAL MAGNETORESISTANCE EFFECT OF HIGH MOBILITY SEMICONDUCTORS

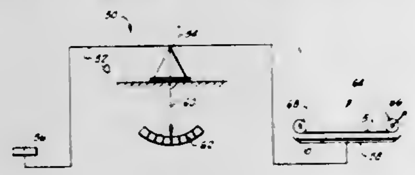
Shoei Kataoka, Kitatama-gun, Tokyo-to, Hideo Yamada, Meguro-ku, Tokyo-to, and Shintaro Kobayashi, Setagaya-ku, Tokyo-to, Japan, assignors to Agency of Industrial Science and Technology, Ministry of International Trade and Industry, Tokyo-to, Japan, an authority of the Japanese Government
Filed Mar. 25, 1963, Ser. No. 267,421
Claims priority, application Japan, Mar. 30, 1962, 37/12,024; June 30, 1962, 37/22,801; July 4, 1962, 37/27,514
11 Claims. (Cl. 235—179)



1. An analog circuit comprising a bridge circuit having an arm of said bridge circuit comprising a semiconductor element, said semiconductor element having geometrical magnetoresistance effect and high mobility, means to apply magnetic flux to said element and to vary the amount of magnetic flux acting upon said semiconductor element, and means connected to said circuit to derive an output potential from said circuit.

3,353,011
METHOD AND APPARATUS FOR CORRELATING TWO RECORDED SIGNALS

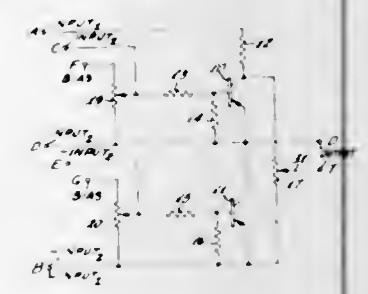
Jesse T. Cherry, Jr., and Graydon L. Brown, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Apr. 17, 1963, Ser. No. 273,634
4 Claims. (Cl. 235—181)



1. A method for determining the degree of coherence between a first signal and a second signal recorded as first and second force fields on first and second elongated magnetic tapes, respectively, comprising the steps of:
positioning the first and second elongated magnetic tapes in parallel relationship with the force fields interacting;
moving the first magnetic tape longitudinally relative to the second member and in uniform spaced relationship to the second magnetic tape; and,
measuring the resulting force between the two magnetic tapes as the first magnetic tape is moved relative to the second magnetic tape to provide an indication of the degree of coherence between the first and second signals.

3,353,012
TRANSISTORIZED MULTIPLICATION CIRCUIT

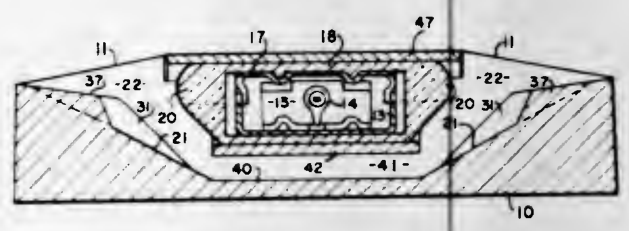
John Baude, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 1, 1963, Ser. No. 313,116
11 Claims. (Cl. 235—194)



1. An electrical multiplication circuit for producing an output proportional to a first and second input comprising:
a transistor connected to operate in a linear portion of its characteristic curve having an input circuit connected to receive the second input and having an output circuit;
a resistance connected in series with the transistor output circuit to form a series circuit,
said series circuit connected to receive the first input across the series circuit; and
a potentiometer connected in parallel with the series circuit, said potentiometer having a tap, said tap adjusted so that the potential between said tap and a point in the series circuit between the resistance and the transistor output circuit is proportional to the first and second input.

3,353,013
PAVEMENT EMBEDDED LIGHTING UNIT

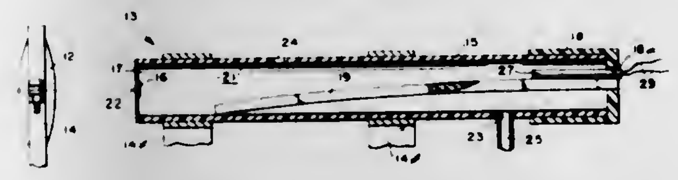
Charles A. Robertson, Syracuse, and Frederick B. Small, Moravia, N.Y., assignors to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York
Filed Aug. 12, 1965, Ser. No. 479,149
2 Claims. (Cl. 240—1.2)



1. A light fixture adapted for semi-flush mounting in an airport pavement comprising a base member formed with a channel open through the top surface of the base and extending transversely thereof, the medial portion of said channel having an intermediate bottom wall extending horizontally, the outer end portions of said channel having bottom walls inclining downwardly from the periphery of said base and merging with said intermediate bottom wall, shoulders formed in opposite side walls of said medial portion of said channel and being spaced upwardly from said intermediate bottom wall, a lamp unit mounted on said shoulders and spanning the space therebetween in upwardly spaced relation to said intermediate bottom wall, said lamp unit being operable to direct a light beam outwardly through said outer end portions of said channel, and a cover plate detachably secured to said base and overlying said lamp unit.

3,353,014
LIGHT BOMB

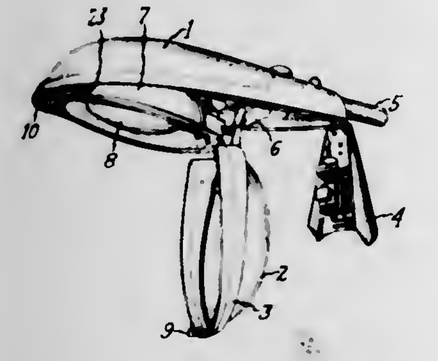
Rolland Gallup, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 14, 1965, Ser. No. 472,067
5 Claims. (Cl. 240—1.3)



3. In a light-bomb for use in a high-speed camera system, means comprising in combination:
housing means defining an elongated chamber therewithin;
an opaque sealing member fixed across one end of said chamber including means defining an opening extending through said member in a manner such that light waves may be passed from said chamber through said sealing member;
a light-diffuser fixed across said opening adapted to diffuse light waves passed through said opening;
means adapted to establish and maintain an atmosphere of inert gas within said chamber; and
means connected with said chamber adapted to project an explosive shock wave along said chamber for thereby causing said atmosphere to propagate light rays as a moving explosive shock wave is passed through said chamber, whereby the rays of light are caused to pass through said diffuser and be scattered thereby.

3,353,015
STREET LIGHTING LUMINAIRE

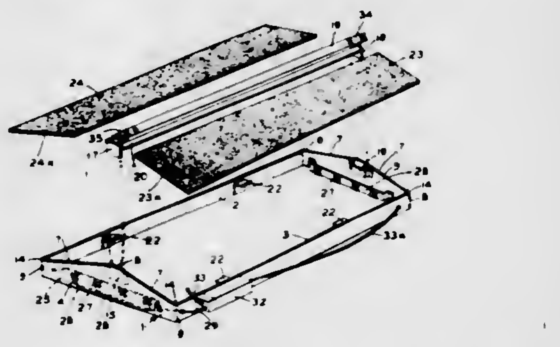
John Stuart Franklin, Hendersonville, and Samuel L. Baldwin, Flat Rock, N.C., assignors to General Electric Company, a corporation of New York
Filed Mar. 9, 1966, Ser. No. 533,054
10 Claims. (Cl. 240—25)



1. A luminaire comprising, in combination, an upper housing open at its bottom, first and second closure means in conjunction closing the open bottom of said upper housing, said first and second closure means being separate from each other and operating independently of each other, transverse support means within and extending across the interior of said housing at adjacent portions of said first and second closure means, said first and second closure means being movably secured to said support means at their adjacent portions, a reflector within said housing having opposite ends, said reflector at one end being secured to said housing and at its opposite end being removably supported by said transverse support means, said first closure means including light transmitting means, said reflector and said first closure means being arranged in the front portion of said housing with said first closure means closing the front portion of said housing, said second closure means closing the rear portion of said housing, said transverse support means comprising a generally U-shaped unitary cross member having a web portion and opposite arm portions and being secured at said arm portions to opposite sides of said housing with said web portion depending therefrom, said web portion having means for releasably securing said reflector and said first and second closure means thereto in operative assembly.

3,353,016
COMBINATION ACOUSTICAL AND LIGHTING FIXTURE

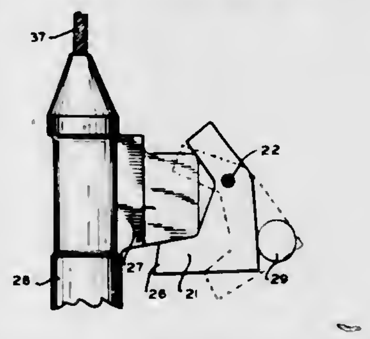
William H. Robinson, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Dec. 23, 1965, Ser. No. 515,911
10 Claims. (Cl. 240—51.11)



1. A light fixture comprising side members and end members, means for hingedly connecting said side and end members to form a foldable frame, an elongated channel having a bottom portion, spaced, downwardly extending projections secured to said bottom portion, means forming a pocket on each of at least a pair of opposed end members, said projections being removably positioned in said pockets whereby said frame is held in open position, flanges extending outwardly from the bottom portion of said channel, brackets secured to said side members, at least two panels having light-reflecting lower surfaces, supported by said flanges and brackets on opposite sides of said channel, light supporting socket means carried by said frame.

3,353,017
LATCH ASSEMBLY FOR LOWERING DEVICE MECHANISM

Henry C. Pfaff, Jr., Summit, and Francis G. Schlosser, Ridgefield Park, N.J., assignors to Pfaff and Kendall, Newark, N.J., a corporation of New Jersey
Continuation of application Ser. No. 207,196, July 3, 1962. This application Sept. 21, 1965, Ser. No. 488,915
10 Claims. (Cl. 240—66)

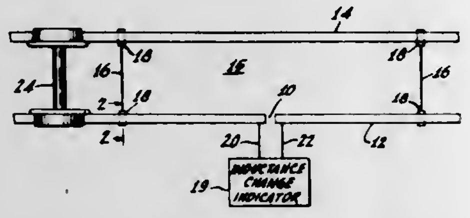


1. A latch assembly for a lighting fixture, which fixture is raised and lowered by a motor unit positioned on a support, said assembly including a switch for activating said motor when said switch is engaged and operated by a member, a latch member, pivotally mounted on said support in position to be engaged and moved by said fixture

at a predetermined position of the fixture, said latch member being an obstructing member to the movement of the switch operating member to prevent switch operation, said switch being operative by said switch operating member when the latch member does not obstruct the movement of the switch operating member.

3,353,018
SIGNALING LOOP INCLUDING RAILROAD TRACKS

George W. Gray, Lambertville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 19, 1965, Ser. No. 441,088
5 Claims. (Cl. 246—34)

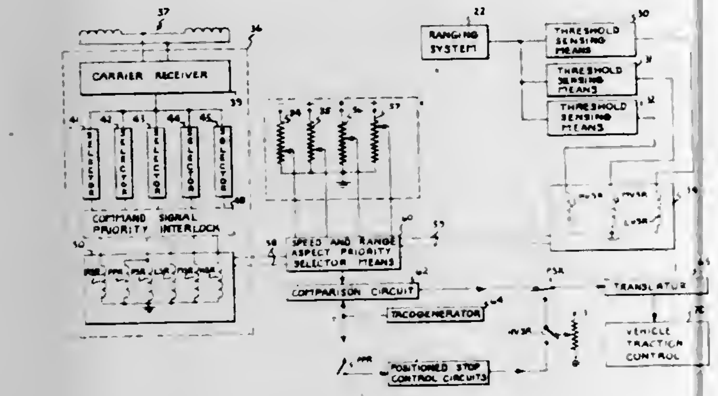


5. A railroad signaling and detecting loop system comprising:

a portion of a pair of rails, there being an electrical discontinuity in one of said rail portions,
a pair of connectors connecting said rail portions at positions spaced at opposite sides of said electrical discontinuity, said connectors running substantially perpendicularly to said rail portions,
a pair of leads,
a utilization device having a pair of terminals,
said leads being connected between respective points of said one rail at opposite sides of said electrical discontinuity and respective ones of said terminals of said utilization device.

3,353,019
AUTOMATIC CONTROL SYSTEM FOR VEHICLES INCORPORATING A RANGING SYSTEM FOR VEHICLE TRAFFIC SAFETY CONTROL

Robert K. Allen, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,057
9 Claims. (Cl. 246—187)

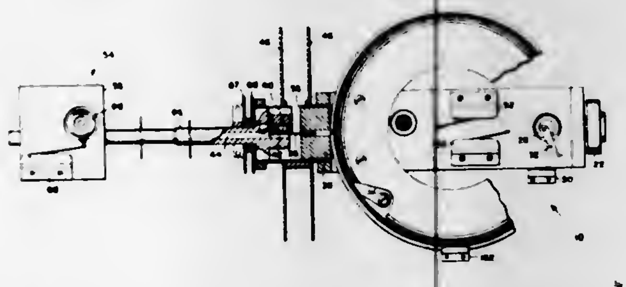


1. In a system for automatically controlling the operation of vehicles in accordance with local route conditions, the combination comprising:

(a) receiver means responsive to signals from wayside representing maximum speed limits for selectively energizing devices establishing corresponding speed aspect indications on board said vehicle;
(b) means on board said vehicle for deriving a range signal which increases in value as a function of increasing distance between said vehicle and an obstruction in advance thereof;
(c) means responsive to said range signal for selectively energizing devices establishing a number of discrete range aspect indications;
(d) a plurality of reference signal sources;
(e) selector means operative to provide for the selection of a reference signal source in accordance with the lowest order aspect indication established; and
(f) means for comparing the reference signal so selected with a signal proportional to the actual speed of said vehicle to provide an error signal.

3,353,020
AUTOMATIC CONTROL SYSTEM FOR AN X-RAY DIFFRACTION APPARATUS

John D. Bennett, Richardson, Preston E. Chaney, Dallas, and Jack Weir Jones and Stanley B. McCaleb, Richardson, Tex., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Oct. 15, 1964, Ser. No. 404,091
13 Claims. (Cl. 250—51.5)



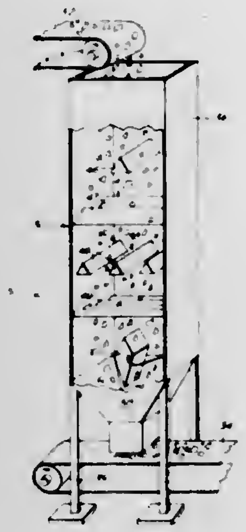
1. A slide changing apparatus for use with an X-ray diffraction scanning apparatus comprising a rotatable slide magazine, means operable by a first motor for removing a slide from said magazine and placing said slide in a position to be examined by said X-ray diffraction scanning apparatus, switching means activated when said slide is in said position for returning said slide removing means to its original position, switching means operable in response to the return of said slide removing means for initiating scanning of said scanning apparatus, means providing a signal at the end of the scan of said scanning apparatus, means responsive to said signal to operate a second motor, means operable by said second motor for reutrning said slide to said magazine, means operable by said second motor to provide a signal initiating operation of a third motor, said third motor being operable to index said slide magazine, switching means operable to stop said third motor, said last-mentioned switching means being operable to initiate operation of said first motor, and switching means operable by said slide removing means when no slide exists in the position in said magazine such that it would have been removed by said slide removing means, said last-mentioned switching means initiating operation of said second motor and rendering said scanning apparatus inactive.

3,353,021
APPARATUS AND PROCESS FOR CONTINUOUS MEASUREMENT OF MOISTURE IN MOVING COAL BY NEUTRON THERMALIZATION

Robert F. Stewart, Morgantown, W. Va., assignor to the United States of America as represented by the Secretary of the Interior
Filed Sept. 29, 1964, Ser. No. 400,288
2 Claims. (Cl. 250—83.1)

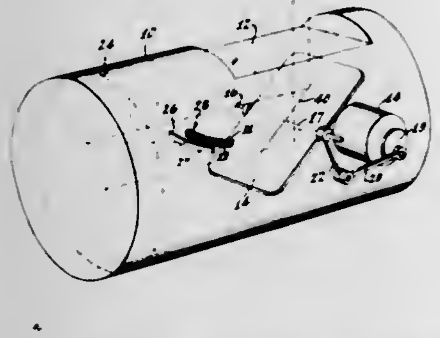
1. An apparatus for continuously measuring moisture in a stream of unhomogeneous, particled material containing relatively large amounts of hydrogeneous matter, comprising a housing having an inlet and an outlet and defining in between a channel wherein said particled material is guided to move as a mass, a substantially wedge-shaped enclosure and means supporting said enclosure

centrally in said channel whereby extended edges of said enclosure are disposed across the path of said mass moving through said channel, a moisture meter comprising a radioactive means maintained centrally within said channel by a supporting attachment thereof within said enclosure, and radiating fast neutrons within an area of said moving mass of particled material, a thermal neutron detecting means attached within said enclosure for support at a predetermined distance from said radioactive means and operative thereby to detect thermal neutrons scattered back from said moving mass of particles, and an electronic circuit including a scaler operatively responsive to an output from said detecting means to control a recorder to indicate the moisture content of said material.



3,353,022
INFRARED SEARCH SYSTEM COMPRISING MEANS FOR DIFFERENTIATING BETWEEN TARGET AND BACKGROUND RADIATION

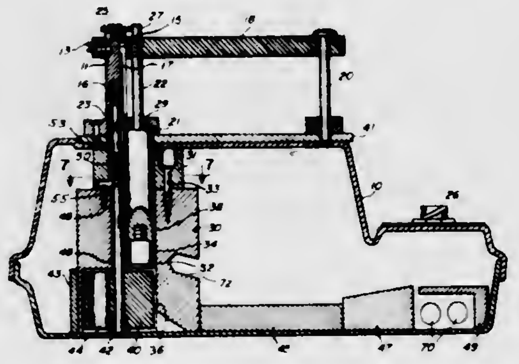
Joseph Schwartz, Teaneck, N.J., assignor, by mesne assignments, to Avion Electronics, Incorporated, Wilmington, Del., a corporation of Delaware
Filed Jan. 29, 1959, Ser. No. 789,958
2 Claims. (Cl. 250—83.3)



1. A search system comprising a radiation sensitive device, means for collecting radiation from an optical field and for projecting said radiation along a path onto said radiation sensitive device, said radiation collecting and projecting means including a mirror mounted in said radiation path for oscillation about an axis, means for oscillating said mirror about said axis, said radiation sensitive device comprising a plurality of photosensitive cells aligned in a plane including said mirror axis, a reticle having alternately spaced linear radiation opaque and transparent portions extending substantially parallel to said aligned cells mounted between said aligned cells and mirror, a storage circuit connected individually to each cell, a display means, switching means for connecting the storage circuits to said display means in succession, and means responsive to said switching means and said means for oscillating the mirror for indicating on said display means two coordinates of a source of radiation.

3,353,023
SAFETY SHIELDING STRUCTURE FOR PORTABLE NUCLEAR GAUGE

Andrew Lowery, Durham, and David B. Auld and Robert W. Faulkner, Raleigh, N.C., assignors to Troxler Electronic Laboratories, Inc., Raleigh, N.C., a corporation of North Carolina
Filed Nov. 1, 1963, Ser. No. 320,899
1 Claim. (Cl. 250—106)



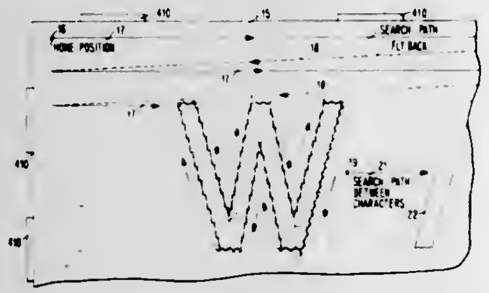
In a portable nuclear measuring device:

(a) a housing including top and bottom walls;
(b) a vertically extending radiation shielding block mounted within said housing and secured to said bottom wall, said block having a vertical passageway formed in the upper and central portion thereof and communicating therewith a cylindrical cavity formed in the lower and lateral portion thereof;
(c) an elongated probe rod slidably mounted within said passageway for movement along a vertical axis laterally offset from the central vertical axis of said cavity, said probe rod including a radioactive source mounted on its lower end and having its upper end extending through and above said top wall;
(d) a radiation shielding cylinder mounted within and substantially filling said cylindrical cavity and being rotatable around the said central vertical axis thereof, said cylinder being substantially solid except for a vertical opening provided therethrough, the size of said opening being selected and the axis thereof being laterally offset from the axis of said cylinder such that when said cylinder is rotated to a first position the axis of said probe rod and opening coincide and said opening is positioned to slidably receive said probe rod for vertical movement of said source downwardly to a measuring position adjacent said bottom wall and when said source is positioned above said cylinder and said cylinder is rotated to a second position the solid portion of said cylinder shields said source;
(e) a vertically positioned elongated drive rod centrally mounting said shielding cylinder and rotatable therewith, said drive rod being adjacent said probe rod and extending through said passageway upwardly through and above said top wall and including a vertical groove along the length thereof and a connecting horizontal groove at the top thereof;
(f) singular spring means secured to said drive rod and effective to constantly force said drive rod in a direction to bring said cylinder into said second shielding position;

(g) a horizontally positioned bar handle rigidly connected to the upper end of said probe rod above said top wall and movable with said probe rod for positioning of said source within said opening, said handle being slidably mounted on said drive rod and including horizontally positioned pin means arranged to engage the said horizontal groove in said drive rod and maintain said handle and said probe rod in a fixed raised position for transport and said source in said shielded position when said cylinder and drive rod positions correspond to said second position and to engage and slide vertically in said vertical groove in said drive rod only when said cylinder and drive rod positions correspond to said first position; and

(h) auxiliary handle means mounted on said drive rod above said handle for manually rotating said drive rod and cylinder between said first and second positions.

3,353,024
CONTROL CIRCUITRY FOR AN ELECTRONIC CURVE FOLLOWER
Norman S. Stockdale, Rochester, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 25, 1965, Ser. No. 427,874
6 Claims. (Cl. 250—202)



1. Apparatus for controlling the beam of an electronic curve follower comprising:

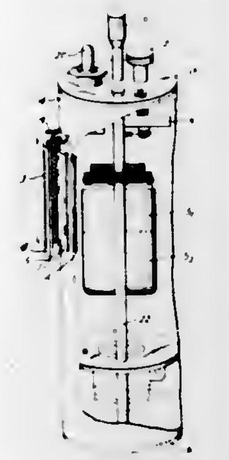
means for defining a first rectangular area in terms of voltage levels about the beam starting position for following a curve;

means for defining a second rectangular area displaced from said first rectangular area at predetermined vertical and horizontal distances, said second rectangular area being defined in terms of voltage levels; and

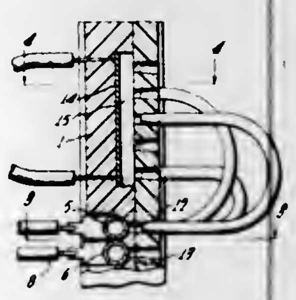
means for providing a signal indicative that the beam has completely followed said curve when said beam re-enters said first and second rectangular areas successively.

3,353,025
APPARATUS FOR TESTING A MATERIAL'S REACTION TO ILLUMINATION AND HUMIDITY WITH CAPACITOR-TYPE HUMIDITY DETECTOR
Walter Sturm, Hanau-Hohetanne, Germany, assignor to Quarzlampen Gesellschaft m.b.H., Hanau am Main, Germany
Filed Feb. 18, 1963, Ser. No. 259,041
Claims priority, application Germany, Feb. 22, 1962, Qu 697
14 Claims. (Cl. 250—215)

1. In an apparatus for testing the reaction of material specimens to irradiation and humidity, in combination, a stationary source of irradiation; movable carrier means for moving at least one material specimen across the flux of radiation emanating from said source and including at least one specimen holder means adapted to hold said material specimen in at least one predetermined position with one side thereof facing said source so as to cause irradiation thereof while it is moved, said specimen holder means including hygrometer means including two capacitor plate members arranged on opposite sides of said specimen with one of said capacitor plate members located in front of said one side of said specimen and being irradiation permeable so as to let said irradiation pass therethrough to impinge on said specimen, said material specimen placed as a dielectric between said plate members constituting a capacitance of variable magnitude depending on the humidity of said specimen, said hygrometer means furnishing electrical signals having a characteristic varying with the variation of said capacitance and including transmitter means for wireless transmission of said signals; and stationary receiver means for receiving said signals and including transducer means for converting said electrical signals into mechanical action.



3,353,026
RADIATION SENSITIVE PROGRAMMING DEVICE USING FLEXIBLE LIGHT CONDUCTORS
Ilan Israely, Los Angeles, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed Mar. 11, 1965, Ser. No. 439,038
6 Claims. (Cl. 250—227)



5. A programming device comprising a receiver board having a front and rear surface,

said board having a plurality of recesses therein accessible from said rear surface and a plurality of openings communicating said front surface with each of said recesses,

light sources in respective ones of said recesses,

said board having a second plurality of recesses therein accessible from the front surface thereof,

photo-sensing devices in said last mentioned recesses,

a plugboard,

means for removably locating said plugboard in contact with said front surface of said receiver board,

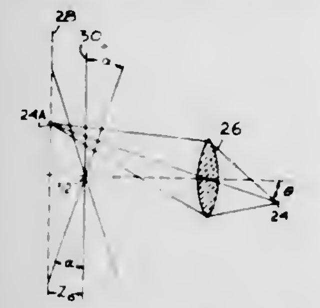
said plugboard having a first and second series of holes therethrough,

said first series of holes communicating with said openings and said second series of holes communicating with said second plurality of recesses, and

at least one flexible light conductor,

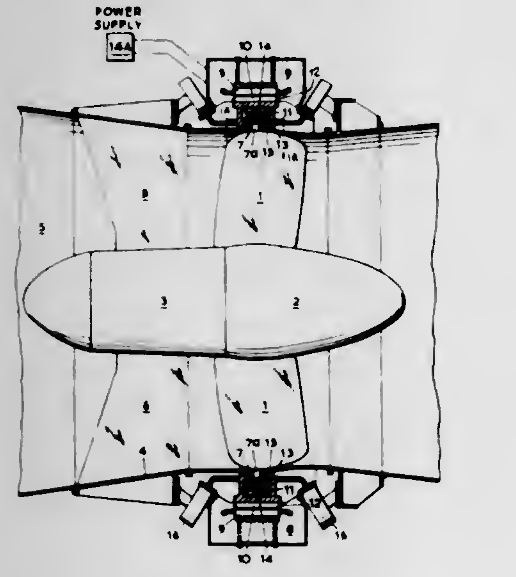
said light conductor being insertable at one end thereof in any one of said first series of holes and being insertable at its opposite end in any of said second series of holes.

3,353,027
AIMING DEVICE
James C. Bliss, Los Altos, and Hewitt D. Crane, Portola Valley, Calif., assignors to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Nov. 9, 1964, Ser. No. 409,726
5 Claims. (Cl. 250—235)



1. Apparatus for determining the direction of an object from a predetermined line comprising a lens having its optical axis coincide with said predetermined line, a nonlinear photocell spaced from said lens and adjacent the focus plane of said lens, means for oscillating in a rotary mode said nonlinear photocell about an axis passing therethrough, and means for deriving an electrical output from said photocell indicative of the angular displacement of said object from the optical axis of said lens.

3,353,028
TURBOGENERATORS, INCLUDING A MAGNETIC COUPLING BETWEEN THE DYNAMO ROTOR AND THE TURBINE RUNNER
Michael Braikevitch and Edward Thomas Metcalf, Netherton, England, assignors to The English Electric Company Limited, London, England, a British company
Filed Nov. 2, 1964, Ser. No. 408,266
Claims priority, application Great Britain, Nov. 6, 1963, 43,777/63
19 Claims. (Cl. 290—52)



1. A water turbine comprising

a water flow tube,

a bladed runner rotatably mounted in said water flow tube,

a magnetic ring mounted on, and extending around, the outer periphery of the bladed runner,

an electric generator having

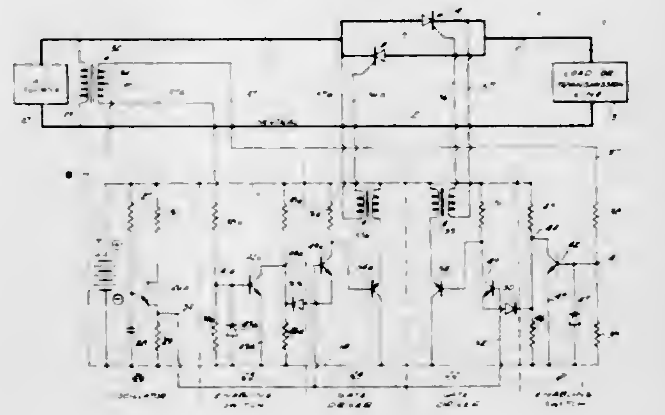
a rotor,

a stator, and

means for magnetically coupling the rotor to said ring, and

a non-magnetic wall forming a portion of the wall of the water flow tube interposed between the rotor and the ring and sealing the stator from water in the water flow tube.

3,353,029
APPARATUS AND METHOD FOR EFFECTING UNIDIRECTIONAL FLOW OF POWER IN A.C. CIRCUITS
Paul E. Rolfes, Costa Mesa, Calif., assignor, by mesne assignments, to Lorain Products Corporation, Lorain, Ohio, a corporation of Ohio
Filed Aug. 24, 1964, Ser. No. 391,501
9 Claims. (Cl. 307—51)



2. A method of preventing reverse flow of substantial power in a symmetrical A.C. system, which comprises:

providing switch means between first and second predetermined points in a symmetrical A.C. system,

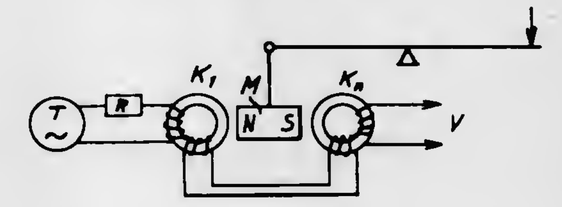
determining the phase relationship between the voltage and current waves in said system which is required to effect transfer of power from said first point to said second point,

continuously sensing at least one of said voltage and current waves,

advancing the phase of the wave which is generated as the result of such sensing step, employing the phase-advanced wave to maintain said switch means closed when said phase relationship is such as to effect transfer of power from said first point to said second point, and

employing the phase-advanced wave to maintain said switch means open during at least the major portion of the time when said phase relationship is such as to effect transfer of power from said second point to said first point.

3,353,030
KEYING DEVICES, PARTICULARLY FOR ELECTRICAL MUSICAL INSTRUMENTS
Adolf Michel, 2 Dietramszellerstrasse, Munich 25, Germany
Continuation of application Ser. No. 159,244, Dec. 14, 1961. This application Aug. 17, 1966, Ser. No. 573,126
Claims priority, application Germany, Jan. 13, 1961, M 47,686
6 Claims. (Cl. 307—88)



1. In an electronic musical instrument having an input circuit and an output circuit for conducting electronic musical instrument signals, the improvement comprising means for achieving a high keying ratio between said circuits comprising:

(a) a plurality of transformers connected in tandem between said circuits;

(b) said transformers having highly permeable cores adapted to degrees of saturation for determining the degree of isolation between said circuits and the conductance of said output circuit;

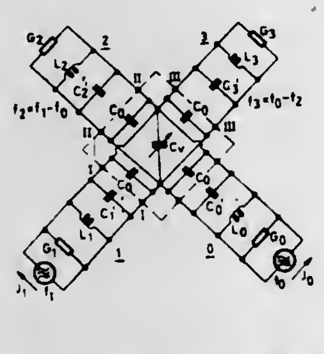
(c) magnetic poles adapted to be moved into proximity with said cores to saturate said transformers and to be moved out of said proximity; and

(d) means for moving said magnetic poles into and out of said proximity comprising musical instrument keys having a released position for moving said magnetic poles into said proximity and a depressed position for moving said magnetic poles out of said proximity.

3,353,031
LOW NOISE LEVEL SHORT WAVE AMPLIFICATION EMPLOYING A REACTANCE MODULATOR

Konrad Abel, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed June 3, 1960, Ser. No. 33,838
Claims priority, application Germany, June 11, 1959,
S 63,416
1 Claim. (Cl. 307—88.3)



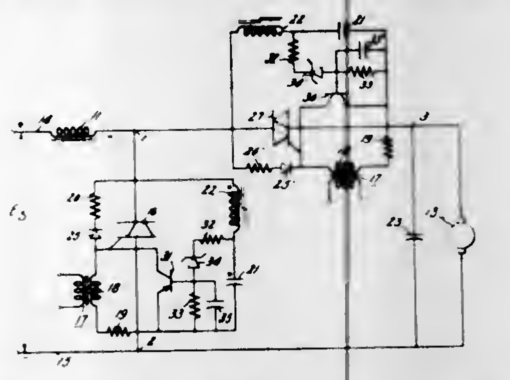
An arrangement for low noise level amplification of short and ultra short electromagnetic waves, comprising a reactance modulator having output means containing a first terminal impedance for the mirror wave which comprises the effective working oscillation and a second terminal impedance for the lower sideband, said second terminal impedance being with respect to its effective component operatively independent of said first terminal impedance, a pump oscillator, means for conducting to said modulator the energy of an input signal and also the energy of the pump oscillator the frequency of which is lower than that of the input signal, said reactance modulator being provided with an output utilizing the lower sideband oscillation, making it possible to effect separately thereof an influencing of the mirror wave by an ohmic load.

3,353,032
FLYBACK POWER AMPLIFIER CIRCUIT

Raymond E. Morgan, Schenectady, and Burnice D. Bedford, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed June 9, 1964, Ser. No. 373,674
9 Claims. (Cl. 307—88.5)

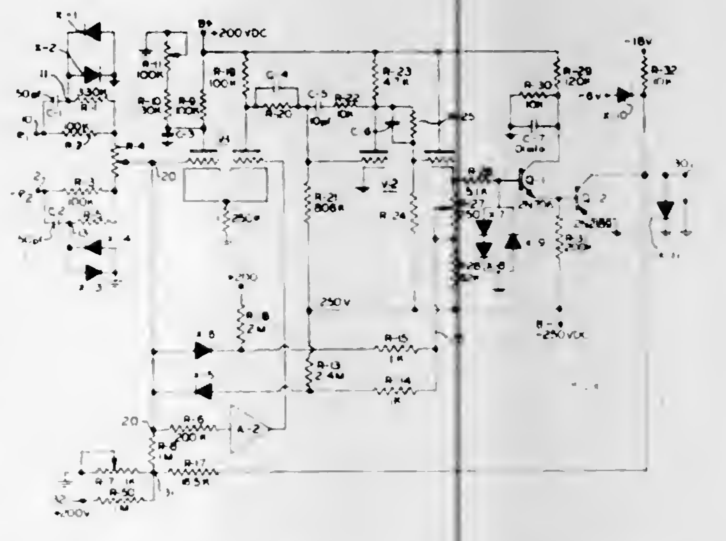
1. A new and improved flyback power amplifier circuit including in combination a linear inductance, a triac bidirectional conducting device for controlling current flow through the linear inductance in two directions, and a load all connected in series circuit relationship across a pair of power supply terminals that in turn are adapted to be connected across a source of electric potential, a second triac bidirectional conducting device connected in parallel circuit relationship with the series connected first-mentioned triac bidirectional conducting device and the load, first and second gating signal means respectively coupled to the control gates of said triac bidirectional conducting devices for respectively turning on said devices to cause them to conduct current therethrough in either direction depending upon the polarity of the potentials across the devices, first and second commutating circuit means respectively connected across the load terminals of said triac bidirectional conducting devices for respectively turning off the devices after predetermined intervals of conduction in at least one direction, and a filter capacitor connected in parallel circuit relationship with the load.



3,353,033
HIGH-SPEED LOW-DRIFT ELECTRONIC COMPARATOR HAVING POSITIVE AND NEGATIVE FEEDBACK PATHS

Edward O. Gilbert, Ann Arbor, Mich., assignor to Applied Dynamics, Inc., Ann Arbor, Mich., a corporation of Michigan

Filed May 3, 1965, Ser. No. 452,634
8 Claims. (Cl. 307—88.5)

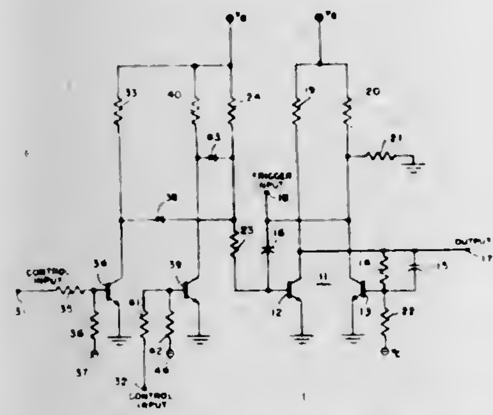


1. A high-speed electronic comparator circuit for comparing first and second input voltages, comprising, in combination:
- a first input terminal for receiving said first input voltage; a second input terminal for receiving said second input voltage;
- a summing junction;
- a first impedance connected between said summing junction and said first input terminal; a second impedance connected between said summing junction and said second input terminal;
- an amplifier connected to amplify the signal at said summing junction to provide an output voltage having a first or a second level dependent upon the polarity of the signal at said summing junction;
- a first switching circuit responsive to said output voltage and operative to apply a regenerative feedback voltage continuously to said summing junction;
- and a second switching circuit responsive to said output voltage and operative to apply an input voltage degeneratively to said summing junction immediately upon excursion of said output voltage outside a selected range of values.

3,353,034
PULSE GENERATOR UTILIZING CONTROL SIGNALS TO VARY PULSE WIDTH

Robert J. Betz, Ferndale, and George H. McAfee, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed May 26, 1965, Ser. No. 459,129
3 Claims. (Cl. 307—88.5)

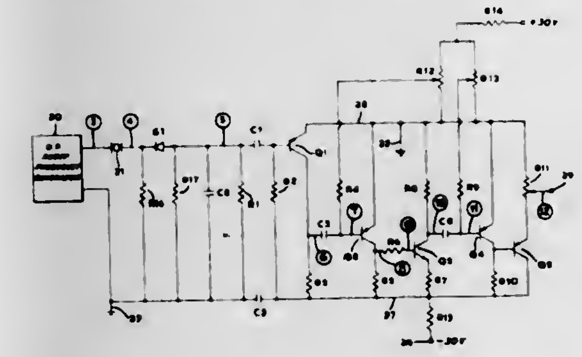


1. In a pulse generator having a time constant network for controlling the width of pulses generated thereby, said network consisting of a capacitor and resistive means connected thereto for providing a charge path for said capacitor; control means comprising: a plurality of impedance networks connected in parallel with said resistive means, each of said impedance networks consisting of a control resistor and a diode connected in series; and a plurality of switching means, one of which is connected to each of said impedance networks to switch the conduction of said diodes between states of high and low impedance so that various ones of said plurality of resistors may be selectively connected in parallel with said resistive means, thereby changing the width of said generated pulses, each of said plurality of switching means comprising a transistor having input and output electrodes, said output electrode being connected to the junction of the resistor and diode connection of the one of said plurality of impedance networks which is associated with said transistor; and a control input terminal connected to the input electrode of each of said transistors.

3,353,035
TRIGGERED MARKER GENERATOR WITH FEEDBACK NETWORK FOR HOLDING OFF UNDESIRED SIGNALS

Ray F. Dent, Kitchener, Ontario, Canada, assignor to Dominion Electrohome Industries Limited, Kitchener, Ontario, Canada

Filed June 28, 1965, Ser. No. 468,194
6 Claims. (Cl. 307—88.5)

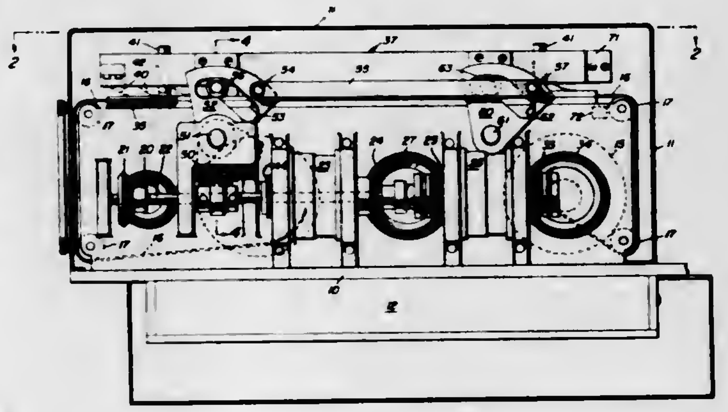


1. A triggered marker generator for generating a marker pulse from a signal indicating the response of a crystal to the sweep frequency excitation of said crystal by a band of frequencies including the natural frequency of said crystal, said signal being in the form of a series of interconnected pulses alternately of opposite-going polarities, which comprises: a first transistor of one conductivity type for amplifying said signal and having an output circuit; a second transistor of said one conductivity type and biased to non-conduction, said second transistor having an input circuit, said output circuit being connected to said input circuit to apply the amplified signal from said first transistor to said second transistor with the polarity required to render said second transistor conductive on the first one of said interconnected pulses; means for biasing said first transistor into conduction and including a resistor connected to said first and second transistors and through which current is drawn when said second transistor conducts, the voltage developed across said resistor due to passage of said current therethrough being in a direction to increase the bias on and conduction of said first transistor; and means responsive to conduction of said second transistor for developing and applying a signal to said second transistor to cut-off said second transistor during application of pulses subsequent to said first pulse of said signal, whereby said second transistor produces a single pulse for each one of said signals, said single pulses being triggered on the leading edges of said first pulses of said signals.

3,353,036
MULTIPLE VARIABLE SWITCHER

Bohdan W. Siryj, Philadelphia, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Oct. 30, 1964, Ser. No. 407,943
5 Claims. (Cl. 307—149)

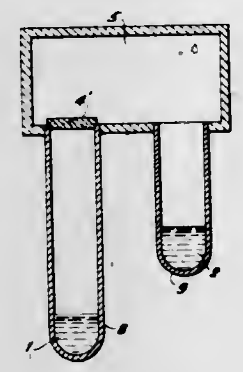


1. A multiple variable switcher for making programed circuit tests, comprising:
- frame means having a plurality of conductive points located thereon;
- contact board mounting means positioned in spaced relationship to the frame means and being selectively movable over a specified range toward and away from the frame means;
- a contact board secured to the contact board mounting means, the contact board being a substantially planar member of insulating material containing in spaced relationship on the side having the frame means a plurality of resilient conductive contact members, the contact members being positioned to establish conductive relationship with the conductive points when the contact board is brought into close proximity thereto, contact board mounting means maintaining substantial congruity between the contact board and the conductive points in the frame means while permitting selective movement of the contact board into close proximity with the device;
- positioning means connected to the contact board mounting means for imparting thereto selective movement over the specified range;

a thin nonconductive weblike tape disposed between and being in a plane substantially parallel with the contact board and the conductive points in the frame means, the tape having therein at least one set of perforations corresponding to the programed test to be made;
a supply member for receiving the tape;
a takeup member for withdrawing the tape from the supply member, the supply member and the takeup member being positioned with respect to the frame means and the contact board so as to permit successive positioning of the tape portions containing the sets of perforations between the frame means and the contact board;
shaft means capable of receiving a source of rotary motion;
first clutch means connected to the shaft means and being selectively capable of transferring rotary motion thereof to either of a first rotary output and a second rotary output;
motion translation means receiving said first rotary output and converting rotary motion thereof to linear output motion, the linear output motion being operatively supplied to said positioning means whereby the contact board mounting means may be selectively moved; and
second clutch means connected to receive the second rotary output of the first clutch means, the second clutch means being capable of transferring rotary motion to either of a third rotary output and a fourth rotary output, the third rotary output being operatively connected to said takeup member to cause operation thereof, and the fourth rotary output being operatively connected to said supply member to cause operation thereof.

3,353,037
APPARATUS FOR SEPARATELY ADJUSTING THE VAPOR PRESSURES OF TWO OR MORE SUBSTANCES IN A COMMON VAPOR CHAMBER

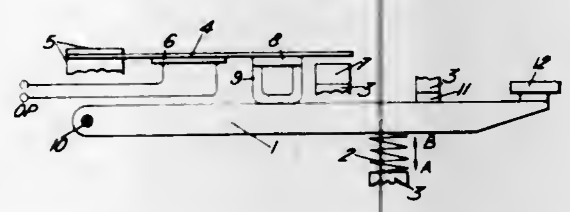
Alfred Jester, Speyer, Reinhart Langpape, Mannheim, and Josef Bohdansky, Altenbach, Odenwald, Germany, assignors to Brown, Boveri & Cie., Aktiengesellschaft, Mannheim, Kafertal, Germany, a corporation of Germany
Filed May 11, 1964, Ser. No. 366,348
4 Claims. (Cl. 310—4)



1. Apparatus for separately regulating the vapor pressures of at least two thermally volatile substances in a chamber, said apparatus comprising at least two receptacles communicating with the chamber, said receptacles respectively containing the substances in non-vaporous phase, means for heating the substances in said receptacles to their volatilizing temperatures, and means for adjusting the temperature in each of said receptacles in accordance with the vapor pressure of the respective substance, the receptacle of relatively lower temperature communicating with the chamber through an opening having a much smaller cross section than the opening through which the higher temperature receptacle communicates with the chamber, whereby the higher temperature vapor in the chamber is choked from entering the lower temperature receptacle.

3,353,038
SIGNAL GENERATING ARRANGEMENT FOR AN ELECTRIC TYPEWRITER AND SIMILAR APPARATUS

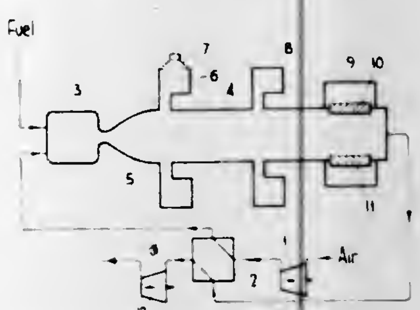
Frederick P. Mason and Graham J. L. Stevens, Hollingbury, Brighton, England, assignors to Creed & Company Limited, Brighton, England, a British company
Filed Sept. 20, 1965, Ser. No. 488,317
Claims priority, application Great Britain, Nov. 6, 1964, 45,303/64
2 Claims. (Cl. 310—8.2)



1. A keybar arrangement for key-operated apparatus comprising a keybar, a vibratory cantilever, a piezo-electric crystal element mounted on the cantilever and arranged to generate an electric signal upon vibratory flexure of the cantilever, magnet means causing the cantilever to be mechanically coupled to the keybar so as to follow its movement over a given range, and means causing disengagement of the cantilever from the keybar and consequent vibration of the cantilever when the movement of the keybar exceeds the given range.

3,353,039
MAGNETOHYDRODYNAMIC GENERATORS

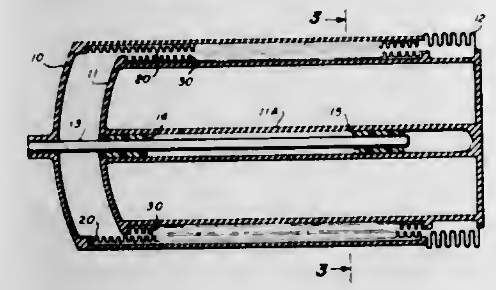
Richard Burnaby Dyott, Chalfont St. Peter, England, assignor to The M-O Valve Company Limited, London, England
Filed Oct. 8, 1963, Ser. No. 314,732
Claims priority, application Great Britain, Oct. 8, 1962, 37,977/62
6 Claims. (Cl. 310—11)



1. An electric generator comprising means for producing a magnetic field, means for forcing a conducting fluid at supersonic velocity along a path which passes through the magnetic field in a direction transverse to the direction of the lines of force of the field, means located adjacent the position at which said path passes through the field for deriving an electrical output, and means for modulating the velocity of the flow of said fluid by introducing pressure waves into said flow of fluid, thereby causing the velocity of the flow of fluid at the modulation position to vary cyclically about a mean value in such a manner as to cause periodic bunching of the particles in said fluid at a position downstream of said means for modulating the velocity, said means for modulating the velocity being positioned upstream of said magnetic field by an amount such that said periodic bunching occurs in the region of said magnetic field.

3,353,040
ELECTRODYNAMIC TRANSDUCER

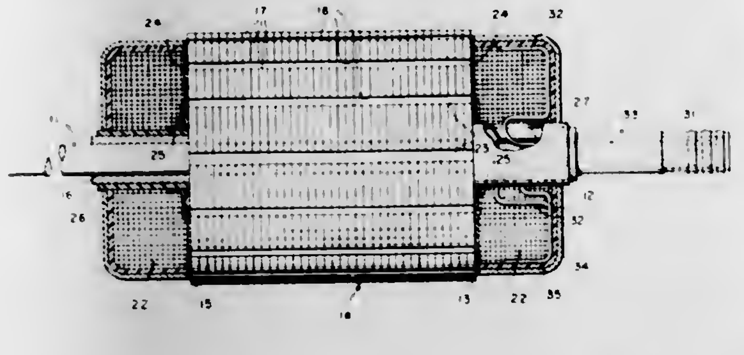
Frank R. Abbott, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 20, 1965, Ser. No. 473,534
5 Claims. (Cl. 310—27)



1. A transducer comprising:
two coaxial cylinders, one telescoped in and reciprocably mounted within the other;
the opposing surfaces of the cylinders being of ferromagnetic material, and the opposing surfaces each being spirally grooved to define elongated narrow areas spiralled about said opposing surfaces,
the grooves being doubled so that the axial lead is twice the groove pitch; and
bifilar windings in said grooves to oppositely magnetically polarize alternate spiralled cylindrical surfaces.

3,353,041
ELECTRIC MOTOR ROTOR WITH ENCAPSULATED END TURNS

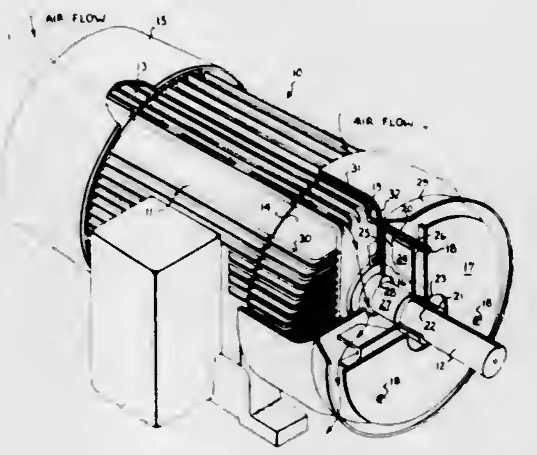
Joseph R. Little, Springfield, Pa., assignor, by mesne assignments, to Litton Industries, Inc., Beverly Hills, Calif., a corporation of Delaware
Original application May 9, 1962, Ser. No. 193,477, now Patent No. 3,247,585, dated Apr. 26, 1966. Divided and this application May 10, 1966, Ser. No. 565,363
2 Claims. (Cl. 310—43)



1. An electric rotor comprising a rotor shaft, a stack of laminations mounted on said shaft and forming radial teeth separated by slots, a wire winding on said rotor with slot windings in said slots and end windings between slots across the ends of said stack, an integral cup-shaped insulating liner made of insulating material and circling and tightly covering the end windings, a layer of insulation disposed between the end lamination of said stack and said end windings and engaged by the end of said cup-shaped insulating liner thereby forming with said liner an insulated enclosure about said end windings, an integral cup-shaped end cap of thin sheet metal tightly enclosing the insulating liner, slip rings mounted on said rotor shaft, slip ring leads extending from said slip rings through a passage in said shaft and emerging inside of said liner and passing adjacent the inner surface of said liner over the outside of said end windings, said leads connected to outside turns of said end windings and thereby tightly sandwiched between said liner and end windings, and an insulating binder holding together said windings, insulating liner, and end cap.

3,353,042
VENTILATION FOR TOTALLY ENCLOSED DYNAMOELECTRIC MACHINE

Frederick W. Baumann, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 19, 1965, Ser. No. 457,025
6 Claims. (Cl. 310—57)



1. A cooling system for a dynamoelectric machine comprising:
(a) an imperforate end bell having a rotatable shaft projecting therethrough and a plurality of integral heat-dissipating fins on said end bell projecting outward from said end bell and extending longitudinally relative to said machine on the outer peripheral portion of said end bell and extending substantially radially on the end portion of said end bell;
(b) a baffle mounted on said end bell including inner and outer spaced parallel plates extending radially outward approximately to the outer circumference of said machine, said inner plate providing an air flow path radially inwardly over said end bell and into the space between said plates; and,
(c) a fan assembly secured to said shaft for rotation therewith and including a fan plate projecting into said space and carrying a plurality of circumferentially spaced fan blades projecting from said fan plate toward said inner plate, whereby external cooling air is drawn radially inward over said fins and expelled radially outward through said space in response to rotation of said shaft in either direction.

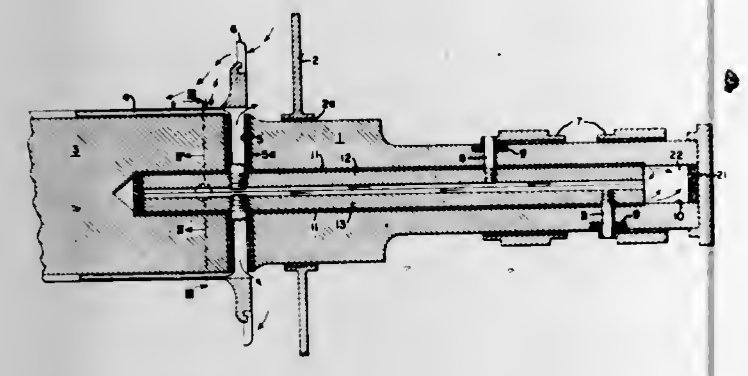
3,353,043
CONDUCTOR COOLING SYSTEM FOR DYNAMOELECTRIC MACHINE ROTOR

Donald R. Albright, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 14, 1965, Ser. No. 455,710
5 Claims. (Cl. 310—61)

1. A dynamoelectric machine comprising a rotor member having a shaft portion, a sealed casing surrounding said rotor member and through which one end of said shaft portion projects, and a fan means mounted on said rotor within said casing, said shaft portion having a central axial cylindrical bore, a plurality of connection bars longitudinally disposed within said axial bore, insulation separating said connection bars from each other and from the wall of said axial bore, said connection bars and said insulation defining longitudinal passages along said axial bore, and a seal on said one end of said shaft portion

closing off the bore to define a chamber common to all of said longitudinal passages, such dynamoelectric machine characterized by the following improvement comprising:

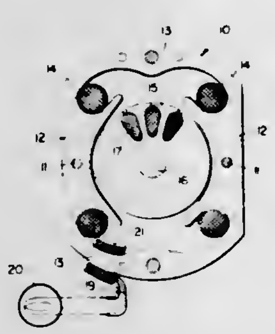
- a plurality of radial passages defined by the part of said shaft portion inside said casing, each of said radial passages permitting communication between the interior of said casing and one of said longitudinal passages,



- at least one of said radial passages communicating with said interior on the suction side of said fan means,
- at least one of said radial passages communicating with said interior on the discharge side of said fan means.

3,353,044
LOW-VOLTAGE WINDINGS ON A.C. SERIES MOTORS FOR INCANDESCENT LAMP VOLTAGE SUPPLY

Wolfgang Jaffé, Mountain Lakes, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 30, 1965, Ser. No. 483,667
4 Claims. (Cl. 310—73)



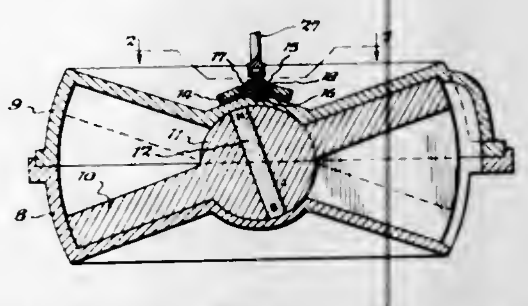
1. A series A.C. commutator motor comprising a magnetic field core formed with pole sections connected by yoke sections, a field winding wound directly on at least one of said pole sections for supplying flux to said core, and an auxiliary winding insulated from said field winding and wound on one of said yoke sections.

3,353,045
METHOD AND MEANS FOR PRODUCING MOTION REDUCTION

Kingman Bassett, 188 Soldiers Place,
Buffalo, N.Y. 14222
Filed May 7, 1964, Ser. No. 365,729
11 Claims. (Cl. 310—104)

1. A motion reduction device comprising:

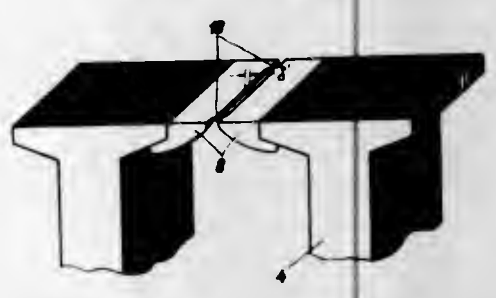
- a nutating driven member having a circular contact portion,
- a stationary pivot on which said driven member is mounted for free nutation and rotation,
- a stationary surface with which said circular contact portion of said driven member contacts during nutation and rotation,
- means for varying the elevation of said pivot relatively to said stationary surface to vary the ratio of revolutions to nutations of said driven member,



means for imparting nutation to said driven member, and means for transmitting rotation of said driven member.

3,353,046
QUIET-RUNNING ELECTRIC MOTOR

Hermann Papst, St. Georgen, Black Forest, Germany
Continuation of application Ser. No. 158,674, June 16, 1966, which is a division of application Ser. No. 25,162, Apr. 27, 1960. This application June 16, 1966, Ser. No. 558,144
Claims priority, application Germany, Apr. 27, 1959, P 22,679
8 Claims. (Cl. 310—214)



1. In a quiet-running electric motor, in combination, a stator member; a rotor member arranged coaxially with said stator member and separated therefrom by an annular air gap of uniform radial width, one of said members having at said annular air gap an uninterrupted cylindrical surface, the other of said members being formed with a plurality of slots so as to form teeth therebetween, each of said teeth having adjacent said annular air gap a portion wider than the remainder thereof and the side faces of said portions on adjacent teeth facing each other and approaching each other in direction toward said air gap, the ends of said side faces at said annular air gap being spaced from each other a distance substantially equal to said radial width of said annular air gap.

3,353,047
BRUSH CONSTRUCTION

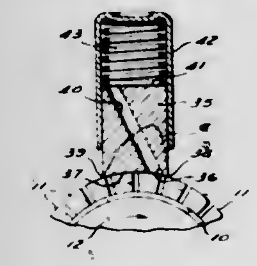
Frank S. Buchwald, Cleveland, Ohio, assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,302
4 Claims. (Cl. 310—247)

4. A brush for a dynamoelectric machine comprising

- a brush body having an outer surface consisting of a first current-conducting, conductor-engaging portion and second portion comprising the remainder of said outer surface,
- a hydrodynamic relief port in said brush body and opening out and onto said first portion of said outer surface thereof,
- a pressure-transmitting passage in said brush body connecting said relief port and said second portion of said outer surface for placing said relief port in communication with a pressure condition existing at a portion of said outer surface other than within said conductor-engaging portion,

in combination with

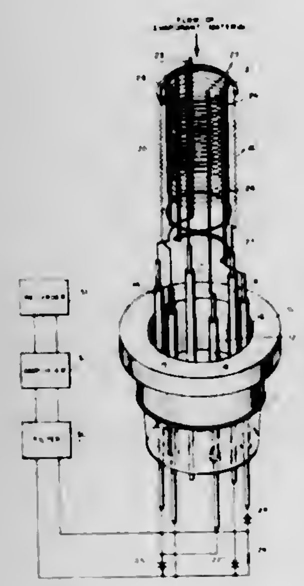
- a brush box having a closed end and an open end for telescopingly receiving and holding said brush body with a part thereof including said conductor-engaging portion of said outer surface and said relief port supported and positioned outside of said brush box and with a part of said brush body supported and



positioned within said brush box and away from said closed end to provide at said closed end of said brush box a chamber closed by said brush, said pressure-transmitting passage extending between said relief port and said closed chamber in said brush box to place said chamber in communication with pressure conditions at said relief port.

3,353,048
IONIZATION GAUGE FOR MONITORING THE FLOW OF EVAPORANT MATERIAL

Arno K. Hagenlocher, Kew Gardens, and Thomas G. Polanyi, Croton-on-Hudson, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 413,034
5 Claims. (Cl. 313—7)

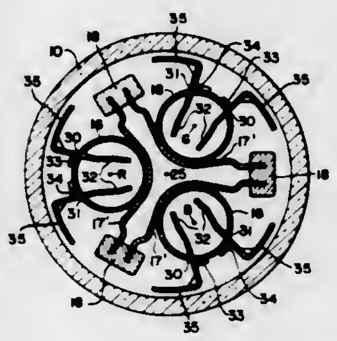


1. An ionization gauge for monitoring the flow of evaporant material during vacuum deposition which comprises

(a) an insulating base,
(b) an accelerating grid mounted on said base, said grid defining a volume through which said evaporant material flows,
(c) cathode means mounted on said base, said cathode means being positioned outside said grid volume, and
(d) a plurality of ion collectors mounted at one end on said base, said ion collectors being positioned within said grid volume with the other ends thereof free, upstream of the flow and spaced from each other to permit the flow of evaporant material therebetween.

3,353,049
DYNAMIC CONVERGENCE ASSEMBLY SHIELDING AND MOUNTING STRUCTURE

Nick Pappadis, Chicago, Ill., assignor to The Rauland Corporation, Chicago, Ill., a corporation of Illinois
Filed June 18, 1965, Ser. No. 464,946
2 Claims. (Cl. 313—70)



1. An electron gun mount for a multibeam cathode-ray tube comprising:

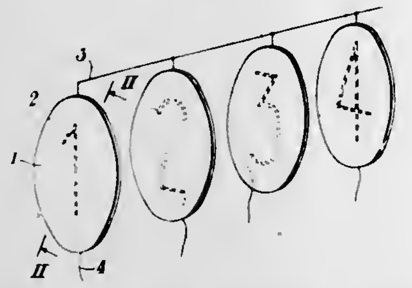
- a plurality of electron guns arranged in a predetermined array, individually including a cathode subassembly and a series of conductive electrodes aligned along a beam path for collectively developing, accelerating and focusing a beam of electrons along said path, the final electrode of each series being a cylinder disposed coaxially of said beam path and having a pair of longitudinally extending side-by-side slots;
- a plurality of beading elements secured to electrodes of said guns to integrate said guns into a gun cluster;
- shielding means for magnetically shielding the slotted electrodes of said guns from one another comprising a plurality of straps of ferromagnetic material individually having end portions secured to said beading elements, an intermediate section enveloping and secured to the outer periphery of said slotted electrode of an assigned one of said guns on the portion thereof that faces the center of said gun cluster and is diametrically opposed to said slots and further having a width dimension exceeding the longitudinal dimension of said slots;
- a plurality of pairs of convergence magnet pole pieces of ferromagnetic material, individually threaded through the slots of the slotted electrode of an assigned one of said guns and comprising pole tips disposed within its assigned electrode on opposite sides of the beam path extending through its assigned electrode each of said pole pieces further comprising a supporting tab concentric with and welded to its respective cylinder and a coupling portion nearer the neck of said tube than said tab, disposed parallel to said neck for coupling to an external magnetic source and having a length exceeding that of said slots.

3,353,050
ELECTROLUMINESCENT FILAMENT-INDICATOR DEVICE, PARTICULARLY SUITABLE FOR DIGITAL AND/OR ALPHABETICAL DIALS

Maria Panerai and Giuseppe Panerai, both of 2 Piazza Galileo Ferraris, Florence, Italy
Filed June 16, 1965, Ser. No. 464,437
Claims priority, application Italy, June 25, 1964, 13,748/64
5 Claims. (Cl. 313—108)

1. An indicator display device comprising a plurality of coaxial closely spaced transparent wafer elements with each wafer element including a thin electroluminescent filament shaped in the form of a discrete symbol, and mounted on a thin layer of transparent conductive material supporting said filament, a plurality of selectively operable conductors respectively connected to said filaments

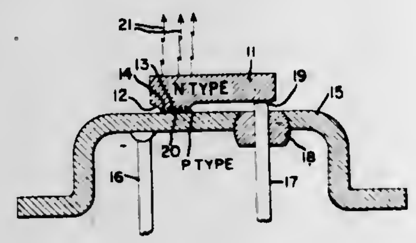
and a common conductor connected to each layer of conductive material so that actuation of a selected one of



said selectively operable conductors causes the filament to which it is connected to glow to provide a visual indication of the filament's shape.

3,353,051
HIGH EFFICIENCY SEMICONDUCTOR LIGHT EMITTER

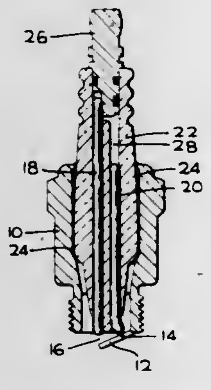
John R. Barrett, Fayetteville, and Harold A. Jensen, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 29, 1965, Ser. No. 517,395
9 Claims. (Cl. 313—113)



1. A semiconductor light emitter comprising a wafer of light transmissive semiconductor material, a mesa formed on one surface of said wafer containing a light emissive region, said mesa having a planar surface bounded by walls obliquely inclined to said planar surface of a height which is a substantial fraction of the width of said mesa, to intercept an appreciable amount of light emitted in said region and to redirect said intercepted light toward the remote, light emitting surface of said wafer.

3,353,052
SPARK PLUG HAVING AN AUXILIARY SERIES SPARK GAP IN PARALLEL WITH THE MAIN SPARK GAP

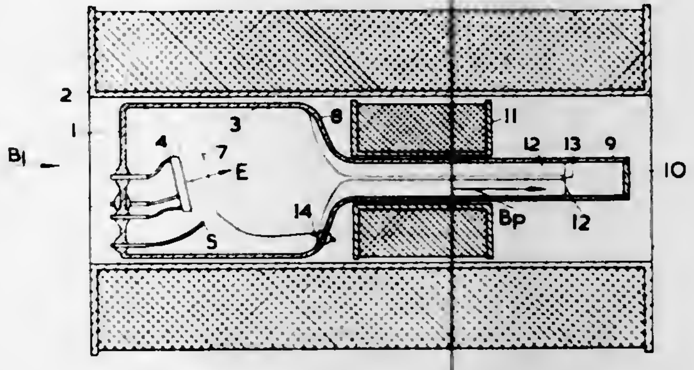
George H. Barry, 1044 Moffett Circle, Palo Alto, Calif. 94303
Filed July 15, 1964, Ser. No. 382,702
7 Claims. (Cl. 313—123)



1. A spark plug which comprises a first electrode adapted for connection to ground, a second electrode adapted for connection to an ignition coil and spaced a predetermined distance from said first electrode to form a first firing gap, a third electrode spaced from said first electrode a lesser distance than said second electrode to form a second shorter firing gap, and means including an auxiliary gap for electrically connecting said third electrode to said second electrode.

3,353,053
RADIATION GENERATOR OPERATING IN THE MILLIMETER AND SUBMILLIMETER WAVELENGTH RANGE

Ian Bernard Bott, Malvern Link, England, assignor to the Minister of Aviation in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Mar. 25, 1964, Ser. No. 354,678
Claims priority, application Great Britain, Mar. 28, 1963, 12,348/63
9 Claims. (Cl. 313—154)

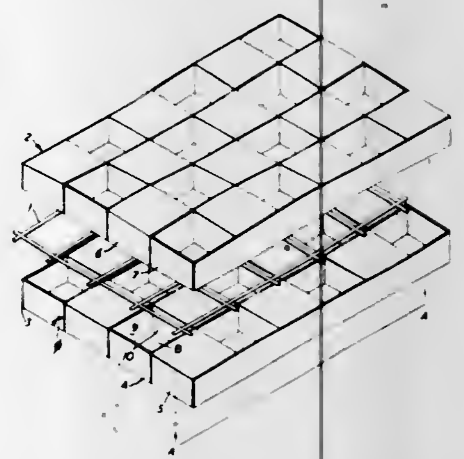


1. Means for generating magnetic radiation in the millimeter and sub-millimeter ranges, comprising

means for generating a uniform first magnetic field;
means arranged in said first magnetic field for emitting an electron stream of substantial initial thickness at an oblique angle to the first magnetic field;
means defining a microwave cavity arranged to receive said electron stream;
and means for generating in said microwave cavity an intense second magnetic field applied contemporaneously with said first magnetic field to reduce the diametric size of the electron stream.

3,353,054
PENNING TYPE VACUUM PUMPS

Leslie Arthur Holland, Crawley, England, assignor to Edwards High Vacuum International Limited, Crawley, England, a British company
Filed June 9, 1964, Ser. No. 373,798
5 Claims. (Cl. 313—178)



1. An improved electrical vacuum getter pump of the type provided with

(A) an electrode assembly comprising
(1) two substantially parallel spaced cathodes and

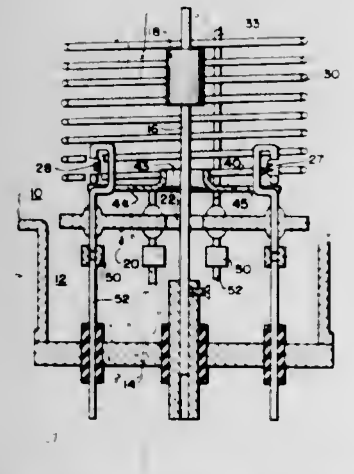
(2) an anode of grid construction disposed between said cathodes, and
(B) means for impressing a magnetic field across said electrode assembly in a direction substantially normal to the cathode planes to cause electrons moving in the space within said assembly to follow spiral paths between the said cathodes before being captured,

the improvement residing in the fact that

(C) each of said cathodes has a surface made up of an alternate array of raised and depressed polygonal sections joined by side walls disposed to receive sputtered material from said depressed section, the area of each raised and depressed section and the area of each grid aperture of said anode are approximately equal, the distance between said depressed sections and said raised sections measured in a direction at right angles to the cathode planes is not larger than the distance between adjacent raised sections, and said side walls of each of said cathodes are disposed substantially opposite the grid outline of said anode.

3,353,055
SHIELDED FILAMENT ASSEMBLY FOR ORBITING ELECTRON TYPE VACUUM PUMP

Clifton B. Sibley, Needham, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Feb. 15, 1965, Ser. No. 432,749
1 Claim. (Cl. 313—276)

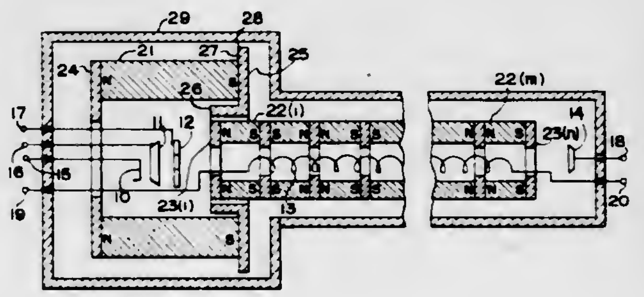


An improved orbiting electron device comprising, in combination:

(a) an annular vacuum-tight metal wall with a closure plate at one end of said wall, an anode electrode and a filament assembly supported from said closure plate;
(b) the said anode electrode comprising a rod extending along the center of the annular space defined by the wall;
(c) the filament assembly comprising a helical filament with the helix axis parallel to and offset from the anode rod electrode, the filament assembly further comprising a header disc of insulating material with lead wires sealed therein, two of said lead wires being adjacent to and circumferentially straddling said filament, a first one of said wires being bent to cross between said filament and anode and extending parallel to said anode and filament helix axis and being connected to the filament at one end to support said filament, the other of said leads extending to the other end of said filament to further support said filament; the said first lead wire partially masking the helical filament from the anode and being located close to the filament; and
(d) electrical voltage supply means connected to said annular wall to provide a ground bias thereto and connected to said anode to provide a high positive bias thereto and connected to said filament leads to provide a low positive bias thereto, current supply means for heating the filament so that electrons are emitted from the filament and constrained to orbit around the anode several times before colliding with the anode,
(e) the support of said filament assembly being a second pair of wires sealed into the closure plate and ending in terminal means, the said first pair of lead wires being held by said terminals and the said first pair of lead wires being sealed into said header disc, the header disc being constructed with a central opening to allow clearance of the anode electrode, and
(f) a metal end shield surrounds the anode with a portion of the shield extending radially outwardly from the anode without touching the anode, the longitudinal location of said shield portion being between the header disc and the filament helical portion, and wherein said voltage supply means are connected to said end shield to provide a grounding bias thereto and wherein the end shield is supported from the header disc.

3,353,056
ELECTRON BEAM FOCUSING SYSTEM INCLUDING A MAGNETICALLY PERMEABLE SHIELD ENCLOSING THE ELECTRON GUN PERMANENT MAGNET

William Hershyn, San Francisco, Calif., assignor to General Electric Company, a corporation of New York
Filed Apr. 24, 1964, Ser. No. 362,359
3 Claims. (Cl. 315—3.5)



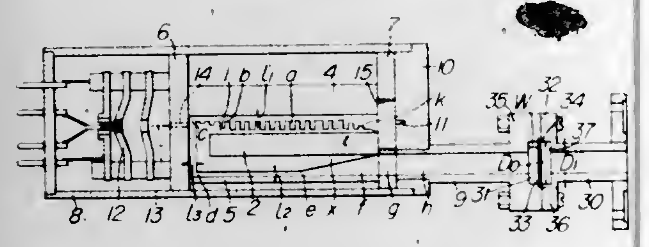
1. In a traveling wave tube system having an electron gun for projecting a stream of electrons along a predetermined path and a collector electrode at the end of said path, a beam focusing structure for preventing dispersion of said beam comprising:

a gun permanent magnet structure providing a first axially magnetic field having a major lobe extending the major length of the electron gun and a minor lobe adjacent the gun and for focusing said stream along a first portion of said path;
a periodic magnet structure providing an alternating magnetic field for focusing said beam along the remainder of said path;
a magnetic flux deflection means positioned adjacent the collector electrode end of said gun magnetic structure for deflecting magnetic flux of the minor lobe of said gun magnetic structure from the path of said beam, said magnetic flux deflection means including a magnetically permeable shield structure positioned in spaced relation and substantially enclosing the electron gun permanent magnet; and
means forming a relatively low reluctance path between said shield structure and said collector electrode end of said gun magnet structure so as to shunt the magnetic flux of said minor lobe around the outside of said gun magnet and towards the gun end of the focusing system.

3,353,057

TRAVELING-WAVE TUBE HAVING A COMB DELAY LINE FORMED ON A RIDGE IN A FIRST WAVEGUIDE AND A PLURALITY OF CONNECTING RIDGE WAVEGUIDES

Yoshio Kato, Minoo-shi, and Osamu Konosu, Kyoto, Japan, assignors to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan
Filed July 8, 1964, Ser. No. 381,001
Claims priority, application Japan, July 12, 1963, 38/38,278; Sept. 26, 1963, 38/51,794; Nov. 1, 1963, 38/58,991
11 Claims. (Cl. 315—3.5)



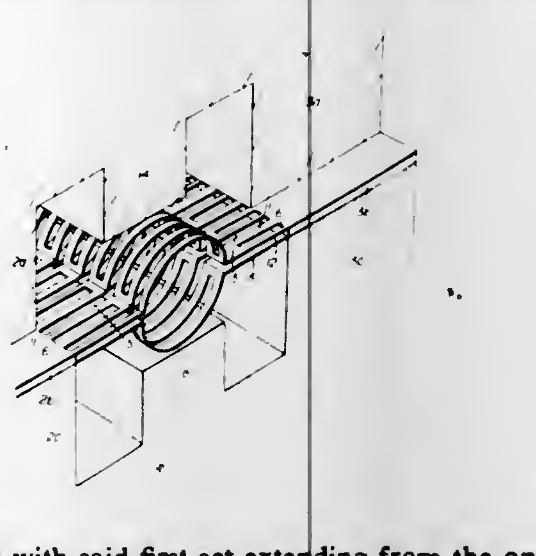
1. An extremely high frequency electron tube of the traveling wave type comprising a substantially cylindrical enclosure having at one end thereof an electron gun and at the opposite end thereof a collector electrode arranged in alignment with said electron gun, a comb-type circuit formed on a ridge in a first ridge waveguide, said ridge of said first ridge waveguide being a metal strip having a plurality of transverse slots therein thereby forming comb teeth, said comb-type circuit being mounted in said cylinder between said electron gun and said collector electrode along the path of travel of the electron beam from said gun, said comb teeth being gradually diminished in height at the end of said circuit towards said electron gun, a second ridge waveguide transversely mounted in said cylinder directed towards the bottom of said comb teeth and being continuous therewith, said second ridge having the same transverse width as said comb teeth, and a fold-back waveguide directed towards the collector electrode and connected to the fore end of said second ridge waveguide, said fold-back waveguide including a tapered portion.

3,353,058

SLOW WAVE STRUCTURE HAVING OPPOSITELY CURVED CONDUCTORS DISPOSED ABOUT THE BEAM AND MOUNTED TRANSVERSELY BETWEEN OPPOSITE WALLS

Jocelyn Froom, Bishop's Stortford, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 9, 1964, Ser. No. 381,334
Claims priority, application Great Britain, Aug. 16, 1963, 32,475/63
4 Claims. (Cl. 315—3.5)

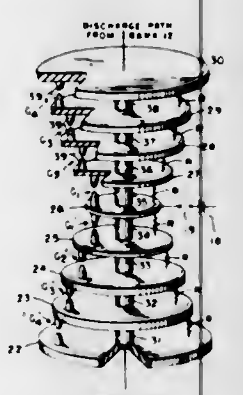
1. In a travelling wave tube having a cylindrical electron beam and a slow wave structure secured to metal side walls, the beam-interacting portions thereof conforming closely to the profile of the beam and providing a tunnel therefor, the said beam-interacting portions of the slow wave structure include a pair of similarly slotted but oppositely curved metal sheets having flat longitudinally extending marginal portions on each side fixed to said side walls and wherein each sheet is slotted to form with the side walls a stub-supported meander line providing a zigzag conducting path from end to end of the slow wave structure, each sheet having a first set of transverse slots extending alternately from each side wall and terminating within the flat portion adjacent said side wall spaced from the curved portion and a second set of transverse slots along the length of said structure extending alternately with said first set from each side wall and flat portion over the curved portion of the sheet beyond the axis of the tunnel and terminating at a position spaced from the junction of the curved portion of the sheet with the opposite flat marginal portion, said second set of slots being aligned with said first set extending from the opposite walls and spaced therefrom by a portion of said metal sheet.



3,353,059

SERIES MULTIPLE SPARK GAP SWITCH WITH A TRIGGERING TERMINAL

Anthony J. Buffa, West Long Branch, and Sol Schneider, Little Silver, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Apr. 8, 1966, Ser. No. 541,396
7 Claims. (Cl. 315—36)



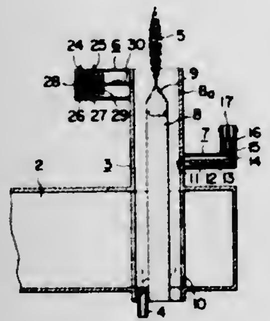
1. A device for selectively providing a low resistance path between points at different electrical potential upon receiving a trigger pulse comprising: an even number of resistors connected in series, a corresponding number of spark gaps connected in series, an odd number of electrically conductive members including a center member connecting respective resistors in parallel with corresponding spark gaps, and means connected to said center electrical member for feeding said trigger pulse to said center conductive member.

3,353,060

HIGH-FREQUENCY DISCHARGE PLASMA GENERATOR WITH AN AUXILIARY ELECTRODE

Manabu Yamamoto, Odawara-shi, and Seiichi Murayama, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Chiyoda-ku, Tokyo-to, Japan
Filed Nov. 18, 1965, Ser. No. 508,425
Claims priority, application Japan, Nov. 28, 1964, 39/66,813
6 Claims. (Cl. 315—111)

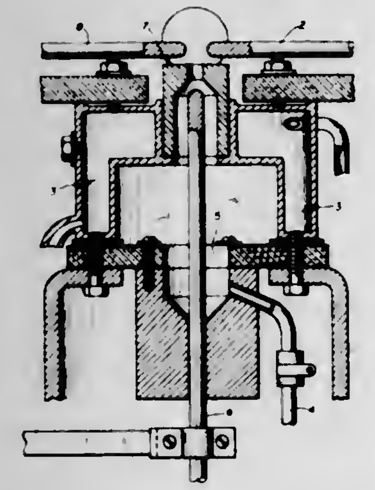
1. In a high-frequency discharge plasma generator of the type which has a high-frequency power source, a coaxial discharge vessel comprising a coaxial waveguide with at least one end thereof open to the atmosphere and an inner conductor with a tip constituting a discharge electrode at the open end of said coaxial waveguide, and a waveguide for transmitting high-frequency power from the high-frequency power source into the coaxial discharge vessel, the high-frequency power from the high-frequency power source being supplied through a high-frequency power supply path formed by said waveguide and the coaxial discharge vessel to the tip of said discharge electrode thereby to form a high-frequency discharge plasma extending outwardly from the tip of the discharge electrode, a detection device comprising a probe means inserted into the high-frequency power supply path at a location of minimum voltage of the standing waves produced when no discharge plasma is formed such that electric current flows through said probe means in response to and in accordance with the state of generation of the discharge plasma and means to detect and state in accordance with said electric current.



3,353,061

HIGH TEMPERATURE PLASMA GENERATOR HAVING MEANS FOR PROVIDING CURRENT FLOW THROUGH PLASMA DISCHARGE

Kenneth D. Davis, 224 N. Xenophen St., Tulsa, Okla. 74127
Continuation of application Ser. No. 452,751, May 3, 1965. This application Apr. 10, 1967, Ser. No. 634,408
3 Claims. (Cl. 315—111)

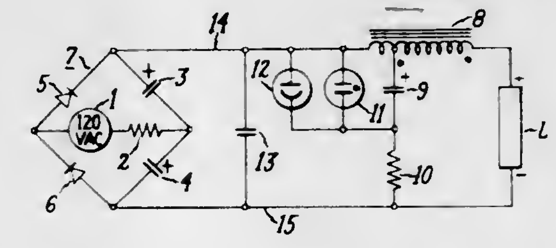


1. A high temperature plasma generator comprising:
(a) a chamber;
(b) arc discharge electrodes mounted in said chamber;
(c) said chamber being provided with inlet means for introducing an ionizable medium therein;
(d) means connecting said discharge electrodes to an electrical circuit providing current thereto capable of generating and maintaining an arc;
(e) said chamber being provided with an outlet for the arc discharge gases formed therein constituting the initially formed plasma, said outlet being the discharge nozzle for said plasma;
(f) electrodes positioned in proximity to and outside said chamber transversely of the mouth of the nozzle and spaced so that the plasma will flow between the active surfaces of opposite signs;
(g) an electromagnet the poles of opposite polarity being positioned transversely of the said mouth of the said nozzle and spaced so that the plasma will flow between the said poles;
(h) the said electrodes being positioned approximately 90° to and in a plane substantially parallel to said electromagnet;
(i) means for excitation of the said electromagnet;
(j) and means for excitation of the last-named electrodes providing substantial discharge current thereto for generating a flow of current therebetween.

3,353,062

FLASHER DEVICE

Joe A. Nuckolls, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Filed Mar. 29, 1965, Ser. No. 443,336
6 Claims. (Cl. 315—157)



1. A flasher system comprising, in combination, a source of alternating current, a first energy storage circuit connected to said source of alternating current for storing energy and voltage at a predetermined level and at a predetermined rate, a discharge flash lamp connected across said first energy storage circuit, a second energy storage circuit including a discharge capacitor connected across said first energy storage circuit for storing at a predetermined rate energy received from said first energy storage circuit, pulse generating means connected to said second energy storage circuit and comprising a glow lamp having a predetermined voltage breakdown level and a step-up pulse transformer, said glow lamp, said discharge capacitor and the primary of said transformer forming a discharge loop for automatically generating a pulse at said voltage breakdown level, the secondary of said pulse transformer being connected to said flash lamp for delivering said pulse thereto at high voltage to provide an illumination flash therein, and photocell means connected across said glow lamp for controlling the operation thereof in response to ambient light level.

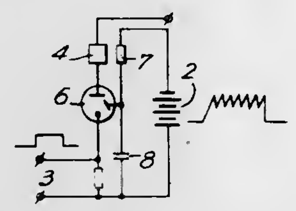
3,353,063

METHOD OF FIRING AND QUENCHING CONTROL OF GAS-DISCHARGE TUBES

Lev Nickolaevich Korablev, Moscow, U.S.S.R., assignor to Fizichesky Institute imeni Lebedeva, Moscow, U.S.S.R.
Filed Oct. 26, 1964, Ser. No. 406,452
3 Claims. (Cl. 315—176)

1. A circuit comprising a cold-cathode gas-discharge tube having characteristic sustaining and firing voltages, means for applying to said tube a direct-current bias voltage substantially equal to said sustaining voltage, means to apply auxiliary periodic unidirectional pulses of predetermined duration to said tube which in combination with said direct-current bias voltage provide a cumulative voltage waveform of a magnitude which periodically varies between levels greater than the sustaining voltage but less than said firing voltage, and means to apply

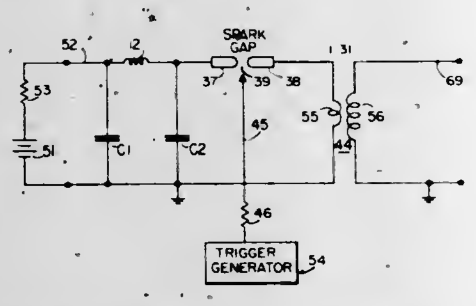
positive and negative control pulses of predetermined duration selectively to said tube, the duration of each control pulse being greater than the duration of each auxiliary pulse, said positive pulses in combination with said cumulative voltage enabling a triggering of said tube, said negative pulses in combination with said direct current voltage effecting an extinguishing of said tube.



3,353,064
HIGH POWER PULSE MODULATOR

James P. Kitchen, Fort Washington Estates, and David C. De Packh, Oxon Hill, Md., Harold R. D. Roess, Washington, D.C., and Thomas J. O'Connell, Clinton, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Dec. 30, 1964, Ser. No. 422,463
2 Claims. (Cl. 315—239)

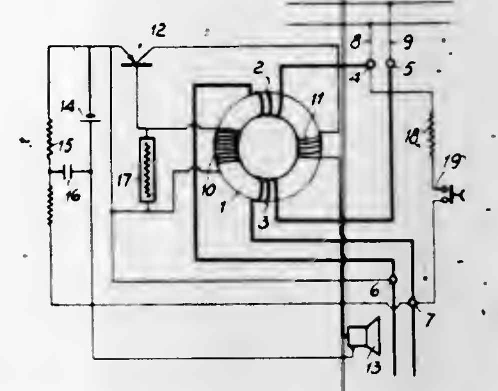


1. A pulse generator network comprising:
First and second capacitors connected in cascade;
A first sealed housing for enclosing and insulating said first and second capacitors;
Means for charging said first and second capacitors from the exterior of said first sealed housing;
A transformer having a single-turn primary and a multiple-turn secondary;
A second sealed housing for enclosing and insulating said transformer;
Means connecting said transformer secondary to the exterior of said second housing;
Anode means connected to said capacitors;
Anode adjustment means, located partially interiorly and partially exteriorly of said first housing, for varying the position of said anode means;
Cathode means electrically connected to said single-turn transformer primary, said cathode means being spaced from said variably positioned anode means to form a variable spark-gap;
A third vented housing containing said anode and cathode means, said third housing coupling said first housing to said second housing, the structural cooperation of said third housing, anode means and cathode means being such that said spark-gap is exposed to ambient conditions but the seals of said first and second housings are not disturbed, and
Triggering means including a copper pin encased in a ceramic shield and connected to receive a triggering pulse and mechanically contained and supported in said cathode means for periodically increasing the potential difference between said anode means and said cathode means for causing breakdown of the air space between said anode means and said cathode means when said potential difference exceeds a given value.

3,353,065
ELECTRONIC ALARM OR TRIPPING SYSTEM

Ermanno Bassani, Corso di Porta Vittoria 9, Milan, Italy

Filed May 27, 1965, Ser. No. 459,324
Claims priority, application Italy, Dec. 19, 1964, 26,982/64
8 Claims. (Cl. 317—27)



1. An arrangement for the detection of leakage currents in electrical apparatus comprising, in combination, an electrical power source supplying electrical current to said apparatus through at least two supply lines carrying identical currents during normal operating conditions, and carrying unequal currents under abnormal operating conditions when said leakage currents prevail in said apparatus; a magnetic core; a first primary winding wound upon said magnetic core and connected between said apparatus and one supply line of said electrical power source; a second primary winding wound upon said magnetic core and connected between said apparatus and the other supply line of said electrical power source, said second primary winding being wound upon said core oppositely to that of said first primary winding so that the magnetic flux generated through said core as a result of said primary windings is null during normal operating conditions; a first secondary winding wound upon said core and having an induced current when said magnetic flux in said core is different from null under said abnormal operating conditions; a transistor connected to said first secondary winding and made conductive when said induced current exceeds a predetermined value; a second secondary winding wound upon said core and energized by said transistor when latter is made conductive; and indicating means connected to said second secondary winding and actuated by the current flowing therethrough to indicate the existence of abnormal operating conditions.

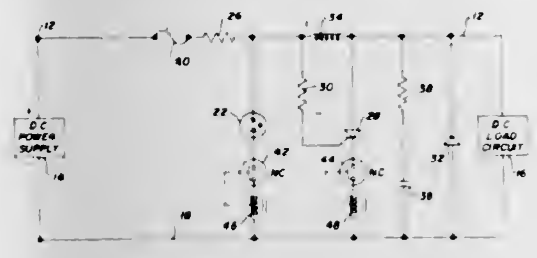
3,353,066
SURGE PROTECTION CIRCUIT

Alwyn A. de Souza, Goleta, Calif., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois

Filed Sept. 17, 1965, Ser. No. 488,006
6 Claims. (Cl. 317—31)

1. An overvoltage surge protection circuit, comprising:
a pair of conductor lines adapted to be connected between a voltage source and a load;
normally conducting switch means connected to at least one of said lines;
high voltage protection means including a discharge device connected between said lines, said device being adapted to be rendered conducting when the surge voltage on said conductors is above a first voltage;
low voltage protection means including a controlled semiconductor rectifier having an anode, a cathode and a trigger electrode with its anode and cathode connected to different ones of said pair of lines in position between said discharge device and the outputs of said lines;

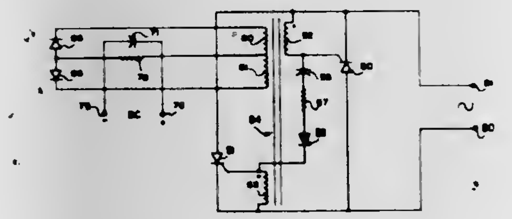
means connecting one of said lines to the trigger electrode of said controlled rectifier to enable said controlled rectifier to be rendered conducting when the surge voltage on such line is above a second voltage less than said first voltage; and
means for actuating said switch means to render it nonconducting in response to the conduction of said controlled rectifier to interrupt the current flow through said rectifier and return it to a nonconducting condition.



3,353,067
AC CIRCUIT BREAKER

Richard L. White, Paradise Valley, Ariz., assignor to Dickson Electronics Corporation

Filed Oct. 12, 1964, Ser. No. 403,288
11 Claims. (Cl. 317—33)

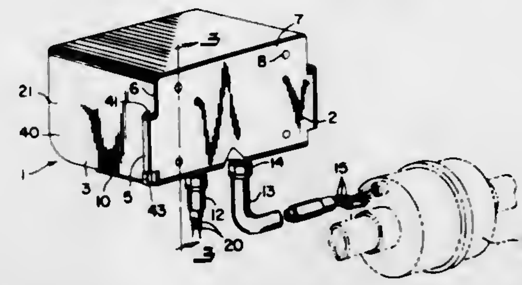


1. An AC circuit breaker comprising:
(a) a first and a second terminal,
(b) a first and a second controlled rectifier each having an anode electrode, a cathode electrode, and a control electrode,
(c) means connecting the anode and cathode electrodes of said first controlled rectifier to said first and second terminals respectively,
(d) means connecting the cathode and anode electrodes of said second controlled rectifier to said first and second terminals respectively,
(e) a transformer having a primary and a secondary winding,
(f) means connecting one side of said primary winding to the control electrode of said first controlled rectifier and the other side of said primary winding to said second terminal,
(g) means connecting one side of said secondary winding to the control electrode of said second controlled rectifier and the other side of said secondary winding to said first terminal,
(h) said primary and secondary windings inductively related to provide voltages at the respective sides of said windings connected to said control electrodes for gating the corresponding controlled rectifier,
(i) a control winding on said transformer,
(j) variable impedance means connected in series with said control winding, and
(k) transient producing means connected to said control electrodes for initiating conduction through one of said controlled rectifiers when said variable impedance is low.

3,353,068
CONTROL BOX ASSEMBLY

James R. Turk, Solon, Ohio, assignor to Vincent K. Smith, Gates Mills, Ohio

Filed Dec. 2, 1965, Ser. No. 511,135
9 Claims. (Cl. 317—99)

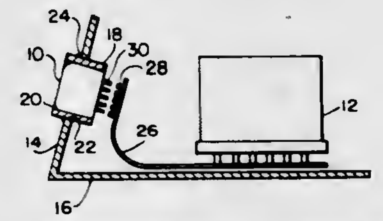


1. A control box assembly comprising, in combination, a self-contained expendable cartridge element and a mounting bracket for supporting said cartridge element, said cartridge element comprising a housing having electrical components embedded in plastic in said housing, said electrical components having a plurality of plug-type connector elements passing through and projecting from said plastic within the interior of said housing for providing a releasable connection to lead lines entering said housing through openings in said mounting bracket, and means for releasably securing said cartridge element to said mounting bracket, whereby said cartridge element may be quickly and easily replaced in the event of a failure of one of the components thereof.

3,353,069
MOUNT FOR ELECTRONIC TUBES

Peter E. Slavin, Winchester, Mass., assignor to Intelligent Instruments, Inc., Winchester, Mass., a corporation of Massachusetts

Filed Apr. 12, 1965, Ser. No. 447,279
5 Claims. (Cl. 317—101)



1. A mount for electronic tubes comprising,
(a) a chassis,
(b) a wall mounted to said chassis,
(c) said wall being formed with an opening therethrough, and,
(d) a rigid sleeve open at both ends mounted to said wall through said opening with opposite ends of said sleeve extending from opposite sides of said wall,
(e) said sleeve being dimensioned to accommodate an electronic tube inserted axially therein whereby one end of said tube will be exposed at one side of said wall and the other end at the opposite side thereof.

3,353,070
MOLDED SANDWICH ELECTRICAL CONNECTOR WITH IMPROVED CONNECTOR PINS AND ENCAPSULATING STRUCTURE

Albert E. Paul, Thousand Oaks, and Charles W. Smith, Canoga Park, Calif., assignors to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

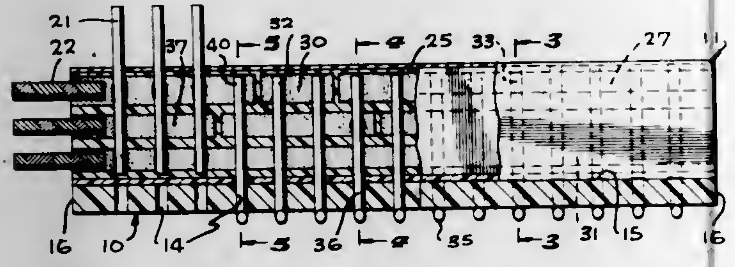
Filed Dec. 13, 1965, Ser. No. 513,177
11 Claims. (Cl. 317—101)

1. A molded sandwich electrical connector for interconnecting a plurality of electrical circuits, comprising:
a flexible layer of plastic material having a plurality of preformed electrically conductive areas embedded

therein to form a pattern of land areas so that said plastic material completely surrounds said conductive land areas;

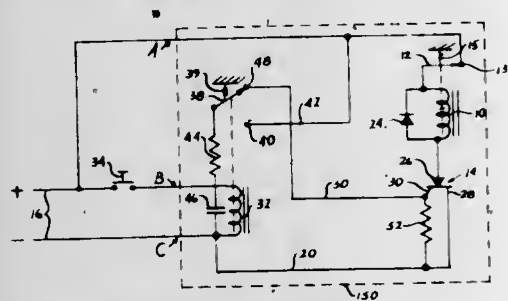
connector pins disposed across selected ones of said conductive areas along one side of said layer substantially normal to the longitudinal axis thereof and in substantially fixed spaced parallel relationship to each other and being secured to selected ones of said conductive material land areas, selected ones of said connector pins each having a plug portion that projects beyond the edge of said plastic layer; and

a body of relatively rigid electrically insulative material encapsulating said plastic layer including said connector pins except for the plug portions thereof to form a rigid body from which said plug portions outwardly extend.



3,353,071
SWITCH DEVICE

Elvin Keith Cable, New Carlisle, Ohio, assignor to Ledex, Inc., Dayton, Ohio, a corporation of Ohio
Filed Nov. 19, 1964, Ser. No. 412,438
5 Claims. (Cl. 317—148.5)

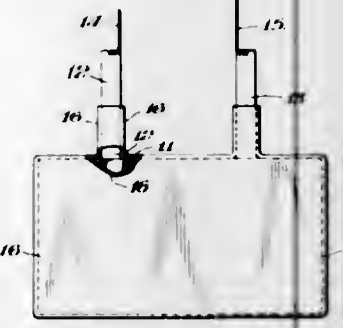


1. A device for regulating the delivery of electrical energy to a load, said device including, in combination: a controlled rectifier having an anode, a cathode and a control gate element, conductor means to connect said anode and cathode in series with said load and with a voltage source for operating said load, and control circuit means adapted to receive a voltage temporarily supplied thereto; said control circuit means including a first inductance coil to receive said temporarily supplied voltage, a second inductance coil inductively coupled to said first coil, and discharge circuit means coupling said second coil with said control gate element, said discharge circuit means transmitting a voltage pulse from said second coil to said control gate element upon removal of said temporarily supplied voltage.

3,353,072
ALUMINUM ELECTROLYTIC CAPACITOR ENCASED IN POLYVINYLALCOHOL-BORATE FILM

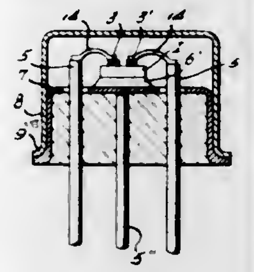
David B. Peck and Mark Markarian, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Mar. 16, 1965, Ser. No. 440,141
7 Claims. (Cl. 317—230)

1. An aluminum electrolytic capacitor comprising a section including at least a pair of convolutely wound aluminum foil electrodes and inert spacers of porous insulating material separating said electrodes, at least one of said electrodes having an anodic dielectric film on its surface, electrical connections affixed to the electrodes and extending from said section, an electrolyte containing a borate ionogen impregnating said section, and an impervious film comprising the reaction product of the borate electrolyte and polyvinylalcohol disposed on the surface of and sealingly enveloping said section.



3,353,073
MAGNESIUM-ALUMINUM ALLOY CONTACTS FOR SEMICONDUCTOR DEVICES

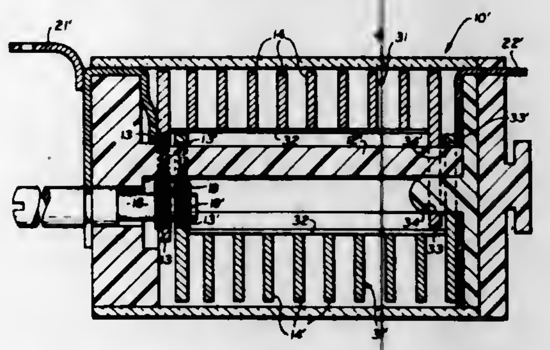
Tsutomu Majima and Koichi Urushida, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Sept. 9, 1965, Ser. No. 486,027
Claims priority, application Japan, Sept. 10, 1964, 39/51,648
4 Claims. (Cl. 317—234)



1. An improved lead arrangement for a semiconductor element comprising a conductor of aluminum alloy consisting of 0.5 to 7% magnesium with the balance aluminum and said conductor being bonded to an aluminum electrode formed on the semiconductor element.

3,353,074
VARIABLE ELECTRICAL IMPEDANCE DEVICE

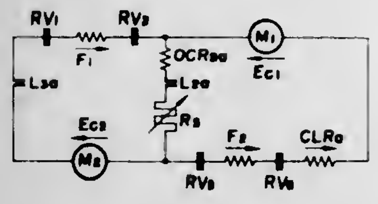
Martin Mittler, Parsippany, and Martin Blickstein, West Caldwell, N.J., assignors to Voltronics Corporation, Hanover, N.J., a corporation of New Jersey
Filed Oct. 19, 1965, Ser. No. 498,071
10 Claims. (Cl. 317—253)



9. A variable electrical impedance device which comprises a base means, a first element and a second element, both supported by said base means and disposed for rotation relative thereto and for cooperation with each other to establish an electrical impedance the magnitude of which is a function of their relative angular positions, and differential rotary gear drive means including a pair of internal ring gears, one connected to each of said first and second impedance establishing elements, and a pair of pinion gears each disposed for meshing engagement with a corresponding ring gear and mounted on a common drive shaft for rotation therewith to rotate said ring gears and their respective impedance establishing elements in a common direction with respect to the base means and through respective angular displacements differing from each other by an amount corresponding to the magnitude of the drive shaft rotation to selectively vary the relative angular positions of said elements, and hence the magnitude of the electrical impedance established thereby.

3,353,075
SAFETY DEVICE FOR DYNAMIC BRAKING OF ELECTRIC VEHICLES

Yasunosuke Torii and Murao Tanaka, Tokyo, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Dec. 16, 1963, Ser. No. 330,836
4 Claims. (Cl. 318—57)



1. A safety device for dynamic braking of an electric car comprising

at least two driving electric motors for driving said car,

a powering contactor means to connect said motors to a power source and to complete a powering circuit during powering of said car,

a braking contactor means to separate said electric motors from said powering circuit to complete a dynamic braking circuit for said electric motors only during braking of said car,

a braking resistor connected to said electric motors,

said dynamic braking circuit energizing the field winding of one of said motors, respectively functioning as generators, by braking current caused to occur by the other of said motor and to flow through said braking resistor,

and a power confirming relay means connected to at least one of said motors to confirm and store the energization of said motors in switch-over operation from powering to braking of said car,

said braking contactor means being energized through a contact of said power confirming relay means to act to complete said dynamic braking circuit in said switch-over operation.

3,353,076
MOTOR CONTROL CIRCUIT FOR A STEPPING MOTOR

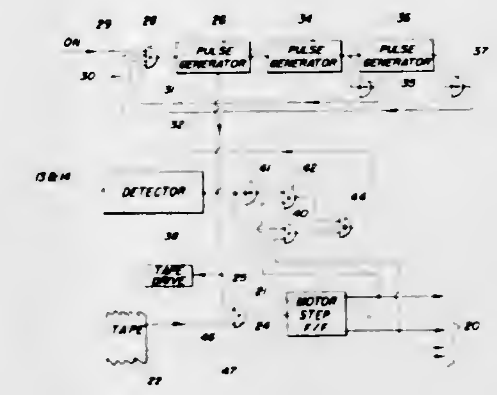
Thomas H. Haines, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 19, 1964, Ser. No. 412,402
7 Claims. (Cl. 318—138)

1. A stepping motor acceleration control system comprising:

means for detecting the relative difference between the mechanical and electric and condition of such motor and for generating a position signal when such difference is one-half step;

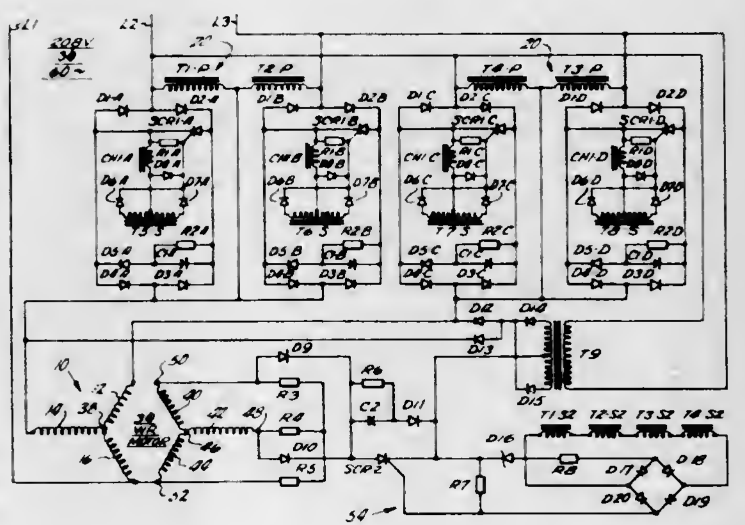
encoded means for generating a limited series of step signal pulses; and

first gate circuit means for comparing the step signal pulse with the position signal and passing each step signal pulse presented by said encoded means only when the motor is no more than one and one-half steps from the position called for by the step signal so that maximum torque is provided to accelerate the stepping motor.



3,353,077
ELECTRICAL MOTOR DRIVE WITH DYNAMIC AND STATIC BRAKING

Robert W. Egglestone, West Hartford, and Algernon S. Noell, Jr., Windsor, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,271
16 Claims. (Cl. 318—212)



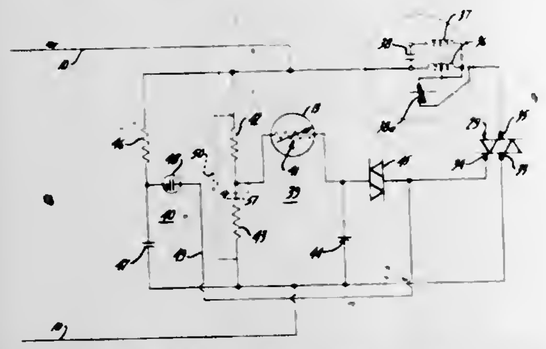
1. An electric motor drive providing electric static and dynamic braking and comprising in combination a three-phase wound rotor induction motor, means for controllably supplying driving potential to the motor, means for supplying a DC braking current to the motor this last named means including a circuit into which is connected a source of potential, said circuit having the field coils of the motor connected thereinto with two of these coils being parallel connected and the remaining coil being series connected with these two, one of the coils of the rotor being series connected with said remaining field coil and the other two coils of the rotor being series connected with said one coil of the rotor but in parallel with each other, means to control the passage of DC current through the motor from said source and interlock effective to prevent the passage of DC braking current to the motor from said source when driving potential is supplied to the motor.

3,353,078
DYNAMOELECTRIC MACHINE AND CONTROL THEREFOR

John T. Maynard, West Allis, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed Jan. 29, 1965, Ser. No. 428,975

4 Claims. (Cl. 318—227)



1. In a variable speed alternating current motor,

a cylindrical housing having apertured end bells secured to the opposite ends to permit fluid flow therethrough,

an annular stator winding unit including a start winding and a run winding connected with a capacitor to form a permanent split capacitor stator unit, said winding unit being mounted within the housing in spaced relation to one end to define an internal control chamber,

a rotor concentrically mounted within the winding unit and carried by the shaft,

a solid state symmetrical switch means connected to one side of the stator windings and including firing means,

means mounting said switch means on the inner surface of the end bell forming a part of the control chamber, said switch being series connected with the winding unit,

a firing circuit for said switching means including a voltage dividing network connected in parallel with the switch means and the winding unit and a timing capacitor connected in series with a charging control circuit across a portion of the voltage dividing network, said charging control circuit including a solid state amplifying means having its output connected to charge the capacitor during each half cycle and a control element mounted separately from the other elements and connected to control the bias on the amplifying means and thereby the charging rate of the capacitor, said firing circuit including a trigger diode means connected between the capacitor and the firing means,

means to mount the switching means and the firing circuit components within the control chamber, and wherein said charging circuit includes a rectifying circuit having input terminals connected between the timing capacitor and the voltage dividing network and having output terminals, said amplifying means being connected across the output terminals in parallel with a control voltage dividing network having the control element therein, said amplifying means having a control terminal means connected to the control voltage dividing network to bias the amplifying means.

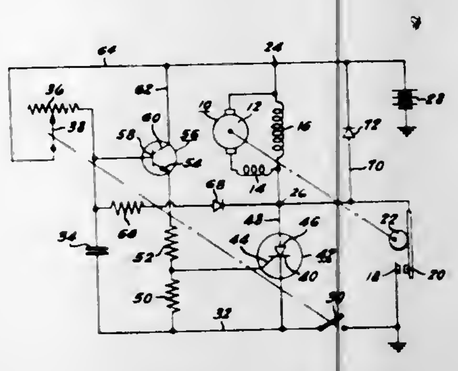
3,353,079
WINDSHIELD WIPER CONTROL SYSTEM

John J. Saeli, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 7, 1964, Ser. No. 402,089

10 Claims. (Cl. 318—443)

1. Windshield wiper control mechanism for a wiper movable back and forth across the surface of a windshield including, an electric motor operable to oscillate the wiper and park the wiper in a predetermined position, an electric power source, an energizing circuit for said motor including a cyclically actuated parking switch operated by said motor, interrupter means connected in parallel with said parking switch in said energizing circuit, variable timing means connected in circuit with said interrupter means, and a manual control connected with said power source and said timing means for varying the time constant of said timing means to effect a one cycle operation of said wiper motor with the time interval between successive cycles of wiper operation being infinitely variable between zero and a predetermined maximum time interval.

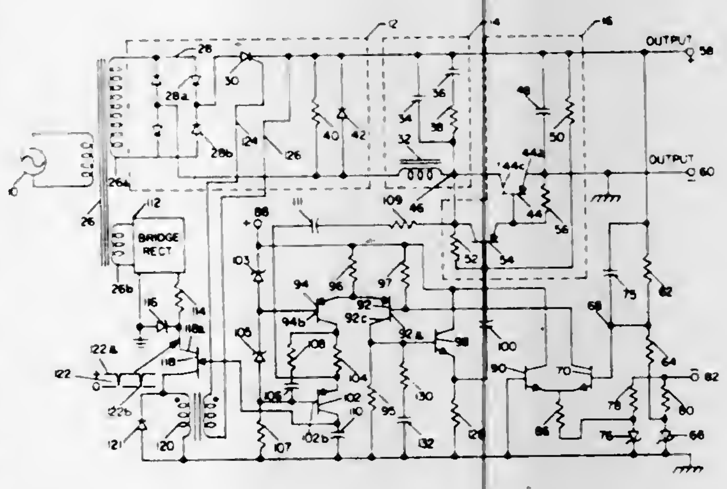


3,353,080
REGULATED POWER SUPPLY HAVING SEPARATE REGULATORS RESPONSIVE TO DIFFERENT ERROR SIGNAL FREQUENCY COMPONENTS

William F. Santelmann, Jr., Lexington, Mass., assignor to Walden Electronics Corporation, Arlington, Mass.

Filed Aug. 6, 1964, Ser. No. 387,906

17 Claims. (Cl. 321—2)



1. In a regulated power supply of the type in which the power from a source thereof is passed first through a relatively high efficiency first regulator, the output of said first regulator is passed through a relatively low efficiency second regulator, the output of said power supply being derived from the output of said second regulator, and including means generating an error signal which is a function of the difference between the output of the supply and a desired output, said error signal comprising a low frequency range including frequency components to which said low frequency regulator responds and a high frequency range including frequency components to which said high frequency regulator responds, the improvement comprising control means

(A) utilizing said low frequency range of said error signal to control said first regulator, and

(B) utilizing said high frequency range of said error signal to control said second regulator.

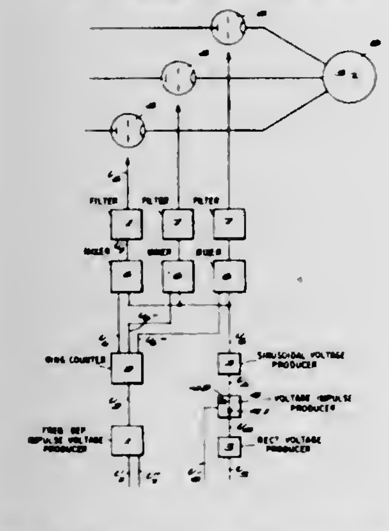
3,353,081
APPARATUS FOR PRODUCING FREQUENCY AND AMPLITUDE DEPENDENT CONTROL VOLTAGES

Herbert Stemmler, Baden, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company

Filed Mar. 8, 1965, Ser. No. 437,893

Claims priority, application Switzerland, Mar. 20, 1964, 3,598/64

6 Claims. (Cl. 321—6)



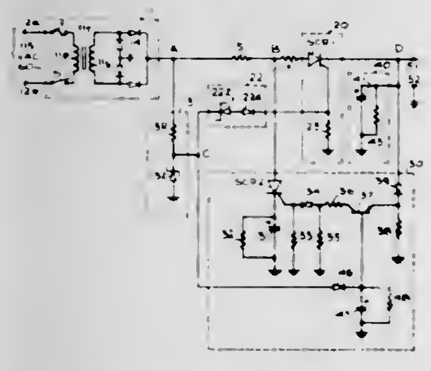
1. Apparatus for producing frequency and amplitude dependent control voltages comprising, first means producing a first series of rectangular voltage impulses having a constant amplitude but variable frequency, means transforming said first series of rectangular voltage impulses into an n number of voltage impulses displaced in phase by $360/n$ and which form a rotary field voltage, second means producing a second series of rectangular voltage impulses having a constant frequency but variable amplitude, means transforming said second series of rectangular voltage impulses into a single-phase sinusoidal voltage of the same constant frequency and variable amplitude, and means mixing said single-phase sinusoidal voltage with each of said phase displaced rotary field voltages to form an n-phase sinusoidal control voltage having a variable amplitude and a variable frequency equal to the difference between the respective frequencies of said single-phase sinusoidal voltage and said rotary field voltage.

3,353,082
FIXED POWER SUPPLY UTILIZING A COMMUTATED RECTIFIER

Robert N. Mellott, Northridge, Los Angeles, Calif., and Richard W. Petersen, Fort Wayne, Ind., assignors to Interco, Inc., a corporation of Maryland

Filed Apr. 20, 1964, Ser. No. 360,821

7 Claims. (Cl. 321—16)



1. An apparatus responsive to a source of a direct current supply voltage of varying amplitude for providing to a load a direct current output voltage whose amplitude remains substantially within predetermined limits comprising:

a source of a first reference voltage;

a controlled rectifier having an anode, a cathode, and a gate and capable of defining either an open or closed condition; a first impedance;

means connecting said first impedance and said rectifier anode and cathode in series between said source of supply voltage and said load;

means connected to said rectifier gate for causing said rectifier to define a closed condition in response to said first reference voltage amplitude exceeding said output voltage amplitude to provide a path for current from said source of supply voltage to said load;

a source of a second reference voltage;

a switch means capable of defining either an open or closed condition;

said switch means defining a closed condition in response to said output voltage amplitude exceeding said second reference voltage amplitude; and

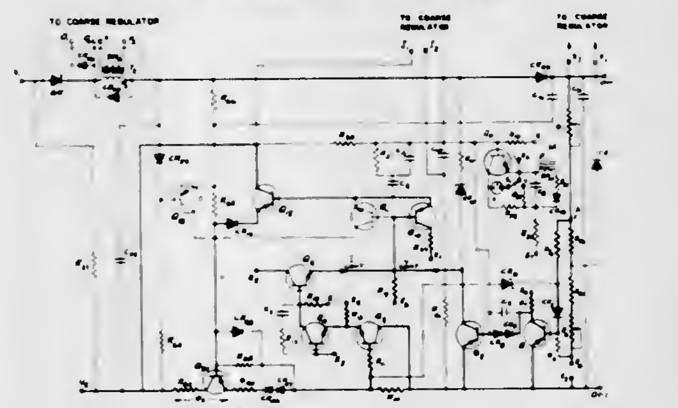
means connecting said switch means to said source of supply voltage for diverting current from said path therethrough to thus switch said rectifier to said open condition.

3,353,083
REGULATED AC-DC POWER SUPPLY

Sol Greenberg, 23 Ridge Drive, Port Washington, N.Y. 11050, George Gautherin, 48—11 59th St., Woodside, N.Y. 11377, and Irving Forrest, 21 Evelyn Road, Plainview, N.Y. 11803

Filed June 5, 1963, Ser. No. 285,780

15 Claims. (Cl. 321—18)



1. An improved variable impedance regulator for an A.C. to D.C. power supply of the type including a source of relatively unregulated potential, an output circuit for delivering a regulated output, a series variable impedance circuit between said source and said output circuit and having a pass transistor therein, the cascaded combination for controlling said pass transistor of (1) error detector means responsive to said output, (2) amplifying means, and (3) driver means, said improvement comprising said comprising a pair of paralleled, complementary transistors alternatively operative, one of said complementary transistors normally operative with respect to signals from said error detector, circuit means operative in dependence on temperature conditions, said circuit means being connected to render said other complementary transistor conductive when the temperature exceeds a predetermined value.

3,353,084
REGULATABLE RECTIFYING APPARATUS

Toshio Kurimura, Setagaya-ku, Tokyo-to, Japan, assignor to Kokusai Denshin Denwa Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

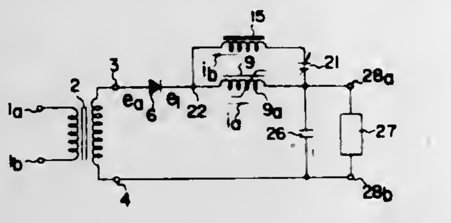
Filed June 24, 1965, Ser. No. 466,739

Claims priority, application Japan, June 29, 1964, 39/36,367

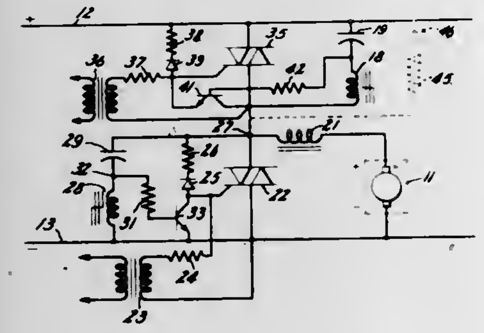
12 Claims. (Cl. 321—25)

1. A regulatable rectifying apparatus, comprising a rectifying circuit for producing a rectified direct-current output from an alternating current supply, said rectifying

circuit comprising a series connection of a rectifying element and a main saturable reactor having a cut core, and a control circuit, which is composed of a series connection of a non-saturable reactor and a direct-current voltage source having a small internal resistance, said control circuit forming a by-pass circuit for supplying a demagnetization current of the main saturable reactor during a period in which the rectifying element is nonconductive, whereby the voltage of the rectified direct-current output is regulatable by controlling the voltage of the direct-current voltage source.

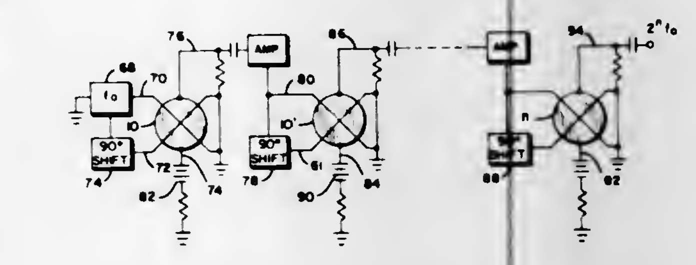


3,353,085
TIME RATIO CONTROL AND INVERTER POWER CIRCUITS
Raymond E. Morgan, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 27, 1964, Ser. No. 347,731
22 Claims. (Cl. 321—43)



5. An improved power circuit using turn on, non-gate turn off solid state semiconducting devices including in combination a load current carrying gate turn on, non-gate turn off triac controlled conducting device, a filter inductance, and a load operatively connected in series circuit relationship across a pair of power supply terminals that in turn are adapted to be connected across a source of electric potential, first gating circuit means operatively connected to the control gate of the load current carrying triac device for turning on the device to cause it to conduct current in either one of two directions depending upon the polarity of the potentials applied across the device, first commutation circuit means comprising a first saturable reactor and a first commutating capacitor connected in series circuit relationship across the load current carrying triac device tuned to series resonance at a desired commutating frequency, first blocking circuit means interconnecting the first gating circuit means and the first commutation circuit means for rendering said first gating circuit means ineffective during the commutation intervals of said first commutation circuit means, a coasting gate turn on, non-gate turn off triac controlled conducting device connected in parallel circuit relationship with the filter inductance and the load, second gating circuit means operatively connected to the control gate of said coasting triac device for turning on the coasting triac device to cause it to conduct current in either one of two directions depending upon the polarity of the potentials across the device, second commutation circuit means comprising a second saturable reactor and a second commutating capacitor connected in series circuit relationship across the coasting triac device and tuned to series resonance at the desired commutating frequency, and second blocking circuit means interconnecting the second commutation circuit means and the second gating circuit means for rendering the second gating circuit means ineffective during the commutation intervals of the second commutation circuit means.

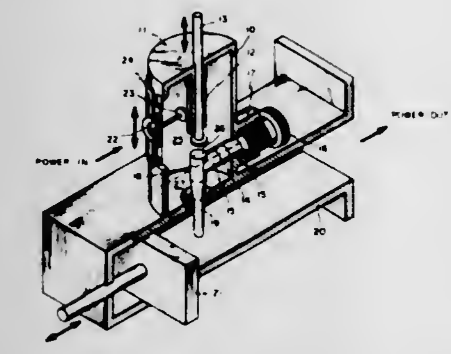
3,353,086
MAGNETORESISTIVE FREQUENCY DOUBLER
Paul Oberg, Minneapolis, Richard M. Sanders, St. Paul, and Charles H. Tolman, Bloomington, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 16, 1964, Ser. No. 375,482
7 Claims. (Cl. 321—60)



7. A frequency generator comprising:
- *n* isotropic magnetic elements each having a remanent magnetization vector,
- a sense line connected to each of said elements,
- a pair of drive lines oriented at an angle of 90° to each other and inductively coupled to each of said elements for rotating said remanent vector,
- means for connecting said elements in serial arrangement by connecting the sense line of each element except the last in the series to the drive lines of the following element,
- means for connecting a first current source in series with one of said drive lines coupled to each element, said current source connected to the drive line of the first of said elements in said series producing a frequency f_0,
- means for connecting a 90° phase shift network in series with the other of said drive lines coupled to each element, and
- a second current source means and a load means connected in series with said sense line of said last element across which an output voltage of frequency $2^n f_0$ caused by said rotating vectors may be developed.

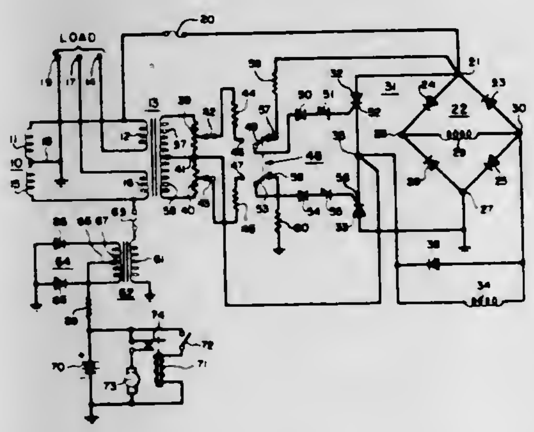
3,353,087
SHUNT-TYPE COAXIAL TO WAVEGUIDE HARMONIC GENERATOR
Edward A. Murphy, Farmingdale, and William Posner, Brooklyn, N.Y., assignors to General Telephone and Electronics Laboratories Inc., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,602
6 Claims. (Cl. 321—69)

6. A harmonic generator which comprises
- (a) a coaxial assembly having inner and outer conductors and being terminated at one end in a short circuit, said inner conductor comprising first and second spaced segments forming a gap capacitance therebetween, the first segment having an adjustable length to permit variation of said capacitance,
- (b) a varactor diode mounted in shunt between the second segment of said inner conductor and said outer conductor of the assembly, said diode dividing the coaxial assembly into an input and an output section, said input section having an electrical length of about one-eighth of a wavelength at the input frequency to provide a low inductive reactance at the input frequency and a substantially anti-resonant trap at the second harmonic of the input frequency, the combination of said input section, the capacitance of said varactor diode, and said gap capacitance being tuned to series resonance at the input frequency,
- (c) means for coupling a signal at the input frequency to said input section,



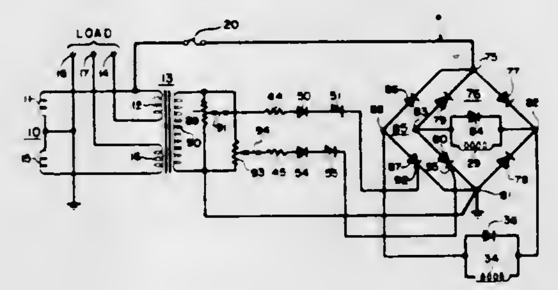
- (d) a section of waveguide coupled to the output section of said coaxial assembly, the cut-off frequency of said waveguide being between the input frequency and the second harmonic thereof,
- (e) coupling means connected to the second segment of said inner conductor and extending into said section of waveguide for coupling power thereto, and
- (f) tuning means connected to said waveguide section for impedance matching the waveguide to said output section to insure the flow of power therebetween.

3,353,088
ELECTRIC GENERATING SYSTEMS
Lawrence R. Roche, Sioux City, Iowa, assignor to Wincharger Corporation, a corporation of Minnesota
Filed Sept. 27, 1965, Ser. No. 490,422
3 Claims. (Cl. 322—27)



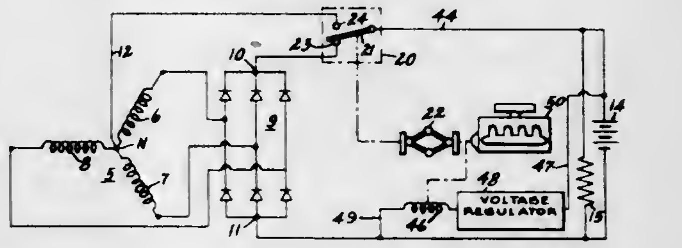
1. A voltage regulated electric generating system in which the output voltage is maintained substantially constant at a predetermined level over a wide range of operating loads, said system comprising:
- an electric generator having an output winding and a field winding;
- a field circuit for supplying exciting current to said field winding;
- and means for increasing the field excitation of said generator in response to increasing generator loads, said last-mentioned means comprising:
- an intermeittently conductive controllable rectifier device having main electrodes in said field circuit and a separate control electrode;
- a multiple layer diode device, having an avalanche conduction characteristic dependent on applied voltage and essentially independent of temperature, coupled to said control electrode; and sensing means, responsive to load current variations in said output winding and coupled to said multiple layer diode device, for effecting breakdown in said multiple layer device and conduction in said intermittently conductive controllable rectifier in the presence of a predetermined load condition of said system.

3,353,089
ELECTRIC GENERATING SYSTEMS
Sterling P. Garrett, York, Pa., assignor to Wincharger Corporation, a corporation of Minnesota
Filed Sept. 28, 1965, Ser. No. 490,979
5 Claims. (Cl. 322—27)



4. A voltage regulated electric generating system in which the output voltage is maintained substantially constant at a predetermined level over a wide range of operating loads, said system comprising:
- an electric generator having a field winding, a control winding, and an output winding;
- a first circuit means responsive to an applied alternating current and having a bridge rectifier network including a plurality of rectifier elements for supplying direct current to said field winding;
- a second circuit means responsive to an applied alternating current and having a bridge rectifier network including at least one of said rectifier elements and an intermittently conductive controllable rectifier device for supplying controlled direct current to said control winding;
- means coupled to said output winding and responsive to load current variations therein for controlling the conduction state of said intermittently conductive controllable rectifier device to vary the excitation of said control winding.

3,353,090
ALTERNATOR POWER SUPPLY SYSTEM WITH SPEED RESPONSIVE RECTIFICATION ALTERING MEANS
Elbert M. Sawyer, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 8, 1965, Ser. No. 513,669
10 Claims. (Cl. 322—30)

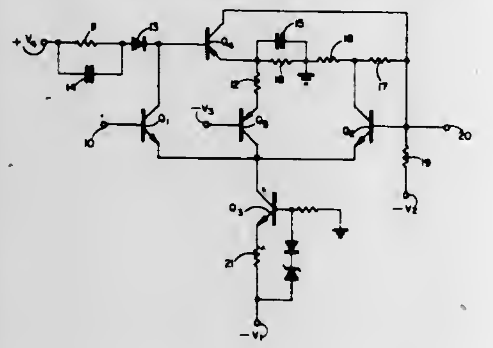


1. An electrical system comprising an alternating current generator having three-phase output windings connected in a Y configuration, a three-phase full-wave

bridge type rectifier circuit having three alternating current input terminals and positive and negative polarity direct current output terminals, means for connecting the terminal end of each of said output windings to a respective alternating current input terminal of said bridge rectifier circuit, at least one supply conducfor to which an electrical load may be connected, a neutral conductor connected to the electrical neutral of said Y connected output windings and a switch means for connecting said supply conductor to a selected one of said direct current output terminals or to said neutral conductor.

3,353,091
AMPLIFIER USING PARAGONED ACTIVE ELEMENTS

Raymond T. Matsumoto, Cypress, Calif., assignor to North American Aviation, Inc.
Filed Aug. 24, 1964, Ser. No. 391,368
10 Claims. (Cl. 323—4)

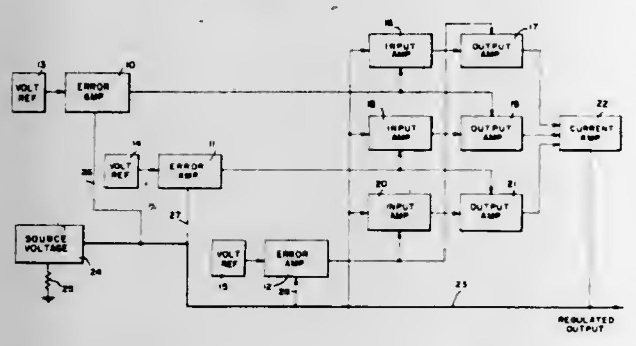


1. In a circuit using active elements connected to a common source of constant current, a system for maintaining constant the ratio of currents through said elements comprising

- first means for detecting a current in one of said active elements,
- and second means coupled to a junction of the active elements and the constant current source for conducting a proportionately greater current of opposite polarity in response to detected current in said one of said active elements, the proportion being so adjusted as to force a current through at least one other element equal to the current through said one of said active elements.

3,353,092
REDUNDANT POWER CONTROL REGULATOR

Robert A. Rubin, Los Angeles, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Sept. 21, 1965, Ser. No. 488,966
6 Claims. (Cl. 323—19)

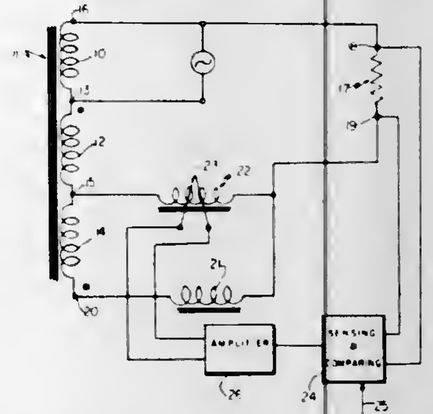


1. In combination,

- a source of power for generating an output potential,
- a plurality of reference voltage sources,
- a plurality of error amplifiers each receiving an input from one of said reference sources and said output potential for generating at least three error signals,
- a plurality of pair of input and output amplifiers connected in series across a supply voltage source,
- each of said error signals from said error amplifiers being connected to an input and output amplifier not connected in series; and
- a regulating circuit responsive to each of said output amplifiers for controlling said output potential.

3,353,093
TRANSFORMER AND SATURABLE REACTOR VOLTAGE REGULATOR

Carl A. Peterson, Oak Park, Ill., assignor to Basic Products Corporation, Elk Grove Village, Ill., a corporation of Wisconsin
Filed June 24, 1963, Ser. No. 289,886
11 Claims. (Cl. 323—43.5)

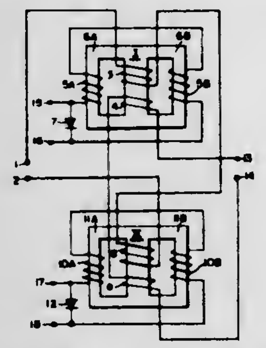


1. In a regulator for supplying energy to load means, the combination including core means, main winding means on said core means, means feeding A.C. to said main winding means, first and second auxiliary winding means on said core means, said first and second winding means being connected in series with each other and said first auxiliary winding means being connected to said main winding means, said first and second auxiliary winding means being connected in opposed relation to each other, means connecting one part of said load means to a terminal means of said main winding means, a first and second impedance means, one of said impedance means being variable, and means connecting another part of said load means to said second auxiliary winding means through said first impedance means and also connecting said another part of said load means to a point between said first and second auxiliary winding means through said second impedance means.

3,353,094
STATIC INDUCTION REGULATOR EMPLOYING TRANSFORMERS WITH EVEN-HARMONIC FEEDBACK

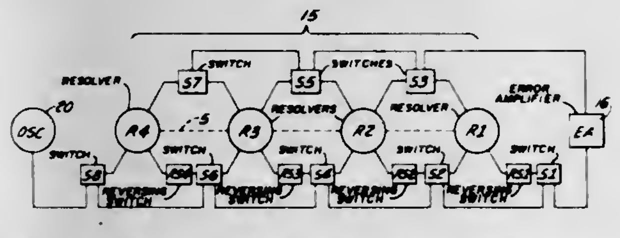
Fitzwilliam A. Wentworth, Mosman, New South Wales, Australia, assignor to Stabilac Pty. Limited, Kingsgrove, New South Wales, Australia, a corporation of New South Wales, Australia
Filed May 1, 1964, Ser. No. 364,198
Claims priority, application Australia, May 21, 1963, 30,912/63
5 Claims. (Cl. 323—45)

1. A static induction regulator comprising input terminals to the regulator, output terminals to the regulator, two transformers, a three legged core for each transformer consisting of a central limb and two outer limbs, a primary winding for each transformer on the central limb thereof, series connections between the primary windings, a secondary winding for each transformer on the central limb thereof, series connections between the secondary windings and the input and output terminals such that the secondary voltages oppose each other, a control winding for each transformer having portions on each outer limb, a rectifier connected across each control winding whereby it functions as a second harmonic feedback winding, means for applying currents through said control windings such that the two secondary voltages are equal and opposite, and means for varying the currents through the control windings such that as one secondary winding voltage increases the other secondary winding voltage decreases.



3,353,095
VARIABLE SPEED POSITION MEASURING TRANSFORMER SYSTEM

Clair L. Farrand, Bronxville, N.Y., assignor to Inductosyn Corporation, Carson City, Nev., a corporation of Nevada
Filed June 25, 1964, Ser. No. 377,873
6 Claims. (Cl. 323—53)

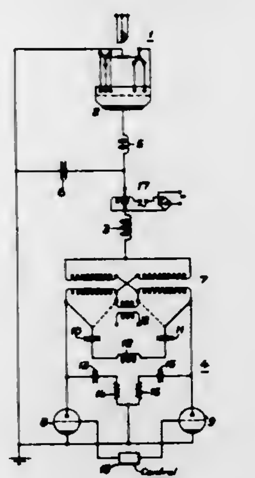


1. A position measuring transformer system comprising a plurality of position measuring transformers of unequal speeds, speed being equal to one-half the number of poles, each transformer having relatively movable members, each of said members having a winding having a plurality of poles, a common drive for said movable members, input and output windings cooperating with said members respectively, one of said windings of each transformer being a polyphase winding, the windings of at least two of said transformers being connected in tandem, the speed of said connected transformers being the algebraic sum of the speed of each of said connected transformers.

3,353,096
TEST APPARATUS FOR CONTROLLED RECTIFIERS OPERATING AS PART OF AN INVERTER CIRCUIT

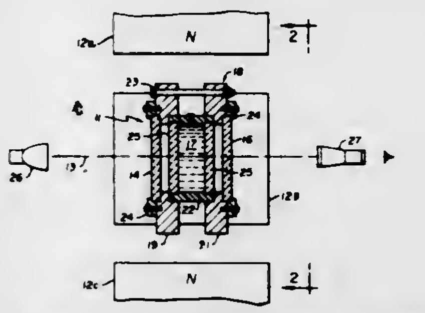
Harry Forssell, Ludvika, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Jan. 30, 1963, Ser. No. 254,866
Claims priority, application Sweden, Feb. 5, 1962, 1,222/62
7 Claims. (Cl. 324—26)

1. Means for testing a mercury arc rectifier, comprising three components, namely an inverter having at least two rectifiers and an interphase transformer comprising a winding for each of said rectifiers, each rectifier being connected in series with its respective interphase transformer winding to form the respective legs of the inverter, a direct voltage source and an oscillatory circuit; said oscillatory circuit comprising an oscillatory reactor and an oscillatory capacitor; said inverter fed from said direct voltage source, said oscillatory reactor being connected in series between the direct voltage source and the inverter, said oscillatory capacitor being connected between the legs of the inverter; said three components forming a closed circuit; said windings and their rectifiers being connected in parallel to each other to said direct voltage source; the rectifier under test being inserted as one of the rectifiers of said inverter; the voltage of said direct voltage source being at least one order of magnitude lower than the rated voltage of the rectifier under test; the resultant resistance of the D.C. circuit formed by the above three components not exceeding the ratio between the voltage of said direct voltage source and the rated current of said rectifier under test; the impedance of said oscillatory capacitor at the natural frequency of said oscillatory circuit exceeding the ratio between the maximum desired testing voltage and the rated current of said rectifier under test; said inverter being provided with a control device delivering control pulses to the control grids of the rectifiers of said inverter at a frequency corresponding to an operation frequency of said inverter exceeding the natural frequency of said oscillatory circuit.



3,353,097
METHOD AND APPARATUS FOR OPTICALLY DETERMINING THE ALIGNMENT OF MAGNETIC FIELDS UTILIZING THE COTTON-MOUTON EFFECT

Rudin M. Johnson, Berkeley, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 10, 1964, Ser. No. 350,928
8 Claims. (Cl. 324—43)

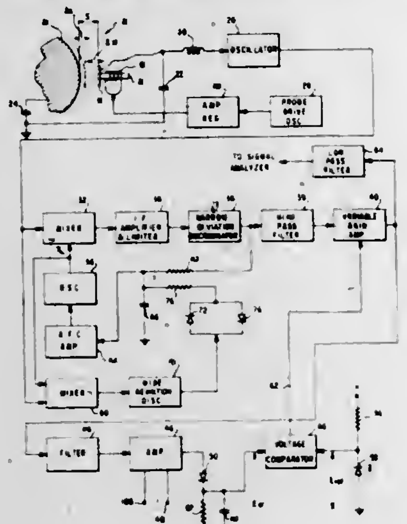


2. Apparatus for visually locating regions within a magnetic field at which the field is absent or parallel or perpendicular to a plane of plane polarized light, comprising:

(a) a magneto-optical cell containing a substance exhibiting the Cotton-Mouton effect,
(b) a source of said polarized light directed through said cell, said cell and the direction of said polarized light being transverse to the flux of said magnetic field, and
(c) a polarizing screen disposed in the path of said light transmitted by said cell with the polarizing plane of said light source whereby the light pattern transmitted by said cell is indicative of the location of said regions.

3,353,098
TRANSDUCER SYSTEM HAVING A VARIABLE CHARACTERISTIC DISCRIMINATOR

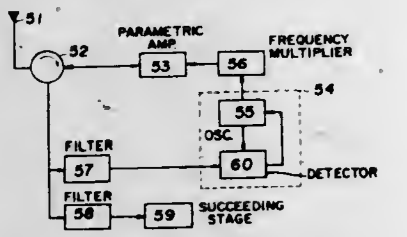
George B. Foster, Worthington, and Kenneth A. Ostrander, Columbus, Ohio, assignors, by mesne assignments, to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed May 7, 1963, Ser. No. 278,664
10 Claims. (Cl. 325—45)



1. A non-contact system for transducing a variable to be measured including portable pickup means adapted to be hand held by a user in operative position relative to a source of said variable, means connected to said hand held pickup means for producing a carrier frequency modulated in response to variations in said variable, said carrier frequency experiencing substantial and rapid variations during operation due to movement of the pickup means in the hands of the user, beat oscillator means, mixer means for mixing said frequency modulated carrier and the signal from said beat oscillator to provide an I.F. signal, discriminator means for detecting said I.F. signal, and automatic frequency control means for maintaining said I.F. signal at a constant frequency, said automatic frequency control means being responsive to a signal from said discriminator means, said discriminator means having an overall discriminator characteristic having a high slope over the range of deviation normally caused by the variation of said variable and a lower slope over a larger deviation range which is considerably greater than the high slope deviation range.

3,353,099
DOUBLE-SIDEBAND COMMUNICATION SYSTEM

Syuiti Hayasi, Ohta-ku, Tokyo, and Junzo Murakami, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Mar. 30, 1964, Ser. No. 355,720
Claims priority, application Japan, Aug. 16, 1963, 38/43,027
2 Claims. (Cl. 325—60)

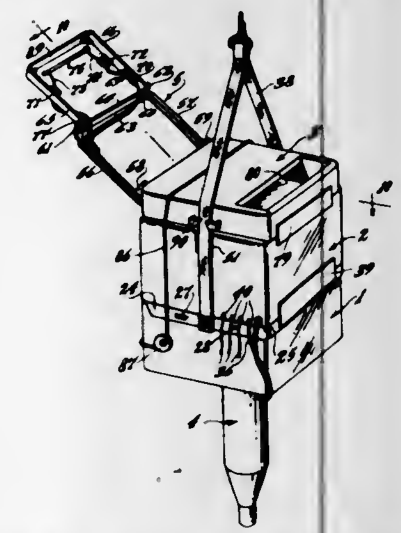


1. A double-sideband radio communication system utilizing a parametric amplifier comprising, means to produce and transmit a double-sideband signal which has a pair of sidebands and a carrier wave signal, the phase of the carrier wave signal being shifted substantially to a phase angle of 90° from its normal phase relation with respect to said sidebands;

- means to receive said double-sideband signal and amplify the same by means of a parametric amplifier,
- means to separate said carrier wave signal from the amplified received signal;
- an automatic phase control device to attain phase synchronism by the separated carrier wave signal;
- an oscillator controlled by means of said device; and,
- means to drive said parametric amplifiers with the output of said oscillator so as to separate the carrier wave signal after the received signal has been amplified.

3,353,100
PACKAGE FOR RADIOSONDE

John N. Collins, 513 Burton Road, Oreland, Pa. 19075, and Maurice Friedman, 7961 Thouron Ave., Philadelphia, Pa. 19150
Filed Apr. 6, 1964, Ser. No. 357,503
4 Claims. (Cl. 325—113)

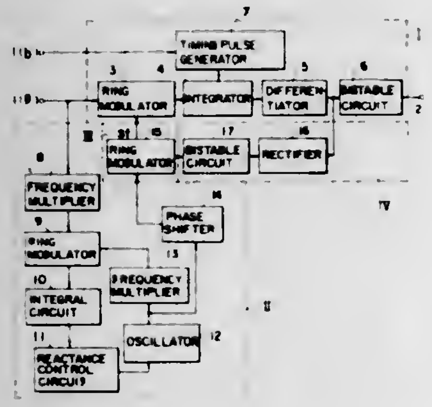


1. A radiosonde package for radiosonde comprising a base portion having a battery receiving compartment, a battery in said compartment, a pressure transducer including an electrical circuit mounted on the top of said base, a pressure transducer housing movably connected with said base and sealed when closed with the top of the base, and a foldable outrigger mounted on top of said housing, a thermistor on said outrigger, a cover movably connected to said housing and having intake and discharge air openings forming an air stream between the cover and housing, a humidity element secured within the air stream within said cover and a transmitter detachably connected with said base, said humidity element, thermistor, transmitter and pressure transducer being in electrical connection with said battery and electrical circuit.

3,353,101
DEMODULATION APPARATUS FOR PHASE-MODULATED TELEGRAPHIC CODE

Kazuo Kawai, Nerima-ku, Tokyo-to, and Hiroshi Kurihara, Suginami-ku, Tokyo-to, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha (also known as Kokusai Denshin Denwa Co., Ltd.), Tokyo-to, Japan, a joint-stock company of Japan
Filed June 3. 1963. Ser. No. 284,988
Claims priority, application Japan, Dec. 21, 1960, 35/49,439; Dec. 28, 1960, 35/50,417; Dec. 19, 1962, 37/55,987; Jan. 23, 1963, 38/2,441; Feb. 20, 1963, 38/7,451
15 Claims. (Cl. 325—320)

1. A demodulation apparatus for a phase-modulated telegraphic signal having multiple phase positions each of which is determined in accordance with polarity of a telegraphic code to be transmitted and using a phase position of an immediately preceding unit code element of reference, which comprises, a demodulation circuit generating a demodulated signal corresponding to said telegraphic signal comprising first terminal means for receiving said phase-modulated signal, second terminal means for receiving a reference carrier wave, a phase detector for detecting a magnitude and sign of a difference between phase positions of said telegraphic signal applied thereto from said first terminal means and said reference carrier wave applied thereto from said second terminal means and of the same frequency as said telegraphic signal, said phase detector comprising a ring modulator having an output comprising a direct current voltage, an integrator connected to said phase detector for integrating the direct-current voltage of the output of the ring modulator at every unit code element of said telegraphic signal and producing an integrated signal successively having a plus or minus polarity according to the sign of said difference, pulse means receptive of said integrated signal for transforming the integrated signal into a pulse signal of plus or minus polarity successively in accordance with the polarity of said integrated signal, said pulse means comprising a differentiator, third terminal means receptive of said pulse signal, an automatic control circuit producing an alternating-current signal having a stable frequency corresponding to the frequency of said telegraphic signal, a phase memory circuit receptive of the output of said third terminal means for successively storing during every unit code element of said telegraphic signal the phase position of the immediately preceding unit code element in response to said pulse signal, and a regulation circuit disposed between said automatic control circuit and the second terminal means to be controlled by an output signal of the phase memory circuit and regulating the phase of the alternating-current signal of the automatic control circuit to apply to said second terminal means the reference carrier wave having a phase position synchronized with the phase position of the immediately preceding unit code element, whereby the demodulation circuit generates correctly said demodulated signal corresponding to said telegraphic signal.

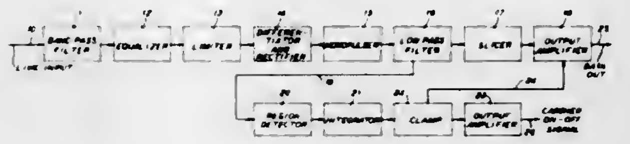


3,353,102
FREQUENCY SHIFT RECEIVER WITH NOISE FREQUENCY DETECTION

Stanley T. Meyers, East Orange, and Jerry P. Ratzlaff, Eatontown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 26, 1963, Ser. No. 333,543
9 Claims. (Cl. 325—320)

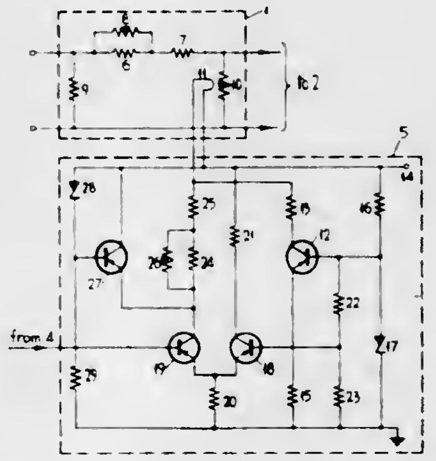
1. A carrier frequency detector responsive to a frequency shift signal in which first and second binary data bit levels are represented by first and second frequencies bounding a first carrier frequency band within a second carrier frequency band for suppressing the effect of carrier signals having frequencies that are both within said second frequency band and outside said first frequency band to provide an output data signal in which said first and second binary data bit levels are represented by first and second amplitudes respectively comprising:

- means responsive to said frequency shift signal for providing a potential signal having an amplitude proportional to the frequency thereof;
- means responsive to said potential signal, rendered effective by a control signal for providing said output data signal; and
- means responsive to said potential signal for providing said control signal.



3,353,103
TEMPERATURE RESPONSIVE CIRCUIT

Allan David Berry, Coventry, and Dušan Vučinić, Nuneaton, England, assignors to The General Electric Company Limited, London, England
Filed Apr. 30, 1964, Ser. No. 363,724
Claims priority, application Great Britain, May 15, 1963, 19,328/63
3 Claims. (Cl. 328—3)



1. A temperature responsive variable attenuator and control circuit comprising: first and second temperature controlled impedances; means interconnecting said impedances in said attenuator such that the gain of the attenuator depends primarily on the temperature of the first impedance and compensation for the effect on said first impedance of changes in ambient temperature is effected by said second impedance when the temperature of said first impedance has a first nominal value; a current supply circuit for supplying a current of variable magnitude; means for utilizing said current to heat said first impedance; a third temperature controlled impedance; and means interconnecting said third impedance with said supply circuit so that, when the current supplied by said supply circuit has a nominal value such that the temperature of the first impedance has a second nominal value different from said first nominal value, the value of said current varies with the value of said third impedance, thereby to effect, in conjunction with said second impedance, compensation for the effect of changes in ambient temperature on said first impedance when the temperature of said first impedance has said second nominal value.

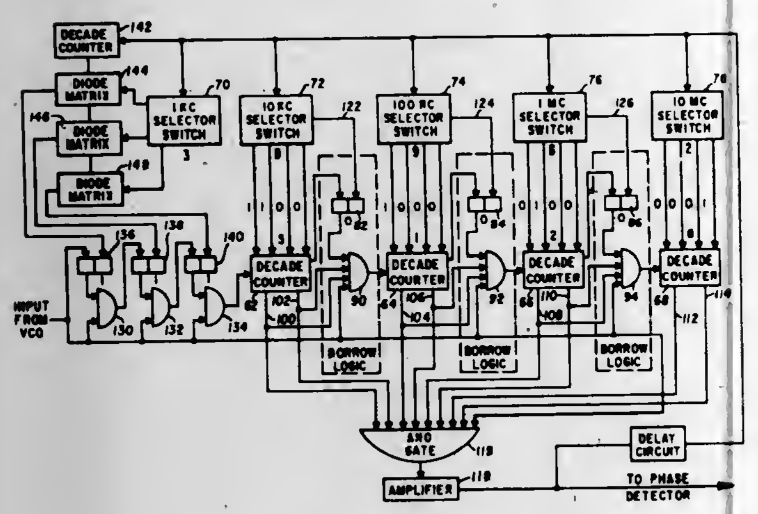
3,353,104

FREQUENCY SYNTHESIZER USING FRACTIONAL DIVISION BY DIGITAL TECHNIQUES WITHIN A PHASE-LOCKED LOOP

Thomas L. Loposer, Dallas, Tex., assignor to LTV Electrosystems, Inc., Dallas, Tex., a corporation of Delaware

Original application Oct. 2, 1963, Ser. No. 313,346, now Patent No. 3,217,267, dated Nov. 9, 1965. Divided and this application June 14, 1965, Ser. No. 463,532

8 Claims. (Cl. 328—39)



6. A fractional divider for performing, in response to a first series of pulses applied to its input, a sequence of divisions of the frequency of said first series of pulses by a series of whole number factors to produce a second series of pulses at its output in response thereto, said series of whole number factors being selected to produce an average frequency of said second series of pulses less than said frequency of said first series of pulses by said factor when averaged over said sequence of divisions, said divider comprising:

counter means for producing a divider output pulse in response to a number of said pulses in said first series applied to its input equal to the smallest of said whole number factors in said series of whole number factors and

logic means coupled between the output of said divider and the input of said counter means and responsive to said divider output pulses for withholding, for each of said divisions by said series of whole number factors greater than said smallest whole number factor, a number of said pulses within said first series of pulses from said counter input equal to the difference between the whole number factor of said division and said smallest whole number factor;

said counter means comprising:

selector means for selecting said smallest whole number factor from a plurality of whole numbers.

3,353,105

LOGICAL ELECTRIC CIRCUITS

Reginald Hugh Allmark and James Raymond Ellison, Stoke-on-Trent, England, assignors to The English Electric Company Limited, London, England, a British company

Filed Apr. 6, 1964, Ser. No. 357,594

Claims priority, application Great Britain, Apr. 11, 1963, 14,518/63

7 Claims. (Cl. 328—91)

1. A logic device comprising:

a magnetizable core;

a drive winding coupled to the core;

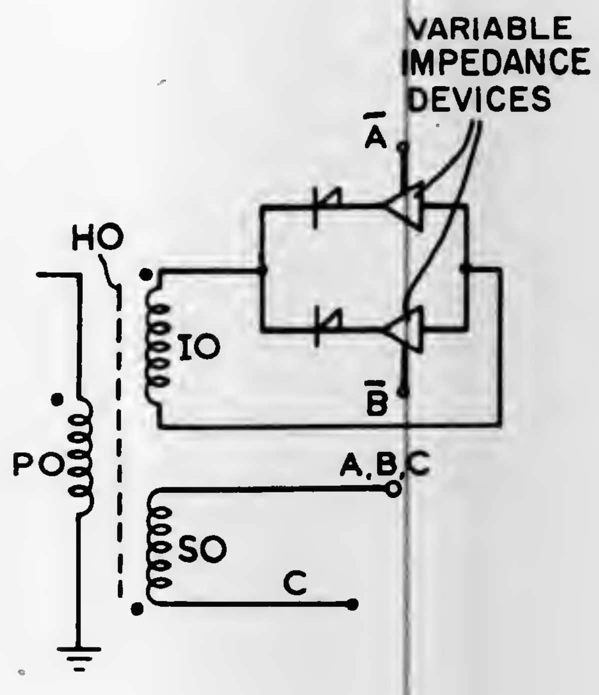
means for regularly applying drive pulses to the drive winding;

an inhibit winding coupled to the core;

a variable impedance means connected across the inhibit winding and controllable in response to an input signal to assume a high or a low impedance state;

an output winding coupled to the core; and

a source of logical signals connected to the output winding;



the core being switched by the drive pulses only if the variable impedance means is in the high impedance state and a true output signal being produced only if the core is switched and the signal produced by said source of logical signals is simultaneously true.

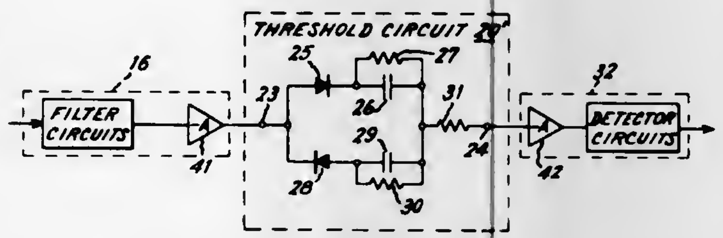
3,353,106

AUTOMATIC VARIABLE THRESHOLD CONTROL CIRCUIT

Raymond J. Dudek, Binghamton, Charles G. Mallery, Vestal, and Luther D. Sunderland, Apalachin, N.Y., assignors to General Electric Company, a corporation of New York

Filed May 28, 1964, Ser. No. 370,845

3 Claims. (Cl. 328—171)



1. A variable threshold circuit comprising:

(a) an input terminal,

(b) an output terminal,

(c) a resistance-capacitance circuit to accumulate a charge and to release that charge in accordance with its discharge time constant including

(1) a branch terminal,

(2) two identical branch circuits connected in parallel at said branch terminal,

(3) each said branch circuit containing a resistor and a capacitor connected in parallel,

(4) a common resistor connected between said output terminal and said branch terminal,

(d) two unidirectional conducting devices connected with opposite polarity, one between each said branch circuit and said input terminal in series with said branch circuit whereby the two said branch circuits with their respective unidirectional conducting devices are in parallel between said branch terminal and said input terminal.

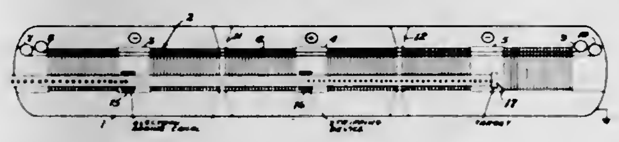
3,353,107

HIGH VOLTAGE PARTICLE ACCELERATORS USING CHARGE TRANSFER PROCESSES

Robert J. Van de Graaff, Lexington, Mass., assignor to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts

Filed Oct. 6, 1959, Ser. No. 844,711

16 Claims. (Cl. 328—233)



1. Apparatus for the acceleration of charged particles comprising a source of low velocity positive ions and a charge neutralizing device associated therewith, a high (with respect to said charge neutralizing device) negative voltage terminal having within it an electron adding device, a high positive voltage terminal having an electron stripping device within it, and means for causing particles originating in said positive ion source successively to travel through said charge neutralizing device, said electron adding device, and said electron stripping device, whereby said particles originating in said positive ion source are neutralized to permit them to reach the high negative voltage terminal at low velocity, whereby electrons are added to said neutrals within said high negative voltage terminal so as to form negative ions which are then accelerated from said high negative voltage terminal to said high positive voltage terminal, and whereby electrons are stripped from said negative ions within said high positive voltage terminal so as to form positive ions which are then accelerated away from said high positive voltage terminal.

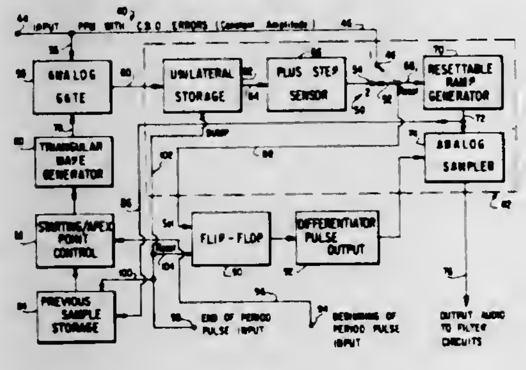
3,353,108

PULSE WEIGHTING DEMODULATOR

Richard A. Branham, Orange County, Fla., assignor to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland

Filed Jan. 6, 1964, Ser. No. 335,718

9 Claims. (Cl. 329—107)


INPUT PPM WITH CBO ERRORS (Constant Amplitude)
ANALOG GATE
UNILATERAL STORAGE
PLUS STEP SENSOR
RESETTABLE RAMP GENERATOR
TRIANGULAR WAVE GENERATOR
ANALOG SAMPLER
FLIP-FLOP
DIFFERENTIATOR PULSE OUTPUT
PREVIOUS SAMPLE STORAGE
OUTPUT AUDIO TO FILTER CIRCUITS

9. A single channel pulse position demodulator comprising input means for receiving a pulse train having a series of spaced time modulation frames wherein said modulation frame refers to the interval between the maximum excursions for pulses allowed for a single channel, in which a position modulated intelligence pulse may appear, said pulse train being subject to random interference pulses in said time frames of the same size as the said intelligence pulses, means coupled to said input means for modulating said pulse train to modify the amplitude of all pulses of the train, with a single pulse in each time frame being enlarged to a greater extent than any other pulse which may appear in that same time modulation frame, and means coupled to said modulating means for producing an analog output representative of the position of said enlarged pulse.

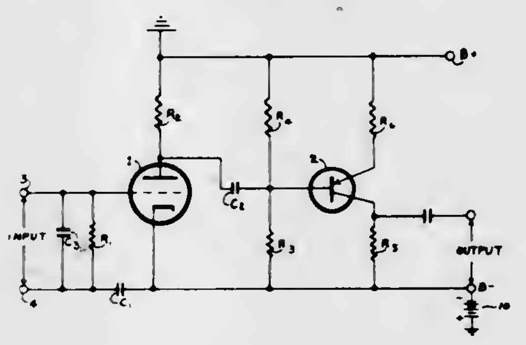
3,353,109

HYBRID PREAMPLIFIER FOR THERMISTOR BOLOMETER INFRARED DETECTORS

Hugh R. Carlon, Edgewood, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed July 17, 1964, Ser. No. 384,052

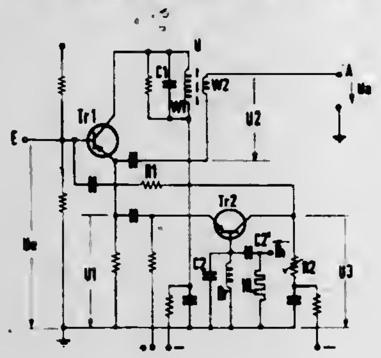
1 Claim. (Cl. 330—3)



A high gain, low noise preamplifier for amplifying signals of thermistor bolometer infrared detectors to the exclusion of noise signals having a higher or lower frequency than the frequency of said detector signal frequency comprising in combination, an electron tube amplifier of the common-cathode configuration having a grid, anode and cathode elements, a high impedance floating input means for coupling said detector signals to said electron tube amplifier whereby ground loop currents are not applied to the input of said electron tube consisting of a first terminal connected to said grid, a second terminal connected through a capacitor to said cathode and a grid resistor connected between said grid and said capacitor, a direct-current potential source having a positive pole connected to ground and a negative pole connected to said cathode, an anode resistor coupling said anode to said positive pole, a transistor amplifier comprising a transistor having a collector electrode, a base electrode and an emitter electrode, a collector resistance means connecting the collector electrode of said transistor to said negative pole, emitter resistance means connecting the emitter electrode to said positive pole, a voltage divider comprising a first resistor and a second resistor series connected across said positive and negative poles, said first resistor connected between said base electrode and said positive pole and said second resistor connected between said base and said negative pole, a first capacitor coupling said anode and said base electrode, the output signal of said electron tube amplifier developed across said anode resistor and applied to the input of said transistor amplifier through said ground and said first capacitor, the resistance value of said anode resistor selected to match the input impedance of said transistor amplifier whereby maximum signal transfer from the electron tube amplifier to the transistor amplifier is obtained, band-pass means comprising said first capacitor having a small capacitance value at low audio frequencies whereby the low frequency noise signals from the bolometer detector are not coupled to the transistor amplifier input and a second capacitor connected across said first and second terminals whereby high frequency noise signals from the bolometer detector are shunted to ground, and signal output coupling means consisting of a first output terminal connected to one end of said collector resistance means through a capacitor and a second output terminal connected to the opposite end of said collector resistance means.

3,353,110
REGULATED TRANSISTOR AMPLIFIER

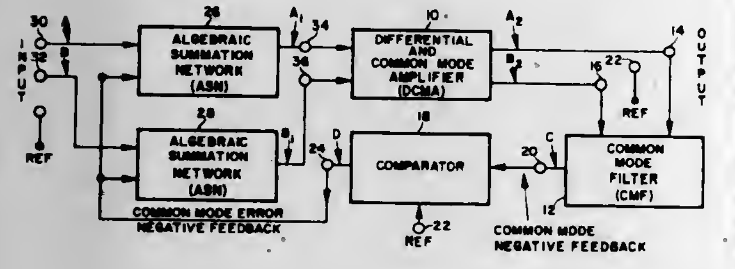
Josef Gammel, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany
Filed Jan. 25, 1965, Ser. No. 427,983
Claims priority, application Germany, Jan. 23, 1964, S 89,199
5 Claims. (Cl. 330—28)



1. An amplifier which is electrically controllable as to its amplification, comprising a transistor, arranged in common emitter circuit, an impedance, electrically controllable as to its magnitude, disposed in the emitter branch of the transistor and providing feedback, said impedance comprising the input resistance of a second transistor, arranged in common base circuit, and a direct-current-controlled thermistor disposed in the base circuit of said second transistor, whereby the base resistance active in alternating current manner, is determined by the action of said thermistor.

3,353,111
AMPLIFIER CIRCUITS FOR DIFFERENTIAL AMPLIFIERS

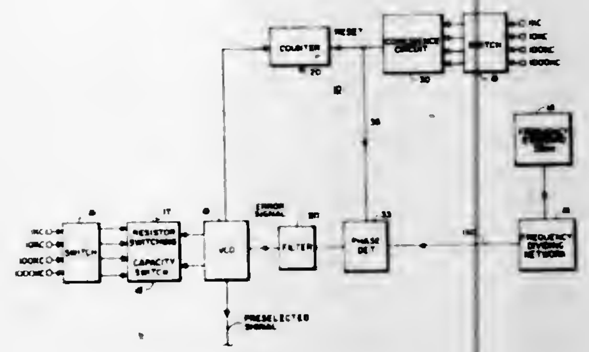
Marlin Van Wilson, Orange County, Fla., assignor to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland
Filed Apr. 1, 1963, Ser. No. 269,424
10 Claims. (Cl. 330—69)


INPUT
30
32
REF
26
ALGEBRAIC SUMMATION NETWORK (ASN)
28
ALGEBRAIC SUMMATION NETWORK (ASN)
A1
B1
34
36
10
DIFFERENTIAL AND COMMON MODE AMPLIFIER (DCMA)
18
COMPARATOR
A2
B2
14
16
22
REF
OUTPUT
20
12
COMMON MODE FILTER (CMF)
22
REF
COMMON MODE ERROR NEGATIVE FEEDBACK
COMMON MODE NEGATIVE FEEDBACK

1. A differential amplifier circuit for compensating for the presence of unwanted common mode voltages in said circuit, comprising a differential amplifier having a pair of inputs for receiving differential input voltages, and a pair of outputs for supplying a voltage proportional to the difference of said input voltages, means connected to said output terminals for removing therefrom the common mode voltage present in said output voltage and for generating from said common mode voltage a feedback voltage, means for comparing said feedback voltage with a predetermined voltage level so as to develop a common mode error voltage, which is negative with respect to said unwanted common mode voltages in said circuit, and means for applying said error voltage to said differential amplifier so as to effectively cancel said unwanted common mode voltages in said circuit.

3,353,112
FREQUENCY SYNTHESIZING SYSTEM

Glenn L. Richards, Webster, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed May 20, 1966, Ser. No. 551,594
5 Claims. (Cl. 331—16)



1. A system for synthesizing a signal pre-selected from a frequency band comprised of a plurality of precise frequencies spaced a predetermined number of cycles from each other in said band, said system comprising

(a) means for generating a reference signal having a precise predetermined frequency,

(b) oscillator means tunable over said band for providing said pre-selected signal,

(c) counter means for counting the cycles produced by said oscillator and having a plurality of flip-flops arranged in a plurality of counter stages,

(d) said counter means including a first decade counter actuated by said oscillator means, a second decade counter, and a first carry gate coupled to said second decade counter and being adapted to actuate said second decade counter when enabled, said first carry gate being enabled upon receiving the next pulse from said oscillator means after it receives signals from at least two stages of said first decade counter indicating a count of "9" being held in said first decade counter,

(e) coincidence means including a plurality of monitoring circuits each connected to a different one of flip-flops in said counter stage and adapted to yield an actuation signal upon monitoring of a predetermined number in said counter, and gate means responsive to said actuation signal and said reference signal at a precise number of cycles at the oscillator frequency after said actuation signal to develop an output signal adapted to reset all of the stages of said counter means,

(f) means for setting said coincidence means to said predetermined number which when multiplied by the frequency of said reference signal is equal to said pre-selected frequency, and

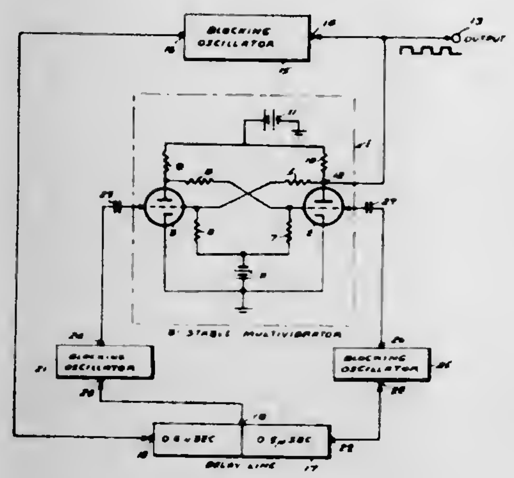
(g) means responsive to said output signal for providing an error signal to control the tuning of said oscillator to lock it in at said pre-selected frequency.

3,353,113
DIGITAL FREQUENCY STANDARD

Thomas Alva Stinnett, Ripley, Md.
(Box 637 La Plata, Md. 20646)
Filed June 22, 1965, Ser. No. 466,137
3 Claims. (Cl. 331—55)

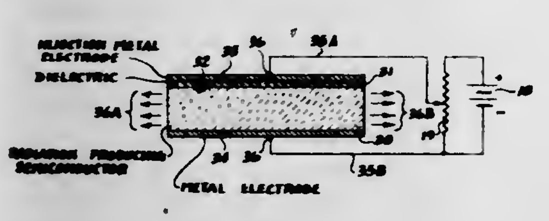
1. A digital frequency stadard of high stability comprising in combination a bi-stable multivibrator having an output terminal and two input terminals, a first triggering means, an electrical delay line provided with a center tap, said first triggering means coupled to said output terminal and responsive to the output pulse of said bi-stable multivibrator, the output of said first triggering means coupled

to one end of said electrical delay line, a second triggering means coupled between said center tap and one of said input terminals, and a third triggering means coupled between the opposite end of said electrical delay line and the other of said input terminals.



3,353,114
TUNNEL-INJECTION LIGHT EMITTING DEVICES

Russell V. Hanks, Seattle, and Alexander Matthew Unwin, Bellevue, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,704
14 Claims. (Cl. 331—94.5)



1. A laser comprising a sandwich structure including a first layer of semiconductor material, a second layer of dielectric material of a thickness less than 100 angstrom units next to the first layer, and a third layer as a source of current carriers next to the second layer; means for injecting current carriers from the third layer into the first layer by tunneling, including a voltage source having opposing terminals connected to the exposed faces of the first and third layers, said laser further including two reflective plane parallel surfaces disposed transverse to the layers, with the first layer lying therebetween and disposed perpendicular thereto, the value of source voltage and the available quantity of tunneling carriers from the third layer being sufficiently great to produce laser action.

3,353,115
RUBY LASER SYSTEMS

Theodore H. Maiman, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Continuation of application Ser. No. 102,698, Apr. 13, 1961. This application Nov. 29, 1965, Ser. No. 516,830
2 Claims. (Cl. 331—94.5)

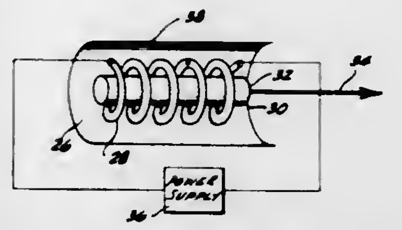
1. A three energy level laser comprising:

a ruby having atoms exhibiting a first energy level corresponding to a ground atomic state, a substantially discrete second energy level above said ground state and third energy levels defining a relatively broadband absorption third region extending above said second level;

a pumping source of broadband light energy optically coupled to said ruby for illuminating it and exciting atoms thereof to exhibit excitation at said third energy levels from whence they decay without substantial radiation loss to said discrete second energy level so as to establish a population inversion between said discrete second energy level and said ground state;

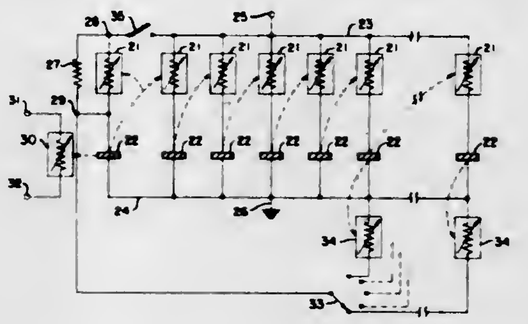
interferometer means optically coupled to said ruby and tuned to the frequency corresponding to that of the energy difference between said second energy level and said first energy level for reflecting light energy of said frequency repeatedly through portions of said ruby to generate a coherent light beam;

and coupling means for extracting the monochromatic coherent light beam from said ruby.



3,353,116
ELECTRO-OPTICAL OSCILLATOR

Cebern B. Trimble, Xenia, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Jan. 25, 1965, Ser. No. 427,901
21 Claims. (Cl. 331—107)



1. An electro-optical oscillator device capable of producing a periodically repeated output signal of predetermined frequency comprising, in combination,

a plurality of stages, including a first stage and a group of succeeding stages, with said succeeding stages being identical to one another, and with each said stage including at least a serial combination of a radiation-sensitive element and a radiation-emitting element capable of assuming either a high-level radiation-emitting state or a low-level radiation-emitting state, with optical coupling of elements between stages; said radiation-emitting element and radiation-sensitive element of said first stage also being optically coupled to each other;

means for applying power to said plurality of stages; said first stage being operable to initiate sustained operation of said oscillator device;

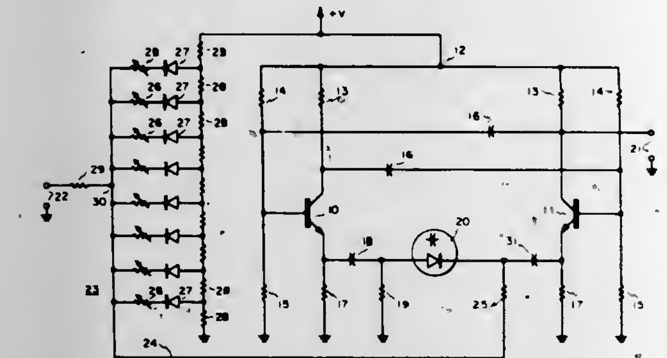
radiation-sensitive reset means associated with certain of said succeeding stages and operably connected to said first stage to effect a sequence of operation in which the radiation-emitting elements of the first and succeeding stages are reset from one state to the other; and

output means associated with at least one of the radiation-emitting elements, on which an output signal appears.

3,353,117
VARIABLE LINEAR FREQUENCY MULTIVIBRATOR CIRCUIT WITH DISTORTED INPUT VOLTAGE CONTROLLING THE VOLTAGE SENSITIVE FREQUENCY DETERMINING CAPACITOR

Donald Renkowitz, Whitestone, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Mar. 30, 1965, Ser. No. 443,783
7 Claims. (Cl. 331—113)



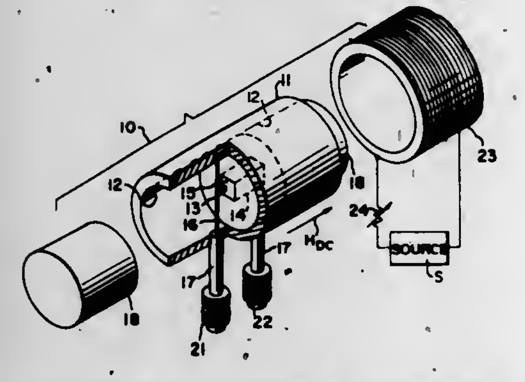
1. A variable frequency multivibrator of the type wherein the frequency of the output signal is varied in accordance with an input signal which comprises:

(a) a pair of transistors having first, second and third electrodes;
(b) means for coupling the second electrode of each of said pair of transistors to the first electrode of the other of said pair of transistors;
(c) a pair of timing resistors each of which is coupled to the third electrode of one of said pair of transistors;
(d) means for coupling a voltage source across each said transistor and the corresponding timing resistor;
(e) means for coupling the second electrodes of said transistors to a reference potential;
(f) a nonlinear capacitor coupled to the third electrodes of said transistors, the frequency of the output signal of the multivibrator being determined substantially by said timing resistors and said capacitor; and
(g) a shaping network having an input and an output for distorting an input signal to offset the nonlinearity of said capacitor, the output of said shaping network being coupled to said capacitor so that the application of an input signal to said shaping network provides a substantially linear variation in the frequency of said multivibrator.

3,353,118
MAGNETOSTATIC WAVE VARIABLE DELAY APPARATUS

Frank A. Olson, Palo Alto, Lyle D. Buchmiller, Menlo Park, and John R. Yaeger, Palo Alto, Calif., assignors, by mesne assignments, to Teledyne, Inc., Hawthorne, Calif., a corporation of Delaware

Filed May 19, 1964, Ser. No. 368,545
10 Claims. (Cl. 332—29)

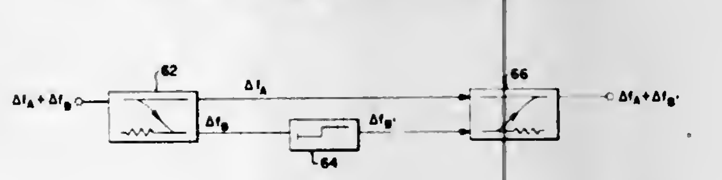


1. A variable delay apparatus comprising: a housing; a single crystal ferrimagnetic rod mounted in said housing, serving as the transmission medium and having a first end and a second end; means for coupling an input electromagnetic wave to said first end of said rod; means for coupling an output electromagnetic wave from said second end of said rod; means for establishing a magnetic field longitudinally of said rod from said first end to said second end thereof to produce long wavelength spin waves in said rod in response to said input electromagnetic wave and in turn produce an output electromagnetic wave at said second end of said rod with said spin waves; and means for changing the strength of said magnetic field to change the time delay between said input electromagnetic wave coupled to said first end of said rod and said output electromagnetic wave coupled from said second end of said rod.

3,353,119
DEVICE FOR LIMITING THE POWER LEVEL OF SIGNALS OCCURRING WITHIN AT LEAST ONE PRESELECTED PASSBAND OF A WIDER FREQUENCY BAND

William M. Honig, Allan Christopher and Murray Solomon, New York, N.Y., assignors to Loral Corporation, New York, N.Y., a corporation of New York

Filed Feb. 15, 1966, Ser. No. 527,420
4 Claims. (Cl. 333—17)

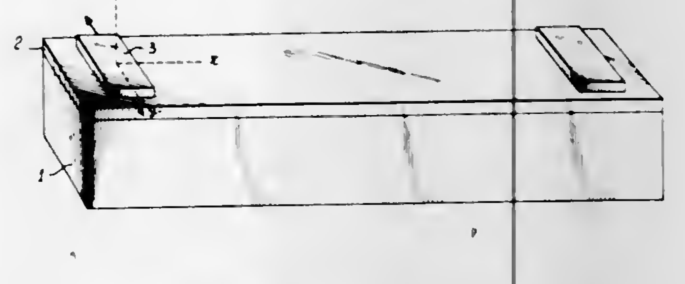


1. A device for limiting the power level of signals occuring within at least one preselected passband of a wider frequency band, said passband being intermediate the low and high extremes of said wider frequency band, comprising non-reciprocal means for separating the signals within said preselected passband from the remaining signals within said wider band, limiter means comprising a ferrimagnetic resonator coupled to said separating means for limiting the power of the signals within said preselected passband to a threshold level, and means for combining the output of said limiter means with said remaining signals.

3,353,120
ACOUSTIC PROPAGATION LINE FOR COMPRESSING TRAINS OF ELECTRIC WAVES

Pierre Tournois, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Jan. 14, 1965, Ser. No. 425,428
Claims priority, application France, Jan. 15, 1964, 960,326, Patent 1,390,365
5 Claims. (Cl. 333—30)

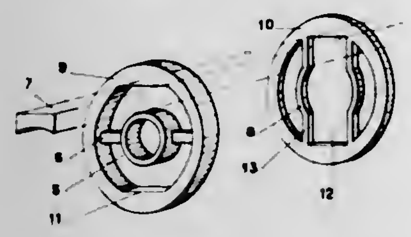


1. An acoustic dispersive line, comprising an elongated base of a first rigid material having two faces; a thin layer of a second rigid material deposited over one of said faces coextensively therewith and having two ends; said second material having, for a given mechanical vibration, a phase velocity lower than said first material; a first electromechanical transducer, coupled to one of said two ends of said layer for exciting therein a transverse vibration, and having an electric input, and a second electromechanical transducer coupled to the other end of said layer, and having an output.

3,353,121
DELAY LINE

Roland G. Dubé, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France

Filed Aug. 15, 1963, Ser. No. 302,369
Claims priority, application France, Sept. 4, 1962, 908,516
5 Claims. (Cl. 333—31)



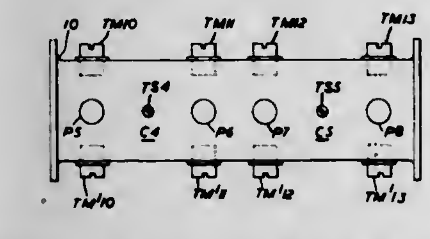
1. A delay line comprising:

a series of separate metallic ring-like members mutually spaced from each other so as to form individual ring-like members,
a guide member having a metallic cylindrical surface essentially coaxially surrounding said rings,
means for imparting to said delay line a forward dispersion characteristic to provide a fundamental space harmonic travelling along said delay line which is forward, including at least two individual support means for each of said metallic ring-like members for individually supporting each of said members within said guide exclusive of the next adjacent member and a corresponding number of conductive segment-like members secured to the inside of said guide and extending intermediate said support means over the length of said line,
and strap means periodically interconnecting said segment-like members within planes intermediate the planes of said successive ring-like members thereby substantially eliminating in said delay line the overlap of wave length band of propagation of the symmetric and anti-symmetric modes of propagation of said fundamental space harmonic, respectively.

3,353,122
WAVEGUIDE FILTERS HAVING ADJUSTABLE TUNING MEANS IN NARROW WALL OF WAVEGUIDE

Hussein Hamid Manoochehri, Chelmsford, England, assignor to The Marconi Company Limited, a British company

Filed Aug. 21, 1963, Ser. No. 303,481
Claims priority, application Great Britain, Aug. 24, 1962, 32,632/62
10 Claims. (Cl. 333—73)

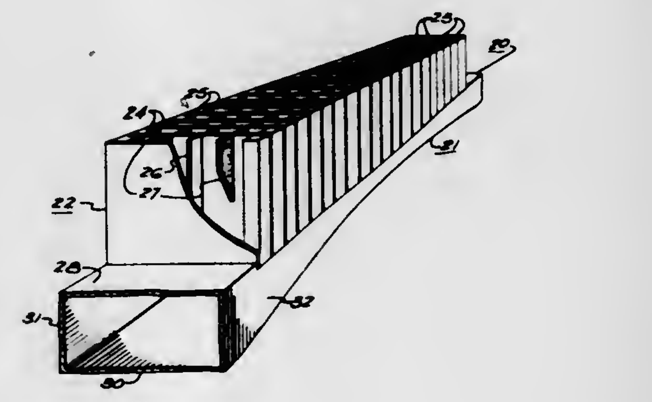


1. A waveguide filter comprising a length of rectangular waveguide having a pair of opposing broad faces joined together by a pair of opposing narrow faces, a pair of spaced conductive inductive posts, each extending fully between and in contact with said broad faces and positioned to lie generally parallel to the electric field upon excitation of the filter, said conductive posts being spaced to define a resonant length within said waveguide between said posts, and a plurality of adjustable conductive members each attached to a narrow face of said waveguide adjacent to a corresponding conductive post and movable within said waveguide toward and away from the corresponding conductive post to adjust the resonant frequency of said resonant length within said waveguide.

3,353,123
MICROWAVE FILTER COMPRISING ABSORBING STRUCTURES FOR REMOVING SPURIOUS WAVE ENERGY

Viktor O. Met, Palo Alto, Calif., assignor to General Electric Company, a corporation of New York

Continuation of application Ser. No. 184,626, Mar. 7, 1962. This application Sept. 1, 1965, Ser. No. 489,783
20 Claims. (Cl. 333—73)



1. A waveguide filter for transmitting first electromagnetic waves having predetermined fundamental frequency and for absorbing second electromagnetic waves of higher frequency, comprising: an elongated waveguide segment for transmitting therethrough said first electromagnetic wave; a wave energy absorbing means for eliminating substantially all wave energy of all frequencies above said predetermined frequency from said waveguide segment without substantial attenuation of the wave energy of frequencies below said predetermined frequency, said means comprising a plurality of waveguide sections having cross-sectional dimensions preventing propagation of said first electromagnetic waves and allowing propagation therein of said second electromagnetic waves, a plurality of apertures coupling said structure to said segment, each aperture directly coupling said segment to one of said sections for coupling said second electromagnetic waves from said segment to said waveguide sections said apertures being spaced apart along the length of said segment at intervals which are less than one-quarter wavelength of said first waves; and wave absorbent material in said waveguide sections to dissipate said second electromagnetic waves, said absorbent material being disposed sufficiently remote from said apertures to avoid substantial interception of said first electromagnetic waves.

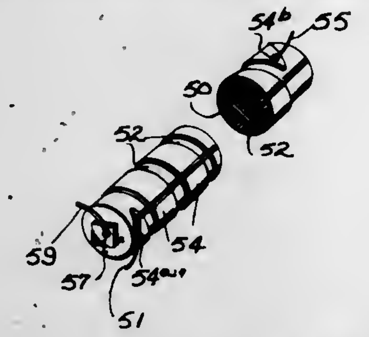
3,353,124
NICKEL OXIDE CAPACITORS

Le Roy Dilger, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed Apr. 18, 1963, Ser. No. 274,043
22 Claims. (Cl. 333—76)

1. A method for manufacturing a capacitor comprising painting two noncontiguous surfaces of a nickel member with conductive paint containing conductive particles

formed of a noble metal, frit and a solvent, the paint applied to one of said surfaces being oxygen-permeable, drying said paint by removing said solvent, and firing said nickel member in an atmosphere containing oxygen for a period of time and at a temperature such that said frit flows freely, said conductive particles maintain their integrity, and a thin continuous homogeneous layer of NiO having a green color is formed on the surfaces of said nickel plate exposed to said oxygen to form an intermediately disposed dielectric film.



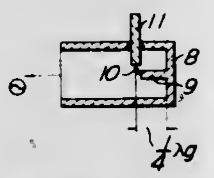
3,353,125
MICROWAVE WIDE-BAND DETECTORS

Toshio Aoki, Kodaira-shi, Japan, assignor to Hitachi Electronics Company, Ltd., Tokyo, Japan, a corporation of Japan

Filed June 4, 1965, Ser. No. 461,307

Claims priority, application Japan, Sept. 15, 1964, 39/52,397

2 Claims. (Cl. 333—98)



1. A microwave detector in a wave guide having a fixed finishing end comprising a first elongated metal electrode having a length of odd-number times about one fourth of a wave-length in the guide, said first elongated metal electrode being secured to the finishing end of the wave guide and extending in a direction parallel to that of electric wave propagation from the finishing end of said wave guide towards the generator, a second elongated metal electrode disposed within said waveguide in a position distant from said finishing end of the wave guide towards the generator by a length of odd-number times about one fourth of the wave-length in the guide, said second elongated metal electrode being electrically insulated from the walls of the wave guide, and being disposed in a direction extending at a right angle to the first elongated metal electrode and parallel to the high frequency electric field, and a microwave detecting element secured between the free ends of the first and second elongated metal electrodes.

3,353,126
RESONANT CIRCUIT TUNABLE OVER A LARGE FREQUENCY RANGE

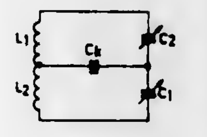
Peter Schucht, Munich, Germany, assignor to Siemens Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Continuation of application Ser. No. 393,643, Sept. 1, 1964. This application Oct. 31, 1966, Ser. No. 591,024

Claims priority, application Germany, Sept. 3, 1963, S 87,070

1 Claim. (Cl. 334—78)

A resonant circuit with a large frequency range subdivisible into partial ranges, comprising a bridge-like circuit including two inductances connected in series and two independently variable capacitances connected in series, the respective series circuits being connected in parallel, and a coupling capacitance connected between the junction point of said inductances and the junction point of said two variable capacitances, one of said variable capacitances serving for determination of relatively large partial ranges of the total frequency range, and the other of said variable capacitances serving for fine tuning within the respective partial ranges, said variable capacitors being dimensioned to be of approximately equal value in the middle of said frequency range to form a balanced bridge, said coupling capacitance having a capacity such that capacitance changes of said other variable capacitance will effect an equally great frequency change in each partial range.

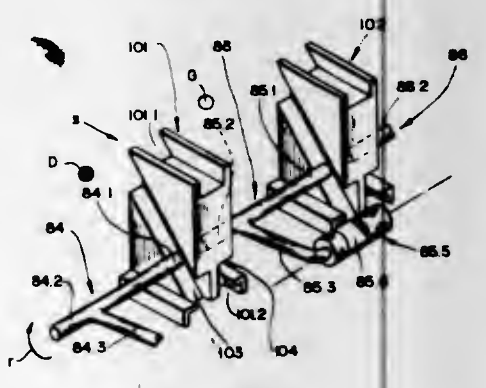


3,353,127
MULTIPOLE CIRCUIT BREAKER WITH INDIVIDUAL BREAKERS COUPLED BY SLIDES THEREBETWEEN

Joseph Francis, West Peabody, and Walter D. Pennell, Salem, Mass., assignors to Wood Electric Corporation, Lynn, Mass., a corporation of Massachusetts

Filed June 7, 1965, Ser. No. 461,637

6 Claims. (Cl. 335—9)



1. A multipole circuit breaker unit having a plurality of juxtaposed single pole breakers of the type wherein a linkage mechanism is locked to maintain contact closure until it is manually operated or automatically unlocked by tripping with an emergency actuator, comprising:

in each of said single pole breakers a trigger yoke having a tripping latch head and fastened thereto for rotation thereabout pin means extending laterally at least at one side of its breaker and being in substantial alignment with each other in closed contact position, for tripping the linkage mechanism upon rotation of the head by the pin means when moved by said actuator;

partition means for separating said single pole breakers; and

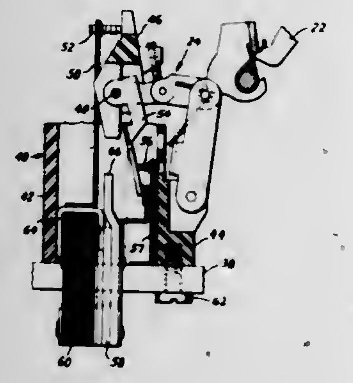
transfer means slidingly mounted on said partition means, and having on opposite sides facing adjacent single breakers transfer surfaces for engaging the ends of said aligned pin means extending towards each other from the adjacent breakers, the surfaces being inclined to the path of the respective pin means upon tripping, rotation of the pin means of one single breaker upon tripping thereof causing sliding of the transfer means that engages the tripped pin means, causing rotation of the opposite pin means of the adjacent single breaker engaged by the same transfer means, causing tripping of such breaker and opening of the respective contacts.

3,353,128
THERMALLY AND MAGNETICALLY RESPONSIVE ELECTRICAL CONTROL DEVICE

George E. Gauthier, Plainville, Conn., assignor to General Electric Company, a corporation of New York

Filed Feb. 17, 1966, Ser. No. 528,276

10 Claims. (Cl. 335—35)



1. In a thermally and magnetically responsive electrical control device for use in an electrical circuit, the combination comprising:

(a) a support;

(b) an electrical conductor mounted on said support;

(c) a control member mounted on said support and movable to perform a control function;

(d) a magnetic field piece mounted on said support in close proximity to said conductor forming a path of the magnetic flux created by an electrical current passing through said electrical conductor, said magnetic field piece having a pair of spaced arm portions each providing a pole portion, one of said arm portions being adapted to be saturated by the magnetic flux before the other of said arm portions;

(e) a movable armature mounted on said support and normally magnetically attracted toward engagement with said one arm portion, said armature being movable by magnetic attraction of said other arm portion toward engagement with said other arm portion upon the occurrence of a relatively large overload current in said conductor causing saturation of the flux path provided by said one arm portion, said armature being engageable with said control member upon magnetic engagement by said other arm portion to cause movement thereof;

(f) intermediate overload current thermally responsive means mounted on said support and responsive to current carried by said conductor, said intermediate overload current thermally responsive means being operable upon the occurrence of a predetermined overload current to move said armature away from said one arm portion and toward said other arm portion to permit said other arm portion to move said armature by magnetic attraction into engagement therewith and into engagement with said control member to cause movement thereof; and

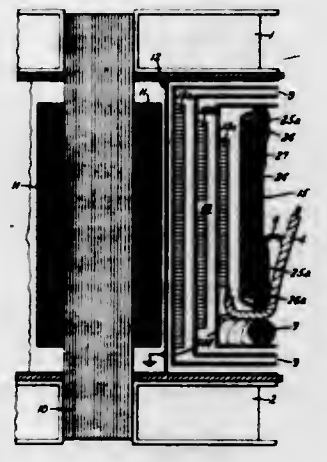
(g) low overload current thermally responsive means mounted on said support and responsive to current carried by said conductor, said low overload current thermally responsive means being operable upon the occurrence of a predetermined relatively low overload current to engage said control member and effect movement thereof.

3,353,129
HIGH VOLTAGE ELECTRIC INDUCTION APPARATUS

George E. Leibinger, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

Filed Oct. 24, 1965, Ser. No. 504,566

9 Claims. (Cl. 336—70)



7. An electric induction apparatus comprising:

(a) a cylindrical current conducting winding adapted to be connected at one outer axial end to a high voltage source of electric current supply,

(b) an electrostatic shield surrounding said winding for substantially its full axial length and including a split conductive cylinder and a split conductive ring of substantially equal diameter in axially spaced relation, said ring being adjacent said one outer axial end of said winding,

(c) an insulated high voltage line conductor connected to said one end of said winding and extending between said ring and said cylinder, and

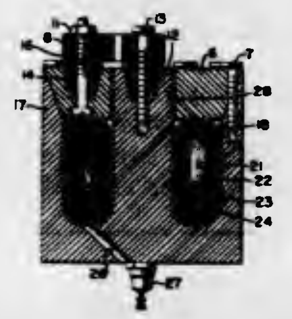
(d) electrically conductive tap connections from said line conductor to said ring and cylinder.

3,353,130
HIGH RATIO VACUUM TUBE INPUT TRANSFORMER

Abraham Silverstein, Hyattsville, Md., assignor to the United States of America as represented by the Secretary of the Navy

Continuation of application Ser. No. 250,964, Jan. 11, 1963. This application Aug. 11, 1965, Ser. No. 483,001

3 Claims. (Cl. 336—82)



1. A high ratio vacuum tube input transformer comprising:

an open ended cup-shaped single turn primary winding having a substantially solid center projection and a solid side wall tapered at the inside of the uppermost portion,

a solid cover plate having a tapered peripheral portion conforming to said side wall and held wedged in tight electrical contact with the side wall and being electrically insulated from the center projection, said primary winding and said cover plate forming a toroidal shaped cavity of conductive solid materials and having an ohmic resistance in the order of 1 milliohm whereby the attenuation of frequencies below 400 cycles is reduced, said solid side wall and solid cover plate being absorbtive to eddy currents whereby currents induced in the primary having frequencies above 2000 cycles per second are absorbed as eddy currents,

a pair of input terminals connected to said cover plate and to said center projection respectively,

a toroidal shaped highly permeable core,

a multi-turn secondary winding encircling said magnetic core, said magnetic core and said secondary winding being enclosed completely within the cavity, and shielded from high frequency currents by the primary winding and cover plate,

a pair of output terminals,

and means connected to said secondary winding and said pair of output terminals for conducting the voltage of said secondary winding to said output terminals.

3,353,131

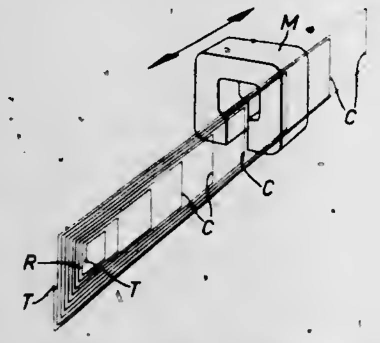
ELECTROMECHANICAL LINEAR VELOCITY TRANSDUCER

Peter W. R. Stubbs, Coventry, Ronald V. Woodward, Solihull, and Charles Ollerenshaw, Shirley, England, assignors to The Rover Company Limited, Solihull, Warwickshire, England, a company of Great Britain

Filed Aug. 19, 1966, Ser. No. 573,675

Claims priority, application Great Britain, Aug. 21, 1965, 35,963/65

7 Claims. (Cl. 336—130)



1. An electromechanical linear velocity transducer comprising an array in the form of a plurality of electrical conductors, said conductors being spaced apart along a line parallel to the direction in which relative movement is to occur, each of said conductors extending transversely to said direction, means connecting all of said conductors in the same electrical sense, a pair of output terminals, said means connecting said conductors across said output terminals, a magnetic circuit having an air gap, said array of conductors and said magnetic circuit being relatively movable in said direction along a line such that said conductors pass successively through said air gap on occurrence of relative movement.

3,353,132

LEAKAGE FLUX SUPPRESSOR WINDINGS FOR TRANSFORMERS

Franklin R. D'Entremont, Dover, N.H., assignor to General Electric Company, a corporation of New York

Filed May 27, 1965, Ser. No. 459,213

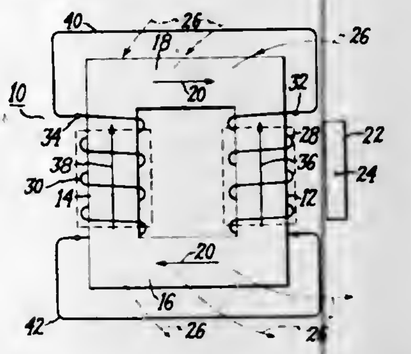
1 Claim. (Cl. 336—155)

In a core and coil construction having coils wound about a core member for operation as a transformer, the improvement of means for reducing the effect of leakage flux in the core member from adjacent conductors, said leakage flux reducing means comprising

(a) at least two flux suppressor windings wound on the core member,

(1) said flux suppressor windings connected together and wound in opposition such that normal flux in the core will produce opposing voltages in said flux suppressor windings,

(2) said flux suppressor windings mounted in the flux field of adjacent conductors,



(3) said flux field of adjacent conductors producing a voltage and current in said flux suppressor windings which will produce a flux in the core member in opposition to the leakage flux produced in the core member by the adjacent conductors.

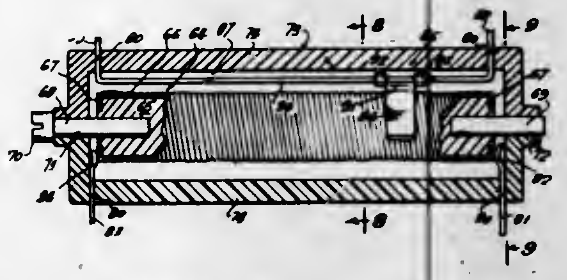
3,353,133

VARIABLE ELECTRICAL RESISTANCE DEVICE

Oscar Bellar, Alhambra, Calif., assignor of thirty-five percent to Terence Dalby, Alhambra, Calif.

Filed Nov. 2, 1966, Ser. No. 591,530

8 Claims. (Cl. 338—145)



1. In a variable electrical resistance device, a housing having a side wall and opposed end web portions and a resistance component mounted for rotation within said housing component; said resistance component comprising a cylindrical body having axially aligned bearing journals at the opposite ends thereof rotatably mounted in bearings formed in said housing end web portions, resistance means on said cylindrical body comprising at least one length of wire closely wound thereon the adjacent convolutions of said wire being insulated from one another and the outer surface of said length of wire being uninsulated and the adjacent convolutions of said wire forming a helical groove on the exterior of said resistant component, means for electrically connecting said resistance means in an electrical circuit comprising at least one slip ring fixed to one end of said cylindrical body in coaxial relation thereto and electrically conductively connected to one end of said wire, and a stationary brush element carried by said housing including a contact portion maintained in yielding contact with said slip ring and another portion extending through a wall of said housing for connection in an electrical circuit, a movable brush component means carried by said housing and including means effecting both electrical conductive connection with said uninsulated surface of said resistance wire and mechanical engagement with said helical groove, a bus bar within said housing disposed parallel to and substantially longitudinally coextensive with said resistance component on which said brush component is slidable, and means on the exterior of said housing for effecting rotation of said resistance component with resultant movement of said brush component along said bus bar by reason of said mechanical engagement of said brush component with said helical groove, said housing completely enclosing said resistance component and being formed of interfitting parts each including a portion of both end web portions so shaped as to combine to form said bearings for said journals whereby assembly of said housing simultaneously encloses said resistance component and the contact portions of said brushes and mounts said resistance component for rotation within said housing on said bearings and said bus bar and said brush component being wholly mounted on one of said housing parts.

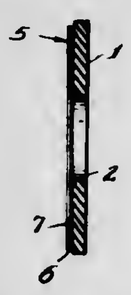
3,353,134

RESISTIVE ELEMENT AND VARIABLE RESISTOR

Vito D. Elarde, Downers Grove, Ill., assignor to Amphenol Corporation, Broadview, Ill., a corporation of Delaware

Filed Aug. 17, 1964, Ser. No. 389,834

6 Claims. (Cl. 338—160)



1. A resistive element comprising an insulating base coated with an electrical resistance alloy consisting essentially of 20 to 65 percent nickel, 15 to 75 percent chromium and the remainder iron, having a film coating thereon of a noble metal selected from the group consisting of platinum, rhodium, and iridium, said nickel-chromium-iron coating having a thickness of between 100 and 2,000 Angstrom units, and said film coating having a thickness such that the resistance density thereof is between 8,000 and 13,000 ohms per square.

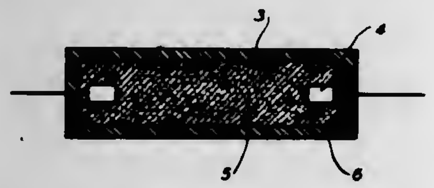
3,353,135

POLYTETRAFLUOROETHYLENE LUBRICANT FOR CARBON COMPOSITION RESISTORS

George F. Chadwick, North Tonawanda, N.Y., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 14, 1965, Ser. No. 463,846

7 Claims. (Cl. 338—226)



1. A carbon composition resistor comprising a conductive core member having 0.2% to 1% by weight polytetrafluoroethylene dispersed therein, electrical terminal means attached to said core member, and an insulating jacket surrounding said core member.

3,353,136

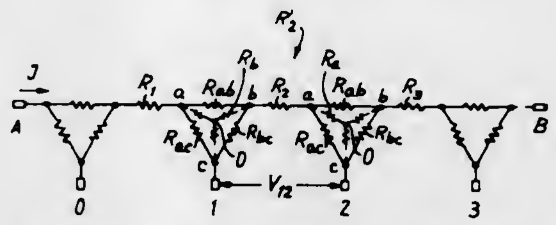
PRINTED RESISTORS

Victor Sergeevich Umantsev, Krasnodar, U.S.S.R., assignor to Zavod Elektroizmeriteljnykh priborov, Krasnodar, U.S.S.R.

Filed June 5, 1964, Ser. No. 372,918

1 Claim. (Cl. 338—308)

A resistor unit comprising an electrically insulative support and a sheet of resistance material mounted on said support and including discrete quantites of resistance material forming a plurality of spaced interconnected main resistors constituting a main circuit including current leads, and plurality of delta connections each including three additional resistors connected between main resistors and including respective voltage taps, whereby the electrical resistance in said circuit between said taps is selectively decreasable in value in response to an increase in value of selected of said additional resistances.



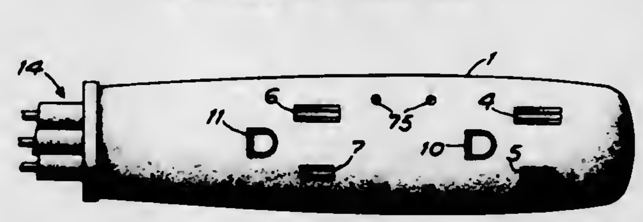
3,353,137

CURRENT TAP WITH GROUND

Daniel B. Miller, Providence, R.I., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed June 30, 1965, Ser. No. 468,392

8 Claims. (Cl. 339—14)



1. A current tap with ground comprising:

a molded body;

a first pair of parallel plug receivable openings in one side of said body;

second and third pairs of parallel plug receivable openings in the opposite side of said body;

a ground connection opening adjacent each of said pair of parallel plug receivable openings;

a pair of parallel contact strips disposed in said body in adjacent relationship to said pairs of parallel plug receivable openings; and

a flat ground contact strip having receptacles for receiving a plurality of ground connection members of connector plugs disposed between said contact strips and parallel thereto in adjacent relationship to said ground connection openings, said ground strip including a slit and two shaped portions extending from said slit in opposite transverse directions to form an opening of a ground receptacle.

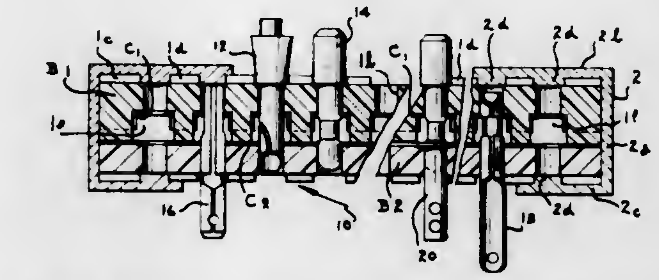
3,353,138

PROGRAMMING SYSTEM

Winfield Warren Loose, Reading, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Mar. 22, 1965, Ser. No. 441,700

8 Claims. (Cl. 339—18)

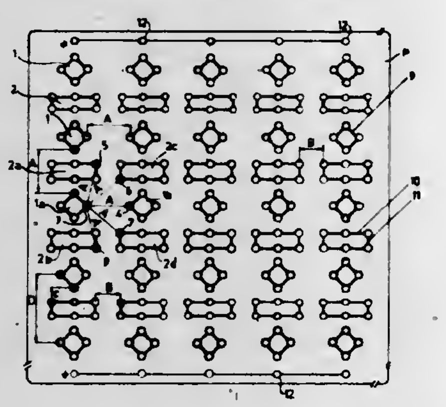


1. In an electrical connecting device, the combination including an insulating board assembly comprised of at least two board members and means to hold said board

members together, each said board member including at least an aperture extending normally therethrough with the said apertures of the two board members in axial alignment, one board including a groove and a contact strip fitted therein, the contact strip including a contact surface secant to the aligned board apertures, the other board including a projection of a width to fit within said groove, said projection being offset from said contact surface and of a length to engage said contact strip and hold said strip in position in said assembly.

3,353,139
PANEL PROVIDED WITH A NUMBER OF SOCKET CONTACTS WHICH ARE ARRANGED IN A DEFINITE PATTERN

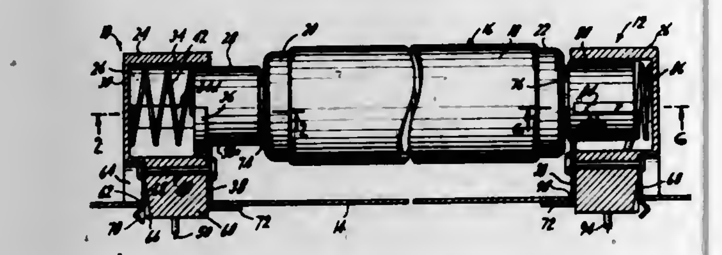
Willem Ribbelink, The Hague, Netherlands
Filed Oct. 11, 1965, Ser. No. 494,842
Claims priority, application Netherlands, Oct. 12, 1964, 64—11,830
7 Claims. (Cl. 339—18)



1. Panel, provided with a number of contact sockets arranged in a definite pattern and serving to receive the contact pins of electrical or electronic components, comprising groups of four interconnected contact sockets placed on the angular points of a diamond while the centres of these diamonds lie on the intersecting points of equidistantly spaced, mutually perpendicular coordinate lines, characterized in that in the direction of the first coordinate between adjoining diamond-shaped groups, groups of contact sockets are provided, said sockets being oriented along the sides of a rectangle, the said groups thereby comprising at least two rows of three. aligned, mutually interconnected, contact sockets, while each group is symmetrical in respect of both the connecting line of the centres of the diamonds concerned and a line, equidistantly spaced from these centres and being perpendicular to said coordinate.

3,353,140
FLUORESCENT LAMPHOLDER WITH SELF-ALIGNING SEALING MEANS

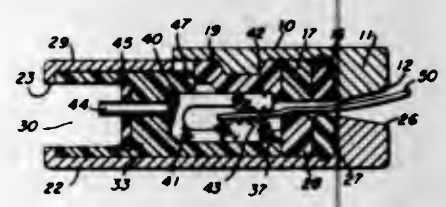
George Johnson, Bronxville, N.Y., assignor to Kulka Electric Corporation, Mount Vernon, N.Y., a corporation of New York
Filed Apr. 26, 1965, Ser. No. 450,900
12 Claims. (Cl. 339—56)



11. A lampholder assembly comprising a compressible lampholder and a stationary lampholder mounted in spaced alignment and each having a socket portion for receiving the end of a lamp mounted therebetween, said stationary lampholder comprising a body having a recess therein, a separate socket member contained in said recess and spaced from the rear surface thereof, means holding said socket member in a position within said recess substantially against forward or rearward translation therein, said means including a member extending between the rear of said socket member and the rear surface of said recess and providing tilting movement of said socket member within said recess.

3,353,141
FLAT CABLE CONNECTOR

Donald M. Budal, 5312 Cloud Way, San Diego, Calif. 92117
Filed Mar. 22, 1966, Ser. No. 538,163
7 Claims. (Cl. 339—99)



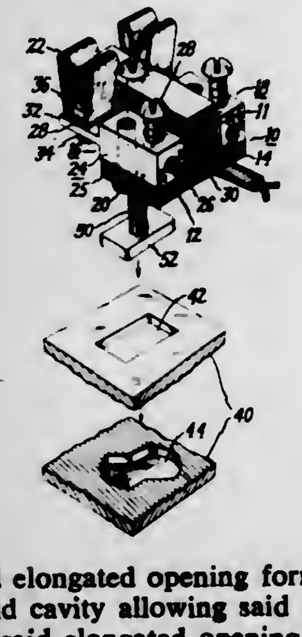
1. A sealed connector for electrically connecting a cable to a socket comprising;
- an insulated housing having a cavity therein,
- a deformable electrically conductive means positioned in said cavity and having a pair of opposed members and a conductor, said opposed members being formed to receive said cable therebetween and said conductor extending to the housing exterior,
- a conductor seal disposed between said conductor and said housing,
- an insulating cover covering said cavity and abutting one of said opposing members, said cover being adapted to be depressed onto said housing and secured thereon,
- means for securing said cover to said housing,
- sealing means having opposed portions adjacent said cover and said housing, said opposed portions being formed to permit insertion of said cable therebetween,
- stress relieving means having opposed elements adjacent said cover and said housing, said opposed elements being formed to permit insertion of said cable therebetween and said stress relieving means positioned between said sealing means and said cavity, and
- a cover seal disposed between said cover and said housing whereby, upon insertion of said cable into said cavity between said opposed members and forceably depressing and securing said cover, said conductive means is deformed forcing said opposed members into electrical connection with said cable, said electrical connection being sealed within said cavity by compression of said seal means and said cover seal by said cover and said housing.

3,353,142
AUXILIARY TERMINAL FOR METER SOCKETS

John H. Spencer, Rochester, N.H., assignor to General Electric Company, a corporation of New York
Filed Apr. 8, 1965, Ser. No. 446,674
1 Claim. (Cl. 339—125)

An auxiliary terminal for securing to the socket terminal block of a meter socket comprising, in combination, an insulated base portion, at least one connector assembly secured to said insulated base portion, said connector assembly comprising a terminal jaw and a wire connector electrically connected together, and securing means attached to said insulated base portion for securing said auxiliary terminal to said socket terminal block, said

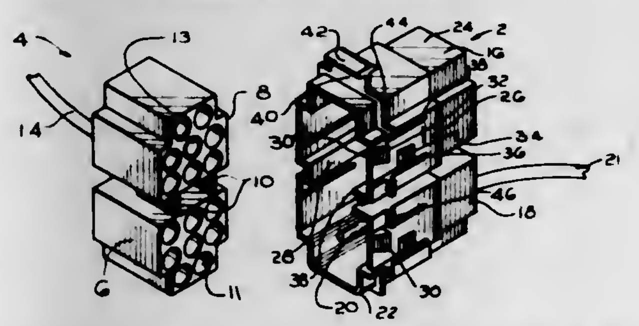
securing means being in the form of an elongated nut threaded to a bolt which extends from said insulated base portion, and said socket terminal block having an elongated opening through which said nut extends, with a



cavity beneath said elongated opening forming shelf portions therewith, said cavity allowing said nut to turn out of alignment with said elongated opening but preventing rotation of said elongated nut.

3,353,143
ELECTRICAL CONNECTOR

William Vito Pauza, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed July 21, 1965, Ser. No. 473,605
5 Claims. (Cl. 339—128)

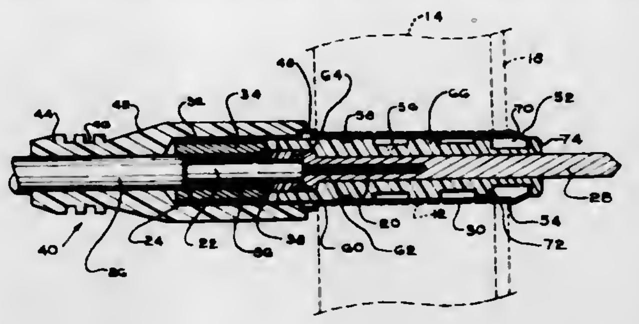


1. An electrical connector housing comprising a block having a cavity extending therethrough for reception of a contact terminal, said block having a pair of bosses thereon, said bosses being spaced-apart by a distance greater than the thickest panel in which said housing is adapted to be mounted, said bosses providing opposed surfaces adapted to bear against a side of said panel, panel-abutting means integral with, and extending from said block, said panel-abutting means being disposed in a plane extending transversely of the axis of said housing and between the planes of said opposed surfaces, said housing being insertable through an opening in a panel from either side thereof with concomitant deflection of one of said bosses until said panel is disposed between said one boss and said panel-abutting means, said housing being held on said panel by the bearing of said one boss and by said abutting means on opposite sides of said panel.

3,353,144
PATCHCORD ASSEMBLY

Ronald John Brookman, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 21, 1966, Ser. No. 522,227
1 Claim. (Cl. 339—217)

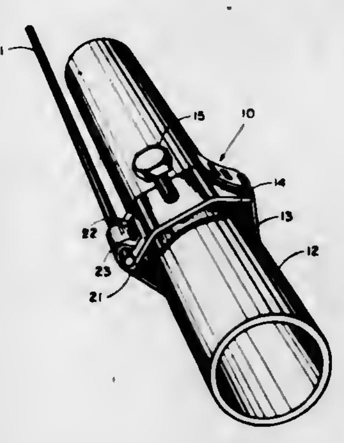
In a plug contactor adapted for use with shielded cable including a central pin member adapted to be terminated to the center conductor of the cable and a conductive shell adapted to be terminated at one end to the shielding of the cable and having at its other end a plurality of cantilever members each carrying a detent adapted for radial movement to latch the contactor within a board, the improvement comprising an insulating insert disposed between said shell and said pin member, said insert having a portion adjacent the fixed end of said cantilever members with a diameter approximately equal to the inside diameter of said cantilever members to thus serve as a pivot point for said cantilever members, said insert further having an enlarged end section disposed beyond the end of said conductive shell, said enlarged end serving to insulate said cantilever members from said central pin member and further serving to guide said plug



contactor into an aperture in the board, a flange disposed on said insert between said pivot portion and said enlarged end, said flange lying beneath said cantilever members and having an outer diameter slightly less than the inside diameter of said cantilever members whereby said cantilever members are normally out of contact with said flange, said insert having a radially relieved section adjacent said flange and underlying the free ends of said cantilever members to permit inward radial movement of said cantilever members, said flange serving to limit the inward movement of said cantilever members and to provide a partial restoring force thereto to displace said detents radially outward into contact with the board.

3,353,145
ELECTRICAL GROUNDING CLAMP

George A. Sodderland and Allan J. Solar, London, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed June 3, 1965, Ser. No. 461,135
8 Claims. (Cl. 339—249)



1. A ground clamp for electrically connecting a conductor to a grounded element comprising a strap adapted to substantially encircle the grounded element, a saddle member engaging opposite ends of the strap and means for moving the saddle member away from the grounded element to tension the strap; one end of said saddle member having a curved portion for receiving the conductor, a slot adjacent the curved portion and a tab projecting into the slot from one side thereof, the strap having a slot for engaging the tab; said strap passing through the

slot and over the conductor whereby the conductor is encircled partially by the strap and partially by the saddle member and is thus clamped between the saddle member and the strap when the latter is tightly secured about the grounded element.

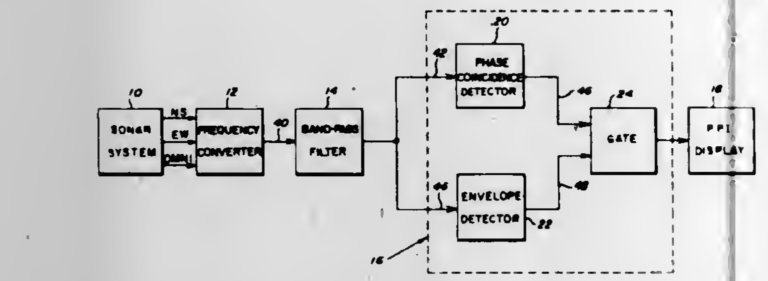
3,353,146

SIGNAL DISPLAY SYSTEM

Vartan Vartanian, Barrington, R.I., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed June 1, 1965, Ser. No. 460,361

14 Claims. (Cl. 340—3)



1. A noise elimination means for substantially reducing random noise which is mixed with valid signals, comprising:

a first means responsive to said valid signals and noise for producing selected zero-crossing signals therefrom including delaying means for delaying said valid signals and noise by a plurality of times, zero-crossing means connected to said delaying means for generating said selected zero-crossing signals, and a summation means connected to said zero-crossing means for summing said selected zero-crossing signals;

a second means also responsive to said valid signals and noise for producing an energy envelope therefrom; and

a third means connected to said first and second means for correlating said selected zero-crossing signals with said energy envelope.

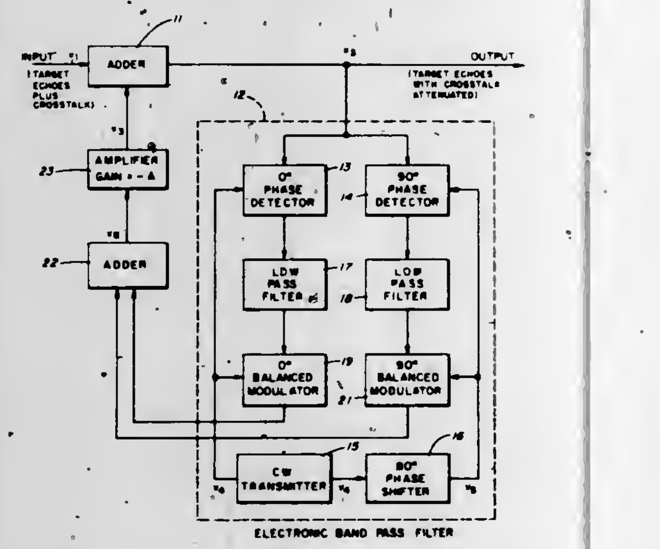
3,353,147

CLOSE-IN TARGET ELECTRONIC CANCELLATION DEVICE

George W. Meeker, Jr., Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 18, 1966, Ser. No. 536,947

4 Claims. (Cl. 340—3)



1. An electronic notch filter having a variable center frequency, comprising:

an adder circuit receiving as one input the signal to be filtered and providing a filtered output signal, and

an electronic band pass filter the center frequency of which varies in step with a master frequency, the output of said adder circuit being connected to the input of said electronic band pass filter and the output of said electronic band pass filter being connected to a second input of said adder circuit.

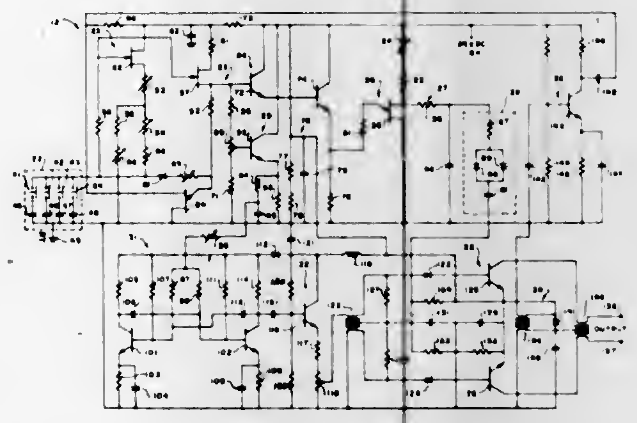
3,353,148

FM SONAR EXCITER

Francis J. Murphree, Sunnyside, and James H. Hammond, Jr., Panama City, Fla., assignors to the United States of America as represented by the Secretary of the Navy

Filed Mar. 22, 1966, Ser. No. 538,164

10 Claims. (Cl. 340—3)



1. A frequency modulation signal generator comprising in combination:

means for generating a sawtooth signal having an adjustable nonlinear ramp voltage and a rapidly decaying following edge voltage;

means effectively connected to the output of said sawtooth signal generating means for producing a substantially sinusoidal output signal having a frequency that is substantially linearly modulated in response to said nonlinear ramp voltage;

means connected to the outputs of said sawtooth signal generating means and said substantially sinusoidal output signal producing means for blanking said substantially sinusoidal signal for a period of time which encompasses the occurrence of the aforesaid decaying following edge voltage; and

means connected between an output of said substantially sinusoidal signal producing means and an input of the aforesaid sawtooth signal generating means for resetting said sawtooth signal generating means at a predetermined time within the time period said substantially sinusoidal signal is blanked.

9. A nonlinear sawtooth signal generator comprising in combination:

a B+ voltage;

a first field effect transistor having a drain, a source, and a gate, with the drain thereof connected to said B+ voltage;

a diode having an anode and a cathode;

a first resistance means connected between the gate of said first field effect transistor and the anode of said diode;

a first and second variable resistance means commonly joined in series and connected between the source of said first field effect transistor and the anode of said diode;

a ground;

a third variable resistance means connected between the common junction of said first and second variable resistance means and said ground;

a second field effect transistor having a gate connected to the gate of said first field effect transistor, a drain, and a source adapted for being the output of the subject nonlinear sawtooth signal generator;

a second resistance means connected between the drain of said second field effect transistor and said B+ voltage;

a unijunction transistor having an emitter, a first base, and a second base, with the first base thereof connected to said ground;

a third resistance means connected between the emitter of said unijunction transistor and the source of the aforesaid second field effect transistor;

a fourth variable resistance means connected between the emitter of said unijunction transistor and the cathode of the aforesaid diode;

a fourth resistance means connected between the second base of said unijunction transistor and said B+ voltage; and

a variable capacitance means connected between the anode of said diode and said ground.

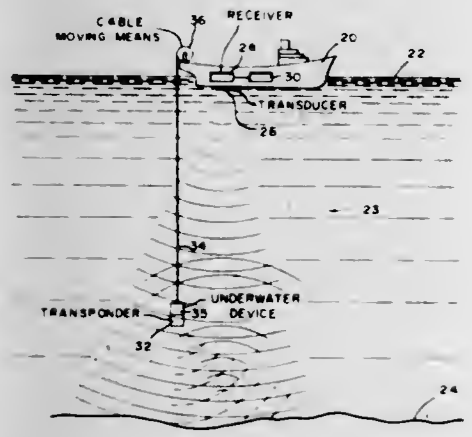
3,353,149

ACOUSTIC RANGING SYSTEM

David H. Frantz, Jr., West Tisbury, and David D. Ketchum, Falmouth, Mass., assignors to Ocean Research Equipment, Inc., Falmouth, Mass., a corporation of Massachusetts

Filed Mar. 30, 1966, Ser. No. 538,623

6 Claims. (Cl. 340—3)



5. Apparatus for indicating the position of a device submerged in a body of water between the upper surface and bottom of said body, said

apparatus comprising in combination;

means disposed at a station adjacent the surface of said body for transmitting first acoustic pulses toward said bottom;

transponder means associated with said device and suspended so as to be movable with said device between said surface and said bottom, said transponder means being adapted for producing second acoustic pulses each responsively to a first acoustic pulse received at said transponder means; and

means at said station for timing the transmission of each first pulse and the arrival at said station of each second pulse and reflections of said pulses from said bottom.

3,353,150

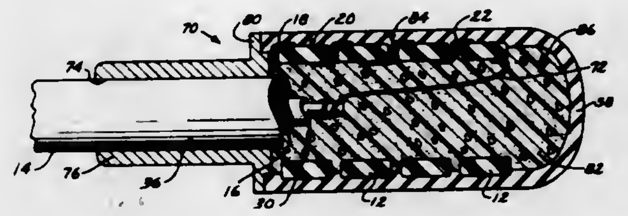
FOAM-FILLED TRANSDUCER

Gordon Lee Jacox, Fairfax, Va., assignor to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia

Filed Oct. 22, 1965, Ser. No. 502,085

9 Claims. (Cl. 340—10)

1. A transducer comprising a base, a cover mounted to said base thereby forming an enclosed cavity, a plurality of electromechanically-responsive ceramic elements mounted in said cavity and in pressure-transmitting relation with said cover, a rigid foamed cellular material selectively located within said cavity for acoustically isolating said elements to improve the frequency response characteristics of said transducer, said material also absorbing unwanted compressional waves within said cavity, supporting said elements and lending rigidity to said transducer.



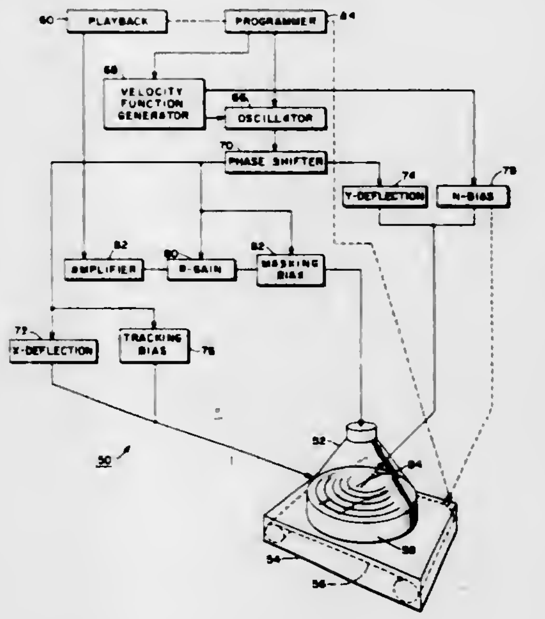
3,353,151

COMMON TANGENT STACKING METHOD AND SYSTEM FOR LOCATING SONIC ENERGY VELOCITY DISCONTINUITIES

Don W. Rockwell, London, England, assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Sept. 30, 1964, Ser. No. 400,369

50 Claims. (Cl. 340—15.5)



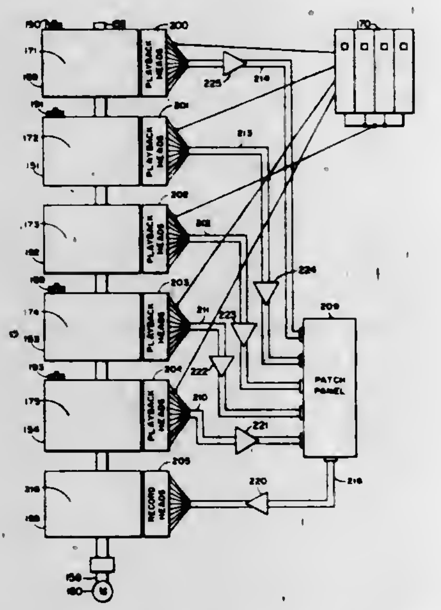
1. The method for locating subsurface acoustic velocity discontinuities from a plurality of acoustic response signals each representative of the amplitude of acoustic energy received at a detection point and induced at a source point which comprises:

converting each of the response signals to data representative of a scaled wave-front pattern, each of the coordinate points of each scaled wave-front pattern having a value representative of the amplitude of the respective acoustic response signal at the point in time on the response signal that is equal to the acoustic travel time from the respective source point to the coordinate point and back to the respective detection point, and

combining the data representative of the scaled wave-front patterns to produce data representative of the sums of the amplitude values of the common coordinate points of the wave-front patterns if the patterns were superimposed in relative scale positions whereby the combined data will be representative of a composite pattern having reinforcement patterns representative of the scale positions of the acoustic velocity discontinuities.

3,353,152
RE-RECORDING SEISMOMETER TRACES OBTAINED FROM THE ROLL ALONG TECHNIQUE TO PRODUCE A SIMULATED BIDIRECTIONAL SEISMIC SURVEY

Clyde W. Kerns, Irving, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,635
4 Claims. (Cl. 340—15.5)



1. In seismic exploration wherein a linear spread of detectors and a seismic source offset from the same end thereof are operated to produce a plurality of multitrace records representative of overlapping coverage of reflection points on subsurface horizons, each multitrace record resulting from a separate actuation of said seismic source, the method comprising the steps of:

(a) re-recording a first group of traces from a first of said records in sequential order of linearly varying source-detector distances, said first group of traces being representative of reflection points on a first segment of a subsurface horizon, and

(b) re-recording a second group of traces in side-by-side relation on one side of said first group of traces, said second group of traces being selected from different ones of said records to represent a second segment on said one side of said subsurface horizon, said re-recording of said second group of traces including:

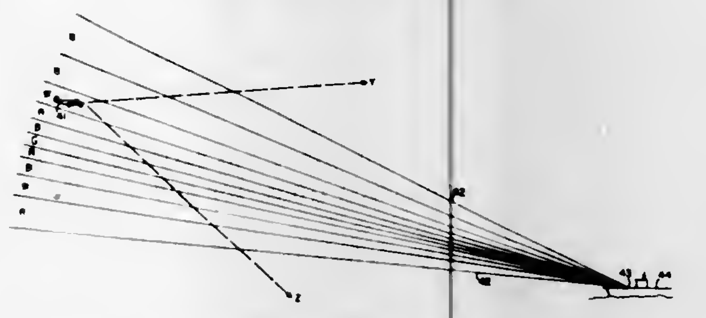
(1) re-recording a first trace to one side of an end trace of said first group, said first trace having substantially the same source-detector distance as a trace in said first group, said first trace representing a reflection point on said second segment and next to a reflection point represented by said end trace,

(2) re-recording a second trace adjacent said first trace, said second trace having substantially the same source-detector distance as another trace in said first group, said second trace representing a reflection point on said second segment and next to said reflection point represented by said first trace, and

(3) continuing to re-record adjacent traces in a sequence such that each trace has substantially the same source-detector distance as a trace in said first group, whereby there is produced a simulated split spread seismogram representative of singlefold subsurface coverage.

3,353,153
OPTICAL GUIDANCE SYSTEM FOR PROVIDING VEHICLE MOTION ERROR INFORMATION

Henry P. Birmingham, Washington, D.C., Alan W. Baldwin, Oxon Hill, Md., and Barbour Lee Perry, Alexandria, Va., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 22, 1965, Ser. No. 427,521
10 Claims. (Cl. 340—26)



1. An optical guidance landing system for providing a pilot with a visual indication of proper glide slope and his rate of change of position error, comprising:

projection means operationally adapted to be located on a landing area in close proximity to the desired point of touchdown, and having at least one light source and a lens system adjusted to focus a beam of light from said light source at optical infinity;

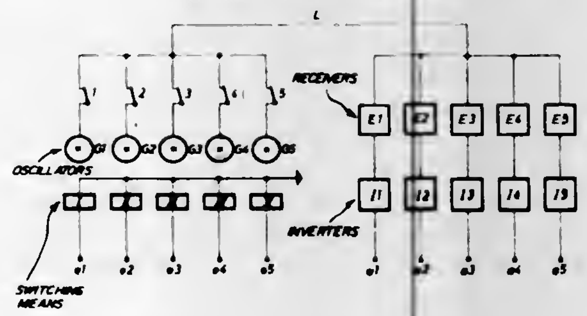
said projection means operationally adapted to be directed at an angle to said landing area representative of said glide slope;

coded filter means having a repetitive pattern thereon capable of indicating rate of change of position error and proper glide slope when projected to an approaching aircraft; and

drive means operationally adapted to continuously drive said filter means through said beam of light in a predetermined direction, such that the projected light beam is caused to be altered in accordance with said pattern.

3,353,154
MULTI-FREQUENCY CODE SIGNALLING SYSTEM

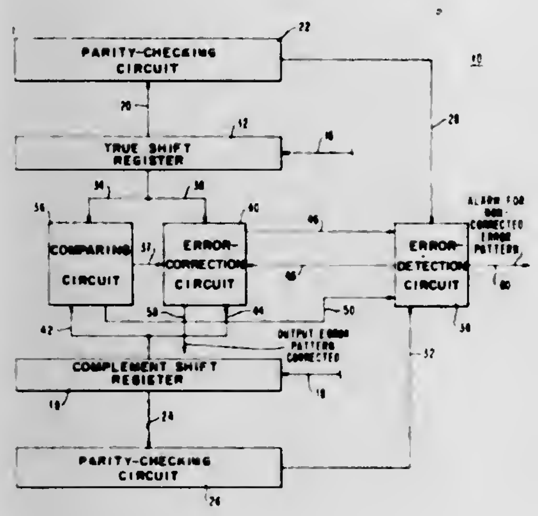
Theodor Burian, Ditzingen, Heinz Plitschka, Stuttgart-Zuffenhausen, and Georg Vogel, Schwieberdingen, Ludwigsburg, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 13, 1963, Ser. No. 302,492
Claims priority, application Germany, Aug. 23, 1962, St 19,626
7 Claims. (Cl. 340—146.1)



1. A multi-frequency code signalling system comprising a plurality of transmitting and receiving stations, line means connecting said stations, generating means in said transmitting stations normally connected to said line for generating a plurality of signalling frequencies each associated with an incoming supervisory signal, there being "*n*" number of frequencies, and switching means responsive to said incoming supervisory signals for individually disconnecting "*m*" number of said associated signalling frequencies in coded combinations from said line thereby transmitting a desired *n*-out-of-*m* coded signal as an absence of the *n* number of certain of said signalling frequencies.

3,353,155
ERROR CONTROL OF DIGITAL INFORMATION SIGNALS WITH INHERENT INFORMATION REDUNDANCY

Robert T. Chien, Yorktown Heights, and Jack J. Stein, Bronx, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,178
15 Claims. (Cl. 340—146.1)



1. Apparatus for predetermined error control of digital information signals characterized in the format of a Bose-Chaudhuri error-correcting code, the information part of said signals having inherent balanced information redundancy, comprising, in combination:

input means to store the information streams of said information signals;

first logic means to process said information streams on the digit basis to check if consistency is maintained with said inherent balanced information redundancy;

second logic means for error-detection and error-correction of said signals in accordance with said Bose-Chaudhuri error-correcting code; and

output means responsive to said first logic means and said second logic means to provide said information from said information streams in accordance with the nature of said error control.

3,353,156
BUFFER PROCESSOR I/O OPTION

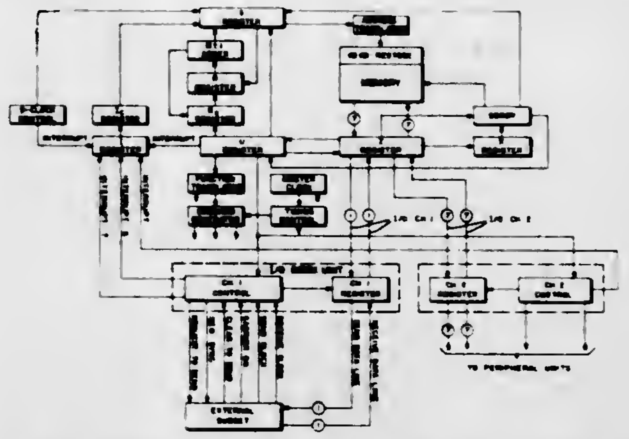
Carl W. Ehrman, Spring Lake Park, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 10, 1964, Ser. No. 388,468
18 Claims. (Cl. 340—172.5)

1. An information handling system comprising:

(a) first means having a plurality of individually selectable locations each comprising a group of N bit storage positions, said first means being responsive to a location selecting signal indication for providing simultaneous access to all said N storage positions of the selected location;

(b) second means having a single bit storage position and adapted for connection to a peripheral unit with a serial operating mode, said second means being responsive to a control signal indication for providing access to its said storage position;

(c) a group of N bit transfer means, each *n*th transfer means being operatively connected with the corresponding *n*th storage position of any first means location only when accessed, and a particular one of said transfer means being operatively connected with the second means storage position only when accessed;

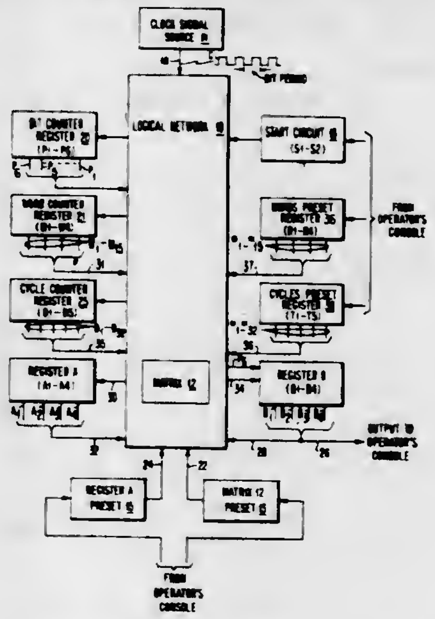


(d) first control means operable to successively apply location selecting signal indications to said first means and to successively apply control signal indications to said second means so as to transfer only one serial train of bits between said first means and said second means; and

(e) second control means for automatically inhibiting operation of said first control means after a predetermined number of bits have been transferred between said first means and said second means.

3,353,157
GENERATOR FOR VARIABLE AND REPETITIVE SEQUENCES OF DIGITAL WORDS

Donald J. Chesarek, San Jose, and Harold E. Petersen, Saratoga, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 28, 1964, Ser. No. 399,598
7 Claims. (Cl. 340—172.5)



1. A word generator, comprising:

first and second registers each capable of storing a word;

a network for transfer of words between said registers;

first preset means to establish the words transferred by said network in a sequence;

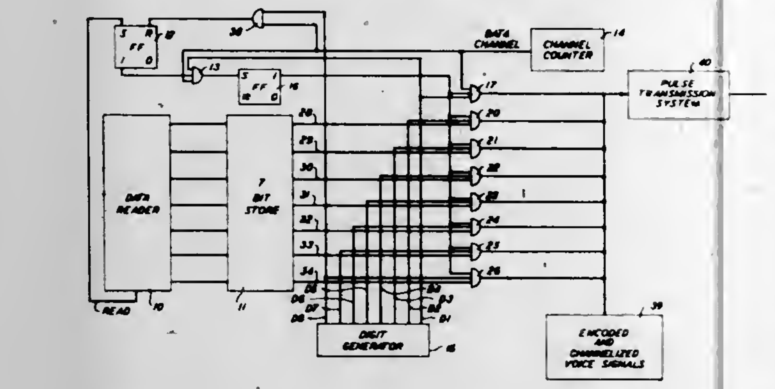
second preset means to establish the first word in the sequence;

third preset means to establish the number of words in the sequence; and fourth preset means to establish the number of sequences.

3,353,158
DATA TRANSMISSION

Claude G. Davis, Colts Neck, and Lewis C. Thomas, North Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 8, 1964, Ser. No. 402,505
6 Claims. (Cl. 340—172.5)

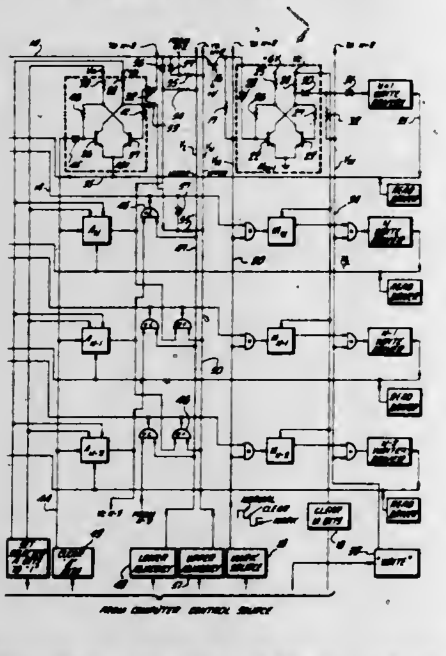


1. Apparatus for transmitting data from a data source over a predetermined channel of a multiple channel regenerative pulse code modulation transmission system comprising, in combination, a source of data characters, means at the transmitting terminal of said transmission system to store each of said data characters, means at said transmitting terminal to transmit each of said stored data characters in said predetermined channel, means at the receiving terminal to store the received data, and means at said receiving terminal to measure the rate at which data is stored at the receiving terminal and read the data out of said stores at a rate equal to the average rate at which data is stored at the receiving terminal.

3,353,159
ASSOCIATIVE MEMORY WITH VARIABLE WORD LENGTH CAPACITY

Edwin S. Lee III, West Covina, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 11, 1964, Ser. No. 417,679
8 Claims. (Cl. 340—172.5)

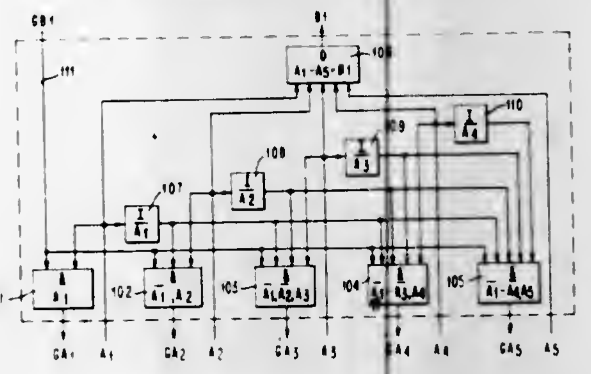


3. An associative memory system comprising a plurality of memory cells arranged in rows and columns for storing binary coded information, the binary bits of the same binary order being arranged in the same column and the binary bits comprising a character being arranged in the same row, each of said memory cells including input means for receiving binary coded signals to be associatively compared with the signals stored in the memory cells and being adapted to provide an output indication of the binary state of the cell upon being associatively interrogated, a comparison register comprising a plurality of storage cells for storing binary coded characters to be associatively compared with the characters stored in the memory cells, the comparison cells storing bits of the same binary order being arranged in the same column with the corresponding memory cells and being connected in parallel circuit relationship with the input means for said corresponding memory cells, individual storage means for each row of memory cells connected to be responsive to the output indications of the memory cells of the row comprising a character for storing a signal indicative of a matching or mismatching character, individual control means for each row of memory cells connected to be responsive to the matching output indications from the individual storage means having a preselected physical location and a control signal specifying the physical location of the character to undergo comparison relative to the location of a character stored in memory and whose location is stored by the individual storage means, and a control signal source for specifying the desired physical location of a character to be compared relative to a character stored in memory and connected to each of said individual control means, said individual control means being connected to said storage means for the corresponding row for delivering thereto a signal indicative of a match or mismatch relative to the specified physical location in combination with the output signals from said memory cells.

3,353,160
TREE PRIORITY CIRCUIT

Arwin Bruce Lindquist, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 9, 1965, Ser. No. 462,652
9 Claims. (Cl. 340—172.5)

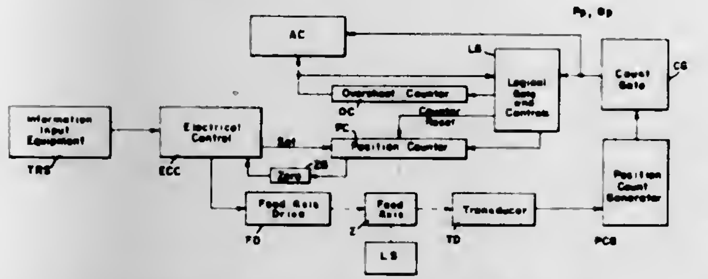


1. A tree priority circuit comprising:
- a plurality of tree priority circuit modules arranged in a tree configuration having a plurality of levels including a first level and at least one additional level, each level having significantly fewer modules than the previous level, all modules being identical, each said module comprising a module priority go-ahead signal input terminal, a plurality of individually ranked priority demand input terminals and go-ahead signal output terminals;
- a source of priority demand signals which may be characterized as having positions in a hierarchy of rank;
- means connecting said source of priority demand signals to said priority demand input terminals of the modules forming said first level;
- means connected to all of said priority demand signal input terminals for providing at a module priority demand signal output terminal an output signal whenever any one of said priority demand signals is present;
- means connected to said priority demand signal input terminals of said module and to said module priority go-ahead signal terminal of said module for providing an output at a selected one of said go-ahead signal terminals related to the highest ranked priority demand signal available.

3,353,161
ELECTRICAL CONTROL SYSTEM FOR MACHINE TOOL DEVICE WITH OVERSHOOT CORRECTION FEATURE

Esteban J. Toscano, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed June 23, 1965, Ser. No. 466,315
8 Claims. (Cl. 340—172.5)



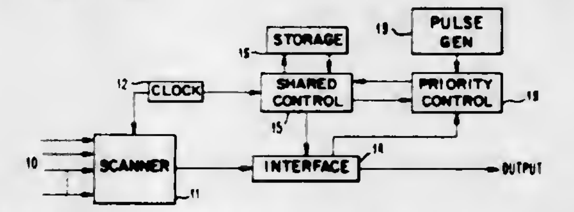
1. In a positioning system, the combination of:
- drive means for positioning a movable element;
- electrical control means coupled to and controlling said drive means;
- a position counter;
- means coupled to said position counter to set said position counter to a count indicative of a desired position of said movable element;
- count pulse generating means coupled to said movable element for producing a count pulse for each predetermined increment of movement of said movable element;
- a move flip-flop normally in one electrical state during movement of said movable element;
- an overshoot counter;
- position counter gating means coupled to and controlled by said overshoot counter in a particular electrical configuration of said overshoot counter for gating count pulses to said position counter to operate said position counter;
- stop signal gating means coupled to said position counter and having an output coupled to said move flip-flop to switch said move flip-flop from said one electrical state to a second electrical state upon the occurrence of a count pulse when said position counter is in a predetermined electrical state;
- and output gating means coupled to said move flip-flop and said overshoot counter and enabled when said overshoot counter is in a predetermined electrical configuration and said move flip-flop is in said second electrical state to produce an electrical output.

3,353,162
COMMUNICATION LINE PRIORITY SERVICING APPARATUS

William H. Richard, Barrytown, and Leo T. O'Connor, Jr., Hyde Park, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 29, 1965, Ser. No. 467,944
12 Claims. (Cl. 340—172.5)

1. Data communication apparatus comprising
- a plurality of communication lines,
- means for cyclically scanning said lines for sampling data received thereat,
- output means,
- control means for causing data sampled at said lines to be transferred to said output means, and
- means for indicating that data was ready for transfer but was not accepted by said output means during a scan cycle,

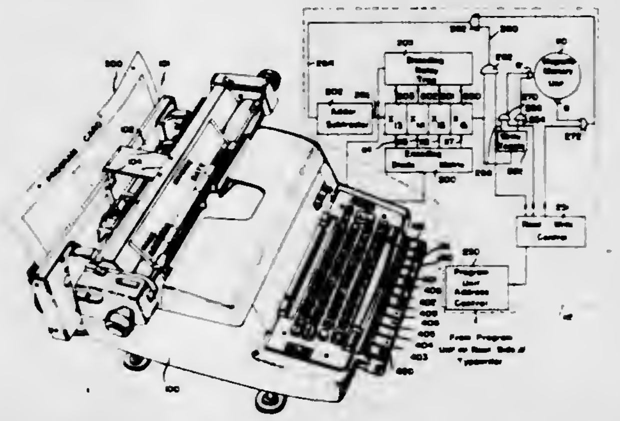


- said control means being responsive to said indicating means during at least one scan cycle subsequent to operation of said indicating means for permitting transfer to said output means of data available but not transferred during a prior cycle and for inhibiting transfer of all other data.

3,353,163
DATA PROCESSING WITH TYPEWRITER INPUT-OUTPUT DEVICE AND TYPEWRITER CARRIAGE CONTROLLED PROGRAM MEANS

Winsor Soule, Jr., Berkeley, and Eugene P. Binnall, El Cerrito, Calif., assignors to SCM Corporation

Original application Dec. 27, 1961, Ser. No. 162,526, now Patent No. 3,265,874, dated Aug. 9, 1966. Divided and this application July 22, 1966, Ser. No. 567,212
16 Claims. (Cl. 340—172.5)



1. In a computing machine having at least two registers, a printing unit having a shiftable carriage for holding and positioning a document-in-preparation in at least three predetermined sequential shifted positions of the carriage; and means to print-out a value from said registers onto said document; the combination of: a totalizing key means responsive to the position of said carriage when standing in a second predetermined sequential position to initiate said print-out means to cause print-out of a total standing in said first register; said key means also being responsive to the position of said carriage standing in a third predetermined sequential position to initiate said print-out means to cause print-out of a total standing in said second register; and said totalizing key means further being responsive to the position of said carriage standing in the first predetermined sequential position to shift the carriage from said first position through said second position to said third position and to initiate said print-out means to cause print-out of the total standing in said second register.

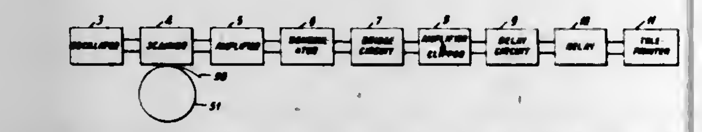
3,353,164
COMPARISON READ-OUT CIRCUIT

William A. Folsom, 303 11th St., Schenectady, N.Y. 12306

Filed June 10, 1963, Ser. No. 286,829
2 Claims. (Cl. 340—173)

1. A read-out system for the reading of code bits on a web comprising
- a pick-up transducer head responsive to the presence of the bits which converts their presence into electrical signals,

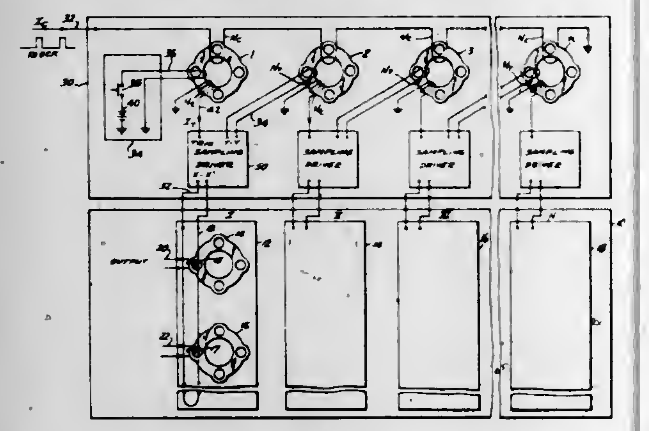
means to move the web relative to the pick-up head,
a first amplifier connected to the pick-up head,
a bridge circuit connected to the first amplifier and including first and second electrically balanced legs, the first leg being a rate circuit,



a second amplifier connected to the bridge circuit and biased to cut-off by the balancing of the legs of the bridge circuit, and operated by their unbalancing;
a pulse time delay circuit connected between said second amplifier and a relay connected to said pulse delay circuit.

3,353,165
MAGNETIC CORE DRIVER AND SYSTEM

Edward C. Dowling, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 16, 1963, Ser. No. 302,497
2 Claims. (Cl. 340—174)

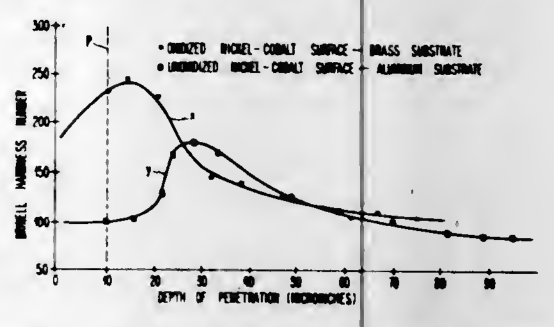


1. An improved cycle control circuit for producing a cycle of sampling pulses to a series of stages of magnetic core devices comprising a plurality of control cores linked by a common winding in a common sense of clock pulse developed MMF drive, a sampling pulse means connected to each control core to produce a pulse having a relatively long duration positive swing of relatively low amplitude followed by a relatively short duration swing of relatively high amplitude, the said sampling means for a given control core being connected to a succeeding control core and to a stage of magnetic core devices to apply said relatively high amplitude pulse to sample said stage device and set said succeeding control core, and means to set one of the said control cores to initiate sampling, wherein each of the said control cores is a multi-aperture core having a major and at least a minor aperture and the sampling pulse means is connected to each control core by a winding linking a control core major aperture and the sampling means connected to a given control core is connected to a succeeding control core by a winding linking the control core through turns linking a minor and major aperture thereof.

3,353,166
OXIDE COATED MAGNETIC RECORDING MEDIUM

George W. Brock, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 23, 1963, Ser. No. 318,395
6 Claims. (Cl. 340—174.1)

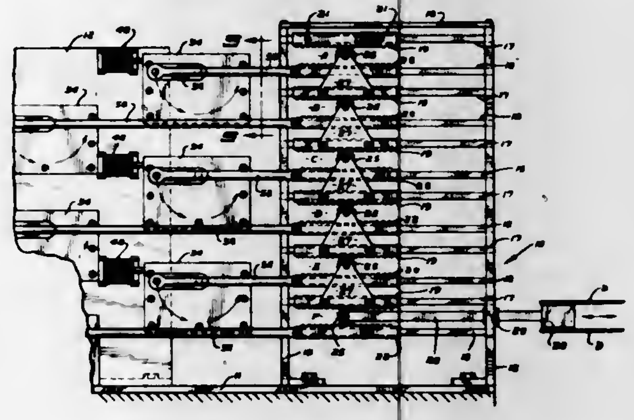
1. A magnetic recording device comprising:
a magnetic record member including a magnetizable material forming a surface portion, said surface portion having formed in place thereon by an oxidizing process effected directly on the magnetizable material a thin protective oxide film of said magnetizable material, and



a magnetic transducer in contact with said oxide film for cooperating with said magnetizable material.

3,353,167
HEAD POSITIONER FOR A MAGNETIC DATA STORAGE DEVICE

Howard L. Daniels, West St. Paul, Minn., assignor, by mesne assignments, to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 9, 1964, Ser. No. 336,804
8 Claims. (Cl. 340—174.1)



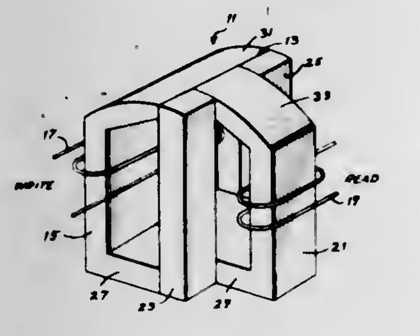
1. In a system for positioning a magnetic reproducer head at various preselected positions along a rectilinear path over a magnetic information storage surface, a head support, a plurality of independently movable linear movement determining devices, each of said devices including gear means intermeshing with gear means on the next adjacent device in accordance with the steps of a progressive series to add the respective movements of said devices, said gear means having a gear ratio for producing a transfer of a predetermined portion of movement of any one of said devices to the next succeeding device in the series, said head support being operatively connected to the last said device in the series for movement thereby along a rectilinear path, drive means additional to said devices for causing said series movement, said drive means for moving said devices singly or in any selected combination, and said drive means including actuators each movable about an axis generally perpendicular to said rectilinear path.

3,353,168
WIDE-RECORD NARROW-READ MAGNETIC HEAD

Eleuthere Poumakis, East Islip, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Apr. 9, 1964, Ser. No. 358,564
4 Claims. (Cl. 340—174.1)

1. A magnetic transducer head comprising,
a magnetic core having an air gap,
said air gap being defined on one side by a first portion of magnetic permeable material for the full width of said head,

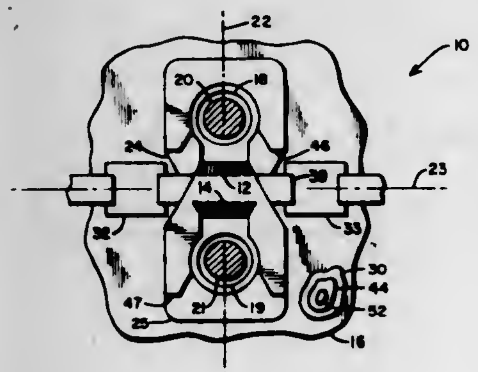
said air gap being defined on the other side by a second portion of magnetic permeable material for a width less than the full width of said head,
means to magnetically interconnect the bases of said first and second portions to form a first magnetic circuit including the portion of the air gap defined by the first and second portions, and
said air gap being further defined on said other side by a third portion of magnetic permeable material,



said last-mentioned portion having a predetermined width so that along with the width of the second portion it extends to the full width of said head, and
means to magnetically interconnect the base of said third portion and the base of said first portion to form a second magnetic circuit including the portion of the air gap defined by the first and third portions.

3,353,169
MULTI-APERTURE MATED THIN FILM MEMORY ELEMENT

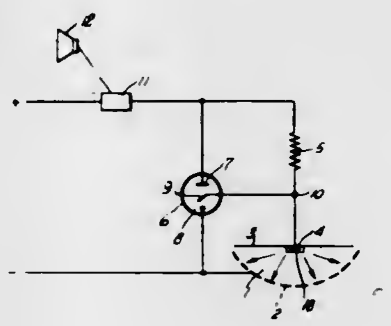
Richard P. Halverson, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,364
4 Claims. (Cl. 340—174)



1. A magnetizable memory element, comprising:
a substrate member;
said substrate member having first and second apertures therethrough and forming a web therebetween;
first and second open-flux-path layers of a magnetizable material;
said first and second layers each associated with said first and second apertures, respectively;
a conductive strip having a longitudinal axis oriented along said web;
third and fourth open-flux-path layers of magnetizable material;
said third and fourth film layers each associated with said first and second apertures, respectively, and each having portions superposed portions of said first and second layers, respectively, for closing the otherwise open flux path of said first and second layers around said first and second apertures, respectively, wherein said first and fourth layers have superposed central portions in the area of said web for sandwiching and enveloping said conductive strip therebetween with said central portions having sides overlapping said enveloped conductive strip for forming closely-coupled mated-film portions for creating a substantially-closed flux path about said enveloped conductive strip and orthogonal the longitudinal axis thereof;
said superposed central portions and said enveloped conductive strip forming a memory area;
binary information stored in said memory area in a first or second and opposite circumferential flux direction about said enveloped conductive strip.

3,353,170
IONIZATION FIRE ALARM SYSTEM

Ernst Meili, Kusnacht, and Thomas Lampart, Mannedorf, Switzerland, assignors to Cerberus AG, Mannedorf, Switzerland, a corporation of Switzerland
Filed Nov. 12, 1963, Ser. No. 322,775
Claims priority, application Switzerland, Nov. 19, 1962, 13,526/62
5 Claims. (Cl. 340—237)



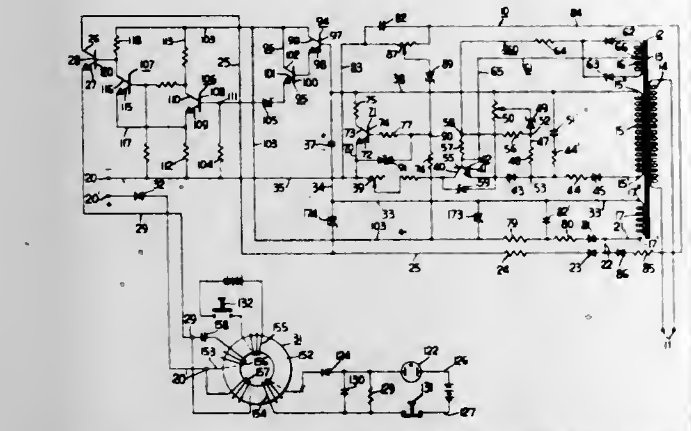
1. In a fire alarm of the ionization type responsive to changes in the composition of a gas comprising at least one ionization chamber open to the gas to be tested, means for ionizing the gases in said ionization chamber, the improvement which comprises said ionizing means incorporating a radiation source which cooperates with said ionization chamber for inducing under normal atmospheric conditions a gas ionization rate of not more than one ion pair per cubic millimeter per second at a distance of 10 centimeters from the external limits of said ionization chamber, said radiation source being a substance which is poor in gamma radiation and producing at least 10^8 times more ion pairs per cubic millimeter at a distance of 0.5 centimeter from said radiation source than at a distance of 10 centimeters, to thereby decrease the effects of dust upon the fire alarm.

3,353,171
MAGNETIC DEVICE FOR INDICATING THE OCCURRENCE OF AN ELECTRICAL SIGNAL

John Baude, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Original application Dec. 23, 1960, Ser. No. 78,060, now Patent No. 3,176,145, dated Mar. 30, 1965. Divided and this application Nov. 27, 1964, Ser. No. 414,305
5 Claims. (Cl. 340—253)

1. Means for producing an indication of the occurrence of an electrical signal, said means comprising:
a magnetic core;
a first winding mounted on the core and connected to receive the electrical signal as an input, said first winding having two substantially equal portions wound in opposition to each other;

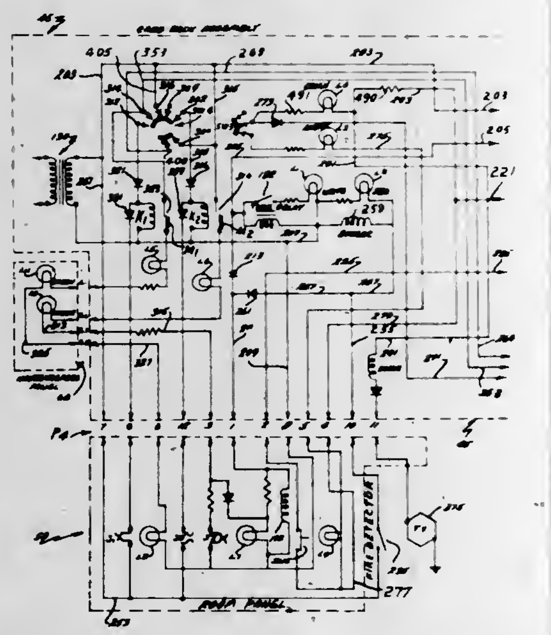
a capacitor connected in series with only one of the portions of the first winding;
a second winding mounted on the core; and



means connected to the second winding and responsive to current in said second winding for producing an indication of said occurrence.

3,353,172
CLOCK CONTROLLED HOTEL SIGNALLING SYSTEM

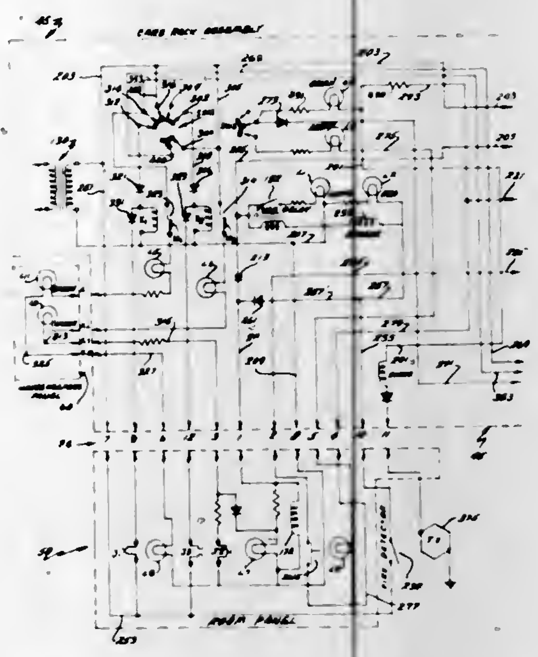
Freeman C. Beilfuss, Wyoming, Mich., assignor to Call-Boy Systems, Inc., Wyoming, Mich., a corporation of Michigan
Filed Sept. 9, 1964, Ser. No. 395,144
3 Claims. (Cl. 340—286)



1. A hostelry signaling system comprising: power supply means; a master clock control associated with said power supply means and having a sweeping contact and a plurality of cooperative electrical contacts closed at time intervals; a control console including a plurality of presettable variable time switches, each in electrical cooperation with said control contacts to close circuits at selected times; a like plurality of first and second signaling means, said first signaling means being for individual hostelry rooms and said second signaling means being in said console and correlated to respective time switches; said signaling means being normally inactive; said first signaling means each having electrical connections to respective ones of said switches to be directly activated with closing thereof; a plurality of circuit opening signal release means for the respective rooms; and said second signaling means having time delay means in electrical association therewith and with said switches to be delay activated thereby in the event said first signaling means is not released; and said time delay means also being released with release of said first signaling means.

3,353,173
MULTIPLE SIGNAL MODULE HOTEL CALL SYSTEM

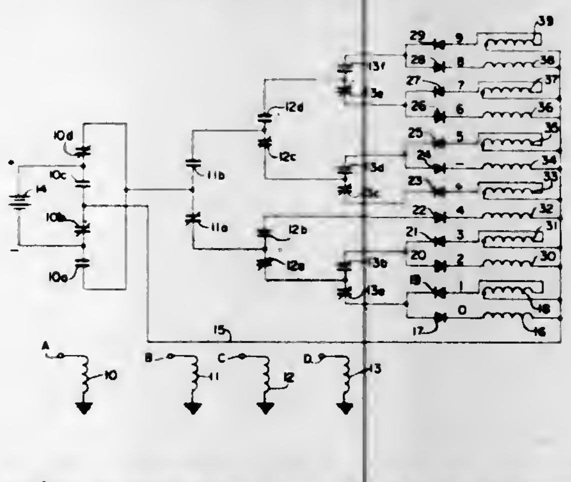
Freeman C. Beilfuss, Wyoming, Mich., assignor to Call-Boy Systems, Inc., Wyoming, Mich., a corporation of Michigan
Filed Sept. 9, 1964, Ser. No. 395,271
10 Claims. (Cl. 340—286)



1. In a signaling control system for a hostelry from the main desk to the individual rooms, a plurality of signal means in the rooms; a plurality of individual modules at the desk each associated with one of the signal means for the respective rooms; said modules each having a separate housing containing a multipilicity of signal controls and illuminating signal indicators; a retaining casing receiving said housings in interfitted relationship to form a console; sliding electrical plug connections between each module housing and said casing; said plurality of control switches and illuminating signal indicators being mounted on the exposed face of each module housing forming a compact console frontal assembly of switches and indicators for convenient control of the system.

3,353,174
ELECTROMAGNETIC INDICATOR GATING ARRANGEMENT

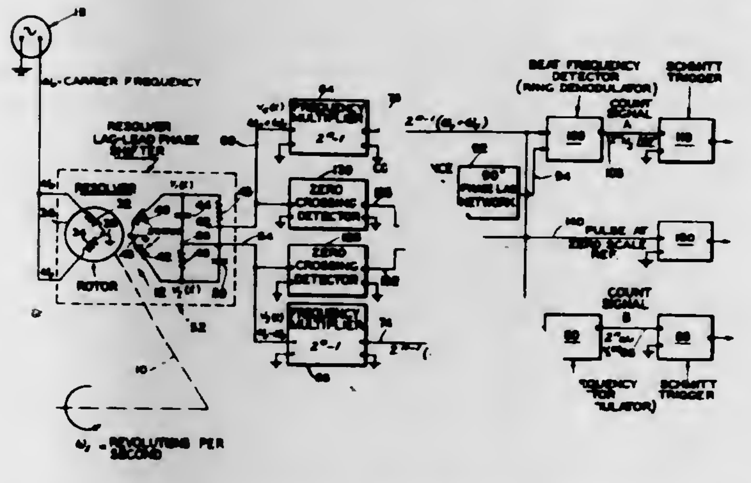
Elliot R. Lang, Hamden, Conn., assignor to Patwin, Inc., a corporation of Connecticut
Filed May 28, 1964, Ser. No. 370,891
4 Claims. (Cl. 340—325)



1. A gating arrangement for causing an electromagnetic indicator to respond to binary coded electrical signals, the electromagnetic indicator being of the type having an array of separately energizable stator coils, the gating arrangement comprising:
a source of electrical potential;
a plurality of signal relays, each signal relay being responsive to a different bit in the coded electrical signals;
the signal relays, in response to the binary coded electrical signals, causing an electric path to be established which applies an electric potential from the source across two of the stator coils;
diodes connected to the stator coils, the diodes being arranged to permit current flow in one of the two coils to which the electric potential is applied and to block current flow in the other of the two coils;
and the signal relay responding to the least significant bit being arranged to cause a reversal in polarity of the potential applied to the two stator coils.

3,353,175
RESOLVER INCREMENTAL ENCODER

James E. Brook, Maywood, and Frank A. Hanusek, Wyckoff, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Aug. 26, 1964, Ser. No. 392,221
10 Claims. (Cl. 340—347)

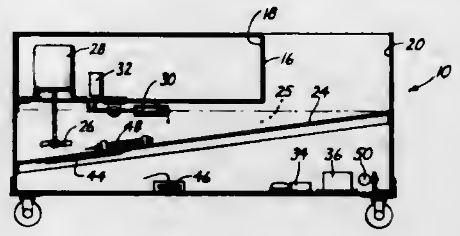


7. In an incremental encoder system comprising a resolver transducer including a rotor having a pair of windings arranged in spaced quadrature, a stator having a pair of windings arranged in spaced quadrature, said pair of rotor and stator windings being variably inductively coupled, a source of a constant frequency alternating current for energizing a first pair of said windings so as to induce a sinusoidal carrier wave in a second pair of said windings, a shaft for angularly positioning the pair of rotor windings in relation to the pair of stator windings at a variable angular velocity so as to vary the inductive coupling between said rotor and stator windings and superimpose the angular velocity of the shaft upon the angular velocity of the sinusoidal carrier wave, a lag-lead phase shifter network connected across output conductors of said second pair of windings, the lag-lead phase shifter network including first and second output means, frequency multiplier means operatively connected to said first and second output means to provide a pair of signals, and means to combine said signals so as to effect a count signal having a frequency equivalent to an integer multiple of the velocity of rotation of said shaft.

3,353,176
CONTROL SYSTEM FOR FOAM CLEANER GENERATING APPARATUS

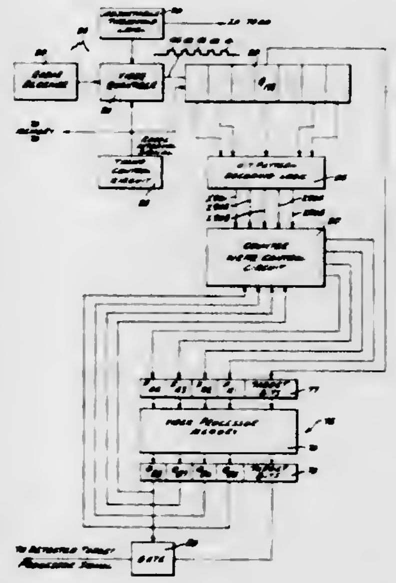
Clarence C. Bower, Lancaster, Ohio
(804 W. Washington St., Charleston, W. Va. 25302)
Filed Jan. 7, 1965, Ser. No. 423,938
3 Claims. (Cl. 340—417)

1. In a cleaning foam generating machine having a well, a cleaning solution in said well, motor operated means in said well for producing a cleaning foam by agitation of said solution, electrical heating means under said well for heating said solution, thermostatic switch means connected in series circuit relationship with heating means for maintaining said solution at a temperature for optimum foam production, float controlled means mounted in said well, and alarm means connected with said float controlled means to indicate drop in solution level by a predetermined amount.



3,353,177
RADAR CLUTTER VIDEO PROCESSING SYSTEM

Richard D. Wilmot, Fullerton, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of California
Filed Apr. 4, 1966, Ser. No. 540,800
15 Claims. (Cl. 343—5)

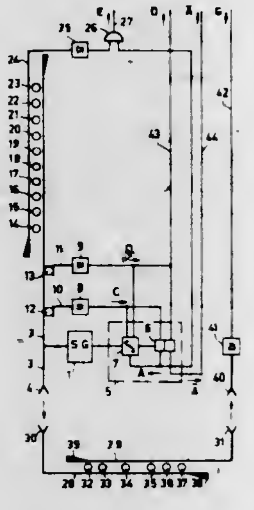


1. In a radar system, wherein series of successive binary signals are provided by a digitized receiver, a clutter detection system for detecting the presence of clutter signals in any of a plurality of range intervals comprising:
first means for sequentially storing the binary signals representing hits or misses from successive range intervals from at least a portion of a single radar sweep;
a memory including means for storing multibit memory words each word being associated with another of said range intervals and means for reading out and writing in binary signals in the bits in each words;
second means responsive to the signals stored in said first means for developing hit pattern-representing signals each signal being indicative of a hit pattern of hits in related range intervals; and
write control logic means responsive to said hit pattern-representing signals and a selected number of bits of a memory word for storing in said selected number of bits binary signals indicative of the history of the hit patterns related to the range interval associated

with said word in a sequence of radar sweeps, said latter means further including means for setting one bit of said selected number of bits to a first binary state to indicate the presence of clutter in said range interval when the other of said selected bits reach a predetermined state.

3,353,178
IDENTIFICATION EQUIPMENT

Nils Arne Erland Wästerlid, Skolby, Sweden, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 18, 1966, Ser. No. 528,598
Claims priority, application Sweden, Feb. 18, 1965, 2,142/65
10 Claims. (Cl. 343—6.5)

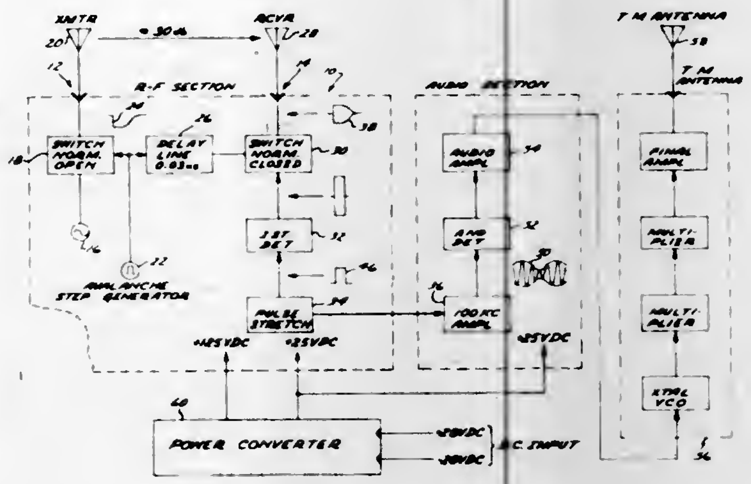


1. A system for the identification of an object adapted to move past a detecting station, of the type in which said detecting station is provided with an inquiry device for transmitting an inquiry signal and said object is provided with a reply unit for responding to said inquiry signal in a manner characteristic of the object, wherein said inquiry device comprises a source of high frequency electromagnetic energy, means for continuously sweeping the frequency of said energy across a predetermined frequency band, and first directional antenna means for transmitting said energy toward said reply unit, and said reply unit comprises a waveguide system having a plurality of cavity resonators having different resonant frequencies within said predetermined band for forming a code characteristic of said object, second directional antenna means for receiving said transmitted energy and applying the received energy to said cavity resonators, whereby said received energy is modified by said cavity resonators in response to their natural frequencies, and a third directional antenna means for transmitting said modified energy toward said detecting station, said detecting station further comprising fourth directional antenna means for receiving said modified energy, and means for determining the modification of the received modified energy caused by said cavity resonators.

3,353,179
DISTANCE INDICATING RADIO APPARATUS

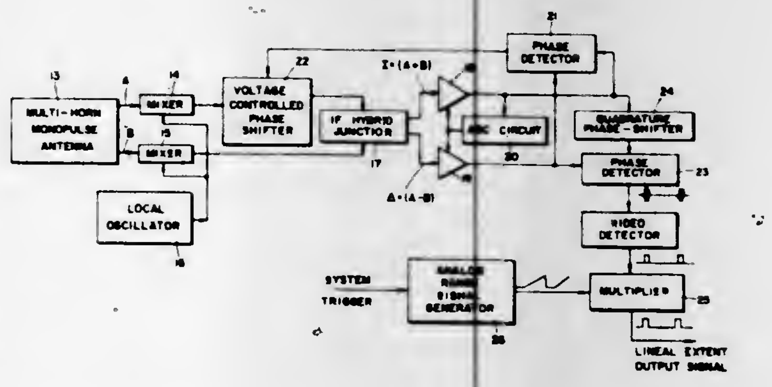
Victor F. Cartwright, Fullerton, Calif., assignor to Babcock Electronics Corporation, Costa Mesa, Calif., a corporation of California
Filed Feb. 16, 1966, Ser. No. 527,834
8 Claims. (Cl. 343—13)

1. Apparatus for indicating an object within a predetermined distance of a target comprising in combination, omnidirectional antenna means for sending and receiving radio signals, a transmitter, a detector, signal initiation, means including a first switch connected between said antenna means and said transmitter to effect initiation of signal transmission from said antenna means, and means including time delay means and a second switch, connected between said antenna means and said detector responsive to operation of said signal initiation means for disconnecting said detector from said antenna means a predetermined time following such operation.



3,353,180
MONOPULSE DATA SYSTEM

Dean B. Anderson, Whittier, Calif., assignor to North American Aviation, Inc.
Filed Apr. 16, 1963, Ser. No. 273,395
15 Claims. (Cl. 343—16)



1. In a monopulse receiver, means for determining the quadrature signals in radar return signals and means for determining target extent from such quadrature signals.

3,353,181
SELF-TEST CIRCUIT FOR TRANSPONDER

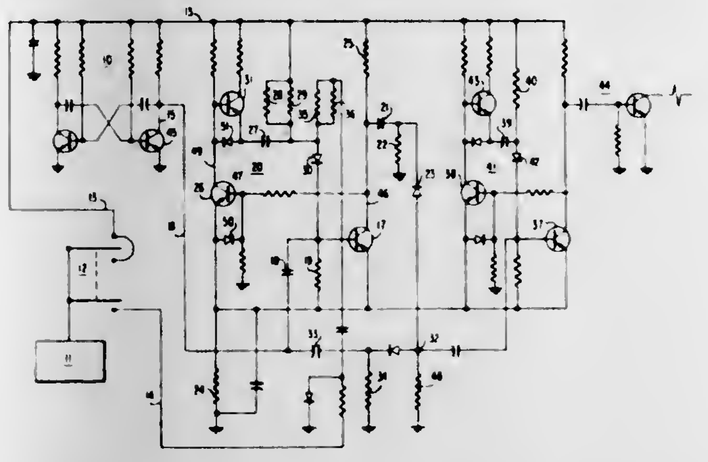
Ernest A. Preuss, Convent Station, N.J., assignor to Aircraft Radio Corporation, Boonton, N.J., a corporation of New Jersey
Filed Dec. 7, 1965, Ser. No. 512,136
4 Claims. (Cl. 343—17.7)

1. In a transponder having local oscillator means for generating a beating signal, said oscillator means including an active element means having an anode,

a self-test circuit comprising means for generating a base timing signal of fixed duration, first means responsive to the leading edge of said base timing signal for generating a first pulse timing signal,

second means responsive to the leading edge of said base timing signal for generating a second pulse timing signal at a variable interval after the first,

means for generating a test pulse of fixed duration in response to each of said pulse timing signals, the fixed duration being less in time than the variable delay between said pulse timing signals,

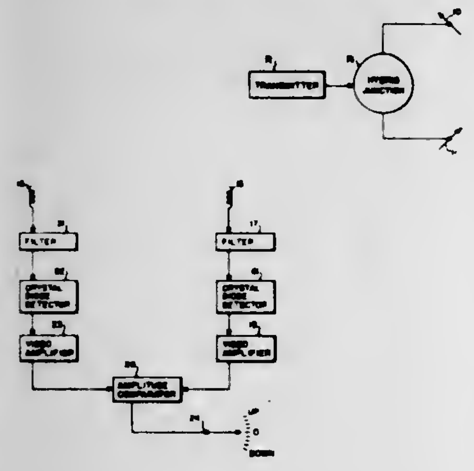


and means for applying said test pulses to the anode of said local oscillator means,

whereby circuits of said transponder are tested for proper operation.

3,353,182
RADIO POLARIZATION GUIDANCE SYSTEM

Gerald E. Hart, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 14, 1966, Ser. No. 543,768
23 Claims. (Cl. 343—102)



1. A radio polarization guidance system, comprising:

means for transmitting at least a pair of orthogonally-oriented, linearly-polarized radio waves;

said transmitting means including at least two active orthogonally-oriented radiating elements;

receiving and indicating means for receiving said radio waves and for indicating the instantaneous characteristics thereof;

said receiving and indicating means including means for indicating directly the direction and amount of deviation from a median spatial region.

3,353,183
MODE SIGNAL COMPENSATION SYSTEM

Adolf J. Giger, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 24, 1965, Ser. No. 466,652
11 Claims. (Cl. 343—117)

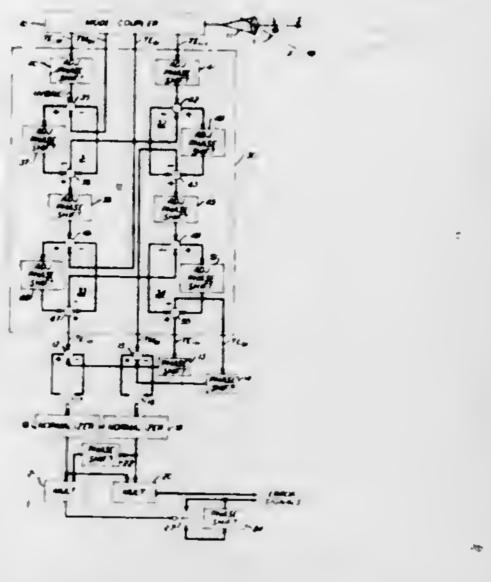
2. A tracking system which includes, in combination,

means for receiving arbitrarily polarized electromagnetic wave energy signals,

means for developing individual signals representative of a number of different modes of propagation excited by said wave energy in said receiving means,

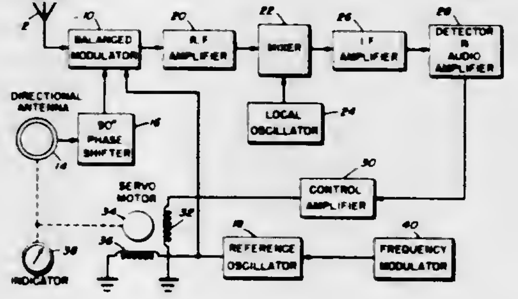
means for compensating for undesired mode signals which contaminate individual ones of said signals, said compensating means including means for algebraically summing selected components of a contaminating mode signal with a contaminated mode signal thereby to cancel undesired mode signals from a desired signal, and

means for selectively combining said compensated signals to develop signals indicative of the direction of reception of said arbitrarily polarized signals with respect to said system.



3,353,184
AUTOMATIC DIRECTION FINDER WITH FREQUENCY MODULATED SERVO CONTROL

Stanley F. Kadron, Reisterstown, Md., and Hans G. Ludwig, Ridgefield, Conn., assignors to The Bendix Corporation, Towson, Md., a corporation of Delaware
Filed Apr. 28, 1966, Ser. No. 545,898
5 Claims. (Cl. 343—117)



1. An automatic direction finding radio receiver comprising

an omnidirectional sense antenna;

a rotatable directional antenna;

a reference oscillator;

modulation means for combining signals from said sense antenna with signals from said directional antenna and the output of said reference oscillator to provide a modulation product indicative of the bearing from the receiver to the transmitter of signals received by said antennas;

means for recovering from the output of said modulation means a signal having the frequency of the output of said reference oscillator;

a servomotor controlled by said recovered signal for positioning said directional antenna; and means for continuously modulating the frequency of the output of said reference oscillator whereby response of said servomotor to spurious control signals is inhibited.

3,353,185
METHOD OF RECORDING CHARGED PARTICLES

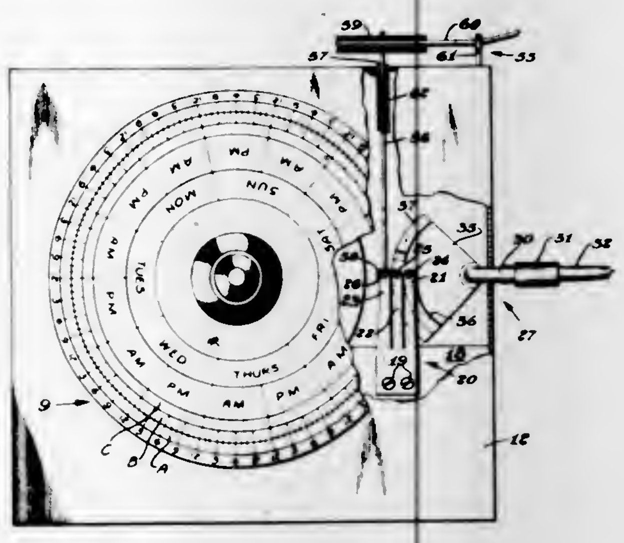
Heinz F. Nitka, Binghamton, N.Y., asssignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 2, 1964, Ser. No. 356,932
4 Claims. (Cl. 346—1)

1. The method of recording intelligence, which comprises the steps of applying to a sheet support an emulsion which comprises silver bromide and silver iodide, and a lead salt in a colloidal carrier, exposing an area of said emulsion-bearing sheet to a beam of charged particles which is accelerated in an electric field of a wide voltage range to form a latent image developing said image by overall post-exposure to visible light, subsequently re-exposing a different area of the light exposed emulsion to an electron or ion beam to produce a second, independent latent image and developing the latter image by post-exposure to visible light.

3,353,186
TRAFFIC RECORDING APPARATUS

James P. McCurdy, 1025 N. Miller Road,
Saginaw, Mich. 48603
Filed May 19, 1965, Ser. No. 457,081
6 Claims. (Cl. 346—42)

1. Traffic recording apparatus comprising a rotary support member for supporting a record; means for rotating said supporting member about an axis to revolve a record past a reference zone; first marking means at said reference zone operable to mark said record at a predetermined distance from said axis; second marking means at said reference zone operable to mark said record at a different predetermined distance from said axis; traffic sensing means; means mounting said sensing means in the path of traffic for movement in either of two opposite directions; actuating means connected to said sensing means for movement with the latter and being engageable with one or the other of said first and second marking means for operating the latter according to the direction of movement of said sensing means; means acting on said sensing means for returning the latter to a neutral position following movement thereof in either one of said directions; and snubbing means acting on said returning means for preventing return movement of said sensing means past said neutral position.

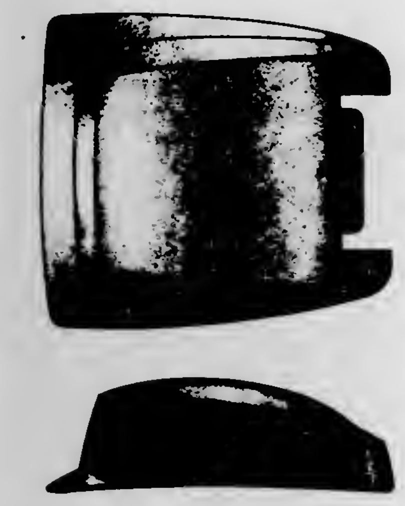


DESIGNS

NOVEMBER 14, 1967

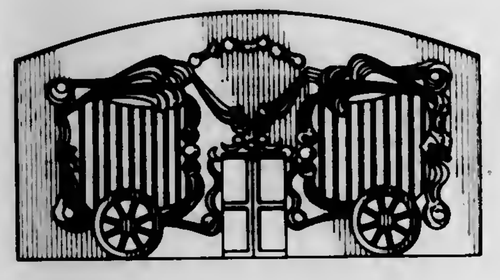
209,189
CASING FOR A SUCTION CLEANER OR SIMILAR ARTICLE

Carroll M. Gantz, North Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Delaware
Filed Aug. 12, 1966, Ser. No. 3,454
Term of patent 14 years
(Cl. D9—2)



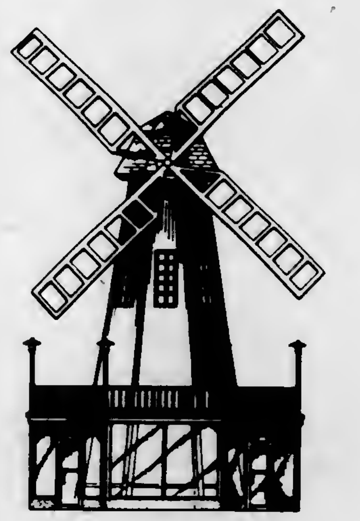
209,190
RESTAURANT BUILDING FACADE

Edwin H. Eichler, 910 Lake Shore Drive,
Chicago, Ill. 60611
Original design application Dec. 13, 1965, Ser. No. 517, now Patent No. 205,931, dated Oct. 11, 1966. Divided and this application June 16, 1966, Ser. No. 2,708
Term of patent 14 years
(Cl. D13—1)



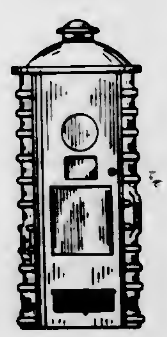
209,191
RESTAURANT

Silvino F. De Sieno, 32 Comanche Drive,
Port au Peck, N.J.
Filed Mar. 22, 1967, Ser. No. 6,330
Term of patent 14 years
(Cl. D13—1)



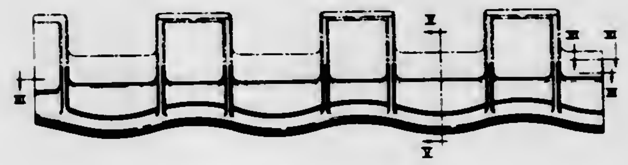
209,192
PORTABLE TOILET CABANA

David B. Harding, Grosse Pointe Woods, Mich., assignor to Sani-Jon of America, Inc., Warren, Mich.
Filed Apr. 3, 1967, Ser. No. 6,489
Term of patent 14 years
(Cl. D13—1)



209,193
TRACK ROLLER GUARD

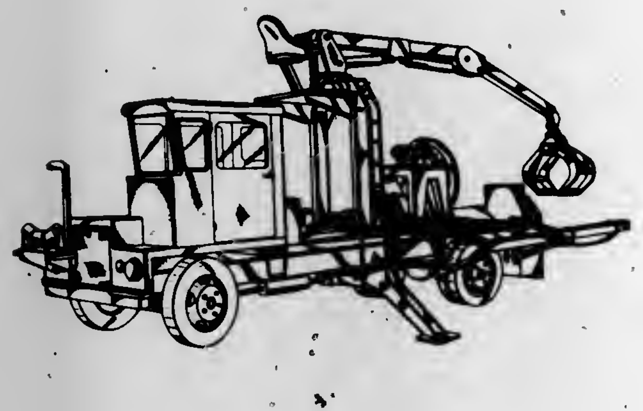
Ronald J. Fanslow, Schamburg, Donald E. Wilkinson, Melrose Park, and Jack M. Deli, Wheaton, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 6, 1966, Ser. No. 3,736
Term of patent 14 years
(Cl. D14—3)



209,194
MOBILE LOG SLASHER

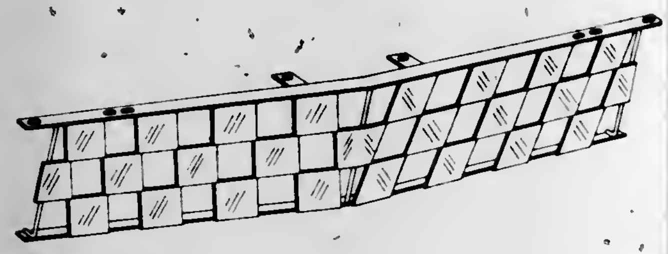
Douglas O. Sanders, 402 Minneapolis Ave., and George S. Finneman, 318 Maryland Ave., both of Duluth, Minn. 55803

Filed Oct. 26, 1966, Ser. No. 4,495
Term of patent 14 years
(Cl. D14—3)



209,195
VEHICLE GRILL

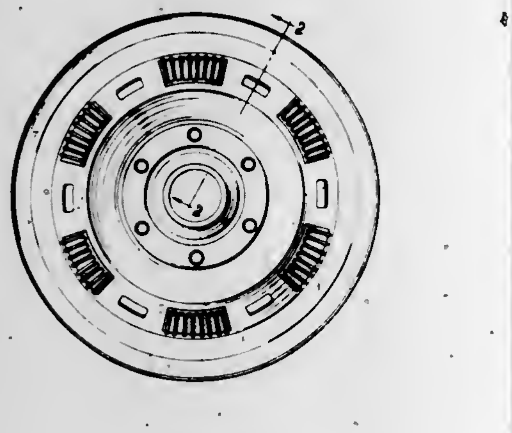
John Jusztin, 2914 Foreman Ave.,
Long Beach, Calif. 90815
Filed Mar. 21, 1967, Ser. No. 6,319
Term of patent 7 years
(Cl. D14—18)



209,196
WHEEL

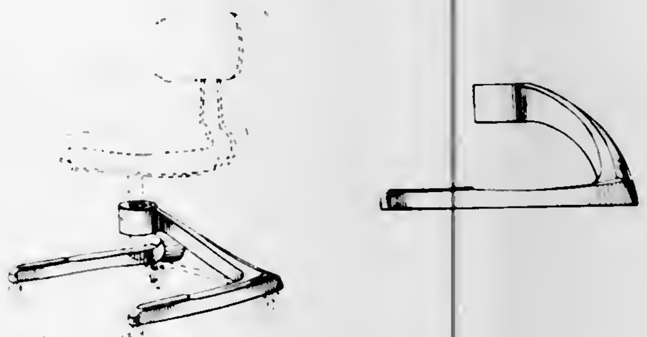
John A. Main, East Lansing, and Dann T. Deaver, Mount Clemens, Mich., assignors to Motor Wheel Corporation, Lansing, Mich., a corporation of Ohio

Filed Jan. 5, 1966, Ser. No. 466
Term of patent 14 years
(Cl. D14—30)



209,197
CHAIR

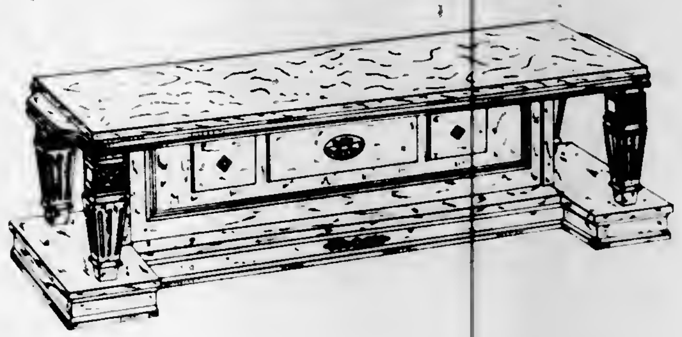
Abe Chamness, 2231 Lovers Lane,
Dallas, Tex. 75235
Filed May 25, 1966, Ser. No. 2,423
Term of patent 14 years
(Cl. D15—1)



209,198
CASKET DISPLAY BIER

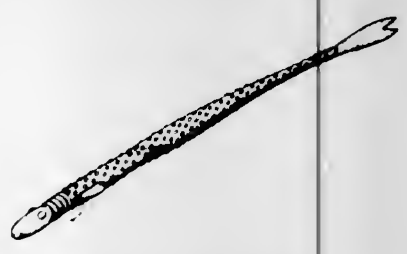
Richard Wareham, Euclid, and Ralph Ellsworth, Willoughby, Ohio, assignors to Superior Funeral Supply Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 4, 1966, Ser. No. 447
Term of patent 3½ years
(Cl. D19—1)



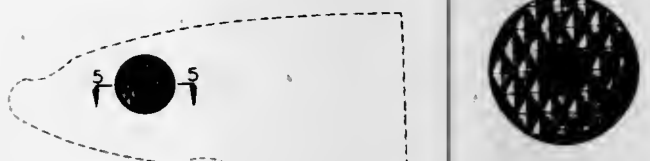
209,199
FISHING LURE

Bradford C. Driggers, 3102 Cloverhurst Drive,
East Point, Ga. 30044
Filed Feb. 16, 1967, Ser. No. 5,838
Term of patent 14 years
(Cl. D22—27)



209,200
EYE FOR FISHING LURES

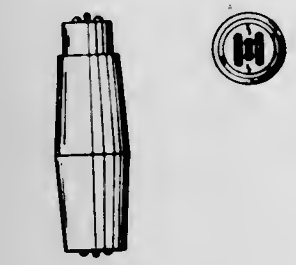
Theodore Kandz, 2240 Curtis Drive N.,
Clearwater, Fla. 33516
Filed Apr. 21, 1967, Ser. No. 6,782
Term of patent 14 years
(Cl. D22—27)



209,201
FISHING BOBBER

Donald W. Betts, Fuquay Varina, N.C., assignor to Frederick A. Lambach, Omaha, Nebr.

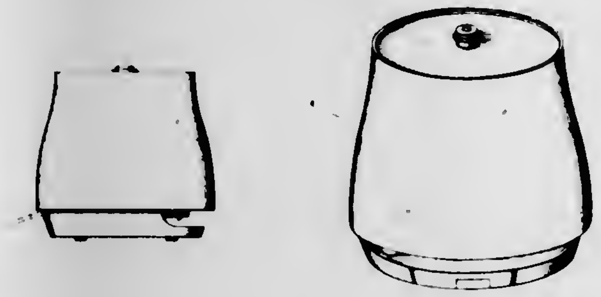
Filed Dec. 14, 1966, Ser. No. 5,025
Term of patent 14 years
(Cl. D22—30)



209,202
COMBINED MOTOR PUMP HOUSING AND COVER FOR A DENTAL JET CLEANSING UNIT

James F. Fulton, Mamaroneck, N.Y., Melvin Earl St. Clair, Burlington, Conn., and John W. Mattingly, Fort Collins, Colo., assignors, by mesne assignments, to Aqua Tec Corporation, Denver, Colo., a corporation of California

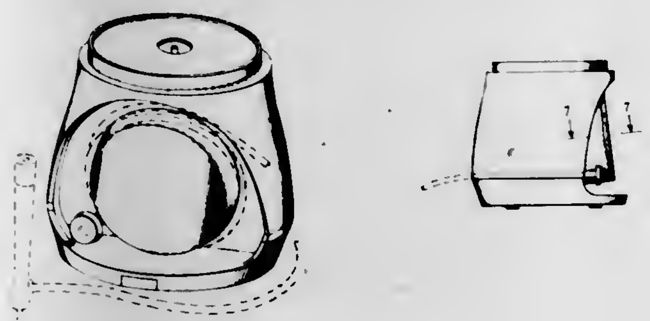
Filed Sept. 13, 1966, Ser. No. 3,834
Term of patent 14 years
(Cl. D24—1)



209,203
MOTOR PUMP HOUSING FOR A DENTAL JET CLEANSING UNIT

John W. Mattingly, Fort Collins, Colo., James F. Fulton, Mamaroneck, N.Y., and Melvin Earl St. Clair, Burlington, Conn., assignors, by mesne assignments, to Aqua Tec Corporation, Denver, Colo., a corporation of California

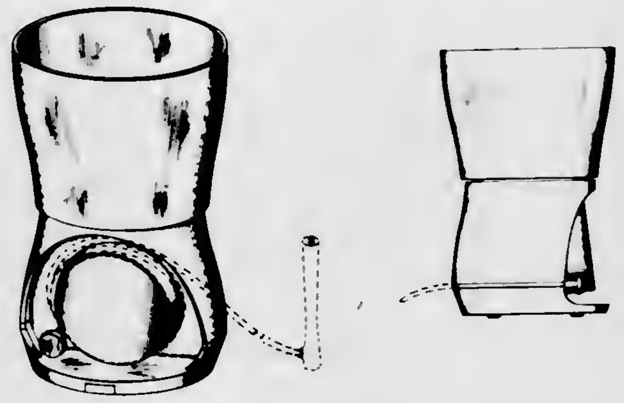
Filed Sept. 13, 1966, Ser. No. 3,835
Term of patent 14 years
(Cl. D24—1)



209,204
DENTAL JET CLEANSING UNIT OR THE LIKE

Melvin Earl St. Clair, Burlington, Conn., John W. Mattingly, Fort Collins, Colo., and James F. Fulton, Mamaroneck, N.Y., assignors, by mesne assignments, to Aqua Tec Corporation, Fort Collins, Colo., a corporation of California

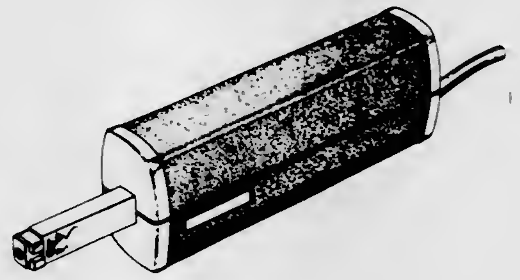
Filed Sept. 13, 1966, Ser. No. 3,837
Term of patent 14 years
(Cl. D24—1)



209,205
PORTABLE DE-MAGNETIZER

Darrel A. Lauer, San Francisco, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

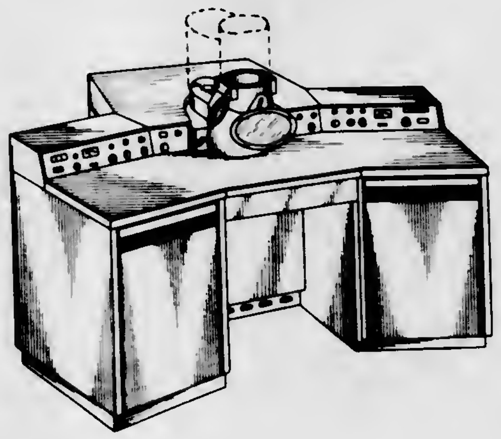
Filed May 16, 1966, Ser. No. 2,310
Term of patent 14 years
(Cl. D26—1)



209,206
COMBINED DESK AND PROJECTION CHAMBER FOR AN ELECTRON MICROSCOPE

Johan Catharinus Hendrikus de Jongh, Eindhoven, Netherlands, assignor to North American Philips Co. Inc.

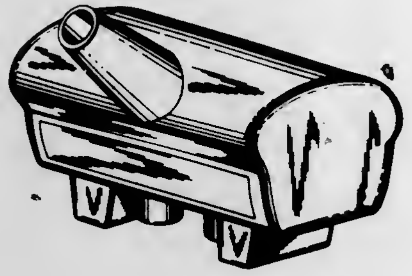
Filed Jan. 25, 1967, Ser. No. 5,620
Term of patent 14 years
Claims priority, Switzerland Aug. 22, 1966
(Cl. D26—5)



209,207
HOIST PUSH BUTTON CONTROL

Robert H. Madding, Little Rock, Ark., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

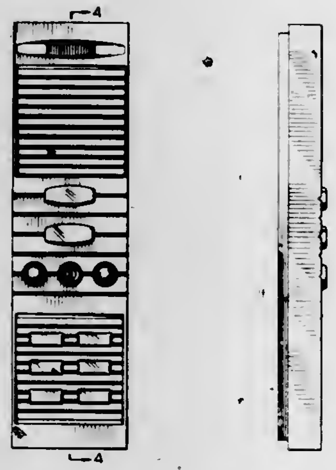
Filed Mar. 10, 1966, Ser. No. 1,400
Term of patent 14 years
(Cl. D26—13)



209,208
TELEPHONE SIGNAL CONTROL UNIT

Felix Gilbert, New York, N.Y., assignor to General Alarm Corporation, New York, N.Y., a corporation of Delaware

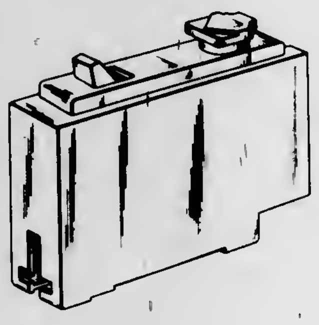
Filed Oct. 24, 1966, Ser. No. 4,405
Term of patent 14 years
(Cl. D26—13)



209,209
ELECTRICAL CIRCUIT BREAKER

Carl E. Gryctko, Haddon Heights, and Felix E. Myers, Cherry Hill, N.J., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

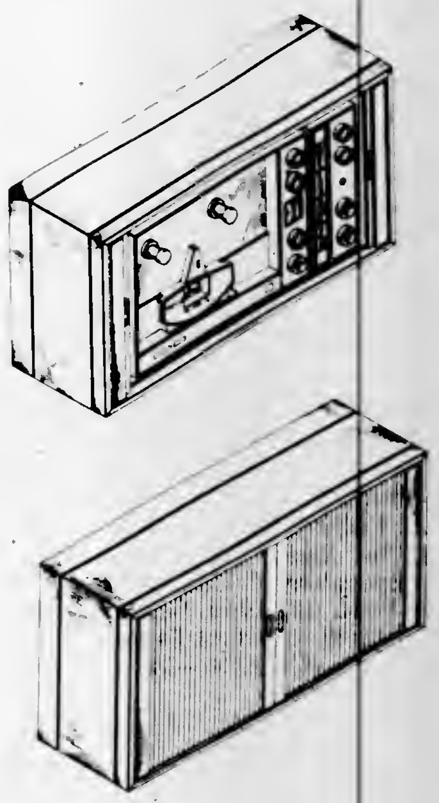
Filed May 1, 1967, Ser. No. 6,894
Term of patent 14 years
(Cl. D26—13)



209,210
COMBINED TAPE RECORDER AND RADIO RECEIVER

Harry K. Matsuda, Chicago, Ill., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

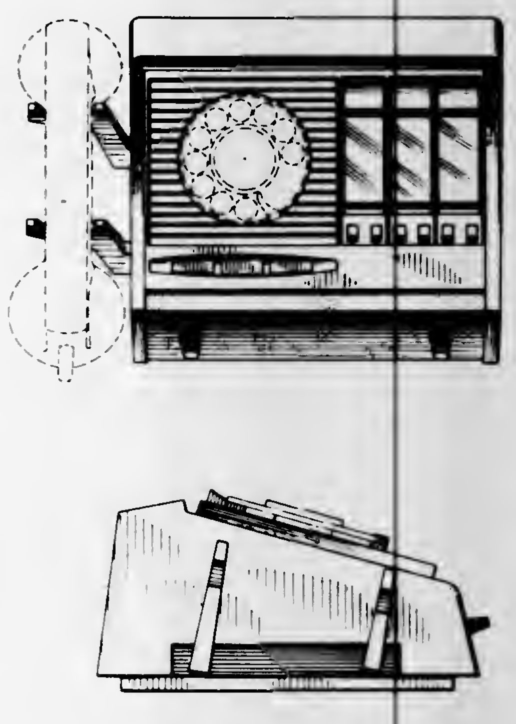
Filed June 13, 1966, Ser. No. 2,667
Term of patent 14 years
(Cl. D26—14)



209,211
AUTOMATIC TELEPHONE CONSOLE

Felix Gilbert, New York, N.Y., assignor to General Alarm Corporation, New York, N.Y., a corporation of Delaware

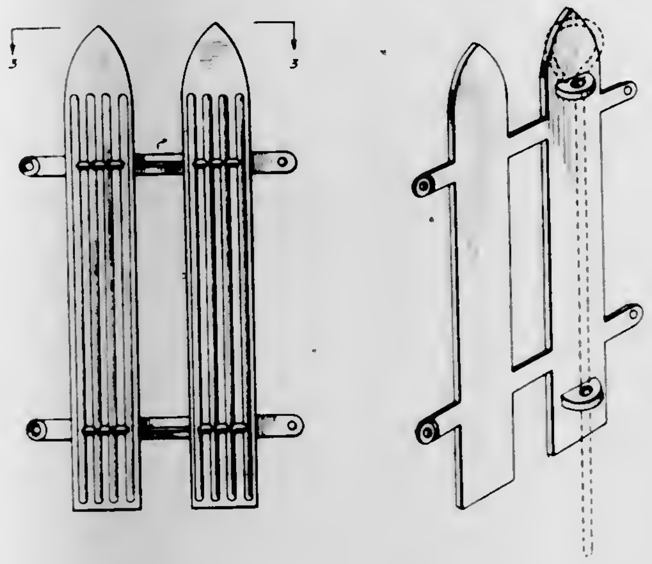
Filed Oct. 24, 1966, Ser. No. 4,403
Term of patent 14 years
(Cl. D26—14)



209,212
SECTIONALIZED UNIT FOR A PICKET SLAT FENCE

Gerard R. De Paolo, 5 Dorset Drive,
Kenilworth, N.J. 07033

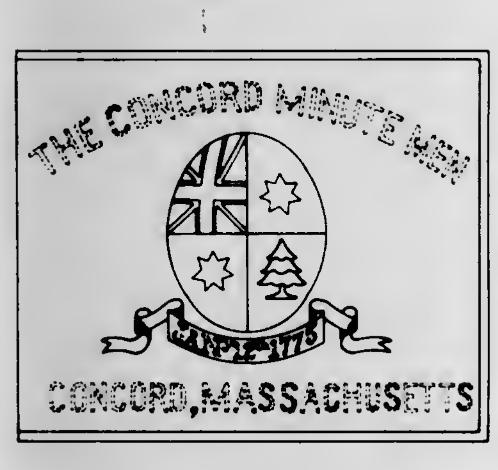
Filed June 20, 1966, Ser. No. 2,743
Term of patent 14 years
(Cl. D28—1)



209,213
FLAG OR SIMILAR ARTICLE

David A. Niles, 4 Coburn Hill Road,
Concord, Mass. 01742

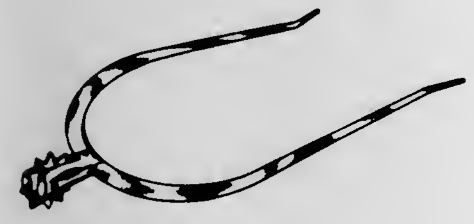
Filed Aug. 24, 1966, Ser. No. 3,572
Term of patent 14 years
(Cl. D29—17)



209,214
RIDING SPUR

Betty J. Markim, 10064 Gamma St.,
Baton Rouge, La. 70814

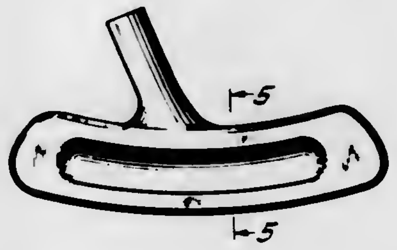
Filed Apr. 7, 1967, Ser. No. 6,569
Term of patent 14 years
(Cl. D30—31)



209,215
GOLF PUTTER HEAD

James M. Long, South Hadley, Mass., assignor to A. G. Spalding & Bros. Inc., Chicopee, Mass., a corporation of Delaware

Filed Apr. 20, 1966, Ser. No. 1,950
Term of patent 3½ years
(Cl. D34—5)

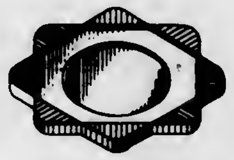


209,216
POKER CHIP

Albert S. Hakim, P.O. Box 1026,
Monroe, La. 71201

Original design application Oct. 5, 1965, Ser. No. 87,321, now Patent No. 205,779, dated Sept. 20, 1966. Divided and this application Aug. 17, 1966, Ser. No. 3,503

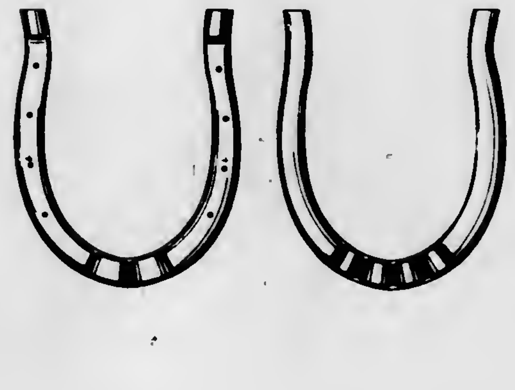
Term of patent 14 years
(Cl. D34—5)



209,217
HORSESHOE FOR A GAME

Cecil R. Smith, 960 Isley Blvd.,
Excelsior Springs, Mo. 64024

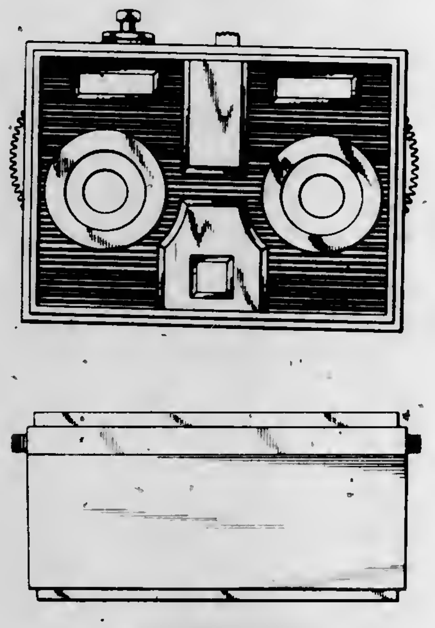
Filed Jan. 10, 1967, Ser. No. 5,371
Term of patent 14 years
(Cl. D34—5)



209,218
AN AMUSEMENT-TYPE INDICATOR

Mel Appel, Livingston, and Martin Schnur, West Orange, N.J., assignors to Elpo Industries Inc., Fair Lawn, N.J., a corporation of New Jersey

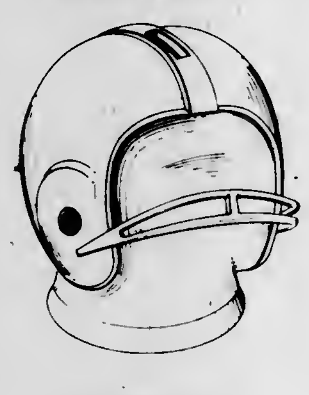
Filed Feb. 8, 1967, Ser. No. 5,719
Term of patent 14 years
(Cl. D34—5)



209,219
COIN COLLECTOR

Jerome Goldstein and Abraham Goldstein, Scarsdale, N.Y., assignors to Loyal Gift Products Inc., New York, N.Y., a corporation of New York

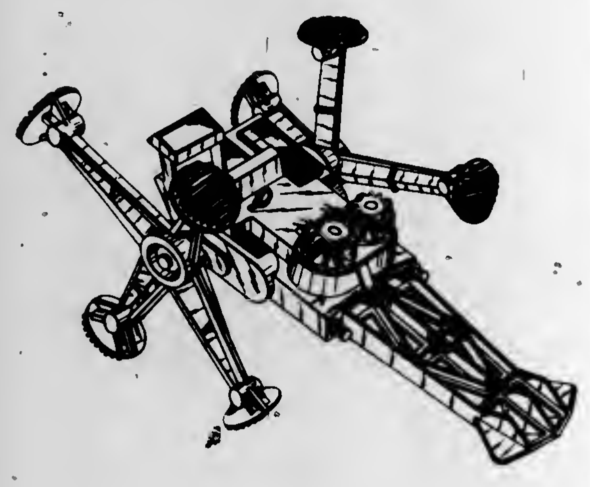
Filed Nov. 29, 1966, Ser. No. 4,852
Term of patent 14 years
(Cl. D34—11)



209,220
CRAWLER-TYPE TOY VEHICLE

John W. Ryan, Bel Air, and Gerald W. Schmidt, Tarzana, Calif., assignors to Mattel, Inc., a corporation of California

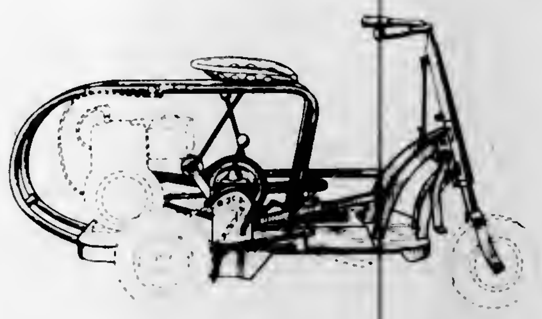
Filed Dec. 21, 1966, Ser. No. 5,133
Term of patent 14 years
(Cl. D34—15)



209,221
LAWN MOWING MACHINE

George A. Wegele, Otis, Kans. 67565

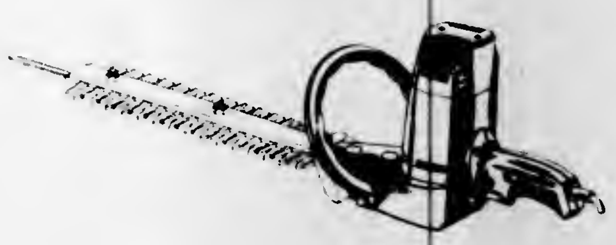
Filed Oct. 24, 1966, Ser. No. 4,396
Term of patent 14 years
(Cl. D40—1)



209,222
HEDGE TRIMMER

William A. Batson, Pickens, S.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

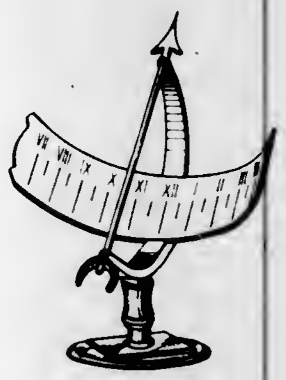
Filed Feb. 9, 1967, Ser. No. 5,752
Term of patent 14 years
(Cl. D40—1)



209,223
SUNDIAL

Gaston Vuilleumier, Neuchatel, Switzerland, assignor to Derby S.A., Neuchatel, Switzerland

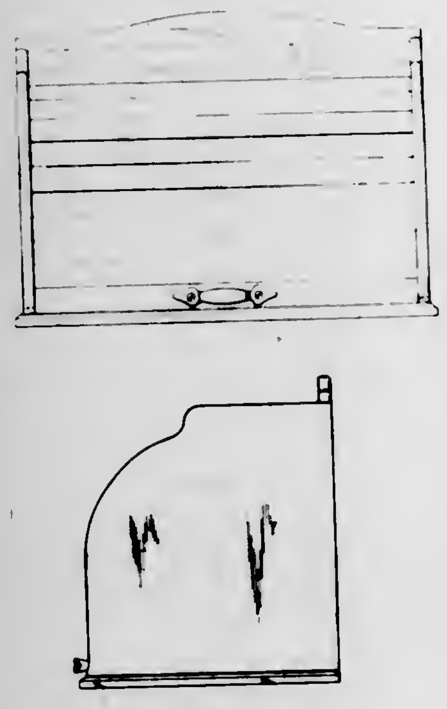
Filed Feb. 2, 1966, Ser. No. 883
Claims priority, application Switzerland Aug. 5, 1965
Term of patent 14 years
(Cl. D42—7)



209,224
BREAD BOX

Mel Appel, Livingston, and Martin Schnur, West Orange, N.J., assignors to Elpo Industries Inc., Fair Lawn, N.J., a corporation of New Jersey

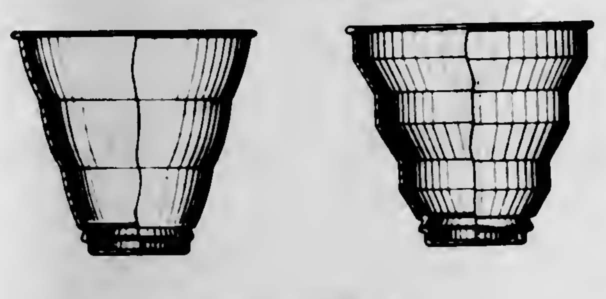
Filed Feb. 8, 1967, Ser. No. 5,720
Term of patent 14 years
(Cl. D44—6)



209,225
CUP

Paul Davis, Swampscott, Mass., assignor to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland

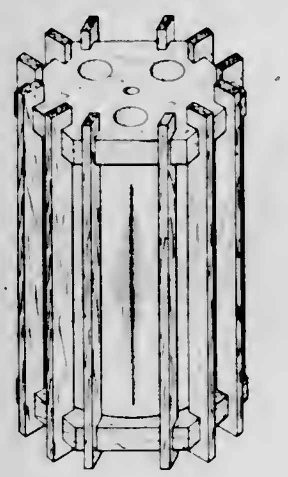
Filed Sept. 2, 1966, Ser. No. 3,700
Term of patent 14 years
(Cl. D44—9)



209,226
LIGHTING FIXTURE

Bradford W. Powers, Jr., 5470 Castle Hills Drive, San Diego, Calif. 92109

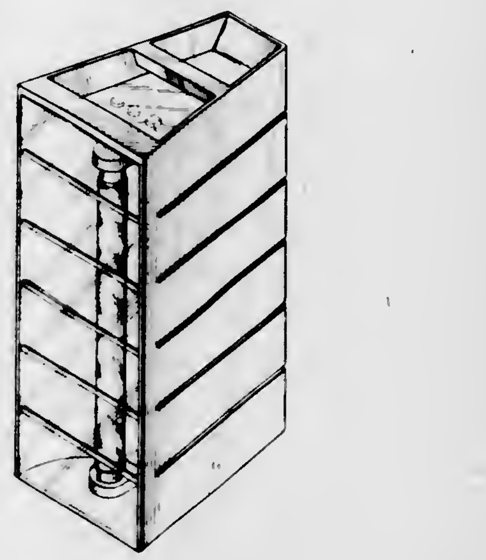
Filed Apr. 1, 1966, Ser. No. 1,739
Term of patent 14 years
(Cl. D48—23)



209,227
PORTABLE FLUORESCENT LIGHT

Donald Wayne Doman, Jamesville, Wis., assignor to Clevite Corporation, Cleveland, Ohio, a corporation of Ohio

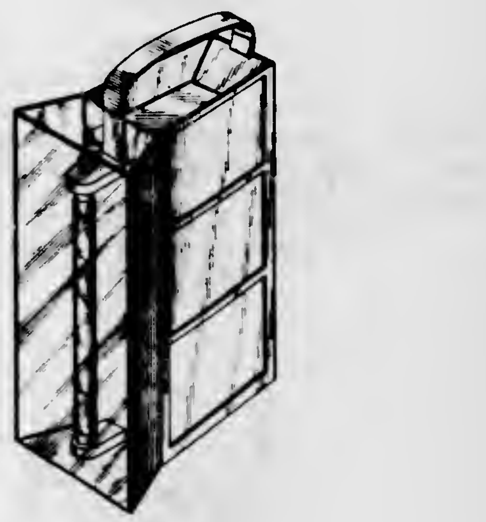
Filed Feb. 27, 1967, Ser. No. 5,953
Term of patent 14 years
(Cl. D48—24)



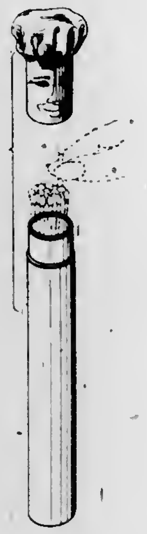
209,228
PORTABLE FLUORESCENT LIGHT

Donald Wayne Doman, Jamesville, Wis., assignor to Clevite Corporation, Cleveland, Ohio, a corporation of Ohio

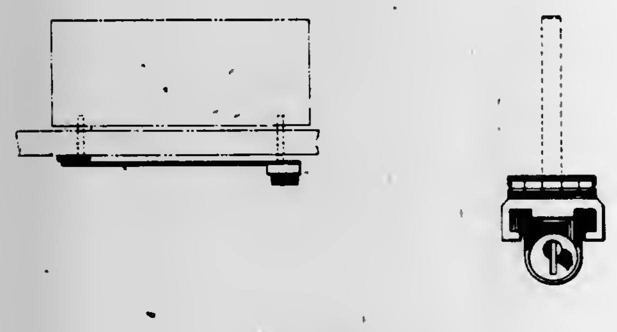
Filed Feb. 27, 1967, Ser. No. 5,954
Term of patent 14 years
(Cl. D48—24)



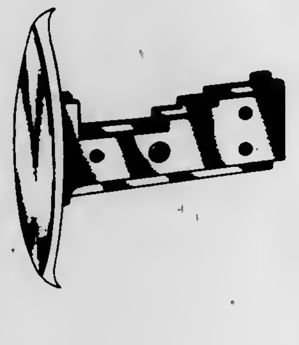
209,229
MATCH BOX
Andrew Pappalardo, 186 14th St., Long Island City, N.Y.
Filed Aug. 1, 1966, Ser. No. 3,298
Term of patent 3½ years
(Cl. D48—29)



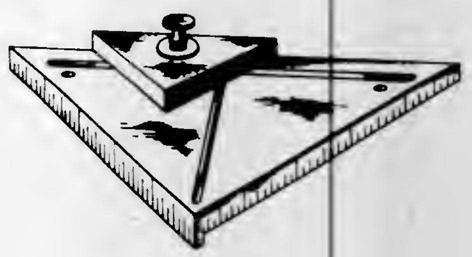
209,230
LOCK FOR A MACHINE
Anthony B. Bennett, 25 E. 86th St., New York, N.Y. 10028, and Max Steinberg, 18 Jeffery Lane, Lake Success, N.Y. 11040
Filed Apr. 25, 1967, Ser. No. 6,842
Term of patent 14 years
(Cl. D50—7)



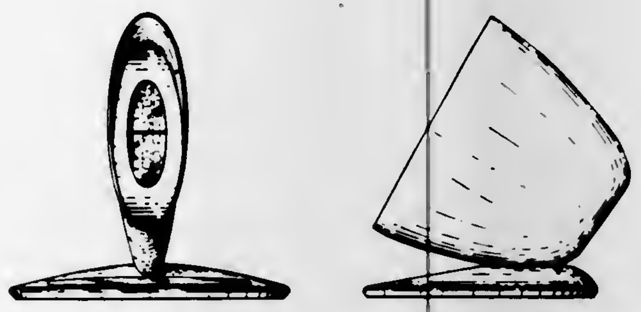
209,231
LUMBER RULE HEAD
Edward M. Conway, Benjamin F. Smith and Harold E. Hamilton, Grand Rapids, Mich., assignors to Conway Lumber Rule Company, Grand Rapids, Mich., a corporation of Michigan
Filed May 2, 1966, Ser. No. 2,092
Term of patent 14 years
(Cl. D52—6)



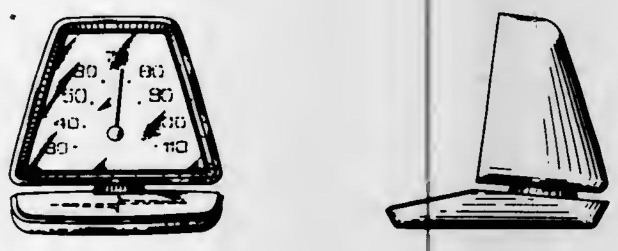
209,232
CARPENTER'S GUIDE
Joseph Charniga, Jr., P.O. Box 5037, Poland, Ohio 44514
Filed Nov. 4, 1966, Ser. No. 4,558
Term of patent 14 years
(Cl. D52—6)



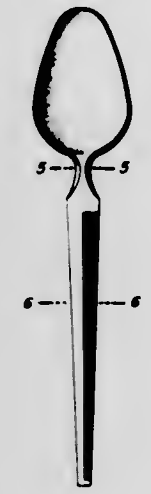
209,233
SPACE CONDITION RESPONSIVE INSTRUMENT
Clayton A. Laughlin, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 6,087
Term of patent 14 years
(Cl. D52—7)



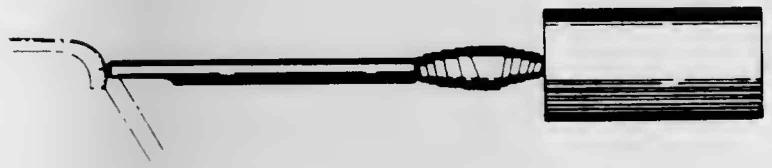
209,234
SPACE CONDITION RESPONSIVE INSTRUMENT
Clayton A. Laughlin, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 7, 1967, Ser. No. 6,100
Term of patent 14 years
(Cl. D52—7)



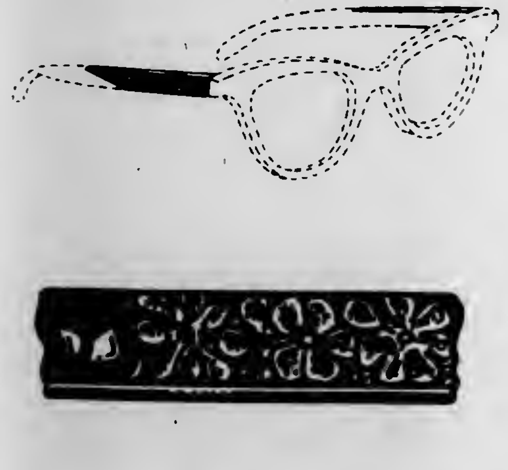
209,235
SPOON OR SIMILAR ARTICLE OF FLATWARE
Hiroshi Soehara, Tsubame, Japan, assignor to Soehara Mfg. Co., Ltd., Tsubame, Japan, a corporation of Japan
Filed Apr. 26, 1967, Ser. No. 6,848
Claims priority, application Japan Feb. 18, 1967
Term of patent 14 years
(Cl. D54—12)



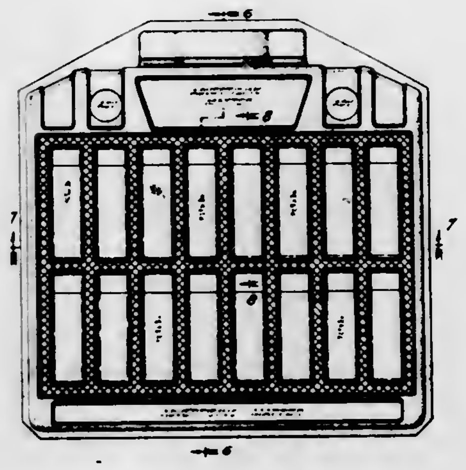
209,236
TELESCOPING PLUNGER HAMMER
William A. Douglass, 5251 Pattison Ave., St. Louis, Mo. 63110
Filed May 13, 1966, Ser. No. 2,284
Term of patent 14 years
(Cl. D54—13)



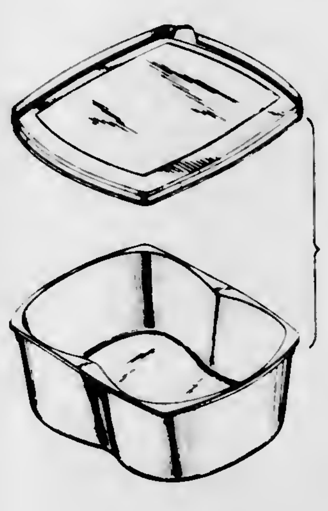
209,237
EYEGLASS FRAME OR THE LIKE
Alexander Kono, Woodside, N.Y., assignor to Kono Manufacturing Co. Inc., New York, N.Y., a corporation of New York
Filed Sept. 9, 1966, Ser. No. 3,789
Term of patent 14 years
(Cl. D57—1)



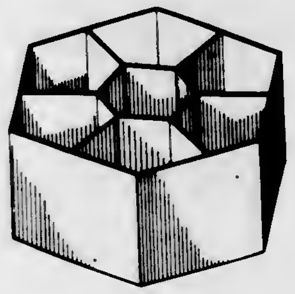
209,238
MERCHANDISE DISPLAY PACKAGE
Fred D. Barton, Box 187, Holly, Mich. 48442
Filed Jan. 24, 1966, Ser. No. 735
Term of patent 14 years
(Cl. D58—2)



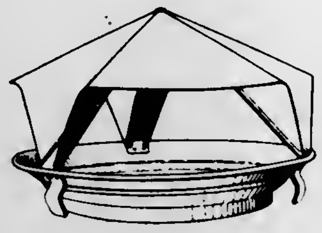
209,239
PACKAGING CONTAINER OR THE LIKE
Daniel Bernstein, 2 Horizon House, Fort Lee, N.J. 07024
Filed Dec. 21, 1966, Ser. No. 5,135
Term of patent 14 years
(Cl. D58—12)



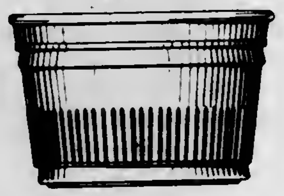
209,240
HEXAGONAL BEVERAGE CARTON
William J. Plogsted, 5064 Grosspoint Lane, Hamilton County, Cincinnati, Ohio 45238
Filed Apr. 26, 1966, Ser. No. 2,032
Term of patent 14 years
(Cl. D58—13)



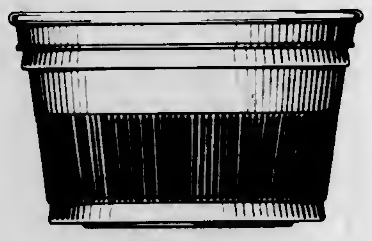
209,241
TRASH RECEPTACLE COVER
Herbert J. L. Baum, Larkspur, and Gerald V. Ball, Walnut Creek, Calif., assignors to Mipro Metal Products Co., a corporation of California
Filed May 25, 1966, Ser. No. 2,433
Term of patent 14 years
(Cl. D58—17)



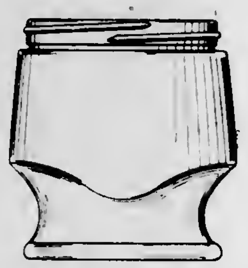
209,242
PACKAGING CONTAINER FOR FOOD OR THE LIKE
Henry H. Huston, Huntington, N.Y., assignor to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 28, 1967, Ser. No. 5,987
Term of patent 14 years
(Cl. D58—17)



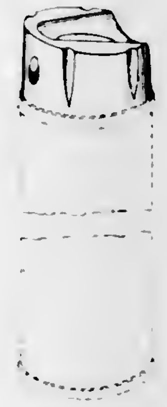
209,243
PACKAGING CONTAINER FOR FOOD OR THE LIKE
Henry H. Huston, Huntington, N.Y., assignor to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 28, 1967, Ser. No. 5,992
Term of patent 14 years
(Cl. D58—17)



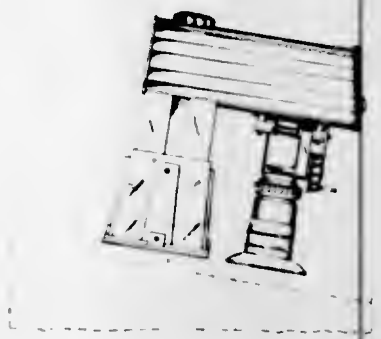
209,244
JAR OR SIMILAR ARTICLE
Victor Koenigsberg, Franklin Square, N.Y., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Original design application Mar. 4, 1965, Ser. No. 84,087, now Patent No. 206,292, dated Nov. 22, 1966. Divided and this application June 22, 1966, Ser. No. 4,226
Term of patent 14 years
(Cl. D58—25)



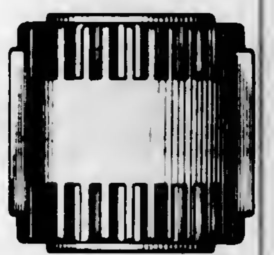
209,245
DISPENSER TOP FOR A PRESSURIZED CAN
Eugene Barnett, Chicago, Ill., assignor to Aerosol Research Company, a Division of Valve Corporation of America, a corporation of Delaware
Filed Aug. 4, 1966, Ser. No. 3,334
Term of patent 14 years
(Cl. D58—26)



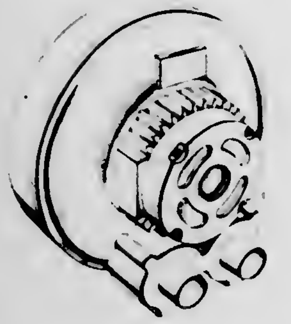
209,246
PROJECTOR FOR A FILM VIEWER
Willis L. Wells, Clayton, Mo., assignor to Photronix, Inc., St. Louis, Mo., a corporation of Missouri
Filed Jan. 24, 1966, Ser. No. 746
Term of patent 14 years
(Cl. D61—1)



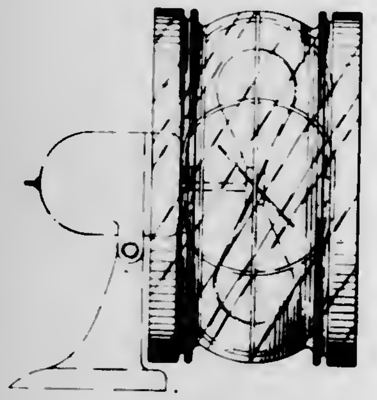
209,247
FLOOR FAN HOUSING
William P. Ayers, 390 E. St. Charles Road, St. Charles, Ill. 60148
Filed May 11, 1966, Ser. No. 2,250
Term of patent 14 years
(Cl. D62—4)



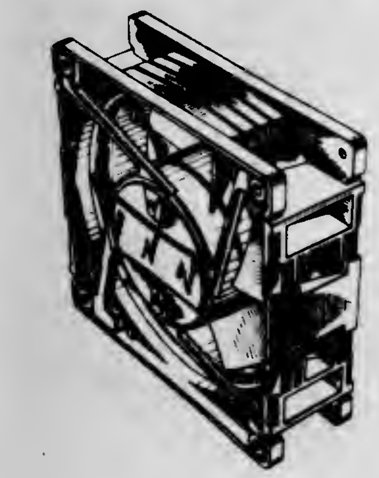
209,248
BLOWER
Joel W. Hollenberg, Middlesex, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed June 21, 1966, Ser. No. 2,757
Term of patent 14 years
(Cl. D62—4)



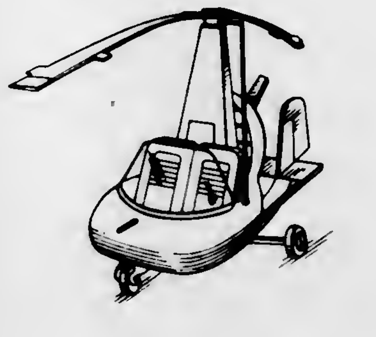
209,249
FAN GUARD
James V. Militello, Buffalo, N.Y., assignor to American Allsafe Co., Buffalo, N.Y., a corporation of New York
Filed Sept. 20, 1966, Ser. No. 3,934
Term of patent 14 years
(Cl. D62—4)



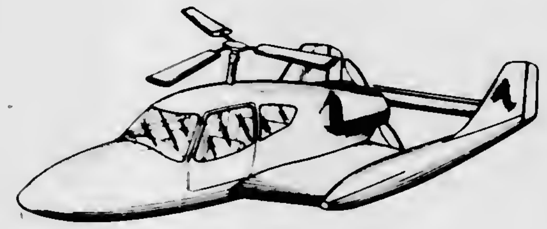
209,250
FAN
Peter P. Grad, Woodstock, N.Y., assignor to Rotron Manufacturing Company, Inc., Woodstock, N.Y., a corporation of New York
Filed Nov. 25, 1966, Ser. No. 4,811
Term of patent 14 years
(Cl. D62—4)



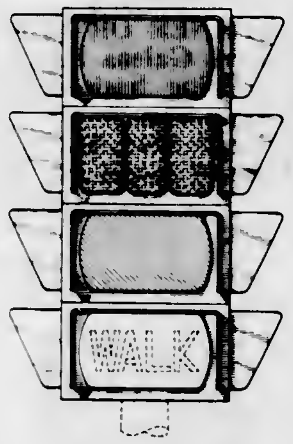
209,251
AIRCRAFT
Robert E. Peck San Diego, Calif., assignor to Saalfeld Aircraft Co., a corporation of California
Filed Mar. 8, 1966, Ser. No. 1,339
Term of patent 14 years
(Cl. D71—1)



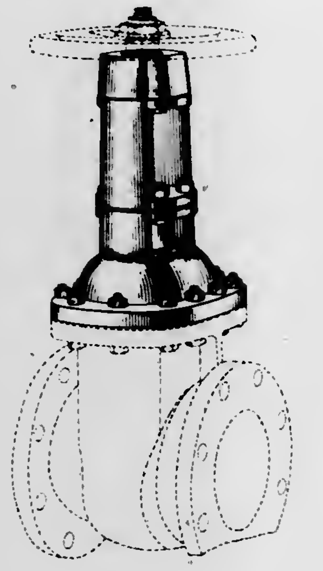
209,252
AIRCRAFT
Robert E. Foote, 1030 Shadow Wood, Lewisville, Tex. 75067
Filed Sept. 12, 1966, Ser. No. 3,828
Term of patent 14 years
(Cl. D71—1)



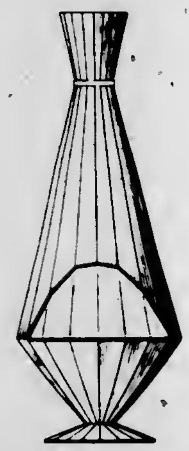
209,253
TRAFFIC LIGHT
Thomas M. Karl, 501 S. Broadway, New Ulm, Minn. 56073
Filed Feb. 27, 1967, Ser. No. 5,968
Term of patent 14 years
(Cl. D72—1)



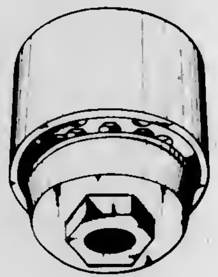
209,254
GATE VALVE CONTROL
James Trefil, Berwyn, Ill., and Nicholas P. Arvan, Milwaukee, Wis., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Mar. 2, 1967, Ser. No. 6,039
Term of patent 14 years
(Cl. D78—1)



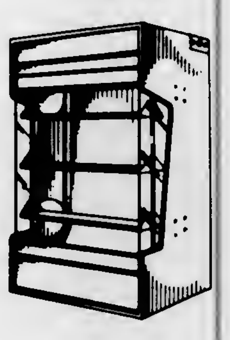
209,255
FREE-STANDING FIREPLACE
James F. Sandiford, 5012 Glendora Ave., Covina, Calif. 91722
Filed Mar. 28, 1966, Ser. No. 1,664
Term of patent 14 years
(Cl. D81—7)



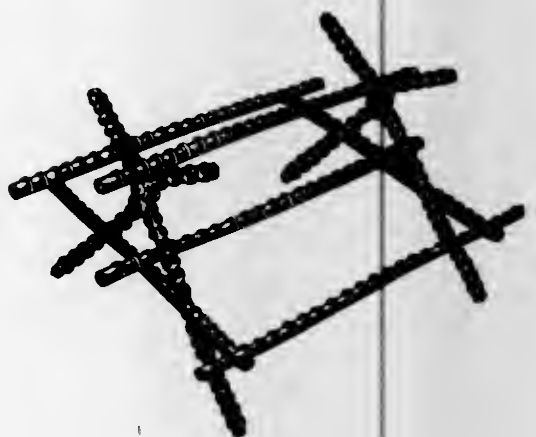
209,256
GAS BURNER OR THE LIKE
James R. Richardson, Galena Park, Tex., assignor to Elsinore Addis, doing business as William Addis Company, Houston, Tex.
Filed Mar. 9, 1966, Ser. No. 1,360
Term of patent 14 years
(Cl. D81—10)



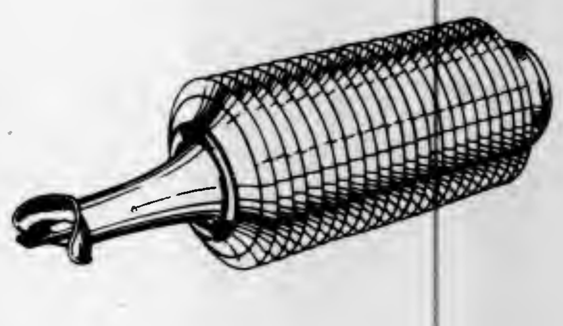
209,257
COMBINED FOOD WARMER AND DISPLAY DEVICE
Tony J. Bressickello, 13015 S. Normandie Ave., Gardena, Calif. 90249
Filed Oct. 20, 1966, Ser. No. 4,353
Term of patent 14 years
(Cl. D81—10)



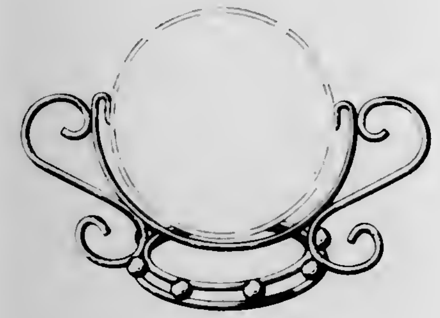
209,258
LOG GRATE
Carroll E. McDonald, P.O. Box 1229, Lakeview, Oreg. 97630
Filed Jan. 11, 1967, Ser. No. 5,384
Term of patent 14 years
(Cl. D81—18)



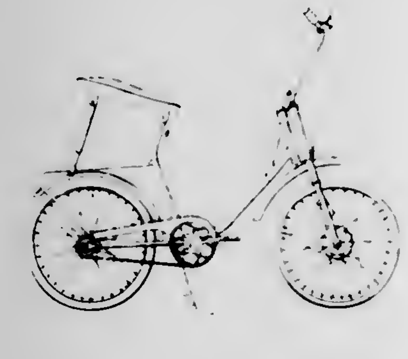
209,259
RESPIRATOR
Proctor P. Disbro, 2888 Fairfax Road, Cleveland Heights, Ohio 44118
Filed Sept. 26, 1966, Ser. No. 4,030
Term of patent 14 years
(Cl. D83—1)



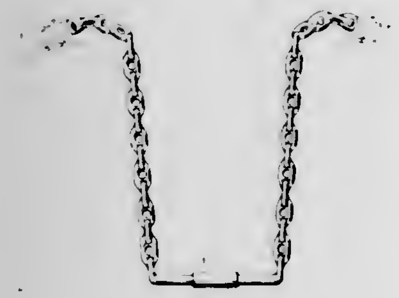
209,260
COMBINED MIRROR AND STAND
Jack Kaye, 200 Kosciusko St., Brooklyn, N.Y. 11216
Filed Feb. 21, 1967, Ser. No. 5,904
Term of patent 7 years
(Cl. D86—10)



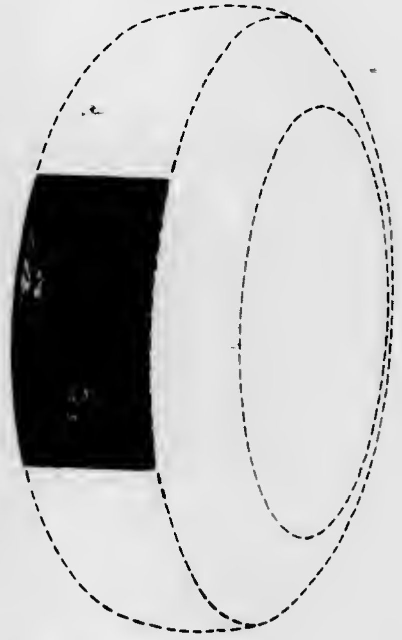
209,261
BICYCLE
Brian Harry Bailey, Grove Vale, England, assignor to Tri-Ang Toys Limited, London, England, a British company
Filed Oct. 10, 1966, Ser. No. 4,205
Claims priority, application Great Britain Aug. 9, 1966
Term of patent 14 years
(Cl. D90—8)



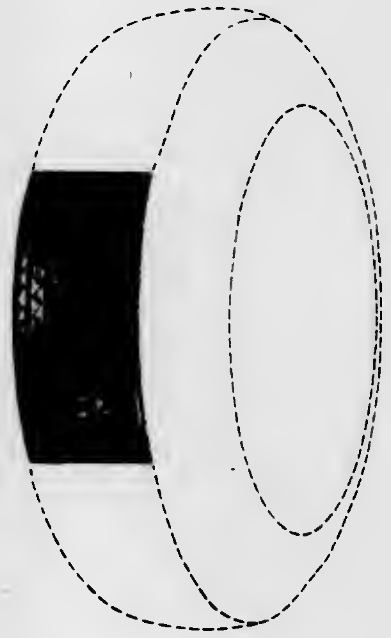
209,262
HANDLE BAR FOR A MOTORCYCLE OR OTHER VEHICLE
Avery F. Weaver, 21030 Le Fever, Warren, Mich. 48091
Filed Jan. 9, 1967, Ser. No. 5,357
Term of patent 14 years
(Cl. D90—11)



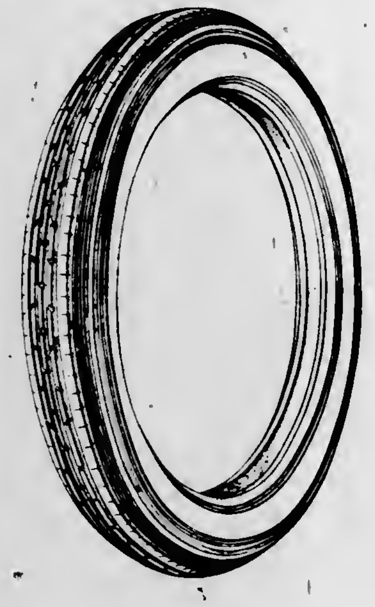
209,263
PNEUMATIC TIRE
Joseph N. Jacobs, Indiana, Pa., assignor to McCreary Tire & Rubber Company, Indiana, Pa., a corporation of Pennsylvania
Filed Dec. 23, 1965, Ser. No. 299
Term of patent 14 years
(Cl. D90—20)



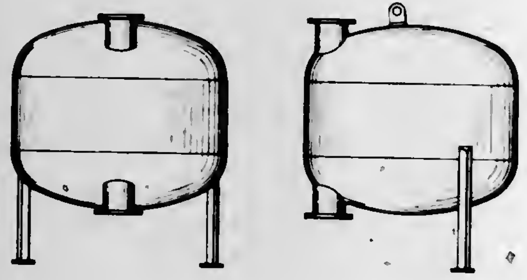
209,264
PNEUMATIC TIRE
Joseph N. Jacobs, Indiana, Pa., assignor to McCreary Tire & Rubber Company, Indiana, Pa., a corporation of Pennsylvania
Filed Dec. 23, 1965, Ser. No. 305
Term of patent 14 years
(Cl. D90—20)



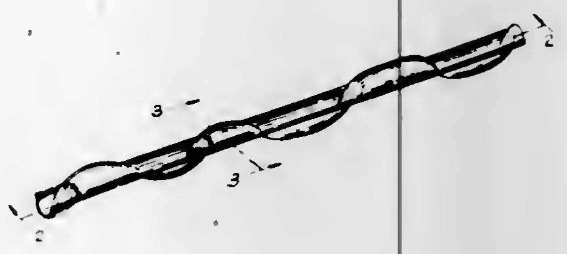
209,265
TIRE
Anthony Mark Mills, Sutton Coldfield, England, assignor to Dunlop Rubber Company Limited, Birmingham, England, a British corporation
Filed Oct. 18, 1966, Ser. No. 4,314
Claims priority, application Great Britain Apr. 20, 1966
Term of patent 14 years
(Cl. D90—20)



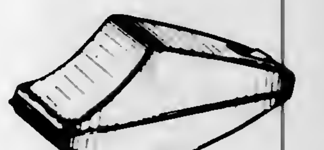
209,266
PRESSURE STORAGE TANK
Verle H. Brown, Seattle, Wash., assignor to E. Sam Dick Co., Inc., Seattle, Wash.
Filed Nov. 29, 1965, Ser. No. 88,247
Term of patent 14 years
(Cl. D91—1)



209,267
PLASTIC RIBBON
Sohinder Nath Chopra and Hilaire Marcel Turmel, Drummondville, Quebec, Canada, assignors to Chemcell Limited, Montreal, Quebec, Canada
Filed June 17, 1966, Ser. No. 2,713
Claims priority, application Canada Dec. 21, 1965
Term of patent 14 years
(Cl. D92—1)



209,268
HAIR CLIPPER
Henricus Franciscus Theresia Schellens, Drachten, Netherlands
Filed Dec. 16, 1965, Ser. No. 212
Claims priority, application Switzerland July 8, 1965
Term of patent 14 years
(Cl. D95—5)



LIST OF PLANT PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 14TH DAY OF NOVEMBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Ecke, Paul. Poinsettia plant. 2,778, 11–14–67, Cl. 86.
Fitzgerald, Elizabeth B. Cattleya orchid plant. 2,777, 11–14–67, Cl. 68.
Garabedian, John M., to Peach & Willow Farms. Plum tree. 2,783, 11–14–67, Cl. 38.
Lowry, David B. Nectarine tree. 2,776, 11–14–67, Cl. 41.
Peach & Willow Farms: *See*—
  Garabedian, John M. 2,783.

LIST OF DESIGN PATENTEES

Addis, Elsinore, d.b.a. William Addis Co.: *See*—
  Richardson, James R. 209,256.
Aerosol Research Co.: *See*—
  Barnett, Eugene. 209,245.
American Allsafe Co.: *See*—
  Militello, James V. 209,249.
Ampex Corp.: *See*—
  Lauer, Darrel A. 209,205.
  Matsuda, Harry K. 209,210.
Appel, Mel, and M. Schnur, to Elpo Industries Inc. Amusement-type indicator. 209,218, 11–14–67, Cl. D34—5.
Appel, Mel, and M. Schnur, to Elpo Industries Inc. Bread box. 209,224, 11–14–67, Cl. D44—6.
Aqua-Tec Corp.: *See*—
  Fulton, James F., St. Clair, and Mattingly. 209,202.
  Mattingly, John W., Fulton, and St. Clair. 209,203.
  St. Clair, Melvin E., Mattingly, and Fulton. 209,204.
Arvan, Nicholas P.: *See*—
  Trefil, James, and Arvan. 209,254.
Ayers, William P. Floor fan housing. 209,247, 11–14–67, Cl. D62—4.
Bailey, Brian H., to Tri-Ang Toys Ltd. Bicycle. 209,261, 11–14–67, Cl. D90—8.
Ball, Gerald V.: *See*—
  Baum, Herbert J. L., and Ball. 209,241.
Barnett, Eugene, to Aerosol Research Co. Dispenser top for a pressurized can. 209,245, 11–14–67, Cl. D58—26.
Barton, Fred D. Merchandise display package. 209,238, 11–14–67, Cl. D58—2.
Batson, William A., to The Singer Co. Hedge trimmer. 209,222, 11–14–67, Cl. D40—1.
Baum, Herbert J. L., and G. V. Ball, to Mipro Metal Products Co. Trash receptacle cover. 209,241, 11–14–67, Cl. D58—17.
Benett, Anthony B., and M. Steinberg. Lock for a machine. 209,230, 11–14–67, Cl. D50—7.
Bernstein, Daniel. Packaging container or the like. 209,239, 11–14–67, Cl. D58—12.
Betts, Donald W., to F. A. Lambach. Fishing bobber. 209,201, 11–14–67, Cl. D22—30.
Bressickello, Tony J. Combined food warmer and display device. 209,257, 11–14–67, Cl. D81—10.
Brown, Verle H., to E. Sam Dick Co., Inc. Pressure storage tank. 209,266, 11–14–67, Cl. D91—1.
Chamness, Abe. Chair. 209,197, 11–14–67, Cl. D15—1.
Charniga, Joseph, Jr. Carpenter's guide. 209,232, 11–14–67, Cl. D52—6.
Chemcell Ltd.: *See*—
  Chopra, Sohinder N., and Turmel. 209,267.
Chopra, Sohinder N., and H. M. Turmel, to Chemcell Ltd. Plastic ribbon. 209,267, 11–14–67, Cl. D92—1.
Clevite Corp.: *See*—
  Doman, Donald W. 209,227.
  Doman, Donald W. 209,228.
Colgate-Palmolive Co.: *See*—
  Koenigsberg, Victor. 209,244.
Conway, Edward M., B. F. Smith, and H. E. Hamilton, to Conway Lumber Rule Co. Lumber rule head. 209,231, 11–14–67, Cl. D52—6.
Conway Lumber Rule Co.: *See*—
  Conway, Edward M., Smith, and Hamilton. 209,231.
Crane Co.: *See*—
  Trefil, James, and Arvan. 209,254.
Davis, Paul, to Sweetheart Plastics, Inc. Cup. 209,225, 11–14–67, Cl. D44—9.
Deaver, Dann T.: *See*—
  Main, John A., and Deaver. 209,196.
De Jongh, Johan C. H., to North American Philips Co. Inc. Combined desk and projection chamber for an electromicroscope. 209,206, 11–14–67, Cl. D26—5.
Dell, Jack M.: *See*—
  Fanslow, Ronald J., Wilkinson, and Dell. 209,193.
De Paolo, Gerard R. Sectionalized unit for a picket slat fence. 209,212, 11–14–67, Cl. D28—1.
Derby S.A. Canton: *See*—
  Vuilleumier, Gaston. 209,223.
De Sieno, Silvino F. Restaurant. 209,191, 11–14–67, Cl. D13—1.
Dick, E. Sam, Co., Inc.: *See*—
  Brown, Verle H. 209,266.
Disbro, Proctor P. Respirator. 209,259, 11–14–67, Cl. D83—1.
Doman, Donald W., to Clevite Corp. Portable fluorescent light. 209,227, 11–14–67, Cl. D48—24.
Doman, Donald W., to Clevite Corp. Portable fluorescent light. 209,228, 11–14–67, Cl. D48—24.
Douglass, William A. Telescoping plunger hammer. 209,236, 11–14–67, Cl. D54—13.
Driggers, Bradford C. Fishing lure. 209,199, 11–14–67, Cl. D22—27.
Dunlop Rubber Co., Ltd.: *See*—
  Mills, Anthony M. 209,265.
Eaton Yale & Towne, Inc.: *See*—
  Madding, Robert H. 209,207.
Eichler, Edwin H. Restaurant building facade. 209,190, 11–14–67, Cl. D13—1.
Ellsworth, Ralph: *See*—
  Wareham, Richard, and Ellsworth. 209,198.
Elpo Industries, Inc.: *See*—
  Appel, Mel, and Schnur. 209,218.
  Appel, Mel, and Schnur. 209,224.
Fanslow, Ronald J., D. E. Wilkinson, and J. M. Dell, to International Harvester Co. Track roller guard. 209,193, 11–14–67, Cl. D14—3.
Finneman, George S.: *See*—
  Sanders, Douglas O., and Finneman. 209,194.
Foote, Robert E. Aircraft. 209,252, 11–14–67, Cl. D71—1.
Fulton, James F., M. E. St. Clair, and J. W. Mattingly, to Aqua-Tec Corp. Combined motor pump housing and cover for a dental jet cleansing unit. 209,202, 11–14–67, Cl. D24—1.
Fulton, James F.: *See*—
  St. Clair, Melvin E., Mattingly, and Fulton. 209,204.
  Mattingly, John W., Fulton, and St. Clair. 209,203.
Gantz, Carroll M., to The Hoover Co. Casing for a suction cleaner or similar article. 209,189, 11–14–67, Cl. D9—2.
General Alarm Corp.: *See*—
  Gilbert, Felix. 209,208.
  Gilbert, Felix. 209,211.
Gilbert, Felix, to General Alarm Corp. Telephone signal control unit. 209,208, 11–14–67, Cl. D26—13.
Gilbert, Felix, to General Alarm Corp. Automatic telephone console. 209,211, 11–14–67, Cl. D26—14.
Goldstein, Abraham: *See*—
  Goldstein, Jerome and A. 209,219.
Goldstein, Jerome and A., to Loyal Gift Products Inc. Coin collector. 209,219, 11–14–67, Cl. D34—11.
Grad, Peter P., to Rotron Mfg. Co. Inc. Fan. 209,250, 11–14–67, Cl. D62—4.
Gryctko, Carl E., and F. E. Myers, to I-T-E Circuit Breaker Co. Electrical circuit breaker. 209.209, 11–14–67, Cl. D26—13.
Hakim, Albert S. Poker chip. 209,216, 11–14–67, Cl. D34—5.
Hamilton, Harold E.: *See*—
  Cornway, Edward M., Smith, and Hamilton. 209,231.
Harding, David B., to Sani-Jon of America, Inc. Portable toilet cabana. 209,192, 11–14–67, Cl. D13—1.
Hollenberg, Joel W., to The Singer Co. Blower. 209,248, 11–14–67, Cl. D62—4.
Honeywell Inc.: *See*—
  Laughlin, Clayton A. 209,233.
  Laughlin, Clayton A. 209,234.
Hoover Co., The: *See*—
  Gantz, Carroll M. 209,189.
Huston, Henry H., to Lily-Tulip Cup Corp. Packaging container for food or the like. 209,242, 11–14–67, Cl. D58—17.
Huston, Henry H., to Lily-Tulip Cup Corp. Packaging container for food or the like. 209,243, 11–14–67, Cl. D58—17.
I-T-E Circuit Breaker Co.: *See*—
  Gryctko, Carl E., and Myers. 209,209.
International Harvester Co.: *See*—
  Fanslow, Ronald J., Wilkinson, and Dell. 209,193.
Jacobs, Joseph N., to McCreary Tire & Rubber Co. Pneumatic tire. 209 263, 11–14–67, Cl. D90—20.
Jacobs, Joseph N., to McCreary Tire & Rubber Co. Pneumatic tire. 209,264, 11–14–67, Cl. D90—20.
Jusztin, John. Vehicle grill. 209,195, 11–14–67, Cl. D14—18.
Kandz, Theodore. Eye for fishing lures. 209,200, 11–14–67, Cl. D22—27.
Karl, Thomas M. Traffic light. 209,253, 11–14–67, Cl. D72—1.
Kaye, Jack. Combined mirror and stand. 209,260, 11–14–67, Cl. D86—10.
Koenigsberg, Victor, to Colgate-Palmolive Co. Jar or similar article. 209,244, 11–14–67, Cl. D58—25.

Kono, Alexander, to Kono Mfg. Co., Inc. Eyeglass frame or the like. 209,237, 11-14-67, Cl. D57—1.
Kono Mfg. Co., Inc.: *See*—
  Kono, Alexander. 209,237.
Lambach, Frederick A.: *See*—
  Betts, Donald W. 209,201.
Lauer, Darrel A., to Ampex Corp. Portable de-magnetizer. 209,205, 11-14-67, Cl. D26—1.
Laughlin, Clayton A., to Honeywell Inc. Space condition responsive instrument. 209,233, 11-14-67, Cl. D52—7.
Laughlin, Clayton A., to Honeywell Inc. Space condition responsive instrument. 209,234, 11-14-67, Cl. D52—7.
Lily-Tulip Cup Corp.: *See*—
  Huston, Henry H. 209,242.
  Huston, Henry H. 209,243.
Long, James M., to A. G. Spalding & Bros. Inc. Golf putter head. 209,215, 11-14-67, Cl. D34—5.
Loyal Gift Products Inc.: *See*—
  Goldstein, Jerome and A. 209,219.
Madding, Robert H., to Eaton Yale & Towne, Inc. Hoist push button control. 209,207, 11-14-67, Cl. D26—13.
Main, John A., and D. T. Deaver, to Motor Wheel Corp. Wheel. 209,196, 11-14-67, Cl. D14—30.
Markim, Betty J. Riding spur. 209,214, 11-14-67, Cl. D30—31.
Matsuda, Harry K., to Ampex Corp. Combined tape recorder and radio receiver. 209,210, 11-14-67, Cl. D26—14.
Mattel, Inc.: *See*—
  Ryan, John W., and Schmidt. 209,220.
Mattingly, John W.: *See*—
  Fulton, James F., St. Clair, and Mattingly. 209,202.
Mattingly, John W., J. F. Fulton, and M. E. St. Clair, to Aqua-Tec Corp. Motor pump housing for a dental jet cleansing unit. 209,203, 11-14-67, Cl. D24—1.
Mattingly, John W.: *See*—
  St. Clair, Melvin E., Mattingly, and Fulton. 209,204.
McCreary Tire & Rubber Co.: *See*—
  Jacobs, Joseph N. 209,263.
  Jacobs, Joseph N. 209,264.
McDonald, Carroll E. Log grate. 209,258, 11-14-67, Cl. D81—18.
Militello, James V., to American Allsafe Co. Fan guard. 209,249, 11-14-67, Cl. D62—4.
Mills, Anthony M., to Dunlop Rubber Co., Ltd. Tire. 209,265, 11-14-67, Cl. D90—20.
Mipro Metal Products Co.: *See*—
  Baum, Herbert J. L., and Ball. 209,241.
Motor Wheel Corp.: *See*—
  Main, John A., and Deaver. 209,196.
Myers, Felix E.: *See*—
  Gryctko, Carl E., and Myers. 209,209.
Niles, David A. Flag or similar article. 209,213, 11-14-67, Cl. D29—17.
North American Philips Co. Inc.: *See*—
  De Jongh, Johan C. H. 209,206.
Pappalardo, Andrew. Match box. 209,229, 11-14-67, Cl. D48—29.
Peck, Robert E., to Saalfeld Aircraft Co. Aircraft. 209,251, 11-14-67, Cl. D71—1.
Photronix, Inc.: *See*—
  Wells, Willis L. 209,246.
Plogsted, William J. Hexagonal beverage carton. 209,240, 11-14-67, Cl. D58—13.
Powers, Bradford W., Jr. Lighting fixture. 209,226, 11-14-67, Cl. D48—23.
Richardson, James R., to E. Addis, d.b.a. William Addis Co. Gas burner or the like. 209,256, 11-14-67, Cl. D81—10.
Rotron Mfg. Co. Inc.: *See*—
  Grad, Peter P. 209,250.
Ryan, John W., and G. W. Schmidt, to Mattel, Inc. Crawler-type toy vehicle. 209,220, 11-14-67, Cl. D34—15.
Saalfeld Aircraft Co.: *See*—
  Peck, Robert E. 209,251.
Sanders, Douglas O., and G. S. Finneman. Mobile log slasher. 209,194, 11-14-67, Cl. D14—3.
Sandiford, James F. Free-standing fireplace. 209,255, 11-14-67, Cl. D81—7.
Sani-Jon of America, Inc.: *See*—
  Harding, David B. 209,192.
Schellens, Henricus F. T. Hair clipper. 209,268, 11-14-67, Cl. D95—5.
Schmidt, Gerald W.: *See*—
  Ryan, John W., and Schmidt. 209,220.
Schnur, Martin: *See*—
  Appel, Mel, and Schnur. 209,218.
  Appel, Mel, and Schnur. 209,224.
Singer Co., The: *See*—
  Batson, William A. 209,222.
  Hollenberg, Joel W. 209,248.
Smith, Benjamin F.: *See*—
  Conway, Edward M., Smith, and Hamilton. 209,231.
Smith, Cecil R. Horseshoe for a game. 209,217, 11-14-67, Cl. D34—5.
Soehara, Hiroshi, to Soehara Mfg. Co., Ltd. Spoon or similar article of flatware. 209,235, 11-14-67, Cl. D54—12.
Soehara Mfg. Co., Ltd.: *See*—
  Soehara, Hiroshi. 209,235.
Spalding, A. G., & Bros. Inc.: *See*—
  Long, James M. 209,215.
St. Clair, Melvin E.: *See*—
  Fulton, James F., St. Clair, and Mattingly. 209,202.
  Mattingly, John W., Fulton, and St. Clair. 209,203.
St. Clair, Melvin E., J. W. Mattingly, and J. F. Fulton, to Aqua-Tec Corp. Dental jet cleansing unit or the like. 209,204, 11-14-67, Cl. D24—1.
Superior Funeral Supply Corp.: *See*—
  Wareham, Richard, and Ellsworth. 209,198.
Sweetheart Plastics, Inc.: *See*—
  Davis, Paul. 209,225.
Trefil, James, and N. P. Arvan, to Crane Co. Gate valve control. 209,254, 11-14-67, Cl. D78—1.
Tri-Ang Toys Ltd.: *See*—
  Bailey, Brian H. 209,261.
Turmel, Hilaire M.: *See*—
  Chopra, Sohinder N., and Turmel. 209,267.
Vuilleumier, Gaston, to Derby S.A. Canton. Sundial. 209,223, 11-14-67, Cl. D42—7.
Wareham, Richard, and R. Ellsworth, to Superior Funeral Supply Corp. Gasket display bier. 209,198, 11-14-67, Cl. D19—1.
Weaver, Avery F. Handle bar for a motorcycle or other vehicle. 209,262, 11-14-67, Cl. D90—11.
Wegele, George A. Lawn mowing machine. 209,221, 11-14-67, Cl. D40—1.
Wells, Willis L., to Photronix, Inc. Projector for a film viewer. 209,246, 11-14-67, Cl. D61—1.
Wilkinson, Donald E.: *See*—
  Fanslow, Ronald J., Wilkinson, and Dell. 209,193.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 14TH DAY OF NOVEMBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
  Brookman, Ronald J. 3,353,144.
  Dowling, Edward C. 3,353,165.
  Ekers, Glenn R. 3,352,981.
  Loose, Winfield W. 3,353,138.
  Pauza, William V. 3,353,143.
Abbott, Frank R., to United States of America, Navy. Electrodynamic transducer. 3,353,040, 11-14-67, Cl. 310—27.
Abcor, Inc.: *See*—
  Modell, Michael, and Ryan. 3,352,089.
Abdalian, Noubar S.: *See*—
  Shields, Sebough S. 3,352,763.
Abdalian, Robert V.: *See*—
  Shields, Sebough S. 3,352,763.
Abdo, Daniel A., to The Boeing Co. Process for making a temperature sensitive color reversible pigment and resulting product. 3,352,794, 11-14-67, Cl. 252—408.
Abel, Konrad, to Siemens & Halske Aktiengesellschaft Berlin and Munich. Low noise level short wave amplification employing a reactance modulator. 3,353,031, 11-14-67, Cl. 307—88.3.
Abelson, Louis. Mechanical jaw spreader. 3,352,301, 11-14-67, Cl. 128—12.
Abraham, James G., to Armco Steel Corp. Load measuring windlass. 3,352,152, 11-14-67, Cl. 73—143.
Abramson, Louis D. Powerized spray gun. 3,352,497, 11-14-67, Cl. 239—332.
Acme Industries, Inc.: *See*—
  Greenfield, John B. 3,352,546.
Acme Juicer Mfg. Co.: *See*—
  Moline, Douglas F. 3,352,339.
Acme Visible Records, Inc.: *See*—
  Fleischhauer, Eugene T. 3,352,740.
Adachi, Kazuo, M. Hoshikawa, and K. Ohira, to Tekkosha Co., Ltd. Process for producing gamma phase linear quinacridone. 3,352,867, 11-14-67, Cl. 260—279.
Adams, Frederick J., to Hydrosteer Ltd. Power assisted steering or like control gear. 3,352,170, 11-14-67, Cl. 74—388.
Adams, Kenneth D., and E. H. Kay, to The Singer Co. Automatic apparatus for sewing machines and the like. 3,352,263, 11-14-67, Cl. 112—2.
Adams, Leonard H.: *See*—
  Black, James B., and Adams. 3,352,392.
Admiral Corp.: *See*—
  Stute, Carlton F. 3,352,983.
Aerojet-General Corp.: *See*—
  Sisson, James C., Sparrow, Eckles, Meissner, and Burnham. 3,353,005.
Agency of Industrial Science and Technology, Ministry of International Trade and Industry: *See*—
  Kataoka, Shoei, Yamada, and Kobayashi. 3,353,010.
Agfa Aktiengesellschaft: *See*—
  Morcher, Bernhard, Meckl, and Häseler. 3,352,676.
Agostini, Victor A. Fishhook releasing and retrieving means. 3,352,049, 11-14-67, Cl. 43—17.2.
Ahlf, John C. Extensible and retractable wheel assembly for luggage. 3,352,568, 11-14-67, Cl. 280—35.
Air Products and Chemicals, Inc.: *See*—
  Biskis, Edward G. 3,352,121.
Air Reduction Co., Inc.: *See*—
  Chadwick, George F. 3,353,135.
  Hoffman, Joseph K. 3,352,929.
  Kim, Kee H. 3,352,797.
Aircraft Radio Corp.: *See*—
  Preuss, Ernest A. 3,353,181.
Air-Mite Devices, Inc.: *See*—
  Stryker, Seymour F. 3,352,324.
  Stryker, Seymour F. 3,352,325.
Akkerman, Antony M., and J. F. Michels, to N.V. Nederlandsche Combinatie voor Chemische Industrie. Hexachlorophene derivatives for treating fascioliasis. 3,352,751, 11-14-67, Cl. 167—58.
Albright, Donald R., to General Electric Co. Conductor cooling system for dynamoelectric machine rotor. 3,353,043, 11-14-67, Cl. 310—61.
Albright, Franklin C., to The Bendix Corp. Castered wheel centering mechanism. 3,352,515, 11-14-67, Cl. 244—103.
Alden, Lars A. G. Crane boom. 3,532,441, 11-14-67, Cl. 214—130.
Alexander, Carl J., and R. W. Bowers, to Wells Mfg. Corp. Electrically heated flexible knife. 3,352,011, 11-14-67, Cl. 30—140.
Alexander, Donald F., to General Motors Corp. Domestic appliance. 3,353,004, 11-14-67, Cl. 219—398.
Alexander, Richard L., and F. E. Brown, to Gulf Oil Corp. Polyethylene compositions. 3,352,819, 11-14-67, Cl. 260—45.9.
Algieri, Salvatore: *See*—
  Caldo, Cornelio, and Algieri. 3,352,882.
Alkofer, James S., to Eastman Kodak Co. Method for smoothing coated web. 3,352,706, 11-14-67, Cl. 117—64.
Allen, John L. Compressor apparatus. 3,352,483, 11-14-67, Cl. 230—79.
Allen, Manton E.: *See*—
  Warner, Albert C., and Allen. 3,352,046.
Allen, Robert K., to General Electric Co. Automatic control system for vehicles incorporating a ranging system for vehicle traffic safety control. 3,353,019, 11-14-67, Cl. 246—187.
Allgonac Marine Foundry, Inc.: *See*—
  Herreshoff, Alexander G., Rich, and Johnson. 3,352,273.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
  Forssell, Harry. 3,353,096.
  Lindström, Olle. 3,352,716.
  Stenkvist, Sven-Einar, and Hanås. 3,352,665.
Allied Chemical Corp.: *See*—
  Apice, Pasquale J. 3,352,943.
  Boggs, Beryl A. 3,351,991.
  Degginger, Edward R., Knapp, and Zuern. 3,352,780.
  Gilbert, Everett E., and Veldhuis. 3,352,928.
  Parham, Thomas M., Jr. 3,352,812.
Allis-Chalmers Mfg. Co.: *See*—
  Baude, John. 3,353,012.
  Baude, John. 3,353,171.
  Haworth, Daniel T., and Pollnow. 3,352,823.
  Longshore, Donald W. 3,352,394.
  Schneider, Burnett M. 3,352,719.
  Wachta, Zygmunt A., and Pflanz. 3,352,988.
  Wolff, George D. 3,352,245.
Allmark, Reginald H., and J. R. Ellison, to The English Electric Co. Ltd. Logical electric circuits. 3,353,105, 11-14-67, Cl. 328—91.
Almquist, Nils T., to United States of America, Army. Self-regulating turbine. 3,352,536, 11-14-67, Cl. 253—59.
Altenburger, Paul, to The United States Time Corp. Method of assembly of resonator. 3,352,000, 11-14-67, Cl. 29—177.
American Chain & Cable Co., Inc.: *See*—
  Gilmore, William J. 3,352,098.
American Cyanamid Co.: *See*—
  Fujita, Yoshimasa, and Tsutsui. 3,352,626.
  Matsunaga, Yoshio. 3 352,888.
  Nolan, Kenneth G., Frederick, and Coleman. 3,352,664.
  Sheehan, Desmond, Clarke, and Rauhut. 3,352,791.
  Welcher, Richard P. 3,352,919.
  Wikswo, John P. 3,352,639.
American Excelsior Corp.: *See*—
  Gasch, Dale J., and Pitsch. 3,351,977.
American Flange & Mfg. Co., Inc.: *See*—
  Koll, Stanley J. 3,352,268.
American Home Products Corp.: *See*—
  Lefebvre, Yvon. 3,352,889.
  Wendt Gerhard R., and Ledig. 3,352,891.
American Machine & Foundry Co.: *See*—
  Berler, Robert M. 3,352,099.
American Motors Corp.: *See*—
  Smith, Harold H. 3,352,431.
Amerock Corp.: *See*—
  Dargene, Carl J. 3,352,617.
Amphenol Corp.: *See*—
  Elarde, Vito D. 3,353,134.
Anaconda Aluminum Co.: *See*—
  Neal, Harry B. 3,352,078.
Andermac, Inc.: *See*—
  McLaughlin, Jack E. 3,352,960.
Andersen, Andrew W. Tiltable holder and dispenser. 3,352,614, 11-14-67, Cl. 312—42.
Anderson, Arthur W., and L. R. Perkins, to E. I. du Pont de Nemours and Co. Polyfluorocarbon substrate coated with polyamide and method. 3 352,714, 11-14-67, Cl. 117—213.
Anderson, Charles M. Tractor cab mounting apparatus. 3,352,598, 11-14-67, Cl. 296—35.
Anderson, Dean B., to North American Aviation, Inc. Monopulse data system. 3,353,180, 11-14-67, Cl. 343—16.
Anderson, Edgar L., and N. E. Lauterbach, to Wilmot Castle Co. Closure apparatus for pressure chamber. 3,352,446, 11-14-67, Cl. 220—41.
Anderson, George A., to Collier-Keywarth Co. Chair iron. 3,352,526, 11-14-67, Cl. 248—380.
Anderson, Harold C., to Litton Systems, Inc. Microwave process and apparatus. 3,352,704, 11-14-67, Cl. 117—36.8.
Anderson, Harold H., to G. & J. Weir Ltd. Self-tightening pressure vessel closure. 3,352,444, 11-14-67, Cl. 220—14.
Anderson, Wilbur G., to Packaging Corp. of America. Foldable rodenticide feeding box and blank therefor. 3,352,053, 11-14-67, Cl. 43—131.
Ando, Noboru, Y. Tanizaki, and F. Hasegawa, to Hitachi, Ltd. Liquid chromatography and chromatographs. 3,352,643, 11-14-67, Cl. 23—230.
Andrews, James D., to General Electric Co. Method for making electrode holder. 3,352,958, 11-14-67, Cl. 264—255.
Anocut Engineering Co.: *See*—
  Williams, Lynn A. 3,352,774.
Anson, Michael D. Inner spring mattress and handle combination. 3,351,964, 11-14-67, Cl. 5—351.
Anspon, Harry D., to General Aniline & Film Corp. Polymerization of halo acrylate monomers using ultraviolet light and hydroxy substituted benzophenone absorbers. 3,352,771, 11-14-67, Cl. 204—159.23.

Antell, George R., to International Standard Electric Corp. Method of forming a gallium arsenide transistor by diffusion. 3,352,725, 11-14-67, Cl. 148—186.
Anthony, Andrew J., to Combustion Engineering, Inc. Fuel assembly for nuclear reactor. 3,352,758, 11-14-67, Cl. 176—78.
Aoki, Toshio, to Hitqchi Electronics Co., Ltd. Microwave wide-band detectors. 3,353,125, 11-14-67, Cl. 333—98.
Apice, Pasquale J., to Allied Chemical Corp. Air drying polyesters. 3,352,943, 11-14-67, Cl. 260—871.
Applied Dynamics, Inc.: *See*—
Gilbert, Edward O. 3,353,033.
Arburg Maschinenfabrik Hehl & Sohne: *See*—
Hehl, Karl. 3,351,980.
Archer, William, Jr.: *See*—
Pigott, Kenneth A., and Archer. 3,352,955.
Arenco Aktiebolag: *See*—
Danielsson, Henning E. 3,352,401.
Lindgren, Ake N. 3,352,308.
Arent, John F., to V-M Corp. Adapter for record changer spindle. 3,352,561, 11-14-67, Cl. 274—10.
Armco Steel Corp.: *See*—
Abraham, James G. 3,352,152.
Armento, William H., to General Aniline & Film Corp. Method for producing azoic pigment. 3,352,845, 11-14-67, Cl. 260—152.
Armstrong Cork Co.: *See*—
Robinson, William H. 3,353,016.
Arndt, Friedrich: *See*—
Freund, Heinz E., Arndt, and Rusch. 3,352,663.
Asada, Mitsuo: *See*—
Taniguchi, Kanji, Asada, and Sakimoto. 3,352,899.
Atlantic Refining Co., The: *See*—
Sorgenti, Harold A. 3,352,933.
Atlantic Research Corp.: *See*—
Holter, William H., Dunfee, and Webster. 3,352,244.
Jacox, Gordon L. 3,353,150.
Niederman, Howard H., and Jensen. 3,352,543.
Atlantic Richfield Co.: *See*—
Wakefield, Charles E., Jr. 3,352,356.
Atlas Chemical Industries, Inc.: *See*—
Conlisk, John R. 3,352,788.
Lew, Baak W. 3,352,947.
Zech, John D. 3,352,916.
Atlas Coverall & Uniform Supply Co.: *See*—
Indreland, Jack B. 3,352,627.
Atteberry, Ocie D.: *See*—
Page, Howard, and Atteberry. 3,352,606.
Auld, David B.: *See*—
Lowery, Andrew, Auld, and Faulkner. 3,353,023.
Aupoix, Marcel J. P., to Societe Generale du Vide. Flexible gate device pressure lock arrangement using same. 3,352,821, 11-14-67, Cl. 137—613.
Austin, Avery J., and R. S. Patch, to Sweden Freezer Mfg. Co. Hemodialysis system. 3,352,779, 11-14-67, Cl. 210—23.
Avco Mfg. Corp.: *See*—
Hart, Thomas C. 3,352,162.
Avco Corp.: *See*—
Tomaszek, Edward P. 3,352,168.
Avellone, Richard C., to Republic Steel Corp. Process for applying cladding of stainless steel on steel base with aluminum bonding layer. 3,352,005, 11-14-67, Cl. 29—484.
Avion Electronics, Inc.: *See*—
Schwartz, Joseph. 3,353,022.
Babcock Electronics Corp.: *See*—
Cartwright, Victor F. 3,353,179.
Babcock & Wilcox Co., The: *See*—
Schluderberg, Donald C., and Carlson. 3,352,365.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
Luetzel, Gerhard. 3,352,846.
Reicheneder, Franz, and Dury. 3,352,907.
Wolf, Hans, Drescher, Faulhaber, Wilhelm, Reinhard, and Penning. 3,352,710.
Baker, Charles: *See*—
Wilde, Geoffrey L., Ward, Williamson, and Baker. 3,352,114.
Baker, George W., and R. D. Wiseman, Jr., to United States of America, Navy. Explosive energy transfer means. 3,352,236, 11-14-67, Cl. 102—24.
Baker, George W., and R. D. Wiseman, Jr., to United States of America, Navy. Helicopter rotor shaft and rotor blade severing means. 3,352,513, 11-14-67, Cl. 244—17.15.
Baker, Marshall W.: *See*—
Beatenbough, Paul K., and Baker. 3,352,125.
Baker Perkins, Inc.: *See*—
Temple, Hiram E. 3,352,346.
Baldwin, Alan W.: *See*—
Birmingham, Henry P., Baldwin, and Perry. 3,353,153.
Baldwin-Lima-Hamilton Corp.: *See*—
Boshold, Raymond F. 3,352,141.
Baldwon, Samuel L.: *See*—
Franklin, John S., and Baldwon. 3,353,015.
Ball Brothers Co., Inc.: *See*—
Lyon, Kenneth C., Pickard, and Scholes. 3,352,708.
Pickard, John E. 3,352,707.
Baque, Pierre, R. Darras, and P. Koch, to Commissariat al'Energie Atomique. Process for cladding uranium rods. 3,352,004, 11-14-67, Cl. 29—474.3.
Barber-Colman Co.: *See*—
Haug, Edward W. 3,352,188.
Kennedy, Walter W. 3,352,319.
Barch, Herbert W., and R. V. Posney, to Pittsburgh Plate Glass Co. Method of controlling heat application to glass to repair scored regions. 3,352,655, 11-14-67, Cl. 65—28.
Barényi, Béla, and B. Sacco, to Daimler-Benz Aktiengesellschaft. Motor vehicle. 3,352,597, 11-14-67, Cl. 296—28.
Barényi, Béla: *See*—
Wilfert, Karl, and Barényi. 3,352,600.
Barke, Bernard A., and R. P. Oehrke, to Bell & Howell Co. Self-storing rear screen projector. 3,352,203, 11-14-67, Cl. 88—24.
Barnes Drill Co.: *See*—
Estabrook, Mark R. 3,352,067.
Barnes Engineering Co.: *See*—
Beitz, Richard C. 3,352,156.
Barney, Alfred N. Scaffold with catwalks for penetrating tree foliage. 3,352,380, 11-14-67, Cl. 182—131.
Barr, Dennis A., E. Nield, and J. B. Rose, to Imperial Chemical Industries Ltd. Copolymers of N-substituted maleimides. 3,352,832, 11-14-67, Cl. 260—78.
Barrett, John R., and H. A. Jensen, to General Electric Co. High efficiency semiconductor light emitter. 3,353,051, 11-14-67, Cl. 313—113.
Barrios, Hector R.: *See*—
Nordberg, Robert C., and Barrios. 3,352,654.
Barron, James O., J. T. Coomes, and R. D. C. Bone, to Shandon Scientific Co. Ltd. Chromatography. 3,352,221, 11-14-67, Cl. 95—11.
Barry, George H. Spark plug having an auxiliary series spark gap in parallel with the main spark gap. 3,353,052, 11-14-67, Cl. 313—123.
Barthule, George, to Liftex Slings, Inc. End terminal for fabric sling. 3,352,590, 11-14-67, Cl. 294—74.
Bartlett, Roscoe G., Jr. Mask-to-mask resuscitation systems. 3,352,304, 11-14-67, Cl. 128—145.8.
Baruffi, Charles E.: *See*—
Cheris, Maynard H., Bigos, and Baruffi. 3,351,989.
Basic Products Corp.: *See*—
Peterson, Carl A. 3,353,093.
Basile, Norman K.: *See*—
Ulbricht, Walter E., Yearwood, and Basile. 3,352,123.
Bassani, Ermanno. Electronic alarm or tripping system. 3,353,063, 11-14-67, Cl. 317—27.
Bassett, Kingman. Method and means for producing motion reduction. 3,353,045, 11-14-67, Cl. 310—104.
Battelle Development Corp., The: *See*—
Bouladon, Gabriel, and Zuppiger. 3,352,250.
Baude, John, to Allis-Chalmers Mfg. Co. Transistorized multiplication circuit. 3,353,012, 11-14-67, Cl. 235—194.
Baude, John, to Allis-Chalmers Mfg. Co. Magnetic device for indicating the occurrence of an electrical signal. 3,353,171, 11-14-67, Cl. 340—253.
Baumann, Frederick W., to General Electric Co. Ventilation for totally enclosed dynamoelectric machine. 3,353,042, 11-14-67, Cl. 310—57.
Bawn, Carl V., to United States Rubber Co. ABS polymers stabilized with a metal sulfide and one or more phenolic amine or phosphite antioxidants. 3,352,820, 11-14-67, Cl. 260—45.75.
Beatenbough, Paul K., and M. W. Baker, to General Motors Corp. Pressure-compensated polyphase expansion valve refrigeration system. 3,352,125, 11-14-67, Cl. 62—211.
Beatrice Foods Co.: *See*—
Li, Kwon H., Bunuus, and Noznick. 3,352,691.
Beau, Christian, and Gerard. Garage for motor vehicles. 3,352,437, 11-14-67, Cl. 214—16.1.
Beau, Gerard: *See*—
Beau, Christian, and Gerard. 3,352,437.
Beavers, Cyril: *See*—
Cleef, Peter H., Beavers, and William. 3,352,177.
Becker, Klaus, and P. Mertens, to Demag-Zug G.m.b.H. Device for controlling the speed of movement of an object. 3,352,397, 11-14-67, Cl. 193—35.
Beco Products Corp.: *See*—
Klingberg, Arthur F. 3,352,287.
Bedford, Burnice D.: *See*—
Morgan, Raymond E., and Bedford. 3,353,032.
Bedline Inc.: *See*—
Dodrill, Richard, W., and Long. 3,351,962.
Beecham Group Ltd.: *See*—
Cheney, Lee C. 3,352,852.
Doyle, Frank P., and Nayler. 3,352,850.
Fosker, George R. 3,352,851.
Beermink, Gerardus J.: *See*—
Van Heel, Abraham C. S., Beermink, and Raterink. 3,352,618.
Beggs, James E.: *See*—
Kling, August J., and Beggs. 3,352,729.
Bellfuss, Freeman C., to Call-Boy Systems, Inc. Clock controlled hotel signalling system. 3,353,172, 11-14-67, Cl. 340—286.
Bellfuss, Freeman C., to Call-Boy Systems, Inc. Multiple signal module hotel call system. 3,353,173, 11-14-67, Cl. 340—286.
Beitz, Richard C., to Barnes Engineering Co. Radiometer for measuring a temperature of semi-transparent material. 3,352,156, 11-14-67, Cl. 73—355.
Belfit, Robert W., Jr., to The Dow Chemical Co. Method of producing fuel gas. 3,352,652, 11-14-67, Cl. 48—197.
Bell, Clyde H., to Velsicol Chemical Corp. Process for the recovery of acetoguanamine. 3,352,861, 11-14-67, Cl. 260—249.9.
Bell & Howell Co.: *See*—
Barke, Bernard A., and Oehrke. 3,352,203.
Bell Punch Co. Ltd.: *See*—
Kitz, Norbert, Lloyd, and Mansford. 3,353,008.
Bell Telephone Laboratories, Inc.: *See*—
Davis, Claude G., and Thomas. 3,353,158.
Giger, Adolf J. 3,353,183.
Meyers, Stanley T., and Ratzlaff. 3,353,102.
Minchenko, George. 3,352,974.
Schroeder, Manfred R. 3,352,378.
Bellar, Oscar, 33% to T. Dalby. Variable electrical resistance device. 3,353,133, 11-14-67, Cl. 338—145.

Bencze, William L., to Ciba Corp. Aralkyl-phenyl N-aryl-thiocarbamates. 3,352,815, 11-14-67, Cl. 260—455.
Bender, Lloyd F. Fluid conveying apparatus. 3,352,248, 11-14-67, Cl. 103—236.
Bendix Corp., The: *See*—
Albright, Franklin C. 3,352,515.
Brook, James E., and Hanusek. 3,353,175.
Cripe, Maxwell L. 3,352,209.
Kadron, Stanley F., and Ludwig. 3,353,184.
Leach, Robert I., and Lanahan. 3,352,021.
Schweitzer, Otto R. 3,352,282.
Benichasa, Thomas J.: *See*—
Wysocki, Kazmier, and Benichasa. 3,352,455.
Benken, Henry v. d.: *See*—
Strick, Rudolf P. 3,352,322.
Bennett, James R.: *See*—
Lehnert, Robert E., Bennett, Moorhead, and Jenkins. 3,352,257.
Bennett, John D., to Sun Oil Co. Apparatus for positioning a tool member within well tubing at a desired location. 3,352,363, 11-14-67, Cl. 166—214.
Bennett, John D., P. E. Chaney, J. W. Jones, and S. B. McCaleb, to Sun Oil Co. Automatic control system for an X-ray diffraction apparatus. 3,353,020, 11-14-67, Cl. 250—51.5.
Benz & Hilgers G.m.b.H.: *See*—
Reinecke, Gunter. 3,352,435.
Berde, Botond: *See*—
Boissonnas, Roger, Hugenin, Berde, and Schalch. 3,352,843.
Berger, Michel C. Apparatus for providing multi-coloured compositions. 3,352,200, 11-14-67, Cl. 88—24.
Bergles, Eduard. Speed-change gearing (gearing hub) for bicycles. 3,352,175, 11-14-67, Cl. 74—750.
Berk, Zeki, to Technion Research and Development Foundation Ltd. Concentration of thixotropic compositions. 3,352,693, 11-14-67, Cl. 99—205.
Berler, Robert M., to American Machine & Foundry Co. Multiple elapsed time interval readout device. 3,352,099, 11-14-67, Cl. 58—39.5.
Berler, Robert M. Fluid dispenser. 3,352,463, 11-14-67, Cl. 222—321.
Bernstrom, William B., R. L. and D. H. Jones. Ice tray assembly. 3,352,528, 11-14-67, Cl. 249—126.
Berry, Allan D., and D. Vučinić, to The General Electric Co. Ltd. Temperature responsive circuit. 3,353,103, 11-14-67, Cl. 328—3.
Berry, Jim S., to The Procter & Gamble Co. Sulfoxonium compounds. 3,352,786, 11-14-67, Cl. 252—106.
Bertolini, William A., to Pullman Inc. Overhead rail design. 3,352,252, 11-14-67, Cl. 104—106.
Beshekas, William S., to Wiklander Metallic Fabricators, Inc. Support for heat exchanger. 3,352,126, 11-14-67, Cl. 62—286.
Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung: *See*—
Hoff, Hans S. 3,352,088.
Betz, Robert J., and G. H. McAfee, to United States of America, Army. Pulse generator utilizing control signals to vary pulse width. 3,353,034, 11-14-67, Cl. 307—88.5.
Bezlaj, Frank A., to Unarco Industries, Inc. Lading separating apparatus. 3,352,595, 11-14-67, Cl. 296—24.
Bicking, John B., and J. M. Sprague, to Merck & Co., Inc. N-carboxyalkyl-(2-methylenealkanoyl) aniline compounds. 3,352,904, 11-14-67, Cl. 260—518.
Bigos, Aloise A.: *See*—
Cheris, Maynard H., Bigos, and Baruffi. 3,351,989.
Biller, William P., and C. W. Skarstrom, to Esso Research and Engineering Co. Process and device for preventing evaporation loss. 3,352,294, 11-14-67, Cl. 123—136.
Bilotti, Anthony G., to Warner-Lambert Pharmaceutical Co. Sugarless gum. 3,352,689, 11-14-67, Cl. 99—135.
Binnall, Eugene P.: *See*—
Soule, Winsor, Jr., and Binnall. 3,353,163.
Binns, John W.: *See*—
Crosswell, Flay D., and Binns. 3,352,585.
Birmingham, Henry P., A. W. Baldwin, and B. L. Perry, to United States of America, Navy. Optical guidance system for providing vehicle motion error information. 3,353,153, 11-14-67, Cl. 340—26.
Bischof, Hans, and K. G. Hersperger. Packaging. 3,352,086, 11-14-67, Cl. 53—39.
Biskis, Edward G., to Air Products and Chemicals, Inc. Regenerative adsorption process. 3,352,121, 11-14-67, Cl. 62—18.
Biskup, John, N. R. Migdol, and E. C. Scholl, to Congoleum-Nairn Inc. Waste sulphite liquor adhesive composition. 3,352,700, 11-14-67, Cl. 106—123.
Black and Decker Mfg., Co., The: *See*—
Maffey, George E., Jr. 3,352,368.
Wickham, John L. 3,352,323.
Black, James B., and L. H. Adams, to Twin Disc Clutch Co. Clutch and transmission with dual modulating fluid controls. 3,352,392, 11-14-67, Cl. 192—3.5.
Blake, William E., to Kliklok Corp. Devices for accelerating and timing articles. 3,352,403, 11-14-67, Cl. 198—34.
Blaskowski, Henry J., to Combustion Engineering, Inc. Desalination and power generating system. 3,352,107, 11-14-67, Cl. 60—64.
Blattmann & Co.: *See*—
Christoffel, Cla, Borel, Blumenthal, Schobinger, and Mueller. 3,352,848.
Blaw-Knox Co.: *See*—
Ornitz, Martin N., and English. 3,352,549.
Blickstein, Martin: *See*—
Mittler, Martin, and Blickstein. 3,353,074.
Bliss, James C., and H. D Crane, to Stanford Research Institute. Aiming device. 3,353,027, 11-14-67, Cl. 250—235.
Blomeyer, Friedrich, W. Zecher, and H. Holtschmidt, to Farbenfabriken Bayer Aktiengesellschaft. Polyurethane forming compositions containing sulfurous acid esters as retarding agents. 3,352,829, 11-14-67, Cl. 260—77.5.
Bloxham, Arnall I. W. H. Medical applicators. 3,352,307, 11-14-67, Cl. 128—269.
Blue, Sidney D., to Reeves Brothers, Inc. Foam and fiber combination product and method of making same. 3,352,739, 11-14-67, Cl. 161—81.
Blum, Julius, & Co., Inc.: *See*—
Seery, Robert F. 3,352,084.
Blumenthal, Artur: *See*—
Christoffel, Cla, Borel, Blumenthal, Schobinger, and Mueller. 3,352,848.
Blynn, Henry R.: *See*—
Drayton, John W., and Blynn. 3,352,260.
Bodach, Charles M., to W. R. Grace & Co. Inhibition of plastic crazing. 3,352,787, 11-14-67, Cl. 252—108.
Bodanszky, Miklos, and J. T. Sheehan, to E. R. Squibb & Sons, Inc. 2,2'-succinyl bis(4-thiazole carboxylic acid). 3,352,881, 11-14-67, Cl. 260—302.
Bodenstein, Camillo, to Siemens & Halske Aktiengesellschaft Berlin and Munich. System for transmission of information recorded along endless magnetic tracks. 3,352,973, 11-14-67, Cl. 179—6.
Bodine, Albert G., Jr. Sonic method and apparatus for driving anchors, anchor posts and the like. 3,352,369, 11-14-67, Cl. 175—56.
Bodrov, Alexandr D., V. V. Petrov, and I. M. Fonar, to Nauchno-Issledovatelsky Kinofotoinstitute. Film winding device. 3,352,506, 11-14-67, Cl. 242—55.18.
Boeing Co., The: *See*—
Abdo, Daniel A. 3,352,794.
Garra, Anthony A. 3,352,223.
Gunnar, Keith, and Hansen. 3,352,709.
Hanks, Russell V., and Unwin. 3,353,114.
Boggs, Beryl A., to Allied Chemical Corp. Adjustable heater bracket assembly. 3,351,991, 11-14-67, Cl. 28—62.
Bogosh, Donald F. Trophy and fastener. 3,352,522, 11-14-67, Cl. 248—158.
Bohdansky, Josef: *See*—
Jester, Alfred, Langpape, and Bohdansky. 3,353,037.
Boissonnas, Roger, R. Huguenin, B. Berde, and W. Schalch, to Sandoz, Ltd. (also known as Sandoz A.G.) Phe-2-orn-8-oxytocin. 3,352,843, 11-14-67, Cl. 260—112.5.
Boissonnas, Roger S. Guttmann, and J. Pless, to Sandoz Ltd., also known as Sandoz A.G. Nleu^{4}-lys^{17}-lys^{18}-α^{1-18}-ACTH-val^{18}-amide. 3,352,844, 11-14-67, Cl. 260—112.5.
Bole, Claude E., to United States Steel Corp. Temporary liner flue assembly for repairing masonry stacks. 3,352,072, 11-14-67, Cl. 52—127.
Bollar, Leo C. Impact apparatus. 3,352,143, 11-14-67, Cl. 72—445.
Bomar, Horace L.: *See*—
Dubois, Joseph W., 3,352,097.
Bone, Ronald D. C.: *See*—
Barron, James O., Coomes, and Bone. 3,352,221.
Bonnell, Larry W. Combination agricultural machine. 3,352,261, 11-14-67, Cl. 111—8.
Bono, Luigi, to Necchi Societa per Azioni. Automatic fabric feeder device for sewing machines. 3,352,262, 11-14-67, Cl. 112—2.
Boothroyd, Howard W., H. E. Perry, J. M. Buzzell, and T. W. Nachazel, to Sanders Associates, Inc. Constant damping gyro system. 3,352,163, 11-14-67, Cl. 74—5.5.
Borbe-Wanner AG: *See*—
Kuoni, Xaver. 3,352,414.
Borel, Eric A.: *See*—
Christoffel, Cla, Borel, Blumenthal, Schobinger, and Mueller. 3,352,848.
Boshold, Raymond F., to Baldwin-Lima-Hamilton Corp. Extrusion press container apparatus. 3,352,141, 11-14-67, Cl. 72—272.
Bostich Inc.: *See*—
Fisher, Edward I. 3,352,471.
Bott, Ian B., to Minister of Aviation, in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland. Radiation generator operating in the millimeter and submillimeter wavelength range. 3,353,053, 11-14-67, Cl. 313—154.
Bouladon, Gabriel, and P. Zuppiger, to The Battelle Development Corp. Transport apparatus. 3,352,250, 11-14-67, Cl. 104—25.
Boussageon, Louis H. A. Motor driven fishing reels. 3,352,507, 11-14-67, Cl. 242—84.21.
Bower, Clarence C. Control system for foam cleaner generating apparatus. 3,353,176, 11-14-67, Cl. 340—417.
Bowers, Raymond W.: *See*—
Alexander, Carl J., and Bowers. 3,352,011.
Bowling, Lin W.: *See*—
Peters, Harlan J., and Bowling. 3,352,217.
Boyd, Joseph J. Hydro-gaseous bearing. 3,352,607, 11-14-67, Cl. 308—9.
Braikevitch, Michael, and E. T. Metcalf, to The English Electric Co. Ltd. Turbogenerators including a magnetic coupling between the dynamo rotor and the turbine runner. 3,353,028, 11-14-67, Cl. 290—52.
Brandriff, Robert C., and C. G. Pickett, to The Singer Co. Control circuit useful with sewing machines. 3,352,267, 11-14-67, Cl. 112—218.
Branham, Richard A., to Martin-Marietta Corp. Pulse weighting demodulator. 3,353,108, 11-14-67, Cl. 329—107.
Brant, Elmer J., ½ to H. P. Locklin. Organic fluorescent colorants for stimulating the growth of plants. 3,352,058, 11-14-67, Cl. 47—58.
Brasch, Jay, to Esso Research and Engineering Co. Lubricating compositions containing polyamine salts. 3,352,782, 11-14-67, Cl. 252—47.5.

Braun, William E. Athletic shoe cleat. 3,352,034, 11-14-67, Cl. 36—67.
Brazier, Jack H., to Sears, Roebuck and Co. Nautical rudder mounting. 3,352,272, 11-14-67, Cl. 114—165.
Breckoff, Walter E., and J. M. McEuen, to Ethyl Corp. Olefin isomerization process. 3,352,939, 11-14-67, Cl. 260—683.2.
Breslow, David S., and F. E. Piech, to Hercules Inc. Cross-linking coating polymers with polysulfonazides. 3,352,798, 11-14-67, Cl. 260—2.
Brian, Arthur L. Protective rings for pipe coatings. 3,352,574, 11-14-67, Cl. 285—3.
Brink, Joseph A., Jr., and W. W. Sugg, to Monsanto Co. Shaped fibers. 3,352,778, 11-14-67, Cl. 210—23.
Brinkmann, Gerhard, to Voigtlander A.G. Slide projector. 3,352,205, 11-14-67, Cl. 88—28.
Bristol-Myers Co.: *See—*
Crast, Leonard B., Jr., and Essery. 3,352,858.
Minor, William F. 3,352,878.
British Aircraft Corp. (Operating) Ltd.: *See—*
Proudlove, Frank W. 3,352,207.
Brock, George W., to International Business Machines Corp. Oxide coated magnetic recording medium. 3,353,166, 11-14-67, Cl. 340—174.1.
Brock, James D., to Industrial Boiler Co., Inc. Bin storing a hot asphalt mix. 3,352,354, 11-14-67, Cl. 165—169.
Brock, James D., to Industrial Boiler Co., Inc. Crop drying apparatus. 3.352,025, 11-14-67, Cl. 34—212.
Brook, James E., and F. A. Hanusek, to The Bendix Corp. Resolver incremental encoder. 3,353,175, 11-14-67, Cl. 340—347.
Brooker, Leslie G. S.: *See—*
Taber, Robert C., and Brooker. 3,352,680.
Brooker, Leslie G. S., and G. H, Keyes, to Eastman Kodak Co. Solubilized cyanine and merocyanine sensitizing dyes. 3,352,857, 11-14-67, Cl. 260—240.6.
Brookman, Ronald J., to AMP Inc. Patchcord assembly. 3,353,144, 11-14-67, Cl. 339—217.
Brown, Boveri & Cie, Aktiengesellschaft: *See—*
Jester, Alfred, Langpape, and Bohdansky. 3,353,037.
Stemmler, Herbert. 3,353,081.
Brown, Charles K., Jr.: *See—*
Lacy, Johnson W., and Brown. 3,352,253.
Brown, David D., and L. B. Manker, to Tell-A-Matic, Inc. Telephone alarm and reporting apparatus. 3,352,972, 11-14-67, Cl. 179—5.
Brown, David M.: *See—*
Colville, Francis J., Roberts, and Brown. 3,352,494.
Brown, Francis E.: *See—*
Alexander, Richard L., and Brown. 3,352,819.
Brown, Graydon L.: *See—*
Cherry, Jesse T., Jr., and Brown. 3,353,011.
Brown, Harry D. Rotary internal combustion engine. 3,352,291, 11-14-67, Cl. 123—16.
Brown, Karl R., to United States of America, Army. Explosive bolt. 3,352,189, 11-14-67, Cl. 85—1.
Brown, Robert R., and L. E. Daum, to Elastic Stop Nut Corp. of America. Construction in insulated housing for terminating shielded high voltage cable. 3,352,962, 11-14-67, Cl. 174—73.
Brown, Russell H.: *See—*
Kawahara, Fred K., and Brown. 3,352,948.
Kawahara, Fred K., and Brown. 3,352,949.
Brownscombe, Philip J., to Eugene Dietzgen Co. Projector viewer and image scanning assembly therefor. 3,352,201, 11-14-67, Cl. 88—24.
Bruce, George B., and H. R. Smalstig, to Brusmatic Inc. Automatic cotton lint sampler. 3,352,159, 11-14-67, Cl. 73—422.
Brundage, Robert W., to Emerson Electric Co. Laundry equipment power package. 3,352,176, 11-14-67, Cl. 74—785.
Brusmatic Inc.: *See—*
Bruce, George B., and Smalstig. 3,352,159.
Buchmann, Fred J., to Esso Research and Engineering Co. Pure magnesium chloride prepared by the simultaneous extraction and azeotropic drying of a salt mixture. 3,352,634, 11-14-67, Cl. 23—91.
Buchmiller, Lyle D.: *See—*
Olson, Frank A., Buchmiller, and Yaeger. 3,353,118.
Buchwald, Frank S., to Lear Siegler, Inc. Brush construction. 3,353,047, 11-14-67, Cl. 310—247.
Budai, Donald M. Flat cable connector. 3,353,141, 11-14-67, Cl. 339—99.
Budnick, Gunther, deceased, by T. Budnick, legal representative of minor heirs. Method of measuring and/or controlling the relative movement of two moved bodies. 3,352,023, 11-14-67, Cl. 33—179.5.
Budnick, Thea: *See—*
Budnick, Gunther. 3,352,023.
Buehler, Fritz A., to Mobil Oil Corp. Stabilization of silicone fluids. 3,352,781, 11-14-67, Cl. 252—37.2.
Buehler, William J.: *See—*
Goldstein, David, Buehler, and Wiley. 3,352,650.
Buehler, William J.: *See—*
Wang, Frederick E., Syeles, Clark, and Buehler. 3,352,722.
Buffa, Anthony J., and S. Schneider, to United States of America, Army. Series multiple spark gap switch with a triggering terminal. 3,353,059, 11-14-67, Cl. 315—36.
Bugianesi, Robert L.: *See—*
Shen, Tsung-Ying, Ruyle, and Bugianesi. 3,352,849.
Buhmann, Gunther, to International Standard Electric Corp. Apparatus for applying ring-shaped markings to electric current conductors. 3,352,285, 11-14-67, Cl. 118—624.
Bumgarner, Robert L., A. O. Knutson, and T. B. Royal, to Homeline Corp. Bag holder. 3,352,520, 11-14-67, Cl. 248—99.
Bundus, Robert H.: *See—*
Li, Kwoh H., Bundus, and Noznick. 3,352,691.
Bunker-Ramo Corp., The: *See—*
Davis, John S. 3,352,992.
Paul, Albert E., and Smith. 3,353,070.
Buntin, George A., to Hercules Inc. Alkyl-substituted-benzoquinone-4-oximinyl N-alkyl carbamates and use as fungicides. 3,352,750, 11-14-67, Cl. 167—30.
Buonaiuto, Robert B. Apparatus for wetting and feeding plastic beads into a mold. 3,351,979, 11-14-67, Cl. 18—5.
Burant, Leonard J., and K. R. Jones, to Globe-Union Inc. Cathode for deferred action batteries. 3,352,717, 11-14-67, Cl. 136—90.
Bureau, Yvon: *See—*
Coulombe, Maurice, and Bureau. 3,352,489.
Burger, Vincent G., Sr. Rigid archery bow stringing device. 3,352,296, 11-14-67, Cl. 124—23.
Burian, Theodor, H. Plitschka, and G. Vogel, to International Standard Electric Corp. Multi-frequency code signalling system. 3,353,154, 11-14-67, Cl. 340—146.1.
Burke, Donald J., to Continental Industries, Inc. Welded pipe joints. 3,352,578, 11-14-67, Cl. 285—286.
Burke, Jacob. Eyeglass frame display structure. 3,352,425, 11-14-67, Cl. 211—13.
Burkhardt, Joseph A., to Esso Production Research Co. Marker buoy control. 3,351,965, 11-14-67, Cl. 9—8.
Burkhardt, Joseph A., to Esso Production Research Co. Frictional drag reducer for immersed bodies. 3,352,118, 11-14-67, Cl. 61—46.
Burkholder, John W. Detachable headboard with armrests. 3,351,960, 11-14-67, Cl. 5—317.
Burnham, Woodrow A.: *See—*
Sissop, James C., Sparrow, Eckles, Meissner, and Burnham. 3,353,005.
Burroughs Corp.: *See—*
Lee, Edwin S., III. 3,353,159.
Butler, Thomas E., to Union Carbide Corp. Method of refining surface-contaminated metals. 3,352,997, 11-14-67, Cl. 219—123.
Butts, Arthur G. and J. L. Display device. 3,352,043, 11-14-67, Cl. 40—78.
Butts, Jerry L.: *See—*
Butts, Arthur G. and J. L. 3,352,043.
Buzzell, James M.: *See—*
Boothroyd, Howard W., Ferry, Buzzell, and Nachazel. 3,352,163.
C.D.M. Kabushiki Kaisha: *See—*
Inoue, Mitsuo. 3,352,246.
CSF-Compagnie Generale de Telegraphie Sans Fil: *See—*
Dube, Roland G. 3,353,121.
Tournois, Pierre. 3,353,120.
Cable, Elvin K., to Ledex, Inc. Switch device. 3,353,071, 11-14-67, Cl. 317—148.5.
Caldo, Cornelio, and S. Algieri, to Montecatini Edison S.p.A. Novel carbazole derivatives. 3,352,882, 11-14-67, Cl. 260—315.
California Texas Oil Corp.: *See—*
Porges, George E. W. and Staves. 3,352,197.
Calkins, Dale E., to United States of America, Navy. High speed faired towing cable. 3,352,274, 11-14-67, Cl. 114—235.
Callanen, Oliver E., to Melpar, Inc. Motion system for flight simulation. 3,352,029, 11-14-67, Cl. 35—12.
Call-Boy Systems, Inc.: *See—*
Beilfuss, Freeman C. 3,353,172.
Beilfuss, Freeman C. 3,353,173.
Cameron, Grant M. and A. J. Duke, to Ciba Ltd. Epoxy resin compositions. 3,352,810, 11-14-67, Cl. 260—30.8.
Camp, Alfred L., to T. Irving. Shower head valve. 3,352,320, 11-14-67, Cl. 137—604.
Campbell, George W., Jr.: *See—*
Cislak, Francis E., McGill, and Campbell. 3,352,872.
Cislak, Francis E., McGill, and Campbell. 3,352,873.
Campbell, Ross L., Jr., to The Industrial Nucleonics Corp. 3,352,499, 11-14-67, Cl. 241—21.
Canada, Her Majesty the Queen in right of, as represented by the Minister of Mines and Technical Surveys: *See—*
Machin, William D., Montgomery, and Parsons. 3,352,635.
Canadian Patents and Development Ltd., National Research Council: *See—*
Moschopedis, Spiros E. 3,352,902.
Canning, Walter L., to Alex F. Walker & Associates, Inc. Hinged pipe connectors. 3,352,573, 11-14-67, Cl. 285—2.
Cape, Arthur T., to Powder Melting Corp. Method of and apparatus for depositing metal powder. 3,352,492, 11-14-67, Cl. 239—85.
Cape, Richard A. G., to Dominion Bridge Co., Ltd. Web bender for forming a continuous V-contoured web. 3,352,330, 11-14-67, Cl. 140—105.
Capossela, Anthony C.: *See—*
Mancuso, John J., and Capossela. 3,352,686.
Carl Zeiss-Stiftung: *See—*
Mondon, Herbert. 3,352,199.
Carlon, Hugh R., to United States of America, Army. Hybrid preamplifier for thermistor bolometer infrared detectors. 3,353,109, 11-14-67, Cl. 330—3.
Carlson, Harold S. Exercising device. 3,352,426, 11-14-67, Cl. 211—22.
Carlson, Raymond H., to Textron Industries, Inc. Fastener having extruded driving head. 3,352,190, 11-14-67, Cl. 85—9.
Carlson, Robert W.: *See—*
Schluderberg, Donald C., and Carlson. 3,352,365.
Carlyle, Robert L., and G. E. Gaumer, to The Dow Chemical Co. Polyglycidyl ether of a polyhydric compound with a minor amount of a polyepoxide formed by the reaction of diglycidyl ether with a polyhydric phenol. 3,352,809, 11-14-67, Cl. 260—30.4.

Carmo Aktieselskab: *See—*
Sorensen, Elo. 3,352,402.
Carr, Brownell: *See—*
Wilson, Charles P., Jr., Carr, and Clapetta. 3,352,636.
Carr, William F.: *See—*
Webb, James E. 3,352,192.
Carrier Corp.: *See—*
Glasgow, James A., and Linthicum. 3,352,333.
Gustafson, Einar H. 3,352,326.
Carson, William N., Jr., and W. H. Fischer, to General Electric Co. Sea water-activated primary battery. 3,352,718, 11-14-67, Cl. 136—91.
Carter, Whitney B., to Eastman Kodak Co. Method for packaging tow. 3,351,992, 11-14-67, Cl. 28—72.
Cartwright, Victor F., to Babcock Electronics Corp. Distance indicating radio apparatus. 3,353,179, 11-14-67, Cl. 343—13.
Carver, Diane D. B.: *See—*
Higgins, Harvey M., Jr., Davisson, and Carver. 3,352,859.
Cary, James E., to Sweden Freezer Mfg. Co. Dialyzer clamp assembly. 3,352,421, 11-14-67, Cl. 210—238.
Case, J. I., Co.: *See—*
Lee, Albin L. 3,352,165.
Casey, James C. Clamp for grasping storage drums. 3,352,591, 11-14-67, Cl. 294—81.
Castellano, Joseph A.: *See—*
Perry, Donald D., and Castellano. 3,352,914.
Caterpillar Tractor Co.: *See—*
Johnson, Lowell E. 3,352,385.
Celanese Coatings Co.: *See—*
Hicks, Darrell D. 3,352,806.
McWhorter, Wayne F., Kuhn, and Klassen. 3,352,826.
Price, Herbert P. 3,352,825.
Celanese Corp. of America: *See—*
White, George T., and Mullin. 3,352,908.
Centanni, Michael J., to Continental Can Co., Inc. Corrugated carton. 3,352,475, 11-14-67, Cl. 229—34.
Cerberus AG.: *See—*
Meili, Ernst, and Lampart. 3,353,170.
Cerwonka, Edward, to General Aniline & Film Corp. Photopolymerization of vinyl monomers by means of ferric salts of organic acids. 3,352,675, 11-14-67, Cl. 96—35.1.
Cetrone, Ronald A., C. W. Kerns, and J. L. Wilson, to Mobil Oil Corp. Multiple coverage seismic exploration utilizing two groups of detectors separated by a gap. 3,352,377, 11-14-67, Cl. 181—.5.
Chadwick, George F., to Air Reduction Co., Inc. Polytetrafluoroethylene lubricant for carbon composition resistors. 3,353,135, 11-14-67, Cl. 338—226.
Chalfin: *See—*
Chalfin, William L., and Garvey. 3,351,954.
Chalfin, William L., and E. C. Garvey; said Garvey, assor. to said Chalfin. Boning. 3,351,954, 11-14-67. Cl. 2—255.
Chan, William, J. G. De Vine, and C. O. Klein, to Vapor Corp. Door overtravel mechanism. 3,352,061, 11-14-67, Cl. 49—507.
Chaney, Preston E.: *See—*
Bennett, John D., Chaney, Jones, and McCaleb. 3,353,020.
Chapman, John H.: *See—*
Cislak, Francis E., Rieger, and Chapman. 3,352,870.
Cislak, Francis E., Rieger, and Chapman. 3,352,874.
Char-Lynn Co.: *See—*
Easton, Wayne B. 3,352,247.
Charles, Richard J., to General Electric Co. Method for producing high critical field superconducting circuits. 3,352,007, 11-14-67, Cl. 29—599.
Charnock, Harold, to Pilkington Bros. Ltd. Method of attenuating a ribbon of glass on a molten metal bath. 3,352,657, 11-14-67, Cl. 65—65.
Chase Terry J., to United Aircraft Corp. Bleed control in mixing valve for a turbofan engine. 3,352,112, 11-14-67, Cl. 60—261.
Chaskin, Herbert, to United States of America, Navy. Trajectory miss indicator system. 3,352,556, 11-14-67, Cl. 273—101.2.
Chasteen, Douglas L. Multi-year calendar. 3,352,044, 11-14-67, Cl. 40—115.
Chattem Drug & Chemical Co.: *See—*
Holbert, James M., and Gross. 3,352,893.
Holbert, James M., and Gross. 3,352,895.
Cheney, Lee C., to Beecham Group Ltd. Synthetic penicillins. 3 352,852, 11-14-67, Cl. 260—239.1.
Cheris, Maynard H., A. A. Bigos, and C. E. Baruffi, to Sterling Automotive Mfg. Co., Inc. Hose clamp. 3,351,989, 11-14-67, Cl. 24—274.
Cherry, Jesse T., Jr., and G. L. Brown, to Continental Oil Co. Method and apparatus for correlating two recorded signals. 3 353,011, 11-14-67, Cl. 235—181.
Chesrack, Donald J., and H. E. Petersen, to International Business Machines Corp. Generator for variable and repetitive sequences of digital words. 3,353,157, 11-14-67, Cl. 340—172.5.
Chicago Boiler Co.: *See—*
Krumholz, Alfred F., Sr. 3,352,501.
Chicago Bridge & Iron Co.: *See—*
Sattlelberg, Stanley E., and Selcukoglu. 3,352,443.
Chiddix, Max E.: *See—*
Katz, Leon, and Chiddix. 3,352,768.
Chien, Robert T., and J. J. Stein, to International Business Machines Corp. Error control of digital information signals with inherent information redundancy. 3,353,155, 11-14-67, Cl. 340—146.1.
Chimiotex S. A.: *See—*
Drisch, Nicolas, and Herrbach. 3,352,957.
Chini, Paolo, M. Dolci, and M. de Malde', to S.N.A.M. S.p.A. Compounds derived from allyl-addition of olefins to acetylene. 3,352,937, 11-14-67, Cl. 260—680.
Christoffel, Cla, E. A. Borel, A. Blumenthal, U. Schobinger, and K. Mueller, to Blattmann & Co. Process for the modification of polysaccharides. 3,352,848, 11-14-67, Cl. 260—209.
Christopher, Allan: *See—*
Honig, William M., Christopher, and Solomon. 3,353,119.
Chromalloy Corp.: *See—*
Cooley, Robert A. 3,352,727.
Chubb, Wingfield L. Carrying case construction. 3,352,289, 11-14-67, Cl. 190—49.
Clapetta, Frank G.: *See—*
Wilson, Charles P., Jr., Carr, and Clapetta. 3,353,636.
Ciba Corp.: *See—*
Bencze, William L. 3,352,815.
Huebner, Charles F. 3,352,876.
Schmidt, Paul, Wilhelm, Eichenberger, and Schumacher. 3,352,683.
Ciba Ltd.: *See—*
Cameron, Grant M. and Duke. 3,352,810.
Hayes, Barry J. 3,352,813.
Liechti, Hans W. 3,352,847.
Menzi, Ulrich, and Grigereit. 3,352,554.
Toepfl, Rosemarie, Schibler, and Maeder. 3,352,838.
Cincinnati Milling Machine Co., The: *See—*
Seidel, William B. 3,352,611.
Cislak, Francis E., to Reilly Tar & Chemical Corp. Fatty acid phenylalkylpiperides. 3,352,871, 11-14-67, Cl. 260—294.7.
Cislak, Francis E., W. H. Rieger, and J. H. Chapman, to Reilly Tar & Chemical Corp. Di-(N-cyanoalkylpiperidyl)-alkanes. 3,352,870, 11-14-67, Cl. 260—293.
Cislak, Francis E., C. K. McGill, and G. W. Campbell, Jr., to Reilly Tar & Chemical Corp. Di-(N-hydroxyalkylpiperidyl)alkanes. 3,352,872, 11-14-67, Cl. 260—294.7.
Cislak, Francis E., C. K. McGill, and G. W. Campbell, Jr., to Reilly Tar & Chemical Corp. N-hydroxyalkyl-phenylakylpiperidines. 3,352,873, 11-14-67, Cl. 260—294.7.
Cislak, Francis E., W. H. Rieger, and J. H. Chapman, to Reilly Tar & Chemical Corp. N-hydroxyalkylpiperidyl, N'-cyanoalkylpiperidyl alkanes. 3,352,874, 11-14-67, Cl. 260—294.7.
Clairtone Sound Corp. Ltd.: *See—*
Schmidt, Hans. 3,352,277.
Clark Equipment Co.: *See—*
Swanson, Allan R. 3,352,037.
Clark, Hulda: *See—*
Clark, John B. and H. 3,352,792.
Clark, John B. and H.; said J. B. Clark, assor. to said H. Clark. Odor inhibiting composition. 3,352,792, 11-14-67, Cl. 252—193.
Clark, Wellman L.: *See—*
Wang, Frederick E., Syeles, Clark, and Buehler. 3,352,722.
Clarke, Kenneth W., to Conrac Corp. Metal forming machine. 3 352,136, 11-14-67, Cl. 72—9.
Clarke, Rose A.: *See—*
Sheehan, Desmond, Clarke, and Raubut. 3,352,791.
Clary Corp.: *See—*
Israely, Ilan. 3,353,026.
Clay-Adams, Inc.: *See—*
Gibbs, Mary B. 3,352,486.
Cleef, Peter H., C. Beavers, and W. William. Epicyclic gears. 3,352,177, 11-14-67, Cl. 74—801.
Cleland, Charles E., to Continental Machines, Inc. Blade guiding and supporting structure for band saws. 3,352,186, 11-14-67, Cl. 83—201.15.
Cleveland Range Co., The: *See—*
Mecredy, James R., and Wolaver. 3,352,462.
Clevite Corp.: *See—*
MacDonald, Robert J., and Ward. 3,352,647.
MacDonald, Robert J., and Ward. 3,352,668.
Cline, Vincent C. Flexible scraper. 3,351,969, 11-14-67, Cl. 15—245.
Clites, Philip G., to United States of America, Atomic Energy Commission. Method and apparatus for melting metals by induction heating. 3,352,991, 11-14-67, Cl. 219—10.79.
Coal Industry (Patents) Ltd.: *See—*
McCandless, Richard. 3,352,605.
Coast, Geoffrey: *See—*
Lockett, George E., Coast, Coudray, Vitry, and Torielli. 3,352,756.
Cobble, James A., Sr., and J. A. Cobble, Jr., to Southern Machine Co., Inc. Backing fabric lateral shifting arrangement for tufting and like machines. 3,352,265, 11-14-67, Cl. 112—79.
Cobble, James A., Jr.: *See—*
Cobble, James A., Sr., and J. A. Cobble, Jr. 3,352,265.
Cochin, Solomon. Captive closure for a container. 3,352,445, 11-14-67, Cl. 220—30.5.
Cohen, Martin M.: *See—*
Grube, Wolfgang O., and Cohen. 3,352,219.
Cohn, Eugene, R. A. De Forest, and R. G. Frick, to Secon Metals Corp. Process of producing high temperature resistant insulated wire, such wire and coils made therefrom. 3,352,009. 11-14-67, Cl. 29—605.
Coles, Robert F., to Minnesota Mining and Mfg. Co. Supersensitizers for optically sensitized photoconductive layers. 3,352,670, 11-14-67, Cl. 96—1.7.
Colgate-Palmolive Co.: *See—*
Gagliardi, Domenick D. 3,352,625.
Colley, Raymond C. Light weight sandal. 3,352,033, 11-14-67, Cl. 36—11.5.
Collier-Keywarth Co.: *See—*
Anderson, George A. 3,352,526.
Collins, Glenn A., Jr., and F. L. Phelps, Jr., to Teleflex Inc. Method for making ceramic bodies. 3,352,814, 11-14-67, Cl. 260—41.

Collins, John N., and M. Friedman. Package for radiosonde. 3,353,100, 11-14-67, Cl. 325—113.
Columbia Broadcasting System, Inc.: *See*—
Delin, Irwin L., Doncaster, and Moll. 3,352,169.
Fender, Clarence L. 3,352,188.
Columbus Auto Parts Co.: *See*—
Patton, De Lane D. 3,352,583.
Colville, Francis J., N. Roberts, and D. M. Brown, to Rolls-Royce Ltd. Supersonic jet propulsion nozzle. 3,352,494, 11-14-67, Cl. 239—265.13.
Combourieux, Andre, to Industrial Holding Establishment. Projectile impact fuze. 3,352,241, 11-14-67, Cl. 102—76.
Combs, Jerry A., to The National Cash Register Co. Feed control delay means. 3,353,007, 11-14-67, Cl. 235—61.11.
Combustion Engineering, Inc.: *See*—
Anthony, Andrew J. 3,352,758.
Blaskowski, Henry J. 3,352,107.
Egglestone, Robert W., and Noell. 3,353,077.
Murtha, Bruce E. 3,352,003.
Commissariat a l'Energie Atomique: *See*—
Baque, Pierre, Darras, and Koch. 3,352,004.
Faugeras, Pierre, Michel, and Talmont. 3,352,645.
Commonwealth Scientific and Industrial Research Organization: *See*—
Mellor, John D. 3,352,024.
Compagnie De Saint-Gobain: *See*—
Galabert, Pierre, and Pillon. 3,352,015.
Compur-Werk Gesellschaft mit beschrankter Haftung & Co.: *See*—
Lang, Rudolf, and Hartl. 3,352,220.
Concrete Building Units Co., Inc.: *See*—
Lacy, Johnson W., and Brown. 3,352,253.
Congoleum-Nairn Inc.: *See*—
Biskup, John, Migdol, and Scholl. 3,352,700.
Conlisk, John R., to Atlas Chemical Industries, Inc. Activated carbon compositions. 3,352,788, 11-14-67, Cl. 252—161.
Conover, George M. Sand blast device. 3,352,062, 11-14-67, Cl. 51—8.
Conrad Corp.: *See*—
Clarke, Kenneth W. 3,352,136.
Consolidated Engineering Co.: *See*—
Reuter, Brian R. 3,352,984.
Container Corp. of America: *See*—
Cummings, Jan G., and Maskell. 3,352,472.
Continental Can Co., Inc.: *See*—
Centanni, Michael J. 3,352,475.
Iverson, Bjarne J. 3,352,629.
Weiss, Arthur J. 3,352,453.
Continental Carbon Co.: *See*—
Thomson, Ely K. 3,352,231.
Continental Industries, Inc.: *See*—
Burke, Donald J. 3,352,578.
Continental Machines, Inc.: *See*—
Cleland, Charles E. 3,352,186.
Continental Oil Co.: *See*—
Cherry, Jesse T., Jr., and Brown. 3,353,011.
Watari, Tamiro. 3,352,271.
Controls Co. of America: *See*—
Cools, Johannus J. 3,352,983.
Cooley, Robert A., to Chromalloy Corp. Propellant compositions. 3,352,727, 11-14-67, Cl. 149—19.
Cools, Johannus J., to Controls Co. of America. Pressure switch and electrical switch therefor. 3,352,983, 11-14-67, Cl. 200—83.
Coomes, Trevor J.: *See*—
Barron, James O., Coomes, and Bone. 3,352,221.
Cooper-Stanley Co., Inc.: *See*—
Maus, Burns R. 3,352,283.
Cope, Gerald R.: *See*—
Koenig, Edward W., and Cope. 3,352,552.
Cordrey, Carl E. Velocipede usable as tricycle or scooter. 3,352,570, 11-14-67, Cl. 280—282.
Corliss, Duncan S., R. R. Keast, and J. S. Thompson, to FMC Corp. Stable dishwashing compositions containing sodium dichloroisocyanurate. 3,352,785, 11-14-67, Cl. 252—99.
Corning Glass Works: *See*—
Domicone, Joseph J., and Smith. 3,352,703.
Knapp, Warren R. 3,352,658.
Rahe, Villem. 3,352,659.
Corporation Realisations Ultrasoniques: *See*—
Dory, Jacques. 3,352,376.
Costain, Winston, H. J. Palmer, and T. R. White, to Imperial Chemical Industries Ltd., England and British Nylon Spinners Ltd. TiO_2 delustered polyamide stabilized with a manganese compound and an oxy compound of phosphorus. 3,352,821, 11-14-67, Cl. 260—45.75.
Coudray, Michel: *See*—
Lockett, George E., Coast, Coudray, Vitry, and Torielli. 3,352,756.
Coulombe, Maurice, and Y. Bureau. Thermostatic mixing valve. 3,352,489, 11-14-67, Cl. 236—12.
Coulter Electronics, Inc.: *See*—
Hughes, Roy, and Hogg. 3,352,280.
Cowlishaw, Frank, to W. E. & F. Dobson Ltd. Driving gear anchor means for mines. 3,352,117, 11-14-67, Cl. 61—45.
Cox, Norman P., and W. J. Ritchie, to United Aircraft of Canada Ltd. Firewall attachment. 3,352,105, 11-14-67, Cl. 60—39.11.
Craghead, William D., Jr.: *See*—
Harper, Billie L., and Craghead. 3,352,648.
Crain, Donald L., and R. F. Kleinschmidt, to Phillips Petroleum Co. Process for separating organometal from 1-olefins. 3,352,894, 11-14-67, Cl. 260—448.
Cramer, Ward C. Container filling apparatus. 3,352,458, 11-14-67, Cl. 222—66.
Crast, Leonard B., Jr., and J. M. Essery, to Bristol-Myers Co. Antibacterial agents of the cephalosporin class. 3,352,858, 11-14-67, Cl. 260—243.
Crawford, Allan H. Dowel. 3,352,191, 11-14-67, Cl. 85—14.
Craven, Herman R., to The Vendo Co. Double depth article release mechanism for vending machine. 3,352,454, 11-14-67, Cl. 221—105.
Crawford, Joseph H., and R. D. Halverstadt, to General Electric Co. Electrochemical machining of small diameter holes in high temperature superalloys. 3,352,770, 11-14-67, Cl. 204—143.
Creed & Co. Ltd.: *See*—
Mason, Frederick P., and Stevens. 3,353,038.
Cresswell, Roger A., to Rolls-Royce Ltd. Gas turbine by-pass engine. 3,352,110, 11-14-67, Cl. 60—229.
Cripe, Maxwell L., to The Bendix Corp. Servomotor. 3,352,209, 11-14-67, Cl. 91—391.
Crishin, Peter F., to Roberts Co. Linear contact horizontal spinning ring. 3,352,096, 11-14-67, Cl. 57—119.
Crosswell, Flay D., and J. W. Binns, to Overhead Door Corp. Door lock with safety device. 3,352,585, 11-14-67, Cl. 292—92.
Crown Zellerbach Corp.: *See*—
Pantenburg, Joseph W. 3,352,085.
Crouse-Hinds Co.: *See*—
Robertson, Charles A., and Small. 3,353,013.
Crutcher, B. T., III, and R. D. Dodge, to International Business Machines Corp. Character selection mechanism without return to home position. 3,352,398, 11-14-67, Cl. 197—16.
Culligan, Inc.: *See*—
Entringer, James S., Marks, and Ritchie. 3,352,419.
Cummings, Edgar H., to The National Acme Co. Threading implement. 3,352,139, 11-14-67, Cl. 72—123.
Cummings, Jan G., and R. N. Maskell, to Container Corp. of America. Container for frozen product. 3,352,472, 11-14-67, Cl. 229—14.
Cunningham, Richard, Jr., and J. D. Kimmel, to Vapor Corp. Steam generator. 3,352,289, 11-14-67, Cl. 122—240.
Cupples Container Co.: *See*—
Kraus, Robert A. and E. J. 3,351,978.
Curra, Richard S., Jr., to Hussey Mfg. Co., Inc. Gymnasium stand with foldable seats. 3,352,069, 11-14-67, Cl. 52—9.
Curtis, Charles, to Enresco, Inc. Self propelled irrigator. 3,352,493, 11-14-67, Cl. 239—177.
Customline Control Products, Inc.: *See*—
Wright, Edward L. 3,352,407.
Cutaia, Alfred, to International Business Machines Corp. Document sorting apparatus. 3,352,417, 11-14-67, Cl. 209—74.
Cycowicz, Izchak. Chair. 3,352,601, 11-14-67, Cl. 297—85.
Dahlgren, Harold P., to Dahlgren Mfg. Co., Inc. Dampening fluid cooling and circulating apparatus for lithographic offset press dampening device. 3,352,317, 11-14-67, Cl. 137—339.
Dahlgren Mfg. Co., Inc.: *See*—
Dahlgren, Harold P. 3,352,317.
Daimler-Benz Aktiengesellschaft: *See*—
Barényii, Béla, and Sacco. 3,352,597.
Wilfert, Karl, and Barényi. 3,352,600.
Dalby, Terence: *See*—
Bellar, Oscar. 3,353,133.
Dalebout, William H.: *See*—
Thomas, McKinley B., and Dalebout. 3,352,208.
Dalzell, James W., and J. E. B. Thorsteinsson, to Pioneer Electric Brandon Ltd. Automatic set-point control for thermostats in room-heating systems. 3,352,490, 11-14-67, Cl. 236—68.
Damon, George F.: *See*—
Polinsky, Murray A., and Damon. 3,352,712.
Danfoss A/S: *See*—
Jorgensen, Svend E., and Siegfred. 3,352,211.
Daniels, Howard L., to Sperry Rand Corp. Head positioner for a magnetic data storage device. 3,353,167, 11-14-67, Cl. 340—174.1.
Daniels, William A., Jr.: *See*—
Daniels, William A. and W. A. 3,351,961.
Daniels, William A. and W. A., Jr. Bedrail. 3,351,961, 11-14-67, Cl. 5—331.
Danielsson, Henning E., to Arenco Aktiebolag. Transport means and a transversely located discharge conveyor. 3,352,401, 11-14-67, Cl. 198—20.
Dardig, Ben V. Heel construction. 3,351,967, 11-14-67, Cl. 12—147.
Dargene, Carl J., to Amerock Corp. Drawer slide. 3,352,617, 11-14-67, Cl. 312—343.
Darr, Wayne B. Static balancing method. 3,352,732, 11-14-67, Cl. 156—75.
Darras, Raymond: *See*—
Baque, Pierre, Darras, and Koch. 3,352,004.
Das, Dilip K., and G. Freedman, to Raytheon Co. Prevention of hydrogen-embrittlement in oxygen-bearing copper. 3,352,667, 11-14-67, Cl. 75—153.
Dascanio, Adolfo, to Southwest Welding & Mfg. Co. Transportable water tower. 3,352,461, 11-14-67, Cl. 222—160.
Daspit, Ronald A. Pipe coupling for high-pressure gas and oil underwater pipe lines, and process of installing same. 3,352,575, 11-14-67, Cl. 285—45.
Daum, Leonard E.: *See*—
Brown, Robert R., and Daum. 3,352,962.
Daviau, Jerome G. Vacuum evaporator of the ejector pump type. 3,352,348, 11-14-67, Cl. 159—5.
Davidson, Julian S. Self-kindling charcoal briquets. 3,352,651, 11-14-67, Cl. 44—10.
Davidson, Robert E. Transportation system and method. 3,352,438, 11-14-67, Cl. 214—88.
Davis, Claude G., and L. C. Thomas, to Bell Telephone Laboratories, Inc. Data transmission. 3,353,158, 11-14-67, Cl. 340—172.5.

Davis, Douglas P.: *See*—
Le Vesconte, Harold J., and Davis. 3,352,436.
Davis, John S., to The Bunker-Ramo Corp. Fabricating methods for electrical connecting structures. 3,352,992, 11-14-67, Cl. 219—58.
Davis, Kenneth D. High temperature plasma generator having means for providing current flow through plasma discharge. 3,353,061, 11-14-67, Cl. 315—111.
Dechantsreiter, Max J., to Harnischfeger Corp. Crane with cable carrier apparatus. 3,352,432, 11-14-67, Cl. 212—21.
De Coste, Clarence J. Jacket type sprinkling and spraying device. 3,352,364, 11-14-67, Cl. 169—1.
Dee, John B., and M. T. Simnad, to General Dynamics Corp. Fuel element. 3,352,757, 11-14-67, Cl. 176—68.
Deere & Co.: *See*—
Hubbard, Arthur L. 3,352,092.
Marquart, Gordon L., and Michael. 3,352,166.
De Forest, Raymond A.: *See*—
Cohn, Eugene, De Forest, and Frick. 3,352,009.
De Garab, Giorgio O., 70% to Montecatini Edison, S.p.A., and 30% to G. de Varda. Multicell electrolytic furnace with suspended electrodes and method of aluminum production. 3,352,767, 11-14-67, Cl. 204—67.
Degginger, Edward R., W. A. Knapp, and H. E. Zuern, to Allied Chemical Corp. Stabilisation of chlorofluoroalkanes. 3,352,789, 11-14-67, Cl. 252—171.
De Groot, John E., and B. Fuerst, to The Wheelabrator Corp. Lock system for blasting-machine blades. 3,352,064, 11-14-67, Cl. 51—9.
De Korte, Peter: *See*—
Ten Hoeve, Marinus, De Korte, and E. Ten Hoeve. 3,352,039.
Delaney, Lawrence J. Method for blood clot lysis. 3,352,303, 11-14-67, Cl. 128—34.
De Leonardis, Michael J. Electrode assembly for insertion in a fluid container. 3,352,989, 11-14-67, Cl. 200—166.
Delin, Irwin L., D. P. Doncaster, and R. E. Moll, to Columbia Broadcasting System, Inc. Reversible two speed tape drive. 3,352,169, 11-14-67, Cl. 74—194.
Deltrol Controls Corp.: *See*—
Harris, John L. 3,352,381.
De Luxe Rading Corp.: *See*—
Marcus, Solomon. 3,352,056.
Demag-Zug G.m.b.H.: *See*—
Becker, Klaus, and Mertens. 3,352,397.
De Maldé, Marcello: *See*—
Chini, Paolo, Dolci, and de Maldé. 3,352,937.
Deminier, Jeanne P.: *See*—
Mention, Maurice L., and Gobron. 3,352,930.
Dempster, Hendry W.: *See*—
McIntyre, James E., Marsden, and Dempster. 3,352,734.
Den Hollander, Charles W., to Hoffmann-La Roche, Inc. Process for preparing 5-halo-2-amino-phenyl-3-aryl ketones. 3,352,877, 11-14-67, Cl. 260—296.
Denine, John F. Carburetor construction. 3,352,545, 11-14-67, Cl. 261—41.
Dent, Ray F., to Dominion Electrohome Industries Ltd. Triggered marker generator with feedback network for holding off undesired signals. 3,353,035, 11-14-67, Cl. 307—88.5.
D'Entremont, Franklin R., to General Electric Co. Leakage flux suppressor windings for transformers. 3,353,132, 11-14-67, Cl. 336—155.
De Packh, David C.: *See*—
Kitchen, James P., De Packh, Roess, and O'Connell. 3,353,064.
De Sabla, Louis J.: *See*—
McFann, Charles E., and de Sabla. 3,352,242.
Desoto, Inc.: *See*—
Sekmakas, Kazys. 3,352,827.
De Souza, Alwyn A., to Joslyn Mfg. and Supply Co. Surge protection circuit. 3,353,066, 11-14-67, Cl. 317—31.
De Vine, Jon G.: *See*—
Chan, William, De Vine, and Klein. 3,352,061.
De Vries, Donald L., and P. W. Ryan, to Sinclair Research, Inc. Method for the preparation of xylenol. 3,352,927, 11-14-67, Cl. 260—629.
Dew, Jimmy S., to Phillips Petroleum Co. Disulfonylazide crosslinked polypropylene - polyethylene-ethylene/propylene rubber blends. 3,352,946, 11-14-67, Cl. 260—897.
Diamond International Corp.: *See*—
Struble, Glenn E. 3,352,451.
Diassi, Patrick A., and G. W. Krakower, to E. R. Squibb & Sons, Inc. Steroid derivatives. 3,352,854, 11-14-67, Cl. 260—239.55.
Dickinson, Harold W. Structural unit for buildings. 3,352,082, 11-14-67, Cl. 52—639.
Dickson Electronics Corp.: *See*—
White, Richard L. 3,353,067.
Diehl, John M.: *See*—
Pollock, Harold V., and Diehl. 3,353,006.
Dietzgen, Eugene, Co.: *See*—
Brownscombe, Philip J. 3,352,201.
Dieudonne, Alain: *See*—
Godet, Pierre, and Dieudonne. 3,352,548.
Dilchert, Heinz, to Dynamit Nobel Aktiengesellschaft. Solid fuel propellant charge. 3,352,243, 11-14-67. Cl. 102—101.
Dilger, Le Roy, to Globe-Union Inc. Nickel oxide capacitors. 3,353,124, 11-14-67, Cl. 333—76.
Di Ramio, Victor A., to United Aircraft Corp. Thread element-retaining assembly. 3,352,609, 11-14-67, Cl. 308—22.
Di Settembrini, Antoine. Devices for stabilizing light objects on conveyor belts. 3,352,404, 11-14-67, Cl. 198—52.
Disko, Harry: *See*—
Glass, Marvin I., Disko, and McFarland. 3,352,054.
Disteldorf, Josef: *See*—
Schmitt, Karl, Disteldorf, and Keller. 3,352,831.
Schmitt, Karl, and Disteldorf. 3,352,834.
Schmitt, Karl, Disteldorf, and Hubel. 3,352,913.
Djorup, Robert S. Heated element fluid flow sensor. 3,352,154, 11-14-67, Cl. 73—189.
Dodd, Edward C.: *See*—
Harris, Albert E., and Dodd. 3,352,682.
Dodge, Ronald D.: *See*—
Crutcher, B. Todd, III, and Dodge. 3,352,398.
Dodrill, Richard W., and C. W. Long, to Bedline Inc. Adjustable guard frame for beds. 3,351,962, 11-14-67, Cl. 5—331.
Doherty, John, Jr., to Texas Instruments Inc. Vibration resistant construction for thermally responsive electrical switches. 3,352,986, 11-14-67, Cl. 200—138.
Dolci, Martino: *See*—
Chini, Paolo, Dolci, and de Maldé. 3,352,937.
Doll, Brendan L.: *See*—
Doll, Gregory W. and B. L. 3,352,738.
Doll, Gregory W. and B. L. Apparatus for creping paper. 3,352,738, 11-14-67, Cl. 156—585.
Dollison, William W., to Otis Engineering Corp. Floating work platform. 3,352,269, 11-14-67, Cl. 114—.5.
Domicone, Joseph J., and W. C. Smith, to Corning Glass Works. Method for producing light-diffusing coatings of titania on glass. 3,352,703, 11-14-67, Cl. 117—17.
Dominion Bridge Co., Ltd.: *See*—
Cape, Richard A. G. 3,352,330.
Dominion Electrohome Industries Ltd.: *See*—
Dent, Ray F. 3,353,035.
Doncaster, Daniel P.: *See*—
Delin, Irwin L., Doncaster, and Moll. 3,352,169.
Doochi, Yuu. *See*—
Nakamura, Hiromichi, Katoo, Minejima, Shimizu, Satoo, Nozaki, and Doochi. 3,352,641.
Dore, James E., and A. L. Kearney, to Olin Mathieson Chemical Corp. Horizontal continuous casting venting method. 3,352,350, 11-14-67, Cl. 164—82.
Dorfman, Ralph I., B. Loken, and M. Gut, to Worcester Foundation for Experimental Biology. Method of selectively reducing the 3-oxo radical of 3-oxo-6-alpha-methyl-pregn-4-en-20-one compounds. 3,352,890, 11-14-67, Cl. 260—397.4.
Dornfield, Clinton A., to G. D. Searle & Co. 4-alkanoyl-1-piperazinealkanamides. 3,352,866, 11-14-67, Cl. 260—268.
Dory, Jacques, to Corporation Realisations Ultrasoniques. Stack of foils used as an acoustic relay. 3,352,376, 11-14-67, Cl. 181—.5.
Douglas, Hunter International Ltd.: *See*—
Hennequin, Petrus J. 3,352,349.
Dow Chemical Co., The: *See*—
Belfit, Robert W., Jr. 3,352,652.
Carlyle, Robert L., and Gaumer. 3,352,809.
Guebert, Kenneth W., and Jones. 3,352,424.
Lowes, Fred J. 3,352,525.
Putman, Maurice W. 3,352,355.
Strycker, Stanley J. 3,352,911.
Dowling, Edward C., to AMP Inc. Magnetic core driver and system. 3,353,165, 11-14-67, Cl. 340—174.
Doyle, Frank P., and J. H. C. Nayler, to Beecham Group Ltd. Synthetic penicillins. 3,352,850, 11-14-67, Cl. 260—239.1.
Doyscher, Robert E. Parts washer. 3,352,310, 11-14-67, Cl. 134—56.
Draper, Walter S., III, to United States of America, Army. Gun charger device. 3,352,206, 11-14-67, Cl. 89—1.
Draving, Walter J., and J. E. Nerz, to Micro-Miniature Parts Corp. Package for flexible material. 3,352,412, 11-14-67, Cl. 206—59.
Drayton, John W., and H. R. Blynn. Leaf burner. 3,352,260, 11-14-67, Cl. 110—19.
Drescher, Erwin: *See*—
Wolf, Hans, Drescher, Faulhaber, Wilhelm, Reinhard, and Penning. 3,352,710.
Dresser Industries, Inc.: *See*—
Hoke, Howard L. 3,352,579.
Read, Norman W. 3,352,212.
Stevens, Howard C., Jr. 3,352,384.
Dressler, Hans, and K. G. Reabe, to Koppers Co., Inc. Bis(3-hydroxy-4-benzoylphenoxy) silanes. 3,352,896, 11-14-67, Cl. 260—448.8.
Drisch, Nicolas, and P. Herrbach, to Chimiotex S.A. Process for spinning cellulosic fibers. 3,352,957, 11-14-67, Cl. 264—196.
Driver, Paul C., and R. E. Fowler, to United States of America, Navy. Method and means for enhancing camouflaged target detection utilizing light polarization techniques. 3,352,965, 11-14-67, Cl. 178—6.
Dube, Roland G., to CSF-Compagnie Generale De Telegraphie Sans Fil. Delay line. 3,353,121, 11-14-67, Cl. 333—31.
Dubois, Joseph W., to H. L. Bomar and J. D. Marshall, trustees, known as The Carolina Patent Development Trust. Ring Traveler. 3,352,097, 11-14-67, Cl. 57—125.
Dubuque Awning & Tent Co.: *See*—
Frommelt, Cyril P. and Sylvan J. 3,352,814.
Dudek, Raymond J., C. G. Mallery, and L. D. Sunderland, to General Electric Co. Automatic variable threshold control circuit. 3,353,106, 11-14-67, Cl. 328—171.
Duerr, Bruno, to General Motors Corp. Turbine inlet screen. 3,352,104, 11-14-67, Cl. 60—13.
Duke, Angus J.: *See*—
Cameron, Grant McLay, and Duke. 3,352,810.
Dunbar, Robert B.: *See*—
Williams, Stanley E., Dunbar, and Rademaker. 3,352,746.
Dunfee, Danny D.: *See*—
Holter, William H., Dunfee, and Webster. 3,352,244.
Dunlop Rubber Co. Ltd.: *See*—
Hogg, Wilfred H., Hartle, and Merriman. 3,352,803.

- Du Pont de Nemours, E. I. and Co.: *See*—
  - Anderson, Arthur W. 3,352,714.
  - Klopping, Hein L., and Loux. 3,352,662.
  - Loux, Harvey M. 3,352,862.
  - Prichard, William W. 3,352,912.
  - Soboczenski, Edward J. 3,352,863.
- Dury, Karl: *See*—
  - Reicheneder, Franz, and Dury. 3,352,907.
- Du Temple de Rougemont, Godefroy M. C., and M. M. Stapfer. Slidable switch actuator contacts and structure associated therewith. 3,352,980, 11–14–67, Cl. 200—16.
- Dutton, Lloyd K.: *See*—
  - Mooney, Walter G., Dutton, and Lynch. 3,352,532.
- Dvorkin, Harry. Air filter for inflatable tires. 3,352,091, 11–14–67, Cl. 55—274.
- Dynamit Nobel Aktiengesellschaft: *See*—
  - Dilchert, Heinz. 3,352,243.
  - Hass, Karl, Epler, and Langenhoff. 3,352,860.
  - Schinnerer, Thomas, Umbach, Frobel. 3,352.239.
- Dyott, Richard B., to The M-O Valve Co. Ltd. Magnetohydrodynamic generators. 3,353,039, 11–14–67, Cl. 310—11.
- Earl Industries, Inc.: *See*—
  - Wilson, Merton. 3,352,440.
- Earle, Ralph H., Jr., to Hercules, Inc. Acid stabilization and base reactivation of water-soluble wet-strength resins. 3,352,833, 11–14–67, CCl. 260—78.
- Eastman Kodak Co.: *See*—
  - Alkofer, James S. 3,352,706.
  - Brooker, Leslie G. S., and Keyes. 3,352,857.
  - Carter, Whitney B. 3,351,992.
  - Graham, James L. 3,352,673.
  - Guillet, James E., and Towne. 3,352,926.
  - Haines, Thomas H. 3,353,076.
  - Harrington, Robert C., Jr., and Smith. 3,352,735.
  - Harvey, Donald M. 3,352,674.
  - Hoppe, John C. 3,352,672.
  - Nerwin, Hubert. 3,352,042.
  - Perlowski, John S., and Sillick. 3,352,638.
  - Salminen, Wilho M. 3,352,679.
  - Taber, Robert C., and Brooker. 3,352.680.
  - Woodhouse, Fred W., and Owen. 3,352,469.
- Easton, Wayne B., to Char-Lynn Co. Fluid pressure device with dual feed and exhaust. 3,352,247, 11–14–67, Cl. 103—130.
- Eckles, Paul N.: *See*—
  - Sisson, James C., Sparrow, Eckles, Meissner, and Burnham. 3,353,005.
- Eckstein, George R., to Remington Arms Co., Inc. Primer. 3,352,240, 11–14–67, Cl. 102—45.
- Eddy, Joseph J. Atmospheric pressure plant. 3,352,108, 11–14–67, Cl. 60—108.
- Edison, Montecatini, S.p.A.: *See*—
  - De Garab, Giorgio O. 3.352,767.
- Edwards High Vacuum International Ltd.: *See*—
  - Holland, Leslie A. 3,353,054.
  - Power, Basil D. 3.352.535.
- Egglestone, Robert W., and A. S. Noell, Jr., to Combustion Engineering, Inc. Electrical motor drive with dynamic and static braking. 3,353,077, 11–14–67, Cl. 318—212.
- Ehrman, Carl W., to Sperry Rand Corp. Buffer processor I/O option. 3,353,156, 11–14–67, Cl. 340—172.5.
- Eichenberger, Kurt: *See*—
  - Schmidt, Paul, Wilhelm, Eichenberger, and Schumacher. 3,352,683.
- Einfalt, Alfred, to Gebruder Einfalt, Blechspielwarenfabrik. Toy track system. 3,352,251, 11–14–67, Cl. 104—63.
- Eisenberg, Alfred. Egg carton. 3,352,477, 11–14–67, Cl. 229—40.
- Ekers, Glenn R., to AMP Inc. Card reader. 3,352,981. 11–14–67, Cl. 200—46.
- Eklund, Henrik J.: *See*—
  - Lalonde, Earl E., and Eklund. 3,352,233.
- Elarde, Vito D., to Amphenol Corp. Resistive element and variable resistor. 3,353,134, 11–14–67, Cl. 338—160.
- Elastic Stop Nut Corp. of America: *See*—
  - Brown, Robert R., and Daum. 3,352,962.
- Electro-Optical Systems, Inc.: *See*—
  - Forrester, Alvin T., and Perel. 3,352,482.
- Ellison, James R.: *See*—
  - Allmark, Reginald H., and Ellison. 3,353,105.
- Elmer, Curtis, and J. J. Mestdagh, to Monsanto Co. Self-extinguishing phenolic resin compositions and laminates prepared therefrom. 3,352,744, 11–14–67, Cl. 161—264.
- Eltra Corp.: *See*—
  - Grube, Wolfgang O., and Cohen. 3,352,219.
- Elwell, Charles A., and R. B. Klamer, to The Toy Development Center, Inc. Visual-auditory means for microscopes. 3,352,026, 11–14–67, Cl. 35—8.
- Emerson Electric Co.: *See*—
  - Brundage, Robert W. 3.352.176.
- Engel, Teofil, to Redirack Industries Ltd. Locking pin device for pallet rack. 3,352,584, 11–14–67, Cl. 287—189.36.
- Engelhardt, Edward L., to Merck & Co., Inc. Substituted and unsubstituted 4-(5H-dibenzo[a,d]cyclohepten-5-ylidene)-1-(amino or nitroso) piperidines. 3,352,869, 11–14–67, Cl. 260—293.
- Engh, Howard A. Vertical paint roller tray. 3,351,970, 11–14–67, Cl. 15—257.06.
- English Electric Co. Ltd., The: *See*—
  - Allmark, Reginald H., and Ellison. 3,353,105.
  - Braikevitch, Michael, and Metcalf. 3,353.028.
  - McMillan, Peter W., and Partridge. 3,352,656.
- English Electric Co. Ltd., English Electric House: *See*—
  - McMillan, Peter W., and Lawton. 3,352,698.
- English, Ray H.: *See*—
  - Ornitz, Martin N., and English. 3,352,549.
- Enkelmann, Walter, to Henschel-Werke A.G. Machine for grinding crankshafts. 3,352,065, 11–14–67, Cl. 51—105.
- Enresco, Inc.: *See*—
  - Curtis, Charles. 3,352,493.
- Enterprise Machine & Development Corp.: *See*—
  - Wiggins, Kennard R. 3,352,511.
- Entringer, James S., L. P. Marks, and H. D. Ritchie, to Culligan, Inc. Dual cam shaft control valve for automatic water softener. 3,352,419, 11–14–67, Cl. 210—140.
- Eppler, Arthur H. Polishing apparatus. 3,352,063, 11–14–67, Cl. 51—8.
- Essery, John M.: *See*—
  - Crast, Leonard B., Jr., and Essery. 3,352,858.
- Esso Production Research Co.: *See*—
  - Burkhardt, Joseph A. 3,351,965.
  - Burkhardt, Joseph A. 3,352,118.
- Esso Research and Engineering Co.: *See*—
  - Biller, William F., and Skarstrom. 3,352,294.
  - Brasch, Jay. 3,352,782.
  - Buchmann, Fred J. 3,352,634.
  - Gladrow, Elroy M., and Mattox. 3,352 924.
  - House, William T., Ray, and Hoover. 3,352,934.
  - Kimberlin, Charles N., Jr., and Gladrow. 3,352,796.
  - Mason, Ralph B., and Hamner. 3,352,776.
  - Meyer, Werner T. 3,352,956.
  - Passannante, Anthony J. 3,352,828.
  - Vander Linden, Ronald, and Serratore. 3,352,940.
  - Yanowitz, Arthur. 3,352,318.
- Estabrook, Mark R., to Barnes Drill Co. Automatic sizing device for a honing machine. 3,352,067, 11–14–67, Cl. 51—165.
- Eta A.G. Ebauches-Fabrik: *See*—
  - Giger, Urs. 3,352,103.
- Ethyl Corp.: *See*—
  - Breckoff, Walter E., and McEuen. 3,352,939.
  - Plonsker, Larry, and McEuen. 3,352,938.
- Eudier, Michel, to La Metallurgie Francaise des Poudres-Metafrom. Self-lubricating bearing. 3,352,612, 11–14–67, Cl. 308—243.
- Evans Products Co.: *See*—
  - Lehnert, Robert E., Bennett, Moorhead, and Jenkins. 3,352,257.
  - Vandersys, Arthur. 3,352,523.
- Eyring, Fritz: *See*—
  - Wohlhaupter, Emil and Erwin, and Eyring. 3,352,185.
- FMC Corp.: *See*—
  - Corliss, Duncan S., Keast, and Thompson. 3,352,785.
  - Gartin, John L., and Gellatly. 3,352,405.
  - Hahn, Herbert S. 3,352,447.
  - Hirahara, Katsuji. 3 352.338.
  - Lima, Daniel A. 3,352,805.
  - Vadas, Leslie. 3,352,337.
- Fabrique d'Horlogesie Chs. Tissot et Fils S.A.: *See*—
  - Schneider, Jean-Claude. 3,352,102.
- Fairbanks, Daniel F., to National Research Corp. Process of bonding copper foil to foil containing superconductive layer such as niobium stannide. 3,352 008, 11–14–67, Cl. 29—599.
- Fairchild Camera & Instrument Corp.: *See*—
  - Michalchik, Michael. 3,352,671.
- Farbenfabriken Bayer Aktiengesellschaft: *See*—
  - Blomeyer, Friedrich, Zecher, and Holtschmidt. 3.352,829.
  - Molls, Hans H., Hornle, Raab, and Muller. 3,352,500.
  - Muller, Erwin. 3,352.880.
  - Schellhammer, Carl-Wolfgang, Muller, and Raue. 3,352,885.
- Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
  - Hoyer, Hans, Welfers, and Köpke. 3,352,959.
  - Mauz, Otto, and Hertel. 3,352,824.
- Farrand, Clair L., to Inductosyn Corp. Variable speed position measuring transformer system. 3,353,095, 11–14–67, Cl. 323—53.
- Faugeras, Pierre, P. Michel, and X. Talmont, to Commissariat a l'Energie Atomique. Apparatus for dissolving nuclear materials. 3,352 645, 11–14–67, Cl. 23—272.6.
- Faulhaber, Gerhard: *See*—
  - Wolf, Hans, Drescher, Faulhaber, Wilhelm, Reinhard, and Penning. 3,352,710.
- Faulkner, Robert W.: *See*—
  - Lowery, Andrew, Auld, and Faulkner. 3,353,023.
- Federal Paper Board Co., Inc.: *See*—
  - Williamson, Marshall I. 3,352.476.
- Fehling, Hans R., and A. D. Street, to I.R.C. Ltd. Ball point writing instrument. 3.352,621, 11–14–67, Cl. 401—109.
- Fender, Clarence L., to Columbia Broadcasting System, Inc. String mounting for steel pedal guitars. 3,352,188, 11–14–67, Cl. 84—312.
- Fenner, Erich: *See*—
  - Schofer, Rudolf, and Fenner. 3,352,713.
- Ferrand, Marcel. Soil-less cultivation device. 3,352,057, 11–14–67, Cl. 47—1.2.
- Ferro Corp.: *See*—
  - Robson, James T. 3,352,347.
- Ferry, Harry E.: *See*—
  - Boothroyd, Howard W., Ferry, Buzzell, and Nachazel. 3,352,163.
- Ffiske, Gerald D., to Stockbuildings Ltd. Ventilation apparatus with control means. 3,352,225, 11–14–67, Cl. 98—33.
- Field, Edmund: *See*—
  - Kimoto, Walter I., Swakon, and Field. 3,352,900.
- Figone, Donald C.: *See*—
  - Reed, Leonard, and Figone. 3,352,694.
- Filters, Inc.: *See*—
  - Osterman, James W. 3,352,423.
- Finkbeiner, Herman L., to General Electric Co. Metal chelates of hydantoins and their use in making 5-substituted hydantoins. 3,352,879, 11–14–67, Cl. 260—299.
- Finn, Alexander V.: *See*—
  - Puetzer, Bruno, Mackles, and Finn. 3,352,752.

- Fiore, Joseph P., to The Rauland Corp. Method of making a rectangular-mask assembly for a shadow-mask assembly for a shadow-mask type of color tube. 3,351,996, 11–14–67, Cl. 29—25.13.
- Firma E. Wolff Maschinenfabrik u. Eisengiesserei: *See*—
  - Schlechter, Alfred. 3,352,540.
- Fisher, Edward I., to Bostich Inc. Fastener driving apparatus. 3,352,471, 11–14–67, Cl. 227—7.
- Fischer, Edward L., to Thiokol Chemical Corp. Nozzle construction. 3,352,495, 11–14–67, Cl. 239—265.15.
- Fischer, George A., and R. H. Ricciardi. Razor sterilizer. 3,352,630, 11–14–67, Cl. 21—90.
- Fischer, William H.: *See*—
  - Carson, William N., Jr., and Fischer. 3,352,718.
- Fisher, Julian V., to Illinois Tool Works Inc. Self-retained nut with imperforate head. 3,352,195, 11–14–67, Cl. 85—80.
- Fisk, James C. Upright grinding gauge. 3,352,022, 11–14–67, Cl. 33—178.
- Fitzpatrick, Allyn H.: *See*—
  - Macoicz, Edward L., and Fitzpatrick. 3,352,999.
  - Macoicz, Edward L., and Fitzpatrick. 3,353,001.
  - Macoicz, Edward L., and Fitzpatrick. 3,353,002.
- Fizichesky Institute imeni Lebedeva: *See*—
  - Korablev, Lev N. 3,353,063.
- Flair, Henry J., to United States of America, Navy. Self-adjusting tension type, low friction seal. 3,352,563, 11–14–67, Cl. 277—27.
- Flambeau Plastics Corp.: *See*—
  - Hulterstrum, Harold D. 3,352,340.
- Fleischhauer, Eugene T., to Acme Visble Records, Inc. Index strips. 3,352,740, 11–14–67, Cl. 161—112.
- Fleming, Clarence R. Ice fishing tip-ups. 3,352,048, 11–14–67, Cl. 43—17.
- Floden, Bjorn F., to Radio Corp. of America. Motion picture apparatus with magnetic and optical sound reproducing means. 3,352,975, 11–14–67, Cl. 179—100.2.
- Folsom, William A. Comparison read-out circuit. 3,353,164, 11–14–67, Cl. 340—173.
- Fonar, Iosif M.: *See*—
  - Bodrov, Alexandr Dmitrievich, Petrov, and Fonar. 3,352,506.
- Fonken, Gunther S., M. E. Herr, and H. C. Murray, to The Upjohn Co. 1-benzenesulfonyl-3-(oxocycloalkyl)-ureas and the cyclic alkylene ketals thereof. 3,352,884, 11–14–67, Cl. 260—340.9.
- Ford Motor Co.: *See*—
  - Leonard, Richard L. 3,352,179.
- Forman, Harold M. Quick-opening shrink film package and packaging method. 3,352,480, 11–14–67, Cl. 229—51.
- Forrest, Irving: *See*—
  - Greenberg, Sol, Gautherin, and Forrest. 3,353,083.
- Forrester, Alvin T., and J. Perel, to Electro-Optical Systems, Inc. Ion sputter pumping collector. 3,352,482, 11–14–67, Cl. 230—69.
- Forssell, Harry, to Allmanna Svenska Elektriska Aktiebolaget. Test apparatus for controlled rectifiers operating as part of an inverter circuit. 3,353,096, 11–14–67, Cl. 324—26.
- Fosker, George R., to Beecham Group Ltd. α-Ureidopenicillins. 3,352,851, 11–14–67, Cl. 260—239.1.
- Foster, George B., and K. A. Ostrander, to The Reliance Electric and Engineering Co. Transducer system having a variable characteristic discriminator. 3,353,098, 11–14–67, Cl. 325—45.
- Foster, George H., L. Mattek, and W. W. McCandless, to Xaloy Inc. Precipitation hardening stainless steel alloy. 3,352,666, 11–14–67, Cl. 75—125.
- Fouretier, Georges L., to Societe d'Etudes et de Realisations d'Installations de Mesure (S.E.R.I.M.). Strain gauge potentiometer. 3,352,150, 11–14–67, Cl. 73—88.5.
- Fowler, Robert E.: *See*—
  - Driver, Paul C., and Fowler. 3,352,965.
- France Bed Co. Ltd.: *See*—
  - Ikeda, Minoru. 3,351,957.
- Francis, Gus: *See*—
  - Sustrich, William H., and Francis. 3,352,459.
- Francis, John P. Automobile rain shield and supporting means therefor. 3,352,599, 11–14–67, Cl. 296—95.
- Francis, Joseph, and W. D. Pennell, to Wood Electric Corp. Multipole circuit breaker with individual breakers coupled by slides therebetween. 3,353,127, 11–14–67, Cl. 335—9.
- Frangos, John, to Revlon, Inc. Pressure fluid metering and dispensing container valves. 3,352,464, 11–14–67, Cl. 222—402.2.
- Franklin, John S., and S. L. Baldwon, to General Electric Co. Sheet lighting luminaire. 3,353,015, 11–14–67, Cl. 240—25.
- Frantz, David H., Jr., and D. D. Ketchum, to Ocean Research Equipment, Inc. Acoustic ranging system. 3,353,149, 11–14–67, Cl. 340—3.
- Franzen, Gustav, to Palitex Project-Co. G.m.b.H. Yarn brake. 3,352,510, 11–14–67, Cl. 242—149.
- Frederick, Ilse B.: *See*—
  - Nolan, Kenneth G., Frederick, and Goleman. 3,352,664.
- Freedman, George: *See*—
  - Das, Dilip K., and Freedman. 3,352,667.
- Freedman, Hyman. Multiple fluid dental instrument with mirror actuated valve. 3,352,305, 11–14–67, Cl. 128—173.2.
- Freeland, Elmer E. Variable transmission gear shift for bicycles. 3,352,173, 11–14–67, Cl. 74—473.
- Freeland Gauge Co.: *See*—
  - Minix, William A. 3,352,145.
- Fre-Mar Industries: *See*—
  - Marra, Ivan L. 3,352,142.
- Freund, Heinz E., F. Arndt, and R. Rusch, to Schering, A.G. Method of destroying a weed. 3,352,663, 11–14–67, Cl. 71—88.
- Frick, Ralph G.: *See*—
  - Cohn, Eugene, De Forest, and Frick. 3,352,009.
- Friedman, Maurice: *See*—
  - Collins, John N., and Friedman. 3,353,100.
- Frobel, Elise: *See*—
  - Schinnerer, Thomas, Umbach, and Frobel. 3,352,239.
- Frobel, Ernst: *See*—
  - Schinnerer, Thomas, Umbach, and Frobel. 3,352,239.
- Frobel, Ernst G.: *See*—
  - Schinnerer, Thomas, Umbach, and Frobel. 3,352,239.
- Frommelt, Cyril P. and S. J., to Dubuque Awning & Tent Co. Loading dock shelter. 3,352,314, 11–14–67, Cl. 135—5.
- Frommelt, Sylvan J.: *See*—
  - Frommelt, Cyril P. and S. J. 3,352,314.
- Froom, Jocelyn, to International Standard Electric Corp. Slow wave structure having oppositely curved conductors disposed about the beam and mounted transversely between opposite walls. 3,353,058, 11–14–67, Cl. 315—3.5.
- Fuerst, Bernard: *See*—
  - De Groot, John E., and Fuerst. 3,352,064.
- Fuji Shashin Film Kabushiki Kaisha: *See*—
  - Nishio, Fumihiko, Oi, and Tajima. 3,352,678.
  - Ohi, Reiichi, and Shirasu. 3,352,681.
- Fujita, Yoshimasa, and N. Tsutsui, to American Cyanamid Co. Relaxation and crimp stabilization of acrylonitrile polymer fibers through treatment with aqueous solutions of acetonitrile, pyridine or dioxane. 3,352,626, 11–14–67, Cl. 8—130.1.
- Fujiwara, Shinobu, S. Hayashi, and K. Kawakami, to TDK Electronics Co., Ltd. Ceramic dielectrics. 3,352,697, 11–14–67, Cl. 106—39.
- Fuller, Gordon W.: *See*—
  - Fuller, John C., G. W., R. A. and W. I. 3,352,013.
- Fuller, John C., G. W., R. A. and W. I. Apparatus for venting pneumatic tires. 3,352,013, 11–14–67, Cl. 30—368.
- Fuller, Kathleen B.: *See*—
  - Greene, Janice L., and Fuller. 3,352,886.
- Fuller, Ralph A.: *See*—
  - Fuller, John C., G. W., R. A. and W. I. 3,352,013.
- Fuller, William I.: *See*—
  - Fuller, John C., G. W., R. A. and W. I. 3,352,013.
- Furst, Stefan, to Walter Reiners. Apparatus for seizing the yarn ends of spinning cops or similar yarn coils. 3,352,505, 11–14–67, Cl. 242—35.6.
- Furukawa, Yuichiro. Bearing for impeller shaft. 3,352,610, 11–14–67, Cl. 308—122.
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- Galabert, Pierre, and M. Pillon, to Compagnie de Saint-Gobain. Apparatus and method for cutting glass. 3,352,015, 11–14–67, Cl. 33—32.
- Gallup, Rolland, to United States of America, Navy. Light bomb. 3,353,014, 11–14–67, Cl. 240—1.3.
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- Gard, Don L., and J. E. Wachtstetter, to Eli Lilly & Co. Method of increasing production of salable eggs. 3,352,684, 11–14–67, Cl. 99—4.
- Garra, Anthony A., to The Boeing Co. Apparatus for determining the attitude and distance between two bodies. 3,352,223, 11–14–67, Cl. 95—12.5.
- Garrett, Sterling P., to Wincharger Corp. Electric generating systems. 3,353,089, 11–14–67, Cl. 322—27.
- Gartin, John L., and R. K. Gellatley, to FMC Corp. Carton transporting mechanism. 3,352,405, 11–14–67, Cl. 198—131.
- Garvey, Edward C.: *See*—
  - Chalfin, William L., and Garvey. 3,351,954.
- Garwood, William E.: *See*—
  - Smith, Robert B., and Garwood. 3,352,800.
- Gasch, Dale J., and R. D. Pitsch, to American Excelsior Corp. Shaping apparatus. 3,351,977, 11–14–67, Cl. 18—4.
- Gaumer, Glenn E.: *See*—
  - Carlye, Robert L., and Gaumer. 3,352,809.
- Gautherin, George: *See*—
  - Greenberg, Sol, Gautherin, and Forrest. 3,353,083.
- Gauthier, George E., to General Electric Co. Thermally and magnetically responsive electrical control device. 3,353,128, 11–14–67, Cl. 335—35.
- Gazave, Jean M., to Sarec S.A. Therapeutic compositions comprising isoflavone compounds. 3,352,754, 11–14–67, Cl. 167—81.
- Gebruder Einfalt, Blechspielwarenfabrik: *See*—
  - Einfalt, Alfred. 3,352,251.
- Gebruder Sulzer Aktiengesellschaft: *See*—
  - Pfarrwaller, Erwin. 3,352,328.
- Gellatly, Robert K.: *See*—
  - Gartin, John L., and Gellatly. 3,352,405.
- General Aniline & Film Corp.: *See*—
  - Anspon, Harry D. 3,352,771.
  - Armento, William H. 3,352,845.
  - Cerwonka, Edward. 3,352,675.
  - Katz, Leon, and Chiddix. 3,352,768.
  - Kosalek, Joseph F. 3,352,677.
  - Leibowitz, Marvin R., and Grosser. 3,352,808.
  - Nitka, Heinz F. 3,353,185.
  - Sugarman, Jeal, and Woodward. 3,352,790.
- General Dynamics Corp.: *See*—
  - Dee, John B., and Simnad. 3,352,757.
  - Richards, Glenn L. 3,353,112.
  - Zavitz, Arnold L., and Vanderveer. 3,352,953.
- General Electric Co.: *See*—
  - Albright, Donald R. 3,353,043.
  - Allen, Robert K. 3,353,019.
  - Andrews, James D. 3,352,958.
  - Barrett, John R., and Jensen. 3,353,051.
  - Baumann, Frederick W. 3,353,042.
- General Electric Co. Ltd., The: *See*—
  - Berry, Allan D., and Vucinic. 3,353,103.

- General Electric Co.: *See—*
  - Carson, William N., Jr., and Fischer. 3,352,718.
  - Charles, Richard J. 3,352,007.
  - Crawford, Joseph H., and Halverstadt. 3,352,770.
  - D'Entremont, Franklin R. 3,353,132.
  - Dudek, Raymond J., Mallery, and Sunderland. 3,353,106.
  - Finkbeiner, Herman L. 3,352,879.
  - Franklin, John S., and Baldwon. 3,353,015.
  - Gauthier, George E. 3,353,128.
  - Hershyn, William. 3,353,056.
  - Klebe, Johann F., and Murray. 3,352,799.
  - Kling, August J., and Beggs. 3,352,729.
  - Leibinger, George E. 3,353,129.
  - Macoicz, Edward L., and Fitzpatrick. 3,352,999.
  - Macoicz, Edward L., and Fitzpatrick. 3,353,001.
  - Macoicz, Edward L., and Fitzpatrick. 3,353,002.
- McNamara, John E. 3,352,775.
  - Met, Viktor O. 3,353,123.
  - Morgan, Raymond E., and Bedford. 3,353,032.
  - Morgan, Raymond E. 3,353,085.
  - Nichols, Frank S., and Steele. 3,352,711.
  - Nuckolls, Joe A. 3,353,062.
  - Sandin, Raymond C. 3,352,615.
  - Spencer, John H. 3,353,142.
- General Foods Corp.: *See—*
  - Mancuso, John J., and Capossela. 3,352,686.
- General Motors Corp.: *See—*
  - Alexander, Donald F. 3,353,004.
  - Beatenbough, Paul K., and Baker. 3,352,125
  - Duerr, Bruno. 3,352,104.
  - Glonet, Edmond R. 3,351,976.
  - Hulten, Richard E. 3,352,293.
  - Ivers, Richard J. 3,352,608.
  - Johnson, Ralph H. 3,352,564.
  - Kellogg, George E. 3,352,315.
  - Lindgren, Milton F., and Peterson. 3,352,178.
  - Mao, Tzu J. 3,352,772.
  - Rossi, David A. 3,352,524.
  - Saeli, John J. 3,353,079.
  - Sawyer, Elbert M. 3,353,090.
  - Tuck, Robert M. 3 352,373.
- General Telephone and Electronics Laboratories, Inc.: *See—*
  - Hagenlocher, Arno K., and Polanyi. 3,353,048.
  - Murphy, Edward A., and Posner. 3,353,087.
  - Renkowitz, Donald. 3,353,117.
- General Time Corp.: *See—*
  - Michael, Eugene M. and Toovey. 3,352,101.
  - Moseley, John B. 3,352,396.
- Gentles, James K.: *See* –
  - Harrison, Jack B., Hignett, and Gentles. 3,352,804.
- Georgia Tech Research Institute: *See—*
  - Jackson, Thomas W. 3,352,111.
- Gerlach, Stanley C. Computing scale. 3,352,372, 11-14-67, Cl. 177—40.
- Gewerkschaft Eisenhutte Westfalia: *See—*
  - Hohn, Walter. 3,352,603.
- Gibbs, Mary B., to Clay-Adams, Inc. Apparatus for washing particle matter. 3,352,486, 11-14-67, Cl. 233—26.
- Giger, Adolf J., to Bell Telephone Laboratories, Inc. Mode signal compensation system. 3,353,183, 11-14-67, Cl. 343—117.
- Giger, Urs, to Eta A.G. Ebauches-Fabrik. Calendar watch with an instantaneous date-change motion. 3,352,103, 11-14-67, Cl. 58—58.
- Gilbert, Edward O., to Applied Dynamics, Inc. High-speed low-drift electronic comparator having positive and negative feedback paths. 3,353,033, 11-14-67, Cl. 307—88.5.
- Gilbert, Everett E., and B. Veldhuis, to Allied Chemical Corp. Fluorinated alcohol and ether derivatives thereof. 3,352,928, 11-14-67, Cl. 260—633.
- Gillette Co., The: *See—*
  - Lerner, Louis L., and Oberstar. 3,352,755.
- Gillette Research Institute, Inc.: *See—*
  - Schwartz, Anthony M., and Rader. 3,352,773.
- Gillick. Laurance H., to Vapor Corp. Ventilating and air conditioning system for a passenger vehicle. 3,352,224, 11-14-76, Cl. 98—10.
- Gilmore, William J., to American Chain & Cable Co., Inc. Multi-element wire line having compacted strands. 3,352,098, 11-14-67. Cl. 57—147.
- Glonet, Edmond R., to General Motors Corp. Vehicle body door hinge and hold-open. 3,351,976, 11-14-67, Cl. 16—138.
- Girling Ltd.: *See—*
  - Powell, George B. 3,352,387.
  - Thompson, George E. 3,352,383.
- Gladrow, Elroy M.: *See—*
  - Kimberlin, Charles N., Jr., and Gladrow. 3,352,796.
- Gladrow, Elroy M., and W. J. Mattox, to Esso Research and Engineering Co. Carbonylation reactions. 3,352,924, 11-14-67, Cl. 260—604.
- Glasgow, James A., and H. E. Linthicum, to Carrier Corp. Spray gun for cleaning tubes having radially expansible means for sealingly engaging said tube. 3,352,333, 11-14-67, Cl. 141—383.
- Glass, Marvin, I. H. Disko, and N. T. McFarland, to Marvin Glass & Associates. 3,352,054, 11-14-67, Cl. 46—17.
- Globe-Union Inc.: *See—*
  - Burant, Leonard J., and Jones. 3,352,717.
  - Dilger, Le Roy. 3,353,124.
- Gobron, Georges: *See—*
  - Mention, Maurice L. 3,352,930.
- Godet, Pierre, and A. Dieudonne, to Olestin. Gas and liquid contact apparatus. 3,352,548, 11-14-67, Cl. 261—124.
- Goebel, Clarence. Pressure gauge for pumps. 3,352,158, 11-14-67, Cl. 73—420.
- Goetz, Carlos C.: *See—*
  - Goetz, Paul C. and C. C. 3,352,701.
- Goetz, Paul C. and C. C. Process of applying d-limonene varnishes to an image bearing surface. 3,352,702, 11-14-67, Cl. 106—237.
- Goldstein, David, W. J. Buehler, and R. C. Wiley, to United States of America, Navy. Metallic composites. 3,352,650, 11-14-67, Cl. 29—191.
- Goleman, D. Lyle: *See—*
  - Nolan, Kenneth G., Frederick, and Goleman. 3,352,664.
- Gonmori, Osamu, to Sanyo Electric Co., Ltd., and Toyko Sanyo Electric Co., Ltd. Reversible tilting drive mechanism in a magazine type magnetic transducing apparatus. 3,352,976, 11-14-67, Cl. 179—100.2.
- Goodacre, Cecil, to Lansing Bagnall Ltd. Industrial trucks. 3,352,569, 11-14-67, Cl. 280—43.12.
- Goodall Semi-Metallic & Mfg., Co.: *See—*
  - Marshall, Don J. 3,352,161.
- Goodlass Wall & Co. Ltd.: *See—*
  - Harrison, Jack B., Hignett, and Gentles. 3,352,804.
- Goodrich-Gulf Chemicals, Inc.: *See—*
  - Lehr, Marvin H. 3,352,839.
- Gorham Corp.: *See—*
  - Iaciofano, Joseph. 3,352,695.
- Gorman, Marvin: *See—*
  - Neuss, Norbert, and Gorman. 3,352,868.
- Goss Gas, Inc.: *See—*
  - Swineford, John W. 3,352,456.
- Goto, Koji, to Toyota Motor Co. Ltd. Hinge mechanism. 3,351,975, 11-14-67, Cl. 16—128.1.
- Grace, W. R., & Co.: *See—*
  - Bodach, Charles M. 3,352,787.
  - Wilson, Charles P., Jr., Carr, and Ciapetta. 3.352,636.
- Graham, James L., to Eastman Kodak Co. Multilayer color photographic element. 3,352,673, 11-14-67, Cl. 96—22.
- Graham, William H., to Rohm & Haas Co. Process for the preparation of nitrogen- and fluorine-containing ethers. 3,352,915, 11-14-67, Cl. 260—584.
- Graser, Earl J., to Olinkraft, Inc. Bottle carrier. 3,352,452, 11-14-67, Cl. 220—111.
- Graser, Earl J., to Olinkraft, Inc. Partition structure to separate articles. 3,352,473, 11-14-67, Cl. 229—15.
- Gray, Earl H., to Phillips Petroleum Co. Two-stage isomerization. 3,352,932, 11-14-67, Cl. 260—668.
- Gray, George W., to Radio Corp. of America. Signaling loop including railroad tracks. 3,353,018, 11-14-67, Cl. 246—34.
- Grayson, Edward L., and B. J. Perry, to RCL Electronics, Inc. Switch contact assembly. 3,352,979, 11-14-67, Cl. 200—11.
- Greenberg, Sol, G. Gautherin, and I. Forrest. Regulated AC-DC power supply. 3,353,083, 11-14-67, Cl. 321—18.
- Greene, George B. Fluidic telemetering apparatus for quantity meters. 3,352,488, 11-14-67, Cl. 235—91.
- Greene, Janice L., and K. B. Fuller, to The Standard Oil Co. Manufacture of cis-1,2-cyclobutanecarboxylic anhydride. 3,352,886 11-14-67, Cl. 260—346.3.
- Greenfield, John B., to Acme Industries, Inc. Cooling tower sump. 3,352,546, 11-14-67, Cl. 261—111.
- Greenslade, John T., to Rocket Power, Inc. Automatic lap belt mechanism. 3,352,517, 11-14-67, Cl. 244—122.
- Grigereit, Helmut: *See—*
  - Menzi, Ulrich, and Grigereit. 3,352,554.
- Grigull, Hans, to Leybold Holding AG. Apparatus for injection molding. 3,352,983, 11-14-67, Cl. 18—30.
- Grinnell Corp.: *See—*
  - Irons, Milton H., and Maguire. 3,352,827.
- Grishin, Peter F., to Roberts Co. Linear contact horizontal spinning ring. 3,352,096, 11-14-67, Cl. 57—119.
- Grob & Co. A.G.: *See—*
  - Koch, Bernhard R. 3,352,329.
- Groslambert, Georges G., to Labofina, S.A. Fire resistant-extreme pressure and hydrolysis resistant lubricant comprising polychlorinated diphenyl and triaryl phosphates. 3,352,780, 11-14-67, Cl. 252—33.3.
- Gross, Benjamin H.: *See—*
  - Holbert, James M., and Gross. 3,352,895.
- Grosser, Frederick: *See—*
  - Leibowitz, Marvin R., and Grosser. 3,352,808.
- Grube, Wolfgang O., and M. M. Cohen, to Eltra Corp. Photocomposing machines. 3,352,219, 11-14-67, Cl. 95—4.5.
- Grunzweig & Hartman A.G.: *See—*
  - Speth, Sebastian. 3,352,653.
- Gude, Fritz: *See—*
  - Schmitt, Karl, and Gude. 3,352,830.
  - Schmitt, Karl, and Gude. 3,352,835.
  - Schmitt, Karl, and Gude. 3,352,836.
  - Schmitt, Karl, and Gude. 3,352,942.
- Guebert, Kenneth W., and I. C. Jones, Jr., to The Dow Chemical Co. Coated filter aids. 3,352,424, 11-14-67, Cl. 210—502.
- Guilbert, Inc.: *See—*
  - Metz, Louis P. 3,352,059.
- Guillet, James E., and E. B. Towne, to Eastman Kodak Co. Peroxide catalysts and polymerization processes employing the same. 3,352,926, 11-14-67, Cl. 260—610.
- Guiroy, Pierre J., to Les Laboratories Brunea uet Cie. Theophyllinyl-7-n-propane-w sulfonic acid and salt thereof. 3,352,864, 11-14-67, Cl. 260—253.
- Gulf Oil Corp.: *See—*
  - Alexander, Richard L., and Brown. 3,352,819.
  - Helin, Arthur F., and Mantell. 3,352,807.
- Gunnar, Keith, and R. S. Hansen, to The Boeing Co. Method of repelling water from a transparent member. 3,352,709, 11-14-67, Cl. 117—124.
- Gustafson, Einar H., to Carrier Corp. Prefabricated ducts for air conditioning systems. 3,352,326, 11-14-67, Cl. 138—149.
- Gut, Marcel: *See—*
  - Dorfman, Ralph I., Loken, and Gut. 3,352,890.

- Guttmann, Stephan: *See—*
  - Boissonnas, Roger, Guttmann, and Pless. 3,352,844.
- Haas, Wilson E. Mold apparatus for hollow building elements. 3,352,529, 11-14-67, Cl. 249—142.
- Hadley, Bernard G. Self-rewinding rigging device. 3,352,508, 11-14-67, Cl. 242—107.
- Hagenlocher, Arno K., and T. G. Polanyi, to General Telephone and Electronics Laboratories, Inc. Ionization gauge for monitoring the flow of evaporant material. 3,353,048, 11-14-67, Cl. 313—7.
- Hahn, Herbert S., to FMC Corp. Container closure. 3,352,447, 11-14-67, Cl. 220—46.
- Haines, Thomas H., to Eastman Kodak Co. Motor control circuit for a stepping motor. 3,353,076, 11-14-67, Cl. 318—138.
- Hakanson, Alfred, to M. P. Hakanson. Locking device for sliding windows and doors. 3,352,586, 11-14-67, Cl. 292—225.
- Hakanson, M. Paulyne: *See—*
  - Hakanson, Alfred. 3,352,586.
- Halliburton Co.: *See—*
  - Homrig, Horace J. 3,352,963.
  - Page, Howard O., and Atteberry. 3,352,606.
  - Waterman, Willis D. 3,352,116.
- Hallmark Cards, Inc.: *See—*
  - Wood, Gerald L. 3,352,478.
- Halverson, Richard P., to Sperry Rand Corp. Multi-aperture mated thin film memory element. 3,353,169, 11-14-67, Cl. 340—174.
- Halverstadt, Robert D.: *See—*
  - Crawford, Joseph H., and Halverstadt. 3,352,770.
- Hamilton, Lyle A., to Mobil Oil Corp. Production of mono- and di-substituted phosphines. 3,352,925, 11-14-67, Cl. 260—606.5.
- Hammond, James H., Jr.: *See—*
  - Murphree, Francis J., and Hammond. 3,353,148.
- Hammond, Robert J., to V-M Corp. Record changer spindle. 3,352,562 11-14-67, Cl. 274—10.
- Hammond, Wardlaw M., Jr., to Martin-Marietta Corp. Sighting device which superimposes the image of target with that of a missile. 3,352,196, 11-14-67, Cl. 88—2.4.
- Hammer, Glen P.: *See—*
  - Mason, Ralph B., and Hammer. 3,352,776.
- Hanås, Bertil: *See—*
  - Stenkvist, Sven-Einar, and Hanås. 3,352,665.
- Hanks, Russell V., and A. M. Unwin, to The Boeing Co. Tunnel-injection light emitting devices. 3,353,114, 11-14-67, Cl. 331—94.5.
- Hansen. Robert S.: *See—*
  - Gunnar, Keith, and Hansen. 3,352,709.
- Hanusek, Frank A.: *See—*
  - Brook, James E., and Hanusek. 3,353,175.
- Hara, Tadataka, to Kaken Kagaku Kabushiki Kaisha. Process for producing cis-succinic acid of gauche form. 3,352,759, 11-14-67, Cl. 195—37.
- Harbison-Walker Refractories Co.: *See—*
  - Koenig, Edward W., and Cope. 3,352,552.
  - Rossi, Carl E. 3,352,550.
- Harding, Arthur J. I., W. L. Morgan, and K. S. la Flexr., said Harding and said Morgan, assors. to A. J. I. Harding. Two-tone dyeing of wool and Ca $(OH)_2$ modified wool blend with solution of polysulfonated and monosulfonated dyes and aryl sulfonic acid-aldone reaction product. 3,352,624, 11-14-67. Cl. 8—15.
- Hardwick, Thomas L. R. Ejector type load hauling wagon. 3,352,439, 11-14-67, Cl. 214—82.
- Hardy, Peter S., to Peerless Aluminum Foundry Co., Inc. Layout fixture. 3,352,019. 11-14-67, Cl. 33—174.
- Harley, Theodore H., to Vesuvius Crucible Co. Stopper for a ladle or similar receptacle. 3,352,534, 11-14-67, Cl. 251—356.
- Harnisch, Heinz: *See—*
  - Heymer, Gero, and Harnisch. 3,352,637.
- Harnischfeger Corp.: *See—*
  - Dechantsreiter, Max J. 3,352,432.
- Harper, Billie L., and W. D. Craghead, Jr., to Kennecott Copper Corp. Self-palletizing, interlocking, copper ingot. 3,352,648, 11-14-67, Cl. 29—187.
- Harrington, Robert C., Jr., and J. L. Smith, to Eastman Kodak Co. Method of preparing layered non-woven products from continuous filamentary tow materials. 3,352,735, 11-14-67, Cl. 156—180
- Harris, Albert E., and E. C. Dodd, to Ilford Ltd. Photographic silver halide emulsion containing finely divided inert particles dispersed in a synthetic colloid medium and a silver halide developer. 3,352,682, 11-14-67, Cl. 96—95.
- Harris, John L., to Deltrol Controls Corp. Time controlled actuator. 3,352,381, 11-14-67, Cl. 185—40.
- Harrison, Jack B., L. D. Hignett, and J. K. Gentles, to Goodlass Wall & Co. Ltd. Pentaerythritol modified epoxy resins. 3,352,804, 11-14-67, Cl. 260—18.
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- Hart, Thomas G., to Avco Mfg. Corp. Means for and method of detecting rotation. 3,352,162, 11-14-67, Cl. 73—505.
- Hartl, Karl: *See—*
  - Lang, Rudolf, and Hartl. 3,352,220.
- Hartle, Cedric: *See—*
  - Hogg, Wilfred H., Hartle, and Merriman. 3,352,803.
- Hartman, Elmer C., to Hartman Metal Fabricators, Inc. Automated storage apparatus. 3,352,978, 11-14-67, Cl. 191—22.
- Hartman Metal Fabricators. Inc.: *See—*
  - Hartman, Elmer C. 3,352,978.
- Harvey, Donald M., to Eastman Kodak Co. Process and product for image transfer photography. 3,352,674, 11-14-67, Cl. 96—29.
- Harvey, Robert M. Door lock. 3,352,587, 11-14-67, Cl. 292—289.
- Hasegawa, Fumie: *See—*
  - Ando, Noboru, Tanizaki, and Hasegawa. 3,352,643.
- Häseler, Helmut: *See—*
  - Morcher, Bernhard, Meckl, and Häseler. 3,352,676.
- Hashii, Eitaro, to Takeda Chemical Industries, Ltd. Production of diacetone-2-keto-1-gulonic acid. 3,352,883, 11-14-67, Cl. 260—340.7.
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- Haug, Edward W., to Barber-Colman Co. Tool for forming toothed parts. 3,352,138, 11-14-67, Cl. 72—76.
- Haworth, Daniel T., and G. Pollnow, to Allis-Chalmers Mfg. Co. Process for curing epoxy resins with methyl polpborate. 3,352,823, 11-14-67, Cl. 260—46.5.
- Hayashi, Shigekazu: *See—*
  - Fujiwara, Shinobu, Hayashi, and Kawakami. 3,352,697.
- Hayasi, Syuiti, and J. Murakami, to Tokyo Shibaura Electric Co., Ltd. Double sideband communication system. 3,353,099, 11-14-67, Cl. 325—60.
- Hayes, Barry J., to Ciba Ltd. Curable compositions comprising a polyglycidal ether of a novolac resin, a tertiary amine, and a dialkyl phthalate. 3,352,813, 11-14-67, Cl. 260—31.8.
- Hayes, Edward J., and T. Sturis, to Kelsey-Hayes Co. Caliper-type disc brake with yieldable support. 3,352,382, 11-14-67, Cl. 188—78.
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- Heidt, Lawrence J., and V. R. Landi, to Massachusetts Institute of Technology. Stabilization of ozone. 3,352,642, 11-14-67, Cl. 23—222.
- Heim Universal Corp., The. *See—*
  - McCloskey, Albert R. 3,351,999.
- Helin, Arthur F., and G. J. Mantell, to Gulf Oil Corp. Process of preparing stable unoxidized polyethylene emulsions. 3,352,807, 11-14-67, Cl. 260—29.6.
- Helm, Mark W., to The Hoover Co. Suction polisher. 3,351,972, 11-14-67, Cl. 15—385.
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- Henschel-Werke A.G.: *See—*
  - Enkelmann, Walter. 3,352,065.
- Hercules Inc.: *See—*
  - Breslow, David S., and Piech. 3,352,798.
  - Buntin, George A. 3,352,750.
  - Earle, Ralph H., Jr. 3,352,833.
- Herr, Milton E.: *See—*
  - Fonken, Gunther S., Herr, and Murray. 3,352,884.
- Herrbach, Paul: *See—*
  - Drisch, Nicolas, and Herrbach. 3,352,957.
- Herreshoff, Alexander G., P. J. Rich, and R. J. Johnson, to Allgonac Marine Foundry, Inc. Cleat. 3,352,273, 11-14-67, Cl. 114—218.
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- Hershyn, William, to General Electric Co. Electron beam focusing system including a magnetically permeable shield enclosing the electron gun permanent magnet. 3,353,056, 11-14-67, Cl. 315—3.5.
- Hersperger, Karl G.: *See—*
  - Bischof, Hans, and Hersperger. 3,352,086.
- Hertel, Hasso: *See—*
  - Mauz, Otto, and Hertel. 3,352,824.
- Hess, Earl H., to Victor F. Weaver Inc. Processes for preparing blood meal. 3,352,685, 11-14-67, Cl. 99—7.
- Hesse Carriage Co.: *See—*
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- Hignett, Leslie D.: *See—*
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- Hirsch, Sidney. Intravenous catheter assembly. 3,352,306, 11–14–67, Cl. 128—214.4.
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  - Ando, Noboru, Tanizaki, and Hasegawa. 3,352,643.
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  - Nordberg, Robert C., and Barrios. 3,352,654.
- Hitqchi Electronics Co., Ltd.: *See*—
  - Aoki, Toshio. 3,353,125.
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  - Wysocki, Lawrence S. 3,352,692.
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  - Den Hollander, Charles W. 3,352,877.
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  - Lear, Joseph D., and Holt. 3,352,302.
- Holter, William H., D. D. Dunfee, and R. C. Webster, to Atlantic Research Corp. Gas-generating grain. 3,352,244, 11–14–67, Cl. 102—102.
- Holtschmidt, Hans: *See*—
  - Blomeyer, Friedrich, Zecher, and Holtschmidt. 3,352,829.
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  - Bumgarner, Robert L., Knutson, and Royal. 3,352,520.
- Homrig, Horace J., to Halliburton Co. High pressure, high temperature electrical lead-through fitting. 3,352,963, 11–14–67, Cl. 174—151.
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  - Jayaram, M. R. 3,352,985.
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- Honma, Tsutomu: *See*—
  - Sawazaki, Norikazu, Honma, and Yagi. 3,352,966.
- Hood, Charles B., Jr.: *See*—
  - Rothenberg, Jerome H., and Hood. 3,352,122.
- Hoover Ball and Bearing Co.: *See*—
  - Rupert, Samuel J. 3,351,981.
- Hoover Co., The: *See*—
  - Helm, Mark W. 3,351,972.
- Hoover, Wayne: *See*—
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- Horak, Edgardo: *See*—
  - Palvarini, Attilio, Horak, and Milizia. 3,352,945.
- Hörnle, Reinhold: *See*—
  - Molls, Hans H., Hörnle, Raab, and Müller. 3,352,500.
- Hoshikawa, Masakatsu: *See*—
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  - Martin, Claude, Krollman, King, and Rumsey. 3,352,386.
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  - Webb, Derrel D. 3,352,593.
- Howard, Graham W. Drive belt tension determining apparatus. 3,352,153, 11–14–67, Cl. 73—144.
- Howsare, Lewis D. Drill jigs. 3,352,183, 11–14–67, Cl. 77—62.
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- Hubbard, Arthur L., to Deere & Co. Cotton picker. 3,352,092, 11–14–67, Cl. 56—12.
- Hubel, Werner: *See*—
  - Schmitt, Karl, Disteldorf, and Hubel. 3,352,913.
- Huebner, Charles F., to Ciba Corp. 2-Indanyl-hydrazines and salts thereof. 3,352,876, 11–14–67, Cl. 260—295.
- Hughes Aircraft Co.: *See*—
  - Maiman, Theodore H. 3,353,115.
  - Toscano, Esteban J. 3,353,161.
  - Wilmot, Richard D. 3,353,177.
- Hughes, Frank J.: *See*—
  - Stevens, Thomas D., and Hughes. 3,352,353.
- Hughes, Robert B.: *See*—
  - Stevens, Thomas D., and Hughes. 3,352,353.
- Hughes, Roy, and W. R. Hogg, to Coulter Electronics, Inc. Centrifugal apparatus for slide staining. 3,352,280, 11–14–67, Cl. 118—9.
- Huguenin, Rene: *See*—
  - Boissonnas, Roger, Huguenin, Berde, and Schalch. 3,352,843.
- Hulten, Richard E., to General Motors Corp. Camshaft construction. 3,352,293, 11–14–67, Cl. 123—90.
- Hulterstrum, Harold D., to Flambeau Plastics Corp. Food processing device. 3,352,340, 11–14–67, Cl. 146—213.
- Hunn, Douglas C., to The Mill-Cut Corp. Power saw mounting apparatus. 3,352,334, 11–14–67, Cl. 144—129.
- Hunnebeck AG.: *See*—
  - Hunnebeck, Emil M. 3,352,081.
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- Hunnicutt, Cecil C., to Instrument Research, Inc. Press for tin cans. 3,352,230, 11–14–67, Cl. 100—53.
- Hurr-I-Cane Awning Shutter Co., Inc.: *See*—
  - Slusser, Benjamin I. 3,352,077.
- Hussey Mfg. Co., Inc.: *See*—
  - Curra, Richard S., Jr. 3,352,069.
- Hydrosteer Ltd.: *See*—
  - Adams, Frederick J. 3,352,170.
- I.R.C. Ltd.: *See*—
  - Fehling, Hans R., and Street. 3,352,621.
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- Ikeda, Minoru, to France Bed Co. Ltd. Portable steam bath. 3,351,957, 11–14–67, Cl. 4—164.
- Ilford Ltd.: *See*—
  - Harris, Albert E., and Dodd. 3,352,682.
- Illinois Tool Works Inc.: *See*—
  - Fisher, Julian V. 3,352,195.
  - Lanius, James C., Jr. 3,352,344.
- Imperial Chemical Industries Ltd.: *See*—
  - Barr, Dennis A., Nield, and Rose. 3,352,832.
  - Costain, Winston, Palmer, and White. 3,352,821.
  - Mather, John. 3,352,921.
  - McIntyre, James E., Marsden, and Dempster. 3,352,734.
- Inductosyn Corp.: *See*—
  - Farrand, Clair L. 3,353,095.
- Industrial Boiler Co., Inc.: *See*—
  - Brock, James D. 3,352,025.
  - Brock, James D. 3,352,354.
- Industrial Devices, Inc.: *See*—
  - Kausen, Theodore R. 3,352,194.
- Industrial Holding Establishment: *See*—
  - Combourieux, Andre. 3,352,241.
- Industrial Nucleonics Corp., The: *See*—
  - Campbell, Ross L., Jr. 3,352,499.
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- Inoue, Mitsuo, to C.D.M. Kabushiki Kaisha. Automatic submersible pump. 3,352,246, 11–14–67, Cl. 103—25.
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  - Hunnicutt, Cecil C. 3,352,230.
- Intelligent Instruments, Inc.: *See*—
  - Slavin, Peter E. 3,353,069.
- Interco, Inc.: *See*—
  - Mellott, Robert N., and Petersen. 3,353,082.
- International Business Machines Corp.: *See*—
  - Brock, George W. 3,353,166.
  - Chesarek, Donald J., and Petersen. 3,353,157.
  - Chien, Robert T., and Stein. 3,353,155.
  - Crutcher, B. Todd, III, and Dodge. 3,352,398.
  - Cutaia, Alfred. 3,352,417.
  - Lindquist, Arwin B. 3,353,160.
  - Richard, William H., and O'Connor. 3,353,162.
  - Stockdale, Norman S. 3,353,024.
- International Diamond Corp.: *See*—
  - Lithgo, William, Roberts, Smith, and Wills. 3,352,747.
- International Harvester Co.: *See*—
  - Reynolds, Ralph K. 3,352,365.
- International Minerals & Chemical Corp.: *See*—
  - Nylander, Alfred F. 3,352,633.
- International Standard Electric Corp.: *See*—
  - Antell, George R. 3,352.725.
  - Buhmann, Gunther. 3,352,285.
  - Burian, Theodor, Plitschka, and Vogel. 3,353,154.
  - Froom, Jocelyn. 3,353,058.
- International Telephone and Telegraph Corp.: *See*—
  - Miller, Daniel B. 3,353,137.
- Irons, Milton H., and P. F. Maguire, to Grinnell Corp. Apparatus for cleaning textile machinery. 3,352,327, 11–14–67, Cl. 139—1.
- Irving Terry: *See*—
  - Camp, Alfred L. 3,352,320.

- Ishizaki, Keizo: *See*—
  - Suzuki, Haruyoshi, and Ishizaki. 3,352,993.
- Israely, Ilan, to Clary Corp. Radiation sensitive programming device using flexible light conductors. 3,353,026, 11–14–67, Cl. 250—227.
- Itek Corp.: *See*—
  - Powers, Robert H. 3,352,470.
- Ivers, Richard J., to General Motors Corp. Dithering suspension system. 3,352.608 11–14–67, Cl. 308—10.
- Iverson, Bjarne J., to Continental Can Co., Inc. Can cover sterilizer on can closing machine. 3,352,629, 11–14–67, Cl. 21—80.
- Jablonsky, Stephen J. Guide fixture. 3,352,016, 11–14–67, Cl. 33—75.
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- Jackson, Martin A., to van Zelm Associates Inc. Wildcat arresting gear. 3,352,516, 11–14–67, Cl. 244—110.
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- Jacox, Gordon L., to Atlantic Research Corp. Foam-filled transducer. 3,353,150, 11–14–67, Cl. 340—10.
- Jaffe, Wolfgang, to The Singer Co. Low-voltage windings on A.C series motors for incandescent lamp voltage supply. 3,353,044, 11–14–67, Cl. 310—73.
- James, John C., to Monsanto Research Corp. Process for production of bunte compounds. 3,352,898, 11–14–67, Cl. 260—453.
- James, John C., R. J. Wineman, and M. H. Gollis. Diamine oxyalkyl compounds. 3,352.917, 11–14–67. Cl. 260—584.
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- James, Mitchell E., Sr. Express transportation systems. 3,352,512, 11–14–67, Cl. 243—2.
- Jamieson, Harry D. Camera support clamp. 3,351,988, 11–14–67, Cl. 24—243.
- Javkin, Simon. Luggage tag. 3,352,040, 11–14–67, Cl. 40—21.
- Jayaram, M. R., to Honeywell Inc. Tamper-proof flame sensor control 3,352.985, 11–14–67, Cl. 200—137.
- Jenkins, Kenneth R.: *See*—
  - Lehnert, Robert E., Bennett, Moorhead, and Jenkins. 3,352,257.
- Jensen, Harold A.: *See*—
  - Barrett, John R., and Jensen. 3,353,051.
- Jensen, William P.: *See*—
  - Niederman, Howard H., and Jensen. 3,352,543.
- Jessen, Andrew R.: *See*—
  - Turner, John F., Ziegler, Thompson, and Jessen. 3,352,518.
- Jester, Alfred, R. Langpape, and J. Bobdansky, to Brown, Boveri & Cie, Aktiengesellschaft. Apparatus for separately adjusting the vapor pressures of two or more substances in a common vapor chamber. 3,353,037, 11–14–67, Cl. 310—4.
- Johns-Manville Corp.: *See*—
  - Pusch, Walter G., and Stafford. 3,352,743.
  - William, Stanley E., Dunbar, and Rademaker. 3,352.746.
- Johnson, Frank J. Textile processing sealer. 3,352,129, 11–14–67, Cl. 68—5.
- Johnson, George, to Kulka Electric Corp. Fluorescent lampholder with self-aligning sealing means. 3,353,140, 11–14–67, Cl. 339—56.
- Johnson, John D. Test bar for hardness testing machines. 3,352,148, 11–14–67, Cl. 73—81.
- Johnson, Lowell E., to Caterpillar Tractor Co. Hydrodynamic retarder 3,352,385 11–14–67, Cl. 188—90.
- Johnson, Ralph J.: *See*—
  - Herreshoff, Alexander G., Rich, and Johnson. 3,352.273.
- Johnson, Ralph H., to General Motors Corp. Gasket construction. 3,352,564, 11–14–67, Cl. 277—180.
- Johnson, Ray C., to United States Steel Corp. Wire rope wedge clamp 3,351.986, 11–14–67, Cl. 24—126.
- Johnson, Richard S., to Modine Mfg. Co. Method of making expanded metal. 3,351,995, 11–14–67, Cl. 29—6.1.
- Johnson, Rudin M., to United States of America, Atomic Energy Commission. Method and apparatus for optically determining the alignment of magnetic fields utilizing the cotton-mouton effect. 3,353,097, 11–14–67, Cl. 324—43.
- Jones, Carl F.: *See*—
  - Salladay, Mark, and Jones. 3,352,410.
- Jones, Cecil D.: *See*—
  - Thom, Wenzel W. 3,352,541.
- Jones, Dennis H.: *See*—
  - Bernstrom, William B., R. L. and D. H. Jones. 3,352,528.
- Jones Division of Beloit Corp.: *See*—
  - Lalonde, Earl E., and Eklund. 3,352,233.
- Jones, Irby C., Jr.: *See*—
  - Guebert, Kenneth W., and Jones. 3,352,424.
- Jones, Jack W.: *See*—
  - Bennett, John D., Chaney, Jones, and McCaleb. 3,353,020.
- Jones, Kenneth R.: *See*—
  - Burant, Leonard J., and Jones. 3,352,717.
- Jones, Mary J. and R. F. Jones III. Diaper rinsing device. 3,352,132, 11–14–67, Cl. 68—213.
- Jones, Richard F., III: *See*—
  - Jones, Mary J. and R. F. Jones III. 3,352,132.
- Jones, Robert L.: *See*—
  - Bernstrom, William B., R. L. and D. H. Jones. 3,352,528.
- Jones, Thomas J., to Wheeling Steel Corp. Airflow grid structure for air distribution through metal latch and plaster ceilings. 3,352,076, 11–14–67, Cl. 52—303.
- Jordan, Ralph C., to The Marsan Mfg. Co., Inc. Machine for manufacturing a colostomy drainage device. 3,352,737, 11–14–67, Cl. 156—514.
- Jorgensen, Svend E., and H. Siegfred, to Danfoss A/S. Diaphragm unit. 3,352,211, 11–14–67, Cl. 92—42.
- Joslyn Mfg. and Supply Co.: *See*—
  - De Souza, Alwyn A. 3,353,066.
- Joyce, Francis J., to National Bulk Carriers, Inc. Dredge. 3,352,035, 11–14–67, Cl. 37—54.
- Jurisich, Joseph M. Means and method of positioning materials under the ground. 3,352,115, 11–14–67, Cl. 61—35.
- Juveland, Omar O.: *See*—
  - Shepard, John W., Peters, and Juveland. 3,352,795.
- Kabushiki Kaisha Honda Gijutsu Kenkyujo: *See*—
  - Honda, Hidehisa, and Sakai. 3,352,367.
- Kabushiki Kaisha Hitachi Seisakusho: *See*—
  - Yamamoto, Manabu, and Murayama. 3,353,060.
- Kadron, Stanley F., and H. G. Ludwig, to The Bendix Corp. Automatic direction finder with frequency modulated servo control. 3,353,184, 11–14–67, Cl. 343—117.
- Kaken Kagaku Kabushiki Kaisha: *See*—
  - Hara, Tadataka. 3,352.759.
- Kalve, Ernest. Prestressed drag shell construction or bucket. 3,352,038, 11–14–67, Cl. 37—135.
- Kamshitsky, Jury C.: *See*—
  - Ugodin, Evgeny G., Lepsky, and Kamashitsky. 3,352,400.
- Karol, Raymond J. Expansible reciprocating piston. 3,352,213, 11–14–67, Cl. 92—204.
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- Kato, Yoshio, and O. Konosu, to Matsushita Electronics Corp. Traveling-wave tube having a comb delay line formed on a ridge in a first waveguide and a plurality of connecting ridge waveguides. 3,353,057, 11–14–67, Cl. 315—3.5.
- Katoo, Hiroshi: *See*—
  - Nakamura, Hiromichi, Katoo, Minejima, Shimizu, Satoo, Nozaki, and Doochi. 3,352,641.
- Katz, Leon, and M. E. Chiddix, to General Aniline & Film Corp. Acetylene dicarboxylic acid process. 3,352,768, 11–14–67, Cl. 204—79.
- Kaul, Arthur A. Sanitary smoking pipe. 3,352,309, 11–14–67, Cl. 131—224.
- Kaul, Richard J. Curing of vanilla beans. 3,352,690, 11–14–67, Cl. 99—140.
- Kausen, Theodore R., to Industrial Devices, Inc. Elastic Safety nut. 3,352,194, 11–14–67, Cl. 85—62.
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- Kawakami, Kiyoto: *See*—
  - Fujiwara, Shinobu, Hayashi, and Kawakami. 3,352,697.
- Kay, Edward H.: *See*—
  - Adams, Kenneth D., and Kay. 3,352,263.
- Kearney, Avery L.: *See*—
  - Dore, James E., and Kearney. 3,352,350.
- Keast, Russell R.: *See*—
  - Corliss, Duncan S., Keast, and Thompson. 3,352,785.
- Kehke, Clarence E. Optical method of hull measurement. 3,352,014, 11–14–67, Cl. 33—1.
- Kelco Co.: *See*—
  - Messina, Blase T. 3,352,688.
- Keller, Gunther: *See*—
  - Schmitt, Karl, Disteldorf, and Keller. 3,352,831.
- Keller, Joseph D. Nail clipper having restraining means for preventing flight of fingernails. 3,352,010, 11–14–67, Cl. 30—135.
- Kellogg, George E., to General Motors Corp. Manual and power control mechanism and method. 3,352,315, 11–14–67, Cl. 137—1.
- Kelsey-Hayes Co.: *See*—
  - Hayes, Edward J., and Sturis. 3,352,382.
- Kennecott Copper Corp.: *See*—
  - Harper, Billie L., and Craghead. 3,352,648.
- Kennedy, Frank, and E. C. Klein, to United States Steel Corp. Coil separator. 3,352,551, 11–14–67, Cl. 263—47.
- Kennedy, Michael E., to Peter Kennedy, Inc. Composite metal and plastic ski and method for making same. 3,352,366, 11–14–67, Cl. 280—11.13.
- Kennedy, Walter W., to Barber-Colman Co. Flow controller. 3,352,319, 11–14–67, Cl. 137—503.
- Kentucky Electronics, Inc.: *See*—
  - Merchant, Chester O. 3,352,994.
- Kerns, Clyde W.: *See*—
  - Cetrone, Ronald A., Kerns, and Wilson. 3,352,377.
- Kerns, Clyde W., to Mobil Oil Corp. Re-recording seismometer traces obtained from the roll along technique to produce a simulated bidirectional seismic survey. 3,353,152, 11–14–67, Cl. 340—15.5.
- Kerr, Ralph O., to Petro-Tex Chemical Corp. Oxidation of lower aliphatic aldehydes. 3,352,905, 11–14–67, Cl. 260—530.
- Ketchum, David D.: *See*—
  - Frantz, David H., Jr., and Ketchum. 3,353,149.
- Keuffel & Esser Co.: *See*—
  - Stein, Charles H., and Krause. 3,352,728.
- Keyes, Grafton H.: *See*—
  - Brooker, Leslie G. S., and Keyes. 3,352,857.

- Kidde, Walter & Co., Inc.: *See—*
  - Turner, John F., Ziegler, Thompson, and Jessen. 3,352,518.
- Kilboy, Lambert J., and J. Litecky, Jr. Hand grapple. 3,352,589, 11-14-67, Cl. 294—16.
- Kilmarx, Louis E., to Scovill Mfg. Co. Check valve. 3,352,531, 11-14-67, Cl. 251—149.6.
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- Kimberlin, Charles N. Jr., and E. M. Gladrow, to Esso Research and Engineering Co. Catalyst for hydrocarbon conversions. 3,352,796, 11-14-67, Cl. 252—455.
- Kimberly-Clark Corp.: *See—*
  - Anson, Michael D. 3,351,964.
- Kimmel, J. D.: *See—*
  - Cunningham, Richard, Jr., and Kimmel. 3,352,289.
- Kimoto, Walter I., E. A. Swakon, and E. Field, to Standard Oil Co. Esters of 2-substituted ethylthiolcarbonic acid. 3,352,900, 11-14-67, Cl. 260—455.
- King, Robert E.: *See—*
  - Martin, Claude, Krollman, King, and Rumsey. 3,352,386.
- Kingdom of Netherland, The: *See—*
  - Van Heel, Abraham C. S., Beernink, and Raterink. 3,352,618.
- Kipping, Vernon L. Device to mount prints on a base. 3,352,020, 11-14-67, Cl. 33—174.
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- Kitz, Norbert, J. G. Lloyd, and H. L. Mansford, to Bell Punch Co. Ltd. Calculating machine using pulse actuated counters. 3,353,008, 11-14-67, Cl. 235—160.
- Klamer, Reuben B.: *See—*
  - Elwell, Charles A., and Klamer. 3,352,026.
- Klassen, Harold C.: *See—*
  - McWhorter, Wayne F., Kuhn, and Klassen. 3,352,826.
- Klebe, Johann F., and J. G. Murray, to General Electric Co. Organosiliconcarbodiimide polymers and process for their preparation. 3,352,799, 11-14-67, Cl. 260—2.
- Klein, Charles O.: *See—*
  - Chan, William, De Vine, and Klein. 3,352,061.
- Klein, Edwin C.: *See—*
  - Kennedy, Frank, and Klein. 3,352,551.
- Kleinschmidt, Roger F.: *See—*
  - Crain, Donald L., and Kleinschmidt. 3,352,894.
- Kliklok Corp.: *See—*
  - Blake, William E. 3,352,403.
- Klimstra, Paul M., to G. D. Searle & Co. 17β-(substituted-oxy)-3-oxygenated-5α-androst-1-enes. 3,352,853, 11-14-67, Cl. 260—239.55.
- Kling, August J., and J. E. Beggs, to General Electric Co. Method of manufacturing strong reticulated electrodes. 3,352,729, 11-14-67, Cl. 156—3.
- Klingberg, Arthur F., to Beco Products Corp. Collapsible bird cage. 3,352,287, 11-14-67, Cl. 119—17.
- Klopping, Hein L., and H. M. Loux, to E. I. du Pont de Nemours and Co. Method of inhibiting growth of undesired vegetation. 3,352,662, 11-14-67, Cl. 71—88.
- Klute, Charles H., to United States of America, Army. Stage interferometer for microinterferometry. 3,352,198, 11-14-67, Cl. 88—14.
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- Knapp, William A.: *See—*
  - Degginger, Edward R., Knapp, and Zuern. 3,352,789.
- Knapsack Aktiengesellschaft: *See—*
  - Heymer, Gero, and Harnisch. 3,352.637.
- Knight, Elwin T. Infinitely variable holder for flexible knives, markers or guides. 3,352,187, 11-14-67, Cl. 83—657.
- Knutson, Arthur O.: *See—*
  - Bumgarner, Robert L., Knutson, and Royal. 3,352,520.
- Kobayashi, Shintaro: *See—*
  - Kataoka, Shoei, Yamada, and Kobayashi. 3,353,010.
- Kobick, David G. Packaging machine. 3,352,087, 11-14-67, Cl. 53—389.
- Koch, Bernhard R., to Grob & Co. A.G. Heddle frame. 3,352,329, 11-14-67, Cl. 139—92.
- Koch, Philippe: *See—*
  - Baque, Pierre, Darras, and Koch. 3,352,004.
- Koenig, Edward W., and G. R. Cope, to Harbinson-Walker Refractories Co. Refractory-coated oxygen lance. 3,352,552, 11-14-67, Cl. 266—34.
- Kokusai Denshin Denwa Kabushiki Kaisha: *See—*
  - Kawai, Kazuo, and Kurihara. 3,353,101.
  - Kurimura, Toshio. 3,353,084.
- Koll, Stanley J., to American Flange & Mfg. Co., Inc. Method for forming closure caps. 3,352,268, 11-14-67, Cl. 113—121.
- Kombi Flex, S.A.: *See—*
  - Maass Escoto, Eduardo. 3,352,596.
- Konings, Marcel J. M., to North American Philips Co. Inc. Video amplifier in which bandwidth is a function of signal amplitude. 3,352,969, 11-14-67, Cl. 178—7.1.
- Konosu, Osamu: *See—*
  - Kato, Yoshio, and Konosu. 3,353,057.
- Köpke, Heinz: *See—*
  - Hoyer, Hans, Welfers, and Köpke. 3,352,959.
- Koppers Co., Inc.: *See—*
  - Dressler, Hans, and Reabe. 3,352,896.
  - Kulwicki, Henry E. 3.352,736.
  - Medney, Jonas. 3,352.577.
  - Schulte, Elwood V. 3,352,498.
- Korablev, Lev N., to Fizichesky Institute Imeni Lebedeva. Method of firing and quenching control of gas-discharge tubes. 3,353,063, 11-14-67, Cl. 315—176.
- Kort, Hans A., to Sola Basic Industries, Inc. Multi-piece coil bobbin. 3,352,509, 11-14-67, Cl. 242—118.4.
- Kosalek, Joseph F., to General Aniline & Film Corp. Transparentizing base stock of tracing papers and intermediate diazotype papers by the use of polypropenes. 3,352,677, 11-14-67, Cl. 96—75.
- Koski, Olli R.: *See—*
  - Koski, Pentti U. 3,352,335.
- Koski, Pentti U., ½ to O. R. Koski. Wood block splitting device. 3,352,335, 11-14-67, Cl. 144—195.
- Kovacs, Geza L., to Palm Oil Recovery, Inc. Process for treating and recovering rolling oil. 3,352,137, 11-14-67, Cl. 72—42.
- Koyanagi, Yukio, to Matsushita Electric Industrial Co., Ltd. Cathode ray tubes and apparatus using the same. 3,352,970, 11-14-67, Cl. 178—7.85.
- Krakower, Gerald W.: *See—*
  - Diassi, Patrick A., and Krakower. 3,352,854.
- Kraus, Edmund J.: *See—*
  - Kraus, Robert A. and E. J. 3,351,978.
- Kraus, Robert A. and E. J., to Cupples Container Co. Apparatus for molding foamed plastic cups. 3,351,978, 11-14-67, Cl. 18—5.
- Krause, William R.: *See—*
  - Stein, Charles H., and Krause. 3,352,728.
- Krey, Theodor, to Seismos G.m.b.H. Method and arrangement for detecting faults traversing a mineral stratum. 3,352,375, 11-14-67, Cl. 181—.5.
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- Krollman, Edward J.: *See—*
  - Martin, Claude, Krollman, King, and Rumsey. 3,352,386.
- Kruce, Benjamin A. Method and apparatus for making a carpet unit. 3,352,733, 11-14-67, Cl. 156—94.
- Krumholz, Alfred F., Sr., to Chicago Boiler Co. Grinding apparatus. 3,352,501, 11-14-67, Cl. 241—74.
- Kruse, Carl W.: *See—*
  - Mahan, John E., Reusser, and Kruse. 3,352,935.
- Kryk, Theodore A. Valve spring compressor. 3,352,002, 11-14-67, Cl. 29—217.
- Kuhn, John E.: *See—*
  - McWhorter, Wayne F., Kuhn, and Klassen. 3,352,826.
- Kuhu, Karl, to Societe d'Etudes de Machines Thermiques. Device for connecting cooled valves of machines or the like, and its various applications. 3,352,292, 11-14-67, Cl. 123—41.41.
- Kulka Electric Corp.: *See—*
  - Johnson, George. 3,353,140.
- Kulwicki, Henry E., to Koppers Co., Inc. Apparatus for detecting and handling defective box blanks. 3,352,736, 11-14-67, Cl. 156—350.
- Kuoni, Xaver, to Borbe-Wanner AG. Clampable closure seal for band-like enclosure hoops. 3,352,414, 11-14-67, Cl. 206—65.
- Kurihara, Hiroshi: *See—*
  - Kawai, Kazuo, and Kurihara. 3,353,101.
- Kurimura, Toshio, to Kokusai Denshin Denwa Kabushiki Kaisha. Regulatable rectifying apparatus. 3,353,084, 11-14-67, Cl. 321—25.
- Kuroda, Takashi, to Torjo Kogyo Co., Ltd. Multi-stage rotary piston engine. 3,352,290, 11-14-67, Cl. 123—8.
- Kurz, Rudolf: *See—*
  - Kurz, Rudolf, Neubert, and Lechler. 3,352.580.
- Kurz, Rudolf, deceased (by H. Kurz, legal guardian of minor heir), W. Neubert, and H. Lechler; said Neubert and said Lechler assors. to Rudolf Kurz, minor. Adjustable joint. 3,352,580, 11-14-67, Cl. 287—14.
- L. T. Mart Co. Ltd., The: *See—*
  - Parkinson, Graham C. 3,352,547.
- LTV Electrosystems, Inc.: *See—*
  - Loposer, Thomas L. 3,353,104.
- Labofina, S.A.: *See—*
  - Groslambert, Georges G. 3.352,780.
- Lacy, Johnson W., and C. K. Brown, Jr., to Concrete Building Units Co., Inc. Apparatus for conveying articles. 3,352,253, 11-14-67, Cl. 104—172.
- Lafferty, John J., and C. L. Zirkle, to Smith Kline & French Laboratories. Alkyl phenylpiperazinylalkylcarbamates. 3,352,865, 11-14-67, Cl. 260—268.
- La Flexr, Kermit S.: *See—*
  - Harding, Arthur J. I., Morgan, and La Flexr. 3,352,624.
- Lalonde, Earl E., and H. J. Eklund, to Jones Division of Beloit Corp. Automatic turntable and bale forming press. 3,352,233, 11-14-67, Cl. 100—215.
- La Metallurgie Francaise Des Poudres-Metafrom: *See—*
  - Eudier, Michel. 3,352,612.
- Lampart, Thomas: *See—*
  - Meili, Ernst, and Lampart. 3,353,170.
- Lanahan, John H.: *See—*
  - Leach, Robert I., and Lanahan. 3,352,021.
- Landbouwwerktuigen-en Machinefabriek H. Vissers N.V. Nieuw-Vennep: *See—*
  - Vissers, Herbert. 3,352,366.
- Landi, Vincent R.: *See—*
  - Heidt, Lawrence J., and Landi. 3,352,642.
- Landwier, William G., to The Maytag Co. Filter for laundry machine. 3,352,130, 11-14-67, Cl. 68—18.
- Lang, Elliot R., to Patwin, Inc. Electromagnetic indicator gating arrangement. 3,353,174, 11-14-67, Cl. 340—325.

- Lang, Rudolf, and K. Hartl, to Compur-Werk Gesellschaft mit beschrankter Haftung & Co. Photographic camera with depth of field indicator. 3,352,220, 11-14-67, Cl. 95—10.
- Langan Aperture Cards, Inc.: *See—*
  - Langan, John F. 3,352,045.
- Langan, John F., to Langan Aperture Cards, Inc. Aperture cards and their manufacture. 3,352,045, 11-14-67, Cl. 40—158.
- Langenhoff, Ferdinand: *See—*
  - Hass, Karl, Epler, and Langenhoff. 3,352,860.
- Langpape, Reinhart: *See—*
  - Jester, Alfred, Langpape, and Bohdansky. 3,353,037.
- Lanius, James C., Jr., to Illinois Tool Works Inc. Dished lock washer. 3,352,344, 11-14-67, Cl. 151—35.
- Lansing, Bagnall Ltd.: *See—*
  - Goodacre, Cecil. 3,352,569.
- Laos, Ivar, to G. D. Searle & Co. 17-oxygenated 4-halo-2-methylene (androst/estr)-4-en-3-ones and intermediates. 3,352,855, 11-14-67, Cl. 260—239.55.
- Larsen, Erling A. Golf swing training device. 3,352,559, 11-14-67, Cl. 273—187.
- Lassaulx, Manuel R. Machine for making tortillas and the like. 3,352,258, 11-14-67, Cl. 107—15.
- Lau Blower Co., The: *See—*
  - Martin, Warner W., and Sweet. 3,352,297.
- Lauber, Ernst, to Maschinenfabrik Habegger. Monorail train. 3,352,254, 11-14-67, Cl. 105—4.
- Lauterbach, Norman E.: *See—*
  - Anderson, Edgar L., and Lauterbach. 3,352,446.
- Lawrence Bros., Inc.: *See—*
  - Lawrence, Edwin F., Jr. 3,351,973.
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- Lawrence, George H. Traveling message sign. 3,352,041, 11-14-67, Cl. 40—32.
- Lawrence, Wallace C., and W. C. Neely. Volumetric flask rack. 3,352,427, 11-14-67, Cl. 211—74.
- Lawton, Donald C.: *See—*
  - McMillan, Peter W., and Lawton. 3,352,698.
- Leach, Robert I., and J. H. Lanahan, to The Bendix Corp. Internal locating device for a coordinate measuring machine. 3,352,021, 11-14-67, Cl. 33—174.
- Lear, Joseph D., and E. M. Holt, to Posting Equipment Corp. Filing tray. 3,352,302, 11-14-67, Cl. 129—16.
- Lear Siegler, Inc.: *See—*
  - Buchwald, Frank S. 3,353,047.
- Lebourg, Maurice P., to Schlumberger Technology Corp. Well packer apparatus. 3,352,362, 11-14-67, Cl. 166—140.
- Lechler, Helmut: *See—*
  - Kurz, Rudolf, Neubert, and Lechler. 3,352,580.
- Lecouffe, Yves J. F., to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme). Method of making a battery. 3,352,721, 11-14-67, Cl. 136—175.
- Ledex, Inc.: *See—*
  - Cable, Elvin K. 3,353,071.
- Ledig, Kurt W.: *See—*
  - Wendt, Gerhard R., and Ledig. 3,352,891.
- Lee, Albin L., to J. I. Case Co. Two-speed power-take-off drive. 3,352,165, 11-14-67, Cl. 74—15.4.
- Lee, Edwin S., III, to Burroughs Corp. Associative memory with variable word length capacity. 3,353,159, 11-14-67, Cl. 340—172.5.
- Lee-Rowan Co.: *See—*
  - McAtee, Gene A. 3,352,430.
- Lefebvre, Yvon, to American Home Products Corp. Steroidal 6-chloro-4,6-dienes. 3,352,889, 11-14-67, Cl. 260—397.2.
- Lehnert, Robert E., J. R. Bennett, J. P. Moorhead, and K. R. Jenkins, to Evans Products Co. Adjustable bulkhead. 3,352,257, 11-14-67, Cl. 105—376.
- Lehr, Marvin H., to Goodrich-Gulf Chemicals, Inc. Diolefin polymerization catalysts using a metalliferous component, a catalyst regulator and AlX₃. 3,352,839, 11-14-67, Cl. 260—94.3.
- Leibelt, John C. Caliper control in the continuous production of paper. 3,352,232, 11-14-67, Cl. 100—92.
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- Leibinger, George E., to General Electric Co. High voltage electric induction apparatus. 3,353,129, 11-14-67, Cl. 336—70.
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- Lemaire, Eugene A. Nut harvesting apparatus. 3,352,094, 11-14-67, Cl. 56—328.
- Leonard, Richard L., to Ford Motor Co. Multiple speed ratio power transmission system with semi-automatic controls. 3,352,179, 11-14-67, Cl. 74—856.
- Lepsky, Abram V.: *See—*
  - Ugodin, Evgeny G., Lepsky, and Kamshitsky. 3,352,400.
- Lerich, Lester. Removable anchor bolt. 3,352,193, 11-14-67, Cl. 85—79.
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- Lerner, Louis L., and H. E. Oberstar, to The Gillette Co. Acid dye composition for human hair. 3,352,755, 11-14-67, Cl. 167—88.
- Les Laboratoires Bruneau et cie: *See—*
  - Guiroy, Pierre J. 3,352,864.
- Lesley, Hubert G. Butt welding tool for flash removal and work hardening. 3,352,995, 11-14-67, Cl. 219—97.
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  - Mention, Maurice L. 3,352,930.
- Lett, Guy, to Societe Fichet Societe Anonyme. Multiple-combination safety lock. 3,352,134, 11-14-67, 11-14-67, Cl. 70—362.
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- Lew, Baak W., to Atlas Chemical Industries, Inc. Polyol poly (hydrogen alkyl phosphite) monomers. 3,352,947, 11-14-67, Cl. 260—928.
- Leybold Holding AG.: *See—*
  - Grigull, Hans. 3,352,983.
- Liftex Slings, Inc.: *See—*
  - Barthule, George. 3,352,590.
- Li, Kwon H., R. H. Bundus, and P. P. Noznick, to Beatrice Foods Co. Prevention of pink color in white onions. 3,352,691, 11-14-67, Cl. 99—154.
- Liechti, Hans W., to Ciba Ltd. Process for the manufacture of 4-amino-3-nitroazobenzenes. 3,352,847, 11-14-67, Cl. 260—208.
- Ligon, Tom T. Construction header. 3,352,147, 11-14-67, Cl. 73—40.5.
- Lilly, Eli, and Co.: *See—*
  - Gard, Don I., and Wachtstetter. 3,352,684.
  - Higgins, Harvey M., Jr., Davisson, and Carver. 3,352,859.
  - Neuss, Norbert, and Gorman. 3,352,868.
- Lima, Daniel A., to FMC Corp. Polish containing bis(2-butoxyethyl)-2-butoxyethylphosphonate. 3,352,805, 11-14-67, Cl. 260—28.5.
- Lindgren, Ake N., to Arenco Aktiebolag. Method and apparatus for forming a band of tobacco. 3,352,308, 11-14-67, Cl. 131—20.
- Lindgren, Milton F., and V. W. Peterson, to General Motors Corp. Planetary gearing. 3,352,178, 11-14-67, Cl. 74—801.
- Lindquist, Arwin B., to International Business Machines Corp. Tree priority circuit. 3,353,160, 11-14-67, Cl. 340—172.5.
- Lindquist, Donald D. Training aid for indicating binary to non-binary conversion. 3,352,031, 11-14-67, Cl. 35—30.
- Lindström, Olle, to Allmanna Svenska Elektriska Aktiebolaget. Method of generating electricity from ammonia fuel. 3,352,716, 11-14-67, Cl. 136—86.
- Linger, Harrison K. Artist's palette. 3,352,616, 11-14-67, Cl. 312—231.
- Link, Martin, to Union Camp Corp. Article display package. 3,352,409, 11-14-67, Cl. 206—45.14.
- Link, Robert O., and G. W. Morse. Wire cutter. 3,352,012, 11-14-67, Cl. 30—246.
- Linthicum, Harley E.: *See—*
  - Glasgow, James A., and Linthicum. 3,352,333.
- Lipske, Benjamin B., to National Can Corp. Aerosol container system. 3,352,496, 11-14-67, Cl. 239—304.
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- Lissant, Kenneth J., to Petrolite Corp. Hybrid thixotropic rocket and jet fuels comprising oil in water emulsions. 3,352,109, 11-14-67, Cl. 60—217.
- Lister, R. A., & Co. Ltd.: *See—*
  - Morris, Alberto J. 3,352,484.
- Litecky, John, Jr.: *See—*
  - Kilboy, Lambert J., and Litecky. 3,352,589.
- Lithgo, William, G. Roberts, R. L. Smith, and D. E. Wills, to International Diamond Corp. Apparatus for replacing an endless belt in a papermaking roller press assembly. 3,352,747, 11-14-67, Cl. 162—274.
- Litman, Alan L. Bacon cooker. 3,352,227, 11-14-67, Cl. 99—341.
- Little, Joseph R., to Litton Industries, Inc. Electric motor rotor with encapsulated end turns. 3,353,041, 11-14-67, Cl. 310—43.
- Litton Industries, Inc.: *See—*
  - Little, Joseph R. 3,353,041.
- Litton Systems, Inc.: *See—*
  - Anderson, Harold C. 3,352,704.
- Livingstone, Jay G. Resilient closure. 3,352,448, 11-14-67, Cl. 220—60.
- Livingston, Herman G. Directional drilling tool. 3,352,370, 11-14-67, Cl. 175—73.
- Lloyd, John G.: *See—*
  - Kitz, Norbert, Lloyd, and Mansford. 3,353,008.
- Lockett, George E., G. Coast, M. Coudray, P. Vitry, and E. Torielli, to United Kingdom Atomic Energy Authority. Arrangements for closing penetrations in the walls of reactor pressure containing structures. 3,352,756, 11-14-67, Cl. 176—40.
- Locklin, Harry P.: *See—*
  - Brant, Elmer J. 3,352,058.
- Lockwood, Glynn H., to The Tensor Corp. Hot melt glue applicator. 3,352,278, 11-14-67, Cl. 118—7.
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  - Lockwood, Glynn H. 3,352,279.
- Lo Duca, Thomas S. Instrument string package. 3,352,416, 11-14-67, Cl. 206—79.
- Loken, Bjarte: *See—*
  - Dorfman, Ralph I., Loken, and Gut. 3,352,890.
- Lok-Products Co.: *See—*
  - Sutter, Ormond S. 3,352,071.
- Löllmann, Paul, to Rieker & Co. Adjustable tightening lock for shoes. 3,351,985, 11-14-67, Cl. 24—70.
- Londahl, Dickey S., and M. A. Schueler, to Unimark Corp. Electrostatic printer with powder feed structure inside stencil drum. 3,352,234, 11-14-67, Cl. 101—114.
- Long, Calvin W.: *See—*
  - Dodrill, Richard W., and Long. 3,351,962.

- Long, John B., to Marmon-Herrington Co., Inc. Belt take-up and storage unit for extensible belt conveyors. 3,352,406, 11-14-67, Cl. 198—139.
- Longshore, Donald W., to Allis-Chalmers Mfg. Co. Clutches with control valve. 3,352,394, 11-14-67, Cl. 192—87.19.
- Loose, Winfield W., to AMP Inc. Programming system. 3,353,138, 11-14-67, Cl. 339—18.
- Loposer, Thomas L., to LTV Electrosystems, Inc. Frequency synthesizer using fractional division by digital techniques within a phase-locked loop. 3,353,104, 11-14-67, Cl. 328—39.
- Lorain Products Corp.: *See—*
  - Rolfes, Paul E. 3,353,029.
- Loral Corp.: *See—*
  - Honig, William M., Christopher, and Solomon. 3,353,119.
- Loux, Harvey M., to E. I. du Pont de Nemours and Co. 3,5,6-substituted uracils. 3,352,862, 11-14-67, Cl. 260—260.
- Loux, Harvey M.: *See—*
  - Klopping, Hein L., and Loux. 3,352,662.
- Lowery, Andrew, D. B. Auld, and R. W. Faulkner, to Troxler Electronic Laboratories, Inc. Safety shielding structure for portable nuclear gauge. 3,353,023, 11-14-67, Cl. 250—106.
- Lowes, Fred J., to The Dow Chemical Co. Structure base. 3,352,525, 11-14-67, Cl. 248—346.
- Lucas, John T. Simulated golf game board with adjustable green member. 3,352,558, 11-14-67, Cl. 273—134.
- Luce, Robert L., to Philco-Ford Corp. Method of fabricating planar semiconductor devices. 3,352,726, 11-14-67, Cl. 148—187.
- Lucien, Rene, to Recherches Etudes Production R.E.P. Hydraulic servo-control. 3,352,210, 11-14-67, Cl. 91—434.
- Ludwig, Hans G.: *See—*
  - Kadron, Stanley F., and Ludwig. 3,353,184.
- Luetzel, Gerhard, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Monoazo pyrimidine dyes. 3,352,846, 11-14-67, Cl. 260—154.
- Lundquist, Robert A.: *See—*
  - Werner, Frank D., and Lundquist. 3,352,075.
- Lycoil, Inc.: *See—*
  - Lyon, Lee R. 3,352,841.
  - Lyon, Lee R. 3,352,842.
- Lynch, Francis K., Jr.: *See—*
  - Mooney, Walter G., Dutton, and Lynch. 3,352,532.
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  - Teichmann, Heinrich. 3,352,172.
- M-O Valve Co. Ltd., The: *See—*
  - Dyott, Richard B. 3,353,039.
- M & T Chemicals Inc.: *See—*
  - Passal, Frank. 3,352,766.
- Maass, Escoto E., to Kombi Flex, S.A. Collapsible sheltering trailer. 3,352,596, 11-14-67, Cl. 296—27.
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- Machin, William D., D. S. Montgomery, and B. I. Parsons, to Canada, Her Majesty the Queen in right of, as represented by the Minister of Mines and Technical Surveys. Process for the preparation of metal oxides having an enlarged pore volume. 3,352,635, 11-14-67, Cl. 23—142.
- Mackles, Leonard: *See—*
  - Puetzer, Bruno, Mackles, and Finn. 3,352,752.
- Macoicz, Edward L., and A. H. Fitzpatrick, to General Electric Co. Electric water heater circuit. 3,352,999, 11-14-67, Cl. 219—321.
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- Madison, Theodore N., to Royal Typewriter Co., Inc. Plural space bar operated mechanism for controlling proportional escapements. 3,352,399, 11-14-67, Cl. 197—39.
- Maeder, Arthur: *See—*
  - Toepfl, Rosemarie, Schibler, and Maeder. 3,352,838.
- Maffey, George E., Jr., to The Black and Decker Mfg. Co. Pivoted trigger means for power-operated reversible tool. 3,352,368, 11-14-67, Cl. 173—169.
- Magerlein, Helmut: *See—*
  - Meyer, Gerhard, Siggel, Schopf, and Magerlein. 3,352,816.
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- Magnuson, John E., to Pacific Car and Foundry Co. Material-handling vehicle. 3,352,442, 11-14-67, Cl. 214—767.
- Magnuson, Raymond A., to Vogel-Peterson Co. Surface-mounted hat and coat rack. 3,352,429, 11-14-67, Cl. 211—113.
- Maguire, Addison C., to Rolls-Royce Ltd. Jet propelled aircraft with variable area jet nozzle. 3,352,514, 11-14-67, Cl. 244—56.
- Maguire, Philip F.: *See—*
  - Irons, Milton H., and Maguire. 3,352,327.
- Mahan, John E., R. E. Reusser, and C. W. Kruse, to Phillips Petroleum Co. Dehydrohalogenation process. 3,352,935, 11-14-67, Cl. 260—677.
- Maher, Pat. Space vehicle simulating game. 3,352,557, 11-14-67, Cl. 273—110.
- Maiman, Theodore H., to Hughes Aircraft Co. Ruby laser systems. 3,353,115, 11-14-67, Cl. 331—94.5.
- Majima, Tsutomu, and K. Urashida, to Nippon Electric Co. Ltd. Magnesium-aluminum alloy contacts for semiconductor devices. 3,353,073, 11-14-67, Cl. 317—234.
- Malm, Gustaf E., to Svenska Cellulosa Aktiebolaget. Process of separating fibrous pulp into springwood and summerwood fibers by centrifuging. 3,352,745, 11-14-67, Cl. 162—55.
- Mallery, Charles G.: *See—*
  - Dudek, Raymond J., Mallery, and Sunderland. 3,353,106.
- Mancuso, John J., and A. C. Caposela, to General Foods Corp. Process of making precooked dehydrated pasta product. 3,352,686, 11-14-67, Cl. 99—85.
- Manker, Leslie B.: *See—*
  - Brown, David D., and Manker. 3,352,972.
- Mankin, Paul A., and L. F. Nelson, to John Wood Co. Swivel type hose clamp for connection to the hose of a gasoline dispensing apparatus. 3,352,582, 11-14-67, Cl. 287—89.
- Manning, William F., to Mobil Oil Corp. Ballistic jacket-pile connection. 3,352,119, 11-14-67, Cl. 61—46.
- Manoochehri, Hussein H., to The Marconi Co. Ltd. Waveguide filters having adjustable tuning means in narrow wall of waveguide. 3,353,122, 11-14-67, Cl. 333—73.
- Mansford, Hugh L.: *See—*
  - Kitz, Norbert, Lloyd, and Mansford. 3,353,008.
- Mantell, Gerald J.: *See—*
  - Helin, Arthur F., and Mantell. 3,352,807.
- Mao, Tzu J., to General Motors Corp. Triphenyl-arsine, stibine, -bismuthine as photopolymerization initiators for organic monomers. 3,352,772, 11-14-67, Cl. 204—159.24.
- Marconi Co. Ltd., The: *See—*
  - Manoochehri, Hussein H. 3,353,122.
- Marcus, Solomon, to De Luxe Rading Corp. Cap-exploding projectile. 3,352,056, 11-14-67, Cl. 46—200.
- Markarian, Mark: *See—*
  - Peck, David B., and Markarian. 3,353,072.
- Marks, Lawrence P.: *See—*
  - Entringer, James S., Marks, and Ritchie. 3,352,419.
- Marmon-Herrington Co., Inc.: *See—*
  - Long, John B. 3,352,406.
- Maroudas, Nicholas G., to United Kingdom Atomic Energy Authority. Apparatus for electro-hydraulic crushing. 3,352,503, 11-14-67, Cl. 241—301.
- Marquart, Gordon L., and R. A. Michael, to Deere & Co. Vehicle planetary transmission with PTO. 3,352,166, 11-14-67, Cl. 74—15.84.
- Marr, John A., to Shell Oil Co. Method of coloring thermoplastics. 3,352,952, 11-14-67, Cl. 264—40.
- Marra, Ivan L., to Fre-Mar Industries. Tool for fabricating attachment clips. 3,352,142, 11-14-67, Cl. 72—387.
- Marsan Mfg. Co., Inc., The: *See—*
  - Jordan, Ralph C. 3,352,737.
- Marsden, Ralph J. B.: *See—*
  - McIntyre, James E., Marsden, and Dempster. 3,352,734.
- Marshall, Don J., to Goodall Semi-Metallic & Mfg. Co. Wheel balancing stand. 3,352,161, 11-14-67, Cl. 73—484.
- Marshall, John D.: *See—*
  - Dubois, Joseph W. 3,352,097.
- Martin, Claude, E. J. Krollman, R. E. King, and R. D. Rumsey, to Houdaille Industries, Inc. Piston-type hydraulic damper. 3,352,386, 11-14-67, Cl. 188—96.
- Martin, Jacob H.: *See—*
  - Seeley, William G., May, and Martin. 3,352,415.
- Martin-Marietta Corp.: *See—*
  - Branham, Richard A. 3,353,108.
  - Hammond, Wardlaw M., Jr. 3,352,196.
  - Van Wilson, Marlin. 3,353,111.
- Martin, Warner W., and C. D. Sweet, Jr., to The Lau Blower Co. Humidifiers. 3,352,297, 11-14-67, Cl. 126—113.
- Martin, William G. Collapsible camping unit. 3,352,312, 11-14-67. Cl. 135—1.
- Glass, Marvin, & Associates: *See—*
  - Glass, Marvin I., Disko, and McFarland. 3,352,054.
- Maschinenfabrik Habegger: *See—*
  - Lauber, Ernst. 3,352,254.
- Maskell, Richard N.: *See—*
  - Cummings, Jan G., and Maskell. 3,352,472.
- Mason, Frederick P., and G. J. L. Stevens, to Creed & Co. Ltd. Signal generating arrangement for an electric typewriter and similar apparatus. 3,353,038, 11-14-67, Cl. 310—8.2.
- Mason, Ralph B., and G. P. Hamner, to Esso Research and Engineering Co. Process for the preparation of binder oils. 3,352,776, 11-14-67, Cl. 208—125.
- Massachusetts Institute of Technology: *See—*
  - Heldt, Lawrence J., and Landi. 3,352,642.
- Masters, Philip C., to The F. E. Myers & Bro. Co. Hose guide apparatus. 3,351,968, 11-14-67, Cl. 15—104.3.
- Mather, John, to Imperial Chemical Industries Ltd. Process for making 2-hydroxy-4 or 5-alkylbenzophenones using sodium iodide. 3,352,921, 11-14-67, Cl. 260—591.
- Matsui, Toshimi: *See—*
  - Yamadera, Reizo, Ono, and Matsui. 3,352,822.
- Matsumoto, Raymond T., to North American Aviation. Inc. Amplifier using paragoned active elements. 3,353,091, 11-14-67, Cl. 323—4.

- Matsunaga, Yoshio, to American Cyanamid Co. Organometallo-semiconducting materials. 3,352,888, 11-14-67, Cl. 260—396.
- Matsuoka, James T., to Stewart Bolling & Co., Inc. Mixing machine. 3,352,542, 11-14-67, Cl. 259—41.
- Matsushita Electronics Corp.: *See—*
  - Kato, Yoshio, and Konosu. 3,353,057.
- Matsushita Electric Industrial Co., Ltd.: *See—*
  - Koyanagi, Yukio. 3,352,970.
  - Sasaki, Hiromu. 3,352,632.
  - Yai, Toshio, and Takashima. 3,352,998.
- Mattek, Lawrence: *See—*
  - Foster, George H., Mattek, and McCandless. 3,352,666.
- Matthews & Birkhamshaw Ltd.: *See—*
  - Matthews, Denis. 3,352,264.
- Matthews, Denis, to Matthews & Birkhamshaw Ltd. Fabric linking machines. 3,352,264, 11-14-67, Cl. 112—25.
- Mattox, William J.: *See—*
  - Gladrow, Elroy M., and Mattox. 3,352,924.
- Maus, Burns R., to Cooper-Stanley Co., Inc. Striping device. 3,352,283, 11-14-67, Cl. 118—301.
- Mauz, Otto, and H. Hertel, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Stabilized polymers of alkylene oxides. 3,352,824, 11-14-67, Cl. 260—45.75.
- May, Harold V.: *See—*
  - Seeley, William G., May, and Martin. 3,352,415.
- Mayer, Edward F.: *See—*
  - Schwertz, Frederick A., and Mayer. 3,352,731.
- Maynard, John T., to A. O. Smith Corp. Dynamoelectric machine and control therefor. 3,353,078, 11-14-67, Cl. 318—227.
- Maytag Co., The: *See—*
  - Landwier, William G. 3,352,130.
- Mazeika, Albert, to Milton Mfg. Co., Inc. Device for measuring the depth of a groove between the ribs of the tread of a vehicle tire to determine the amount of wear of such ribs. 3,352,018, 11-14-67, Cl. 33—169.
- McAfee, George H.: *See—*
  - Betz, Robert J., and McAfee. 3,353,034.
- McAllister, Jack S. Shade edger. 3,352,466, 11-14-67, Cl. 223—38.
- McAtee, Gene A., to Lee-Rowan Co. Swinging arm clothes rack. 3,352,430, 11-14-67, Cl. 211—119.
- McCaleb, Stanley B.: *See—*
  - Bennett, John D., Chaney, Jones, and McCaleb. 3,353,020.
- McCandless, Richard, to Coal Industry (Patents) Ltd. Apparatus for distributing particulate material into a multi-inlet receiver. 3,352,605, 11-14-67, Cl. 302—28.
- McCandless, William W.: *See—*
  - Foster, George H., Mattek, and McCandless. 3,352,666.
- McCloskey, Albert R., to The Helm Universal Corp. Manufacture of self-aligned bearings. 3,351,999, 11-14-67, Cl. 29—149.5.
- McColgam, Arnold J., to W. Ralston & Co. (Canada) Ltd. Method of making containers. 3,352,214, 11-14-67, Cl. 93—35.
- McCord, Robert S., to McDonnell Douglas Corp. Hydraulic fluid. 3,352,783, 11-14-67, Cl. 252—78.
- McCurdy, James P. Traffic recording apparatus. 3,353,186, 11-14-67, Cl. 346—42.
- McDonnell Douglas Corp.: *See—*
  - McCord, Robert S. 3,352,783.
  - Nall, Donald H. 3,352,784.
- McDonnell, Thomas M. Gun trigger locking device. 3,352,047. 11-14-67, Cl. 42—70.
- McElhill, Elizabeth A.: *See—*
  - Wilson, Glenn R., and McElhill. 3,352,720.
- McEuen, John M.: *See—*
  - Breckhoff, Walter E., and McEuen. 3,352,939.
  - Plonsker, Larry and McEuen. 3,352,938.
- McFann, Charles E., and L. J. deSabla, to United States of America, Navy. Thermally initiated pyrotechnic delay time fuze. 3,352,242, 11-14-67, Cl. 102—85.6.
- McFarland, Norman T.: *See—*
  - Glass Marvin I., Disko, and McFarland. 3,352,054.
- McGill, Charles K.: *See—*
  - Cislak, Francis E., McGill, and Campbell. 3,352,872.
  - Cislak, Francis E., McGill, and Campbell. 3,352,873.
- McGill, Charles K., to Reilly Tar & Chemical Corp. Methylenebis [(N-hydroxyalkyl-piperidyl) alkyl] piperidines. 3,352,875, 11-14-67, Cl. 260—294.7.
- McIntyre, James E., R. J. B. Marsden, and H. W. Dempster, to Imperial Chemical Industries Ltd. Process for the production of non-woven fabrics. 3,352,734, 11-14-67, Cl. 156—180.
- McLaughlin, Jack E., to Andermac, Inc. Plastic tube bending method. 3,352,960, 11-14-67, Cl. 264—322.
- McLendon, Harmon B. Combustion device construction. 3,352,345, 11-14-67, Cl. 158—28.
- McMillan, Peter W., and G. Partridge, to The English Electric Co. Ltd. Method of making glass-ceramics by devitrification in a single stage. 3,352,656, 11-14-67, Cl. 65—33.
- McMillan, Peter W., and D. C. Lawton, to English Electric Co. Ltd., English Electric House. Method of making glass ceramic and product. 3,352,698, 11-14-67, Cl. 106—39.
- McMillian, Thomas, and L. C. Thompson, to United States of America, Navy. Hydrophone dynamic calibration system. 3,352,144, 11-14-67, Cl. 73—1.
- McMullen, John J.: *See—*
  - Ulbricht, Walter E., Yearwood, Basile, and McMullen. 3,352,123.
- McNamara, John E., to General Electric Co. Tube-to-tube reactor. 3,352,775, 11-14-67, Cl. 204—313.
- McNitt, Lewis F., and E. L. Melgun, to Midland-Ross Corp. Heat treatment of structural sections. 3,352,724, 11-14-67, Cl. 148—144.
- McWhorter, Wayne F., J. E. Kuhn, and H. C. Klassen, to Celanese Coatings Co. Increased heat distortion ethoxyline resins. 3,352,826, 11-14-67, Cl. 260—47.
- Meckl, Heinz: *See—*
  - Morcher, Bernhard, Meckl, and Häseler. 3,352,676.
- Mecredy, James R., and R. M. Wolaver, to The Cleveland Range Co. Cooking apparatus. 3,352,462, 11-14-67, Cl. 222—166.
- Medney, Jonas, to Koppers Co., Inc. Coupling arrangement for filament reinforced thermosetting resin tubular members. 3,352,577, 11-14-67, Cl. 285—246.
- Meeker, George W., Jr., to United States of America, Navy. Close-in target electronic cancellation device. 3,353,147, 11-14-67, Cl. 340—3.
- Megla, Gerhard K., to Hoffman Electronics Corp. Lecher-line crystal light modulator. 3,352,619, 11-14-67, Cl. 350—150.
- Meili, Ernst, and T. Lampart, to Cerberus AG. Ionization fire alarm system. 3,353,170, 11-14-67, Cl. 340—237.
- Meinwald, Jerrold, to Schering Corp. Novel D-nor-progesterones and processes for their manufacture. 3,352,920, 11-14-67, Cl. 260—586.
- Meinwald, Jerrold, to Schering Corp. Novel D-nor-estratrienes and processes for their manufacture. 3,352,922, 11-14-67, Cl. 260—586.
- Meinwald, Jerrold, to Schering Corp. Novel D-nor-pregnanes and processes for their manufacture. 3,352,923, 11-14-67, Cl. 260—586.
- Meissner, Fred H.: *See—*
  - Sisson, James C., Sparrow, Eckles, Meissner, and Burnham. 3,353,005.
- Melcher, Glee J., to Owens-Corning Fiberglas Corp. Method and apparatus for making brush segments. 3,352,604, 11-14-67. Cl. 300—1.
- Melgun, Edmund L.: *See—*
  - McNitt, Lewis F., and Melgun. 3,352,724.
- Mellor, John D., to Commonwealth Scientific and Industrial Research Organization. Freeze-drying process. 3,352,024, 11-14-67, Cl. 34—5.
- Mellott, Robert N., and R. W. Petersen, to Interco, Inc. Fixed power supply utilizing a commutated rectifier. 3,353,082, 11-14-67, Cl. 321—16.
- Melpar, Inc.: *See—*
  - Callanen, Oliver E. 3,352,029.
- Mention, Jean-Paul H.: *See—*
  - Mention, Maurice L., and Gobrono. 3,352,930.
- Mention, Madelein G.: *See—*
  - Mention, Maurice L., and Gobrono. 3,352,930.
- Mention, Maurice L. (deceased), by J. P. Deminier, heir, legal guardian of minor heirs, and administratrix of M. G., J.-P. H. Mention, Y. L. Verdier (nee Mention), heirs, and G. Gobron, to Les Usines De Melle. Process for hydrating propylene. 3,352,930, 11-14-67, Cl. 260—641.
- Menzi, Ulrich, and H. Grigereit, to Ciba Ltd. Device for separating two superimposed moving sheets. 3,352,554, 11-14-67, Cl. 271—64.
- Merchant, Chester O., to Kentucky Electronics Inc. Method of making an electrode component. 3,352,994, 11-14-67, Cl. 219—93.
- Merck & Co., Inc.: *See—*
  - Bicking, John B., and Sprague. 3,352,904.
  - Engelhardt, Edward L. 3,352,869.
  - Schultz, Everett M., and Sprague. 3,352,903.
  - Shen, Tsung-Ying, Ruyle, and Bugianesi. 3,352,849.
- Merett, Cecil L. Adjustable wall mount. 3,352,527, 11-14-67, Cl. 248—480.
- Merriman, Peter: *See—*
  - Hogg, Wilfrid H., Hartle, and Merriman. 3,352,803.
- Mertens, Paul: *See—*
  - Becker, Klaus, and Mertens. 3,352,397.
- Mestdagh, Jerome J.: *See—*
  - Elmer, Curtis, and Mestdagh. 3,352,744.
- Messina, Blase T., to Kelco Co. Bake stable bakery filling product and method. 3,352,688, 11-14-67, Cl. 99—131.
- Metcalf, Edward T.: *See—*
  - Braikevitch, Michael, and Metcalf. 3,353,028.
- Met, Viktor O., to General Electric Co. Microwave filter comprising absorbing structure for removing spurious wave energy. 3,353,123, 11-14-67, Cl. 333—73.
- Metz, Louis P., to Guilbert, Inc. Reversing edge for gates. 3,352,059 11-14-67, Cl. 49—27.
- Metzler, Eugene A.: *See—*
  - Rockland, Louis B., and Metzler. 3,352,687.
- Meyer, Gerhard, E. Siggel, A. Schopf, and H. Magerlein, to Vereinigte Glanzstoff-Fabriken AG. Stability of polyolefines. 3,352,816, 11-14-67, Cl. 260—45.7.
- Meyer, Gerhard, E. Siggel, A. Schopf, and H. Magerlein, to Vereinigte Glanzstoff-Fabriken AG. Stability of polyolefines. 3,352,817, 11-14-67, Cl. 260—45.7.
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- Meyer, Werner T., to Esso Research and Engineering Co. Method of preparing geometrically uniform rolls of plastic film. 3,352,956, 11-14-67, Cl. 264—176.
- Meyers, Stanley T., and J. P. Ratzlaff, to Bell Telephone Laboratories. Inc. Frequency shift receiver with noise frequency detection. 3,353,102, 11-14-67, Cl. 325—320.
- Micale, Angelo. Pinking knife. 3,352,266, 11-14-67, Cl. 112—122.
- Michael, Eugene M., and G. R. Toovey, to General Time Corp. Touch controlled alarm clock. 3,352,101, 11-14-67, Cl. 58—50.
- Michael, Richard A.: *See—*
  - Marquart, Gordon L., and Michael. 3,352,166.
- Michalchik, Michael, to Fairchild Camera & Instrument Corp. Activated photoconductors and recording element therewith. 3,352,671, 11-14-67, Cl. 96—1.8.

- Michel, Adolf. Keying devices, particularly for electrical musical instruments. 3,353,030, 11–14–67, Cl. 307—88.
- Michel, Pierre: *See—*
  - Faugeras, Pierre, Michel, and Talmont. 3,352,645.
- Michels, Josephus F.: *See—*
  - Akkerman, Antony M., and Michels. 3,352,751.
- Micro-Miniature Parts Corp.: *See—*
  - Draving, Walter J., and Nerz. 3,352,412.
- Middleton, Frank. Artificial leg having a knee joint construction which selectively permits either manual or automatic rotation between the stump unit and lower leg unit. 3,351,955, 11–14–67, Cl. 3—22.
- Midland-Ross Corp.: *See—*
  - McNitt, Lewis F., and Melgun. 3,352,724.
- Midvale-Heppenstall Co., and Heppenstall Co.: *See—*
  - Sickbert, Adolf H. W. 3,352,351.
- Migdol, Norman R.: *See—*
  - Biskup, John, Migdol, and Scholl. 3,352,700.
- Miki, Takao, to Mitsubishi Denki Kabushiki-Kaisher. Ignition device for internal combustion engine. 3,352,295, 11–14–67, Cl. 123—179.
- Milizia, Franco: *See—*
  - Palvarini, Attilio, Horak, and Milizia. 3,352,945.
- Mill-Cut Corp., The: *See—*
  - Hunn, Douglas C. 3,352,334.
- Miller, Daniel B., to International Telephone and Telegraph Corp. Current tap with ground. 3,353,137, 11–14–67, Cl. 339—14.
- Miller, Eldon F., to Hesse Carriage Co. Truck body. 3,352,594, 11–14–67, Cl. 296—3.
- Miller, Harold E. Trail grader. 3,352,036, 11–14–67, Cl. 37—108.
- Miller, Philip, to Hicks and Otis Prints, Inc. Contoured ornamentation of laminated resilient materials. 3,352,741, 11–14–67, Cl. 161—120.
- Milton Mfg. Co., Inc.: *See—*
  - Mazeika, Albert. 3,352,018.
- Minchenko, George, to Bell Telephone Laboratories, Inc. Traffic load detecting arrangement. 3,352,974, 11–14–67, Cl. 179—8.
- Minejima, Nobuaki: *See—*
  - Nakamura, Hiromichi, Katoo, Minejima, Shimizu, Satoo, Nozaki, and Doochi. 3,352,641.
- Minister of Aviation, in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland: *See—*
  - Bott, Ian B. 3,353,053.
- Minister of Aviation in Her Britannic Majesty's: *See—*
  - West, Ronald F. 3.352,174.
- Minix, William A., to Freeland Gauge Co. Air gauge. 3,352,145, 11–14–67, Cl. 73—379.
- Minnesota Mining and Mfg. Co.: *See—*
  - Coles, Robert F. 3,352,670.
- Minor, William F., to Bristol-Myers Co. Certain pyridylmethyl guanidine derivatives. 3,352,878, 11–14–67, Cl. 260—296.
- Mishcon, Sam, to The Singer Co. Knitting machine drive mechanisms. 3,352,128, 11–14–67, Cl. 66—56.
- Mitsubishi Denki Kabushiki-Kaisher: *See—*
  - Miki, Takao. 3,352,295.
- Mittler, Martin, and M. Blickstein, to Voltronics Corp. Variable electrical impedance device. 3,353,074. 11–14–67. Cl. 317—253.
- Mlaker, Günther J.: *See—*
  - Leitner, Karl, Mlaker, Moll, and Skalla. 3,352,702.
- Mobay Chemical Co.: *See—*
  - Pigott, Kenneth A., and Archer. 3,352,955.
- Mobil Oil Corp.: *See—*
  - Buehler, Fritz A. 3,352,781.
  - Cetrone, Ronald A., Kerns, and Wilson. 3,352,377.
  - Hamilton, Lyle A. 3,352,925.
  - Kerns, Clyde W. 3.353,152.
  - Manning, William F. 3,352,119.
  - Smith, Robert B., and Garwood. 3.352,800.
  - Williams, Sherrod A., Jr. 3,352,358.
- Modell, Michael, and J. M. Ryan, to Abcor, Inc. Method and apparatus for introducing samples into a gas chromatographic column. 3,352,089, 11–14–67, Cl. 55—67.
- Modine Mfg. Co.: *See—*
  - Johnson, Richard S. 3,351,995.
- Moes, Geert, and A. H. Zijderveld, to Scholten's, W.A., Chemische Fabrieken N.V. Method of producing a water resistant pigmented coating on paper or paperboard, and the paper or paperboard thus obtained. 3,352,705, 11–14–67, Cl. 117—62.2.
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  - Leitner, Karl, Mlaker, Moll, and Skalla. 3,352,702.
- Moll, Robert E.: *See—*
  - Delin, Irwin L., Doncaster, and Moll. 3,352,169.
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  - Brink, Joseph A., Jr., and Sugg. 3,352,778.
  - Elmer, Curtis, and Mestdagh. 3,352,744.
  - Mohs, Thomas J. 3,352,479.
  - Smith, Lowell R., and Speziale. 3,352,910.
- Monsanto Research Corp.: *See—*
  - James, John C. 3,352,898.
- Montecatini Edison S.p.A.: *See—*
  - Caldo, Cornelio, and Algieri. 3,352,882.
- Montgomery, Douglas S.: *See—*
  - Machin, William D., Montgomery, and Parsons. 3,352,635.
- Mooney, Walter G., L. K. Dutton, and F. K. Lynch, to Corrosion resistant valve. 3,352,532, 11–14–67, Cl. 251—268.
- Moore, Gordon G. Pole setting apparatus. 3,352,433, 11–14–67, Cl. 214—3.
- Moorehead, John P.: *See—*
  - Lehnert, Robert E., Bennett, Moorhead, and Jenkins. 3,352,257.
- Morcher, Bernhard, H. Meckl, and H. Häseler, to AGFA Aktiengesellschaft. Processing of color photographic materials. 3,352,676, 11–14–67, Cl. 96—56.
- Morgan Construction Co.: *See—*
  - Hill, William J. 3,352,228.
- Morgan, Raymond E., and B. D. Bedford, to General Electric Co. Flyback power amplifier circuit. 3,352,032, 11–14–67, Cl. 307—88.5.
- Morgan, Raymond E, to General Electric Co. Time Ratio control and inverter power circuits. 3,353,085, 11–14–67, Cl. 321—43.
- Morgan, Willard L.: *See—*
  - Harding, Arthur J. I., Morgan, and la Flexr. 3,352,624.
- Morris, Alberto J., to R. A. Lister & Co., Ltd. Air moving apparatus. 3,352,484, 11–14–67, Cl. 230—116.
- Morris, William J., and R. C. Simmons, to Philco Ford Corp. Cabinet structure. 3,352,613, 11–14–67, Cl. 312—8.
- Morse, George W.: *See—*
  - Link, Robert O., and Morse. 3,352,012.
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- Mowrey, Ralph A. Bait caster. 3,352,050, 11–14–67, Cl. 43—41.2.
- Mueller, Karl: *See—*
  - Christoffel, Cla, Borel, Blumenthal, Schobinger, and Mueller. 3,352,848.
- Mulec, Frank A.: *See—*
  - Zunich, Alexander, Shade, and Mulec. 3,352,742.
- Muller, Erich: *See—*
  - Molls, Hans, Hornle, Raab, and Muller. 3,352,500.
- Muller, Erwin, to Farbenfabriken Bayer Aktiengesellschaft. Unsaturated methylene - carbonamide - sulphonamides and process of producig them. 3,352,880, 11–14–67, Cl. 260—301.
- Muller, Hans D.: *See—*
  - Walter, Heinz F., and Muller. 3,352,968.
- Muller, Karl-Walter: *See—*
  - Schellhammer, Carl-Wolfgang, Muller, and Raue. 3,352,885.
- Mullin, Keith B.: *See—*
  - White, George T., and Mullin. 3,352,908.
- Murakami, Junzo: *See—*
  - Hayasi, Syuiti, and Murakami. 3,353,099.
- Murayama, Seiichi: *See—*
  - Yamamoto, Manabu, and Murayama. 3,353.060.
- Murch, Charles J., Jr., to Sanders Associates, Inc. Method of making multilayer circuit boards. 3,352,730, 11–14–67, Cl. 156—3.
- Murphree, Francis J., and J. H. Hammond, to United States of America, Navy. FM sonar exciter. 3,353,148, 11–14–67, Cl. 340—3.
- Murphy, Edward A., and W. Posner, to General Telephone and Electronics Laboratories, Inc. Shunt-type coaxial to waveguide harmonic generator. 3,353,087, 11–14–67, Cl. 321—69.
- Murphy, Francis J. Vibra-watch and jewelry cleaner. 3,352,311, 11–14–67, Cl. 134—86.
- Murphy, William J., to Xerox Corp. Photoconductive member and processes of preparing and using same. 3,352,669, 11–14–67, Cl. 96—1.5.
- Murray, Herbert C.: *See—*
  - Fonken, Gunther S., Herr, and Murray. 3,352,884.
- Murray, James G.: *See—*
  - Klebe, Johann F., and Murray. 3,352,799.
- Murtha, Bruce E., to Combustion Engineering, Inc. Method of fabricating a fuel element cluster. 3,352,003, 11–14–67, Cl. 29—421.
- Murton, Crawford B., to Vesuvius Crucible Co. Stopper for a ladle or similar receptacle. 3.352,533, 11–14–67, Cl. 251—356.
- Myers, F. E. & Bro. Co., The: *See—*
  - Masters, Philip C. 3.351,968.
- NTT Enterprises, Inc.: *See—*
  - Tyler, Nelson. 3,352,521.
- N.V. Nederlandsche Combinatie voor Chemische Industrie: *See—*
  - Akkerman, Antony M., and Michels. 3,352,751.
- Nachazel, Thomas W.: *See—*
  - Boothroyd, Howard W., Ferry, Buzzell, and Nachazel. 3,352,163.

- Nall, Donald H., to McDonnell Douglas Corp. Fire resistant hydraulic fluid and lubricant composition. 3,352,784, 11–14–67, Cl. 252—78.
- Nakamura, Hiromichi, H. Katoo, N. Minejima, H. Shimizu, A. Satoo, M. Nozaki, and Y. Doochi, to Rohm and Haas Co. Recovery of iodide ions from anion exchange resins used to extract iodine. 3,352,641, 11–14–67, Cl. 23—216.
- Nakayama, Shozo: *See—*
  - Niki, Akira, Nakayama, and Toriyama. 3,352,485.
- Nalco Chemical Co.: *See—*
  - Robertson, Reed S. 3,352,793.
- National Acme Co., The: *See—*
  - Cummings, Edgar H. 3,352,139.
- National Bulk Carriers, Inc.: *See—*
  - Joyce, Francis J. 3,352,035.
- National Can Corp.: *See—*
  - Lipske, Benjamin B. 3,352,496.
  - Tracy, Gerald T., and Zenger. 3,352,457.
- National Cash Register Co., The: *See—*
  - Combs, Jerry A. 3,353,007.
  - Trimble, Cebern B. 3,353,116.
- National Lead Co.: *See—*
  - Zunich, Alexander, Shade, and Mulec. 3,352,742.
- National Lock Co.: *See—*
  - Spain, Roy C. 3,352,135.
- National Research Corp.: *See—*
  - Fairbanks, Daniel F. 3.352,008.
  - Sibley, Clifton B. 3,353,055.
- Nauchno-Issledovatelsky Kinofoinstitute: *See—*
  - Bodrov, Alexandr D., Petrov, and Fonar. 3,352,506.
- Nayler, John H. C.: *See—*
  - Doyle, Frank P., and Nayler. 3,352,850.
- Neal, Harry B., to Anaconda Aluminum Co. Two-piece frame assembly with expansion joint. 3,352,078, 11–14–67, Cl. 52—573.
- Necchi Societa per Azioni: *See—*
  - Bono, Luigi. 3,352,262.
- Neely, William C.: *See—*
  - Lawrence, Wallace C., and Neely. 3,352,427.
- Neilsen, Peter C. Toothed blade for tire rasp. 3,351,997, 11–14–67, Cl. 29—79.
- Nelson, Lowell F.: *See—*
  - Mankin, Paul A., and Nelson. 3,352,582.
- Nelson, Silas E. Infusion package. 3,352,226, 11–14–67, Cl. 99—295.
- Nelson, Permil N. Rail construction and connector therefor. 3,352,491, 11–14–67, Cl. 238—209.
- Nelson, Permil N. Fifth wheel connector. 3,352,571, 11–14–67, Cl. 280—435.
- Nerwin, Hubert, to Eastman Kodak Co. Film storage system. 3,352,042, 11–14–67, Cl. 40—72.
- Nerz, Joseph E.: *See—*
  - Draving, Walter J., and Nerz. 3,352,412.
- Neumeier, Albert, to Omark Industries, Inc. Collapsible stud welder collet. 3,352,996, 11–14–67, Cl. 219—98.
- Neuss, Norbert, and M. Gorman, to Eli Lilly and Co. Dihydrovinblastine. 3,352,868, 11–14–67, Cl. 260—287.
- Newberg, Allen E. Water depth indicating device. 3,352,017, 11–14–67, Cl. 33—126.5.
- Nichols, Frank S., and E. K. Steele, to General Electric Co. Method of making electrical coils. 3,352,711, 11–14–67, Cl. 117—201.
- Niederman, Howard H., and W. P. Jensen, to Atlantic Research Corp. Vertical mixer. 3,352,543, 11–14–67, Cl. 259—44.
- Nield, Eric: *See—*
  - Barr, Dennis A., Nield, and Rose. 3,352,832.
- Niki, Akira, S. Nakayama, and T. Toriyama, to Toyoda Automatic Loom Works, Ltd. Swash plate compressor for use in air conditioning system for vehicles. 3,352,485, 11–14–67, Cl. 230—186.
- Nilsson, Nils E., and A. I. Olofsson. System for charging amounts recorded by consumption and service-meters. 3.352,971, 11–14–67, Cl. 179—2.
- Nippon Electric Co. Ltd.: *See—*
  - Majima, Tsutomu, and Urashida. 3,353,073.
- Nippon Soda Kabushiki Kaisha: *See—*
  - Taniguchi, Kanji, Asada, and Sakimoto. 3,352,899.
- Nishio, Fumihiko, R. Oi, and T. Tajima, to Fuji Shashin Film Kabushiki Kaisha. Diffusion transfer photographaic materials. 3,352,678, 11–14–67, Cl. 96—76.
- Nitka, Heinz F., to General Aniline & Film Corp. Method of recording charged particles. 3,353,185, 11–14–67, Cl. 346—1.
- Noell, Algernon S., Jr.: *See—*
  - Egglestone, Robert W., and Noell. 3,353,077.
- Nolan, Kenneth G., I. B. Frederick, D. L. Goleman, to American Cyanamid Co. Viscosity stable insecticidal and herbicidal compositions. 3,352,664, 11–14–67, Cl. 71—110.
- Norcross, Paul D. Compensating device for carburetors. 3,352,544, 11–14–67, Cl. 261—34.
- Nordberg, Robert C., and H. R. Barrios, to Hitco. Method for heat treatment of vitreous fibers. 3,352,654, 11–14–67, Cl. 65—23.
- North American Aviation, Inc.: *See—*
  - Anderson, Dean B. 3,353,180.
  - Lysyj, Ihor. 3,352,644.
  - Matsumoto, Raymond T. 3.353,091.
  - Rosen, Leonard L. 3,352,164.
  - Wiley, Carl A. 3,352,967.
- North American Philips Co., Inc.: *See—*
  - Hoefgeest, Engelmundus J. 3,352,964.
  - Konings, Marcel J. M. 3.352,969.
  - Wästerlid, Nils A. E. 3,353,178.
- Northern Electric Co. Ltd.: *See—*
  - Sodderland, George A., and Solar. 3,353,145.
- Norton Co.: *See—*
  - Perry, James H. 3,352,749.
- Norum, Vernon G. Valve guide reaming assembly. 3,352,182, 11–14–67, Cl. 77—62.
- Nozaki, Masashi: *See—*
  - Nakamura, Hiromichi, Katoo, Minejima, Shimizu, Satoo, Nozaki, and Doochi. 3,352,641.
- Noznick, Peter P.: *See—*
  - Li, Kwoh H., Bundus, and Noznick. 3,352,691.
- Nuckolls, Joe A., to General Electric Co. Flasher device. 3,353,062, 11–14–67, Cl. 315—157.
- Nylander, Alfred F., to International Minerals & Chemical Corp. Process for making purified potassium chloride and potassium sulfate from sulfate-contaminated potassium chloride and langbeinite. 3,352,633, 11–14–67, Cl. 23—89.
- Oberg, Paul, R. M. Sanders, and C. H. Tolman, to Sperry Rand Corp. Magnetoresistive frequency doubler. 3,353,086, 11–14–67, Cl. 321—60.
- Oberstar, Helen E.: *See—*
  - Lerner, Louis L., and Oberstar. 3,352,755.
- Ocean Research Equipment, Inc.: *See—*
  - Frantz, David H., Jr., and Ketchum. 3,353,149.
- O'Connell, Thomas J.: *See—*
  - Kitchen, James P., De Packh, Roess, and O'Connell. 3,353,064.
- O'Connor, Leo T., Jr.: *See—*
  - Richard, William H., and O'Connor. 3,353,162.
- Oehrke, Reinhart P.: *See—*
  - Barke, Bernard A., and Oehrke. 3,352,203.
- Ohi, Reiichi, and K. Shirasu, to Fuji Shashin Film Kabushiki Kaisha. Color photographic light-sensitive element containing ultraviolet absorber. 3,352,681, 11–14–67, Cl. 96—84.
- Ohira, Kazuaki: *See—*
  - Adachi, Kazuo, Hoshikawa, and Ohira. 3,352,867.
- Oi, Reiichi: *See—*
  - Nishio, Fumihiko, Oi, and Tajima. 3,352,678.
- Oktay, Celal M., to Phillips Petroleum Co. Removal of deposits from polymerization reactors. 3,352,840, 11–14–67, Cl. 260—94.7.
- Olestin: *See—*
  - Godet, Pierre, and Dieudonne. 3,352,548.
- Olinkraft, Inc.: *See—*
  - Graser, Earl J. 3,352,452.
  - Graser, Earl J. 3,352,473.
- Olin Mathieson Chemical Corp.: *See—*
  - Dore, James E., and Kearney. 3,352,350.
  - Thorne-Thomsen, Thomas. 3,352,576.
- Ollerenshaw, Charles: *See—*
  - Stubbs, Peter W. R., Woodward, and Ollerenshaw. 3,353,131.
- Olofsson, Arne I.: *See—*
  - Nilsson, Nils E., and Olofsson. 3,352,971.
- Olson, Frank A., L. D. Buchmiller, and J. R. Yaeger, to Teledyne, Inc. Magnetostatic wave variable delay apparatus. 3,353,118, 11–14–67, Cl. 332—29.
- Olson, Merrill K., and O. C. Ter Meer. Visual chart reader. 3,352,487, 11–14–67, Cl. 235—89.
- Omark Industries, Inc.: *See—*
  - Neumeier, Albert. 3,352,996.
- Ono, Hiroshi: *See—*
  - Yamadera, Reizo, Ono, and Matsui. 3,352,822.
- Organon Inc.: *See—*
  - Vollema, Gerlof. 3,352,892.
- Ornitz, Martin N., and R. H. English, to Blaw-Knox Co. Composite carbonaceous members for furnace rolls and other high temperature members. 3,352,549, 11–14–67, Cl. 263—6.
- Ostensen, Ralph G., to SCM Corp. Sheet feed apparatus. 3,352,218, 11–14–67, Cl. 95—1.7.
- Osterman, James W., to Filters, Inc. Filter and Coalescer element. 3,352,423, 11–14–67, Cl. 210—496.
- Osterreichisch - Amerikanische Magnesit Aktiengesellschaft: *See—*
  - Leitner, Karl, Mlaker, Moll, and Skalla. 3,352,702.
- Ostrander, Kenneth A.: *See—*
  - Foster, George B., and Ostrander. 3,353,098.
- Otis Engineering Corp.: *See—*
  - Dollison, William W. 3,352,269.
- Ottawa Steel Products: *See—*
  - Vivian, Frank H. 3,352,374.
- Overhead Door Corp.: *See—*
  - Crosswell, Flay D., and Binns. 3,352,585.
- Owen, William S., Jr.: *See—*
  - Woodhouse, Fred W., and Owen. 3,352,469.
- Owens-Corning Fiberglas Corp.: *See—*
  - Heumann, Frederick G. 3,352,095.
  - Melcher, Glee J. 3,352,604.
- Pacific Car and Foundry Co.: *See—*
  - Magnuson, John E. 3,352,442.
- Packaging Corp. of America: *See—*
  - Anderson, Wilbur G. 3,352,053.
- Page, Howard O., and O. D. Atteberry, to Halliburton Co. Bulk material handling systems. 3,352,606, 11–14–67, Cl. 302—52.
- Palitex Project Co. G.m.b.H.: *See—*
  - Franzen, Gustav. 3,352,510.
- Palm Oil Recovery, Inc.: *See—*
  - Kovacs, Geza L. 3,352,137.
- Palmer, Harold J.: *See—*
  - Costain, Winston, Palmer, and White. 3,352,821.
- Palvarini, Attilio, E. Horak, and F. Milizia, to Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p.A. Formaldehyde-propylene graft copolymers and process for their synthesis. 3,352,945, 11–14–67, Cl. 260—897.
- Panerai, Giuseppe: *See—*
  - Panerai, Maria and G. 3,353,050.
- Panerai, Maria and G. Electroluminescent filament-indicator device, particularly suitable for digital and/or alphabetical dials. 3,353,050, 11–14–67, Cl. 313—108.
- Pantenburg, Joseph W., to Crown Zellerbach Corp. Process of wrapping articles in polyolefin material. 3,352,085, 11–14–67, Cl. 53—32.

Panzardi, Manuel A. Safety channel for radiator overboil. 3,352,184, 11–14–67, Cl. 81—3.1.

Pappdis, Nick, to The Rauland Corp. Dynamic convergence assembly shielding and mounting structure. 3,353,049, 11–14–67, Cl. 313—70.

Papst, Hermann. Quiet-running electric motor. 3,353,046, 11–14–67, Cl. 310—214.

Parham, Price H., to The Upjohn Co. Method of promoting maturation of cotton plants. 3,352,660, 11–14–67, Cl. 71—70.

Parham, Thomas M., Jr., to Allied Chemical Corp. Concrete joint sealant containing carbon black, zinc oxide and polysulphide aldehyde copolymer. 3,352,812, 11–14–67, Cl. 260—31.8.

Parker, Frederick, Ltd.: *See*—
Parker, Frederick W. 3,352,502.

Parker, Frederick W., to Frederick Parker Ltd. Rotary impact breakers. 3,352,502, 11–14–67, Cl. 241—192.

Parker, Walter, to Ernest Scragg & Sons (Holdings) Ltd. Textile apparatus. 3,352,505, 11–14–67, Cl. 242—43.

Parkerson, Charles R., and H. H. Wieder, to United States of America, Navy. Habit modification and preparation of single crystal triglycine sulfate. 3,352,906, 11–14–67, Cl. 260—534.

Parkinson, Graham C., to The L.T. Mart Co. Ltd. Cooling towers. 3,352,547, 11–14–67, Cl. 261—112.

Parlante, Frank: *See*—
Parlante, Henry and F. 3,352,467.

Parlante, Henry and F. Releasable shoulder strap for Sam Browne belts. 3,352,467, 11–14–67, Cl. 224—5.

Parsons, Basil I.: *See*—
Machin, William D., Montgomery, and Parsons. 3,352,635.

Partridge, Graham: *See*—
McMillan, Peter W., and Partridge. 3,352,656.

Pasko, Joseph B., Jr., to United States Steel Corp. Retractable exhaust hood for a processing vessel. 3,352,284, 11–14–67, Cl. 118—429.

Passal, Frank, to M & T Chemicals Inc. Bright nickel plating process. 3,352,766, 11–14–67, Cl. 204—49.

Passannante, Anthony J., to Esso Research and Engineering Co. Polyvinyl carbamates and containing NF_2 groups and processes for producing same. 3,352,828, 11–14–67, Cl. 260—77.5.

Patch, Robert S.: *See*—
Austin, Avery J., and Patch. 3,352,779.

Patton, De Lane D., to Columbus Auto Parts Co. Joint for steering linkage and the like. 3,352,583, 11–14–67, Cl. 287—93.

Patwin, Inc.: *See*—
Lang, Elliot R. 3,353,174.

Paul, Albert E., and C. W. Smith, to The Bunker-Ramo Corp. Molded sandwich electrical connector with improved connector pens and encapsulating structure. 3,353,070, 11–14–67, Cl. 317—101.

Pauza, William V., to AMP Inc. Electrical connector. 3,353,143, 11–14–67, Cl. 339—128.

Pawalkat, Horst, to Theodor Wuppermann, G.m.b.H. Rolling mill construction. 3,352,140, 11–14–67, Cl. 72—238.

Payne, Nigel E., to Rolls-Royce Ltd. Reheat combustion equipment. 3,352,113, 11–14–67, Cl. 60—261.

Payne, Peter R., Inc.: *See*—
Payne, Peter R. 3,352,270.

Payne, Peter R., to Peter R. Payne Inc. Air lubricated planing hull. 3,352,270, 11–14–67, Cl. 114—67.

Peck, David B., and M. Markarian, to Sprague Electric Co. Aluminum electrolytic capacitor encased in polyvinyl-alcohol-borate film. 3,353,072, 11–14–67, Cl. 317—230.

Peerless Aluminum Foundry Co., Inc.: *See*—
Hardy, Peter S. 3,352,019.

Pelkowski, Stanley. Spinning top with aids for spinning and lashing the same. 3,352,055, 11–14–67, Cl. 46—70.

Pelochino, Edward J. Method of making resilient locking fasteners. 3,351,966, 11–14–67, Cl. 10—10.

Pelzer, Grace L.: *See*—
Pelzer, Harold H. 3,352,120.

Pelzer, Harold H., to G. L. Pelzer. Reinforced concrete pile. 3,352,120, 11–14–67, Cl. 61—56.

Penet, Pierre M., to Societe D'Instrumentation Schlumberger. Valve and flowmeter assembly. 3,352,155, 11–14–67, Cl. 73—198.

Penick, S. B., & Co.: *See*—
Moses, William. 3,352,761.

Pennell, Walter D.: *See*—
Francis, Joseph, and Pennell. 3,353,127.

Penning, Ernst: *See*—
Wolf, Hans, Drescher, Faulhaber, Wilhelm, Reinhard, and Penning. 3,352,710.

Pennsalt Chemicals Corp.: *See*—
Richman, Jay L. 3,352,028.
Rothenberg, Jerome H., and Hood. 3,352,122.
Silverman, Meyer S. 3,352,640.
Smith, Herbert Q. 3,352,661.

Perel, Julius: *See*—
Forrester, Alvin T., and Perel. 3,352,482.

Perkins, Lowell R.: *See*—
Anderson, Arthur W., and Perkins. 3,352,714.

Perlowski, John S., and W. E. Sillick, to Eastman Kodak Co. Process for manufacturing magnetic oxide. 3,352,638, 11–14–67, Cl. 23—200.

Perry, Barbour L.: *See*—
Birmingham, Henry P., Baldwin, and Perry. 3,353,153.

Perry, Bernard J.: *See*—
Grayson, Edward L., and Perry. 3,352,979.

Perry, Donald D., and J. A. Castellano, to Thiokol Chemical Corp. 1,2-Bis(difluoramino)alkylene aromatic compounds. 3,352,914, 11–14–67, Cl. 260—570.5.

Perry, James H., to Norton Co. Drainage control elements for paper machines. 3,352,749, 11–14–67, Cl. 162—352.

Peter Kennedy, Inc.: *See*—
Kennedy, Michael E. 3,352,366.

Peters, Edwin F.: *See*—
Shepard, John W., Peters, and Juveland. 3,352,795.

Peters, Harlan J., and L. W. Bowling. Means for forming lines of weakness in cementitious floors, pavements and the like. 3,352,217, 11–14–67, Cl. 94—18.

Petersen, Harold E.: *See*—
Chesarek, Donald J., and Petersen. 3,353,157.

Petersen, Richard W.: *See*—
Mellott, Robert N., and Petersen. 3,353,082.

Peterson, Carl A., to Basic Products Corp. Transformer and saturable reactor voltage regulator. 3,353,093, 11–14–67, Cl. 323—43.5.

Peterson, Victor W.: *See*—
Lindgren, Milton F., and Peterson. 3,352,178.

Petrie, James A., to Rolls-Royce Ltd. Vane operating mechanism for fluid flow machines. 3,352,537, 11–14–67, Cl. 253—78.

Petrol Injection Ltd.: *See*—
Jackson, Harold E., and Weeks. 3,351,982.

Petrolite Corp.: *See*—
Lissant, Kenneth J. 3,352,109.

Petro-Tex Chemical Corp.: *See*—
Kerr, Ralph O. 3,352,905.

Petrov, Vasily V.: *See*—
Bodrov, Alexandr D., Petrov, and Fonar. 3,352,506.

Pfaff, Henry C., Jr., and F. G. Schlosser, to Pfaff and Kendall. Latch assembly for lowering device mechanism. 3,353,017, 11–14–67, Cl. 240—66.

Pfaff and Kendall: *See*—
Pfaff, Henry C., Jr., and Schlosser. 3,353,017.

Pfarrwaller, Erwin, to Gebruder Sulzer Aktiengesellschaft. Loom dobby. 3,352,328, 11–14–67, Cl. 139—68.

Pflanz, Herbert M.: *See*—
Wachta, Zygmunt A., and Pflanz. 3,352,988.

Phelps, Frederick L., Jr.: *See*—
Collins, Glenn A., Jr., and Phelps. 3,352,814.

Philco-Ford Corp.: *See*—
Luce, Robert L. 3,352,726.
Morris, William J., and Simmons. 3,352,613.

Phillips Petroleum Co.: *See*—
Crain, Donald L., and Kleinschmidt. 3,352,894.
Dew, Jimmy S. 3,352,946.
Gray, Earl H. 3,352,932.
Mahan, John E., Reusser, and Kruse. 3,352,935.
Oktay, Celal M. 3,352,840.
Warner, Paul F., and Willis. 3,352,765.
Wheat, Robert C. 3,352,944.
Zuech, Ernest A. 3,352,931.

Phillips, Paul W. Elastic tub swing seat. 3,352,555, 11–14–67, Cl. 272—85.

Pianko, Marc. Combustion chamber with whirling slots. 3,352,106, 11–14–67, Cl. 60—39.65.

Pickard, John E., to Ball Bros. Co. Inc. Glass having dual protective coatings thereon and method for forming such coatings. 3,352,707, 11–14–67, Cl. 117—72.

Pickard, John E.: *See*—
Lyon, Kenneth C., Pickard, and Scholes. 3,352,708.

Pickelsimer, Emory J. Portable animal feeder. 3,352,286, 11–14–67, Cl. 119—51.11.

Pickett, Charles G.: *See*—
Brandriff, Robert C., and Pickett. 3,352,267.

Plech, Frank E.: *See*—
Breslow, David S., and Plech. 3,352,798.

Pigott, Kenneth A., and W. Archer, Jr., to Mobay Chemical Co. Process of bonding a polyurethane resin to a metal surface having a cured epoxy resin coating. 3,352,955, 11–14–67, Cl. 264—135.

Pilkington Bros. Ltd.: *See*—
Charnock, Harold. 3,352,657.

Pillon, Marcel: *See*—
Galabert, Pierre, and Pillon. 3,352,015.

Pioneer Electric Brandon Ltd.: *See*—
Dalzell, James W., and Thorsteinsson. 3,352,490.

Pitsch, Ronald D.: *See*—
Gasch, Dale J., and Pitsch. 3,351,977.

Pittsburgh Plate Glass Co.: *See*—
Barch, Herbert W., and Posney. 3,352,655.

Plasser, Franz, and J. Theurer. Track aligning apparatus. 3,352,249, 11–14–67, Cl. 104—7.

Pless, Janos: *See*—
Boissonnas, Roger, Guttmann, and Pless. 3,352,844.

Plexowood, Inc.: *See*—
Rondum, Svend B. 3,352,080.

Plitschka, Heinz: *See*—
Burian, Theodor, Plitschka, and Vogel. 3,353,154.

Plonsker, Larry, and J. M. McEuen, to Ethyl Corp. Olefin double-bond isomerization using a mixture of platinum group metals as a catalyst. 3,352,938, 11–14–67, Cl. 260—683.2.

Pneumatic Scale Corp., Ltd.: *See*—
Scully, John W. 3,352,281.

Polanyi, Thomas G.: *See*—
Hagenlocher, Arno K., and Polanyi. 3,353,048.

Polinsky, Murray A., and G. F. Damon, to Radio Corp. of America. Method of stabilizing semi-conductor devices having exposed surfaces of a hydrophilic oxide. 3,352,712, 11,14–67, Cl. 117—201.

Pollnow, Gilbert: *See*—
Haworth, Daniel T., and Pollnow. 3,352,823.

Pollock, Harold V., and J. M. Diehl; said Diehl assor. to said Pollock. Method and device for destroying credit cards. 3,353,006, 11–14–67, Cl. 235—61.7.

Polymark (Holdings) Ltd.: *See*—
Smith, Geoffrey. 3,352,131.

Porges, George E. W., and W. A. E. Staves, to California Texas Oil Corp. Method for determining the amount of particulate contaminants in a liquid by employing series filter. 3,352,197, 11–14–67, Cl. 88—14.

Posner, William: *See*—
Murphy, Edward A., and Posner. 3,353,087.

Posney, Richard V.: *See*—
Barch, Herbert W., and Posney. 3,352,655.

Posting Equipment Corp.: *See*—
Lear, Joseph D., and Holt. 3,352,302.

Potter, Denton A. Golf practice apparatus. 3,352,560, 11–14–67, Cl. 273—200.

Potter Instrument Co., Inc.: *See*—
Poumakis, Eleuthere. 3,353,168.

Poumakis, Eleuthere, to Potter Instrument Co., Inc. Wide-record narrow-read magnetic head. 3,353,168, 11–14–67, Cl. 340—174.1.

Powder Melting Corp.: *See*—
Cape, Arthur T. 3,352,492.

Powell, George B., to Girling Ltd. Shock absorber fluid flow velocity reducing means. 3,352,387, 11–14–67, Cl. 188—96.

Power, Basil D., to Edwards High Vacuum International Ltd. Cam actuated gate valve. 3,352,535, 11–14–67, Cl. 251—204.

Powers, Robert H., to Itek Corp. Adjustable guides for web threading apparatus. 3,352,470, 11–14–67, Cl. 226—91.

Powers, William R., to Scott Paper Co. Rigid reticulated structure and method of use thereof. 3,352,802, 11–14–67, Cl. 260—2.5.

Preston, David. Continuous forms folder machine. 3,352,553, 11–14–67, Cl. 270—79.

Preuss, Ernest A., to Aircraft Radio Corp. Self-test circuit for transponder. 3,353,181, 11–14–67, Cl. 343—17.7.

Price, Edison A.: *See*—
Sak, August, and Price. 3,352,428.

Price, Herbert P., to Celanese Coatings Co. Preparation of glycidyl polyethers. 3,352,825, 11–14–67, Cl. 260—47.

Price, Luther A.: *See*—
Spragg, Hal R., Price, and Wooldridge. 3,352,238.

Prichard, William W., to E. I. du Pont de Nemours and Co. Adamantanes and tricyclo [4.3.1.1.3.8] undecanes. 3,352,912, 11–14–67, Cl. 260—563.

Procter, Edward C., to Sperry Rand Corp. Forage harvester. 3,352,093, 11–14–67, Cl. 56—98.

Proctor & Gamble Co., The: *See*—
Berry, Jim S. 3,352,786.

Proudlove, Frank W., to British Aircraft Corp. (Operating) Ltd. Gun pod enclosing a gun and a cartridge tank connected by a cartridge chute enclosed in a pylon connecting the pod to an aircraft. 3,352,207, 11–14–67, Cl. 89—37.5.

Puetzer, Bruno, L. Mackles, and A. V. Finn, to Tintex Corp. Intestinal adsorbent compositions. 3,352,752, 11–14–67, Cl. 167—55.

Pullman Inc.: *See*—
Bertolini, William A. 3,352 252.

Pusch, Walter G., and W. L. Stafford, to Johns-Manville Corp. Consumable product for ingot hot tops and the like. 3,352.743, 11–14–67, Cl. 161—162.

Putman, Maurice W., to The Dow Chemical Co. Method of recovery of hydrocarbons from solid hydrocarbonaceous formations. 3,352,355, 11–14–67, Cl. 166—2.

Quarzlampen Gesellschaft m.b.H.: *See*—
Sturm, Walter. 3,353,025.

RCL Electronics, Inc.: *See*—
Grayson, Edward L., and Perry. 3,352,979.

Raab, Hans: *See*—
Molls, Hans, Hornle, Raab, and Muller. 3,352,500.

Racer, James H., to Senco Products, Inc. Recessed end carton. 3,352,474, 11–14–67, Cl. 229—16.

Rademaker, John C.: *See*—
Williams, Stanley E., Dunbar, and Rademaker. 3,352,746.

Rader, Charles A.: *See*—
Schwartz, Anthony M., and Rader. 3,352,773.

Radio Corp. of America: *See*—
Floden, Bjorn F. 3,352,975.
Gray, George W. 3,353,018.
Polinsky, Murray A., and Damon. 3,352,712.
Shashoua, Fred E. 3,352,977.
Swyt, Joseph. 3,352,331.

Rahe, Villem, to Corning Glass Works. Apparatus for blending glass. 3,352,659, 11–14–67, Cl. 65—178.

Ralston, W., & Co. (Canada) Ltd.: *See*—
McColgan, Arnold J. 3,352,214.

Rapisarda, Paul. Air vent for plastic cover. 3,351,963, 11–14–67, Cl. 5—347.

Rasmussen, Theo. Circular saw gumming and tooth shaping apparatus. 3,352,180, 11–14–67, Cl. 76—42.

Raterink, Hendrik J.: *See*—
Van Heel, Abraham C. S., Beernink, and Raterink. 3,352,618.

Ratzlaff, Jerry P.: *See*—
Meyers, Stanley T., and Ratzlaff. 3,353,102.

Raue, Roderich: *See*—
Schellhammer, Carl-Wolfgang, Muller, and Raue. 3,352,885.

Rauhut, Michael M.: *See*—
Sheehan, Desmond, Clarke, and Rauhut. 3,352,791.

Rauland Corp., The: *See*—
Fiore, Joseph P. 3,351,996.
Pappdis, Nick. 3,353,049.

Rawlins, Julia. Tray for paint can. 3,352,450, 11–14–67, Cl. 220—85.

Ray Oil Burner Co.: *See*—
Winters, Harry K. 3,352,167.

Ray, Richard L.: *See*—
House, William T., Ray, and Hoover. 3,352,934.

Raynes, Burt F., to Roha Corp. Truss type panel structures. 3,352,070, 11–14–67, Cl. 52—22.

Raytheon Co.: *See*—
Das, Dilip K., and Freedman. 3,352,667.
Vartanian, Vartan. 3,353,146.

Reabe, Kenneth G.: *See*—
Dressler, Hans, and Reabe. 3,352,896.

Read, Norman W., to Dresser Industries, Inc. Well swab device. 3,352,212, 11–14–67, Cl. 92—192.

Reames, James R.: *See*—
Sherlock, Jack G., and Reames. 3,352,149.

Recherches Etudes Production R.E.P.: *See*—
Lucien, Rene. 3,352,210.

Redirack Industries Ltd.: *See*—
Engel, Teofil. 3,352,584.

Reed, Leonard, and D. C. Figone, to Varian Associates. Low temperature metallizing paint and method of making same. 3,352,694 11–14–67, Cl. 106—1.

Reeves Bros., Inc.: *See*—
Blue, Sidney D. 3,352,739.

Reicheneder, Franz, and K. Dury, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of mucochloric acid. 3,352,907, 11–14–67, Cl. 260—539.

Reid-Meredith, Inc.: *See*—
Wheelock, Silas M. 3,351,984.

Reilly Tar & Chemical Corp.: *See*—
Cislak, Francis E. 3,352,871.
Cislak, Francis E., Rieger, and Chapman. 3,352,870.
Cislak, Francis E., McGill, and Campbell. 3,352,872.
Cislak, Francis E., McGill, and Campbell. 3,352,873.
Cislak, Francis E., Rieger, and Chapman. 3,352,874.
McGill, Charles K. 3,352,875.

Reinecke, Gunter, to Benz & Hilgers G.m.b.H. Article stacker. 3,352,435, 11–14–67, Cl. 214—6.

Reiners, Walter: *See*—
Furst, Stefan. 3,352,505.

Reinhard, Hans: *See*—
Wolf, Hans, Drescher, Faulhaber, Wilhelm, Reinhard, and Penning. 3,352,710.

Reis, Robert D.: *See*—
Machado, John S., and Reis. 3,352,987.

Reliance Electric and Engineering Co., The: *See*—
Foster, George B., and Ostrander. 3,353,098.

Remington Arms Co., Inc.: *See*—
Eckstein, George R. 3,352,240.

Renkowitz, Donald, to General Telephone and Electronics Laboratories, Inc. Variable linear frequency multivibrator circuit with distorted input voltage controlling the voltage sensitive frequency determining capacitor. 3,353,117, 11–14–67, Cl. 331—113.

Renniks Corp.: *See*—
Skinner, Ralph L., Sr. 3,352,127.

Republic Seel Corp.: *See*—
Avellone, Richard C. 3,352,005.

Reusser, Robert E.: *See*—
Mahan, John E., Reusser, and Kruse. 3,352,935.

Reuter, Brian R., to Consolidated Engineering Co. Pressure actuated switch and plug assembly. 3,352,984, 11–14–67, Cl. 200—83.

Revlon, Inc.: *See*—
Frangos, John. 3,352,464.

Reynolds, Ralph K., to International Harvester Co. Servo-mechanism and vehicle suspension employing same. 3,352,365, 11–14–67, Cl. 280—6.

Ribbelink, Willem. Panel provided with a number of socket contacts which are arranged in a definite pattern. 3,353,139, 11–14–67, Cl. 339—18.

Ricciardi, Robert H.: *See*—
Fischer, George A., and Ricciardi. 3,352,630.

Rich, Paul J.: *See*—
Herreshoff, Alexander G., Rich, and Johnson. 3,352,273.

Richard, William H., and L. T. O'Connor, Jr., to International Business Machines Corp. Communication line priority servicing apparatus. 3,353,162, 11–14–67, Cl. 340—172.5.

Richards, Glenn L., to General Dynamics Corp. Frequency synthesizing system. 3,353,112, 11–14–67, Cl. 331—16.

Richman, Jay L., to Pennsalt Chemicals Corp. Industrial process and apparatus. 3,352,028, 11–14–67, Cl. 35—12.

Richter, Sidney B., to Velsicol Chemical Corp. N-alkoxy amides of 4-halophenoxyalkylcarboxy acids. 3,352,987, 11–14–67, Cl. 260—453.

Ridgway, John A., Jr.: *See*—
Schoen, William, and Ridgway. 3,352,941.

Rieger, William H.: *See*—
Cislak, Francis E., Rieger, and Chapman. 3,352,870.
Cislak, Francis E., Rieger, and Chapman. 3,352,874.

Rieker & Co.: *See*—
Löllmann, Paul. 3,351,985.

Riggs, Harley B. Combination tree stand and game cart. 3,352,379, 11–14–67, Cl. 182—20.

Rikagaku Kenkyusho and Kawasaki Seitetsu Kabushiki Kaisha: *See*—
Yoshida, Kiyota and K. 3,352,151.

Riley, Harry L., and A. Romanski, to United Coke and Chemicals Co., Ltd. Method of producing phthalic anhydride. 3,352,887, 11–14–67, Cl. 260—346.4.

Ritchie, Harold D.: *See*—
Entringer, James S., Marks, and Ritchie. 3,352,419.

Ritchie, Wallace J.: *See*—
Cox, Norman P., and Ritchie. 3,352,105.

Robbins, George T., and R. L. Ware. Wooden pole having plastic pole top cover with preservative. 3,352,581, 11–14–67, Cl. 287—20.95.

Roberts Co.: *See*—
Grishin, Peter F. 3,352,096.

Roberts, Gene: *See*—
Lithgo, William, Roberts, Smith, and Wills. 3,352,747.

Roberts, Norman: *See*—
Colville, Francis J., Roberts, and Brown. 3,352,494.

- Robertson, Charles A., and F. B. Small, to Crouse-Hinds Co. Pavement embedded lighting unit. 3,353,013, 11-14-67, Cl. 240—1.2.
- Robertson, Reed S., to Nalco Chemical Co. Cooling water treatment and compositions useful therein. 3,352,793, 11-14-67, Cl. 252—389.
- Robinson, William H., to Armstrong Cork Co. Combination acoustical and lighting fixture. 3,353,016, 11-14-67, Cl. 240—51.11.
- Robson, James T., to Ferro Corp. Ceramic refractory flame retention nozzle. 3,352,347, 11-14-67, Cl. 158—116.
- Roche, Lawrence R., to Wincharger Corp. Electric generating systems. 3,353,088, 11-14-67, Cl. 322—27.
- Rocheleau, Leopold A. Grinding fixture. 3,352,068, 11-14-67, Cl. 51—225.
- Rocket Power, Inc.: *See*—
  - Greenslade, John T. 3,352,517.
- Rockland, Louis B., and E. A. Metzler, to United States of America, Agriculture. Preparation of frozen quick-cooking legumes. 3,352,687, 11-14-67, Cl. 99—98.
- Rockwell, Don W., to Texas Instruments Inc. Common tangent stacking method and system for locating sonic energy velocity discontinuities. 3,353,151, 11-14-67, Cl. 340—15.5.
- Rodgers, Leonard J., to Rolls-Royce Ltd. Hoisting sling. 3,352,592, 11-14-67, Cl. 294—81.
- Roess, Harold R. D.: *See*—
  - Kitchen, James P., De Packh, Roess, and O'Connell. 3,353,064.
- Roha Corp.: *See*—
  - Raynes, Burt F. 3,352,070.
- Rohm & Haas Co.: *See*—
  - Graham, William H. 3,352,915.
  - Nakamura, Hiromichi, Katoo, Minejima, Shimizu, Satoo, Nozaki, and Doochi. 3,352,641.
- Rolfes, Paul E., to Lorain Products Corp. Apparatus and method for effecting unidirectional flow of power in A.C. circuits. 3,353,029, 11-14-67, Cl. 307—51.
- Rolls-Royce Ltd.: *See*—
  - Colville, Francis J., Roberts, and Brown. 3,352,494.
  - Cresswell, Roger A. 3,352,110.
  - Maguire, Addison C. 3,352,514.
  - Payne, Nigel E. 3,352,113.
  - Petrie, James A. 3,352,537.
  - Rodgers, Leonard J. 3,352,592.
  - Sheppard, Francis E. 3,352,255.
  - Wilde, Geoffrey L., Ward, Williamson, and Baker. 3,352,114.
  - Wilkinson, Wilfred H. 3,352,538.
- Romanski, Andrzej: *See*—
  - Riley, Harry L., and Romanski. 3,352,887.
- Rondum, Svend B., to Plexowood, Inc. Laminated countertop and method of producing the same. 3,352,080, 11-14-67, Cl. 52—614.
- Rose, Fred A. Cardiac monitor. 3,352,300, 11-14-67, Cl. 128—2.06.
- Rose, John B.: *See*—
  - Barr, Dennis A., Nield, and Rose. 3,352,832.
- Rosemount Engineering Co.: *See*—
  - Werner, Frank D., and Lundquist. 3,352,075.
- Rosen, Leonard L., to North American Aviation, Inc. Gyro monitor adaptive mechanization. 3,352,164, 11-14-67, Cl. 74—5.34.
- Rosenstein, Abraham J.: *See*—
  - Rosenstein, Nathan and A. J. 3,351,993.
- Rosenstein, Nathan and A. J., to Spunize Co. of America, Inc. Method for crimping of natural and synthetic textile materials. 3,351,993, 11-14-67, Cl. 28—72.
- Rossi, Carl E., to Harbison-Walker Refractories Co. Shaft kiln discharge mechanism. 3,352,550, 11-14-67, Cl. 263—29.
- Rossi, David A., to General Motors Corp. Remotely adjustable rear view mirror. 3,352,524, 11-14-67, Cl. 248—278.
- Rothenberg, Jerome H., and C. B. Hood, Jr., to Pennsalt Chemicals Corp. Industrial process and apparatus. 3,352,122, 11-14-67, Cl. 62—45.
- Rover Co. Ltd., The: *See*—
  - Stubbs, Peter W. R., Woodward, and Ollerenshaw. 3,353,131.
- Royal, Thomas B.: *See*—
  - Bumgarner, Robert L., Knutson, and Royal. 3,352,520.
- Royal Typewriter Co., Inc.: *See*—
  - Madison, Theodore N. 3,352,399.
- Ruben, Samuel. Process for producing microperforated stainless steel sheets. 3,352,769, 11-14-67, Cl. 204—143.
- Rubin, Robert A., to TRW, Inc. Redundant power control regulator. 3,353,092, 11-14-67, Cl. 323—19.
- Ruegger, Richard A., to Timett Corp. Switch mechanism for clocks. 3,352,100, 11-14-67, Cl. 58—41.
- Rumsey, Rollin D.: *See*—
  - Martin, Claude, Krollman, King, and Rumsey. 3,352,886.
- Rupert, Samuel J., to Hoover Ball and Bearing Co. Apparatus for automatically trim finishing blow molded plastic articles. 3,351,981, 11-14-67, Cl. 18—5.
- Rusch, Reinhart: *See*—
  - Freund, Heinz, Arndt, and Rusch. 3,352,663.
- Ruyle, William V.: *See*—
  - Shen, Tsung-Ying, Ruyle, and Bugianesi. 3,352,849.
- Ryan, James M.: *See*—
  - Modell, Michael, and Ryan. 3,352,089.
- Ryan, Patrick W.: *See*—
  - De Vries, Donald L., and Ryan. 3,352,927.
- SCM Corp.: *See*—
  - Ostensen, Ralph G. 3,352,218.
  - Soule, Winsor, Jr., and Binnall. 3,353,163.
  - Stitt, Robert I. 3,352,343.
- S.N.A.M. S.p.A.: *See*—
  - Chini, Paolo, Dolci, and De Maldé. 3,352,937.
- Sabre, Daniel R. Lens making apparatus. 3,352,066, 11-14-67, Cl. 51—162.
- Sacco, Bruno: *See*—
  - Barényli, Béla, and Sacco. 3,352,597.
- Saeli, John J., to General Motors Corp. Windshield wiper control system. 3,353,079, 11-14-67, Cl. 318—443.
- Sagiroglu, Nuri. Cytologic pan-scraper. 3,352,299, 11-14-67, Cl. 128—2.
- Saima, Tooru, to Tokyo Shibaura Electric Co., Ltd. Stabilizing railway truck. 3,352,256, 11-14-67, Cl. 105—199.
- St. Louis Janitor Supply Co.: *See*—
  - Sutliff, Wayne N. and M. W. 3,352,359.
- Sak, August, and E. A. Price. Adjustable mounting assembly. 3,352,428, 11-14-67, Cl. 211—87.
- Sakai, Jun: *See*—
  - Honda, Hidehisa, and Sakai. 3,352,367.
- Sakimoto, Reiji: *See*—
  - Taniguchi, Kanji, Asada, and Sakimoto. 3,352,899.
- Salger, Werner, to Werner Zindler d.b.a. Lumoprint Zindler KG. Contact printing devices. 3,352,22[illegible], 11-14-67, Cl. 95—73.
- Salladay, Mark, and C. F. Jones. Wrapping material roll package and roll support therefor. 3,352,410, 11-14-67, Cl. 206—52
- Salminen, Wilho M., to Eastman Kodak Co. Photographic element comprising polycarbonate resin coated paper. 3,352,679, 11-14-67, Cl. 96—77.
- Salmon, Louis A. Municipal incinerator. 3,352,259, 11-14-67, Cl. 110—7.
- Sanders Associates, Inc.: *See*—
  - Boothroyd, Howard W., Ferry, Buzzell, and Nachazel, Thomas W. 3,352,163.
  - Murch, Charles J., Jr. 3,352,730.
- Sanders, Richard M.: *See*—
  - Oberg, Paul, Sanders, and Tolman. 3,353,086.
- Sandin, Raymond C., to General Electric Co. Connecting structure. 3,352,615, 11-14-67, Cl. 312—11[illegible].
- Sandoz, Ltd.: *See*—
  - Boissonnas, Roger, Huguenin, Berde, and Schlach. 3,352,843.
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- Sanet, Edward. Lubricant dispenser. 3,352,623, 11-14-67, Cl. 401—183.
- Santelmann, William F., Jr., to Walden Electronics Corp. Regulated power supply having separate regulators responsive to different errort signal frequency components. 3,353,080, 11-14-67, Cl. 321—2.
- Sanyo Electric Co., Ltd., and Tokyo Sanyo Electric Co., Ltd.: *See*—
  - Gonmori, Osamu. 3,352,976.
- Sara, Raymond V., to Union Carbide Corp. Method for induction sintering refractory carbide articles. 3,352,951, 11-14-67, Cl. 264—25.
- Sarec S.A.: *See*—
  - Gazave, Jean M. 3,352,754.
- Sasaki, Hiromu, to Matsushita Electric Industrial Co., Ltd. Production of lead titanate and lead zirconate for ceramic bodies. 3,352,632, 11-14-67, Cl. 23—51.
- Satch, Tatsuo, and G. Hirata, to The Yokoham Rubber Co., Ltd. Method of making hollow ring gaskets. 3,352,006, 11-14-67, Cl. 29—512.
- Satoo, Akira: *See*—
  - Nakamura, Hiromichi, Katoo, Minejima, Shimizu, Satoo, Nozaki, and Doochi. 3,352,641.
- Sattleiberg, Stanley E., and Y. A. Selcukoglu, to Chicago Bridge & Iron Co. Internal suspended insulating ceiling for storage tanks. 3,352,443, 11-14-67, Cl. 220—9.
- Sawazaki, Norikazu, T. Honma, and M. Yagi, to Tokyo Shibaura Electric Co., Ltd. Television telephone system utilizing one telephone line. 3,352,966, 11-14-67, Cl. 178—6.
- Sawyer, Elbert M., to General Motors Corp. Alternator power supply system with speed responsive rectification altering means. 3,353,090, 11-14-67, Cl. 322—[illegible]0.
- Sayigh, Adnan A. R., and H. Ulrich, to The Upjohn Co. Novel 4-(organosulfonyl) semicarbazides. 3,352,909, 11-14-67, Cl. 260—554.
- Schachter, Friedrich. Ball point pens. 3,352,622, 11-14-67, Cl. 401—14[illegible].
- Schalch, Walter: *See*—
  - Boissonnas, Roger, Hugenin, Berde, and Schalch. 3,352,843.
- Schellhammer, Carl-Wolfgang, Karl-Walter Muller, and R. Raue, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of 7-amino-3-phenyl-coumarine compounds. 3,352,885, 11-14-67, Cl. 260—343.2.
- Schering, A.G.: *See*—
  - Freund, Heinz E., F. Arndt, and R. Rusch. 3,352,663.
- Schering Corp.: *See*—
  - Meinwald, Jerrold. 3,352,920.
  - Meinwald, Jerrold. 3,352,922.
  - Meinwald, Jerrold. 3,352,923.
- Schertz, Arthur R., 50% to Eva N. Schertz. Fast-action nut assembly. 3,352,341, 11-14-67, Cl. 151—19.
- Schertz, Eva N.: *See*—
  - Schertz, Arthur R. 3,352,341.
- Schibler, Luzius: *See*—
  - Toepfl, Rosemarie, Schibler, and Maeder. 3,352,838.
- Schinnerer, Thomas, H. Umbach, E. Frobel (deceased by, Elise and Ernst G. Frobel, heirs), to Dynamit Nobel Aktiengesellschaft. Cartridge case. 3,352,239, 11-14-67, Cl. 102—43.
- Schlechter, Alfred, to Firma E. Wolff Maschinenfabrik u. Eisengiesserei. Drag-line winch. 3,352,540, 11-14-67, Cl. 254—185.
- Schlosser, Francis G.: *See*—
  - Pfaff, Henry C., Jr., and Schlosser. 3,353,017.
- Schluderberg, Donald C., and R. W. Carlson, to The Babcock & Wilcox Co. Nuclear reactor system. 3,352,365, 11-14-67, Cl. 176—55.
- Schlumberger Technology Corp.: *See*—
  - Lebourg, Maurice P. 3,352,362.
  - Urbanosky, Harold J. 3,352,361.

- Schmidt, Hans, to Clairtone Sound Corp., Ltd. Visual indicator. 3,352,277, 11-14-67, Cl. 116—114.
- Schmidt, Paul, M. Wilhelm, K. Eichenberger, and E. Schumacher, to CIBA Corp. Pyridines and poultry feedstuffs and additives thereof containing pyridines. 3,352,683, 11-14-67, Cl. 99—2.
- Schmitt, Karl, J. Disteldorf, and G. Keller, to Scholven-Chemie Aktiengesellschaft. Polyamides from 3-amino-methyl-3,5,5-trialkyl-1-cyclohexylamine. 3,352,831, 11-14-67, Cl. 260—78.
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- Schneider, Jean-Claude, to Fabrique d'Horlogesie Chs. Tissot et Fils S.A. Ringing watch piece. 3,352,102, 11-14-67, Cl. 58—53.
- Schneider, Sol: *See*—
  - Buffa, Anthony J., and Schneider. 3,353,059.
- Schobinger, Ulrich: *See*—
  - Christoffel, Cla, Borel, Blumenthal, Schobinger, and Mueller. 3,352,848.
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- Scholes, Addison B.: *See*—
  - Lyon, Kenneth C., Pickard, and Scholes. 3,352,708.
- Scholl, Edward C.: *See*—
  - Biskup, John, Migdol, and Scholl. 3,352,700.
- Scholten's, W.A., Chemische Fabrieken N.V.: *See*—
  - Moes, Geert, and Zijderveld. 3,352,705.
- Scholven-Chemie Aktiengesellschaft: *See*—
  - Schmitt, Karl, and Gude. 3,352,830.
  - Schmitt, Karl, Disteldorf, and Keller. 3,352,831.
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  - Schmitt, Karl, and Gude. 3,352,835.
  - Schmitt, Karl, and Gude. 3,352,836.
  - Schmitt, Karl, Disteldorf, and Hubel. 3,352,913.
  - Schmitt, Karl, and Gude. 3,352,942.
- Schopf, Albert: *See*—
  - Meyer, Gerhard, Siggel, Schopf, and Magerlein. 3,352,816.
  - Meyer, Gerhard, Siggel, Schopf, and Magerlein. 3,352,817.
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- Schucht, Peter, to Siemens Aktiengesellschaft. Resonant circuit turnable over a large frequency range. 3,353,126, 11-14-67, Cl. 334—78.
- Schueler, Marlin A.: *See*—
  - Lendahl, Dickey S., and Schueler. 3,352,234.
- Schulte, Elwood V., to Koppers Co., Inc. Explosive shattering method and apparatus. 3,352,498, 11-14-67, Cl. 241—1.
- Schultz, Everett M., and J. M. Sprague, to Merck & Co., Inc. (α-Alkylideneacyl) phenyl-alkanoic acids. 3,352,903, 11-14-67, Cl. 260—515.
- Schulz, John W.: *See*—
  - Swatek, Robert C., Schulz, and Taquino. 3,352,332.
- Schulz Tool and Mfg. Co.: *See*—
  - Swatek, Robert C., Schulz, and Taquino. 3,352,332.
- Schumacher, Eduard: *See*—
  - Schmidt, Paul, Wilhelm, Eichenberger, and Schumacher. 3,352,683.
- Schuster, Alfred, to Union-Teppich-Fabrik Walter Poser & Co. KG. Method for removing floating yarn ends from a pile fabric. 3,351,990, 11-14-67, Cl. 26—15.
- Schwartz, Anthony M., and C. A. Rader, to Gillette Research Institute, Inc. Method of degrading polysaccharides using light radiation and a water-soluble metal or nitrogen base salt of nitrous and hyponitric acid. 3,352,773, 11-14-67, Cl. 204—160.1.
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- Schwartz, Louis E. Audio teaching device. 3,352,027, 11-14-67, Cl. 35—8.
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- Schwarzkopf, August, to Windmoller & Holscher. Supply block consisting of commodity bags made from plastic material. 3,352,411, 11-14-67, Cl. 206—57.
- Schweitzer, Otto R., to Bendix Corp. Vacuum deposit device including means to register and manipultae mask and substrate elements. 3,352,282, 11-14-67, Cl. 118—49.
- Schwertz, Frederick A., and E. F. Mayer, to Xerox Corp. Thin film printed circuit. 3,352,731, 11-14-67, Cl. 156—11.
- Scidmore, Wright H., and R. J. Wolfe, to United States of America, Army. Wide angle eyepiece with large eye relief. 3,352,620, 11-14-67, Cl. 350—220.
- Scott Paper Co.: *See*—
  - Powers, William R. 3,352,802.
- Scovill Mfg. Co.: *See*—
  - Kilmarx, Louis E. 3,352,531.
  - Tarullo, Pasquale R. 3,351,987.
- Scragg, Ernest, & Sons (Holdings) Ltd.: *See*—
  - Parker, Walter. 3,352,505.
- Scully, John W., to Pneumatic Scale Corp., Ltd. Packaging machine and control means therefor. 3,352,281, 11-14-67, Cl. 118—12.
- Sear, Joseph. Stencil and pad inker chase for a tag printing machine. 3,352,235, 11-14-67, Cl. 101—125.
- Searle, G. D., & Co.: *See*—
  - Dornfeld, Clinton A. 3,352,866.
  - Klimstra, Paul M. 3,352,853.
  - Laos, Ivar. 3,352,855.
- Sears, Roebuck & Co.: *See*—
  - Brazier, Jack H. 3,352,272.
- Secon Metals Corp.: *See*—
  - Cohn, Eugene, De Forest, and Frick. 3,352,009.
- Seegmiller, Henry L. B., to United States of America, Administrator of the National Aeronautics and Space Administration. Inertia diaphragm pressure transducer. 3,352,157, 11-14-67, Cl. 73—398.
- Seeley, William G., H. V. May, and J. H. Martin, to Sprague Electric Co. Packing folder for electrical components. 3,352,415, 11-14-67, Cl. 206—78.
- Seery, Robert F., to Julius Blum & Co., Inc. Stanchion assembly. 3,352,084, 11-14-67, Cl. 52—721.
- Sehgal, Surendra N.: *See*—
  - Vezina, Claude, Sehgal, and Singh. 3,352,760.
- Seidel, William B., to The Cincinnati Milling Machine Co. Preloading mechanism for machine tool spindle bearings. 3,352,611, 11-14-67, Cl. 308—189.
- Seismos G.m.b.H.: *See*—
  - Krey, Theodor. 3,352,375.
- Sekmakas, Kazys, to Desoto, Inc. Production of hydroxy-containing copolymers by slurry copolymerization of dicarboxylic acids in the presence of a monoepoxide. 3,352,827, 11-14-67, Cl. 260—72.
- Selcukoglu, Yuksel A.: *See*—
  - Sattleiberg, Stanley, and Selcukoglu. 3,352,443.
- Selleck, Edward J. Safety hub cap and locking device. 3,352,133, 11-14-67, Cl. 70—259.
- Senco Products, Inc.: *See*—
  - Racer, James H. 3,352,474.
- Serratore, Joseph: *See*—
  - Vander Linden, Ronald, and Serratore. 3,352,940.
- Shade, Donald: *See*—
  - Zunich, Alexander, Shade, and Mulec. 3,352,742.
- Shaffer, John R., to Western Electric Co., Inc. Assembling apparatus. 3,352,001, 11-14-67, Cl. 29—203.
- Shandon Scientific Co. Ltd.: *See*—
  - Barron, James O., Coomes, and Bone. 3,352,221.
- Shapland, James T., to United States Steel Corp. Refractory closure member for bottom pour vessels. 3,352,465, 11-14-67, Cl. 222—512.
- Shashoua, Fred E., to Radio Corp. of America. Helical scan transducer apparatus utilizing time sharing head to minimize distortion during edge changeover. 3,352,977, 11-14-67, Cl. 179—100.2.
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- Sheehan, John T.: *See*—
  - Bodanszky, Miklos, and Sheehan. 3,352,881.
- Shell Oil Co.: *See*—
  - Marr, John A. 3,352,952.
  - Slott, Robert S. 3,352,936.
  - Stilleboroer, Cornelis. 3,352,090.
  - Van Eek, Wouter H. 3,352,357.
  - Zarker, Keith E. 3,352,631.
- Shen, Tsung-Ying, W. V. Ruyle, and R. L. Bugianesi, to Merck & Co., Inc. 6-Aza-2'-deoxyuridines. 3,352,849, 11-14-67, Cl. 260—211.5.
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- Sheppard, Francis E., to Rolls-Royce Ltd. Bogie with elastomerically sprung bolster. 3,352,255, 11-14-67, Cl. 105—197.
- Sherlock, Jack G., and J. R. Reames, to United States of America, Navy. Erosion gage. 3,352,149, 11-14-67, Cl. 73—86.
- Shields, Eugene H. Cushioned coping for swimming pool walls. 3,351,958, 11-14-67, Cl. 4—172.
- Shields, Sebough S., to N. S., and R. V. Abdalian. Dry cleaning solvent purifying apparatus. 3,352,763, 11-14-67, Cl. 202—200.
- Shimizu, Hiroshi: *See*—
  - Nakamura, Hiromichi, Katoo, Minejima, Shimizu, Satoo, Nozaki, and Doochi. 3,352,641.
- Shirasu, Kazuo: *See*—
  - Ohi, Reiichi, and Shirasu. 3,352,681.
- Shoemaker, Robert L. Slide film advance mechanisms. 3,352,468, 11-14-67, Cl. 226—47.
- Sibley, Clifton B., to National Research Corp. Shielded filament assembly for orbiting electron type vacuum pump. 3,353,055, 11-14-67, Cl. 313—276.

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- Sickinger Hans Co.: *See—*
  - Lyssy, Georges H. 3,352,146.
- Siegel, Richard S., to United States of America, Atomic Energy Commission. Process for producing $N_2O_5.11.8HF$. 3,352,646, 11–14–67, Cl. 23—356.
- Siegfred, Hans: *See—*
  - Jorgensen, Svend E., and Siegfred. 3,352,211.
- Siemens Aktiengesellschaft: *See—*
  - Gammel, Josef. 3,353,110.
  - Schofer, Rudolf, and Fenner. 3,352;713.
  - Schucht, Peter. 3,353,126.
  - Walter, Heinz F., and Muller. 3,352,968.
- Siemens & Halske Aktiengesellschaft Berlin and Munich: *See—*
  - Abel, Konrad. 3,353,031.
  - Bedenstein, Camillo. 3,352,973.
  - Bodenstein, Camillo. 3,352,973.
- Siggel, Erhard: *See—*
  - Meyer, Gerhard, Siggel, Schopf, and Magerlein. 3,352,816.
  - Meyer, Gerhard, Siggel, Schopf, and Magerlein. 3,352,817.
  - Meyer, Gerhard, Siggel, Schopf, and Magerlein. 3,352,818.
- Signouret, Jean-Baptiste, to Societe Nationale des Petroles d'Aquitaine. Sulphur-containing resinous products and their preparation. 3,352,837, 11–14–67, Cl. 260—79.
- Sillick, William E.: *See—*
  - Perlowski, John S., and Sillick. 3,352,638.
- Silverman, Meyer S., to Pennsalt Chemicals Corp. Bismuth diselenide and a method for its preparation. 3,352,640, 11–14–67, Cl. 23—204.
- Silverstein, Abraham, to United States of America, Navy. High ratio vacuum tube input transformer. 3,353,130, 11–14–67. Cl. 336—82.
- Simon, Hans. Cable clamp. 3,352,961, 11–14–67, Cl. 174—65.
- Simmons, Robert C.: *See—*
  - Morris, William J., and Simmons. 3,352,613.
- Simnad, Massoud T.: *See—*
  - Dee, John B., and Simnad. 3,352,757.
- Sinclair Research, Inc.: *See—*
  - De Vries, Donald L., and Ryan. 3,352,927.
- Singer Co., The: *See—*
  - Adams, Kenneth D., and Kay. 3,352,263.
  - Brandriff, Robert C., and Pickett. 3,352,267.
  - Jaffe, Wolfgang. 3,353,044.
  - Mishcon, Sam. 3,352,128.
- Singh, Kartar: *See—*
  - Venzina, Claude, Sehgal, and Singh. 3,352,760.
- Siryj, Bohdan W., to United States of Amreica, Navy. Multiple variable switcher. 3,353,036, 11–14–67, Cl. 307—149.
- Sisson, James C., E. C. Sparrow, Jr., P. N. Eckles, F. H. Meissner, and W. A. Burnham, to Aerojet-General Corp. Brazing furnace. 3,353,005, 11–14–67, Cl. 219—411.
- Skalla, Norbert F.: *See—*
  - Leitner, Karl, Miaker, Moll, and Skalla. 3,352,702.
- Skarstrom, Charles W.: *See—*
  - Biller, William F., and Skarstrom. 3,352,294.
- Skidum, John D.: *See—*
  - Stevens, Joseph L., Skidum, Hughes, and H. R. 3,352,353.
- Skiera, Heinz, to Veb Druckmaschinenwerke Leipzig. Drive means for welding blades in welding apparatus. 3,352,171, 11–14–67, Cl. 74—393.
- Skinner, Ralph L., Sr., to Renniks Corp. Seals. 3,352,127, 11–14–67, Cl. 64—17.
- Slavin, Peter E., to Intelligent Instruments, Inc. Mount for electronic tubes. 3,353,069, 11–14–67, Cl. 317—101.
- Slott, Robert S., to Shell Oil Co. Separation process. 3,352,936, 11–14–67, Cl. 260—677.
- Slusser, Benjamin I., to Hurr-I-Cane Awning Shutter Co., Inc. Water seal for roof construction. 3,352,077, 11–14–67, Cl. 52—469.
- Small, Frederick B.: *See—*
  - Robertson, Charles A., and Small. 3,353,013.
- Smalstig, Harold R.: *See—*
  - Bruce, George B., and Smalstig. 3,352,159.
- Smith, A. O., Corp.: *See—*
  - Maynard, John T. 3,353,078.
- Smith, Archibald H. Methods of making three dimensional contoured articles from nonwoven fabrics of fibrous materials. 3,352,954, 11–14–67, Cl. 264—90.
- Smith, Charles W.: *See—*
  - Paul, Albert E., and Smith. 3,353,070.
- Smith, David W. Method of gluing or regluing a joint. 3,352,336, 11–14–67, Cl. 144—310.
- Smith, Geoffrey, to Polymark (Holdings) Ltd. Laundry washing machines. 3,352,131, 11–14–67, Cl. 68—58.
- Smith, Harold H., to American Motors Corp. Refrigerator adjustable shelf. 3,352,431, 11–14–67, Cl. 211—176.
- Smith, Herbert Q., to Pennsalt Chemical Corp. Defoliation of plants with fatty alkyl isothiocyanates. 3,352,661, 11–14–67, Cl. 71—72.
- Smith, James L.: *See—*
  - Harrington, Robert C., Jr., and Smith. 3,352,735.
- Smith, Lowell R., and A. J. Speziale, to Monsanto Co. Trans-1,2,3-cyclopropanetricarboxamides and their synthesis. 3,352,910, 11–14–67, Cl. 260—557.
- Smith, Robert B., and W. E. Garwood, to Mobil Oil Corp. Porous synthetic ion exchange catalysts and preparation thereof. 3,352,800, 11–14–67, Cl. 260—2.2.
- Smith, Russell L.: *See—*
  - Lithgo, William, Roberts, Smith, and Wills. 3,352,747.
- Smith, Vincent K.: *See—*
  - Turk, James R. 3,353,068.
- Smith, William C.: *See—*
  - Domicone, Joseph J., and Smith. 3,352,703.
- Smull, Harold, to Universal Container Corp. Method of cleaning used steel drums of organic residues. 3,352,723, 11–14–67, Cl. 148—6.15.
- Soboczenski, Edward J., to E. I. du Pont de Nemours and Co. 3,5-disubstituted uracils. 3,352,863, 11–14–67, Cl. 260—260.
- Societa Nazionale Industria Applicazioni Viscosa S.p.A., SNIA: *See—*
  - Palvarini, Attilio, Horak, and Milizia. 3,352,945.
- Societe d'Etudes de Machines Thermiques: *See—*
  - Kuhn, Karl. 3,352,292.
- Societe d'Etudes et de Realisations d'Installations de Mesure (S.E.R.I.M.): *See—*
  - Fouretier, Georges L. 3,352,150.
- Societe d'Instrumentation Schlumberger: *See—*
  - Penet, Pierre M. 3,352,155.
- Societe des Accumulateurs Fixes et de Traction (Societe Anonyme): *See—*
  - Lecouffe, Yves J. F. 3,352,721.
- Societe Fichet Societe Anonyme: *See—*
  - Lett, Guy. 3,352,134.
- Societe Generale du Vide: *See—*
  - Aupoix, Marcel J. P. 3,352,321.
- Societe Nationale des Petroles d'Aquitaine: *See—*
  - Signouret, Jean-Baptiste. 3.352,837.
- Sodderland, George A., and A. J. Solar, to Northern Electric Co. Ltd. Electrical grounding clamp. 3,353,145, 11–14–67, Cl. 339—249.
- Sola Basic Industries, Inc.: *See—*
  - Kort, Hans A. 3,352,509.
- Solar, Allan J.: *See—*
  - Sodderland, George A., and Solar. 3,353,145.
- Solar Thomson Engineering Co. Ltd.: *See—*
  - Thomson, Charles. 3,352,408.
- Solomon, Murray: *See—*
  - Honig, William M., Christopher, and Solomon. 3,353,119.
- Somero, Leonard A. Electric heating unit. 3,353,003, 11–14–67, Cl. 219—341.
- Sorensen, Elo, to Carmo Aktieselskab. Apparatus for handling objects. 3,352,402, 11–14–67, Cl. 198—38.
- Sorgenti, Harold A., to The Atlantic Refining Co. Isomerization of 2-phenyl alkanes. 3,352,933, 11–14–67, Cl. 260—668.
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- Southern Machine Co., Inc.: *See—*
  - Cobble, James A., Sr., and J. A. Cobble, Jr. 3,352,265.
- Southwest Welding & Mfg. Co.: *See—*
  - Dascanio, Adolfo. 3,352,461.
- Southwestern Engineering Co.: *See—*
  - Swallow, Douglas M. 3,352,418.
- Spain, Roy C., to National Lock Co. Plate tumbler plugs. 3,352,135, 11–14–67, Cl. 70—375.
- Sparks, Allen K., to Universal Oil Products Co. Oxidation of mercaptans. 3,352,777, 11–14–67, Cl. 208—206.
- Sparrow, Edward C., Jr.: *See—*
  - Sisson, James C., Sparrow, Eckles, Meissner, and Burnham. 3,353,005.
- Spencer, John H., to General Electric Co. Auxiliary terminal for meter sockets. 3,353,142, 11–14–67, Cl. 339—125.
- Sperry Rand Corp.: *See—*
  - Daniels, Howard L. 3,353,167.
  - Ehrman, Carl W. 3,353,156.
  - Halverson, Richard P. 3,353,169.
  - Oberg, Paul, Sanders, and Tolman. 3,353,086.
  - Procter, Edward C. 3,352,093.
- Spery, Joseph C. Wrapper type can carrier and improved tab construction therefor. 3,352,413, 11–14–67, Cl. 206—65.
- Speth, Sebastian, to Grunzweig & Hartmann A.G. Blast nozzle for forming silicate fibers. 3,352,653, 11–14–67, Cl. 65—1.
- Speziale, Angelo J.: *See—*
  - Smith, Lowell R., and Speziale. 3,352,910.
- Spragg, Hal R., L. A. Price, and J. M. Wooldridge, to Universal Match Corp. Atomizer and method for disseminating toxicants. 3,352,238, 11–14–67, Cl. 102—39.
- Sprague Electric Co.: *See—*
  - Peck, David B., and Markarian. 3,353,072.
  - Seeley, William G., May, and Martin. 3,352,415.
- Sprague, James M.: *See—*
  - Bicking, John B., and Sprague. 3,352,904.
  - Schultz, Everett M., and Sprague. 3,352,903.
- Spunize Co. of America, Inc.: *See—*
  - Rosenstein, Nathan and A. J. 3,351,993.
- Squibb, E. R., & Sons. Inc.: *See—*
  - Bodanszky, Miklos, and Sheenhan. 3,352,881.
  - Diassi, Patrick A., and Krakower. 3,352,854.
  - Lerner, Leonard J. 3,352,753.
- Staar, Marcel J. H. Frame for supporting a transparency and sound reproducing material. 3,352,204, 11–14–67, Cl. 88—28.
- Stabilac Pty. Ltd.: *See—*
  - Wentworth, Fitzwilliam A. 3,353,094.
- Stafford, William L.: *See—*
  - Pusch, Walter G., and Stafford. 3,352,743.
- Stapfer, Max M.: *See—*
  - Du Temple de Rougemont, Godefroy M. C., and Stapfer. 3,352,980.
- Stancliffe, Floyd S. Bumper with impact attachment. 3,352,588, 11–14–67, Cl. 293—67.
- Standard Oil Co.: *See—*
  - Kawahara, Fred K., and Brown. 3,352,948.
  - Kawahara, Fred K., and Brown. 3 352,949.
  - Kimoto, Walter I., Swakon, and Field. 3,352,900.

- Standard Oil Co. (Indiana): *See—*
  - Schoen, William, and Ridgway. 3,352,941.
  - Shepard, John W., Peters, and Juveland. 3,352,795.
- Standard Oil Co. (Ohio), The: *See—*
  - Greene, Janice L., and Fuller. 3,352,886.
  - Tyler, Clarence M. 3,352,764.
- Stanford Research Institute: *See—*
  - Bliss, James C., and Crane. 3,353,027.
- Starbuck, Herman S. Iodine vapor generator and method of using it to treat and disinfect a fluid. 3,352,628, 11–14–67, Cl. 21—58.
- Staves, William A. E.: *See—*
  - Porges, George E. W., and Stáves. 3,352,197.
- Steele, Eugene K.: *See—*
  - Nichols, Frank S., and Steele. 3,352,711.
- Stein, Charles H., and W. R. Krause, to Keuffel & Esser Co. Material and method for making stencil masters. 3,352,728, 11–14–67, Cl. 156—3.
- Stein, Jack J.: *See—*
  - Chien, Robert T., and Stein. 3,353,155.
- Stemmler, Herbert, to Brown, Boveri & Cie, Aktiengesellschaft. Apparatus for producing frequency and amplitude dependent control voltages. 3,353,081, 11–14–67, Cl. 321—6.
- Stenkvist, Sven-Einar, and B. Hanås, to Allmanna Svenska Elektriska Aktiebolaget. Degassing of melts. 3,352,665, 11–14–67, Cl. 75—49.
- Sterling Automotive Mfg. Co., Inc.: *See—*
  - Cheris, Maynard H., Bigos, and Baruffi. 3,351,989.
- Stetson-Ross Machine Co., Inc.: *See—*
  - Zuercher, Warren H. 3,352,434.
- Stevens, Graham J. L.: *See—*
  - Mason, Frederick P., and Stevens. 3,353,038.
- Stevens, Howard C., Jr., to Dresser Industries, Inc. Spring applied, one way disc brake. 3,352,384, 11–14–67, Cl. 188—82.7.
- Stevens, Joseph L.: *See—*
  - Stevens, Thomas D., and Hughes. 3,352,353.
- Stevens, Thomas D., and R. B. Hughes, ¼ each to J. L. Stevens, J. D. Skidum, F. J. and R. B. Hughes. Automobile accessory apparatus. 3,352,353, 11–14–67, Cl. 165—41.
- Stewart Bolling & Co., Inc.: *See—*
  - Matsuoka, James T. 3,352,542.
- Stewart, Francis M., III. Combination fishing lure and hook guard. 3,352,051, 11–14–67, Cl. 43—42.1.
- Stewart, Robert F., to United States of America, Interior. Apparatus and process for continuous measurement of moisture in moving coal by neutron thermalization. 3,353,021, 11–14–67, Cl. 250—83.1.
- Stilleboroer, Cornelis, to Shell Oil Co. Liquid-gas separator. 3,352,090, 11–14–67, Cl. 55—201.
- Stinnett, Thomas A. Digital frequency standard. 3,353,113, 11–14–67, Cl. 331—55.
- Stitt, Robert I., to SMC Corp. Mechanical connection. 3,352,343, 11–14–67, Cl. 151—31.
- Stockbuildings Ltd.: *See—*
  - Ffiske, Gerald D. 3,352,225.
- Stockdale, Norman S., to International Business Machines Corp. Control circuitry for an electronic curve follower. 3.353,024, 11–14–67, Cl. 250—202.
- Street, Alfred D.: *See—*
  - Fehling, Hans R., and Street. 3,352,621.
- Strick, Rudolf P., to H. v.d. Benken. Air operated timer. 3,352,322, 11–14–67, Cl. 137—624.11.
- Strong, John G. Floor form structure. 3,352,079, 11–14–67, Cl. 52—577.
- Struble, Glenn E., to Diamond International Corp. Container carrier. 3.352,451, 11–14–67, Cl. 220—102.
- Strycker, Stanley J., to The Dow Chemical Co. Haloacetanilides. 3,352,911, 11–14–67, Cl. 260—562.
- Stryker, Seymour F., to Air-Mite Devices, Inc. Control valve structure and linkage therefor. 3,352,324, 11–14–67, Cl. 137—625.69.
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- Stubbs, Peter W. R., R. V. Woodward, and C. Ollerenshaw, to The Rover Co. Ltd. Electromechanical linear velocity transducer. 3,353,131, 11–14–67, Cl. 336—130.
- Sturis, Tallvaldis: *See—*
  - Hayes, Edward J., and Sturis. 3,352,382.
- Sturm, Walter, to Quarzlampen Gesellschaft m.b.H. Apparatus for testing a material's reaction to illumination and humidity with capacitor-type humidity detector. 3,353,025, 11–14–67, Cl. 250—215.
- Stute, Carlton F., to Admiral Corp. Escutcheon mounting clip. 3,352 983, 11–14–67, Cl. 52—716.
- Sugarman, Jeal, and F. E. Woodward, to General Aniline & Film Corp. Process and compositions for dry cleaning. 3,352,790, 11–14–67, Cl. 252—171.
- Sugg, William W.: *See—*
  - Brink, Joseph A., Jr., and Sugg. 3,352,778.
- Sun Oil Co.: *See—*
  - Bennett, John D. 3,352,363.
  - Bennett, John D., Chaney, Jones, and McCaleb. 3,353,020.
- Sunderland, Luther D.: *See—*
  - Dudek, Raymond J., Mallery, and Sunderland. 3,353,106.
- Sustrich, William H., and G. Francis. Roll bar explosive cutter mechanism. 3,352,459, 11–14–67, Cl. 222—85.
- Sutliff, Meryl W.: *See—*
  - Sutliff, Wayne N. and M. W. 3,352,359.
- Sutliff, Wayne N. and M. W., to St. Louis Janitor Supply Co., d.b.a., Navy Brand Mfg. Co. Apparatus for steam treating a deep well. 3,352,359, 11–14–67, Cl. 166—53.
- Sutter, Ormond S., to Lok-Products Co. Fixture for use in a suspended grid ceiling system. 3,352,071, 11–14–67, Cl. 52—28.
- Suzuki, Haruyoshi, and K. Ishizaki, to Yawata Welding Electrode Co., Ltd. Method for electroslag welding. 3,352,993, 11–14–67, Cl. 219—73.
- Svendsen, Svend E. B. Convertible chair and table. 3,352,602, 11–14–67, Cl. 297—130.
- Svenska Cellulosa Aktiebolaget: *See—*
  - Malm, Gustaf E. 3,352,745.
- Swakon, Edward A.: *See—*
  - Kimoto, Walter I., Swakon, and Field. 3,352,900.
- Swallow, Douglas M., to Southwestern Engineering Co. Removable separator screen. 3,352,418, 11–14–67, Cl. 209—403.
- Swanson, Allan R., to Clark Equipment Co. Power operated apron for tractor scrapers. 3,352,037, 11–14–67, Cl. 37—129.
- Swanson, Roger I. Pre-stressed snow coaster. 3,352,567, 11–14–67, Cl. 380—12.
- Swatek, Robert C., J. W. Schulz, and T. P. Taquino, to Schulz Tool and Mfg. Co. Probe with sliding sealed nozzle. 3,352,332, 11–14–67, Cl. 141—349.
- Sweden Freezer Mfg. Co.: *See—*
  - Austin, Avery J., and Patch. 3,352,779.
  - Cary, James E. 3,352,421.
- Sweet, Clifton D., Jr.: *See—*
  - Martin, Warner W., and Sweet. 3,352,297.
- Swenson, Julius A. Writing pad. 3,352,572, 11–14–67, Cl. 283—45.
- Swineford, John W., to Goss Gas, Inc. Combined pressure regulating and cartridge piercing assembly. 3,352,456, 11–14–67, Cl. 222—5.
- Swyt, Joseph, to Radio Corp. of America. Wire combing. 3,352,331, 11–14–67, Cl. 140—147.
- Syeles, Albert M.: *See—*
  - Wang, Frederick E., Syeles, Clark, and Buehler. 3,352,722.
- Szmuszkovicz, Jacob, to The Upjohn Co. 2-(p-alkoxyphenyl)-3-substituted indoles. 3,352,856, 11–14–67, Cl. 260—240.
- TDK Electronics Co., Ltd.: *See—*
  - Fujiwara, Shinobu, Hayashi, and Kawakami. 3,352,697.
- TRW, Inc.: *See—*
  - Rubin, Robert A. 3,353,092.
- Taber, Robert C., and L. G. S. Brooker, to Eastman Kodak Co. Sensitizing and filter dyes for photographic elements. 3,352,680, 11–14–67, Cl. 96—84.
- Tajima, Tatsuya: *See—*
  - Nishio, Fumihiko, Oi, and Tajima. 3,352,678.
- Takashima, Seiji: *See—*
  - Yai Toshio, and Takashima. 3,352,998.
- Takeda Chemical Industries, Ltd.: *See—*
  - Hashii, Eitaro. 3,352,883.
- Talmont, Xavier: *See—*
  - Faugeras, Pierre, Michel, and Talmont. 3,352,645.
- Tanaka, Koichi. Integrating conveyor scale with misalignment prevention arrangement. 3,352,371, 11–14–67, Cl. 177—16.
- Tanaka, Murao: *See—*
  - Torii, Yasunosuke, and Tanaka. 3,353,075.
- Taniguchi, Kanji, M. Asada, and R. Sakimoto, to Nippon Soda Kabushiki Kaisha. Substituted benzohydroxamates. 3,352 899, 11–14–67, Cl. 260—453.
- Tanizaki, Yoshie: *See—*
  - Ando, Noboru, Tanizaki, and Hasegawa. 3,352,643.
- Taquino, Thomas P.: *See—*
  - Swatek, Robert C., Schulz, and Taquino. 3,352,332.
- Tarullo, Pasquale R., to Scovill Mfg. Co. Post for attaching snap fastener stud elements. 3,351,987, 11–14–67, Cl. 24—219.
- Technion Research and Development Foundation Ltd.: *See—*
  - Berk, Zeki. 3,352,693.
- Teichmann, Heinrich, to M.A.N. Turbo G.m.b.H. Planetary gearing with a movable planetary carrier. 3,352,172, 11–14–67, Cl. 74—410.
- Tekkosha Co. Ltd.: *See—*
  - Adachi, Kazuo, Hoshikawa, and Ohira. 3,352,867.
- Teledyne, Inc.: *See—*
  - Olson, Frank A., Buchmiller, and Yaeger. 3,353,118.
- Teleflex Inc.: *See—*
  - Collins, Glenn A., Jr., and Phelps. 3,352,814.
- Tell-A-Matic, Inc.: *See—*
  - Brown, David D., and Manker. 3,352,972.
- Temple, Hiram E., to Baker Perkins Inc. Ribbon burner and electrode assembly. 3,352,346, 11–14–67, Cl. 158—115.
- Ten Hoeve, Edward: *See—*
  - Ten Hoeve, Marinus, De Korte, and Ten Hoeve, E. 3,352,039.
- Ten Hoeve, Marinus, P. De Korte, and E. Ten Hoeve. Display holders. 3 352,039, 11–14–67, Cl. 40—16.
- Tennison, Alfred A., Jr. Anti-splash roof valley. 3,352,649, 11–14–67, Cl. 29—190.
- Tensor Corp., The: *See—*
  - Lockwood, Glynn H. 3,352,278.
- Ter Meer, Opie C.: *See—*
  - Olson, Merrell K., and Ter Meer. 3,352,487.
- Texas Instruments Inc.: *See—*
  - Doherty, John, Jr. 3,352,986.
  - Rockwell, Don W. 3,353,151.
- Textron Industries, Inc.: *See—*
  - Carlson, Raymond H. 3,352,190.
- Thams Hans. Plastic window and process for making same. 3,352,060, 11–14–67, Cl. 49—192.
- Theiler, Werner C. Rotary cutting tool. 3,351,998, 11–14–67, Cl. 29—105.
- Thelander, W. Vincent. Friction clutch. 3,352,393, 11–14–67, Cl. 192—68.
- Theurer, Josef: *See—*
  - Plasser, Franz, and Theurer. 3,352,249.
- Thiem, Darold W. Bottom ring for a hot top. 3,352,530, 11–14–67, Cl. 249—202.

Thiokol Chemical Corp.: *See*—
  Fischer, Edward L. 3,352,495.
  Perry, Donald D., and Castellano. 3,352,914.
Thom, Wenzel W., ½ to C. D. Jones. Railing assembly. 3,352,-541, 11-14-67, Cl. 256—21.
Thomas, Lewis C.: *See*—
  Davis, Claude G., and Thomas. 3,353,158.
Thomas, McKinley B., and W. H. Dalebout, to United States Steel Corp. Inside flash trimmer. 3,352,208, 11-14-67, Cl. 90—24.
Thompson, George E., to Girling Ltd. Vehicle drum brake adjuster. 3,352,383, 11-14-67, Cl. 188—79.5.
Thompson, John S.: *See*—
  Corliss, Duncan S., Keast, and Thompson. 3,352,785.
Thompson, Lawrence C.: *See*—
  McMillian, Thomas, and Thompson. 3,352,144.
Thompson, Lloyd E.: *See*—
  Turner, John F., Ziegler, Thompson, and Jessen. 3,352,-518.
Thomson, Charles, to Solar Thomson Engineering Co. Ltd. Cable belt. 3,352,408, 11-14-67, Cl. 198—201.
Thomson, Ely K., to Continental Carbon Co. Apparatus for shaping bags. 3,352,231, 11-14-67, Cl. 100—90.
Thöner, Robert. Foldable warm air and steam bath assembly. 3,351,956, 11-14-67, Cl. 4—160.
Thorne-Thomsen, Thomas, to Olin Mathieson Chemical Corp. Tube coupling having split ring locking means. 3,352,576, 11-14-67, Cl. 285—169.
Thorsteinsson, John E. B.: *See*—
  Dalzell, James W., and Thorsteinsson. 3,352,490.
Timett Corp.: *See*—
  Ruegger, Richard A. 3,352,100.
Tintex Corp.: *See*—
  Puetzer, Bruno, Mackles, and Finn. 3,352,752.
Toepfl, Rosemarie, L. Schibler, and A. Maeder, to Ciba Ltd. Methylolated urea and melamine etherified with utanol and polyethyleneglycol as emulsion polymerization agents. 3,352,838, 11-14-67, Cl. 260—80.73.
Tokyo Shibaura Electric Co., Ltd.: *See*—
  Hayasi, Syuiti, and Murakami. 3,353,099.
  Saima, Tooru. 3,352,256.
  Sawazaki, Norikazu, Honma, and Yagi. 3,352,966.
  Torii, Yasunosuke, and Tanaka. 3,353,075.
Tolman, Charles H.: *See*—
  Oberg, Paul, Sanders, and Tolman. 3,353,086.
Tomaszek, Edward P., to Avco Corp. Mechanical servo system utilizing cascaded differential toroidal drives. 3,352,168, 11-14-67, Cl. 74—190.5.
Tomlinson, Curtis C., to Weil-McLain Co., Inc. Cast vessel for an electric hot water heating boiler. 3,353,000, 11-14-67, Cl. 219—321.
Toovey, Gerald R.: *See*—
  Michael, Eugene M., and Toovey. 3,352,101.
Torielli, Enea: *See*—
  Lockett, George E., Coast, Coudray, Vitry, and Torielli. 3,352,756.
Torii, Yasunosuke, and M. Tanaka, to Tokyo Shibaura Electric Co., Ltd. Safety device for dynamic braking of electric vehicles. 3,353,075, 11-14-67, Cl. 318—57.
Toriyama, Takeshi: *See*—
  Niki, Akira, Nakayama, and Toriyama. 3,352,485.
Torjo Kogyo Co., Ltd.: *See*—
  Kuroda, Takashi. 3,352,290.
Toscano, Esteban J., to Hughes Aircraft Co. Electrical control system for machine tool device with overshoot correction feature. 3,353,161, 11-14-67, Cl. 340—172.5.
Tournois, Pierre, to CSF-Compagnie General de Telegraphie Sans Fil. Acoustic propagation line for compressing trains of electric waves. 3,353,120, 11-14-67, Cl. 333—30.
Towne, Edmund B.: *See*—
  Guillet, James E., and Towne. 3,352,926.
Toy Development Center, Inc., The: *See*—
  Elwell, Charles A., and Klamer. 3,352,026.
Toyo Spinning Co., Ltd.: *See*—
  Yamadera, Reizo, Ono, and Matsui. 3,352,822.
Toyoda Automatic Loom Works, Ltd.: *See*—
  Niki, Akira, Nakayama, and Toriyama. 3,352,485.
Toyota Motor Co. Ltd.: *See*—
  Goto, Koji. 3,351,975.
Tracy, Gerald T., and R. D. Zenger, to National Can Corp. Aerosol dispensing attachment. 3,352,457, 11-14-67, Cl. 222—52.
Trask, Allen: *See*—
  Walters, Charles E. 3,352,352.
Trimble, Cebern B., to The National Cash Register Co. Electro-optical oscillator. 3,353,116, 11-14-67, Cl. 331—107.
Troxler Electronic Laboratories, Inc.: *See*—
  Lowery, Andrew, Auld, and Faulkner. 3,353,023.
Tsukihoshi Gomu Kabushiki Kaisha (The Moon-Star Rubber Ltd.): *See*—
  Yamaguchi, Hideo. 3,352,032.
Tsutsui, Nobuhiro: *See*—
  Fujita, Yoshimasa, and Tsutsui. 3,352,626.
Tuck, Robert M., to General Motors Corp. Vehicles with plural axles and means to provide maximum tractive effort for each axle at the same speed. 3,352,373, 11-14-67, Cl. 180—44.
Turk, James R., to V. K. Smith. Control box assembly. 3,353,-068, 11-14-67, Cl. 317—99.
Turner, John F., W. F. Ziegler, L. E. Thompson, and A. R. Jessen, to Walter Kidde & Co., Inc. Personnel ejection system for aircraft. 3,352,518, 11-14-67, Cl. 244—122.
Turpin, Bobby G. Invalid lift. 3,351,959, 11-14-67, Cl. 5—83.
Turquois, Rene F. Detonator with adjustable delay and built-in setting device. 3,352,237, 11-14-67, Cl. 102—28.
Twin Disc Clutch Co.: *See*—
  Black, James B., and Adams. 3,352,392.
  Hilpert, Conrad R. 3,352,395.

Tyler, Clarence M., to The Standard Oil Co. Absorption and distillation process for separating crude unsaturated nitriles from acetonitrile with selective solvent recycle. 3,352,764, 11-14-67, Cl. 203—42.
Tyler, Nelson, to NTT Enterprises, Inc. Universal mount. 3,352,521, 11-14-67, Cl. 248—123.
Ugodin, Evgeny G., A. V. Lepsky, and J. V. Kamshitsky, to Vsesojuzny Nauchno-Issledovatelsky Institute Zheleznodolozhnogo Transporta. Automotive continuous action facility for unloading bulk materials. 3,352,400, 11-14-67, Cl. 198—9.
Ulbricht, Walter E., D. R. Yearwood, and N. K. Basile, to J. J. McMullen. System for cooling transporting and warming up double barrier liquefied gas cargo tanks. 3,352,123, 11-14-67, Cl. 62—55.
Ulrich, Henri: *See*—
  Sayigh, Adnan A. R., and Ulrich. 3,352,909.
Umantsev, Victor S., to Zavod Elektroizmeriteljnykh priborov. Printed resistors. 3,351,136, 11-14-67, Cl. 338—308.
Umbach, Hans: *See*—
  Schinnerer, Thomas, Umbach, and Frobel. 3,352,239.
Unarco Industries, Inc.: *See*—
  Beziaj, Frank A. 3,352,595.
Unimark Corp.: *See*—
  Londahl, Dickey S., and Schueler. 3,352,234.
Union Camp Corp.: *See*—
  Link, Martin. 3,352,409.
Union Carbide Corp.: *See*—
  Butler, Thomas E. 3,352,997.
  Sara, Raymond V. 3,352,951.
Union-Teppich-Fabrik Walter Poser & Co. KG.: *See*—
  Schuster, Alfred. 3,351,990.
United Aircraft Corp.: *See*—
  Chase, Terry J. 3,352,412.
  Di Ramio, Victor A. 3,352,609.
United Aircraft of Canada Ltd.: *See*—
  Cox, Norman P., and Ritchie. 3,352,105.
United-Carr Inc.: *See*—
  Kirby, Edward. 3,352,990.
  Wilhelmi, Julius B. 3,351,974.
United Coke and Chemicals Co., Ltd.: *See*—
  Riley, Harry L., and Romanski. 3,352,887.
United Electric Controls Co.: *See*—
  Machado, John S., and Reis. 3,352,987.
United Kingdom Atomic Energy Authority: *See*—
  Lockett, George E., Coast, Coudray, Vitry, and Torielli. 3,352,756.
  Maroudas, Nicholas G. 3,352,503.
United States of America
  Agriculture: *See*—
    Rockland, Louis B., and Metzler. 3,352,687.
    Weiner, Bernard A. 3,352,762.
  Army: *See*—
    Almquist, Nils T. 3,352,536.
    Betz, Robert J., and McAfee. 3,353,034.
    Brown, Karl R. 3,352,189.
    Buffa, Anthony J., and Schneider. 3,353,059.
    Carlon, Hugh R. 3,353,109.
    Draper, Walter S., III. 3,352,206.
    Klute, Charles H. 3,352,198.
    Mohnkern, Gerald L. 3,353,009.
    Scidmore, Wright H., and Wolfe. 3,352,620.
  Atomic Energy Commission: *See*—
    Clites, Philip G. 3,352,991.
    Helton, Dennis M., and Wymer. 3,352,950.
    Johnson, Rudin M. 3,353,097.
    Siegel, Richard S. 3,352,646.
  Interior: *See*—
    Stewart, Robert F. 3,353,021.
  National Aeronautics and Space Administration: *See*—
    Seegmiller, Henry L. B. 3,352,157.
  Navy: *See*—
    Abbott, Frank R. 3,353,040.
    Baker, George W., and Wiseman. 3,352,236.
    Baker, George W., and Wiseman. 3,352,513.
    Birmingham, Henry P., Baldwin, and Perry. 3,353,153.
    Calkins, Dale E. 3,352,274.
    Chaskin, Herbert. 3,352,556.
    Driver, Paul C., and Fowler. 3,352,965.
    Flair, Henry J. 3,352,563.
    Gallup, Rolland. 3,353,014.
    Goldstein, David, Buehler, and Wiley. 3,352,650.
    Hart, Gerald E. 3,353,182.
    Kitchen, James P., De Packh, Roess, and O'Connell. 3,353,064.
    McFann, Charles E., and deSabla. 3,352,242.
    McMillian, Thomas, and Thompson. 3,352,144.
    Meeker, George W., Jr. 3,353,147.
    Murphree, Francis J., and Hammond. 3,353,148.
    Parkerson, Charles R., and Wieder. 3,352,906.
    Sherlock, Jack G., and Reames. 3,352,149.
    Silverstein, Abraham. 3,353,130.
    Siryj, Bohdan W. 3,353,036.
    Walther, Mark F. 3,352,982.
    Wang, Frederick E., Syeles, Clark, and Buehler. 3,352,-722.
    Weller, James F. 3,351,994.
United States Rubber Co.: *See*—
  Bawn, Carl V. 3,352,820.
United States Steel Corp.: *See*—
  Bole, Claude E. 3,352,072.
  Johnson, Ray C. 3,351,986.
  Kennedy, Frank, and Klein. 3,352,551.
  Pasko, Joseph B., Jr. 3,352,284.
  Shapland, James T. 3,352,465.
  Thomas, McKinley B., and Dalebout. 3,352,208.

United States Time Corp., The: *See*—
  Altenburger, Paul. 3,352,000.
Universal Container Corp.: *See*—
  Smull, Harold. 3,352,723.
Universal Match Corp.: *See*—
  Spragg, Hal R., Price, and Wooldridge. 3,352,238.
Universal Oil Products Co.: *See*—
  Sparks, Allen K. 3,352,777.
Unwin, Alexander M.: *See*—
  Hanka, Russell V., and Unwin. 3,353,114.
Upjohn Co., The: *See*—
  Fonken, Gunther S., Herr, and Murray. 3,352,884.
  Parham, Price H. 3,352,600.
  Sayigh, Adnan A. R., and Ulrich. 3,352,909.
  Szmuszkovicz, Jacob. 3,352,856.
Urbanosky, Harold J., to Schlumberger Technology Corp. Formation fluid-sampling apparatus. 3,352,361, 11-14-67, Cl. 166—100.
Urushida, Koichi: *See*—
  Majima, Tsutomu, and Urushida. 3,353,073.
V-M Corp.: *See*—
  Arent, John F. 3,352,561.
  Hammond, Robert J. 3,352,562.
VEB Druckmaschinenwerke Leipzig: *See*—
  Sklera, Heinz. 3,352,171.
Vadas, Leslie, to FMC Corp. Pineapple peeling, coring and trimming machine. 3,352,337, 11-14-67, Cl. 146—6.
Van de Graaff, Robert J., to High Voltage Engineering Corp. High voltage particle accelerators using charge transfer processes. 3,353,107, 11-14-67, Cl. 328—233.
Vander Linden, Ronald, and J. Serratore, to Esso Research and Engineering Co. Process for production of N-a-olefins by the alkyl metal technique. 3,352,940, 11-14-67, Cl. 260—683.15.
Vandersys, Arthur, to Evans Products Co. Display stand. 3,352,523, 11-14-67, Cl. 248—165.
Vanderveer, Ramon D.: *See*—
  Zavitz, Arnold L., and Vanderveer. 3,352,953.
Van Eek, Wouter H., to Shell Oil Co. Flexible marine conductor with cellar pipe. 3,352,357, 11-14-67, Cl. 166—.5.
Van Heel, Abraham C. S., G. J. Beernink, and H. J. Raterink, to The Kingdom of Netherland. Periscope for use in submarines. 3,352,618, 11-14-67, Cl. 350—16.
Van Kampen, Henry. Poultry helmet. 3,352,288, 11-14-67, Cl. 119—97.
Van Wilson, Marlin, to Martin-Marietta Corp. Amplifier circuits for differential amplifiers. 3,353,111, 11-14-67, Cl. 330—69.
Van Zelm Associates Inc.: *See*—
  Jackson, Martin A. 3,352,516.
Vapor Corp.: *See*—
  Chan, William, De Vine, and Klein. 3,352,061.
  Cunningham, Richard, Jr., and Kimmel. 3,352,289.
  Gillick, Laurance H. 3,352,224.
Varian Associates: *See*—
  Reed, Leonard, and Figone. 3,352,694.
Vartanian, Vartan, to Raytheon Co. Signal display system. 3,353,146, 11-14-67, Cl. 340—3.
Vaughan, Ernest. Women's handbags. 3,352,391, 11-14-67, Cl. 190—51.
Veldhuis, Benjamin: *See*—
  Gilbert, Everett E., and Veldhuis. 3,352,928.
Velsicol Chemical Corp.: *See*—
  Bell, Clyde H. 3,352,861.
  Richter, Sidney B. 3,352,897.
Vendo Co., The: *See*—
  Craven, Herman R. 3,352,454.
Verdier, Yvonne L.: *See*—
  Mention, Maurice L. 3,352,930.
Vereinigte Glanzstoff-Fabriken AG.: *See*—
  Meyer, Gerhard, Siggel, Schopf, and Magerlein. 3,352,816.
  Meyer, Gerhard, Siggel, Schopf, and Magerlein. 3,352,817.
  Meyer, Gerhard, Siggel, Schopf, and Magerlein. 3,352,818.
Vesuvius Crucible Co.: *See*—
  Harley, Theodore H. 3,352,534.
  Murton, Crawford B. 3,352,533.
Vezina, Claude, S. N. Sehgal, and K. Singh, to Wisconsin Alumni Research Foundation. Process for producing 11 alpha hydroxy steroids. 3,352,760, 11-14-67, Cl. 195—51.
Vissers, Herbert, to Landbouwwerktuigen- en Mashinefabriek H. Vissers N.V. Nienw-Vennep. Machines for cultivating the soil. 3,352,366, 11-14-67, Cl. 172—94.
Vitry, Pierre: *See*—
  Lockett, George E., Coast, Goudray, Vitry, and Torielli. 3,352,756.
Vivian, Frank H., to Ottawa Steel Products. Trailer tractor. 3,352,374, 11-14-67, Cl. 180—79.2.
Vogel, Georg: *See*—
  Burian, Theodor, Plitschka, and Vogel. 3,353,154.
Vogel-Peterson Co.: *See*—
  Magnuson, Raymond A. 3,352,429.
Voigtlander A.G.: *See*—
  Brinkmann, Gerhard. 3,352,205.
Vollema, Gerlof, to Organon Inc. Hydrolysis of 17-20,20-21-bismethylene dioxy-steroids of the pregnane series. 3,352,-892, 11-14-67, Cl. 260—397.45.
Voltronics Corp.: *See*—
  Mittler, Martin, and Blickstein. 3,353,074.
Vsesojuzny Nauchno-Issledovatelsky Institute Zheleznodolozhnogo Transporta: *See*—
  Ugodin, Evgeny G., Lepsky, and Kamshitsky. 3,352,400.
Vučinić, Dušan: *See*—
  Berry, Allan D., and Vučinić. 3,353,103.
Vurlow, John: *See*—
  Hocking, Richard A., and Vurlow. 3,351,971.
W.E. & F. Dobson Ltd.: *See*—
  Cowlishaw, Frank. 3,352,117.

Wachta, Zygmunt A., and H. M. Pflanz, to Allis-Chalmers Mfg. Co. Means for mounting and electrically interconnecting circuit interrupting devices. 3,352,988, 11-14-67, Cl. 200—144.
Wachtstetter, Joseph E.: *See*—
  Gard, Don I., and Wachtstetter. 3,352,684.
Wainberg, Daniel. Feeding mechanism for a container forming machine. 3,352,215, 11-14-67, Cl. 93—51.
Wainberg, Daniel. Feeding mechanism for container forming machine. 3,352,216, 11-14-67, Cl. 93—51.
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  Santelmann, William F., Jr. 3,353,080.
Waldhauer, Charles H., Jr., to Honeywell Inc. Control apparatus. 3,352,030, 11-14-67, Cl. 35—25.
Walker, Alex F. & Associates, Inc.: *See*—
  Canning, Walter L. 3,352,573.
Wallace, Norma E.: *See*—
  Wallace, Temple E. 3,352,696.
Wallace, Temple E., deceased, by Norma E. Wallace, executrix. Method of manufacturing puncture sealing compositions. 3,352,696, 11-14-67, Cl. 106—33.
Walter, Heinz F., and H. D. Muller, to Siemens Aktiengesellschaft. Arrangement for storing individual television pictures. 3,352,968, 11-14-67, Cl. 178—6.6.
Walters, Charles E., 50% to Allen Trask. Air conditioning system. 3,352,352, 11-14-67, Cl. 165—16.
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Wang, Frederick E., A. M. Syeles, W. L. Clark, and W. J. Buehler. 3,352,722, 11-14-67, Cl. 148—1.6.
Ward, James F.: *See*—
  MacDonald, Robert J., and Ward. 3,352,647.
  MacDonald, Robert J., and Ward. 3,352,668.
Ward, Peter A.: *See*—
  Wilde, Geoffrey L., Ward, Williamson, and Baker. 3,352,-114.
Ware, Robert L.: *See*—
  Robbins, George T., and Ware. 3,352,581.
Warner, Albert C., and M. E. Allen, to Warner Development Ltd. Defensive weapon and cartridge therefor. 3,352,046, 11-14-67, Cl. 42—1.
Warner Development Ltd.: *See*—
  Warner, Albert C., and Allen. 3,352,046.
Warner-Lambert Pharmaceutical Co.: *See*—
  Bilotti, Anthony G. 3,352,689.
Warner, Paul F., and J. L. Willis, to Phillips Petroleum Co. Extractive distillation of sulfolane with an isoparaffinic hydrocarbon entrainer. 3,352,765, 11-14-67, Cl. 203—70.
Wästerlid, Nils A. E., to North American Philips Co., Inc. Identification equipment. 3,353,178, 11-14-67, Cl. 343—6.5.
Watari, Tamiro, to Continental Oil Co. Submersible barge. 3,352,271, 11-14-67, Cl. 114—74.
Waterman, Willis D., to Halliburton Co. Underground storage vessel. 3,352,116, 11-14-67, Cl. 61—41.
Watkins, John E. Liquid refrigerant recirculating system. 3,352,124, 11-14-67, Cl. 62—115.
Weaver, Victor F., Inc.: *See*—
  Hess, Earl H. 3,352,685.
Webb, Derrel D., to Houston Engineers, Inc. Well bore packer, milling and removing tool. 3,352,593, 11-14-67, Cl. 294—86.25.
Webb, James E., Administrator of the National Aeronautics and Space Administration with respect to an invention by W. F. Carr. Split nut separation system. 3,352,192, 11-14-67, Cl. 85—33.
Webster, Roland C.: *See*—
  Holter, William H., Dunfee, and Webster. 3,352,244.
Weeks, Michael W.: *See*—
  Jackson, Harold E., and Weeks. 3,351,982.
Weil-McLain Co., Inc.: *See*—
  Tomlinson, Curtis C. 3,353,000.
Weiner, Bernard A., to United States of America, Agriculture. Disinfectant-containing stopper for prolonged aerobic fermetations. 3,352,762, 11-14-67, Cl. 195—127.
Weir, G. & J., Ltd.: *See*—
  Anderson, Harold H. 3,352,444.
Weiss, Arthur J., to Cotinental Can Co., Inc. Carrier with center divider. 3,352,453, 11-14-67, Cl. 220—115.
Welcher, Richard P., to American Cyanamid Co. 4-Phosphorinanones and method of preparing same. 3,352,919, 11-14-67, Cl. 260—586.
Welfers, Egidius: *See*—
  Hoyer, Hans, Welfers, and Köpke. 3,352,959.
Weller, James F., to United States of America, Navy. Method for lining firearm barrels. 3,351,994, 11-14-67, Cl. 29—1.1.
Wells Mfg. Corp.: *See*—
  Alexander, Carl J., and Bowers. 3,352,011.
Wendt, Gerhard R., and K. W. Ledig, to American Home Products Corp. 19-norsteroidal-17-nitrates. 3,352,891, 11-14-67, Cl. 260—397.4.
Wentworth, Fitzwilliam A., to Stabilac Pty. Ltd. Static induction regulator employing transformers with even-harmonic feedback. 3,353,094, 11-14-67, Cl. 323—45.
Werner, Frank D., and R. A. Lundquist, to Rosemount Engineering Co. Movable wall construction of panels held by channels at top and bottom. 3,352,075, 11-14-67, Cl. 52—239.
Werner Zindler d.b.a. Limoprint Zindler KG: *See*—
  Salger, Werner. 3,352,122.
West, Ronald F., to Minister of Aviation in Her Britannic Majesty's. Pivotal mountings or connections. 3,352,174, 11-14-67, Cl. 74—608.

- Western Electric Co., Inc.: *See—*
  - Shaffer, John R. 3,352,001.
- Wheat, Robert C., to Phillips Petroleum Co. Blend of butadiene-styrene block copolymer with cis-polybutadiene. 3,352,944, 11-14-67, Cl. 260—876.
- Wheelabrator Corp., The: *See—*
  - De Groot, John E., and Fuerst. 3,352,064.
- Wheeler, John St. C. Calcium silicate brick development. 3,352,699, 11-14-67, Cl. 106—89.
- Wheeling Steel Corp.: *See—*
  - Jones, Thomas J. 3,352,076.
- Wheelock, Silas M., to Reid-Meredith, Inc. Method and apparatus for preparing chignons from tow length fibers. 3,351,984, 11-14-67, Cl. 19—66.
- White, George T., and K. B. Mullin, to Celanese Corp. of America. Production of diisopropyl carbodiimide. 3,352,908, 11-14-67, Cl. 260—551.
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- White, Richard L., to Dickson Electronics Corp. AC circuit breaker. 3,353,067, 11-14-67, Cl. 317—33.
- White, Trevor R.: *See—*
  - Costain, Winston, Palmer, and White. 3,352,821.
- Wickham, John L., to The Black and Decker Mfg. Co. Valve for reversible pneumatic tool. 3,352,323, 11-14-67, Cl. 137—625.26.
- Wieder, Harry H.: *See—*
  - Parkerson, Charles R., and Wieder. 3,352.906.
- Wiggins, Kennard R., to Enterprise Machine & Development Corp. Yarn tensioning device. 3,352,511, 11-14-67, Cl. 242—155.
- Wiklander Metallic Fabricators, Inc.: *See—*
  - Beshekas, William S. 3,352,126.
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- Wiley, Carl A., to North American Aviation, Inc. Image projection system having electrically charged tape and electro-optical crystal. 3,352,967, 11-14-67, Cl. 178—6.6.
- Wiley, Raymond C.: *See—*
  - Goldstein, David, Buehler, and Wiley. 3,352,650.
- Wilfert, Karl, and B. Barényi, to Daimler-Benz Aktiengesellschaft. Vehicle roof. 3,352,600, 11-14-67, Cl. 296—137.
- Wilhelm, Hans: *See—*
  - Wolf, Hans, Drescher, Faulhaber, Wilhelm, Reinhard, and Penning. 3,352,710.
- Wilhelm, Max: *See—*
  - Schmidt, Paul, Wilhelm, Eichenberger, and Schumacher. 3,352,683.
- Wilhelmi, Julius B., to United-Carr Inc. Self-securing grommet. 3,351,974, 11-14-67, Cl. 16—2.
- Wilkinson, Wilfred H., to Rolls-Royce Ltd. Bladed rotors for use in gas turbine engines. 3,352,538, 11-14-67, Cl. 253—77.
- William, Walton: *See—*
  - Cleef, Peter H., Beavers, and William. 3,352,177.
- Williams, Lynn A., to Anocut Engineering Co. Apparatus for electrolytically tapered or contoured cavities. 3,352,774, 11-14-67, Cl. 204—224.
- Williams, Sherrod A., Jr., to Mobil Oil Corp. Waterflood employing viscous aqueous solution. 3,352,358, 11-14-67, Cl. 166—9.
- Williams, Stanley E., R. B. Dunbar, and J. C. Rademaker, to Johns-Manville Corp. Manufacture of calcium silicate insulating products. 3,352,746, 11-14-67, Cl. 162—153.
- Williamsburg Steel Products Co.: *See—*
  - Schwartzberg, Jack. 3,352,074.
- Williamson, Marshall I., to Federal Paper Board Co., Inc. Carton. 3,352,476, 11-14-67, Cl. 229—39.
- Williamson, Willie: *See—*
  - Wilde, Geoffrey L., Ward, and Williamson. 3,352,114.
- Willis, James L.: *See—*
  - Warner, Paul F., and Willis. 3,352,765.
- Wills, Dale E.: *See—*
  - Lithgo, William, Roberts, Smith, and Wills. 3,352,747.
- Wilmot Castle Co.: *See—*
  - Anderson, Edgar L., and Lauterbach. 3,352,446.
- Wilmot, Richard D., to Hughes Aircraft Co. Radar clutter video processing system. 3,353,177, 11-14-67, Cl. 343—5.
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- Wilson, Homer C. Aquaero boat glider. 3,352,275, 11-14-67, Cl. 114—235.
- Wilson, Merton, to Earl Industries, Inc. Loading ramp. 3,352,440, 11-14-67, Cl. 214—85.
- Wincharger Corp.: *See—*
  - Garrett, Sterling P. 3,353,089.
  - Roche, Lawrence R. 3,353,088.
- Windmoller & Holscher: *See—*
  - Schwarzkopf, August. 3,352,411.
- Wineman, Robert J.: *See—*
  - James, John C., Wineman, and Gollis. 3,352,917.
  - James, John C., Wineman, and Gollis. 3,352,918.
- Winters, Harry K., to Ray Oil Burner Co. Motion transmitting linkage with variable transmission means. 3,352,167, 11-14-67, Cl. 74—96.
- Wisconsin Alumni Research Foundation: *See—*
  - Vezina, Claude, Sehgal, and Singh. 3,352,760.
- Wiseman, Ryland D., Jr.: *See—*
  - Baker, George W., and Wiseman. 3,352,236.
  - Baker, George W., and Wiseman. 3,352,513.
- Witt, Ray H. Cable jack. 3,352,539, 11-14-67, Cl. 254—71.
- Wohlhaupter, Emil and Erwin, and F. Eyring, to Emil Wohlhaupter u. Co. Boring and facing head. 3,352,185, 11-14-67, Cl. 82—2.
- Wohlhaupter, Emil, u. Co.: *See—*
  - Wohlhaupter, Emil and Erwin, and Eyring. 3,352,185.
- Wohlhaupter, Erwin: *See—*
  - Wohlhaupter, Emil and Erwin, and Eyring. 3,352,185.
- Wolaver, Robert M.: *See—*
  - Mecredy, James R., and Wolaver. 3,352,462.
- Wolf, Hans, E. Drescher, G. Faulhaber, H. Wilhelm, H. Reinhard, and E. Penning, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of bonded non-woven fabrics. 3,352,710, 11-14-67, Cl. 117—140.
- Wolfe, Robert J.: *See—*
  - Scidmore, Wright H., and Wolfe. 3,352,620.
- Wolff, George D., to Allis-Chalmers Mfg. Co. Fuel injection system. 3,352,245, 11-14-67, Cl. 103—2.
- Woll, Carvel A. Fish lure. 3,352,052, 11-14-67, Cl. 43—42.06.
- Wood Electric Corp.: *See—*
  - Francis, Joseph, and Pennell. 3,353,127.
- Wood, Gerald L., to Hallmark Cards, Inc. Merchandise container. 3,352,478, 11-14-67, Cl. 229—44.
- Wood, John, Co.: *See—*
  - Mankin, Paul A., and Nelson. 3,352,582.
- Woodhouse, Fred W., and W. S. Owen, Jr., to Eastman Kodak Co. Automatic loop-forming and threading mechanism. 3,352,469, 11-14-67, Cl. 226—91.
- Woodrow, Arthur F. Order display system. 3,352,202, 11-14-67, Cl. 88—24.
- Woodward, Fred E.: *See—*
  - Sugarman, Jeal, and Woodward. 3,352,790.
- Woodward, Ronald V.: *See—*
  - Stubbs, Peter W. R., Woodward, and Ollerenshaw. 3,353,131.
- Wooldridge, James M.: *See—*
  - Spragg, Hal R., Price, and Wooldridge. 3,352,238.
- Worcester Foundation for Experimental Biology: *See—*
  - Dorfman, Ralph I., Loken, and Gut. 3,352,890.
- Wright, Edward L., to Customline Control Products, Inc. Conveyor medium. 3,352,407, 11-14-67, Cl. 198—189.
- Wuppermann, Theodor G.m.b.H.: *See—*
  - Pawalkat, Horst. 3,352,140.
- Wymer, Raymond G.: *See—*
  - Helton, Dennis M., and Wymer. 3,352,950.
- Wysocki, Kazmier, and T. J. Benichasa, said Benichasa, assor. to said Wysocki. Sorter for non-magnetic aerosol valves and other closures having attached tubes, etc. 3,352,455, 11-14-67, Cl. 221—167.
- Wysocki, Lawrence S., to Hoerner-Waldorf Corp. Butter carton. 3,352,692, 11-14-67, Cl. 99—179.
- Xaloy Inc.: *See—*
  - Foster, George H., Mattek, and McCandless. 3,352,666.
- Xerox Corp.: *See—*
  - Murphy, William J. 3.352,669.
  - Schwertz, Frederick A., and Mayer. 3,352,731.
- Yaeger, John R.: *See—*
  - Olson, Frank A., Buchmiller, and Yaeger. 3,353,118.
- Yagi, Motoi: *See—*
  - Sawazaki, Norikazu, Honma, and Yagi. 3,352,966.
- Yai, Toshio, and S. Takashima, to Matsushita Electric Industrial Co., Ltd. Electric iron. 3,352,998, 11-14-67, Cl. 219—252.
- Yamada, Hideo: *See—*
  - Kataoka, Shoei, Yamada, and Kobayashi. 3,353,010.
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- Yanowitz, Arthur, to Esso Research and Engineering Co. Check valve. 3,352,318, 11-14-67, Cl. 137—484.2.
- Yawata Welding Electrode Co., Ltd.: *See—*
  - Suzuki, Haruyoshi, and Ishizaki. 3,352,993.
- Yearwood, Donald R.: *See—*
  - Ulbricht, Walter E., Yearwood, and Basile. 3,352,123.
- Yokoham Rubber Co., Ltd., The: *See—*
  - Satoh, Tatsuo, and Hirata. 3,352,006.
- Yoshida, Kazuo: *See—*
  - Yoshida, Kiyota and Kazuo. 3,352,151.
- Yoshida, Kiyota and Kazuo, to Rikagaku Kenkyusho and Kawasaki Seitetsu Kabushiki Kaisha. Mechanical automatic-recording apparatus for tensile testing of sheet metal. 3,352,151, 11-14-67, Cl. 73—89.
- Zahn, Willy, to Hans J. Zimmer Verfahrenstechnik. Gate valve with stripper rings for plastic melts. 3,352,316, 11-14-67, Cl. 137—242.
- Zalkind, Minnie B.: *See—*
  - Zalkind, Joseph. 3,352,390.
- Zalkind, Joseph, deceased; M. B. and S. S. Zalkind, executors. Attache case with suspension folder device. 3,352,390, 11-14-67, Cl. 190—51.
- Zalkind, Sheldon S.: *See—*
  - Zalkind, Joseph. 3,352,390.
- Zarker, Keith E., to Shell Oil Co. Method of separating carbon dioxide from gaseous mixtures. 3,352,631, 11-14-67, Cl. 23—2.
- Zaromb, Solomon. Battery comprising alternating layers of noble metal and salt-containing substance. 3,352,715, 11-14-67, Cl. 136—83.

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- Zavod Elektroizmeriteljnykh priborov: *See—*
  - Umantsev, Victor S. 3,353,136.
- Zech, John D., to Atlas Chemical Industries, Inc. Aminated polyoxyalkylene fatty amines. 3,352,916, 11-14-67, Cl. 260—584.
- Zecher, Wilfried: *See—*
  - Blomeyer, Friedrich, Zecher, and Holtschmidt. 3,352,829.
- Zenger, Richard D.: *See—*
  - Tracy, Gerald T., and Zenger. 3,352,457.
- Ziegler, Wallace F.: *See—*
  - Turner, John F., Ziegler, Thompson, and Jessen. 3,352,518.
- Zijderveld, Antonius H.: *See—*
  - Moes, Geert, and Zijderveld. 3,352,705.
- Zimmer, Hans J. Verfahrenstechnik: *See—*
  - Zahn, Willy. 3,352,316.
- Zimmerman, John J. Pontoon boat cycle drive. 3,352,276, 11-14-67, Cl. 115—26.
- Zirkle, Charles L.: *See—*
  - Lafferty, John J., and Zirkle. 3,352,865.
- Zuech, Ernest A., to Phillips Petroleum Co. Catalytic oligomerization of butadiene. 3,352,931, 11-14-67, Cl. 260—666.
- Zuercher, Warren H., to Stetson-Ross Machine Co., Inc. Stick placer apparatus. 3,352,434, 11-14-67, Cl. 214—6.
- Zuern, Hans E.: *See—*
  - Degginger, Edward R., Knapp, and Zuern. 3,352,789.
- Zunich, Alexander, D. Shade, and F. A. Mulec, to National Lead Co. Laminates. 3,352,742, 11-14-67, Cl. 161—125.
- Zuppiger, Paul: *See—*
  - Bouladon, Gabriel, and Zuppiger. 3,352,250.

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164 : 3,351,957
172 : 3,351,958
5 – 83 : 3,351,959
317 : 3,351,960
331 : 3,351,961
3,351,962
347 : 3,351,963
351 : 3,351,964
8 – 15 : 3,352,624
116.2 : 3,352,625
130.1 : 3,352,626
137 : 3,352,627
9 – 8 : 3,351,965
10 – 10 : 3,351,966
12 – 147 : 3,351,967
15 – 104.3 : 3,351,968
245 : 3,351,969
257.06: 3,351,970
340 : 3,351,971
385 : 3,351,972
16 – 1 : 3,351,973
2 : 3,351,974
128.1 : 3,351,975
138 : 3,351,976
18 – 4 : 3,351,977
5 : 3,351,978
3,351,979
3,351,980
3,351,981
30 : 3,351,982
3,351,983
19 – 66 : 3,351,984
21 – 58 : 3,352,628
80 : 3,352,629
90 : 3,352,630
23 – 2 : 3,352,631
51 : 3,352,632
89 : 3,352,633
91 : 3,352,634
142 : 3,352,635
143 : 3,352,636
191 : 3,352,637
200 : 3,352,638
202 : 3,352,639
204 : 3,352,640
216 : 3,352,641
222 : 3,352,642
230 : 3,352,643
232 : 3,352,644
272.6 : 3,352,645
356 : 3,352,646
24 – 70 : 3,351,985
126 : 3,351,986
219 : 3,351,987
243 : 3,351,988
274 : 3,351,989
26 – 15 : 3,351,990
28 – 62 : 3,351,991
72 : 3,351,992
3,351,993
29 – 1.1 : 3,351,994
6.1 : 3,351,995
25.13: 3,351,996
79 : 3,351,997
105 : 3,351,998
149.5 : 3,351,999
177 : 3,352,000
182.1 : 3,352,647
187 : 3,352,648
190 : 3,352,649
191 : 3,352,650
203 : 3,352,001
217 : 3,352,002
421 : 3,352,003
474.3 : 3,352,004
484 : 3,352,005
512 : 3,352,006
599 : 3,352,007
3,352,008
605 : 3,352,009
30 – 135 : 3,352,010
140 : 3,352,011
246 : 3,352,012
368 : 3,352,013
33 – 1 : 3,352,014
32 : 3,352,015
75 : 3,352,016

33 – 126.5 : 3,352,017
169 : 3,352,018
174 : 3,352,019
3,352,020
3,352,021
178 : 3,352,022
179.5 : 3,352,023
34 – 5 : 3,352,024
212 : 3,352,025
35 – 8 : 3,352,026
3,352,027
12 : 3,352,028
3,352,029
25 : 3,352,030
30 : 3,352,031
36 – 9 : 3,352,032
11.5 : 3,352,033
67 : 3,352,034
37 – 54 : 3,352,035
108 : 3,352,036
129 : 3,352,037
135 : 3,352,038
40 – 10 : 3,352,039
21 : 3,352,040
32 : 3,352,041
72 : 3,352,042
78 : 3,352,043
115 : 3,352,044
158 : 3,352,045
42 – 1 : 3,352,046
70 : 3,352,047
43 – 17 : 3,352,048
17.2 : 3,352,049
41.2 : 3,352,050
42.06: 3,352,052
42.1 : 3,352,051
131 : 3,352,053
44 – 10 : 3,352,651
46 – 17 : 3,352,054
70 : 3,352,055
200 : 3,352,056
47 – 1.2 : 3,352,057
58 : 3,352,058
48 – 197 : 3,352,652
49 – 27 : 3,352,059
192 : 3,352,060
507 : 3,352,061
51 – 8 : 3,352,062
3,352,063
9 : 3,352,064
105 : 3,352,065
162 : 3,352,066
165 : 3,352,067
225 : 3,352,068
52 – 9 : 3,352,069
22 : 3,352,070
28 : 3,352,071
127 : 3,352,072
208 : 3,352,073
211 : 3,352,074
239 : 3,352,075
303 : 3,352,076
469 : 3,352,077
573 : 3,352,078
577 : 3,352,079
614 : 3,352,080
632 : 3,352,081
639 : 3,352,082
716 : 3,352,083
721 : 3,352,084
53 – 32 : 3,352,085
39 : 3,352,086
389 : 3,352,087
55 – 18 : 3,352,088
67 : 3,352,089
201 : 3,352,090
274 : 3,352,091
56 – 12 : 3,352,092
98 : 3,352,093
328 : 3,352,094
57 – 105 : 3,352,095
119 : 3,352,096
125 : 3,352,097
147 : 3,352,098
58 – 39.5 : 3,352,099
41 : 3,352,100
50 : 3,352,101
53 : 3,352,102
58 : 3,352,103
60 – 13 : 3,352,104

60 – 39.11: 3,352,105
39.65: 3,352,106
64 : 3,352,107
108 : 3,352,108
217 : 3,352,109
229 : 3,352,110
251 : 3,352,111
261 : 3,352,112
3,352,113
262 : 3,352,114
61 – 35 : 3,352,115
41 : 3,352,116
45 : 3,352,117
46 : 3,352,118
3,352,119
56 : 3,352,120
62 – 18 : 3,352,121
45 : 3,352,122
55 : 3,352,123
115 : 3,352,124
211 : 3,352,125
286 : 3,352,126
64 – 17 : 3,352,127
65 – 1 : 3,352,653
23 : 3,352,654
28 : 3,352,655
33 : 3,352,656
65 : 3,352,657
70 : 3,352,658
178 : 3,352,659
66 – 56 : 3,352,128
68 – 5 : 3,352,129
18 : 3,352,130
58 : 3,352,131
213 : 3,352,132
70 – 259 : 3,352,133
362 : 3,352,134
375 : 3,352,135
71 – 70 : 3,352,660
72 : 3,352,661
88 : 3,352,662
3,352,663
110 : 3,352,664
72 – 9 : 3,352,136
42 : 3,352,137
76 : 3,352,138
123 : 3,352,139
238 : 3,352,140
272 : 3,352,141
387 : 3,352,142
445 : 3,352,143
73 – 1 : 3,352,144
37.9 : 3,352,145
38 : 3,352,146
40.5 : 3,352,147
81 : 3,352,148
86 : 3,352,149
88.5 : 3,352,150
89 : 3,352,151
143 : 3,352,152
144 : 3,352,153
189 : 3,352,154
198 : 3,352,155
355 : 3,352,156
398 : 3,352,157
420 : 3,352,158
422 : 3,352,159
425.2 : 3,352,160
484 : 3,352,161
505 : 3,352,162
74 – 5.34: 3,352,164
5.5 : 3,352,163
15.4 : 3,352,165
15.84: 3,352,166
96 : 3,352,167
190.5 : 3,352,168
194 : 3,352,169
388 : 3,352,170
393 : 3,352,171
410 : 3,352,172
473 : 3,352,173
608 : 3,352,174
750 : 3,352,175
785 : 3,352,176
801 : 3,352,177
3,352,178
856 : 3,352,179
75 – 49 : 3,352,665
125 : 3,352,666
153 : 3,352,667

75 – 208 : 3,352,668
76 – 42 : 3,352,180
77 – 55 : 3,352,181
62 : 3,352,182
3,352,183
81 – 3.1 : 3,352,184
82 – 2 : 3,352,185
83 – 201.15: 3,352,186
657 : 3,352,187
84 – 312 : 3,352,188
85 – 1 : 3,352,189
9 : 3,352,190
14 : 3,352,191
33 : 3,352,192
62 : 3,352,194
79 : 3,352,193
80 : 3,352,195
88 – 2.4 : 3,352,196
14 : 3,352,197
3,352,198
24 : 3,352,199
3,352,200
3,352,201
3,352,202
3,352,203
28 : 3,352,204
3,352,205
89 – 1 : 3,352,206
37.5 : 3,352,207
90 – 24 : 3,352,208
91 – 391 : 3,352,209
434 : 3,352,210
92 – 42 : 3,352,211
192 : 3,352,212
204 : 3,352,213
93 – 35 : 3,352,214
51 : 3,352,215
3,352,216
94 – 18 : 3,352,217
95 – 1.7 : 3,352,218
4.5 : 3,352,219
10 : 3,352,220
11 : 3,352,221
12.5 : 3,352,223
73 : 3,352,222
96 – 1.5 : 3,352,669
1.7 : 3,352,670
1.8 : 3,352,671
3 : 3,352,672
22 : 3,352,673
29 : 3,352,674
35.1 : 3,352,675
56 : 3,352,676
75 : 3,352,677
76 : 3,352,678
77 : 3,352,679
84 : 3,352,680
3,352,681
95 : 3,352,682
98 – 10 : 3,352,224
33 : 3,352,225
99 – 2 : 3,352,683
4 : 3,352,684
7 : 3,352,685
85 : 3,352,686
98 : 3,352,687
131 : 3,352,688
135 : 3,352,689
140 : 3,352,690
154 : 3,352,691
179 : 3,352,692
205 : 3,352,693
295 : 3,352,226
341 : 3,352,227
100 – 12 : 3,352,228
38 : 3,352,229
53 : 3,352,230
90 : 3,352,231
92 : 3,352,232
215 : 3,352,233
101 – 114 : 3,352,234
125 : 3,352,235
102 – 24 : 3,352,236
28 : 3,352,237
39 : 3,352,238
43 : 3,352,239
45 : 3,352,240
76 : 3,352,241
85.6 : 3,352,242
101 : 3,352,243

102 – 102 : 3,352,244
103 – 2 : 3,352,245
25 : 3,352,246
130 : 3,352,247
236 : 3,352,248
104 – 7 : 3,352,249
25 : 3,352,250
63 : 3,352,251
106 : 3,352,252
172 : 3,352,253
105 – 4 : 3,352,254
197 : 3,352,255
199 : 3,352,256
376 : 3,352,257
106 – 1 : 3,352,694
5 : 3,352,695
33 : 3,352,696
39 : 3,352,697
3,352,698
89 : 3,352,699
123 : 3,352,700
237 : 3,352,701
281 : 3,352,702
107 – 15 : 3,352,258
110 – 7 : 3,352,259
19 : 3,352,260
111 – 8 : 3,352,261
112 – 2 : 3,352,262
3,352,263
25 : 3,352,264
79 : 3,352,265
122 : 3,352,266
218 : 3,352,267
113 – 121 : 3,352,268
114 – .5 : 3,352,269
67 : 3,352,270
74 : 3,352,271
165 : 3,352,272
218 : 3,352,273
235 : 3,352,274
3,352,275
115 – 26 : 3,352,276
116 – 114 : 3,352,277
117 – 17 : 3,352,703
36.8 : 3,352,704
62.2 : 3,352,705
64 : 3,352,706
72 : 3,352,707
3,352,708
124 : 3,352,709
140 : 3,352,710
201 : 3,352,711
3,352,712
212 : 3,352,713
213 : 3,352,714
118 – 7 : 3,352,278
3,352,279
9 : 3,352,280
12 : 3,352,281
49 : 3,352,282
301 : 3,352,283
429 : 3,352,284
624 : 3,352,285
119 – 17 : 3,352,287
51.11: 3,352,286
97 : 3,352,288
122 – 240 : 3,352,289
123 – 8 : 3,352,290
16 : 3,352,291
41.41: 3,352,292
90 : 3,352,293
136 : 3,352,294
179 : 3,352,295
124 – 23 : 3,352,296
126 – 113 : 3,352,297
350 : 3,352,298
128 – 2 : 3,352,299
2.06: 3,352,300
12 : 3,352,301
24 : 3,352,303
145.8 : 3,352,304
173.1 : 3,352,305
214.4 : 3,352,306
269 : 3,352,307
129 – 16 : 3,352,302
131 – 20 : 3,352,308
224 : 3,352,309
134 – 56 : 3,352,310
86 : 3,352,311
135 – 1 : 3,352,312

135 – 1 : 3,352,313
5 : 3,352,314
136 – 83 : 3,352,715
86 : 3,352,716
90 : 3,352,717
91 : 3,352,718
120 : 3,352,719
137 : 3,352,720
175 : 3,352,721
137 – 1 : 3,352,315
242 : 3,352,316
339 : 3,352,317
484.2 : 3,352,318
503 : 3,352,319
604 : 3,352,320
613 : 3,352,321
624.11: 3,352,322
625.26: 3,352,323
625.69: 3,352,324
3,352,325
138 – 149 : 3,352,326
139 – 1 : 3,352,327
68 : 3,352,328
92 : 3,352,329
140 – 105 : 3,352,330
147 : 3,352,331
141 – 349 : 3,352,332
383 : 3,352,333
144 – 129 : 3,352,334
195 : 3,352,335
310 : 3,352,336
146 – 6 : 3,352,337
50 : 3,352,338
76 : 3,352,339
213 : 3,352,340
148 – 1.6 : 3,352,722
6.15: 3,352,723
144 : 3,352,724
186 : 3,352,725
187 : 3,352,726
149 – 19 : 3,352,727
150 – 1.6 : 3,352,390
151 – 19 : 3,352,341
21 : 3,352,342
31 : 3,352,343
35 : 3,352,344
156 – 3 : 3,352,728
3,352,729
3,352,730
11 : 3,352,731
75 : 3,352,732
94 : 3,352,733
180 : 3,352,734
3,352,735
350 : 3,352,736
514 : 3,352,737
585 : 3,352,738
158 – 28 : 3,352,345
115 : 3,352,346
116 : 3,352,347
159 – 5 : 3,352,348
160 – 171 : 3,352,349
161 – 81 : 3,352,739
112 : 3,352,740
120 : 3,352,741
125 : 3,352,742
162 : 3,352,743
264 : 3,352,744
162 – 55 : 3,352,745
153 : 3,352,746
274 : 3,352,747
318 : 3,352,748
352 : 3,352,749
164 – 82 : 3,352,350
335 : 3,352,351
165 – 16 : 3,352,352
41 : 3,352,353
169 : 3,352,354
166 – .5 : 3,352,356
3,352,357
2 : 3,352,355
9 : 3,352,358
53 : 3,352,359
55.1 : 3,352,360
100 : 3,352,361
140 : 3,352,362
214 : 3,352,363
167 – 30 : 3,352,750
53 : 3,352,751
55 : 3,352,752

167– 77 : 3,352,753
81 : 3,352,754
88 : 3,352,755
169– 1 : 3,352,364
172– 94 : 3,352,366
96 : 3,352,367
173–169 : 3,352,368
174– 65 : 3,352,961
73 : 3,352,962
151 : 3,352,963
175– 56 : 3,352,369
73 : 3,352,370
176– 40 : 3,352,756
55 : 3,352,365
68 : 3,352,757
78 : 3,352,758
177– 16 : 3,352,371
40 : 3,352,372
178– 5.8 : 3,352,964
6 : 3,352,965
3,352,966
6.6 : 3,352,967
3,352,968
7.1 : 3,352,969
7.85: 3,352,970
179– 2 : 3,352,971
5 : 3,352,972
6 : 3,352,973
8 : 3,352,974
100.2 : 3,352,975
3,352,976
3,352,977
180– 44 : 3,352,373
79.2 : 3,352,374
181– .5 : 3,352,375
3,352,376
3,352,377
3,352,378
182– 20 : 3,352,379
131 : 3,352,380
185– 40 : 3,352,381
188– 73 : 3,352,382
79.5 : 3,352,383
82.7 : 3,352,384
90 : 3,352,385
96 : 3,352,386
3,352,387
181 : 3,352,388
190– 49 : 3,352,389
51 : 3,352,391
191– 22 : 3,352,978
192– 3.5 : 3,352,392
68 : 3,352,393
87.19: 3,352,394
103 : 3,352,395
142 : 3,352,396
193– 35 : 3,352,397
195– 37 : 3,352,759
51 : 3,352,760
80 : 3,352,761
127 : 3,352,762
197– 16 : 3,352,398
84 : 3,352,399
198– 9 : 3,352,400
20 : 3,352,401
33 : 3,352,402
34 : 3,352,403
52 : 3,352,404
131 : 3,352,405
139 : 3,352,406
189 : 3,352,407
201 : 3,352,408
200– 11 : 3,352,979
16 : 3,352,980
46 : 3,352,981
51.07: 3,352,982
83 : 3,352,983
3,352,984
137 : 3,352,985
138 : 3,352,986
140 : 3,352,987
144 : 3,352,988
166 : 3,352,989
3,352,990
202–200 : 3,352,763
203– 42 : 3,352,764
70 : 3,352,765
204– 49 : 3,352,766
67 : 3,352,767
79 : 3,352,768
143 : 3,352,769
3,352,770
159.23: 3,352,771
159.24: 3,352,772
160.1 : 3,352,773
224 : 3,352,774
313 : 3,352,775
206– 45.14: 3,352,409
52 : 3,352,410
57 : 3,352,411
59 : 3,352,412

206– 65 : 3,352,413
3,352,414
78 : 3,352,415
79 : 3,352,416
208–125 : 3,352,776
206 : 3,352,777
209– 74 : 3,352,417
403 : 3,352,418
210– 23 : 3,352,778
3,352,779
140 : 3,352,419
205 : 3,352,420
238 : 3,352,421
321 : 3,352,422
496 : 3,352,423
502 : 3,352,424
211– 13 : 3,352,425
22 : 3,352,426
74 : 3,352,427
87 : 3,352,428
113 : 3,352,429
119 : 3,352,430
176 : 3,352,431
212– 21 : 3,352,432
214– 3 : 3,352,433
6 : 3,352,434
3,352,435
16.1 : 3,352,436
3,352,437
38 : 3,352,438
82 : 3,352,439
85 : 3,352,440
130 : 3,352,441
767 : 3,352,442
219– 10.79: 3,352,991
58 : 3,352,992
73 : 3,352,993
93 : 3,352,994
97 : 3,352,995
98 : 3,352,996
123 : 3,352,997
252 : 3,352,998
321 : 3,352,999
3,353,000
3,353,001
3,353,002
341 : 3,353,003
398 : 3,353,004
411 : 3,353,005
220– 9 : 3,352,443
14 : 3,352,444
30.5 : 3,352,445
41 : 3,352,446
46 : 3,352,447
60 : 3,352,448
63 : 3,352,449
85 : 3,352,450
102 : 3,352,451
111 : 3,352,452
115 : 3,352,453
221–105 : 3,352,454
167 : 3,352,455
222– 5 : 3,352,456
52 : 3,352,457
66 : 3,352,458
85 : 3,352,459
129.4 : 3,352,460
160 : 3,352,461
166 : 3,352,462
321 : 3,352,463
402.2 : 3,352,464
512 : 3,352,465
223– 38 : 3,352,466
224– 5 : 3,352,467
226– 47 : 3,352,468
91 : 3,352,469
3,352,470
227– 7 : 3,352,471
229– 14 : 3,352,472
15 : 3,352,473
16 : 3,352,474
34 : 3,352,475
39 : 3,352,476
40 : 3,352,477
44 : 3,352,478
51 : 3,352,479
3,352,480
92.1 : 3,352,481
230– 69 : 3,352,482
79 : 3,352,483
116 : 3,352,484
186 : 3,352,485
233– 26 : 3,352,486
235– 61.11: 3,353,007
61.7 : 3,353,006
89 : 3,352,487
91 : 3,352,488
160 : 3,353,008
168 : 3,353,009
179 : 3,353,010
181 : 3,353,011

235–194 : 3,353,012
236– 12 : 3,352,489
68 : 3,352,490
238–209 : 3,352,491
239– 85 : 3,352,492
177 : 3,352,493
265.13: 3,352,494
265.15: 3,352,495
304 : 3,352,496
332 : 3,352,497
240– 1.2 : 3,353,013
1.3 : 3,353,014
25 : 3,353,015
51.11: 3,353,016
66 : 3,353,017
241– 1 : 3,352,498
21 : 3,352,499
74 : 3,352,500
3,352,501
192 : 3,352,502
301 : 3,352,503
242– 35.6 : 3,352,504
43 : 3,352,505
55.18: 3,352,506
84.21: 3,352,507
107 : 3,352,508
118.4 : 3,352,509
149 : 3,352,510
155 : 3,352,511
243– 2 : 3,352,512
244– 17.15: 3,352,513
56 : 3,352,514
103 : 3,352,515
110 : 3,352,516
122 : 3,352,517
3,352,518
139 : 3,352,519
246– 34 : 3,353,018
187 : 3,353,019
248– 99 : 3,352,520
123 : 3,352,521
158 : 3,352,522
165 : 3,352,523
278 : 3,352,524
346 : 3,352,525
380 : 3,352,526
480 : 3,352,527
249–126 : 3,352,528
142 : 3,352,529
202 : 3,352,530
250– 51.5 : 3,353,020
83.1 : 3,353,021
83.3 : 3,353,022
106 : 3,353,023
202 : 3,353,024
215 : 3,353,025
227 : 3,353,026
235 : 3,353,027
251–149.6 : 3,352,531
204 : 3,352,535
268 : 3,352,532
356 : 3,352,533
3,352,534
252– 33.3 : 3,352,780
37.2 : 3,352,781
47.5 : 3,352,782
78 : 3,352,783
3,352,784
99 : 3,352,785
106 : 3,352,786
108 : 3,352,787
161 : 3,352,788
171 : 3,352,789
3,352,790
188.3 : 3,352,791
193 : 3,352,792
389 : 3,352,793
408 : 3,352,794
442 : 3,352,795
455 : 3,352,796
514 : 3,352,797
253– 59 : 3,352,536
77 : 3,352,538
78 : 3,352,537
254– 71 : 3,352,539
185 : 3,352,540
256– 21 : 3,352,541
259– 41 : 3,352,542
44 : 3,352,543
260– 2 : 3,352,798
3,352,799
2.2 : 3,352,800
3,352,801
2.5 : 3,352,802
3,352,803
18 : 3,352,804
28.5 : 3,352,805
29.4 : 3,352,806
29.6 : 3,352,807
29.7 : 3,352,808
30.4 : 3,352,809

260– 30.8 : 3,352,810
31.2 : 3,352,811
31.8 : 3,352,812
3,352,813
41 : 3,352,814
45.7 : 3,352,816
3,352,817
3,352,818
45.75: 3,352,820
3,352,821
3,352,824
45.85: 3,352,822
45.9 : 3,352,819
46.5 : 3,352,823
47 : 3,352,825
3,352,826
72 : 3,352,827
77.5 : 3,352,828
3,352,829
3,352,830
78 : 3,352,831
3,352,832
3,352,833
3,352,834
3,352,835
3,352,836
79 : 3,352,837
80.73: 3,352,838
94.3 : 3,352,839
94.7 : 3,352,840
112 : 3,352,841
3,352,842
112.5 : 3,352,843
3,352,844
152 : 3,352,845
154 : 3,352,846
208 : 3,352,847
209 : 3,352,848
211.5 : 3,352,849
239.1 : 3,352,850
3,352,851
3,352,852
239.55: 3,352,853
3,352,854
3,352,855
240 : 3,352,856
240.6 : 3,352,857
243 : 3,352,858
3,352,859
248 : 3,352,860
249.9 : 3,352,861
253 : 3,352,864
260 : 3,352,862
3,352,863
268 : 3,352,865
3,352,866
279 : 3,352,867
287 : 3,352,868
293 : 3,352,869
3,352,870
294.7 : 3,352,871
3,352,872
3,352,873
3,352,874
3,352,875
295 : 3,352,876
296 : 3,352,877
3,352,878
299 : 3,352,879
301 : 3,352,880
302 : 3,352,881
315 : 3,352,882
340.7 : 3,352,883
340.9 : 3,352,884
343.2 : 3,352,885
346.3 : 3,352,886
346.4 : 3,352,887
396 : 3,352,888
397.2 : 3,352,889
397.4 : 3,352,890
3,352,891
397.45: 3,352,892
448 : 3,352,893
3,352,894
3,352,895
448.8 : 3,352,896
453 : 3,352,897
3,352,898
3,352,899
455 : 3,352,815
3,352,900
476 : 3,352,901
507 : 3,352,902
515 : 3,352,903
518 : 3,352,904
530 : 3,352,905
534 : 3,352,906
539 : 3,352,907
551 : 3,352,908
554 : 3,352,909
557 : 3,352,910

260–562 : 3,352,911
563 : 3,352,912
3,352,913
570.5 : 3,352,914
584 : 3,352,915
3,352,916
3,352,917
3,352,918
586 : 3,352,919
3,352,920
3,352,922
3,352,923
591 : 3,352,921
604 : 3,352,924
606.5 : 3,352,925
610 : 3,352,926
629 : 3,352,927
633 : 3,352,928
635 : 3,352,929
641 : 3,352,930
666 : 3,352,931
3,352,932
668 : 3,352,933
669 : 3,352,934
677 : 3,352,935
3,352,936
680 : 3,352,937
683.15: 3,352,940
683.2 : 3,352,938
3,352,939
683.74: 3,352,941
857 : 3,352,942
871 : 3,352,943
876 : 3,352,944
897 : 3,352,945
3,352,946
928 : 3,352,947
944 : 3,352,948
964 : 3,352,949
261– 34 : 3,352,544
41 : 3,352,545
111 : 3,352,546
112 : 3,352,547
124 : 3,352,548
263– 6 : 3,352,549
29 : 3,352,550
47 : 3,352,551
264– .5 : 3,352,950
25 : 3,352,951
40 : 3,352,952
71 : 3,352,953
90 : 3,352,954
135 : 3,352,955
176 : 3,352,956
196 : 3,352,957
255 : 3,352,958
282 : 3,352,959
322 : 3,352,960
266– 34 : 3,352,552
270– 79 : 3,352,553
271– 64 : 3,352,554
272– 85 : 3,352,555
273–101.2 : 3,352,556
110 : 3,352,557
134 : 3,352,558
187 : 3,352,559
200 : 3,352,560
274– 10 : 3,352,561
3,352,562
277– 27 : 3,352,563
180 : 3,352,564
280– 6 : 3,352,565
11.13: 3,352,566
12 : 3,352,567
35 : 3,352,568
43.12: 3,352,569
282 : 3,352,570
435 : 3,352,571
283– 45 : 3,352,572
285– 2 : 3,352,573
3 : 3,352,574
45 : 3,352,575
169 : 3,352,576
246 : 3,352,577
286 : 3,352,578
337 : 3,352,579
287– 14 : 3,352,580
20.95: 3,352,581
89 : 3,352,582
93 : 3,352,583
189.36: 3,352,584
290– 52 : 3,353,028
292– 92 : 3,352,585
225 : 3,352,586
289 : 3,352,587
293– 65 : 3,352,588
294– 16 : 3,352,589
74 : 3,352,590
81 : 3,352,591
3,352,592
86.25: 3,352,593

296– 3 : 3,352,594
24 : 3,352,595
27 : 3,352,596
28 : 3,352,597
35 : 3,352,598
95 : 3,352,599
137 : 3,352,600
297– 85 : 3,352,601
130 : 3,352,602
299– 34 : 3,352,603
300– 1 : 3,352,604
302– 28 : 3,352,605
52 : 3,352,606
307– 51 : 3,353,029
88 : 3,353,030
88.3 : 3,353,031
88.5 : 3,353,032
3,353,033
3,353,034
3,353,035
149 : 3,353,036
308– 9 : 3,352,607
10 : 3,352,608
22 : 3,352,609
122 : 3,352,610
189 : 3,352,611
240 : 3,352,612
310– 4 : 3,353,037
8.2 : 3,353,038
11 : 3,353,039
27 : 3,353,040
43 : 3,353,041
57 : 3,353,042
61 : 3,353,043
73 : 3,353,044
104 : 3,353,045
214 : 3,353,046
247 : 3,353,047
312– 8 : 3,352,613
42 : 3,352,614
111 : 3,352,615
231 : 3,352,616
343 : 3,352,617
313– 7 : 3,353,048
70 : 3,353,049
108 : 3,353,050
113 : 3,353,051
123 : 3,353,052
154 : 3,353,053
178 : 3,353,054
276 : 3,353,055
315– 3.5 : 3,353,056
3,353,057
3,353,058
36 : 3,353,059
111 : 3,353,060
3,353,061
157 : 3,353,062
176 : 3,353,063
239 : 3,353,064
317– 27 : 3,353,065
31 : 3,353,066
33 : 3,353,067
99 : 3,353,068
101 : 3,353,069
3,353,070
148.5 : 3,353,071
230 : 3,353,072
234 : 3,353,073
253 : 3,353,074
318– 57 : 3,353,075
138 : 3,353,076
212 : 3,353,077
227 : 3,353,078
443 : 3,353,079
321– 2 : 3,353,080
6 : 3,353,081
16 : 3,353,082
18 : 3,353,083
25 : 3,353,084
43 : 3,353,085
60 : 3,353,086
69 : 3,353,087
322– 27 : 3,353,088
3,353,089
30 : 3,353,090
323– 4 : 3,353,091
19 : 3,353,092
43.5 : 3,353,093
45 : 3,353,094
53 : 3,353,095
324– 26 : 3,353,096
43 : 3,353,097
325– 45 : 3,353,098
60 : 3,353,099
113 : 3,353,100
320 : 3,353,101
3,353,102
328– 3 : 3,353,103
39 : 3,353,104
91 : 3,353,105

328–171 : 3,353,106
233 : 3,353,107
329–107 : 3,353,108
330– 3 : 3,353,109
28 : 3,353,110
69 : 3,353,111
331– 16 : 3,353,112
55 : 3,353,113
94.5 : 3,353,114
3,353,115
107 : 3,353,116
113 : 3,353,117
332– 29 : 3,353,118
333– 17 : 3,353,119
30 : 3,353,120

333– 31 : 3,353,121
73 : 3,353,122
3,353,123
76 : 3,353,124
98 : 3,353,125
334– 78 : 3,353,126
335– 9 : 3,353,127
35 : 3,353,128
336– 70 : 3,353,129
82 : 3,353,130
130 : 3,353,131
155 : 3,353,132
338–145 : 3,353,133
160 : 3,353,134
226 : 3,353,135

338–308 : 3,353,136
339– 14 : 3,353,137
18 : 3,353,138
3,353,139
56 : 3,353,140
99 : 3,353,141
125 : 3,353,142
128 : 3,353,143
217 : 3,353,144
249 : 3,353,145
340– 3 : 3,353,146
3,353,147
3,353,148
3,353,149
10 : 3,353,150

340– 15.5 : 3,353,151
3,353,152
26 : 3,353,153
146.1 : 3,353,154
3,353,155
172.5 : 3,353,156
3,353,157
3,353,158
3,353,159
3,353,160
3,353,161
3,353,162
3,353,163
173 : 3,353,164

340–174 : 3,353,165
3,353,169
174.1 : 3,353,166
3,353,167
3,353,168
237 : 3,353,170
253 : 3,353,171
286 : 3,353,172
3,353,173
325 : 3,353,174
347 : 3,353,175
417 : 3,353,176
343– 5 : 3,353,177
6.5 : 3,353,178

343– 13 : 3,353,179
16 : 3,353,180
17.7 : 3,353,181
102 : 3,353,182
117 : 3,353,183
3,353,184
346– 1 : 3,353,185
42 : 3,353,186
350– 16 : 3,352,618
150 : 3,352,619
220 : 3,352,620
401–109 : 3,352,621
141 : 3,352,622
183 : 3,352,623

CLASSIFICATION OF DESIGNS

D 9– 2 : 209,189
D13– 1 : 209,190
209,191
209,192
D14– 3 : 209,193
209,194
18 : 209,195
30 : 209,196
D15– 1 : 209,197
D19– 1 : 209,198
D22– 27 : 209,199
209,200
30 : 209,201
D24– 1 : 209,202

D24– 1 : 209,203
209,204
D26– 1 : 209,205
5 : 209,206
13 : 209,207
209,208
209,209
14 : 209,210
209,211
D28– 1 : 209,212
D29– 17 : 209,213
D30– 31 : 209,214
D34– 5 : 209,215
209,216

D34– 5 : 209,217
209,218
11 : 209,219
15 : 209,220
D40– 1 : 209,221
209,222
D42– 7 : 209,223
D44– 6 : 209,224
9 : 209,225
D48– 23 : 209,226
24 : 209,227
209,228
29 : 209,229

D50– 7 : 209,230
D52– 6 : 209,231
209,232
7 : 209,233
209,234
D54– 12 : 209,235
13 : 209,236
D57– 1 : 209,237
D58– 2 : 209,238
12 : 209,239
13 : 209,240
17 : 209,241
209,242

D58– 17 : 209,243
25 : 209,244
26 : 209,245
D61– 1 : 209,246
D62– 4 : 209,247
209,248
209,249
209,250
D71– 1 : 209,251
209,252
D72– 1 : 209,253
D78– 1 : 209,254
D81– 7 : 209,255

D81– 10 : 209,256
209,257
18 : 209,258
D83– 1 : 209,259
D86– 10 : 209,260
D90– 8 : 209,261
11 : 209,262
20 : 209,263
209,264
209,265
D91– 1 : 209,266
D92– 1 : 209,267
D95– 5 : 209,268

CLASSIFICATION OF PLANTS

P. – 41 : 2,776
P. – 68 : 2,777
P. – 86 : 2,778

GEOGRAPHICAL INDEX
OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1
Alaska	2
American Samoa	3
Arizona	4
Arkansas	5
California	6
Canal Zone	7
Colorado	8
Connecticut	9
Delaware	10
District of Columbia	11
Florida	12
Georgia	13
Guam	14
Hawaii	15
Idaho	16
Illinois	17
Indiana	18
Iowa	19
Kansas	20
Kentucky	21
Louisiana	22
Maine	23
Maryland	24
Massachusetts	25
Michigan	26
Minnesota	27
Mississippi	28
Missouri	29
Montana	30
Nebraska	31
Nevada	32
New Hampshire	33
New Jersey	34
New Mexico	35
New York	36
North Carolina	37
North Dakota	38
Ohio	39
Oklahoma	40
Oregon	41
Pennsylvania	42
Puerto Rico	43
Rhode Island	44
South Carolina	45
South Dakota	46
Tennessee	47
Texas	48
Utah	49
Vermont	50
Virginia	51
Virgin Islands	52
Washington	53
West Virginia	54
Wisconsin	55
Wyoming	56
U.S. Air Force	57
U.S. Army	58
U.S. Navy	59

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,352,044
3,352,051
3,352,352
3,352,915
4 : 3,352,031
3,352,202
3,352,238
3,352,360
3,352,393
3,352,481
3,352,517
3,353,067
5 : 3,352,275
6 : 3,351,962
3,351,966
3,351,978
3,351,988
3,352,012
3,352,014
3,352,020
3,352,026
3,352,030
3,352,043
3,352,058
3,352,070
3,352,071
3,352,085
3,352,091
3,352,108
3,352,136
3,352,143
3,352,144
3,352,149
3,352,152
3,352,157
3,352,159
3,352,164
3,352,167
3,352,184
3,352,188
3,352,217
3,352,229
3,352,234
3,352,274
3,352,278
3,352,279
3,352,288
3,352,320
3,352,332
3,352,337
6 : 3,352,338
3,352,339
3,352,341
3,352,343
3,352,345
3,352,356
3,352,359
3,352,369
3,352,405
3,352,423
3,352,436
3,352,461
3,352,482
3,352,488
3,352,492
3,352,518
3,352,521
3,352,529
3,352,543
3,352,555
3,352,560
3,352,565
3,352,568
3,352,586
3,352,588
3,352,623
3,352,627
3,352,630
3,352,631
3,352,633
3,352,644
3,352,651
3,352,654
3,352,687
3,352,694
3,352,701
3,352,733
3,352,757
3,352,783
3,352,784
3,352,892
3,352,906
3,352,936
3,352,953
3,352,960
3,352,965
3,352,967
3,352,985
3,352,990
3,352,992
6 : 3,353,005
3,353,014
3,353,026
3,353,027
3,353,029
3,353,040
3,353,052
3,353,056
3,353,066
3,353,070
3,353,082
3,353,091
3,353,092
3,353,097
3,353,115
3,353,118
3,353,123
3,353,133
3,353,141
3,353,157
3,353,159
3,353,161
3,353,163
3,353,166
3,353,177
3,353,179
3,353,180
8 : 3,352,153
3,352,193
3,352,291
3,352,459
3,352,527
9 : 3,351,987
3,351,993
3,351,999
3,352,003
3,352,016
3,352,019
3,352,099
3,352,107
3,352,112
3,352,119
3,352,156
3,352,168
3,352,169
3,352,240
3,352,350
3,352,380
3,352,396
3,352,399
9 : 3,352,463
3,352,479
3,352,536
3,352,558
3,352,609
3,352,758
3,352,791
3,352,801
3,352,805
3,352,820
3,352,888
3,352,909
3,352,919
3,352,952
3,353,077
3,353,128
3,353,174
10 : 3,351,984
3,352,662
3,352,714
3,352,750
3,352,798
3,352,833
3,352,862
3,352,912
3,352,916
3,352,947
11 : 3,352,192
3,352,198
3,352,773
3,353,153
12 : 3,352,010
3,352,077
3,352,187
3,352,196
3,352,272
3,352,311
3,352,520
3,353,108
3,353,111
3,353,148
13 : 3,352,045
3,352,078
3,352,111
3,352,286
3,352,607
3,352,995
16 : 3,352,591
17 : 3,351,955
3,351,970
17 : 3,351,973
3,351,989
3,351,996
3,352,018
3,352,038
3,352,047
3,352,054
3,352,061
3,352,067
3,352,083
3,352,100
3,352,101
3,352,104
3,352,124
3,352,126
3,352,138
3,352,190
3,352,195
3,352,203
3,352,218
3,352,224
3,352,245
3,352,276
3,352,287
3,352,319
3,352,324
3,352,325
3,352,326
3,352,344
3,352,385
3,352,391
3,352,392
3,352,395
3,352,429
3,352,438
3,352,443
3,352,449
3,352,457
3,352,460
3,352,466
3,352,468
3,352,472
3,352,477
3,352,491
3,352,496
3,352,501
3,352,522
3,352,544
3,352,563
3,352,567
17 : 3,352,571
3,352,576
3,352,587
3,352,589
3,352,590
3,352,595
3,352,615
3,352,617
3,352,622
3,352,629
3,352,688
3,352,691
3,352,692
3,352,727
3,352,737
3,352,742
3,352,755
3,352,762
3,352,774
3,352,777
3,352,787
3,352,793
3,352,827
3,352,853
3,352,855
3,352,866
3,352,897
3,352,927
3,352,948
3,352,949
3,353,049
3,353,093
3,353,134
18 : 3,351,994
3,352,072
3,352,178
3,352,209
3,352,247
3,352,284
3,352,373
3,352,389
3,352,515
3,352,684
3,352,707
3,352,708
3,352,792
3,352,859
3,352,868
3,352,870
3,352,871

---

18 : 3,352,872
3,352,873
3,352,874
3,352,875
3,352,900
3,353,000
3,353,090
19 : 3,352,092
3,352,130
3,352,166
3,352,314
3,353,088
20 : 3,352,116
3,352,230
3,352,374
3,352,439
3,352,454
3,352,541
3,352,594
21 : 3,351,964
3,352,084
3,352,379
3,352,398
3,352,528
3,352,616
3,352,806
3,352,826
3,352,994
22 : 3,352,094
3,352,115
3,352,452
3,352,473
3,352,475
3,352,575
3,352,634
3,352,776
3,352,796
3,352,924
3,352,934
23 : 3,352,069
3,352,348
3,352,512
24 : 3,352,161
3,352,173
3,352,189
3,352,270
3,352,304
3,352,323
3,352,368
3,352,486
3,352,516
3,352,650
3,352,704
3,352,722
3,352,736
3,352,788
3,352,982
3,353,034
3,353,064
3,353,109
3,353,113
3,353,130
3,353,147
3,353,182
3,353,184
25 : 3,351,974
3,351,979
3,351,986
3,352,008
3,352,068
3,352,154
3,352,162
3,352,206
3,352,228
3,352,259
3,352,281
3,352,303
3,352,322
3,352,415
3,352,420
3,352,458
3,352,483
3,352,497
3,352,526
3,352,545
3,352,599
3,352,608
3,352,642
3,352,667
3,352,711
3,352,720
3,352,748
3,352,749
3,352,890
3,352,898
3,352,917
3,352,918
3,352,986
3,352,987
3,352,988
3,353,055
3,353,069
3,353,072
3,353,080
3,353,107
3,353,127
25 : 3,353,129
3,353,149
26 : 3,351,976
3,351,981
3,352,011
3,352,022
3,352,037
3,352,053
3,352,064
3,352,098
3,352,127
3,352,145
3,352,179
3,352,257
3,352,273
3,352,293
3,352,346
3,352,355
3,352,382
3,352,384
3,352,431
3,352,445
3,352,447
3,352,524
3,352,525
3,352,539
3,352,546
3,352,550
3,352,561
3,352,562
3,352,564
3,352,573
3,352,582
3,352,652
3,352,660
3,352,766
3,352,772
3,352,856
3,352,884
3,352,911
3,352,938
3,352,939
3,353,033
3,353,172
3,353,173
3,353,186
27 : 3,351,969
3,351,997
3,352,017
3,352,041
3,352,075
3,352,082
3,352,148
3,352,186
3,352,310
3,352,313
3,352,334
3,352,353
3,352,417
3,352,425
3,352,440
3,352,598
3,352,670
3,353,006
3,353,024
3,353,086
3,353,156
3,353,167
3,353,169
29 : 3,352,034
3,352,109
3,352,430
3,352,478
3,352,542
3,352,553
3,352,732
3,352,744
3,352,771
3,352,778
3,352,807
3,352,841
3,352,842
3,352,910
30 : 3,352,233
3,352,557
33 : 3,352,163
3,352,730
3,353,003
3,353,132
3,353,142
34 : 3,351,958
3,352,035
3,352,039
3,352,055
3,352,056
3,352,089
3,352,160
3,352,194
3,352,201
3,352,219
3,352,263
3,352,266
3,352,267
3,352,268
3,352,294
3,352,318
34 : 3,352,331
3,352,378
3,352,407
3,352,409
3,352,453
3,352,455
3,352,495
3,352,532
3,352,559
3,352,613
3,352,661
3,352,666
3,352,690
3,352,700
3,352,712
3,352,715
3,352,728
3,352,743
3,352,746
3,352,753
3,352,761
3,352,768
3,352,781
3,352,782
3,352,785
3,352,800
3,352,802
3,352,808
3,352,815
3,352,828
3,352,849
3,352,854
3,352,876
3,352,877
3,352,881
3,352,914
3,352,925
3,352,928
3,352,929
3,352,943
3,352,954
3,352,962
3,352,975
3,352,977
3,352,979
3,352,997
3,353,017
3,353,018
3,353,022
3,353,044
3,353,059
3,353,074
3,353,102
3,353,158
3,353,175
3,353,181
3,353,183
35 : 3,352,046
3,352,648
3,353,009
36 : 3,351,954
3,351,963
3,351,967
3,351,998
3,352,007
3,352,009
3,352,021
3,352,027
3,352,040
3,352,042
3,352,074
3,352,120
3,352,123
3,352,125
3,352,128
3,352,133
3,352,137
3,352,191
3,352,235
3,352,252
3,352,261
3,352,282
3,352,301
3,352,302
3,352,305
3,352,306
3,352,342
3,352,386
3,352,390
3,352,413
3,352,428
3,352,446
3,352,450
3,352,464
3,352,467
3,352,469
3,352,470
3,352,476
3,352,499
3,352,531
3,352,556
3,352,577
3,352,601
3,352,614
3,352,638
3,352,646
36 : 3,352,658
3,352,659
3,352,665
3,352,669
3,352,671
3,352,672
3,352,673
3,352,674
3,352,675
3,352,677
3,352,679
3,352,680
3,352,686
3,352,689
3,352,703
3,352,706
3,352,718
3,352,729
3,352,731
3,352,739
3,352,741
3,352,752
3,352,769
3,352,775
3,352,789
3,352,790
3,352,797
3,352,799
3,352,811
3,352,845
3,352,852
3,352,857
3,352,858
3,352,878
3,352,879
3,352,920
3,352,922
3,352,923
3,352,956
3,352,978
3,352,989
3,353,013
3,353,032
3,353,042
3,353,043
3,353,045
3,353,048
3,353,051
3,353,076
3,353,079
3,353,083
3,353,085
3,353,087
3,353,095
3,353,106
3,353,112
3,353,117
3,353,119
3,353,135
3,353,140
3,353,155
3,353,160
3,353,162
3,353,164
3,353,168
3,353,185
37 : 3,352,096
3,352,427
3,352,619
3,352,738
3,352,908
3,353,015
3,353,023
3,353,062
3,353,176
38 : 3,352,426
39 : 3,351,961
3,351,968
3,351,972
3,352,001
3,352,005
3,352,087
3,352,139
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DESIGN PATENTS

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PLANT PATENTS

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 14, 1967 Volume 844 Number 2

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 603,047 (LONDON FOG), The Londontown Manufacturing Company, Raincoats for men, women and children; **Reg. No. 764,346** (FOGBANK), same, Rainwear for men, women and children, and golf jackets and topcoats; **Reg. No. 623,109** (BAY FOG), same, Raincoats for men, women and children; **Reg. No. 623,106** (FRISCO FOG), same, **filed** Sept. 8, 1967, D.C., S.D.N.Y., Doc. 67–C–3453, *The Londontown Manufacturing Company* v. *Chief Apparel, Inc.*

Reg. No. 623,106. (See Reg. No. 603,047.)

Reg. No. 623,109. (See Reg. No. 603,047.)

Reg. No. 764,346. (See Reg. No. 603,047.)

Reg. No. 800,993. (See Reg. No. 825,488.)

Reg. No. 825,488 (WEEKEND), Ritter Productions, Title of a television show; **Reg. No. 800,993**, same, Bob and Ruth Ritter, doing business as Ritter Productions, Periodical publication, **filed** Sept. 5, 1967, D.C., E.D. Mich. (Detroit), Doc. 30340, *Bob and Ruth Ritter, doing business as Ritter Productions* v. *National Broadcasting Co. Inc., WWJ-TV, United Artists Television.*

Reg. No. 828,792 (DOUGLASS), Howard W. Douglass, Jr., doing business as Douglass Muffler Manufacturing Co., Automobile exhaust systems and mufflers, tail pipe extensions, clamps, brackets, exhaust pipes, exhaust headers, and exhaust header flanges used therein, **filed** Aug. 11, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1180–JWC, *Howard W. Douglass, Jr., doing business as Douglass Muffler Mfg. Co.* v. *Douglas Torley, doing business as Doug's Auto Clinic.*

Reg. No. 834,842 (CHEEZELETS), Jays Foods, Inc., Cheese flavored extruded fried corn snack food preparation, **filed** July 7, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1178, *Jays Foods, Inc.* v. *Sunshine Biscuits, Inc.*

CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17, 337
Date of oldest new application	Oct. 7, 1966
Date of oldest amended application (filing date)	Oct. 30, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	10-7-66	10-5-65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	12-14-66	9-29-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	11-22-66	10-18-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	12-6-66	10-30-64
Renewals (All Classes)	9-1-67	....
Sec. 12(c) Publications (All Classes)	9-5-67	....

Applications filed during the month of September 1967—2,140

Registrations Issued	396—No. 838,586 to No. 838,981
Renewals Issued	70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 231,639. Fanon Electronic Industries, Inc., Newark, N.J. Filed Oct. 26, 1965.

FANON

Owner of Reg. No. 675,185.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electronic Amplifiers, Intercommunication Equipment, Radio Transceivers, Recording and Reproducing Systems, Walkie-Talkies and Other Citizen Band Communication Equipment, Public Address Systems, and Components Thereof.
First use July 1, 1965.

Class 36—Musical Instruments and Supplies

For Magnetic Tape Recorders.
First use August 1965.

SN 236,171. PRD Electronics, Inc., Westbury, N.Y. Filed Jan. 11, 1966.

RAK-STAK

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus for the Transmission of High Frequency Electric Waves—Namely, Power Supplies.

Class 26—Measuring and Scientific Appliances

For Electrical Apparatus for the Measurement and Control of High Frequency Waves—Namely, Sweep Signal Sources.

First use during May 1964.

SN 244,547. Carboline Company, St. Louis, Mo. Filed Apr. 29, 1966.

CARBOLINE

Class 5—Adhesives

For Adhesives for Bonding Wood, Leather, Plastic, Glass, Stone, Rubber to Steel, or the Like.
First use Jan. 1, 1956.

Class 12—Construction Materials

For Non-Paint-Like, Two-Component Epoxy Resin Compounds, Surfacer Tank Lining Compositions, and the Like.
First use 1957.

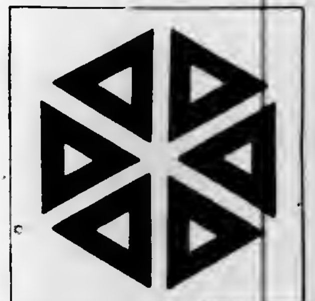
Class 16—Protective and Decorative Coatings

For Paint-Like, Two-Component Epoxy-Amine Primer and Finish Coatings; Phenolic and Vinyl Silicone Coatings, and the Like, for Structural or Functional Materials Such as Wood, Concrete and Steel; and Paint Thinner.
First use June 1947.

Class 52—Detergents and Soaps

For Chemical Cleaners for Cleaning a Surface Preparatory to Subsequent Coating.
First use 1958.

SN 252,901. The Smithers Company, Kent, Ohio. Filed Aug. 22, 1966.



Class 1—Raw or Partly Prepared Materials

For Epoxy and Urethane Casting and Filling Compounds for General Use in Industrial Arts.
First use at least as early as May 17, 1966.

Class 5—Adhesives

For Structural Adhesives—Namely, Epoxy and Urethane Compounds.
First use at least as early as May 17, 1966.

Class 22—Games, Toys, and Sporting Goods

For Toy and Model Vehicles—Namely, Aircraft.
First use July 28, 1966.

SN 256,120. Nelson Laboratories, Inc., Rochester, N.Y. Filed Oct. 10, 1966.

DAY OFF

Class 6—Chemicals and Chemical Compositions

For Laundry Bleach and Laundry Brightener.

Class 52—Detergents and Soaps

For Laundry Detergent and Bath Detergent.

First use at least as early as Aug. 10, 1966.

SN 260,759. The National Sugar Refining Company, New York, N.Y. Filed Dec. 14, 1966.

JUICECRAFT

Class 45—Soft Drinks and Carbonated Waters

For Orange Juice Drink Containing Water.

Class 46—Foods and Ingredients of Foods

For Orange Juice Concentrate.

First use Apr. 28, 1966.

SN 261,152. Martin S. Maltenfort, d.b.a. Textile Chemical Associates, Elkton, Md. Filed Dec. 20, 1966.

TEXCHEM

Class 6—Chemicals and Chemical Compositions

For Chemicals for Hosiery Rinse for Sizing, Softening, Lubricating, and Finishing Hosiery To Prevent Runs.

Class 37—Paper and Stationery

For Crayon for Marking of Textiles.

First use June 23, 1963.

SN 262,733. Dixie Kitchens, Inc., d.b.a. Bit-of-Dixie, Omaha, Nebr. Filed Dec. 29, 1966.

Bit - of - Dixie

Class 46—Foods and Ingredients of Foods

For Prepared Restaurant Food—Namely, Dinners Comprising as Their Main Courses, Seafood, Chicken, Beef, and Ribs.

Class 100—Miscellaneous

For Restaurant and Food Catering Services.

First use on or before Sept. 30, 1966.

SN 265,676. Van Straaten Chemical Company, Chicago, Ill. Filed Mar. 1, 1967.

VANTROL

Owner of Reg. Nos. 401,338, 689,741, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Magnetic Separators.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Magnetic Slide Conveyors.

First use on or about Dec. 21, 1966.

SN 268,348. Union Tank Car Company, Chicago, Ill. Filed Apr. 4, 1967.

UNITECH

Class 100—Miscellaneous

For Design of Chemical Processing Equipment, Generally on a Custom Basis.

Class 103—Construction and Repair

For Fabrication of Chemical Processing Equipment, Generally of a Custom Basis.

First use March 1967.

SN 268,358. Arby's, Inc., Youngstown, Ohio. Filed Apr. 5, 1967.

ARBY'S

Owner of Reg. No. 801,497.

Class 45—Soft Drinks and Carbonated Waters

For Soft Drinks.

Class 46—Foods and Ingredients of Foods

For Ready To Eat Roast Beef Sandwiches, Milk Shakes, Milk, Cider, and Prepared Coffee and Tea.

First use at least as early as July 1964.

SN 269,943. Trans-Dapt of California, Long Beach, Calif. Filed Apr. 24, 1967.

TRANS-DAPT

Class 19—Vehicles

For Motorcycles.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automotive Parts and Equipment—Namely, Exhaust Headers, Transmission Adapter Plates, Transmission Protector Shields, Carburetor Adapter Plates, and Exhaust Collector Pipes.

First use on or about Feb. 2, 1959.

SN 277,849. Lance Antenna Corporation, Sylmar, Calif. Filed Aug. 9, 1967.

COLORMASTER

Class 12—Construction Materials

For Antenna Masts, Bases, and Mounting Hardware.

Class 21—Electrical Apparatus, Machines, and Supplies

For UHF and VHF Antennas; Parts—Namely, Dipole Elements, Directors, Reflectors, Booms, Insulators, Lightning Arrestors, and Couplers Therefor; and Twin Lead.

First use on or before Mar. 16, 1964.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 253,034. Island Creek Coal Company, Cleveland, Ohio. Filed Aug. 24, 1966.

KENTUCKY BLUE GRASS COAL

Applicant's right to exclusive use of the words "Kentucky" and "Coal," apart from the mark as shown, are disclaimed.
For Coal.
First use Apr. 19, 1966.

SN 255,768. Armour and Company, Chicago, Ill. Filed Oct. 5, 1966.

ARMOUR

Owner of Reg. No. 564,915.
For Bull Semen.
First use Nov. 30, 1962.

SN 260,350. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 8, 1966.

DYNATHENE

For Plastic Resin.
First use Nov. 4, 1966.

SN 260,351. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 8, 1966.

DYNAR

For Plastic Resin.
First use Nov. 4, 1966.

SN 260,352. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 8, 1966.

POLYTRON

For Plastic Resin.
First use Nov. 4, 1966.

SN 260,353. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 8, 1966.

AQUATHENE

For Plastic Resin.
First use Nov. 4, 1966.

SN 260,354. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 8, 1966.

TUFTRON

For Plastic Resin.
First use Nov. 4, 1966.

SN 260,355. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 8, 1966.

ULTRAMER

For Plastic Resin.
First use Nov. 4, 1966.

SN 260,356. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 8, 1966.

STYROTHENE

For Plastic Resin.
First use Nov. 4, 1966.

SN 260,357. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 8, 1966.

VYNATHENE

For Plastic Resin.
First use Nov. 4, 1966.

SN 261,061. Fiber Industries, Inc., Charlotte, N.C. Filed Dec. 19, 1966.

FORTRIL

Owner of Reg. No. 702,048.
For Man-Made Fibers.
First use Feb. 2, 1960.

261,062. Fiber Industries, Inc., Charlotte, N.C. Filed Dec. 19, 1966.

FORTAL

Owner of Reg. No. 702,046.
For Man-Made Fibers.
First use Jan. 15, 1960.

SN 269,648. The Dow Chemical Company, Midland, Mich. Filed Apr. 20, 1967.

SCUFA

For Expanded Synthetic Resin.
First use Aug. 13, 1965.

SN 273,828. Domtar Limited, Montreal, Quebec, Canada. Filed June 14, 1967.

Q-80

Owner of U.S. Reg. No. 797,669.
For Wood Pulp.
First use on or about Apr. 12, 1967; in commerce on or about Apr. 12, 1967.

SN 273,829. Domtar Limited, Montreal, Quebec, Canada. Filed June 14, 1967.

Q-30

Owner of U.S. Reg. No. 797,669.
For Wood Pulp.
First use on or about Apr. 19, 1967; in commerce on or about Apr. 19, 1967.

Class 2 — Receptacles

SN 251,642. The Mead Corporation, Dayton, Ohio. Filed Aug. 3, 1966.

POLAR-CORR

For Conditioned Corrugated Board and Cartons Made Therefrom.
First use Dec. 11, 1965.

SN 255,858. American Tube and Controls, Inc., West Warwick, R.I. Filed Oct. 6, 1966.

EX-TROL

Owner of Reg. No. 731,732.
For Hot Water Heating System Components—Namely, Tanks.
First use October 1957.

SN 259,138. National Can Corporation, Chicago, Ill. Filed Nov. 21, 1966.

EPTONE

For Finished Interior Coating Which Is Incorporated Into Containers, Particularly Metal Containers for Food and Beverages.
First use Oct. 28, 1966.

SN 264,642. Associated Piping & Engineering Corp., Compton, Calif. Filed Feb. 14, 1967.

UNI-FLEX

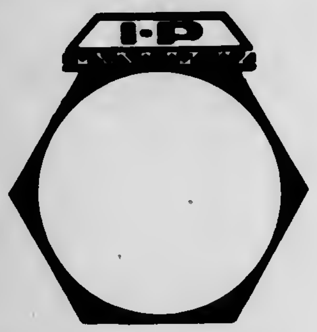
For Vessels for Liquified Gases.
First use October 1961.

SN 265,535. Liberty Distributors, Des Plaines, Ill. Filed Feb. 27, 1967. COLLECTIVE MARK.

SPORTMASTER

Owner of Reg. No. 719,087.
For Thermally Insulated Jugs, Vacuum Bottles, Portable Heat Insulated Buckets, and Ice Chests.
First use Feb. 8, 1967.

SN 268,313. International Paper Company, New York, N.Y. Filed Apr. 4, 1967.



Owner of Reg. Nos. 491,573 and 773,413.
For Boxes and Shipping Containers Made From Paper and Paperboard.
First use Oct. 3, 1962.

SN 268,695. C-Thru Flexible Packaging Corp., Brooklyn, N.Y. Filed Apr. 10, 1967.

POLYZIP

For Plastic Bags and Pouches.
First use Mar. 17, 1967.

SN 268,696. C-Thru Flexible Packaging Corp., Brooklyn, N.Y. Filed Apr. 10, 1967.

ZIP-OLY

For Plastic Bags and Pouches.
First use Mar. 17, 1967.

SN 268,873. E. B. Kingman Co., Inc., Leominster, Mass. Filed Apr. 11, 1967.

Tray·Mates

For Molded Plastic Trays for Holding Hairpins, Cosmetic Bottles, Lipsticks, and Similar Objects.
First use on or about Feb. 1, 1967.

SN 269,294. Container Corporation of America, Chicago, Ill. Filed Apr. 17, 1967.

INTOP

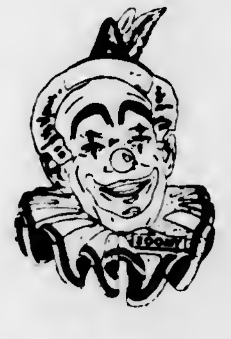
For Paperboard Containers.
First use on or before Apr. 1, 1967.

SN 269,647. The Dow Chemical Company, Midland, Mich. Filed Apr. 20, 1967.

SCUFA

For Portable Metal Tanks for Liquid Polymers, Liquid Chemicals and Chemical Compositions, and Compressed Gases, and Carrying Packs for Said Tanks.
First use Aug. 13, 1965.

SN 269,779. National Soda Straw Company, Chicago, Ill. Filed Apr. 21, 1967.



For Paper Cups and Plates.
First use Mar. 20, 1967.

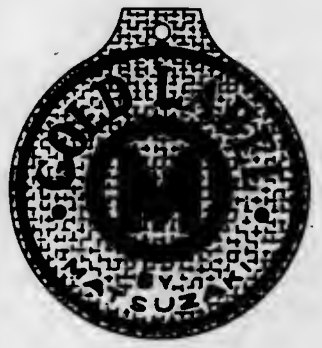
SN 269,917. Nolin Manufacturing Company, Inc., Montgomery, Ala. Filed Apr. 24, 1967.

TRANSPORTAINER

For Low Temperature Shipping Receptacles.
First use Dec. 28, 1966.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 236,618. Meitetsu, Inc., San Francisco, Calif. Filed Jan. 17, 1966.



The drawing is lined for the color gold. The white circular dot shown in the drawing represents a functional feature of the label and is disclaimed apart from the mark as shown.
For Luggage and Briefcases.
First use on or before Dec. 30, 1964.

SN 272,140. Mandarin Textiles Limited, Kowloon, Hong Kong. Filed May 23, 1967.

THE DYNASTY WEEKENDER

Applicant disclaims the term "Weekender" apart from the mark as shown. Owner of Reg. Nos. 426,437, 740,082, and others.
For Luggage.
First use February 1966; in commerce March 1966.

Class 4 — Abrasives and Polishing Materials

SN 261,390. Peck's Products Company, St. Louis, Mo. Filed Dec. 23, 1966.

COMPLIMENT

For Wax-Containing High Gloss Floor Coating.
First use Dec. 5, 1966.

Class 5 — Adhesives

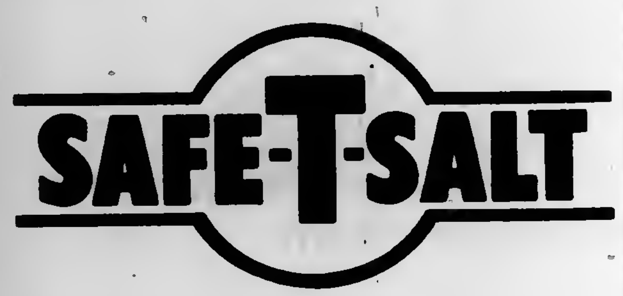
SN 258,330. Topco Associates, Inc., Skokie, Ill. Filed Nov. 9, 1966.

TOPCO

For Transparent Adhesive Tape and Household Adhesive for Household and the Like Use.
First use Mar. 29, 1966.

Class 6 — Chemicals and Chemical Compositions

SN 231,836. Morton International, Inc., Chicago, Ill. Filed Oct. 29, 1965.



For Salt for Melting Ice and Snow.
First use on or about June 16, 1960.

SN 245,001. Miles Laboratories, Inc., Elkhart, Ind. Filed May 5, 1966.

KETOCHECK

Owner of Reg. No. 656,284.
For Reagent Test for Urine Ketones for Laboratory Use.
First use Apr. 20, 1966.

SN 256,001. K. J. Quinn & Co., Inc., Malden, Mass. Filed Oct. 7, 1966.

MIRA-TEAK

For Leather Dressing Containing Coloring Agents for Use in Tanneries and Shoe Factories.
First use June 1, 1966.

SN 257,259. Dade Reagents, Inc., Miami, Fla. Filed Oct. 26, 1966.

DATA-CYTE

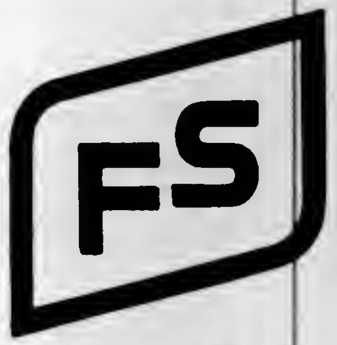
Owner of Reg. No. 793,552.
For Suspensions of Red Blood Cells for Use in Laboratory Analysis of the Antibody Content of Test Serums.
First use on or before July 21, 1966.

SN 257,897. The Standard Oil Company, Cleveland, Ohio. Filed Nov. 3, 1966.

VISTRON

For Sodium Nitrilotriacetate, Suitable for Use as a Sequestering Agent.
First use Oct. 20, 1966.

SN 258,370. FS Services, Inc., Bloomington, Ill. Filed Nov. 10, 1966.



Owner of Reg. Nos. 636,120 and 659,711.
For Liquified Petroleum Gas.
First use about January 1959.

SN 261,198. Ciba Limited, Basel, Switzerland. Filed Dec. 21, 1966.

MIKRODISPERS

Owner of Swiss Reg. No. 188,859, dated Nov. 14, 1961; and U.S. Reg. No. 730,999.
For Dyestuffs, Colouring Matter, Chemical Compositions, Preparations or Compounds for Use as Auxiliary Agents in the Textile, Leather, and Paper Industries.

SN 262,743. Cyclo Chemicals Limited, London, England. Filed Jan. 19, 1967.

CYCLOCHEM

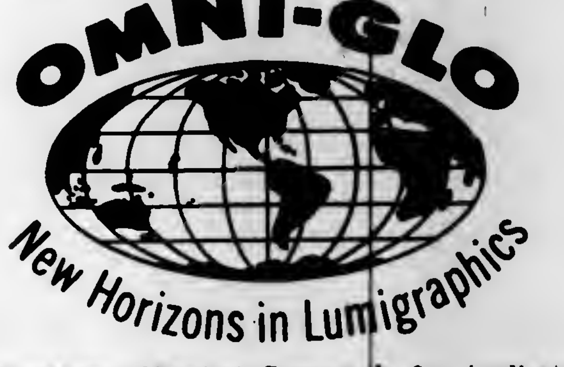
For Self-Emulsifiable Waxes; Emulsifying Waxes and Blends Thereof With Emulsifying or Wetting Agents, All for Cosmetic Purposes.
First use 1941; in commerce 1954.

SN 263,749. Conversion Chemical Corporation, Rockville, Conn. Filed Feb. 1, 1967.

SPECULAG

For Plating Solutions for Silver—Namely, Brightening and Catalyst Formulations.
First use on or before Sept. 21, 1966.

SN 267,165. Luminex, Inc., Santa Barbara, Calif. Filed Mar. 20, 1967.



For Fluorescent Chemical Compounds for Application to Paper and Other Products for Use With Ultraviolet Illumination.
First use July 1, 1966.

SN 267,547. Reichhold Chemicals, Inc., White Plains, N.Y. Filed Mar. 24, 1967.

STAFLEX

Owner of Reg. No. 325,870.
For Plasticizers and Stabilizers.
First use May 18, 1938.

SN 267,551. Societe Continentale Parker, Clichy, Hauts-de-Seine, France. Filed Mar. 24, 1967.

GALNIPLAST

Owner of French Reg. No. 528,591, dated Feb. 26, 1965 (Seine); Natl. Inst. No. 241,989.
For Chemicals for the Preparation, Activation, Sensitising of Plastic Materials, With a View To Subsequently Producing an Electrolytic Metal Deposit Thereon.

SN 267,568. Universal Oil Products Company, Des Plaines, Ill. Filed Mar. 24, 1967.

AMCON

For Solid Catalyst.
First use July 25, 1966.

SN 267,753. Hartz Mountain Products Corp., New York, N.Y. Filed Mar. 28, 1967.

HARTZ

Owner of Reg. Nos. 726,633, 802,044, and others.
For Flea Killing Collar for Animal Pets.
First use Apr. 1, 1966.

SN 267,813. Celanese Corporation, New York, N.Y. Filed Mar. 29, 1967.

GLYCOCEL

For Glycol Ethers and Esters.
First use on or about May 16, 1966.

SN 272,678. General Mills, Inc., Minneapolis, Minn. Filed May 31, 1967.

DIAD

For Curing Agents for Epoxy Resins.
First use Nov. 30, 1966.

SN 277,733. Alois A. Toenjes, d.b.a. The Exodust Company, Los Angeles, Calif. Filed Aug. 7, 1967.

EXODUST

For Inorganic Insecticide for the Control of Cockroaches.
First use July 29, 1967.

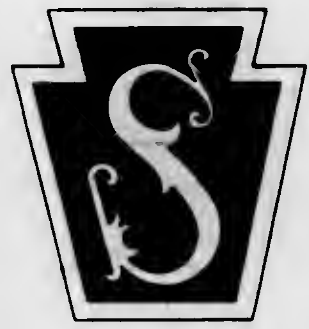
SN 279,600. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 5, 1967.

KROMATHERM

Owner of Reg. Nos. 589,622 and 818,961.
For Finely Divided Pigment for Use in the Industrial Arts.
First use Dec. 27, 1965.

Class 7 — Cordage

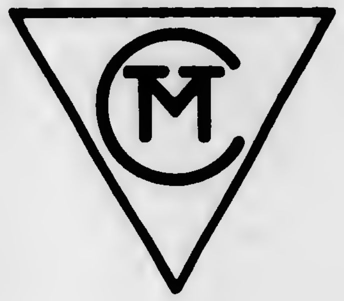
SN 265,452. Wall Industries, Inc., d.b.a. Schlichter Products Company, New York, N.Y. Filed Feb. 24, 1967.



Owner of Reg. No. 48,743.
For Rope, Cord, and Twine.
First use June 13, 1889.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

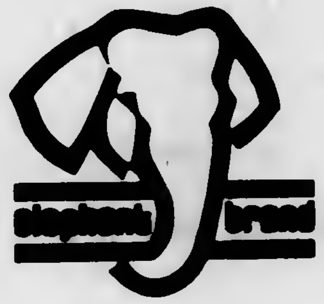
SN 267,701. James L. Wade, d.b.a. Wade Tri-Test Munitions Company, Mundelein, Ill. Filed Mar. 27, 1967.



For Firearms Ammunition.
First use on or about Aug. 28, 1961.

Class 10 — Fertilizers

SN 261,810. Cominco Ltd., Montreal, Quebec, Canada. Filed Jan. 3, 1967.



Priority claimed under Sec. 44(d) on Canadian application filed July 12, 1966; Reg. No. 149,687, dated Mar. 10, 1967. Applicant disclaims the word "Brand" apart from the mark as shown. Owner of U.S. Reg. Nos. 509,595, 735,214, and 657,948.
For Chemical Fertilizers.

Class 12 — Construction Materials

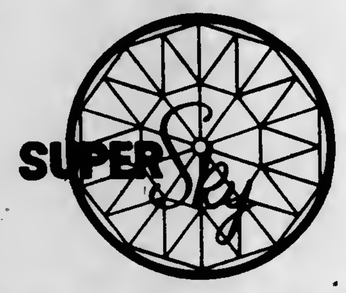
SN 248,715. Lunn Laminates, Incorporated, Wyandanch, N.Y. Filed June 22, 1966.

DURALUN

For Plywood Panels Faced on Both Sides With Fiberglass Reinforced Plastic for Manufacture of Cargo Containers, Shipping Crates, Truck Bodies, and Railroad Car Bodies.

First use May 1, 1966.

SN 248,745. Super Sky Products, Inc., Mequon, Wis. Filed June 22, 1966.



The design of a skylight depicted in the mark is disclaimed apart from the mark and without prejudice to any rights which applicant may have therein.

For Skylights.

First use June 3, 1966; as early as August 1963 in a different form.

SN 249,581. Hess M. Roberts, d.b.a. Guardian Laboratories, St. Louis, Mo. Filed July 5, 1966.

HARDPLATE

For Liquid Resinous Finishes To Be Applied to Concrete, Wood, and Steel Surfaces To Form a Uniform Monolithic Structural Layer Thereon.

First use July 1, 1961.

SN 265,635. Johns-Manville Corporation, New York, N.Y. Filed Feb. 28, 1967.

BEL-AIR

For Shingles.

First use Jan. 25, 1966.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 255,213. Kenlin Enterprises, Inc., Highland Park, Ill. Filed Sept. 27, 1966.

GLIDE RITE

For Drawer Slide Fitting.

First use Aug. 26, 1966.

Class 14 — Metals and Metal Castings and Forgings

SN 261,413. Vanadium Corporation of America, New York, N.Y. Filed Dec. 23, 1966.

H.S.-CHROME 50

For Alloy Addition for Steel.

First use June 4, 1965.

SN 261,817. Electronic Specialty Company, Los Angeles, Calif. Filed Jan. 3, 1967.

KO2

For Aluminum Alloys and Castings.

First use on or before Nov. 30, 1966.

SN 262,044. Lips N.V., Drunen, Netherlands. Filed Jan. 6, 1967.

LIDRUNEL

Owner of Dutch Reg. No. 149,019, dated Aug. 22, 1963.

For Alloys of Common Metals.

SN 262,311. The Carpenter Steel Company, Reading, Pa. Filed Jan. 11, 1967.

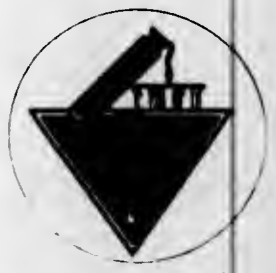
HY-SAT

For Steel in the Form of Wire, Strips, Bars, Billets, and Shapes.

First use Mar. 25, 1965.

Class 15 — Oils and Greases

SN 262,038. Hulburt Oil and Grease Company, Philadelphia, Pa. Filed Jan. 6, 1967.



Applicant disclaims the words "Established 1861" apart from the mark as a whole.

For Lubricating Oils and Greases.

First use at least as early as Apr. 28, 1920; about 1861 as to "Hulburt."

Class 16 — Protective and Decorative Coatings

SN 250,879. Vane-Calvert Paint Company, St. Louis, Mo. Filed July 22, 1966.

B-K

For Paint-Like Plastic Gel Coating Composition for Concrete Walls, Swimming Pools, and the Like.

First use January 1954.

Class 17 — Tobacco Products

SN 251,927. Samuel B. Jacobs, Hoboken, N.J. Filed Aug. 8, 1966.

ROYAL HOUSE

For Cigars.

First use on or about May 6, 1966.

SN 259,319. Havatampa Cigar Corporation, Tampa, Fla. Filed Nov. 23, 1966.

CRAFTSMAN

For Cigars.

First use Oct. 15, 1966.

Class 18 — Medicines and Pharmaceutical Preparations

SN 129,016. Lan Lanne Incorporated, Hollywood, Calif. Filed Oct. 2, 1961.

LA LANNE

Owner of Reg. Nos. 704,521, 772,937, and others.

For Food Supplement Products Including a Mineral and Vitamin Food Supplement, a Liver, Iron, and Vitamin B-12 Supplement, Protein Wafers, and Vitamin C tablets.

First use Apr. 1, 1961.

SN 244,056. A. H. Robins Company, Incorporated, Richmond, Va. Filed Apr. 22, 1966.

A-H-ROBINS

The mark is the name of the founder of the company and has been in use since 1878. Owner of Reg. No. 521,047.

For Medicines and Pharmaceutical Preparations.

First use Jan. 20, 1966.

SN 248,333. Heyl & Co., Chemisch-Pharmaseutische Fabrik, Berlin-Zehlendorf, Germany. Filed June 17, 1966.

METALCAPTASE

Owner of German Reg. No. 749,337, dated May 30, 1961.

For D-Penicillamin.

SN 252,486. Masti-Kure Products Co., Norwich, Conn. Filed Aug. 16, 1966.

DRY TREET

Applicant disclaims the word "Dry" as used herein except as part of the composite mark.

For Veterinary Preparation for Mastitus Treatment for Dry Cows.

First use at least as early as Mar. 18, 1966.

SN 255,127. Stanback Company, Ltd., Salisbury, N.C. Filed Sept. 26, 1966.

STANCO

For Aspirin.

First use Aug. 19, 1966.

SN 255,730. Stanley Drug Products, Inc., Portland, Oreg. Filed Oct. 4, 1966.

PRO-BIO

For Hemorrhoidal Preparation.

First use Sept. 27, 1966.

SN 256,781. Veterinary Supply Depot Incorporated, Dallas, Tex. Filed Oct. 19, 1966.

EQUI-PED

For Hoof Conditioner for the Treatment of Dry or Brittle Equine Hooves and Other Related Hoof Problems.

First use November 1965.

SN 257,113. Veterinary Supply Depot Incorporated, Dallas, Tex. Filed Oct. 24, 1966.

EQUI-PREP

For Hoof Conditioner for the Treatment of Dry or Brittle Equine Hooves and Other Related Hoof Problems.

First use Sept. 12, 1966.

SN 261,083. Iron Products, Inc., Douglas, Ariz. Filed Dec. 19, 1966.

MINI-SUP

For Mineral Supplement for Livestock and Poultry.

First use February 1966.

SN 261,140. Bentex Pharmaceutical Company, Houston, Tex. Filed Dec. 20, 1966.

BENADERM

For Medicated Skin Cream for Use in Subacute or Chronic Dermatoses as an Antifungal, Anti-Inflammatory, Antipruritic Preparation.

First use Dec. 16, 1966.

SN 261,202. Ciba Limited, Basel, Switzerland. Filed Dec. 21, 1966.

MEXASIL

Owner of Swiss Reg. No. 209,04, dated Mar. 11, 1965.

For Preparation for Treatment of Intestinal Diseases.

SN 262,437. Ohio Drug Company Pty. Ltd., d.b.a. Ohio Drug Coy. Pty. Ltd., Sydney, New South Wales, Australia. Filed Jan. 12, 1967.

FLURETS

Owner of Australian Reg. No. 170,014, dated Oct. 25, 1961.

For Preparations Containing Fluoride for Use in the Prevention of Tooth Decay.

SN 263,478. The Purdue Frederick Company, Yonkers, N.Y. Filed Jan. 27, 1967.

BETAGIENE

Owner of Reg. Nos. 657,663 and 711,741.

For Antiseptic Germicidal Preparation.

First use Jan. 17, 1967.

SN 263,479. The Purdue Frederick Company, Yonkers, N.Y. Filed Jan. 27, 1967.

ISOGIENE

Owner of Reg. Nos. 305,850 and 649,591.
For Antiseptic Germicidal Preparation.
First use Jan. 17, 1967.

SN 263,481. The Purdue Frederick Company, Yonkers, N.Y. Filed Jan. 27, 1967.

POVICIDIN

For Antiseptic Germicidal Preparation.
First use Jan. 17, 1967.

SN 264,261. Wagner Veterinary Drug Company, Louisville, Ky. Filed Feb. 8, 1967.

Biovet

For Vitamin Supplement for Veterinary Use.
First use at least as early as Nov. 10, 1965.

SN 264,262. Wagner Veterinary Drug Company, Louisville, Ky. Filed Feb. 8, 1967.

Equidoc

For Vitamin Supplement for Veterinary Use.
First use at least as early as May 11, 1965.

SN 265,154. Beecham Group Limited, d.b.a. Beecham Research Laboratories, Brentford, Middlesex, England. Filed Feb. 21, 1967.

PENBROCK

Owner of British Reg. No. 788,058, dated Mar. 4, 1959.
For Antibiotic Preparations.

SN 265,165. Ciba Corporation, d.b.a. The Gland-O-Lac Company, New York, N.Y. Filed Feb. 21, 1967.

AMNIZOL

For Preparation for Control of Blackhead in Turkeys.
First use February 1952.

SN 267,827. T. R. Gibbs Medicine Company, Inc., Washington, D.C. Filed Mar. 29, 1967.

T.R.

For Remedy for Athlete's Foot and Ringworm.
First use Dec. 2, 1958.

SN 267,828. T. R. Gibbs Medicine Company, Inc., Washington, D.C. Filed Mar. 29, 1967.

PUSH

For Remedy for Acid Indigestion, Gas and Heartburn.
First use Dec. 2, 1958.

SN 269,227. E. R. Squibb & Sons, Inc., New York, N.Y. Filed Apr. 14, 1967.

GENASE

For Enzymatic Debridement Agent.
First use Feb. 24, 1967.

SN 272,897. Chas. Pfizer & Co., Inc., New York, N.Y. Filed June 2, 1967.

PFIZER OTC

Owner of Reg. Nos. 501,762, 626,088, and others.
For Antibiotic Preparation for Veterinary Use.
First use May 15, 1967.

SN 277,865. Mead Johnson & Company, Evansville, Ind. Filed Aug. 9, 1967.

MEADICYCLINE

Owner of Reg. No. 297,187, and others.
For Anti-Infective Agent Used for Soft Tissue Infections, and Infections of the Respiratory Tract, Urinary Tract and Central Nervous System.
First use on or prior to May 17, 1967.

SN 279,515. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 1, 1967.

GUARDVAC

For Veterinary Biological Preparations.
First use Aug. 23, 1967.

Class 19—Vehicles

SN 241,726. Aiofs Manufacturing Company, Grand Rapids, Mich. Filed Mar. 24, 1966.

LYFE BELT

The word "Belt" is disclaimed apart from the mark as shown.
For Safety Belts for Use in Automobiles and Other Vehicles.
First use on or about July 2, 1956.

SN 247,790. Fruehauf Corporation, Detroit, Mich. Filed June 10, 1966.

PRO-PAR

For Semi-Trailer Axles and Parts Thereof.
First use Nov. 15, 1965.

SN 256,068. Centreville Tag-A-Long Trailers, Inc., Centreville, Md. Filed Oct. 10, 1966.

For Equipment Trailers.
First use July 29, 1966.

SN 256,353. Excel Corporation, Elkhart, Ind. Filed Oct. 13, 1966.

XL

The drawing is lined for the color red.
For Vehicle Windows and Travel Tops for Camper Vehicles.
First use 1928.

SN 257,487. Henry R. Hinckley & Company, Southwest Harbor, Maine. Filed Oct. 28, 1966.

H

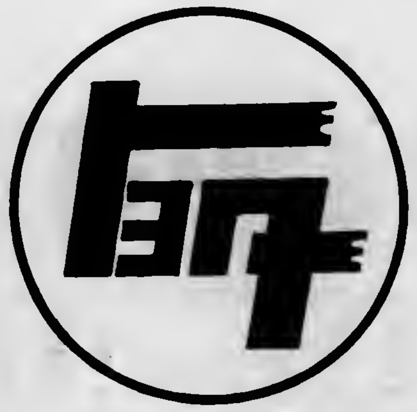
For Sail Boats and Sails Therefor.
First use 1946.

SN 258,144. Play-Mor Trailers, Inc., Westphalia, Mo. Filed Nov. 7, 1966.

PLAY-MOR

For Trailers—Namely, Travel Trailers and Pick-Up Truck Campers.
First use May 2, 1964.

SN 273,448. Toyota Motor Company, Ltd., Toyoda-shi, Aichi-ken, Japan. Filed June 9, 1967.



The mark is composed of Japanese characters which mean "Toyota" in Japanese. The English translation of "Toyota" is "richfield."
For Automobiles and Motor Trucks.
First use Dec. 2, 1964; in commerce Dec. 2, 1964.

SN 273,449. Toyota Motor Company, Ltd., Toyoda-shi, Aichi-ken, Japan. Filed June 9, 1967.

TOYOTA

The English translation of "Toyota" is "richfield."
For Automobiles and Motor Trucks.
First use Mar. 29, 1958; in commerce Mar. 29, 1958.

SN 273,450. Toyota Motor Company, Ltd., Toyoda-shi, Aichi-ken, Japan. Filed June 9, 1967.

CORONA

For Automobiles and Motor Trucks.
First use Sept. 17, 1955; in commerce Sept. 17, 1955.

SN 277,245. Bangor Punta Operations, Inc., New York, N.Y. Filed Aug. 1, 1967.

RHODES 19

Applicant disclaims the numeral "19" apart from the mark as shown. Owner of Reg. No. 730,960.
For Boats.
First use Mar. 30, 1959.

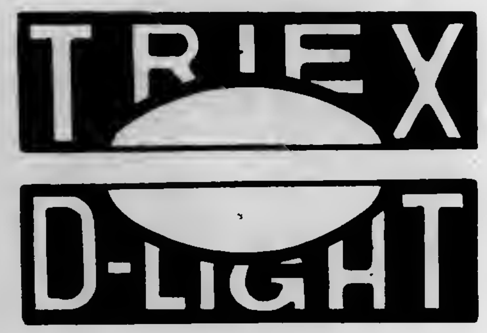
Class 21—Electrical Apparatus, Machines, and Supplies

SN 240,854. Century Lighting, Inc., New York, N.Y. Filed Mar. 14, 1966.

C-CARD

For Composition or Wire-Wound Potentiometers.
First use November 1962.

SN 243,601. Triex, Inc., Philadelphia, Pa. Filed Apr. 15, 1966.



For Vehicle Deceleration Warning Signal.
First use Feb. 14, 1966.

SN 251,327. The New England Industries, Inc., Medina, Ohio, assignee of Plasti-Kote, Inc., Madina, Ohio. Filed July 29, 1966.

SPRA-KOOL

For Spray-Type Coolant Used in Conjunction With Testing of Electronic Circuits To Locate Short Circuits in the Equipment.
First use Nov. 15, 1965.

SN 260,794. Electrical Utilities Company, La Salle, Ill. Filed Dec. 13, 1966.

EUC

Owner of Reg. Nos. 658,542 and 663,396.
For Capacitors.
First use November 1951.

SN 264,398. Fisher Radio Corporation, Long Island City, N.Y. Filed Feb. 10, 1967.

220-T

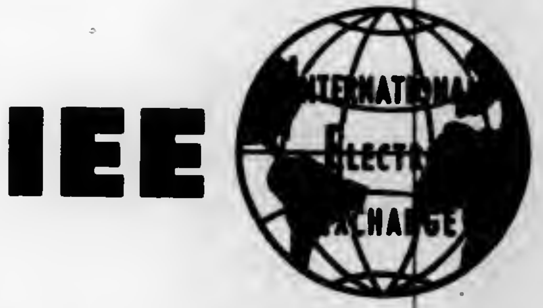
For Radio Receivers.
First use Oct. 6, 1966.

SN 264,399. Fisher Radio Corporation, Long Island City, N.Y. Filed Feb. 10, 1967.

500-T

For Radio Receivers.
First use Sept. 29, 1966.

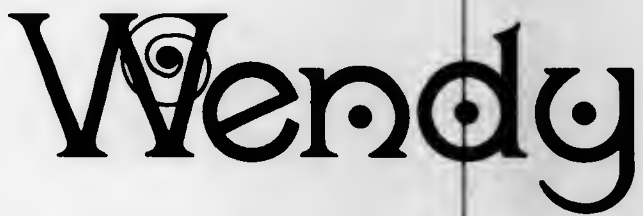
SN 267,633. International Electro Exchange Corporation, Minneapolis, Minn. Filed Mar. 27, 1967.



For Electrical Components—Namely, Electrical Switches and Parts Therefor, Miniature Lamps, Lamp Sockets, and Accessories for the Lamps.
First use May 1962.

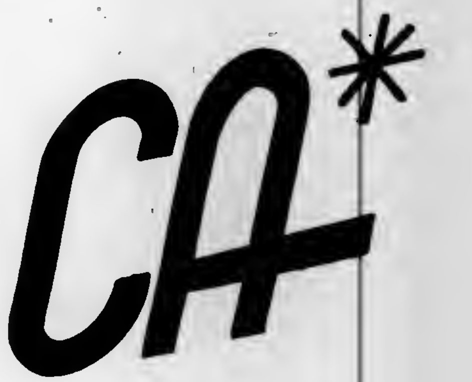
Class 22—Games, Toys, and Sporting Goods

SN 247,063. Romper Room, Inc., Baltimore, Md. Filed June 1, 1966.



For Toys—Namely, Figurines and Dress Accessories for the Same, Cut Out From Sheet Material.
First use April 1965.

SN 278,638. Kent Sporting Goods Co., Ashland, Ohio. Filed Aug. 21, 1967.



For Golf Balls.
First use Oct. 12, 1966.

SN 279,897. Mattel, Inc., Hawthorne, Calif. Filed Sept. 8, 1967.

STACY

For Dolls, Doll Clothing, and Doll Accessories.
First use Aug. 15, 1967.

SN 279,898. Mattel, Inc., Hawthorne, Calif. Filed Sept. 8, 1967.

SKEDIDDLE

For Dolls, Doll Clothing, and Doll Accessories.
First use Aug. 15, 1967.

SN 279,901. Mattel, Inc., Hawthorne, Calif. Filed Sept. 8, 1967.

SHEILA

For Dolls, Doll Clothing, and Doll Accessories.
First use Aug. 15, 1967.

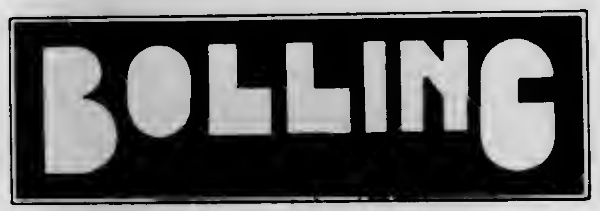
SN 279,902. Mattel, Inc., Hawthorne, Calif. Filed Sept. 8, 1967.

SYLVIA

For Dolls, Doll Clothing, and Doll Accessories.
First use Aug. 15, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 250,190. Stewart Bolling & Co., Inc., Cleveland, Ohio. Filed July 13, 1966.



For Machinery for the Rubber and Plastic Industries—Namely, Mills, Extruders, Calenders, Presses, and Mixers.
First use Jan. 10, 1955.

SN 250,814. Amsted Industries Incorporated, Chicago, Ill. Filed July 22, 1966.

UNI-MOUNT

Owner of Reg. No. 747,214.
For Chain Tighteners for Use in Connection With Chain Drive Assemblies and Driving Chains.
First use Jan. 21, 1963.

SN 253,936. Frank M. Weaver & Co., Inc., Lansdale, Pa. Filed Sept. 6, 1966.

SELECT-A-RACK

For Machines in the Nature of Mechanized Racks Useful for Storing Metal Bars and the Like and Selectively Producing and Discharging the Same.
First use Oct. 30, 1964.

SN 256,427. Bobst Champlain, Inc., Roseland, N.J. Filed Oct. 14, 1966.

CORSAIR

For Printing Presses.
First use July 18, 1966.

SN 258,434. White Motor Corporation, Cleveland, Ohio. Filed Nov. 10, 1966.

WHITE MOBILIFT

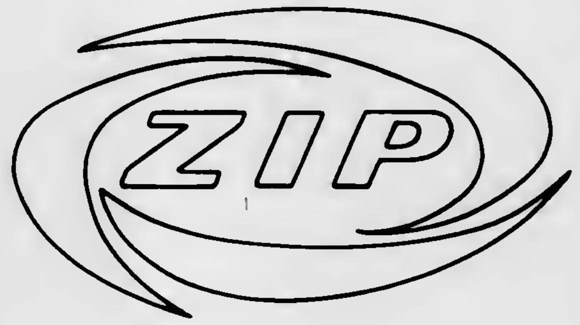
Owner of Reg. Nos. 562,147, 763,456, and others.
For Lift Trucks.
First use Oct. 10, 1966.

SN 260,126. Luwa Ltd., Zurich, Switzerland. Filed Nov. 29, 1966.

PNEUMACENT

For Pneumatic Blowers and Suction Apparatus and Accessories Therefor, Employed in Textile Mills for Removing Undesired Accumulations of Foreign Matters.
First use in or before December 1964; in commerce October 1965.

SN 262,073. Textron Inc., Providence, R.I. Filed Jan. 6, 1967.



For Chain Saws.
First use Aug. 5, 1958.

SN 262,342. Koppers Company, Inc., Pittsburgh, Pa. Filed Jan. 11, 1967.

MARAPEL

For Polyurethane-Covered Printing Cylinders.
First use Sept. 1, 1966.

SN 262,513. Scott Midland Corporation, Millgrove, N.Y. Filed Jan. 13, 1967.

ROTADRAULIC

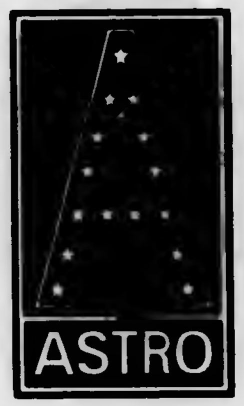
For Hydraulic Cranes.
First use on or about Apr. 1, 1966.

SN 262,818. Textron Inc., Providence, R.I. Filed Jan. 18, 1967.

ZIP

For Chain Saws.
First use Aug. 5, 1958.

SN 275,204. Astro Broaching Corp., Indianapolis, Ind. Filed July 3, 1967.



For Broaching Machines.
First use May 24, 1967.

Class 24 — Laundry Appliances and Machines

SN 262,198. Russey's & Associates, Inc., Abilene, Tex. Filed Jan. 9, 1967.

DYDEE QUEEN

Applicant disclaims exclusive right to the use of the word "Dydee" aside and apart from the mark as shown, reserving, however, unto itself all common law rights that it has in the mark.
For Sanitary Diaper Washer To Be Installed on Toilet Bowls.
First use about October 1964.

Class 26 — Measuring and Scientific Appliances

SN 245,772. Trimac Engineering, Inc., Salem, Mass. Filed May 16, 1966.

SHARPSITE

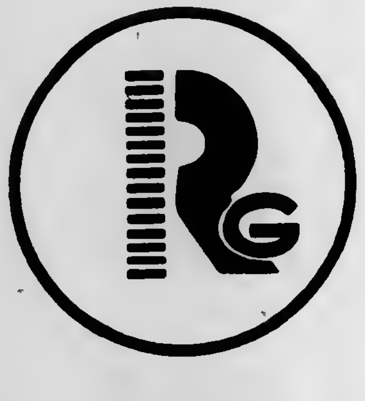
For Indicating Means—Namely, Sighting Discs Attached to Eyeglass Lenses To Aid Persons Using Firearms in Aiming Such Devices.
First use Mar. 1, 1966.

SN 247,624. Rotron Manufacturing Company, Inc., Woodstock, N.Y. Filed June 8, 1966.

PIPER

For Snap Action Switch Actuated by the Velocity Pressure of Flowing Air and/or Gas.
First use on or about May 16, 1966.

SN 254,721. Rochester Gauges Inc. of Texas, Dallas, Tex. Filed Sept. 19, 1966.



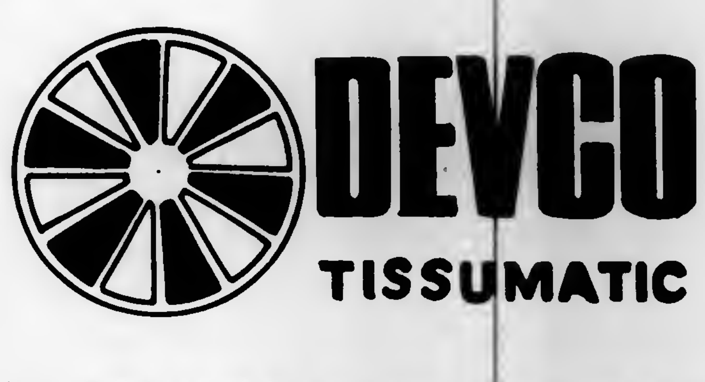
The mark consists of a fanciful design of the letters "RG."
For Liquid Level Gauges.
First use Sept. 20, 1962.

SN 258,282. Chicago Pneumatic Tool Company, New York, N.Y. Filed Nov. 9, 1966.

AUTOLARM

For Automatic Remote Control Sensing System for Gas Compressors Which Indicates Pressures, Temperatures, and Other Operating Conditions.
First use July 6, 1966.

SN 262,770. Devco, Inc., Detroit, Mich. Filed Jan. 18, 1967.



For Tissue-Staining and Microscopic Slide Processing Unit for Laboratory and Hospital Applications.
First use Oct. 11, 1965.

SN 264,584. Rand Manufacturing Company, Flint, Mich. Filed Feb. 13, 1967.

NORTH STAR

For Magnetic Compass.
First use Jan. 8, 1967.

SN 264,652. Compugraphic Corporation, Reading, Mass. Filed Feb. 14, 1967.

JUSTAPE

For Typesetting Computers for Control of Typesetting, Line Casting and Printing, and for the Processing of Data Storage Tape and Components Therefor.
First use Feb. 26, 1966.

SN 265,069. Industrial Nucleonics Corporation, Columbus, Ohio. Filed Feb. 20, 1967.

WATER BALANCE

For Moisture Measuring Systems, Basis Weight Measuring Systems, and Combinations Thereof, for Industrial Process Measurement and/or Control in the Paper Industry.
First use on or about Feb. 10, 1967.

SN 265,277. Computron Inc., Waltham, Mass. Filed Feb. 23, 1967.

TVP

For Magnetic Tape for Audio, Video, Instrumentation and Data Processing.
First use Oct. 27, 1966.

SN 273,231. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed June 7, 1967.

Owner of Reg. Nos. 747,594, 823,384, and others.
For Drop Out Compensator.
First use Mar. 29, 1963.

SN 273,232. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed June 7, 1967.

For Digital, Communication, Telemetric, and General Instrumentation Recorders, and Reproducing Machines.
First use Jan. 12, 1959.

SN 277,504. Yarway Corporation, Chestnut Hill, Pa. Filed Aug. 4, 1967.

YARWAY

Owner of Reg. Nos. 126,809, 622,203, and others.
For Metering, Proportioning, and Controlled Volume Pumps.
First use Nov. 9, 1966.

Class 28 — Jewelry and Precious-Metal Ware

SN 272,143. Longines-Wittnauer Watch Co., Inc., New York, N.Y. Filed May 23, 1967.

SYMPHONETTE

Owner of Reg. Nos. 307,087, 592,852, and others.
For Jewelry.
First use Januanry 1967.

Class 29 — Brooms, Brushes, and Dusters

SN 279,984. Delta Brush Mfg. Corp., Mount Vernon, N.Y. Filed Sept. 11, 1967.

For Artists' Brushes.
First use July 14, 1966.

Class 31 — Filters and Refrigerators

SN 259,605. Thompson-Starrett Co. Inc., Maspeth, N.Y. Filed Nov. 28, 1966.

DELMONICO

Owner of Reg. No. 709,578.
For Refrigerators, Freezers, and Refrigerator-Freezer Combinations.
First use July 15, 1964.

SN 261,294. Ford Motor Company, Dearborn, Mich. Filed Dec. 22, 1966.

BLUE OVAL

For Lubricant Filters, Air Filters, and Fuel Filters for Internal Combustion Engines.
First use Dec. 16, 1966.

Class 32 — Furniture and Upholstery

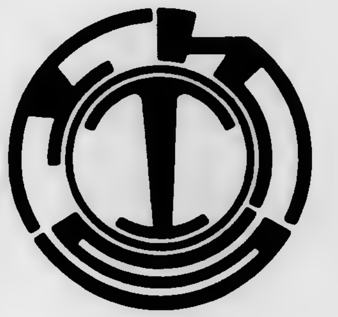
SN 250,641. J. Cinnamon Limited, Cambridge, Heath, London, England. Filed July 20, 1966.

LOUNGEMASTER

Owner of British Reg. No. 865,224, dated June 5, 1964.
For Chairs, Chair Frames, Upholstered and Partially Upholstered Furniture, and Parts of All the Aforesaid Goods; Stools and Pouffes, All Being Furniture; Cushions (Upholstery) and Pillows (Not for Surgical or Curative Purposes).

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 246,372. Sadao Taketsuna, Miyakojima-ku, Osaka, Japan. Filed May 23, 1966.



Owner of Japanese Reg. No. 508,744, dated Oct. 14, 1957.
For Space Heater for Commercial or Industrial Use.

SN 252,779. E. Green & Son Limited, Wakefield, England. Filed Aug. 15, 1966.

GREEN'S ECONOMISERS

The word "Economisers" is disclaimed apart from the mark as shown. Owner of British Reg. No. 73,421, dated Mar. 2, 1888.
For Heat Exchangers Designed To Heat the Feed Water for a Steam Boiler by Waste Heat in the Furnace Gases Passing From the Boiler to the Chimney.

SN 256,949. Duane P. Martin, d.b.a. Shurail Manufacturing Co., Minneapolis, Minn. Filed Oct. 21, 1966.

SHURAIL

For Connectors for Joining and Supporting Fiberglass Ducts and the Like in Heating, Ventilating, and Cooling Installations.
First use Nov. 19, 1965.

SN 259,136. Motor Wheel Corporation, Lansing, Mich. Filed Nov. 21, 1966.

Duo-Therm

Owner of Reg. Nos. 332,330, 588,696, and others.
For Electric Furnaces and Electric Air Conditioners.
First use May 14, 1956, on electric air conditioners.

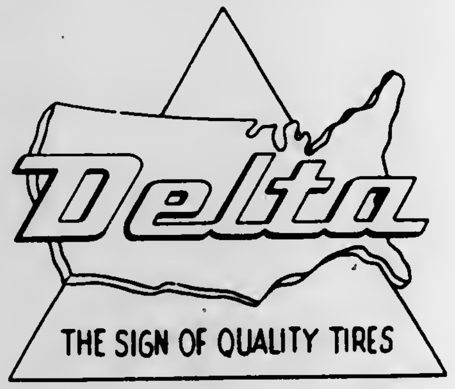
Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 229,969. Fleet Wholesale Supply Co., Inc., Appleton, Wis. Filed Oct. 12, 1965.

ROAD RUNNER

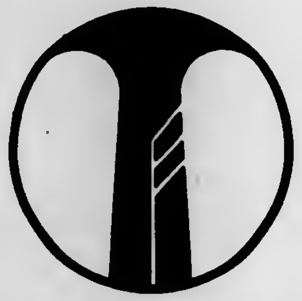
For Automotive Tires.
First use Oct. 1, 1965.

SN 242,574. Delta Tire Corporation, Detroit, Mich. Filed Apr. 4, 1966.


Delta
THE SIGN OF QUALITY TIRES

The words "The Sign of Quality Tires" are disclaimed apart from the mark as shown. Owner of Reg. No. 768,772.
For Non-Metallic Tires.
First use Jan. 4, 1965; June 7, 1960, as to the trademark "Delta."

SN 251,251. The Toyo Rubber Industry Company Limited, Nishi-ku, Osaka, Japan. Filed July 28, 1966.



The mark is a design symbolizing a rubber tree within a circle. Owner of Japanese Reg. No. 390,558, dated Aug. 29, 1950.
For Automobile Tires and Tubes.

SN 255,956. Ashworth Bros., Inc., Fall River, Mass. Filed Oct. 7, 1966.

CB5 BAKING BAND

The words "Baking Band" are disclaimed apart from the mark as shown, without prejudice to applicant's common law rights.
For Metallic Conveyor Belts.
First use Mar. 12, 1963.

SN 262,193. Raybestos-Manhattan, Inc., Passaic, N.J. Filed Jan. 9, 1967.

MINI-V

For Small V-Belt.
First use Dec. 23, 1966.

Class 36 — Musical Instruments and Supplies

SN 249,927. Action Productions Inc., Atlanta, Ga. Filed July 11, 1966.

ACTION

For Phonograph Records.
First use Mar. 15, 1966.
Subj. to Intf. with SN 278,773.

Class 37 — Paper and Stationery

SN 235,871. Titan Plastics Corporation, New York, N.Y. Filed Jan. 5, 1966.

MAGI-CLAMP

For Gravity-Grip Paper-Holding Device Adapted for Mounting on a Vertical Surface.
First use Dec. 1, 1965.

SN 250,675. Oxford Paper Company, New York, N.Y. Filed July 20, 1966.

RHODES TEXT

Applicant disclaims the term "Text" apart from the mark as shown.
For Printing Papers for Books, Magazines, and the Like.
First use Apr. 23, 1966.

SN 251,649. Office Products Incorporated, Detroit, Mich. Filed Aug. 3, 1966.

SLIP-ON

For Label Holders for Office Use, of the Type Used on the Back of Ring Binders and Post Binders.
First use in or about April 1948.

SN 256,524. A-V Communications, Inc., Farmingdale, N.Y. Filed Oct. 17, 1966.

AVCOM

For Kits for the Production of Transparencies, Comprising Marking Devices as Pencils, Leads, Pens, Felt Nib Markers, Pen Points, Ink, Pen Holders, and Lettering Guides; Acetate and Cellophane Transparencies, Mounts for Transparencies; and Sheet Hinges.
First use Dec. 3, 1964.

SN 261,946. Scott Paper Company, Delaware County, Pa. Filed Jan. 4, 1967.

CONVOY

For Household Wipers Including a Layer of Paper.
First use Dec. 12, 1966.

SN 265,540. Micropoint, Inc., Sunnyvale, Calif. Filed Feb. 24, 1967.

SAFETY-PEN

For Pens.
First use Jan. 11, 1967.

SN 265,542. Micropoint, Inc., Sunnyvale, Calif. Filed Feb. 24, 1967.

VISI-PEN

For Pens.
First use Jan. 11, 1967.

SN 265,703. Cleo Wrap Corporation, Memphis, Tenn. Filed Mar. 1, 1967.

BYE BYE BUGS

For Shelf and Drawer Lining Paper.
First use Dec. 15, 1960.

SN 265,911. Micropoint, Inc., Sunnyvale, Calif. Filed Mar. 3, 1967.

DEPENDA

For Pens.
First use Feb. 20, 1967.

SN 275,011. Customark Corporation, Appleton, Wis. Filed June 29, 1967.

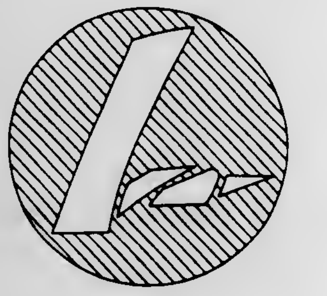
CHEMARK

For Chemically Watermarked Customized Letterhead Paper.
First use June 20, 1967.

SN 279,981. Arden-Mayfair, Inc., d.b.a. Low Cost Markets, Los Angeles, Calif. Filed Sept. 11, 1967.

Owner of Reg. No. 834,439.
For Facial Tissue, Toilet Tissue, and Paper Towels.
First use Aug. 3, 1967.

SN 280,135. Lewis Business Forms, Inc., Jacksonville, Fla. Filed Sept. 12, 1967.



The drawing is lined to represent the color green, however, no claim is made to the color apart from the mark as shown.
For Tabulating Cards and Business Forms.
First use February 1960.

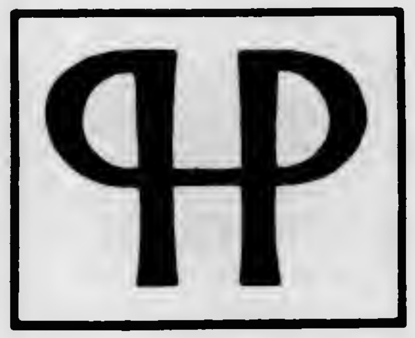
Class 38 — Prints and Publications

SN 247,895. Church-Craft Pictures, Inc., St. Louis, Mo. Filed June 13, 1966.

CHURCH-CRAFT

For Slides, Film Strips, Religious Albums, Books, and Religious Instructive Material, as Religious Pamphlets and Loose Leaf Sheets.
First use Jan. 15, 1947.

SN 255,717. Picture House Press, Inc., New York, N.Y. Filed Oct. 4, 1966.



For Books.
First use Aug. 1, 1966.

SN 257,317. Simmons-Boardman Publishing Corporation, New York, N.Y. Filed Oct. 26, 1966.

Marine Catalog

Owner of Reg. No. 722,712.
For Trade Magazine.
First use July 16, 1956.

SN 258,940. Transamerica Corporation, San Francisco, Calif. Filed Nov. 17, 1966.

Owner of Reg. No. 741,404.
For Directories, Magazine, Brochures, Pamphlets, and Reports.
First use April 1964.

SN 259,699. The American Oil Company, Chicago, Ill. Filed Nov. 30, 1966.

ADVENTURE ROAD

For Magazine.
First use September 1965.

SN 259,916. Geigy Chemical Corporation (New York corporation), Ardsley, N.Y., by merger from Geigy Chemical Corporation (Delaware corporation), Ardsley, N.Y. Filed Dec. 2, 1966.

TECHNICA

For Information Bulletins Describing Chemical Products, Issued From Time to Time.
First use June 1960.

SN 260,108. Vance Publishing Corporation, d.b.a. Modern Beauty Shop Magazine, Chicago, Ill. Filed Dec. 5, 1966.

MODERN'S MARKET GUIDE

The words "Market Guide" are disclaimed apart from the mark as shown.
For Annual Trade Directory.
First use Nov. 1, 1966.

SN 261,145. General Features Corporation, New York, N.Y. Filed Dec. 20, 1966.

ON THE SPORTS FRONT

For Newspaper Feature.
First use Apr. 17, 1966.

SN 261,170. Tower Press, Inc., Lynn, Mass. Filed Dec. 20, 1966.

AUNT JANE'S SEWING CIRCLE

For Monthly Magazine.
First use March 1963.

SN 261,630. Chilton Company, Philadelphia, Pa. Filed Dec. 29, 1966.

INSTRUMENTS AND CONTROL SYSTEMS

For Periodical Publication in the Nature of a Business or Trade Magazine.
First use in or about November 1959; Jan. 15, 1928, as to the mark "Instruments."

SN 261,672. Norcross, Inc., New York, N.Y. Filed Dec. 29, 1966.

VELVET ELEGANCE

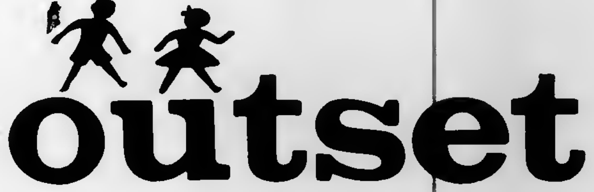
For Greeting Cards.
First use Nov. 23, 1966.

SN 261,677. Pimienta Publishing Corp., New York, N.Y. Filed Dec. 29, 1966.

PIMIENTA!

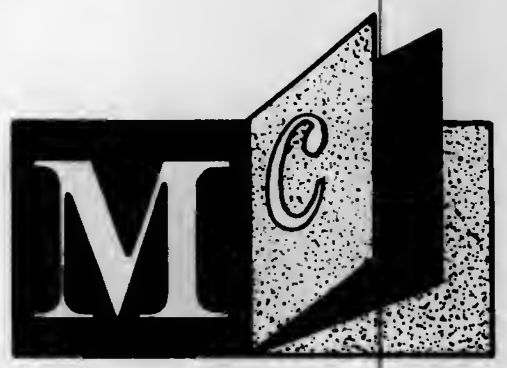
For Magazine Issued Periodically.
First use September 1958.

SN 261,731. Guidance Associates of Pleasantville, New York, Inc., Pleasantville, N.Y. Filed Dec. 30, 1966.



For Color Filmstrips and Narrative Record Albums Used by Educators, Counselors, and Administrators in Elementary Schools.
First use May 23, 1966.

SN 261,866. McCall Corporation, New York, N.Y. Filed Jan. 3, 1967.



The drawing is not lined for color, but merely indicates difference in shading or colors; no claim being made to any specific color.
For House Organ.
First use September 1966.

SN 261,871. Norcross, Inc., New York, N.Y. Filed Jan. 3, 1967.

TASTY TOPPERS

For Greeting Cards.
First use Nov. 27, 1966.

SN 278,351. Lane Magazine & Book Company, Menlo Park, Calif. Filed Aug. 16, 1967.

Sunset Newsletter

WESTERN MARKET REPORT
from Sunset, the Magazine of Western Living

Owner of Reg. Nos. 209,499, 568,050, 724,008, 724,009, and others.
For Monthly Trade Bulletin.
First use Sept. 30, 1961; as early as 1954 as to the words "Sunset Newsletter."

Class 39 — Clothing

SN 236,275. Marbot & Cie S.A., Neuvic-sur-l'Isle, France. Filed Jan. 12, 1966.

Marbot

Owner of French Reg. No. 1,053, dated June 10, 1965.
For Shoes, Sandals, Boots, Sports Shoes, and Ski Boots.

SN 249,901. Rodman D. Grimm, El Cerrito, Calif. Filed July 7, 1966.

THE GREAT BIRDWATCHING SOCIETY

For Outer Garments—Namely, Sweatshirts.
First use July 2, 1966.

SN 250,944. Eagle Shoe Mfg. Company, Inc., Everett, Mass. Filed July 25, 1966.

VUL-FLEX

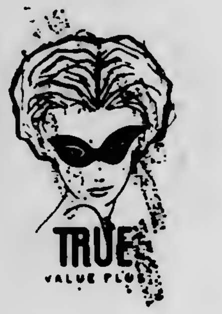
For Men's and Boys' Shoes.
First use January 1957.

SN 252,889. Prue Acton Proprietary Limited, Melbourne, Victoria, Australia. Filed Aug. 22, 1966.

Prue Acton ✿

"Prue Acton" identifies Prudence Leigh Treloar (formerly Prudence Leigh Acton), whose consent is of record.
For Women's, Fashion Dresses, Suits, Coats, Skirts, Slacks, Shorts, Blouses, Ski-Wear, Knitted Dresses, Knitted Twin Sets, Knitted Jumpers, Knitted Cardigans, Scarves, Swim-Wear, Singlets, Panties, Petticoats, Girdles, Suspender Belts, Brassieres, Sleepwear, and Hosiery.
First use Feb. 1, 1963; in commerce April 1966.

SN 255,961. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Oct. 7, 1966.



The words "Value Plus" are disclaimed apart from the mark as shown.
For Ladies' Hosiery.
First use July 22, 1966.

SN 260,089. Simon Pearl, Inc., Boston, Mass. Filed Dec. 5, 1966.

NESTLETOE

For Slippers and Casual Shoes.
First use Nov. 8, 1966.

SN 260,116. Topco Associates, Inc., Skokie, Ill. Filed Dec. 5, 1966.

TOPCO

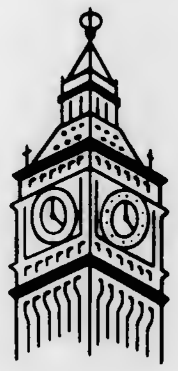
Owner of Reg. No. 814,545.
For Women's Hosiery.
First use Nov. 3, 1966.

SN 260,362. Scott Paper Company, Delaware, Pa. Filed Dec. 8, 1966.

PAPER-CAPER

For Disposable Paper Dresses.
First use Mar. 28, 1966.

SN 261,591. The Londontown Manufacturing Company, Baltimore, Md. Filed Dec. 28, 1966.



For Men's, Women's, and Children's Coats for Outer Wear and Outer Jackets and Hats.
First use on or about Jan. 1, 1954.

SN 263,026. Creighton Shirt Company, Inc., Reidsville, N.C. Filed Jan. 23, 1967.

DUE PROCESS

For Men's Shirts.
First use Dec. 1, 1966.

SN 263,141. Wembley, Inc., New Orleans, La. Filed Jan. 23, 1967.

PYROTECHNICS

For Neckwear.
First use Dec. 1, 1966.

SN 263,575. House of Worsted-Tex, Inc., Philadelphia, Pa. Filed Jan. 30, 1967.

THE RELATIVES

For Men's and Young Men's Suits, Topcoats, Overcoats, Sportcoats, and Slacks.
First use June 1966.

SN 263,938. The Oak Rubber Company, Ravenna, Ohio. Filed Feb. 3, 1967.

OAK

Owner of Reg. Nos. 654,090, 757,688, and 821,540.
For Rubber and Plastic Protective Gloves.
First use June 24, 1965.

SN 264,459. The Williams Manufacturing Company, Portsmouth, Ohio. Filed Feb. 10, 1967.

M & M MATES

For Shoes.
First use Feb. 1, 1967.

SN 265,394. Battelstein's, Inc., Houston, Tex. Filed Feb. 24, 1967.

PRO-MASTER

Owner of Reg. Nos. 729,780 and 750,604.
For Men's Clothing—Namely, Undershorts, Undershirts, T-Shirts, Socks, Robes, Sweaters, Knit Shirts, and Sport Shirts.
First use 1962.

SN 265,845. Queen Knitting Mills, Inc., Philadelphia, Pa. Filed Mar. 2, 1967.

LADY QUEEN

For Women's Sportswear—Namely, Shirts, Shorts, Slacks, Blouses, Skirts, and Shifts.
First use Oct. 25, 1965.

SN 266,230. Jambi, Inc., New York, N.Y. Filed Mar. 8, 1967.

JAMBI

For Men's Socks.
First use Nov. 1, 1951.

SN 266,433. Mars Manufacturing Company, Inc. of Asheville, Asheville, N.C. Filed Mar. 10, 1967.

INSTANT BEACH

For Disposable Beach Poncho, Tote Bag, and Scarf, Sold as a Set.
First use Jan. 6, 1967.

SN 267,082. Virginia Maid Hosiery Mills, Inc., Pulaski, Va. Filed Mar. 17, 1967.

Step 'N Out

For Ladies' Hosiery.
First use Mar. 6, 1967.

SN 267,811. Canton Textile Mills, Inc., Canton, Ga. Filed Mar. 29, 1967.

INDIDENIM

For Shirts, Trousers, and Jackets for Men, Women, and Children.
First use Mar. 10, 1967.

SN 269,828. Laughlin Hosiery Mills, Inc., Randleman, N.C. Filed Apr. 24, 1967.

HIDDEN VALUE

For Ladies' Hosiery.
First use Apr. 6, 1967.

SN 277,839. Jantzen Inc., Portland, Oreg. Filed Aug. 8, 1967.

SMILEWEAR

Owner of Reg. No. 803,595.
For Women's Clothing—Namely, Swimming Suits, Sweaters, Skirts, Outer Shorts, Under Panties, Pants, Dresses, Suits, Outer Shirts, Blouses, Jackets, Brassieres, Brassiere Pads, Girdles, Socks, Shoes, Gloves, Caps, Hats, Swimming Caps, Belts, Headbands, Coats, Mittens, Swimsuit Coverups, and Scarves.
First use July 31, 1967.

SN 278,352. Melville Shoe Corporation, New York, N.Y. Filed Aug. 16, 1967.

THOM MCAN SITAR

"Thom McAn" is a fanciful name. Owner of Reg. Nos. 170,095, 268,176, and others.
For Sandals.
First use Aug. 11, 1967.

SN 280,374. Melville Shoe Corporation, New York, N.Y. Filed Sept. 15, 1967.

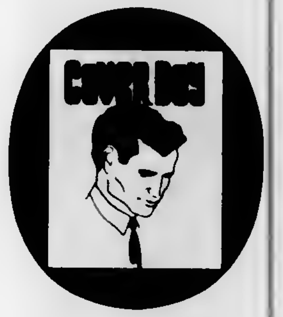
Thom McAn

Five Way Fit

"Thom McAn" is a fanciful name. Owner of Reg. Nos. 170,095, 268,176, and others.
For Boys' and Girls' Shoes.
First use Aug. 28, 1958; Aug. 30, 1922, as to "Thom McAn."

Class 40—Fancy Goods, Furnishings, and Notions

SN 263,631. Charle Venee, Incorporated, Salt Lake City, Utah. Filed Jan. 30, 1967.



The picture shown in the drawing is not that of any living individual.
For Men's Hairpieces.
First use on or about Mar. 1, 1966.

SN 276,747. General Wig Manufacturers, Inc., Miami, Fla. Filed July 25, 1967.

MME. POMPADOUR

The name "Mme. Pompadour" is the name of a historical character of France.
For Wigs, Wiglets, Falls, and Hair Pieces.
First use June 12, 1967.

SN 276,985. Fashion Tress, Inc., Miami Beach, Fla. Filed July 28, 1967.

International

"PERFECT FALL"

Applicant disclaims the exclusive right to the use of the wording "Perfect Fall" apart from the mark as shown. Owner of Reg. No. 831,123.
For Ladies' Wigs and Hair Pieces.
First use on or about June 1, 1967; on or about Dec. 1, 1966, as to "International."

SN 276,986. Fashion Tress, Inc., Miami Beach, Fla. Filed July 28, 1967.

MAXI WIG

Applicant disclaims the right to the exclusive use of the word "Wig" apart from the mark as shown.
For Ladies' Wigs and Hair Pieces.
First use on or about May 1, 1967.

SN 276,987. Fashion Tress, Inc., Miami Beach, Fla. Filed July 28, 1967.

MAXI WIGLET

Applicant disclaims the word "Wiglet" apart from the mark as shown.
For Ladies' Wigs and Hair Pieces.
First use on or about May 1, 1967.

SN 276,988. Fashion Tress, Inc., Miami Beach, Fla. Filed July 28, 1967.

MINI FALL

Applicant disclaims the right to the exclusive use of the word "Fall" apart from the mark as shown. Owner of Reg. No. 830,227.
For Ladies' Wigs and Hair Pieces.
First use on or about May 1, 1967.

SN 276,989. Fashion Tress, Inc., Miami Beach, Fla. Filed July 28, 1967.

MIDI FALL

Applicant disclaims any right to the exclusive use of the word "Fall" apart from the mark as shown.
For Ladies' Wigs and Hair Pieces.
First use on or about May 1, 1967.

SN 276,990. Fashion Tress, Inc., Miami Beach, Fla. Filed July 28, 1967.

MAXI FALL

Applicant disclaims any right to the exclusive use of the word "Fall" apart from the mark as shown.
For Ladies' Wigs and Hair Pieces.
First use on or about May 1, 1967.

SN 276,991. Fashion Tress, Inc., Miami Beach, Fla. Filed July 28, 1967.

MIDI WIGLET

Applicant disclaims the word "Wiglet" apart from the mark as shown.
For Ladies' Wigs and Hair Pieces.
First use on or about May 1, 1967.

SN 277,237. Fashion Tress, Inc., Miami Beach, Fla. Filed July 28, 1967.

MIDI WIG

Applicant disclaims the right to the exclusive use of the word "Wig" apart from the mark as shown.
For Ladies' Wigs and Hair Pieces.
First use on or about May 1, 1967.

SN 277,329. Fashion Tress, Inc., Miami Beach, Fla. Filed Aug. 2, 1967.

MINI WIGLET

Applicant disclaims the right to the exclusive use of the word "Wiglet" apart from the mark as shown. Owner of Reg. No. 830,227.
For Ladies' Wigs and Hair Pieces.
First use on or about May 1, 1967.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 256,045. Alamo Manufacturing Co., Inc., New York, N.Y. Filed Oct. 10, 1966.

POLYKRON

For Piece Goods for Making Dresses, Skirts, Blouses, and the Like.
First use June 17, 1966.

SN 266,523. Fabrics by Joyce, Inc., New York, N.Y. Filed Mar. 13, 1967.

JOYCELLA

For Acetate Fabrics.
First use Aug. 15, 1966.

SN 266,698. J. P. Stevens & Co., Inc., New York, N.Y. Filed Mar. 14, 1967.

BALSA-WATE

For Piece Goods of One or More Natural Fibers, Including Wool and Cotton, or Synthetic Fibers or of Blends of the Foregoing.
First use Mar. 7, 1967.

SN 266,699. J. P. Stevens & Co. Inc., New York, N.Y. Filed Mar. 14, 1967.

CASTLE GARDEN

Owner of Reg. No. 743,503.
For Towels, Bath Rugs, Blankets, Sheets, and Pillow Cases.
First use Dec. 27, 1961.

SN 266,874. The General Tire & Rubber Company, Akron, Ohio. Filed Mar. 16, 1967.

genera

For Polymeric Upholstery Fabric.
First use Oct. 13, 1966.

SN 267,358. J. P. Stevens & Co., Inc., New York, N.Y. Filed Mar. 22, 1967.

LASER

For Piece Goods of One or More Natural Fibers, Including Wool and Cotton, or of Synthetic Fibers or Cellulosic Fibers, or Blends of the Foregoing.
First use Mar. 17, 1967.

SN 267,640. J. B. Martin Company, Norwich, Conn. Filed Mar. 27, 1967.

GIOCONDA

Owner of Reg. No. 220,915.
For Pile-Fabric Piece Goods.
First use Sept. 11, 1924.

SN 268,753. J. B. Martin Company, Norwich, Conn. Filed Apr. 10, 1967.

STRATOVEL

For Velvets in the Piece.
First use Dec. 20, 1966.

SN 274,384. Cone Mills Corporation, Greensboro, N.C. Filed June 21, 1967.

CONE SHIELD

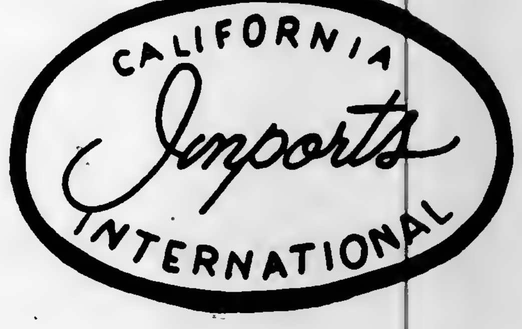
Owner of Reg. Nos. 334,013 and 819,975.
For Fabrics Treated With a Soil Release Finish for Making Into Slacks, Coats, Suits, Shirts, Skirts, Dresses, and the Like.
First use June 12, 1967.

SN 274,385. Cone Mills Corporation, Greensboro, N.C. Filed June 21, 1967.

SCRAM

For Fabrics Treated With a Soil Release Finish for Making Into Slacks, Coats, Suits, Shirts, Skirts, Dresses, and the Like.
First use June 12, 1967.

SN 277,109. Thompson of California, Inc., Hermosa Beach, Calif. Filed July 31, 1967.



Applicant disclaims the wording "California Imports" apart from the mark as shown.
For Piece Goods for Making Into Wearing Apparel of All Kinds, Draperies, Tablecloths, and the Like.
First use on or about Apr. 1, 1961.

SN 279,745. Paper Corporation of United States, New York, N.Y. Filed Sept. 6, 1967.

PACOLON

For Non-Woven Fabrics Made of Synthetic Fiber With Decorative Patterns Applied to the Web.
First use July 14, 1967.
Subj. to Intf. with SN 279,784.

SN 279,784. Deering Milliken, Inc., New York, N.Y. Filed Sept. 7, 1967.

PACOLET

For Cotton Sheeting, Sheets and Pillowcases, Piece Goods of Cotton and Synthetic Fibers, and Combinations Thereof.
First use as early as 1884.
Subj. to Intf. with SN 279,745.

SN 279,792. Wyomissing Corporation, Reading, Pa. Filed Sept. 7, 1967.

Fiberlyte

Owner of Reg. No. 775,897.
For Elastic Fabrics.
First use Nov. 7, 1963.

Class 43 — Thread and Yarn

SN 253,954. Compagnie Francaise de Bonneterie, Paris, France. Filed Sept. 7, 1966.

EAUX VIVES

The English translation of the French words "Eaux Vives" is "running waters." Owner of French Reg. No. 496,993, dated June 15, 1961 (Seine); Natl. Inst. No. 166,434.
For Yarns and Threads.

SN 266,882. Harrap Bros. (Sirdar Wools) Limited, Wakefield, England. Filed Mar. 16, 1967.

SUMMERBREEZE

Owner of British Reg. No. 884,183, dated Sept. 13, 1965.
For Yarns and Threads, All of Natural or Artificial Textile Materials.

SN 279,985. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Sept. 11, 1967.

NANDEL

For Yarns of Man Made Fibers.
First use Aug. 10, 1967.

Class 44 — Dental, Medical, and Surgical Appliances

SN 248,502. Miles Laboratories, Inc., Elkhart, Ind. Filed June 20, 1966.

ULTRADOP

For Biomedical Ultrasound Instrument for Detection of Fetal Heartbeat.
First use on or before June 2, 1966.

SN 252,106. August Kettenbach, d.b.a. A. Kettenbach, Wissenbach, Dillkreis, Germany. Filed Aug. 10, 1966.

SIMPA

Owner of German Reg. No. 672,014, dated Jan. 1, 1954.
For Synthetic Plastic Paste Which Hardens Upon Incorporation of Catalysts and Is Used for Various Dental Purposes, Particularly for Fitting and Repair of Prosthetic Devices and for Protection of Teeth in Sports.

SN 255,773. Hyman Burman, d.b.a. Merit Dental Sales Company, Beverly Hills, Calif. Filed Oct. 5, 1966.

MERIT MAT

The word "Mat" is disclaimed apart from the mark as shown.
For Dental Instrument Mat.
First use June 14, 1966.

SN 262,563. C. R. Bard, Inc., Murray Hill, N.J. Filed Jan. 16, 1967.

CS

For Urinary Drainage System, Comprising a Collection Bag, Drainage Tube, and Accessory Devices.
First use Sept. 1, 1966.

SN 270,843. Hypo Surgical Supply Corp., New York, N.Y. Filed May 8, 1967.

THINLINE PM

For Clinical Thermometers.
First use June 1, 1966.

SN 271,758. Ciba Corporation, New York, N.Y. Filed May 18, 1967.

MEDI-JECTOR

For Injector Component for Liquids for Medical Use.
First use Mar. 30, 1967.

SN 271,759. Ciba Corporation, New York, N.Y. Filed May 18, 1967.

MEDI-VIAL

For Cartridges and Injectors for Containing Liquids and Powders for Medical Use.
First use Mar. 30, 1967.

SN 272,785. Espe Fabrik Pharmazeutischer Praparate G.m.b.H., Seefeld, Upper Bavaria, Germany. Filed June 1, 1967.

IMPREGUM

Owner of German Reg. No. 689,221, dated Oct. 3, 1955.
For Dental Wax.

SN 277,491. Bentley Laboratories, Santa Ana, Calif. Filed Aug. 4, 1967.

THORA SEAL

For Surgical Container for Collecting Body Fluids From the Pleural Cavity Following Chest Surgery.
First use June 8, 1967.

SN 279,907. Milton H. Tavel, d.b.a. Bond Custom Hearing Aid Center, Indianapolis, Ind. Filed Sept. 8, 1967.

MINI-AID

For Hearing Aids.
First use Jan. 10, 1966.

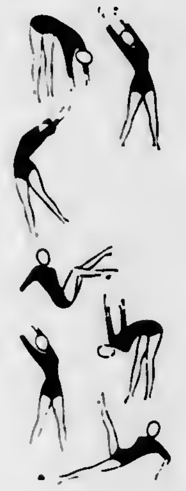
SN 279,990. Parke, Davis & Company, Detroit, Mich. Filed Sept. 11, 1967.

UNIPREP

For Medicated Swabs To Prepare Injection Site.
First use on or before Aug. 18, 1967.

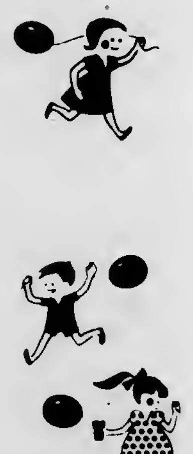
Class 46 — Foods and Ingredients of Foods

SN 223,897. National Dairy Products Corporation, New York, N.Y. Filed July 21, 1965.



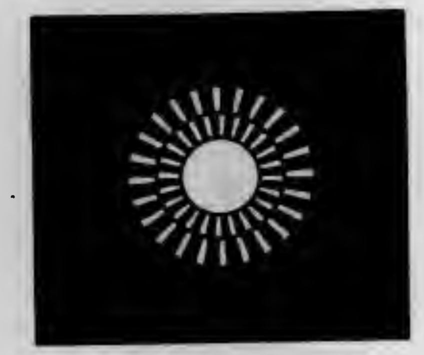
For Fluid Milk.
First use July 22, 1963.

SN 223,898. National Dairy Products Corporation, New York, N.Y. Filed July 21, 1965.



For Chocolate Milk and Chocolate Food Drink.
First use July 22, 1963.

SN 223,899. National Dairy Products Corporation, New York, N.Y. Filed July 21, 1965.



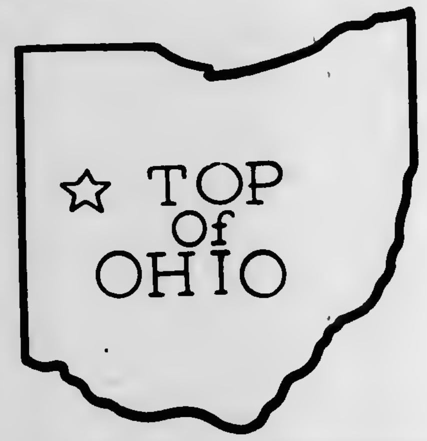
The rectangular design shown in the drawing is for the purpose of displaying the mark and is not claimed as a feature of the mark.
For Fluid Milk.
First use July 22, 1963.

SN 230,423. Lewis J. Ort, La Vale, Md. Filed Oct. 18, 1965.

DIET FIRST

The word "Diet" is disclaimed apart from the mark as shown without prejudice to applicant's common law rights.
For Bakery Products—Namely, Bread and Frozen Roll Dough.
First use on or about Dec. 10, 1964.

SN 237,366. Logan Packing Company, Bellefontaine, Ohio. Filed Jan. 26, 1966.



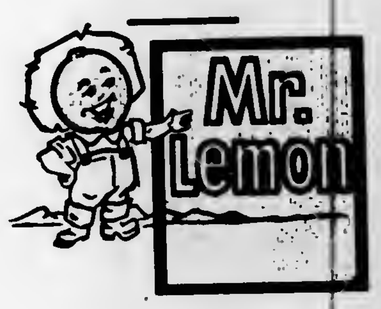
The word "Ohio" and the representation of the map of Ohio are disclaimed apart from the mark as shown.
For Beef Carcasses, Fresh and Frozen, Cuts and Grinds of Beef, and Fresh and Frozen Beef Parts Such as Heart, Liver, Kidneys, etc.
First use Jan. 6, 1966.

SN 241,240. Ceskoslovenske Cokoladovny Oborovy Podnik, Modrany, Modrany, Czechoslovakia. Filed Mar. 17, 1966.

LIPO

Owner of Czechoslovakian Reg. No. 109,819, dated May 7, 1947.
For Cooking, Baking, and Milk Chocolate; Edible Foiled Chocolate Candy Novelties; and Candies.

SN 241,600. Pure Gold, Inc., Redlands, Calif. Filed Mar. 22, 1966.



The drawing is lined for yellow. The word "Lemon" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 626,352 and 642,694.
For Fresh Lemons.
First use on or about Feb. 15, 1966.

SN 242,496. Rich Products Corporation (Delaware corporation), Buffalo, N.Y., assignee of Rich Products Corporation (New York corporation), Buffalo, N.Y. Filed Apr. 1, 1966.

RICH'S

Owner of Reg. No. 579,212.
For Edible Oleaginous Emulsion, Sold in Unpressurized and Pressurized Containers, Capable of Being Whipped or Aerated for Use as a Topping on Desserts, Salads, and the Like; Frozen Chocolate Eclairs; and Edible Oleaginous Emulsion for Use in Coffee, on Fruit, Cereals, and in Cooking.
First use March 1945.

SN 242,719. Dell Products Corp., Hillside, N.J. Filed Apr. 5, 1966.

N-JOY

For Iced Tea Sold in Cartons.
First use Mar. 28, 1966.

SN 242,935. Safe-T Pacific Company, Redwood City, Calif. Filed Apr. 7, 1966.

KIDS CONES

The word "Cones" is disclaimed apart from the mark as shown.
For Unfilled Ice Cream Cones and Cups.
First use Mar. 10, 1966.

SN 243,257. New England Apple Products Co., Inc., Littleton, Mass. Filed Apr. 12, 1966.

JOHNNY APPLESEED

The name "Johnny Appleseed" is that of the deceased historical character.
For Apple-Cranberry Juice, Apricot Nectar, Cider, Cider Vinegar, Cranberry Juice, Orange Food Drink, Prune Juice, and Vinegar, All Canned and Unfrozen, or Bottled.
First use June 23, 1954.

SN 243,420. Dunkirk Ice Cream Co., Inc., Dunkirk, N.Y. Filed Apr. 14, 1966.

DUNKIRK

For Frozen Desserts—Namely, Ice Cream, Ice Cream Novelties, Ice Milk, and Sherbet.
First use on or about May 6, 1914.

SN 243,423. Dunkirk Ice Cream Co., Inc., Dunkirk, N.Y. Filed Apr. 14, 1966.

SCOTCH-PAK

For Frozen Desserts—Namely, Ice Cream, Ice Cream Novelties, and Ice Milk.
First use on or about Feb. 1, 1951.

SN 244,583. Harvest Brand, Inc., Pittsburg, Kans. Filed Apr. 29, 1966.

TOP HAT

For Livestock Feed Supplement of a Food Nature.
First use Apr. 1, 1966.

SN 244,847. Paech-Brot G.m.b.H., Berlin, Germany. Filed May 3, 1966.

Paech
BERLIN
Tiefenfurter

Priority claimed under Sec. 44(d) on German application filed Nov. 12, 1965; Reg. No. 814,346, dated Jan. 7, 1966. The words "Paech" and "Berlin" are disclaimed apart from the mark as shown.
For Bread.

SN 245,093. Outpost of America, Inc., Ocala, Fla. Filed May 6, 1966.

OUTPOST
OF AMERICA

The word "America" is disclaimed apart from the mark as shown.
For Candy.
First use Dec. 10, 1965.

SN 245,301. Escalon Packers, Inc., Escalon, Calif. Filed May 10, 1966.

JUNE IN JANUARY

For Canned Tomatoes.
First use May 15, 1957.

SN 246,327. Lauhoff Grain Company, Danville, Ill. Filed May 23, 1966.

VITA-PRO

For Food for Animals—Namely, Dogs.
First use in or before June 1959.

SN 248,128. Golden Dipt Corporation, Millstadt, Ill. Filed June 15, 1966.

Golden
Dipt

Owner of Reg. Nos. 389,794 and 681,590.
For Breading Mix, Batter Mix, Garlic Dressing, Vinegar and Oil Dressing, and Combined Sweet Food Sauce and Glaze.
First use June 6, 1966; May 17, 1939, in a different form.

SN 248,590. Cherokee Products Company, Haddock, Ga. Filed June 21, 1966.

CHEROKEE ROSE

For Canned Fruits.
First use Apr. 19, 1966.

SN 249,492. August Storck GmbH, Halle, Germany. Filed July 5, 1966.

merci

The word "Merci" means "thanks."
For Cocoa, Chocolate, and Candies.
First use Aug. 27, 1965; in commerce Aug. 27, 1965.

SN 251,073. Productos de Leche, S.A., Mexico City, Mexico. Filed July 26, 1966.

BONAFINA

Owner of Mexican Reg. No. 105,662, dated Dec. 6, 1961.
For Fluid Milk, Fluid Chocolate Malted Milk, Butter, Fluid Cream, Burned Milk Jelly, and Candies.

SN 251,303. Hartz Mountain Products Corp., New York, N.Y. Filed July 29, 1966.

YUMMIES

Owner of Reg. Nos. 694,986 and 773,575.
For Food for Animal Pets—Namely, Dog and Cat Food.
First use Apr. 18, 1966.

SN 253,106. American Bakeries Company, Chicago, Ill. Filed Aug. 25, 1966.

BARBARA ANN

For Bakery Products—Namely, Cookies, Cakes, and Bread.
First use March 1931.

SN 253,521. Frisco Foods Corporation, Wilmington, Del. Filed Aug. 31, 1966.

MAJA

For Coffee.
First use July 5, 1966.

SN 254,288. Ibec Packing Co. of New York, Inc., New York, N.Y. Filed Sept. 12, 1966.

TUNA SPREE
"PROTEIN OF CHAMPIONS"

The words "Tuna" and "Protein" are disclaimed apart from the mark as shown.
For Canned Tuna Fish.
First use July 29, 1966.

SN 254,936. Jerome Foods, Inc., Barron, Wis. Filed Sept. 22, 1966.

MISS COUNTY FAIR

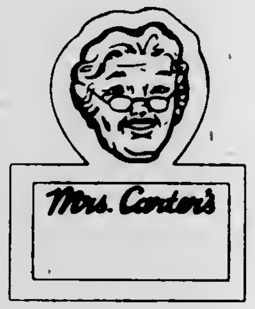
For Whole Frozen Dressed Turkeys.
First use on or about Sept. 2, 1966.

SN 255,184. Basic Foods, Inc., Englewood, N.J. Filed Sept. 27, 1966.

ParFon

For Instant Dry Mixes for Use in Making Fruit Flavored Fillings for Edible Food Products—Namely, Pie Fillings, Cake Fillings, Fillings for Creme Rolls, Fillings for Fresh and Frozen Baked Goods, Fillings for Use With Fresh, Frozen, or Crushed Fruits, and Fresh or Frozen Fruit Juices.
First use Sept. 6, 1966.

SN 255,285. Bake-Rite Baking Company, Stevens Point, Wis. Filed Sept. 28, 1966.



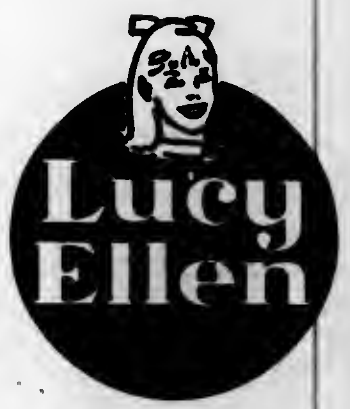
The picture of the woman forming a part of applicant's mark is fanciful.
For Bakery Goods—Namely, Bread, Rolls, Buns, Doughnuts, Apple Fritters, and Coconut Sticks.
First use 1948.

SN 255,367. Thurman's, Inc., McKeesport, Pa. Filed Sept. 28, 1966.

OL' PEP SALT JELLS

No claim is made to the words "Salt Jells" apart from the mark as shown.
For Candy.
First use June 1, 1964.

SN 255,601. Community Industries Ltd., Sullivan, Ill. Filed Oct. 3, 1966.



The name "Lucy Ellen" and the representation of a girl are fictitious.
For Candy.
First use at least as early as Apr. 8, 1966; at least as early as 1931 as to "Lucy Ellen."

SN 255,618. Hallmark Cards, Incorporated, d.b.a. Halls, Kansas City, Mo. Filed Oct. 3, 1966.

ENTERTAIN MINTS

The word "Mints" is disclaimed apart from the mark as shown.
For Candies.
First use Sept. 15, 1966.

SN 255,862. Beatrice Foods Co., Chicago, Ill. Filed Oct. 6, 1966.

Pecan
BUTTERINO

Without waiving any of its common law rights applicant disclaims the word "Pecan" apart from the mark as shown.
For Candy.
First use Aug. 15, 1966.

SN 256,190. Armour and Company, Chicago, Ill. Filed Oct. 11, 1966.

SCHOOL BELL

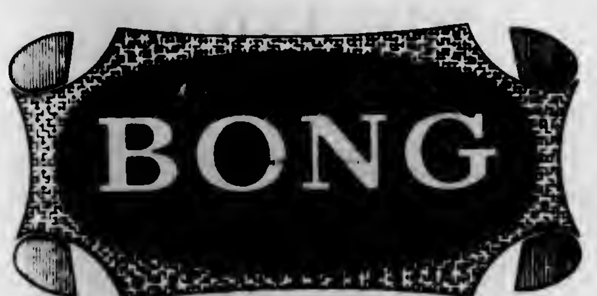
For Fresh Meats and Prepared Meat Products.
First use on or prior to Sept. 14, 1966.

SN 256,723. Companhia Nacional de Frigorificos Confrio, Sao Paulo, Brazil. Filed Oct. 19, 1966.

CONFRIO

For Frozen Shrimp and Fish.
First use at least as early as Oct. 25, 1965; in commerce at least as early as Oct. 25, 1965.

SN 257,708. Gustaf Bong Aktiebolag, Ystad, Sweden. Filed Nov. 1, 1966.



The drawing is lined for gold and red. Owner of Swedish Reg. No. 110,566, dated Aug. 7, 1964.
For Soups, Soup Extracts, Soup Powders, Soup Tablets, Soup Flavourings of a Spice Nature, Soup Flour, Soup Pastes, and Soup Seasoning of a Spice Nature.

SN 257,955. General Foods Corporation, White Plains, N.Y. Filed Nov. 4, 1966.

LO·JEL

For Gelatin Dessert.
First use Sept. 14, 1966.

SN 258,082. Farm Fresh Cream Wip Corp., Lynbrook, N.Y. Filed Nov. 7, 1966.

For this application only and without waiver of common law rights, the word "Fresh" is disclaimed apart from the mark as shown.
For Vegetable-Derived Cream for Use in Whitening Coffee and the Like.
First use Sept. 6, 1966.

SN 258,615. Thompson's Dairy, Inc., d.b.a. Washington Dairy Foods and Thompson's Honor Dairy, Washington, D.C. Filed Nov. 14, 1966.

FLORIDA BELLE

For Orange Juice in Bottles or Cartons.
First use Oct. 4, 1966.

SN 259,176. Seven Seas Inc., Seattle, Wash. Filed Nov. 21, 1966.

For Seafoods—Namely, Refrigerated Fish and Shellfish, Packaged for Institutional and Retail Sales.
First use on or about Apr. 1, 1966.

SN 259,177. Seven Seas Inc., Seattle, Wash. Filed Nov. 21, 1966.

FIVE OCEANS

For Seafoods—Namely, Refrigerated Fish and Shellfish, Packaged for Institutional and Retail Sales.
First use on or about Apr. 1, 1966.

SN 259,321. Hygrade Food Products Corporation, Detroit, Mich. Filed Nov. 23, 1966.

BLACK FOREST

Owner of Reg. No. 741,011.
For Sausage and Bologna.
First use on or about Oct. 19, 1962.

SN 259,347. State Fair Provision Co. Inc., d.b.a. State Fair Poultry Farms, Philadelphia, Pa. Filed Nov. 23, 1966.

STATE FAIR
E-z Slice

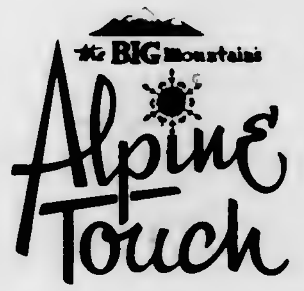
Applicant disclaims the phrase "E-Z Slice" apart from the mark as shown.
For Boneless Turkey Roll.
First use on or about Sept. 23, 1966.

SN 260,315. Armour and Company, d.b.a. Armour Creameries, Chicago, Ill. Filed Dec. 8, 1966.

FLAVOR UP

Owner of Reg. No. 814,612.
For Butter.
First use on or prior to July 26, 1965.

SN 260,609. Russell Street, Whitefish, Mont. Filed Dec. 12 1966.



For Dry Granular All Purpose Food Seasoning.
First use Oct. 20, 1966.

SN 260,876. North Pacific Canners & Packers, Inc., Portland, Oreg. Filed Dec. 15, 1966.

SUPER SLIMS

Applicant hereby disclaims the word "Super" apart from the mark as shown, and without prejudice to the applicant's common law rights therein which may have been established or which might be established in the future. Owner of Reg. No. 763,639.
For Frozen French Fried Potatoes.
First use Nov. 30, 1966.

SN 260,924. Critchley's Candies, Tenafly, N.J. Filed Dec. 16, 1966.

ORITANI

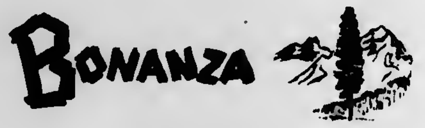
For Chocolate Candy.
First use July 1, 1957.

SN 261,158. S. A. Schonbrunn & Co. Inc., Palisades Park, N.J. Filed Dec. 20, 1966.

EL PICO

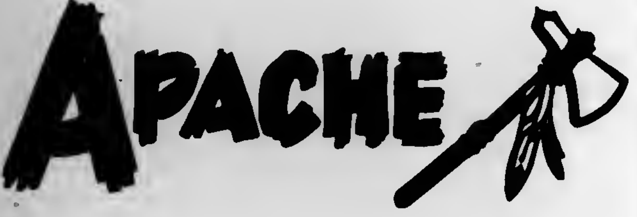
The words "El Pico" are Spanish for "the top" or "the peak."
For Coffee.
First use Dec. 12, 1966.

SN 261,240. Granny Goose Foods, Inc., Oakland, Calif., assignee of United Prepared Products Corporation, Mount Vernon, N.Y. Filed Dec. 21, 1966.



For Preblanched Frozen French Fried Potatoes for Institutional and Commercial Use.
First use July 1, 1966.

SN 261,241. Granny Goose Foods, Inc., Oakland, Calif., assignee of United Prepared Products Corporation, Mount Vernon, N.Y. Filed Dec. 21, 1966.



For Preblanched Frozen French Fried Potatoes for Institutional and Commercial Use.
First use Sept. 1, 1966.

SN 261,392. Pet Incorporated, St. Louis, Mo. Filed Dec. 23, 1966.

COMPLIMENT

For Meatless Cooking Sauces for Use in the Preparation of Foods.
First use Aug. 24, 1966.

SN 261,941. Ocean Spray Cranberries, Inc., d.b.a. Ocean Spray Cranberry House, Hanson, Mass. Filed Jan. 4, 1967.

CRANBERRY HOUSE

The word "Cranberry" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 796,851 and 823,108.
For Fruit Cake, Honey, Fruit Nut Bread, and a Concentrated Food Beverage Mixer Consisting of Cranberry Juice and Lesser Ingredients.
First use Aug. 31, 1964.

SN 262,369. Dortch Baking Co., Inc., Birmingham, Ala. Filed Dec. 19, 1966.

KIM AND JIM

For Cookies and Cakes.
First use on or about July 29, 1966.

SN 262,531. Michigan Sugar Company, Saginaw, Mich. Filed Dec. 20, 1966.

PIONEER

Owner of Reg. No. 333,850.
For Sugar.
First use on or about June 5, 1924.

SN 262,876. McCormick & Company, Incorporated, Baltimore, Md. Filed Jan. 19, 1967.

S

Schilling

Owner of Reg. Nos. 288,287, 652,150, and others.
For Spices and Flavoring Extracts; Blends and Mixes of Spices and Flavorings; Onion Juice and Garlic Juice; Dry Seasoning Mixes and Dehydrated Herbs and Vegetabels for Food Flavoring Purposes; Food Colors; Coffee; and Edible Food Decorations—Namely, Sugar Decors and Crystals.
First use Mar. 31, 1964.

SN 262,880. Northwest Cold Pack Company, Seattle, Wash. Filed Jan. 19, 1967.

CHEF'S CERTIFIED

The word "Certified" is disclaimed apart from the mark as shown.
For Frozen Vegetables—Namely, Asparagus, Beans, Broccoli, Brussel Sprouts, Carrots, Cauliflower, Corn, Okra, Onions, Peas, Potatoes, Pumpkin, Spinach, Squash, Stew Mix, Succotash, Turnips, and Mixed Vegetables; Frozen Fruits—Namely, Apples, Applesauce, Berries, Cantaloupe, Cherries, Cocktail Mixes, Cranberries, Currants, Grapefruit, Grapes, Melon, Peaches, Pineapple and Rhubarb; Frozen Juice Concentrates—Namely, Apple, Grape, Grapefruit, Lemonade, Lemon, Orange, and Pineapple.
First use April 1946.

SN 262,988. Welch Fruit Sales, Inc., Wenatchee, Wash. Filed Jan. 20, 1967.

VELVET TOUCH

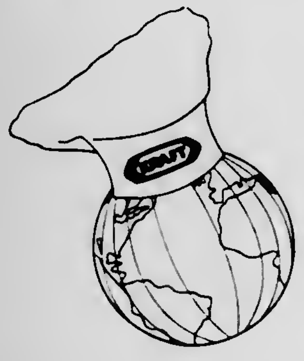
For Fresh Apples and Pears.
First use Oct. 4, 1966.

SN 263,027. Ralph A. Daisey, d.b.a. R. A. Daisey Candy Co., Chincoteague, Va. Filed Jan. 23, 1967.

WHITE MARLIN

Applicant disclaims the representation of the goods apart from the mark as shown.
For Salt Water Taffy.
First use Jan. 7, 1967.

SN 263,102. National Dairy Products Corporation, Chicago, Ill. Filed Jan. 23, 1967.



Owner of Reg. Nos. 285,539, 801,424, and others.
For Frozen Entrees—Namely, Prepared Meat, Poultry, Seafood, Vegetable and Alimentary Paste Products.
First use Jan. 24, 1966.

SN 263,144. Wm. Wrigley Jr. Company, Chicago, Ill. Filed Jan. 23, 1967.

HANDY PAK

No claim is made to the exclusive use of the word "Pak" apart from the mark as shown. Owner of Reg. No. 822,974.
For Chewing Gum.
First use Dec. 28, 1966.

SN 263,821. The Donruss Company, Memphis, Tenn. Filed Feb. 2, 1967.

BUB'S DADDY

For Chewing Gum.
First use Jan. 9, 1967.

SN 264,080. McKee Baking Company, Collegedale, Tenn. Filed Feb. 6, 1967.

CHOC-O-JEL

For Cream Pies.
First use Jan. 9, 1967.

SN 264,094. Pet Incorporated, St. Louis, Mo. Filed Feb. 6, 1967.

PETCOM

For Hard Candies, Apple Sauce, Mixed Nuts, Evaporated Milk, Asparagus, and Apple Juice.
First use Sept. 14, 1966.

SN 264,425. Keebler Company, Elmhurst, Ill. Filed Feb. 10, 1967.

ISLAND SPICE

For Cookies.
First use Jan. 5, 1967.

SN 264,570. Northland Foods, Inc., Duluth, Minn. Filed Feb. 13, 1967.

APET-TEEZERS

For Frozen Italian Foods—Namely, Pizza, Pizza Rolls, and Pasta.
First use Dec. 7, 1966.

SN 264,571. Northland Foods, Inc., Duluth, Minn. Filed Feb. 13, 1967.

API-TEEZERS

For Frozen Italian Foods—Namely, Pizza, Pizza Rolls, and Pasta.
First use Dec. 7, 1966.

SN 264,785. Alexa Associates, Weston, Conn. Filed Feb. 16, 1967.

OZ-CREAM

The word "Cream" is disclaimed apart from the mark as shown.
For Ice Cream.
First use Dec. 6, 1966.

SN 264,837. Larrowe Mills, Inc., Penn Yan, N.Y. Filed Feb. 16, 1967.

TYOGA

Owner of Reg. No. 222,857.
For Flour Mixes, Particularly Pancake Mix.
First use on or about Dec. 1, 1925.

SN 264,913. Corte & Co., Jersey City, N.J. Filed Feb. 17, 1967.

CHORIPAN

For Smoked Sausage.
First use Dec. 7, 1966.

SN 264,969. Royal Citrus Company, Riverside, Calif. Filed Feb. 17, 1967.

RIVERSIDE KING

For Fresh Citrus Fruits.
First use Jan. 6, 1967.

SN 264,970. Royal Citrus Company, Riverside, Calif. Filed Feb. 17, 1967.

RIVERSIDE QUEEN

For Fresh Citrus Fruits.
First use Jan. 6, 1967.

SN 265,398. Carnation Company, Los Angeles, Calif. Filed Feb. 24, 1967.

ROUND-UP

For Horse Feed.
First use at least as early as October 1960.

SN 265,430. The Nestlé Company, Inc., White Plains, N.Y. Filed Feb. 24, 1967.

NESCAFÉ

Owner of Reg. Nos. 364,017, 379,117, and 674,257.
For Coffee.
First use Jan. 27, 1967.

SN 265,442. J. R. Simplot Company, Boise, Idaho. Filed Feb. 24, 1967.

ECONO-FRIES

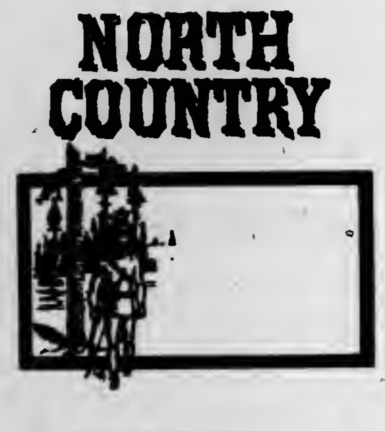
For Processed Frozen Potatoes.
First use at least as early as Aug. 4, 1966.

SN 265,726. Monsanto Company, St. Louis, Mo. Filed Mar. 1, 1967.

EMULSI-PHOS

For Food Additive for Process Cheese.
First use Oct. 14, 1966.

SN 265,729. Northwest Marketers, Inc., d.b.a. Famous Foods, Minneapolis, Minn. Filed Mar. 1, 1967.

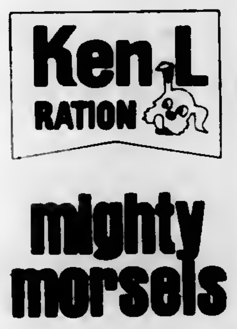


Owner of Reg. No. 739,452.
For Frozen Processed Poultry.
First use September 1960.

SN 265,812. The Deciduous Fruit Board, Cape Town, Republic of South Africa. Filed Mar. 2, 1967.

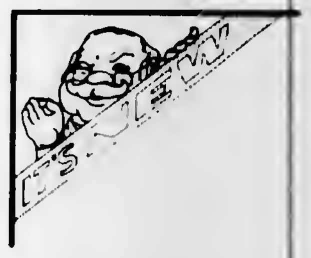
For Fresh Fruit.
First use on or about Sept. 1, 1965; in commerce in or about April 1966.

SN 265,873. The Quaker Oats Company, Chicago, Ill. Filed Mar. 3, 1967.



Applicant disclaims exclusive right to use of the words "Ration" and "Morsels" apart from the mark as shown.
Owner of Reg. Nos. 188,326, 697,161, and 746,309.
For Dog Food.
First use Feb. 3, 1967; Jan. 22, 1923, as to "Ken-L-Ration."

SN 266,950. Uncle Dan's, Inc., Yakima, Wash. Filed Mar. 16, 1967.



The words "It's New" are disclaimed apart from the mark. The person represented in the drawing is only a fictitious representation. The banner in the drawing is lined for red and this color is claimed as a feature of the mark.
For Dry Dressing Mixtures.
First use on or about May 23, 1966.

SN 267,490. Roche Fruit Co., Inc., Yakima, Wash. Filed Mar. 24, 1967.

ROCHE

For Fresh Deciduous Fruits.
First use on or about Nov. 30, 1964.

SN 268,452. Stauffer Chemical Company, New York, N.Y. Filed Apr. 6, 1967.

TATERFOS

For Food Grade Sodium Acid Pyrophosphate for Use in Retarding Oxidation or Discoloration of Potatoes.
First use Mar. 8, 1967.

SN 271,098. West Indies Food & Packing, Inc., Miami, Fla. Filed May 10, 1967.

BOLA ROJA

The words "Bola Roja" may be translated as "red ball."
For Dry Beans and Rice.
First use Oct. 5, 1962.

SN 271,218. The Quaker Oats Company, Chicago, Ill. Filed May 11, 1967.

QUAKER SHELF OF HEALTH

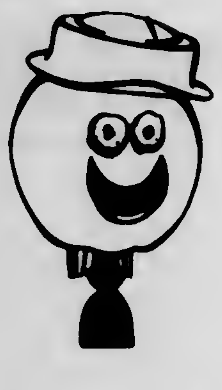
Owner of Reg. Nos. 57,620, 706,464, and others.
For Breakfast Cereals.
First use Mar. 15, 1966.

SN 272,675. International Minerals & Chemical Corporation, d.b.a. Ac'cent International, Skokie, Ill. Filed May 31, 1967.

WAKES UP FLAVOR NATURE PUTS IN FOOD

For Monosodium Glutamate Food Seasoning.
First use Jan. 27, 1965.

SN 272,891. Kellogg Company, Battle Creek, Mich. Filed June 2, 1967.



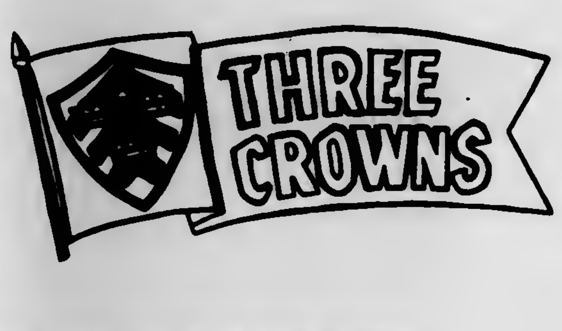
Applicant disclaims exclusive rights to the representation of the goods apart from the mark as shown.
For Cereal Breakfast Foods.
First use Sept. 13, 1965.

SN 273,011. Ulrich Baensch, d.b.a. Tetra Kraft Werke, Melle, Germany. Filed June 5, 1967.

TetraMin

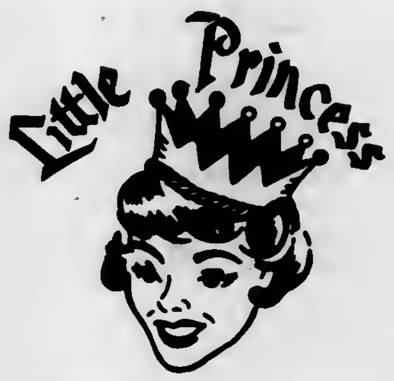
For Fish Food.
First use Jan. 30, 1961; in commerce Jan. 10, 1963.

SN 274,919. Valley Packing Company of California, d.b.a. Valley Packing Co., Salinas, Calif. Filed June 28, 1967.



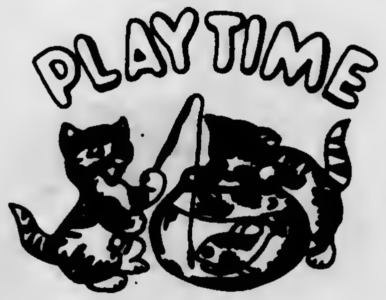
For Fresh Vegetables and Fresh Melons.
First use at least as early as 1963.

SN 276,984. Gaddis Packing Company, Forest, Miss. Filed July 28, 1967.



The portrait shown in the drawing is fanciful.
For Fresh and Frozen Chicken.
First use at least as early as Apr. 15, 1959.

SN 278,075. J.D. Packing Company, Oxnard, Calif. Filed Aug. 11, 1967.



For Canned Dog and Cat Food.
First use July 25, 1967.

SN 278,649. The Quaker Oats Company, Chicago, Ill. Filed Aug. 21, 1967.

SENTINEL

For Dog Food.
First use July 31, 1967.

SN 278,650. Safeway Stores, Incorporated, Oakland, Calif. Filed Aug. 21, 1967.

PARTY PRIDE

Owner of Reg. Nos. 368,355, 783,321, and 818,811.
For Potato Chips and Pretzels.
First use Sept. 23, 1965.

SN 278,760. International Milling Company Inc., Minneapolis, Minn. Filed Aug. 22, 1967.

RADIANCE ROSE

For Wheat Flour.
First use July 1, 1924.

SN 278,762. International Milling Company Inc., Minneapolis, Minn. Filed Aug. 22, 1967.

BEMO

For Wheat Flour.
First use at least as early as Jan. 1, 1936.

SN 278,764. International Milling Company Inc., Minneapolis, Miss. Filed Aug. 22, 1967.

NIAGARA

For Wheat Flour.
First use at least as early as March 1963.

SN 278,766. International Milling Company Inc., Minneapolis, Minn. Filed Aug. 22, 1967.

RAVENA

For Wheat Flour.
First use at least as early as Jan. 1, 1936.

SN 279,032. The Quaker Oats Company, Chicago, Ill. Filed Aug. 25, 1967.

CHOW MANIA

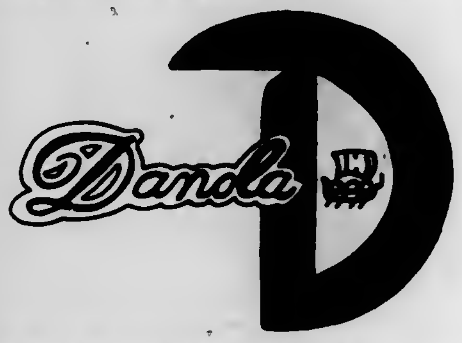
For Snack Crackers.
First use Aug. 9, 1967.

SN 279,139. The Coca-Cola Company, d.b.a. Duncan Foods Co., Atlanta, Ga. Filed Aug. 28, 1967.

REV

For Coffee.
First use June 26, 1967.

SN 279,141. The East Asiatic Company, Inc., d.b.a. Danfoods Corporation, Los Angeles, Calif. Filed Aug. 28, 1967.



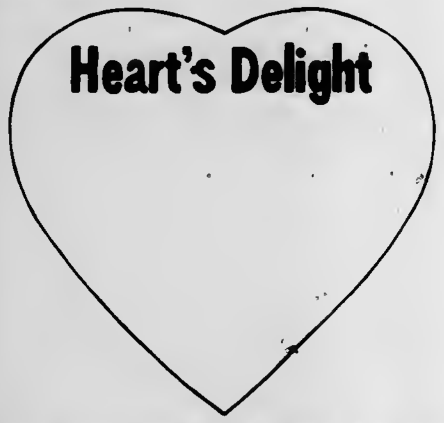
Owner of Reg. Nos. 708,800 and 765,219.
For Ham Loaf, Cooked Ham, and Pork Shoulder.
First use June 20, 1967.

SN 279,255. The Quaker Oats Company, Chicago, Ill. Filed Aug. 29, 1967.

PO'K CHOMPS

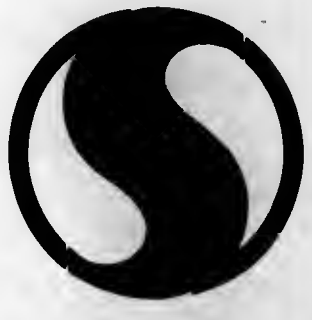
For Snack Crackers.
First use Aug. 9, 1967.

SN 279,511. California Canners and Growers, San Francisco, Calif. Filed Sept. 1, 1967.



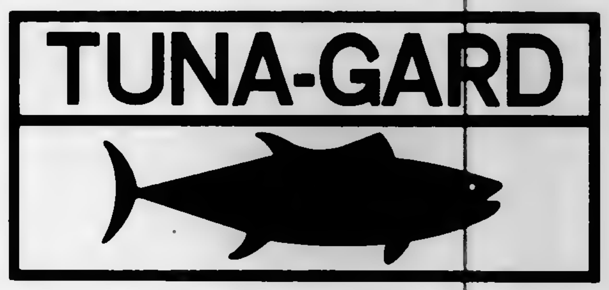
Owner of Reg. Nos. 134,276, 647,592, and others.
For Canned Fruits, Vegetables, Fruit Juices, Fruit Nectars, Vegetable Juices, Fish, Olives, Olive Oil, Milk; Frozen Fruits and Vegetables, Dried Fruits, Tomato Catsup, Flours, Cornmeal, Corn Starch, Alimentary Paste Products, Rolled Oats, Rice, Cocoa, Coffee, Tea, Mincemeat, Salad Dressing, Vinegar, Pickles, Spices, Salt, Fruit and Berry Preserves, Food Flavoring Extracts, Jelly Powders, Jellies, Apple Butter, Molasses, Table Syrups, Butter, and Cheese.
First use 1894.

SN 279,518. Safeway Stores, Incorporated, Oakland, Calif. Filed Sept. 1, 1967.



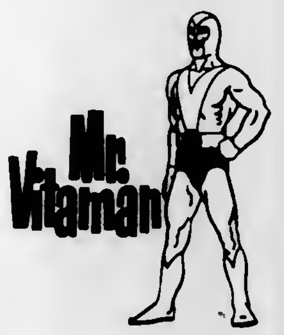
Owner of Reg. Nos. 685,246, 759,677, and others.
For Potato Chips and Pretzels.
First use Sept. 23, 1965.

SN 279,703. Calgon Corporation, Pittsburgh, Pa. Filed Sept. 6, 1967.



Owner of Reg. No. 834,085.
For Food Grade Phosphate Composition for Treating Tuna To Retain Soluble Protein Upon Cooking.
First use July 25, 1967.

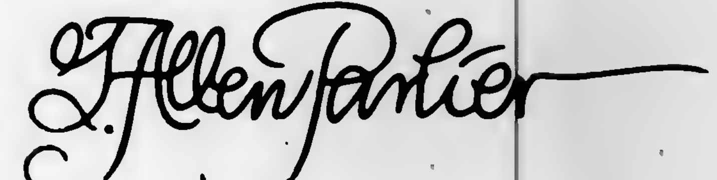
SN 279,905. The Quaker Oats Company, Chicago, Ill. Filed Sept. 8, 1967.



For Breakfast Cereal.
First use Aug. 9, 1967.

Class 47 — Wines

SN 279,348. G. Allen Parlier Corporation, Arecibo, Puerto Rico. Filed Aug. 30, 1967.



"G. Allen Parlier" is the name of a living individual whose consent is of record.
For Wine.
First use Dec. 21, 1964.

SN 279,702. United Vintners, Inc., d.b.a. Italian Swiss Colony, San Francisco, Calif. Filed Sept. 5, 1967.

BIMINI BELLE

For Wines.
First use Apr. 19, 1967.

Class 49 — Distilled Alcoholic Liquors

SN 252,114. E. Martinoni Company, San Francisco, Calif. Filed Aug. 10, 1966.

OLD "PRO"

For Scotch Whisky.
First use July 19, 1966.

SN 254,069. David Sherman Corporation, d.b.a. Treasure Rums, Ltd., St. Louis, Mo. Filed Sept. 8, 1966.

SEVEN SEAS

For Rum.
First use Apr. 22, 1964.

SN 257,537. Stitzel-Weller Distillery, Louisville, Ky. Filed S.R. Oct. 28, 1966; Am. P.R. Sept. 8, 1967.

OLD RIP VAN WINKLE

For Whiskey.
First use Nov. 10, 1960.

SN 258,168. Standard Wine & Liquor Co., Inc., d.b.a. J.H.T. Ltd., Long Island City, N.Y. Filed Nov. 7, 1966.

J.H.T.

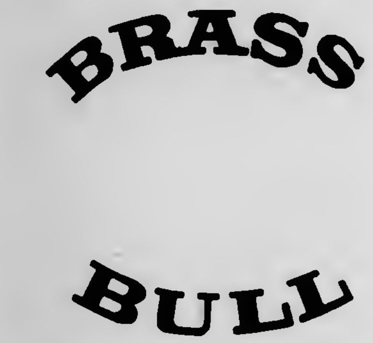
For Scotch Whisky.
First use Oct. 28, 1966.

SN 258,808. John Gross & Co., Baltimore, Md. Filed Nov. 16, 1966.

BLANSAC

For French Brandy.
First use Apr. 12, 1948.

SN 263,955. Sazerac Company, Inc., d.b.a. Brass Bull Co., New Orleans, La. Filed Feb. 3, 1967.



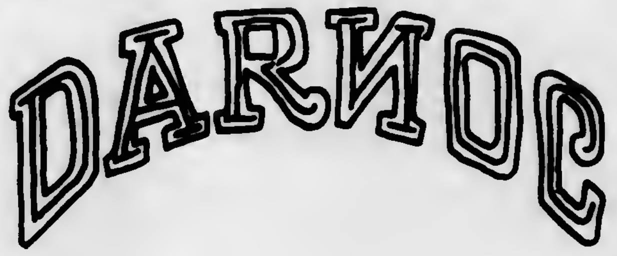
For Bourbon Whiskey.
First use Nov. 9, 1966.

SN 264,014. The Black Prince Company, Inc., d.b.a. Cardigan Imports, Nutley, N.J. Filed Feb. 6, 1967.

CARDIGAN

For Scotch Whisky.
First use November 1966.

SN 278,636. Hilton Hotels Corporation, Chicago, Ill. Filed Aug. 21, 1967.



For Vodka.
First use July 18, 1967.

Class 50 — Merchandise Not Otherwise Classified

SN 256,558. International Tools Limited, Windsor, Ontario, Canada. Filed Oct. 17, 1966.

RAY-O-LITE

For Multi-Facet Plastic Reflector or Delineator for Use as a Warning Signal on Automobiles, Highways, and Driveways.
First use Jan. 13, 1966; in commerce May 25, 1966.

SN 259,575. Precision Dynamics Corporation, Burbank, Calif. Filed Nov. 28, 1966.

TRI-BAND

For Hospital Identification Bracelets.
First use Nov. 24, 1958.

SN 260,414. Edukaid of Ridgewood, Ridgewood, N.J. Filed Dec. 9, 1966.

COUNT-A-BARS

For Educational Aids Relating to Mathematics in Teaching an Understanding of the Basic Operations and Properties of Numbers.
First use July 7, 1966.

SN 260,415. Edukaid of Ridgewood, Ridgewood, N.J. Filed Dec. 9, 1966.

COUNT-A-LADDER

For Educational Aids Relating to Mathematics in Teaching an Understanding of the Basic Operations and Properties of Numbers.
First use July 1, 1966.

SN 260,417. Edukaid of Ridgewood, Ridgewood, N.J. Filed Dec. 9, 1966.

COUNT-A-LINE

For Educational Aids Relating to Mathematics in Teaching an Understanding of the Basic Operations and Properties of Numbers.
First use July 7, 1966.

SN 273,925. Dimensional Concepts, Inc., Chicago, Ill. Filed June 15, 1967.

TABLE TOPPER

For Portable Display Unit.
First use May 20, 1967.

SN 276,014. H. T. Hall, Inc., Manasquan, N.J. Filed July 14, 1967.

DURA-CRETE

For Concrete Burial Vaults.
First use May 22, 1967.

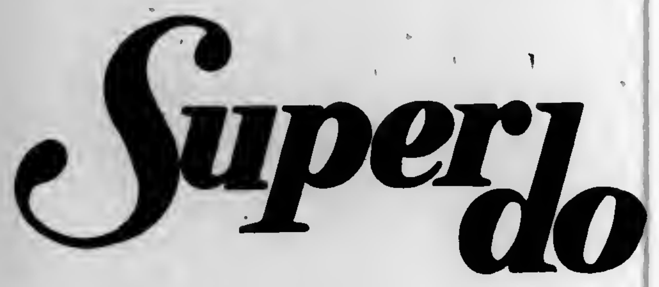
Class 51 — Cosmetics and Toilet Preparations

SN 246,635. Elizabeth Arden Sales Corporation, New York, N.Y. Filed May 26, 1966.

ACCENT

For Liquid for Tinting of the Knees.
First use Apr. 29, 1966.

SN 259,581. Rayette-Faberge, Inc., New York, N.Y. Filed Nov. 28, 1966.



For Hair Setting Gel.
First use Sept. 24, 1965.

SN 259,853. Rhodes Pharmacal Co., Inc., Chicago, Ill. Filed Dec. 1, 1966.

DONNATELLI

For Cosmetic Preparations—Namely, Creme Facials and Moisturizing Lotions.
First use on or about Aug. 15, 1966.

SN 266,460. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company, Los Angeles, Calif. Filed Mar. 10, 1967.

ENSEMBLE

For Cologne.
First use Feb. 3, 1967.

SN 266,967. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company, Los Angeles, Calif. Filed Mar. 16, 1967.

MAHARAJAH

For Cologne.
First use Feb. 3, 1967.

SN 271,316. Shulton, Inc., Clifton, N.J. Filed May 12, 1967.

SERIES 3

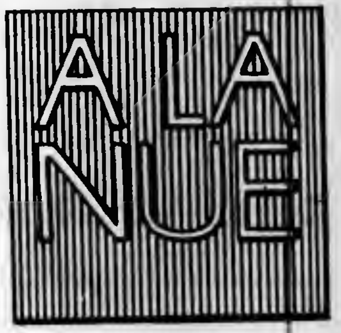
For Cologne.
First use May 2, 1967.

SN 274,841. Sterling Drug Inc., New York, N.Y. Filed June 27, 1967.

REAL GIRL

For Lipsticks, Eye Shadow, Facial Liquid Make-Up, Face Powder; and Cosmetic Compacts Containing a Tray Holding Eyebrow Shaper, a Brush, and a Mirror.
First use Nov. 2, 1966.

SN 279,598. Marie Ganee, Ltd., New York, N.Y. Filed Sept. 5, 1967.



The drawing is lined for the color rose red. Owner of Reg. No. 831,195.
For Cosmetics—Namely, Depilatories.
First use June 9, 1967.

Class 52 — Detergents and Soaps

SN 241,719. Witco Chemical Company, Inc., New York, N.Y. Filed Mar. 23, 1966.

WITCO

Owner of Reg. No. 811,939 and others.
For Synthetic Detergents for Commercial and Industrial Use and for Sale to Others for Packaging for Household Use.
First use at least as early as January 1956.

SN 247,964. Pylam Products Company, Inc., Queens Village, N.Y. Filed June 13, 1966.

DYE GONE

For Hand Cleansing Cream.
First use Apr. 1, 1966.

SN 252,567. Hadco Corporation, Cleveland, Ohio. Filed Aug. 17, 1966.

QUIK-SAN

For Preparation for Cleaning and Deodorizing Toilet Bowls and Urinals.
First use December 1946.

SN 252,572. Hadco Corporation, Cleveland, Ohio. Filed Aug. 17, 1966.

COVE-KLEEN

For Cleaning Composition for Floors, Baseboards, Covings, and Other Washable Surfaces.
First use at least November 1959.

SN 256,272. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 12, 1966.

SPARKLING GODDESS

Owner of Reg. Nos. 430,977, 799,244, and others.
For Liquid Detergent for Washing Dishes and Fabrics.
First use Sept. 28, 1966.

SN 263,025. Cowles Chemical Company, Cleveland, Ohio. Filed Jan. 23, 1967.

PASS-UP+

For Dry Cleaning Detergent.
First use Sept. 27, 1965.

SN 266,001. Colgate-Palmolive Company, New York, N.Y. Filed Mar. 6, 1967.

BARRIER

Owner of Reg. Nos. 596,908, 759,870, and others.
For Hair Shampoo.
First use Mar. 18, 1960.

SN 269,644. The Dow Chemical Company, Midland, Mich. Filed Apr. 20, 1967.

SCUFA

For Cleaning Solvents.
First use Aug. 13, 1965.

SERVICE MARKS

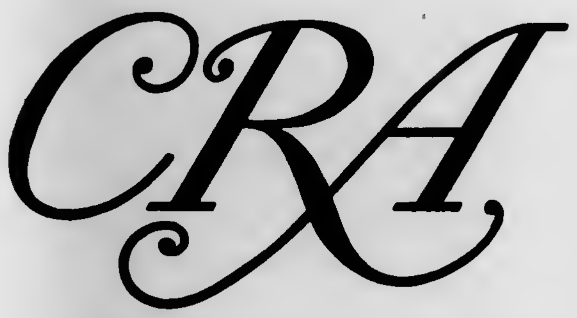
Class 100 — Miscellaneous

SN 245,147. The Austin Company, Cleveland, Ohio. Filed May 9, 1966.

THE AUSTIN METHOD

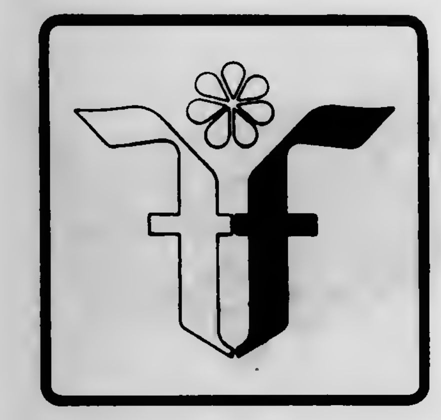
Owner of Reg. Nos. 186,643 and 821,327.
For Consulting, Planning, Designing, and Engineering Services in the Field of Construction.
First use 1915.

SN 261,919. Charles River Associates Incorporated, Cambridge, Mass. Filed Jan. 4, 1967.



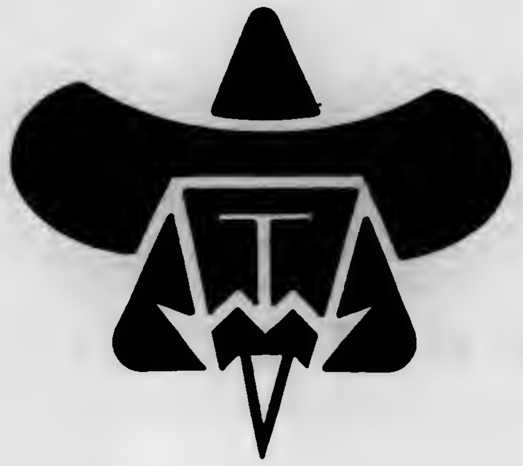
For Economic Research and Analysis Services.
First use August 1966.

SN 262,153. Florida Food Products, Inc., Orlando, Fla. Filed Jan. 9, 1967.



For Beverage Canning Services.
First use Apr. 27, 1966.

SN 265,465. Buffalo Bill's Steak Village, Inc., Los Angeles, Calif. Filed Feb. 27, 1967.



For Restaurant Services.
First use Sept. 8, 1966.

SN 267,994. Steak n Shake, Inc., Bloomington, Ill. Filed Mar. 30, 1967.

STEAK N SHAKE

Owner of Reg. Nos. 609,979, 680,071, and others.
For Restaurant Services.
First use Feb. 1, 1936.

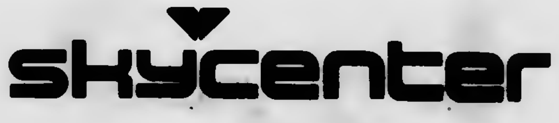
Class 101 — Advertising and Business

SN 261,304. John P. Hungelmann and Willard M. Mattson (joint owners), Minneapolis, Minn. Filed Dec. 22, 1966.

ELECTRA-TAX

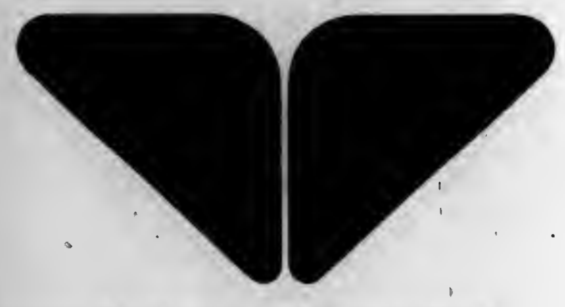
For Preparing Tax Returns.
First use Dec. 3, 1966.

SN 269,482. The Hertz Corporation, New York, N.Y., by assignment and change of name from The Hertz Corporation, New York, N.Y. Filed Apr. 19, 1967.



For Airport Management Consultant Services.
First use Apr. 5, 1967.

SN 269,483. The Hertz Corporation, New York, N.Y., by assignment and change of name from The Hertz Corporation, New York, N.Y. Filed Apr. 19, 1967.



For Airport Management Consultant Services.
First use Apr. 5, 1967.

SN 275,809. Taffy's Inc., Norridge, Ill. Filed July 12, 1967.

TAFFY'S

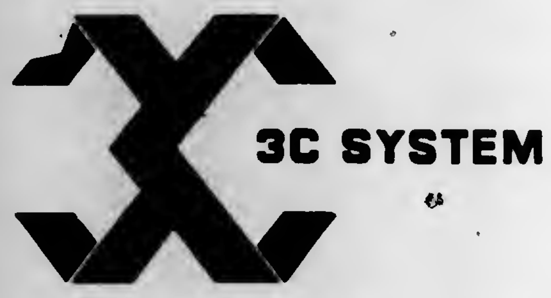
For Business Services—Namely, Services Involved in Operating a Bridal Salon, Including Advising Prospective Brides; and Selling Bridal Clothes and Accessories.
First use on or before Feb. 6, 1963.

SN 276,907. Hammer Galleries, Inc., New York, N.Y. Filed July 27, 1967.

HAMMER GALLERIES

For Buying and Selling Works of Art, Accepting Works of Art on Consignment From Artists, Collectors, Dealers, and Others, for Sale on a Commission Basis.
First use at least prior to 1934.

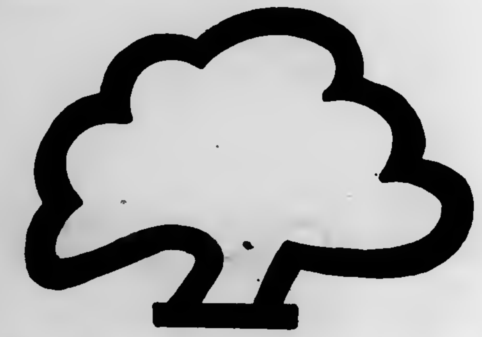
SN 278,059. Catalog Card Corporation of America, Inc., Minneapolis, Minn. Filed Aug. 11, 1967.



The word "System" is disclaimed apart from the mark as shown.
For Imprinting and Supplying Indicia for Index Cards for Libraries.
First use Apr. 15, 1967.

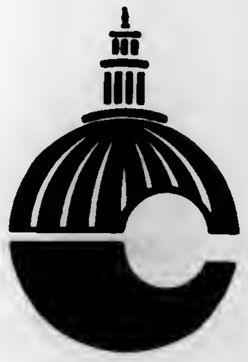
Class 102 — Insurance and Financial

SN 261,468. Edmund K. Eichengreen, Chicago, Ill. Filed Dec. 27, 1966.



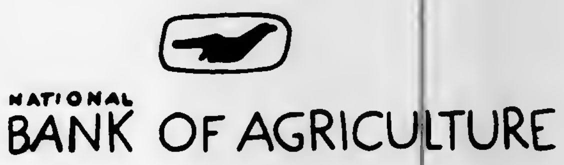
For Insurance Agency and Brokerage Services.
First use 1935.

SN 275,109. Congressional Life Insurance Company, Philadelphia, Pa. Filed June 30, 1967.



The mark consists of a stylized letter "C" and design.
For Underwriting of Life Insurance.
First use Mar. 24, 1966.

SN 278,074. National Bank of Agriculture, Delano, Calif. Filed Aug. 11, 1967.



For General Banking Services Such as Loans, Savings and Checking Accounts, Escrow Transactions, Various Trust Services, and the Like.
First use at least as early as July 14, 1967.

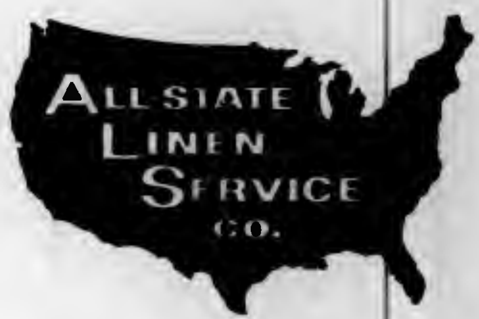
Class 103 — Construction and Repair

SN 249,464. Borg-Warner Corporation, Chicago, Ill. Filed June 30, 1966.

VISQUEEZ

For Treatment of Oil Wells To Control Production of Fluids Therefrom.
First use on or prior to Sept. 6, 1955.

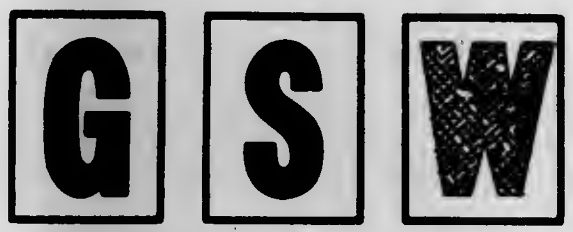
SN 256,909. All-State Linen Service Co., Inc., Memphis, Tenn. Filed Oct. 21, 1966.



The words "Linen Service Co." and the outline map of the continental United States are disclaimed apart from the mark as shown.
For Furnishing Clean Linen as Required.
First use Sept. 1, 1966.

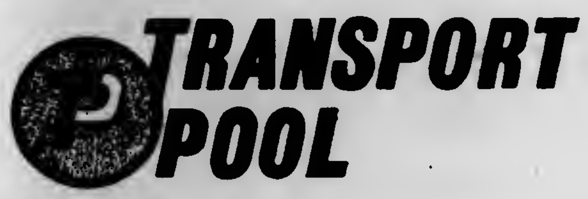
Class 105 — Transportation and Storage

SN 233,595. Great Southwest Warehouses, Inc., Dallas, Tex. Filed Nov. 30, 1965.



The drawing is lined for orange.
For Transportation and Storage of Goods.
First use July 1, 1959.

SN 246,727. Transport Pool, Inc., Los Angeles, Calif. Filed May 26, 1966.



The words "Transport Pool" are disclaimed apart from the mark as shown.
For Rental of Truck Trailers.
First use May 1, 1966.

SN 271,212. F. H. Prince & Company, Inc., d.b.a. Continental Freezers of Illinois, Chicago, Ill. Filed May 11, 1967.

TDP

For Warehousing and Transportation Services for Frozen Food Packers.
First use at least as early as Feb. 8, 1966.

Class 107 — Education and Entertainment

SN 255,933. Univision Inc., Boston, Mass. Filed Oct. 6, 1966.

UNIVISION

For Producing and Distributing Motion Pictures, Videotapes, and Slide Films for Education and Entertainment of Others.
First use January 1966.

SN 257,863. Motown Record Corporation, Detroit, Mich., assignee of Hitsville, U.S.A., Inc., Detroit, Mich. Filed Nov. 3, 1966.

HITSVILLE U.S.A.

No claim is made to the exclusive use of "U.S.A." apart from the mark as a whole.
For Providing Packaged Theatrical Attractions.
First use December 1959.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 2 — Receptacles

838,586. QUIK ROLL. Polaris Plastics Corporation. SN 234,143. Pub. 8–29–67. Filed 12–7–65.

838,587. ROAD RIDER. Olinkraft, Inc., assignee of Olin Mathieson Chemical Corporation. SN 246,095. Pub. 8–29–67. Filed 5–19–66.

838,588. USE AND DESIGN. United States Envelope Company. MULTIPLE CLASS (Classes 2 and 37). SN 255,852. Pub. 8–29–67. Filed 10–6–66.

838,589. IPC-O₂ AND DESIGN. International Paper Company. SN 256,738. Pub. 8–29–67. Filed 10–19–66.

838,590. ST. JOE. St. Joe Paper Company. SN 268,271. Pub. 8–29–67. Filed 4–4–67.

838,591. HIRSCH WEIS ORIGINAL AND DESIGN. White Stag Manufacturing Co., d.b.a. Hirsch-Weis Canvas Products Co. SN 271,102. Pub. 8–29–67. Filed 5–10–67.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

838,592. GLO-CASE. Apex Products Corporation. SN 273,151. Pub. 8–29–67. Filed 6–6–67.

Class 4 — Abrasives and Polishing Materials

838,593. ASEA. Allmanna Svenska Elektriska Aktiebolaget. MULTIPLE CLASS (Classes 4, 14, 23, and 34). SN 242,700. Pub. 8–29–67. Filed 4–5–66.

838,594. RACING FINISH AND DESIGN. Ann Shirley Alessi, d.b.a. Four Seasons Racing Products. SN 247,559. Pub. 8–29–67. Filed 6–8–66.

838,595. FOUR SEASONS AND DESIGN. Ann Shirley Alessi, d.b.a. Four Seasons Racing Products. SN 247,560. Pub. 8–29–67. Filed 6–8–66.

838,596. CONOCO AND DESIGN. Continental Oil Company. SN 247,583. Pub. 8–29–67. Filed 6–8–66.

838,597. REVEEL. W. R. Grace & Co. SN 262,421. Pub. 8–29–67. Filed 1–12–67.

838,598. MY-RO. My-Ko Chemical Corporation. SN 262,803. Pub. 8–29–67. Filed 1–18–67.

838,599. CHEROKEE AND DESIGN. Cherokee Wholesalers, Inc. SN 264,198. Pub. 8–29–67. Filed 2–8–67.

Class 5 — Adhesives

838,600. JOCLIN. The Joclin Manufacturing Company. SN 246,178. Pub. 8–29–67. Filed 5–20–66.

838,601. LAG-IT. Benjamin Foster Company. SN 248,077. Pub. 8–29–67. Filed 6–10–66

838,602. CORDFLEX. St. Regis Paper Company. SN 248,165. Pub. 8–29–67. Filed 6–15–66.

838,603. MOD-PODGE. Enterprise Paint Manufacturing Company, assignee of Janet M. Wetstone, d.b.a. Jan's Interiors. SN 258,184. Pub. 8–29–67. Filed 11–7–66.

838,604. SPARE TIRE. Auto-Chem Research Company, Inc. SN 258,771. Pub. 8–29–67. Filed 11–16–66.

838,605. GEN/STIK. General Cable Corporation. SN 258,998. Pub. 8–29–67. Filed 11–18–66.

Class 6 — Chemicals and Chemical Compositions

838,606. LEAK SPOT. Jet Air Products Co. SN 254,219. Pub. 8–29–67. Filed 9–12–66.

838,607. SOLARINE. Laco Corp., assignee of The Solarine Company. SN 258,163. Pub. 8–29–67. Filed 11–7–66.

838,608. PREE-ZERV. Lake Products Company, Inc. SN 261,501. Pub. 8–29–67. Filed 12–27–66.

838,609. ARW-7. Technicon Corporation, by merger and change of name from Technicon Chemical Company, Inc. SN 262,217. Pub. 8–29–67. Filed 1–9–67.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

838,610. CLASSIQUE. UMC Industries, Inc. SN 257,541. Pub. 8–29–67. Filed 10–28–66.

838,611. MISCELLANEOUS DESIGN. The High Standard Manufacturing Corporation. SN 259,246. Pub. 8–29–67. Filed 11–22–66.

838,612. FOG CUTTER. Trojan Fireworks Co. SN 259,358. Pub. 8–29–67. Filed 11–23–66.

838,613. SPACE BOY. Trojan Fireworks Co. SN 259,354. Pub. 8–29–67. Filed 11–23–66.

838,614. .007 SIGNAL. Trojan Fireworks Co. SN 259,355. Pub. 8–29–67. Filed 11–23–66.

838,615. DELLEK. The Dow Chemical Company. SN 259,530. Pub. 8–29–67. Filed 11–28–66.

838,616. TEMPREL. The Dow Chemical Company. SN 259,534. Pub. 8–29–67. Filed 11–28–66.

Class 10 — Fertilizers

838,617. AGRI-BASE. Continental Oil Company, assignee of American Agricultural Chemical Company. SN 228,104. Pub. 8–29–67. Filed 9–20–65.

838,618. PLANT LIFE. Marion Plant Life Fertilizer Co. SN 261,739. Pub. 8–29–67. Filed 12–30–66.

Class 11 — Inks and Inking Materials

838,619. HYDRO-MAX. Sun Chemical Corporation. SN 246,619. Pub. 8–29–67. Filed 5–25–66.

838,620. HYDRO-SUN. Sun Chemical Corporation. SN 246,620. Pub. 8–29–67. Filed 5–25–66.

838,621. ANCHOR. Allied Carbon and Ribbon Manufacturing Corp. SN 257,747. Pub. 8–29–67. Filed 11–2–66.

Class 12 — Construction Materials

838,622. READTEX. Readco Industries Inc. SN 258,403. Pub. 8–29–67. Filed 11–10–66.

838,623. BO-DEL AND DESIGN. John F. Kennedy, d.b.a. Bo-Del Beams. SN 262,488. Pub. 8–29–67. Filed 1–13–67.

838,624. CORIAN. E. I. du Pont de Nemours and Company. SN 263,163. Pub. 8–29–67. Filed 1–24–67.

838,625. KA/REF. Kaiser Aluminum & Chemical Corporation. SN 263,377. Pub. 8–29–67. Filed 1–26–67.

838,626. Q-AIR. H. H. Robertson Company. MULTIPLE CLASS (Classes 12 and 34). SN 263,501. Pub. 8–29–67. Filed 1–30–67.

838,627. VULCANITE. Certain-Teed Products Corporation. SN 263,536. Pub. 8–29–67. Filed 1–30–67.

838,628. FAB-DEK. Miracle Adhesives Corporation. SN 263,595. Pub. 8–29–67. Filed 1–30–67.

838,629 SKYLARK. Skylark Builders, Inc. SN 263,618. Pub. 8–29–67. Filed 1–30–67.

838,630. EPOIL. Boise Cascade Corporation. SN 263,809. Pub. 8–29–67. Filed 2–2–67.

838,631. TRANSFLEX. The General Tire & Rubber Company. SN 264,050. Pub. 8–29–67. Filed 2–6–67.

838,632. SBI (DESIGN). Sola Basic Industries, Inc. SN 265,878. Pub. 8–29–67. Filed 3–3–67.

838,633. ULTIMET. United States Steel Corporation. SN 269,881. Pub. 8–29–67. Filed 4–24–67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

838,634. DYNAFORM. Flexible Tubing Corporation, assignee of The Flexible Tubing Corporation. SN 245,701. Pub. 8–29–67. Filed 5–16–66.

838,635. FLAIR. Flair Manufacturing Corp. MULTIPLE CLASS (Classes 13, 21, 23, 26, and 34). SN 248,994. Pub. 8–29–67. Filed 6–27–66.

838,636. GOLDEN GLO. Chicago Metallic Manufacturing Company. SN 259,716. Pub. 8–29–67. Filed 11–30–66.

Class 14 — Metals and Metal Castings and Forgings

838,593. (See Class 4 for this trademark.)

838,637. GREEN DOT AND DESIGN. Republic Steel Corporation. SN 242,982. Pub. 8–29–67. Filed 4–7–66.

838,638. STAMSTAFF. The Charles C. Lewis Company. SN 247,703. Pub. 8–29–67. Filed 6–9–66.

838,639. AMCRAFT. Amcraft Inc. SN 257,447. Pub. 8–29–67. Filed 10–28–66.

Class 15 — Oils and Greases

838,640. POLYFLO. Moore & Munger. SN 244,603. Pub. 8–29–67. Filed 4–29–66.

838,641. 5 DROPS (DESIGN). Metal Lubricants Co. SN 246,802. Pub. 8–29–67. Filed 5–27–66.

838,642. CIMLYTE-7. The Cincinnati Milling Machine Co. SN 250,984. Pub. 8–29–67. Filed 7–25–66.

838,643. "GET THE LEAD OUT!" Puratronics, Inc. SN 253,334. Pub. 8–29–67. Filed 8–29–66.

838,644. MELKOOL. Metal Lubricants Co. SN 258,240. Pub. 8–29–67. Filed 11–8–66.

838,645. JT-8. Cato Oil and Grease Company. SN 258,668. Pub. 8–29–67. Filed 11–15–66.

838,646. HALO "THE PARTY PEOPLE" AND DESIGN. Halo Sales Corporation, d.b.a. The Party People. SN 265,021. Pub. 8–29–67. Filed 2–20–67.

838,647. HOMELITE. Textron Inc. SN 268,345. Pub. 8–29–67. Filed 4–4–67.

838,648. PFLASH! American Petrofina Company of Texas. SN 268,553. Pub. 8–29–67. Filed 4–7–67.

838,649. SIMONIZ. Simoniz Company. SN 272,995. Pub. 8–29–67. Filed 6–5–67.

Class 16 — Protective and Decorative Coatings

838,650. SILHOUETTE OF TWINS (DESIGN). Twinco Products Company, Inc. MULTIPLE CLASS (Classes 16, 22, 24, and 29). SN 215,474. Pub. 8–29–67. Filed 4–1–65.

838,651. MIRACLE COAT. Del Chemical Corporation. SN 250,252. Pub. 8–29–67. Filed 7–14–66.

838,652. DEL-LITE. Del Chemical Corporation. SN 250,254. Pub. 8–29–67. Filed 7–14–66.

838,653. INSIDE-OUT AND DESIGN. Burgess Fobes Paint Co., d.b.a. Burgess Fobes Paint. SN 252,588. Pub. 8–29–67. Filed 8–17–66.

838,654. TILE/GARD. The Valspar Corporation. SN 253,375. Pub. 8–29–67. Filed 8–29–66.

838,655. "PLASMASK." Britt Metal Processing, Inc. SN 257,088. Pub. 8–29–67. Filed 10–24–66.

838,656. SOLARSEAL. Laco Corp., assignee of The Solarine Company. SN 257,099. Pub. 8–29–67. Filed 10–24–66.

838,657. RED RAIN. Specialized Coatings, Inc. SN 261,338. Pub. 8–29–67. Filed 12–22–66.

838,658. TIQUE TONE. C. H. Tripp Finishing Company. SN 262,295. Pub. 8–29–67. Filed 1–10–67.

838,659. DA·SHEEN. Davis Paint Company. SN 264,726. Pub. 8–29–67. Filed 2–15–67.

838,660. POWERCRON. Pittsburgh Plate Glass Company. SN 272,404. Pub. 8–29–67. Filed 5–25–67.

838,661. SILAMEL. Electrofinishing by Hudson, Inc. SN 272,788. Pub. 8–29–67. Filed 6–1–67.

Class 17 — Tobacco Products

838,662. CLUBHOUSE SELECCIONS. The S. Frieder & Sons Company. SN 257,954. Pub. 8–29–67. Filed 11–4–66.

Class 18 — Medicines and Pharmaceutical Preparations

838,663. "FORMULA 94." Amulet Corporation, d.b.a. Sierra General Sales Co. SN 245,144. Pub. 8–29–67. Filed 5–9–66.

838,664. MAUCHANT. Societe Parisienne de Recherches et d'Expansion Therapeutique. SN 247,078. Pub. 8–29–67. Filed 6–1–66.

838,665. S.P.R.E.T. AND DESIGN. Societe Parisienne de Recherches et d'Expansion Therapeutique. SN 247,074. Pub. 8–29–67. Filed 6–1–66.

838,666. UNIMED. Unimed, Inc. SN 248,267. Pub. 8–29–67. Filed 6–16–66.

838,667. ALKA-SELTZER ON THE ROCKS. Miles Laboratories, Inc. SN 250,761. Pub. 8–29–67. Filed 7–21–66.

838,668. PYRILGIN. Savage Laboratories, Inc. SN 257,654. Pub. 8–29–67. Filed 10–31–66.

838,669. KLORT. Lemmon Pharmacal Company. SN 261,854. Pub. 8–29–67. Filed 1–3–67.

838,670. NITRO-T.D. Fleming and Company, Pharmaceuticals. SN 261,984. Pub. 8–29–67. Filed 1–5–67.

838,671. PAR-ORIC. Joseph Candido, d.b.a. Candido Pharmacy. SN 262,566. Pub. 8–29–67. Filed 1–16–67.

Class 19 — Vehicles

838,672. FALTEX PRODUCT AND DESIGN. Hagop S. Touloukian, d.b.a. Cornhill Commercial Company. SN 243,600. Pub. 8–29–67. Filed 4–15–66.

Class 20—Linoleum and Oiled Cloth

838,673. BELMONDO. Congoleum-Nairn Inc. SN 270,899. Pub. 8-29-67. Filed 5-8-67.

Class 21—Electrical Apparatus, Machines, and Supplies

838,635. (See Class 13 for this trademark.)

838,674. DENON. Nippon Columbia Co., Ltd. MULTIPLE CLASS (Classes 21, 31, 34, and 36). SN 188,564. Pub. 10-18-66. Filed 3-12-64.

838,675. ELECTRO-MODULE. Warner Electric Brake & Clutch Company. SN 200,306. Pub. 8-29-67. Filed 8-20-64.

838,676. KARMA. Sealine Manufacturing Corp. SN 212,595. Pub. 12-21-65. Filed 2-23-65.

838,677. KARMATIC. Sealine Manufacturing Corp. SN 214,183. Pub. 1-18-66. Filed 3-15-65.

838,678. LETTER T AND DESIGN. U.S. Terminals Inc. SN 228,221. Pub. 8-29-67. Filed 9-20-65.

838,679. CORDEM. Cordem Corporation. SN 236,882. Pub. 8-29-67. Filed 1-21-66.

838,680. CHEKAR. General Signal Corporation. SN 239,258. Pub. 8-29-67. Filed 2-21-66.

838,681. NORD. Multronics, Inc. SN 243,699. Pub. 8-29-67. Filed 4-18-66.

838,682. UNI-KIT. General Electric Company. SN 244,700. Pub. 8-29-67. Filed 5-2-66.

838,683. ELECTRO-FLYTE. The Black Clawson Company. SN 245,151. Pub. 8-29-67. Filed 5-9-66.

838,684. KNURZ. Bernhard Kirsch. MULTIPLE CLASS (Classes 21 and 34). SN 245,402. Pub. 8-29-67. Filed 5-11-66.

838,685. DURACELL. P. R. Mallory & Co. Inc. MULTIPLE CLASS (Classes 21 and 26). SN 245,654. Pub. 8-29-67. Filed 5-16-66.

838,686. ROLEN-STAR AND DESIGN. Rolen Diversified Investors, Inc. SN 245,794. Pub. 8-29-67. Filed 5-16-66.

838,687. SPIRAL (DESIGN). Preformed Line Products Company. SN 245,852. Pub. 8-29-67. Filed 5-17-66.

838,688. IHF AND DESIGN. Joseph A. Perweiler. SN 247,402. Pub. 8-29-67. Filed 6-6-66.

838,689. C AND DESIGN. Coilform Company. SN 247,896. Pub. 8-29-67. Filed 6-13-66.

838,690. RAYONIC. Waterman Electronic Tube Company. SN 248,072. Pub. 8-29-67. Filed 6-14-66.

838,691. INDIT. Indit Corporation. SN 248,621. Pub. 8-29-67. Filed 6-21-66.

838,692. SILHOUETTE. BJD, Inc. SN 252,460. Pub. 8-29-67. Filed 8-16-66.

838,693. DIAL-A-LITE. Eagle Electric Mfg. Co., Inc. SN 252,555. Pub. 8-29-67. Filed 8-17-66.

838,694. CHEVRON (DESIGN). Standard Oil Company of California. SN 253,352. Pub. 8-29-67. Filed 8-29-66.

838,695. MINI-MOD. Dynair Electronics, Inc. SN 255,604. Pub. 8-29-67. Filed 10-3-66.

838,696. ALL AMERICAN AND DESIGN. General Indicator Corporation. SN 255,614. Pub. 8-29-67. Filed 10-3-66.

838,697. TRANSIST-O-GARD. Fisher Radio Corporation. SN 255,792. Pub. 8-29-67. Filed 10-5-66.

838,698. LITTLE GIANT. Fisher Radio Corporation. SN 255,793. Pub. 8-29-67. Filed 10-5-66.

838,699. ELECTRO WARMTH. Patented Products Corporation. SN 255,816. Pub. 8-29-67. Filed 10-5-66.

838,700. LUMIFORM. Lightolier Incorporated. SN 257,397. Pub. 8-29-67. Filed 10-27-66.

838,701. V-Q. Electric Machinery Mfg. Company. SN 257,474. Pub. 8-29-67. Filed 10-28-66.

838,702. H AND DESIGN. Hammarlund Manufacturing Co., Inc. SN 257,623. Pub. 8-29-67. Filed 10-31-66.

838,703. TRI-LOK. Elliott & Evans, Inc., d.b.a. Telectron Company Division. SN 258,679. Pub. 8-29-67. Filed 11-15-66.

838,704. PAN-TY. Panduit Corp. SN 258,716. Pub. 8-29-67. Filed 11-15-66.

838,705. SBI (DESIGN). Sola Basic Industries, Inc. SN 265,875. Pub. 8-29-67. Filed 3-3-67.

838,706. MISCELLANEOUS DESIGN. Oak Electro/Netics Corp. SN 268,127. Pub. 8-29-67. Filed 4-3-67.

Class 22—Games, Toys, and Sporting Goods

838,650. (See Class 16 for this trademark.)

838,707. DEE GEE OF CALIFORNIA. Dee Gee of California, Inc. SN 232,678. Pub. 8-29-67. Filed 11-15-65.

838,708. MATCHBOX. Lesney Products & Co., Limited. SN 237,718. Pub. 8-29-67. Filed 2-1-66.

838,709. REAL-ACTION. William D. Hart, Jr. SN 247,920. Pub. 8-29-67. Filed 6-13-66.

838,710. KENWOOD. Kenneth Smith, Inc. SN 251,888. Pub. 8-29-67. Filed 8-5-66.

838,711. KANDY KITCHEN. Transogram Company, Inc. SN 252,500. Pub. 8-29-67. Filed 8-16-66.

838,712. TIC-TAC-TOTS. Century Printing Company, Inc. SN 254,864. Pub. 8-29-67. Filed 9-21-66.

838,713. K-TWENTY-EIGHT. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 256,617. Pub. 8-15-67. Filed 10-17-66.

838,714. INDESTRUCTO. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 256,618. Pub. 8-15-67. Filed 10-17-66.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

838,593. (See Class 4 for this trademark.)

838,635. (See Class 13 for this trademark.)

838,715. DELTA AND DESIGN. Delta Mercantile Corp. SN 200,423. Pub. 5-25-65. Filed 8-24-64.

838,716. CARPETRON. Advance Machine Company. SN 222,325. Pub. 6-28-66. Filed 6-30-65.

838,717. MILL WHEEL (DESIGN). George O. Graves, d.b.a. Michiana Mills. MULTIPLE CLASS (Classes 23 and 46). SN 239,686. Pub. 8-29-67. Filed 2-28-66.

838,718. MICHIANA MILLS AND DESIGN. George O. Graves, d.b.a. Michiana Mills. MULTIPLE CLASS (Classes 23 and 46). SN 239,687. Pub. 8-29-67. Filed 2-28-66.

838,719. RIBONDEX. Slinger Foundry Company, Inc. SN 239,812. Pub. 8-29-67. Filed 2-28-66.

838,720. POW-R-MUFF. Bennett Company. SN 239,873. Pub. 8-29-67. Filed 3-1-66.

838,721. SUPER-MUFF. Bennett Company. SN 239,874. Pub. 8-29-67. Filed 3-1-66.

838,722. EC AND DESIGN. East Chicago Machine Tool Corporation. SN 241,130. Pub. 8-29-67. Filed 3-16-66.

838,723. PROJECTO-DRILL. Optomechanisms, Inc. SN 241,174. Pub. 8-29-67. Filed 3-16-66.

838,724. TI AND DESIGN. Thomson Industries, Inc. SN 241,547. Pub. 8-29-67. Filed 3-21-66.

838,725. ALEMITE AND DESIGN. Stewart-Warner Corporation. SN 246,383. Pub. 8-29-67. Filed 5-23-66.

838,726. UNION. Union Tank Car Company. MULTIPLE CLASS (Classes 23 and 31). SN 246,728. Pub. 8-29-67. Filed 5-26-66.

838,727. OILGEAR FLUID POWER AND DESIGN. The Oilgear Company. SN 247,826. Pub. 8-29-67. Filed 6-10-66.

838,728. TAG-O-MATIC. Aero-Motive Manufacturing Company. SN 247,865. Pub. 8-29-67. Filed 6-13-66.

838,729. AERO-MOTIVE. Aero-Motive Manufacturing Company. SN 247,867. Pub. 8-29-67. Filed 6-13-66.

838,730. GROZ-BECKERT. Theodor Groz and Sohne and Ernst Beckert, Nadelfabrik Commandit Gesellschaft. SN 249,000. Pub. 8-29-67. Filed 6-27-66.

838,731. POPPER. Trophy Company. SN 250,056. Pub. 8-29-67. Filed 7-11-66.

838,732. FRINK AND DESIGN. Frink Sno-Plows Inc. SN 253,304. Pub. 8-29-67. Filed 8-29-66.

838,733. MCCULLOCH. McCulloch Corporation. SN 253,774. Pub. 8-29-67. Filed 9-2-66.

838,734. STYLIZED R (DESIGN). J. C. Renfroe & Sons, Inc. SN 257,194. Pub. 8-29-67. Filed 10-25-66.

838,735. VALHALLA. Gustav J. Schutterman, d.b.a. Progredo Trading Co. SN 257,516. Pub. 8-29-67. Filed 10-28-66.

838,736. ANITA. Gustav J. Schutterman, d.b.a. Progredo Trading Co. SN 257,518. Pub. 8-29-67. Filed 10-28-66.

838,737. IMPERIAL. Jacobsen Manufacturing Company. SN 258,383. Pub. 8-29-67. Filed 11-10-66.

838,738. CONTROL. Control Molding Corporation. SN 260,906. Pub. 8-29-67. Filed 12-16-66.

838,739. DORAL. Global Import & Export, Inc. SN 264,051. Pub. 8-29-67. Filed 2-6-67.

838,740. HUSKY. Industrial Metalcraft Company, Inc. SN 264,322. Pub. 8-29-67. Filed 2-9-67.

838,741. STA-MULCHER. Sta-Soil Corporation. SN 271,887. Pub. 8-29-67. Filed 5-19-67.

838,742. VWF. Wotan Werke GmbH. SN 272,451. Pub. 8-29-67. Filed 5-26-67.

838,743. SNOW-MATIC. Snow Manufacturing Company. SN 272,665. Pub. 8-29-67. Filed 5-31-67.

838,744. HY-HIT. Hydraulic Machinery Company, Inc. SN 272,673. Pub. 8-29-67. Filed 5-31-67.

Class 24 — Laundry Appliances and Machines

838,650. (See Class 16 for this trademark.)

838,745. WESTERN EAGLE. Gardner Machinery Corporation. SN 257,179. Pub. 8-29-67. Filed 10-25-66.

838,746. SUNBEAM. Sunbeam Corporation. SN 257,664. Pub. 8-29-67. Filed 10-31-66.

Class 25 — Locks and Safes

838,747. AIR-O-DYNE. Air-O-Dyne Corporation. SN 260,806. Pub. 8-29-67. Filed 12-15-66.

838,748. SENTRY LOCK. Sargent & Company (Delaware corporation), assignee of Sargent & Company (Connecticut corporation). SN 265,658. Pub. 8-29-67. Filed 2-28-67.

838,749. SAFE-T-VAULT. Meilink Steel Safe Company. SN 267,051. Pub. 8-29-67. Filed 3-17-67.

838,750. CISA AND DESIGN. S.p.A. C.I.S.A. Costruzioni Italiane Serrature Affini. SN 272,641. Pub. 8-29-67. Filed 5-29-67.

Class 26 — Measuring and Scientific Appliances

838,635. (See Class 13 for this trademark.)

838,685. (See Class 21 for this trademark.)

838,751. CHRISLIN INSTA-CAMERA. Camera Corporation of America. SN 240,578. Pub. 8-29-67. Filed 3-10-66.

838,752. INSTA-CAMERA. Camera Corporation of America. SN 240,579. Pub. 8-29-67. Filed 3-10-66.

838,753. TORDUCTOR. Allmanna Svenska Elektriska Aktiebolaget. SN 244,177. Pub. 8-29-67. Filed 4-25-66.

838,754. TAPP. General Precision Systems Inc., by change of name from General Precision, Inc. SN 245,546. Pub. 8-29-67. Filed 5-20-66.

838,755. OPTICOM. Light Energy Systems, Inc. SN 247,704. Pub. 8-29-67. Filed 6-9-66.

838,756. R AND DESIGN. Tracor, Inc. SN 247,787. Pub. 8-29-67. Filed 6-9-66.

838,757. OLDEN DOES THE IMPOSSIBLE. Olden Camera and Lens Company, Inc. SN 249,177. Pub. 8-29-67. Filed 6-28-66.

838,758. IONALYZER. Orion Research Incorporated. SN 249,197. Pub. 8-29-67. Filed 6-29-66.

838,759. VU-CHEK. Union Carbide Corporation. SN 253,462. Pub. 8-29-67. Filed 8-30-66.

838,760. PRESTONE. Union Carbide Corporation. SN 253,463. Pub. 8-29-67. Filed 8-30-66.

838,761. DESIGN OF CARDINAL BIRD WITH ELECTRONIC SYMBOL. Cardinal Scale Manufacturing Company. SN 258,667. Pub. 8-29-67. Filed 11-15-66.

838,762. ACRO-SEE AND DESIGN. Robert J. Mahnert. SN 259,008. Pub. 8-29-67. Filed 11-18-66.

838,763. ROLL-TACT. Industrial Tectonics, Inc. SN 259,833. Pub. 8-29-67. Filed 12-1-66.

838,764. AUDITION. F. W. Woolworth Co. SN 260,124. Pub. 8-29-67. Filed 12-5-66.

838,765. MERCATOR. Ing. C. Olivetti & C., S.p.A. SN 260,983. Pub. 8-29-67. Filed 7-18-66.

838,766. REMINGTON. Sperry Rand Corporation. SN 262,211. Pub. 8-29-67. Filed 1-9-67.

838,767. SBI (DESIGN). Sola Basic Industries, Inc. SN 265,876. Pub. 8-29-67. Filed 3-3-67.

838,768. MERRILL ENGINEERING LABORATORIES AND DESIGN. Marcellus S. Merrill, d.b.a. Merrill Engineering Laboratories. SN 265,957. Pub. 8-29-67. Filed 3-6-67.

838,769. GLOBE AND DESIGN. The Caltype Corporation. SN 270,856. Pub. 8-29-67. Filed 5-8-67.

838,770. TITAN AND DESIGN. The Caltype Corporation. SN 270,857. Pub. 8-29-67. Filed 5-8-67.

838,771. ARTISAN AND DESIGN. The Caltype Corporation. SN 270,858. Pub. 8-29-67. Filed 5-8-67.

838,772. SENATOR AND DESIGN. The Caltype Corporation. SN 270,860. Pub. 8-29-67. Filed 5-8-67.

838,773. ADVOCATE AND DESIGN. The Caltype Corporation. SN 270,861. Pub. 8-29-67. Filed 5-8-67.

838,774. PORTFOLIO AND DESIGN. The Caltype Corporation. SN 270,862. Pub. 8-29-67. Filed 5-8-67.

Class 27 — Horological Instruments

838,775. ANDRE PAILET. Sterling Wholesale Jewelers, Inc. SN 249,188. Pub. 8-29-67. Filed 6-28-66.

838,776. CIFRA. Solari & C./Udine S.p.A. SN 256,317. Pub. 8-29-67. Filed 10-12-66.

Class 28 — Jewelry and Precious-Metal Ware

838,777. MARIO BUCCELLATI. Mario Buccellati Inc. CONSOLIDATED CERTIFICATE. SN 261,613, pub. 8-29-67, filed 12-29-66, Cl. 28; SN 261,611, pub. 7-18-67, filed 12-29-66, Cl. 101.

838,778. TAC-MATE. Maurice Blackman, d.b.a. Maurice Blackman & Sons, and Blackman Jewelers. SN 269,248. Pub. 8-29-67. Filed 4-17-67.

Class 29 — Brooms, Brushes, and Dusters

838,650. (See Class 16 for this trademark.)

838,779. VISTRON. The Standard Oil Company. SN 260,195. Pub. 8-29-67. Filed 12-6-66.

838,780. MISCELLANEOUS DESIGN. Triangle Manufacturing Company. SN 266,626. Pub. 8-29-67. Filed 3-14-67.

838,781. GEM. Gem, Incorporated. SN 272,043. Pub. 8-29-67. Filed 5-22-67.

Class 30 — Crockery, Earthenware, and Porcelain

838,782. CELESTA. Castleton China, Inc. SN 217,290. Pub. 8-29-67. Filed 4-26-65.

Class 31 — Filters and Refrigerators

838,674. (See Class 21 for this trademark.)

838,726. (See Class 23 for this trademark.)

838,783. ERUS. Tecna-Chem, Inc. SN 250,604. Pub. 8-29-67. Filed 7-19-66.

Class 32 — Furniture and Upholstery

838,784. TEXAIR AND DESIGN. Texair. SN 253,997. Pub. 8-29-67. Filed 9-7-66.

838,785. SD AND DESIGN. Stow & Davis Furniture Company. SN 255,930. Pub. 8-29-67. Filed 10-6-66.

838,786. PY AND DESIGN. Porter and Yeager Incorporated. MULTIPLE CLASS (Classes 32 and 100). SN 257,329. Pub. 8-29-67. Filed 10-27-66.

838,787. DECOTIQUE AND DESIGN. Reliable Manufacturing Company. MULTIPLE CLASS (Classes 32 and 50). SN 261,518. Pub. 8-29-67. Filed 12-27-66.

Class 33 — Glassware

838,788. FLAX. American Saint Gobain Corporation, SN 257,144. Pub. 8-29-67. Filed 10-25-66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

838,593. (See Class 4 for this trademark.)

838,626. (See Class 12 for this trademark.)

838,635. (See Class 13 for this trademark.)

838,674. (See Class 21 for this trademark.)

838,684. (See Class 21 for this trademark.)

838,789. IDEAL STANDARD AND DESIGN. American Radiator & Standard Sanitary Corporation. SN 248,384. Pub. 8-29-67. Filed 4-14-66.

838,790. MISCELLANEOUS DESIGN. American Radiator & Standard Sanitary Corporation. SN 248,388. Pub. 8-29-67. Filed 4-14-66.

838,791. AMERICAN STANDARD AND DESIGN. American Radiator & Standard Sanitary Corporation. SN 248,392. Pub. 8-29-67. Filed 4-14-66.

838,792. MC C AND DESIGN. McCulloch Corporation. SN 252,748. Pub. 8-29-67. Filed 8-19-66.

838,793. VARIAN. Varian Associates. SN 255,380. Pub. 8-29-67. Filed 9-28-66.

838,794. ENTER-ARC. Enterprise Wire Company. SN 256,079. Pub. 8-29-67. Filed 10-10-66.

838,795. SUNNYTROL. Crane Co. SN 256,274. Pub. 8-29-67. Filed 10-12-66.

838,796. INFINITEX. Integrated Ceilings Inc. SN 256,668. Pub. 8-29-67. Filed 10-18-66.

838,797. ALUMA-FLEX. United States Register Company, d.b.a. United States Register Co. SN 256,891. Pub. 8-29-67. Filed 10-20-66.

838,798. SBI (DESIGN). Sola Basic Industries, Inc. SN 265,877. Pub. 8-29-67. Filed 3-8-67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

838,799. SLIDE-LAG. Hols Rubber Company, Inc. SN 249,536. Pub. 8-29-67. Filed 7-5-66.

838,800. POWERFLITE. E. James and Company. SN 259,819. Pub. 8-29-67. Filed 12-1-66.

838,801. FIDESTA. The Firestone Tire & Rubber Company. SN 259,822. Pub. 8-29-67. Filed 12-1-66.

838,802. OPTIMUM PROFILE. Dunlop Tire and Rubber Corporation. SN 273,722. Pub. 8-29-67. Filed 6-18-67.

Class 36 — Musical Instruments and Supplies

838,674. (See Class 21 for this trademark.)

838,803. PACIFIC JAZZ. Liberty Records, Inc. SN 227,692. Pub. 8-29-67. Filed 9-13-65.

838,804. FIRESIDE. Mastertape (Magnetic) Limited. SN 234,913. Pub. 8-29-67. Filed 12-20-65.

838,805. HOHNER CLAVINET. M. Hohner Inc. SN 236,603. Pub. 8-29-67. Filed 1-17-66.

838,806. DIAMOND CUT. Roy J. Maier Corporation. SN 244,005. Pub. 8-29-67. Filed 4-21-66.

838,807. GOLDEN MELODY. Organaire Inc. SN 246,935. Pub. 8-29-67. Filed 5-31-66.

838,808. EUTERPE. Euterpe Instruments. SN 247,113. Pub. 8-29-67. Filed 6-2-66.

838,809. HOEDOWN. Benjamin Harrison Blankenship. SN 250,445. Pub. 8-29-67. Filed 7-18-66.

838,810. A & M RECORDS AND DESIGN. A & M General Corp., by change of name from Irving Music, Inc., d.b.a. A & M Records. SN 251,434. Pub. 8-29-67. Filed 8-1-66.

838,811. COLOR-GLO. Thomas Organ Company. SN 255,558. Pub. 8-29-67. Filed 9-30-66.

Class 37 — Paper and Stationery

838,588. (See Class 2 for this trademark.)

838,812. GOOD MORNING RAM. R. C. Schafer. SN 256,977. Pub. 8-29-67. Filed 10-21-66.

838,813. UNI-VISION. The C. R. Gibson Company. SN 257,180. Pub. 8-29-67. Filed 10-25-66.

838,814. TOSCA BOOK. Mohawk Paper Mills, Inc. SN 257,719. Pub. 8-29-67. Filed 11-1-66.

838,815. GRACIOUS LIVING. The Glidden Company. SN 258,095. Pub. 8-29-67. Filed 11-7-66.

838,816. INTERNATIONAL GREEN TREAT. International Paper Company. SN 259,481. Pub. 8-29-67. Filed 11-25-66.

838,817. 3M. Minnesota Mining and Manufacturing Company. SN 260,701. Pub. 8-29-67. Filed 12-14-66.

838,818. HOUSEBOYS AND DESIGN. Kimberly-Clark Corporation. SN 261,589. Pub. 8-29-67. Filed 12-28-66.

838,819. SWIFSET. Herbert H. Milarch, d.b.a. Milarch Printing & Office Supply. SN 268,450. Pub. 8-29-67. Filed 4-6-67.

Class 38 — Prints and Publications

838,820. DIAL-A-STYLE. Feurer Bros., Inc. SN 251,808. Pub. 8-29-67. Filed 8-5-66.

838,821. AFTER 40 AND DESIGN. Ciba Corporation. SN 251,888. Pub. 8-29-67. Filed 8-8-66.

838,822. WHITE CANDLES. Norcross, Inc. SN 256,676. Pub. 8-29-67. Filed 10-18-66.

838,823. SURPRIZE PICTURE. Navarco Products Inc. SN 256,762. Pub. 8-29-67. Filed 10-19-66.

838,824. DOLLAR-AMA. Associated Hardware Supply Company. SN 257,246. Pub. 8-29-67. Filed 10-26-66.

838,825. THE MARYLAND ASPHALT PAVER. The Maryland Asphalt Association, Inc. SN 257,399. Pub. 8-29-67. Filed 10-27-66.

838,826. JET JEMS. Jet Spray Corp. SN 259,121. Pub. 8-29-67. Filed 11-21-66.

838,827. VIS-A-SAMPLER. Media/Sampling, Inc. SN 260,558. Pub. 8-29-67. Filed 12-12-66.

838,828. INSTRUMENT & APPARATUS NEWS. Chilton Company. SN 260,649. Pub. 8-29-67. Filed 12-13-66.

838,829. MODERN MANAGEMENT FILMS. BNA Incorporated. SN 261,038. Pub. 8-29-67. Filed 12-19-66.

838,830. DERMATOLOGY DIGEST. Dermatology Digest, Inc. SN 263,861. Pub. 8-29-67. Filed 1-26-67.

838,831. E & P. Editor & Publisher Co., Inc. SN 263,661. Pub. 8-29-67. Filed 1-31-67.

838,832. SCHOOL-DAZE. Frank H. Fleer Corporation. SN 264,660. Pub. 8-29-67. Filed 2-14-67.

838,833. FUNNY FRONTS. Krauss Screen Process, Inc. SN 270,791. Pub. 8-29-67. Filed 5-5-67.

Class 39 — Clothing

838,834. DOLPHIN. Almar Rainwear Corporation (Delaware corporation), assignee of Almar Rainwear Corporation (Georgia corporation). SN 139,871. Pub. 12-21-65. Filed 3-8-62.

838,835. GOLD MEDAL BY SHERMAN. Sherman Underwear Mills, Inc. SN 248,371. Pub. 8-29-67. Filed 6-17-66.

838,836. COBBLESTONES. Cobblestones Limited. SN 251,896. Pub. 8-29-67. Filed 8-8-66.

838,837. SHEEP SHAPES. Joel H. Durand, d.b.a. Sheep Shapes. SN 255,426. Pub. 8-29-67. Filed 9-29-66.

838,838. LABEL 4 JRS. Jantzen Inc. SN 256,741. Pub. 8-29-67. Filed 10-19-66.

838,839. SUNJUNS. G. H. Bass & Co. SN 256,918. Pub. 8-29-67. Filed 10-21-66.

838,840. MAN WITH SPYGLASS (DESIGN). Sawyer-Tower Products, Inc. SN 257,096. Pub. 8-29-67. Filed 10-24-66.

838,841. BRYANEES. Beautiful Bryans, Inc. SN 258,277. Pub. 8-29-67. Filed 11-9-66.

838,842. UNIVEST. Brown Company. SN 258,487. Pub. 8-29-67. Filed 11-14-66.

838,843. ALESSANDRO ORIGINALS. France Neckwear Co., Inc. SN 258,686. Pub. 8-29-67. Filed 11-15-66.

838,844. PLAYBABY. International Playtex Corporation, by change of name from International Latex Corporation. SN 259,003. Pub. 8-29-67. Filed 11-18-66.

838,845. ACTEVES. Henson-Kickernick, Inc. SN 259,116. Pub. 8-29-67. Filed 11-21-66.

838,846. PENN SONS. Pennebaker & Sons, Inc. SN 259,147. Pub. 8-29-67. Filed 11-21-66.

838,847. JANE & JOHNNY. Pennebaker & Sons, Inc. SN 259,148. Pub. 8-29-67. Filed 11-21-66.

838,848. NATURE RITE AND DESIGN. Endicott Johnson Corporation. SN 259,231. Pub. 8-29-67. Filed 11-22-66.

838,849. SLAK-BACK. Farah Manufacturing Company, Inc. SN 259,542. Pub. 8-29-67. Filed 11-28-66.

838,850. COSMOS. H. Daroff & Sons, Inc. SN 259,644. Pub. 8-29-67. Filed 11-29-66.

838,851. HIGH STOOL (DESIGN). Anvil Brand, Incorporated. SN 259,705. Pub. 8-29-67. Filed 11-30-66.

838,852. W AND DESIGN. Blue Bell, Inc. SN 259,711. Pub. 8-29-67. Filed 11-30-66.

838,853. TANGENT. Boomerang Fashions, Inc. SN 259,713. Pub. 8-29-67. Filed 12-13-66.

838,854. THE DEUCE. A. Schreter & Sons Co., Inc. SN 259,855. Pub. 8-29-67. Filed 12-1-66.

838,855. HOUSE OF OLGA. Olga Company. SN 259,955. Pub. 8-29-67. Filed 12-2-66.

838,856. DENI-CURL. Originals by Denise, Inc. SN 259,956. Pub. 8-29-67. Filed 12-2-66.

838,857. SASCO HILL. The Warner Brothers Company. SN 260,292. Pub. 8-29-67. Filed 12-7-66.

838,858. BROOKLAWN. The Warner Brothers Company. SN 260,293. Pub. 8-29-67. Filed 12-7-66.

838,859. GREENFIELD HILL. The Warner Brothers Company. SN 260,294. Pub. 8-29-67. Filed 12-7-66.

838,860. BODY-DO. The Warner Brothers Company. SN 260,295. Pub. 8-29-67. Filed 12-7-66.

838,861. THE-MAXI. Cluett, Peabody & Co., Inc. SN 260,408. Pub. 8-29-67. Filed 12-9-66.

838,862. FEET SAKE. Ray D. Petty, d.b.a. Petty-Johnson Mens Hosiery Co. SN 260,880. Pub. 8-29-67. Filed 12-15-66.

838,863. FOURDROBER. Louis Goldsmith, Inc. SN 260,934. Pub. 8-29-67. Filed 12-16-66.

838,864. HOUSE OF ANSLEY. Ansley, Incorporated. SN 261,189. Pub. 8-29-67. Filed 12-21-66.

838,865. HIGHLAND FLING. Wembley, Inc. SN 261,339. Pub. 8-29-67. Filed 12-22-66.

838,866. GOLF CLASSIC. Byer-Rolnick Corporation. SN 261,916. Pub. 8-29-67. Filed 1-4-67.

838,867. PERMA-BELT. Reliable Trouser Co., Inc. SN 262,618. Pub. 8-29-67. Filed 1-16-67.

838,868. TWENTY GRAND. Rombro Brothers, Inc. SN 262,625. Pub. 8-29-67. Filed 1-16-67.

838,869. ROBUST. Rombro Brothers, Inc. SN 262,626. Pub. 8-29-67. Filed 1-16-67.

838,870. COMMANDER. Rombro Brothers, Inc. SN 262,627. Pub. 8-29-67. Filed 1-16-67.

838,871. SIXPENCE. Melville Shoe Corporation. SN 266,057. Pub. 8-29-67. Filed 3-6-67.

838,872. FLORSHEIM TRADITIONAL. Interco Incorporated, d.b.a. The Florsheim Shoe Company. SN 266,283. Pub. 8-29-67. Filed 3-9-67.

838,873. BEN KAHN. Ben Kahn Furs Corp. SN 266,486. Pub. 8-29-67. Filed 3-13-67.

838,874. 2030. Haggar Company. SN 267,098. Pub. 8-29-67. Filed 3-20-67.

838,875. ABSTRACTS. The United States Shoe Corporation. SN 267,692. Pub. 8-29-67. Filed 3-27-67.

838,876. SEENERY. Kops Bros., Inc. SN 269,956. Pub. 8-29-67. Filed 4-25-67.

838,877. CHADOLON. Chadbourn Gotham, Inc. SN 271,411. Pub. 8-29-67. Filed 5-15-67.

838,878. THE TWEEDSTER. Wonderknit Corporation. SN 271,677. Pub. 8-29-67. Filed 5-17-67.

838,879. MAIDENFORM AND DESIGN. Maidenform, Inc. SN 271,715. Pub. 8-29-67. Filed 5-17-67.

838,880. WHITE STAG. White Stag Manufacturing Co. SN 271,996. Pub. 8-29-67. Filed 5-22-67.

838,881. STAG-PREST. White Stag Manufacturing Co. SN 272,142. Pub. 8–29–67. Filed 5–23–67.

838,882. BARTWICK. Beaver Shirt Company. SN 272,782. Pub. 8–29–67. Filed 6–1–67.

838,883. RAVELLO. Interco Incorporated, d.b.a. The Florsheim Shoe Company. SN 272,889. Pub. 8–29–67. Filed 6–2–67.

838,884. DREAMLINER. Maidenform, Inc. SN 273,551. Pub. 8–29–67. Filed 6–12–67.

838,885. CONFECTION. Maidenform, Inc. SN 273,557. Pub. 8–29–67. Filed 6–12–67.

Class 40 — Fancy Goods, Furnishings, and Notions

838,886. COIFASHIONS AND DESIGN. The Glemby Company, Inc. SN 273,980. Pub. 8–29–67. Filed 6–15–67.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

838,887. TEXTRA-SOF. Mil-Art Knits, Inc. SN 257,402. Pub. 8–29–67. Filed 10–27–66.

838,888. WONDER GLASS. J. P. Stevens & Co., Inc. SN 260,284. Pub. 8–29–67. Filed 12–7–66.

838,889. NUBBY DAN. Dan River Mills, Incorporated. SN 260,827. Pub. 8–29–67. Filed 12–15–66.

838,890. "SPORTSTER." Chatham Manufacturing Company. SN 262,567. Pub. 8–29–67. Filed 1–16–67.

838,891. UNI-SEAM. Asten-Hill Mfg. Company. SN 262,750. Pub. 8–29–67. Filed 1–18–67.

Class 46 — Foods and Ingredients of Foods

838,717. (See Class 28 for this trademark.)

838,718. (See Class 28 for this trademark.)

838,892. BUTTER BUDS. Morton International, Inc., assignee of Allen C. Buhler. SN 221,787. Pub. 8–29–67. Filed 6–23–65.

838,893. MARTHA WHITE COTTON PICKIN'. Martha White Incorporated, by change of name from Martha White Mills, Inc. SN 229,161. Pub. 8–29–67. Filed 10–1–65.

838,894. WESTERN KITCHEN AND DESIGN. Purity Stores, Inc. SN 249,444. Pub. 8–29–67. Filed 7–1–66.

838,895. KENTUCKY FRIED CHICKEN. Kentucky Fried Chicken Corporation. SN 249,774. Pub. 8–29–67. Filed 7–7–66.

838,896. TRUMPS. I. Rokeach & Sons, Inc. SN 250,772. Pub. 8–29–67. Filed 7–21–66.

838,897. BRISTOL FARM. Sue Ann Food Products Corporation. SN 252,293. Pub. 8–29–67. Filed 8–12–66.

838,898. EVER-WHIP. Farm Fresh Cream Wip Corporation. SN 253,295. Pub. 8–29–67. Filed 8–29–66.

838,899. TASTY BIRD AND DESIGN. Arkansas Valley Industries, Inc. SN 253,412. Pub. 8–29–67. Filed 8–30–66.

838,900. MJB AND DESIGN. M.J.B. Co. SN 254,172. Pub. 8–29–67. Filed 9–9–66.

838,901. VIRGO. Fisher Flouring Mills Co. SN 258,085. Pub. 8–29–67. Filed 11–7–66.

838,902. ASTRONAUT. Fisher Flouring Mills Co. SN 258,086. Pub. 8–29–67. Filed 11–7–66.

838,903. CAPRICORN. Fisher Flouring Mills Co. SN 258,087. Pub. 8–29–67. Filed 11–7–66.

838,904. AQUARIUS. Fisher Flouring Mills Co. SN 258,088. Pub. 8–29–67. Filed 11–7–66.

838,905. TAURUS. Fisher Flouring Mills Co. SN 258,089. Pub. 8–29–67. Filed 11–7–66.

838,906. ROLLER CHAMPION. Valley City Milling Company. SN 258,736. Pub. 8–29–67. Filed 11–15–66.

838,907. ROWENA. Valley City Milling Company. SN 258,737. Pub. 8–29–67. Filed 11–15–66.

838,908. HY - MARSH. Warner-Jenkinson Manufacturing Company. SN 258,948. Pub. 8–29–67. Filed 11–17–66.

838,909. OVEN BUSTER. Nebraska Consolidated Mills Company, d.b.a. Mauser Mill Company. SN 259,011. Pub. 8–29–67. Filed 11–18–66.

838,910. FACTOR. General Mills, Inc. SN 273,563. Pub. 8–29–67. Filed 6–12–67.

838,911. ALIVE. General Mills, Inc. SN 273,564. Pub. 8–29–67. Filed 6–12–67.

838,912. ZEAL. General Mills, Inc. SN 273,565. Pub. 8–29–67. Filed 6–12–67.

838,913. ABOUND. General Mills, Inc. SN 273,566. Pub. 8–29–67. Filed 6–12–67.

838,914. COLONEL CRISPIT. General Mills, Inc. SN 273,567. Pub. 8–29–67. Filed 6–12–67.

838,915. SUGAR PLINKS. General Mills, Inc. SN 273,568. Pub. 8–29–67. Filed 6–12–67.

838,916. AMPLE. General Mills, Inc. SN 273,569. Pub. 8–29–67. Filed 6–12–67.

838,917. RENEW. General Mills, Inc. SN 273,571. Pub. 8–29–67. Filed 6–12–67.

838,918. THRIVE. General Mills, Inc. SN 273,572. Pub. 8–29–67. Filed 6–12–67.

Class 49 — Distilled Alcoholic Liquors

838,919. DEACON'S. Sazerac Company, Inc., d.b.a. Kentucky Dale Co. SN 259,166. Pub. 8–29–67. Filed 11–21–66.

838,920. BLUE JACKET. Sazerac Company, Inc., d.b.a. The Winship Company. SN 259,168. Pub. 8–29–67. Filed 11–21–66.

Class 50 — Merchandise Not Otherwise Classified

838,787. (See Class 32 for this trademark.)

838,921. WEDDING RAIN AND DESIGN. Rishellco, Incorporated. SN 259,677. Pub. 8–29–67. Filed 11–29–66.

838,922. REMINGTON. Sperry Rand Corporation. SN 260,193. Pub. 8–29–67. Filed 12–6–66.

838,923. STEM. The De Havilland Aircraft of Canada, Limited. SN 260,489. Pub. 8–29–67. Filed 11–25–66.

838,924. PORT-A-SPLAY. Media/Graphics, Inc. SN 260,754. Pub. 8–29–67. Filed 12–14–66.

Class 51 — Cosmetics and Toilet Preparations

838,925. ONCE IS ENOUGH. Colgate-Palmolive Company, assignee of John H. Breck, Inc. SN 199,875. Pub. 2–23–65. Filed 8–14–64.

838,926. ONCE IS ENOUGH. Colgate-Palmolive Company, assignee of John H. Breck, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 201,514. Pub. 2–23–65. Filed 9–9–64.

838,927. ONCE. Colgate-Palmolive Company, assignee of John H. Breck, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 201,515. Pub. 8–10–65. Filed 9–9–64.

838,928. PERFUME GLACE. Avon Products, Inc. SN 204,446. Pub. 6–7–66. Filed 10–21–64.

838,929. NEW LOOK. John H. Breck, Inc., assignee of Len-Gee Corporation. SN 226,253. Pub. 7–5–66. Filed 8–23–65.

838,930. MISS MOD AND DESIGN. Mr. Mod Shop, Inc. SN 245,440. Pub. 1–3–67. Filed 4–7–66.

838,931. EMILIO PUCCI (SIGNATURE). Emilio Pucci Societa a Responsabilita Limitata. SN 248,030. Pub. 8–29–67. Filed 6–14–66.

838,932. COLOR ESSENCE. Helene Curtis Industries, Inc. SN 253,852. Pub. 8–29–67. Filed 9–6–66.

838,933. GRADUAL. Clairol Incorporated. SN 261,636. Pub. 8–29–67. Filed 12–29–66.

838,934. "POWDER BUFF." Vitabath, Incorporated. SN 263,866. Pub. 8–29–67. Filed 2–3–67.

838,935. "BODY BUFF." Vitabath, Incorporated. SN 263,867. Pub. 8–29–67. Filed 2–3–67.

838,936. RUSSIA LEATHER CHANEL. Chanel Industries, Inc. SN 268,456. Pub. 8–15–67. Filed 4–6–67.

838,937. TO 25. Fairfield Products, Inc. SN 272,549. Pub. 8–29–67. Filed 5–29–67.

838,938. O (DESIGN). Sterling Drug Inc. MULTIPLE CLASS (Classes 51 and 52). SN 273,440. Pub. 8–29–67. Filed 6–9–67.

838,939. GOOD GUY. Bryce L. Holland, d.b.a. Good Guy Products Co. SN 274,031. Pub. 8–29–67. Filed 6–16–67.

Class 52 — Detergents and Soaps

838,926. (See Class 51 for this trademark.)

838,927. (See Class 51 for this trademark.)

838,938. (See Class 51 for this trademark.)

838,940. SLUICEX. Embassy Chemicals Corp. SN 238,941. Pub. 8–29–67. Filed 2–16–66.

838,941. SUD-Z-KLEEN. Shur-Gloss Mfg. Co., Inc. SN 255,024. Pub. 8–29–67. Filed 9–23–66.

838,942. WIFE SAVER. Robert M. McMath, d.b.a. Wifesaver Products Company. SN 258,919. Pub. 8–29–67. Filed 11–17–66.

838,943. UP-DATE. Charles Grossman, d.b.a. Victor Co. SN 259,656. Pub. 8–29–67. Filed 11–29–66.

838,944. A THIRD HAND. Ecco Chemicals, Inc. SN 261,054. Pub. 8–29–67. Filed 12–19–66.

838,945. CS–78. Calgon Corporation. SN 261,623. Pub. 8–29–67. Filed 12–29–66.

838,946. C-49. Calgon Corporation. SN 261,625. Pub. 8–29–67. Filed 12–29–66.

838,947. MIRAGE. Calgon Corporation. SN 261,627. Pub. 8–29–67. Filed 12–29–66.

Service Marks

Class 100 — Miscellaneous

838,786. (See Class 32 for this trademark.)

838,948. MASTER FURRIERS GUILD OF AMERICA, INC. Master Furriers Guild of America, Inc. SN 241,484. Pub. 8–29–67. Filed 3–21–66.

838,949. BEEF BUILDERS. Willis E. Payton, d.b.a. Ed Payton. SN 242,840. Pub. 8–29–67. Filed 4–6–66.

838,950. GENE AUTRY'S MELODY RANCH AND DESIGN. Gene Autry. SN 246,854. Pub. 8–29–67. Filed 5–31–66.

838,951. TOMFOOLERY AND DESIGN. Mel-Mart, Inc. SN 251,555. Pub. 8–29–67. Filed 8–2–66.

838,952. FLYING CARPET. Flying Carpet Motor Inn., Inc. SN 257,950. Pub. 8–29–67. Filed 11–4–66.

Class 101 — Advertising and Business

838,777. CONSOLIDATED CERTIFICATE. See Class 28.

838,953. ELECTRONIC TREASURE CHEST. Electronic Treasure Chest Enterprises, Inc. SN 197,271. Pub. 8–29–67. Filed 7–7–64.

838,954. C.O.D.E. Continental Organization of Distributor Enterprises, Inc. SN 248,028. Pub. 8–29–67. Filed 6–14–66.

838,955. IPEX. Master Photo Dealers' & Finishers' Association. SN 252,192. Pub. 8–29–67. Filed 8–11–66.

838,956. ADT. American District Telegraph Company. MULTIPLE CLASS (Classes 101, 103, and 107). SN 252,614. Pub. 8–29–67. Filed 8–18–66.

838,957. MAKE A MILLION. Adams, Martin & Nelson, Inc. SN 256,413. Pub. 8–29–67. Filed 10–14–66.

Class 102 — Insurance and Financial

838,958. MNB AND DESIGN. National Bank of McKeesport. SN 239,646. Pub. 8–29–67. Filed 2–25–66.

Class 103 — Construction and Repair

838,956. (See Class 101 for this trademark.)

838,959. MI AND DESIGN. Madison Industries. SN 244,232. Pub. 8–29–67. Filed 4–25–66.

Class 106 — Material Treatment

838,960. ST REGIS. St. Regis Paper Company. SN 268,107. Pub. 8–29–67. Filed 3–31–67.

Class 107 — Education and Entertainment

838,956. (See Class 101 for this trademark.)

838,961. MELODY RANCH AND DESIGN. Golden West Broadcasters, by merger from Melody Ranch Enterprises, Inc. SN 246,920. Pub. 8–29–67. Filed 5–31–66.

838,962. MIDNIGHT STRING QUARTET. Snuff Garrett Productions, Inc. SN 269,484. Pub. 8–29–67. Filed 4–19–67.

Certification Marks

Class A — Goods

838,963. NEMA ETC. AND DESIGN. National Electrical Manufacturers Association. SN 259,669. Pub. 8–29–67. Filed 11–29–66.

838,964. NEMA ETC. AND DESIGN. National Electrical Manufacturers Association. SN 259,670. Pub. 8–29–67. Filed 11–29–66.

838,965. NEMA ETC. AND DESIGN. National Electrical Manufacturers Association. SN 259,671. Pub. 8–29–67. Filed 11–29–66.

838,966. RECOMMENDED BY SUNSET FOR WESTERN FAMILIES AND DESIGN. Lane Magazine & Book Company. SN 274,074. Pub. 8–29–67. Filed 6–16–67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

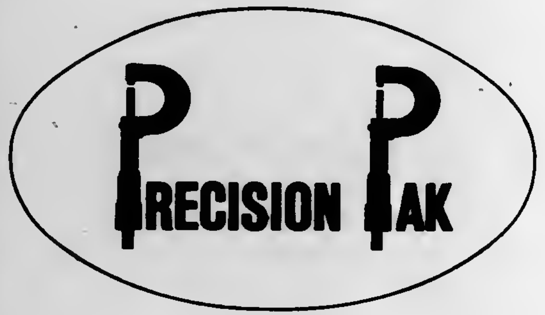
Class 2 — Receptacles

838,967. United States Box Crafts, Inc., Brooklyn, N.Y. SN 232,435. Filed P.R. 11-9-65; Am. S.R. 9-18-67.

VU-TOP

For Hinged Plastic Boxes With Transparent Cover.
First use Oct. 11, 1965.

838,968. The Electric Game Company, Holyoke, Mass. SN 238,725. Filed P.R. 2-14-66; Am. S.R. 9-26-67.



For Plastic Containers Specifically Boxes for Packaging Purposes.
First use September 1964.

Class 5 — Adhesives

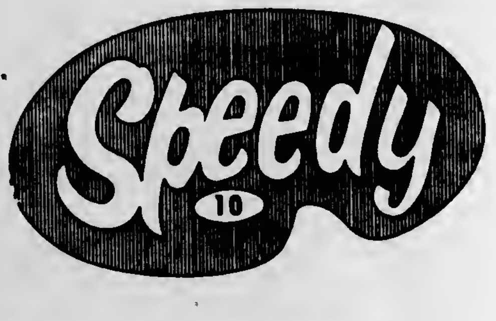
838,969. Tape, Inc., Green Bay, Wis. SN 246,398. Filed P.R. 5-23-66; Am. S.R. 9-19-67.

Don't tie it-TAPE IT

For Gummed Tape.
First use on or about Jan. 31, 1966.

Class 11 — Inks and Inking Materials

838,970. National Sales Engineers, Inc., Roanoke, Ala. SN 260,444. Filed P.R. 12-9-66; Am. S.R. 9-20-67.



The drawing is lined for the color red.
For Ink for Sign Use.
First use during December 1964.

Class 12 — Construction Materials

838,971. Granite City Steel Company, Granite City, Ill. SN 248,469. Filed P.R. 6-20-66; Am. S.R. 9-18-67.

STRONGPANEL

For Galvanized Steel Roofing and Siding for Farm, Ranch, and Other Buildings.
First use Apr. 29, 1965.

Class 26 — Measuring and Scientific Appliances

838,972. Robert S. Benbow, d.b.a. Benbow Products Co., Oroville, Calif. SN 243,400. Filed P.R. 4-14-66; Am. S.R. 7-20-67.

WEIGH BUCK

For Gambrels for Skinning, Weighing, and Dressing Dead Animals.
First use Oct. 29, 1965.

Class 31 — Filters and Refrigerators

838,973. American Manufacturing Company, Inc., Montgomery, Ala. SN 260,510. Filed 12-12-66.

KOOLVAN

For Refrigeration System for Installation in an Insulated Vehicle To Provide Temperature Control for Transportation of Various Products.
First use Nov. 12, 1965.

Class 34 — Heating, Lighting, and Ventilating Apparatus

838,974. Disco Engineering, Incorporated, Detroit, Mich. SN 217,022. Filed P.R. 4-21-65; Am. S.R. 9-18-67.

DRAFT FREE

For Ventilating and Air Conditioning Apparatus and Structure Providing an Air Door Closure.
First use July 31, 1964.

Class 38 — Prints and Publications

838,975. Guide Services, Inc., Atlanta, Ga. SN 246,681. Filed P.R. 5-26-66; Am. S.R. 6-6-67.

AMERICAN MOTOR
CARRIER DIRECTORY

No claim is made to the words "Motor Carrier Directory" apart from the mark as shown.
For Directory Issued Periodically.
First use Apr. 18, 1966.

838,976. Medical Tribune, Inc., New York, N.Y. SN 257,191. Filed P.R. 10-25-66; Am. S.R. 9-18-67.

PULSE OF MEDICINE

For Particular Portion of Medical Newspaper Published Periodically.
First use Sept. 8, 1962.

Class 46 — Foods and Ingredients of Foods

838,977. Salada Foods Ltd., Don Mills, Ontario, Canada. SN 265,847. Filed 3-2-67.

TRUE CRYSTALS

For Concentrated and Dehydrated Fruit Juice Powders and Dehydrated Vegetable Juice Powders.
First use Oct. 26, 1960.

Class 50 — Merchandise Not Otherwise Classified

838,978. E. L. Richardson, Houston, Tex. SN 211,579. Filed P.R. 2-8-65; Am. S.R. 9-19-67.

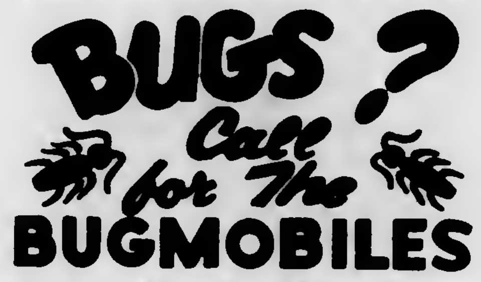
KON-TUR

For Coat Retainer.
First use about May 1960.

Service Marks

Class 103 — Construction and Repair

838,979. Texas Sanitation Co., Inc., Victoria, Tex. SN 228,577. Filed P.R. 9-24-65; Am. S.R. 5-5-67.



For Sanitation and Pest Control Services.
First use Nov. 1, 1954.

Class 105 — Transportation and Storage

838,980. F. H. Prince & Company, Inc., d.b.a. Continental Freezers of Illinois, Chicago, Ill. SN 271,211. Filed P.R. 5-11-67; Am. S.R. 9-18-67.

TOTAL DISTRIBUTION
PLAN

For Warehousing and Transportation Services for Frozen Food Packers.
First use at least as early as Feb. 8, 1966.

Class 106 — Material Treatment

838,981. Geigy Chemical Corporation (New York corporation), Ardsley, N.Y., by merger from Geigy Chemical Corporation (Delaware corporation), Ardsley, N.Y. SN 250,149. Filed P.R. 7-13-66; Am. S.R. 9-12-67.

RING GEIGY FOR SERVICE

For Technical Assistance in the Use of Dyestuffs and Dyestuff Auxiliaries Rendered to the Textile, Leather and Paper Industries.
First use January 1961.

TRADEMARK REGISTRATIONS RENEWED

63,958.	DESIGN OF KEYSTONE. Cl. 18. 7-16-07.
207,269.	"OSTER" ETC. Cl. 28. 12-22-25.
229,252.	PRINCESS. Cl. 1. 6-21-27.
229,257.	PACA LAMB AND DESIGN. Cl. 39. 6-21-27.
230,010.	REFRESHANT. Cl. 18. 7-12-27.
231,888.	MISCELLANEOUS DESIGN. Cl. 28. 8-30-27.
232,026.	LABOR KING. Cl. 39. 8-30-27.
232,418.	DRAGON ETC. AND DESIGN. Cl. 43. 9-6-27.
232,722.	ALTMAN. Cl. 39. 9-13-27.
232,883.	BIG CHIEF. Cl. 52. 9-20-27.
232,873.	SCOUT. Cl. 28. 9-20-27.
232,915.	"HERCULES" ETC. AND DESIGN. Cl. 52. 9-20-27.
232,936.	THE TRIAD OF ACACIA. Cl. 38. 9-20-27.
233,910.	REMINGTON. Cl. 26. 10-11-27.
235,076.	SUNSET CRAYONS. Cl. 37. 11-8-27.
235,249.	REGIMENTALS. Cl. 39. 11-15-27.
235,312.	TRUMP. Cl. 39. 11-15-27.
235,464.	"CUT-RITE." Cl. 37. 11-22-27.
235,872.	DUET. Cl. 39. 11-29-27.
236,068.	CATALINA. Cl. 39. 11-29-27.
236,573.	VOGUE FOOTWEAR FOR "LITTLE MISS FASHION" AND DESIGN. Cl. 39. 12-13-27.
236,605.	"PRIMULA" AND FANCIFUL DESIGN. Cl. 46. 12-20-27.
236,936.	"GOLD STAR" AND REPRESENTATION OF STAR. Cl. 39. 12-27-27.
236,937.	"SILVER STAR" AND REPRESENTATION OF STAR. Cl. 39. 12-27-27.
237,233.	HAPPY JACK. Cl. 39. 1-3-28.
238,151.	BONDFLEX. Cl. 23. 1-31-28.
239,564.	JIM-DANDY. Cl. 23. 3-6-28.
430,880.	ANIS CASTELLANA AND DESIGN. Cl. 49. 7-1-47.
431,244.	ANGELUS AND DESIGN. Cl. 27. 7-15-47.
431,403.	KAY-DEE. Cl. 32. 7-22-47.
431,689.	ALFOL. Cl. 12. 7-29-47.
431,872.	QUI SAIT. Cl. 51. 8-12-47.
432,254.	MALLARD. Cl. 17. 8-26-47.
432,817.	PLATINITE. Cl. 44. 9-16-47.
432,829.	EMCO-GUM. Cl. 1. 9-16-47.
432,839.	ACROMAT. Cl. 22. 9-16-47.
432,877.	SUNDEX. Cl. 6. 9-16-47.
432,976.	NUSCO. Cl. 15. 9-16-47.
433,184.	ML. Cl. 6. 9-30-47.

433,200. "TEXOMA" AND REPRESENTATION OF A TRIANGLE. Cl. 22. 9–30–47.
433,439. DERETA. Cl. 39. 10–14–47.
433,545. DCMT AND DESIGN. Cl. 23. 10–21–47.
433,547. SUNBEAM. Cl. 23. 10–21–47.
433,681. MYVANE. Cl. 15. 10–28–47.
433,776. LOWMAY. Cl. 46. 10–28–47.
433,777. GLOW. Cl. 46. 10–28–47.
433,873. KRYOCIDE. Cl. 10. 11–4–47.
434,003. AEROGRAPHIC. Cl. 26. 11–4–47.
434,140. AMIDA. Cl. 49. 11–11–47.
434,351. FULCHAR. Cl. 6. 11–18–47.
434,444. SACRIFICE. Cl. 51. 11–18–47.
434,542. VIKALOID. Cl. 40. 11–25–47.
434,712. FRATERNITY. Cl. 51. 12–2–47.
434,727. S AND DESIGN. Cl. 21. 12–2–47.
434,728. S AND DESIGN. Cl. 21. 12–2–47.
434,729. SYLVANIA. Cl. 21. 12–2–47.
435,015. RECARB-X. Cl. 1. 12–9–47.
435,118. PALADAC. Cl. 18. 12–9–47.
435,525. POTENTOL. Cl. 52. 12–30–47.
435,546. NORTH STAR. Cl. 28. 12–30–47.
435,900. JUJYFRUITS. Cl. 46. 1–13–48.
436,237. DECHOLIN SODIUM. Cl. 18. 1–27–48.
436,238. DECHOLIN. Cl. 18. 1–27–48.
436,514. HYDRONUT. Cl. 46. 2–10–48.
436,777. GILLAM. Cl. 23. 2–17–48.
436,894. LOOK LOVELY ANGEL AND DESIGN. Cl. 51. 3–2–48.
437,196. THE YOUNG CATHOLIC MESSENGER. Cl. 38. 3–9–48.
437,197. JUNIOR CATHOLIC MESSENGER. Cl. 38. 3–9–48.
437,198. OUR LITTLE MESSENGER. Cl. 38. 3–9–48.
437,257. HEAVYWEIGHT. Cl. 46. 3–9–48.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Sept. 26, 1961

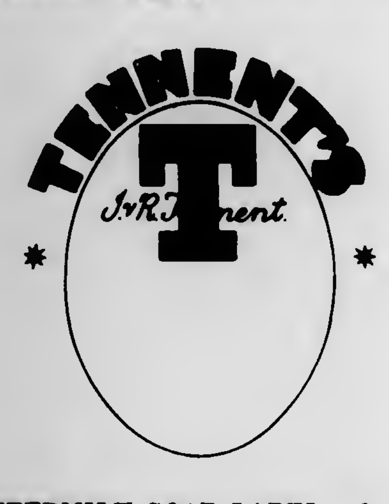
721,745. SLIM-JIM. Cl. 3.
721,758. GARD N STIK. Cl. 10.
721,760. LEV-A-LOK. Cl. 12.
721,766. LODYTE. Cl. 12.
721,770. PIT-TILE. Cl. 12.
721,771. TULCO AND DESIGN. Cl. 12.
721,775. VIEWTITE. Cl. 12.
721,788. PHANTOM. Cl. 13.
721,789. TRYMTOOL AND DESIGN. Cl. 13.
721,792. AMERLOY INC. AND DESIGN. Cl. 14.
721,793. NICROTUNG. Cl. 14.
721,796. ROCOLOY. Cl. 14.
721,803. DEOX. Cl. 16.
721,806. KING EDWARD AND PORTRAIT. Cl. 17.
721,810. SUPERTIN. Cl. 18.
721,814. REPRESENTATION OF A CHAUFFEUR. Cl. 19.
721,815. FACELLIA. Cl. 19.
721,816. SHOCK BUOY. Cl. 19.
721,817. DESIGN OF WINGS. Cl. 19.
721,818. REMPAR. Cl. 19.
721,819. ELEGANTE. Cl. 20.
721,825. CONOCO AND DESIGN. Cl. 21.
721,831. VEC-O-TEX. Cl. 21.
721,836. CON AVIONICS AND DESIGN. Cl. 21.
721,841. AREA/LITER. Cl. 21.
721,842. REMPAR. Cl. 21.
721,843. DARK EYE. Cl. 21.
721,844. EYE SPY. Cl. 21.
721,850. SIMCAMATIC. Cl. 23.
721,851. FLASH. Cl. 23.
721,858. POSITRAN. Cl. 23.
721,861. ELNITA. Cl. 23.
721,865. SWIRL-AWAY. Cl. 23.
721,866. "BRIXIA." Cl. 23.
721,873. MOTEC. Cl. 23.
721,874. MOLINE. Cl. 23.
721,876. DURATUF. Cl. 23.
721,877. DAYSTROM. Cl. 23.
721,879. JET-CLIP AND DESIGN. Cl. 23.
721,882. REMPAR. Cl. 23.
721,886. AUTOMATICKET CONTROL SYSTEMS. Cl. 26.
721,887. VANGUARD. Cl. 26.
721,891. PROJECTOLAB. Cl. 26.
721,893. DEPTH PROBE. Cl. 26.
721,895. Q-LINE. Cl. 26.
721,896. TRI-D SCANNER. Cl. 26.
721,897. INDUSTRONICS AND DESIGN. Cl. 26.
721,898. CHANGE MASTER. Cl. 26.
721,900. ROLLEIMAGIC. Cl. 26.
721,901. ZERO-BEAT AND DESIGN. Cl. 26.
721,902. SPEC. Cl. 26.
721,906. GALAXY. Cl. 26.
721,907. CHEST-O-COLOR. Cl. 26.
721,917. R & T AND DESIGN. Cl. 26.
721,918. NORTHERN-AIRE. Cl. 26.
721,919. DEA-GRAPH. Cl. 26.
721,922. CINE-PAC. Cl. 26.
721,924. AUTOFLO. Cl. 26.
721,925. HARMON-A-SCOPE AND DESIGN. Cl. 26.
721,928. COMPU/MATIC. Cl. 26.
721,929. VERSA/MATIC. Cl. 26.
721,933. BURSON. Cl. 26.
721,934. OPTIFLOW. Cl. 26.
721,935. DYNAMOUNTER. Cl. 26.
721,941. GLAMMOUR GLIMMERS. Cl. 26.
721,946. AEI AND DESIGN. Cl. 26.
721,950. ORTHOPLEX. Cl. 26.
721,957. PIERRE MARQUETTE. Cl. 27.
721,966. NEW FRONTIER. Cl. 28.
721,968. WARDROBE OF CHINA. Cl. 30.
721,969. IGC AND DESIGN. Cl. 30.
721,971. TRU-ART. Cl. 32.
721,972. MODAVANTI. Cl. 32.
721,973. REGIONAL AND DESIGN. Cl. 32.
721,983. PERRY. Cl. 36.
721,986. DAYSTROM. Cl. 37.
721,991. MISS EUROPA. Cl. 39.
721,995. DUCHESSA D'OSTIA. Cl. 39.
721,996. MERRILL. Cl. 39.
721,997. MAC-JAC. Cl. 39.
722,000. PARISMART. Cl. 39.
722,003. PEDI BARES. Cl. 39.
722,009. NEW STREET. Cl. 39.
722,012. LINDA CAROL. Cl. 39.
722,013. ANNE CARTER. Cl. 39.
722,015. BRIARSPUN. Cl. 39.
722,016. GUY SPRITES. Cl. 39.
722,024. BRINYLON. Cl. 42.
722,025. MERRILL. Cl. 42.
722,031. SUPER "96." Cl. 42.
722,032. SUPER "100." Cl. 42.
722,049. ADJUSTRIX. Cl. 44.
722,054. CHEF ALLENS AND DESIGN. Cl. 46.
722,058. INDEPENDENCE FLOUR AND DESIGN. Cl. 46.
722,063. CHARM-CALL. Cl. 46.
722,069. DINOLITE. Cl. 50.
722,071. SWAT 'N PICK. Cl. 50.
722,073. FASHION-FORM. Cl. 50.
722,074. COMPLAKS. Cl. 50.
722,075. BARDEX. Cl. 50.
722,076. GIBRALTAR PALLETS AND DESIGN. Cl. 50.
722,077. FLORART. Cl 50.
722,084. SPARKLEEN AND DESIGN. Cl. 51.
722,088. POLY-VIRONMENTAL. Cl. 100.
722,089. CABANA INN AND DESIGN. Cl. 100.
722,092. MOTIVATIONAL MEASUREMENT AND DESIGN. Cl. 101.
722,093. HEKEPE. Cl. 106.

Section 18

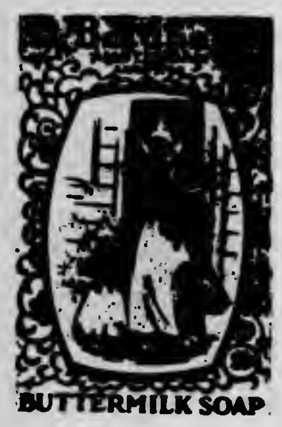
442,957. EXPANDEX. Cl. 39. 6–21–49.
791,170. PUFFY. Cl. 52. 6–15–65.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

59,886. TENNENTS T. Cl. 51. 1–22–07. J. & R. Tennent Ltd. Tennent Caledonian Breweries Limited, Glasgow, Scotland. Amended to appear:



149,179. BUTTERMILK SOAP LABEL. Cl. 52. 12–6–21. Naamlooze Venootschap, Eau de Colognefabriek Voorheen J. C. Boldoot. Eau de Colognefabriek J. C. Boldoot N.V., Amsterdam, Netherlands. Amended to appear:



226,718. RITZ CARLTON. Cl. 51. 4–19–27. Hyman Huebschman. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Amended to appear:

RITZ CARLTON

234,041. CHIFFON. Cl. 37. 10–18–27. Hoberg Paper & Fibre Company. Crown Zellerbach Corporation, San Francisco, Calif. Amended: In the statement, column 1, line 11 through column 2, line 2 is deleted, and the drawing is amended to appear:

CHIFFON

431,922. LAUREL. Cl. 6. 8–12–47. Corn Products Refining Company. Corn Products Company, New York, N.Y. Amended to appear:

LAUREL

432,209. PHILHARMONIC. Cl. 21. 8–26–47. Philharmonic Radio Corporation. Symphonic Electronic Corporation, New York, N.Y. Amended to appear:

PHILHARMONIC

433,102. PHILHARMONIC. Cl. 21. 9–23–47. Philharmonic Radio Corporation. Symphonic Electronic Corporation, New York, N.Y. Amended to appear:

PHILHARMONIC

527,995. FULLER. Cl. 23. 7–25–50. Fuller Manufacturing Company. Eaton Yale & Towne Inc., Cleveland, Ohio. Amended to appear:

FULLER

597,120. TEMPOS. Cl. 39. 10–19–54. The Selby Shoe Company. Wohl Shoe Company, St. Louis, Mo. Amended to appear:

TEMPOS

620,114. PINE-AIR. Cl. 52. 1–24–56. Delta Chemical Company. Dust-A-Way, Inc., Memphis, Tenn. Restricted under the provisions of Section 18 of the Trademark Act of 1946 to that area of the United States including the States of Tennessee, Arkansas, Mississippi, Illinois, Kentucky, Louisiana, Missouri and Ohio, by order of the First Assistant Commissioner dated September 27, 1967, following decision on Civil Action 6–65–51, United States District Court, Western District of Tennessee, Western Division, *Coastal Chemical Co.* v. *Dust-A-Way, Inc.*

821,659. DEMI-TALL. Cl. 39. 1–3–67. Tall Apparel N.Y. Corp. New York, N.Y. Corrected: In the statement column 2, line 4, "January 1964" both occurrences should be deleted and *Dec. 8, 1953* should be inserted.

832,811. REDI-GRIP. Cl. 7. 8–1–67. Pennsylvania Sling Company, Pittsburgh, Pa. Amended: In the statement, column 2, line 1, "Webbing" is deleted.

832,922. COLOR-CUE. Cl. 36. 8–1–67. G.H.S. Corporation, Battle Creek, Mich. Corrected: In the statement, column 2, line 3, "ukuele" should be deleted and *ukelele* should be inserted.

833,877. AEROTHENE. Cl. 6. 8–22–67. The Dow Chemical Company, Midland, Mich. Corrected: In the statement, column 2, line 2, "press" should be deleted and *pressure* should be inserted.

INDEX OF REGISTRANTS

NOVEMBER 14, 1967

(**Registered** ; **Renewed** ; **Canceled** ; **Amended, Disclaimed, Corrected, etc.** ; **New Certificates** ; **12c Publications.**)

A&M General Corp., from Irving Music, Inc., d.b.a. A&M Records, Los Angeles, Calif. 838,810, pub. 8–29–67. Cl. 36.
A&M Records: *See*—
  Irving Music, Inc.
  A&M General Corp.
Acacia Fraternity, Worcester, Mass., to Acacia Fraternity Inc., Evanston, Ill. 232,936, ren. 11–14–67. Cl. 38.
Acacia Fraternity Inc.: *See*—
  Acacia Fraternity.
Accuron Co., from Accuron Co., Tipp City, Ohio. 721,858, canc. Cl. 23.
Adams, Martin & Nelson, Inc., Minneapolis, Minn. 838,957, pub. 8–29–67. Cl. 101.
Advance Machine Co., Spring Park, Minn. 838,716, pub. 6–28–66. Cl. 23.
Aero-Motive Mfg. Co., Kalamazoo, Mich. 838,728–9, pub. 8–29–67. Cl. 23.
Air-O-Dyne Corp., St. Paul, Minn. 838,747, pub. 8–29–67. Cl. 25.
Alca Chemical Co.: *See*—
  Lyon, Geneva S.
Alessi, Ann S., d.b.a. Four Seasons Racing Products, Detroit, Mich. 838 594–5, pub. 8–29–67. Cl. 4.
Allen-Bell Food Products, Lexington, Ky. 722,054, canc. Cl. 46.
Allen Shirt Co., to Washington Mfg. Co., Nashville, Tenn. 236,936–7, ren. 11–14–67. Cl. 39.
Allied Carbon & Ribbon Mfg. Corp., New York, N.Y. 838,621, pub. 8–29–67. Cl. 11.
Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden. 838,593, pub. 8–29–67. Multiple Class (Classes 4, 14, 23, and 34).
Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden. 838,753, pub. 8–29–67. Cl. 26.
Almar Rainwear Corp., New York, N.Y., from Almar Rainwear Corp., Washington, D.C. 838,834, pub. 12–21–65. Cl. 39.
Altman, B., & Co., New York, N.Y. 232,722, ren. 11–14–67. Cl. 39.
Amcraft, Inc., Waterville, Ohio. 838,639, pub. 8–29–67. Cl. 14.
American Agricultural Chemical Co.: *See*—
  Continental Oil Co.
American Charm Corp., New York, N.Y. 721,966, canc. Cl. 28.
American Dietaids Co., Inc., assor. to Charles Killgore Co., Inc., to Charles Killgore Co., Inc., Yonkers, N.Y. 433,776–7, ren. 11–14–67. Cl. 46.
American District Telegraph Co., New York, N.Y. 838,956, pub. 8–29–67. Multiple Class (Classes 101, 103, and 107).
American Mfg. Co., Inc., Montgomery, Ala. 838.973. Cl. 31.
American Petrofina Co. of Texas, Dallas, Tex. 838,648, pub. 8–29–67. Cl. 15.
American Radiator & Standard Sanitary Corp., New York, N.Y. 838.789–91, pub. 8–29–67. Cl. 34.
American Saint Gobain Corp., Kingsport, Tenn. 838,788, pub. 8–29–67. Cl. 33.
American Thread Co., The, New York, N.Y. 232,418, ren. 11–14–67. Cl. 43.
Ameriov Inc., Portland. Oreg. 721,792, canc. Cl. 14.
Ames Co., Inc., to Miles Laboratories, Inc., Elkhart, Ind. 436 237–8, ren. 11–14–67. Cl. 18.
Amulet Corp., d.b.a. Sierra General Sales Co., Los Angeles, Calif. 838,663. pub. 8–29–67. Cl. 18.
Ansley. Inc., Shelby. N.C. 838,864, pub. 8–29–67. Cl. 39.
Anvil Brand, Inc., High Point, N.C. 838,851, pub. 8–29–67. Cl. 39.
Apex Products Corp., Dania, Fla. 838,592. pub. 8–29–67. Cl. 3.
Appalachian Electronic Instruments, Inc., Ronceverte, W. Va. 721 946, canc. Cl. 26.
Arkansas Valley Industries, Inc., Little Rock, Ark. 838,899, pub. 8–29–67. Cl. 46.
Armstrong Cork Co., Lancaster, Pa. 721,819. canc. Cl. 20.
Armstrong Hydraulics, Inc., Chicago, Ill. 721,814, canc. Cl. 19.
Associated Hardware Supply Co., Pittsburgh, Pa. 838,824, pub. 8–29–67. Cl. 38.
Asten-Hill Mfg. Co., Philadelphia, Pa. 838,891, pub. 8–29–67. Cl. 42.
Atomation, Inc.: *See*—
  Reed. C. W., Co.. Inc.
Auto-Chem Research Co., Inc., San Francisco, Calif. 838,604, pub. 8–29–67. Cl. 5.
Automatic Paper Machinery Co., Inc., Newark. N.J., to Scott Paper Co., Chester. Pa. 235.464. ren. 11–14–67. Cl. 37.
Autry, Gene, North Hollywood, Calif. 838,950, pub. 8–29–67. Cl. 100.
Avon Products, Inc., New York, N.Y. 838,928, pub. 6–7–66. Cl. 51.
Award Incentives, Inc., Brooklyn, N.Y. 722,074, canc. Cl. 50.
BJD Inc., Lancaster, Ohio. 838.692. pub. 8–29–67. Cl. 21.
BNA Inc., Washington D.C. 838.829. pub. 8–29–67. Cl. 38.
Bass, G. H., & Co., Wilton, Maine. 838,839, pub. 8–29–67. Cl. 39.
Beautiful Bryans, Inc., Chattanooga, Tenn. 838,841, pub. 8–29–67. Cl. 39.
Beaver Shirt Co., Greensboro, N.C. 838,882, pub. 8–29–67. Cl. 39.
Benbow Products Co.: *See*—
  Benbow, Robert S.
Benbow, Robert S., d.b.a. Benbow Products Co., Oroville, Calif. 838,972. Cl. 26.
Benjamin, E. V., Co., Inc., The, d.b.a. Maginnis Cotton Mill, New Orleans, La., to Washington Mfg. Co., Nashville, Tenn. 237,233, ren. 11–14–67. Cl. 39.
Bennett Co., Warrensville Heights, Ohio. 838,720–1, pub. 8–29–67. Cl. 23.
Black Clawson Co., The, Hamilton, Ohio. 838,683, pub. 8–29–67. Cl. 21.
Blackman, Maurice, d.b.a. Maurice Blackman & Sons, Chicago, Ill. 838,778, pub. 8–29–67. Cl. 28.
Blackman, Maurice, & Sons: *See*—
  Blackman, Maurice.
Blankenship, Benjamin H., San Jose, Calif. 838,809, pub. 8–29–67. Cl. 36.
Blue Bell, Inc., Greensboro, N.C. 838,852, pub. 8–29–67. Cl. 39.
Bo-Del Beams: *See*—
  Kennedy, John F.
Boise Cascade Corp., Boise, Idaho. 838,630, pub. 8–29–67. Cl. 12.
Bond, Charles, Co., Philadelphia, Pa. 238,151, ren. 11–14–67. Cl. 23.
Boomerang Fashions, Inc., New York, N.Y. 838,853, pub. 8–29–67. Cl. 39.
Borg-Warner Corp.: *See*—
  Reflectal Corp.
Breck, John H., Inc.: *See*—
  Colgate-Palmolive Co.
Breck, John H., Inc., Wayne, N.J., from Len-Gee Corp., Detroit, Mich. 838,929, pub. 7–5–66. Cl. 51.
Bringardner Shoe Co., Inc., The, Logan, Ohio, to Genesco, Inc., Nashville, Tenn. 236,573, ren. 11–14–67. Cl. 39.
British Nylon Spinners Ltd., Pontypool, England. 722,024, canc. Cl. 42.
Britt Metal Processing, Inc., ~~Miami~~, Fla. 838,655, pub. 8–29–67. Cl. 16.
Brown Co., Kalamazoo, Mich. 838,842, pub. 8–29–67. Cl. 39.
Buccellati. Mario, Inc., New York, N.Y. 838,777, pub. 7–18–67. (Consolidated certificate, Classes 28 and 101.)
Buhler, Allen C.: *See*—
  Morton International, Inc.
Burgess Fobes Paint: *See*—
  Burgess Fobes Paint Co.
Burgess Fobes Paint Co., d.b.a. Burgess Fobes Paint, Portland, Maine. 838,653, pub. 8–29–67. Cl. 16.
Burshtein, Shoel. d.b.a. Burson Industries, Winnipeg, Manitoba, Canada. 721,933, canc. Cl. 26.
Burson Industries: *See*—
  Burshtein, Shoel.
Byer-Rolnick Corp., Garland, Tex. 838,966, pub. 8–29–67. Cl. 39.
Byrd Produce Co.: *See*—
  Law, John W., Co.
Calgon Corp., Pittsburgh, Pa. 838.945–7, pub. 8–29–67. Cl. 52.
Caltype Corp., The, Los Angeles, Calif. 838,769–74, pub. 8–29–67. Cl. 26.
Camera Corp. of America, Hicksville, N.Y. 838,751–2, pub. 8–29–67. Cl. 26.
Candido, Joseph, d.b.a. Candido Pharmacy, Albany, N.Y. 838,671, pub. 8–29–67. Cl. 18.
Candido Pharmacy: *See*—
  Candido, Joseph.
Cardinal Scale Mfg. Co., Webb City, Mo. 838,761, pub. 8–29–67. Cl. 26.
Carter, Anne, Dresses, Inc.: *See*—
  Jo-Beth Fashions, Inc.
Carter Products, Inc., to Carter-Wallace, Inc., New York, N.Y. 436.894, ren. 11–14–67. Cl. 51.
Carter-Wallace, Inc.: *See*—
  Carter Products. Inc.
Castleton China, Inc., New Castle, Pa. 721.968, canc. Cl. 30.
Castleton China, Inc., New Castle, Pa. 838,782. pub. 8–29–67. Cl. 30.
Catalina. Inc.: *See*—
  Pacific Knitting Mills.
Cato Oil & Grease Co., Oklahoma City, Okla. 838,645, pub. 8–29–67. Cl. 15.
Century Printing Co., Inc., New Orleans, La. 838,712, pub. 8–29–67. Cl. 22.
Certain-Teed Products Corp., Ardmore, Pa. 838,627, pub. 8–29–67. Cl. 12.
Chadbourn Gotham, Inc., Charlotte, N.C. 838,877, pub. 8–29–67. Cl. 39.
Chanel Industries, Inc., New York, N.Y. 838,936, pub. 8–15–67. Cl. 51.
Chatham Mfg. Co., Elkin, N.C. 838,890, pub. 8–29–67. Cl. 42.
Chemway Corp.: *See*—
  Forhan Co.
Cher-O-Kee Photofinishers, Inc., d.b.a. Cine-Pac Processing Lab, Athens, Tenn. 721,922, canc. Cl. 26.
Cherokee Wholesalers, Inc., Alexandria, Va. 838,599, pub. 8–29–67. Cl. 4.

Chicago Flexible Shaft Co., now by change of name Sunbeam Corp., to Sunbeam Corp., Chicago, Ill. 433,547, ren. 11–14–67. Cl. 23.

Chicago Metallic Mfg. Co., Lake Zurich, Ill. 838,636, pub. 8–29–67. Cl. 13.

Chilton Co., Philadelphia, Pa. 838,828, pub. 8–29–67. Cl. 38.

Chrysler Corp., Highland Park, Mich. 721,817–18, canc. Cl. 19.

Chrysler Corp., Highland Park, Mich. 721,842, canc. Cl. 21.

Chrysler Corp., Highland Park, Mich. 721,882, canc. Cl. 23.

Ciba Corp., New York, N.Y. 838,821, pub. 8–29–67. Cl. 38.

Cincinnati Milling Machine Co., The, Cincinnati, Ohio. 838,642, pub. 8–29–67. Cl. 15.

Cine-Pac Processing Lab.: *See—*
Cher-O-Kee Photofinishers, Inc.

Clairol, Inc., New York, N.Y. 838,933, pub. 8–29–67. Cl. 51.

Cluett, Peabody & Co., Inc., Troy, N.Y. 235,249, ren. 11–14–67. Cl. 39.

Cluett, Peabody & Co., Inc., Troy, N.Y. 235,312, ren. 11–14–67. Cl. 39.

Cluett, Peabody & Co., Inc., Troy, N.Y. 235,872, ren. 11–14–67. Cl. 39.

Cluett, Peabody & Co., Inc., New York, N.Y. 838,861, pub. 8–29–67. Cl. 39.

Coast Mfg. and Supply Co., Livermore, Calif. 721,831, canc. Cl. 21.

Coats & Clark Inc., New York, N.Y. 721,788, canc. Cl. 13.

Cobblestones Ltd., Weststones, England. 838,836, pub. 8–29–67. Cl. 39.

Coilform Co., Batavia, Ill. 838,689, pub. 8–29–67. Cl. 21.

Colgate-Palmolive Co., New York, N.Y., from John H. Breck, Inc., Springfield, Mass. 838,925–7, pub. 2–23–65. Cl. 51.

Columbia Technical Corp., Woodside, N.Y. 721,895, canc. Cl. 26.

Computer Control Co., Inc., Farmingham, Mass. 721,902, canc. Cl. 26.

Congoleum-Nairn, Inc., Kearny, N.J. 838,673, pub. 8–29–67. Cl. 20.

Consolidated Avionics Corp., Westbury, N.Y. 721,836, canc. Cl. 21.

Continental Freezers of Ill.: *See—*
Prince, F. H., & Co., Inc.

Continental Oil Co., Ponca City, Okla. 721,825, canc. Cl. 21.

Continental Oil Co., Ponca City, Okla. 838,596, pub. 8–29–67. Cl. 4.

Continental Oil Co., Ponca City, Okla., from American Agricultural Chemical Co., New York, N.Y. 838,617, pub. 8–29–67. Cl. 10.

Continental Organization of Distributor Enterprises, Inc., Pittsburgh, Pa. 838,954, pub. 8–29–67. Cl. 101.

Control Molding Corp., Staten Island, N.Y. 838,738, pub. 8–29–67. Cl. 23.

Cooper, Tinsley, Laboratories, Inc., Harrison, N.J. 721,810, canc. Cl. 18.

Cordem Corp., Minneapolis, Minn. 838,679, pub. 8–29–67. Cl. 21.

Corn Products Refining Co., Corn Products Co., New York, N.Y. 431,922. Am. 7(d). Cl. 6.

Cornhill Commercial Co.: *See—*
Touloukian, Hagop S.

Couristan Inc., New York, N.Y. 722,031–2, canc. Cl. 42.

Crane Co., New York, N.Y. 838,795, pub. 8–29–67. Cl. 34.

Curtis-Allbrite Lighting, Inc., Chicago, Ill. 721,841, canc. Cl. 21.

Curtis Companies Inc., Clinton, Iowa. 721,775, canc. Cl. 12.

Curtis, Helene, Industries, Inc., Chicago, Ill. 838,932, pub. 8–29–67. Cl. 51.

Curtiss-Wright Corp., Goleta, Calif. 721,893, canc. Cl. 26.

Dalin Jewelers, Los Angeles, Calif. 721,957, canc. Cl. 27.

Dan River Mills, Inc., Danville, Va. 838,889, pub. 8–29–67. Cl. 42.

Daroff, H., & Sons, Inc., Philadelphia, Pa. 838,850, pub. 8–29–67. Cl. 39.

Davis Paint Co., North Kansas City, Mo. 838,659, pub. 8–29–67. Cl. 16.

Daystrom, Inc., Murray Hill, N.J. 721,877, canc. Cl. 23.

Daystrom, Inc., Murray Hill, N.J. 721,986, canc. Cl. 37.

Dee Gee of Calif., Inc., Apple Valley, Calif. 838,707, pub. 8–29–67. Cl. 22.

De Havilland Aircraft of Canada, Ltd., The, Toronto, Ontario, Canada. 838,923, pub. 8–29–67. Cl. 50.

Del Chemical Corp., Menomonee Falls, Wis. 838,651–2, pub. 8–29–67. Cl. 16.

Delta Chemical Co., Dust-A-Way, Inc., Memphis, Tenn. 620,114, rest. Cl. 52.

Delta Mercantile Corp., New York, N.Y. 838,715, pub. 5–25–65. Cl. 23.

Demicorp Inc., Caro, Mich. 791,170, canc. Cl. 52.

Dereta, to Dereta (London) Ltd., London, England. 433,439, ren. 11–14–67. Cl. 39.

Dereta (London) Ltd.: *See—*
Dereta.

Dermatology Digest, Inc., Winnetka, Ill. 838,830, pub. 8–29–67. Cl. 38.

Dexter-Carpenter Coal Co., Inc., New York, N.Y., to Princess Coals, Inc., Huntington, W. Va. 229,252, ren. 11–14–67. Cl. 1.

Die Casting Machine Tools Ltd., London, England. 433,545, ren. 11–14–67. Cl. 23.

Di-Noc Chemical Arts, Inc., Cleveland, Ohio. 722,069, canc. Cl. 50.

Disco Engineering, Inc., Detroit, Mich. 838,974. Cl. 34.

Distillation Products, Inc., to Eastman Kodak Co., Rochester, N.Y. 433,681, ren. 11–14–67. Cl. 15.

Dixon, Joseph, Crucible Co., The: *See—*
Hi-Jen Crayon Co.

Domar Products, Inc., St. Paul, Minn. 721,918, canc. Cl. 26.

Dow Chemical Co., The, Midland, Mich. 833,877, cor. Cl. 6.

Dow Chemical Co., The, Midland, Mich. 838,615–6, pub. 8–29–67. Cl. 9.

Drexel Enterprises, Inc., from Heritage Furniture, Inc., High Point, N.C. 721,972, canc. Cl. 32.

Dunlop Tire and Rubber Corp., Buffalo, N.Y. 838,802, pub. 8–29–67. Cl. 35.

Du Pont de Nemours, E. I., & Co., Wilmington, Del. 838,624, pub. 8–29–67. Cl. 12.

Durand, Joel H., d.b.a. Sheep Shapes, St. Paul, Minn. 838,837, pub. 8–29–67. Cl. 39.

Dynacolor Corp., Rochester, N.Y. 721,935, canc. Cl. 26.

Dynair Electronics, Inc., San Diego, Calif. 838,695, pub. 8–29–67. Cl. 21.

Eagle Electric Mfg. Co., Inc., Long Island City, N.Y. 838,693, pub. 8–29–67. Cl. 21.

East Chicago Machine Tool Corp., East Chicago, Ind. 838,722, pub. 8–29–67. Cl. 23.

Eastman Kodak Co.: *See—*
Distillation Products, Inc.

Eastman Kodak Co., Rochester, N.Y. 434,003, ren. 11–14–67. Cl. 26.

Ecco Chemicals, Inc., Dallas, Tex. 838,944, pub. 8–29–67. Cl. 52.

Edison Brothers Stores, Inc., St. Louis, Mo. 722,000, canc. Cl. 39.

Editor & Publisher Co., Inc., New York, N.Y. 838,831, pub. 8–29–67. Cl. 38.

Edmund Scientific Co., Barrington, N.J. 721,891, canc. Cl. 26.

Electric Game Co., The, Holyoke, Mass. 838,968. Cl. 2.

Electric Machinery Mfg. Co., Minneapolis, Minn. 838,701, pub. 8–29–67. Cl. 21.

Electrofinishing by Hudson, Inc., New York, N.Y. 838,661, pub. 8–29–67. Cl. 16.

Electronic Treasure Chest Enterprises, Inc., Lake Bluff, Ill. 838,953, pub. 8–29–67. Cl. 101.

Elliott & Evans, Inc., d.b.a. Telectron Co. Division, Fort Lauderdale, Fla. 838,703, pub. 8–29–67. Cl. 21.

Ely & Walker Dry Goods Co., St. Louis, Mo., to Ely & Walker, Inc., Memphis, Tenn. 232,026, ren. 11–14–67. Cl. 39.

Ely & Walker, Inc.: *See—*
Ely & Walker Dry Goods Co.

Embassy Chemicals Corp., Farmingdale, N.Y. 838,940, pub. 8–29–67. Cl. 52.

Endicott Johnson Corp., Endicott, N.Y. 838,848, pub. 8–29–67. Cl. 39.

Enterprise Paint Mfg. Co., Chicago, Ill., from J. M. Wetstone, d.b.a. Jan's Interiors, Atlanta, Ga. 838,603, pub. 8–29–67. Cl. 5.

Enterprise Wire Co., Blue Island, Ill. 838,794, pub. 8–29–67. Cl. 34.

Euterpe Instruments, North Falmouth, Mass. 838,808, pub. 8–29–67. Cl. 36.

Fabrique d'Horlogerie Angelus, Societe Anonyme: *See—*
Stolz Freres, S.A., Fabrique d'Horlogerie Angelus.

Facel, S.A., Paris, France. 721,815, canc. Cl. 19.

Fairfield Products, Inc., New York, N.Y. 838,937, pub. 8–29–67. Cl. 51.

Farah Mfg. Co., Inc., El Paso, Tex. 838,849, pub. 8–29–67. Cl. 39.

Farm Fresh Cream Wip Corp., Lynbrook, N.Y. 838,898, pub. 8–29–67. Cl. 46.

Fashion Park, Inc., New York, N.Y. 229,257, ren. 11–14–67. Cl. 39.

Feurer Bros., Inc., North White Plains, N.Y. 838,820, pub. 8–29–67. Cl. 38.

Finch, Joseph S., and Co.: *See—*
Logansport Distilling Co., Inc.

Firestone Tire & Rubber Co., The, Akron, Ohio. 838,801, pub. 8–29–67. Cl. 35.

Fisher Flouring Mills Co., Seattle, Wash. 838,901–5, pub. 8–29–67. Cl. 46.

Fisher Radio Corp., Long Island City, N.Y. 838,697–8, pub. 8–29–67. Cl. 21.

Flair Mfg. Corp., Hauppauge, N.Y. 838,635, pub. 8–29–67. Multiple Class (Classes 13, 21, 23, 26, and 34).

Fleer, Frank H., Philadelphia, Pa. 838,832, pub. 8–29–67. Cl. 38.

Fleming & Co., Pharmaceuticals, St. Louis, Mo. 838,670, pub. 8–29–67. Cl. 18.

Flexible Tubing Corp., from The Flexible Tubing Corp., Gilford, Conn. 838,634, pub. 8–29–67. Cl. 13.

Flexible Tubing Corp., The: *See—*
Flexible Tubing Corp.

Florsheim Shoe Co., The: *See—*
Interco Inc.

Flow Products, Inc., Washington, D.C. 722,076, canc. Cl. 50.

Flying Carpet Motor Inn, Inc., Rosemont, Ill. 838,952, pub. 8–29–67. Cl. 100.

Forhan Co., New York, N.Y., to Chemway Corp., Wayne, N.J. 230,010. ren. 11–14–67. Cl. 18.

Foster, Benjamin, Co., Philadelphia, Pa. 838,601, pub. 8–29–67. Cl. 5.

Four Seasons Racing Products: *See—*
Alessi, Ann S.

France Neckwear Co., Inc., New York, N.Y. 838,843, pub. 8–29–67. Cl. 39.

Franke & Heidecke, Fabrik Photographischer Prazisions-Apparate, Braunschweig, Germany. 721,900, canc. Cl. 26.

Frieder, S., & Sons Co., The, Philadelphia, Pa. 838,662, pub. 8–29–67. Cl. 17.

Frink Sno-Plows, Inc., Clayton, N.Y. 838,732, pub. 8–29–67. Cl. 23.

Fuller Mfg. Co. Eaton Yale & Towne Inc., Cleveland, Ohio. 527,995. Am. 7(d). Cl. 23.

G.H.S. Corp., Battle Creek, Mich. 832,922, cor. Cl. 36.

G.R.M.C. Co., d.b.a. Grand Rapids Metal Cabinet Co., Grand Rapids, Mich., to William Schenck & Co., Inc., Evans City, Pa. 431,403, ren. 11–14–67. Cl. 32.

Gansco Products Ltd., Toronto, Ontario, Canada. 721,758, canc. Cl. 10.

Garden-eer Corp., The, Boston, Mass. 721,879, canc. Cl. 23.

Gardner Machinery Corp., Charlotte, N.C. 838,745, pub. 8–29–67. Cl. 24.

Garland Knitting Mills, Jamaica Plain, Mass. 722,015, canc. Cl. 39.

Garrett, Snuff, Productions, Inc., Hollywood, Calif. 838,962, pub. 8–29–67. Cl. 107.

Geigy Chemical Corp., from Geigy Chemical Corp., Ardsley, N.Y. 838,981. Cl. 106.

Gem, Inc., Byhalia, Miss. 838,781, pub. 8–29–67. Cl. 29.

General Cable Corp., New York, N.Y. 838,605, pub. 8–29–67. Cl. 5.

General Electric Co., Schenectady, N.Y. 838,682, pub. 8–29–67. Cl. 21.

General Indicator Corp., Palo Alto, Calif. 838,696, pub. 8–29–67. Cl. 21.

General Merchandise Co., Milwaukee, Wisc. 721,906, canc. Cl. 26.

General Mills, Inc., Minneapolis, Minn. 722,058, canc. Cl. 46.

General Mills, Inc., Minneapolis, Minn. 838,910–18, pub. 8–29–67. Cl. 46.

General Precision, Inc.: *See—*
General Precision Systems, Inc.

General Precision Systems Inc., from General Precision, Inc., Little Falls, N.J. 838,754, pub. 8–29–67. Cl. 26.

General Register Corp., Long Island City, N.Y. 721,886, canc. Cl. 26.

General Signal Corp., Rochester, N.Y. 838,680, pub. 8–29–67. Cl. 21.

General Tire & Rubber Co., The, Akron, Ohio. 838,631, pub. 8–29–67. Cl. 12.

Genesco Inc.: *See—*
Bringardner Shoe Co., Inc., The.

Gibson, C. R., Co., The, Norwalk, Conn. 838,813, pub. 8–29–67. Cl. 37.

Gillette Co., The: *See—*
Gillette Safety Razor Co.

Gillette Safety Razor Co., to Gillette Co., Boston, Mass. 436,777, ren. 11–14–67. Cl. 23.

Glemby Co., Inc., The, New York, N.Y. 838,886, pub. 8–29–67. Cl. 40.

Glidden Co., The, Cleveland, Ohio. 838,815, pub. 8–29–67. Cl. 37.

Global Import & Export, Inc., Miami, Fla. 838,739, pub. 8–29–67. Cl. 23.

Golden West Broadcasters, from Melody Ranch Enterprises, Inc., North Hollywood, Calif. 838,961, pub. 8–29–67. Cl. 107.

Goldsmith, Louis, Inc., Philadelphia, Pa. 838,863, pub. 8–29–67. Cl. 39.

Good Guy Products Co.: *See—*
Holland, Bryce L.

Grace, W. R., & Co., New York, N.Y. 838,597, pub. 8–29–67. Cl. 4.

Grand Rapids Metal Cabinet Co.: *See—*
G. R. M. C. Co.

Granite City Steel Co., Granite City, Ill. 838,971. Cl. 12.

Graves, George O., d.b.a. Michiana Mills, South Bend, Ind. 838,717–8, pub. 8–29–67. Multiple Class (Classes 23 and 46).

Grossman, Charles, d.b.a. Victor Co., Franklin Square, N.Y. 838,948, pub. 8–29–67. Cl. 52.

Groz, Theodor, & Sohne & Ernst Beckert, Nadelfabrik Commandit Gesellschaft. Ebinger, Wurttemberg, Germany. 838,730, pub. 8–29–67. Cl. 23.

Guide Services, Inc., Atlanta, Ga. 838,975. Cl. 38.

Haas-Miller Corp., to Harry Miller Corp., Philadelphia, Pa. 435 525, ren. 11–14–67. Cl. 52.

Haddam Mfg. Co., The, New York, N.Y. 721,901, canc. Cl. 26.

Haggar Co., Dallas, Tex. 838,874, pub. 8–29–67. Cl. 39.

Halo Sales Corp., d.b.a. The Party People, San Francisco, Calif. 838,646, pub. 8–29–67. Cl. 15.

Hammarlund Mfg. Co.: *See—*
Hammarlund Mfg. Co., Inc.

Hammarlund Mfg. Co., Inc., d.b.a. Hammarlund Mfg. Co., Amityville, N.Y. 838,702, pub. 8–29–67. Cl. 21.

Hammond, G. H., Co., to Swift & Co., Chicago, Ill. 232,833, ren. 11–14–67. Cl. 52.

Hart, William D., Jr., Richmond, Va. 838,709, pub. 8–29–67. Cl. 22.

Hays, Ralph, Glendale, Calif. 722,075. canc. Cl. 50.

Heat Timer Corp., New York, N.Y. 721,917, canc. Cl. 26.

Heide, Henry, Inc., New Brunswick, N.J. 435,900, ren. 11–14–67. Cl. 46.

Heinze, Tom, & Associates, Inc., Washington, D.C. 722,093, canc. Cl. 106.

Henson-Kickernick, Inc., Greenville, Tex. 838,845, pub. 8–29–67. Cl. 39.

Heritage Furniture, Inc.: *See—*
Drexel Enterprises, Inc.

Herold Products Co., Inc.: *See—*
Spartus Corp.

Herold Products Co., Inc., from Spartus Corp., Chicago, Ill. 721,887, canc. Cl. 26.

High Standard Mfg. Corp., The, Hamden, Conn. 838,611, pub. 8–29–67. Cl. 9.

Hi-Jen Crayon Co., Valley Park, Mo., to The Joseph Dixon Crucible Co., Jersey City, N.J. 235,076, ren. 11–14–67. Cl. 37.

Hilborn-Hamburger, Inc., New York, N.Y. 434,542, ren. 11–14–67. Cl. 40.

Hirsch-Weis Canvas Products Co.: *See—*
White Stag Mfg. Co.

Hoberg Paper & Fibre Co., Crown Zellerbach Corp., San Francisco, Calif. 234,041. Am. 7(d). Cl. 37.

Hockaday, Robert C., d.b.a. Trymtool, San Diego, Calif. 721,789, canc. Cl. 13.

Hohner, M., Inc., Hichsville, N.Y. 838,805, pub. 8–29–67. Cl. 36.

Holland, Bryce L., d.b.a. Good Guy Products Co., Stamford, Conn. 838,939, pub. 8–29–67. Cl. 51.

Holz Rubber Co., Inc., Lodi, Calif. 838,799, pub. 8–29–67. Cl. 35.

Howell Instruments, Inc., Fort Worth, Tex. 721,924, canc. Cl. 26.

Hudson, H. D., Mfg. Co.: *See—*
Hudson Mfg. Co.

Hudson Mfg. Co., Minneapolis, Minn., to H. D. Hudson Mfg. Co., Chicago, Ill. 232,873, ren. 11–14–67. Cl. 23.

Huebschman, Hyman Lavin-Charles of Ritz, Inc., New York, N.Y. 226,718. Am. 7(d). Cl. 51.

Hughes Industries, Farmington, Mich. 721,760, canc. Cl. 12.

Hunt-Wesson Foods, Inc.: *See—*
Southern Cotton Oil Co., The.

Huth Mfgr., Inc., Burbank, Calif. 721,865, canc. Cl. 23.

Hydraulic Machinery Co., Inc., Butler, Wis. 838,744, pub. 8–29–67. Cl. 23.

Indiana General Corp., Valparaiso, Ind. 721,969, canc. Cl. 30.

Indit Corp., Albertson, N.Y. 838,691, pub. 8–29–67. Cl. 21.

Industrial Metalcraft Co., Inc., Lubbock, Tex. 838,740, pub. 8–29–67. Cl. 23.

Industrial Tectonics, Inc., Ann Arbor, Mich. 838,763, pub. 8–29–67. Cl. 26.

Integrated Ceilings Inc., Los Angeles, Calif. 838,796, pub. 8–29–67. Cl. 34.

Interco Inc., d.b.a. The Florsheim Shoe Co., Chicago, Ill. 838,872, pub. 8–29–67. Cl. 39.

Interco Inc., d.b.a. The Florsheim Shoe Co., Chicago, Ill. 838,883, pub. 8–29–67. Cl. 39.

International Paper Co., New York, N.Y. 838,589, pub. 8–29–67. Cl. 2.

International Paper Co., New York, N.Y. 838,816, pub. 8–29–67. Cl. 37.

International Playtex Corp., from International Latex Corp., Dover, Del. 838,844, pub. 8–29–67. Cl. 39.

Irresistible, Inc., to The Nestle-Le Mur Co., New York, N.Y. 434,444, ren. 11–14–67. Cl. 51.

Irresistible, Inc., to The Nestle-Le Mur Co., New York, N.Y. 434,712, ren. 11–14–67. Cl. 51.

Irving Music: *See—*
A & M General.

Jacobsen Mfg. Co., Racine, Wis. 838,737, pub. 8–29–67. Cl. 23.

James, E., and Co., Chicago, Ill. 838,800, pub. 8–29–67. Cl. 35.

Jamestown Lounge Co., Jamestown, N.Y. 721,973, canc. Cl. 32.

Jan's Interiors: *See—*
Enterprise Paint Mfg. Co.

Jantzen Inc., Portland, Oreg. 838,838, pub. 8–29–67. Cl. 39.

Jet Air Products Co., Dallas, Tex. 838,606, pub. 8–29–67. Cl. 6.

Jet Spray Corp., Waltham, Mass. 838,826, pub. 8–29–67. Cl. 38.

Jo-Beth Fashions, Inc., from Anne Carter Dresses, Inc., New York, N.Y. 722,013 canc. Cl. 39.

Joclin Mfg. Co., The, Wallingford, Conn. 838,600, pub. 8–29–67. Cl. 5.

Jones & Brown, Inc., Pittsburgh, Pa. 721,770, canc. Cl. 12.

Kahn, Ben, Furs Corp., New York, N.Y. 838,873, pub. 8–29–67. Cl. 39.

Kaiser Aluminum & Chemical Corp., Oakland, Calif. 838,625, pub. 8–29–67. Cl. 12.

Kavli, O., A/S: *See—*
Westergaard, B., & Co.

Kennedy, John F., d.b.a. Bo-Del Beams, Middleboro, Mass. 838.623, pub. 8–29–67. Cl. 12.

Kentucky Dale Co.: *See—*
Sazerac Co., Inc.

Kentucky Fried Chicken Corp., Nashville, Tenn. 838,895, pub. 8–29–67. Cl. 46.

Kerr Dental Mfg. Co., now by change of name Kerr Mfg. Co., to Kerr Mfg. Co., Detroit, Mich. 432,817, ren. 11–14–67. Cl. 44.

Kerr Mfg. Co.: *See—*
Kerr Dental Mfg. Co.

Keystone Catarrh Remedy Co., Belle Vernon, to L. J. Pirilla, d.b.a. The Keystone Salve Co., Perryopolis, Pa. 63,958, ren. 11–14–67. Cl. 18.

Keystone Salve Co., The: *See—*
Keystone Catarrh Remedy Co.

Killgore, Charles, Co., Inc.: *See—*
American Dietaids Co., Inc.

Kimberly-Clark Corp., Neenah, Wisc. 838,818, pub. 8–29–67. Cl. 37.

Kirsch, Bernhard, Trier, Biewer, Germany. 838,684, pub. 8–29–67. Multiple Class (Classes 21 and 34).

Kishel Bros. Trading Co., New York, N.Y. 721,991, canc. Cl. 39.

Klasfeld, Nathaniel: *See—*
Tully Construction Co., Inc.

Klein, S., Department Stores, Inc., New York, N.Y. 721,995, canc. Cl. 39.

Kops Bros., Inc., New York, N.Y. 838,876, pub. 8–29–67. Cl. 39.

Krauss Screen Process, Inc., Lawton, Okla. 838,833, pub. 8–29–67. Cl. 38.

Laco Corp., from The Solarine Co., Baltimore, Md. 838,607, pub. 8–29–67. Cl. 6.

Laco Corp., from The Solarine Co., Baltimore, Md. 838,656, pub. 8–29–67. Cl. 16.

Lafer Enterprises: *See—*
Lafer, Howard L.
Lafer, Howard L., d.b.a. Lafer Enterprises, Port Clinton, Ohio. 721,983, canc. Cl. 36.
Lake Products Co., Inc., St. Louis, Mo. 838,608, pub. 8–29–67. Cl. 6.
Lancome S.A.: *See—*
Lancome Sales Inc.
Lancome Sales Inc., New York, N.Y., to Lancome S.A., Chevilly-Larue (Seine), France. 431,872, ren. 11–14–67. Cl. 51.
Lane Magazine & Book Co., Menlo Park, Calif. 838,966, pub. 8–29–67. Cl. A.
Larus & Bro. Co., Inc., also d.b.a. Reed Tobacco Co., Branch, Larus & Bro. Co., Inc., Richmond, Va., to Riggio Tobacco Corp., Brooklyn, to Riggo Tobacco Corp. of New York Ltd., New York, N.Y. 432,254, ren. 11–14–67. Cl. 17.
Law, John W.: *See—*
Law, John W., Co.
Law, John W., Co., also d.b.a. John W. Law, Santa Maria and Guadalupe, to Byrd Produce Co., Guadalupe, Calif. 437,257, ren. 11–14–67. Cl. 46.
Lemmon Pharmacal Co., Sellersville, Pa. 838,669, pub. 8–29–67. Cl. 18.
Len-Gee Corp.: *See—*
Breck, John H., Inc.
Lesney Products & Co., Ltd., London, England. 838,708, pub. 8–29–67. Cl. 22.
Lewis, Charles C., Co., The, Springfield, Mass. 838,638, pub. 8–29–67. Cl. 14.
Liberty Records, Inc., Los Angeles, Calif. 838,803, pub. 8–29–67. Cl. 36.
Light Energy Systems, Inc., Los Angeles, Calif. 838,755, pub. 8–29–67. Cl. 26.
Lightolier, Inc., New York, N.Y. 838,700, pub. 8–29–67. Cl. 21.
Lodyte Chemical Co.: *See—*
Temple, William M.
Logansport Distilling Co., Inc., Philadelphia, Pa., to Joseph S. Finch and Co., New York, N.Y. 434,140, ren. 11–14–67. Cl. 49.
Lyon, Geneva S., d.b.a. Alca Chemical Co., East Millinocket, Maine. 722,084, canc. Cl. 51.
M.J.B. Co., San Francisco, Calif. 838,900, pub. 8–29–67. Cl. 46.
Madison Industries, Los Angeles, Calif. 838,959, pub. 8–29–67. Cl. 103.
Maginnis Cotton Mills: *See—*
Benjamin, E. V., Co., Inc., The.
Mahnert, Robert J., Phoenix, Ariz. 838,762, pub. 8–29–67. Cl. 26.
Maidenform, Inc., New York, N.Y. 838,879, pub. 8–29–67. Cl. 39.
Maidenform, Inc., New York, N.Y. 838,884–5, pub. 8–29–67. Cl. 39.
Maier, Roy J., Corp., Sun Valley, Calif. 838,806, pub. 8–29–67. Cl. 36.
Mallory, P. R., & Co., Inc., Indianapolis, Ind. 838,685, pub. 8–29–67. Multiple Class (Classes 21 and 26).
Marion Plant Life Fertilizer Co., Marion, Ohio. 838,618, pub. 8–29–67. Cl. 10.
Market Merchandisers: *See—*
Market Merchandisers, Inc.
Market Merchandisers, Inc., from William Wolf, d.b.a. Market Merchandisers, Newark, N.J. 722,063, canc. Cl. 46.
Maryland Asphalt Association, Inc., Baltimore, Md. 838,825, pub. 8–29–67. Cl. 38.
Master Furriers Guild of America, Inc., New York, N.Y. 838,948, pub. 8–29–67. Cl. 100.
Master Photo Dealers' & Finishers' Assn., Jackson, Mich. 838,955, pub. 8–29–67. Cl. 101.
Mastertape (Magnetic) Ltd., Colnbrook, Slough, England. 838,804, pub. 8–29–67. Cl. 36.
Mauser Mill Co.: *See—*
Nebraska Consolidated Mills Co.
McCulloch Corp., Los Angeles, Calif. 838,733, pub. 8–29–67. Cl. 23.
McCulloch Corp., Los Angeles, Calif. 838,792, pub. 8–29–67. Cl. 34.
McMath, Robert M., d.b.a. Wifesaver Products Co., New York, N.Y. 838,942, pub. 8–29–67. Cl. 52.
Medart, Fred, Mfg. Co., St. Louis, Mo., to Nissen Corp., Cedar Rapids, Iowa. 432,839, ren. 11–14–67. Cl. 22.
Media/Graphics, Inc., Minneapolis, Minn. 838,924, pub. 8–29–67. Cl. 50.
Media/Sampling, Inc., Chicago, Ill. 838,827, pub. 8–29–67. Cl. 38.
Medical Appliance Enterprises, Berkeley, Calif. 722,049, canc. Cl. 44.
Medical Tribune, Inc., New York, N.Y. 838,976. Cl. 38.
Meilink Steel Safe Co., Toledo, Ohio. 838,749, pub. 8–29–67. Cl. 25.
Mellon Institute of Industrial Research, Pittsburgh, Pa. 721,796, canc. Cl. 14.
Mel-Mart, Inc., Washington, D.C. 838,951, pub. 8–29–67. Cl. 100.
Melody Ranch Enterprises, Inc.: *See—*
Golden West Broadcasters.
Melville Shoe Corp., New York, N.Y. 838,871, pub. 8–29–67. Cl. 39.
Merrill, Marcellus S., d.b.a. Merrill Engineering Laboratories, Denver, Colo. 838,768, pub. 8–29–67. Cl. 26.
Metal Lubricants Co., Chicago, Ill. 838,641, pub. 8–29–67. Cl. 15.
Metal Lubricants Co., Chicago, Ill. 838,644, pub. 8–29–67. Cl. 15.
Meyerhans & Cie. A.-G., Muhle Weinfelden, Weinfelden, to Meypro A.G., Thourgovie, Switzerland. 432,829, ren. 11–14–67. Cl. 1.
Meypro A.G.: *See—*
Meyerhans & Cie. A.-G., Muhle Weinfelden.
Michiana Mills: *See—*
Graves, George O.
Midland Laboratories, Dubuque, Iowa. 433,184, ren. 11–14–67. Cl. 6.
Milarch, Herbert H., d.b.a. Milarch Printing & Office Supply, Detroit, Mich. 838,819, pub. 8–29–67. Cl. 37.
Milarch Printing & Office Supply: *See—*
Milarch, Herbert H.
Mil-Art Knits, Inc., New York, N.Y. 838,887, pub. 8–29–67. Cl. 42.
Miles Laboratories, Inc.: *See—*
Ames Co., Inc.
Miles Laboratories, Inc., Elkhart, Ind. 838,667, pub. 8–29–67. Cl. 18.
Miller, Harry, Corp.: *See—*
Haas-Miller Corp.
Minneapolis-Moline Co., Hopkins, Minn. 721,873–4, canc. Cl. 23.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 838,817, pub. 8–29–67. Cl. 37.
Miracle Adhesives Corp., Bellmore, N.Y. 838,628, pub. 8–29–67. Cl. 12.
Mr. Mod Shop, Inc., New Orleans, La. 838,930, pub. 1–3–67. Cl. 51.
Mohawk Paper Mills, Inc., Cohoes, N.Y. 838,814, pub. 8–29–67. Cl. 37.
Moog Industries Inc., St. Louis, Mo. 721,816, canc. Cl. 19.
Moore & Munger, New York, N.Y. 838,640, pub. 8–29–67. Cl. 15.
Morton International, Inc., Chicago, Ill., from Allen C. Buhler, Racine, Wis. 838,892, pub. 8–29–67. Cl. 46.
Motivational Measurement Industrial Research Foundation, Chicago, Ill. 722,092, canc. Cl. 101.
Multronics, Inc., Rockville, Md. 838,681, pub. 8–29–67. Cl. 21.
Music-Master, Inc., Sewickley, Pa. 721,925, canc. Cl. 26.
My-Ko Chemical Corp., Milwaukee, Wis. 838,598, pub. 8–29–67. Cl. 4.
Naamlooze Venootschap; Eau de Colognefabriek Voorheen, J. C. Boldoot. Eau de Colognefabriek J. C. Boldoot N.V., Amsterdam, Netherlands. 149,179. Am. 7(d). Cl. 52.
National Bank of McKeesport, McKeesport, Pa. 838,958, pub. 8–29–67. Cl. 102.
National Electrical Manufacturers Assn., New York, N.Y. 838,963–5, pub. 8–29–67. Cl. A.
National Sales Engineers, Inc., Roanoke, Ala. 838,970. Cl. 11.
Navarco Products, Inc., Northfield, Ill. 838,823, pub. 8–29–67. Cl. 38.
Nebraska Consolidated Mills Co., d.b.a. Mauser Mill Co., Omaha. Nebr. 838 909, pub. 8–29–67. Cl. 46.
Neo Novelty Co., New York, N.Y. 721,941, canc. Cl. 26.
Nestle-Le Mur Co., The: *See—*
Irresistible, Inc.
Nicomedes Garcia Gomez, Segovia, Spain. 430,880, ren. 11–14–67. Cl. 49.
Nippon Columbia Co., Ltd., Kawasaki, Japan. 838,674, pub. 10–18–66. Multiple Class (Classes 21, 31, 34 and 36).
Nissen Corp.: *See—*
Medart, Fred, Mfg. Co.
Norcross, Inc., New York, N.Y. 838,822, pub. 8–29–67. Cl. 38.
Nusbaum, Lee, d.b.a. Pennsylvania Engineering Co., to Pennco Engineering Co., d.b.a. Pennsylvania Engineering Co., Philadelphia, Pa. 434,351, ren. 11–14–67. Cl. 6.
Oak Electro/Netics Corp., Crystal Lake, Ill. 838,706, pub. 8–29–67. Cl. 21.
Oilgear Co., The, Milwaukee, Wis. 838,727, pub. 8–29–67. Cl. 23.
Olden Camera and Lens Co., Inc., New York, N.Y. 888,757, pub. 8–29–67. Cl. 26.
Olga Co., Van Nuys, Calif. 838,855, pub. 8–29–67. Cl. 39.
Olin Mathieson Chemical Corp.: *See—*
Olinkraft, Inc.
Olinkraft, Inc., West Monroe, La., from Olin Mathieson Chemical Corp., New York, N.Y. 838,587, pub. 8–29–67. Cl. 2.
Olivetti, Ing. C. & C., S.p.A., Ivrea, Italy. 838,765, pub. 8–29–67. Cl. 26.
Optomechanisms, Inc., Plainview, N.Y. 838,723, pub. 8–29–67. Cl. 23.
Organaire Inc., Syracuse, N.Y. 838,807, pub. 8–29–67. Cl. 36.
Originals by Denise, Inc., New York, N.Y. 888,856, pub. 8–29–67. Cl. 39.
Orion Research Inc., Cambridge, Mass. 838,758, pub. 8–29–67. Cl. 26.
Oster, John, Mfg. Co., Milwaukee, Wisc. 207,269, ren. 11–14–67. Cl. 23.
Pacific Knitting Mills, to Catalina, Inc., Los Angeles, Calif. 236,068, ren. 11–14–67. Cl. 39.
Panduit Corp., Tinley Park, Ill. 838,704, pub. 8–29–67. Cl. 21.
Parke, Davis & Co., Detroit, Mich. 435,118, ren. 11–14–67. Cl. 18.
Party People, The: *See—*
Halo Sales Corp.
Patented Products Corp., Danville, Ohio. 838,699, pub. 8–29–67. Cl. 21.
Payton, Ed: *See—*
Payton, Willis E.
Payton, Willis E., d.b.a. Ed Payton, Kawaihae, Hawaii. 838,949, pub. 8–29–67. Cl. 100.
Pedi-Bares, Inc., San Francisco, Calif. 722,003, canc. Cl. 39.
Pennco Engineering Co.: *See—*
Nusbaum, Lee.
Pennebaker & Sons, Inc., Lexington, Ky. 838,846–7, pub. 8–29–67. Cl. 39.

Pennsalt Chemicals Corp.: *See—*
Pennsylvania Salt Mfg. Co., The.
Pennsylvania Engineering Co.: *See—*
Nusbaum, Lee.
Pennsylvania Salt Mfg. Co., The, to Pennsalt Chemicals Corp., Philadelphia, Pa. 433,873, ren. 11–14–67. Cl. 10.
Pennsylvania Sling Co., Pittsburgh, Pa. 832,811. Am. 7(d). Cl. 7.
Perweiler, Joseph A., Miami, Fla. 838,688, pub. 8–29–67. Cl. 21.
Peter, Gordon, Co., Inc., New York, N.Y. 722,012, canc. Cl. 39.
Petty, Ray D., d.b.a. Petty-Johnson Mens Hosiery Co., Dallas, Tex. 838,862, pub. 8–29–67. Cl. 39.
Petty-Johnson Mens Hosiery Co.: *See—*
Petty, Ray D.
Pfaudler Permutit, Inc., d.b.a. Simplex Valve & Meter Co., Lancaster, Pa. 721,950, canc. Cl. 26.
Pflaum, Geo. A., Publisher, Inc., Dayton, Ohio. 437,196–8, ren. 11–14–67. Cl. 38.
Philharmonic Radio Corp. Symphonic Electronic Corp., New York, N.Y. 432,209. Am. 7(d). Cl. 21.
Philharmonic Radio Corp. Symphonic Electronic Corp., New York, N.Y. 433,102. Am. 7(d). Cl. 21.
Pirilla, Leonard J.: *See—*
Keystone Catarrh Remedy Co.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 838,660, pub. 8–29–67. Cl. 16.
Pneumodynamics Corp., Cleveland, Ohio. 721,934, canc. Cl. 26.
Polaris Plastics Corp., Cranford, N.J. 838,586, pub. 8–29–67. Cl. 2.
Poloron Products, Inc., New Rochelle, N.Y. 721,971, canc. Cl. 32.
Porter and Yeager Inc., Doylestown, Pa. 838,786, pub. 8–29–67. Multiple Class (Classes 32 and 100).
Preformed Line Products Co., Cleveland, Ohio. 838,687, pub. 8–29–67. Cl. 21.
Prince, F. H., & Co., Inc., d.b.a. Continental Freezers of Illinois, Chicago, Ill. 838,980. Cl. 105.
Princess Coals, Inc.: *See—*
Dexter-Carpenter Coal Co., Inc.
Progredo Trading Co.: *See—*
Schutterman, Gustav J.
Pucci, Emilio, Societa a Responsabilita Limitata, Florence, Italy. 838,981, pub. 8–29–67. Cl. 51.
Puratronics, Inc., Minneapolis, Minn. 838,643, pub. 8–29–67. Cl. 15.
Purity Stores, Inc., Burlingame, Calif. 838,894, pub. 8–29–67. Cl. 46.
Ramrod Products, Inc., San Mateo, Calif. 722,071, canc. Cl. 50.
Readco Industries, Inc., Reading, Mass. 838,622, pub. 8–29–67. Cl. 12.
Reed, C. W., Co., Inc., d.b.a. Atomation, Inc., Los Angeles, Calif. 721,896, canc. Cl. 26.
Reed Tobacco Co.: *See—*
Larus & Bro. Co., Inc.
Reflectal Corp., New York, N.Y., to Borg-Warner Corp., Chicago, Ill. 431,689, ren. 11–14–67. Cl. 12.
Reliable Mfg. Co., Union, N.J. 838,787, pub. 8–29–67. Multiple Class (Classes 32 and 50).
Reliable Trouser Co., Inc., Chicago, Ill. 838,867, pub. 8–29–67. Cl. 39.
Reliance Trading Corp.: *See—*
Tong, Duncan.
Remington Typewriter Co., to Sperry Rand Corp., New York, N.Y. 233,910, ren. 11–14–67. Cl. 26.
Renfroe, J. C., & Sons, Inc., Jacksonville, Fla. 838,734, pub. 8–29–67. Cl. 23.
Republic Steel Corp., Cleveland, Ohio. 838,637, pub. 8–29–67. Cl. 14.
Rexbilt Leather Goods, Inc., New York, N.Y. 721,745, canc. Cl. 3.
Richardson, E. L., Houston, Tex. 838,978. Cl. 50.
Riggio Tobacco Corp.: *See—*
Larus & Bro. Co., Inc.
Riggio Tobacco Corp. of New York, Ltd.: *See—*
Larus & Bro. Co., Inc.
Rishellco, Inc., Crowley, La. 838,921, pub. 8–29–67. Cl. 50.
Roberts, Sanford & Taylor Co., Sherman, Tex. 433,200, ren. 11–14–67. Cl. 22.
Roberts Sportswear Mfg. Co., Boston, Mass. 722,009, canc. Cl. 39.
Robertson, H. H., Co., Pittsburgh, Pa. 838,626, pub. 8–29–67. Multiple Class (Classes 12 and 34).
Rock River Woolen Mills, Janesville, Wis. 721,996–7, canc. Cl. 39.
Rock River Woolen Mills, Janesville, Wis. 722,025, canc. Cl. 42.
Rokeach, I., & Sons, Inc., New York, N.Y. 838,896, pub. 8–29–67. Cl. 46.
Rolen Diversified Investors, Inc., Stockton, Calif. 838,686, pub. 8–29–67. Cl. 21.
Rombro Brothers, Inc., Baltimore, Md. 838,868–70, pub. 8–29–67. Cl. 39.
Rototest Laboratories, Inc., Lynwood, Calif. 722,088, canc. Cl. 100.
S.p A. C.I.S.A. Costruzioni Italiane Serrature Affini, Faenza (Ravenna), Italy. 838,750, pub. 8–29–67. Cl. 25.
St. Joe Paper Co., Jacksonville, Fla. 838,590, pub. 8–29–67. Cl. 2.
St. Regis Paper Co., New York, N.Y. 838,602, pub. 8–29–67. Cl. 5.
St. Regis Paper Co., New York, N.Y. 838,960, pub. 8–29–67. Cl. 106.
Salada Foods, Ltd., Don Mills, Ontario, Canada. 838,977. Cl. 46.
Sargent & Co., from Sargent & Co., New Haven, Conn. 838,748, pub. 8–29–67. Cl. 25.
Savage Laboratories, Inc., Houston, Tex. 838,668, pub. 8–29–67. Cl. 18.
Sawyer-Tower Products, Inc., Watertown, Mass. 838,840, pub. 9–29–67. Cl. 39.
Sazerac Co., Inc., d.b.a. Kentucky Dale Co., New Orleans, La. 838,919–20, pub. 8–29–67. Cl. 49.
Schafer, R. C., Boerne, Tex. 838,812, pub. 8–29–67. Cl. 37.
Schenck, William, & Co., Inc.: *See—*
G.R.M.C. Co.
Schreter, A., & Sons Co., Inc., Baltimore, Md. 838,954, pub. 8–29–67. Cl. 39.
Schutterman, Gustav J., d.b.a. Progredo Trading Co., New York, N.Y. 838,735–6, pub. 8–29–67. Cl. 23.
Scott Paper Co.: *See—*
Automatic Paper Machinery Co., Inc.
Sealine Mfg. Corp., Chicago, Ill. 838,676–7, pub. 12–21–65. Cl. 21.
Seamless Knitting Machinery Corp., New York, N.Y. 721,866, canc. Cl. 28.
Seatronics, Inc., Towson, Md. 721,897, canc. Cl. 26.
Selby Shoe Co., The, Wohl Shoe Co., St. Louis, Mo. 597,120. Am. 7(d). Cl. 39.
Sherman Underwear Mills, Inc., New York, N.Y. 838,835, pub. 8–29–67. Cl. 39.
Shur-Gloss Mfg. Co., Inc., Chicago, Ill. 838,941, pub. 8–29–67. Cl. 52.
Sierra General Sales Co.: *See—*
Amulet Corp.
Simca, Paris, France. 721,850–1, canc. Cl. 23.
Simoniz Co., Chicago, Ill. 838,649, pub. 8–29–67. Cl. 15.
Simplex Valve & Meyer Co.: *See—*
Pfaudler Permutit, Inc.
Skylark Builders, Inc., Nanuet, N.Y. 838,629, pub. 8–29–67. Cl. 12.
Slinger Foundry Co., Inc., Slinger, Wis. 838,719, pub. 8–29–67. Cl. 23.
Smith, D. B., & Co., Inc., Utica, N.Y. 239,564, ren. 11–14–67. Cl. 23.
Smith, Kenneth, Inc., Kansas City, Mo. 838,710, pub. 8–29–67. Cl. 22.
Snow Mfg. Co., Bellwood, Ill. 838,748, pub. 8–29–67. Cl. 23.
Societe Parisienne de Recherches et d'Expansion Therapeutique, Gennevilliers (Siene), France. 838,664–5, pub. 8–29–67. Cl. 18.
Sola Basic Industries, Inc., Milwaukee, Wis. 838,632, pub. 8–29–67. Cl. 12.
Sola Basic Industries, Inc., Milwaukee, Wis. 838,705, pub. 8–29–67. Cl. 21.
Sola Basic Industries, Inc., Milwaukee, Wis. 838,767, pub. 8–29–67. Cl. 26.
Sola Basic Industries, Inc., Milwaukee, Wis. 838,798, pub. 8–29–67. Cl. 34.
Solari & C./Udine S.p.A., Udine, Italy. 838,776, pub. 8–29–67. Cl. 27.
Solarine Co., The: *See—*
Laco Corp.
Southern Cotton Oil Co., The, New Orleans, La., to Hunt-Wesson Foods, Inc., Fullerton, Calif. 436,514, ren. 11–14–67. Cl. 46.
Specialized Coatings, Inc., Passaic, N.J. 838,657, pub. 8–29–67. Cl. 16.
Sperry Rand Corp.: *See—*
Remington Typewriter Co.
Sperry Rand Corp., New York, N.Y. 838,766, pub. 8–29–67. Cl. 26.
Sperry Rand Corp., New York, N.Y. 838,922, pub. 8–29–67. Cl. 50.
Sprites, Gay, Inc., New York, N.Y. 722,016, canc. Cl. 39.
Standard Change-Makers, Inc., Indianapolis, Ind. 721,898, canc. Cl 26.
Standard Oil Co., The, Cleveland, Ohio. 838,779, pub. 8–29–67. Cl. 29.
Standard Oil Co. of Calif., San Francisco, Calif. 838,694, pub. 8–29–67. Cl. 21.
Standard Torch Industries, Inc., Staten Island, N.Y. 721,803, canc. Cl. 16.
Sta-Soil Corp., North Hollywood, Calif. 838,741, pub. 8–29–67. Cl. 23.
Sterling Drug Inc., New York, N.Y. 838,938, pub. 8–29–67. Multiple Class (Classes 51 and 52).
Sterling Wholesale Jewelers, Inc., Dallas, Tex. 838,755, pub. 8–29–67. Cl. 27.
Stevens, J. P., & Co., Inc., New York, N.Y. 838,888, pub. 8–29–67. Cl. 42.
Stewart-Warner Corp., Chicago, Ill. 838,725, pub. 8–29–67. Cl. 23.
Stiles-McAlpin Hotel Co., Inc., Sarasota, Fla. 722,089, canc. Cl. 100.
Stolz Freres, S.A., Fabrique d'Horlogerie Angelus, to Fabrique d'Horlogerie Angelus Societe Anonyme, Le Locle, Switzerland. 431 244, ren. 11–14–67. Cl. 27.
Stow & Davis Furniture Co., Grand Rapids, Mich. 838,785, pub. 8–29–67. Cl. 32.
Sue Ann Food Products Corp., Chicago, Ill. 838,897, pub. 8–29–67. Cl. 46.
Sun Chemical Corp., New York, N.Y. 838,619–20, pub. 8–29–67. Cl. 11.
Sun Oil Co., Philadelphia, Pa. 432,877, ren. 11–14–67. Cl. 6.
Sun Oil Co., Philadelphia, Pa. 432,976, ren. 11–14–67. Cl. 15.
Sunbeam Corp.: *See—*
Chicago Flexible Shaft Co.
Sunbeam Corp., Chicago, Ill. 838,746, pub. 8–29–67. Cl. 24.
Swift & Co.: *See—*
Hammond, G. H., Co.
Swift and Co., to Swift & Co., Chicago, Ill. 232,915, ren. 11–14–67. Cl. 52.

Swisher, Jno. H., & Son, Inc., Jacksonville, Fla. 721,806, canc. Cl. 17.
Sylvania Electric Products Inc., Salem, Mass., to Sylvania Electric Products Inc., New York, N.Y. 434,727-9, ren. 11-14-67. Cl. 21.
Tall Apparel N.Y. Corp., New York, N.Y. 821,659, cor. Cl. 39.
Tape, Inc., Green Bay, Wis. 838,969. Cl. 5.
Tavarro S.A., Geneva, Switzerland. 721,861, canc. Cl. 23.
Techna-Chem, Inc., Canoga Park, Calif. 838,783, pub. 8-29-67. Cl. 31.
Technicon Chemical Co., Inc.: *See*—
Technicon Corp.
Technicon Corp., from Technicon Chemical Co., Inc., Ardsley, N.Y. 838,609, pub. 8-29-67. Cl. 6.
Telectron Co. Division: *See*—
Elliott & Evans, Inc.
Temple, William M., d.b.a. Lodyte Chemical, Washington, D.C. 721,766, canc. Cl. 12.
Tennent, J & R, Ltd. Tennent Caledonia Brewerlew Ltd., Glasgow, Scotland. 59,886. Am. 7(d). Cl. 51.
Texair, Saone (Rhone), France. 838,784, pub. 8-29-67. Cl. 32.
Texas Sanitation Co., Inc., Victoria, Tex. 838,979. Cl. 103.
Textron, Inc., Providence, R.I. 838,647, pub. 8-29-67. Cl. 15.
Thomas Organ Co. Sepulveda, Calif. 838,811, pub. 8-29-67. Cl. 36.
Thomson Industries, Inc., Manhasset, N.Y. 838,724, pub. 8-29-67. Cl. 23.
Tokyo Maikuro Shashin Kaisha Ltd., The. Tokyo Microphoto Works Ltd., The, Tokyo, Japan. 721,919, canc. Cl. 26.
Tong, Duncan, d.b.a. Reliance Trading Corp., Victoria, Hong Kong. 722,077, canc. Cl. 50.
Torrington Co., The, to The Torrington Co., Torrington, Conn. 231,838, ren. 11-14-67. Cl. 23.
Touloukian, Hagop S., d.b.a. Cornhill Commercial Co., New York, N.Y. 838,672, pub. 8-29-67. Cl. 19.
Towle Mfg. Co., Newburyport, Mass. 435,546, ren. 11-14-67. Cl. 28.
Tracerlab, Inc., Waltham, Mass. 721,928-9, canc. Cl. 26.
Tracor, Inc., Austin, Tex. 838,756 pub. 8-29-67. Cl. 26.
Transistor Devices, Inc., Los Angeles, Calif. 721,843-4, canc. Cl. 21.
Transogram Co., Inc., New York, N.Y. 838,711, pub. 8-29-67. Cl. 22.
Triangle Mfg. Co., Chicago, Ill. 838,780, pub. 8-29-67. Cl. 29.
Tripp, C. H., Finishing Co., San Diego, Calif. 838,658, pub. 8-29-67. Cl. 16.
Trojan Fireworks Co., Norwalk, Calif. 838,612-14, pub. 8-29-67. Cl. 9.
Trophy Co., Palmetto, Fla. 838,731, pub. 8-29-67. Cl. 23.
Trymtool: *See*—
Hockaday, Robert C.
Tully Construction, from N. Klasfeld, McKeesport, Pa. 721,771, canc. Cl. 12.
Twinco Products Co., Inc., San Fernando, Calif. 838,650, pub. 8-29-67. Multiple Class (Classes 16, 22, 24, and 29).
UMC Industries, Inc., St. Louis, Mo. 838,610, pub. 8-29-67. Cl. 9.
Unimed, Inc., Morristown, N.J. 838,666, pub. 8-29-67. Cl. 18.
Union Carbide Corp., New York, N.Y. 838,759-60, pub. 8-29-67. Cl. 26.
Union Tank Car Co., Chicago, Ill. 838,726, pub. 8-29-67. Multiple Class (Classes 23 and 31).
United States Box Crafts, Inc., Brooklyn, N.Y. 838 967. Cl. 2.
United States Envelope Co., Springfield, Mass. 838,588, pub. 8-29-67. Multiple Class (Classes 2 and 37).
United States Graphite Co., The, to The Wicks Corp., Saginaw, Mich. 435,015, ren. 11-14-67. Cl. 1.
United States Register Co., d.b.a. United States Register Co., Battle Creek, Mich. 838,797, pub. 8-29-67. Cl. 34.
United States Shoe Corp., The, Cincinnati, Ohio. 838,875, pub. 8-29-67. Cl. 39.
United States Steel Corp., Pittsburgh, Pa. 838,633, pub. 8-29-67. Cl. 12.
U.S. Terminals, Inc., Cincinnati, Ohio. 838,678, pub. 8-29-67. Cl. 21.
Valeron Corp., The, Detroit, Mich. 721,876, canc. Cl. 23.
Valley City Milling Co., Portland, Mich. 838,906-7, pub. 8-29-67. Cl. 46.
Valspar Corp., The, Rockford, Ill. 838,[illegible]54, pub. 8-29-67. Cl. 16.
Varian Associates, Palo Alto, Calif. 838,793, pub. 8-29-67. Cl. 34.
Victor Co.: *See*—
Grossman, Charles.
Vitabath, Inc., New York, N.Y. 838,934-5, pub. 8-29-67. Cl. 51.
Waldorf Paper Products Co., St. Paul, Minn. 722,073, canc. Cl. 50.
Warner Brothers Co., The, Bridgeport, Conn. 838,857-60, pub. 8-29-67. Cl. 39.
Warner Electric Brake & Clutch Co., South Beloit, Ill. 838,675, pub. 8-29-67. Cl. 21.
Warner-Jenkinson Mfg. Co., St. Louis, Mo. 838,908, pub. 8-29-67. Cl. 46.
Washington Mfg. Co.: *See*—
Allen Shirt Co.
Benjamin, E. V., Co., Inc., The.
Waterman Electronic Tube Co., Philadelphia, Pa. 838,690, pub. 8-29-67. Cl. 21.
Wembley, Inc., New Orleans, La. 838,865, pub. 8-29-67. Cl. 39.
Werke, Wotan, G.m.b.H., Dusseldorf-Holthausen, Germany. 838,742, pub. 8-29-67. Cl. 23.
Westergaard, B., & Co., Brooklyn, N.Y., to O. Kavli A/S, Bergen, Norway. 236,605, ren. 11-14-67. Cl. 46.
Westinghouse Electric Corp., Pittsburgh, Pa. 721,793, canc. Cl. 14.
Wetstone Janet M.: *See*—
Enterprise Paint Mfg. Co.
White, Martha, Inc., from Martha White Mills, Inc., Nashville, Tenn. 838,893, pub. 8-29-67. Cl. 46.
White, Martha, Mills, Inc.: *See*—
White, Martha, Inc.
White Stag Mfg. Co., d.b.a. Hirsch-Weis Canvas Products Co., Portland, Oreg. 838,591, pub. 8-29-67. Cl. 2.
White Stag Mfg. Co., Portland, Oreg. 838,880-1, pub. 8-29-67. Cl. 39.
Wickes Corp., The: *See*—
United States Graphite Co., The.
Wifesaver Products Co.: *See*—
McMath, Robert M.
Wilson Sporting Goods Co., from Wilson Sporting Goods Co., River Grove, Ill. 838,713-4, pub. 8-15-67. Cl. 22.
Winship Co., The: *See*—
Sazerac Co., Inc.
Wolf, William: *See*—
Market Merchandisers.
Wolsey Ltd., Leicester, England. 442,957, canc. Cl. 39.
Wonderknit Corp., New York, N.Y. 838,878, pub. 8-29-67. Cl. 39.
Woolworth, F. W., Co., New York, N.Y. 838,764, pub. 8-29-67. Cl. 26.
Zummach, Wm. F., Inc., Milwaukee, Wis. 721,907, canc. Cl. 26.

U.S. GOVERNMENT PRINTING OFFICE: O—1967

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 21, 1967 Volume 844 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1967

Examiner affirmed	201
Examiner affirmed in part	31
Examiner reversed	74
Total	306

Guidelines for Disclosures of Utility in Patent Applications for Drugs

The following are guidelines which the Patent Office proposes to adopt in the examination of applications for patents for drugs. Comments as to these guidelines will be considered if received on or before January 16, 1968, on which date a public hearing on the matter will be held at 10:00 a.m. in Building 34 (3rd floor) at Crystal Plaza. All persons wishing to be heard orally at that time are requested to notify the Commissioner of their intended appearance.

EDWARD J. BRENNER,
Commissioner of Patents.

Oct. 24, 1967.

Guidelines for Disclosures of Utility in Drug Cases

Introduction

It is felt that special consideration be accorded utility disclosures in drug cases in view of the public interest, particularly as expressed in Public Law 87-781.

> Sec. 702(a) * * *
>
> (d) The Secretary is authorized and directed, upon request from the Commissioner of Patents, to furnish full and complete information with respect to such questions relating to drugs as the Commissioner may submit concerning any patent applications. The Secretary is further authorized, upon receipt of any such request, to conduct or cause to be conducted, such research as may be required.
>
> The Food, Drug and Cosmetic Act defines a drug—
>
> The term "drug" means (A) articles recognized in the official United States Pharmacopeia, Official Homeopathic Pharmacopeia of the United States, or official National Formulary, or any supplement to any of them; and (B) articles intended for use in the diagnosis, cure mitigation, treatment, or prevention of disease in man or other animals; and (C) articles (other than food) intended to affect the structure or any function of the body of man or other animals; and (D) articles intended for use as a component of any articles specified in clause (A), (B), or (C); but does not include devices or their components, parts, or accessories.

Sec. 201(g)(1) Federal Food, Drug, and Cosmetic Act as amended.

In addition, compositions adapted to be applied to or used by human beings e.g., cosmetics, dentifrices, mouthwashes, etc. may be treated in the same manner as drugs if there is a question that their use may affect the health or well being of the person.

35 U.S.C. 101

Since predictability in this field is limited, a question should be raised as to the adequacy of the disclosure that a claimed genus possesses the asserted utility or operativeness under Section 101. That it does is reasonably inferable from a disclosure or showing of a sufficient number of representative examples together with a statement applicable to the genus as a whole.

Utility must be definite and in currently available form; not merely for further investigation or research. Thus generalized and vague assertions such as "therapeutic agents," "for pharmaceutical purposes," "biological activity," "intermediates," and for making further unspecified preparations are regarded as too nebulous and insufficient.

If the asserted utility is believable on its face and not unreasonable the burden is on the examiner to give adequate reasons for disbelief. On the other hand, incredible statements such as the cure or remission of malignant tumors, cure of tuberculosis or diabetes or of any disease condition or symptom known to be intractable to treatment will require adequate proof on the part of applicants for patents. It is presumed that applicants for patents are in the best position to supply evidence to support the assertions.

A spectrum of credibility exists between the noted limits. Criteria for testing the compliance of the assertion of the utility with Section 101 and the credibility of these assertions depends, inter alia, upon the nature of the disease, the seriousness of the use contemplated, the scope of the results claimed, the similarity to known successful drugs, the specificity with which the use is identified, the pattern of the biological response and the art knowledge concerning such response, and the safety of the drug, where necessary.

In instances where a question of proof to satisfy Section 101 is involved, the evidence offered is to be tested by the same criteria. If the specified or implied utility involves humans, clinical evidence is necessary; however, there is authority that animal tests are acceptable if the tests are of a kind that the results are known to be closely correlated with human utility. In accordance with the present case law, if there is no assertion of human utility, operativeness for use on standard test animals is adequate for patent purposes. Further, if the evidence shows that the drug is not safe in the dosage or mode of use for which it is effective, the disclosure will not satisfy the utility requirement of Section 101. Absolute safety is not necessarily required.

35 U.S.C. 112

The standards of disclosure for compliance with Section 112 in respect to the statutory language of "written description of * * * using" the invention "as to enable any person skilled in the art to which it pertains * * * to use the same" are to be strictly construed in view of the special public

New Applications Received During September 1967

Patents	6995
Designs	347
Plant Patents	17
Reissues	19
Total	7378

Issue—November 21, 1967

Patents	1281	No. 3,353,187 to No. 3,354,467, incl.
Designs	114	No. 209,269 to No. 209,382, incl.
Reissues	10	No. 26,298 to No. 26,307, incl.
Total	1405	

interest involved. Thus the extension of specific utilities to classes of compounds must be adequately supported by sufficient and typical exemplification and by a representation that the class as a whole possesses the asserted utility.

A mere statement of pharmacological and chemotherapeutic use for a new compound will raise a question of compliance with Section 112. If however the statement of utility contains within it a connotation of how to use and the art recognizes that standard modes of administration, including parameters, are contemplated Section 112 is satisfied. If on the other hand, the use disclosed is of such nature that the art is unaware of successful treatments with chemically analagous compounds a more complete statement of the parameters of utility and mode of administration should be set forth.

In the case of mixtures formulated including a drug as an ingredient or mixtures which are drugs or methods of treating a specific condition with a drug, whether old or new, a specific example of how to use must be set forth, which will include the organism treated and mode and parameters of administration.

General Principles

In those instances where several distinct utilities are disclosed, each should be investigated for compliance with Sections 101 and 112 as though it existed alone and such utility as fails to satisfy these guidelines should be required to be deleted.

The standard for statements and showings in this field is that which is the practice in the United States rather than the country of origin.

Inquiries Re Status of Pending Applications

The Office has lately received a large number of status inquiries relative to the expected action date on pending applications. These require substantial time on the part of the clerical and examiner forces to answer. In many instances it seems that these inquiries are unnecessary since the OFFICIAL GAZETTE notes by Group the filing date of the oldest new and amended case awaiting action.

It appears that many attorneys are routinely sending in status letters because of a misunderstanding of the 826 O.G. 372 notice "Duty of Inquiry as to Status of Pending Applications." Under that notice the question as to applicant's diligence in checking the status of an application arises in connection with petitions to revive applications which become abandoned through failure to respond to an Office action which had been mailed but not received.

That notice seeks to cut down the number of status letters for both new and amended applications. For new applications, no lack of diligence will be attributed if inquiry is made within a reasonable time *after* the OFFICIAL GAZETTE indicates that the date for the Group in which the application is assigned for examination is more recent than applicant's filing date. For amended applications, lack of diligence will not be attributed if inquiry is made within six months after filing the response; obviously an inquiry after only about two months would be premature.

Thus, no status letter or inquiry is needed for new applications until *after* the application date becomes *older* than the reported Group date in the OFFICIAL GAZETTE, and none is needed in an amended case until at least three months after date of filing the amendment or response.

If an inquiry as to the expected time an application will receive an action is found necessary, such inquiry should be accompanied by a stamped return-addressed envelope.

RICHARD A. WAHL,
Assistant Commissioner.

Oct. 17, 1967.

Patents Available for Licensing or Sale

2,981,997. FLAGSTONE MOLD. G. W. Painter. Correspondence to: Lord Manufacturing Company, 1635 W. 12th St., Erie, Pa., 16512.

3,089,623. DEVICE FOR DISPENSING PREDETERMINED QUANTITIES OF LIQUID. Nancee L. Padzieski, 2210 Muriel Drive, Santa Cruz, Calif., 95060.

3,331,376. TENT. Aarne Aukusti Lyytikaeinen, Kuopio, Finland. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,332,625. TURBO NOZZLE SPRAYDAMPER. VIB Apparatebau G.m.b.H., Frankfurt, Germany. Correspondence to: Edwin E. Greigg, 715 Perpetual Building, 1111 E St. NW., Washington, D.C., 20004.

3,342,535. HOLDER AND CARRIER. Wilson P. Ashley, Sr., 3648 E. Stratford Road, Ocean Park, Bayside Borough, Virginia Beach, Va., 23455.

The following 2 patents are offered by: Brown Boveri & Cie, Baden, Switzerland.

2,730,715. METHOD OF AND APPARATUS FOR GUIDING FLIGHT BODIES ALONG PRESELECTED FLIGHT PATHS.

2,954,555. RADIO GUIDING SYSTEM.

Mine Safety Appliances Company is prepared to grant licenses under the patent listed below upon reasonable terms.

Applications for license may be addressed to: Frank E. Foote, Corporate Patent Counsel, Mine Safety Appliances Company, Pittsburgh, Pa., 15208.

3,338,239. SURGICAL PUNCTURING DEVICE.

Avco Corporation is prepared to grant licenses under the following 18 patents upon reasonable terms to domestic manufacturers.

Applications for license may be addressed to: General Patent Counsel, Avco Corporation, Suite 1800, 1014 Vine St., Cincinnati, Ohio, 45202.

3,086,174. SIGNAL ENERGY DISCRIMINATOR.

3,092,787. CRYSTAL CONTROLLED MULTIPLE FREQUENCY GENERATOR.

3,100,880. TRANSISTORIZED PLATE MODULATOR SYSTEM.

3,135,921. SELF-QUENCHED SUPERREGENERATIVE CIRCUIT UTILIZING VARIABLE IMPEDANCE DIODE IN QUENCHING CIRCUIT.

3,176,615. GUN-PROPELLED ROCKET-BOOSTED MISSILE.

3,200,744. PARACHUTE.

3,204,528. INTERMITTENT FEED MECHANISM FOR HIGH-INERTIAL LOAD.

3,204,530. ROCKET-BOOSTED AUTOMATIC WEAPON AND AMMUNITION SYSTEM.

3,204,559. ROCKET PROPELLANT CHARGE IGNITER.

3,209,692. EXPLOSION TRANSFER DEVICE.

3,210,878. SEMI-AUTOMATIC MISSILE LAUNCHER.

3,261,293. TIME DELAY FUZE.

3,264,995. MECHANICAL FUZE OPERABLE ON GRAZING IMPACT.

3,269,315. EXPLOSIVE PRIMER.

3,311,060. MECHANICAL FUZE OF THE STATOR-ROTOR TYPE WITH PIVOTED SAFETY WEIGHTS AND DETONATOR CARRIER.

3,320,891. DELAYED ACTION FUZE.

3,315,567. AUTOMATIC LAUNCHER FOR ROCKET-BOOSTED AMMUNITION.

3,331,282. AMMUNITION FEEDER FOR AUTOMATIC LAUNCHER FOR ROCKET-BOOSTED AMMUNITION.

General Electric Company is prepared to grant non-exclusive licenses under the following 8 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: Division Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,333,189. HYDRAULIC INTEGRATING APPARATUS USING TWO DIFFERENT FLUIDS.

Applications for license under the following patent may be addressed to: Patent Counsel, Construction Industries Division, General Electric Co., 1285 Boston Ave., Bldg. 1–B, Bridgeport, Conn., 06602.

3,339,393. ROLLING MILL APPARATUS.

Applications for license under the following 6 patents may be addressed to: Patent Counsel, Major Appliances & Hotpoint Division, General Electric Company, Appliance Park, Louisville, Ky., 40225.

2,946,202. AUTOMATIC ICE CUBE MAKING MACHINES.

2,946,733. WATER DEMINERALIZING SYSTEMS.

3,006,828. WATER DEMINERALIZING METHODS AND SYSTEMS.

3,197,981. FILTER PAN PARTICULARLY SUITED FOR USE IN CLOTHES WASHERS AND THE LIKE.

3,324,877. CHECK VALVE.

3,333,444. WASHING MACHINE.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 25, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	3-16-64	5-31-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	4-15-64	3- 5-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Manager Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	1-25-65	5-14-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	8- 3-64	6-12-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	4-27-64	7-23-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	6-23-64	7- 5-63
SECURITY, GROUP 220—S. BOYD, Manager Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3- 7-66	2-17-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1- 8-64	2- 5-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-10-64	1- 8-62
PHYSICS, GROUP 280—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-18-65	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager Industrial Arts; Household, Personal and Fine Arts.	1-14-66	9- 3-65

Total number of pending applications (excluding Designs)	182, 075
Total number of Design applications pending	4, 205
Total number of applications awaiting action (excluding Designs)	131, 517
Total number of Design applications awaiting action	2, 251
Date of oldest new application awaiting action	Jan. 8, 1964
Date of oldest amended application awaiting action	Jan. 8, 1962

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during November 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1953.*

Patents	Numbers 2,528,483 to 2,532,275, inclusive
Plant Patents	Numbers 986 to 995, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	1-21-66	10-16-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	7- 7-65	3-18-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	5-16-65	4-22-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	3- 1-66	12-21-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	8- 9-65	4-30-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	9- 9-65	10-18-62

DECISIONS IN PATENT AND TRADEMARK CASES

In the United States Patent Office
Before the Board of Appeals

EX PARTE GEORGE F. PAULUS, ERWIN J. CAMPBELL, AND JAMES S. CROWL

Appeal No. 683—77. Decided June 23, 1967

1. RES JUDICATA—COPENDING APPLICATIONS—RULE 304—35 U.S.C. 120.

In connection with appellants' contention "that *res judicata* is not applicable because the present application was filed before the expiration of the period fixed by Rule 304 for the parent application, whereby proceedings in the first application had not terminated before the instant application was filed," *Held* that "The * * * argument merely establishes copendency between the two applications, thereby satisfying the requirements of 35 U.S.C. 120"; that "Such argument does not negate the finality of the decision in the parent case"; and that "The decision in the first application became final when appellants failed to prosecute that application further, irrespective of whether or ~~not a~~ continuing application was filed."

2. SAME—FINAL DECISION OF BOARD OF APPEALS.

"* * * it is well settled that a final decision by this Board can be the basis for a *res judicata* rejection, recourse to the courts not being necessary as a foundation for a holding of *res judicata*."

3. SAME—APPLICATIONS AND CLAIMS UNCHANGED—*In re Herr* DISTINGUISHED.

"The facts of the present case differ considerably from the facts of *In re Herr* [*Held*, therefore, as "not being controlling"] * * *. There the original application did not include sufficient basis for consideration of an affidavit under Rule 132, whereby a new application was necessary to furnish a foundation for the supporting affidavit. Chief Judge Worley pointed out in his opinion, with emphasis, that both the application and the record were different in the second appeal. In the present case, on the other hand, the two applications are essentially the same, despite the addition of Example X in the present application. Such additional example is not here a prerequisite for consideration of the affidavit of Paulus. Said affidavit would have been equally appropriate in the parent record even without an example corresponding to present Example X. In short, in the present case, only the record is different, to the extent of the Paulus affidavit. The application is, in essence, the same, and the claims are substantially unchanged."

4. SAME—*In re Prutton* NOT OVERRULED BY *In re Herr*.

"The case of *In re Herr* not being controlling, we look for guidance to the earlier cases of *In re Prutton*, 40 CCPA 975, 1953 CD 289; 674 OG 550, 204 F.2d 291, 97 USPQ 447, and *In re Lundberg et al.*, 47 CCPA 1140, 1960 CD 478, 761 OG 582, 280 F.2d 865, 126 USPQ 412. Despite the suggestion in Judge Rich's opinion in *In re Herr* that *In re Prutton* was overruled, such overruling cannot be considered to have been effected because Chief Judge Worley did not join in overruling and Judges Almond and Kirkpatrick dissented."

5. SAME—APPLICATION AND CLAIMS UNCHANGED—ADDED EVIDENCE TO NEGATE OBVIOUSNESS.

"We conclude that the extended prosecution here before us is proscribed by *In re Prutton* and *In re Lundberg et al.*, supra. Appellants having been denied their claims on the ground of obviousness in view of cited art, they continue the litigation by submitting in this application, after the previous decision, evidence intended to negate the holding of obviousness. The evil of endless litigation is particularly evident in the present case, because appellants possessed their supporting data prior to the first decision. Liberality in the filing of continuing applications does not extend in full measure to cases wherein an appellate decision has been rendered."

APPEAL from the Examiner (Daniel E. Wyman) of Group 110.
Serial No. 418,253.

AFFIRMED.

Harness, Dickey and Pierce for appellants.

Before MAGIL, BEHRENS and STONE, *Examiners-in-Chief*

MAGIL, *Examiner-in-Chief*.

This is an appeal from the final rejection of claims 1 through 4, 7, and 8, all the claims remaining in the application.

Claim 1 is representative and reads as follows:

1. A lubricating composition comprising solid lubricating particles having a size in the range of about 0.2 to about 20 microns in largest dimension and a mass mean diameter no greater than about 0.8 micron, at least one cellulosic resin selected from the group consisting of cellulose acetate, cellulose acetate butyrate, cellulose acetate propionate, cellulose triacetate, cellulose propionate, nitrocellulose, ethyl cellulose, ethyl hydroxyethyl cellulose, carboxyethyl cellulose, hydroxypropylmethyl cellulose and carboxymethyl hydroxyethyl cellulose and a solvent for said resin, said composition having from about 0.5% to about 40% total solids, said lubricating particles constituting from about 34% to about 62%, by volume, of said total solids and said resin constituting from about 66% to about 38%, by volume, of said total solids, and said lubricating particles being selected from the group consisting of molybdenum disulfide, tungsten disulfide, titanium disulfide, graphite and mixtures thereof and said molybdenum disulfide being present in an amount of at least about 10% of said particles.

References relied upon:

Graham et al., 2,736,700, February 28, 1956.
British patent, 794,982, May 14, 1958.

Claims 1 through 4, 7, and 8 have been rejected on the ground of *res judicata* in view of our decision on Appeal No. 207—45 in appellants' parent application, Serial No. 28,004, and also under 35 U.S.C. 103 as obvious from Graham et al. alone or taken with the British patent. These two patents are two of the references cited in connection with the appeal in the parent application.

The *res judicata* rejection requires a comparison of the claims here on appeal with the claims of the previous appeal. The relationship may be conveniently understood by comparing instant claim 1 with the corresponding claim 10 of the prior appeal. The two differences are the limitation in the present claim that the particles have "a mass mean diameter no greater than about 0.8 micron," whereas the earlier claim contained the restriction that "a minimum of 40% of the total particles [have] a maximum dimension less than 0.7 micron," and the omission from instant claim 1 of two members of the Markush group of lubricating particles (boron nitride and lead oxide) recited in previous claim 10. The first change is admittedly merely the substitution of an equivalent expression of particle size (specification, page 5, first full sentence), and appellants do not contend that the deletion of two members of the Markush group is patentably significant. Accordingly, the claims here on appeal may be treated as essentially the same as the claims of the first appeal.

[1] Appellants contend that *res judicata* is not applicable because the present application was filed before the expiration of the period fixed by Rule 304 for the parent application, whereby proceedings in the first application had not terminated before the instant application was filed, and because the decision in the first application was not by a tribunal higher than the Board.

The first argument merely establishes copendency between the two applications, thereby satisfying the requirements of 35 U.S.C. 120. Such argument does not negate the finality of the decision in the parent case. The decision in the first application became final when appellants failed to prosecute that application further, irrespective of whether or not a continuing application was filed.

[2] As for the second argument, it is well settled that a final decision by this Board can be the basis for a *res judicata* rejection, recourse to the courts not being necessary as a foundation for a holding of *res judicata*. See *In re Joliot et al.*, 47 CCPA 722, 1959 CD 427, 749 OG 834, 270 F.2d 954, 123 USPQ 344; *In re Hitchings et al.*, 52 CCPA 1141, 1965 CD 314, 815 OG 1227, 342 F.2d 80, 144 USPQ 637; and *Mallinckrodt Chemical Works* v. *Watson*, 169 F. Supp. 851, 120 USPQ 264. The cases cited by appellants do not set forth the requirement that the first decision must be by a court before *res judicata* is applicable.

Appellants also urge that the *res judicata* rejection is not sustainable because the issues in the two appeals are not identical. No argument is presented that the claims have been significantly changed, as in certain of the decisions cited by appellants, but the contention is raised that the present record includes evidence of unobviousness, in the form of an affidavit of George F. Paulus, one of the coappellants, which evidence was not of record in the parent application. This point requires consideration of not only certain of the decisions relied upon by appellants but also the more recent cases of *In re Herr*, 54 CCPA —; 153 USPQ 548, and *In re Rainer et al.*, Patent Appeal No. 7668, June 2, 1967.

The background proceedings are of interest in connection with the issue of *res judicata*.

The Examiner's answer in the previous appeal stated that no criticality had been demonstrated for the various numerical limitations in the appealed claims. Appellants thereupon filed a statement suggesting that the Examiner's holding was in the nature of a new rejection, pointing out that they possessed data to prove criticality, and requesting that a ruling be made as to whether the Examiner had raised a new ground of rejection. Upon remand to the Examiner, he held that he had not advanced a new ground of rejection in his answer.

At this juncture, appellants had several options available to them. (1) They could have filed a petition under Rule 181 to overrule the Examiner's holding that no new ground of rejection had been advanced. (2) Recognizing the lack of supporting evidence and the desirability of having it in the record, they could have withdrawn the appeal prior to decision in favor of a continuing application wherein the evidence could have been presented. (3) They could have continued with the appeal on the record which was devoid of supporting evidence. Appellants chose the third course and we ultimately rendered a decision sustaining the Examiner's holding of obviousness of the appealed claims in view of the cited art. The filing of the present application followed, as previously indicated.

[3] The facts of the present case differ considerably from the facts of *In re Herr*, supra. There the original application did not include sufficient basis for consideration of an affidavit under Rule 132, whereby a new application was necessary to furnish a foundation for the supporting affidavit. Chief Judge Worley pointed out in his opinion, with emphasis, that both the application and the record were different in the second appeal. In the present case, on the other hand, the two applications are essentially the same, despite the addition of Example X in the present application. Such additional example is not here a prerequisite for consideration of the affidavit of Paulus.

Said affidavit would have been equally appropriate in the parent record even without an example corresponding to present Example X. In short, in the present case, only the record is different, to the extent of the Paulus affidavit. The application is, in essence, the same, and the claims are substantially unchanged.

[4] The case of *In re Herr* not being controlling, we look for guidance to the earlier cases of *In re Prutton*, 40 CCPA 975, 1953 CD 289; 674 OG 550, 204 F.2d 291, 97 USPQ 447, and *In re Lundberg et al.*, 47 CCPA 1140, 1960 CD 478, 761 OG 582, 280 F.2d 865, 126 USPQ 412. Despite the suggestion in Judge Rich's opinion in *In re Herr* that *In re Prutton* was overruled, such overruling cannot be considered to have been effected because Chief Judge Worley did not join in overruling and Judges Almond and Kirkpatrick dissented.

[5] We conclude that the extended prosecution here before us is proscribed by *In re Prutton* and *In re Lundberg et al.*, supra. Appellants having been denied their claims on the ground of obviousness in view of cited art, they continue the litigation by submitting in this application, after the previous decision, evidence intended to negate the holding of obviousness. The evil of endless litigation is particularly evident in the present case, because appellants possessed their supporting data prior to the first decision. Liberality in the filing of continuing applications does not extend in full measure to cases wherein an appellate decision has been rendered.

Having considered all the important factors in this case and the pertinent precedents, we conclude that the holding of *res judicata* must be sustained.

The rejection of claims 1 through 4, 7, and 8 on Graham et al. alone or taken with the British patent (35 U.S.C. 103) is consistent with the rejection which we affirmed in Appeal No. 207—45. We will not discuss the applicability of these references at length, because our views with respect thereto are expressed in our previous decision. However, the present record includes the affidavit of Paulus which is intended to demonstrate criticality and unobviousness in the claimed particle size and relative percentages of lubricating particles and resin.

First, with respect to the cited patents, wherein "Molykote" or "powder fineness" (Graham et al.) or "extremely fine colloidal size" (British patent) is suggested, Paulus avers as follows in the paragraph bridging pages 1 and 2 of his affidavit:

> ". . . He knows that finely ground, solid inorganic lubricant particles which are generally designated in the trade to have powder fineness or to be in a colloidal or semi-colloidal condition actually represent materials having a relatively wide spread of particle sizes, for example, extending from about 70 microns downwardly and containing a sufficient number of such larger particles to make the mass mean diameter in the range of 20 to 30 microns. He knows that a typical commercial material of this type is the purified molybdenum disulfide product 'Molykote,' available from the Alpha Molykote Corporation, and referred to in Graham et al., U.S. Patent 2,736,700."

We are totally uninformed as to the source of Paulus' knowledge. We are not advised whether the affiant made the observation experimentally, found the description in published literature, or was apprised of the facts by the manufacturer. Moreover, we are quite unwilling to accept the affiant's grouping together of powder fineness, colloidal, and semi-colloidal sizes, all with a common mass mean diameter in the range of 20 to 30 microns. Our unwillingness to accept this common grouping is based upon the fact that colloidal size is generally accepted as meaning no more than one micron, with many definitions being restricted to the submicron range. Moreover, the affiant apparently experienced no difficulty in obtaining "Moly-sulfide," a material with a mass mean diameter between 2.0 and 4.0 microns, and it appears from page 146 of Supplement I to the Handbook of Material Trade Names, by Zimmerman and Lavine (Industrial Research Service Inc., Dover, New Hampshire, 1956) that "Molykote Microsize" has an average particle size of less than one micron. Our observation in the first full sentence on page 5 of our first decision to the effect that "appellants do not assert that their particles are unique in the lubricant field" was therefore justified. Copies of pages 146 and 147 of this well known handbook, covering "Molykote" and "Moly-sulfide" are attached hereto.

Aside from the unreliability of the averments quoted above, the data tabulated on page 5 of the affidavit merely demonstrates a gradation in properties as the particle size is varied. It can hardly be said that a distinct change in effectiveness occurs as the 0.8 micron line is crossed, and both references suggest small particle size, with the "finely divided" of Graham et al. and the "extremely fine colloidal size" of the British patent.

The data tabulated on page 6 of the affidavit is similarly unimpressive. First, it is difficult to derive therefrom the precise values of 34% and 62% expressed in the claims. At the best, this data does no more than indicate the desirability of balancing binding action and lubricant action, as stated in the first full sentence on page 6 of our previous decision. Finally, if the computation in the paragraph bridging pages 8 and 9 of appellants' brief in Appeal No. 207—45 be accepted as correct, then the 89.4% by weight of the Graham et al. composition falls between Compositions 1 and 2 of the tabulation on page 6 of the Paulus affidavit.

Appellants contend that the combination of the two references is unwarranted. This argument is, of course, not applicable to the rejection on the Graham et al. patent alone. As for the combination of the British patent with Graham et al., we recognize that the British patent relates to a solid lubricant composition, but said patent does teach "extremely fine colloidal size" of molybdenum disulfide as a lubricant material and, to this extent, it is a suitable analogous teaching properly combinable with Graham et al.

Even with the additional material presented in the present record, we agree with the Examiner that the appealed claims do not define subject matter unobvious from the cited art.

The decision of the Examiner is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE ARTHUR F. WAGNER AND KARL A. FOLKERS

No. 7689. Decided February 9, 1967

[54 CCPA —; 371 F.2d 877; 152 USPQ 552]

1. **PATENTABILITY—COMPOUND—OBVIOUSNESS—PROPERTIES SHOULD BE CONSIDERED.**

"Here, as in *Papesch*, we think the decision of the Board rests 'on one fundamental error of law, namely, the failure to take into consideration the biological or pharmaceutical properties of the compounds.' "

2. **SAME—OBVIOUSNESS—35 U.S.C. 103.**

"* * * in resolving the issue of obviousness under section 103, we must consider the entirety of the invention claimed and compare this with what in contemplation of law would have been obvious to one of ordinary skill in this art at the time of appellants' invention."

3. SAME—COMPOUND—OBVIOUSNESS—EVIDENCE OF SUPERIOR PROPERTIES—35 U.S.C. 103.

"Appellants by a verified showing have established that there was a known inferiority of the prior art Compound C as to its biological and pharmaceutical properties. They also have verified under oath the superiority of Compound A with relation to Compound B. It seems to us, therefore, that on this record appellants have carried a 'burden of persuasion' which refutes any permissible 'inference' of fact upon which to predicate a legal conclusion of obviousness under section 103. Factually unsupported *opinions* of board members and examiners do not provide the *factual* basis required by the Supreme Court in the *Deere* case for the determination of obviousness under section 103. Neither can they establish a 'presumption' of obviousness. These subjective opinions are of little weight against contrary evidence."

4. SAME—SAME—SAME—ALL PRIOR ART SHOULD BE CONSIDERED.

"We think it is a fundamental requirement of the *Deere* decision that *all* the prior art teachings must be factually evaluated. Here this would include the compound of the *Tamm* reference. Considered as a part of the prior art, *Tamm* teaches that methyl substitution at certain positions can be expected to give diminished anti-viral activity. Appellants' teaching that certain claimed isomers enhances this activity is nowhere taught in the prior art and would, we think, be an unobvious teaching to one of ordinary skill in the art in view of the contrary indication in *Tamm*. Prior art teachings unfavorable to the Patent Office position may not be avoided by labeling them 'unexpected' as one of ordinary skill in the art would evaluate them as a whole for what they fairly disclose. *In re Lunsford*, 53 CCPA 1011, 357 F.2d 385, 148 USPQ 721.

5. SAME—SAME—SAME—SAME.

"Where, as here, the substitution made by appellants is shown to be possible in a large number of positions, and one example of such substitution is shown in the prior art to be detrimental, and where there is no teaching in the art that the specific position of substitution here claimed would be beneficial, the comparison between all elements of the prior art and the claimed compound demonstrates no reasonable factual basis for the Board's decision. Where the teaching of that art is that two methyl substituents on the basic ring structure is detrimental in the utility contemplated, and where as on the present record there is no teaching that substitution in certain other spots is beneficial, one who teaches otherwise has made an unobvious contribution to the art."

6. SAME—SAME—SAME—*In re Lohr* CONSTRUED.

"To support its contrary position, the Board held that the proven differences over the art do not establish 'advantages which are differences in kind.' Their cited precedent for this finding, *In re Lohr*, supra, has little relation to the facts of the present case as previously pointed out. In the *Lohr* record the evidence of improved results, i.e., the actual data, was criticized as being inconsistent with such a conclusion and therefore inconclusive as to unobviousness. The Board has not here questioned the factual showing that improved results are achieved by the claimed invention."

7. SAME—SAME—SAME—EVIDENCE—GREATER EFFECTIVENESS—35 U.S.C. 103.

"We find nothing in section 103 which warrants the Board's attempted dismissal of the differences between appellants' claimed compound and the prior art as not being 'differences in kind,' whatever this may mean. This phrase as here encountered is used by the Board to infer that unless a 'difference in kind' is found, the invention is obvious under section 103. Whether the difference between the claimed invention and the prior art is a difference 'in kind' or a difference 'in degree' is not mentioned in section 103. Section 103 simply requires a determination as to whether the invention as a whole would have been *obvious* to one of ordinary skill in the art at the time of appellants' invention. An unexpected increase in physiological activity may be persuasive evidence of unobviousness. *In re Grier*, 52 CCPA 1081, 342 F.2d 120, 144 USPQ 654. In all cases it is to be considered along with over evidence of unobviousness."

8. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—CLAIMS CONSIDERED TOGETHER.

"The Solicitor argues in his brief: 'It is * * * submitted that even if the court considers the comparative data to render claims 2, 3, 4, 7, 8 and 9, unobvious under 35 U.S.C. 103, such data are not sufficiently representative of the properties of the compounds embraced by the claimed genus, as to render claim 1 similarly unobvious.' The Examiner and the Board made no such objection. Rather, the appealed claims were considered together below and we therefore decline to consider the relevancy and weight of the above reasoning in regard to the obviousness of appealed claim 1."

9. SAME—PARTICULAR SUBJECT MATTER—COMPOUNDS CAPABLE OF INHIBITING POLIOMYELITIS VIRUSES.

The refusal of certain claims to chemical compounds and to compositions containing such compounds for inhibiting the growth of poliomyelitis viruses, as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 149,214.

REVERSED.

Harry E. Westlake, Jr. (*John P. Floyd, I. Louis Wolk*, of counsel) for appellants.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

We are here concerned with the obviousness, 35 U.S.C. 103, of a joint invention [2] of appellants relating to new chemical compounds and to compositions containing such compounds for inhibiting the growth of poliomyelitis viruses. The Board of Appeals affirmed the Examiner's final rejection of appealed claims 1 to 10.

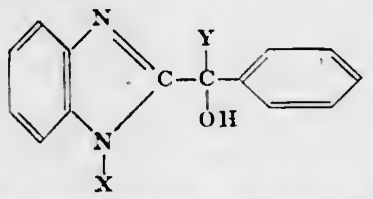
The specification points out that:

> Science is beginning to secure control of poliomyelitis by means of immunization vaccines. There is, however, another approach to the control of this disease and especially the spread of its viruses. This is to find compounds capable of inhibiting the growth of the viruses and of preventing cell damage therefrom.

It is appellants' position that their invention provides compounds which do so inhibit the growth of the viruses.

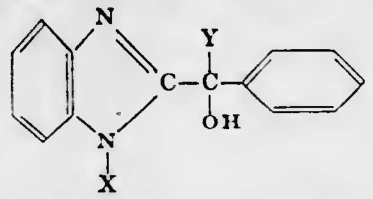
Claims 1 and 6 are representative and are here reproduced:

1. A compound of the structure



in which X and Y are each selected from the group consisting of hydrogen and lower alkyl, at least one of X and Y being lower alkyl.

6. A method for inhibiting the growth of ECHO 6 and poliomyelitis viruses which comprises applying to cells infected with such virus a composition having as an active ingredient a compound of the structure



in which X and Y are each selected from the group consisting of hydrogen and lower alkyl, at least one of X and Y being lower alkyl.

As claimed, the invention is embodied in compounds defined in claims 1–5. As claimed in claims 6–10 the invention is embodied in "A method for inhibiting the growth of ECHO 6 and poliomyelitis viruses" which uses a composition which contains as an active ingredient the compounds of claims 1–5.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] In Application No. 149,214, filed November 1, 1961. No claims have been allowed.

The references relied on to support the rejection are:

Siegart, 79, Amer. Chem. Soc., 4391 (1957).
Hollinshead [I], 52, Chem. Abst., 14845 (1958).

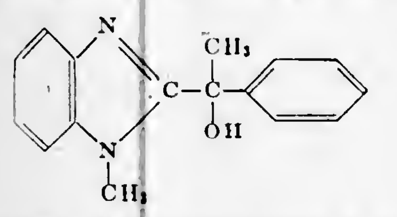
Other references cited by the Examiner for evidentiary purposes are:

Hollinshead [II], 123, J. Pharm. Exper. Therap., 54 (1958).
Tamm, 113, J. Exper. Medicine, 638 (1961).

The Examiner rejected the claims as unpatentable over Siegart and Hollinshead I.

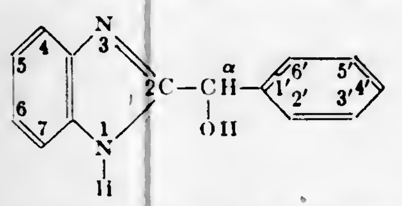
The factual differences between the invention claimed and the prior art are discussed in appellants' brief as follows:

> THE RELATION BETWEEN THE CLAIMED COMPOUNDS AND THE PRIOR ART
>
> The claimed compound closest to the prior art is one of the structure



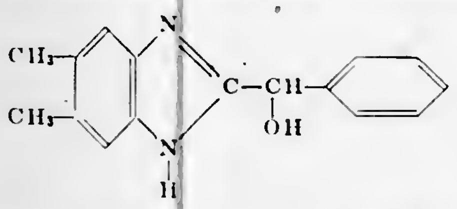
Compound A [claim 3]

> * * * The cited art consists of the Compound B of the structure



Compound B

> cited by the Examiner and the Board, and the Compound C of the structure



Compound C

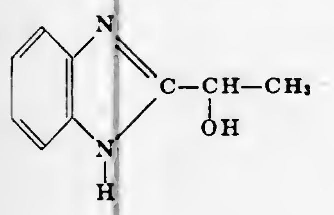
> which was relied on by applicant, and cited by the Examiner to show the state of the art. The ordinary numbering of the places of substitution in this ring system is shown above in the structure of Compound B.

The Solicitor argues the compound of claim 2, wherein CH_3 is substituted for H at the α position in Compound B, is the closest claimed compound to the prior art.

We will inject at this point the Board's summary of the Examiner's position:

> The Examiner has rejected the appealed claim as being obvious over Siegart et al. and Hollinshead et al. since the modification of a compound by the addition of one or more methyl groups is well known and thus obvious, and that Siegart et al. by their disclosure of the interchangeable use of methyl and hydrogen substituents in 2-hydroxy-alkylbenzimidazoles, albeit not specifically teaching compounds within the scope of the instant claims, would indirectly suggest the claimed compounds.

Appellants' position in regard to Siegart is that it describes the preparation of various compounds, analogs of which have been suggested to be "growth promoters." The compounds prepared include 2-α-hydroxyethylbenzimidazole of the structure



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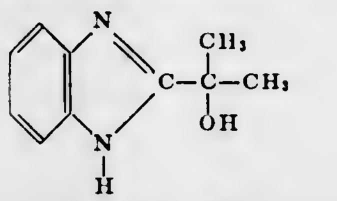
and 2-α-hydroxyisopropylbenzimidazole of the structure



Compound E

In addition to Siegart, the Patent Office placed reliance on the other cited art as follows. Hollinshead [I] discloses that Compound B inhibits the growth of polio virus and influenza virus. Hollinshead [II], the original article upon which Hollinshead [I] is based, is used for its additional disclosure that Compound B is effective against adenovirus. Tamm was relied upon because it discloses the virus inhibitory activity of various 2-(α-hydroxybenzyl) benzimidazoles, among other types of benzimidazoles. Such activity with respect to Poliovirus Type 2 is summarized in Table III.

TABLE III.—POLIOVIRUS TYPE 2 INHIBITORY ACTIVITY AND SELECTIVITY OF BENZIMIDAZOLE AND BENZOTRIAZOLE DERVATIVES IN MONKEY KIDNEY CELLS IN VITRO

Compound			75% virus inhibitory concentration (VIC)	Relative inhibitory activity (RIA)	3+ toxic concentration (TC)	Relative toxicity (RT)	Selectivity ratio (SR)	Relative selectivity (RS)
Group	No.	Benzimidazole derivative						
			μM		μM			
	1	Benzimidazole	2800	1	5200	1	1.9	1
A	3	5-sulfonamido	2400	1.2	>8800	<0.59	>3.7	>1.9
	6	5-benzimidazolesulfonanilide	130	22	>270	<19	>2.1	>1.1
	7	5-benzimidazolesulfon-(4'-toluidide)	96	29	>400	>13	>4.2	>2.2
B	9	5-(4'-toluenesulfonamido)-	21	130	>60	<87	>2.9	>1.5
	10	5-(3',4'-dichlorobenzenesulfonamido)-	12	230	>100	<52	>8.3	>4.4
	11	5-(3',4'-dichlorobenzenesulfonamido)-1-(3″,4″-dichlorobenzenesulfonyl)-	10	280	>100	<52	>10	>5.3
C	13	5-trifluoromethyl	350	8.0	>450	<12	>1.3	>0.68
F	29	2-aminomethyl-5,6-dichloro	130	22	950	55	7.3	3.8
	30	2-(β aminoethyl)-5,6-dichloro	~60	~47	~60	~87	~1	~0.53
	31	2-(γ-aminopropyl)-5,6-dichloro	~60	~47	~60	~87	~1	~0.53
G	33	2-hydroxymethyl	>3800	<0.74	>3800	<1.4	---	
	34	2-(α-hydroxyethyl)-	>3500	<0.80	>3500	<1.5	----	
	35	2-(α-hydroxybenzyl)-	36	78	>1100	<4.7	>31	>16
	36	2-(α-hydroxybenzyl)-5-chloro	22	130	>640	<8.1	>29	>15
	37	2-(α-hydroxybenzyl)-5,6-dichloro	140	20	>1300	<4.1	>9.1	>4.8
	38	2-(α-hydroxybenzyl)-5,6-dimethyl	740	3.8	>1000	<5.2	>1.4	>0.74
	39	2-benzoyl	740	3.8	>1100	<4.7	>1.5	>0.79
	40	2-benzyl	95	29	>360	<14	>3.8	>2.0
		Benzotriazole derivative						
J	48	Benzotriazole	2800	1	11000	0.47	3.9	2.1
	49	5-chloro	500	5.6	1600	3.3	3.2	1.7
	50	5,6-dichloro	73	38	260	20	3.6	1.9
	51	4,5,6-trichloro	23	120	50	100	2.2	1.2
	52	4,5,6,7-tetrachloro	8.1	350	12	430	1.5	0.79
K	54	5-trifluoromethyl	240	12	>450	12	1.9	1.0

It is the Solicitor's position that Compound G–35 there shown is Compound B of the prior art, and Compounds G–36, –37 and –38 are respectively, 5-chloro, 5,6-dichloro and 5,6-dimethyl derivatives of this compound. Considering the respective values 78 and 3.8 shown in the table for the anti-viral activities of Compounds B and G–38

(Compound C), the latter is said to be approximately 1/20 as potent as Compound B against the virus in question.

The structural differences between the claimed invention and the disclosures of the prior art are to be found in appellants' substitution of alkyl groups in specific places. As stated in the specification:

> We have found that 2-[α-hydroxybenzyl] benzimidazoles which are substituted with alkyl groups are more potent inhibitors of poliomyelitis and ECHO 6 virus than previously known compounds. These viruses are members of the class of entero-viruses, the members of which resemble one another in their reaction to these compounds, among many similar properties. We have found that alkyl groups on either the α-position of the benzyl moiety or on N^1 of the benzimidazole ring enhance the inhibitory activity.

The Patent Office maintains that the substitution of alkyl groups in the reference compound at the specific places as required by the claims would be obvious. There are eleven different places on which such radicals can be placed.

The invention as a whole which is in issue here, and which we must consider in resolving the section 103 issue, is a particular group of compounds which either alone or in compositions possess the property of inhibiting the growth of certain viruses and preventing cell damage therefrom. Thus, we have here an issue comparable to that before us in *In re Papesch*, 50 CCPA 1084, 1091, 315 F.2d 381, 386, 137 USPQ 43, 47, where we stated:

> The problem of "obviousness" under section 103 in determining the patentability of new and useful chemical compounds, or, as it is sometimes called, the problem of "chemical obviousness," is not really a problem in chemistry or pharmacology or in any other related field of science such as biology, biochemistry, pharmacodynamics, ecology, or others yet to be conceived. It is a problem of *patent law*.

After reviewing the pertinent authorities referred to in the *Papesch* decision, we stated there the principle which we find to be controlling here, 50 CCPA at 1097, 315 F.2d at 391, 137 USPQ at 51:

> From the foregoing cases it will be seen that this and other courts, both before and after the enactment of section 103, have determined the unobviousness and patentability of new chemical compounds by taking into consideration their biological or pharmacological properties. Nine of the ten cases above considered, directly and indirectly, involved such properties. Patentability has not been determined on the basis of the obviousness of structure alone. In fact, where patentability was found in the above cases it was found in spite of close similarity of chemical structure, often much closer similarity than we have here.

[1] Here, as in *Papesch*, we think the decision of the Board rests "on one fundamental error of law, namely, the failure to take into consideration the biological or pharmaceutical properties of the compounds." *Ibid.*

Pertinent to our resolution of the issue here is the further statement in *Papesch* that:

> From the standpoint of patent law, a compound and all of its properties are inseparable; they are one and the same thing. The graphic formulae, and the chemical nomenclature, the systems of classification and study such as the concepts of homology, isomerism, etc., are mere symbols by which compounds can be identified, classified, and compared. But a formula is not a compound and while it may serve in a claim to *identify* what is being patented, as the metes and bounds of a deed identify a plot of land, the *thing* that is patented is not the formula but the compound identified by it. And the patentability of the thing does not depend on the similarity of its formula to that of another compound but of the similarity of the former compound to the latter. There is no basis in law for ignoring any property in making such a comparison. An assumed similarity based on a comparison of formulae must give way to evidence that the assumption is erroneous. *Ibid.*

[2] Thus, in resolving the issue of obviousness under section 103, we must consider the entirety of the invention claimed and compare this with what in contemplation of law would have been obvious to one of ordinary skill in this art at the time of appellants' invention.

It is the Solicitor's position as stated in his brief that:

> If the court is satisfied that the Board's holding as to structural obviousness was sound, the conclusion which will be dispositive of this appeal is the one announced in *In re Lohr et al.*, 50 CCPA 1274, 1279, 317 F.2d 388, 137 USPQ 548:
>
>> When a new compound so closely related to a prior art compound as to be structurally obvious is sought to be patented based on the alleged greater effectiveness of the new compound for the same purpose as the old compound, clear and convincing evidence of substantially greater effectiveness is needed.

We are concerned with this use of selected language taken from our opinion in *Lohr*. All statements therein must be read in the context of that case, the essential consideration being stated in the penultimate paragraph of the opinion, 50 CCPA at 1279, 317 F.2d at 392, 137 USPQ at 551:

> Considering all of the evidence in the record: the close structural similarity, the similar method of making the compounds, the similar properties, the same use, and the inconclusive showing of the affidavit, we are constrained to agree with the Board of Appeals that the claimed compounds and compositions are obvious in view of the prior art.

While the above quoted statement preceded in time the decision of the Supreme Court in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), it clearly sets forth the factual inquiry which both this court and the Supreme Court deem necessary in resolving issues of obviousness under section 103. On the *Lohr* record our inquiry established that a *factual* base existed for supporting the legal conclusion of the Board that the invention was obvious under section 103.

The legal concept of obviousness under 103 cannot be frozen into set rules and concise statements of general applicability. The unanimous decision of the Supreme Court in the *Deere* case points out that the section 103 condition "lends itself to several basic factual inquiries," which are enumerated, 383 U.S. at 17, 148 USPQ at 467, as follows:

> * * * Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy. * * *

In *Lohr* we recognized the difficulties in making the section 103 evaluation and our experience there, as in numerous other cases involving the issue, underscores and emphasizes the further observation of the Supreme Court in *Deere*, 383 U.S. at 18, 148 USPQ at 467, that:

> * * * What is obvious is not a question upon which there is likely to be uniformity of thought in every given factual context. The difficulties, however, are comparable to those encountered daily by the courts in such frames of reference as negligence and scienter, and should be amenable to a case-by-case development. We believe that strict observance of the requirements laid down here will result in that uniformity and definitiveness which Congress called for in the 1952 Act.

These observations when applied to the facts of record here require that the decision of the Board be reversed. Neither the Examiner nor the Board based the ultimate legal conclusions of obviousness on all the *facts* of record. Instead, their legal conclusions as to "obviousness" seem to be based on such general statements as "the modification of a compound by the addition of one or more methyl groups is well known and thus obvious." Further, "Siegart et al. by their disclosure of the interchangeable use of methyl and hydrogen substituents in 2-hydroxyalkylbenzimidazoles, albeit not specifically teaching compounds within the scope of the instant claims, would indirectly suggest the claimed compounds." How Siegart indirectly suggests the claimed compounds is not explained. It also appears that the Board failed to make factual determinations in support of obviousness, as required by the *Deere* decision, for it stated in its opinion:

> We are of the opinion that appellants' showing [affidavits of record alleging facts], even if considered relevant to the determination of obviousness, is not of such a character as to negate the obviousness of the claimed class of compounds. The claimed compounds are useful for the same purpose as taught for the prior art compound and no significant increased efficiency has been shown for them. A three to five fold increase in efficacy is, in our view, of insufficient magnitude to warrant a conclusion that the claimed materials are different in kind from the one disclosed by the references. They clearly have the same general property and homologous compounds are expected to differ among themselves to a certain extent. We are thus unable to agree with appellants' contention that their showing establishes advantages which are different in kind. *In re Lohr et al.*, 137 USPQ 548, 1963 CD 452. * * *

Under section 103 proof of facts by the applicants may be controverted by the Patent Office but they cannot, as here, be ignored or dismissed as irrelevant.

Underlying the decision of the Board is its statement:

> * * * we consider the claimed class of compounds to be so closely related to the reference compound as to make it presumptively obvious within the meaning of 35 U.S.C. 103. * * *

It appears that this "presumption" is based on the structural relationships of the claimed compounds and Compound B of the prior art. We have recognized that such relationships must be considered in determining issues which arise under section 103 but as stated in *In re Mills*, 47 CCPA 1185, 1191, 281 F.2d 218, 126 USPQ 513, 517:

> * * * What the *Henz* case [37 CCPA 1009, 181 F.2d 196, 85 USPQ 261] established is that there was an inference of fact that the adjacent homologue of the known chemical compound was unpatentable, and that such *inference of fact* placed the *burden of persuasion* on the applicant who asserted the contrary.

It is to be noted that in the *Mills* case we were not dealing with an adjacent homologue. Cf. *Brenner* v. *Manson*, 383 U.S. 519, 531, 148 USPQ 689, 694 (homologs and establishing utility).

In the present case we are not dealing solely with homology. The "similarity" in this case is predicated on alkyl substitution in one or both of two specific places in the reference Compound B. There are, however, eleven places to make such substitution, the prior art Compound C being one such possible combination of two substituents. Neither the Examiner nor the Board pointed to facts demonstrating that it would have been obvious to one of ordinary skill in this art to make the substitution at those *particular* positions at which appellants have placed the substituents *so as to enhance the biological or pharmaceutical activity of the compound* instead of diminishing it as in Compound C.

[3] Appellants by a verified showing have established that there was a known inferiority of the prior art Compound C as to its biological and pharmaceutical properties. They also have verified under oath the superiority of Compound A with relation to Compound B. It seems to us, therefore, that on this record appellants have carried a "burden of persuasion" which refutes any permissible "inference" of fact upon which to predicate a legal conclusion of obviousness under section 103. Factually unsupported *opinions* of board members and examiners do not provide the *factual* basis required by the Supreme Court in the *Deere* case for the determination of obviousness under section 103. Neither can they establish a "presumption" of obviousness. These subjective opinions are of little weight against contrary evidence.

As in the *Mills* case, the Examiner and the Board are here taking a position "predicated on nothing more than the 'legal presumption,' " 47 CCPA at 1191, 126 USPQ at 517. They seek to rely on *In re Herr*, 50 CCPA 705, 304 F.2d 906, 134 USPQ 176, as support for this position. However, in *Herr* the evidence of unexpected properties referred to properties not disclosed in the application. No such contention can be made here in view of the data included in appellants' disclosure.

It is appellants' position that:

> Any permissible inference of [obviousness] * * * must be based on what the prior art suggests will result from the changes in molecular structure involved. * * *
>
>> Whether novel chemical compounds are patentable over prior art isomers and homologues, is a question to be determined in each case. *In re Hass*, 31 CCPA 903; 141 F.2d 127; 60 USPQ 548, 551.
>
> Where the relationship of the claimed compound (Compound A) to the cited compound (Compound B) is the substitution of alkyl groups in specific places, an important fact to be considered is what result was obtained from alkyl substitution in the past. * * *

The *fact* of record is that, while the cited art discloses the basic ring structure prior to appellants' invention, there also exists the *Tamm* reference which shows a related compound—the 5,6-dimethyl derivative (Compound C)—which is also an isomer of the $1,\alpha$-dimethyl derivative (Compound A) claimed herein. The reference further shows that the Relative Inhibitory Activity against poliomyelitis virus of this Compound C is 3.8 as against a figure of 78 for reference Compound B. It is thus about 1/20 as potent in this use. The claimed $1,\alpha$-dimethyl derivative (Compound A) is by verified showing five times as potent as the reference Compound B in the same test. Compound A is shown on the present record to be about 100 times as active as its known isomer, Compound C.

The only teaching in the art dealing with the effect on the growth of polio virus of alkyl substitution in any of the eleven possible points of substitution in Compound B was improperly turned by the Board into support for its decision that the prior art compound made the claimed invention obvious. They characterized this prior art teaching as "an isolated example whose diminished activity may in fact be its unexpected property." There is no factual basis in the record to support this characterization.

[4] We think it is a fundamental requirement of the *Deere* decision that *all* the prior art teachings must be factually evaluated. Here this would include the compound of the Tamm reference. Considered as a part of the prior art, Tamm teaches that methyl substitution at certain positions can be expected to give diminished anti-viral activ-

ity. Appellants' teaching that certain claimed isomers enhances this activity is nowhere taught in the prior art and would, we think, be an unobvious teaching to one of ordinary skill in the art in view of the contrary indication in Tamm. Prior art teachings unfavorable to the Patent Office position may not be avoided by labeling them "unexpected" as one of ordinary skill in the art would evaluate them as a whole for what they fairly disclose. *In re Lunsford*, 53 CCPA 1011, 357 F.2d 385, 148 USPQ 721.

Neither the Examiner nor the Board has pointed to facts of record from which we can find that the prior art teachings suggest the claimed compounds will possess enhanced anti-viral activity. The only effort in this direction appears in the Board's assertion that the Siegart compounds (Compounds D and E) support its position. However, since no physiological data are given for these compounds we are unable to determine what factual support they may provide for the Board's position as to appellants' invention "as a whole."

We agree with the position in appellants' brief:

> * * * That hydrogens can be replaced by methyl groups is so well known as to be apocryphal [sic]. However, it needs more in the art than this to teach that putting an alkyl group on the α-carbon the one with the hydroxyl, in an α-hydroxy*benzyl*benzimidazole, will enhance the activity. Further, the Siegart reference makes no mention of substitution on the 1-nitrogen.

[5] Where, as here, the substitution made by appellants is shown to be possible in a large number of positions, and one example of such substitution is shown in the prior art to be detrimental, and where there is no teaching in the art that the specific position of substitution here claimed would be beneficial, the comparison between all elements of the prior art and the claimed compound demonstrates no reasonable factual basis for the Board's decision. Where the teaching of that art is that two methyl substituents on the basic ring structure is detrimental in the utility contemplated, and where as on the present record there is no teaching that substitution in certain other spots is beneficial, one who teaches otherwise has made an unobvious contribution to the art.

[6] To support its contrary position, the Board held that the proven differences over the art do not establish "advantages which are differences in kind." Their cited precedent for this finding, *In re Lohr*, supra, has little relation to the facts of the present case as previously pointed out. In the *Lohr* record the evidence of improved results, i.e., the actual data, was criticized as being inconsistent with such a conclusion and therefore inconclusive as to unobviousness. The Board has not here questioned the factual showing that improved results are achieved by the claimed invention.

[7] We find nothing in section 103 which warrants the Board's attempted dismissal of the differences between appellants' claimed compound and the prior art as not being "differences in kind," whatever this may mean. This phrase as here encountered is used by the Board to infer that unless a "difference in kind" is found, the invention is obvious under section 103. Whether the difference between the claimed invention and the prior art is a difference "in kind" or a difference "in degree" is not mentioned in section 103. Section 103 simply requires a determination as to whether the invention as a whole would have been *obvious* to one of ordinary skill in the art at the time of appellants' invention. An unexpected increase in physiological activity may be persuasive evidence of unobviousness, *In re Grier*, 52 CCPA 1081, 342 F.2d 120, 144 USPQ 654. In all cases it is to be considered along with other evidence of unobviousness.

Here, we are not concerned with any finite degree of difference in physiologic activity as the determinative factor in resolving the issue of unobviousness under section 103. The difference in physiologic activity as shown in the record herein has been considered and evaluated along with all other evidence of record. Our legal conclusion is that the facts of record do not supply a reasonable factual basis upon which to support the Board's affirmance of the Examiner's finding of obviousness of the claimed invention.[3] [9] The decision of the Board is therefore reversed.

REVERSED.

WORLEY, *Chief Judge*, concurs in the result.

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[8][3] The Solicitor argues in his brief:

> It is * * * submitted that even if the court considers the comparative data to render claims 2, 3, 4, 7, 8 and 9, unobvious under 35 U.S.C. 103, such data are not sufficiently representative of the properties of the compounds embraced by the claimed genus, as to render claim 1 similarly unobvious.

The Examiner and the Board made no such objection. Rather, the appealed claims were considered together below and we therefore decline to consider the relevancy and weight of the above reasoning in regard to the obviousness of appealed claim 1.

U.S. Court of Customs and Patent Appeals

IN RE CARL R. SIEBENTRITT, JR.

No. 7708. Decided February 23, 1967

[54 CCPA —; 372 F.2d 566; 152 USPQ 618]

1. PATENTABILITY—OBVIOUSNESS—REFERENCE—SUGGESTIONS TO THE ART.

"The issue of obviousness is not determined by what the references expressly state but by what they would reasonably suggest to one of ordinary skill in the art."

2. SAME—PARTICULAR SUBJECT MATTER—"METHOD OF FORMING HERMETIC SEAL."

The refusal of certain claims in an application entitled "Method of Forming Hermetic Seal," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 14,240.

AFFIRMED.

Thomas J. Plante, *Richard T. Seeger* for appellant.

Joseph Schimmel (*Lutrelle F. Parker*, of counsel) for the Commissioner of Patents.

Before **WORLEY**, *Chief Judge*, and **RICH**, **SMITH**, and **ALMOND**, *Associate Judges*, and Judge **WILLIAM H. KIRKPATRICK**[1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals,[2] affirming the rejection of claims 2 and 10–15 in application Serial No. 14,240, filed March 11, 1960, entitled "Method of Forming Hermetic Seal." No claim has been allowed.

Appellant's invention is a method of joining two surfaces which includes the following steps:

1. Dispersing plastic particles in a "carrier solution," such as a "water solution," to form a suspension.

2. Coating at least one of the surfaces to be joined with the suspension.

3. Heating the coated surface to fuse the particles and bond them to the surface and then cooling them.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Consisting of Rosa, Examiner-in-Chief, and Hull and Moseley, Acting Examiners-in-Chief, opinion by Hull.

4. Placing the coated surface in abutting relationship to a second surface to be joined.

5. Heating the surfaces to fuse together the coating and the surface to be joined.

There are also various added minor limitations in the claims, none of which is urged as a basis of patentability.

The Examiner relied on the following references:

Lasak, 2,697,058, Dec. 14, 1954.
Hmiel, 2,898,233, Aug. 4, 1959.

Lasak teaches a method of joining a plastic surface and a metal surface in which the metal surface is first coated with a layer of plastic material by flame spraying. The plastic-coated metal surface and the plastic surface are then joined at a temperature sufficient to soften the plastic. The plastic is polyethylene, one of those named by appellant.

Hmiel discloses the coating of a metal surface with a polyethylene by a dispersion technique. The plastic is dispersed in a liquid medium and applied to the metal surface.

The claims were rejected by the Examiner "as unpatentable over Lasak in view of Hmiel." He found it would be "obvious to substitute the metal coating step of Hmiel for the metal coating step of Lasak * * *." The Board agreed. So do we.

Appellant concedes that Lasak discloses "in general * * * applicant's method with the major difference being in the manner in which the plastic coating is applied to the metal surface. In Lasak, the plastic surface is applied by flame spraying * * *." He also admits that "Hmiel shows the coating of a metal surface with a plastic in substantially the same manner as applicant applies his coating to the metal surface."

Appellant, then, does not dispute the Examiner's analysis of the references. He argues, however, that his invention, which demands a substitution of the Hmiel method of coating for that of Lasak would not have been obvious to one of ordinary skill in the art inasmuch as there is *no suggestion* of the substitution in the references, by which he appears to mean no *express* suggestion. He especially urges the deficiency of the Hmiel patent in this regard:

> However, Hmiel applies his coating for entirely different purposes and lists a large number of applications including protective coating, electrical insulators, and lubricant surfaces but *does not mention or suggest* utilizing this coating as a step in a *bonding* process. [Emphasis ours.]

We see no need for explicit reference to a bonding process. [1] The issue of obviousness is not determined by what the references expressly state but by what they would reasonably suggest to one of ordinary skill in the art. Hmiel clearly discloses flame spraying as among the prior art processes for the application of polyethylene coatings, for whatever purpose they may be desired. He discusses some of the difficulties associated with that technique. He then ends his analysis of the prior art with the comment:

> Heretofore, there has been no successful method for coating surfaces with linear polyethylene using a dispersion technique. I have discovered a novel coating process using a stable linear polyethylene dispersion which can be conveniently prepared at ambient temperatures, and which can be applied to surfaces to give an adherent, impermeable, continuous, flexible coating of high impact resistance. My dispersions can be used for coating an almost unlimited variety of surfaces by a method that obviates the difficulties faced by prior art workers.

In its context this statement seems to us to suggest the interchangeability of flame spraying and dispersion procedures, if not the superiority of the latter. We therefore attach no legal significance to the failure of Hmiel to indicate specific processes in which the flame spraying technique might be replaced. See *In re Winslow*, 53 CCPA 1574, 365 F. 2d 1017, 151 USPQ 48.

[2] The decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, concurring.

The record shows that the Board of Appeals here consisted of an examiner-in-chief and two acting examiners-in-chief. Appellants do not challenge the legality of that board. I participate in the merits of this appeal for the reasons stated in my concurring opinion in *In re Mindick*, 54 CCPA—, —F. 2d—, —USPQ—; see also *In re Wiechert*, 54 CCPA—, —F. 2d—, 152 USPQ 247. In so doing, I agree with the reasoning and conclusion of the majority.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

775,095. (See 2,571,549.)

1,597,163. (See 2,571,549.)

1,948,213. (See 2,571,549.)

1,967,392. (See 2,571,549.)

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3,077,521. (See 3,055,988.)

3,077,522. (See 3,055,988.)

3,103,073. (See 2,826,828.)

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3,310,986, W. Lasar, AUTOMATIC MEAT GRINDING APPARATUS, filed July 24, 1967, D.C., C.D. Calif. (Los Angeles), Doc. No. 67–1050–TC, *William Lasar* v. *The Hobart Manufacturing Company.*

3,314,745, Krotinger and Nusbaum, PROCESS FOR PREVENTING FECAL ODORS IN CHEMICAL TOILETS, filed July 27, 1967, D.C. Calif. (Los Angeles), Doc. 67–1073WPG, *Zevel Corporation* v. *Monogram Industries, Inc. et al.*

3,319,893, Rodgers and Caves, SPRINKLER, filed July 21, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1044–CC, *J. Linn Rodgers et al. and Plasmet Engineering Corp.* v. *Thompson Manufacturing Company.*

Reg. No. 293,974. (See 2,520,092.)

Reg. No. 426,777. (See 2,520,092.)

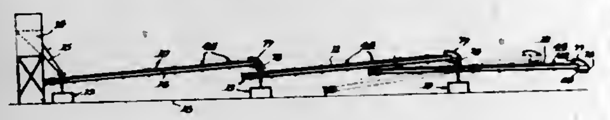
REISSUES

NOVEMBER 21, 1967

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,298
METHOD OF AND APPARATUS FOR TRANSPORTING CONCRETE

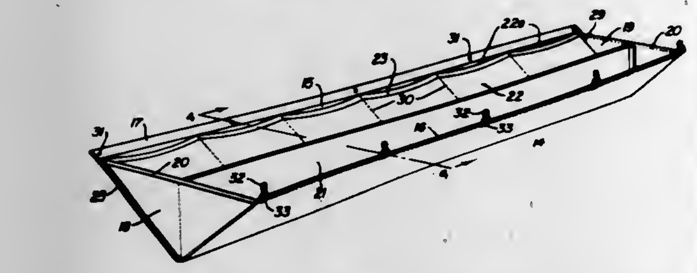
John F. Oury, deceased, late of Wheaton, Ill., by Alice M. Oury, executor, Wheaton, Ill. (Indian Knoll Road, Rte. 1, Box 135, West Chicago, Ill. 60185), and Robert F. Oury, Army Trail, Wayne, Ill. 60184
Original No. 3,151,732, dated Oct. 6, 1964, Ser. No. 111,427, May 18, 1961. Application for reissue Aug. 31, 1966, Ser. No. 582,183
11 Claims. (Cl. 198—92)



1. Concrete mix handling apparatus comprising in combination, a movable base, a support frame rotatably mounted upon the said base, *a* conveyor frame having longitudinal channels, arms pivotally connected intermediate their ends to said support frame, a pair of support rollers on each of said arms below said conveyor frame channels, said support rollers in each pair spaced outwardly from, and on opposite sides of, the intermediate pivot point of said arms, said conveyor frame channels supported upon said support rollers within the said support frame and movable thereon in a longitudinal direction, an endless belt on said conveyor frame, and a motor mounted upon the said conveyor frame for driving said endless belt.

26,299
COLLAPSIBLE STORAGE POUCH

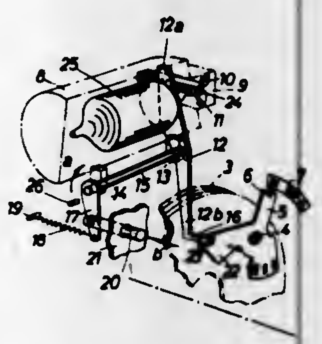
Vern V. Burns, Salina, Utah 84654
Original No. 3,165,247, dated Jan. 12, 1965, Ser. No. 247,744, Dec. 27, 1962. Application for reissue July 21, 1966, Ser. No. 570,123
5 Claims. (Cl. 224—42.42)



1. In combination, a collapsible storage pouch and a vehicle having a passenger cab and seat in the cab with a forwardly swingable back, said pouch comprising front and rear walls made of a single piece of flexible sheet material and forming a V-shaped trough, the upper margin of said rear wall being fixed to said vehicle cab and the upper margin of said front wall being removably fixed to the rear of the said seat back; inverted, triangular end pieces of flexible sheet material at each end of said trough; a partition wall extending the length of the trough and being fixed to and substantially bisecting said end pieces; and a facing of flexible sheet material fixed to said rear wall at its ends and at intervals along its length to form a series of article-receiving pockets, said partition wall and said facing being formed of a single piece of flexible sheet material having a line of fold extending along and fixed to the bottom of said V-shaped trough formed by said front and rear walls.

26,300
FLASH ASSEMBLY FOR CAMERAS

Paul Frost and Fridolin Hennig, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Original No. 3,204,541, dated Sept. 7, 1965, Ser. No. 239,572, Nov. 23, 1962. Application for reissue Oct. 18, 1966, Ser. No. 595,550
Claims priority, application Germany, Feb. 1, 1962, A 39,344
19 Claims. (Cl. 95—11)



8. In a camera, in combination, setting means for setting at least in part the structure of the camera which determines the exposure which is made by the camera, said setting means adapted to be moved into a flash setting position providing a proper setting for an exposure with flash illumination; support means; receiving means for receiving a flash lamp introduced into said receiving means by movement of a portion of the lamp along a predetermined path; movable blocking means adapted to move between a lamp blocking position blocking introduction of a lamp into said receiving means and a lamp releasing position permitting introduction of a lamp into said receiving means along said predetermined path, said movable blocking means having a blocking portion located in said predetermined path movable in direction of said path by said lamp so that said movable blocking means is moved by said lamp during introduction thereof along said predetermined path from said lamp blocking into said lamp releasing position; and motion transmitting means cooperating with both said blocking and setting means for permitting movement of said movable blocking means from said blocking into said releasing position only when said setting means is in said flash setting position thereof.

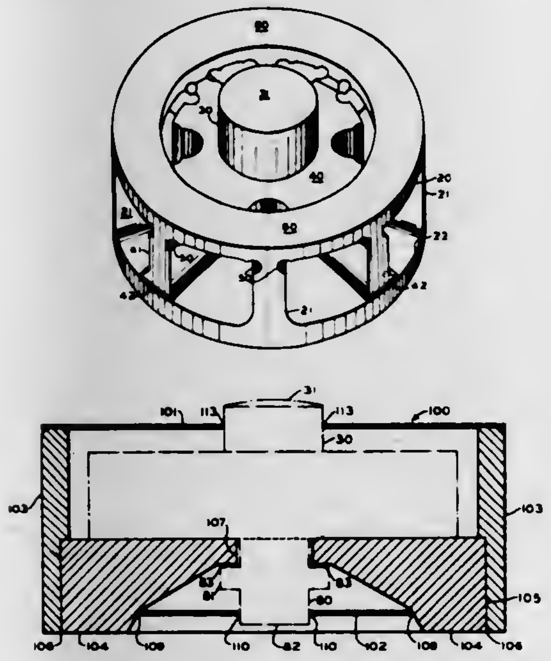
26,301
METHOD OF IN SITU FABRICATION OF A MONOLITH REFRACTORY LINING

Maurice D. Cook, Richmond, Va., and Peter T. Troell, Bethel Park, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original No. 3,201,501, dated Aug. 17, 1965, Ser. No. 283,716, May 28, 1963. Application for reissue Jan. 24, 1967, Ser. No. 617,430
8 Claims. (Cl. 264—30)

1. Method of gunning an unconsolidated basic refractory material on its situs of use, with a minimum of rebound, to form a basic refractory monolith, at least about 60% of the refractory material being *selected from the group consisting of* chrome ore [and], magnesia, *and a mixture of chrome ore and magnesia,* comprising the steps of size grading selected basic refractory material, adding from 0.5 to 5 parts, by weight, of fibrous asbestos to about 100 parts, by weight, of said size graded refractory material, the chemical components of said asbestos capable of chemically reacting with said refractory material at service temperatures substantially without impairing the refractoriness of the resulting monolith, mixing the refractory material and fibrous asbestos with an aqueous carrier fluid and forceful impacting the resulting slurry on the situs of use.

26,302
LOAD CELL APPARATUS

Anlese E. Seed and Frankie Golding, Toledo, Ohio, assignors to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Original No. 3,136,157, dated June 9, 1964, Ser. No. 42,955, July 11, 1960. Application for reissue Mar. 23, 1967, Ser. No. 639,918
11 Claims. (Cl. 73—141)

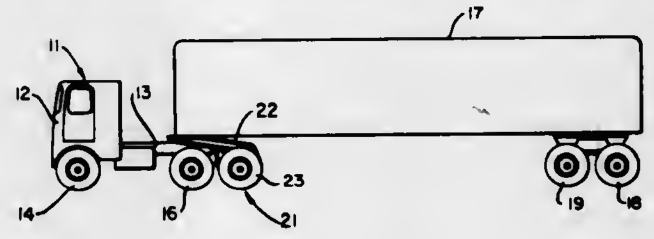


1. A *load cell* [sensing instrument] comprising a base, a displaceable member which is movable relative to the base, a sensing apparatus for measuring the displacement of said member with respect to the base, a flexible diaphragm *exposed to ambient pressure* extending between said member and the base, and a second flexible diaphragm *exposed to ambient pressure* which defines a sealed space with the base and the first diaphragm, and which is positively coupled to said member so as to cause one of said diaphragms to move outward with respect to such space when the other moves inward, *the displaceable member including a first extension extending to the exterior of the sealed space and being responsive to applied loads to be measured and* the effective area of the second diaphragm being such that the force acting on said member which is caused by a change in the differential between the ambient pressure and the pressure inside such space is substantially counterbalanced by the force acting on the second diaphragm which is caused by such change in the differential, *thereby to eliminate the effects of said change in pressure differential on the sensing apparatus.*

26,303
FLOATING AXLE ATTACHMENT

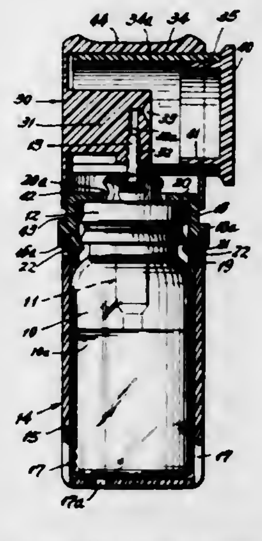
Norman B. Chew, Portland, Oreg., assignor to Freightliner Corporation, Portland, Oreg., a corporation of Delaware
Original No. 3,203,711, dated Aug. 31, 1965, Ser. No. 173,996, Feb. 19, 1962. Application for reissue May 5, 1967, Ser. No. 642,249
10 Claims. (Cl. 280—415)

1. Apparatus for carrying a load over terrain comprising a frame adapted to carry the load, first and second pairs of ground engaging wheels supporting the frame in stable relation to the terrain at each end of the frame, a load distribution attachment disposed between the pairs of ground engaging wheels to distribute the load therebetween, said attachment comprising a frame, an axle, a pair of ground engaging wheels carried by said axle, resilient means having substantially zero spring rate interposed between the axle and the last named frame to support the load in varying spaced relation with respect to the axle with substantially constant force applied by said resilient means whereby load distribution between the first and second pairs of wheels is maintained constant.



26,304
AEROSOL DISPENSING PACKAGE

Philip Meshberg, 15 Stoneleigh Road, Fairfield, Conn. 06430
Original No. 3,184,115, dated May 18, 1965, Ser. No. 192,737, May 7, 1962. Application for reissue Aug. 11, 1965, Ser. No. 479,365
25 Claims. (Cl. 222—156)



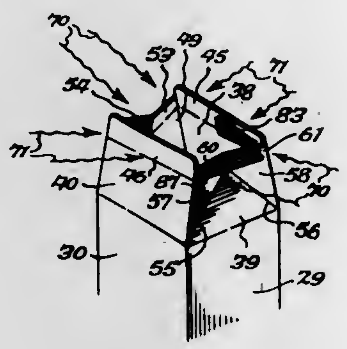
21. An aerosol package comprising a container for an aerosol under pressure having a dispensing valve provided with a tubular stem portion, and a dispensing means connected to the valve stem for movement therewith and having a transverse bore closed at one end to provide a directing chamber, said dispensing means having a center portion to receive the stem and a passage extending from the stem to a dispensing nozzle at said closed end for conducting the aerosol from the stem and projecting the aerosol into the directing chamber to travel the full length thereof to be controlled and guided thereby through the open end of the bore.

26,305
PLASTIC COATED CONTAINER

Denis K. Huang, Laurel, Md., and Harold B. Moors, Richboro, Pa., assignors to International Paper Company, New York, N.Y., a corporation of New York
Original No. 3,292,842, dated Dec. 20, 1966, Ser. No. 107,348, May 3, 1961. Application for reissue Feb. 2, 1967, Ser. No. 617,437
4 Claims. (Cl. 229—17)

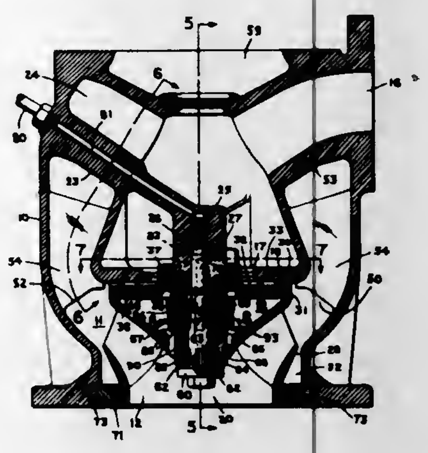
1. A gable-top container formed from a blank of paperboard having a polyethylene coating covering each surface thereof and comprising a tubular body having a bot-

tom closure thereon, a pair of opposed roof panels inclined toward each other and overlying said body, a pair of opposed triangular end panels in-folded between said roof panels from the opposite gable ends formed by the latter, two pairs of triangular fold-back panels each pair of which is integral with a respective one of said infolded triangular end panels along fold lines which are substantially in contact with said roof panels, said fold-back panels being folded against the undersides of said roof panels, a pair of side rib panels each integral with and surmounting a respective roof panel, two pairs of end rib panels, each end rib panel being integral with and surmounting a respective fold-back panel, the end rib panels of each pair being folded to lie against each other and to lie against the inner surface of a respective side rib panel, the height of said end rib panels being less than the height of said side rib panels, said rib panels defining a central laminar top rib divided longitudinally into a fixed portion and a movable portion, a sanitarily protected extensible pouring spout housed in collapsed condition within said container and defined in part by one of said triangular end panels, an adjacent pair of said fold-back panels and an adjacent pair of said end rib panels, said spout also being defined by adjacent portions of said roof panels and side rib panels, said rib panels being adapted to be sealed together to form a liquid-tight seal by the application of heat and pressure thereto to bond together the contacting polyethylene coated surfaces thereof, and means to facilitate opening of said spout into said extended condition thereof comprising an abhesive coating covering substantially the entire inner and outer surface areas of said adjacent pair of end rib panels except for a narrow strip along the line of juncture between said adjacent pair of end rib panels and said respective side rib panels, and an abhesive coating covering a selected area on the inner surface of each of said side rib panels, said selected area on each of said side rib panels including substantially the entire area of contact of said side rib panels and said adjacent end rib panels and a strip of contact between said side rib panels located above said adjacent end rib panels but beneath the upper edges of said side rib panels.

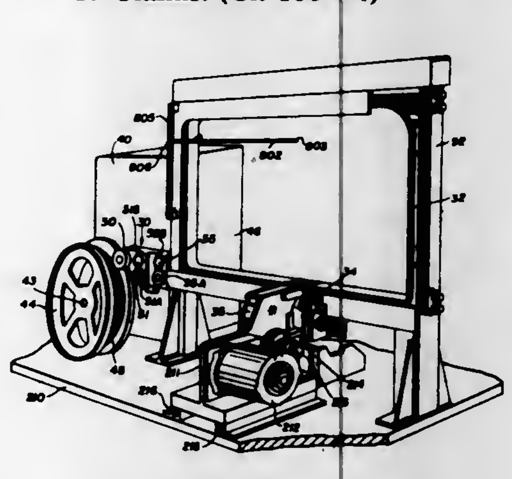


26,306
ROTARY MACHINE
Walter K. Jekat, Upper Montclair, and Tadeusz A. Tokarczyk, Passaic, N.J., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Original No. 3,279,384, dated Oct. 18, 1966, Ser. No. 434,774, Feb. 24, 1965. Application for reissue Dec. 14, 1966, Ser. No. 604,524
27 Claims. (Cl. 103—87)

1. A rotary machine comprising a casing including a first and second inlet passage and an outlet passage, both of said inlet passages and said outlet passage being formed within said casing, means forming a pumping chamber being disposed in said casing, means forming a driving compartment being disposed in said casing, said pumping chamber and driving compartment each having inlet and outlet means, [a shaft] *impeller mounting means* rotatably mounted in said casing, an impeller means connected to said [shaft,] *impeller mounting means,* a blade means disposed in said driving compartment, means for connecting said blade means to said [shaft,] *impeller means so that* said blade means *is* operative to drive said impeller means, said first inlet passage connected to the inlet means of said driving compartment, said second inlet passage connected to the inlet means of said pumping chamber, the outlet means of said pumping chamber and said driving compartment being connected to said outlet passage, a source of working fluid being connected to said first inlet to cause said blade means to drive said impeller means to flow fluid into said inlet passage thru said pumping chamber and into said outlet passage, and a diffuser means in said outlet passage including means to decrease the velocity flow of fluid flowing in said outlet passage and then increase the velocity of said fluid whereby flow losses are reduced.



26,307
AUTOMATIC STRAPPING MACHINE
Harold K. Embree, Hamilton, Ontario, Canada, assignor to Ovalstrapping Limited, Hamilton, Ontario, Canada
Original No. 3,196,779, dated July 27, 1965, Ser. No. 142,040, Oct. 2, 1961. Application for reissue June 2, 1966, Ser. No. 582,172
17 Claims. (Cl. 100—4)



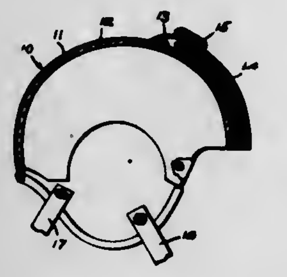
1. A wire loop-forming element for use with automatic wire strapping machines comprising a substantially loop-shaped frame, wire guiding track means mounted within said frame and adapted to cooperate with an inside surface thereof to guide a wire fed thereto in a closed circuit to form a wire loop with an overlapping portion, means for moving said track means within said frame relatively thereto, and strap stripping means operated by movement of said track means away from said inside surface.

PATENTS

GRANTED NOVEMBER 21, 1967

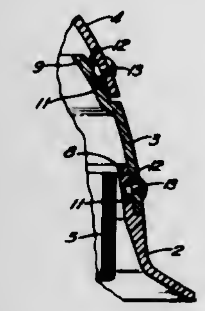
GENERAL AND MECHANICAL

3,353,187
PROTECTIVE HELMET
Abraham L. Lastnik, Framingham, Mass., and Meyer I. Landsberg, St. Louis Park, Minn., assignors to the United States of America as represented by the Secretary of the Army
Filed Nov. 19, 1965, Ser. No. 508,875
8 Claims. (Cl. 2—3)



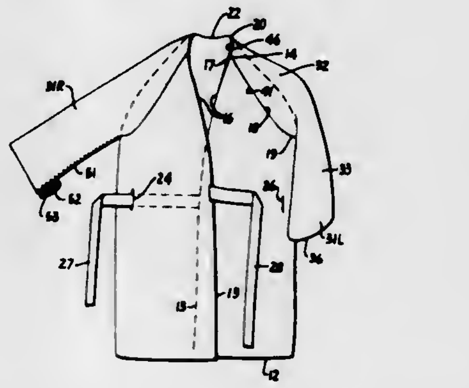
1. A crash and ballistic protective helmet comprising a rigid outer shell formed of a plurality of plies of a woven nylon fabric, said plies bonded together by a resin where said resin comprises at least 35% by weight based on the weight of the shell, an inner energy absorbing liner of irreversibly crushable expanded plastic material and means attaching said inner energy absorbing liner to the inner surface of said rigid outer shell.

3,353,188
COLLAPSIBLE SAFETY HELMET
Laddie John Crincic, 314 Fayette Ave., Belle Vernon, Pa. 15012
Filed Dec. 6, 1965, Ser. No. 511,934
3 Claims. (Cl. 2—3)



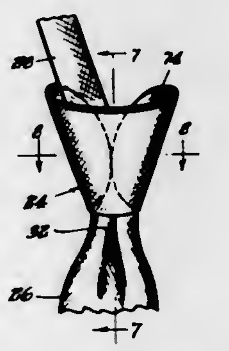
1. A collapsible safety helmet comprising a hard convex shell adapted to fit over the head and formed from three independent substantially rigid sections normally mounted on top of one another, said sections including a dome-like top section and two annular sections beneath it with the lower edge of the top section seating on the exterior upper portion of the middle section and with the lower edge of the middle section seating on the exterior upper portion of the bottom section to form a smooth outer surface for the shell, the middle and top sections being smaller than the inside diameters of the sections supporting them, the upper parts of the bottom and middle sections being provided with upwardly projecting inwardly offset flanges engaging the lower part of the inner surface of the sections resting on said bottom and middle sections to prevent relative lateral movement of the different sections, the outer surface of each flange being provided with a plurality of laterally spaced recesses, and the inner surface of each section adjacent each recess being provided with projections normally seated in the recesses in that flange to lock the sections together, and said sections having just enough resiliency to permit said projections to snap vertically out of said recesses when the sections are manually pulled apart vertically to separate them, whereupon the middle section can be nested in the bottom section and the top section can be nested in the middle section to form a collapsible compact unit.

3,353,189
DISPOSABLE GOWN WITH ONE-PIECE BODY AND SLEEVES HAVING ELASTIC SLEEVE CLOSURE
Harold Zimmon, Redwood City, Calif. (% Zimmon & Company, Inc., 215 O'Neill Ave., Belmont, Calif. 94002)
Filed June 7, 1965, Ser. No. 461,961
6 Claims. (Cl. 2—114)



1. A gown having a body and sleeves, an elastic band dimensioned to fit snugly around the wrist of the wearer, and a short loop attached to said sleeve and extending outside said sleeve adjacent the lower end of said sleeve, said band passing transversely through said loop, said band located externally of said sleeve.

3,353,190
NECKWEAR AND METHOD OF MAKING THE SAME
John M. Gaski, 4533 N. Clark St., Chicago, Ill. 60640
Filed June 15, 1964, Ser. No. 375,053
14 Claims. (Cl. 2—153)

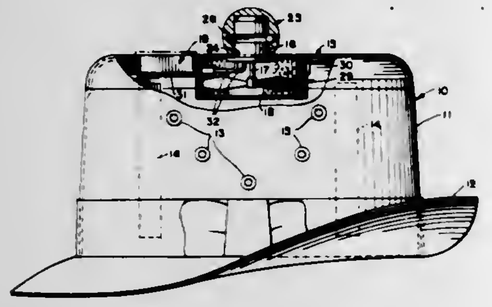


1. An item of neckwear having a simulated knot comprising a resilient insert having a generally elliptical cross-section and being tapered from top to bottom, said insert

having a concave curve in its upper and larger edge and a slot in its rear side, a fabric covering said insert, an elongated tie body having a neckband, an outer flap formed integral with one end of the neckband and an inner flap formed integral with the other end of the neckband, said tie body having an elongated fold formed adjacent to the juncture of the outer flap and the neckband, stitching securing the tie body to the fabric covering the insert with the fold extending below the insert, a loop fixed to the inner side of the outer flap for slideably receiving the inner flap, a pocket fixed to the inner surface of the inner flap, a yoke connected to the pocket, a second pocket fixed to the other end of the yoke, a magnet positioned in one of said pockets, and a lock member positioned in the other of said pockets for cooperation with the magnet to lock the inner flap to an article of clothing by positioning the article of clothing between the magnet and the lock member, whereby the attraction of the lock member to the magnet holds the inner flap in position.

3,353,191
COOLING UNIT FOR A HAT

Harold W. Dahly, 4443 N. Greenview Ave., Chicago, Ill. 60653
Filed July 1, 1965, Ser. No. 468,848
1 Claim. (Cl. 2—171.3)

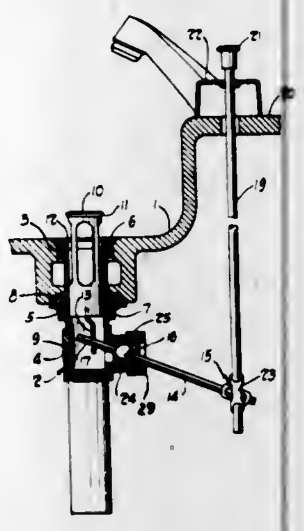


In combination with a hat having a brim and open-top crown, a cooling unit comprising an inverted dish-shaped supporting plate mounted on said crown, a recess in said plate, a solar cell mounted in said recess, a solar cell operable motor electrically connected to said solar cell mounted on said plate having a drive shaft extending to the underside thereof, a fan mounted on said drive shaft for corotation therewith, displaceable cup-shaped screen means at the underside of the plate for enclosing said fan, and cover means mounted on the upper side of said plate for variably exposing said solar cell to control the speed of the motor.

3,353,192
POP-UP BALL ROD MOUNTING

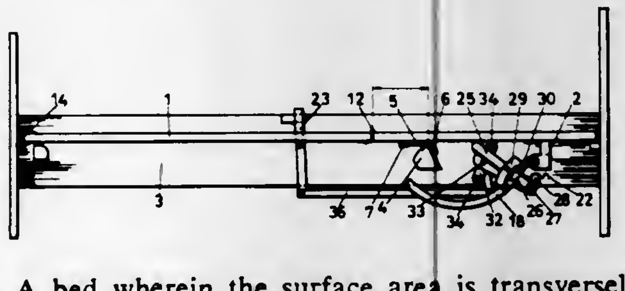
Gerald E. Christiansen, Flora, Ind., assignor to Stephen A. Young, Monticello, Ind.
Filed Nov. 20, 1964, Ser. No. 412,743
2 Claims. (Cl. 4—203)

1. In an actuator handle mounting for a pop-up valve construction including a substantially tubular valve body, a valve member movable between open and closed positions within said body, and actuator means extending through the wall of said cylindrical valve body interconnected with said valve member to operate the same between open and closed positions, the combination comprising: an externally threaded tubular section integral with and extending outwardly from the wall of said valve body, said section including a first bore adjacent the point of interconnection between said section and said valve body wall, a counterbore of a diameter greater than said first bore extending inwardly toward said first bore from the outer extremity of said section, a converging portion interconnecting said first bore and said counterbore, a substantially nonmetallic deformable tubular bushing including a first bore portion and a counterbore portion of greater diameter than said first bore portion, an actuating rod including a shank portion and an enlarged pivot portion, said counterbore portion in said bushing being of a diameter sufficient to supportingly receive in complementary encircling contact said pivot portion of said actuating rod and said counterbore in said bushing of such depth as to receive said pivot wholly within said bushing when said pivot and said bushing are disposed within said counterbore of said section, and means engageable with a portion of said bushing to secure said bushing within said section and to cause the innermost extremity of said bushing to conform to said converging portion of said section.



3,353,193
SELF-ADJUSTING BEDS

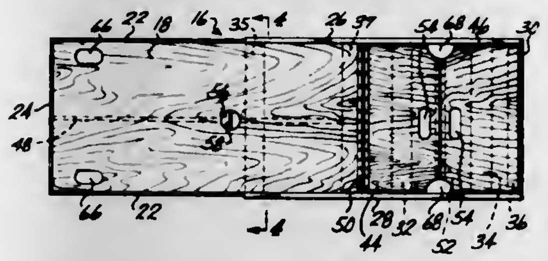
Otto Greiner, Brunnenstrasse 9, Neustadt, near Coburg, Germany
Filed Jan. 26, 1966, Ser. No. 537,249
3 Claims. (Cl. 5—66)



1. A bed wherein the surface area is transversely divided into a lower main part and a back section which are connected by hinges, and where the back can be moved up or down by transmission of pressure from the seat to the back and vice versa without the user having to rise from the bed, and whereby the back tilts on curved blocks which slant forwards and are situated at a certain distance from the hinges below the side bars of the back frame and are firmly joined to the side rails of the base frame and—in order to prevent the back from sliding on the curved blocks—a U-shaped metal bracket of appropriate width is attached on each side, one arm of which is movably connected to the upper end of the curved block, square to the direction of movement, its other arm being movably attached to the bottom surface of the back frame, thus ensuring that the side bars of the back frame and the curved blocks always make contact at the same points, whereby at any inclination of the back there exists such a state of balance as to require the same amount of additional pressure by the user to move the back upwards and downwards.

3,353,194
FOLDING COT STRUCTURE

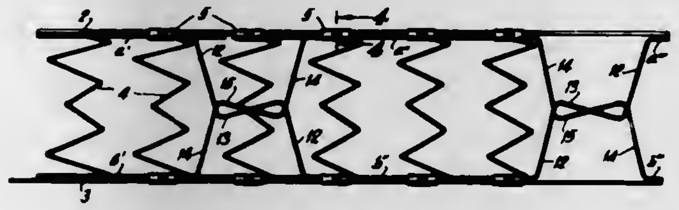
Charles B. Matson, 3265 S. 216th St., Seattle, Wash. 98188
Filed July 28, 1966, Ser. No. 568,608
9 Claims. (Cl. 5—118)



1. An articulated structure adapted to be folded to a compact package for storage and unfolded to form a cot resting upon the backs of the front and rear seats of an automobile comprising: a first rectangular panel member having spaced apart parallel marginal side portions and end portions; a substantially U-shaped frame member, the legs of which are slidingly mounted for traveling movement on the marginal side portions of said first panel member; panel supporting means carried by said U-shaped frame member and disposed in non-interfering relation to the said traveling movement of said U-shaped frame member; a second rectangular panel member; and primary hinge means connecting an end portion of said second panel member with an end portion of said first panel member for movement of the second panel member from a position directly superposed on the first panel member to a position substantially 180° therefrom wherein the second panel member lays in the same plane as the first panel member, is an extension thereof, and is supported by the said panel-supporting means carried by said U-shaped frame member.

3,353,195
BORDER STABILIZERS FOR INNER SPRING UNITS

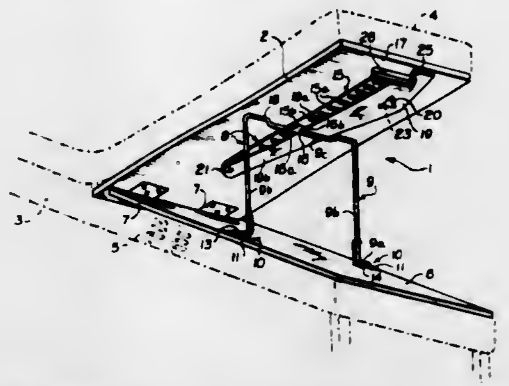
John C. Kline, Merrick, N.Y., assignor to Eclipse Sleep Products, Inc., Brooklyn, N.Y., a corporation of New York
Filed Dec. 14, 1966, Ser. No. 601,606
2 Claims. (Cl. 5—261)



1. In an inner spring unit for a mattress and the like having coil springs spacing the upper from the lower face thereof and having co-extensive parallel upper and lower border forming wires, a border stabilizer formed from two continuous wires and comprising two substantially co-planar and parallel rows of abutment lengths, the abutment lengths in the same row being spaced lengthwise from each other and disposed opposite the abutment lengths in the other thereby to provide successively spaced pairs of abutment lengths; and, resilient force-transmitting means co-planar with said rows and interconnecting adjoining ends of said pairs of abutment lengths for transmitting forces imparted to abutment lengths in one of said parallel rows to abutment lengths in the other of said rows, said resilient force-transmitting means including a bow-like spring reinforcing portion intermediate said parallel rows; and, means for connecting the upper row of abutment lengths to the upper border forming wire and the lower row of abutment lengths to the lower border forming wire.

3,353,196
ADJUSTABLE SUPPORT

Lucien Guillon, 33 E. 70th St., New York, N.Y. 10021
Filed Aug. 17, 1966, Ser. No. 572,961
8 Claims. (Cl. 5—327)



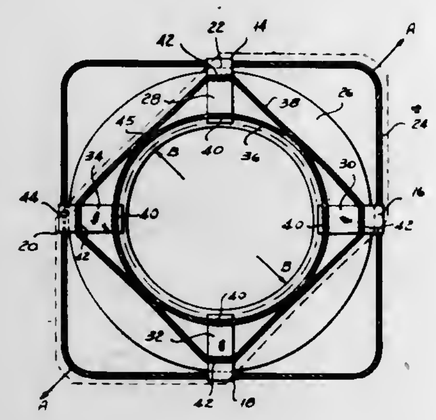
1. An adjustable support comprising
a first member,
a second member hingedly connected to said first member,
a spring biased swing support pivotally connected to said first member, said swing support having a central portion slidably urged against said second member for supporting said second member in an inclined position,
said second member containing a plurality of means for engaging said central portion of said swing and preventing movement of said second member toward said first member,
a spring biased slide member movably connected to said second member adjacent said plurality of means and being urged in a direction covering said plurality of means,
said central portion of said swing support preventing said slide member from covering said plurality of means when said central portion is engaged by one of said means,
said central portion disengaging from said means when said second member is adjusted slightly further apart from said first member,
said slide member covering said plurality of means when said central portion of said swing support is disengaged from said means,
said slide member having a substantially smooth portion facing said first member for causing said central portion of said swing support to slide thereon when said slide member covers said plurality of means and said second member is raised and lowered relative said first member, and
said slide member adapted for being moved to uncover said means when said central portion is slide along said smooth portion of said slide member to an approximately desired position, said central portion then engaging an adajacent one of said plurality of means.

3,353,197
LIFE RING

Leonard P. Frieder, Clarks Green, and Edgar G. Baker, Carbondale, Pa., assignors to Gentex Corporation, New York, N.Y., a corporation of Delaware
Filed July 27, 1965, Ser. No. 475,185
7 Claims. (Cl. 9—311)

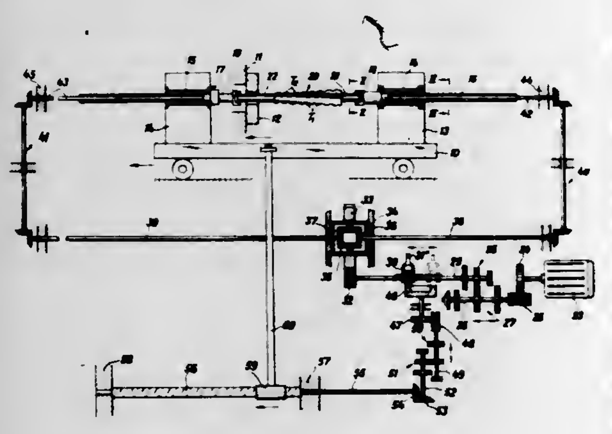
1. A safety life ring including in combination an annular body of soft and resilient buoyant material, a line surrounding said body, respective means for connecting said line to said body at spaced points therearound, a first continuous length of flexible tension-resisting material embedded in said body said first length extending entirely around and within said annular body, respective second

lengths of flexible tension-resisting material embedded in said body, said second lengths extending within said body



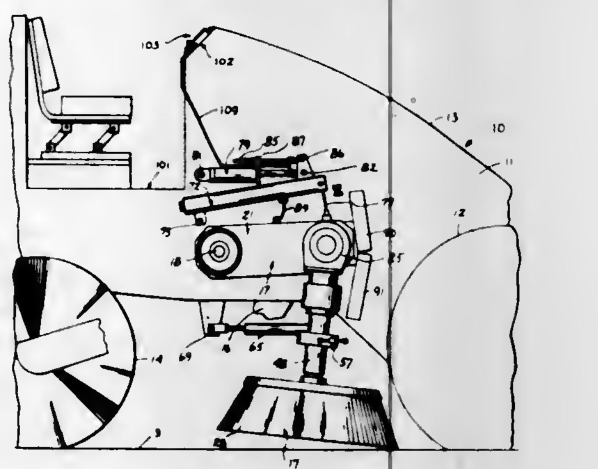
between adjacent connecting means and means for securing said second lengths to said adjacent connecting means.

3,353,198
AUTOMATIC NUT TAPPER AND TOOL FOR NUT THREADING
Ilija Stoilkov Haralampiev and Assen Atanassov Valev, Sofia, Bulgaria, assignors to Nautchno-Izsledovatelski i Proektno-Konstruktorski Institut za Metalo-Obravotvashti Mashini i Instrumenti, Sofia, Bulgaria, a corporation of Bulgaria
Filed Sept. 30, 1965, Ser. No. 491,748
6 Claims. (Cl. 10—133)



1. An apparatus for the cutting of internal threads, comprising:
  first support means adapted to have mounted thereon a perforated workpiece to be provided with internal threads;
  second support means displaceable with reference to said first support means;
  confrontingly aligned first and second gripper means on said second support means engageable with opposite ends of an elongated tapping tool to be introduced into said workpiece;
  a source of motive power;
  first transmission means coupling said source with said first gripper means for imparting rotation thereto;
  second transmission means coupling said source with said second gripper means for rotating same in unison with said first gripper means;
  third transmission means coupling said source with one of said support means for displacing same in timed relationship with the rotation of said first and second gripper means;
  and differential gear means linking said first and second transmission means with said source.

3,353,199
SIDE BROOM POSITION INDICATOR
Donald R. Palmiter and Eugene R. Wilkening, Elgin, Ill., assignors to Elgin Sweeper Company, Elgin, Ill., a corporation of Delaware
Filed Oct. 16, 1964, Ser. No. 404,454
1 Claim. (Cl. 15—87)

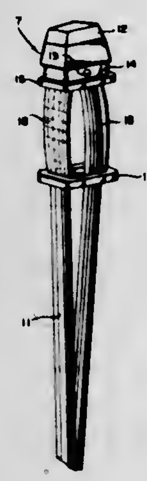


In a street sweeping machine,
a sweeper body,
an elevated operator's station carried on said body,
a control panel positioned at said operator's station,
a side broom assembly carried on said body including
  a side broom disposed at one side of said body,
means operable from said control panel for elevating
  and lowering said side broom,
an arm pivotally mounted on said body and movable
  in an arc,
means for rotating said side broom,
a floating suspension system suspending said assembly
  from said arm in a sweeping position enabling the side broom to be engaged against a surface to be swept and enabling the side broom to drop into road depressions to sweep level surfaces as well as depressions,
said means operable from said control panel being
  operable to pivot said arm in said arc for raising and lowering said side broom into and out of sweeping position, and
side broom position indicator means mounted on said
  control panel and operatively connected to said side broom for indicating the relative vertical position of said side broom,
said indicator means including an indicator plate mount-
  ed at said station,
said plate having a slot, gradations disposed along
  the length of the slot, an indicator mounted in the slot, and a cable having a wire housed therein with the wire connected at one end to said indicator and connected at an opposite end to said arm for moving the indicator in the slot as the vertical position of the side broom is varied.

3,353,200
BRUSH AND BRUSH MATERIAL
Vernon K. Charvat, Bay Village, Ohio, assignor to The Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 27, 1966, Ser. No. 523,399
23 Claims. (Cl. 15—179)

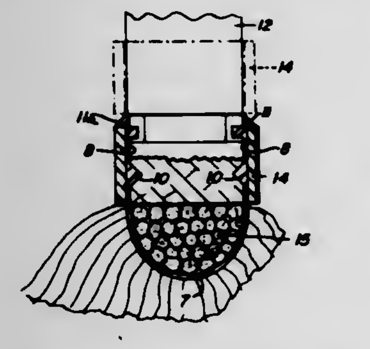
15. Brush bristle material for use in the manufacture of power driven brushes and the like comprising a straight hard wire bristle closely bonded to substantially straight parallel supporting bristle of greater fatigue strength than said hard wire bristle.

3,353,201
BROOM CONSTRUCTION
John P. Horton, 79 Old Fort Road, Bernardsville, N.J. 07924, and Albert T. Nielsen, North Bjaert, near Kolding, Denmark
Filed Aug. 5, 1966, Ser. No. 570,582
5 Claims. (Cl. 15—180)



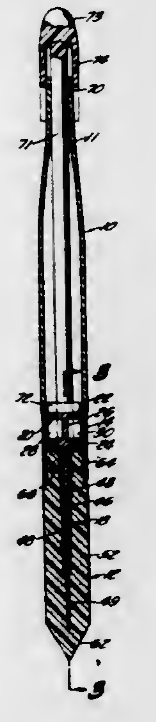
1. Brush apparatus comprising a bristle plug having a plurality of hairpin shaped bristles aligned with medial bends in parallel planes; a bristle cap having first and second ends and having a central recess extending from the first end to an area near the second end, the recess receiving bent portions of the bristles, which are abutted against the area near the second end, the cap further comprising a flange extending outward in continuation of the first end and a groove depressed in the cap adjacent the flange; the plug further comprising a pin extending through said cap at said groove and extending through said bristles transverse to aligned planes of the bends of the bristles, whereby the bends of the bristles are anchored against movement between the pin and an area of the cap near the second end.

3,353,202
MOP HEAD ATTACHING ASSEMBLY
Thomas W. Winstead, Baltimore, and John H. Beyer, Monkton, Md., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,875
6 Claims. (Cl. 15—229)



1. A mop head securing assembly comprising, in combination, a mop handle having an annular, peripheral recess adjacent one end, a non-removable mop head securing band formed of a strip of resilient, non-corrosive material, the central portion of said band being elongated and relatively narrow to provide a loop-forming element for encircling a bundle of mop strands, said elongated element terminating at opposite extremities in normally flat, laterally enlarged, resilient, complementary, handle-embracing components, each adapted for bending to partially encircle said handle, the free end edges of respective components terminating in laterally extending, outwardly directed shoulders having bases which overhang the adjacent outer surfaces of said components, the inner faces of said components being provided, with inwardly directed recess-engaging projections which are arranged parallel with and lie substantially opposite the bases of respective shoulders, and an annular collar slidable on said handle and adapted to be forced downwardly over said handle-embracing components and over said shoulders with a latch-like action to underlie said shoulders in engagement with the outer surfaces of said components, retaining said projections in said groove.

3,353,203
BRUSH HAVING A DISPOSABLE PART AND EJECTOR THEREFOR
James C. Ginter 1134 Linda Vista Ave., Pasadena, Calif. 91103
Filed Apr. 21, 1966, Ser. No. 544,179
1 Claim. (Cl. 15—244)



A brush for the application of paint and the like comprising in combination, means forming a handle part providing a grip for holding the brush, the said brush having a disposable part detachably connected to the handle, the disposable part comprising soft material for absorbing and applying paint, manually actuatable means for detaching and separating the disposable part from the handle, said disposable part comprising a fitting having an extension projecting therefrom said projection being flexible and having an envelope of soft, spongy, resilient, and paint absorbent material thereon, the said handle having a socket to receive said fitting, said manually actuatable means comprising a plunger extending through a bore in said handle, said plunger having an end part positioned in said socket for engaging said fitting and ejecting the fitting therefrom and having a knob at its opposite end for reciprocating the plunger in the bore of the handle, the handle of the brush having an elongated grip and widened part, the said socket having substantially the same configuration as the widened part, the said fitting comprising a structure having the same configuration as the cavity in the socket to be received therein, and the plunger having a foot part on its inner end adapted to engage said fitting for ejecting it.

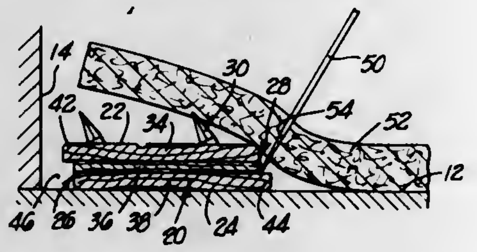
3,353,204

CARPET GRIPPER

Harvey J. Hill, Monterey Park, Calif., assignor to Roberts Consolidated Industries, Inc., City of Industry, Calif., a corporation of California

Filed Aug. 27, 1965, Ser. No. 483,125

3 Claims. (Cl. 16—16)



1. In a carpet gripper, the combination of:

(a) a long, narrow strip of wood having upper and lower sides and outer and inner edges;

(b) said lower side of said strip being engageable with a floor and said outer edge thereof being engageable by a downturned edge of carpeting overlying said upper side of said strip;

(c) an outer, upper integral flange extending longitudinally of said strip and projecting laterally outwardly from said outer edge thereof and having an upper surface forming an outward extension of said upper side of said strip;

(d) an inner, lower integral flange extending longitudinally of said strip and projecting laterally inwardly from said inner edge thereof and having a lower surface forming an inward extension of said lower side of said strip;

(e) said upper flange projecting laterally outwardly from said outer edge of said strip and said lower flange projecting laterally inwardly from said inner edge of said strip substantially equal distances so that said strip is substantially symmetrical in cross section; and

(f) a plurality of carpet hooking elements carried by said strip and projecting upwardly above said upper side of said strip and inclined outwardly toward said outer edge of said strip to secure carpeting overlying said upper side of said strip.

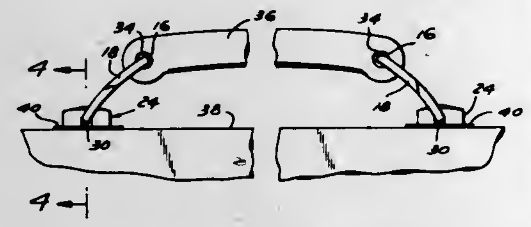
3,353,205

RING POST ASSEMBLY

Julius Sheiman, North Woodmere, N.Y., assignor to Crest Lock Co., Inc., New York, N.Y., a corporation of New York

Filed Apr. 1, 1966, Ser. No. 539,399

11 Claims. (Cl. 16—125)



1. In combination with an article having a surface, a ring post assembly for securing an elongated handle having an opening at an end thereof to said surface, said assembly comprising a gapped ring and a post, said ring being made of stiff resilient material and having a reach adapted to be rotatably received in the opening of the handle, a pair of arms remote from and integral with said reach, said arms being in line with and extending toward one another, a surface on the free end of one arm spaced from and directly facing a surface on the free end of the other arm, said post including an elongated stem adapted to be attached to a top surface of an article, said stem having a pair of oppositely outwardly facing aligned surfaces, said stem being force-fitted between the aforesaid facing surfaces of the arms with one said surface of the stem facing and abutting said surface of one arm whereby a first pair of facing abutting surfaces is provided, and the other said surface of the stem facing and abutting said surface of the other arm whereby a second pair of abutting facing surfaces is provided, the distance between the facing surfaces of the arms prior to the force-fitting of the stem therebetween being less than the distance between the oppositely facing surfaces of the stem, the difference between the aforesaid distances causing the ring on force-fitting of the stem between the arms to be stressed below the elastic limit of the ring material, the free ends of the ring being rotatable on the stem at the force-fitted abutting pairs of surfaces about an axis perpendicular to the longitudinal axis of the stem, and means for limiting linear movement of the arms longitudinally and transversely of the stem after the post has been secured to the top of an article whereby to maintain the arms in force-fitted engagement with the stem.

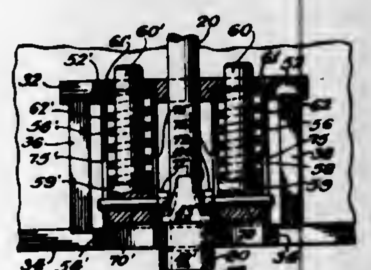
3,353,206

POSITIONING HINGE FOR DOORS AND THE LIKE

Mark Kerman, 7546 N. Oakley Ave., Chicago, Ill. 60645

Filed June 15, 1965, Ser. No. 464,017

2 Claims. (Cl. 16—139)



1. An improved compact positioning mechanism for a pivotable body which is adapted to be located in a stable manner in a plurality of radial attitudes that are arcuately spaced from each other and which body will automatically tend to move to one of said stable attitudes when the body is unrestrained at an arcuate position intermediate said plurality of stable attitudes; said positioning mechanism comprising, in combination: an elongated shaft means; frame means pivotally mounted relative to said shaft means for rotation about the axis of said shaft means; a sleeve member concentric with said shaft means and providing an arcuate cam edge thereon; a piston carried by said frame means adjacent said shaft means for movement along an axis parallel to the axis of said shaft means; a cam follower carried on said piston and engaging said cam edge as said frame member is pivoted; a partially compressed coil spring carried concentrically on said piston for insuring engagement between said cam follower and said cam edge; means for effecting selective locating of said frame means at a plurality of radial attitudes that are arcuately spaced from each other, said means comprising said cam edge providing a high-dwell region having substantial arcuate length, and an inclined cam edge leading from said high-dwell region to a low-dwell region, said cam edge thereby providing for a plurality of arcuately spaced positions wherein the frame means are stably positioned radially relative to the shaft means; and guide means for guiding movement of said piston reciprocably along its axis as said frame means are pivoted relative to said support shaft while preventing rotation of said piston about its axis, said guide means including a tubular member supported upright in said frame means and having an upright slot in the wall thereof, said piston being reciprocably slidable in said tubular member with said cam follower being guided in said upright slot.

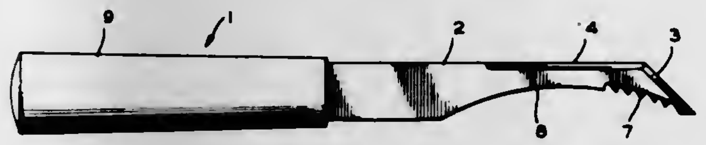
3,353,207

SHRIMP SHELLER AND DEVEINER

Harold Weinberger, 31 S. Stanley Road, South Orange, N.J. 07052

Filed Sept. 14, 1965, Ser. No. 487,144

3 Claims. (Cl. 17—7)



1. A shrimp cleaner comprising a body having a handle at the rear and a cutter portion at the front, said cutter portion comprising a first cutter portion and a second cutter portion, said cutter portions defining an obtuse angle, sharpened edges extending along said cutter portions, teeth formations extending along the undersurface of said obtuse angle formation and a concave curvature extending rearwardly of said teeth formation, said curvature being co-extensive with and conforming to the natural curvature of the shrimp, to allow penetration of the teeth formation in the sand vein of the shrimp while the aforesaid sharpened edges cut the outer shell of the shrimp.

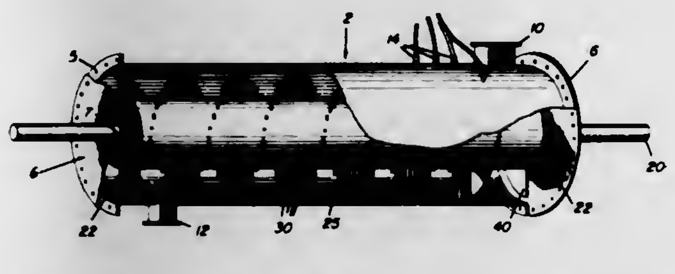
3,353,208

APPARATUS FOR FORMING PELLETS

Vernon W. Fergus, Houston, Tex., assignor to Continental Carbon Company, Houston, Tex., a corporation of Delaware

Filed Mar. 18, 1966, Ser. No. 547,680

2 Claims. (Cl. 18—1)



1. Apparatus for wet pelletizing particulate carbon black comprising:

a stationary cylindrical housing disposed in a substantially horizontal position having centrally apertured end plates affixed to each end thereof;

an inlet opening in the upper side of said housing near one end thereof;

an outlet opening in the lower side of said housing near the other end thereof;

at least one liquid spray port extending through the upper side of said housing substantially flush with the interior surface of said housing;

a rotatable shaft extending axially through said housing and said centrally apertured end plates;

a cylindrical drum affixed to said shaft and disposed to rotate within said housing, said drum having an outside diameter not less than 25 percent nor more than 75 percent of the inside diameter of said housing; and,

pin means affixed to and extending radially from said drum in a pattern suitable to move said black through said housing, said means terminating adjacent the inner surface of said housing.

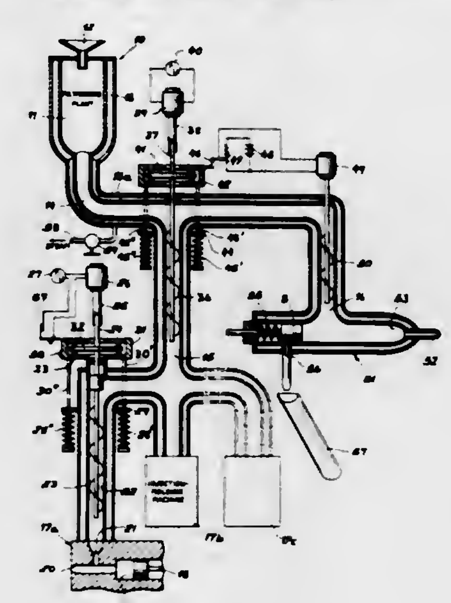
3,353,209

DISTRIBUTION SYSTEM FOR THERMOPLASTIC MOLDING MATERIALS

Robert Dietrich Schad, Toronto, Ontario, Canada, assignor to Husky Manufacturing & Tool Works Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Oct. 11, 1963, Ser. No. 315,611

4 Claims. (Cl. 18—4)



1. In a system for the production of thermoplastic articles, in combination:

a central polymerization plant;

a first load of fluctuating capacity including at least one injection-molding machine;

a second load including at least one extruder adapted to adjust to different rates of supply;

thermally insulated conduit means extending from said polymerization plant to said first and second loads for distributing fluid plastic material thereto, said conduit means including a first branch leading to said first load and a second branch leading to said second load;

first feed means for said plastic material in said first branch including a sensor responsive to reaction pressure from said first load;

variable-speed second feed means in said second branch for directing to said second load a varying overflow of plastic material from said polymerization plant in excess of a quantity usable by said first load; and

control means for said second feed means coupled to said sensor for adjusting the rate of flow of said plastic material in said second branch to compensate for reaction pressure variations in said first branch.

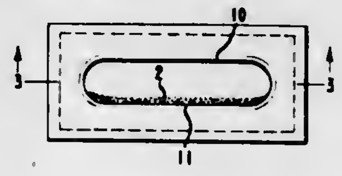
3,353,210

RECTANGULAR CONVERGENCE GUIDE

Milton S. Herring, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 9, 1965, Ser. No. 512,713

2 Claims. (Cl. 18—8)



1. In apparatus for melt spinning a large number of filaments at high speed from a single spinneret wherein the hot filaments are converged into a bundle and a protective finish is applied before the filaments pass to a

take-off wheel, the improvement of a convergence guide for assembling the filaments into a yarn bundle of uniform, essentially rectilinear cross-section, said guide having an essentially linear primary yarn-contacting surface of smoothly-rounded contour for converging the filaments into a flat bundle and contiguous yarn-contacting surfaces of smoothly-rounded contour for controlling the width of the yarn bundle, wherein said yarn-contacting surfaces of the convergence guide form an essentially rectilinear aperture having rounded ends, said surfaces being joined in smoothly-rounded contours.

3,353,211

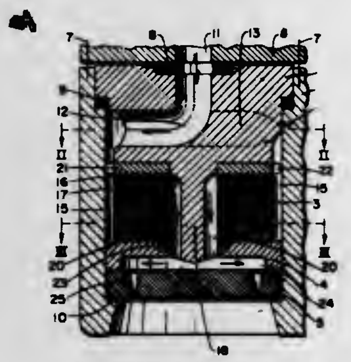
SPINNERET ASSEMBLY

James W. Ij Heijnis, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware

Filed Dec. 29, 1965, Ser. No. 517,250

Claims priority, application Netherlands, Jan. 6, 1965, 65—67

6 Claims. (Cl. 18—8)



1. A spinneret pack assembly wherein both improved heat transfer and self-sealing of the pack is accomplished, comprising:
   - (a) a housing,
   - (b) a fill plug within the housing having at least one feed conduit for receiving a molten polymeric material from a pressurized source,
   - (c) said conduit directly communicating with a horizontally disposed distribution channel, a wall of which is formed by said plug downstream from said feed conduit,
   - (d) said channel further communicating along substantially its entire length with the interior wall of said spinneret housing,
   - (e) a filter pack interposed between said distribution channel and a spinneret plate, and
   - (f) said spinneret plate having a plurality of shaping orifices arranged to receive and shape the molten polymer into filaments.

3,353,212

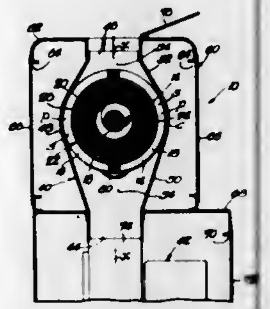
TEMPERATURE MODIFYING PROVISION FOR EXTRUSION APPARATUS

Alden W. Nelson, West Mystic, and Albert P. Brown, Gales Ferry, Conn., assignors to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts

Filed Oct. 23, 1965, Ser. No. 503,152

1 Claim. (Cl. 18—12)

In extrusion apparatus, the combination with an extrusion cylinder having a longitudinal axis and ring-like heat-exchange fins on its outer periphery lying in spaced parallel planes substantially normal to said axis, of a longitudinal hood surrounding and extending substantially over the length of said cylinder and having inlet and outlet openings on opposite sides thereof, said hood providing a through-passage between said openings and having between said openings a first part-circular section and second sections on opposite sides of said first section and connecting the latter with said openings, said second sections flaring from said openings outwardly to, and merge substantially tangentially with, said first section, with said through-passage being cross-sectionally congruent about a plane in which said axis lies, and said fins on opposite sides of said cylinder extending outwardly substantially to said first section so that the latter defines constricted paths substantially confined to the spaces between said fins thereat; means to force air into said inlet opening; and a baffle on said cylinder facing said inlet opening for gradually deflecting forced air in said hood toward said constricted paths.



3,353,213

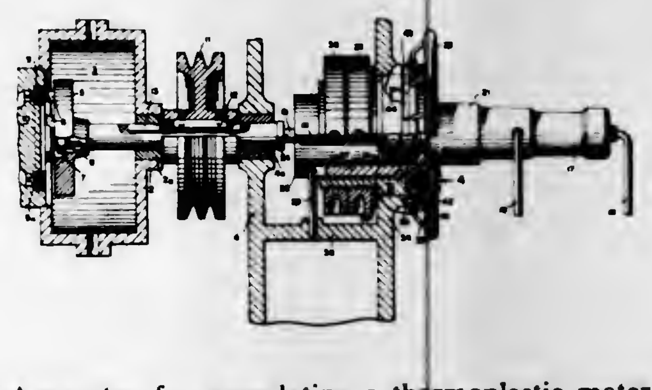
GRANULATING DEVICE

Walter Niemeyer, Remscheid, Germany, assignor to Barmer Maschinenfabrik Aktiengesellschaft, Wuppertal-Oberbarmen, Germany

Filed Nov. 16, 1965, Ser. No. 508,092

Claims priority, application Germany, Nov. 25, 1964, B 79,478

6 Claims. (Cl. 18—12)



1. Apparatus for granulating a thermoplastic material comprising:
   - means for extruding said thermoplastic material including a die having a planar face from which said material issues as at least one strand;
   - rotary cutting means including a cutter head on a rotatable and axially slidable drive shaft and a knife assembly mounted on said cutter head to sweep across said planar die face and cut the extruded material into granules;
   - piston means including a piston housing secured against rotation around its axis and a piston arm coaxial with and operatively connected through said drive shaft to said rotary cutting means for rapid axial shifting of said rotary cutting means to and from said planar face of said die; and
   - fine adjusting means including an axially fixed rotatable cylindrical member concentrically mounted around said piston housing in supporting contact therewith and threadably engaged with a cylindrical portion of said piston housing, with means for rotatably turning said cylindrical member to cause a slow and precise axial shifting of said piston means together with said rotary cutting means toward and away from said planar die face.

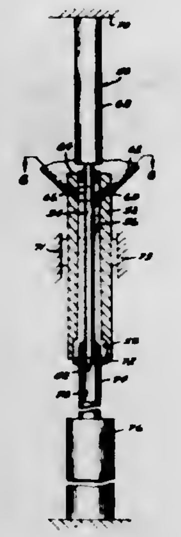
3,353,214

APPARATUS FOR COMPACTING PARTICULATE MATERIAL

Herbert C. Schulze, 3690 Highland Drive, Carlsbad, Calif. 92008

Filed Oct. 30, 1964, Ser. No. 407,700

1 Claim. (Cl. 18—16.5)



Apparatus for compacting particulate material, said apparatus comprising:
- an elongated, relatively fixed cylindrical sleeve having first and second ends and further having a portion of the central opening thereof progressively larger toward said first end to define a taper, and having said first end further enlarged;
- an elongated core for location within said opening to define therewith an elongated open-ended cylindrical mold cavity having an enlarged bell portion adjacent said first end, said mold cavity being adapted for receiving particulate material, said core having a length at least the full length of said mold cavity;
- an annular pressing member fixedly connected to said core for closing the end of said mold cavity adjacent said second end of said sleeve;
- an annular retaining member for closing the end of said mold cavity adjacent said first end of said sleeve and including a centrally bored, generally hemispherical portion for projection into said bell portion of said mold cavity, the central bore of said retaining member being adapted to axially slidably receive an extremity of said core;
- first means operable for axially moving said core and said annular pressing member toward said first end for compacting particulate material in said mold cavity;
- and second means operable for axially moving said annular retaining member toward said second end for compacting particulate material in said bell portion of said mold cavity, said first means being adapted for ejecting molded material from said first end of said sleeve when said second means is rendered inoperable whereby said molded material parts from said taper of said mold cavity and passes out of said mold cavity with the adjacent portion of said core, and rests upon said retaining member.

3,353,215

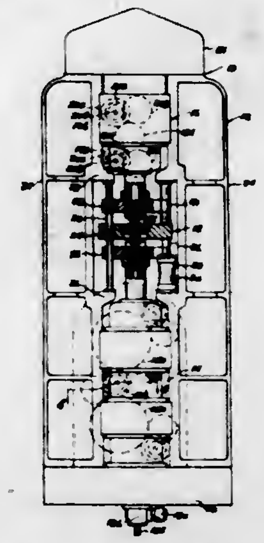
POWDERED MATERIAL BRIQUETTING PRESS

John Haller 18500 Sheldon Road, Northville, Mich. 48167

Filed Nov. 10, 1965, Ser. No. 507,090

12 Claims. (Cl. 18—16.7)

1. A powdered material briquetting press, comprising a press frame formation,
   - a die table mounted on said press frame formation intermediate the opposite ends thereof and adapted to receive a die,
   - lower screw plunger means and upper screw plunger means mounted on said frame formation for movement upward and downward toward and away from said die table and adapted to receive upper and lower punches respectively,
   - lower and upper actuating mechanism assemblies including screw elements threadedly engaging said lower and upper screw plunger means for relative rotation therebetween effecting motion of said screw plunger means independently of one another toward and away from said die table,
   - and motor means drivingly connected to said mechanism assemblies, at least one of said screw plunger means including a plurality of independently-movable telescoping punch-operating screw plungers and independent screw elements threadedly engageable therewith.



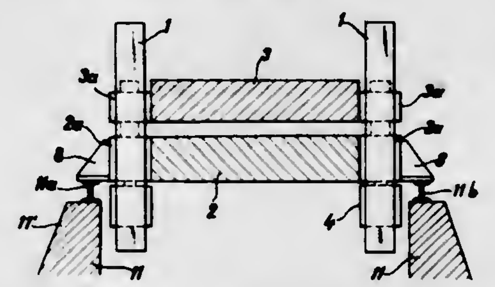
3,353,216

SINGLE-STAGE PRESS INSTALLATION

Eugen Siempelkamp, Krefeld, and Karl Muller, St. Tonis, Krefeld, Germany, assignors to G. Siempelkamp & Co., Krefeld, Germany, a corporation of Germany

Filed June 22, 1965, Ser. No. 465,921

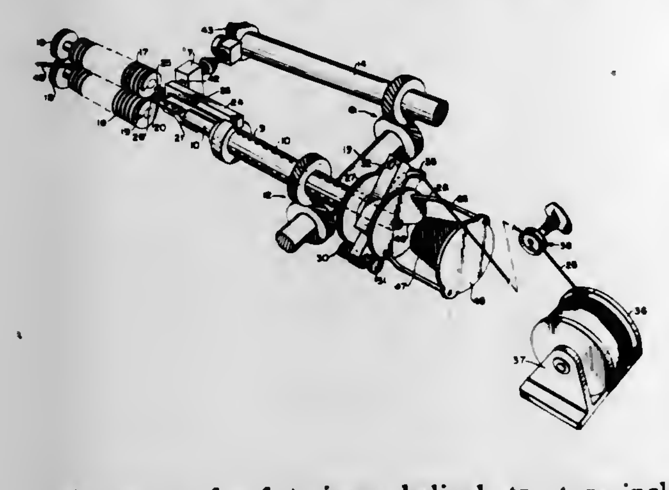
6 Claims. (Cl. 18—17)



1. In a single-level press for the hot-pressing of sheet material the combination which comprises:
   - an elongated, vertically fixed generally horizontal flat press bed,
   - a vertically displaceable generally flat press head extending parallel to and disposed above said bed,
   - a plurality of vertically extending support frames rigidly connected with said head and spaced about the periphery of said bed while vertically bridging said bed and said head, said support frames being displaceable with said head in vertical direction with respect to said bed, and
   - a plurality of fluid-responsive piston-and-cylinder devices spaced along the periphery of said bed and acting respectively upon said support frames for vertically displacing said head with respect to said bed.

3,353,217
FORMING APPARATUS FOR HELICAL SLIDE FASTENER ELEMENTS

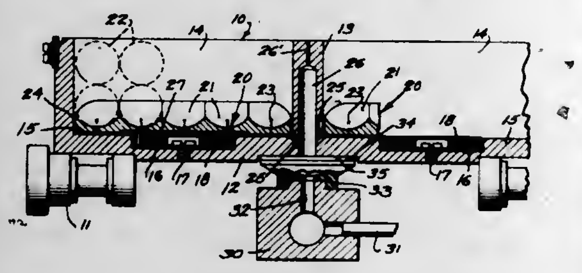
Albert Bashover, Long Beach, N.Y., assignor to Ideal Fastener Corporation, Long Beach, N.Y., a corporation of New York
Filed Apr. 15, 1966, Ser. No. 542,962
6 Claims. (Cl. 18—19)



1. Apparatus for forming a helical structure including a pair of parallel screws having threads which cooperate to form between them a passageway to receive a helical filament, mechanism for forming into a helix and delivering to one end of said passageway a filament of formable and settable material, said mechanism comprising inner and outer concentric shafts having their common axis in line with said passageway, a mandrel mounted axially on the end of the inner shaft and projecting into said passageway between said screws, a winder member mounted on the outer shaft for winding the filament about the mandrel close to the ends of the screws, and a filament conduit alongside of and carried by the outer shaft for delivering the filament to the winder, means for supplying filament to the outer end of said conduit, means for rotating the outer shaft and said screws, means for maintaining the mandrel in non-rotating position, and means for setting the formed helical structure.

3,353,218
APPARATUS FOR CHANGING THE SIZE OF PLASTIC FILM CUPPING DIE OF PACKAGING MACHINE

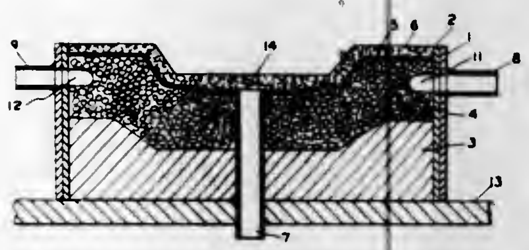
Charles E. Cloud, Wilmette, and Lloyd N. Krohn, Chicago, Ill., assignors to Cloud Machine Corporation, Skokie, Ill., a corporation of Delaware
Filed July 6, 1964, Ser. No. 380,459
13 Claims. (Cl. 18—35)



1. In a plastic sheet cupping die structure for a machine for packaging articles,
a member for cupping plastic sheet and having a bottom and side walls,
a permanent magnetic device at the bottom of said member and an article supporting magnetically responsive insert in said member cooperating with said device so as to be detachably held in said member by the magnetic force of said device in a position to receive a portion of a plastic sheet cupped into said member prior to the placing of an article thereon.

3,353,219
VACUUM-FORMING MOLD

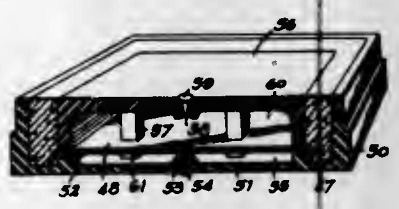
Robert P. Snyder, Saginaw, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Nov. 8, 1965, Ser. No. 506,634
6 Claims. (Cl. 18—35)



1. A vacuum-forming, four-layer mold for imparting shape to a sheet material which comprises (1) a fluid-impervious support layer covered with (2) a thick, porous, rigid layer of coarse particles, (3) a thin, fluid-impervious sheet material covering said thick layer, and (4) a thin, porous, rigid layer of fine particles covering said fluid-impervious sheet and being shaped so that its free surface functions as the molding surface for imparting shape to a sheet material, a passageway for connecting a vacuum-producing means to the interface between said thin layer of fine particles and said fluid-impervious sheet, and a means for causing a heat exchange fluid to flow into, through, and out of said thick, porous layer.

3,353,220
FLEXIBLE MOLD FOR MOLDING A FRAME ONTO A PANE

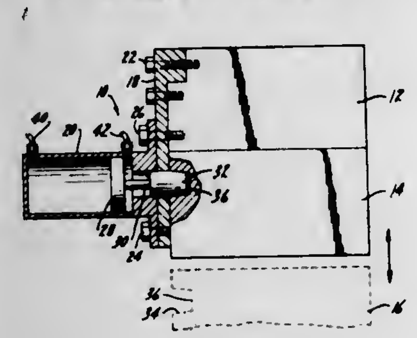
Raymond Lenoble, 1 Rue de Moulin, Gosselies, Belgium
Filed Jan. 18, 1965, Ser. No. 426,328
Claims priority, application Belgium, Jan. 28, 1964, 643,042
2 Claims. (Cl. 18—36)



1. A mold structure adapted to mold a frame with at least one pane of frangible material incorporated therein, said structure comprising,
- (a) a cup-shaped and flexible first mold portion having a bottom member surrounded by integral side walls and provided with a suction opening, said bottom member also having a continuous pane-supporting rib thereupon on its interior surface and spaced from said side walls;
- (b) a cup-shaped and flexible second mold portion adapted to overlie said pane-supporting rib and having a roof portion surrounded by integral side walls provided with a second suction opening;
- (c) suction means operatively connected with said first and second suction openings;
- (d) the dimensions of said first and second mold portions being such as to define a peripheral channel between said first and second mold portions and a compartment between said bottom member of said first mold portion and said roof portion of said second mold portion, said suction means being adapted to apply a reduced pressure within said compartment.

3,353,221
LOCKING DEVICE FOR INJECTION MOLDING APPARATUS

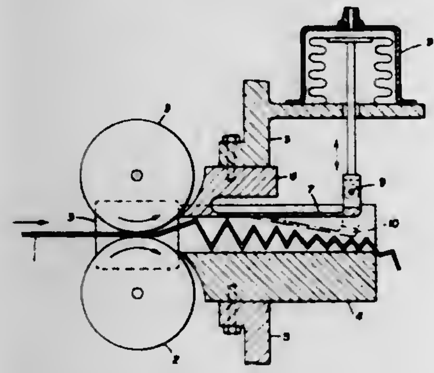
Louis H. Barnett and Robert Haynie, Fort Worth, Tex., assignors, by mesne assignments, to Loma Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Nov. 13, 1963, Ser. No. 323,390
6 Claims. (Cl. 18—43)



2. In a pressurized molding device having linearly separable mold parts, a clamp to hold the mold parts together against separating pressures, which includes a wedge element associated with one mold part, at least one tapered face parallel to the wedge face to form a positive clamp, said wedge element adapted to be seated short of the bottom, and means connected to the wedge element to hold the mold parts together when the wedge is seated said clamp being further characterized in that the wedge is positioned on a rigid arm extending from one mold part and overlapping the other mold part, and said wedge is adapted to be seated in a passageway associated with the other mold.

3,353,222
TEXTILE CRIMPING

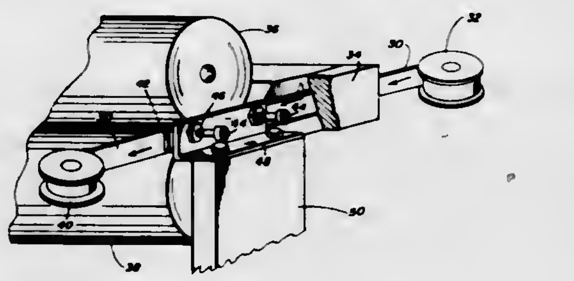
Alvin M. Keel and Daniel I. Saxon, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 22, 1965, Ser. No. 427,408
3 Claims. (Cl. 19—66)



1. An apparatus for crimping the filaments of a moving strand of textile fibers comprising:
- (a) a stuffing box having a crimping chamber defined by a plurality of walls including a top wall, and having entrance and exit openings for directing the moving fibers through said chamber;
- (b) said top wall being formed from a single member having a rigid first portion adjacent to the entrance opening and a flexible second portion formed as an integral extension of said first portion, extending to a location adjacent said exit opening, and varying in cross-section along the direction of fiber movement through the chamber; and
- (c) means for deflecting said second portion in a gentle curve toward the moving strand of fibers in said chamber to constrict the chamber to the movement of fibers therethrough.

3,353,223
METHOD AND APPARATUS FOR CRIMPING

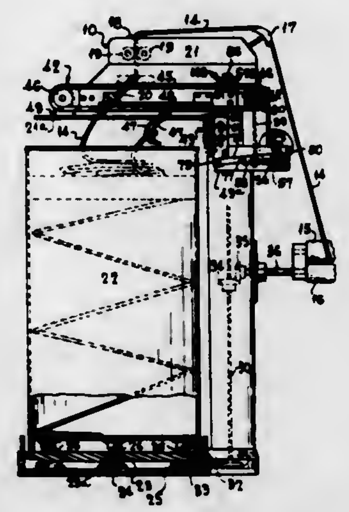
Arthur G. Coffin, Jr., and Daniel I. Saxon, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 302,945, Aug. 19, 1963. This application May 31, 1966, Ser. No. 554,217
6 Claims. (Cl. 19—66)



1. A crimping apparatus comprising a pair of coacting feed rolls adapted to turn in opposite directions, a stuffing box located downstream from said feed rolls, said stuffing box including a chamber having fixed sides, against which sides are positioned ribbon side plates which extend through the chamber past the nip of the aforesaid feed rolls to the upstream side of the feed rolls, means for positioning said ribbon side plates against the sides of said feed rolls, and means for advancing said ribbon side plates in a direction from said downstream to said upstream side of said rolls.

3,353,224
AUTOMATIC SLIVER SEVERING APPARATUS

Bryant W. Gossett and Maurice C. Henson, Gastonia, N.C., assignors to Gossett Machine Work, Inc., Gastonia, N.C., a corporation of North Carolina
Filed July 29, 1965, Ser. No. 475,699
7 Claims. (Cl. 19—159)

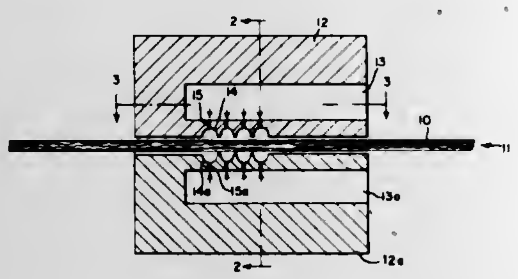


1. In a textile sliver coiler having a coiler head, means for supporting a container in sliver-receiving position beneath said head, means for delivering a continuous strand of said sliver from said head to said sliver-receiving position, means for supporting a second container adjacent said first container, and means for concurrently moving said first container out of sliver-receiving position and for moving the second container in said position, apparatus for severing said strand intermediate said containers comprising: means for subdividing said strand into a plurality of groups of spaced cross-sectional segments, shearing means for each of said groups and disposed adjacent said subdividing means, means for moving said strand transversely into engaging position with said subdividing and said shearing means, electro-magnetic means operable upon said concurrent movement of the containers for actuating said strand-moving and shearing means, and a

second electro-magnetic means operable upon movement of said moving means beyond said engaging position for rendering inactive said moving and shearing means, said subdividing means including a stationary toothed bar and said shearing means including a second toothed bar movably mounted relative to said first bar, the teeth of said bars being disposed face-to-face and respectively having cooperating shearing edges.

3,353,225
PROCESS OF FORMING NONWOVEN FABRIC WITH OPPOSED JETS

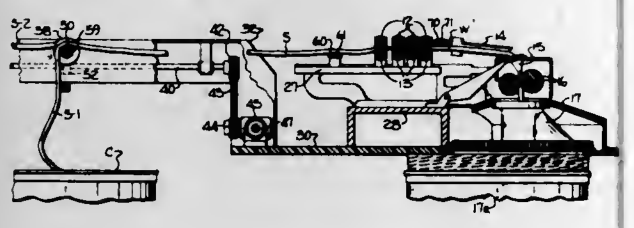
William C. Dodson, Jr., and George R. Long, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 5, 1966, Ser. No. 563,934
6 Claims. (Cl. 19—161)



1. The process for preparing patterned coherent structures directly from loose fibrous layers which comprises, passing a loose fibrous layer between opposed high velocity streams of fluid jetted substantially perpendicularly against opposite faces of the layer to simultaneously interloop and parallelize the fibers, jetting a succession of said opposed streams coaligned along a direction of treatment of the layer and simultaneously guiding the outflow of said jetted fluid against the layer along bilateral paths transverse to said direction of treatment to form a row having a pattern characterized by a center portion of transverse parallelized fibers and by interlooped fibers compacted along the sides of the row to provide a coherent structure.

3,353,226
APPARATUS AND METHOD OF REMOVING FOREIGN MATTER FROM TEXTILE FIBERS

Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina
Filed June 7, 1965, Ser. No. 461,980
6 Claims. (Cl. 19—200)



1. In a textile machine for processing textile material formed of staple length fibers, such as slivers and webs having undesirable foreign matter therein, said textile machine having a drafting unit adapted to receive the textile material and produce a web of drafted fibers therefrom, and means for guiding the textile material from a supply source to said drafting unit, the combination therewith of

(a) first, second and third rotatable textile material cleaning means for successively agitating the textile material to remove foreign matter therefrom,

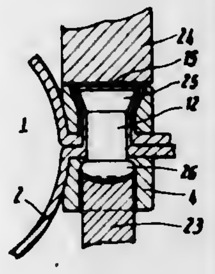
(b) said guide means being rotatable and including said first rotatable cleaning means operable on the textile material being guided thereby,

(c) said second rotatable textile material cleaning means being positioned adjacent the entrance to said drafting unit and being operable on the textile material entering the drafting unit, and

(d) said third rotatable textile material cleaning means being positioned adjacent the exit of said drafting unit and being operable on the drafted web emanating from the drafting unit.

3,353,227
DEVICE FOR TIEING CABLE HARNESSES

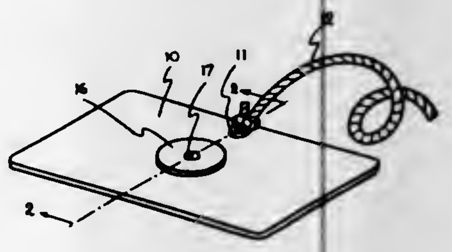
Heinrich Kabel, Quickborn, Holstein, Germany, assignor to Paul Hellermann G.m.b.H., Pinneberg, near Hamburg, Germany
Filed Apr. 9, 1965, Ser. No. 446,855
5 Claims. (Cl. 24—16)



1. In a device for tieing a bundle of cables or the like by means of a deformable plastic strap, a lock having a slot therein for accommodating at least one end of said strap, said lock being provided with a bore extending substantially transversely of said slot, and a pin of substantially lesser diameter than said bore and penetrating said bore and engaging said strap material in said slot to force a portion of said strap entirely through said bore so as to secure said pin in said bore and hence said strap to said lock, by coaction of the plastic with the pin and the wall of said bore, the end of the bore remote from the pin being beveled and the end of the pin engaging the plastic being deformed in the bevel to further lock said strap.

3,353,228
PACKAGE TIE

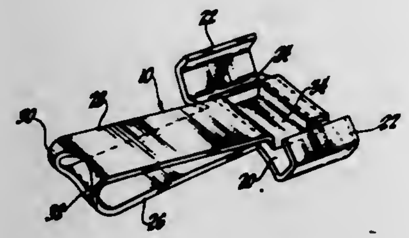
Frank Kish and Maria Kish, both % Mr. A. T. Shumiatcher, Q.C., Barrister and Solicitor, 603 Grain Exchange Bldg., Calgary, Alberta, Canada
Filed Apr. 29, 1966, Ser. No. 546,426
1 Claim. (Cl. 24—18)



A package tie comprising in combination, a rigid panel having an aperture formed therein, a binding cord anchored at one end thereof to said panel at a point spaced from said aperture, a binding post of resiliently yieldable material positioned in said aperture and projecting to one side of the panel, said post having an enlarged head in abutment with the other side of the panel, and a rigid button of a larger diameter than said post secured to the projecting end of the post in spaced relation from said one side of the panel, said button being spaced from said panel by a distance lesser than the thickness of said cord so that when the cord is wound around the post, the post is resiliently stretched to frictionally grip the cord between the panel and the button.

3,353,229
MOLDING RETAINER CLIP

Peter M. Kobrehel, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 25, 1966, Ser. No. 530,024
4 Claims. (Cl. 24—73)

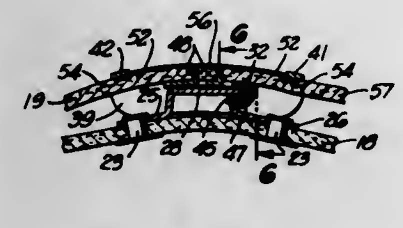


1. A one-piece adjustable molding clip to be used to fasten a molding strip to a body panel, said clip comprising:

- a first strip having an aperture therein and having means to engage and hold said molding strip;
- a second strip overlying and substantially parallel to said first strip, said second strip including an offset portion of smaller size than the aperture in said first strip, said offset portion extending through said aperture and being adapted to be welded to said body panel;
- and a yieldable connecting portion reversely bent from said first strip to connect said first strip to said second strip, whereby said means on said first strip is laterally shiftable relative to the second strip.

3,353,230
SHOE FASTENER

Ralph E. Jones, 4150 Bedford Drive, San Diego, Calif. 92116; Hugo Mahler, 10030 Sunset Ave., La Mesa, Calif. 92041; and Charles E. Weller, 77 Puritan Drive, Warwick, R.I. 02888
Filed Aug. 16, 1965, Ser. No. 479,729
10 Claims. (Cl. 24—77)

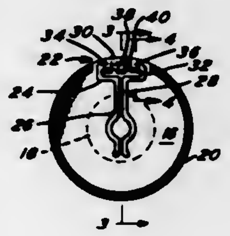


1. A shoe fastener for use with a shoe of the type that includes an upper having two spaced flaps one of which is provided with a transverse closure strap of a length to span the space between said flaps and to overlie the other of said flaps, said shoe fastener being capable of releasably securing said closure strap to said other flap and including the combination of:

- a base having two end portions adapted to be seated against the upper surface of said other flap, said base having a central elevated portion which is substantially flat, and means for securing said end portions to said other flap;
- a shell including two spaced, downwardly extending side walls connected by two spaced end crosspieces and a central crosspiece interposed between said two end crosspieces, said central crosspiece being adjustably connected to said closure strap and adapted to overlie said base;
- a first latching element carried by said shell;
- a second latching element carried by said central elevated portion of said base and engageable with said first latching element to releasably secure said shell to said base to close the fastener;
- said central elevated portion having two generally opposed edges, said side walls fitting closely to said two edges of said central elevated portion of said base when the fastener is closed, this degree of closeness along said two edges serving to prevent any substantial rotary motion and lateral motion of said shell with respect to said base;
- said closure strap being adapted to lie in a position wherein it is below the two end crosspieces of said shell and above said central crosspiece; and
- means for adjustably attaching said closure strap to said shell including at least one projection extending upwardly from said central crosspiece of said shell, said projection being adapted to engage said closure strap to prevent said closure strap from slipping longitudinally with respect to said shell.

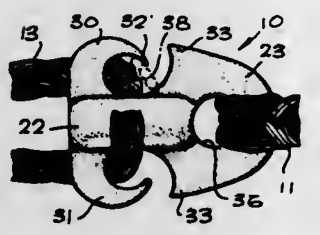
3,353,231
BUTTON COVER

Irving A. Levine, 351 W. Broadway, New York, N.Y. 10013
Filed Aug. 16, 1965, Ser. No. 479,874
1 Claim. (Cl. 24—113)



A button cover for attachment adjacent the button fastener of a shirt comprising a cover body, said body having an ornamental front face and a rear face, a fastener depending from said rear face, said fastener including a bifurcated wire member extending across said rear face, said bifurcated member defining a slot therebetween for receiving the thread fastener of a shirt button, said slot being open at one end and closed at the other end, a portion of said slot adjacent the center of said rear face being enlarged, said closed end forming a loop defining a generally rectangular shaped opening, a portion of said wire member directly in line with said slot provided with a flat surface, the edge of which protrudes into said rectangular shaped opening, said rear face provided with at least two wire receiving members for holding said wire in a hinged relationship, said members shaped to retain said wire on each side of said flat surface, and said rear face further provided with a wire retaining member adapted to engage the portion of said flat surface on said wire which protrudes into said rectangular space to thereby urge said wire toward said rear face, said wire and said rear face being in a spaced relationship large enough to receive a shirt button between said bifurcated member and said rear face, in a removably attached relationship by means of the wire retaining member.

3,353,232
DOUBLE HOOK
Ivan F. Brownson, 16245 Otsego, Encino, Calif. 91316
Filed Feb. 21, 1966, Ser. No. 529,036
4 Claims. (Cl. 24—129)



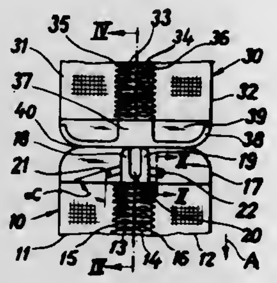
1. A tow line assembly comprising:

a double hook structure including an elongate unitary body having a head member at one end, a central longitudinal rib member extending from said head member to the opposite end of said body along the longitudinal axis of said body, and a pair of coplanar generally hook-shaped extensions at said opposite end of said body extending in opposite lateral directions from said rib member and longitudinally of said body toward said head member to define with said rib and head members slots having open ends opening through the lateral sides of said body and opposite closed ends;

a connecting line secured at one end to said head member on said axis; and

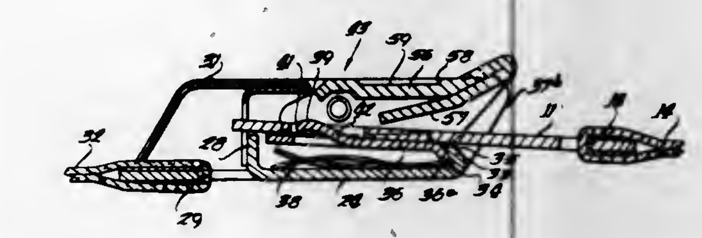
a tow line having a loop at one end extending from said tow line through one body slot and then across said rib member and back to said tow line through the other body slot.

3,353,233
SLIDE-FASTENER STRIP
Alfons Fröhlich, Essen, Germany, assignor to Opti-Holding A.G., Glarus, Switzerland, a corporation of Switzerland
Filed July 19, 1965, Ser. No. 473,002
Claims priority, application Germany, Sept. 30, 1964, O 10,403
11 Claims. (Cl. 24—205.11)



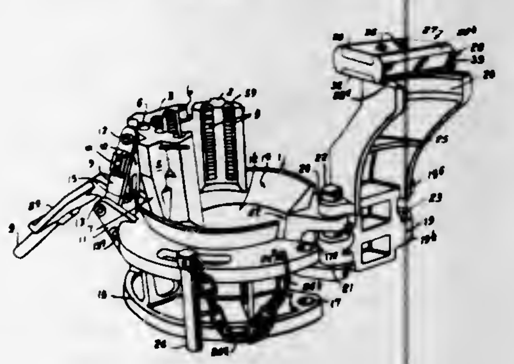
1. A slide-fastener strip, comprising a pair of slide-fastener halves each having a respective support band and a fastener element extending along an edge of the band and matingly couplable with the fastener element of the other band upon the shifting of a slider along said elements in a fastener-closing direction, said elements being decoupled upon shifting of the slider in the opposite, fastener-opening direction; and an end-stop member of a thermoplastic material affixed to said strip at one extremity thereof for blocking displacement of said slider in said fastener-closing direction, said member being formed with at least one longitudinally extending guide groove for leading said slider onto said band, and with at least one elastically deformable formation projecting into said groove and resiliently deflectable by the slider to permit it to be drawn onto said elements past said member but engageable with the slider to prevent its withdrawal from said elements past said member.

3,353,234
SAFETY BELT BUCKLE
Raymond J. Settimi, Lombard, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 20, 1965, Ser. No. 488,336
6 Claims. (Cl. 24—230)



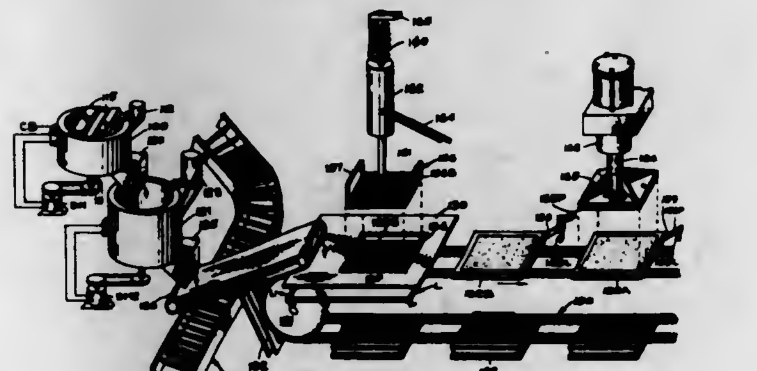
1. A safety belt securing assembly comprising: a buckle body including first connecting means at one end thereof for securing a belt section thereto, a supporting pedestal adjacent to and projecting above said connecting means, and a pair of spaced side walls extending along said body on opposite sides of said pedestal, each of said side walls having an overhanging end portion remote from said pedestal, said end portions forming a pair of aligned stop surfaces; latch means secured to said buckle body; and an elongated tongue having a pair of shoulders intermediate the ends thereof defining a relatively wider rear portion at least as wide as the spaced side walls of said buckle body, said rear portion including second connecting means for securing a belt section thereto, said shoulders further defining a relatively narrower forward portion of a width adapted to slide freely between said side walls including a nose portion adapted to rest on said pedestal, said forward portion also including a latch surface adapted to interlock with said latch means to prevent longitudinal withdrawal of said tongue from said buckle body, said latch means and latch surface cooperating to position said tongue shoulders beneath said overhanging stop surfaces, said pedestal and stop surfaces serving to orient said tongue at an acute angle with the line of action through said first and second connecting means, whereby longitudinal separation forces imposed on said assembly through said belt sections is converted to prying action acting on said pedestal and stop surfaces.

3,353,235
TUBING CENTRALIZER ATTACHMENT FOR WELL SPIDER
Frederick Lee Adams, Dallas, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed July 19, 1965, Ser. No. 473,125
7 Claims. (Cl. 24—263)



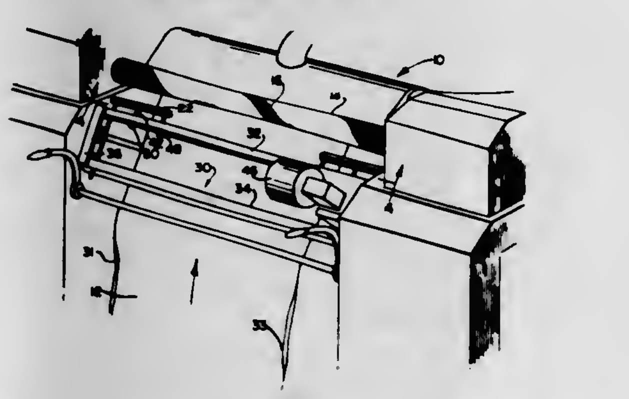
4. As an article of manufacture a pipe centralizer attachable to a tubing spider for centering pipe therein; a body of resilient material having resilient edges; there being longitudinal channels on opposite sides of the body; a rigid plate disposed in each channel whereby the resilient edges of the body extend beyond the edges of the plates; and bolt receiving passages extending through the plates and the body.

3,353,236
APPARATUS FOR PRODUCING ACOUSTICAL TILE
Cresswell E. Stedman, deceased, late of Chicago, Ill., by Elizabeth K. Stedman, administratrix, Miami, Fla., assignor to U.S. Perlite Corporation, Chicago, Ill., a corporation of Delaware
Application June 14, 1963, Ser. No. 288,046, now Patent No. 3,222,434, dated Dec. 7, 1965, which is a division of application Ser. No. 788,998, Jan. 26, 1959, now Patent No. 3,103,254, dated Sept. 10, 1963. Divided and this application Feb. 10, 1965, Ser. No. 431,734
5 Claims. (Cl. 25—2)



2. In apparatus of the kind described, at least a pair of mixers respectively for mixing ingredients in two stages, timers for periodically operating the mixing elements in the mixers, said mixers being so positioned that the material first mixed in the one mixer will be discharged by gravity into the other mixer, a mold filling station, conveyor means to convey material discharged from said other mixer to said mold filling station, other conveyor means to convey individual mold trays past said filling station whereat said individual mold trays are to be filled with said material, said other conveyor means extending to a mold presser station whereat a ram is afforded to press and compact the material deposited in said molds, said conveyor extending to a stripper station whereat the compacted material is to be removed from said mold trays, and means affording a path of travel adjacent said stripper station and leading to an oven and along which the compacted material removed from the mold trays is to be moved into the oven.

3,353,237
FABRIC SHEARING MACHINE HAVING WEB SMOOTHING MEANS
Wilfred N. Hadley and William J. Holm, Springfield, Vt., assignors to Riggs & Lombard, Inc., Lowell, Mass., a corporation of Massachusetts
Filed July 29, 1965, Ser. No. 475,713
6 Claims. (Cl. 26—15)



1. In combination with a fabric shearing machine adapted to shear to a uniform height fibers protruding from the surface of a moving open width fabric web, apparatus for uncurling the rolled edges of a moving fabric web prior to its entry into said machine, comprising

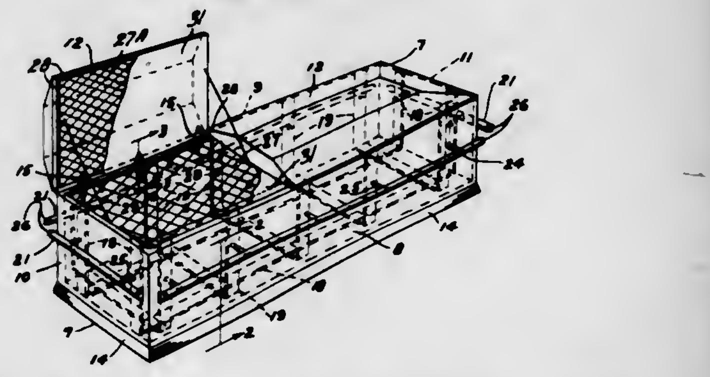
(a) a pair of members providing endless surfaces,

(b) means mounting said members to said machine at the fabric entrance thereof transversely of said web one over each edge thereof and with a section of each endless surface generally co-planar with one surface of said web,

(c) power means for moving said endless surfaces in opposite directions whereby said sections will move laterally outwards over said edges to uncurl rolled web edges, and,

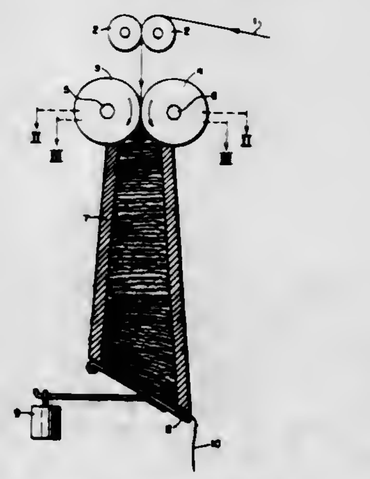
(d) a backing plate mounted behind said web opposite said members.

3,353,238
REINFORCED PLASTIC COFFIN
Christian F. Sieloff, P.O. Box 5003, Grosse Pointe, Mich. 48236
Filed Nov. 25, 1964, Ser. No. 413,892
3 Claims. (Cl. 27—7)



1. In a device of the character described the combination of a light weight thermo plastic box, load carrying members in the form of metal straps positioned within said box, handles on the exterior of said box, bolts connecting said handles to said load carrying strap members, and tubular elements on said bolts to space said handles from said box, an inner basket like framework for said box, made of extruded aluminum wire, a decorative lining material secured to said framework and a rib element along the upper edges of the interior walls of said box for securing said framework to said box.

3,353,239
YARN TEXTURIZING METHOD AND APPARATUS
James W. I. Heijnis, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Jan. 25, 1965, Ser. No. 427,828
Claims priority, application Netherlands, Feb. 1, 1964, 64—844
7 Claims. (Cl. 28—1)

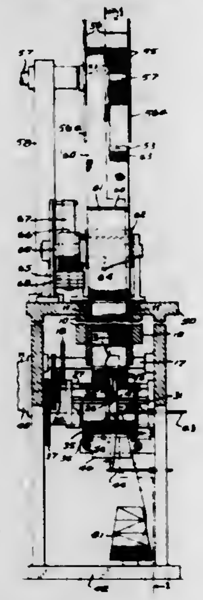


1. In a stufferbox crimping apparatus for crimping a continuous tow of material comprising a stufferbox chamber for producing a crimp in said tow and having an inlet

and an outlet for conducting the tow therethrough, a pair of parallel, rotatable yarn-gripping rollers located adjacent said inlet for feeding tow thereto, the improvement which consists of means associated with said rollers for producing an initial crimp in said tow transverse to the crimp produced in said stufferbox chamber.

3,353,240
METHOD AND APPARATUS FOR FEEDING YARN INTO A STUFFER CRIMPER

James R. Hodges, Green Acres, and Steve E. Zeis, Wilmington, Del., assignors to Joseph Bancroft & Sons Co., Rockford, Wilmington, Del., a corporation of Delaware
Filed Aug. 3, 1965, Ser. No. 476,981
9 Claims. (Cl. 28—1)



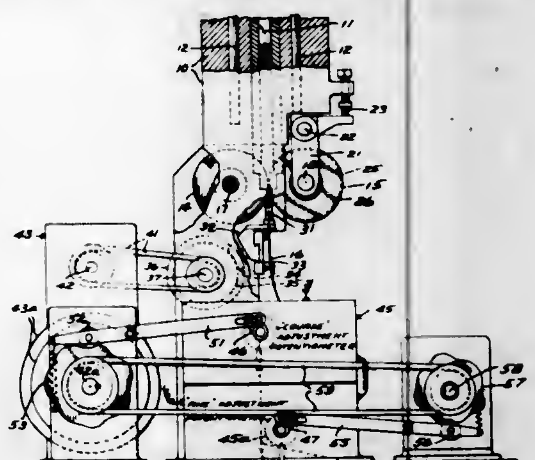
1. The method of forming a core of crimped yarn in a stuffer crimper having a crimping chamber with an elongated cross-section, which comprises feeding a yarn into one end of said chamber from the bite of a pair of feed rolls having axes parallel to the longer side of said chamber, reciprocating the yarn axially of said feed rolls to lay the yarn in said chamber in succession of transverse layers in the core, and superimposing on said reciprocating motion a second reciprocating motion over a shorter path adapted to lay the yarn in a series of overlapped, shingled areas in each of said layers.

8. Apparatus for crimping yarn comprising a crimping chamber of elongated cross-section, feed rolls disposed to feed said yarn into said chamber to be folded over and crimped against a mass of previously crimped yarn in said chamber, and yarn guide means disposed to feed the yarn to the bite of said feed rolls, said yarn guide means comprising a carriage adapted to reciprocate axially of said feed rolls, a guide member mounted on said carriage and adapted to feed the yarn to the bite of said feed rolls, means reciprocating said carriage axially of said feed rolls, and means reciprocating said guide member on said carriage for thereby superimposing on said guide member a second reciprocating motion over a path which is shorter than that of said carriage.

3,353,241
APPARATUS FOR MAKING VARIABLY BULKED YARN

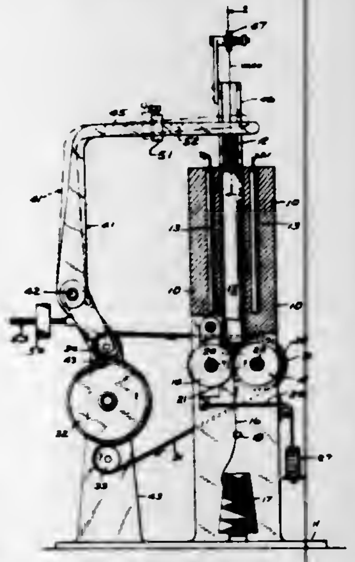
Harry A. Prosceno and Victor H. Schrader, Wilmington, Del., and Steve E. Zeis, Asheville, N.C., assignors to Joseph Bancroft & Sons Co., Rockford, Wilmington, Del., a corporation of Delaware
Filed Sept. 10, 1965, Ser. No. 486,393
10 Claims. (Cl. 28—1)

1. Apparatus for producing novelty crimped yarn of the thick and thin type which comprises a stuffer crimper having a crimping chamber of elongated cross-section, a pair of feed rolls having a bite disposed to feed said yarn into said crimping chamber and having their axes parallel to the longer side of said chamber, a traversing guide disposed to traverse the yarn along said bite, at least one of said rolls having at least one annular recess adapted to vary the feeding pressure at the bite of said rolls as the yarn is traversed thereover.



3,353,242
FEED CONTROL FOR STUFFER CRIMPER

Victor H. Schrader, Wilmington, Del., assignor to Joseph Bancroft & Sons Co., Wilmington, Del., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 497,021
4 Claims. (Cl. 28—1)

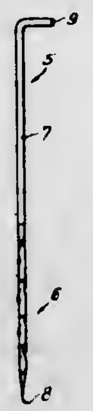


1. Apparatus for crimping yarn comprising a member having walls forming a crimping chamber, feed rolls disposed to feed yarn for crimping into one end of said chamber, drive means including a belt and a drive pulley disposed to drive said feed rolls, a control pulley disposed to control the tension of said belt, a pivoted arm carrying said control pulley, said arm having an end extending through said wall into said crimping chamber to rest upon the mass of crimped yarn therein and said end of said arm effecting pivotal movement of said arm in response to a change in the level of said mass so as to vary the tension of said belt and the consequent rate of feed to maintain the mass of crimped yarn in said chamber at a substantially constant level.

3,353,243
FELTING NEEDLE

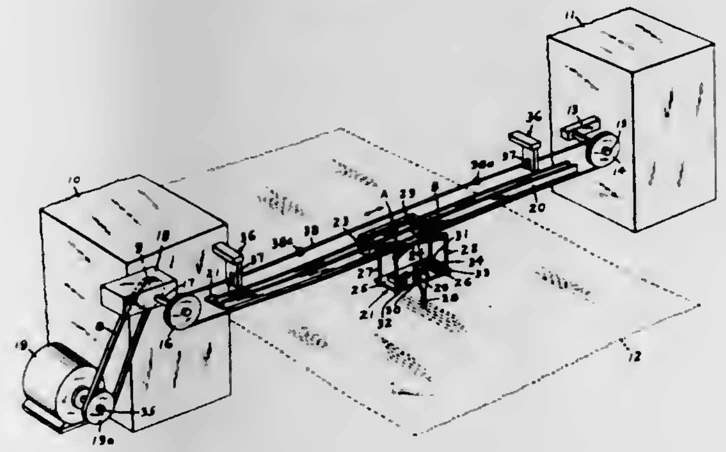
Edson P. Foster, 409 S. 29th St., Manitowoc, Wis. 54220
Filed Dec. 15, 1965, Ser. No. 514,022
3 Claims. (Cl. 28—4)

1. As a new article of manufacture a felting needle having a body portion provided with a barbing recess and a barb at said barbing recess formed by displaced material of said body portion, and a substantially equal counter-stressing recess in said body portion opposite and substantially intermediate the ends of said barbing recess.



3,353,244
APPARATUS FOR DETECTING HIGH-TENSION ENDS IN A THREAD SHEET

Hal R. Newcome, Columbia, S.C., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Mar. 28, 1966, Ser. No. 537,950
5 Claims. (Cl. 28—35)

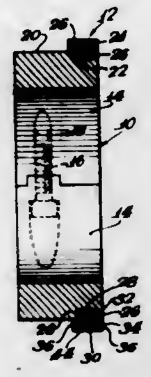


1. Apparatus for detecting high tension ends in a horizontal sheet of parallel yarn ends which comprises two supports disposed one on each side of said parallel yarn ends, a traverse cradle guide disposed transversely over said yarn ends supported by said supports, a traverse cradle including a frame transversely movably mounted on said traverse cradle guide having detecting means for detecting said high tension ends and stopping means for stopping the transverse movement of said frame proximate to the site of said high tension end, and driving means associated with said cradle for driving said cradle at a uniform speed back and forth transversely across said parallel yarn ends including limiting means for limiting the extent of transverse travel of said cradle.

3,353,245
INSERTABLE ELASTIC STRIP

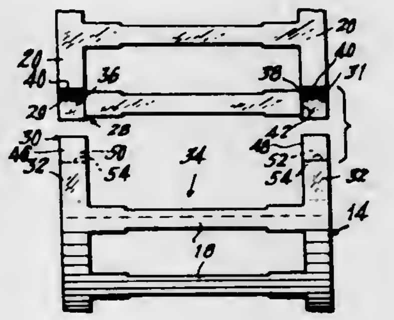
Mayne M. Madson, Hinsdale, Ill., assignor, by mesne assignments, to Maco Industries Inc., a corporation of Illinois
Filed Oct. 28, 1963, Ser. No. 319,359
4 Claims. (Cl. 29—129.5)

1. In combination, a substantially cylindrical operating machine member having a groove circumferentially formed in its outer periphery and with side and bottom surfaces, said groove having a restricted opening, and an integral strip of substantially incompressible elastic material having a working portion and a retaining portion, said retaining portion having leg portions which are received in said groove, said retaining portion having a cross-sectional area slightly less than the cross-sectional area of said groove, the total thickness of the legs taken in a direction parallel to the surface of the machine member and perpendicular to the axis of the groove being substantially the thickness of the restricted opening of the groove, and the side portions of the said retaining portion conforming to the inner surface of both the sides and bottom of said groove whereby upon inward compression of said legs, said retaining portion may be inserted into said groove and after said retaining portion is in said groove, downward pressure against said working portion causes said legs to diverge outwardly against the surface of said sides and bottom of said groove for frictional retention of said strip with said groove.



3,353,246
METHOD OF MAKING A CAGE FOR A ROLLER BEARING

Robert W. Farmer, Livingston, N.J., assignor to Orange Roller Bearing Company, Inc., a corporation of New York
Filed July 1, 1965, Ser. No. 468,778
3 Claims. (Cl. 29—148.4)

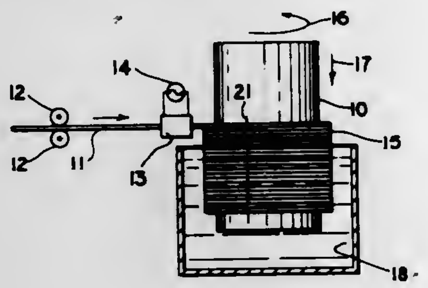


1. The method of making a cage for the rollers of a roller bearing, which consists of punching a strip of bendable sheet material to form a longitudinal row of elongated roller-receiving slots between the side portions of the strip each of which extends transversely of the strip and portions of whose side walls are parallel to each other throughout the thickness of the strip and spaced apart a distance less than the diameter of the rollers to be held in the cage, swaging the ends of the side portions of the strip forming thereon slanted joint surfaces having shoulders at their inner ends with the shoulders at one end of the strip to abut the opposite end of the strip, bending the strip into a circular ring, overlapping said joint surfaces and securing together the overlapped ends of the strip with the shoulders at one end of the strip abutting the other ends of said side portions of the strip.

3,353,247

METHOD OF PRODUCING PISTON RINGS

Gerhard Kubera, Barsinghausen, Germany, assignor to Teves-Thompson & Co., G.m.b.H., Frankfurt am Main, Germany
Filed Mar. 5, 1963, Ser. No. 263,017
Claims priority, application Germany, Mar. 9, 1962, T 21,723
6 Claims. (Cl. 29—156.6)

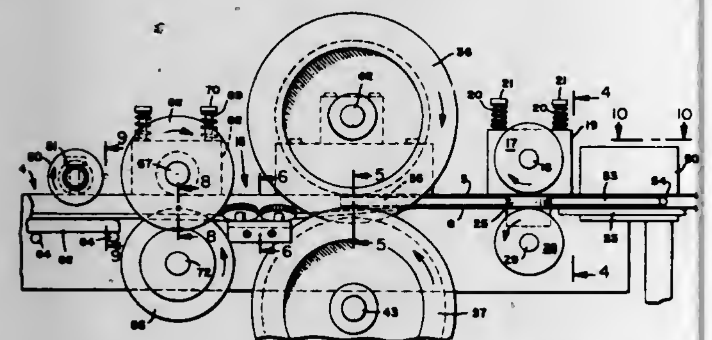


1. A method of producing piston rings which comprises the steps of inductively heating a steel wire having the composition: carbon 0.3 to 1.5% by weight, chromium 1.0 to 25%, molybdenum 0.5 to 4.0% body weight and vanadium 0.1 to 2.0% by weight, the balance being substantially entirely iron to a temperature above the alpha-iron/gamma-iron transformation temperature of the steel; winding the inductively heated steel wire around a mandrel at a temperature above the alpha-iron/gamma-iron transformation temperature of the steel; cooling the wire on the mandrel by quenching; and removing the cooled wire from said mandrel.

3,353,248

METHOD FOR FORMING DOUBLE VANES

Laffie Harper, 1192 Montgomery Ave., San Bruno, Calif. 94066
Filed Mar. 25, 1965, Ser. No. 442,689
2 Claims. (Cl. 29—157)



1. The method of forming a hollow double vane for use in an air duct elbow that includes the steps of:

(a) moving a pair of respectively planar strips of sheet metal of substantially the same width longitudinally thereof in one direction in separate paths of travel with one of the flat surfaces of the strips of said pair in opposedly facing relation at a predetermined location along said paths, and spaced apart at said location a distance substantially less than the width of said strips;

(b) progressively and simultaneously bowing each strip of said pair transversely of its length to the same side of said pair during such longitudinal movement of said strips at said location with the one strip that is opposite to said last mentioned side of said pair being bowed to a substantially greater degree than the other strip and until its longitudinally extending edges engage the surface of the other strip that faces said one strip along a pair of lines equally spaced between and parallel with the longitudinally extending edges of said other strip; and during movement of said strips in said one direction;

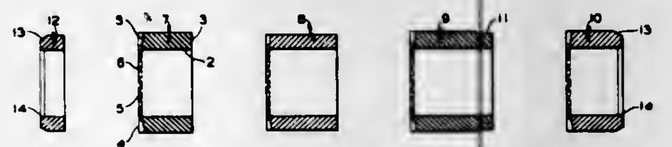
(c) progressively bending the marginal portions of said other strip that are along and outwardly of said pair of spaced lines along the said edges of said one strip across said last mentioned edges and to positions over and against the marginal portions of said one strip; and

(d) holding the central, longitudinally extending portions of said strips spaced apart during said movement of said strips in said one direction.

3,353,249

METHOD OF MAKING A FABRICATED VALVE BUSHING

Charles E. MacFarlane and Carl G. Hoge, Pittsburgh, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Mar. 25, 1964, Ser. No. 354,546
5 Claims. (Cl. 29—157.1)



1. The method of fabricating a valve bushing having passages extending therethrough at intervals along its length, comprising:

(a) pressing and sintering from powdered metal a plurality of tubular bushing segments each terminating at one end in a plane perpendicular to the segment axis, and terminating at the other end in a plane perpendicular to the segment axis, said other end having therein a plurality of grooves radially disposed with respect to the segment axis and formed shallow in depth and large in width at the inner diameter of the segment and gradually increasing in depth and decreasing in width in the direction toward the outside diameter of the segment to provide a large bonding area on the ungrooved portion of said other end and to maintain the cross-sectional area of each groove substantially constant along its length,

(b) forming an end segment having planar ends perpendicular to its axis,

(c) applying a bonding agent to the ungrooved portions of said other end of each segment and to one end of said end segment,

(d) assembling said plurality of segments and said end segment in abutting end-to-end coaxial relationship with the ungrooved end of each segment disposed against the plane end of the adjacent segment and with said one end of the end segment abutting the grooved end of the assembled plurality of segments, and

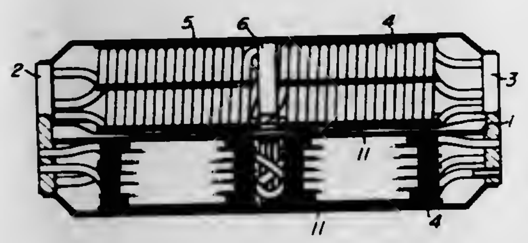
(e) heating the assembled segments to cure said bonding agent.

3,353,250

METHOD FOR MANUFACTURING A HEAT EXCHANGER

Wahei Kikuchi and Masatoshi Watanabe, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Mar. 24, 1964, Ser. No. 354,383
Claims priority, application Japan, Apr. 1, 1963, 38/16,146
2 Claims. (Cl. 29—157.3)

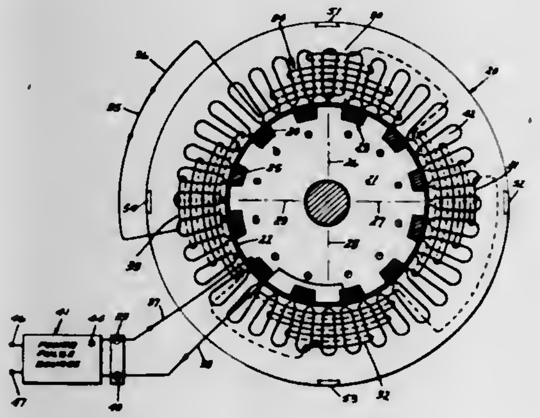
1. In a method of manufacturing a wound tube heat exchanger of relatively great weight and axial extent on a relatively weak core selected for its effect on the heat exchanger independently of its support characteristics, including the steps of providing a core having opposed ends, rotating said core about an axis through its ends, winding a continuous heat exchanger tube helically around said core in multiple layers from one opposed end to the other opposed end of the core, wherein the improvement comprises: supporting the core between its opposite ends by a drivingly connected support ring; supporting the support ring in a bearing for rotation with the core; helically winding the tube first on the core between one end of the core and the support ring; thereafter passing the tube, intermediate its terminal ends, radially through a radially extending outwardly opening slot in the support ring; and thereafter helically winding the tube on the core between the other opposed end of the core and the support ring.



3,353,251

APPARATUS FOR EFFECTING CONDUCTOR-PLACING OPERATIONS ON ELECTRICAL COILS IN INDUCTIVE DEVICES

Clovis E. Linkous, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Original application Nov. 30, 1964, Ser. No. 414,825, now Patent No. 3,333,330, dated Aug. 1, 1967. Divided and this application Dec. 23, 1966, Ser. No. 604,472
4 Claims. (Cl. 29—205)

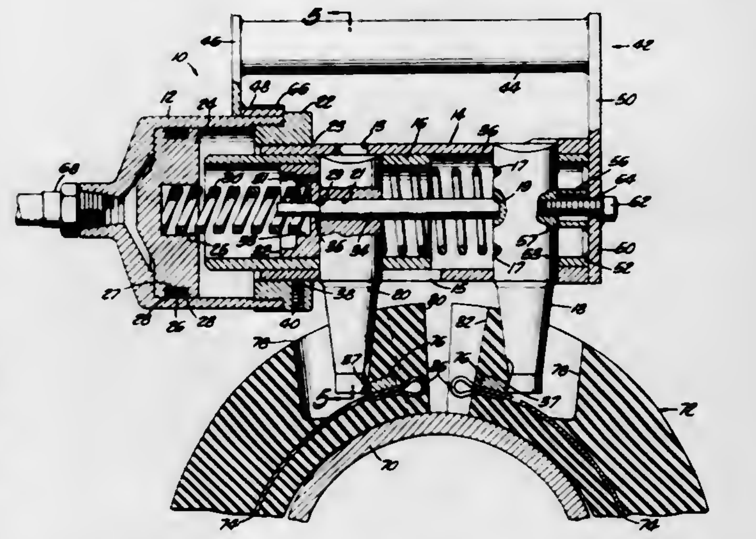


1. Apparatus for effecting a desired placement of at least portions of an excitation winding relative to a dynamoelectric machine core, said excitation winding defining an even number of magnetic poles, said apparatus comprising: a winding-accommodating member, a primary winding disposed in said winding-accommodating member to define at least a pair of magnetic poles with radial axes essentially aligned with the axes of a pair of magnetic poles of the excitation winding, means for positioning the winding-accommodating member adjacent to the excitation winding to cause the primary winding when energized to be inductively coupled with the excitation winding, and means for producing at least one high electric power pulse in the primary winding to cause a surge of current flow through the primary winding to thereby induce a surge of current flow therethrough and establish a varying magnetic field, said current and magnetic field established by said high electric power pulse interacting to cause electromagnetic forces to be exerted on the excitation winding to effect the desired placement.

3,353,252

POWER OPERATED APPLICATOR TOOL FOR PIPE PROTECTORS

Lawrence E. Fuller, Whittier, Calif., assignor to Byron Jackson, Inc., Long Beach, Calif., a corporation of Delaware
Filed Aug. 26, 1965, Ser. No. 482,793
4 Claims. (Cl. 29—236)



1. A tool for constricting about a pipe a flexible split protector which comprises:

(a) a sleeve;

(b) a first jaw fixed to said sleeve;

(c) a second jaw;

(d) means for mounting said second jaw on said sleeve for movement toward said first jaw, said means comprising a member slidable in said sleeve, said member being fixed to said second jaw;

(e) a cylinder threaded to said sleeve;

(f) a piston slidable in said cylinder for sliding said member in said sleeve;

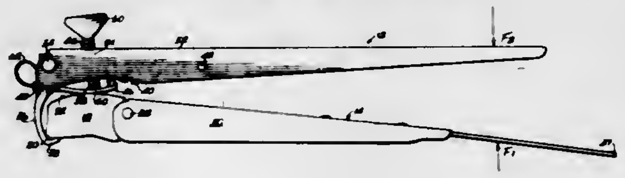
(g) means for sliding said piston; and

(h) mutually abutting stop members on said piston and said cylinder limiting movement of said piston, whereby the spacing between said stop member on said cylinder and said first jaw may be varied by the threaded engagement of said cylinder to said sleeve thereby to vary the spacing of said jaws when said stop members are in abutment.

3,353,253

TOOL FOR INSTALLING ASSEMBLIES TO CARRY WINDSHIELD WIPER BLADES

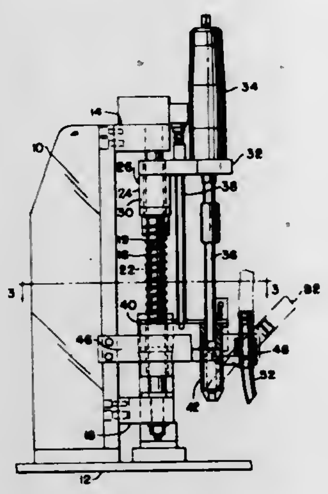
Euseblo Rodriguez Lara, 4660 NW. 4th St., Apt. 4, Miami, Fla. 33126
Filed July 7, 1966, Ser. No. 563,474
10 Claims. (Cl. 29—239)



1. A tool to either install or remove an assembly for a windshield wiper blade from a vehicle which assembly includes an inverted cup-shaped portion pivotally connected to an arm and spring means biasing the arm and the cup-shaped member so that the opening in the cup and the distal end of the arm are urged in arcuate paths toward one another comprising: an elongate lever handle to overlay the arm of the assembly and a short lever at one end of the elongate lever with pivot pin means to connect a short lever and the elongate lever, said short lever extending from the axis of the pivot pin means a

distance at least as large as the height of the cup-shaped portion and hook means on the distal end of the short lever to engage the rim of the cup-shaped portion to captivate the cup-shaped portion within the angle between the levers so that the arm of the assembly and the lever may be arranged in parallel relation and maintained in such relation by minimal opposing forces on the distal ends of the arm and elongate handle while the cup is restrained from pivotal movement with respect to the arm by reason of the hook end of the short lever.

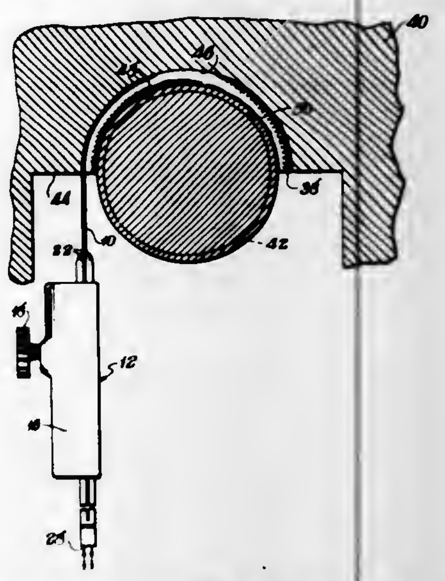
3,353,254
PART FEEDING APPARATUS
Arnold B. Ford, Livonia, Mich., assignor to Feedmatic-Detroit, Inc., Southfield, Mich., a corporation of Michigan
Filed June 7, 1965, Ser. No. 461,885
6 Claims. (Cl. 29—240)



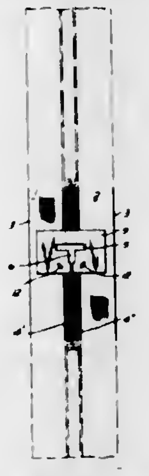
6. Part applying apparatus comprising a frame, rectilinear guide means on said frame, a part holder movable along said guide means, an applicator movable along said guide means, means connecting said holder and applicator to limit separation therebetween, resilient means disposed between said holder and applicator yieldable to permit said applicator to move relative to said holder, abutment means acting between said frame and holder, actuating means connected between said frame and applicator operable to move said applicator and holder as a unit until movement of said holder is arrested by said abutment means, and to thereafter move said applicator relative to said holder as permitted by said resilient means, a part feeder on said frame having a portion movable into a position directly adjacent said holder and in the path of movement of said applicator relative to said holder, and camming means including a part connected to said feeder and a part engageable therewith carried by said holder operable during initial movement of said holder in unison with movement of said applicator therewith to move said feeder out of the path of movement of said applicator prior to initiation of movement of said applicator relative to said holder.

3,353,255
METHOD AND TOOLS FOR TIGHTENING SEALS
Earl Short, 2806 Faulkland Road,
Wilmington, Del. 19808
Filed Sept. 16, 1964, Ser. No. 398,152
7 Claims. (Cl. 29—401)

1. A method of tightening a soft seal installed in a semi-circular groove in a bearing block without removing the shaft from engagement with said block comprising the steps of supporting an elongated thin strip of stiff flexible material in a holder with one end of said strip being exposed a controlled distance from said tool holder, positioning said one end of said strip at one of the exposed ends of said groove between said soft seal and the back wall of the groove opposite from said shaft, moving said holder and supported portion of said strip toward said groove to insert said one end of said strip into said groove, manipulating said holder to expose a further controlled portion of said strip, moving said holder and supported portion of said strip toward said groove to insert said exposed portion of said strip into said groove, and repeating said steps of manipulating said holder to expose portions of said strip and moving said holder toward said groove until said strip is completely inserted about the periphery of said groove whereby the seal material is urged into tight sealing contact with said shaft.

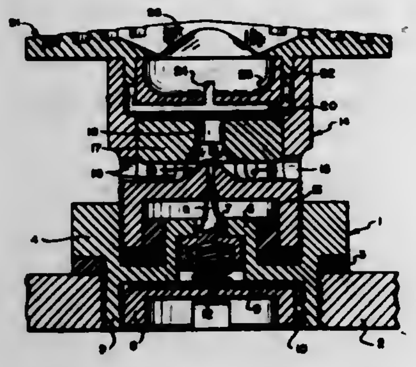


3,353,256
METHOD OF FINISHING SLIDE FASTENERS
Alfons Fröhlich, Franz Hochlehnert, and Georg Gläser, all of Essen, Germany, assignors to Opti-Holding A.G., Glarus, Switzerland, a corporation of Switzerland
Filed July 19, 1965, Ser. No. 472,953
Claims priority, application Germany, Apr. 3, 1965,
O 10,766
15 Claims. (Cl. 29—408)



1. A method of producing individual slide fasteners from a continuous strip having a pair of interlinked elongated fastener elements mounted upon respective bands, comprising the steps of (a) forming windows between said elements at spaced locations along said strip; (b) mounting respective sliders on said strip by inserting them respectively through said windows, and relatively displacing said sliders and said strip by holding said sliders stationary and continuously moving said strip; and (c) severing said strip after the mounting of the respective sliders thereon to produce individual slide fasteners provided with respective sliders, said windows being generally of T-shaped configuration with a head extending transversely to the strip and a leg extending longitudinally between said elements, each slider deflecting the portion of each opening above the head of the respective T out of the plane of the strip to bring the edges of the window into the passage of the slider.

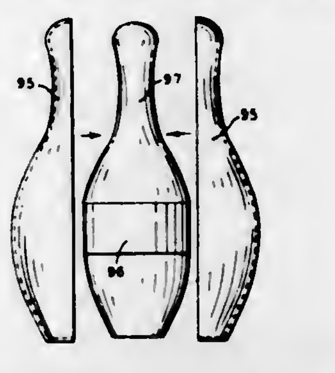
3,353,257
GAS BURNING APPARATUS
Hermann Schlamp, Cologne, and Peter Weber, Cologne-Dellbruck, Germany, assignors to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed Sept. 17, 1965, Ser. No. 488,182
Claims priority, application Germany, Sept. 24, 1964,
R 38,843
10 Claims. (Cl. 239—417.3)



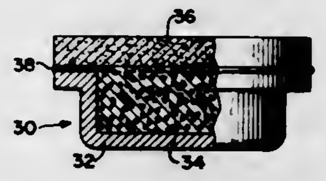
10. A gas burning apparatus comprising:
- (a) a valve body adapted to be connected at one end to a wall of a supply tank, said valve body having:
  - (i) a porous gasket disposed therein in communication with the one end of said valve body,
  - (ii) an internal annular flange, an outer portion of which bears upon the outer edge of the porous gasket on the side opposite said one end and an inner portion which includes an opening extending therethrough concentrically of said valve body, said opening being in communication with said porous gasket,
- (b) a cylindrical mixing chamber body mounted upon the valve body and containing an inwardly extending flange portion forming an orifice which is within and concentric with said mixing chamber body;
- (c) a tapered needle partially projecting into the orifice and held in said valve body between
  - (i) the inner portion of the internal annular flange, said needle projecting partially through the opening therein beyond said internal annular flange with its narrowest portion remote from that flange, and
  - (ii) a spring disposed between it and the porous gasket;
- (d) means for moving the mixing chamber body axially relative to the valve body to alter the extent of projection of the needle into the orifice;
- (e) at least one aperture disposed in the mixing chamber body through which air is admitted to mix with vaporized fuel passing through the orifice; and
- (f) a burner mounted adjacent the mixing chamber body to receive and burn the mixture of vaporized fuel and air.

3,353,258
BOWLING PIN
William W. Barton and Milton B. Hollander, Stamford, and James A. Bolton, Darien, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Feb. 17, 1964, Ser. No. 345,368
8 Claims. (Cl. 29—463)

1. A method of manufacturing a metal clad bowling pin which contains a filler element within the metal cladding comprising selecting a filler element which is to be an integral part of the finished bowling pin said filler element having generally the shape of a finished pin and including a circumferential belly at the ball line region and having a predetermined weight distribution and sonic quality, enclosing said filler element in preshaped complementary metal halves closely similar in size and shape to said filler element and securing said halves along a joint formed at the vertical medial plane and thereby engaging said metal halves with said filler element in permanent close fitting engagement.



3,353,259
METHOD OF BONDING POROUS TUNGSTEN
Milton E. Kirkpatrick, Palos Verdes Estates, Calif., assignor to TRW Inc., a corporation of Ohio
Filed Sept. 18, 1964, Ser. No. 397,582
5 Claims. (Cl. 29—487)



1. In a process of bonding a first member consisting essentially of porous tungsten to a second member consisting essentially of a metal selected from the class which includes molybdenum and tungsten, the procedure comprising the steps of:
- applying a relatively thin layer of substantially pure vanadium to at least a portion of one of said members;
- holding said members together in a manner such that said vanadium is disposed between the interface areas which are to be united;
- heating at least said interface areas to a temperature between about 1900 to 2000° C. for a time sufficient for said vanadium to be transformed to the liquid phase so that said interface areas are wetted;
- and thereafter annealing the assembly at a reduced temperature, of the order of 1600 to 1900° C. at which a continuous series of solid solution alloys of the tungsten and vanadium are formed without formation of a liquid phase.

3,353,260
METHOD OF MAKING SHIELDED CONDUCTORS
Bayard C. Davis, Lombard, Alvin Singer, Glencoe, and Milford T. Chapman, Jr., Addison, Ill., assignors, by direct and mesne assignments, to Continental Sensing, Inc., Melrose Park, Ill., a corporation of Illinois
Filed Oct. 4, 1963, Ser. No. 313,747
4 Claims. (Cl. 29—573)

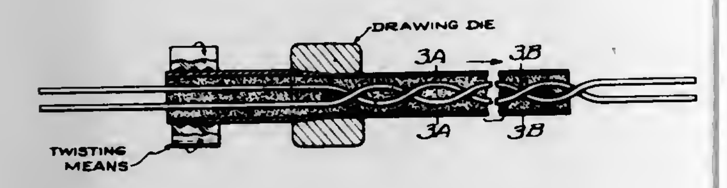
1. A process for producing metal sheathed thermocouple conductors in any desired length; which process comprises the sequential steps of
- preparing an assembly of sensing wires, insulation material, and metallic sheathing whereby said sensing wires are supported within discrete strips of said insulation material and are arranged in substantially

uniform spaced relation along the entire length of the assembly and whereby said wires and surrounding insulation material are loosely supported within said sheath;

urging said strips into contacting relation with each other and said sheath by subjecting said assembly to an initial drawing operation through a stationary reducing die means;

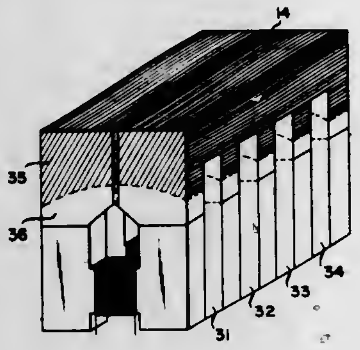
reducing the cross section of the drawn assembly to approximately the desired cross section of the completed thermocouple conductor but substantially without elongation of said assembly, and at the same time crushing the insulator strips and loosely compacting the insulation material about said spaced apart sensing wires supported therein by passing the assembly through a swaging die means;

and finally drawing said drawn and swaged assembly through a second stationary die means to uniformly reduce the cross section of the assembly to the desired final cross section and further compact said insulation material about said wires so that said wires are fixedly maintained in suitably spaced relation throughout the entire length of the completed thermocouple conductor.



3,353,261
METHOD OF MAKING A MULTITRACK MAGNETIC TRANSDUCER HEAD

Rex C. Bradford, Miles H. Cook, and Henry R. Kelsof, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1964, Ser. No. 422,185
9 Claims. (Cl. 29—603)



1. The method of making a multitrack magnetic head comprising:

providing each of a pair of blocks of a high resistivity material with an optically flat polished planar surface;

locating said blocks so that said surfaces are spaced slightly from each other in confronting relation;

joining said blocks to each other by means of a bonding material;

providing a plurality of projections on one block which are spaced from but confront a like number of projections on the other block by forming at least one channel extending into each of said blocks and into said bonding material;

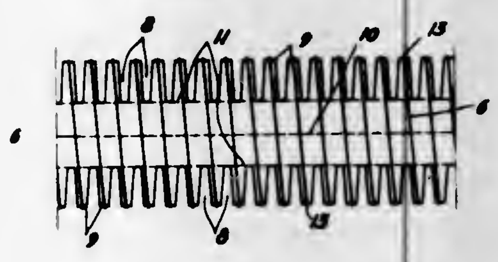
attaching a coiled jumper assembly to each confronting pair of projections;

securing a shield into each channel in such manner that each pair of confronting projections is secured to its closest adjacent neighboring pair of projections both by means of an intervening shield and by means of that portion of each block and that portion of the bonding material that lie beyond said projections;

and removing at least said portions of each block and said portion of bonding material whereby a plurality of functionally independant tracks is formed in a single head unit.

3,353,262
MANUFACTURE OF ELECTRIC IGNITORS FOR DETONATORS

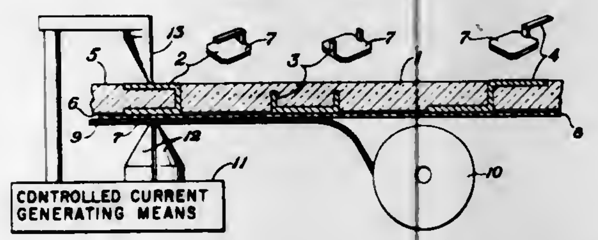
Alain Ingold and Jean Raynal, Hery, Yonne, France, assignors to Etablissement Davey Bickford Smith & Cie Societe Anonyme Francaise, Rouen, Seine Maritime, France, a corporation of France
Filed Apr. 24, 1964, Ser. No. 362,338
Claims priority, application France, May 9, 1963, 934,246
5 Claims. (Cl. 29—623)



1. A process for the preparation of electrical ignitors for detonators comprising forming an adherent electrically conductive metallic coating on both faces of a thin strip of dielectric material, providing at least one side edge of said dielectric strip free from any metallization, winding around the coated strip and over said at least one edge a thin and narrow metallic conductor in the form of a helix of uniform pitch depositing a second conductive metallic coating over a major portion of the width of both faces of said strip including parts of the helically wound conductor while preventing the metallizing of said at least one side edge, cutting slots out of said strip between the turns of said helix along the at least one edge of the strip to provide outwardly projecting portions of the strip having the appearance of the teeth of a comb, and thereafter cutting off said outwardly projecting portions to provide individual ignitors.

3,353,263
SUCCESSIVELY STACKING, AND WELDING CIRCUIT CONDUCTORS THROUGH INSULATION BY USING ELECTRODES ENGAGING ONE CONDUCTOR

John Douglas Helms, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 389,900
6 Claims. (Cl. 29—626)



1. A method of electrically connecting a circuit board base having component and interconnection sides with electrical feed-throughs therebetween, comprising the steps of

(a) overlying the interconnection side of said feed-throughs with a first non-perforated insulating means,

(b) selectively placing first interconnecting means adjacent to said first insulating means,

(c) selectively conductively connecting said first interconnecting means to said feed-throughs through said first insulating means by contacting said first interconnecting means with the electrodes of a current device, applying pressure to said first interconnecting means with said electrodes, and passing current through said electrodes and said first interconnecting means for the application of a sufficient amount of heat to said first interconnecting means to melt said first insulating means and weld said first interconnecting means to said feed-throughs,

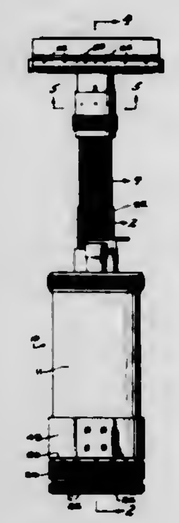
(d) overlying said first interconnecting means with a second non-perforated insulating means,

(e) selectively placing a second interconnecting means over said second insulating means, and

(f) selectively conductively connecting said second interconnecting means through said first and second insulating means to said feed-throughs by contacting said second interconnecting means with the electrodes of a current device, applying pressure to said second interconnecting means with said electrodes, and passing current through said electrodes and said second interconnecting means for the application of a sufficient amount of heat to said second interconnecting means to melt said first and second insulating means and weld said second interconnecting means to said feed-throughs.

3,353,264
SAFETY RAZOR WITH FACE MOISTENER FLUID DISPENSING MEANS

Joseph Waldman, 404 Meadowbrook Lane, Erdenheim, Philadelphia, Pa. 19118
Filed Apr. 29, 1966, Ser. No. 546,350
8 Claims. (Cl. 30—41)



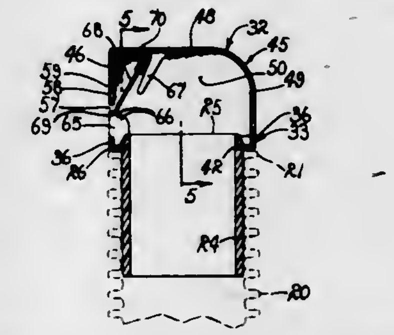
1. In a safety razor of the type having a shaving head including a blade, a blade support and a blade edge guard substantially coextensive in length with the effective length of the blade cutting edge and disposed in closely spaced parallel relation to said cutting edge, a handle for the razor providing a reservoir for holding a supply of skin lubricating fluid for application to the face during the shaving operation, said reservoir including a chamber having a fluid discharge port in communication with fluid discharge passages formed in the shaving head immediate adjacent to and spaced along the effective length of the blade, spring-pressed plunger means operative in said chamber to expel therefrom through said discharge port fluid under pressure exerted by said plunger means, and cable means contained entirely within said handle for retracting said plunger against its spring pressure, and means operable externally of the handle by the hand holding the razor during the shaving operation to automatically control the movement of said plunger means within said chamber and thereby effect flow of lubricant onto the skin being shaved.

ERRATUM

For Class 30—53 see:
Patent No. 3,353,289

3,353,265
VACUUM HAIR CUTTING DEVICE

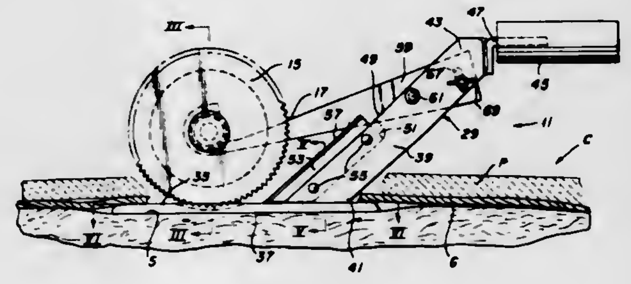
Salvador S. Mendoza, 549 Belmont, Fresno, Calif. 93701
Filed May 26, 1966, Ser. No. 553,092
1 Claim. (Cl. 30—133)



A hair cutting device comprising a cutting head having an intake opening and a discharge opening defining an air path through the head, a razor blade mounted in the head adjacent to the opening obliquely to said air path, means for applying a vacuum to the discharge opening of the head whereby hair may be drawn inwardly of the intake opening along said path of air and severed by movement of the head in a direction bringing the blade into severing engagement with such hair, said cutting head including blade mounts within said head at opposite sides of the intake opening, each providing a series of notches selectively accommodating opposite ends of the razor blade whereby the angular disposition of the blade with respect to the air stream and its spacing from the intake opening can be selectively adjusted.

3,353,266
ATTACHMENT FOR A CAST CUTTER

Teslie C. Goolsby, Rte. 1, Myrtle, Miss. 38650; Bertha Goolsby, executrix of said Teslie C. Goolsby, deceased
Filed Jan. 19, 1966, Ser. No. 521,739
6 Claims. (Cl. 30—167)



1. An attachment for a cast cutter of the type having a vibrating cutter disc mounted adjacent a reduced neck portion of the cast cutter, said attachment comprising an elongated horizontal foot member having an upper surface and a lower surface, said foot member being adapted to be inserted between the cast to be cut and the patient's skin adjacent the cast to be cut with said upper surface adjacent the cast and said lower surface adjacent the skin,

and supporting means attached to said elongated foot member for supporting said cast cutter with the lower edge of said cutter disc adjacent said foot member in position to cut the cast and with said foot member being between said cutter disc and the patient's skin to prevent injury thereto by said cutter disc, said foot member being provided with a longitudinally extending groove in the upper surface thereof adapted to receive the lower edge of the cutter disc, said supporting means including a first member having an upper end and a lower end, and a second member, said first member being fixedly attached adjacent the lower end thereof to said foot member and extending upwardly and rearwardly therefrom, said second member including a substantially hook-shaped end portion providing a rearwardly opening and transversely extending slot spaced above said foot member to receive and support the neck of the cast cutter with which used, a portion of said hook-shaped end portion extending substantially horizontally in a position to overlie the neck of the cast cutter with which used whereby upward movement of the cast cutter is effective to draw said attachment upwardly therewith, and means adjacent the opposite end of said second member from said hook-shaped end portion pivotally and adjustably attaching said second member to said first member for selectively varying the distance between said hook-shaped end portion and said foot member.

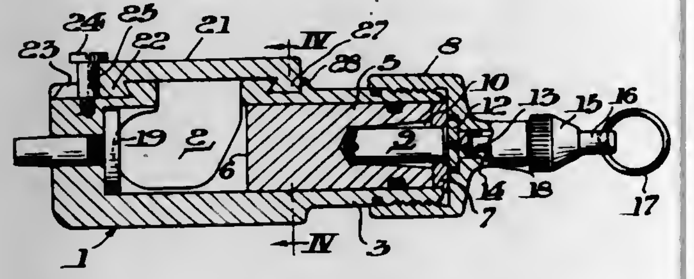
3,353,267

EXPLOSIVELY ACTUATED CABLE-CUTTING TOOL

Robert Temple, Swissvale, and Ernest E. Temple, Murrysville, Pa., assignors to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 20, 1965, Ser. No. 498,573

8 Claims. (Cl. 30—180)



1. A cable-cutting tool comprising a frame provided near one end with a cable-receiving recess having an open side, a chisel slidably mounted in the frame and having a front cutting end movable across said recess, means connected with the frame behind said chisel for detonating an explosive charge to drive the chisel forward, and a removable tie bar normally extending lengthwise of said frame across said open side of said recess, means pivotally connecting one end of the bar to the frame for rotation laterally of the frame in a plane substantially parallel to the longitudinal axis of the frame to open said side of the recess, and means detachably connecting the opposite end of the tie bar to the frame to keep the frame from bending and spreading said open side of the recess farther open when the tool is operated.

3,353,268

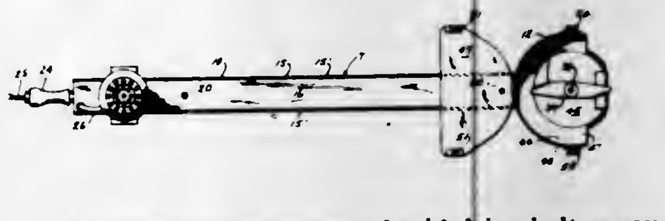
SHRUB FORMER AND LAWN EDGE TRIMMER

Henry E. Meltzer, 1745 Flett St., Racine, Wis. 53403

Filed Oct. 15, 1965, Ser. No. 496,444

2 Claims. (30—276)

1. A lawn manicuring device for cutting, shaping and trimming shrubs, hedges and lawn edges including, an elongated longitudinally extending casing having continuous walls defining a substantially uninterrupted longitudinally extending space and channel, said channel being open at both ends, a drive motor secured adjacent one end of said casing, a drive shaft for said motor projecting into said space and channel, a rearwardly extending handle secured to said elongated longitudinally extending casing adjacent to said drive motor, a rotating cutting blade carried by the other end of said casing including, a driven shaft for said blade received in suitable bearings, at least part of said driven shaft extending into said space and channel and in alignment with said drive shaft for rotating said driven shaft, means in operative connection with said drive shaft for rotating said drive shaft, said means including a pair of pulleys each secured to a respective shaft and a drive belt trained about said pulleys, means for adjusting the tension of said drive belt, a source of power for said motor, a housing for said cutter having an open lower and forward end exposing at least a portion of said cutter blade, the point of balance between said motor and cutter blade and its housing being located intermediate said elongated casing, and a pivoted cover for said lower end of said cutter housing for closing only said lower end, said cutter blade rotating in a horizontal plane and extending beyond the peripheral edge of said housing, said cover having an open position completely exposing the cutter blade and a closed debris collecting position.



3,353,269

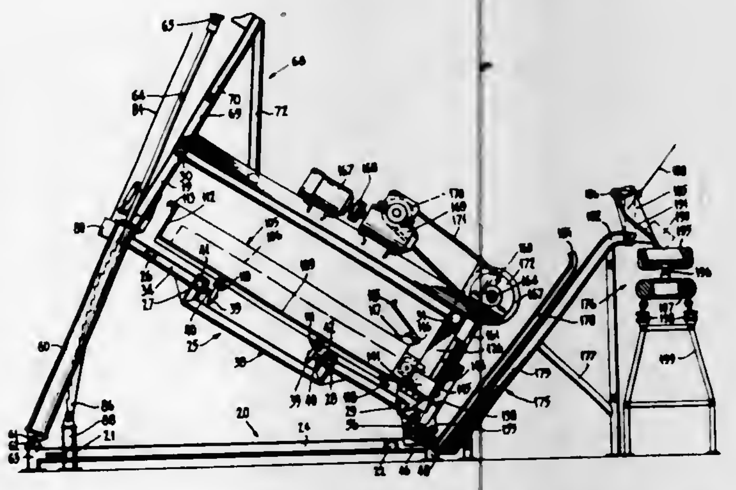
METHOD OF AND APPARATUS FOR HANDLING CHEESE CURD

Douglas R. M. Lambert, Caulfield, Victoria, and Joseph M. Sharkey, Box Hill, Victoria, Australia, assignors, by mesne assignments, to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 16, 1964, Ser. No. 411,523

Claims priority, application Australia, Oct. 6, 1964, 50,123/64

14 Claims. (Cl. 31—5)



5. A method of providing strips of cheese curd comprising depositing a quantity of curd in an open-topped receptacle having a bottom wall and side walls containing the curd, compressing and compacting the curd within the receptacle to form a block, exposing one side of the contained block by displacing one side wall of the receptacle, tilting the receptacle and shifting the block relative to the receptacle so as to cause a segment of the block to project outwardly of the receptacle along the lower open side thereof, and severing a strip of curd from the projecting segment while at least partially containing the segment along a bottom edge portion of the segment.

3,353,270

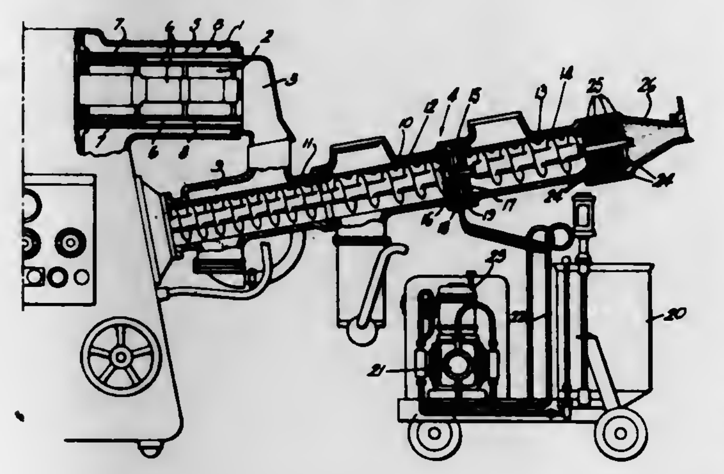
MACHINE FOR THE CONTINUOUS PRODUCTION OF SALT BUTTER

Roger Jules Albert Simon, Cherbourg, Manche, France, assignor to Societe anonyme: Etablissements Simon Freres, Manche, France

Filed Mar. 30, 1964, Ser. No. 355,601

Claims priority, application France Feb. 1, 1964, 962,380, Patent 1,392,586

8 Claims. (Cl. 31—33)



1. In a machine for the continuous production of salt butter comprising cream-feeding means, a churning device, a mixer, means for transferring the butter mass due to the churning action in said mixer, conveyor screws in the mixer, and an outlet to which the mixed butter is fed by said screws; roughened walls having sharp asperities inside the churning device, thin strips arranged inside said device opposite to said walls and at a small distance therefrom for producing the churning action owing to a centrifugal effect between said strips and said roughened walls under such conditions as to achieve a reduction of the moisture content of the resultant butter, means for rapidly revolving said thin strips, means in the mixer for generating a butter-braking region spaced from said outlet, and means for introducing brine into said braking region of the mixer.

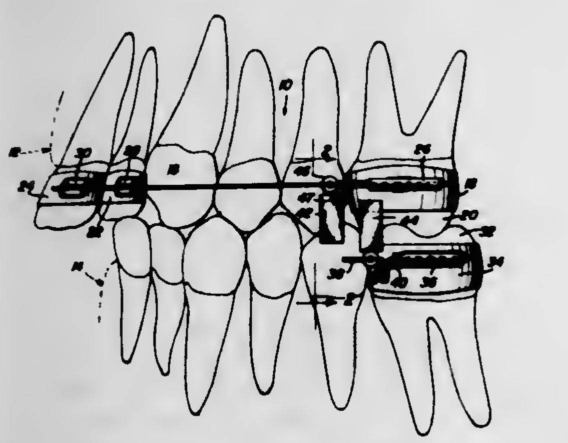
3,353,271

MAGNETIC ORTHODONTIC APPLIANCE

Abraham M. Blechman, 771 Broadway, Paterson, N.J. 07514

Filed Apr. 1, 1965, Ser. No. 444,571

7 Claims. (Cl. 32—14)



1. In an orthodontic appliance having an arch wire adapted to be secured to the teeth of a person, means for generating a corrective force including a first magnetic element secured to said arch wire, a second magnetic element and anchoring means for mounting said second magnetic element on the buccal side of the teeth within the magnetic field of the first magnetic element.

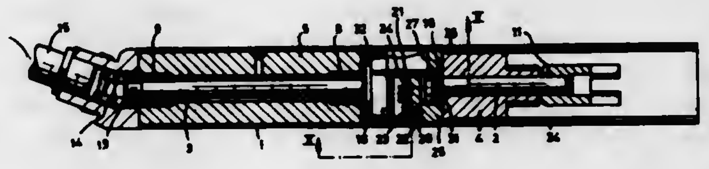
3,353,272

DENTAL HAND PIECES

Michel Seigneurin, Ecole, near Besancon, Doubs, France, assignor to Micro-Mega, a joint-stock company, Besancon, Doubs, France

Filed Nov. 3, 1964, Ser. No. 408,698

2 Claims. (Cl. 32—27)



1. A dental handpiece comprising a cylindrical body, a pair of sockets in said body, a two-part longitudinal rotating shaft journalled in said sockets, said parts having facing ends in register connected by a reduction gearing entirely housed in said body, said gearing comprising: first toothed wheels of unequal diameter carried by said ends, two other toothed wheels of unequal diameter, the smaller of said wheels being in mesh with the larger of said first wheels and the larger with the smaller of said first wheels, and mounted on an intermediate cross-shaft at right angles to said rotating shaft on either side of said rotating shaft, said larger of said first wheels having the shape of a bell for partially housing therein the larger of said wheels of said intermediate cross-shaft, a third socket intermediate said sockets of said pair of sockets, said socket having bores therein for receiving said other wheels and said intermediate cross-shaft.

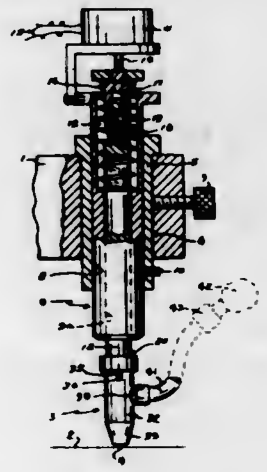
3,353,273

HOLLOW ENGRAVING POINTS, HOLDERS AND CLEANING DEVICE FOR ENGRAVING COATED SHEETS

Robert H. Sicking, 5705 Itaska St., and Robert H. Sovar, 2552 Redman, both of St. Louis, Mo. 63136

Filed June 13, 1966, Ser. No. 557,865

7 Claims. (Cl. 33—18)

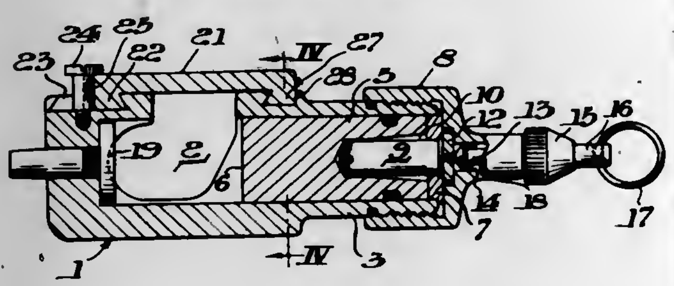


1. In a hollow engraving point and holder for engraving opaque coated transparent sheets, a body having an axial bore and relatively movable in any direction perpendicular to said bore above said opaque coated transparent sheet, a scribing plunger axially slidable in said bore, an engraving point assembly carried by said plunger having an engraving point with an engraving tip and formed with a concentric suction passage therethrough opening inwardly through said engraving tip for receiving and removing debris and plugs from the opaque coating displaced by contacting engagement of said engraving

and supporting means attached to said elongated foot member for supporting said cast cutter with the lower edge of said cutter disc adjacent said foot member in position to cut the cast and with said foot member being between said cutter disc and the patient's skin to prevent injury thereto by said cutter disc, said foot member being provided with a longitudinally extending groove in the upper surface thereof adapted to receive the lower edge of the cutter disc, said supporting means including a first member having an upper end and a lower end, and a second member, said first member being fixedly attached adjacent the lower end thereof to said foot member and extending upwardly and rearwardly therefrom, said second member including a substantially hook-shaped end portion providing a rearwardly opening and transversely extending slot spaced above said foot member to receive and support the neck of the cast cutter with which used, a portion of said hook-shaped end portion extending substantially horizontally in a position to overlie the neck of the cast cutter with which used whereby upward movement of the cast cutter is effective to draw said attachment upwardly therewith, and means adjacent the opposite end of said second member from said hook-shaped end portion pivotally and adjustably attaching said second member to said first member for selectively varying the distance between said hook-shaped end portion and said foot member.

3,353,267
EXPLOSIVELY ACTUATED CABLE-CUTTING TOOL

Robert Temple, Swissvale, and Ernest E. Temple, Murrysville, Pa., assignors to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 20, 1965, Ser. No. 498,573
8 Claims. (Cl. 30—180)



1. A cable-cutting tool comprising a frame provided near one end with a cable-receiving recess having an open side, a chisel slidably mounted in the frame and having a front cutting end movable across said recess, means connected with the frame behind said chisel for detonating an explosive charge to drive the chisel forward, and a removable tie bar normally extending lengthwise of said frame across said open side of said recess, means pivotally connecting one end of the bar to the frame for rotation laterally of the frame in a plane substantially parallel to the longitudinal axis of the frame to open said side of the recess, and means detachably connecting the opposite end of the tie bar to the frame to keep the frame from bending and spreading said open side of the recess farther open when the tool is operated.

3,353,268
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Filed Oct. 15, 1965, Ser. No. 496,444
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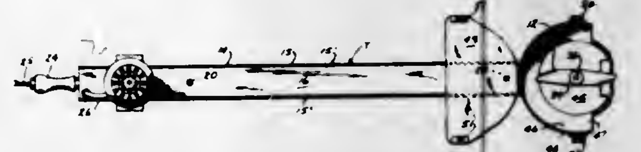

3,353,269
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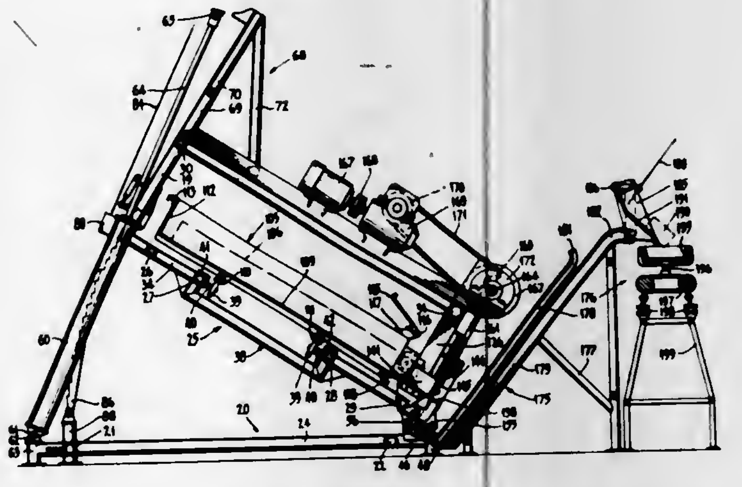
Douglas R. M. Lambert, Caulfield, Victoria, and Joseph M. Sharkey, Box Hill, Victoria, Australia, assignors. by mesne assignments, to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 16, 1964, Ser. No. 411,523
Claims priority, application Australia, Oct. 6, 1964, 50,123/64
14 Claims. (Cl. 31—5)



5. A method of providing strips of cheese curd comprising depositing a quantity of curd in an open-topped receptacle having a bottom wall and side walls containing the curd, compressing and compacting the curd within the receptacle to form a block, exposing one side of the contained block by displacing one side wall of the receptacle, tilting the receptacle and shifting the block relative to the receptacle so as to cause a segment of the block to project outwardly of the receptacle along the lower open side thereof, and severing a strip of curd from the projecting segment while at least partially containing the segment along a bottom edge portion of the segment.

3,353,270
MACHINE FOR THE CONTINUOUS PRODUCTION OF SALT BUTTER

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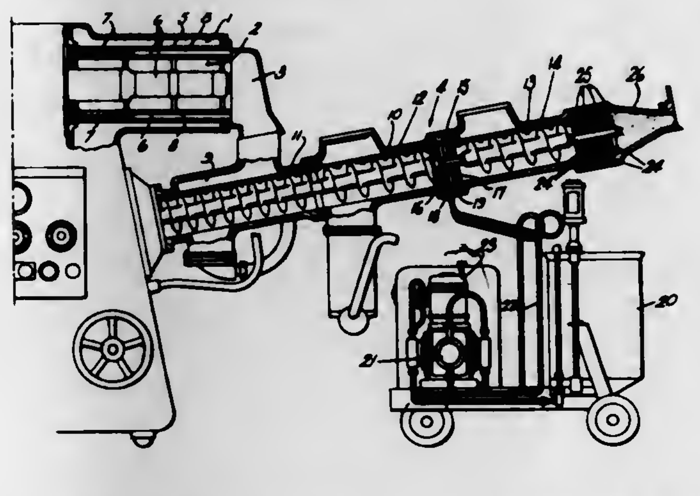
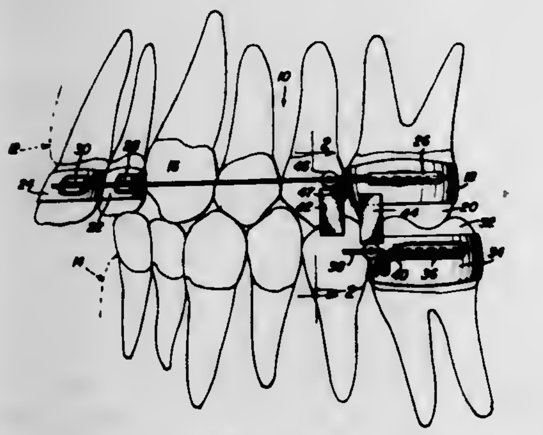
Filed Mar. 30, 1964, Ser. No. 355,601
Claims priority, application France Feb. 1, 1964, 962,380, Patent 1,392,586
8 Claims. (Cl. 31—33)



1. In a machine for the continuous production of salt butter comprising cream-feeding means, a churning device, a mixer, means for transferring the butter mass due to the churning action in said mixer, conveyor screws in the mixer, and an outlet to which the mixed butter is fed by said screws; roughened walls having sharp asperities inside the churning device, thin strips arranged inside said device opposite to said walls and at a small distance therefrom for producing the churning action owing to a centrifugal effect between said strips and said roughened walls under such conditions as to achieve a reduction of the moisture content of the resultant butter, means for rapidly revolving said thin strips, means in the mixer for generating a butter-braking region spaced from said outlet, and means for introducing brine into said braking region of the mixer.

3,353,271
MAGNETIC ORTHODONTIC APPLIANCE

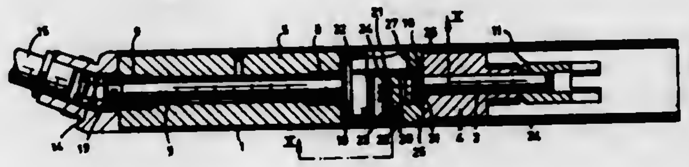
Abraham M. Blechman, 771 Broadway, Paterson, N.J. 07514
Filed Apr. 1, 1965, Ser. No. 444,571
7 Claims. (Cl. 32—14)



1. In an orthodontic appliance having an arch wire adapted to be secured to the teeth of a person, means for generating a corrective force including a first magnetic element secured to said arch wire, a second magnetic element and anchoring means for mounting said second magnetic element on the buccal side of the teeth within the magnetic field of the first magnetic element.

3,353,272
DENTAL HAND PIECES

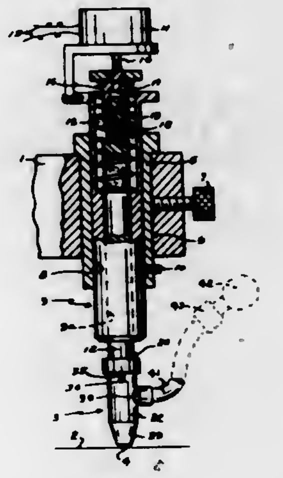
Michel Seigneurin, Ecole, near Besancon, Doubs, France, assignor to Micro-Mega, a joint-stock company, Besancon, Doubs, France
Filed Nov. 3, 1964, Ser. No. 408,698
2 Claims. (Cl. 32—27)



1. A dental handpiece comprising a cylindrical body, a pair of sockets in said body, a two-part longitudinal rotating shaft journalled in said sockets, said parts having facing ends in register connected by a reduction gearing entirely housed in said body, said gearing comprising: first toothed wheels of unequal diameter carried by said ends, two other toothed wheels of unequal diameter, the smaller of said wheels being in mesh with the larger of said first wheels and the larger with the smaller of said first wheels, and mounted on an intermediate cross-shaft at right angles to said rotating shaft on either side of said rotating shaft, said larger of said first wheels having the shape of a bell for partially housing therein the larger of said wheels of said intermediate cross-shaft, a third socket intermediate said sockets of said pair of sockets, said socket having bores therein for receiving said other wheels and said intermediate cross-shaft.

3,353,273
HOLLOW ENGRAVING POINTS, HOLDERS AND CLEANING DEVICE FOR ENGRAVING COATED SHEETS

Robert H. Sicking, 5705 Itaska St., and Robert H. Sovar, 2552 Redman, both of St. Louis, Mo. 63136
Filed June 13, 1966, Ser. No. 557,865
7 Claims. (Cl. 33—18)

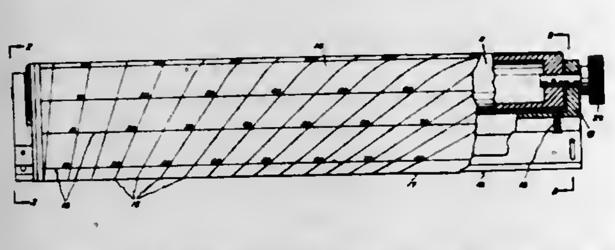


1. In a hollow engraving point and holder for engraving opaque coated transparent sheets, a body having an axial bore and relatively movable in any direction perpendicular to said bore above said opaque coated transparent sheet, a scribing plunger axially slidable in said bore, an engraving point assembly carried by said plunger having an engraving point with an engraving tip and formed with a concentric suction passage therethrough opening inwardly through said engraving tip for receiving and removing debris and plugs from the opaque coating displaced by contacting engagement of said engraving

tip with the opaque coated surface, an annular elongated sleeve-like vacuum jacket concentrically surrounding said point in closely spaced adjacent relation to said engraving tip and to the opaque coating of the transparent sheet when said engraving tip is in engraving engagement with said opaque coating, suction means in communication with said concentric suction passage which extends through said engraving point, and in communication with the interior of vacuum jacket and said engraving point for withdrawing debris displaced from said opaque coated transparent sheet by said engraving tip in an area completely surrounding said tip during relative engraving movement in any direction between the engraving tip and the opaque coated transparent sheet.

3,353,274
AERIAL NAVIGATION DEVICE

Philip Wellesley Dulhunty, 16 Chisholm Road, Sefton, New South Wales, Australia
Filed May 12, 1965, Ser. No. 455,237
Claims priority, application Australia, May 15, 1964, 44,573/64
3 Claims. (Cl. 33—107)

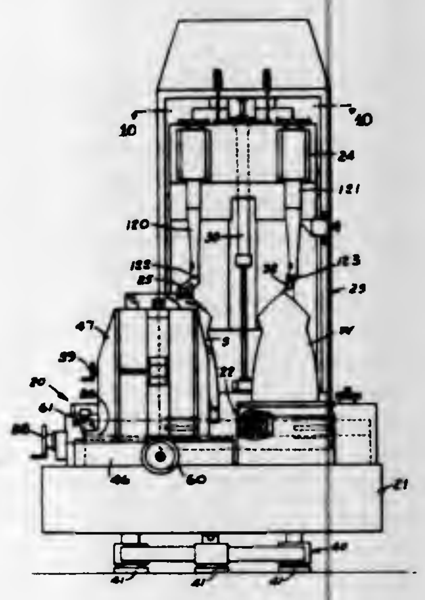


1. A navigation device for measuring between a pair of points on a map to determine the ground speed of an aircraft or to indicate directly the time required to travel to a point on a map, said device comprising; a frame having a relatively sharp straight edge portion, a roller supported in said frame and rotatable about an axis parallel to said straight edge portion, an endless flexible chart mounted on said roller and having its inner surface lying on said straight edge portion, and spring means biasing said roller and said straight edge portion apart to maintain said chart tightly against said roller and said straight edge portion while permitting said chart to move with respect to said straight edge portion.

3,353,275
CONTOUR INSPECTING MACHINE

Gordon H. Porath, Detroit, Mich., assignor to Century-Detroit Corporation, Detroit, Mich., a corporation of Michigan
Filed July 19, 1965, Ser. No. 472,927
17 Claims. (Cl. 33—174)

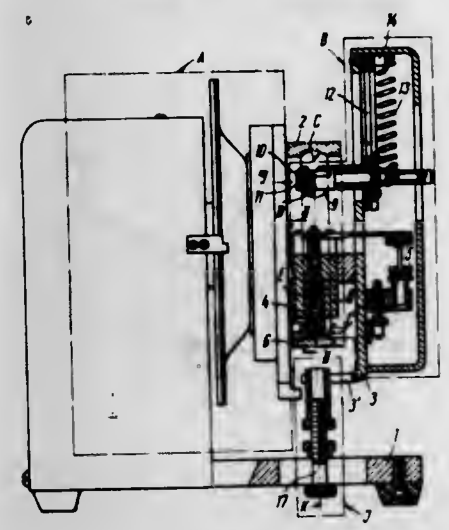
1. In a machine for inspecting the contour of a workpiece, the combination comprising
a base,
means for supporting a standard on said base with a standard contour lying in a generally vertical plane relative to said base,
means for supporting a workpiece on said base with the contour of the workpiece to be inspected lying in a plane parallel to the standard contour of the standard,
a horizontal slide assembly on said base,
said horizontal slide assembly comprising a base portion,
a slide adapted to move horizontally on said base portion,
one of said slide and said base portions having surfaces formed with longitudinally spaced pressure pads,
a restrictor associated with each pressure pad,
means for supplying liquid under pressure to each said restrictor,
the other of said slide and said base portion having complementary cooperating surfaces adjacent to the surfaces on which said pressure pads are positioned,
the relative dimensions of said base portion and said slide being such that a pressurized film of liquid flows continuously between the surfaces through the pressure pads so that forces on the slide are balanced by pressure in the pads providing a permanent, stable, frictionless separation of the surface throughout the movement of the horizontal slide longitudinally on the base portion,
a vertical slide assembly on said horizontal slide,
said vertical slide assembly including a vertical slide adapted to be moved vertically along said horizontal slide,
said vertical slide having surfaces each formed with longitudinally spaced pressure pads,
a restrictor associated with each pressure pad,
means for supplying liquid under pressure to each said restrictor on said vertical slide,
said horizontal slide including complementary cooperating surfaces adjacent to surfaces on which said pressure pads of said vertical slide are positioned,



the relative dimensions of said surfaces on said vertical and horizontal slides being such that a pressurized film of liquid flows continuously between the surfaces through the pressure pads so that forces on the vertical slide are balanced by pressure in the pads providing a permanent, stable, frictionless separation of the surfaces throughout the movement of the vertical slide on the horizontal slide,
a first head assembly mounted on said vertical slide adjacent to the standard supporting means,
a tracing head mounted on said first head assembly,
means operatively connected to said tracing head for moving said vertical and horizontal slides in response to signals from said tracing head,
a first sensing head mounted on said first head assembly for producing a signal corresponding to the position of said sensing head,
a second head assembly mounted on said vertical slide adjacent to the workpiece supporting means,
a second sensing head mounted on said second head assembly for contacting the surface of the workpiece which is to be inspected and producing a signal in response thereto,
and means for producing a differential signal between the readings of said first and second sensing heads to produce an accurate signal corresponding to the deviation of said surface of the workpiece with respect to the standard surface.

3,353,276
WAVINESS TESTER FOR CYLINDRICAL SURFACES OF PARTS SUCH AS BEARING FACE GROOVES

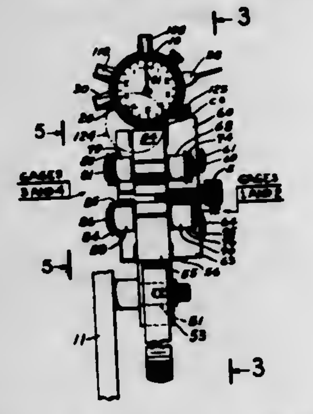
Anatoly Nicolaevich Saimanov, Gazonnaia Ulitsa 30, Apt. 1, and Vasily Fedorovich Sovkin, Ulianovskaia Ulitsa 19, Apt. 23, both of Kuibyshev, U.S.S.R.
Filed July 13, 1966, Ser. No. 564,920
3 Claims. (Cl. 33—174)



1. An instrument for determining the waviness of cylindrical surfaces of parts, particularly of grooves of ball bearing rings, comprising a base, means for fixing and rotating the part to be checked mounted on the base, a bracket, a measuring head adapted to be freely mounted on the surface to be checked, said measuring head including a plurality of supporting members secured to the bracket with said supporting members being maintained in contact with the surface to be checked, a feeler freely mounted in one of said supporting members in permanent contact with the surface to be checked, a pick-up attached to said bracket and operably connected to said feeler, and means fixedly mounted on said base coaxially with said feeler and cooperable with said bracket for restraining said measuring head from turning movement during rotation of the part.

3,353,277
DIFFERENTIAL GAGE INDICATING MEANS, A THREAD GAGE COMBINATION AND A DIFFERENTIAL THREAD GAGE COMBINATION

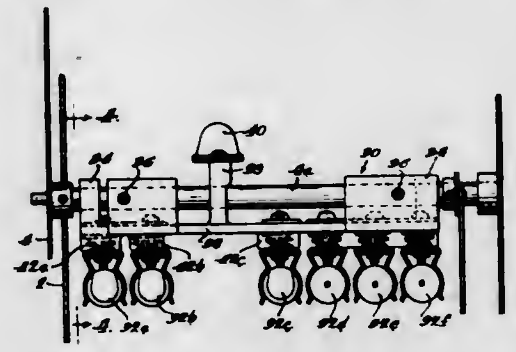
Stanley G. Johnson, West Hartford, Conn., assignor to The Johnson Gage Company, Bloomfield, Conn., a corporation of Connecticut
Filed May 14, 1965, Ser. No. 455,884
21 Claims. (Cl. 33—199)



1. A differential thread gaging combination comprising frame means having fixed arm means including at least one fixed arm, movable arm means including at least one movable arm, mounting means movably mounting the movable arm means on the fixed arm means, gaging means including a plurality of gages mounted on the arm means, each gage having a plurality of gaging elements with at least one gaging element mounted on the fixed arm means and at least one gaging element mounted on the movable arm means, the gaging elements of each gage being cooperatively positioned to engage a test part, the gaging surfaces of the gaging elements for each gage being of a different type for gaging a different thread characteristic, indicator means carried by one arm means including at least one indicator having a contactor, a dial and a pointer movable over the dial in response to movement of the contactor; an operating connection between the indicator means and the other arm means, said indicator dial having indicia with a range of a minute part of a measuring unit and the indicator pointer being movable over the dial and said indicator having at least one tolerance marker with respect to the dial, the operating connection between the indicator means and the arm means renders the indicator pointer responsive to the position of the movable arm means with a test part within the gaging elements of a gage, differential pointer means for the indicator means including at least two differential pointers spaced circumferentially from each other and secured together in fixed spaced relation, and mounting means mounting the differential pointer means for manual adjustment circumferentially with respect to said dial of the indicator means.

3,353,278
INDICATING ATTACHMENT FOR WHEEL ALINEMENT TESTERS

Charles W. MacMillan, Rock Island, Ill., assignor to Bear Manufacturing Company, Rock Island, Ill., a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 391,511
9 Claims. (Cl. 33—203.14)

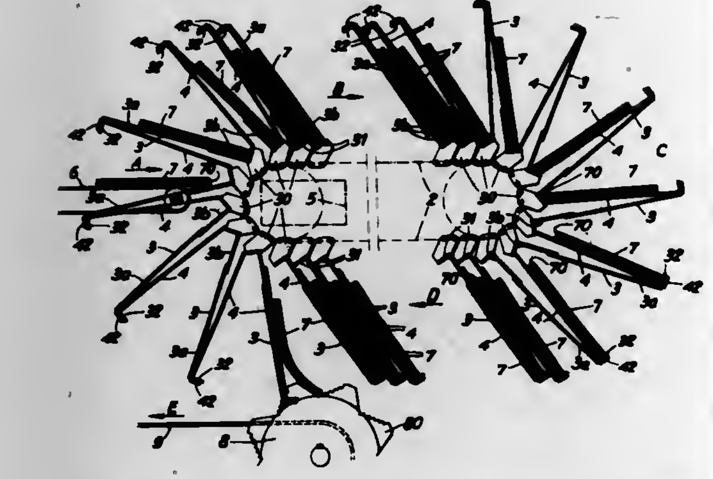


1. In vehicle wheel scuff testing means having scuff determining means normally set to a zero position and movable in proportion to the amount of scuff of vehicle wheels passing thereover, a plurality of switch means associated with the scuff determining means and a plurality of indicating means connected in circuit with respective ones of the switch means for indicating respective degrees of scuff; and also having an indicator remote from the scuff determining means and including an indicator shaft connected with the scuff determining means and rotatable in proportion to the amount of scuff; the improvement comprising a holder mounted on said shaft for rotation therewith, a plurality of individually adjustable switch retainers mounted on said holder in generally horizontal positions at right angles to said shaft, an adjusting screw operatively associated with each retainer and extending generally vertically through the holder and into operative association with the respective retainer for tiltably adjusting the retainer in the vertical plane of the retainer and its screw, and an individual self-contained switch detachably mounted in each of said retainers, said screws being individually adjustable to vary the operation of the respective switch in accordance with varying degrees of shaft rotation whereby individually to control energization of the respective indicating means.

3,353,279

DRYING AND COOLING APPARATUS FOR BOOKLETS HAVING ADHESIVELY CONNECTED BACKS

Hans Müller, Weissensteinstrasse,
Zofingen, Switzerland
Filed Nov. 16, 1965, Ser. No. 508,011
Claims priority, application Switzerland, Dec. 4, 1964,
15,761/64
10 Claims. (Cl. 34—150)

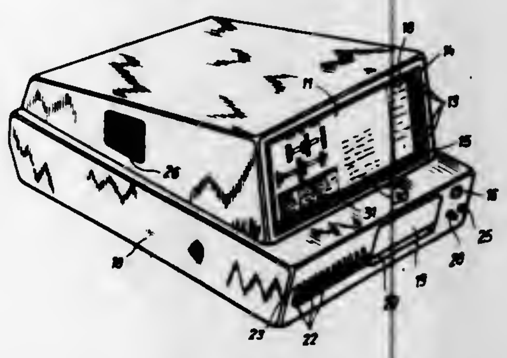


1. A drying and cooling apparatus for booklets or the like having adhesively connected backs comprising, in combination, a support; endless conveyor means mounted on said support and having an upper substantially horizontal run movable in one direction and a lower substantially run movable in the direction opposite to said one direction; a plurality of substantially rigid elongated support means carried by said conveyor means adjacent each other, each of said elongated support means connected at an inner end thereof to said conveyor means and projecting from said connected end outwardly and rearwardly inclined to the direction of movement of the respective run; a pair of abutment means respectively connected to opposite ends of each of said elongated support means respectively projecting in opposite directions and transverse to the elongation of the elongated support means therefrom with the free end of the abutment means on said inner end of the elongated support means leading in direction of movement and the free end of the other abutment means trailing in direction of movement thereof; and a plurality of additional substantially rigid elongated means each shorter than and respectively tiltably connected at one of the ends thereof to the outer end of one of said elongated support means, said additional elongated means being constructed and arranged so that each of said additional elongated means will during movement of the respective elongated support means along the upper run be tilted away from the trailing face of the elongated support means to which it is connected toward the leading face of the following elongated support means, and each of said additional elongated means will abut along the whole length thereof against the trailing face of the elongated support means to which it is connected when the latter moves along the lower run, whereby a booklet placed with its back leading on the leading face of one elongated support means as the latter extends in substantially horizontal direction on its way from the lower to the upper run, will be held on said leading face with its back abutting against said one abutment means during the passage of the respective elongated support means along said upper run, while said booklet will flap over to rest on the trailing face of the additional elongated means tiltably connected to the preceding elongated support means and abut with the end thereof opposite its back on the other abutment means of said preceding elongated support means during transport of the booklet along the lower run.

3,353,280

APPARATUS FOR THE VISIBLE AND AUDIBLE PRESENTATION OF INFORMATION IN A DESIRED SEQUENCE

Günter Emde, Neubiberg, Germany, assignor to Bolkow Gesel'schaft mit beschrankter Haftung, Ottobrunn, near Munich, Germany
Filed Feb. 16, 1965, Ser. No. 433,074
Claims priority, application Germany, Mar. 28, 1964,
B 76,104
24 Claims. (Cl. 35—9)

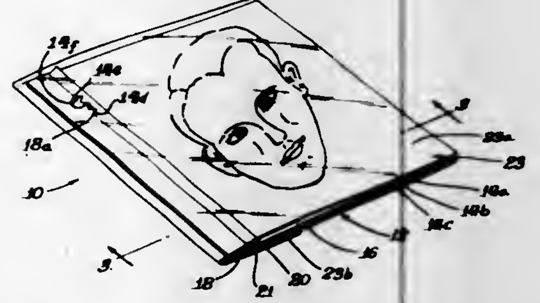


1. Apparatus for the visible and audible presentation of information comprising, in combination, plural separate information units each comprising a pair of cards arranged in surface-to-surface juxtaposition and formed for conjoint edgewise displacement as a unit; one of said cards having information thereon in the form of a projection slide for optical projection of such information; the other of said cards having information magnetically recorded thereon for audible presentation of its information; each unit having respective first scannable features identifying the respective unit, and respective second scannable features determining the next information unit to be presented; presentation means operable to scan the information on a selected unit positioned thereat and to present the information thereon visibly and audibly; unit selector means cooperable with said first scannable features to select a unit for positioning at said presentation means; control means for said selector means controlled by said second scannable features; and selectively operable manual means cooperable with said second scannable features to predetermine the control of said control means by said second scannable features.

3,353,281

TRANSPORT CARRIER AND PICTURE COMPOSITE

John J. Schulze, Prospect Heights, Ill., assignor to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware
Filed June 17, 1965, Ser. No. 464,750
2 Claims. (Cl. 35—28)

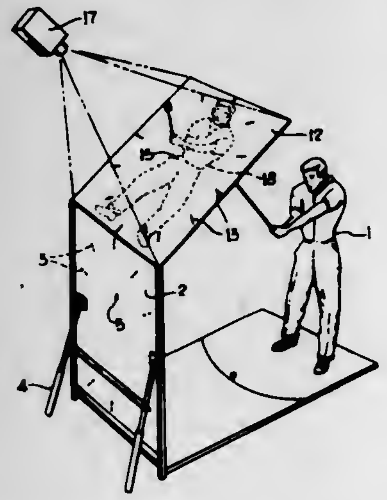


1. In combination a transport carrier for mounting a plurality of transparencies in superimposed position and including a thin, flexible backing sheet, an aligning strip secured to one surface of said sheet adjacent one edge thereof and having a substantial thickness compared to said sheet and provided with aligning means in a first edge remote from said one edge of said sheet, a thin, flexible ribbon secured over said strip and extending beyond said first edge of said strip to define a channel, a thin, transparent, flexible sheet cover having a first portion overlying said one surface of the carrier and having a second foldover portion extending around one edge of said carrier; and a plurality of superimposed transparencies positioned on said sheet having their top edges received in said channel and provided with aligning means in their top edge engaging the first mentioned aligning means in complementary relation thereto, one of said aligning means including a protuberance and the other of said aligning means including a protuberance receiving notch portion whereby each of said transparencies is received in said carrier in a predetermined position.

3,353,282

TEACHING APPARATUS

John M. Sneed, Clayton, Mo.
(4908 Delmar Blvd., St. Louis, Mo. 63108)
Filed May 3, 1965, Ser. No. 452,788
4 Claims. (Cl. 35—29)



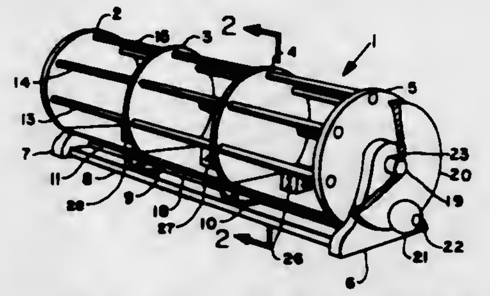
1. Apparatus for teaching golf strokes, comprising a playing area the focus of which is a golf ball impact point; a reflective surface adjacent said playing area and positioned to reflect an image of a student in said playing area; calibration marks on said reflective surface so positioned and arranged that the angularity of a golf club held by the student, relative to a reference point on the student, can immediately be observed and determined; a projection screen positioned to be observed by said student within the playing area; calibration marks on said screen in direct correspondence to those on the reflective surface; a projector on the side of the screen away from the said student and arranged to project the image of a teacher on said screen; an elongated calibration mark on the playing area, defining the proper path of the head of the golf club as it is swung through the impact point, and a phosphorescent coating on the playing area in the same location as, but in a broader expanse than, the said elongated calibration mark.

3,353,283

EDUCATIONAL GAME

Robert F. Walker, Indialantic, and Jerome L. Archambault, Rockledge, Fla., assignors to Edukit, Inc., Eau Gallie, Fla.
Filed May 6, 1965, Ser. No. 453,763
7 Claims. (Cl. 35—31)

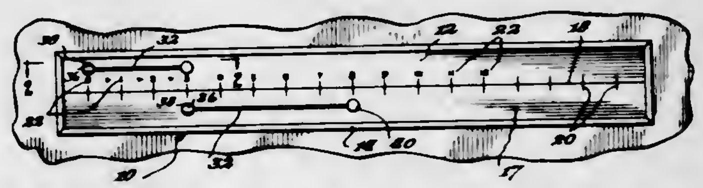
1. An educational game comprised of a base member having a generally horizontal support bar with vertical end members, a cage rotatably mounted between said vertical end members, said cage being divided into compartments and having attached thereto means to manually rotate said cage, rotatably mounted indicator means attached to said horizontal support bar, cubes located in said compartments of said cage and having numerals thereupon and means to open and close said cage to allow insertion and removal of said cubes whereby each said indicator means is adjacent one said compartment of said cage and is adapted to indicate an operation to be performed with one numeral upon one said cube located in said adjacent compartment of said cage.



3,353,284

MAGNETIC NUMBER LINE BOARD

Ronald Hursh, La Grange Park, and Rudolf Ringhofer, Flossmoor, Ill., assignors to La Pine Scientific Company, a corporation of Illinois
Filed July 16, 1965, Ser. No. 472,563
1 Claim. (Cl. 35—31)

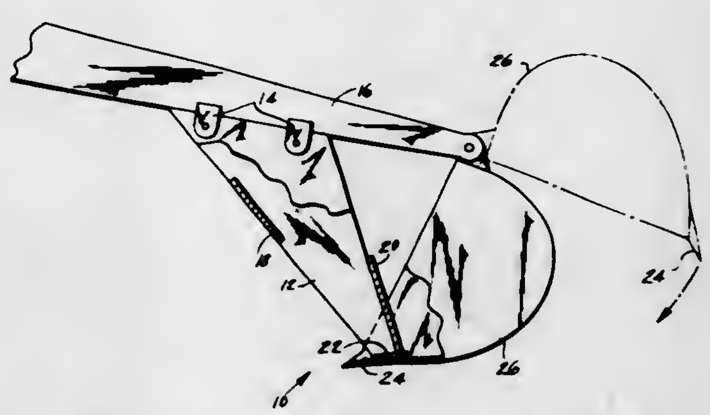


In a teaching aid having a base member, a surface on said base member adapted to receive removable marks, a magnetizable material forming a backing for said base member, a permanent straight horizontal line formed on said surface of said base member, short vertical permanent lines crossing said horizontal line at equally spaced intervals along its length, a plurality of numbers selectively positioned on said board in alignment with some of said vertical lines, said numbers containing magnets for securing them to said surface of said board, an elongated flexible tape having one end coiled on a reel, a magnet on said reel, and a disc with a magnet thereon at the other end of said tape, the tape being removably secured to the surface of said board and extending between two selected ones of said numbers.

3,353,285

BACKHOE ATTACHMENT

Donald W. Murray, Box 1075, Ketchikan, Alaska 99801
Filed June 24, 1965, Ser. No. 466,523
3 Claims. (Cl. 37—2)



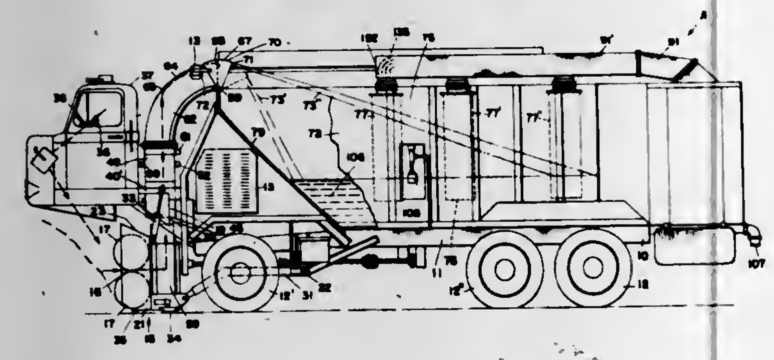
1. A backhoe attachment comprising, a boom, a scoop pivotally secured to the end of said boom, a digging lip on said scoop, a pair of spaced apart side frames supported by said boom, said side frames providing support

means for a shearing blade, a rectangular front plate secured between said side frames providing a means for pushing and urging organic material into said scoop, a stiffener plate carried by said side frames providing a means for increasing the rigidity of said side frames, the upper extremities of said side frames being received between a plurality of lugs secured to said boom, said side frames being secured by suitable fastening means to said lugs, said side frames depending angularly downward and being rigidly secured to said boom by said lugs, said rectangular front plate and said stiffener plate providing maximum rigidity to said side frames so that they do not warp when pressure is placed upon them during a digging operation, said shearing blade being secured to the lower extremity of said side frames and the lower extremity of said front plate at the lower extremity of said side frames, the cutting edge of said shearing blade extending beyond the front surface of said front plate to allow a cutting, grabbing and shearing action of said blade, said digging lip gliding against said shearing blade when said scoop is pivoted downwardly and toward said side frames during the operation of a backhoe machine.

3,353,286

SNOW DISPOSAL UNITS

Alexander Ashton Marks, 6676 Lincoln Drive, Philadelphia, Pa. 19119
Filed July 30, 1964, Ser. No. 386,327
10 Claims. (Cl. 37—12)



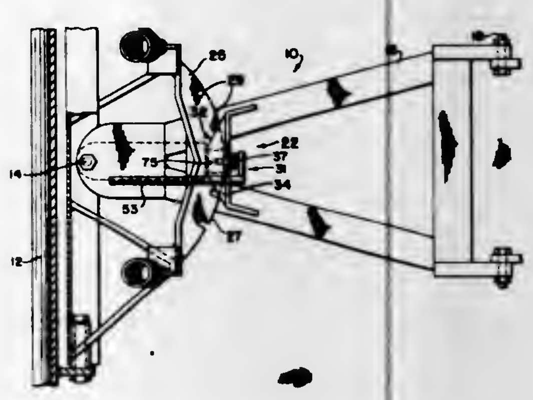
1. A snow disposal unit comprising in combination,
A tank adapted to hold water and to receive snow;
A heater;
Means to convey air under pressure to said heater in a manner to be heated thereby;
A discharge vent adapted to discharge said air under pressure from said heater downwardly beneath the operating water level of said tank;
Means to convey combined melted snow and said water from said tank;
A snow chute having a discharge outlet adapted to introduce snow into said tank; and
Means adapted to distribute said snow substantially evenly upon said water in said tank;
Said last-mentioned means comprising a capper, and means to automatically oscillate said capper between preset limits across the path of snow being emitted from said chute.

3,353,287

ANGLING AND LOCKING ARRANGEMENT FOR VEHICULAR MOUNTED PLOW ATTACHMENTS

William W. King, Cleveland, Ohio, assignor to Meyer Products, Inc., Cleveland, Ohio
Filed Dec. 21, 1964, Ser. No. 420,039
9 Claims. (Cl. 37—42)

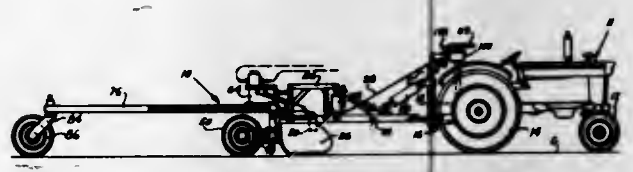
1. In combination with an angularly adjustable plow blade, adjustment and locking means comprising
a horizontal plate member having an arcuate edge and being mounted on the blade for angular movement therewith, the edge being spaced from the blade pivot and having circumferentially spaced, radially extending notches therein,
locking means positioned adjacent the plate member defining a horizontal guide channel for slidably receiving said arcuate edge, said channel having an unobstructed vertical slot formed therein aligned with the blade pivot and extending radially inwardly in registration with one of said notches,
a pin member pivoted relative to said channel in alignment with said slot and extending vertically beyond said plate member and
spring means for biasing said pin member into locking engagement with said plate member when one of said notches is aligned with said slot.



3,353,288

LAND LEVELER

Arthur P. Waterson, Box 415, Dighton, Kans. 67839
Filed Feb. 17, 1965, Ser. No. 433,305
6 Claims. (Cl. 37—180)

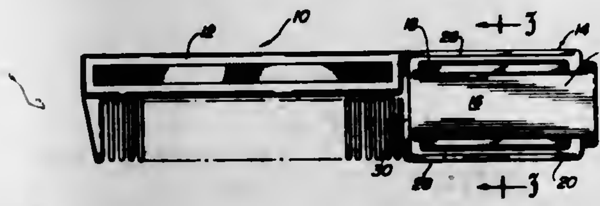


6. A land leveler comprising, in combination with a tractor having front and rear wheels, a drawbar, a horizontal frame, an upright member pivotally attaching the frame to said drawbar, a scraper blade rigidly connected to the rear of said frame and depending therefrom, said scraper blade having a lower cutting edge, wheel and wheel support means pivotally connected on said scraper, a first ram pivotally connected to said frame and upright member, an arm pivotally connected to said frame, a second ram pivotally connected to said arm and frame, hydraulic supply conduit means in communication with both of said rams for actuating said arm about its pivot point, a rod operatively connected to said arm for movement thereby, a beam pivotally connected on said frame and extending rearwardly therefrom, a ground engaging feeler wheel mounted on said beam at the rear end thereof, servo-unit means mounted on said beam and operatively connected for actuation by said rod, double acting hydraulic cylinder scraper blade actuating means operatively connected to said wheel support means to effect pivotal movement of its said wheel means for maintaining the cutting edge of said scraper blade in alignment between said tractor front wheels and said ground engaging feeler wheel, causing the scraper blade to cut and fill, thereby leveling the land, and hydraulic conduit means in communication with said servo-unit and double acting hydraulic cylinder means for controlling said scraper blade.

3,353,289

POCKET RAZOR HAVING BLADE STORING MEANS

Peter L. Cipolla, Kenosha, Wis., assignor to Simplomatic Manufacturing Company, Chicago, Ill., a partnership
Filed May 10, 1966, Ser. No. 549,020
7 Claims. (Cl. 30—53)

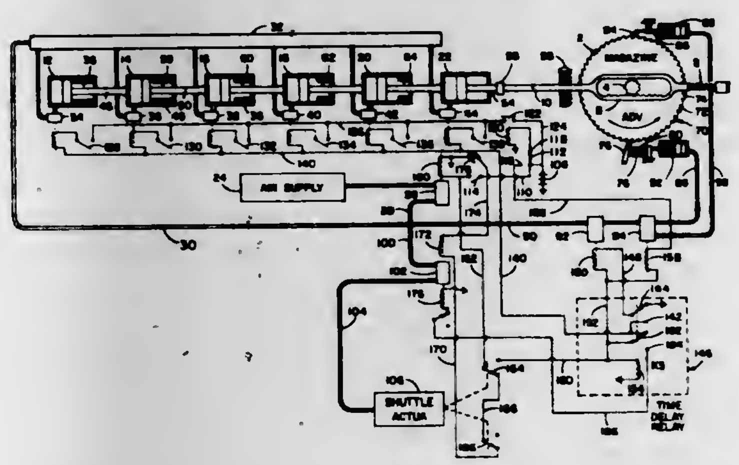


1. A portable razor having a rectangular relatively flat razor head with opposite surfaces and an integral handle formed at one end of said head, the other end of said head having a resilient clip, movably engaged on said head, said clip including a root with two relatively flat facing parts connected to said root and straddling said head, each flat facing part engaged against an opposite surface of said head and the surfaces and inside faces of the clips having tongue and groove means cooperating to limit the movement of said clip relative to said head to a rectilinear movement in the plane of said head, one surface of the head part being recessed to provide blade storage, the second surface of said head having an elevated blade seat and guide edges lower than said seat to expose the shaving edges of a blade positioned on said blade seat.

3,353,290

SLIDE SELECT AND POSITIONING DEVICE

Richard R. Councilman, Garland, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,959
4 Claims. (Cl. 40—79)

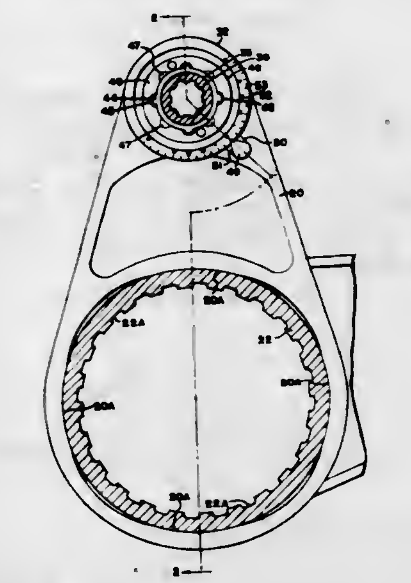


1. Means for selecting and positioning slides of a slide projector having a magazine, said means comprising:
means urging said magazine to a predetermined position;
a plurality of serially connected pneumatic actuators operable to position said means, each of said actuators having a respective stroke length;
a plurality of parallel connected electrical relays to permit actuation of said actuators in a binary coded decimal relationship, each of said relays operable to control actuation of a respective one of said actuators;
indexing means cooperating with said magazine to retain said magazine in a selected position; and
means for deactivating said indexing means to permit said magazine to be freely movable in either direction to a selected position.

3,353,291

RIFLE BARREL ALIGNMENT MECHANISM

C. Walton Musser, Palos Verdes Estates, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed May 4, 1966, Ser. No. 547,676
10 Claims. (Cl. 42—1)

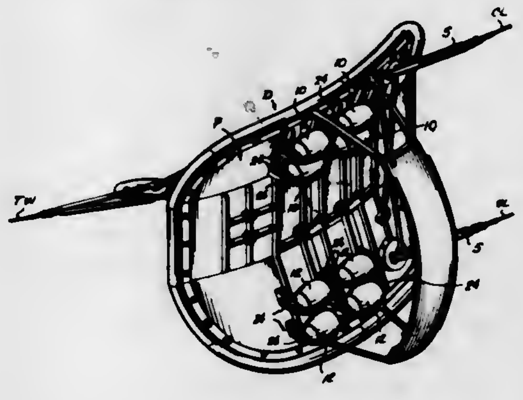


1. An alignment mechanism for accurately adjusting a cylindrical object such as the barrel of a rifle or the like comprising,
a pair of eccentric rings rotatably mounted in a stationary member, said member having means for longitudinally spacing said rings,
a pair of diagonally opposed keys each having an arcuate outer surface engaging an inner surface of one of said rings along a horizontal axis,
a similar pair of keys engaging the other ring in a similar manner along a vertical axis,
each of said keys having inner flat surfaces, and
a sleeve for securement to said cylindrical object and having flat outer surface portions engaging the respective key flat surfaces,
so constructed and arranged that independent rotation of said rings will move said sleeve along the respective axis through which the corresponding pairs of keys extend.

3,353,292

BALLAST AND BUOYANCY ATTACHMENTS FOR TRAWL DOORS

Frank J. Luketa, 5567 Greenwood Ave. N., Seattle, Wash. 98103
Continuation of application Ser. No. 376,993, June 22, 1964. This application Jan. 30, 1967, Ser. No. 622,852
11 Claims. (Cl. 43—9)

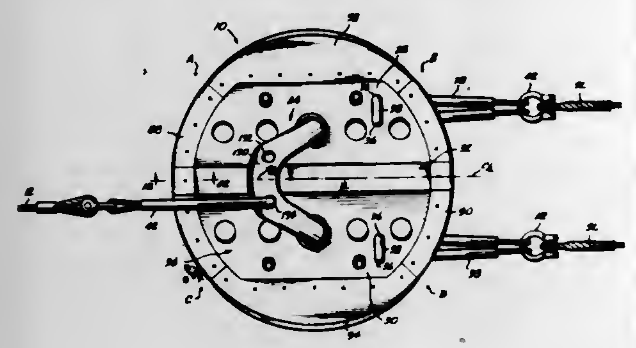


1. In a trawl door, a water reaction body having an upper edge, and a buoyancy attachment comprising a globular body member having wall means forming an enclosed gas tight chamber, and said chamber containing a

gas, providing said body member with a gross specific gravity substantially less than one; and mounting means having portions projecting rearwardly from an upper posterior portion of said water reaction body for detachably securing said body member to said upper posterior portion of said water reaction body, inwardly of said upper edge, and rearwardly offset therefrom.

3,353,293
TRY NET TRAWL DOORS

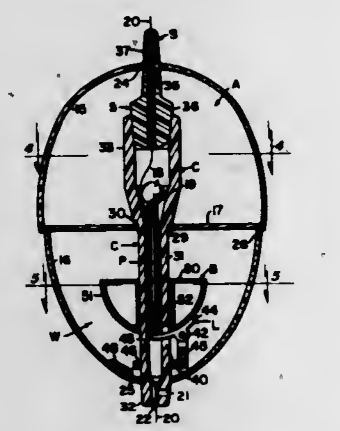
Frank J. Luketa, 5567 Greenwood Ave. N., Seattle, Wash. 98103
Continuation of application Ser. No. 516,829, Nov. 26, 1965, which is a continuation of application Ser. No. 393,137, Aug. 31, 1964. This application Dec. 19, 1966, Ser. No. 628,177
12 Claims. (Cl. 43—9)



5. A trawl door comprising a substantially circular water reaction panel provided with an offset perimetrical edge, generally polyhedral configuration in vertical section, and a one-piece cast structural aluminum construction, a substantially thick, resilient, wear assuming edging of a rubber-like material extending entirely about the offset perimetrical edge of said panel; towing warp securement means on the anterior side of said panel; and net line securement means on said door.

3,353,294
SELF-AFFIXING FISHING LINE FLOAT

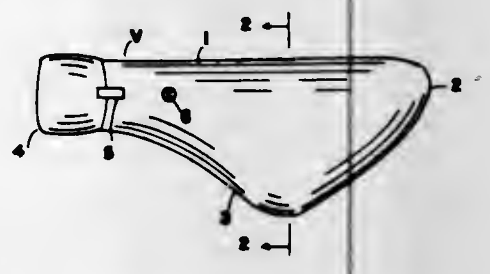
Rewe P. Mundorff, 2203 N. Franklin St., and De Ette A. Berry, 2209 N. Franklin St., both of Colorado Springs, Colo. 80907
Filed June 28, 1965, Ser. No. 467,255
15 Claims. (Cl. 43—44.91)



14. A fishing line float of the character described, comprising:
- a buoyant upper portion;
- a water accessible lower portion;
- a passage for freely slidable accommodation of a fishing line continuous through said upper and lower portions;
- a gravity influenced, movable stop within said passage wedgingly coactable with the line extending therethrough;
- movable means engaging said stop and normally holding said stop upwardly and away from wedging position to permit said line to pass downwardly through said passage; and
- means reactive to accumulation of water in said lower portion for shifting said stop engaging means downwardly to cause said stop to wedgingly engage said line upon the accumulation of a predetermined amount of water in said lower portion.

3,353,295
TRANSVERSELY CURVED AERIAL TOY WITH WEIGHTED NOSE

John T. Downey, 556 Oxford St., Westbury, N.Y. 11590
Filed Mar. 10, 1966, Ser. No. 533,525
1 Claim. (Cl. 46—74)

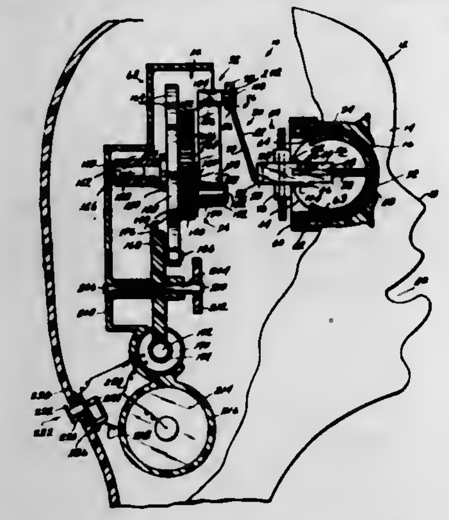


An aerial toy comprising a rigid vane airfoil, said vane having a nose thicker than the remainder of said vane, opposite the tip, launching hook means connected to said vane on a straight line between said nose and the center of gravity of said vane, said vane having a weighted leading edge and said vane being shaped so that the leading edge, tip, and trailing edge from the widest point on its midsection to the tip are level and in line with each other such that if the device were to be placed on a level or flat surface with the nose just protruding over the edge, all points along the leading edge, tip and trailing edge just described would touch the surface and be level, said weighted edge and configuration of said vane comprising means increasing stability along the longitudinal axis when being propelled in a vertical attitude and giving lift to the device when it is spinning in a horizontal attitude, said vane nose including nose means which is relatively blunt and tapering to a wider area on the forward end which gives stability along the longitudinal axis when the device is propelled in a vertical attitude into the air thus preventing premature spinning and allowing the device to climb to a high altitude before it begins to spin, said launch hook means being on the top of the airfoil adjacent and forward of the center of gravity and in line with the center of gravity such that if the device is suspended vertically from this hook, the leading edge will be perpendicular to the ground, said vane having its upper and lower surfaces transversely arcuate in the same direction producing a transverse curvature forming an airfoil, said forward edge being thicker than the mid-area and trailing edge so as to provide the necessary weight to assist the device to spin.

3,353,296
EYE-MOVING APPARATUS COMBINING PLURAL OUTPUT MEANS TO PRODUCE ONE MOTION

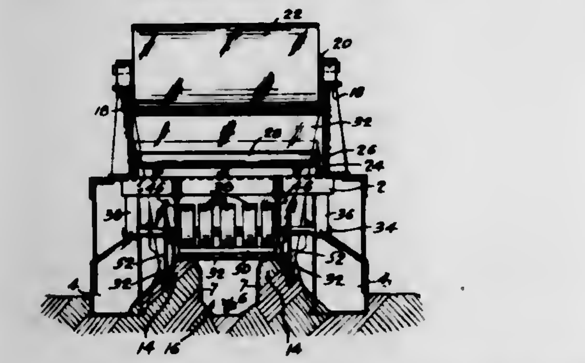
John W. Ryan, Bel Air, Joseph Kossoff, Hawthorne, and Richard L. May and Robert L. Cowell, Manhattan Beach, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Dec. 6, 1966, Ser. No. 599,569
8 Claims. (Cl. 46—247)

1. Apparatus for simulating eye-sweeping movements in figure toys having eye socket means, comprising:
- eyeball means universally pivotally mounted in said eye socket means;
- drive means for driving said eyeball means through simulated, eye sweeping movements with respect to said eye socket means, said drive means including first and second output means having different predetermined output motions; and
- means connecting said drive means to said eyeball means, said connecting means including means for combining said first and second output motions into a single, composite output motion and eyeball connector means connecting said combining means to said eyeball means for transmitting said composite output motion directly to said eyeball means, said eyeball connector means converting said composite output motion into universal pivotal movement of said eyeball means.



3,353,297
MACHINE FOR LAYING A CONTINUOUS PROTECTIVE SHEET

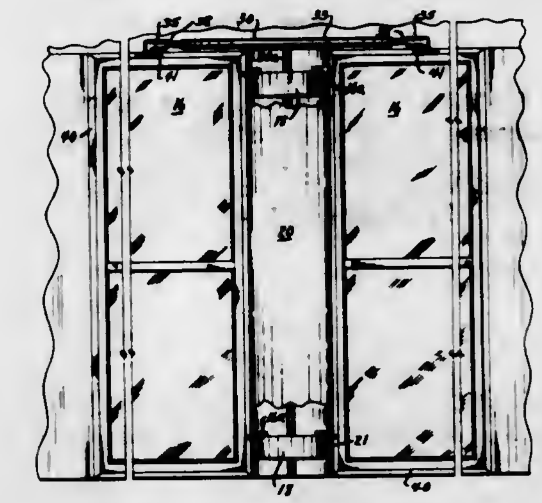
Adrien C. Gervais, 47 Scott St., Kitchener, Ontario, Canada
Filed Apr. 22, 1966, Ser. No. 544,506
10 Claims. (Cl. 47—1)



1. Apparatus for positioning a continuous protective sheet over a row of previously planted seeds, seedlings, or the like, said apparatus being movable along the said row and comprising a frame having a forward end and a rearward end, and blade means carried by the forward end of the frame for forming and means for compacting two parallel soil banks one along each side of the seedling row, a pair of side guards mounted on the frame inwardly of said blade means, one guard positioned along each side of the row and against which soil displaced by the said blade means is piled, and a supply of protective sheeting carried at the rearward end of the frame, and a guide roller means mounted on the frame and adapted to receive the sheeting from the sheeting supply for positioning the sheeting unwound from the supply across the tops of the soil banks and over the said row, and means mounted on the frame rearwardly of the guide roller for tucking the outside edges of the continuous sheeting into the soil banks.

3,353,298
MOVABLE DOOR STRUCTURE

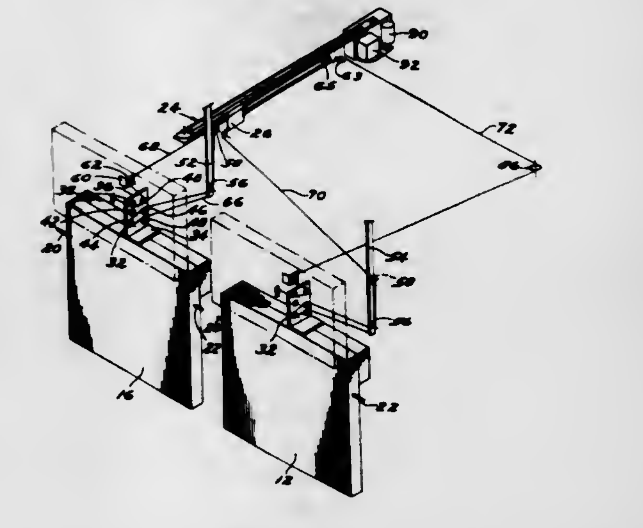
Stephen J. Pfender, 1108 W. Illinois St. 47710, and Thomas E. Pfender, Rte. 1, Frey Road, Box 433 47712, both of Evansville, Ind.
Filed June 17, 1964, Ser. No. 375,765
4 Claims. (Cl. 49—43)



1. A movable door structure comprising a support wall, a plurality of doors slidably secured to said support wall adjacent the upper and lower margins thereof, relatively large pulleys journaled on spaced shafts at each end of said support wall, an endless drive arrangement disposed on said relatively large pulleys, gearing disposed on one of said spaced shafts, spring biased elements on said doors engaging spaced-apart stops on said endless drive arrangement, and a speed control device defined by a fluid-containing casing, an operating shaft disposed within said casing, a gear disposed at one end of said operating shaft and cooperable with said gearing disposed on one of said spaced shafts, said operating shaft having a threaded portion, a vane-carrying member selectively rotatable on said threaded portion of said operating shaft, and a first and second cooperating braking means disposed within said casing, said first braking means disposed on and rotatable with said vane-carrying member, and said second braking means fixedly secured to a portion of said casing.

3,353,299
OVERHEAD DOOR AND OPERATING MEANS THEREFOR

Roger Castonguay, 3905 Beaconsfield, Detroit, Mich. 48224
Filed Aug. 11, 1965, Ser. No. 478,812
8 Claims. (Cl. 49—104)

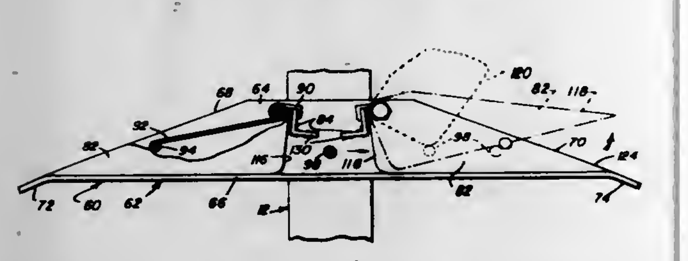


1. The combination with a fixed support structure having a doorway: a door mounted in said doorway for swinging movement from a generally vertical closed position to a generally horizontal open position; pulley means

carried by said door; a track; a trolley movably supported by said track; cable operating means connected between said fixed support structure and said trolley and including intermediate portions engageable with said pulley means; and means for moving said trolley in opposite directions to pull on said cable operating means and thereby move said door.

3,353,300
GATE LATCHING MECHANISM

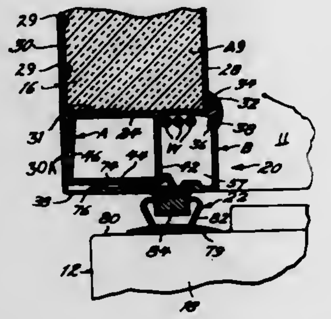
Jimmy B. Wray, Fort Belknap Road,
Graham, Tex. 76046
Filed May 27, 1965, Ser. No. 459,220
11 Claims. (Cl. 49—386)



1. A gate assembly comprising support means and a gate member swingable relative to said support means, coacting means carried by said gate member and said support means operative to positively stop swinging movement of said gate member as it is swung in one direction to a predetermined position and to subsequently yieldingly retain said gate member in said predetermined pivoted position against swinging movement in the other direction therefrom and permitting the gate member to swing from said predetermined position in said other direction independent of said gate member being bowed.

3,353,301
THERMAL BREAKER STRIP

Jerome P. Hellweil, Philadelphia, and Albert E. Schweizer, Morrisville, Pa., assignors to Glenco Refrigeration Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 8, 1965, Ser. No. 431,142
4 Claims. (Cl. 49—489)



1. A thermal breaker strip for use between a cabinet wall having a surface defining an opening leading into a temperature-conditioned cabinet and a door for closing said opening, said strip including

a first, generally flat wall secured to the surface of said cabinet wall,

a first tubular structure carried by a portion of said first wall and providing a dead air space overlying a portion of the surface of said surface of said cabinet wall adjacent one edge thereof,

a channel formed on a second portion of said first wall near the other edge of said surface,

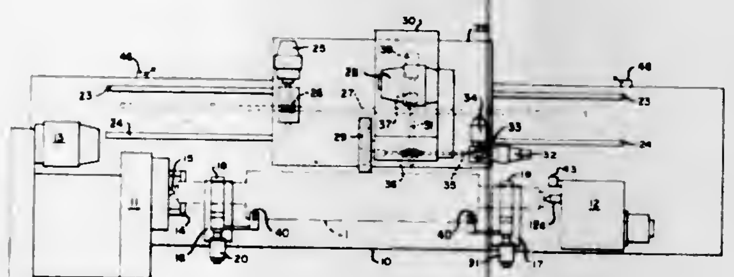
a flange carried by said first wall beyond said channel and engaging an adjacent side of said cabinet wall, and

a second wall having a first section which abuts said first tubular structure, a second section overlying and spaced from the said second portion of said first wall, and a third section substantially normal to said second section and having a free face edge engageable in said channel,

said second section, the adjacent wall of said first tubular structure and said third section coacting to form a second tubular structure overlying said second portion of said first wall.

3,353,302
ROLL GRINDERS

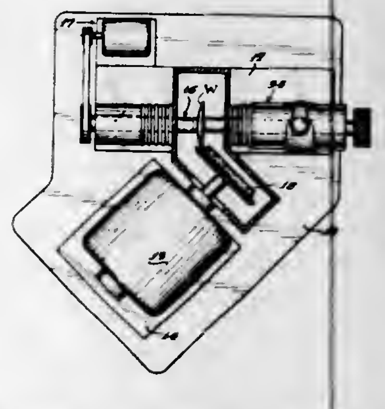
Paul M. Lowy, Pittsburgh, Pa., assignor to Mesta Machine Company, a corporation of Pennsylvania
Filed Nov. 23, 1965, Ser. No. 528,664
5 Claims. (Cl. 51—49)



1. A roll grinder comprising a headstock and an adjustably positioned spaced tailstock adapted to receive a roll on its axis therebetween, means for driving said headstock to rotate the roll, spaced necking stands between the headstock and tailstock receiving the necks of the roll to be ground and supporting said roll, grinding means adapted to move parallel to the axis of the roll between the headstock and tailstock, means for adjusting the grinding means transverse to the axis to be ground, a measuring wheel of known diameter, means urging the wheel against the surface of the roll, a rotatable pulse generator means driven by said wheel, a second pulse generator responsive to rotation of the roll, integrating means relating the proportional rotations of the measuring wheel of known diameter and the roll to derive a diameter of the roll and control means acting on the means for transversely adjusting the grinding means.

3,353,303
ART OF EDGING

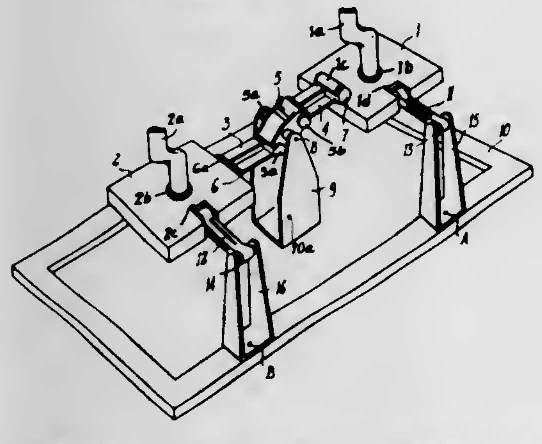
Albert Stern, Lincolnwood, Ill., assignor to A.I.T. Industries, Inc., Skokie, Ill., a corporation of Illinois
Filed Nov. 13, 1964, Ser. No. 410,994
7 Claims. (Cl. 51—105)



4. In an edging machine having frame means for supporting an edging instrumentality and carriage means for mounting a work piece for edgewise movement toward and away from the instrumentality and for substantially free floating movement transversely of the instrumentality, the improvement residing in the provision of an instrumentality having a pair of edge working faces inclined relative to one another and the edge of the work piece, one of said faces being relatively coarse and the other being relatively fine, said faces causing the work piece to locate itself relative thereto with the median plane of the work piece offset from the juncture of said faces in the direction of said relatively coarse face.

3,353,304
SURFACE TREATMENT OF GLASS AND APPARATUS THEREFOR

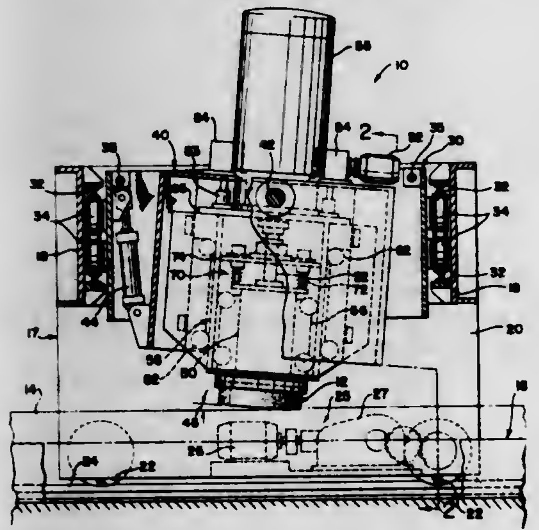
Henri Jules Chaumont, Brussels, Belgium, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, Seine, France
Filed June 11, 1965, Ser. No. 463,248
Claims priority, application France, July 15, 1964, 981,719
13 Claims. (Cl. 51—119)



1. In an apparatus for surfacing sheet glass, a plate having a planar surface to which a pad may be attached for frictional contact with the sheet glass, a pair of thrust blocks, means operable to move said blocks in unison in a predetermined path having mutually-normal components parallel to said surface, first link means between said blocks and plate to transmit one of said components of motion to said plate, and second link means between said blocks and plate to transmit the other said component of motion to said plate.

3,353,305
TILTED SPINDLE GRINDER

Siegfried Wolf, Canton, and Clayton R. Young, Salem, Ohio, assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Jan. 27, 1965, Ser. No. 428,375
3 Claims. (Cl. 51—165)



3. A grinding machine having a rotatable grinder spindle adapted to be inclined slightly from vertical in the direction of grind comprising

a tiltable support head pivotally mounted on an axis transverse to the direction of grind,

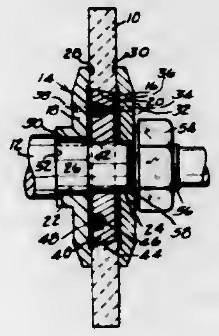
a grinder support head mounted for reciprocatory movement on said tiltable support head parallel to the grinder spindle axis,

yieldable mounting means permitting limited axial movement of said grinder spindle relative to the grinder support head such that the grinder spindle, spindle support head, and tiltable support head are telescopically movable relative to each other along the grinder spindle axis, and

servo-control means for moving said grinder support head axially relative to said tiltable support head and grinder spindle so as to vary the deflection of said yieldable mounting means in accordance with external conditions for maintaining a predetermined grinding pressure.

3,353,306
HUB MOUNTING FOR GRINDING WHEELS

James A. Seymour, Warren, and Walter F. Beth, Holden, Mass., assignors to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed Jan. 31, 1964, Ser. No. 341,573
6 Claims. (Cl. 51—168)



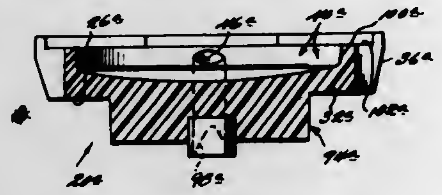
1. A wheel mounting for a wheel of appreciable axial thickness having side faces and a center opening which opening has a tapered wall passing from one to the other of said side faces, comprising a rotatable shaft, opposed clamping devices containing openings for receiving the shaft, means operative to fix the clamping devices, to the shaft for rotation therewith, annular lands on the clamping devices adapted to have contact with the side faces of the wheel marginally of the center opening, means operative to draw the clamping devices into clamping engagement with the side faces of the wheel, and a rigid hub mounted on the shaft within the center opening of the wheel between the clamping devices, said hub corresponding substantially in axial thickness to the axial thickness of the wheel and the peripheral edge of the hub having a conical surface mating substantially with the tapered wall surface of the center opening of the wheel.

3,353,307
LENS HOLDER FOR METALLIC BLOCKING SYSTEM

George M. J. Sarofeen, Colonial Heights, Va., assignor to Titmus Optical Company, Inc., Petersburg, Va., a corporation of Virginia
Filed Oct. 29, 1964, Ser. No. 407,376
27 Claims. (Cl. 51—216)

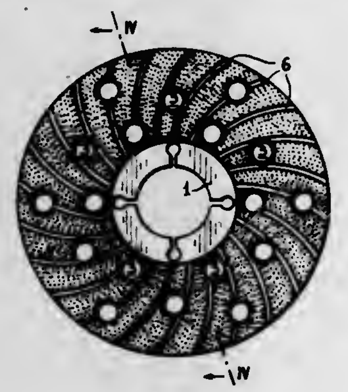
16. A lens blocking member for holding a lens blank and for use with a lens blocking system of the character described employing a blocking agent comprising: a base wall having front and back sides and a continuous periphery; a relatively rigid side wall depending from said front side, integrally formed therewith, and joined to said base wall throughout substantially all of the periphery of said base wall, said side wall having an annular inwardly facing surface, said inwardly facing surface and said front

side defining a first cavity within which a lens blank is adapted to be peripherally enclosed; axially centrally located mounting means associated with said back side of said base wall for mounting said lens blocking member on a lens processing apparatus in a predetermined desired orientation; means associated with said base wall having a portion thereof defining a second cavity within said first cavity and another portion thereof defining support means adapted to support said lens blank, said base wall having



at least one port extending therethrough for enabling a blocking agent to be inserted into said second cavity through said base wall; and means defining an instrument-receiving opening through said side wall into said first cavity and partially into said portion defining said support means so that an instrument can be positioned outside said second cavity and in engagement with a surface of said lens blank when said lens blank is positioned within said first cavity for removing said lens blank from said lens blocking member.

3,353,308
FLEXIBLE ABRASIVE DISC
Riccardo Zane, Via Carducci 5, Cinisello Balsamo, Mailand, Lombardy, Italy
Filed May 8, 1964, Ser. No. 366,119
Claims priority, application Italy, June 4, 1963, 11,973/63
2 Claims. (Cl. 51—397)



1. A flexible abrasive disc comprising a known lamellar, flexible, nonmetallic supporting round plate, and a substantial layer of abrasive material supported by said round plate, said abrasive layer being made of a plurality of thin and uniform alternately superposed coatings of adhesive material and abrasive granules, said round plate having a multiplicity of indentations on its side confronting said abrasive material.

3,353,309
INFLATABLE STRUCTURE
John P. Kwake, 2507 Carob Drive, Los Angeles, Calif. 90046
Continuation of application Ser. No. 458,609, May 25, 1965. This application Feb. 13, 1967, Ser. No. 615,839
16 Claims. (Cl. 52—2)

1. An inflatable structure comprising:

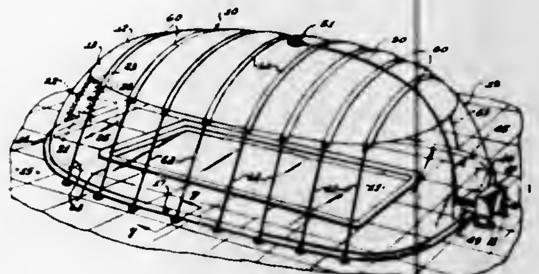
a body member of foldable material having a rim adapted to releasably but sealingly engage a surface over which the body member is to be inflated, said body member having an opening near said rim through which to admit a gaseous fluid to raise the body member above the surface;

supply means to force gaseous fluid through said opening to inflate said body member;

control means operable from said body member to limit operation of said supply means when said body member is inflated;

a door opening in said body member;

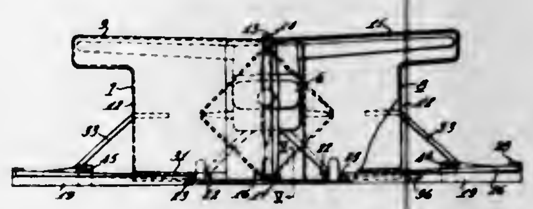
a door having one edge thereof attached to an edge of said door opening;



means for sealingly engaging said door with said door opening in said body member; and

spring means in said door normally urging said door, when unlocking, to a closed position when said blower is non-operative, said spring means being insufficient in force to close said door, when unlocked, and when said blower is operative.

3,353,310
AIRPLANE ENCLOSURE
Emil T. Ruhle, 7050 S. 92nd St., Hales Corners, Wis. 53130
Filed Oct. 23, 1965, Ser. No. 503,001
6 Claims. (Cl. 52—66)

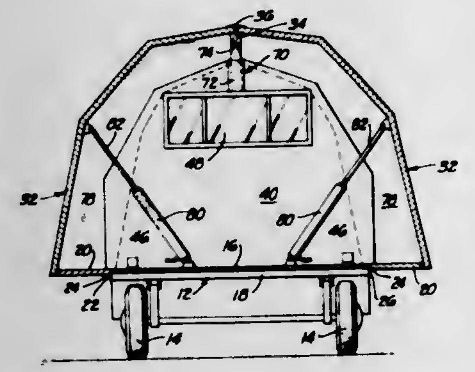


1. An enclosure for an airplane comprising: an airplane covering portion having an outer configuration substantially similar to the outer configuration of the airplane, said covering being made of a light weight material of sufficient stiffness to support its own weight, said covering being composed of at least two sections releasably connected to one another and including a portion embracing the underside of the airplane; first means connected to said section to permit sliding movement thereof a sufficient distance to remove that portion of the sections from the underside of said airplane; and second means connected to said sections to permit pivotal movement of said sections out of enclosing relation with said airplane.

3,353,311
EXPANSIBLE STRUCTURE
Louis C. McClure and Vernon H. Davis, Palmdale, Calif., assignors of thirty-three and one-third percent to Billy A. Couch, Lancaster, Calif.
Filed May 14, 1965, Ser. No. 455,796
11 Claims. (Cl. 52—66)

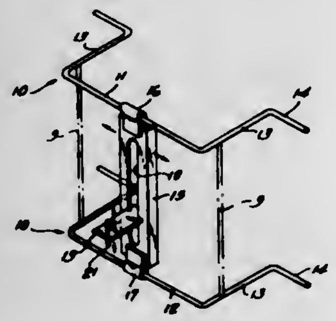
7. In an expansible structure, the combination of: a centrally located floor section; a pair of normally retracted, normally vertically downwardly extending floor sections pivotally connected at normally upper ends thereof to opposite edges of said central floor section and being movable from said retracted, vertical orientation into expanded horizontal orientations and parallelism with said central floor section; a pair of sidewall-roof sections

pivotally connected at their lower edges to normally lower and expanded outer edges of said retractable floor sections and at abutting apexes to each other, said sidewall-roof sections being pivotal between inward retracted and outward expanded positions; a pair of opposed end walls operatively connected upright to opposite end extremities of said central floor section; means associated with certain of said sidewall-roof sections and said end walls to automatically cover space created between



said end walls and the corresponding extremities of said sidewall-roof sections when said sidewall-roof sections are moved to said outward expanded positions; and selectively operable expansible and contractible means for pivoting said sidewall-roof sections to raise and lower said sidewall-roof sections with respect to said central floor section to cause the concomitant raising and lowering of said retractible floor sections to dispose the structure, respectively, in the expanded and retracted conditions.

3,353,312
ADJUSTABLE ANCHORING MEANS FOR MASONRY WALLS
Bernard Storch, 81—57 259th St., Floral Park, N.Y. 11004
Filed May 11, 1966, Ser. No. 549,235
8 Claims. (Cl. 52—713)



1. For use in a masonry wall construction having an inner masonry wall and an outer facing wall, means for anchoring said facing wall to said masonry wall comprising:

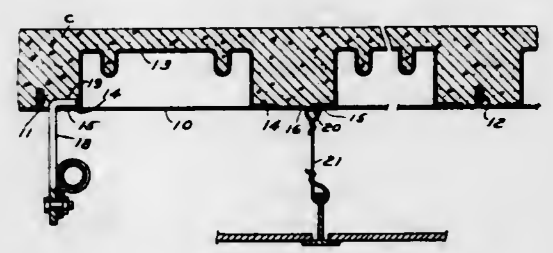
a pair of spaced parallel wire members adapted to be embedded in said masonry wall,

a bracket slidably supported at either end thereof to said wire members, said bracket being adapted to be disposed in the spacing between said masonry and facing walls, and

an anchor projecting outwardly from said bracket and slidable along the length of said bracket, said anchor being adapted to engage a building unit of said facing wall,

whereby said bracket is free to move parallel to said wire members and said anchor is free to move perpendicular to the direction of movement of said bracket.

3,353,313
CELLULAR FLOOR CONSTRUCTION
Edwin Krysinski, Grosse Pointe Woods, Mich., assignor to The R. C. Mahon Company, Detroit, Mich., a corporation of Michigan
Filed May 18, 1965, Ser. No. 456,746
7 Claims. (Cl. 52—100)



6. In a cellular floor construction, the combination comprising

a lower element,

an upper element cooperating with said lower element to form longitudinally extending spaced cells and intervening portions,

each said upper element having longitudinally extending flanges contacting the lower element,

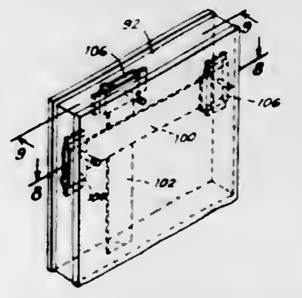
a plurality of longitudinally spaced circular openings in the lower element underlying one of said flanges,

a plurality of longitudinally spaced tabs elongated in the direction of said cells adjacent said circular openings and connected to the lower element by weakened lines,

the edge of said flange which overlies said circular openings extending laterally and terminating between said circular openings and said tabs,

whereby said tabs can be struck out to permit insertion of a bar stock hanger through the openings thereby formed or said portion of said lower element between said circular opening and said tab may be bent downwardly to permit insertion of a wire hanger.

3,353,314
INSULATED PANEL HAVING JOINED CONNECTORS
George W. Melcher, Bally, Pa., assignor to Bally Case and Cooler, Inc., Bally, Pa., a corporation of Pennsylvania
Filed June 24, 1966, Ser. No. 560,306
7 Claims. (Cl. 52—127)

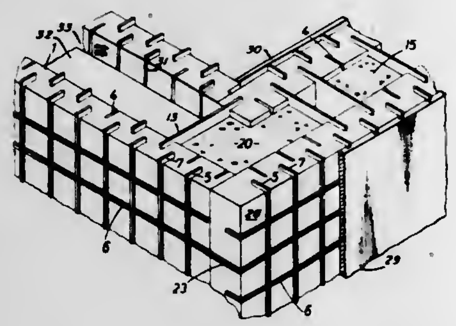


1. A rectangular heat insulating panel comprising: a pair of side shells with a relatively thick layer of heat insulating material therebetween, said insulating material having a low thermal conductivity and relatively low tensile strength; at least one elongated member of relatively high tensile strength material embedded within and surrounded by said insulating material and extending through the panel so that opposite ends of said member are adjacent two different edges of said rectangular panel; locking means for interconnecting said panel with other insulating panels, including first and second thin receptacles connected to the respective ends of said elongated member, each of said receptacles being embedded in said layer of insulating material; an extensible latching device

mounted in one of said receptacles, a catch mounted in the other of said receptacles for interlocking with an extensible latching device, each said receptacle comprising a cup having spaced walls defining a slot in the edge of the panel insulating layer and so located that the slots in adjacent heat insulating panels are aligned when two panels are interconnected, said cup walls extending substantially parallel to the plane of each of said shells, a flange extending from at least one edge of said cup and lying in a plane intermediate said cup walls, said elongated member comprising a substantially flat strap secured at each end to the flanges of said cups, said strap lying at least substantially within an area bounded by the planes of the outer surfaces of said cup walls whereby said strap and cups are all spaced a substantial distance from said panel shells by heat insulating material.

3,353,315
GROOVED PANEL WITH LOAD-BEARING STRIPS

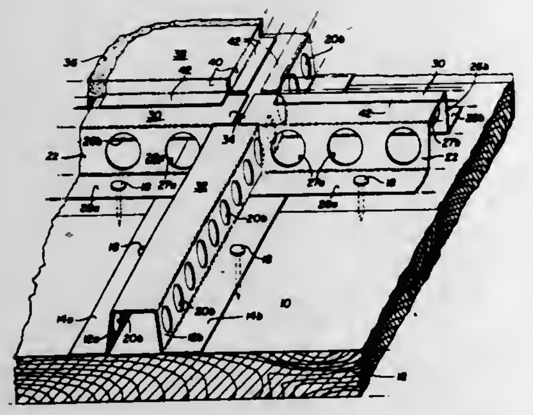
George Barker, 7 Ash Grove, Willerby, Hull, England
Filed Mar. 12, 1965, Ser. No. 439,281
Claims priority, application Great Britain, Sept. 30, 1964, 39,776/64; Jan. 25, 1965, 3,200/65
15 Claims. (Cl. 52—275)



11. A wall including a plurality of panels in alignment and at right angles to one another, each such panel comprising two spaced parallel rectangular slabs of light weight material, parallel grooves in the facing surfaces of said slabs, spacing strips with their edges in said parallel grooves in said facing surfaces, parallel grooves in the opposite surfaces of said slabs parallel to those in the other surfaces thereof, further parallel grooves in said opposite surfaces at right angles to said parallel grooves, and strips in mutual nesting engagement in said grooves in said opposite surfaces.

3,353,316
PANEL-COVERED STRUCTURES

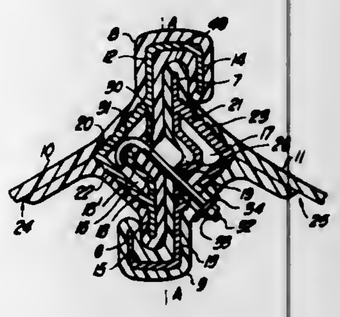
Edward T. Berg, 187 Fremont St., San Francisco, Calif. 94105
Filed June 1, 1965, Ser. No. 460,159
1 Claim. (Cl. 52—302)



A panel cover for structures such as roofs and walls comprising first and second groups of parallel disposed channel members of inverted U-shaped cross-sectional contour having diverging side walls containing longitudinally arranged rows of openings and having laterally directed flanges provided along the outer edges of said side walls, said first and second groups being arranged at right angles to each other to define rectangular spaces between them, with the open ends of the members of one of said groups arranged to encompass an opening in the side walls of members of the other group, blocks of an insulating material placed into said spaces upon the flanges of said channel members and having dished panels secured to their outer surfaces, pads of a sealing compound in the space between said panels above the bight portion of said channel members, bars placed upon said pads, and means for securing said bars through said pads to the bight portions of said channel members.

3,353,317
PANEL JOINT WITH HOOK-SHAPED BOLT CONNECTING DEVICE

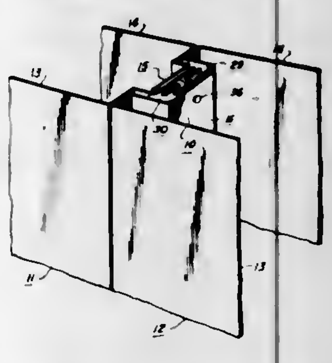
Arthur John Ensor, 434 Kenwood Ave., Ottawa 13, Ontario, Canada
Filed June 17, 1965, Ser. No. 465,256
17 Claims. (Cl. 52—309)



1. The combination comprising a panel, a first element secured to an edge portion of the panel, a structural member, a second element connected to said structural member, said first element having a hook-shaped portion and a hollow portion, said second element having means engaging said hook-shaped portion and said first and second elements being fastened together by at least one bolt passing through said second element and into said hollow portion; said bolt having a first hook-shaped end engaging the first element in said hollow portion and a second threaded end provided with a nut, said nut being tightened to urge said first and second elements together.

3,353,318
INSULATED JOINT FOR PANEL WALLS

Leo O. Bacher, Waco, Tex., assignor to McAx Corporation, McGregor, Tex., a corporation of Texas
Filed Mar. 28, 1966, Ser. No. 538,056
7 Claims. (Cl. 52—403)

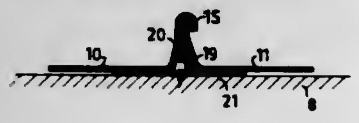


1. An insulated joint for adjacent wall panels having spaced interior and exterior sheets including coextensive first flanges extending transversely inward from the upright margins of the sheets, coextensive second flanges extending longitudinally outward from the transverse first flanges of one of the upright margins of each sheet and

longitudinally inward from the transverse flanges of the other of said upright margins, coextensive third flanges extending transversely from the longitudinal second flanges in parallel closely-spaced relation to each other, whereby the flanges of said one of said margins coact to form a tongue portion and the flanges of said other of said margins coact to form a groove portion complementary to the tongue, and a pair of coextensive gaskets for sealing off between the groove and tongue portions, each gasket having an elongate body for engagement with the outermost third flanges of said tongue and groove portions and adapted to be deformed when the joint is assembled, each body having a substantially flat coextensive extension projecting laterally therefrom for confinement between the parallel closely spaced third flanges whereby one of the gaskets is adapted to be mounted on said tongue portion and the other of said gaskets is adapted to be mounted on said groove portion.

3,353,319
METHOD OF MAKING SHEET-METAL ROOF COVERINGS AND ROOF COVERING MADE IN ACCORDANCE WITH THIS METHOD

Sven Olof Grönlund, Skara, Sweden, assignor to Rostfria Tak AB, Fagersta, Sweden, a corporation of Sweden
Filed Oct. 19, 1965, Ser. No. 497,650
Claims priority, application Sweden, Oct. 3, 1960, 9,434/60; June 15, 1961, 6,271/61, 6,272/61
8 Claims. (Cl. 52—520)



1. A method of making roof coverings from sheet metal, comprising the steps of using strips of stainless steel having a maximum thickness of 0.5 mm., bending marginal portions of such strips through an angle of less than 87° and more than 75° to form upstanding flanges, placing the strips adjacent one another with the flange of one strip adjacent a flange of another strip, pressing the adjacent flanges together by means of pressure rolls, electric resistance welding the pressed flanges together while placing the weld at a distance from the edges of the flanges, and folding over that part of the welded flanges which is located between said edges and the weld.

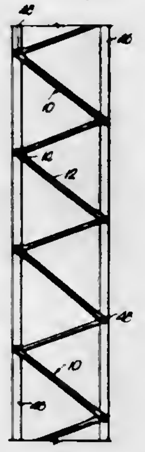
3,353,320
STRUCTURAL MEMBER

August R. Grasis, Gladstone, Mo. (Rte. 22, Kansas City, Mo. 64152)
Filed Nov. 10, 1965, Ser. No. 507,164
3 Claims. (Cl. 52—693)

1. A structural member for connecting a pair of structural elements or the like comprising:

an elongated, straight central portion having a pair of angularly disposed sections whereby to present a neutral axis positioned between said sections throughout the length thereof, the juncture of said sections defining an apex surface; and

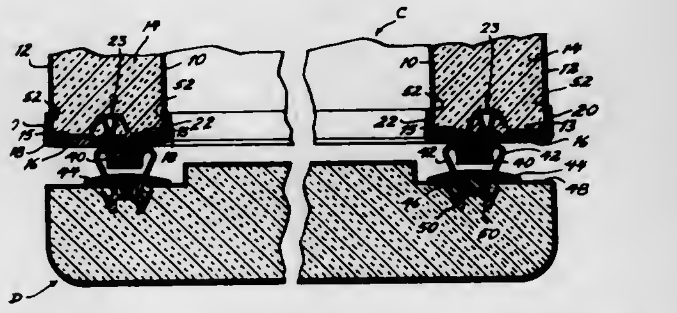
a pair of end portions extending beyond respective ends of said central portion and each resolving therefrom into longitudinally extending transition and terminal stretches, each transition stretch including an integral triangular neck inclined from said apex surface to said neutral axis, the base of the neck being substantially perpendicular to said axis, and a pair of opposed flanges integral with respective adjacent edges of said sections and said neck, said terminal stretch including a rectangular web having a transverse edge thereof integral with the base of said neck, there being a surface defined along the longitudinal axis of said web, said surface being substantially collinear with said neutral axis, and a pair of opposed legs integral with respective adjacent edges of said flanges



and said web, whereby when a load is applied on said surfaces longitudinally of said member, the force of the load will be transmitted along said neutral axis.

3,353,321
THERMAL BREAKER STRIP

Jerome P. Heilweil, Wynnewood, and Albert E. Schweizer, Morrisville, Pa., assignors to Star Metal Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 15, 1965, Ser. No. 487,538
1 Claim. (Cl. 52—716)



A thermal breaker strip for the edge of a cabinet wall formed of an inner liner, an outer shell, and insulating material between, and adhered to, said liner and said shell,

said strip formed of plastic heat insulating material including:

a body portion and side flanges coacting to form a channel for enclosing the edge and adjacent marginal portions of said cabinet wall,

a locking member carried by said body portion for engagement with said insulating material to hold said strip in place,

therebeing spaced, outwardly converging grooves in the outer face of said body portion, and

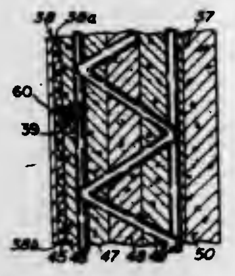
a magnetically permeable element comprising a body portion overlying the body portion of the breaker strip and having inwardly diverging flanges engaging said grooves thereby securing said element in place.

3,353,322
METHOD OF MAKING A WALL STRUCTURE

Karl Guddal, Peger Road, Fairbanks, Alaska 99701
Filed Aug. 27, 1963, Ser. No. 304,809
3 Claims. (Cl. 52—744)

1. The method of making a reinforced building wall comprising the steps of, erecting a plurality of studs into upright horizontally spaced coplanar relation, securing spacing means to said studs along one side thereof,

securing a substantially imperforate backing member to said studs along one side thereof but in spaced relation thereto, and spraying concrete onto said backing member



and around said studs until the concrete reaches such a thickness as to completely cover the edges of the studs remotely located from said backing member.

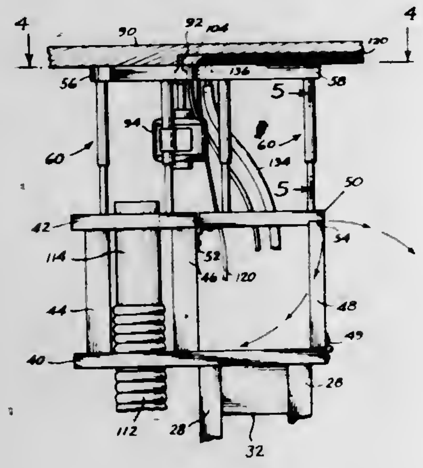
3,353,323

APPARATUS FOR CONTINUOUSLY EMBEDDING FLEXIBLE CABLE IN PLASTER CEILINGS

Thomas L. Livermore, 1543 N. Fir, Tacoma, Wash. 98406

Filed May 2, 1966, Ser. No. 546,848

11 Claims. (Cl. 52—749)



1. Apparatus for embedding electric heating cable and like flexible elements in plaster ceilings which comprises

- (a) a mobile frame extending vertically substantially from the floor to the ceiling and adapted to move along a predetermined path,
- (b) cutter means mounted on top of the frame for cutting continuously a trench of predetermined dimensions in the ceiling as the frame moves along said path,
- (c) cable laying means mounted on the frame behind the cutter means for laying continuously a flexible cable in the trench, and
- (d) plastic filler applying means mounted on the frame behind the cable laying means for filling continuously the trench with uncured plastic filler, thereby embedding the cable in the ceiling.

3,353,324

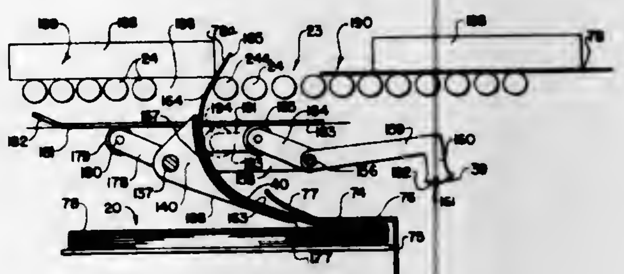
METHOD AND APPARATUS FOR SEPARATING FOLDED WRAPPERS AND PLACING SAME UNDER GOODS TO BE PACKAGED

Edward D. Pierson and James C. Wright, Denver, Colo., assignors to Miner Machine Company, Denver, Colo., a corporation of Colorado

Filed Oct. 26, 1964, Ser. No. 406,472

17 Claims. (Cl. 53—3)

17. The method of separating sheet wrappers folded to provide a pair of overlapping flaps joined together along a common edge from a stack thereof and placing same beneath goods to be packaged which comprises the steps of: restraining the free-edges opposite the flap-joining fold of the uppermost wrapper in the stack, sliding the top flap across the bottom flap in the direction of their restrained free edges until said top layer wrinkles and the flap-joining fold raises off the stack, curling the flap-joining fold up and over toward the free edges, supporting the uplifted portion of the wrapper on the inside of the curl, and passing the goods to be packaged across the supported portion in a direction to roll the wrapper off the top of the stack and leave same under the goods.



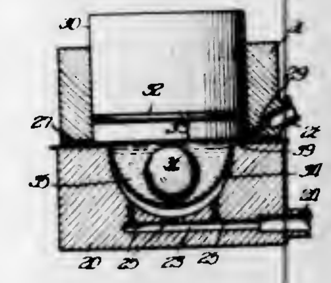
3,353,325

PACKAGING OF FREE FLOWING MATERIALS

Hans A. Jensen and Augustus H. Eberman, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois

Filed Feb. 3, 1964, Ser. No. 342,053

7 Claims. (Cl. 53—22)



1. A method of forming a package containing a free flowing material, said method comprising peripherally supporting a marginally flanged package forming member of upwardly opening cup-like shape, introducing contents into said package forming member to be contained therein by gravity, sealing said package forming member peripherally adjacent the marginal flange thereof, advancing a package base member toward said marginal flange to close off said package forming member and the contents therein, and subjecting the interior of said package forming member adjacent said marginal flange to evacuation to draw said base member into sealing engagement with said marginal flange, the base member advancement and package member forming evacuation occurring simultaneously.

3,353,326

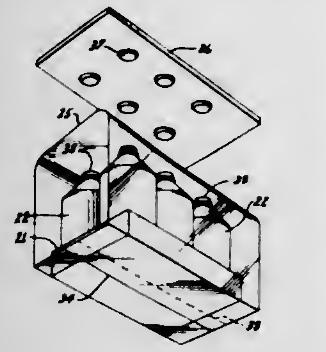
METHOD OF MAKING A CARRYING CASE FOR BOTTLES OR THE LIKE

William C. Becker, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Feb. 1, 1965, Ser. No. 429,572

4 Claims. (Cl. 53—24)

1. A method for making a package construction comprising the steps of providing product means having projection means, encasing said product means in a heat shrinkable film-like member, and thereafter, heat shrinking said film-like member around said product means to compact and encase said product means therein, and forming opening means through said film-like member during part of said heat shrinking step and through which



said projection means will subsequently project to stabilize said product means relative to said film-like member.

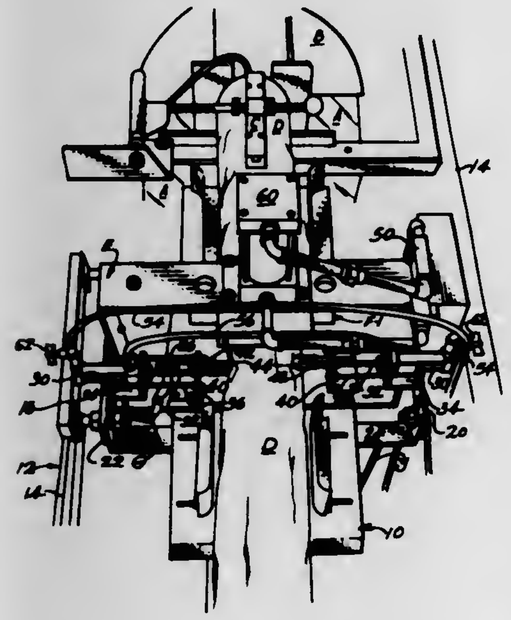
3,353,327

GUSSET APPARATUS FOR BAG FORM AND FILL MACHINE AND METHOD

Duncan B. Cutler, William L. Warner, and William A. Hadden, De Kalb County, Ga., assignors to The Woodman Company, Inc., Decatur, Ga.

Filed Nov. 19, 1962, Ser. No. 239,205

14 Claims. (Cl. 53—28)



1. In a method for forming gussets on bags continuously made on a form and fill machine which includes heat sealing dies for sealing the tops and bottoms of the bags, comprising:

- (a) forming the bag from a continuously supplied tube of material,
- (b) sealing the bag by a pair of heat sealing dies moving from opposite sides of the tube,
- (c) prior to closing said heat sealing dies, forming tucked portions on opposite sides of said tube from the open space between said dies by extending finger members into the opposite sides of said tube at the opposite open ends of said sealing dies,
- (d) and tucking said bag on said opposed sides for a distance above said sealing dies sufficient to extend from the top of the bottom bag being sealed and severed and below said sealing dies to the bottom of the top bag yet to be severed from the tube and sealed.

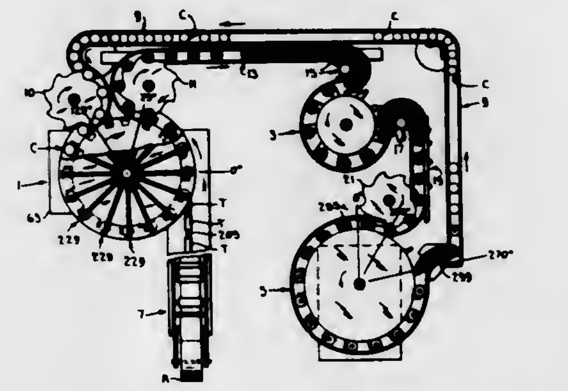
3,353,328

METHOD AND APPARATUS FOR FORMING AND FILLING RECEPTACLES

Paul L. B. Wheeler, Wayland, and Edwin E. Keene, Middlesex, Mich., assignors to Packaging Frontiers, Inc., Waltham, Mass., a corporation of Delaware

Filed Aug. 30, 1965, Ser. No. 483,403

43 Claims. (Cl. 53—29)



1. The method of forming, filling and sealing packages comprising forming flexible packaging material into open-ended tubes, closing one end of each tube, transferring each tube closed at its said one end to a holder in which the tube is positioned upright with its closed end down, filling each tube while held by its holder through its open upper end, and closing the upper end of each filled tube while held by its holder.

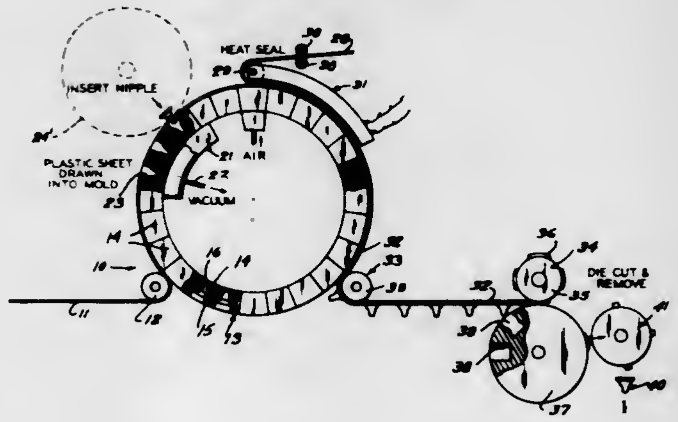
3,353,329

METHOD OF AND APPARATUS FOR PACKAGING ELONGATED ARTICLES SUCH AS NIPPLES

Charles E. Cloud, Wilmette, and Richard G. King, Chicago, Ill., assignors to Cloud Machine Corporation, Skokie, Ill., a corporation of Delaware

Filed Aug. 11, 1964, Ser. No. 388,800

6 Claims. (Cl. 53—30)



1. In a method of packaging elongated articles, the steps of:

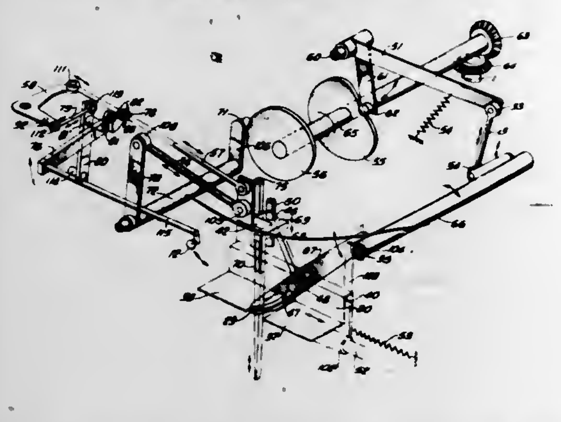
moving a web of stretchable material over a series of heated dies,

causing the stretchable material to be moved into the heated dies with the material being progressively stretched and thinned as it is hetaed by the heated side walls of the dies forming a strip of elongated cups with bottoms of the cups having a greater cross-sectional thickness than side walls of the cups,

attaching a closure web of material over open ends of the cups after articles have been inserted into the the cups providing a strip of packages, and separating the packages from one another.

3,353,330
STUFFER FOR TRAVELING CARTONS

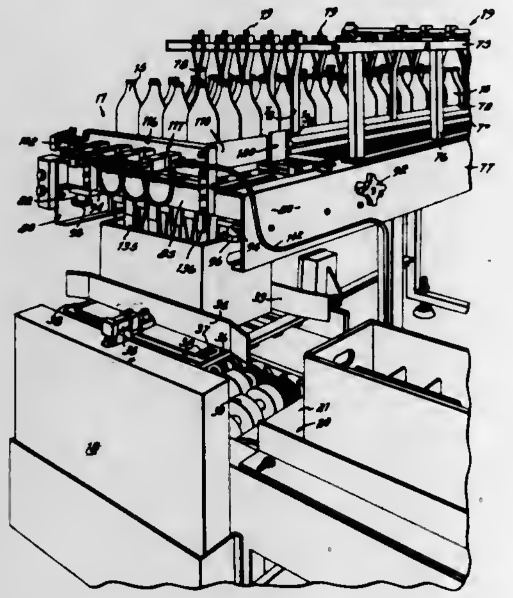
Elbert L. Bivans, Glendale, and John H. Bent, Fullerton, Calif., assignors to Bivans Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 8, 1963, Ser. No. 263,854
9 Claims. (Cl. 53—59)



1. The combination of means for conveying a series of spaced containers at uniform speed along a path, a bridge having a gap above said path, means for successively depositing a leaflet on said bridge over said gap, a reciprocating ram, means supporting said ram for movement from an elevated position above said gap to a lower position through said gap, and means for operating said ram in timed relation with the travel of said conveying means, and means for reciprocating said bridge and said ram along along said path, said ram being operative to insert a leaflet in successive containers while said ram and bridge are moving along said path with the container being stuffed.

3,353,331
CASE LOADER

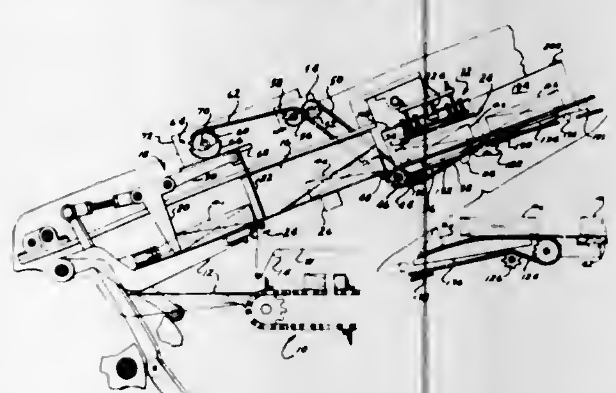
Edward F. Rowekamp, Cincinnati, Ohio, assignor to Lodge and Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 24, 1963, Ser. No. 318,577
5 Claims. (Cl. 53—166)



1. In apparatus having a case loader, a conveyor feeding aligned containers into said loader and means supporting a case under said loader, said case loader structure comprising,
  a plurality of longitudinally extending transversely spaced support rails located above said case support and in position to receive containers from said conveyor,
means for shifting said rails transversely,
longitudinally extending stationary guide rails disposed
  between said support rails and above the plane of the upper edges of said support rails to block transverse movement of containers supported on said support rails,
shifter plates disposed between said support rails adjacent the upstream ends of said stationary rails and projecting above the plane of the upper surfaces of said support rails,
said shifter plates being adapted to engage and transversely shift at least one row of containers,
means fixing said shifter plates with respect to said support rails whereby said shifter plates are transversely shifted with said support rails.

3,353,332
HEAT SEALING MECHANISM FOR WRAPPING MACHINES

John S. Bartlo, Longmeadow, and Richard H. Provost, Shrewsbury, Mass., assignors to Package Machinery Company, East Longmeadow, Mass., a corporation of Massachusetts
Filed Apr. 16, 1964, Ser. No. 360,395
17 Claims. (Cl. 53—379)



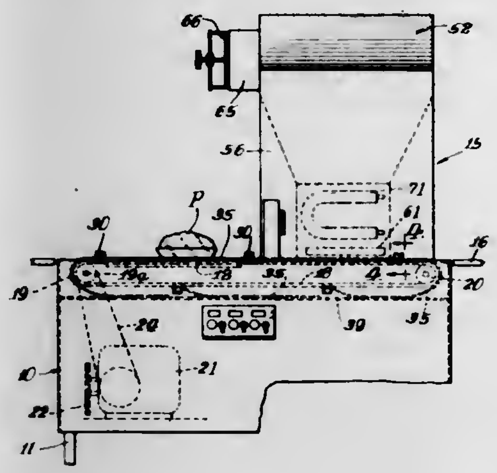
14. In a wrapping machine having a reciprocating conveyor for advancing articles on its forward stroke through a wrapper folding channel and permitting the articles to remain stationary on its reverse stroke, a sealing channel aligned with said folding channel, said reciprocating conveyor advancing successive wrapped articles to a given position within said sealing channel, said sealing channel comprising side sealing elements respectively aligned generally with the opposite sides of said folding channel and a pair of endless belts respectively trained over the opposed faces of said sealing elements and interposed between the elements and the articles, said belts being movable along said sealing channel, belt pulleys carrying each of said belts and mounted independently of said side sealing elements, and means for moving at least one of said side sealing elements toward the other when an article is in said given position in said sealing channel to apply sealing heat and pressure through said belts to the article to thereby seal folded wrapper portions on the end faces of the article and means operable during the forward stroke of said conveyor for advancing articles through said sealing channel, said side sealing elements being in spaced relation from the article at the time of operation of the last named advancing means to permit advance of the articles with the belts remaining in contact with the end faces thereof.

3,353,333
PACKAGE SEALING MACHINE

Bengt A. Arvidson, Villa Park, Ill., assignor to Corley-Miller, Inc., a corporation of Ohio
Filed May 10, 1965, Ser. No. 454,515
14 Claims. (Cl. 53—379)

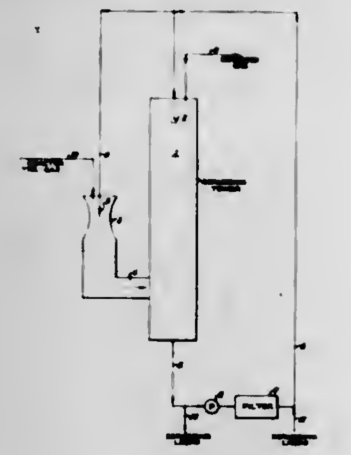
1. A package sealing machine comprising, a frame having a hot plate for bottom sealing of a package, a film shrink tunnel on said frame adjacent said hot plate,

means for conveying a package across said hot plate and then through said tunnel, said tunnel having means for directing heated air against the lower part of a package in the tunnel, said means including an external air inlet overlying said hot plate whereby external air supplied is at a temperature above the ambient temperature.



3,353,334
RECOVERY OF ENTRAINED SOLIDS FROM GASES

Richard I. Bergman, Princeton, N.J., assignor to Princeton Chemical Research Inc., Princeton, N.J., a corporation of New Jersey
Filed June 9, 1965, Ser. No. 462,707
13 Claims. (Cl. 55—94)

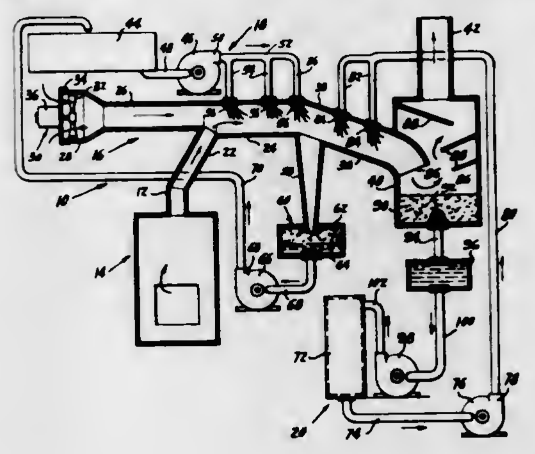


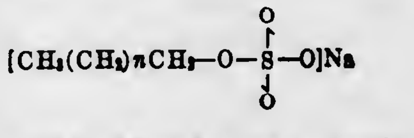
1. A method for recovering pyromellitic dianhydride from the reaction gas of a vapor phase catalytic reaction for its production which comprises flowing the reaction gas in contact with a scrubbing liquid in aerosol form through a constriction with a contacting power sufficient to cause a friction loss of at least 960 (foot pound force)/pound mass, and thereafter separating the scrubbing liquid from the gas stream.

3,353,335
EXHAUST GAS TREATMENT

Edward A. Caballero, 1216 Spruce Ave., Chico, Calif. 95926
Filed Oct. 19, 1965, Ser. No. 498,009
8 Claims. (Cl. 55—94)

1. The process of treating an exhaust gas stream emitting from a combustion chamber including the steps of injecting water into said stream in a finely divided form for cooling said exhaust stream, injecting into said stream a chemical absorptive and cleansing material having an affinity for the irritant portions of an exhaust air stream and recovering a substantial quantity of the injected material and the irritant products contained therein, wherein the chemical material is composed of a minor portion consisting essentially of borax, chlorophyll, trisodium phosphate and



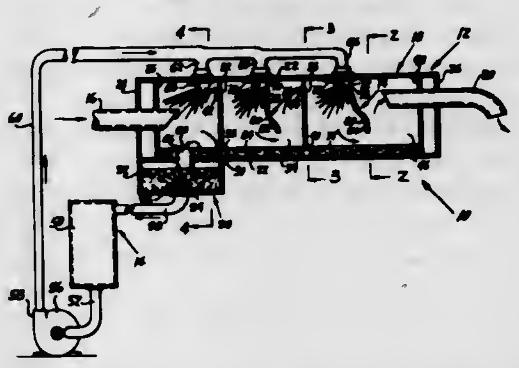


$$[CH_3(CH_2)nCH_2\text{—O—}\overset{\displaystyle O}{\overset{\uparrow}{\underset{\underset{\displaystyle O}{\downarrow}}{S}}}\text{—O}]Na$$

where *n* is from 10 to 18 and a major portion consisting essentially of water.

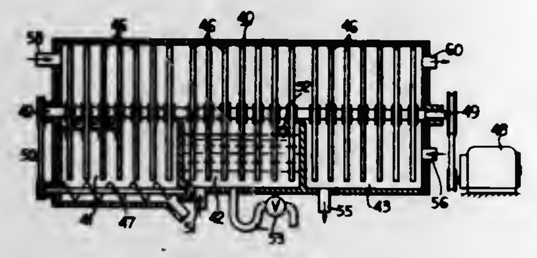
3,353,336
EXHAUST GAS TREATMENT DEVICE

Edward A. Caballero, 1216 Spruce Ave., Chico, Calif. 95926
Filed Oct. 19, 1965, Ser. No. 498,010
3 Claims. (Cl. 55—228)



1. A vehicular exhaust gas treatment system which in combination comprises:
an exhaust gas treating chamber having means for receiving exhaust gas at one point and discharging treated exhaust gas at another point;
a plurality of upstanding divider walls in the chamber arranged and disposed to provide a plurality of compartments which are in communication at the top and bottom;
a plurality of downwardly concave angularly sloping downwardly extending baffles disposed in said compartments for directing exhaust gases and minimizing loss of spray;
a plurality of spray nozzles extending through said baffles for dispersing liquid into only a portion of said compartments;
a liquid recirculation system, including said spray nozzles and further including a filter, for withdrawing liquid from said chamber and returning such liquid after filtering to the chamber through the nozzles; and
a chemical absorbent liquid in said chamber and recirculation system.

3,353,337
TWO-PHASE CONTACTOR
George D. Gale, Wauwatosa, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Sept. 14, 1964, Ser. No. 396,302
1 Claim. (Cl. 55—232)



A dust collector comprising an elongated tank having its longitudinal axis in an approximately horizontal plane; the lower portion of said tank being divided into at least three axially spaced compartments including entrance and exit compartments adjacent opposite ends of said tank; the center one of said compartments being partially filled with a liquid and the entrance and exit compartments being dry;

a shaft mounted for rotation in said tank about said horizontal axis, means for rotating said shaft;

a plurality of apertured disks in each of said compartments mounted on said shaft for rotation therewith and extending to adjacent the inner surface of said tank,

overflow means in said liquid containing compartment to maintain the level of liquid in said compartment at a predetermined level,

scraper means in said entrance compartment positioned adjacent said disks to remove solid particles adhering to the surface of said disks,

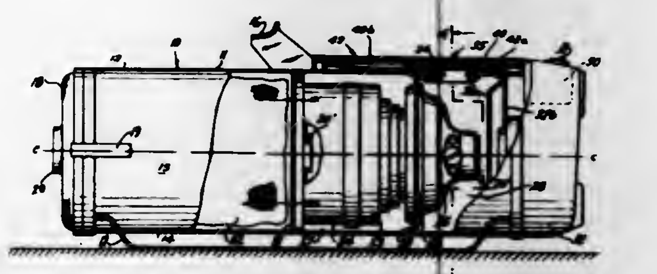
conveyer means in the bottom of said entrance compartment to remove from said entrance compartment dust particles accumulated therein,

drain means in said exit compartment to drain liquid accumulated therein,

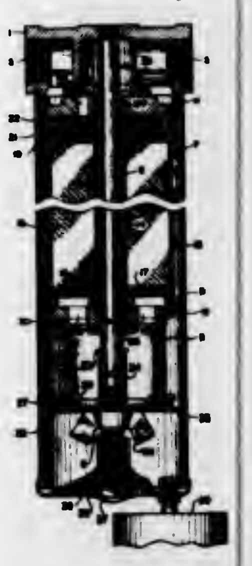
and means including inlet and outlet openings in said tank communicating respectively with said entrance and exit compartments for directing dust laden gas to be treated from said inlet opening through said tank and through the apertures in the disks in said entrance compartment, said liquid containing compartment and said exit compartment in succession and is exhausted from said outlet opening whereby upon rotation of said disks the gas passing through said tank is exposed to dry disks to remove dust, then to wet disks to further remove dust and then to dry disks to remove water droplets and vapor from the gas.

3,353,338
SUCTION CLEANER
Bengt Erik Nilsson, Hagersten, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 15, 1963, Ser. No. 251,606
5 Claims. (Cl. 55—276)

1. In a suction cleaner having a casing provided with an inlet and outlet and having a path of flow for air therein between the inlet and outlet, means in said casing for moving air in the path of flow from the inlet to the outlet, passage means in said casing which is in said path of flow between the inlet and outlet and has an opening therein which is adjacent to the outlet and from which air emerges in its path of flow from the inlet to the outlet, said casing including an apertured exterior wall section which is movable to and from a position over the opening, the outlet being defined by said apertured exterior wall section in its position over said opening, a fine air filter comprising material in the form of a sheet having a cross-sectional area greater than that of said opening, said sheet having first and second opposing sides and being transverse to the axis of said opening and removably positioned in said path of flow between said opening and said exterior wall section and through which all of the air moving in said path of flow passes to remove fine dust particles therefrom, structure comprising said passage means having said opening to produce a stream of air which is directed toward a single side of said sheet in a direction substantially perpendicular to and primarily to one part of said sheet, and means to render said one part of said sheet impervious to air while other parts of said sheet are permeable to air to promote spreading of air at the single side of said sheet which is initially contacted by the stream of air and reduce noise produced during operation of the suction cleaner.

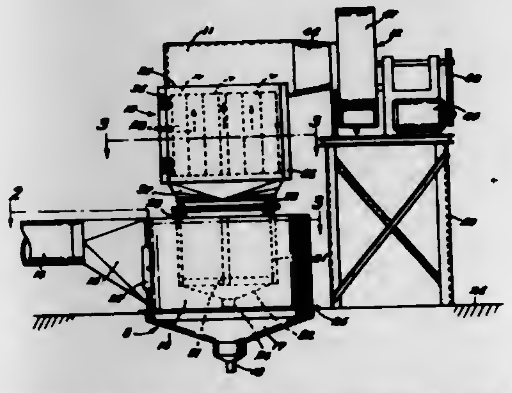


3,353,339
GAS CLEANER
Bernard R. Walter, Roslyn, Pa., assignor to Selas Corporation of America, Dresher, Pa., a corporation of Pennsylvania
Filed Oct. 8, 1964, Ser. No. 402,387
6 Claims. (Cl. 55—316)



1. Apparatus for cleaning gas comprising a support having aligned inlet and discharge openings, said support being provided with an outlet chamber connected with said discharge opening and an inlet to said chamber, a rod attached to said support and extending therefrom through said chamber inlet, an elongated, annular canister filled with vapor adsorbing material received on said rod to be moved against said chamber inlet, said canister being provided with openings in the ends thereof whereby gas can pass axially therethrough into said chamber, means to seal the space between said rod and said canister, an annular filter element having open ends and have a hydrophobic surface, one of said ends engaging the end of said canister remote from said chamber inlet, a disc having a centrally located and axially extending sleeve thereon with said sleeve received on said rod and said disc engaging and sealing the other end of said filter element whereby flow of gas to be cleaned is radially through said element, sealing means between said sleeve and rod, means to force said disc against said filter element, a casing surrounding said canister, filter element and rod and engaging said support, and means effecting communication between the inside of said casing and said inlet opening.

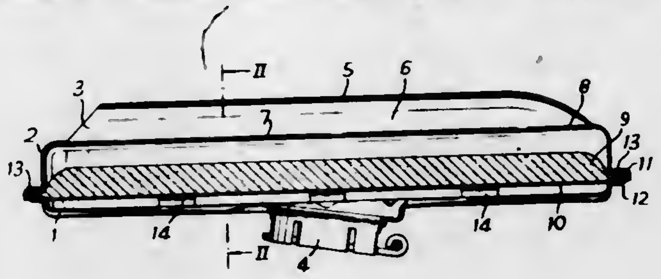
3,353,340
OIL MIST AND FLOTATION DUST COLLECTOR
Eugene A. Carsey, Cincinnati, Ohio, assignor to The Kirk & Blum Manufacturing Co., Cincinnati, Ohio, a corporation of Ohio
Filed June 22, 1966, Ser. No. 559,592
1 Claim. (Cl. 55—324)

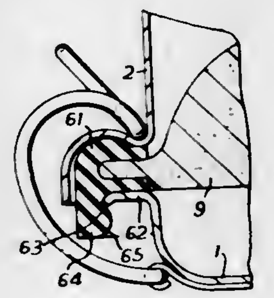


Oil mist and flotation dust collecting apparatus of the character described comprising a first stage, centrifugal separator having an upstanding, outer cylindrical wall, a bottom first drain pan for the wall having a central drain opening, a hollow, cylindrically shaped upstanding second stage primary filter cartridge disposed within the upper portion of the space encompassed by the cylindrical wall and defining with said wall an annular chamber, a tangential inlet formed through the upper end of the cylindrical wall admitting a stream of contaminated air into said chamber, a second drain pan positioned below the filter cartridge and having a drain opening disposed above the drain opening in the bottom drain pan for the outer cylindrical wall, a third stage secondary filter compartment positioned above the chamber, a series of upstanding bag filters disposed in inverted positions within the compartment, a downwardly and inwardly tapering bottom wall for the compartment constituting a passageway connecting the compartment with the space encompassed by the filter cartridge, said bottom wall having a circular lower edge terminating directly above the second stage filter cartridge and directing oil collected by the bag filter into the top of the filter cartridge, a bonnet connected to the top of the third stage secondary filter compartment, and exhaust fan means connected to the bonnet whereby said exhaust fan means creates a rising stream of whirling air in the annular chamber, said stream passing through the filter cartridge and remaining effective up through the cartridge and through the passageway to the third stage secondary filter.

3,353,341
AIR FILTERS FOR INTERNAL COMBUSTION ENGINES
Peter William Stripp, Plymouth, Devon, England, assignor to Tecalemit (Engineering) Limited, Devon, England
Continuation of application Ser. No. 365,696, May 7, 1964. This application Mar. 29, 1966, Ser. No. 542,993
Claims priority, application Great Britain, May 10, 1963, 18,590/63
1 Claim. (Cl. 55—502)

An air filter for an internal combustion engine said filter comprising a shallow casing including a body having an air outlet adapted to be connected with the engine and a cover fitted over said body and including an air inlet for the admission of air to be filtered, said body and cover being provided with outwardly extending peripheral flanges, the cover flange overlying the body flange, the flange on said body being generally flat with a turned down lip, a flat filter element within said casing and extending across said casing; an annular thin peripheral projection integral with said filter element disposed between said flanges, means secured to said projection defining a resilient bead including a downwardly-turned flange having an inwardly-projecting lip, said flanges defining a channel to receive said bead, said filter element including a backing sheet carrying suitable filtering material and secured therewith by said bead, said bead being gripped between said flanges in said channel, said inwardly projecting lip engaging downwardly around and beneath the first mentioned lip to position said filter element over said body flange and to hold the filter element in place on the body during removal and replacement of the cover, and means clamping said flanges and bead together.





3,353,342
HARVESTER PICKUP
Frederick L. Hill, Rio Vista, and Lauren W. Gates, Stockton, Calif., assignors to The Regents of the University of California, Berkeley, Calif.
Filed July 20, 1966, Ser. No. 566,686
23 Claims. (Cl. 56—327)

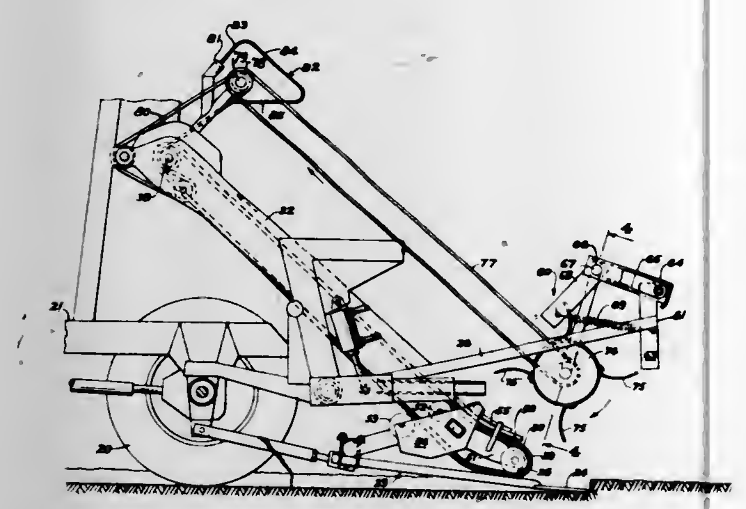
1. In a harvesting machine, a crop pickup device including in combination

a pickup frame extending rearwardly and upwardly from a front end adjacent ground level,

an endless conveyor supported on said frame and comprising a series of bars interlocked with each other at each end and extending transversely across said frame to provide an upwardly and rearwardly moving upper reach and a downwardly and forwardly moving lower reach,

said bars being inset for their full length, except for short end portions adjacent their ends, to provide a trough-like central portion that extends down on the upper reach and up on the lower reach, so that the upper and lower reaches of said central portions lie very close to each other and provide a short radius of turn at the lower end,

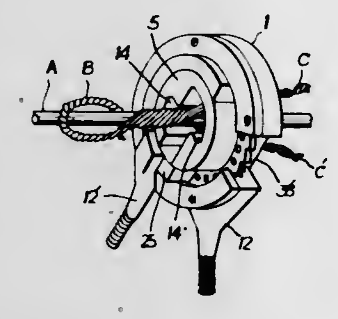
flat flight bars secured to some of said inset bars at regular intervals along said conveyor to provide flights, the upper edges of said bars being approximately even with the end portions of the bars, an assist drum assembly rotatably supported by said frame above the lower end of said conveyor and having yieldable means for engagement with the incoming crop, and



drive means for moving said conveyor and for rotating said drum, said drive means comprising a continuous belt overlying and spaced above and generally parallel to said conveyor centrally for substantially its full length, for preventing roll-back of plants moving up said conveyor by cooperation therewith.

3,353,343
WIRE WRAPPING TOOL

Nubuo Shime, Wakayama-ken, Japan, assignor to Toshin Electric Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Mar. 15, 1965, Ser. No. 439,696
Claims priority, application Japan, Mar. 23, 1964,
39/15,760
3 Claims. (Cl. 57—10)



1. A wire wrapping tool to form a preformed helically wound wire around a cable comprising a frame member having an opening for the insertion therein of the wire and the cable;

a handle portion attached to said frame member;

a rotatable twisting head having an opening adapted for insertion of said wire and cable;

a twisting head rotator having an opening adapted for insertion of said wire and cable, said rotator including means engageable with said twisting head to rotate said twisting head;

means acting between the frame and the twisting head to limit rotation of said twisting head to one direction upon oscillation of the twisting head rotator;

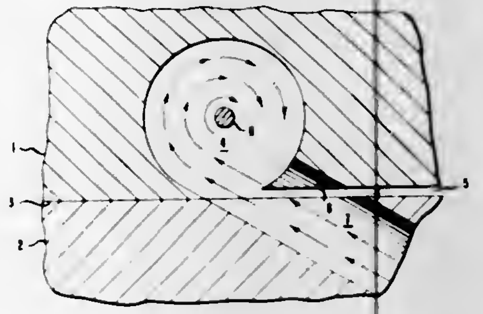
a guide having an opening adapted for insertion of said wire and cable;

means between said guide and said twisting head to provide limited motion of said guide relative to said twisting head wherein said preformed wires and cable are inserted into the aligned openings in said frame member, twisting head, twisting head rotator and guide, and said guide closes the opening in said twisting head during the wrapping operation;

means attached to said frame member to retain the said twisting head, twisting head rotator and guide within said frame.

3,353,344
FLUID JET TWISTER

Francis Joseph Clendening, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 13, 1964, Ser. No. 403,486
4 Claims. (Cl. 57—34)



1. In an apparatus for twisting yarns comprising (a) a single yarn passageway defined by a smooth curved concave inner peripheral wall surface, (b) a single fluid conduit intercepting said yarn passageway and positioned to direct fluid substantially tangentially to said inner peripheral wall surface, and (c) a stringup slot intercepting said yarn passageway substantially tangentially and running the length thereof to enable access of a yarn thereto; the improvement, for diminishing the tendency of a travelling yarn to inadvertently slip out of said slot, wherein said fluid conduit is positioned to intercept said slot at an angle of about 15 to about 90° and in the proximity of said yarn passageway.

3,353,345
FIBER BLENDS

Carl John Setzer, Durham, N.C., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed May 14, 1965, Ser. No. 455,998
7 Claims. (Cl. 57—140)

1. An essentially inelastic staple fiber blend comprising,

(a) hard staple fibers which are essentially inelastic and

(b) bicomponent staple fibers composed of at least one hard inelastic fiber component and at least one elastomeric fiber component, said elastomeric and hard fiber components being adhered to one another in a side-by-side relationship throughout the length of the fiber, said bicomponent fiber being essentially inelastic and having the property whereby the elastomeric and hard components separate when subjected to hot tensionless conditions.

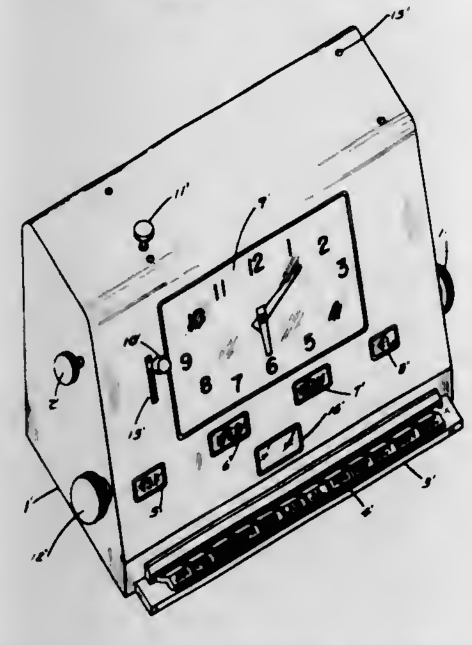
3,353,346
FOAMED SYNTHETIC POLYMER CORDAGE

Remo J. Laureti, Beverly, N.J., assignor to Wall Industries, Inc., a corporation of Delaware
No Drawing. Filed Oct. 23, 1965, Ser. No. 504,149
5 Claims. (Cl. 57—140)

1. Cordage of a foamed synthetic polymer comprising a plurality of strands twisted together in one direction, each of said strands comprising a plurality of yarns twisted together in an opposite direction from the twist of said cordage, each of said yarns comprising a plurality of foamed synthetic filaments twisted together in an opposite direction from the direction of twist of said strand.

3,353,347
REMINDER CLOCK

James T. Gates, 1611 Kirkley Road 43221; Ronald L. Legue, 632 Derrer Road 43204; and William R. Dick, 83 W. Oakland Drive 43212, all of Columbus, Ohio
Filed Nov. 30, 1966, Ser. No. 598,054
1 Claim. (Cl. 58—6)

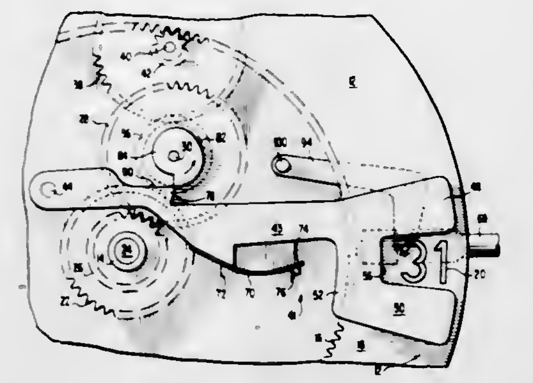


In a reminder clock mechanism, a frame, control tape means mounted for movement on said frame and of a length to run for a plurality of time units; means for placing triggering indicia on said tape means in position to give a reminder signal corresponding to a predetermined time unit thereon; a clock on said frame; a reversible electric motor mounted on said frame; a first set of indicia on said control tape for indicating consecutively the days of the year; a second set of indicia mounted for movement on said frame and including thirty-one units for indicating the days of the month; a third set of indicia mounted for movement on said frame for indicating the months of the year; a fourth set of indicia mounted for movement on said frame for indicating the days of the week; means controlled by said clock for closing once a day a manually openable first electrical circuit; signal means energized by closing of said first circuit and including in series a switch closable by said triggering indicia; means controlled by said clock for closing a second electrical circuit once a day for a brief period only; means for driving said reversible motor in one direction energized by said second circuit; operating connections driven by said motor rotation in said one direction for advancing by one unit said first and fourth sets of indicia and said second set of indicia for the first twenty-eight days of a month; end-of-the-month indicia on said tape means corresponding to the last day of each month; a third electrical circuit including in series a switch closable by said end-of-the-month indicia; means for driving said motor in the opposite direction energized by said third circuit; operating connections driven by said motor rotation in said opposite direction for completing the advance of said second set of indicia for thirty-one units and for advancing said third set of indicia by one unit.

3,353,348
ELECTRIC WATCH CALENDAR MECHANISM

Donald W. Brashear, Lancaster, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Oct. 29, 1965, Ser. No. 505,658
19 Claims. (Cl. 58—58)

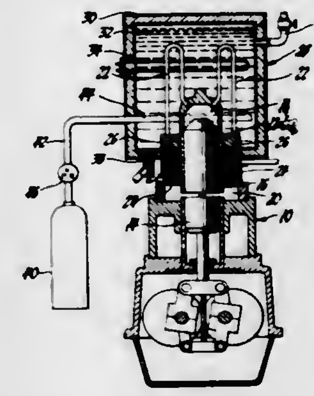
1. In a calendar timepiece, the improvement comprising rotatable calendar means having data indicia thereon, means for continuously rotating said calendar means having a window overlying a portion of said calendar means, cam means operably connected to said calendar rotating means for movement relative to said calendar means and arranged in controlling relation to said shutter means for moving said shutter means in synchronism with said



calendar means during substantially all of each 24-hour period and clutch means engageable against said shutter means for disengaging said shutter means from said cam means during setting of said calendar means.

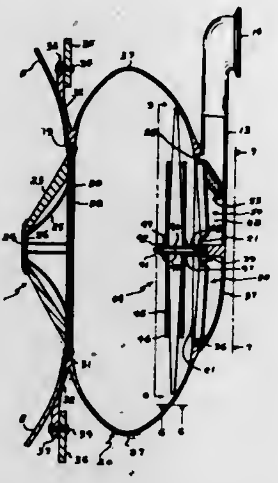
3,353,349
UNDERWATER PROPULSION SYSTEM

Worth H. Percival, Grosse Pointe Woods, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 582,091
5 Claims. (Cl. 60—37)



1. In combination, a closed cycle heat engine containing a working fluid, a combustion system heat source, and heat transfer means operable to conduct heat energy from said combustion system to said working fluid, said combustion system being capable of heating said working fluid to a temperature above about 1000° F. suitable for the efficient operation of said engine; said combustion system being comprised of a molten alkali metal fuel taken from the group consisting of lithium and sodium; an oxidizer containing reactive fluorine atoms in the molecule, said oxidizer being comprised of one or more of the materials taken from the group consisting of $C_xCl_yF_z$, wherein x, y, and z are integers, x having a value in the range of from 1 through 10, y having a value of zero or greater, z being always equal to or greater in value than y but never zero and the value of y plus z being consistent with the value of x in alkane and cycloalkane type organic compounds; and means to add said oxidizer to said fuel in the gaseous state in a controlled quantity whereby the heat generating combustion reaction may occur, the reaction products of said combustion system being nongaseous and such that said combustion system operates at nearly constant volume.

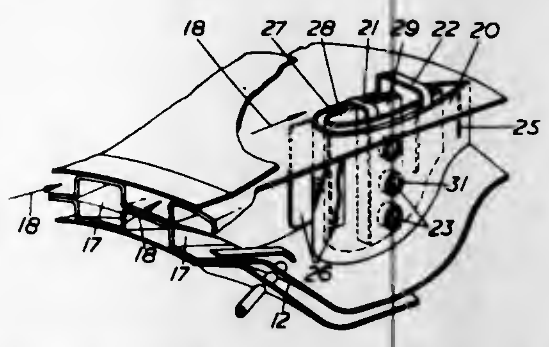
3,353,350
SUMP FOR SPACE VEHICLES
Robert K. Grove, Los Altos, Walter S. Collins, Cupertino, and Stephen C. De Brock, Saratoga, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 28, 1967, Ser. No. 627,255
7 Claims. (Cl. 60—39.48)



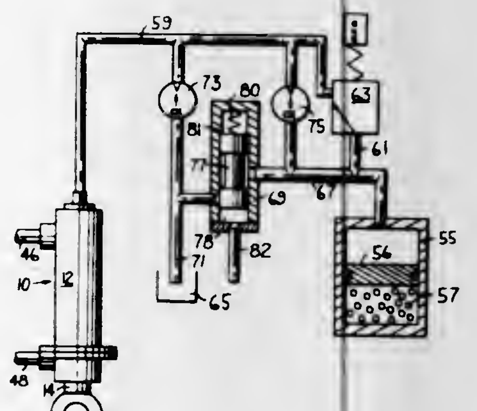
1. A propellent retention device for a propellent supply tank employed in spacecraft designed to restart the engine after the craft has been coasting under low gravity conditions, means for assuring a full supply of propellant when the coasting period has terminated and during which the propellant of a partially full tank would normally have drifted away from the outlet, said means including a relatively large chamber having an opening at one side, a screen containment member fitted over said opening and projecting outwardly from the chamber, said member being of a shape and size as to be inserted into the tank at the position of its outlet whereby the interior of said member is in communication with the interior of the tank in order that the chamber shall receive a full charge of the propellant through said containment member and which is maintained throughout the coasting period until the engine is restarted under low gravity conditions, said chamber having an outlet duct at the side opposite from said container for attachment to a pump and engine, said chamber having an outwardly extending frame at the position of the opening in the chamber, said containment member formed of screen material and having a cone-like configuration supported from said frame, the smaller end of the cone being spanned by screen material which is fitted over said opening in the chamber, said containment member and frame being adapted to be inserted into the tank at the position of its outlet.

3,353,351
AEROFOIL-SHAPED FLUID-COOLED BLADE FOR A FLUID FLOW MACHINE
Arthur Bill, Derby, Thomas Steel, Littleover, and Michael Poucher, Allestree, England, assignors to Rolls-Royce Limited, Derbyshire, England, a British company
Filed Nov. 19, 1965, Ser. No. 508.683
Claims priority, application Great Britain, Dec. 2, 1964, 49,101/64
11 Claims. (Cl. 60—39.65)

1. An aerofoil-shaped blade adapted for use in a fluid flow machine, said blade having an external wall and fluid receiving means surrounded by and spaced from said wall to define a space for receiving cooling fluid from the fluid receiving means and directing some of the cooling fluid over the interior of said wall for cooling said wall, said wall having apertures enabling the cooling fluid to escape from the space between said fluid receiving means and said wall, and means defining a passage wherein a portion of the cooling fluid entering the fluid receiving means passes across the said space directly to the exterior of the said blade without mixing with the fluid in the space.

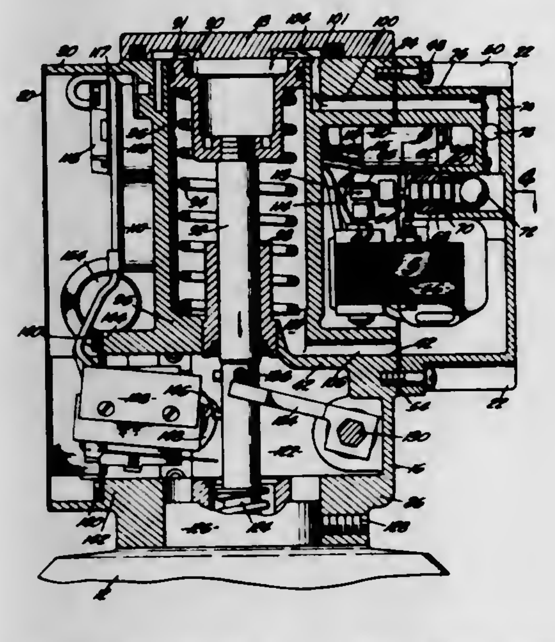


3,353,352
LOAD BALANCING SYSTEM FOR HYDRAULIC JACK
Charles W. Gardner, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Jan. 11, 1966, Ser. No. 519,855
3 Claims. (Cl. 60—51)



1. In an engine driven vehicle having a machine component actuated by a hydraulic jack, apparatus for balancing at least a portion of the weight of said machine component, said apparatus comprising in combination, a hydraulic jack having the usual cylinder, piston and rod, said rod having a bore opening at its inner end, a tube having a first end fixedly secured to and extending through the head end of said cylinder, said tube having a second end portion extending into said rod bore, a stationary wall member fixedly secured to the tube and slidably fitting the rod bore to define one end of an internal expansible chamber within said rod bore, hydraulic fluid means for extending and retracting said jack, and a hydraulic circuit for directing fluid from a pressure fluid reservoir through said tube and into said expansible chamber, said hydraulic circuit comprising an accumulator chargeable to a predetermined pressure by extending and retracting said jack, a pressure control valve located in said hydraulic circuit between said accumulator and said expansible chamber for prventing fluid flow between said expansible chamber and said accumulator when the pressure in the hydraulic circuit drops below said predetermined pressure, check valve means located in said hydraulic circuit between said expansible chamber and said reservoir to communicate pressure fluid from said reservoir to said expansible chamber when the pressure in the hydraulic circuit drops below said predetermined pressure, whereby during normal operation said expansible chamber is supplied with pressure fluid which is sufficient to balance or offset at least a portion of the weight of said machine component, and a safety valve situated between said pressure fluid reservoir and said accumulator, means responsive to operation of said engine to normally close said safety valve and prevent fluid flow from said accumulator to said reservoir, said safety valve further having means operable to open said safety value to allow fluid to flow from said accumulator to said reservoir when said engine is shut down.

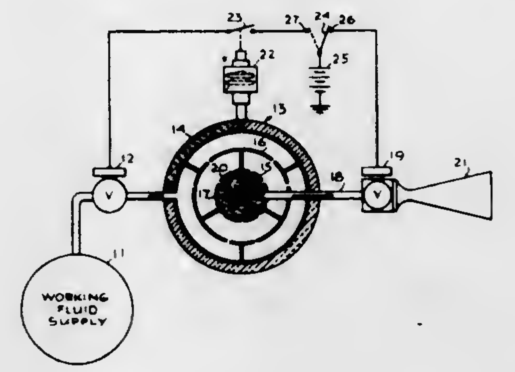
3,353,353
ELECTRO-HYDRAULIC ACTUATOR MECHANISM
William Alton Ray, North Hollywood, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Mar. 30, 1966, Ser. No. 538,827
11 Claims. (Cl. 60—52)



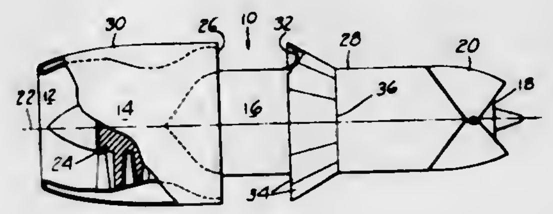
1. An electro-hydraulic actuator mechanism comprising:
- a main casting having top, bottom and side walls,
- a cylinder for receiving an actuator piston integrally formed in a central portion of said casting having an upper end which opens to said top wall,
- a cover removably secured to said casting closing the upper end of said cylinder,
- an enclosed cavity formed in said casting on one side of said cylinder opening to one of said side walls;
- a generally cup-shaped housing having its open end removably secured to said one side wall so that said cavity and the space within the housing are connected to form a hydraulic fluid reservoir;
- an electric motor and a hydraulic pump driven thereby secured to said housing and positioned within said reservoir;
- and duct means in said housing and said casting for ducting fluid from said pump to said cylinder and from the cylinder to said reservoir.

3,353,354
RADIOISOTOPE ATTITUDE CONTROL ENGINE
Burnam I. Friedman, San Pedro, John S. Martinez, Redondo Beach, and Donald Jortner, Palos Verdes Peninsula, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Original application Apr. 8, 1963, Ser. No. 271,366, now Patent No. 3,280,568. Divided and this application July 6, 1965, Ser. No. 469,462
3 Claims. (Cl. 60—203)

1. A heated gas intermittent thrustor comprising:
- (A) means for storing a propellant fluid;
- (B) a radioisotope capsule;
- (C) heat exchanger means surrounding said capsule for storing the heat emission therefrom,
  - said heat exchanger means having passages therethrough and an inlet connected to said propellant storing means and an outlet;
- (D) at least one nozzle connected to said outlet;
- (E) regulator valve means interposed between said propellant supply means and said heat exchanger inlet;
- (F) flow control valve means interposed between said heat exchanger outlet and said nozzle; and
- (G) said heat exchanger including a plurality of concentric walls forming a plurality of chambers, the outer wall being covered with insulation and having said inlet extending therethrough into the outer chamber, the inner walls being perforated to form said passages, and the innermost wall forming an inner chamber containing said capsule and having said outlet extending therethrough.



3,353,355
TURBOFAN LIGHTWEIGHT THRUST REVERSER
Donald John Jordan, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 31, 1966, Ser. No. 553,824
7 Claims. (Cl. 60—226)

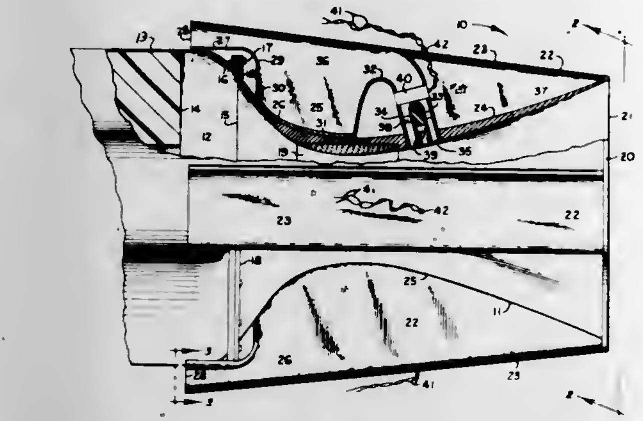


1. A thrust reverser for a gas turbine engine, said engine having a main engine housing and a fan section, said fan section having a substantially annular discharge passage for discharging gas around said main engine housing, said thrust reverser comprising:
- a flexible baffle mounted on said main engine housing downstream of said annular discharge passage;
- a storage section in said main engine housing for storing said baffle, said baffle being normally in a stored position in said storage section;
- a plurality of support elements disposed around said main engine housing, each of said support elements being connected to said flexible baffle and being pivotably connected to said main engine housing; and
- means for causing said support elements to pivot about their points of connection to the main engine housing, pivoting of said support elements outwardly from the housing extending said baffle from said stored position to an operative position, said baffle in said operative position defining an annular baffle disposed in the path of gas exiting from said annular discharge passage to change the direction of flow of said gas.

3,353,356
VECTOR CONTROL SYSTEM, WHICH INCLUDES MEANS FOR INTRODUCING AN AUXILIARY EXHAUST STREAM INTO THE PRIMARY STREAM OF A ROCKET MOTOR

Charles F. Williams, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed June 14, 1965, Ser. No. 463,563
8 Claims. (Cl. 60—231)

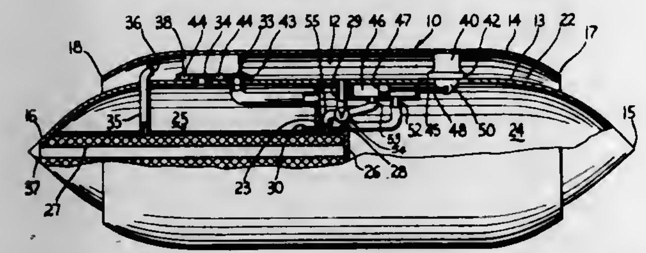


1. In a rocket motor having a combustion chamber, a fuel within said combustion chamber for creating combustion exhaust products therein, a nozzle for the exit of the main exhaust stream of said combustion products from said rocket motor, a vector control system comprising a plurality of air scoops mounted on the nozzle and extending longitudinally thereof, and having communication with the interior of said nozzle, means in said air scoops providing a plenum chamber therein, and an ignitable ducted rocket in each of said air scoops positioned to inject auxiliary exhaust streams into the main exhaust stream flowing through the nozzle, said ignitable ducted rocket in each of said air scoops being selectively operable to provide thrust vector control for the rocket motor.

3,353,357
ROCKET POWERPLANT

William R. Wright, Jr., Sparta, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Pennsylvania

Filed Jan. 18, 1965, Ser. No. 426,286
8 Claims. (Cl. 60—257)



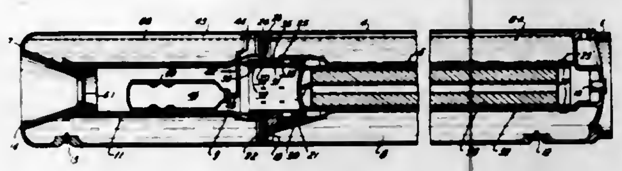
1. A rocket powerplant comprising, in combination, an inner cylinder having tapered, closed ends defining a propellant tank; an outer cylinder defining a combustion chamber with said inner cylinder and having tapered concentric open ends defining exhaust nozzles with the closed ends of said inner cylinder; and means for supplying propellant to said combustion chamber.

3,353,358
ROCKET MOTOR CONSTRUCTION

Joseph J. Lovingham, Madison, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed May 3, 1965, Ser. No. 452,497
8 Claims. (Cl. 60—259)

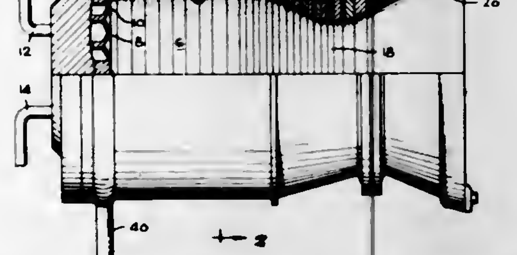
1. In a rocket motor of the type having a thrust chamber and a tank separated by a wall and in which the tank stores at least one propellant liquid which is apt to decompose and produce a high pressure functionally related inversely to the ullage space in said tank, that improvement which comprises providing a continuous connection between a location in said tank where gas collects and the thrust chamber prior to operation of said thrust chamber, said connection extending through the wall of said tank and sealed thereto, and a purging device in said connection of a material which is gas permeable-liquid impermeable to form a barrier in said connection to vent said gas from the tank whereby to permit a high loading density and minimum ullage without producing excessive pressures.



3,353,359
MULTISLOT FILM COOLED PYROLYTIC GRAPHITE ROCKET NOZZLE

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Clifford D. Coulbert and John G. Campbell

Filed Jan. 26, 1966, Ser. No. 523,511
2 Claims. (Cl. 60—265)



1. In a rocket engine having a combustion chamber and throat formed by a nozzle wall, that improvement which comprises:

(a) a multislotted nozzle wall, said wall being formed of a plurality of washers;
(b) said washers having a plurality of grooves formed on at least one face thereof whereby to form with an adjacent washer a plurality of passages;
(c) each of said washers further having a plurality of apertures therein aligned with apertures in adjacent washers whereby to form passages for passage of fluid through said washers, each of said grooves extending from the inner side of said nozzle wall to one of said apertures, grooves of one washer being circumferentially offset relative to the grooves of an adjacent washer to evenly distribute said fluid around said nozzle wall;
(d) whereby fluid in said passages is adapted to pass through said grooves into said rocket engine to provide a cooling boundary layer.

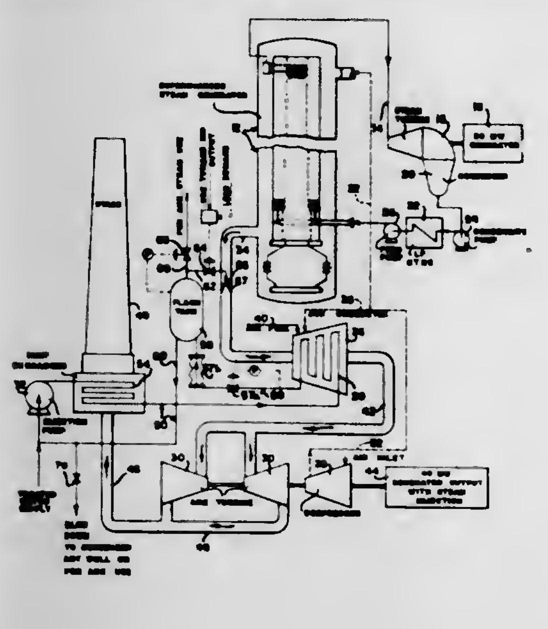
3,353,360
POWER PLANT WITH STEAM INJECTION

Walter P. Gorzegno, Florham Park, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed Feb. 18, 1966, Ser. No. 528,606
7 Claims. (Cl. 60—39.18)

1. A power plant with steam injection comprising:
a supercharged combustion means including burner means for burning fuel in the presence of pressurized air to produce combustion gases;

an auxiliary combustor;
a compressor for supplying the pressurized air to the supercharged combustion means, said compressor including a power input shaft means;
means for conveying the pressurized air from the compressor to the supercharged combustion means and to the auxiliary combustor;
conduit means for conveying the combustion gases from the supercharged combustion means to the auxiliary combustor, a venturi section located within said conduit means;
means for injecting steam into the conduit means adjacent the venturi section to form a mixture of steam and combustion gases being supplied to the auxiliary combustor;
means for injecting fuel into the auxiliary combustor to ignite in the presence of the mixture of air from the compressor, combustion gases from the supercharged combustion means, and steam from the means for injecting steam;
a gas turbine means including a power output shaft means, said power output shaft means being coupled to the power input shaft means of said compressor; and
means for conveying the mixture of combustion gases and steam from the auxiliary combustor to the gas turbine means to drive the gas turbine means.



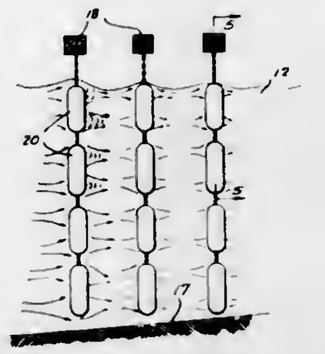
2. A power plant according to claim 1 further including:
a stack heat exchanger;
means for conveying the spent mixture of the combustion gases and steam from the gas turbine means across the stack heat exchanger;
an auxiliary combustor heat exchanger located within said auxiliary heat exchanger;
a flash tank to flash steam, said flash tank including liquid-vapor separating means;
means for supplying water through said stack heat exchanger and then through said auxiliary combustor heat exchanger and then to said flash tank;
means for connecting said flash tank to said means for injecting steam into the conduit means.

3. A power plant according to claim 2 wherein:
said supercharged combustion means is a supercharged steam generator;
and further including:
a steam turbine; and
means for conveying the steam produced by the supercharged steam generator from the supercharged steam generator to the steam turbine to drive the steam turbine.

3,353,361
BREAKWATER

Louis E. Lloyd, 1519 26th Ave., Bradenton, Fla. 33510

Filed July 26, 1966, Ser. No. 567,872
8 Claims. (Cl. 61—3)

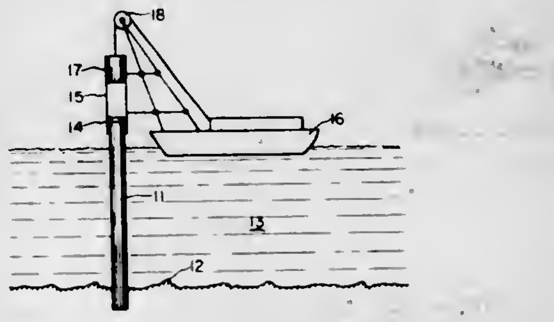


1. A breakwater comprising a plurality of upstanding supports resting on the bed of a body of water and projecting above the surface of the water, rigid horizontal support means secured on the top ends of said upstanding supports, spaced depending flexible members secured to said horizontal support means, and a series of sequentially depending weighted non-buoyant toroidal breakwater elements secured by the uppermost element thereof to each flexible member and with the lowermost element closely adjacent the bed of the body of water in free immersed suspension, each element of each of the series being disposed with the axis of its central opening extending horizontally and having an overall size and opening of the order of those of an automobile tire, said elements intermediate the uppermost and lowermost elements of each series being flexibly interconnected to the adjacent ones of the elements vertically above and below, said toroidal elements being suspended so that they have a substantial degree of ability to turn freely, and the series of sequential toroidal elements being in side-by-side relationship along the horizontal support means to define a wave-retarding curtain.

3,353,362
PILE DRIVING

Arthur Lubinski, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Oct. 24, 1965, Ser. No. 504,609
4 Claims. (Cl. 61—53.5)

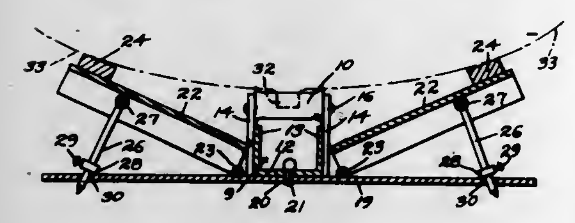


1. The method of driving a pile by a periodically impacting hammer in which the characteristic mechanical impedance of said hammer is at least approximately equal to that of said pile striking said hammer and varying the striking velocity of said hammer until there is little rebound of said hammer and little motion of said pile after the initial movement following each impact and thereafter continuing driving said pile.

3,353,363

PORTABLE BOAT RAMP

Jerry W. Edson, 1508 S. Seneca,
Wichita, Kans. 67213
Filed May 17, 1966, Ser. No. 550,841
7 Claims. (Cl. 61—67)

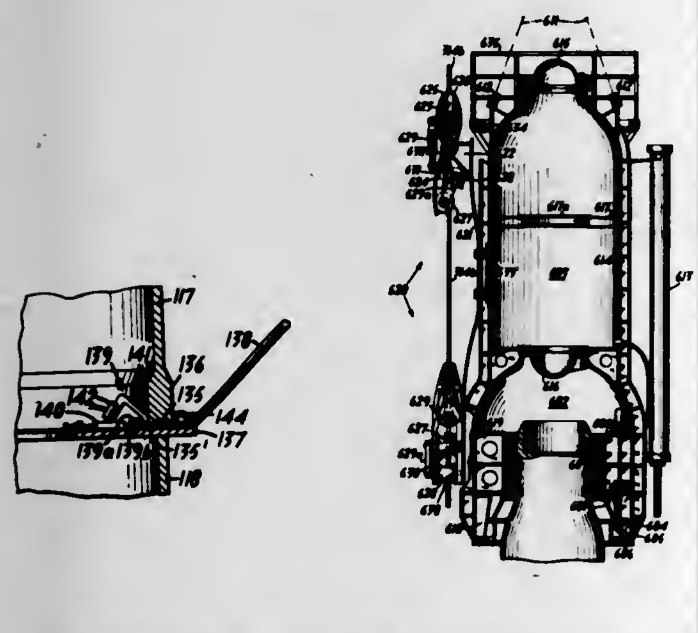


1. A portable boat ramp comprising an elongated rigid keel rest having a transversely disposed keel engaging roller adjacent one end thereof, a rigid stabilizer bar having an intermediate portion disposed beneath and supporting a part of the keel rest, said stabilizer bar being spaced from said end of the keel rest and disposed crosswise thereof, elongated rigid bolsters disposed on the stabilizer bar at opposite sides of the keel rest and longitudinally of said bar, means swingably connecting inner ends of the bolsters to said bar for vertical swinging movement, and brace means adjustably connecting the bolsters to the bar for supporting the bolsters at different angles above the bar ends, said bolsters being adapted to engage the sides of a boat hull to cooperate with said keel engaging roller for supporting a boat on the ramp.

3,353,364

UNDERWATER WELL ENCLOSING CAPSULE AND SERVICE CHAMBER

John E. Blanding, Old Lyme, Edmund C. Trageser, Norwich, and James Vincent Harrington, Mystic, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 26, 1962, Ser. No. 193,040
16 Claims. (Cl. 61—69)



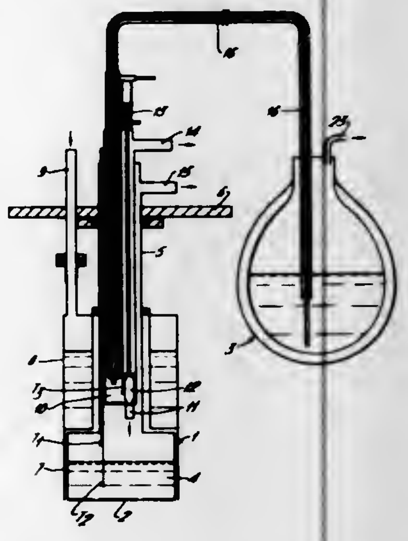
1. Apparatus for enclosing an underwater wellhead, comprising a lower capsule portion having an upper rim, an upper capsule portion having a lower rim removably attachable in sealed relation to said upper rim, whereby said portions form a hollow watertight capsule, biasing means mounted on one of said rims and adapted to exert a force against one side of the other of said rims, bracket means mounted on said one of said rims and co-operating with the other side of the other of said rims, and chafing means mounted on said other of said rims and interposed between said other of said rims and said bracket means, said chafing means, said bracket means and said biasing means co-operating to guide said rims into said relation.

2. A service chamber comprising a hollow watertight upper compartment, a lower diving-bell compartment, annular sealing means formed about the interior of said lower compartment, whereby said lower compartment may be sealed to a sealing neck inserted therewithin, a pair of relatively movable jaws connected to said chamber, and biasing means for urging said jaws into co-operative relationship, said jaws being adapted to co-operate with each other and with an elongated member extending between an underwater well and the surface of the water for guiding said chamber during movement from the surface of the water to an underwater well.

3,353,365

CRYOGENIC DEVICES

John Norman Chubb, Didcot, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Feb. 9, 1966, Ser. No. 526,125
Claims priority, application Great Britain, Feb. 24, 1965, 8,035/65
7 Claims. (Cl. 62—55.5)



1. A cryopump comprising a surface arranged to be in contact with the gas within a system to be pumped, a first vessel arranged to contain a cryogenic liquid in good thermal contact with said surface so that the surface is maintained substantially at the temperature of the cryogenic liquid, this temperature being such that there is a net condensation of gas phase molecules from the system on to said surface, means to maintain the cryogenic liquid in the first vessel substantially at a desired temperature, a subsidiary vessel communicating directly with the first vessel, a connection through which cryogenic liquid is arranged to be supplied from a second vessel containing a further quantity of the same cryogenic liquid to said subsidiary vessel when the cryogenic liquid in the first vessel needs replenishing, and means to allow cryogenic liquid to pass from said subsidiary vessel into the first vessel only when the temperature of the cryogenic liquid in said subsidiary vessel is substantially equal to said desired temperature.

3,353,366

ABSORPTION REFRIGERATION SYSTEMS

Sabatino R. Orfeo, Morris Plains, and Kevin P. Murphy, Bernardsville, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 27, 1966, Ser. No. 523,277
5 Claims. (Cl. 62—112)

1. The method of absorption refrigeration which comprises:

(a) evaporating, in the vicinity of a body to be cooled, a refrigerant comprising a normally gaseous material which, with water, forms a gas hydrate having a critical decomposition temperature of at least about 15° C.,

(b) bringing the evaporated refrigerant vapors in contact with water under conditions operative to form the gas hydrate,

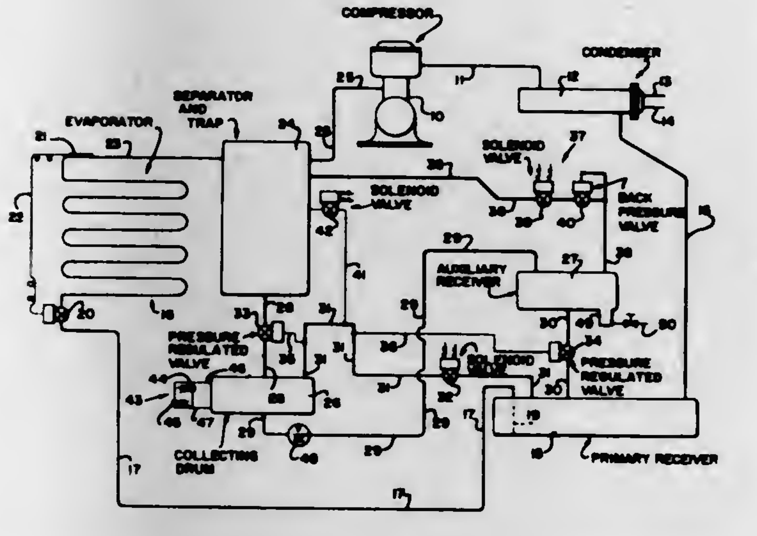
(c) heating the gas hydrate to decompose the same into water and refrigerant and

(d) returning the refrigerant in liquid form to the vicinity of the body to be cooled for reevaporation and recycling.

3,353,367

LIQUID REFRIGERANT RETURN SYSTEM

Milton W. Garland, Franklin County, Pa., and Richard A. Peard, Spring Valley, Md., assignors to Frick Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Apr. 11, 1966, Ser. No. 541,826
14 Claims. (Cl. 62—115)



12. A method of returning liquid refrigerant separated from the low pressure side of a refrigerating system of the volatile liquid-vapor cycle type to the high pressure side of such refrigerating system comprising the steps of

(a) collecting the separated liquid refrigerant,

(b) passing separated liquid refrigerant when a predetermined amount is collected into a receiver,

(c) maintaining the receiver at a pressure value intermediate of the pressures of the low and high pressure sides of the refrigerating system, and

(d) communicating the receiver with the high pressure side of the refrigerating system, when the amount of separated liquid refrigerant collected reaches a predetermined minimum amount so that the liquid refrigerant will thereby be returned to the refrigerating system.

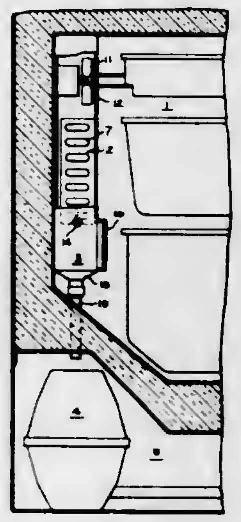
3,353,368

COMBINATION EVAPORATOR AND RADIANT HEATER DEFROST MEANS

Gerald F. Dodge III and Marvel A. Elliott, Louisville, Ky., assignors to General Electric Corporation, a corporation of New York
Filed Nov. 12, 1965, Ser. No. 507,352
4 Claims. (Cl. 62—276)

1. In combination, a refrigerant evaporator comprising a fin structure including a plurality of spaced, vertically extending plate-like fins and normally operable at frost collecting temperatures,

a radiant heat defrost heater operable at a surface temperature above the boiling point of water, said heater being positioned below and spaced from said evaporator for periodically warming said evaporator to defrost temperatures,

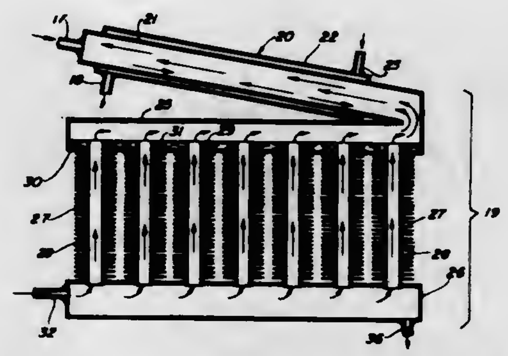


said fins being formed to include protective slanting flange portions above said heater for preventing defrost water draining from said fins from contacting said heater.

3,353,369

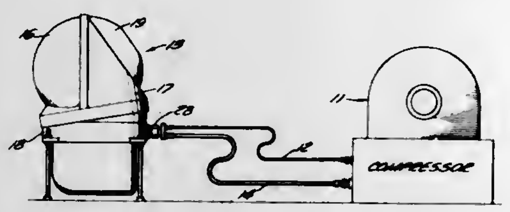
ABSORPTION REFRIGERATION SYSTEM

Eugene P. Whitlow, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,236
10 Claims. (Cl. 62—494)



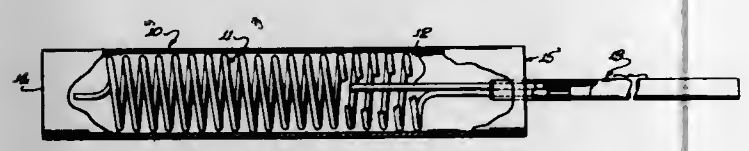
1. In an absorption refrigeration system charged with refrigerant and absorption liquid including a generator where heat is applied to drive gaseous refrigerant from rich liquid, apparatus comprising: an absorber for contacting absorption liquid with gaseous refrigerant for absorption in said liquid; means for introducing weak liquid into said absorber including a fluid conduit at the weak liquid entrance to said absorber in which the initially introduced weak liquid first contacts gaseous refrigerant with the resultant generation of heat; and heat transfer means for transferring said heat from said fluid conduit to said generator comprising means for passing refrigerant rich liquid from said absorber in heat transfer relationship with said fluid conduit prior to the introduction of said rich liquid in said generator, said heat transfer means comprising a heat exchanger in heat exchange relationship with said fluid conduit for carrying refrigerant rich liquid from said fluid conduit to said generator to transfer the heat of absorption to said generator in the refrigerant rich liquid carried by said heat exchanger, said heat exchanger having an exit line connecting directly to said generator for maximum transfer of the heat of absorption to said generator.

3,353,370
MOVABLE, CLOSED-LOOP CRYOGENIC SYSTEM
Carl W. Patten, Jr., and John Richard Wenker, Torrance, and Kenneth B. Craig, Lawndale, Calif., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Apr. 12, 1966, Ser. No. 542,016
16 Claims. (Cl. 62—514)



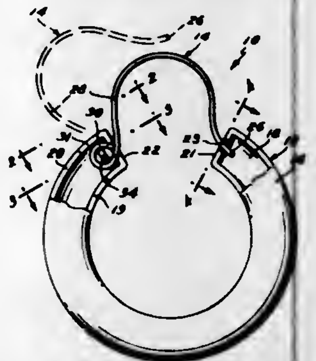
1. In combination, a compressor for receiving and compressing a refrigerant,
- an element to be refrigerated including an expansion valve,
- a gimbal for supporting said element to cause said element to rotate through a solid angle of at least 90°,
- a mount for supporting said gimbal and said element and disposed in fixed relationship with said compressor,
- a high pressure line for transporting high pressure refrigerant from said compressor to said mount and a low pressure line for transporting low pressure refrigerant from said mount to said compressor,
- a flexible line having a high pressure tube and a low pressure tube coupled to said high pressure line and said low pressure line, respectively at one end and coupled to said expansion valve at the other end allowing said element to rotate freely on said gimbal while being refrigerated.

3,353,371
DUAL TUBE REGENERATIVE CRYOSTAT
Carl A. Hammons, Pomona, Elroy B. Kalinke, Upland, and Raymond R. Smith, Pomona, Calif., assignors to General Dynamics Corporation, a corporation of Delaware
Filed June 23, 1966, Ser. No. 559,985
5 Claims. (Cl. 62—514)



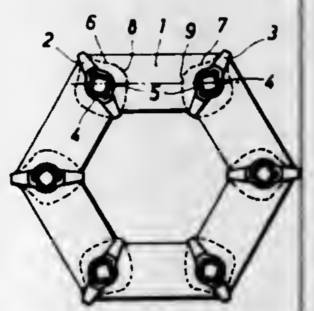
1. A cryogenic device comprising: a housing having an opening in at least one end thereof, a coiled tubing defining a heat exchanger positioned at least partially in said housing, said coiled tubing being without cooling fins and having one end terminating near one end of said housing and the other end of said tubing terminating in a fluid supply conduit, unfinned tubing means positioned substantially centrally within only a portion of said coiled tubing, one end of said tubing means terminating in said fluid supply conduit, and the other end of said tubing means terminating a substantial distance from said one end of said coiled tubing and adapted to discharge fluid from said fluid supply conduit into a central portion of said coil tubing, whereby additional turbulence at the central portion of said coiled tubing is produced which acts to channel fluid exhausting from said coiled tubing and from said unfinned tubing means over said coiled tubing thus providing more efficient heat transfer.

3,353,372
PIERCING EARRING AND METHOD OF MANUFACTURE THEREOF
Max Rapaport, Cranston, R.I., assignor to Nomo Products, Inc., Johnston, R.I., a corporation of Rhode Island
Filed May 29, 1964, Ser. No. 371,235
3 Claims. (Cl. 63—12)



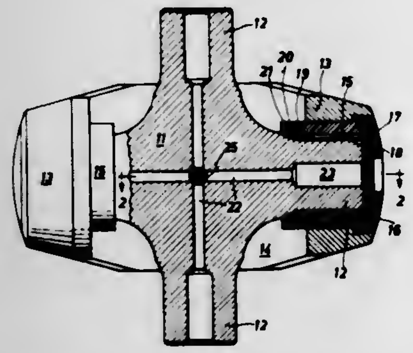
3. In an earring construction, a tubular body portion defined by a pair of generally arcuate shaped shell portions that are joined together, said body portion including spaced ends between which the ear lobe of the wearer is adapted to extend, one of said shell portions including a projection at one end thereof that is integrally connected thereto, said projection being located interiorly of said body portion, the exterior surfaces of said body portion being imperforate in the area that is in the path of the axis of said projection, said projection being positioned such that it extends from said one end into said body portion and is reversely curved to extend transversely within said tubular body portion, thereby defining a hinge axis for an ear wire, a slot being formed in an end of said body portion adjacent to said transversely extending projection, said ear wire having a loop pivotally mounted on said projection and providing for extension of said ear wire through said slot for engagement with the other end of said body portion when said ear wire is to be locked on the ear lobe of the wearer.

3,353,373
FLEXIBLE COUPLING
Rolf Schumacher and Paul Vossieck, Burscheid, Germany, assignors to Goetzewerke Friedrich Goetze A.G., Burscheid, Germany
Filed Feb. 17, 1966, Ser. No. 528,132
Claims priority, application Germany, Mar. 25, 1965, G 43,169
7 Claims. (Cl. 64—11)



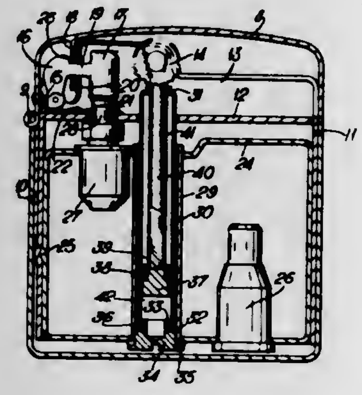
1. A flexible shaft coupling, comprising in combination:
- a plurality of column-like springs made from an elastic material and arranged to form a polygonal ring;
- a plurality of metal parts interposed between said springs as a part of the polygonal ring for connecting the flexible coupling to coupling plates; and
- metal reinforcements connected to said metal parts, said reinforcements having bulge-like projections which extend approximately transversely to the axis of said metal parts and approximately transversely to the axis of said springs and which are completely surrounded by the material of said springs.

3,353,374
UNIVERSAL JOINT
Friedrich Buthenhoff, Hawthorn, Melbourne, Victoria, Australia, assignor to Maybach Motorenbau G.m.b.H., Friedrichshafen, Germany
Filed Mar. 10, 1966, Ser. No. 533,152
Claims priority, application Germany, Mar. 17, 1965, M 64,555
4 Claims. (Cl. 64—17)



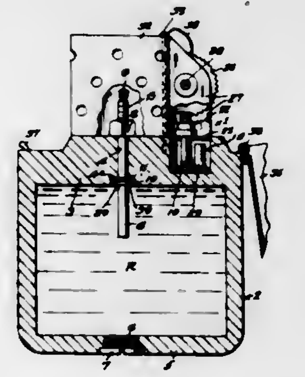
1. In a universal joint which includes a cross structure having bearing pin means, bearing support means for said bearing pin means, and bearing means between a respective pin means and a respective support means, the improvement comprising a lubricating system in said pin means for lubricating said bearing means including bore means in each pin means, lubricant supply bore means for supplying lubricant to said first-mentioned bore means, and a single closure valve means for closing said supply bore means with respect to the first-mentioned bore means as well as said first-mentioned bore means with respect to each other.

3,353,375
CIGARETTE LIGHTERS
Alan Donald Bunyard, Patcham, Brighton, Sussex, Geoffrey Frederick Kendall, Hove, Sussex, and Hans Lowenthal, London, England, assignors to Colibri Lighters Limited, a company of Great Britain
Filed May 21, 1965, Ser. No. 457,683
Claims priority, application Great Britain, June 4, 1964, 23,218/64
11 Claims. (Cl. 67—7.1)



1. In a smoker's lighter comprising a fuel tank, a burner mounted on said fuel tank, an abrasive element, a flint guide, and means urging a flint along said guide into engagement with said abrasive element whereby operation of said abrasive element produces sparks to ignite fuel at said burner; the improved flint guide and urging means which comprises an open ended outer tube extending towards said abrasive element, an inner sleeve positioned within said out.r tube and having a closed end remote from and an open end adjacent to said abrasive element, piston means slidable longitudinally within said inner sleeve, means sealing said piston means to said inner sleeve, a source of compressed gas communicating with the space within said sleeve between said closed end and said piston means and adapted to urge said piston means along said inner sleeve and said flint into engagement with said abrasive element, and means releasably securing said inner sleeve within said outer tube whereby said inner sleeve is removable through said open end of said outer tube remote from said abrasive element for recharging said guide with a new flint.

3,353,376
VALVELESS FUEL LIGHTER
Edd Tackett, Box 177, White Sands Missile Range, N. Mex. 88002
Filed Nov. 19, 1965, Ser. No. 508,874
5 Claims. (Cl. 67—7.1)

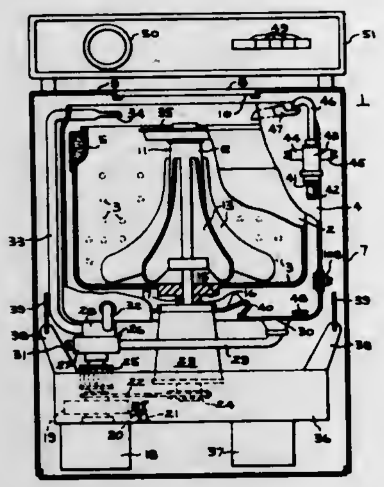


1. A fuel lighter comprising, in combination, a case including a fuel reservoir, an upper wall having a bore, a counterbore in the inner end of said bore, a well in the upper portion of said wall and a filling port in its lower wall; a wick tube in said bore, said wick tube having an outer portion extending above said upper wall and an inner portion having a closed end and extending into said reservoir, a wick in said tube; means associated with said wick tube for mounting and sealing said wick tube in said bore and counterbore, there being at least one port in said inner portion of said wick tube and being located at a level therein bordering the inner edge of said upper wall and communicating with said reservoir to permit fuel from said reservoir to enter said wick tube and saturate the wick and whereby when the fuel level in said reservoir is lower than said port, said wick may be repeatedly saturated by the inversion of said lighter until substantially the entire amount of fuel in said reservoir is exhausted; means for igniting the wick, slidable in and frictionally held in said well; a folding flame guard mounted on the top side of said case; a closure lid hinged to the top side of said case for enclosing exposed parts of said lighter, a closure plug for threadable engagement in said filling port and a closure cap for threadable engagement with the outer end of said wick tube.

3,353,377
WASHING MACHINE WITH IMPROVED POWER CONTROL MEANS
Joseph C. Worst, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Nov. 18, 1966, Ser. No. 595,455
3 Claims. (Cl. 68—12)

1. A washing machine including container means to receive fluid and fabrics to be cleaned in the fluid; agitator means to agitate the fabrics in the fluid; drive means operatively connected to said agitator means to provide power to said agitator means for cleaning the

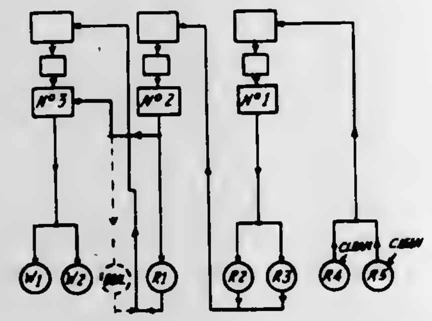
fabrics; and control means, including temperature responsive means arranged to be responsive to the temperature



within said container means, is connected to said drive means to cause the power delivered to said agitator means to be varied dependent upon said temperature.

3,353,378
APPARATUS FOR CLEANING CLOTHES AND TREATING WASH LIQUID

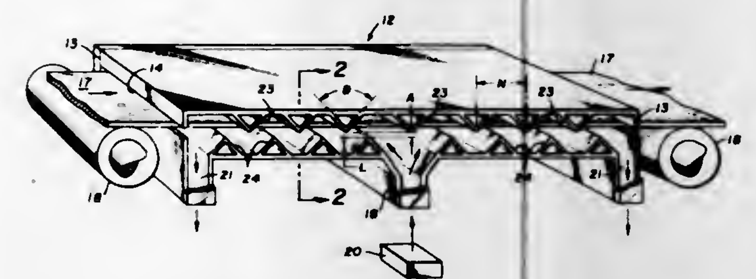
Leo M. Kahn, 536 79th St., Brooklyn, N.Y. 10009
Continuation of application Ser. No. 107,681, May 4, 1961. This application Sept. 14, 1965, Ser. No. 494,292
7 Claims. (Cl. 68—18)



1. An apparatus for washing clothes, by several washing and rinsing stages, the combination of a washing machine and a plurality of separating units for separating dirt from the water used for washing and rinsing, means for filling a washing machine with clean water for the last rinsing stage, means for passing dirty water from the last rinsing stage to a first separator unit, means for passing the cleaned water from said first separator unit to a washing machine for a previous rising stage, means for passing the dirty water from a previous rinsing stage to a second separator unit, and means for passing the cleaned water from said second separator unit to a washing machine for a washing stage, each of said separator units having storage means for storing cleaned water prior to passing the cleaned water to a washing machine and a bowl mounted for rotation about a substantially vertical axis at a speed which can be varied, the said bowl being shaped to form a chamber having at least one wall part inclined inwardly from its outer periphery, and having a plurality of first valves arranged around the maximum periphery of the chamber and a plurality of second valves arranged around said inclined wall and inwardly of the maximum periphery, the said first valves being normally opened and being closed by centrifugal force and said second valves being normally closed and opened by centrifugal force exceeding that at which said first valves are closed, and means for selectively collecting the liquid discharged through said first and second valves respectively.

3,353,379
WASHING APPARATUS

Ernest A. Taylor, Jr., Decatur, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Dec. 29, 1966, Ser. No. 605,663
3 Claims. (Cl. 68—181)



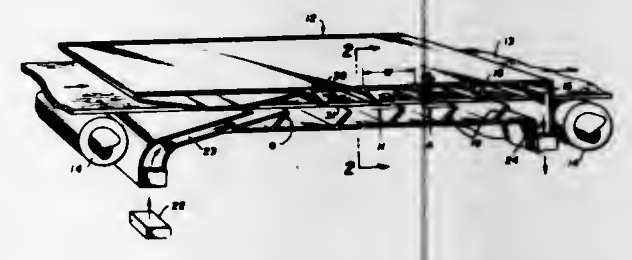
1. An apparatus for treating a moving strand, comprising an elongated chamber having therein an inlet opening and an outlet opening, means for forcing a treating medium into the inlet opening and through the chamber, said chamber having on opposite sides of the interior thereof a plurality of spaced protuberances for deflecting said treating medium from one side of the chamber to the other, said protuberances each having a triangular cross-sectional configuration, said protuberances on one side of the chamber being spaced longitudinally from the protuberances on the other side of the chamber in such a manner that each of said protuberances is positioned at the longitudinal midpoint between adjacent protuberances on the opposite side of the chamber, said protuberances having a height L, an included angle θ and a spacing between centers N, where

$L=3–12A$
$\theta=15–120°$
$N=6–32A$

where A is the distance from the plane defined by the apices of the protuberances on one side of the chamber to the plane defined by the apices of the protuberances on the other side of the chamber and θ is the angle between the sides of the protuberances.

3,353,380
WASHING APPARATUS

Ernest A. Taylor, Jr., Decatur, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Dec. 29, 1966, Ser. No. 605,745
3 Claims. (Cl. 68—181)



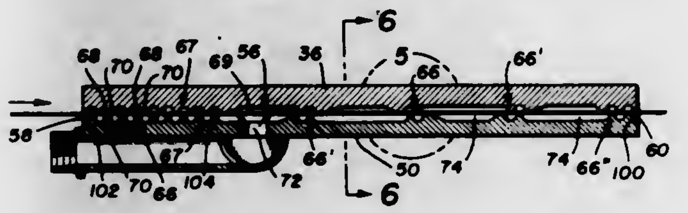
1. An apparatus for washing a strand, comprising an elongated chamber, said chamber having an opening therethrough for the passage of the strand, said chamber having on opposite walls thereof a plurality of plates extending toward the strand for deflecting water from one side of the chamber to the other past the strand, said plates terminating in parallel planes, said planes being spaced apart a distance A, said plates each being positioned at an angle θ relative to the walls, the angle θ being

measured on the downstream side of the plate, said plates on each side of the chamber being spaced apart a distance W, each said plate extending a distance A from its respective wall, wherein

$A=1–4$ times strand thickness
$\theta=15–110°$
$W=6–40A$
$H=3–20A.$

3,353,381
HIGH VELOCITY TOW WASHING CASCADE

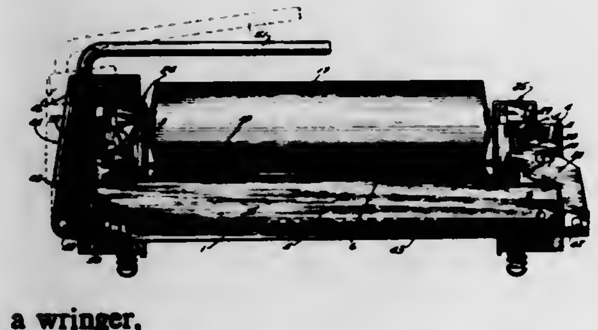
Ernest Austin Taylor, Jr., Decatur, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 509,749
26 Claims. (Cl. 68—184)



1. Apparatus for treating a filamentary tow comprising:
(a) a first elongated trough having a channel extending from end to end thereof;
(b) a second elongated trough having a channel extending from end to end thereof;
(c) said first and second troughs movably secured together to form an elongated compartment defined by said channels and including a passageway extending therethrough adapted to receive a filamentary tow;
(d) an inlet opening into said compartment intermediate said ends and adapted to supply a treating fluid to said passageway;
(e) at least one deflector means on each of said first and second troughs disposed across said channels and extending into said passageway to form in combination a passageway baffle;
(f) said deflectors closely, spacedly terminating at their outermost extent to define a path through said compartment for passing tow and a tortuous conduit through said compartment for said fluid whereby said fluid will be repeatedly directed toward and through filamentary tow in said passageway at substantially right angles.

3,353,382
WRINGER

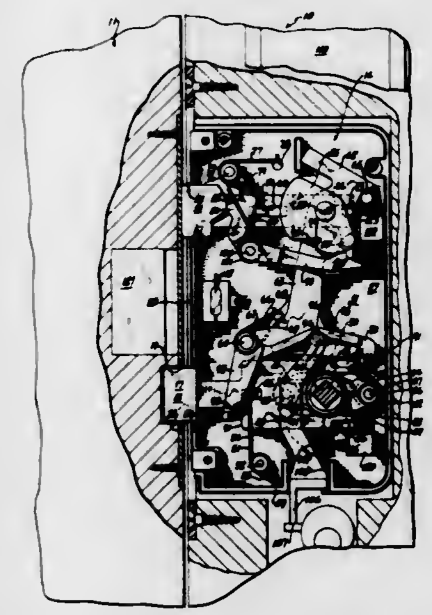
George D. Conlee, Cedar Falls, Iowa, assignor, by mesne assignments, to Lovell Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed Feb. 15, 1965, Ser. No. 432,486
3 Claims. (Cl. 68—257)



1. In a wringer,
a frame comprising
  a pair of identical side members,
  a pair of identical end stiles secured to said side members,
a pair of identical spring cages disposed one in each of said end stiles,
a pair of squeeze rolls in said frame,
springs in said cages to apply pressure on said rolls,
identical lever means to force said springs into pressure applying position,
a toggle linkage to actuate said lever means to apply pressure on the rolls including identical links one on each side of said frame and pivoted at one end thereof to one of said lever means,
a reset link pivoted to the other ends of said links, and
a bar connected to said reset link to give added leverage thereto when pressure is applied,
said bar extending over one of said rolls and operable to release pressure on said rolls.

3,353,383
DOOR LOCKING MEANS

Aaron M. Fish, Montreal, Quebec, Canada, assignor to A. M. Fish Holdings Limited, Montreal, Quebec, a federally chartered corporation of Canada
Filed Dec. 18, 1964, Ser. No. 419,477
23 Claims. (Cl. 70—151)

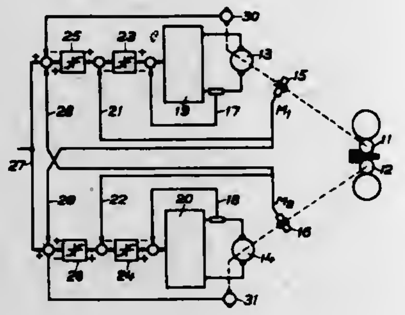


1. Door locking means comprising the combination of:
(A) a combination lock having decodable mechanism and having
  (1) a latch operating member,
  (2) and a number of indexing elements which must be manually actuated in predetermined sequence in order to decode said mechanism and thereby free the latch operating member for movement in one direction to a door releasing position;
(B) and a latch mechanism cooperable with said combination lock and comprising
  (1) a latch bolt biased to a projected position and movable against its bias to a retracted position,
  (2) an operating shaft drivingly connected with the latch operating member to rotate in one direction in consequence of movement of the latch operating member to its door releasing position,
  (3) a pivoted latch retracting lever having a part thereon which blocks retracting movement of the latch bolt except when the lever is swung in one direction about its pivot out of a normal position,
  (4) a driving abutment on the lever engageable with the bolt during pivotal movement of the lever in said one direction to move the latch bolt to its retracted position,

(5) and means providing a motion transmitting connection between said shaft and lever operable to pivot the lever in said one direction out of its normal position in consequence of movement of the latch operating member to its door releasing position.

3,353,384
ROLLING MILL

Per Kain and Vilmos Török, Vasteras, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Oct. 26, 1964, Ser. No. 406,529
Claims priority, application Sweden, Nov. 4, 1963, 12,084/63
5 Claims. (Cl. 72—19)

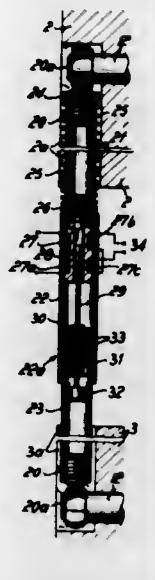


1. Rolling mill with working rolls and a first and a second electrical drive motor, each motor driving a different working roll, a shaft system comprising a shaft of magneto-strictive material connecting each motor to its respective working roll, first and second means operatively connected one with each said shaft for measuring the torsional stresses in said shaft for each of said rolls, each of said first and second measuring means having an output, means oppositely connecting the outputs; of said first and second measuring means to each other to obtain a resultant signal corresponding to the actual load distribution between said motors, control devices for each of said motors, and means to feed said resultant signal to the control devices of said motors in order to regulate said load distribution at a desired value.

3,353,385
ROLL GAP MEASURING DEVICE

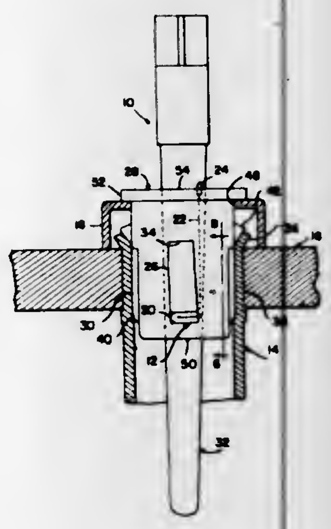
Karl Josef Neumann, Wallerfeldstrasse 2, and Hans Siegfried Metzger, Auf der Teufelsinsel 33, both of St. Ingbert, Saar, Germany
Filed July 7, 1964, Ser. No. 380,956
1 Claim. (Cl. 72—21)

A roll gap measuring device for a rolling mill having upper and lower means for supporting upper and lower rolls respectively, said upper and lower rolls supporting means being arranged for relative vertical movement whereby the vertical spacing therebetween is determinative of said roll gap comprising, in combination, at least one pair of tubular members arranged in telescoping sliding relationship, means for pivotally mounting said pair of tubular members at opposite ends on said upper and lower rolls supporting means respectively for telescoping sliding movement of said tubular members corresponding to the relative vertical movement of said upper and lower rolls supporting means, a differential transformer having an axially movable core supported on one of said tubular members for producing an output signal corresponding to the axial position of said core, adjustable means supported on the other of said tubular means for supporting said differential transformer core on said other tubular member for simultaneous movement therewith, said adjustable means including an electric motor and means including a support rod for drivably connecting said core to said electric motor for axial movement of said core within said differential transformer independently of the telescoping sliding movement of said tubular members.



3,353,386
EXPANDING CONTROL FOR SELF-FEEDING BOILER TUBE EXPANDERS

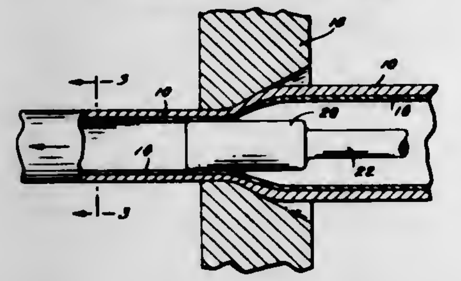
Frank F. Fisher, 14111 Sussex, Detroit, Mich. 48227
Filed Mar. 2, 1964, Ser. No. 348,355
14 Claims. (Cl. 72—32)



1. A tube expander comprising a hollow outer cylindrical cage having longitudinally extending slots therethrough angularly spaced apart therearound, a tapered mandrel extending axially through the cage, a plurality of reversely tapered expanding rollers having feed and front ends positioned in the slots in the cage in engagement with the tapered mandrel for rotation and radial movement in response to rotation and axial movement of the mandrel through the cage, and means operably associated with at least one of the rollers for providing an indication of a predetermined expanding force exerted by the rollers including a collapsible spring operable between the feed end of the one roller and the cage, an indicating member reciprocably mounted to extend through the front end of the cage and means connecting the indicating member to the collapsible spring for movement outwardly of the front end of the cage on collapsing of said spring.

3,353,387
METHOD OF MAKING COMPOSITE TUBULAR ARTICLES

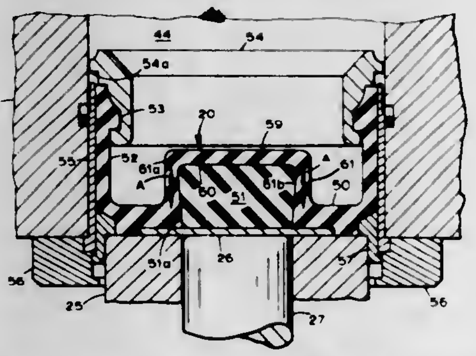
James H. Johnston, Rehoboth, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application Feb. 26, 1963, Ser. No. 261,135. Divided and this application Aug. 24, 1964, Ser. No. 391,809
3 Claims. (Cl. 72—46)



1. The method of making a composite tubular article comprising the steps of providing a tubular metal member; cleaning the inside surface of said metal member to remove barriers to bonding; applying to said cleaned surface, as by spraying, a layer of a colloidal suspension containing a carrier fluid and a plastic in an uncured condition selected from the group consisting of a tetrafluoroethylene polymer and a hexafluoropropylenetetrafluoroethylene copolymer; heating the assembly of said metal member and plastic layer at a temperature of about 500° F. for a period of about 10 minutes to evaporate the fluid carrier of said colloidal suspension to particularly cure the plastic material; subsequently heating and passing said assembly through a draw die with a stationary arbor inserted in said assembly and located adjacent said die to substantially cure and eliminate porosity in said plastic layer, and to bond said plastic layer to said metal member; said drawing step also squeezing said plastic layer against said arbor to effect a reduction in the cross sectional area of said metal member and plastic layer of about 20–25% and to reduce the thickness of said plastic layer to lie within the range of approximately 0.0001 inch to less than 0.004 inch.

3,353,388
CLOSURE FOR FLUID PRESSURE CHAMBER OF A HYDRAULIC PRESS

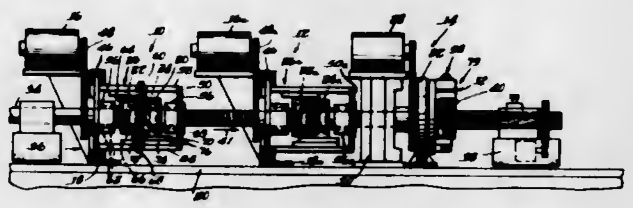
Karl H. Schultz, Livonia, Mich., and Frank W. Gorsler, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Continuation of application Ser. No. 358,583, Apr. 9, 1964. This application May 27, 1966, Ser. No. 554,641
5 Claims. (Cl. 72—63)



1. In a hydraulic press having a fluid pressure chamber and having a male die in registration with the chamber, the combination comprising a flexible diaphragm received across one end of the chamber and in front of the male die, said diaphragm having a central portion offset into the chamber and defining a recess in the diaphragm, said recess facing the male die and having an inner wall in alignment with the side wall of the male die, and a flexible plug received in said recess.

3,353,389
APPARATUS FOR USE IN CORRUGATING METAL HOSE

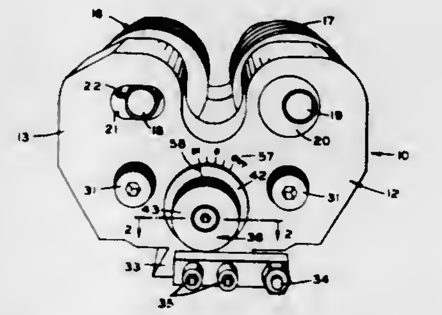
Donald G. Kelstrom, Elmhurst, Ill., assignor to Calumet & Hecla, Inc., Chicago, Ill., a corporation of Michigan
Filed Apr. 10, 1964, Ser. No. 358,772
11 Claims. (Cl. 72—77)



1. A helical corrugator for corrugating a length of metal hose comprising first and second annular forming discs encircling said hose circumferentially and indentably bearing thereon, said forming discs being axially spaced apart and angled transversely to said length of metal hose, said forming discs being radially offset and oppositely angled one to the other, said forming discs being mounted for free rotation about said hose; means for rotating said forming discs synchronously about said hose to form a corrugation in the hose having a relatively large pitch; a plurality of circumferentially spaced apart compression rollers located at a distance axially displaced from said forming discs and rotating synchronously with said forming discs about said hose, said compression rollers indentably compressingly bearing on opposite sides of the corrugation formed in the metal hose by said annular forming discs; and means for rotating said compression rollers synchronously with said forming discs to reduce the pitch of the corrugation.

3,353,390
SYNCHRONIZED THREAD ROLLING TOOL

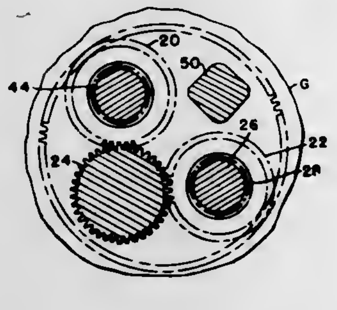
Bruce D. Bedker, Mount Clemens, Mich., assignor to Leo W. Bedker, Detroit, Mich.
Filed Nov. 10, 1964, Ser. No. 410,205
3 Claims. (Cl. 72—104)



1. In a rolling tool of the type having a pair of forming rolls engageable with a rotating workpiece in a plane paralleling a plane substantially including the axes of said rolls, pairs of meshing gears drivingly connected to the respective rolls, and pinion having meshing engagement with and drivingly connecting a gear of each pair with another, the improvement to adjust the distance from the axis of said pinion to the axes of at least one pair of said gears for a precisely phased drive of the rolls, comprising means mounting said pinion for movement transverse of a theoretical line through the gear axes, said

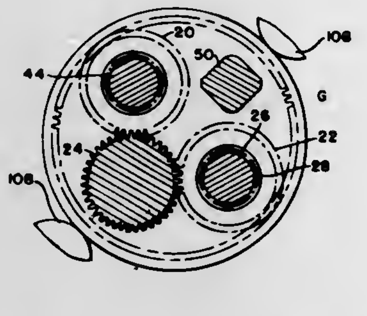
tool having a head by which said rolls, gears and pinion are supported for rotation, said mounting means comprising an eccentric member journaled for adjusting rotation on said head on an axis paralleling the gear axes, said pinion being journaled by said eccentric member for rotation on an axis laterally spaced from and paralleling said eccentric member axis.

3,353,391
METHOD AND APPARATUS FOR CORRECTING OVALITY OF ANNULAR GEARS
Russel W. Anthony, Detroit, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Filed June 21, 1965, Ser. No. 465,486
10 Claims. (Cl. 72—110)



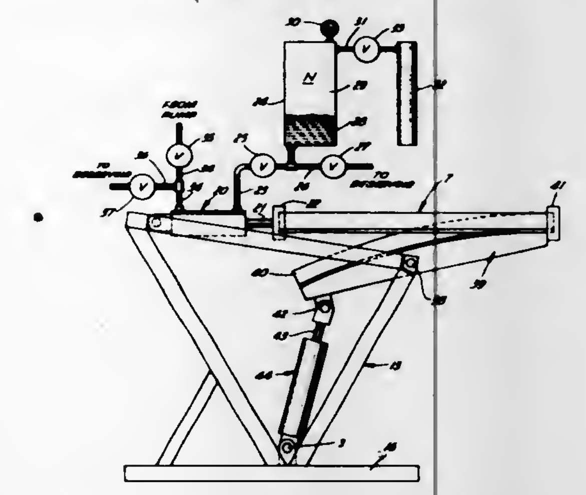
1. The method of simultaneously correcting ovality and reducing nicks and burrs in a heat treated annular internal gear which comprises meshing the gear with a pair of hardened pinions spaced substantially diametrically with respect to the gear, applying radially outwardly directed forces to said pinions to stress the gear beyond its elastic limit, rotating the gear and pinions in mesh, and gradually reducing the forces to be below the elastic limit of the gear.

3,353,392
PITCH DIAMETER ROUNDER
Russell W. Anthony, Detroit, and Carl H. Motz, Harper Woods, Mich., assignors to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Filed June 21, 1965, Ser. No. 465,487
12 Claims. (Cl. 72—110)



1. The method of correcting ovality and simultaneously burnishing annular internal gear and removing nicks and burrs therefrom which comprises mounting the gear on a pair of internal pinions spaced about 180 degrees apart within the gear, driving the gear by rotating one of said pinions, forcing the pinions apart to maintain tight mesh engagement with the gear, applying radial inward forces to the outer surface of the gear at two zones spaced intermediate the zones of mesh of said pinions of a magnitude to distort the gear beyond its elastic limit, continuing at least one full rotation of the gear, and gradually removing said forces throughout at least one complete rotation of the gear.

3,353,393
MODULAR ROOF CONSTRUCTION UNIT AND METHOD OF MAKING SAME
Maurice W. Goodwill, 1126 17th St. S., Fargo, N. Dak. 58102, and Leslie W. Haug, 1011 18th Ave. S., Grand Forks, N. Dak. 58201
Filed Jan. 14, 1963, Ser. No. 251,394
12 Claims. (Cl. 72—297)



1. A method of making a modular roof construction unit consisting in:

(a) first forming a rectangular sheet of metal into a straight elongated hollow upstanding rib member having a flat horizontally and longitudinally extending crest portion and a pair of longitudinally extending side wall portions one each of which extends downwardly and outwardly from opposite sides of said crest portion and a pair of longitudinally extending flanges one each of which extends laterally outwardly from the lower area of one of said side wall portions,

(b) then tensioning the rib member longitudinally along a flat plane and along its entire length to approximately 80 percent of its yield strength, and

(c) then, while maintaining said tension on said rib member, applying a bending moment of force to said rib member progressively at rolling opposite points along and uniformly throughout its length,

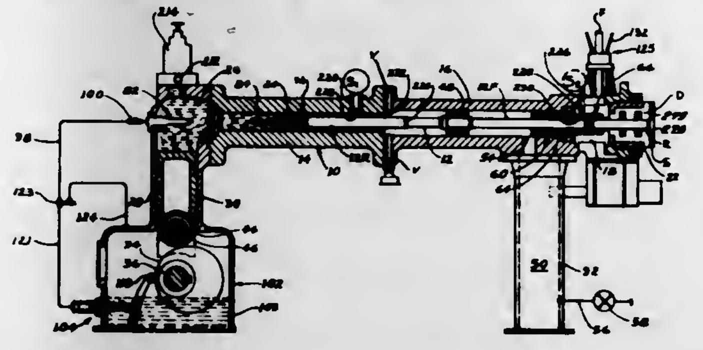
(d) the said bending moment of force applied to said crest portion and said side wall portions being from within the hollow rib member and in a direction generally from a point between the flanges towards the crest portion of the rib member and being sufficiently great to tension said portions longitudinally beyond their yield strengths but less than their ultimate strength,

(e) the magnitude of said bending moment of force applied to said crest portion and said side wall portions being greatest at said crest portion and progressively less from said crest portion toward said flanges and thereby causing said rib member to assume a convex shape.

3,353,394
APPARATUS FOR FORMING CUP-SHAPED CONTAINERS
Arthur Dean Smith, also known as A. Dean Smith, San Lorenzo, Henry G. Henrickson, Walnut Creek. and Cornelis Langewis, Oakland, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,632
13 Claims. (Cl. 72—347)

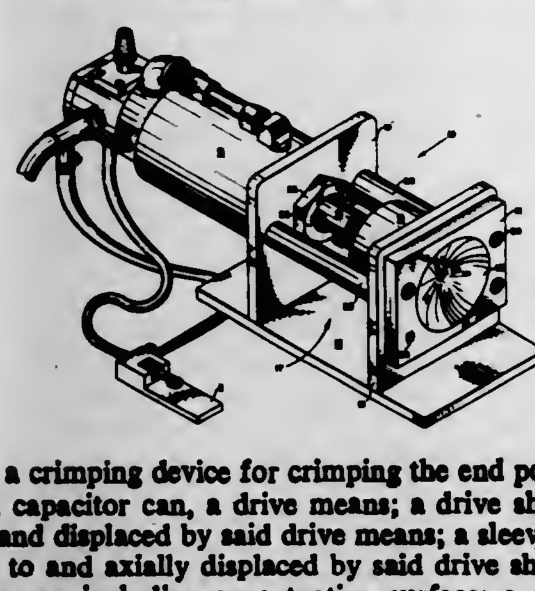
4. An apparatus for drawing cup-shaped blanks into container bodies and for holding the blanks in position during the drawing operation comprising a barrel having a section of reduced diameter near one end thereof and

beyond said section of reduced diameter a section for the reception of the blanks, a piston rod disposed coaxially within said barrel and having a piston at its rear end and a ram of lesser diameter than the diameter of said reduced barrel section at its front end, a blank-holding device slidably received in the space between said ram and said reduced barrel section and forming a gas-tight seal with both said ram and said reduced barrel section, said blank-holding device having a front end of a size and configuration whereby it is adapted to fit into and support the cup-shaped blanks, means operative



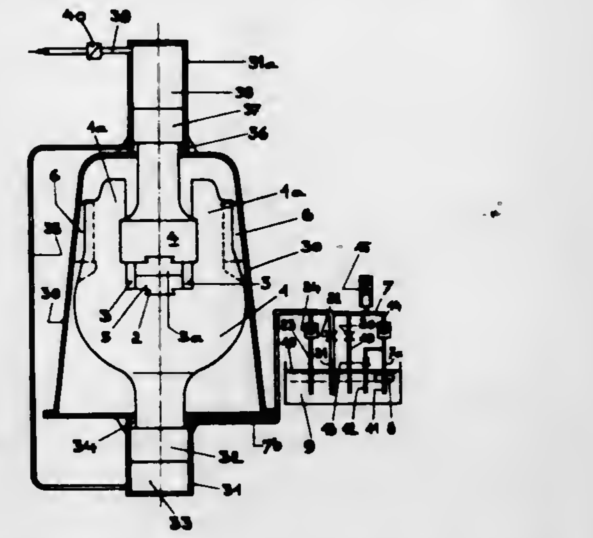
upon said piston for positively advancing said piston rod from an initial position within said barrel to move said ram through said blank-receiving section thereof, chamber means containing a gaseous fluid under compression in communication with said barrel at a point thereof intermediate said reduced barrel section and said piston to return said piston rod to said initial position thereof, and cooperating means on said blank-holding device and said piston rod for limiting forward movement of said blank-holding device relative to said ram under the urgency of the compressed gaseous fluid flowing into said barrel from said chamber means.

3,353,395
END CRIMPING EQUIPMENT FOR ROUND CAPACITOR
Joseph R. Rasch, Indianapolis, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 444,587
11 Claims. (Cl. 72—402)



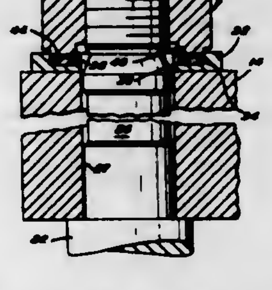
7. In a crimping device for crimping the end portion of a round capacitor can, a drive means; a drive shaft coupled to and displaced by said drive means; a sleeve means coupled to and axially displaced by said drive shaft, said sleeve means including an actuating surface; a crimping means interfitting with said sleeve means, said crimping means including a plurality of finger means there being a sufficient number and spacing between such finger means to substantially simultaneously crimp said can substantially uniformly around its complete circumference, said finger means engaging with said actuating surface of said sleeve means to displace said finger means to engagement with said capacitor and thereafter to crimp said capacitor as said drive shaft axially displaces said sleeve means.

3,353,396
SWAGING HAMMERS
Willi Bräuer, Coburg, Germany, assignor to Langenstein & Schemann AG, Coburg, Bavaria, Germany
Filed Jan. 25, 1965, Ser. No. 427,867
5 Claims. (Cl. 72—453)



1. A forging hammer including a hammer frame, an upper tup and a lower tup arranged opposite each other, each tup being movable upwards and downwards toward or away from each other, hydraulic coupling means including an upper cylinder on said frame and an upper piston connected to said upper tup by an upper piston rod forming an upper annular space below said piston about said piston rod, a lower cylinder on said frame and a lower piston connected to said lower tup by a lower piston rod, a lower annular space within said lower cylinder about said piston rod, a lower cylinder space below said lower piston within said lower cylinder, a connecting pipe between said upper annular cylinder space and said lower cylinder space, and a liquid in the two aforesaid cylinder spaces and in the connecting pipe, the space above the upper piston in said upper cylinder being filled with compressible fluid, the lower annular space within said lower cylinder above said lower piston being filled with liquid, a liquid supply and exhaust pipe connected to said lower annular space within said lower cylinder, pump means having a suction and discharge connected to supply liquid under pressure to said liquid supply and exhaust pipe, and controllable valve means to discharge liquid from said liquid supply and exhaust pipe.

3,353,397
STRESS DISTRIBUTION MEANS
Leo Hoffmann, Chester, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 11, 1965, Ser. No. 431,941
5 Claims. (Cl. 72—455)



1. Apparatus comprising a frame member having an aperture therethrough, a rod extending through said aperture, a head on one end portion of said rod, said head

overlying a portion of the frame member adjacent the aperture, and a stress distribution device between said head and said portion of said frame member, said device including means defining a confined space, said space defining means being an annular member surrounding said rod and having a groove on one face, structure including a substantially non-compressible elastomer capable of simulating hydraulic flow and occupying the entirety of said space, an annular metal member on an inner and outer peripheral surface of said elastomer, and an annular pressing element overlying said elastomer and within said groove, said annular metal member being juxtaposed to said pressing element, said pressing element being coupled to said elastomer and said head, whereby said elastomer absorbs stresses transmitted thereto from said rod.

3,353,398

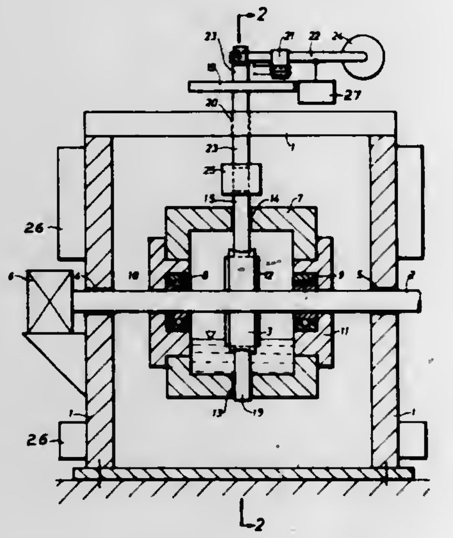
METHOD AND APPARATUS FOR TESTING THE LUBRICATION BEHAVIOUR OF LUBRICANTS

Walther Lohmar, Leverkusen, Hans Joachim Harnisch, Leverkusen-Bayerwerk, Josef Schmahl and Ortwin Köhli, Leverkusen, and Anton Spenner, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed July 20, 1964, Ser. No. 383,895

Claims priority, application Germany, July 24, 1963, F 40,334

6 Claims. (Cl. 73—10)



1. A method of testing the lubricating characteristics of a lubricant, which comprises introducing a liquid lubricant between a worm wheel and meshing worm therefor; driving said worm with said worm wheel, measuring the torques acting upon each worm element and measuring the rotation speeds thereof to determine the effective sliding friction between said gear elements under lubrication as indicated by their individual measured torques and rotation speeds.

3,353,399

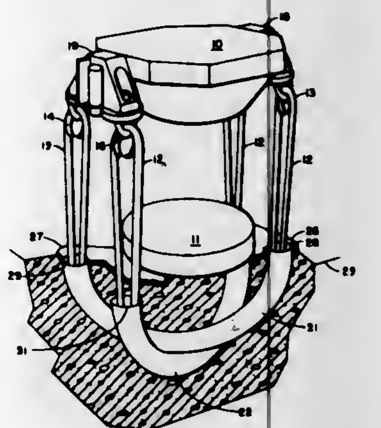
SHOCK TESTING MACHINE

Robert Alexander Hawkins, Topsfield, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed June 1, 1964, Ser. No. 371,380

6 Claims. (Cl. 73—12)

1. In a shock testing machine comprising an immovable member, a planar movable member having transverse axis of symmetry and having at least two connection points symmetrically disposed about said axis and elastic tension means attached to said connection points and to said immovable member, the improvement of providing at least one arcuate tube having an open end disposed in the line of travel of each of said connection points, said elastic tension means fixedly attached at two opposite connection points and trained through said arcuate tube, whereby said movable member has equal forces acting at each connecting point when said movable member is propelled to impact against said immovable member.



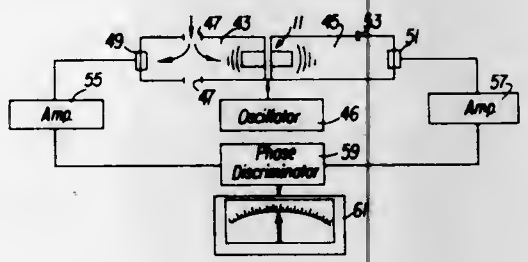
3,353,400

ULTRASONIC TRANSDUCER AND GAS ANALYZER

Hugo W. Schafft, Des Plaines, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Continuation of application Ser. No. 285,690, June 5, 1963. This application Mar. 21, 1966, Ser. No. 536,153

2 Claims. (Cl. 73—24)



1. Apparatus for comparing an unknown gas with a gas having known properties, including in combination, means forming a chamber, transducer means comprising an elongated body having first and second ends and having dimensions to be resonant in longitudinal vibration at a predetermined output frequency and further having a nodal plane of vibration, said transducer means further including a piezoelectric driving member placed in said chamber to form first and second contiguous subchambers of selected dimensions, said first subchamber adapted for containing said gas of known properties and said second subchamber adapted for containing said unknown gas, said piezoelectric driving member engaging the nodal plane of said body transverse to the axis of longitudinal vibration so that the first and second ends of said body extend respectively into said first and second subchambers, said transducer means further including electrode means on said piezoelectric driving member adapted to apply an alternating current voltage of a given frequency thereacross for straining said driving member, first and second sensing means in said first and second subchambers respectively at given distances from said first and second ends of said body, each of said sensing means producing an alternating current voltage signal of a frequency corresponding to the signal said sensing means receives from said transducer, and phase detector means comparing the phase of said alternating current voltage signals from said first and second sensing means and providing an indication of the variance therebetween.

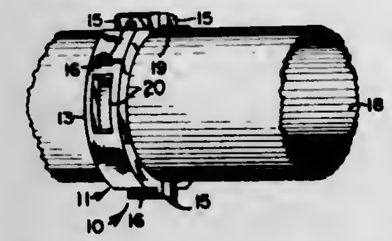
3,353,401

METHOD AND APPARATUS FOR INDUCING FATIGUE CRACKS IN STRUCTURAL MATERIALS

Richard O. Hessler, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Aug. 23, 1965, Ser. No. 481,780

4 Claims. (Cl. 73—37)



1. An apparatus for inducing fatigue cracks in a pressure vessel comprising first and second members that are positioned on opposite surfaces of the pressure vessel in alined relation to each other, said first member having an opening therein, said second member having a cavity therein that is alined with the opening in said first member, said first and second members conforming in shape to the configuration of said pressure vessel and each of said members comprise a plurality of sections of similar configuration, means engaging said sections for retaining the sections of each of said members in rigid relation to each other, and means for intermittently injecting a pressurized fluid into said cavity whereby that portion of the pressure vessel interposed between said first and second members is flexed under the force of the pressurized fluid.

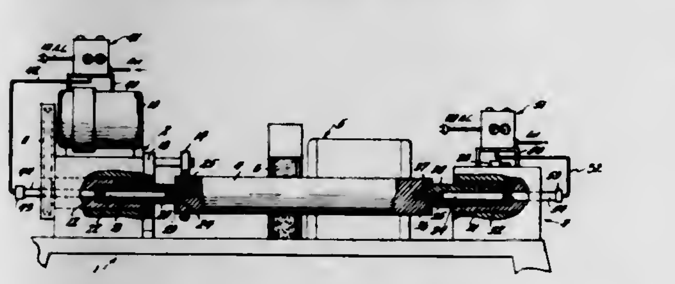
3,353,402

FLUID CENTERING AND SENSING DEVICES

John J. Caligiuri, Buffalo, N.Y., assignor to Joseph V. Tripoli

Filed May 24, 1965, Ser. No. 458,346

14 Claims. (Cl. 73—37.5)



1. A fluid system for checking the alignment and integrity of center means presenting a tapered face on the end of a workpiece to be mounted on a machine tool or the like where centering is required, comprising a sensor member having an end face including at least a tapered portion for engaging the corresponding tapered face on said center means, means for positioning said tapered portion against said tapered face of said center means of said workpiece in face-to-face contact to normally form a seal, said sensor member being mounted with its center line extending along an axis corresponding to the axis along which said workpiece is to be centered, a passage in said system extending through said sensor member and opening at the surface of said end face of said member for communication with said center means, fluid supply means for normally maintaining fluid in said system at substantially constant pressure, and pressure-responsive means to detect the pressure in said passage for determining the leakage of fluid, if any, past said seal formed by said faces whereby the mating fit of said sensor member with said center means is determined to indicate the alignment and integrity of said center means.

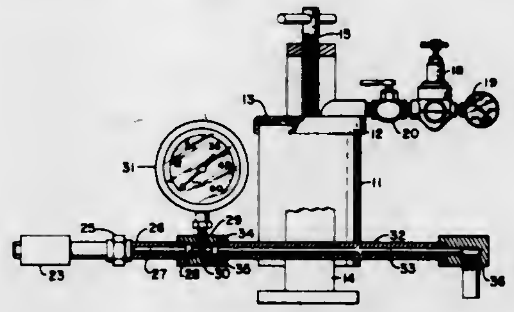
3,353,403

FIELD VISCOSIMETER

Fredric H. Deily and George D. Combs, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware

Filed May 24, 1965, Ser. No. 457,911

5 Claims. (Cl. 73—55)



1. A viscosimeter for measuring the viscosity of a drilling mud or similar liquid comprising:

(a) a closed cell for containing a sample of drilling mud or similar liquid;

(b) means for applying pressure to the liquid contained in said cell;

(c) an elongated capillary tube including a straight entrance section communicating with said cell and a straight test section which communicates with and is substantially concentric with said entrance section, said entrance section and test section being arranged in end-to-end relationship and separated by a gap less than the internal diameter of said sections; and,

(d) a gauge communicating with said gap between said entrance section and said test section for indicating the pressure drop in said test section as liquid from said cell is discharged through said entrance and test sections.

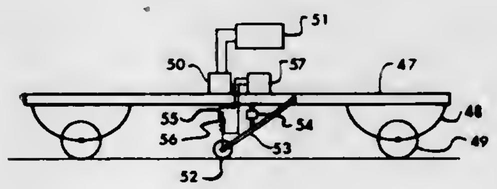
3,353,404

APPARATUS FOR TESTING ROAD SURFACES AND METHOD

Gilbert Swift, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Jan. 29, 1965, Ser. No. 428,956

16 Claims. (Cl. 73—146)



8. An apparatus for measuring the roughness of a road surface, comprising:

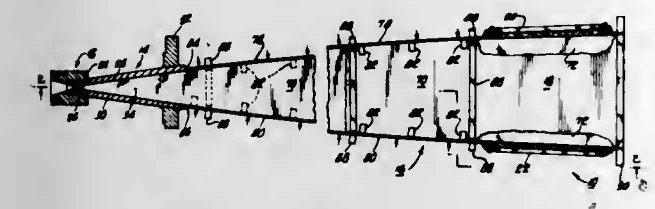
a member adapted for passing along the road and having means for substantially continuously contacting the road surface at a movable contact point during horizontal movement therealong;

means for sensing the vertical movement of the contact point during horizontal movement along the road and producing a first electrical signal representative of the vertical velocity thereof;

means for rectifying the first electrical signal to produce a substantially unidirectional second electrical signal proportional to the first electrical signal, and

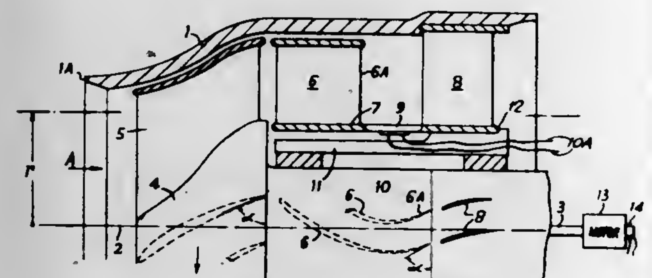
means for integrating the second signal over a predetermined interval as an indication of road roughness.

3,353,405
WIND TUNNEL NOZZLE STRUCTURE
Antonio Ferri, Rockville Centre, N.Y., assignor to General Applied Science Laboratories, Inc., Westbury, N.Y., a corporation of New York
Filed May 11, 1965, Ser. No. 454,837
8 Claims. (Cl. 73—147)



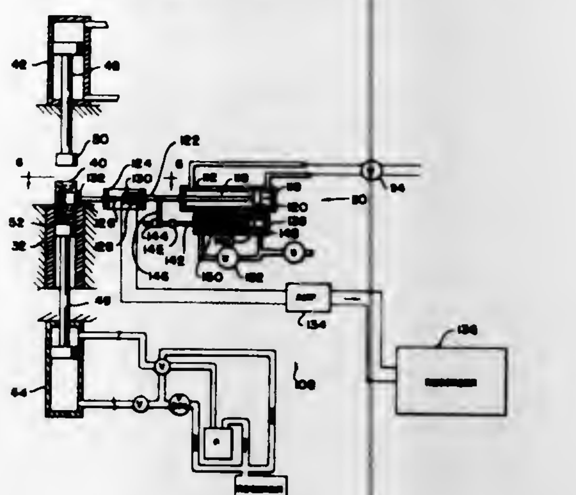
1. In a wind tunnel for converting a compressed gas into a gas stream of supersonic velocity, a plurality of members with substantially flat surfaces joined together with said flat surfaces facing one another to form a gas flow passageway which has a throat and an exit opening, and which diverges from a relatively small cross-sectional area at said throat to a relatively larger cross-sectional area at said exit opening, the cross-sectional shape of said passageway being everywhere substantially symmetrical with respect to the longitudinal axis of said passageway.

3,353,406
MASS-FLOW DETERMINING DEVICES
Norman Moss, Ilford, England, assignor to Plessey-UK Limited, Ilford, England, a British company
Filed Feb. 10, 1965, Ser. No. 431,629
Claims priority, application Great Britain, Feb. 21, 1964, 7,356/64
2 Claims. (Cl. 73—194)



1. A combined pump and mass-flow meter, comprising a power-driven bladed rotor member having an inlet and outlet, and a bladed torque-ascertaining reactor member resiliently restrained from rotation and also having an inlet and an outlet, and means for guiding a flow of fluid through said rotor member from the inlet to the outlet thereof and thence through the reactor member from the inlet to the outlet thereof, wherein the outlet ends of the blades of the reactor member are set at an angle with reference to the flow axis different from the angle of the inlet ends, the respective inlet and outlet angles of the blades of the rotor and reactor members being so determined that when the rotor member is driven and fluid is allowed to flow through the rotor and reactor members, the said angles of the blades of the reactor member as well as their curvature cause a substantial portion of the driving power applied to the rotor member to be employed to increase the total pressure of the fluid leaving the reactor member over the total pressure of the fluid entering the rotor member, the outlet angles of the respective blades of the rotor member and reactor member being so related that when fluid is passed through the rotor and reactor member with the rotor held stationary, the flow of fluid will exert no torque upon the reactor member.

3,353,407
GRANULAR MATERIAL TESTING APPARATUS
Harry W. Dietert, Kerrville, Tex., and Ralph E. Steinmueller, Detroit, Mich., assignors to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan
Filed Aug. 24, 1964, Ser. No. 391,420
4 Claims. (Cl. 73—101)

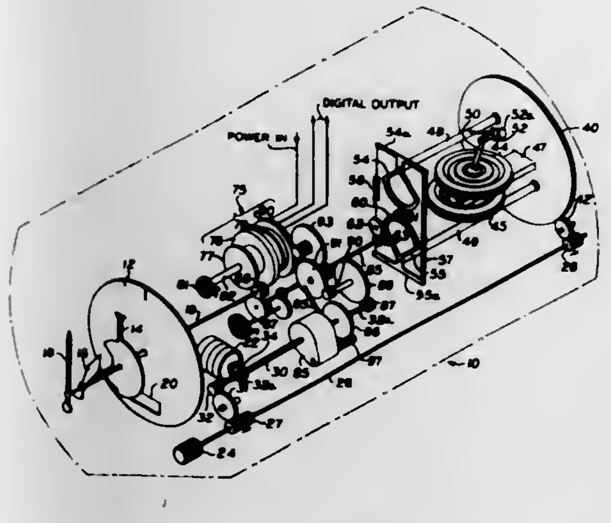


1. Physical properties testing apparatus comprising a cylindrical sample container for receiving a sample of granular material to be tested, a pair of oppositely disposed plungers axially aligned with and movable into and out of the sample container for compressing the granular material into a test specimen, means for moving the plungers into and out of the sample container including a hydraulic piston and cylinder connected to one of the plungers and a pneumatic piston and cylinder connected to the other of the plungers, means for positioning the test specimen for destructive testing including means for moving the plunger connected to the pneumatic piston and cylinder out of the sample container, means for moving the plunger connected to the hydraulic piston and cylinder into the sample container to position the test specimen partially out of the sample container and means for retaining the plunger connected to the hydraulic piston and cylinder in a predetermined position in the sample container, means for testing the test specimen to destruction including a third piston and cylinder, a piston rod connected to the third piston in the third cylinder and an arcuate member connected to the piston rod for movement transversely of the test specimen constructed and arranged to engage the test specimen transversely thereof with the test specimen extending out of the sample container and means for reducing the speed at which the piston rod is allowed to travel toward the test specimen after a predetermined travel thereof toward the test specimen and operable to allow rapid movement of the piston rod away from the test specimen including a fourth piston and cylinder parallel to the third piston and cylinder, a second piston rod having a pair of abutments thereon connected to the third piston, an abutment engaging member on the first mentioned piston rod movable between the abutments on the second piston rod and a bleeder valve connected between the ends of the fourth piston and cylinder, and means for providing a signal representative of the strength of the test specimen responsive to the means for testing the test specimen.

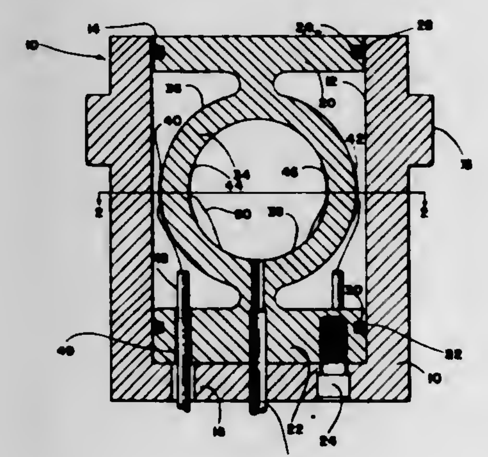
3,353,408
ALTIMETER FOR PRODUCING DATA REFERENCED TO A PREDETERMINED PRESSURE
Frank G. Daleo, Armonk, N.Y., assignor to Astek Instrument Corp., Armonk, N.Y., a corporation of New York
Filed May 25, 1965, Ser. No. 458,641
11 Claims. (Cl. 73—387)

10. A barometric altimeter comprising:
- means for measuring barometric pressure and producing a dimensional change in response thereto,

- means for setting a reference pressure into the altimeter about which said measuring means measures the pressure,
- mechanical readout means responsive to a dimensional change of the pressure measuring means and to the reference pressure for indicating the pressure measured,
- and means for producing an electrical signal proportional to said dimensional change of said pressure measuring means referenced to a second reference pressure.

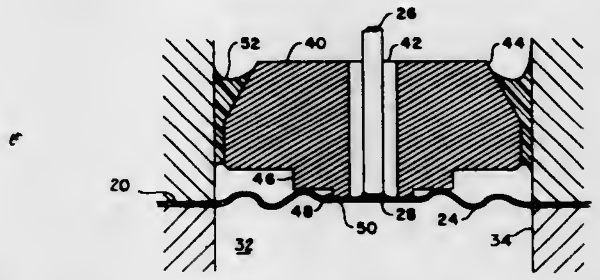


3,353,409
PRESSURE RESPONSIVE TRANSDUCER
Herman R. Gelbach, Pullman, Wash., assignor to J. C. Pemberton, San Diego, Calif.
Filed Sept. 20, 1965, Ser. No. 488,676
3 Claims. (Cl. 73—398)



3. An electrical pressure responsive transducer, comprising:
- a housing cylinder;
- a composite assembly having a base closely fitted in fixed relationship within said cylinder, a movable piston fitted in the end of said cylinder free of contact with the cylinder wall and exposed to access at one end of said cylinder, and an annular force ring affixed to said piston and to said base and separating said piston from said base, said force ring having an access extending transversely of the cylinder access;
- an annular groove around said base, an O-ring in said groove;
- an annular groove around said piston, an O-ring seal in said groove;
- said piston, base and O-ring seals forming a sealed chamber within said cylinder between said base and said piston;
- a pressure supply conduit extending from the exterior of said housing cylinder to the sealed chamber between said base and said piston to introduce a fluid of reference pressure into said sealed chamber;
- two opposed strain gauges carried by the exterior wall of said force ring and two opposed strain gauges carried by the interior wall thereof; and
- electrical terminal means connecting said strain gauges to the exterior of said housing cylinder.

3,353,410
OVERLOAD STOP FOR PRESSURE TRANSDUCER
Norman H. MacNeil, Waltham, Mass., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed July 27, 1965, Ser. No. 475,178
7 Claims. (Cl. 73—406)

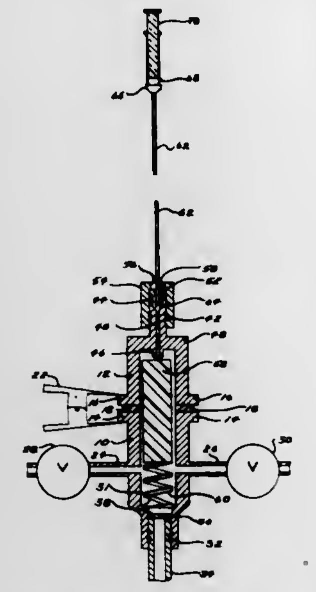


4. Apparatus for measuring fluid pressure comprising:
- a closed fluid compartment adapted to receive fluid whose pressure is to be measured, said compartment having one wall closed by a disc-shaped diaphragm having an axis, said diaphragm adapted to distend from fluid pressure in said compartment to configurations which vary with the characteristics of the diaphragm,
- a hollow cylindrical housing having an axis substantially coincident with the diaphragm axis and fixedly secured to said compartment adjacent said diaphragm,
- a hollow cylindrical diaphragm overload stop member means having an annular end surface and an axis,
- means fixedly positioning said stop member in accordance with the characteristics of said diaphragm under a predetermined fluid pressure overload condition, whereby said stop plate substantially conforms to the unimpeded configuration of said diaphragm when distended under said predetermined overload fluid pressure, thereby to more uniformly absorb the force generated by pressure in said fluid compartment acting on the diaphragm; and
- a displacement transducer positioned at least partially within said overload stop member and engaging said diaphragm for sensing the magnitude of its distention.

3,353,411
APPARATUS FOR SAMPLING GAS FROM PLASTIC FOAM
Herbert G. Nadeau, North Haven, and Paul H. Waszeciak, Hamden, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Filed Feb. 7, 1966, Ser. No. 525,619
10 Claims. (Cl. 73—421.5)

1. In a sampling device for obtaining a fluid sample from a puncturable container of said fluid, the combination of:
- (a) a hollow member adapted to receive a puncturable container of the fluid to be sampled;

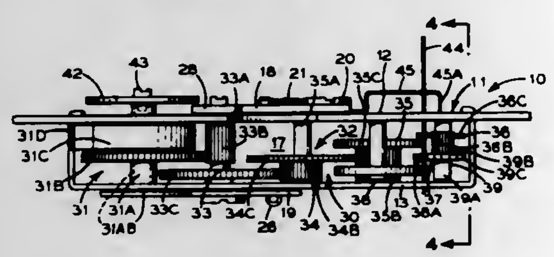
(b) a first and a second port in the walls of said hollow member and so disposed therein that said puncturable container is positioned between said first and second port;
(c) self-sealing puncturable closures sealing each of said first and second ports;
(d) means for removing and replacing the gas in said hollow member;
(e) means for connecting said hollow member to the sample receiving chamber of a fluid analyser via said sealed first port;



(f) an elongated hollow needle adapted to pass from the outside of said hollow member sequentially through (i) the self-sealing puncturable closure of said second port, (ii) the walls of said puncturable container of fluid to be sampled and (iii) the self-sealing puncturable closure of said first port into the sample receiving chamber of said fluid analyser; and
(g) means for drawing the fluid sample into said elongated hollow needle and for expelling said fluid sample from said elongated hollow needle into the sample receiving chamber of said fluid analyser.

3,353,412
MECHANICAL TIMER

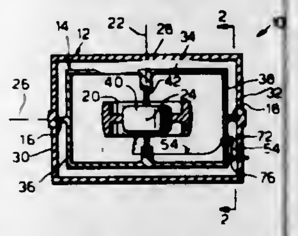
Robert Humphrey, Pelham, N.Y., assignor to Bayside Watch Tool Co., Inc., Whitestone, N.Y., a corporation of New York
Filed Oct. 19, 1965, Ser. No. 497,976
19 Claims. (Cl. 74—3.52)



1. A mechanical timer for sequentially triggering a mechanism after a lapse of a predetermined time interval comprising:
(a) a housing including a top plate and a bottom plate spaced therefrom,
(b) means for maintaining said plates in spaced relationship,
(c) an actuating means pivotally connected to one of said plates for movement between a cocked position and an uncocked position,
(d) a second actuating means pivotally connected to the other of said plates for movement between a cocked position and an uncocked position,
(e) means for normally biasing each of said actuating means toward their respective uncocked positions,
(f) release means for maintaining each of said actuating means in their respective cocked positions,
(g) and timing means operatively associated with each of said release means to effect a sequential operation thereof whereby one of said release means is actuated after a first predetermined time interval and the other of said release means is actuated after a second predetermined time interval.

3,353,413
GYROSCOPE FLEXIBLE LEADS

Robert J. Cohen, Wyckoff, and Oscar M. Edelman, Nutley, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed May 15, 1964, Ser. No. 367,778
7 Claims. (Cl. 74—5)



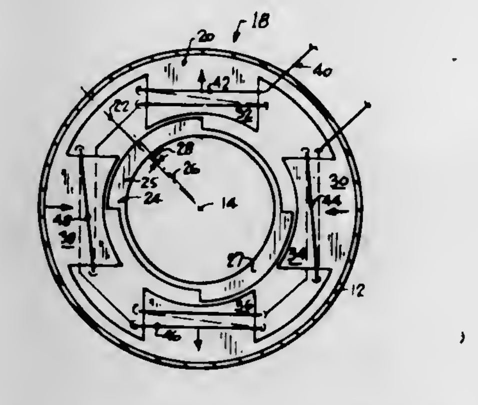
1. In a single-axis floated gyroscope which includes a casing and a float buoyantly supported in the casing for relative angular displacement about the gyroscope axis in either direction from a null position, flexible electrical conductor means spanning between the float and casing, comprising:
a first terminal disposed on the casing;
a second terminal disposed on the float, radially separated from the casing terminal, coplanar with the casing terminal and gyro output axis when the float is in its null position;
a bent wire with respective end portions fixedly connected to said terminals, and having a clockwise spring rate and a different counter-clockwise spring rate urging the float to its null position; and
a spring means with respective end portions fixedly connected adjacent to said terminals, and having a clockwise spring rate identical to the wire counter-clockwise rate, and having a counter-clockwise spring rate identical to the wire clockwise rate, urging the float to its null position,
the total clockwise spring rate being identical to the total counter-clockwise spring rate of the wire and spring in combination.

3,353,414
GYRO SPRING

Rolf K. Brodersen, Orlando, Fla., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,967
4 Claims. (Cl. 74—5.4)

1. An electromagnetic angular spring comprising:
a stator having four symmetrically disposed poles;
a rotor of magnetic material mounted within the stator and having a null position with respect to the poles, the rotor being capable of angular displacement over a range of displacement angle approaching 45 degrees on either side of said null position; and
a circuit including a stator winding, a power supply, an adjustable resistor and an adjustable capacitor connected in series, said winding having four coils respectively wound on said poles and interconnected for producing a magnetomotive force pattern in the stator in which the forces are directed inwardly in two adjacent poles and outwardly in the other two poles,

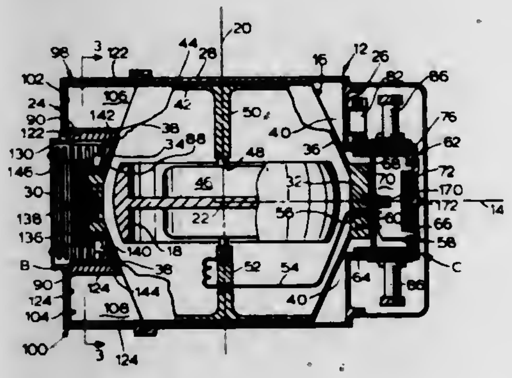
whereby the adjustable capacitor can be tuned when said rotor is at its null position for providing a resonant current level at said power supply frequency and the adjustable resistor can be tuned for selecting



a current level of optimum linearity and suitable strength with a symmetrical slope on either side of said null position so that a substantially straight-line spring rate is provided.

3,353,415
GYRO DAMPING CONTROL

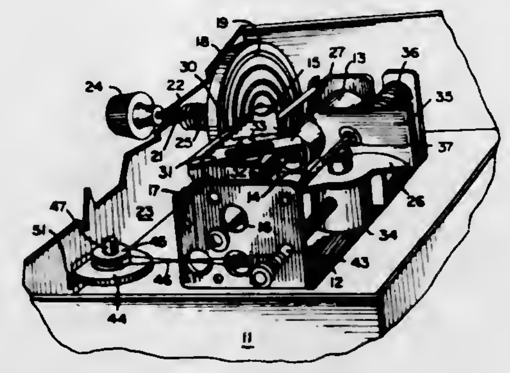
Charles I. Tiplitz, Cedar Grove, and Walter J. Krupick, Succasunna, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed May 8, 1964, Ser. No. 366,063
12 Claims. (Cl. 74—5.5)



1. A fluid-damped gyro comprising:
a casing adapted to contain a damping fluid and including an annular wall;
means defining a plurality of recesses within said casing;
a float within said casing rotatable relative thereto about a common axis, said float having paddles respectively fitting into the recesses, each paddle coacting with its respective recess to form two chambers varying oppositely in volume with float rotation;
means defining in said annular wall a plurality of separate ports each connecting to one of said chambers;
a concentric ring axially and rotatively displaceable relative to said annular wall and containing fluid return pasages for interconnecting in pairs chambers varying oppositely in volume, each return passage having an orifice one dimension of which varies with axial movement of said ring and another dimension of which varies with rotational movement of said ring, thus to vary the fluid flow through said return passages either by rotating the ring or by axially displacing the ring thereby providing a variety of damping torque levels, each level having a constant viscous damping torque with variation in fluid temperature.

3,353,416
SELECTIVE SIGNALING APPARATUS

Frank B. Flint, Weymouth, and Robert W. Housman, Winthrop, Mass., assignors to Automatic Radio Manufacturing Co., Inc., Melrose, Mass., a corporation of Massachusetts
Filed Sept. 23, 1965, Ser. No. 489,579
16 Claims. (Cl. 74—10.6)



1. Selective signaling apparatus comprising,
a mechanically tunable electrical element,
first means mechanically coupled to said tuning element for continuously adjusting the movable portion thereof over a continuous tuning range,
second means mechanically coupled to said tuning element for continuously adjusting said movable portion to any selected position within said continuous tuning range when said first means is mechanically decoupled from said tuning element and simultaneously adjusting the position of a preselected tuning position means,
said preselected tuning position means comprising spring loaded camming means,
and means for selectively decoupling said first means for tuning from said tunable element to cause said movable portion to assume the position determined by said preselected tuning position means.

3,353,417
HIGH SPEED DOUBLE BLOW HEADER

Heinrich Nebendorf and Willi Pieper, Wuppertal-Ronsdorf, Germany, assignors to Firma Gebr. Hilgeland, Wnppertal-Ronsdorf, Germany, a corporation of Germany
Filed Mar. 29, 1965, Ser. No. 443,385
Claims priority, application Germany, Oct. 8, 1964, H 53,973
2 Claims. (Cl. 74—53)

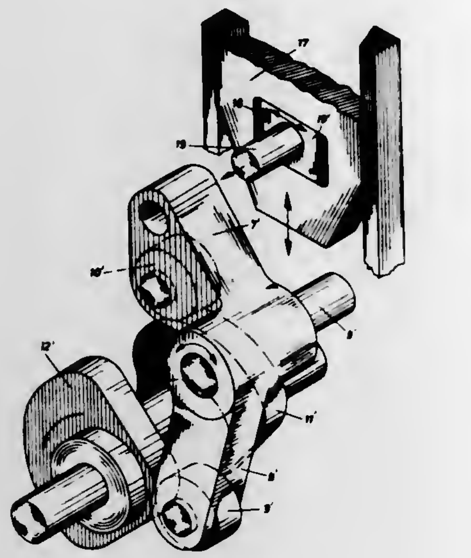
2. In a header;
a press slide mounted for reciprocating movement,
a punch carrier,
means mounting said punch carrier on said press slide for linear reciprocating movement between two alternative work positions,
first cam means rotatably mounted on said press slide and having lift portions and dwell portions,
a first follower on said punch carrier and constantly in engagement with said first cam means,
second cam means mounted on said press slide and having lift portions and dwell portions,
a second follower on said punch carrier and constantly in engagement with said second cam means,
a shaft rotatably mounted below said press slide and rotating in timed relation to the reciprocation of said press slide,
said first cam means and said second cam means continuously rotated by said shaft and reciprocating said punch carrier during their rotation between said two alternative work positions by direct engagement with said first and second followers, respective,

an axle pivotally mounted in said press slide,

said followers comprising oppositely disposed arms secured to said axle,

each of said arms carrying a follower roller,

said first and second cam means rotating in parallel planes perpendicular to the axis of said shaft and spaced apart at a distance equal to the distance of said arms along the axis of said shaft,

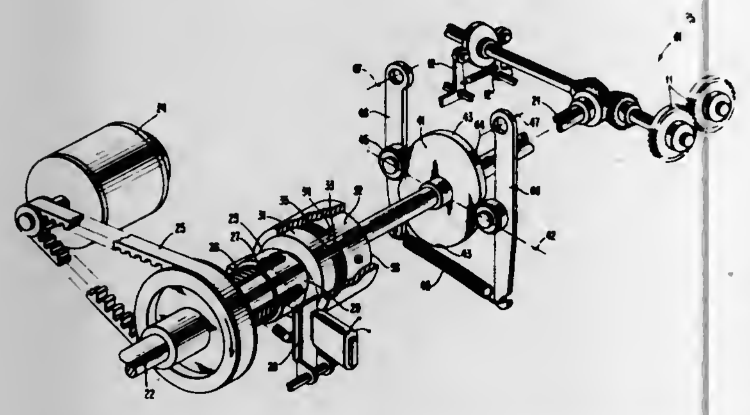


said punch carrier having a slot,

a slide guided in said slot for lateral movement in said punch carrier, and

a pin pivotally connected with said slide and pivotally connected with one of said arms.

3,353,418
ACCELERATION AND VELOCITY SURGE CONTROL MECHANISM
Selahattin A. Okcuoglu, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Sept. 17, 1965, Ser. No. 488,150
5 Claims. (Cl. 74—125.5)

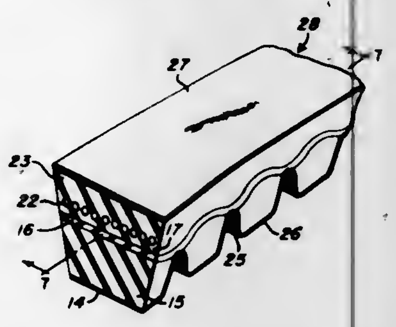


1. In a power transmission having a continuously rotating power member, a rotatable load member, and a selectively engageable positive acting clutch for abruptly drive connecting and disconnecting the power and load members, the acceleration control mechanism comprising:

resilient energy storing means coupled in series power transmitting relationship between the clutch and the load member for reducing acceleration shock on the load member, and

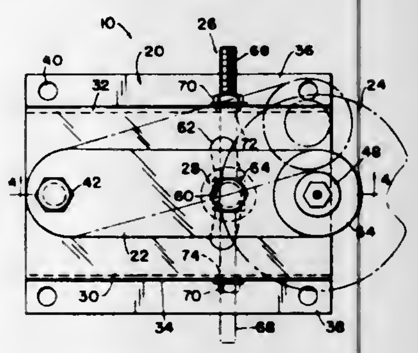
artificial load means for maintaining at least a predetermined minimum load on the load member to control release of energy by said energy storing means, said artificial load means including a first control member connected to said load member for rotation therewith and a second control member cooperable with said first control member and controlled thereby for maintaining a predetermined minimum load on said load member during at least a substantial portion of the driving operation immediately following clutch engagement.

3,353,419
TRANSMISSION BELT
Kenneth D. Richmond, Nixa, Mo., assignor to Dayco Corporation, Dayton, Ohio, a corporation of Ohio
Filed June 29, 1965, Ser. No. 467,890
6 Claims. (Cl. 74—233)



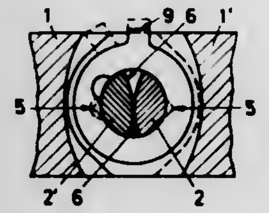
1. An endless V-type transmission belt having a tension section and a compression section; said compression section comprising a first layer of rubber adjacent said tension section, alternating transverse teeth and grooves located inwardly of said first layer, and a longitudinally undulating layer of rubber between said first layer and said teeth.

3,353,420
DRIVE TIGHTENER
Charles F. Rivers, 15318 Warwick, Detroit, Mich. 48223
Filed July 12, 1965, Ser. No. 470,965
4 Claims. (Cl. 74—242.1)



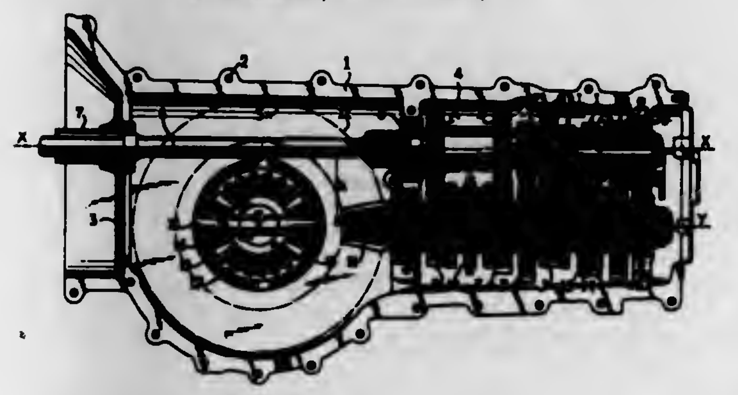
1. A drive tightener comprising a base plate having a flat mounting portion and laterally spaced flanges projecting to one side of said mounting portion along the opposite edges of the latter, each flange having a hole therein, said mounting portion and flanges defining a U-shaped cross-section, a lever arm pivoted on the opposite side of said mounting portion, said arm sliding flat against the said opposite side of said mounting portion during angular movement thereof so as to be supported by said mounting portion and to resist bending of said arm, a rotatable member mounted on the opposite end of said arm and adapted to engage a flexible linear element to tighten the same, means for adjusting the angular position of said arm, said mounting portion having an arcuate slot between said flanges centered on the axis of pivotal movement of said arm, a clamping nut and bolt assembly including a bolt perpendicular to the plane of movement of said arm extending through said arm and through said slot, a nut threaded on said bolt on the said one side of said mounting portion and adapted to be tightened to secure the adjustment of said arm, said adjusting means including a second bolt secured to said nut so as to be rotatable therewith, said second bolt being adapted to extend through the hole in one flange or the other, and a second nut threaded on said second bolt and adapted to bear against one flange or the other on the side thereof away from said arm.

3,353,421
STEEL LINK CHAIN
Walter Ketterle, Oberursel, and Herbert Steuer and Raimund Pataky, Bad Homburg vor der Hohe, Germany, assignors to Reimers Getriebe Kommanditgesellschaft, Ascona, Switzerland
Filed Nov. 26, 1965, Ser. No. 509,920
Claims priority, application Germany, Nov. 25, 1964, R 39,312
12 Claims. (Cl. 74—253)



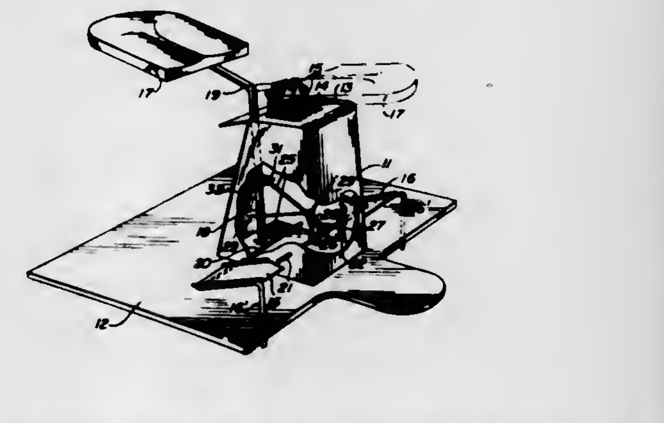
1. A link chain comprising a plurality of chain links each having transverse bores in both ends thereof, a link pin means in each of said bores for pivotably connecting the adjacent links to each other, each of said link pin means consisting of a pair of rocking members, each of said rocking members of one pair being associated with and nonrotatable relative to one of two adjacent links, and each of said rocking members having two opposite sides, one of said sides being curved and facing the other rocking member of said pair and adapted to rock thereon when the adjacent links are pivoted relative to each other, and the other side facing the wall of said bore, locking means on each rocking member and on the associated link for preventing said rocking member from turning relative to said associated link, each of said rocking members having at least one locking groove extending transversely to its longitudinal direction but only within a part of its peripheral surface, and a locking element inserted into said locking groove for preventing said rocking member from sliding longitudinally within said bore.

3,353,422
GEAR BOX
Marcel Dangauthier, Paris, France, assignor to La Publicite Francaise, Paris, France, a corporation of France
Filed May 12, 1965, Ser. No. 455,224
Claims priority, application France, June 15, 1964, 978,270
6 Claims. (Cl. 74—375)



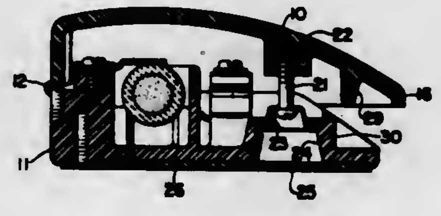
1. Gear box having incorporated counter gears and differential, and comprising: an input shaft, an output shaft parallel to said input shaft and spaced therefrom and driving the differential through said counter gears, a second-speed driving pinion rigid with said input shaft, a gearing having three gear pinions and rotatably mounted on said input shaft, a first-speed driven pinion rotatably mounted on said output shaft and in constant meshing engagement with one gear pinion of said gearing, a second-speed driven pinion rotatably mounted on said output shaft and in constant meshing engagement with said second-speed driving pinion, said second-speed driven pinion having rigid therewith a lateral toothing in constant meshing engagement with another of said gear pinions of said gearing.

3,353,423
CONTROL MECHANISM FOR POWER OPERATED MACHINERY
Harold A. Lehmann, Racine, Wis., assignor to J. I. Case Company, a corporation of Wisconsin
Filed Jan. 27, 1966, Ser. No. 523,400
12 Claims. (Cl. 74—526)



1. A control mechanism for power operated machinery, said mechanism comprising pedal means movable to actuate said machinery, seat means movable between a first and a second position, safety means movable into engagement wiih satd pedal means to prevent operation thereof and movable out of said engagement to permit operation of said pedal means, and linkage means interconnecting said seat means and said safety means and responsive to movement of said seat means to move said safety means into engagement with said pedal means when said seat means is moved into said first position, and out of engagement with said pedal means when said seat means is moved into said second position.

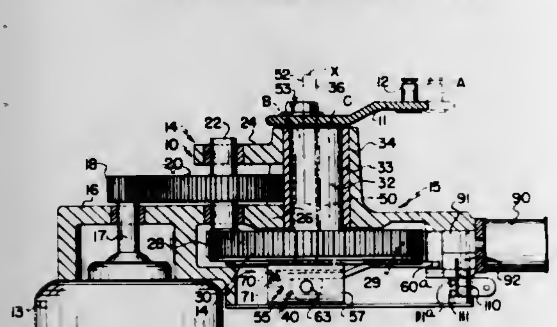
3,353,424
MOTOR SPEED CONTROLLERS
Wesley R. Peterson, Bound Brook, Albert N. Cook, Madison, Ronald R. Thompson, Pluckemin, and Alan H. Stolpen, Union, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 27, 1965, Ser. No. 490,590
1 Claim. (Cl. 74—560)

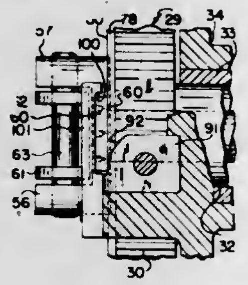


An operator-actuated speed controller for electric motors comprising; a molded base of generally rectangular shape in plan view, a molded cover for said base also of generally rectangular shape in plan view, said base and cover each having one of its respective edges positioned in mutually abutting relation along a single straight line extending in the direction of the longer dimension, hinge means secured to said base and cover and defining a hinge axis coincident with said line, said cover having its other edges overlapping the other respective edges of the base in plan to provide a large exposed cover area relative to the base, said cover having a top external surface which, beginning at the top of the hinged edge, is curved convexly downwardly away from said edge toward the opposite edge to establish the minimum vertical height of the controller along said opposite edge, means biasing the cover to a raised position and means opposing the biasing means and adjustable from the exterior of the controller to establish an initial rest position for the cover.

3,353,425
WINDSHIELD WIPER DRIVE MECHANISM

Edmund A. Abel, Jr., Rocky River, Ohio, assignor, by mesne assignments, to The Leece-Neville Company, Cleveland, Ohio, a corporation of Ohio
Filed July 22, 1965, Ser. No. 473,924
18 Claims. (Cl. 74—600)

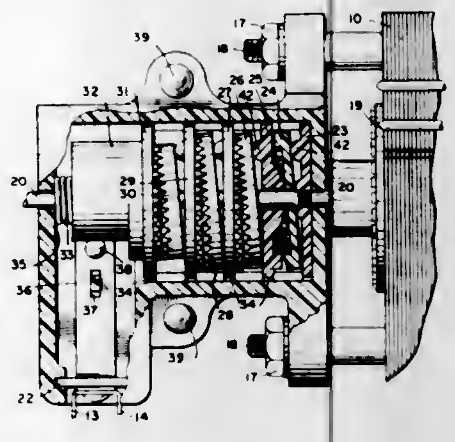




1. A windshield wiper drive mechanism for moving windshield wiper blade means through a normal wiper path and to a park position out of the normal wiper path comprising a rotatable driving member rotatable about its axis, a crank arm carried by said driving member and adapted to effect movement of the wiper blade means upon movement thereof and rotatably supported eccentrically thereof, means operatively interconnecting said crank arm and said driving member including a drive member having a portion movable relative to said driving member between a first position in driving relationship with said driving member wherein said driving member, crank arm, and drive member rotate together about the axis of said driving member to effect movement of the wiper blade means through its normal wiper path and a second position spaced axially of said first position and out of driving relationship with said driving member wherein said driving member rotates relative to said drive member and crank arm, means supporting said drive member to provide for said movement of said portion of said drive member, and means for moving said drive member from its said first position to its said second position and for holding said member in said second position wherein said driving member continues rotation relative to said drive member and crank arm to effect movement of the wiper blade means to its park position.

3,353,426
SPEED REDUCTION SYSTEM FOR A TIMER

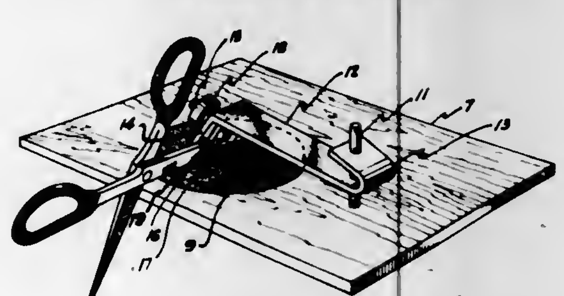
Joseph E. Wiser and Elmo W. Voland, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Oct. 28, 1965, Ser. No. 505,570
16 Claims. (Cl. 74—800)



1. A speed reduction system comprising: a plurality of wobble gears freely mounted about a shaft; a means engaged with a first of said wobble gears for imparting a wobbling motion thereto; a means for restraining said wobble gears from rotating about said shaft; a driven gear engaged with each of said wobble gears so as to be rotated about said shaft when said wobble gears are wobbled, said driven gears having a means thereon for wobbling an adjacent wobble gear as said driven gears are rotated; a peripheral means for rotatably supporting said driven gears; and a means for holding said wobble gears and said driven gears in engagement.

3,353,427
SCISSOR SHARPENER

Lloyd G. Moore, Rte. 3, Box 80, Orland, Calif. 95963
Filed Dec. 10, 1965, Ser. No. 513,040
2 Claims. (Cl. 76—82.2)

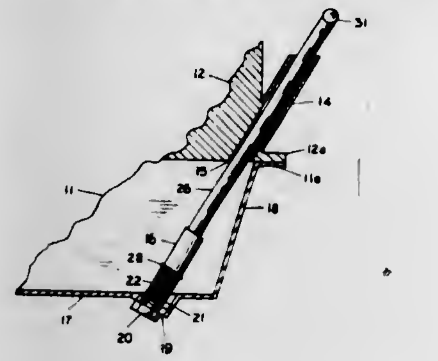


1. A scissors sharpener comprising a flat base, a strip of metal having a U-shaped end in which is located a pair of substantially aligned transverse openings, a rod secured to the base and extending through these openings, the other end of the strip bent at an obtuse angle and means for clamping a blade of a scissors to the other end in a transverse position, a shaft extending through said base, and an abrasive disk mounted on said shaft above said base.

3,353,428
OIL PAN DRAIN PLUG AND WRENCH THEREFOR

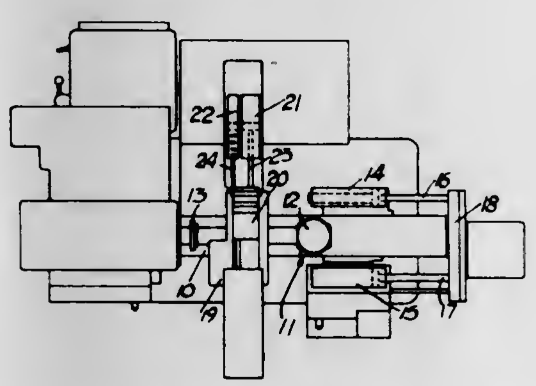
Alfred B. Herr, West Chester, Pa., assignor of one-twentieth to John L. Johnson, Toronto, Ontario, Canada
Filed Aug. 10, 1966, Ser. No. 571,568
5 Claims. (Cl. 81—71)

1. An oil pan drain plug and wrench therefor, said plug being threadably retained in the base wall of said oil pan and extending inwardly thereof, means in the upper end of said plug to cooperate with said wrench, said wrench extending downwardly and engaging said means in the upper end of said plug, at least one opening in the wall of said plug whereby upon the said plug being rotated to expose a portion of said opening below the said wall of the oil pan the oil therein will be drained.



3,353,429
HYDRAULIC FEED SYSTEMS

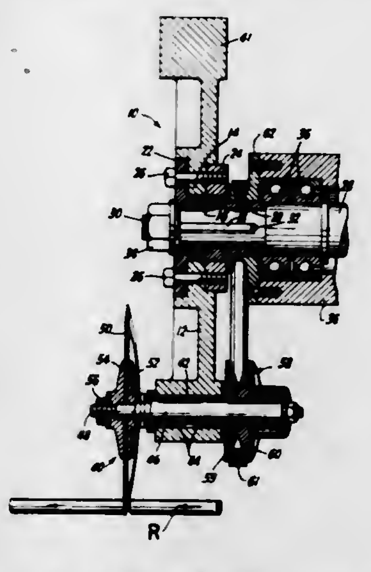
Duncan James Keith Stuart and Brian Queenborough, Solihull, England, assignors to Edward Williams Holdings Limited, Birmingham, England, a British company
Filed July 12, 1965, Ser. No. 471,220
Claims priority, application Great Britain, July 25, 1964, 26,279/64
7 Claims. (Cl. 82—21)



5. An automatic lathe of the type described including a bed, an adjustable turret rest on the bed, a turret slide movable along the bed and an hydraulic feed system for moving the turret slide along the bed, said hydraulic feed system comprising first and second parallel identical cylinders attached to the turret rest, first and second pistons slidable in said cylinders respectively, first and second piston rods projecting in the same direction from the cylinders respectively and attached to the turret slide, a dummy piston rod on said first piston of cross-sectional area greater than that of the first piston rod and projecting from that end of the first cylinder which is remote from the end thereof from which said first piston rod projects, a source of pressurised fluid, a reservoir, selectively operable speed control devices controlling the flow of fluid to the reservoir, first and second conduits connectible to the source and to said speed control devices, said first conduit being a first valve for connecting the first conduit to the end of the first cylinder from which the dummy piston rod projects when said first valve is in a first condition and for connecting said second conduit to the end of the first cylinder from which the dummy piston rod projects when the first valve is in a second condition, said second conduit being permanently connected to the end of the first cylinder from which the first piston rod projects, and a second valve for connecting the second conduit to the end of the second cylinder from which the second piston rod projects when the second valve is in a first condition and for connecting the first conduit to said end of the second cylinder from which the second piston rod projects when the second valve is in a second condition, the other end of the second cylinder being permanently connected to said first conduit, so as to enable different feed speeds to the turret slide to be obtained by changing the conditions of said first and second valves without altering the speed control devices.

3,353,430
HIGH SPEED CIGARETTE CUTOFF

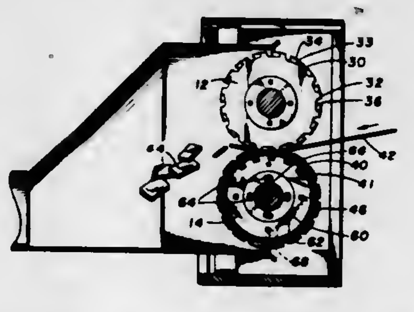
Warren Arthur Brackmann and Kermit Hibbitts, Richmond, Va., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 24, 1965, Ser. No. 482,241
8 Claims. (Cl. 83—13)



1. A cigarette cut-off mechanism comprising: a support; a carrier assembly journalled in said support for rotation about a fixed axis; a rotatable knife journalled in said carrier on another axis spaced from said fixed axis; and means for rotating said knife about said other axis at speeds approximating the rotational speed of said carrier assembly about said fixed axis.

3,353,431
STABLE FIBER CUTTER

John Mylo, Athens, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,458
6 Claims. (Cl. 83—116)



1. Apparatus for cutting a continuous tow into uniform lengths of staple fibers, comprising:
(a) an upright support housing,
(b) a first cylindrical member and second cylindrical member oppositely disposed for rotation on parallel shafts supported by said housing,
(c) a plurality of grooves selectively spaced in the peripheral surface of the first cylindrical member,
(d) an anvil having a sharp edge and stationarily secured against one wall of said grooves, said anvil being smaller in cross-sectional area than the said grooves whereby the sharp edge is exposed,

(e) a matching number of slots in the peripheral surface of the second cylindrical member, said slots having a varying width extending from one end to the other end thereof to accommodate a laterally movable blade member,

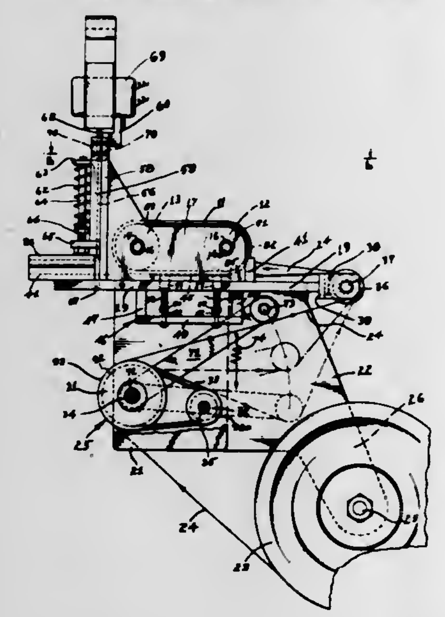
(f) a blade pivotally mounted in at least one of said slots and having a knifed edge exposed for contact with the sharp edge of an opposed anvil, said blade having a width substantially the same as the narrowest width of said slots to provide a pivotal point for said blade at said narrowest width when said blade makes contact with said opposed anvil,

(g) means for driving the cylindrical members in synchronism to move the said knifed edge and said sharp edge into contact with each other to produce a cutting action, and

(h) means carried by one of the cylindrical members for conveying and holding in place a continuous tow while said tow is being severed into discontinuous lengths.

3,353,432
PRESSURE-SENSITIVE TAPE FEEDING DEVICE

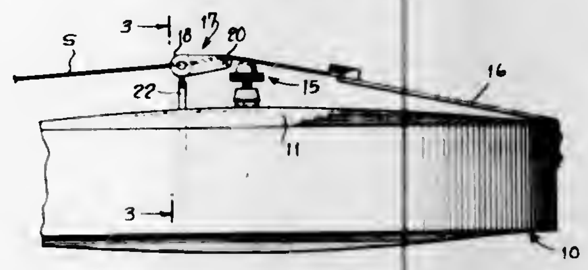
George J. Philippi, Plainfield, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Apr. 19, 1966, Ser. No. 543,662
20 Claims. (Cl. 83—176)



1. A feeding device for a pressure-sensitive adhesive strip which comprises forwardly advancing feeding means adapted to progressively adhere to a narrow elongated area of the adhesive side of said strip and thereby advance said strip with said feeding means, said elongated area extending lengthwise of the strip for an appreciable distance along a longitudinal axis of contact centrally located transversely of the strip, a guide track extending longitudinally of said strip for guiding the strip as it adheres to said feeding means, said feeding means running within said track and said track comprising opposed edge guide portions located transversely outwardly of said feeding means for guiding the longitudinal edges of the strip on each side of said feeding means, said edge guide portions being displaced in the direction of said feeding means away from the normal plane of the strip passing through said axis of contact for causing the strip to assume a three dimensional transverse cross-section while said strip is adhered to said feeding means along said axis of contact, and stripping means for progressively separating said strip from said feeding means without adhering to or applying tension to the strip and without retarding the forward movement imparted to the strip by the feeding means; whereby said strip is progressively fed forward by said feeding means while adhering to said feeding means only in a narrow area of the adhesive side of the strip, caused to assume a three dimensional transverse cross-section by virtue of its simultaneous contact with said feeding means and the opposed edge guide portions of said track, and progressively separated from said feeding means by said stripping means.

3,353,433
FLOATING BRIDGE FOR MUSICAL INSTRUMENTS

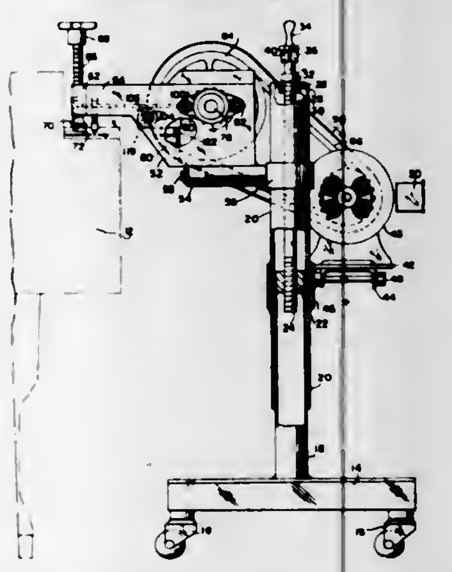
James D. Webster, Northport, N.Y., assignor to The Fred. Gretsch Mfg. Co., Brooklyn, N.Y., a corporation of New York
Filed Aug. 25, 1965, Ser. No. 482,379
8 Claims. (Cl. 84—294)



6. In a musical instrument of the class described, the combination of a body having a sound board formed with an opening, a fixed bridge adjacent said opening, strings extending across said bridge, a floating bridge adjacent said fixed bridge and having means for suspending the same on said strings, and a tuning fork secured to said floating bridge and extending downwardly through said opening.

3,353,434
PIANO CONDITIONER

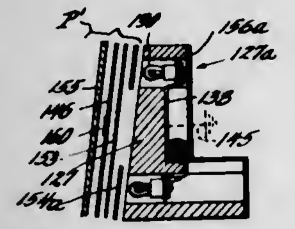
John B. Habig, Jasper, and Maurice E. Schuler, Evansville, Ind., assignors to W. W. Kimball Co., Jasper, Ind., a corporation of Delaware
Filed Oct. 16, 1963, Ser. No. 316,750
8 Claims. (Cl. 84—454)



1. An apparatus for stabilizing the keys and key action of a musical instrument having a keyboard comprising; a frame comprising a movable platform having two vertical supporting columns in spaced relation thereon, movable columns in telescoping engagement with said supporting columns and having height adjusting means associated therewith, side plate means connected with each said movable column, and having forward portions adapted for positioning over said keyboard, horizontal reinforcing means connecting said side plates, horizontal reinforcing means connecting said movable columns, clamping means mounted on said forward portions for holding said side plate means in fixed relation to said keyboard, resilient activator means pivotally mounted between said side plate means and adapted for positioning over and engaging and depressing each key on said keyboard, activating means rotatably mounted between said side plate means for repetitively engaging each said activator means, and variable speed driving means mounted on said frame and drivingly connected to said activating means.

3,353,435
APPARATUS FOR TEACHING THE OPERATION OF A KEYBOARD-CONTROLLED MACHINE OR INSTRUMENT

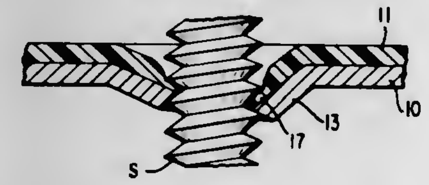
Arthur R. Schmoyer, Falls Church, Va., assignor of fifty percent to Don S. Wenger, Bethesda, Md.
Filed Apr. 24, 1964, Ser. No. 362,360
4 Claims. (Cl. 84—478)



1. A multi-layer front panel structure for a lamp box housing two spaced rows of lamps, said panel including a sheet of light-transmitting material adapted to overlie only that part of the lamp box occupied by one of said rows of lamps, a second sheet of light-transmitting material adapted to overlie said first-mentioned sheet and dimensioned to cover that portion of the lamp box occupied by both rows of lamps, said second sheet being of contrasting color, a third panel sheet coextensive with said second sheet and having indicia on its exposed face, said indicia including a row of light-transmitting areas adapted to overlie and to be respectively aligned with said first row of lamps in said lamp box, and a second row of light-transmitting areas adapted to be aligned with said second row of lamps.

3,353,436
SHEET METAL SCREW-RECEIVING FASTENER

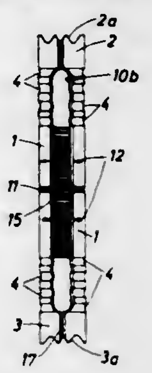
Leonard S. Jaworski, Toledo, Ohio, assignor to The Bishop and Babcock Corporation, Toledo, Ohio, a corporation of Ohio
Filed Dec. 10, 1965, Ser. No. 513,021
1 Claim. (Cl. 85—32)



In a screw-receiving impression a sheet metal body having a substantially frusto-conical protuberance provided with a central opening, the rim of which is helical for screw thread engagement and there being a radial slit extending from such opening so that the helix extends from one side of such slit to the opposite side, the improvement which comprises a relatively thin layer of nonmetallic flexible and resilient plastic material of a thickness in excess of one half the thickness of the sheet metal adhered to the inner side of said protuberance to cover the helical thread portion and to extend substantially to the edge of said hole, said layer being partially freed of its bond to said protuberance from one end portion of the helix to the other thereby to enable thinning and stretching of the plastic layer to take place in the region of said hole so that a portion of said layer is completely interposed between the threads of an applied screw and the helical rim for insuring a moisture-tight seal with a screw when the latter is tightened.

3,353,437
DEVICE FOR DRILLING HOLES IN MASONRY WALLS AND THE LIKE

Artur Fischer, Tumlingen, Kreis Freudenstadt, Germany
Filed Oct. 14, 1965, Ser. No. 496,057
Claims priority, application Germany, Oct. 14, 1964, F 44,226
8 Claims. (Cl. 85—68)

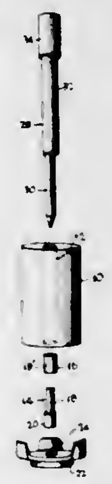


1. In a tubular device for drilling holes in masonry walls and the like and adapted to be expanded in cooperation with expanding means,

an elongated tubular tool having opposite end portions respectively provided with axially extending cutting teeth, and further having at least one annular recess in its circumferential surface located intermediate said end portion so as to provide a frangible connection, whereby said tool may be separated into two sections respectively usable as expansion anchors for holes drilled with said tool, each of said sections being expansible by expanding means inserted therein.

3,353,438
DEVICE FOR MOLDING CASELESS AMMUNITION

John J. Scanlon, Jr., Burlington County, N.J., and Joseph B. Quinlan, Philadelphia County, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Aug. 1, 1966, Ser. No. 569,530
5 Claims. (Cl. 86—1)



1. A device for molding propellant cylinders for use in caseless ammunition including,

a first cylindrical member having an axial opening therethrough,

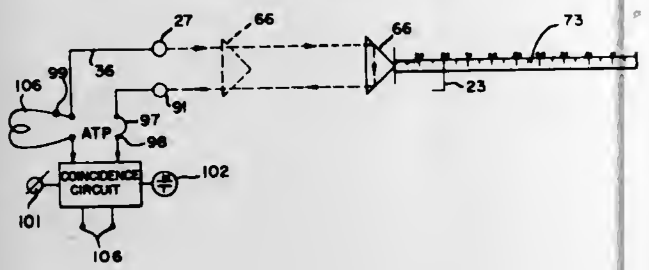
said axial opening defining an outer diameter of the cylinder to be molded,

a multi-diameter elongate punch member,

said elongate member being insertable into one end of said axial opening of said cylindrical member and having a first diameter adapted to define an inner diameter of the cylinder to be molded, a second diameter equal to the inner diameter of said axial opening of said first cylindrical member, and a third diameter adapted to define a diameter larger than said axial opening of said first cylindrical member, and a second cylindrical member being insertable into the other end of said axial opening of said cylindrical member and having an outer diameter equal to the inner diameter of said axial opening of said first cylindrical member.

3,353,439
APPARATUS FOR MEASURING THE VELOCITY OF LIGHT

Zoltan Tarczy-Hornoch, Berkeley, Calif., assignor to W. K. Rosenberry, doing business as Able Research Lab., Berkeley, Calif.
Filed May 9, 1963, Ser. No. 279,112
3 Claims. (Cl. 88—1)



1. Apparatus for measuring the speed of light in a transparent medium comprising;

An elongated enclosure which is substantially free from ambient light,

rapid electrical discharge means disposed within said enclosure for repetitively generating time coincident light pulses and first electrical pulses at a first point within said enclosure,

means for projecting said light pulses along a path within said enclosure,

a substantially transparent medium in said enclosure forming at least a part of said light path,

a reflector located in said path at a second point remote from said source,

means located at a third point within said enclosure for receiving light pulses reflected from said reflector and for converting said light pulses into second electrical pulses,

coincidence determining circuit means having a first input path coupled to said discharge means and a second input path coupled to said means for receiving,

electrical delay means for introducing at will a known and fixed time delay into said first input path to delay said first electrical pulses through said first input path,

and calibrated means coupled to said reflector for moving said reflector to optically vary the length of the light path and thereby to optically delay said second electrical pulses whereby coincidence between said first and second electrical pulses at said coincidence circuit may be obtained.

3,353,440
NAVIGATION PELORUS

James R. Benford, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Apr. 26, 1965, Ser. No. 450,736
13 Claims. (Cl. 88—2.3)

1. A navigation pelorus for a ship, said pelorus having in combination

a body member,

means including gimbal mechanism for supporting said member in a normally level position while preventing motion thereof in azimuth,

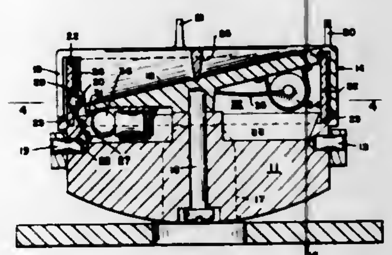
an upstanding circular ring operatively carried by said body member for relative rotational adjustment therebetween,

a 360° scale formed adjacent to the top of said ring on one of the cylindrical surfaces of the ring,

a rotatable member overlying and enclosing said ring,

means for mounting the rotatable member for relative movement in azimuth on the body member,

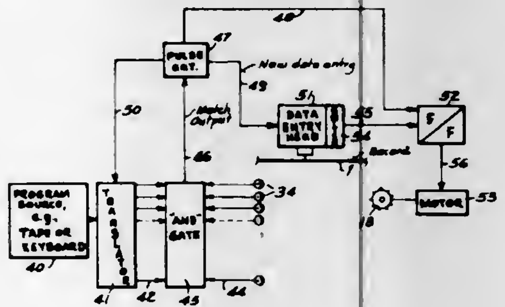
means carried by said body member for indicating a lubber line located in parallel to the keel of the ship, and



means operably constructed diametrically across the top of the rotatable member for defining a horizontally divided field of view, said means including an aperture sight fixed on the last said member near one edge thereof and on the center of symmetry of said field of view, said last means additionally including a positive half-lens which is located at its focal length from said scale in the direction of the aperture sight along said line.

3,353,441
SUPERIMPOSABLE CARD SYSTEM BASED ON NOVEL RECORDS

Frederick Jonker, Washington, D.C., assignor to Jonker Business Machines, Inc., a corporation of Delaware
Filed Oct. 15, 1963, Ser. No. 316,422
5 Claims. (Cl. 88—24)



1. Apparatus for entering coded data in the form of radiation-permeable spots at matrix positions in selected ones of a plurality of matrix areas spaced in at least one direction along a lengthy record strip, each matrix area being associated with a coded representation of radiation-permeable spots on said strip, comprising:

(a) power means for feeding such a record strip in a direction parallel to one major coordinate direction common to all of said matrix areas,

(b) coded sensing means adjacent the means of travel of said record strip, for sensing successive matrix-position identification codes presented thereto during the motion of said strip,

(c) spot recording means adjacent the path of said strip for controllably registering coded data on said strip in the form of radiation-permeable spots,

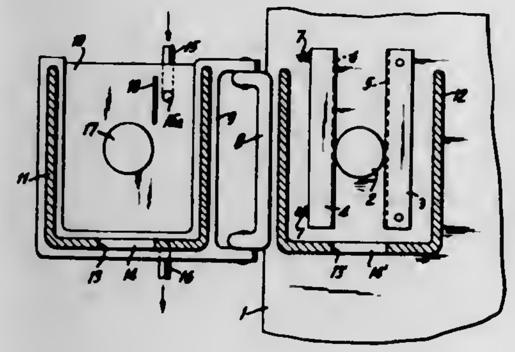
(d) a program source for generating successive code signals identifying matrix positions on said strip in which new information is to be recorded,

(e) comparison gate means under the joint control of said program source and said code sensing means for controlling the energization of said power means to arrest the motion of said strip when a desired matrix area is positioned in alignment with said spot recording means, and

(f) means controlled by said program source for actuating said spot recording means upon the occurrence of an output signal from said comparison gate means.

3,353,442
CINEMATOGRAPH APPARATUS

André Victor Léon Clément Debrie, Paris, France, assignor to Societe des Etablissements André Debrie, Paris, France, a company of France
Filed Dec. 17, 1964, Ser. No. 419,161
Claims priority, application France, Apr. 27, 1964, 972,438; July 28, 1964, 983,297
5 Claims. (Cl. 88—24)

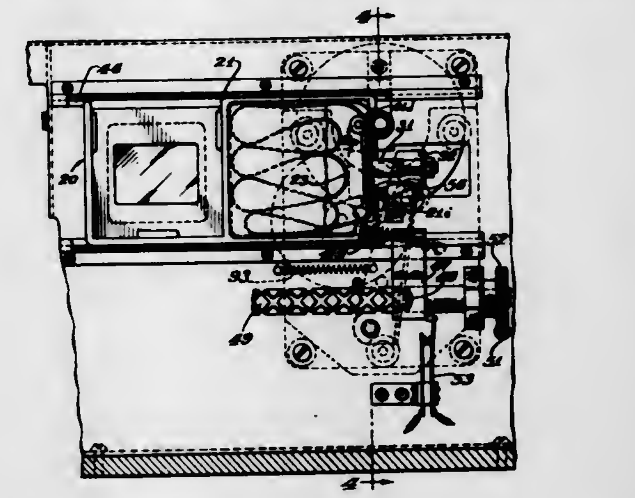


1. A liquid immersion optical printer for film reproduction comprising, in combination, a relatively fixed panel; a shutter cooperable with said panel to define therewith an upwardly extending recess; means hingedly mounting said shutter for swinging movement toward and away from said panel, said shutter being clamped against said panel in the closed, recess-forming position; sealing means interposed between said panel and said shutter in such closed position and peripherally defining said recess; a liquid inlet in said shutter opening into said recess, for filling the latter with a liquid adapted to eliminate flaws in the film; a liquid outlet in said shutter opening into said recess; said sealing means being formed to define a liquid-tight passage for the film to enter said recess; first and second optical plates on said panel and on said shutter, respectively, aligned in facing spaced relation in such closed position to define a film passage therebetween; and means guiding the film to pass from said liquid-tight passage through said recess and between said optical plates, whereby the film runs through the liquid in said recess.

3,353,443
SLIDE PROJECTOR IN COMBINATION WITH A SOUND TAPE AND TRANSPARENCY SLIDE HOLDER

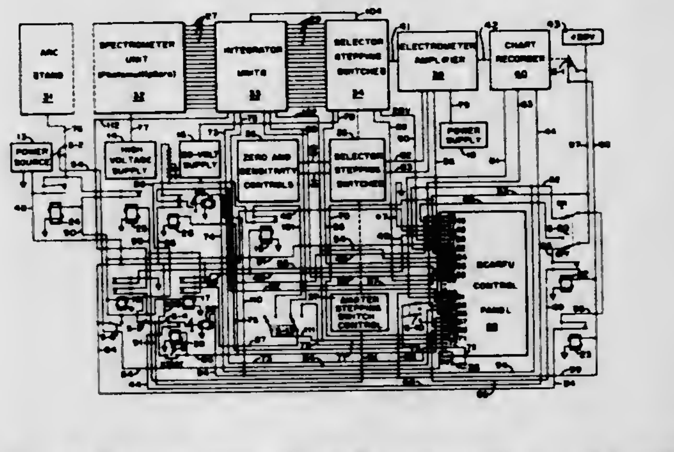
Walter J. Hall, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Original application Feb. 8, 1962, Ser. No. 171,915, now Patent No. 3,256,775, dated June 21, 1966. Divided and this application June 3, 1966, Ser. No. 571,161
4 Claims. (Cl. 88—28)

1. In a slide projection apparatus, a sound head, a driven capstan, means driving the capstan, light projecting means having a light path spaced from the capstan, an endless sound tape, a transparency, a sound slide holder holding the transparency and the endless sound tape, and a slide-changer for moving the holder from a retracted position to a projection position in which the transparency intersects the light path and the tape engages the sound head and capstan, the slide holder including guide means having a pressure plate for backing up the endless sound tape and holding the tape in engagement with the sound head and the capstan.



3,353,444
SIMULTANEOUS CHARGE AND READ QUANTOMETER

John William Theiring, Pittsburgh, Pa., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 12, 1963, Ser. No. 323,184
5 Claims. (Cl. 88—14)

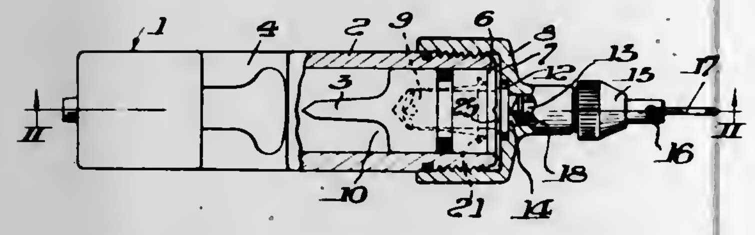


5. In a spectrochemical analyzing system for measuring the individual concentrations of a plurality of impurity elements in each of a plurality of sample materials in successive read-out cycles, including an arc stand provided with an arc discharge for exposing one of said sample materials thereto to form separate spectral lines for said impurity elements, a spectrometer unit having a plurality of respective photomultipliers for intercepting said spectral lines, a plurality of element integrator units and an internal standard integrator unit, each of said element integrator units and said internal standard unit provided with a first capacitor and coupled to said photomultipliers for receiving and accumulating a charge from said photomultipliers, selector stepping switches for sequentially switching the output circuits of said integrator units to an amplifier circuit and chart recorder for measuring and indicating the accumulated charge in each of said integrator units as an indication of the respective impurity element concentrations, the improvement comprising a second capacitor in each of said element integrator units, relay means in each of said element integrator units for switching said first capacitor of each of said element integrator units, charged by a previous arc exposure, into said output circuits during a given read-out cycle, while at the same time switching said second capacitor of each of said element integrator units into

said photomultiplier circuits to receive a charge from an arc exposure during said given read-out cycle for said first capacitors, said standard integrator unit being coupled to receive a charge from an associated photomultiplier during said given read-out cycle and to be switched into said amplifier circuit at the end of said given read-out cycle, means operated by a full-scale reading of said recorder when said standard integrator unit is in circuit therewith for operating said relay means for effecting a reversal of connections of said charge circuits and output circuits of said respective first and second capacitors of each of said element integrator units such that said second capacitors are read-out and said first capacitors will receive a charge from the next arc exposure during the next read-out cycle, and circuit means for suppressing the relay control function of said recorder full-scale operating means for all positions of said stepping switches except their home position.

3,353,445
EXPLOSIVELY ACTUATED TOOL

Robert Temple, Swissvale, and Ernest E. Temple, Murrysville, Pa., assignors to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 20, 1965, Ser. No. 498,571
2 Claims. (Cl. 89—1)

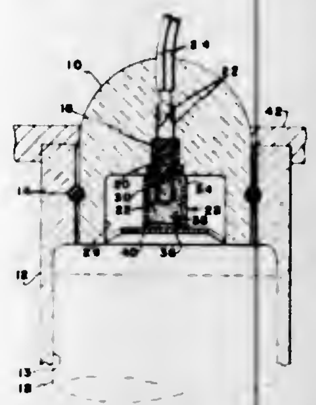


1. An explosively actuated tool comprising a barrel, a working projectile slidably mounted therein provided in its rear end portion with an axial chamber to receive an explosive cartridge, a separate flat disc member rigidly mounted in the barrel behind said projectile and covering the rear end of the projectile, said disc member being provided with a central opening therethrough aligned with said chamber for receiving and holding the rear end of said cartridge, and means at the rear end of the barrel for firing the cartridge to create pressure that will drive said projectile forward away from the disc member, said disc member and projectile being provided with integral hooks positively interlocked with each other to restrain the projectile while said pressure increases to a predetermined point, one of said hooks being adapted to shear off when said predetermined pressure is reached to permit the projectile to move forward, the hook on said disc member projecting forward from the edge thereof and extending less than 180° around the disc, and the rear face of said projectile in front of the disc member hook being recessed at the edge to form its hook.

3,353,446
EXPULSION APPARATUS

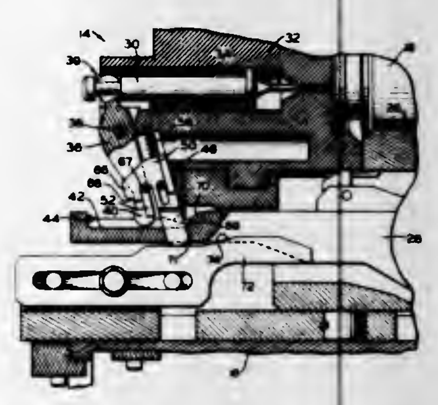
Charles R. Levesque, Silver Spring, Md., and William M. Mitchell, Akron, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed Jan. 28, 1966, Ser. No. 523,777
1 Claim. (Cl. 89—1.5)

In an expulsion apparatus the combination of a mounting base defining an open-ended discharge chamber having a large uniform bore throughout its length characterized by the base having a reduced bore recess substantially centrally and axially aligned with the discharge chamber opposite the open end thereof, an insulated fuse mounting cup centrally positioned at the bottom of said recess and carried by the recess of said base in recessed relation thereto so as to be flush with the base of the chamber and axially aligned with the chamber, a plug-in-type fuse removably plugged into the fuse mounting cup and contained within the recess in said base, a spring type lock washer resiliently engaging at least some portions of the side walls of the recess and holding the fuse in plugged in relation to the mounting cup, explosive means filling the fuse, and an electrical lead passed through the mounting base and the mounting cup and connected through the fuse when it is positioned in the mounting cup whereby a current through the lead greater than the fuse capacity will burn out the fuse causing ignition of the explosive means, the recess of said base in which said fuse is contained acting to direct the force of the explosive charge axially along the discharge chamber, and a solid material in the chamber that is discharged axially out the open end of said chamber by the force.



3,353,447
DOUBLE-SEAR DEVICE FOR A FORWARD MOVING BARREL MACHINE GUN MOUNTED FOR DIFFERENTIAL RECOIL

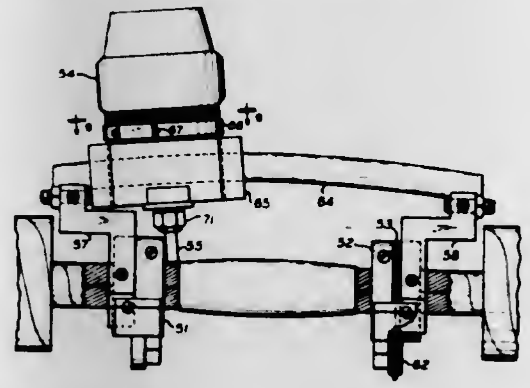
Bengt I. Piskator, Chicopee Falls, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed July 6, 1966, Ser. No. 563,654
4 Claims. (Cl. 89—27)



1. A machine gun including a mount, a recoiling mass mounted on said mount for longitudinal reciprocation between a seared and a forward position and including a breech block, a barrel actuable between a forward loading position and a rearward battery position wherein a cartridge is chambered for discharge and an operating rod actuatable in forward and rearward strokes in synchronization with the displacement of said barrel, energy storing buffer means disposed between said recoiling mass and said mount so as to be energized by displacement of said recoiling mass to the seared position responsive to discharge of the cartridge in said barrel, sear means for releasably holding said recoiling mass in the seared position against the forward bias of the stored energy in said buffer means, a firing pin slidingly mounted in said breech block for displacement against the cartridge when chambered in said barrel, a spring for impelling said firing pin forwardly from a cocked position into impact with the chambered cartridge, a cocking lever operationally disposed between said operating rod and said firing pin for converting the forward displacement of said operating rod to rearward displacement of said firing pin to the cocked position, a sear device engageable with said cocking lever when said firing pin is in the cocked position to releasably hold said firing pin therein, cooperating means on said sear device and said operating rod for partially releasing said cocking lever from said sear device when said barrel is in battery position, and cooperating cam means on said mount and said sear device for completing the release of said cocking lever therefrom when said recoiling mass is traveling forwardly from the seared to the forward position after release by said sear means.

3,353,448
APPARATUS FOR SPLICING ELECTRICAL CABLES

Jack Jerome, 453 Roslyn Road, East Williston, N.Y. 11596
Original application July 2, 1964, Ser. No. 379,810. Divided and this application Feb. 20, 1967, Ser. No. 617,106
3 Claims. (Cl. 90—12)

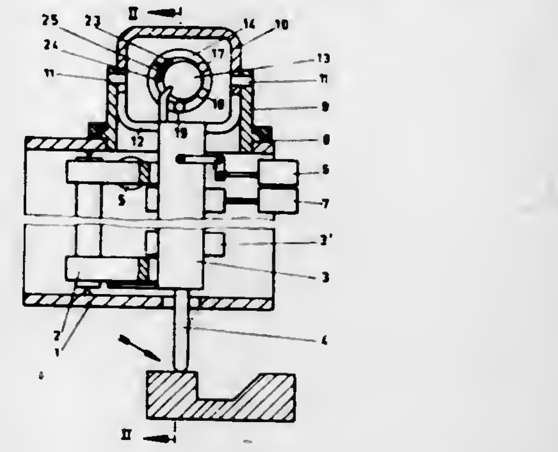


1. Apparatus for accurately machining to desired shape a connector sleeve which has been pressed onto two aligned cable ends which comprises, in combination, split ring clamps adapted to be secured on the cables spaced a short distance from the ends of the connector sleeve, a frame comprising end members, each adapted to engage the exterior surface of one of the split ring clamps and be rotatable therearound, outwardly bowed slide bars connecting the two end members, a carriage mounted on and movable back and forth along the bowed slide bars between the end members, a motor mounted in the carriage with the extension of the longitudinal axis of the motor shaft intersecting the longitudinal axis of the connected cable ends, a router bit mounted at the inner end of the motor shaft and extending toward the connector sleeve, and means on the carriage whereby the frame may be rotated about the connected cable ends and moved longitudinally of the connector sleeve along the bowed slide bars to cause the router bit to machine the connector sleeve to a barrel shape.

3,353,449
TRACING MECHANISM FOR DUPLICATING MILLING MACHINES

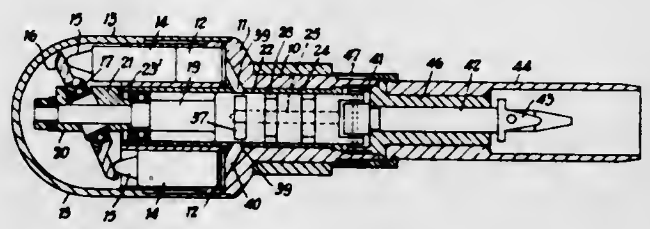
Georg Schlapp, Langen, near Frankfurt am Main, Germany, assignor to Nassovia Werkzeugmaschinenfabrik G.m.b.H., Frankfurt am Main, Germany
Filed May 27, 1966, Ser. No. 553,572
Claims priority, application Germany, May 28, 1965, N 26,799
5 Claims. (Cl. 90—62)

1. In a duplicating machine tool having a tracer adapted to follow a pattern, a measuring element mounted on said tracer, an advance control mechanism having a measuring head rotatably engageable with said element for forcing said tracer in constant engagement with the pattern and automatically determining the advance direction as a function of the contact tangent between the tracer and pattern, and means in said measuring head activated by engagement of said head with said element for transmitting two impulses to an electronic control for rotating said head clockwise or counterclockwise as soon as the pattern contour deviates from the contact tangent and for stopping rotation when the contact tangent coincides with the pattern contour.



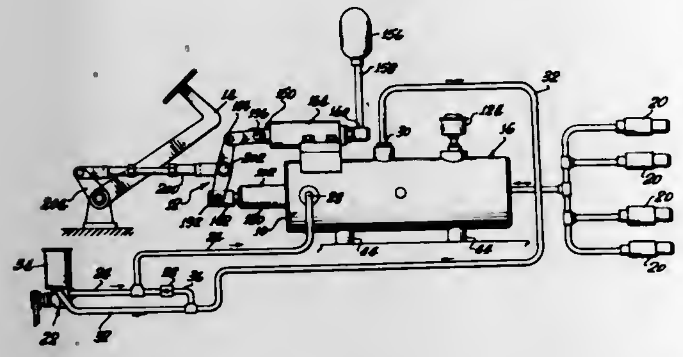
3,353,450
FLUID DRIVEN MOTOR UNIT FOR A DENTAL APPARATUS

Herbert Percy Killick and Percy Hawtin, Blackpool, Lancashire, England, assignors to The Dental Manufacturing Company Limited, Blackpool, England, a British company
Filed May 10, 1965, Ser. No. 454,317
Claims priority, application Great Britain, July 6, 1964, 27,831/64
2 Claims. (Cl. 91—175)



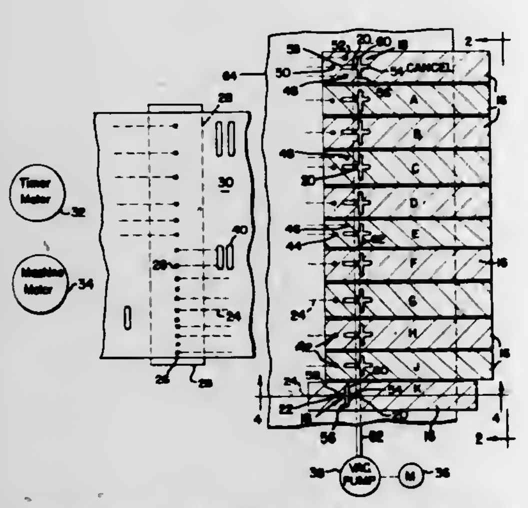
1. A drive unit to which a dental handpiece may be removably connected, said unit comprising:
- a housing,
- a fluid operated motor having a fixed angle swash plate, said motor being mounted within said housing,
- a gaseous fluid supply source connected to said motor which delivers to said motor on demand a supply of said fluid,
- said swash plate having a plurality of pistons operatively acting upon its outer peripheral surface,
- said pistons being longitudinally disposed within said motor and having an axial projection from one end thereof, providing a frictional contact between said axial projection and said swash plate,
- a drive shaft connected to a hub member,
- said hub member being an integral part of said swash plate and operatively connected thereto by bearing members, thereby allowing said shaft to rotate when said pistons are linearly moved by the gaseous fluid, and
- a stationary locating sleeve disposed about said drive shaft, means for securing said locating sleeve at one end to said housing, and resilient locking means mounted on said locating sleeve, whereby a dental handpiece may be drivingly connected to said drive unit.

3,353,451
FLUID OPERATED BOOSTER HAVING AN ACCUMULATOR SAFETY SYSTEM
Robert A. Garrison, 735 Via Lido Soud, Newport Beach, Calif. 92660, and Charles F. Schoelm, Long Beach, Calif.; said Schoelm assignor to said Garrison
Filed Oct. 20, 1965, Ser. No. 498,303
10 Claims. (Cl. 91—6)



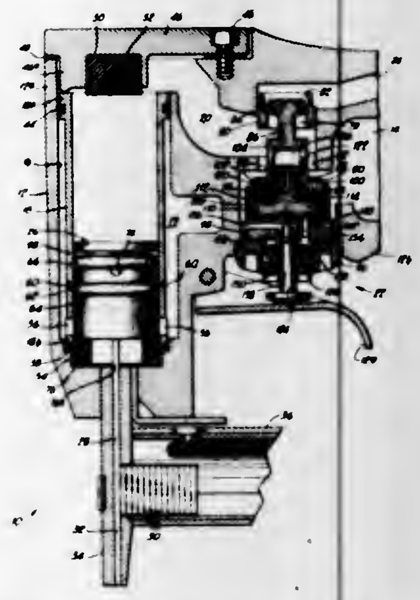
1. In a fluid operated booster, the combination of:
(a) housing means provided with cylinder means therein and provided with an inlet port;
(b) piston means reciprocable in said cylinder means;
(c) first valve means movable to an actuated position to apply fluid pressure in said inlet port to an area of said piston means;
(d) an accumulator;
(e) second valve means movable to an open position to apply fluid pressure in said accumulator to said area of said piston means;
(f) said second valve means being spaced from and being structurally separate from said first valve means;
(g) means biasing said second valve means closed; and
(h) lever means mechanically interconnecting said first and second valve means for moving said first valve means to said actuated position and for moving said second valve means to said open position upon movement of said first valve means to said actuated position.

3,353,452
PNEUMATIC PUSHBUTTON CONSTRUCTION
Roland D. Beck, Anaheim, and Reed A. Palmer, Los Alamitos, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Virginia
Filed Mar. 10, 1965, Ser. No. 438,659
9 Claims. (Cl. 91—36)



1. In combination: a base with a plurality of grooves having a plurality of openings therein; a plurality of pushbuttons slidably located respectively in said grooves, said buttons each having a channel construction to interconnect certain of said openings together in one position of the pushbuttons and to disconnect said certain openings from each other in another position of said pushbuttons, at least one pushbutton having its channel construction comprising a pair of right angled channels crossing each other intermediate the ends of said crossing channels.

3,353,453
FASTENER DRIVING TOOL
Howard B. Ramspeck, Chicago, Ill., assignor to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois
Filed May 21, 1965, Ser. No. 457,767
16 Claims. (Cl. 91—356)

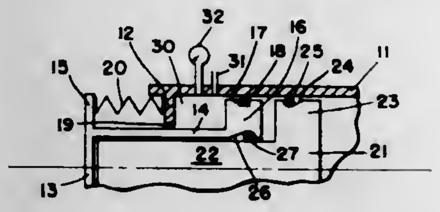


1. A control valve assembly for controlling a pneumatic fastener driving apparatus of the type having a power piston mounted in a power cylinder actuated in its drive stroke by the communication of the power cylinder with a fluid reservoir and automatically returned through a return stroke during the automatic sequential exhausting of the power cylinder, said control valve comprising first valve means movable between a first position exhausting said power cylinder to the atmosphere and a second position placing said power cylinder in communication with said fluid reservoir; a valve cylinder; a second valve means including a valve piston in said valve cylinder positionable to one position biasing said first valve means into said first position when said valve cylinder is connected to said fluid reservoir and simultaneously blocking pressurized fluid from said reservoir from acting against said first valve means in a direction to bias said first valve means into said first direction, and a second position wherein pressure differential on said valve means is effective to move said first valve means to its said second position in conjunction with the movement of said second valve means; operating means controlling the position of said second valve means; and time delay means for unblocking said pressurized fluid from acting on said first valve means thereby to return said first valve means to its said first position.

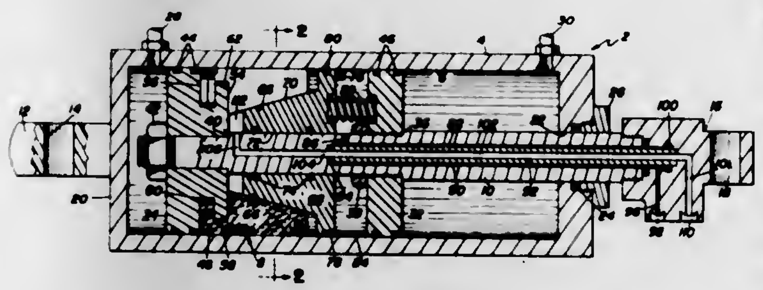
3,353,454
RATCHET
William F. Donovan, Aberdeen, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 5, 1966, Ser. No. 540,417
3 Claims. (Cl. 92—5)

1. In a ratchet, a cylinder having a sidewall and an inwardly extending flange integral therewith, a power piston having a substantially hollow cylindrical main body portion, outwardly extending rear flange and forward

head portions, said head having an external lateral surface provided with an annular recess and an O-ring in said recess engaging an inner surface of said cylinder sidewall, spring means positioned between said power piston rear flange and said cylinder flange to normally bias said power piston relatively rearward of said cylinder, a fluid drive piston having a main body portion extending within said power piston and an enlarged head portion with an annular lateral groove carrying an O-ring for engaging said cylinder sidewall forwardly of said power piston head, said power piston having an internal annular groove carrying an O-ring for engaging said fluid drive piston main body portion, said cylinder flange carrying an O-ring for engaging said power piston main body portion rearwardly of said power piston head internal O-ring, and means for delivering pressurized fluid into said cylinder and around said power piston main body portion intermediate said cylinder flange and power piston head to move said power piston forward, said power piston head internal groove having a rearward tapering sidewall portion to lock its O-ring between said pistons during forward movement of said power piston, and said fluid drive piston head groove having a forward tapering surface portion to lock its O-ring against said cylinder sidewall to prevent rearward movement of said fluid drive piston.

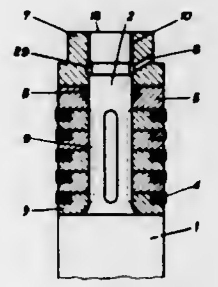


3,353,455
FLUID PRESSURE MOTOR
Frank Berry, Corinth, Miss., assignor to Westinghouse Air Brake Company, a corporation of Pennsylvania
Filed Sept. 20, 1965, Ser. No. 488,532
4 Claims, (Cl. 92—24)



1. A fluid pressure motor comprising an elongated cylinder having a bore closed at one end and open at the opposite end:
- a piston and rod assembly movably positioned in said bore and defining therewith head and rod chambers;
- a first conduit in fluid communication with at least one of said head and rod chambers, said assembly including a piston rod movable in the bore through said open end, said piston rod including second and third conduits;
- a first piston part secured against axial movement relative to the rod;
- a second piston part axially spaced from the first piston part and also secured against axial movement relative to the rod;
- a cam follower between the piston parts fixed against longitudinal movement relative to the rod and radially movable into and out of frictional engagement with said bore;
- a cam having an operating position in which it operatively engages the cam follower and another operating position in which it operatively disengages the cam follower, in one position the follower being in locking frictional engagement with the bore and in other position the follower being movable in the bore;
- said cam having first and second portions cooperating with said first and second piston parts to define first and second chambers, said first and second chambers in fluid communication with said second and third conduits, respectively;
- resilient means biasing said cam into one operating position; and
- fluid pressure means to move said cam into its other operating position against the bias of the resilient means, said fluid pressure means in fluid communication with said second and third conduits.

3,353,456
PISTONS FOR VERY HIGH PRESSURE OPERATION IN PUMPS OR COMPRESSORS
Helmut Bauer, Basel, Switzerland, assignor to Maschinenfabrik Burckhardt A.G., Basel, Switzerland, a corporation of Switzerland
Filed Sept. 16, 1965, Ser. No. 487,692
Claims priority, application Switzerland, Sept. 23, 1964, 12,346/64
11 Claims. (Cl. 92—258)

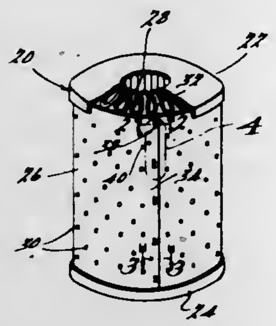


1. A piston for very high pressure operation comprising a central support member, a plurality of annular body members assembled in superposed relation along the length of said support member to form a cylindrical piston body of which the diameter is stepped at intervals along its axial length so as to define at least one piston ring receiving groove, at least one piston ring positioned in said groove and threaded means holding said annular body members together on said support member, the dimensions and modulus of elasticity of the material of said piston body in relation to the dimensions and modulus of elasticity of said support member being such that said body and support member contract to substantially the same extent in response to operational pressures acting upon their exposed end faces whereby alternating stresses at said threaded means of said support member during operation of the piston are substantially avoided.

3,353,457
METHOD OF MAKING A TUBULAR ELEMENT
David J. Whittingham and John D. Hopkins, Franksville, and Craig H. Cowles, Manitowoc, Wis., assignors to Walker Manufacturing Company, Racine, Wis.
Continuation of application Ser. No. 232,503, Oct. 23, 1962. This application Oct. 22, 1965, Ser. No. 522,334
11 Claims. (Cl. 93—1.1)

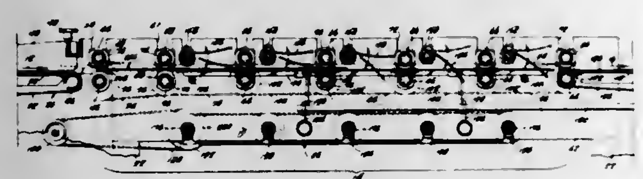
1. The method of forming a connection between overlapping ends of sheet material comprising the steps of positioning the ends in overlapping relationship, forming an offset tab means in one of the ends at a point disposed in the overlapping area of the ends, moving the

ends relative to each other to decrease the overlap therebetween sufficiently for the formed tab to engage the outer edge of the other end for precluding relative movement in the return direction, and providing means for precluding relative movement between the ends in a direction opposite to the return direction.



3,353,458
APPARATUS FOR STRIPPING DIE CUT BLANKS

Albert D. Johnson, 27 Fairview Drive,
St. Davids, Pa. 19087
Filed Dec. 4, 1964, Ser. No. 415,938
21 Claims. (Cl. 93—36)



2. Apparatus for stripping die cut scrap portions including selvage edges from paperboard blanks comprising spaced parallel first and second sets of nip rolls, means for driving said sets of nip rolls in rotation with said second set being driven at a higher speed than said first set such that the passage of blanks between said sets of nip rolls with the selvage edges parallel to said rolls effects a tensioning of the blanks and a stripping of the selvage edges, a plurality of closely spaced parallel reed elements, means for oscillating said reed elements, and means for progressively advancing the blanks to effect intermittent contact with the reed elements at closely spaced intervals thereon whereby the contact of the reed elements with the blanks effects a stripping of the scrap portions.

3,353,459
BOX PREFORMING MACHINE AND METHOD

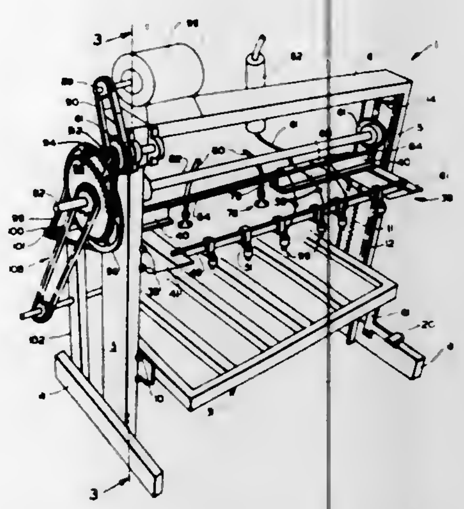
William A. Owsley, Diablo, Calif., assignor, by mesne assignments, to Filper Corporation, San Ramon, Calif., a corporation of California
Filed Oct. 19, 1964, Ser. No. 404,567
7 Claims. (Cl. 93—36.6)

1. In a box forming machine for partially forming a box from a planar box blank having crease lines therein defining a pair of adjacent central panels between two terminal panels, each panel including a box sidewall and a top closure flap and a bottom closure flap, said sidewall and said top and bottom flaps being defined by crease lines at the junctures thereof, one side of said blank being an inner surface to face into said box when the latter is folded along said crease lines:

(a) blank supporting means for supporting a vertical stack of blanks with said inner surface facing upwardly;

(b) a vertically reciprocal adhesive applicator over said stack mounted for movement into and out of contact with said upwardly facing inner surface of the uppermost blank of said stack to deposit adhesive at predetermined points on said uppermost blank adjacent said crease line defining the junctures between said top flaps and said sidewalls;

(c) applicator actuating means connected with said applicator for so moving it;

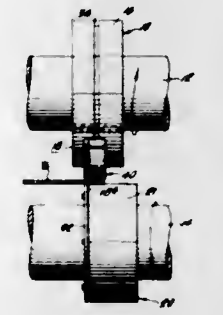


(d) blank removing means for removing each uppermost blank from said stack after said adhesive has been deposited thereon;

(e) means operatively connected with said applicator actuating means for moving said blank supporting means toward said applicator a distance approximately equal to the thickness of one blank when said uppermost blank is removed from said stack.

3,353,460
APPARATUS FOR WORKING SHEET MATERIAL

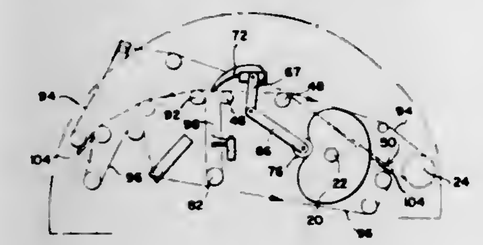
Edward V. Henc, 302 Netherington Drive,
Broomall, Pa. 19008
Filed May 21, 1965, Ser. No. 457,582
12 Claims. (Cl. 93—58.2)



1. A rotary die cutting apparatus comprising a rotatable die head, means mounting a cutting blade on the outer periphery of said die head, a rotatably mounted backing anvil, said backing anvil comprising a hub and a cover assembly mounted on said hub including an outer resilient blanket member against which the cutting blade engages during rotation of the die head and backing anvil, means mounting the cover assembly for movement circumferentially relative to the hub, and means mounting the die head and backing anvil for rotation so that the peripheral edge of the cutting blade and peripheral surface of the resilient blanket are moving at different relative speeds whereby the cutting blade effects movement circumferentially of the cover assembly relative to the hub so that the die blade engages a different portion of the resilient blanket during successive cycles of the die head.

3,353,461
ATTACHMENT FOR ENVELOPE HANDLING MACHINE

Leslie B. Larson, 2306 N. Janssen Ave.,
Chicago, Ill. 60614
Filed Dec. 27, 1965, Ser. No. 516,382
2 Claims. (Cl. 93—62)



1. An envelope handling machine, comprising:

(A) a housing;

(B) a plurality of rollers transversely supported in said housing;

(C) at least two belts supported on several of said rollers one above the other so that an abutting portion of the path of rotation defines a path for horizontal conveyance of envelopes;

(D) means driving said roller;

(E) a lower roller vertically spaced beneath said path for horizontal conveyance and engaging the top of the lower of said belts so as to define a cul de sac in said path for horizontal conveyance;

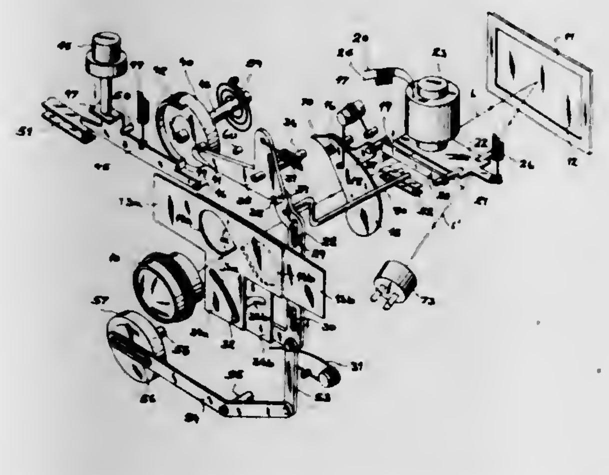
(F) finger means mounted for reciprocal movement into and out of said path against the roller nearest the entrance of said cul de sac, so as to retain an envelope flap against said roller as the envelope descends vertically into said cul de sac;

(G) cam means actuatable by said means for driving said rollers for directly moving said finger means;

(H) bar assembly means located within said cul de sac, said bar means adjustably mounted for upward and downward movement therein and leaf spring assemblies attached to the top of said bar assembly means for engaging contact with said envelope to lift same back into said path for said horizontal conveyance.

3,353,462
EXPOSURE - CONTROL SYSTEM FOR PHOTOGRAPHIC CAMERAS AND THE LIKE

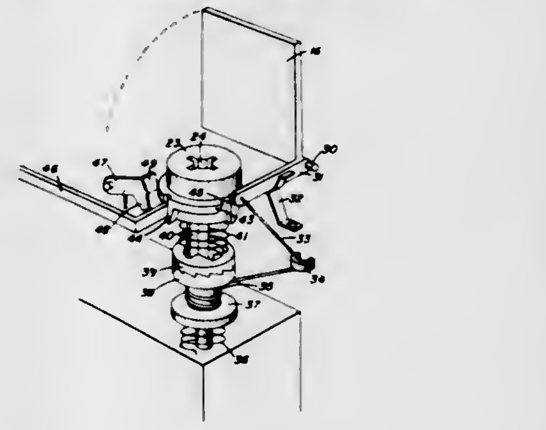
Nabuo Suzuki, 162 Minami-Tunashima-Kohoku-ku,
Yokohama, Japan
Filed July 13, 1965, Ser. No. 471,684
15 Claims. (Cl. 95—10)



1. In a camera having an optical objective for projecting light from an external object onto a photosensitive surface, the combination therewith of light-control means in line with said objective for normally blocking illumination of said photosensitive surface; photosensitive means disposed to receive reflected light rays from said photosensitive surface in an unblocking position of said light-control means; trigger means operable to move said light-control means into said unblocking position whereby a radiant flux is directed by said objective onto said photosensitive surface; circuit means connected to said photoelectric means for producing a progressively increasing electric output in response to said flux; operating means for rapidly restoring said light-control means to a blocking position; and electronic switch means connected to said circuit means for tripping said operating means in response to a predetermined magnitude of said electric output whereby said flux is substantially instantaneously cut off.

3,353,463
FLASH SOCKET ARRANGEMENT

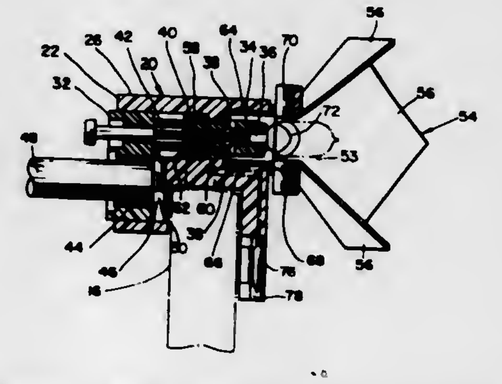
William H. Horton and James E. Dierks, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 12, 1965, Ser. No. 471,014
3 Claims. (Cl. 95—11)



1. In a photographic device, the combination comprising movable socket means to detachably receive a package containing a plurality of flash lamps, door means movable between a position covering the socket means and a position uncovering the socket means, drive means for selectively moving the socket means and received package to sequentially place the flash lamps in a flash circuit and means interconnecting the door means and the drive means to energize the drive means upon movement of the door means to one of its positions.

3,353,464
PHOTOGRAPHIC FLASH APPARATUS AND METHOD

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Continuation of application Ser. No. 420,984, Dec. 24, 1964. This application Mar. 6, 1967, Ser. No. 621,069
13 Claims. (Cl. 95—11)



1. Photographic flash apparatus for permitting open flash exposures with a shutter mechanism including photoresponsive means normally illuminated by light from the

subject being photographed for automatically establishing the proper exposure interval for said shutter in accordance with the light from said subject incident on said photoresponsive means, said flash apparatus comprising, in combination:

means for covering and completely shielding said photoresponsive means of a shutter from light from the subject being photographed when said flash apparatus is operatively coupled with said shutter;

illumination means for illuminating said photoresponsive means with a predetermined amount of light during a flash exposure to effect a predetermined response of said photoresponsive means and thereby automatically establish a predetermined exposure interval for said shutter, the length of said exposure interval being established by said illumination means independently of the flash lamp employed during said exposure interval; and

means for firing a flash lamp following initiation of said exposure interval and, a predetermined time after firing of said flash lamp, energizing said illumination means for terminating said exposure interval.

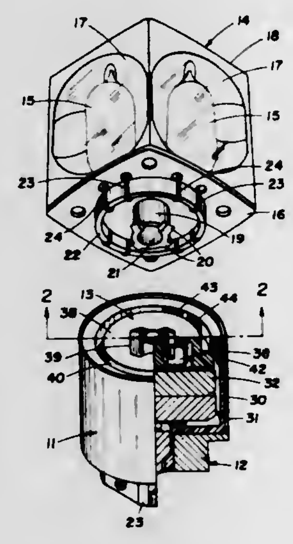
3,353,465

MINIATURE FLASH ATTACHMENT AND PHOTOFLASH LAMP SOCKET RECEIVING PORTION

Dean M. Peterson and Charles E. Pickering, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 14, 1964, Ser. No. 417,913

14 Claims. (Cl. 95—11.5)



1. For use with a multilamp flash unit having a plurality of ignitable photoflash lamps mounted on a base with a depending connecting post and a plurality of radially extending lugs, a photoflash attachment comprising:

a hollow body of electrically conductive material,

a source of electric potential having a pair of terminal connecting poles disposed within the body,

spring retaining means positioned above the source and engageable with at least a pair of the lugs of a multilamp flash unit,

a cover overlying the spring retaining means and defining a central access opening permitting insertion of the connecting post and lugs of a multilamp flash unit into the hollow body for engagement of the spring retaining means with the said pair of lugs, the cover further defining an annular groove coaxial with the access opening,

a pair of contact terminals disposed within the groove for electrical contact with lead-in wires of a selected one photoflash lamp of an inserted multilamp flash unit,

a pair of electrical leads, one lead connecting one of the terminals with one pole of the source and the other connecting the other terminal with the hollow body, and

contact means respectively connected to the other pole of the source and the hollow body for connection to a camera synchronizer switch.

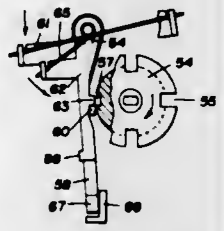
3,353,466

PHOTOGRAPHIC STILL CAMERAS WITH BUILT-IN FLASH

Michael Charney, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 24, 1965, Ser. No. 457,980

1 Claim. (Cl. 95—11.5)



In a roll film camera having means to wind film to successively place frames of film on a picture taking axis, a rotatable socket portion to receive and retain a unitary package containing a plurality of photoflash lamps and individual reflectors in a fixed position relative thereto; means operatively connecting the film wind means and socket means to operatively rotate the socket portion and received package through selected positions to successively place the photoflash lamps at a photoflash synchronizing circuit location with corresponding film frames for flashing the lamps in timed relation with camera operation, the operatively connecting means including a rotatable socket cam engaging the socket portion, drive means to rotate the cam and socket portion with film wind, a laterally movable metering pawl engageable with slot means defined by the cam to terminate cam rotation when the socket is moved to a successive position, and means responsive to camera operation to withdraw the metering pawl from engagement with the slot means and to move the metering pawl out of alignment therewith by lateral movements of the pawl to permit further cam and socket rotation, the improvement comprising a pivotable latch lever to prevent reengagement of the metering pawl after camera operation resulting from a manual rotation of the socket portion before camera operation, the latch lever having means engaging the slot means defined by the cam and preventing both cam rotation and lateral movement of the pawl during cam engagement and means responsive to pawl movement to disengage the latch lever but remain in alignment with the slot means in response to camera operation.

3,353,467

FLASH PHOTOGRAPHY

Paul J. Ernisse and Michael S. Montalto, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 24, 1965, Ser. No. 458,015

25 Claims. (Cl. 95—11.5)

14. A photographic camera comprising:

operating means to make an exposure,

means to reset the operating means after each exposure,

a rotatable socket to detachably receive a unitary package containing a plurality of photoflash lamps,

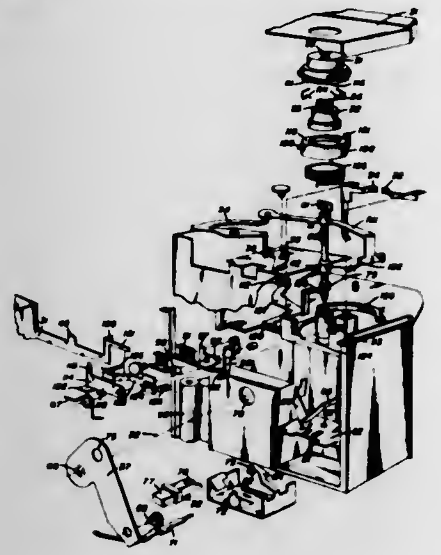
a photoflash circuit with fixed terminal means to place a selected one lamp in the circuit and flash the lamp in timed relation with the operating means,

drive means to rotate the socket and received package to place successive others of the lamps in the circuit,

means interconnected to the resetting means to energize the drive means during the resetting of the operating mechanism,

latching means to operatively hold the drive means energized after the operating mechanism is reset, and

means responsive to the operating means to permit the drive means after exposure making to rotate the socket and place a successive one other lamp in the circuit.



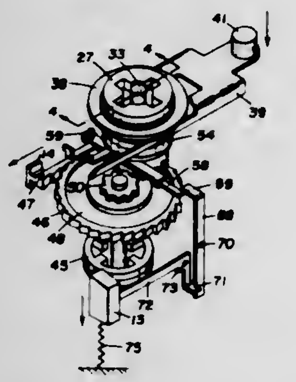
3,353,468

PHOTOGRAPHIC STILL CAMERAS WITH BUILT-IN FLASH

David E. Beach, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 24, 1965, Ser. No. 458,016

12 Claims. (Cl. 95—11.5)



4. In a roll film camera having means to wind film to successively place frames of film on a picture taking axis, the combination comprising a rotatable socket portion to receive and retain a unitary package containing a plurality of photoflash lamps and individual reflectors in a fixed position relative thereto; and means operatively connecting the film wind means and socket portion to operatively rotate the socket portion and received package through selected positions to successively place the photoflash lamps at a photoflash synchronizing circuit location with corresponding film frames for flashing the lamps in timed relation with camera operation, the operative connecting means comprising:

a rotatable socket cam releasably engaging the socket portion,

indexing means engaging the cam to prevent cam rotation when the socket is in a selected position,

slip clutch means to rotate the cam with film wind until engagement by the indexing means,

means responsive to camera operation to release the indexing means from engagement with the cam,

and means preventing reengagement of the indexing means until the next successive selected position of the socket portion and corresponding lamp is at the photoflash circuit location.

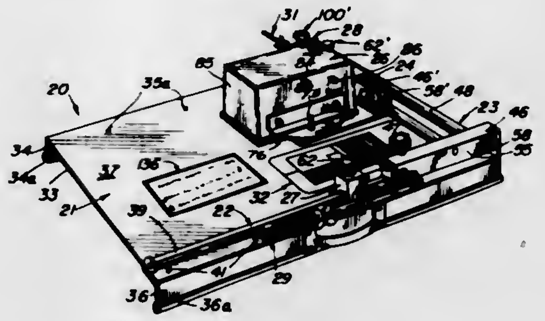
3,353,469

MULTIPLE CONTACT PRINTING MACHINE

Lyndon V. Grover, 319 N. Chevy Chase, Glendale, Calif. 91206

Filed Oct. 7, 1964, Ser. No. 402,075

38 Claims. (Cl. 95—73)



1. A graphic arts easel for the multiple positioning of an image with respect to a workpiece, comprising in combination:

(a) a table having a surface for supporting the workpiece;

(b) a rigid guide rail fixedly secured to said table;

(c) a rigid carriage movably supported on said rigid guide rail for movement in a first direction parallel to said table surface;

(d) a carriage travel stop means movably supported on said rigid guide rail engageable with abutment surfaces on said rigid carriage to limit movement of said carriage along said rigid guide rail, and providing with said carriage and adjustable repeatable travel distance between said carriage and said carrige stop means;

(e) a support movably supported on said carriage for movement in a second direction parallel to said table surface and transverse to said first direction; and

(f) an image holder supported by said support and having an image support surface directed toward said table surface.

3,353,470

AUTOMATIC CONVEYING DEVICE

Ronald S. O. Zane, 2572 Hamner Ave., Norco, Calif. 71760

Filed Apr. 19, 1965, Ser. No. 449,223

10 Claims. (Cl. 95—94)

9. An automatic dental X-ray plate developing apparatus comprising, in combination:

(a) containing means for a plurality of X-ray developing solution baths;

(b) support means for said containing means for said baths;

(c) elevator means adapted to move up and down through a fixed path of travel, and support and movement guidance means therefor;

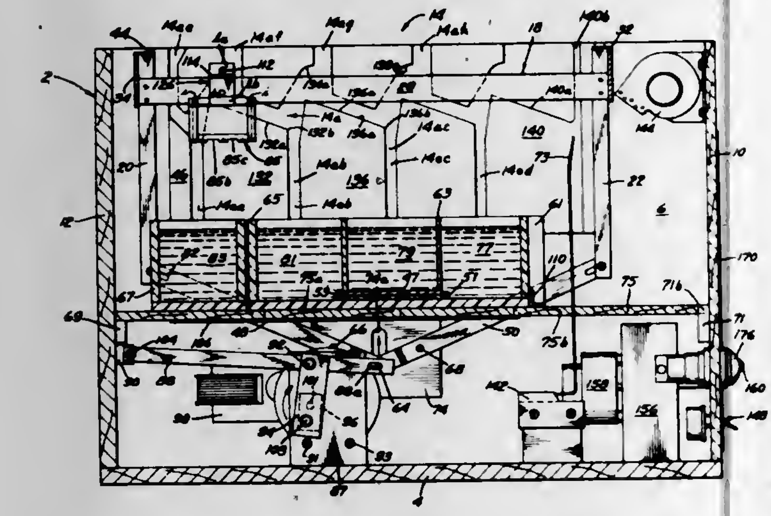
(d) elevator drive means, including prime mover means and motive power transmitting means interconnecting it with said elevator means so characterized as to induce the latter to move through its fixed path of travel upon actuation of said prime mover means;

(e) holding means for dental X-ray plates so shaped, sized and positioned as to hold the plates in any space within said containing means for said baths adapted to contain a body of bath solution, and so characterized as to permit contact of bath liquid solution therein with said X-ray plates during operation of said developing apparatus;

(f) support and carrying means for said holding means adapted to rest on said elevator means and ride it, in horizontally sliding relationship, as it travels up and down through its fixed path of travel, said support and carrying means having outwardly extending projections;

(g) guide means adapted to engage said outwardly extending projections and induce them to travel forwardly a predetermined distance during each up and down trip of said elevator means, thereby causing forward progression of the assembly comprising the support and carrying means for said holding means, the holding means proper and any dental X-ray plates held thereby said predetermined distance with each up and down trip of said elevator means during operation of the developing apparatus, comprising:

  (1) a pair of wall-like members disposed either side of said support and carrying means in generally parallel relationship, the facing surfaces of said wall-like members being distinguished by the presence of guide-way channels for said outwardly extending projections, the consequent channel patterns on the two wall-like members being in mirror image relationship, and the guide-way channels serving to receive said projections in generally perpendicular, relative to the wall-like members, relationship;



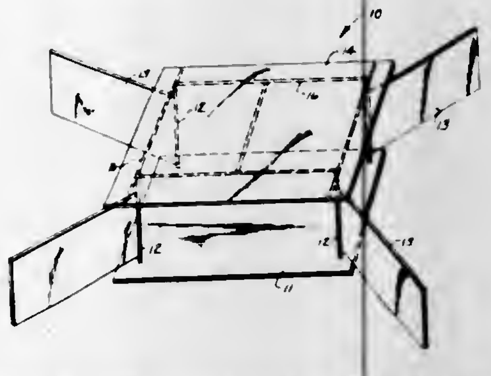
  (2) the positional relationships of the involved parts relative to each other and the character and layout of the guide-way channel patterns being such that the two outwardly extending projections of said support and carrying means are urged forwardly by the channels a sufficient distance to advance them, the dental X-ray plate holding means and any dental X-ray plates held thereby from the resident station for any one step of the X-ray plate developing process performed by the automatic dental X-ray developing apparatus to the station for the next successive step of the process with each up and down trip of said elevator means;

(h) control means adapted to automatically energize said elevator drive means after successive time intervals corresponding to X-ray plate immersion times in the separate X-ray developing solution baths and in proper chronological sequence for X-ray plate developing purposes, and for a time sufficient for said drive means to impel the elevator means through one complete up and down travel cycle on its fixed path of travel;

(i) the various parts of the X-ray plate developing apparatus being so sized, configured, supported and positioned, with accessory positioning means where necessary, to form an integrated processing unit adapted to hold exposed X-ray plates, with said holding means for dental X-ray plates, immersed in each of said developing solution baths, in proper sequence, the predetermined time necessary to yield developed plates after immersion in all of said baths and to automatically move the plates from bath to bath, and finally out of the last bath, by periodic up and down travel of said elevator means with consequential upward and forward movement of the aforesaid assembly comprising the support and carrying means for said X-ray plate holding means, the holding means proper and any X-ray plates held thereby at the proper times for successful operation of said automatic developing apparatus.

3,353,471
AIR COOLED PATIO STRUCTURE

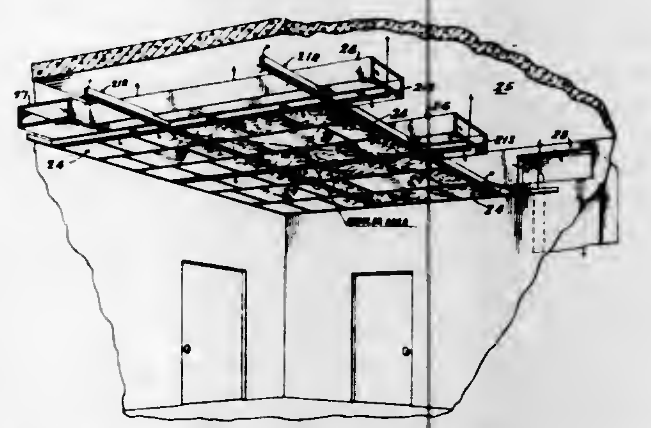
Gordon O. Roberts, Rte. 1, East Cove,
Inverness, Fla. 32650
Filed Jan. 25, 1967, Ser. No. 611,717
5 Claims. (Cl. 98—32)



1. An air-cooled patio structure providing a maximum of comfort to the occupants thereof comprises, in combination, a concrete base member providing support beams for a plurality of spaced apart pipe members, a rectangular roof member providing protection for the occupants against precipitation and the like, a plurality of air scoop panels providing directing means and control means for air to pass through said structure, hinge means for said air scoop panels providing pitted means for said panels, inverted L-shaped rod members providing a means of securing said air scoop panels in any desired position.

3,353,472
DROPPED CEILING VENTILATOR APPARATUS

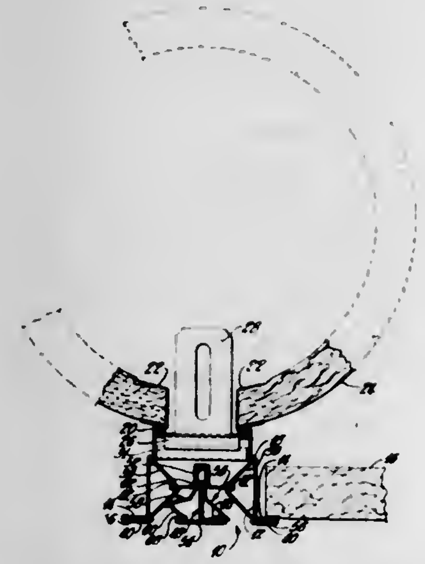
Jon W. Lee, Campbell, Calif., and Jack T. Feld, Granville, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed May 13, 1965, Ser. No. 455,476
7 Claims. (Cl. 98—40)



1. A dropped ceiling construction having a rectilinear support grid for ceiling elements, air supply means, air return means and lighting fixtures and suspension means for supporting said grid at a selected level beneath the structural ceiling of a building, in which said support grid consists of (1) a plurality of elongated, inverted, generally T-shaped elements, each of said elongated elements having an outwardly turned flange at each side of its bottom edge, said elongated elements being spaced to define rectilinear modular areas of said dropped ceiling, some of said elongated elements being air-flow elements and having vertically extending air-flow passageways through the central portions thereof, each of said modular areas adjacent one of the walls of the ceiled room being defined by structure adjacent such wall and at least two of said elongated elements at least one of which is an air-flow element and each of said modular areas remote from such walls being defined by at least three of said elongated elements at least two of which are air-flow elements, at least one of said air-flow elements defining each of said modules having a continuous air duct extending therealong above the level of said flanges and communicating along its length with the vertical passageway in the associated air-flow element for the flow of air between the space below said ceiling structure and said air duct, (2) additional elongated, inverted, T-shaped elements extending between and generally transverse to said module defining elements for cooperation therewith in supporting ceiling panel boards, light fixtures and the like within each of said modules, and (3) retaining means for connecting said elongated elements to each other.

3,353,473
LINEAR AIR DIFFUSERS

Thomas M. Oneson, Newark, Thomas W. Journell, Granville, and Clifford D. Smith, Jr., Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed June 24, 1966, Ser. No. 560,313
9 Claims. (Cl. 98—40)



1. An elongated air diffuser, for connection to a longitudinal slot within an air conduit to provide even distribution of air from the conduit along the length of the slot comprising:

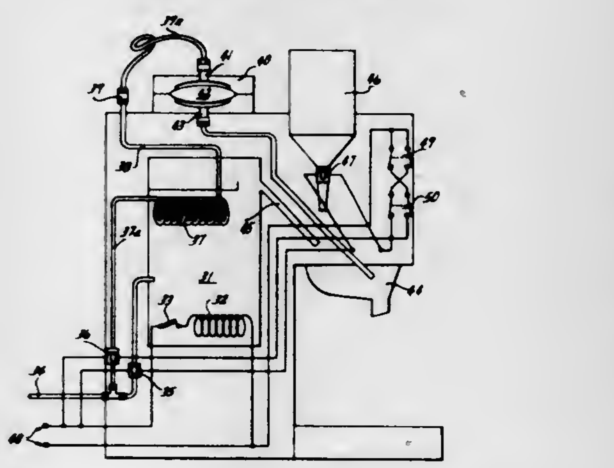
an elongated channel with sidewalls defining a longitudinal exit opening extending between the walls along the length thereof for the emission and even distribution of air into an adjoining room, the channel having a webwork connecting the walls to each other with a plurality of openings within the webwork for the passage of air from an air conduit therethrough;

a plurality of vanes, each depending within the space provided between the sidewalls along a portion of the edge of each opening within the webwork and disposed at an angle to the flow of air through the air conduit so that an air passage is formed, between each vane connected to the edge portion of each opening and that connected to the edge portion of an adjacent opening;

a latticework of vanes connected to the channel with each vane of the latticework closely associated with the depending vanes to form a passage, the shortest distance therethrough being no less than the distance measured arcoss the opening within the web in the direction of air flow through the conduit, so that air flowing from the conduit into the openings between the web will have the component of velocity in the direction of the air flow through the conduit substantially removed and will generally flow evenly from all the passages created between the tandemly associated vanes in a direction substantially equivalent to the direction of the passage created between the vanes.

3,353,474
BEVERAGE DISPENSER

Albert W. MacCorkell, 3925 N. 31st Ave.,
Phoenix, Ariz. 85017
Filed Nov. 24, 1965, Ser. No. 509,491
1 Claim. (Cl. 99—281)



A dispenser adapted to provide both fresh-brewed beverages and instant beverages comprising in combination:

(a) a water heating tank having a cold water inlet and an overflow hot water outlet;

(b) a thermostatically controlled electrical water-heating element in said tank;

(c) a tubular heat exchanger positioned in said tank;

(d) a mixing-dispensing chamber having an outlet adapted to discharge liquid into a drinking vessel;

(e) a fresh-brewing chamber having a hot water inlet and a brewed beverage outlet and adapted to be opened and closed for insertion and removal of water-permeable bags of beverage base;

(f) solenoid-actuated dispensing means for dispensing a measured quantity of water-soluble instant beverage concentrate into said mixing-discharge chamber;

(g) first conduit means for supplying cold water under pressure to said dispenser;

(h) solenoid-actuated valve means in said conduit means for directing the cold water into either the tube side of said heat exchanger or into the cold water inlet of said water-heating tank;

(i) second conduit means communicating between the discharge of said heat exchanger and the hot water inlet of said fresh-brewing chamber;

(j) third conduit means communicating between the brewed beverage outlet of said fresh-brewing chamber and said mixing-dispensing chamber;

(k) fourth conduit means communicating between the overflow hot water outlet of said water-heating tank and said mixing-discharge chamber;

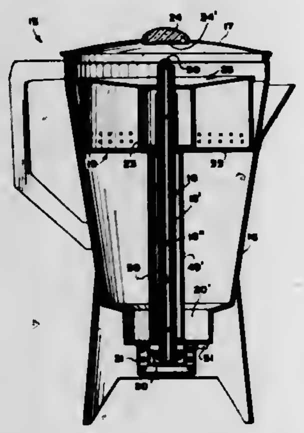
(l) electrical switch means controlling said solenoid-actuated dispensing means and said solenoid-actuated valve means to provide as modes of operation

(1) a first mode whereby cold water flows under pressure from the first conduit means through the valve means, through the tube-side of the heat exchanger, into the fresh-brewing chamber, through the water-permeable bags of beverage base and the brewed beverage flows from the fresh brewing chamber into the mixing-discharge chamber and thence to a drinking vessel, and

(2) a second mode whereby cold water flows from the first conduit means through the valve means, into said water heating tank causing heated water to overflow into the mixing-discharge chamber where it mixes with and dissolves a measured amount of water-soluble instant beverage concentrate delivered by said dispensing means, the resulting instant beverage flowing thence into a drinking vessel.

3,353,475
BEVERAGE BREWERS, COFFEE PERCOLATORS AND THE LIKE

David Robbins, 7 Dogleg Lane,
Roslyn Heights, N.Y. 11577
Filed Apr. 23, 1965, Ser. No. 450,458
5 Claims. (Cl. 99—312)



1. In a beverage brewer, coffee percolator and the like, a pot, a main strainer cup of a diameter substantially that of the interior of said pot, an auxiliary strainer cup of substantially smaller diameter than said main strainer cup, centrally within said main strainer cup; only the bottom wall of said auxiliary strainer cup being perforated, a vertical tube passing centrally through both said strainer cups, a member mounted on the pot, presenting a surface above the upper end of said tube, to disperse downwardly, liquid discharged from the upper end of said tube and a shield means below said surface, affording passage of liquid dispersed by said surface only into said auxiliary strainer cup.

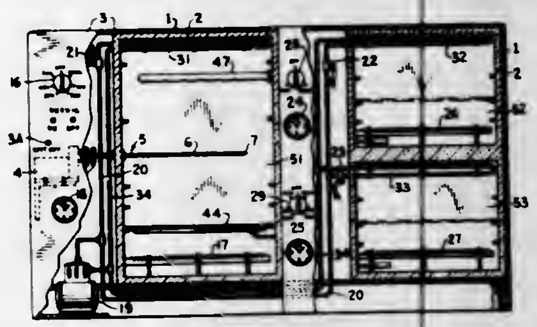
3,353,476
GASTRONOMIC MACHINE

Myron F. Goodman, 3301 St. Paul, Apt. 209, Baltimore, Md. 21218, and Phillip Clausen, Oxon Hill, Md.; said Clausen assignor to said Goodman
Filed Jan. 11, 1966, Ser. No. 519,892
1 Claim. (Cl. 99—328)

A food preparation device having plural food reception chambers with inner and outer walls, inner wall cooling tubes comprising controllable chamber refrigerant circulating means each including a solenoid tube shutoff valve, and a refrigerant condensing means connected for maintaining reduced chamber temperature upon solenoid energization,

electric chamber heater means in a plurality of said chambers and first clock-controlled switch means connected thereto and to a said shutoff valve of said chamber for maintaining a preset elevated chamber temperature starting at a first predetermined clock set start-of-cooking time and for lowering said chamber temperature at a first preset end-of-cooking time,

motorizedly rotatable spit means having a hollow interior in at least a second said chamber, located in cooking relationship to a said heater means and adapted for food impalement and rotation, electrical food interior temperature sensing means within the hollow of said spit means, and manually presettable detection and control means slidingly connected to said sensing means and to said heater means for deenergization control thereof upon detection of attainment of a preset internal food temperature,



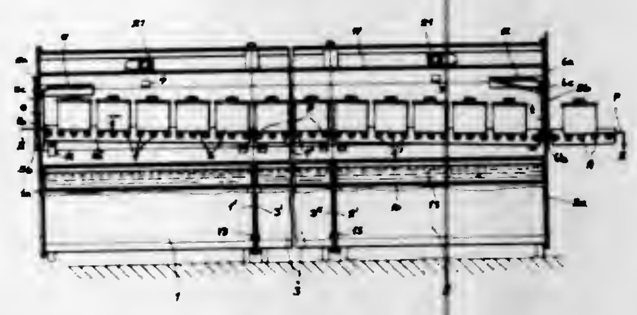
further clock controlled switch means connected to a said heater means in said second chamber and to said motorized spit means and to the said shutoff valve of said chamber for initiating rotating spit cooking at a second predetermined clock set start-of-cooking time,

spitted food basting means comprising an underlying tray, and pump means connected thereto and operative to pump basting fluid from said tray to an outlet over said spit, and

oven heat resisting inter-wall insulation having a thermal insulating value substantially exceeding that of asbestos.

3,353,477
STEAM COOKING APPARATUS

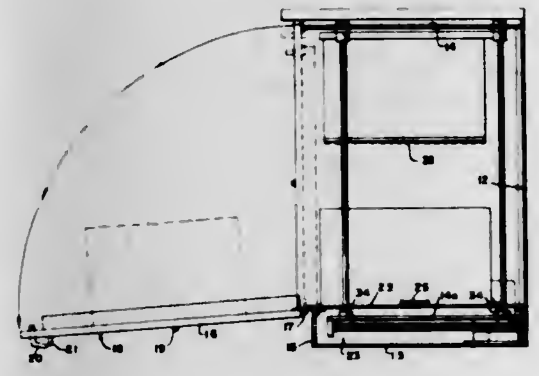
Alfred Wilhelm, Essen, and Alfred Löhr, Bochum, Germany, assignors to Firma F. Kuppersbusch & Sohne Aktiengesellschaft, Gelsenkirchen, Germany, a corporation of Germany
Filed Apr. 11, 1966, Ser. No. 541,554
Claims priority, application Germany, Jan. 28, 1964, K 51,959
5 Claims. (Cl. 99—360)



1. An apparatus for the cooking of foodstuffs contained in a multiplicity of receptacles, comprising an elongated fluidtight chamber composed of a plurality of longitudinally adjoining compartments, including an inlet compartment with an entrance opening and an outlet compartment with an exit opening, each of said compartments being provided with a set of parallel, transversely extending idler rollers aligned with those of every adjoining compartment and forming therewith a substantially planar continuous support for a series of receptacles advancing from said entrance opening to said exit opening, said rollers being in a plane sloping downwardly from said entrance opening to said exit opening, the supporting level of said rollers being above the lower edges of said entrance and exit openings; steam-generating means communicating with the upper part of said chamber above said rollers; and upwardly slidable lids retractably obstructing said entrance and exit openings, while bearing upon inner wall surfaces of said inlet and outlet compartments immediately adjacent the first and last of said rollers, respectively.

3,353,478
WASTE COLLECTING AND COMPACTING UNIT

Stephen Hopkins, 5209 Wapokaneta Road,
Washington, D.C. 20016
Filed Feb. 24, 1966, Ser. No. 529,886
1 Claim. (Cl. 100—52)



A kitchen waste compacting unit comprising

(a) an expandable receptacle adapted to be seated upon a firm base in a condition of constriction less than its expanded condition and having an open top,

(b) a shock dissipating compacting member complemental to the expandable receptacle open top and having a stroke depth equal to the depth of the receptacle,

(c) three worm shafts vertically mounted for rotation in a base support beneath the open top receptacle,

(d) a press member connected to said compacting member and having complemental threads with said worm shafts and driven thereby, and

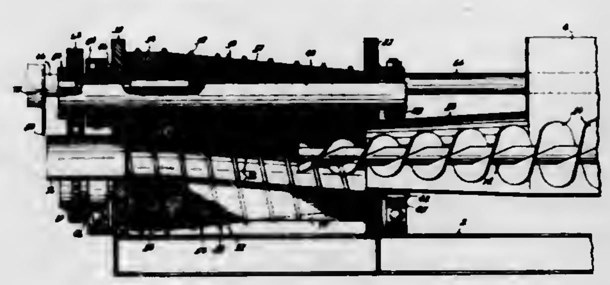
(e) drive means including an electric drive motor, reducer and chain drive to drive sprockets secured to rotate the worm shafts which are geometrically located at the vertices of an equilateral triangle connected to drive said worm shafts in synchronism to cause said compacting member to enter said receptacle under even pressure starting at a high point with the entrance end of the compacting member above the top of the receptacle sufficient to permit dumping of waste into the receptacle prior to waste compaction, thereafter descending into the receptacle compressing and compacting waste until said compacting member encounters a predetermined force causing cessation of the compacting cycle after which the compacting member will return to an origin position above the receptacle,

(f) a closed cabinet structure about the unit having a primary door on the front for removing the receptacle to discharge its compressed contents, and a secondary door in said primary door of smaller area than said primary door and being located at a point above the top of the waste receptacle, and

(g) electrical interlocks between said primary door and the line supply to said motor and said secondary door and the line supply to said motor so that the motor cannot be energized to cause the compacting member to enter the receptacle with either door open.

3,353,479
HAY PELLETING DEVICE

Merwin W. Gilmore and Jerald W. Bishop, Clay Center, Kans., assignors to Gilmore-Tatge Manufacturing Co., Inc., Clay Center, Kans., a corporation of Kansas
Filed May 13, 1964, Ser. No. 367,037
11 Claims. (Cl. 100—86)



1. In a hay pelleting device:

(a) a base,

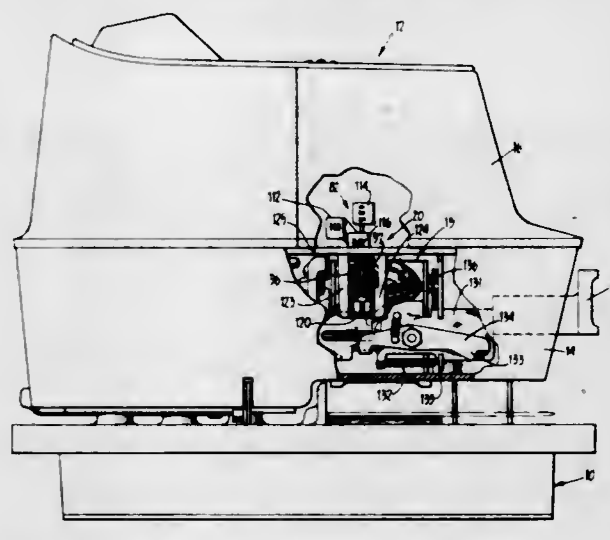
(b) a series of conically tapered drums carried by said base each for axial rotation, said drums being parallel, coextensive, and angularly spaced apart whereby they define in skeleton form a conically tapered chamber therebetween, each of said drums being provided with a raised helical rib at the surface thereof, said rib being of generally uniform pitch,

(c) means for rotating said drums at equal speeds in the same direction whereby said ribs tend to advance hay introduced into the larger end of said conical chamber toward the smaller end of said chamber, whereby said hay is radially compressed and twisted about the axis of said chamber, and

(d) means for introducing hay into the larger end of said conical chamber.

3,353,480
PRINT WHEEL SETTING CONTROL IN POSTAGE METERS

Peter M. Lowell, Pleasanton, Charles S. Balaz, Dublin, and Maynard E. Anderson, Pleasanton, Calif., assignors to Friden, Inc., a corporation of Delaware
Filed Mar. 14, 1966, Ser. No. 533,991
4 Claims. (Cl. 101—91)



1. In a postage meter,

a frame,

an indicia print drum including value type wheels mounted in said frame and cyclically rotatable from a normal full-cycle position,

- a series of date type wheels mounted in said print drum and independently adjustable to each of a plurality of angular positions to effect printing of a date upon each rotation of said drum,

means associated with each of said date type wheels for controlling the adjustment thereof,

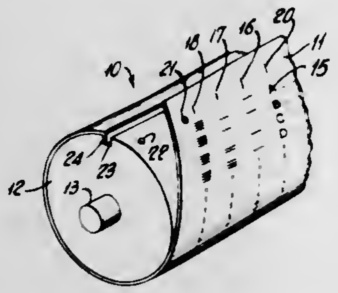
- a manually operable setting means normally engaged with said associated means to selectively control the angular adjustment of each of said date type wheels and disengageable therefrom to enable cyclic rotation of said print drum, and
- a manipulative member operable to disengage said setting means from said associated means and to effect cyclic operation of said print drum.

3,353,481
HIGH SPEED PRINTER DRUM WITH PRINT PLATE MOUNTING MEANS

Carmine J. Antonucci, Uniondale, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Filed Nov. 27, 1964, Ser. No. 416,192

8 Claims. (Cl. 101—93)



1. In a high speed printer, a print type assembly comprising,

hammer means including electrical actuating circuitry for effecting impact printing,

- a first carrier member formed of a relatively thin flexible material including raised type elements formed integrally therewith in a predetermined pattern for impact printing by said hammer means,
- a code on the first carrier member positioned to provide information as to the location and identity of the raised type elements,
- a second carrier member formed of a substantially rigid material with relatively high inertia and including means to move the second carrier member relative to said hammer means, and

means to fixedly hold the first carrier member relative to the second carrier member so that the first carrier member is supported during a printing cycle.

3,353,482
FLEXIBLE TYPE MOUNTS IN HIGH SPEED PRINTING MACHINES

Anthony A. Sariti, Lake Park, Fla., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 11, 1966, Ser. No. 541,632

5 Claims. (Cl. 101—93)

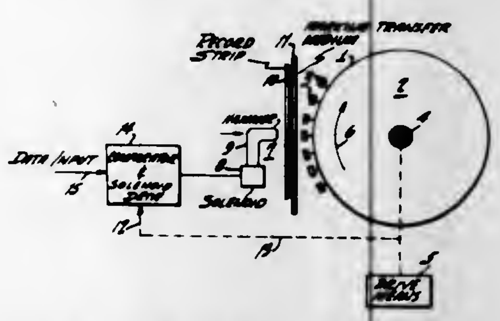
1. Printer apparatus comprising

- a carrier body having an endless surface, said carrier body being revolvable to impart peripheral motion to said surface,
- a plurality of type character mounts extending from said surface, each of said mounts being thin and flexible along a first direction and elongated and rigid along a second direction perpendicular to said first direction,

print hammer means disposed at a print station adjacent said revolvable carrier surface,

- a printing medium disposed between said hammer means and said carrier surface, and

means for selectively operating said print hammer means to forcibly place said printing medium against said type character mounts, said first and second directions being aligned along the carrier surface such that a selected type character mount flexes during the dwell of said hammer and print medium against said selected character so that the peripheral motion thereof is momentarily retarded, while there is substantially no flexure or disorientation of the mount along the second direction.

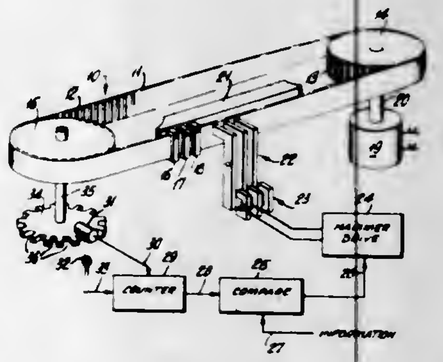


3,353,483
LAMINATED TIMING WHEEL FOR HIGH SPEED PRINTERS

Thomas P. Foley, Huntington, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Filed Apr. 6, 1967, Ser. No. 628,985

7 Claims. (Cl. 101—93)



1. In a high speed printer having a timing wheel and having a support means for moving a plurality of print type past a printing line and having means for rotating the timing wheel in synchronism with the support means to generate information pulses, the timing wheel comprising:

- a plurality of separate discs having regions of discontinuity formed in a predetermined pattern,
- the pitch dimension between adjacent regions of discontinuity representing a predetermined timing for the information pulses, and

said plurality of discs being supported contiguously to form said timing wheel, each successive disc being rotated a predetermined degree,

so that any errors in said pitch dimension are reduced to a minimum.

3,353,484
INKING SYSTEM FOR PRINTING PRESSES

Joseph W. Koyak, Libertyville, Ill., assignor to Vandercook & Sons, Inc., Chicago, Ill., a corporation of Delaware

Filed June 2, 1965, Ser. No. 460,775

13 Claims. (Cl. 101—350)

1. In a printing press,

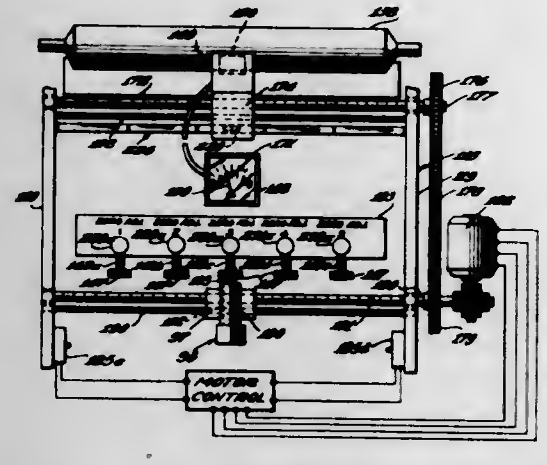
an ink roll,

means for applying ink to said ink roll,

means for monitoring the thickness of the ink on said ink roll comprising

- a monitor roll rotatably engageable with said ink roll along axially spaced portions thereof to receive a layer of ink thereon the thickness of which is proportional to the thickness of the ink on the engaged portion of the ink roll,

means associated with said monitor roll providing a signal which varies according to the thickness of ink on said monitor roll, and



means for moving said signal providing means along axially spaced portions of said ink roll, and

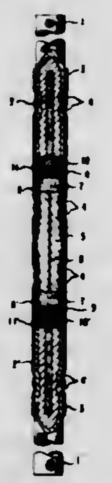
means cooperable with said monitoring adjustable means and responsive to the signal provided thereby to control the thickness of the ink along said axially spaced portions of the ink roll in synchronism with the movement of said signal providing means therealong.

3,353,485
BIDIRECTIONAL DELAY CONNECTOR

Ross J. Miller, Franklin Lakes, N.J., and Frederick C. Sawyer, Dallas, Tex., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 29, 1965, Ser. No. 517,317

9 Claims. (Cl. 102—27)



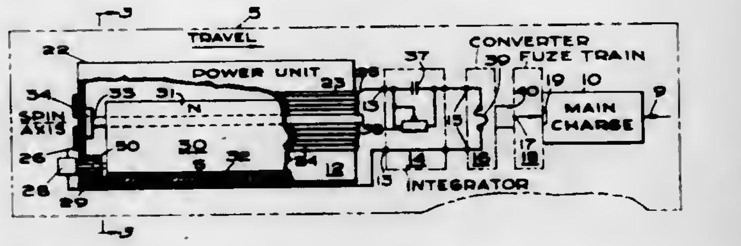
1. In bidirectional delay connectors comprising a shell containing two detonating charges each having a delay element adjacent thereto, each end of the shell adjacent the detonating charges being adapted to receive the end of an explosive cord, the improvement which comprises interposing between the delay elements associated with said each detonating charges, a relay element comprising a column of explosive having a loading of about from 0.5 to 5 grains per foot and a propagation velocity of at least about 300 meters per second.

3,353,486
SELF-DESTRUCTING FUZE SYSTEM FOR ROTATING PROJECTILES

Robert M. Haiken, Union, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Mar. 3, 1966, Ser. No. 533,377

3 Claims. (Cl. 102—70.2)



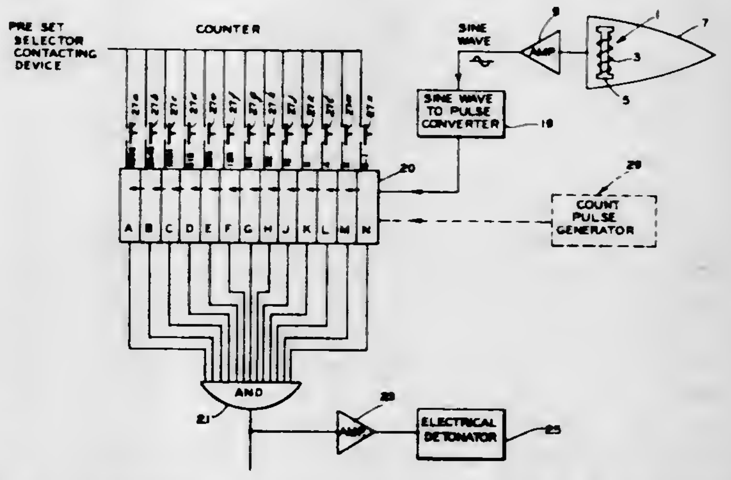
1. In a rotating fuzed projectile having a main detonating charge and a main fuze train operative to fire said charge on impact, an auxiliary self-destructing fuze system therefor comprising, means providing a supply of energy operative upon rotation of said projectile in flight, integrator means connected to said energy supply means for accumulating the energy output therefrom over a predetermined time of flight as measured by the number of revolutions of said projectile, converter means connected with said integrator means for operation in response to energy storage by said integrator means reaching a predetermined level, a second fuze train connected with said converter means and responsive to operation thereof providing a detonation-propagating connection between said convertor and said main charge for effecting detonation thereof independently of said main fuze train of said projectile, said energy supply means including an unbalanced rotor element the axis of rotation of which is adapted to be located on the center line of the projectile which is the axis of spin thereof and whose center of mass is remote from the axis of rotation, and the integrator and converter means being connected in series relation in the order named with said energy supply means and responsive to rotation of the projectile about said unbalanced rotor to apply a regulated and converted energy output therefrom to said main charge as an auxiliary fuze line.

3,353,487
DEVICE FOR MEASURING FLIGHT DISTANCE OF A MISSILE

George H. Perryman, Teaneck, N.J., assignor to The Bendix Corporation, a corporation of Delaware

Filed May 11, 1966, Ser. No. 549,387

15 Claims. (Cl. 102—70.2)

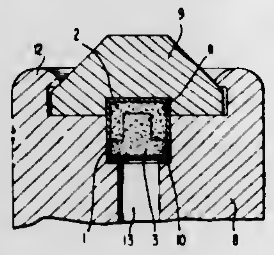


8. Equipment for counting revolutions of a body rotating in the earth's magnetic field and traveling a known distance per revolution, comprising a transducer including

a pick-up coil wound on a core of magnetically permeable material, the transducer being arranged to rotate in the earth's magnetic field with the body to provide an electrical signal corresponding to the number of revolutions of the body, and means connected to the transducer and responsive to the signal therefrom and providing a signal when the body makes a predetermined number of revolutions corresponding to a predetermined distance.

3,353,488
PRIMER FOR IMPACT FUSES

Hans Stadler, Nurnberg, and Heinz Gawlick, Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Sept. 27, 1965, Ser. No. 490,261
15 Claims. (Cl. 102—73)



1. A primer for impact fuses comprising:

a capsule having a bottom part and open on one side thereof,

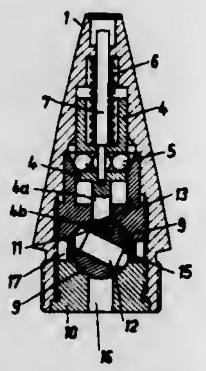
an impact- and friction-sensitive ignition composition accommodated in said capsule,

said ignition composition being pressed into the bottom part of the capsule in such a manner as to leave a substantially central recess in the direction toward the open capsule side,

and a pressed-on particulate friction material substantially filling the remainder of the capsule.

3,353,489
IMPACT FUZE FOR A SPINNING PROJECTILE

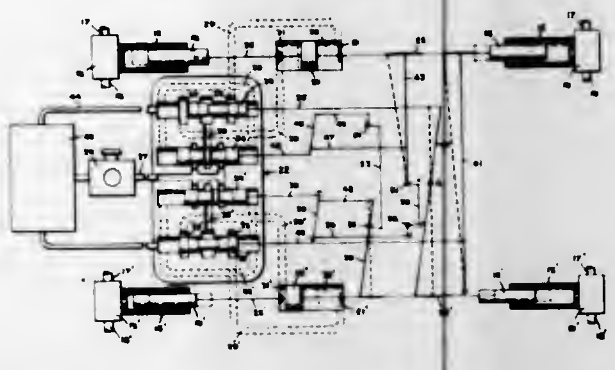
Fritz Berger, Dusseldorf, Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed Feb. 21, 1966, Ser. No. 528,706
Claims priority, application Germany, Feb. 26, 1965, R 39,998
3 Claims. (Cl. 102—79)



1. A percussion fuze for spinning projectiles comprising a casing having a front part and a rear part, a sleeve secured in the rear part of the casing and having a bearing surface, a ball carrier with balls mounted slidably in the casing and in the sleeve, and having a striker pin secured thereon, a fuze body secured in the rear part of the casing and spaced from the sleeve, a rotor mounted to rotate between the fuze body and the sleeve and having a coiled band around the rotor and having a percussion cap therein; and a fuze plunger slidably mounted in the casing and extending into the sleeve, said rotor being normally held in inoperative position by the coiled band and when the projectile is fired centrifugal spinning force will act on the band to hold the rotor in an unarmed position for a predetermined period of time so that when the balls in the ball carrier force the latter away from the rotor the striker pin will be in a position to plunge into the percussion cap when the projectile strikes a target.

3,353,490
POSITIVE DISPLACEMENT PUMP

Elliott F. Wright, Warren Township, Somerset County, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Feb. 9, 1966, Ser. No. 526,105
8 Claims. (Cl. 103—49)



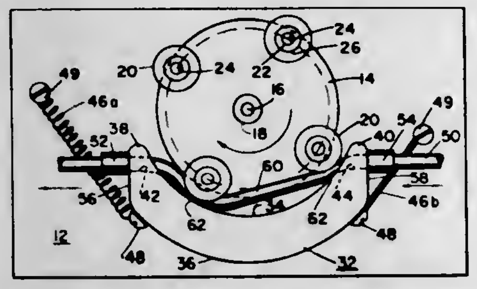
1. A positive displacement pump of the reciprocating type comprising a pair of pumping cylinders each including reciprocating plunger-like means, power means connected to each of the plunger means, supply means selectively associated with each of the power means to supply power fluid to said power means at a fixed or variable capacity, as desired, to cause said power means to drive said plunger like means to provide a desired pump output, first and second conduit means connecting said supply means to each of said power means, a first and second valve disposed in said first conduit, a first and second valve disposed in said second conduit, all of said valves operative to selectively control passage of power fluid through said first and second conduit means to said power means and to selectively control return of said power fluid to said supply means, movable rod means connecting said first valve of said first conduit means to one of said plunger-like means, movable rod means connecting said first valve of said second conduit means to said other plunger-like means, means movably connecting said second valve of said first conduit means to said other plunger-like means so that said other plunger-like means controls primary movement of said second valve of said first conduit means, means movably connecting said second valve of said second conduit means to said one plunger-like means so that said one plunger-like means controls primary movement of said second valve of said second conduit means, and means movably interconnecting each of said last mentioned means whereby secondary movement of said second valve of said first conduit means is controlled by said one plunger-like means and secondary movement of said second valve of said second conduit means is controlled by said other plunger-like means.

3,353,491
PUMPING DEVICE

James W. Bastian, 126 Chestnut St., Park Forest, Ill. 60466
Filed Sept. 28, 1965, Ser. No. 490,982
14 Claims. (Cl. 103—149)

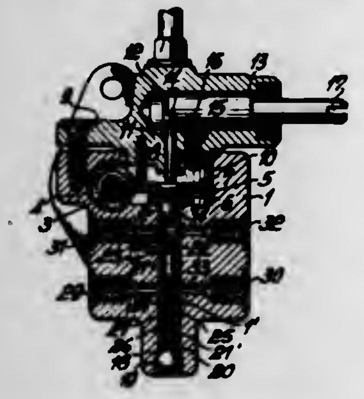
1. A pumping device comprising in combination: a support; a rotor rotatably mounted on said support and having a plurality of spaced roller members mounted thereupon for rotation therewith and independent rotation

relative thereto; a back-up member freely slidable upon said support and having a concave arcuate surface disposed in spaced cooperating relationship to said roller members; tension means resiliently biasing said back-up member toward said roller members while simultaneously providing substantially equal opposed forces normal to the forces urging said back-up member toward said rotor; driving means mounted on said support and selectively actuatable to rotate said rotor; and a compressible elongated tube having an input and an output end and disposed in a substantially fixed position relative to said arcuate surface intermediate said back-up member and said roller members, said back-up member coacting with at least one said roller members to create a zone of substantially complete radial compression of said tube upon engagement of said tube therebetween, said zone being movable toward the output end of said tube in response to the rotation of said rotor.



3,353,492
LUBRICATING PUMP

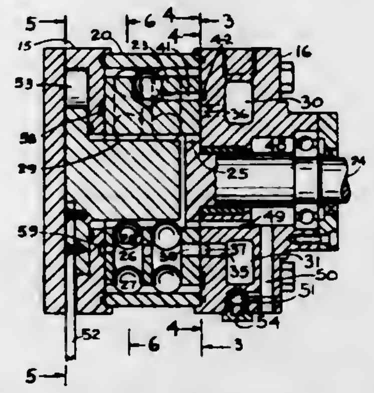
Josef Heinzelmann, Ablach, near Sigmaringen, and Fritz Hugendubel, Stuttgart-Feuerbach, Germany, assignors to Robert Bosch GmbH, Stuttgart, Germany
Filed Jan. 25, 1966, Ser. No. 522,975
Claims priority, application Germany, Jan. 26, 1965, B 80,265
9 Claims. (Cl. 103—157)



1. A lubricating pump, comprising a housing defining a supply chamber and having a passage therein; a rotary piston reciprocably received in said passage and having a blind bore and defining with said housing a first working chamber at the open end of said bore; a plunger sealingly telescoped into said bore and defining with said piston a second working chamber at the closed end of said bore, said piston further having port means for entry of lubricant from said supply chamber into said working chambers in first angular positions of the piston and said housing further having at least two outlet means respectively communicating through said port means with said working chambers in second angular positions of said piston; and means for rotating said piston in one direction with reference to said housing and for reciprocating the piston with reference to said plunger so that the piston performs alternating suction and injection strokes to draw lubricant from said supply chamber into said working chambers in said first angular positions and to expel lubricant from said working chambers through said outlet means in said second angular positions thereof.

3,353,493
CONTINUOUSLY VARIABLE HYDRAULIC TRANSMISSIONS

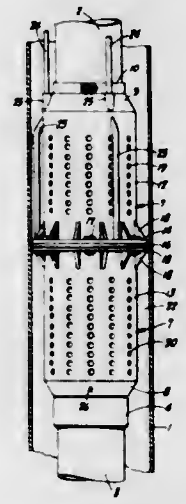
Arne Feroy, 1921 S. 291st Place, Kent, Wash. 98002
Filed July 2, 1965, Ser. No. 469,216
2 Claims. (Cl. 103—161)



1. In a continuously variable hydraulic transmission, a pump unit comprising a stator, an outer eccentric in said stator, a rotor operable within said outer eccentric, a cylindrical recess in said rotor, an inner eccentric operable in said recess, radial cylinders in said rotor, an outer ball piston in each of said radial cylinders and coacting with said outer eccentric, an inner ball piston in each of said radial cylinders and coacting with said inner eccentric, the said inner and outer ball pistons in each radial cylinder diverging and converging during the intake and delivery cycles whereby pumping chambers are formed between each set of inner and outer ball pistons, and inlet and outlet means communicating with said pumping chambers, the eccentricity of one of said eccentrics being fixed, and means for adjusting the eccentricity of the other of said eccentrics to vary the combined strokes of said inner and outer ball pistons from zero to a maximum substantially equal to the ball diameter; with pumping means for supplying said radial cylinders with oil under priming pressure to keep said inner ball pistons in running contact with said inner eccentric, and a relief valve controlling said priming pressure.

3,353,494
AIR AND GAS SEPARATOR FOR DESCENDING WATER

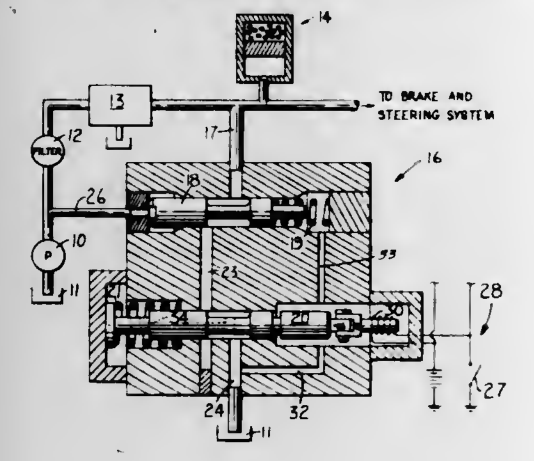
Albert P. Carroll, 1630 Paloma St., Stockton, Calif. 95207
Filed Apr. 11, 1966, Ser. No. 541,665
10 Claims. (Cl. 103—203)



1. An air and gas separator for water descending in a well between a casing and a pump column, comprising a tubular housing surrounding the column, the housing for a major portion of its length being of greater diameter than and spaced from the column to define a separator

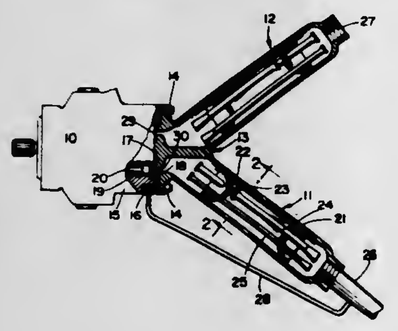
chamber therebetween, ends on the housing substantially closing with the column, means securing the housing against displacement along the column, the housing being of lesser diameter than and spaced from the well casing, means on the housing intermediate its ends closing the space between said housing and casing whereby to block direct down-flow in such space of descending water, a multiplicity of metering holes in the housing above said closure means, a multiplicity of other metering holes in the housing below said closure means, and a vent pipe communicating with the top of said separator chamber and extending upwardly from the housing.

3,353,495
AUTOMATIC ACCUMULATOR BLEED MEANS
Donald L. Bianchetta, Coal City, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Mar. 2, 1966, Ser. No. 531,211
5 Claims. (Cl. 103—223)



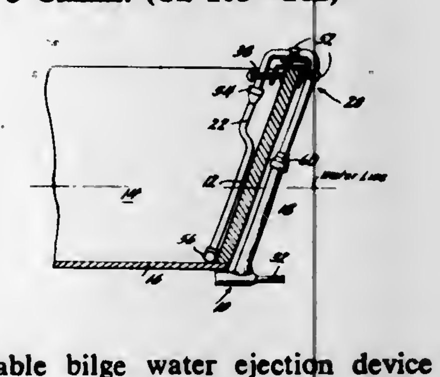
1. In a vehicle hydraulic system including an accumulator which is normally pressurized during operation of the vehicle, means to bleed pressure from the accumulator comprising two valves in series, means normally holding said valves closed during operation of the vehicle, means for opening one of said valves when the vehicle engine stops and means for opening the other valve in response to a manual adjustment normally made when the vehicle is taken out of operation.

3,353,496
COMBINED FLUID PUMP AND PULSATION DAMPENER
Wilhelm S. Everett, 126 W. Santa Barbara St., Santa Paula, Calif. 93060
Filed Jan. 19, 1967, Ser. No. 610,309
3 Claims. (Cl. 103—223)



1. The combination comprising: a liquid pump of the high frequency, high speed type having inlet and outlet ports; and at least one liquid pulsation dampener having a first end portion shaped to be secured directly to said pump by the same bolts normally employed to secure the normal port plate of said pump so that said pulsation dampener constitutes a substitute for said port plate and thereby a part of the pump body in direct communication with at least one of said ports of said pump such that there is no appreciable length of liquid passage between said port and said pulsation dampener, said pulsation dampener having a second end portion adapted for connection to the liquid line for said pump normally connected to said one of said ports, said pulsation dampener including a chamber for liquid, and passage means connecting said first end portion and said second end portion with the chamber, said first and second end portions and chamber being at all times completely filled with liquid when said pump is operating whereby liquid pulsations passing into said pulsation dampener when said pump is operating are dampened.

3,353,497
PUMP APPARATUS
George K. Williams, Rte. 1, Box 121–A, Mobile, Ala. 36605
Filed Feb. 3, 1967, Ser. No. 613,772
5 Claims. (Cl. 103—262)



1. A removable bilge water ejection device for use with a boat or the like comprising: a venturi pump operable by movement of said pump through the water, a first rigid vacuum line operatively connected to said venturi pump, a bracket assembly supporting said vacuum line and adapted for clamping engagement with a boat transom or the like, and a second vacuum inlet line operatively connected to the free end of said first line and adapted for communication with a source of bilge water to be ejected, said bracket assembly comprising an inverted U-shaped plate, adapted to fit over said transom or the like, at least one clamping screw extending through one part of said bracket to said transom or the like, a pair of upright ears having aligned bores therein on the top of said bracket, and L-shape support plate adapted to rest on said bracket, the base of said L-shaped plate positioned generally parallel to and over the upper and rear faces of said U-shaped plate, a second pair of ears having aligned bores therein formed on the under-surface of said L-shaped plate, adjacent said first pair of ears, a central shaft through said bores, both of said pairs of ears securing said plates together, a torsion spring mounted interiorly of said pairs of ears along said shaft urging said L-shaped support plate against said U-shaped plate, and clamp means for securing said first vacuum line rigidly to said L-shaped plate.

3,353,498
ELEVATED TRANSPORTATION SYSTEM HAVING IMPROVED SUPPORTING STRUCTURE
Leland L. Davis, 5247 E. 8th St., Kansas City, Mo. 64124
Filed May 14, 1965, Ser. No. 455,733
17 Claims. (Cl. 104—89)

1. In a transportation system:

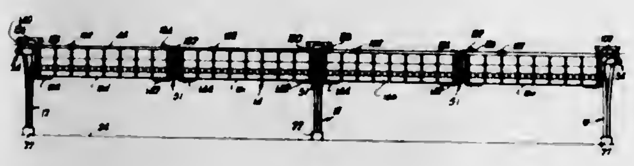
an elongated vehicular unit having runner means extending longitudinally thereof;

a series of spaced supports for said unit arranged along a predetermined route and disposed for successive engagement by the runner means as the unit travels along said route,

said unit being at least as long as the distance defined by any three successive supports whereby, during said travel the unit is alternately carried by two supports and by three supports,

said unit having structure rendering the same self-sustaining when carried either by two or by three supports,

said unit comprising a train of articulated sections,



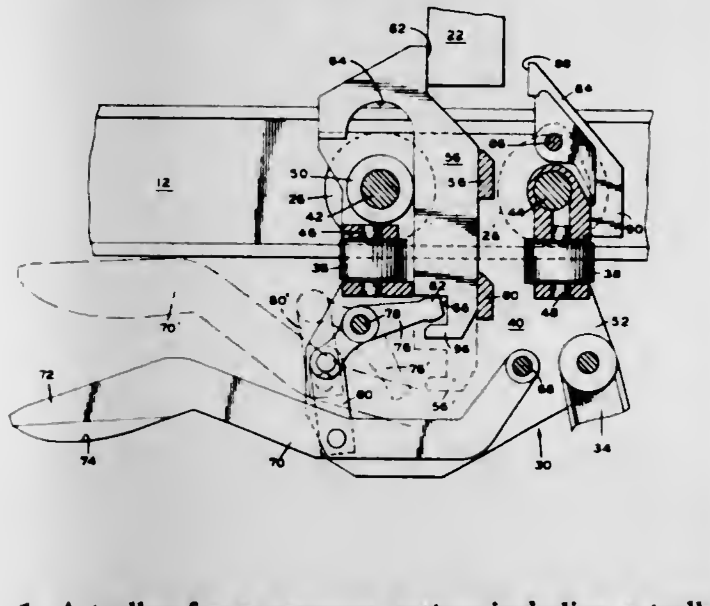
guide means for said sections extending along said route; and

mechanism on the sections engaging the guide means for shifting one section relative to an adjacent section,

said mechanism being provided with apparatus sensitive to changes in elevation of said guide means,

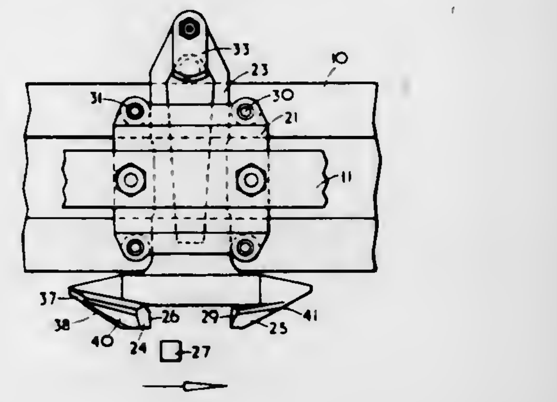
the sections having means responsive to said apparatus for raising and lowering the same as said elevation varies.

3,353,499
CONVEYOR TROLLEY
John C. Sutherland, Livonia, Mich., assignor to Taylor & Gaskin, Inc., Detroit, Mich., a corporation of Michigan
Filed May 11, 1965, Ser. No. 454,925
6 Claims. (Cl. 104—172)



1. A trolley for a conveyor system including a trolley track and powered drive means having pusher members disposed in spaced apart relation therealong, comprising a trolley body provided with track-engaging means supporting the trolley for movement along the track, a driving dog supported for vertically shiftable movement on the body between an operative position in the path of said pusher members and an inoperative position out of the path of said members, means coupled to said driving dog for shifting the same and including a vertically swingable actuating member projecting forwardly of the trolley for engagement with a preceding trolley on the track, and a link operably coupled to said member engaging said driving dog when the latter is in its operative position to positively shift the dog to its inoperative position upon movement of said actuating member, said link being disengaged from the driving dog when the dog reaches its inoperative position.

3,353,500
CONVEYORS FOR CONVEYING GOODS
Olaf John Barclay Orwin, Quinton, Birmingham, England, assignor to Fisher & Ludlow Limited, Tipton, England, a company of Great Britain
Filed June 7, 1965, Ser. No. 461,695
Claims priority, application Great Britain, June 9, 1964, 23,773/64
5 Claims. (Cl. 104—172)

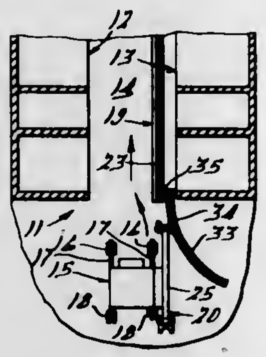


1. A conveyor of the kind specified characterized that in association with each driving dog is a retarding dog spaced forwardly of the driving dog in the designed direction of advancement of a conveyor element, each driving dog and its associated retarding dog being both carried upon a common supporting body mounted for sliding movement relative to the associated conveyor element in a direction transverse to the length thereof, so as to permit of each driving dog together with its associated retarding dog being displaceable relative to the conveyor element from a trolley engaging to a trolley disengaging position, each driving dog being formed on its rearwardly directed side and on at least one of its two laterally directed sides respectively with a rear trolley engaging face and a lateral trolley engaging face, each of said trolley engaging faces being inclined to the direction of sliding movement of the driving dog with each face directed away from the direction of sliding movement of the driving dog into the trolley disengaged position, each retarding dog on its forwardly directed side being formed with a forwardly directed trolley driving abutment engaging face which in a rearward direction is inclined away from the direction of sliding movement of the retarding dog into the trolley disengaged position, the arrangement being such that in the event of a trolley advancing relatively towards the driving dog so as to bring the driving abutment of the trolley into engagement with the rear face or the lateral face of such driving dog the latter is slidden temporarily into its disengaged position to permit of the driving abutment of said trolley moving forwardly relative to the driving dog into a position for engagement by the trolley driving face of such dog.

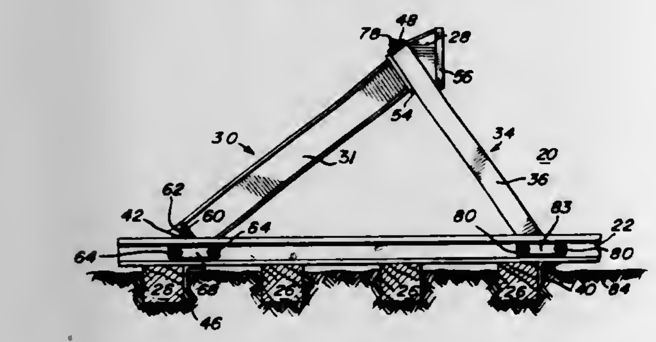
3,353,501
GUIDANCE SYSTEM
Edward H. Kidera, Lake Villa, Ill., and Clark J. Hamkins and James K. Siddons, Racine, Wis., assignors to Walker Manufacturing Company, a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,461
10 Claims. (Cl. 104—247)

1. In combination a warehouse or the like having a floor, means defining an aisleway extending along at least a portion of said floor, a self-propelled multi-purpose dirigible vehicle adapted to be driven in operator selected paths along said floor and at times to operate in said aisleway, guide means extending along said aisleway for de-

fining a vehicular path through said aisleway, follower means detachably connected to said vehicle, and means on said follower means for cooperation with said guide means for directing said vehicle down said aisleway.



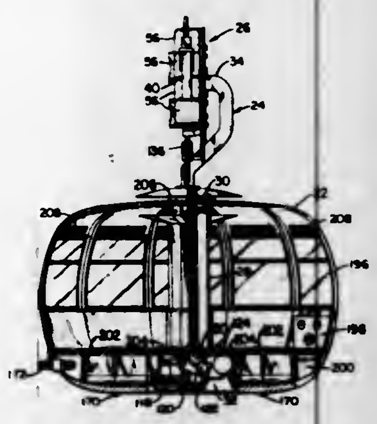
3,353,502
BUMPING POST
Brice E. Hayes, Richmond, Ind., assignor to Hayes Track Appliance Company, Richmond, Ind., a corporation of Indiana
Filed Sept. 8, 1965, Ser. No. 485,822
9 Claims. (Cl. 104—254)



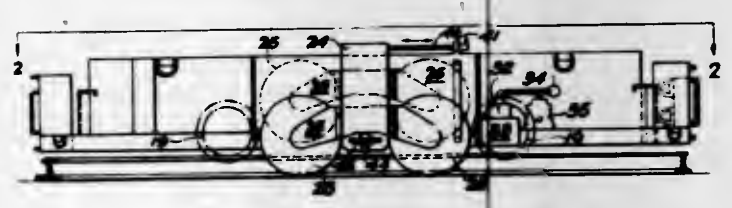
1. In a bumping post for installation on the spaced rails of a track, the combination of a bumper head positioned above the track to be struck by a moving car, compression means extending between said bumper head and the rails for transmitting compressive forces to the track upon impact, tension means extending between said bumper head and each of the rails for transmitting tension forces to the track upon impact, a tension cross piece extending beneath the track below said tension means, and means pivotally connecting said tension cross piece and said tension means adjacent each rail for horizontal pivotal movement of said tension cross piece relative to said connecting means.

3,353,503
AERIAL TRAMWAY SYSTEM
Frank P. Pettit, Arvada, Colo., assignor to Big Rock Mountain Corporation, Custer, S. Dak.
Continuation of application Ser. No. 294,824, July 15, 1963. This application Apr. 21, 1966, Ser. No. 544,315
17 Claims. (Cl. 105—150)

1. A carriage for use in suspending a self-propelled vehicle on an aerial tramway system including spaced towers with lengths of suspension cable strung between them comprising: an elongate support structure extending in the direction of travel of said carriage; a plurality of drive wheels mounted in fore and aft spaced relation on said structure to engage the upper side of said cable to support and propel said vehicle; motor means carried by said structure in driving engagement with said drive wheels; pressure rollers mounted on said structure operative to yieldably pressurally engage the underside of said cable to produce a greater traction, cable-gripping action between the drive wheels and the rollers, said pressure rollers operative to retract away from said cable against the pressure urging them towards said track; a source of fluid under pressure; fluid motor means connected to said rollers to urge them into engagement with said cable; conduit means connecting said pressure fluid source to said fluid motor means; and an accumulator connected to said conduit means to permit said rollers to retract from said wheels to accommodate tracks on said towers which are thicker than the cable while maintaining the desired gripping action.

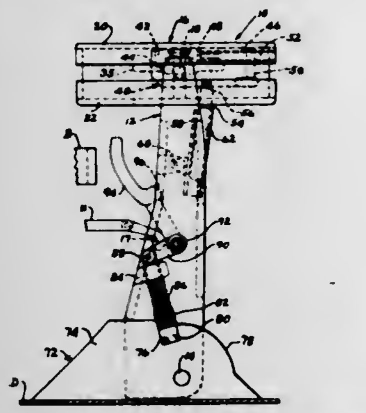


3,353,504
CONVERTIBLE MINE CARS WITH FLANGED AND RUBBER TIRED WHEELS
Frank N. Kersey, John L. Kersey, Jr., and Trent H. Kemp, Bluefield, Va., assignors to "Automatic" Sprinkler Corporation of America, Youngstown, Ohio, a corporation of Ohio
Filed Oct. 7, 1965, Ser. No. 493,669
5 Claims. (Cl. 105—215)



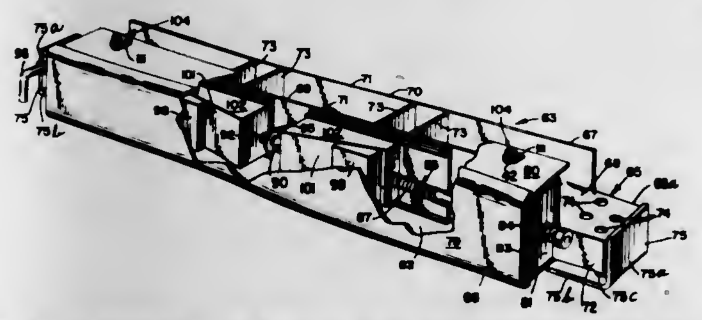
1. In a mine car, a body structure including side wall portions and a floor, rail wheel mounting axles and flanged rail wheels thereon beneath said floor, a torque rod positioned transversely beneath the floor of the mine car and secured thereto, a tandem wheel assembly secured to each of the opposite ends of said torque rod beyond the sides of said mine car, said tandem wheel assemblies including members defining vertically extending passageways, and a pair of spaced plates positioned in each of said vertically extending passageways and arranged for vertical movement relative thereto, wheel bearings extending between the plates at each end portion thereof, said wheel bearings being spaced equidistance from the center of the plates and rubber tired wheels removably mounted on said wheel bearings and means positioned between said members defining said vertical passageways and said spaced plates for moving said plates and said rubber tired wheels vertically relative to said members from an upper position where said rubber tired wheels are elevated with respect to said flanged rail wheels to a lower position where said rubber tired wheels are positioned below said flanged rail wheels so that said mine car may be supported on either said flanged rail wheels or said rubber tired wheels.

3,353,505
COLLAPSIBLE SUPPORT
Dallas W. Rollins, St. Charles, and Carl E. Becker, St. Louis, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Mar. 6, 1967, Ser. No. 633,321
7 Claims. (Cl. 105—368)



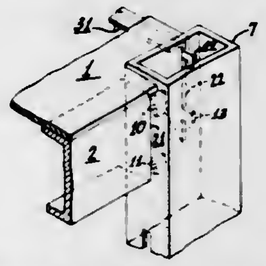
1. A collapsible hitch adapted to be erected and collapsed by a tractor comprising, a base support including a plurality of horizontally spaced upwardly extending projections, a single strut having a plurality of downwardly extending projections interfitting the upwardly extending projections and mounted on the base support for pivotal movement between a generally horizontal collapsed position and a generally vertical erect position, means carried by the extending end of the strut to engage the kingpin of a trailer or the like, a locking member mounted adjacent the lower end of the strut in the erect position thereof to releasably lock the strut in erect position to the base support, said upwardly extending projections being positioned adjacent said locking member and having notches therein alignable with said locking member in the erect position of the hitch to receive the locking member in locking engagement, means on said downwardly extending projections to receive said locking member and being defined by opposed surfaces positioned closely adjacent said locking member in the erect locked position of the hitch and adapted to contact said locking member for restricting movement of said single strut in erect position, and actuating means operatively connected to said locking member and adapted to be contacted by a tractor or the like for withdrawing said locking member from the notches in said projections to permit collapsing of the hitch.

3,353,506
ADJUSTABLE RESTRAINING MEANS
Richard C. Snyder and Marvin Stark, Michigan City, Ind., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,443
9 Claims. (Cl. 105—369)



8. An adjustable coil restraining means adapted for coupling to a lading carrying railway car comprising a reaction member provided with attachment means for the railway car and a lading restraining member being reciprocally mounted on the reaction member and adapted for engagement with a lading on the railway car, guided biasing means guided in opposing the outward movement of the restraining member, means providing for motion translation between the members in moving the restraining member outwardly of the reaction member in tight engagement with the lading, the longitudinal axis of the means providing for motion translation extending generally parallel to the longitudinal axis of the lading restraining member, said biasing means biasingly holding said restraining member against said reaction member by way of said means providing for motion translation to keep a bearing on the lading and to transmit loads to the reaction member.

3,353,507
ADJUSTABLE SHELVING
George R. Squires, 19 Heathcliff Road, Rumson, N.J. 07760
Filed July 11, 1966, Ser. No. 564,250
3 Claims. (Cl. 108—107)



1. Adjustable metal shelving comprising a plurality of sheet metal shelves supported by vertical uprights at the corners of said shelves, said shelves having downturned flanges along their longitudinal edges, said flanges being formed at right angles to the main surface portion of said shelves, said shelves having corner brackets which have first and second arms extending at right angles to each other, said first arms of said corner brackets extending along and under areas of the main surface portions of said shelves adjacent the longitudinal edges thereof thereby providing support therefor, said second arms of said corner brackets being positioned against said downturned flanges so that the edge formed by said first and second arms engages and extends along the inside edge of said shelf formed by said main body portion and said downturned flanges, said second arms being permanently affixed to said downturned flanges, said second arms having hooks extending from an edge thereof which are arranged to pass through corresponding slots in said vertical uprights thereby supporting said sheet metal shelves from said vertical uprights, said vertical uprights being tubular and of square cross section, said edges of said second arms being arranged to be flush against a side surface of said tubular uprights, said shelves having a lip extending from the main body portion at both longitudinal ends thereof, each pair of vertical uprights located at longitudinal ends of a shelf having an end bracket detachably positioned between said pairs of vertical uprights, said end brackets having a horizontal flange extending under and in supporting relationship with said lips extending from said main body portions of said shelves.

3,353,508
GARBAGE DESTROYER
Wylie W. Crowe, 1886 Windemere Drive, Atlanta, Ga. 30324
Filed Aug. 19, 1965, Ser. No. 480,879
6 Claims. (Cl. 110—8)

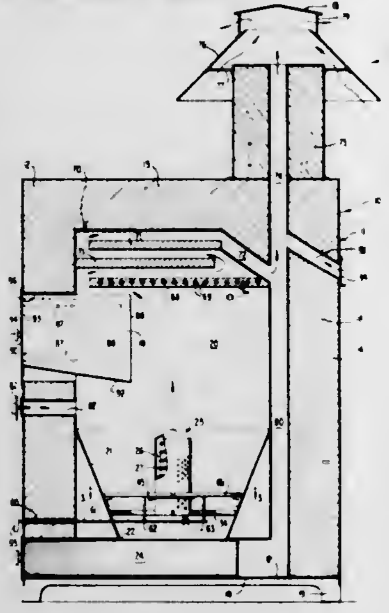
1. An incinerator comprising:
- (A) an insulated housing defining a combustion chamber,
  - (1) said combustion chamber having a truncated conical lower portion;
- (B) an elongated ignition unit supported by said conical lower portion of said combustion chamber with

its longitudinal axis being coaxial with the longitudinal axis of said conical lower portion;

(C) an annular grate supported by said conical lower portion and surrounding said ignition unit intermediate its ends;

(D) an exhaust flue in the upper portion of said housing and extending outwardly thereof,

  (1) said exhaust flue defining a series of horizontal passageways connected together in series at their alternate ends;



(E) a flat heating element disposed in a horizontal plane immediately below said exhaust flue in said housing forming a heated extension of said flue;

(F) heat responsive means responsive to a rise in temperature of the combustion chamber for energizing said flat heating element, and

(G) means for energizing said ignition unit at predetermined periods of time.

3,353,509

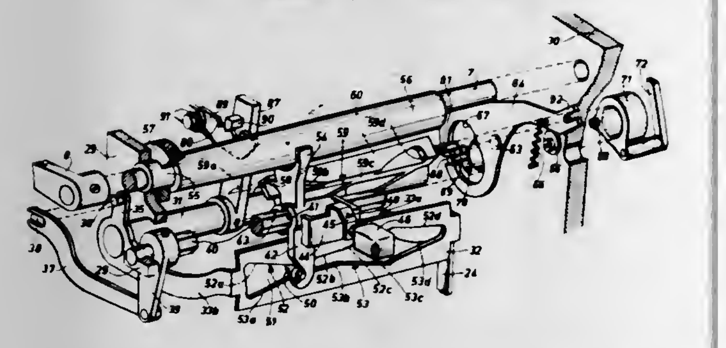
ZIG-ZAG SEWING MACHINE WITH SINGLE MANUALLY OPERABLE SETTING DEVICE FOR BOTH OVERSTITCH WIDTH AND STITCH LENGTH

Rudolf Reeber, Neukeferloh, and Herbert Wenz, Kaiserslautern, Germany, assignors to G. M. Pfaff AG, Kaiserslautern, Germany

Filed Mar. 15, 1965, Ser. No. 439,771

Claims priority, application Germany, Mar. 17, 1964, P 33,857

17 Claims. (Cl. 112—158)



1. A zigzag sewing machine comprising, in combination, means for adjusting the overstitch width; means for adjusting the stitch length; a pair of setting cams, each operatively associated with a respective one of said adjusting means; scanning means operatively engageable with both of said setting cams; and a single manually operable setting device operative to effect displacement of said scanning means and both of said setting cams to effect conjoint adjustment of the overstitch width and the stitch length.

3,353,510

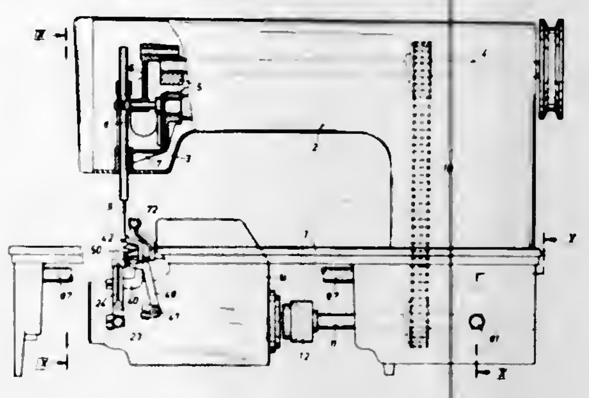
APPARATUS FOR SIMULTANEOUS FORMATION OF WORK UNITING SEAM AND EDGE BINDING SEAM OR SEAMS

Rudolf Reeber, Neukeferloh über Munchen, and Reinhold Dobner and Werner Tretow, Kaiserslautern, Pfalz, Germany, assignors to G. M. Pfaff AG, Pfalz, Germany

Filed Apr. 17, 1964, Ser. No. 360,695

Claims priority, application Germany, Apr. 18, 1963, P 31,622

4 Claims. (Cl. 112—162)



1. A chain stitch and overcast stitch sewing machine comprising, in combination, chain stitching means, including a chain stitching needle, constructed and arranged to form a chain stitch seam, uniting superposed plies of work material, in spaced substantially parallel relation to corresponding edges of the plies; work feeding means operable in synchronism with said chain stitching means to feed the superposed plies past said chain stitching needle; overcast stitching means constructed and arranged to form a protective seam along at least one of said corresponding ply edges in coordination with the formation of said chain stitch seam, said overcast stitching means including an overcast stitch needle and looping means cooperable with said overcast stitch needle; driving means operating said overcast stitching means at a reduced rate with respect to the rate of operation of said chain stitching means, the ratio of the rate of operation of said overcast stitching means to that of said chain stitching means being a whole number; said driving means oscillating said overcast stitch needle between a first position, in which the point of said overcast stitch needle is spaced substantially from one surface of the work, and a second position, in which the point of said overcast stitch needle is spaced a substantial distance from the opposite surface of the work; said driving means including an oscillatable instrumentality and crank guide means connected thereto and operable to retard the oscillatory movement of said overcast stitch needle in the range of oscillation thereof between said one surface of the work and said first position, and being further operable to accelerate the oscillation rate of said overcast stitch needle in the range of operation thereof between said one surface of the work and said second position to the extent that the work-penetrating stitch formation time of the overcast stitch needle is substantially the same as that of the chain stitch needle.

3,353,511

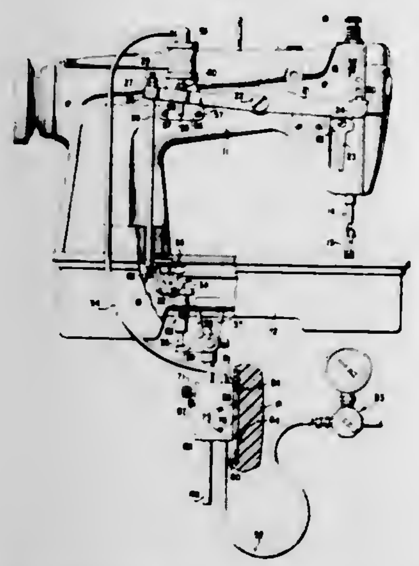
OPERATOR ASSIST DEVICE FOR SEWING MACHINES OR THE LIKE

Salvatore M. Marino, East Brunswick, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 7, 1966, Ser. No. 525,580

3 Claims. (Cl. 112—237)

1. A sewing machine having an appurtenance shiftably supported thereon, an operator influenced linkage carried by said sewing machine and operatively connected to said appurtenance, said linkage including provision for a predetermined increment of lost motion incident to the shifting of said appurtenance, valve means carried by said sewing machine and responsive to said lost motion in said linkage, a fluid pressure operated drive member carried by said sewing machine and operatively connected to said appurtenance, a source of fluid under a regulatable pressure, and conduit means interconnecting said drive member and said source with said valve means.



3,353,512

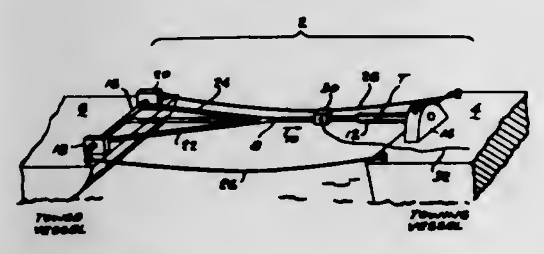
MARINE COUPLING

Sydney T. Mathews and Leopold I. Kawerninski, Ottawa, Ontario, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada

Filed Apr. 10, 1967, Ser. No. 629,651

Claims priority, application Canada, July 21, 1966, 966,024

23 Claims. (Cl. 114—235)



1. In combination:

(a) a towing vessel including a first mounting means fastened thereto, said first mounting means being disposed substantially on the longitudinal axis of said towing vessel,

(b) a towed vessel,

(c) a coupling device interconnecting said vessels for towing said towed vessel along a path of travel,

(d) said towed vessel including second mounting means comprising a pair of mounting portions fastened to the bow of said towed vessel in spaced apart relation to define a horizontal axis transverse to said path of travel, and

(e) said coupling device including:

  (i) rigid structural member means extending along said path of travel between said vessels and constituting the sole rigid connection between said vessels,

  (ii) connecting means, including universal joint means, connecting said structural member means to said first mounting means to permit three degrees of rotational movement of said structural member means relative to said first mounting means and thus of said towed vessel relative to said towing vessel, and

  (iii) means rotatably connecting said structural member means to said mounting portions to permit rotational movement of said structural member means about said horizontal axis,

whereby to enable relative yaw, pitch, heave and roll between said vessels.

3,353,513

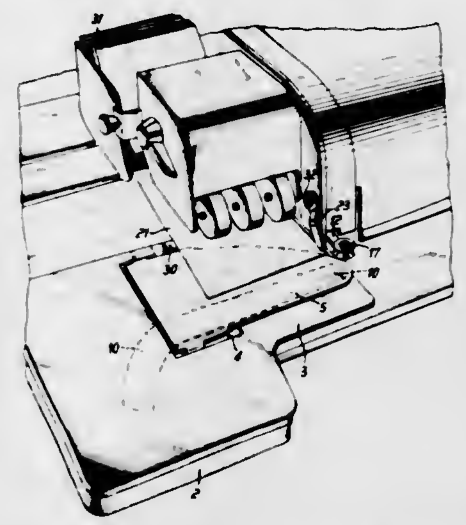
ENVELOPE CLOSING DEVICES

Hans Schmitt, Frankfurt am Main, Germany, assignor to Telefonbau und Normalzeit G.m.b.H., Frankfurt am Main, Germany, a joint-stock company of Germany

Filed June 10, 1965, Ser. No. 462,930

Claims priority, application Germany, June 24, 1964, T 26,424

1 Claim. (Cl. 118—32)



An envelope closing device comprising a moistening tongue for moistening the gummed flap of an envelope, a pivotable element, an abutment for said pivotable element, spring means urging said pivotable element towards said abutment, means for adjusting said pivotable element to co-operate with said abutment, a double-cone shaped roller rotatably mounted on said pivotable element with the smallest cross-section of said roller in the plane of said moistening tongue, said roller being disposed before said moistening tongue in the direction of travel of said envelope and said spring means being adapted to urge said roller against the flapped edge of said envelope to form a gap between said envelope and the flap thereof for receiving said moistening tongue, and a pressure lever disposed before the moistening tongue in the path of advance of the flap-carrying edge of said envelope for preventing upward deflection of said envelope as said envelope reaches said moistening tongue.

3,353,514

APPARATUS FOR APPLYING COATINGS TO ARTICLES OF GLASSWARE

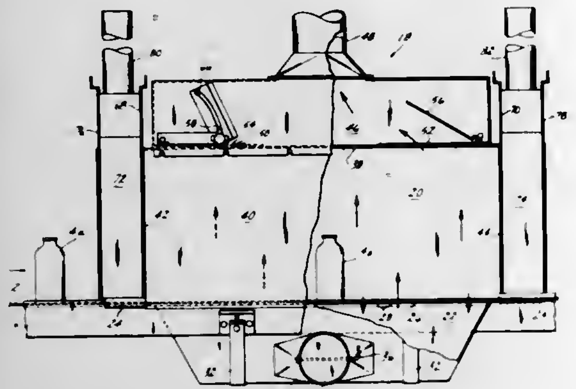
Aaron K. Lyle, West Hartford, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed Dec. 9, 1964, Ser. No. 417,040

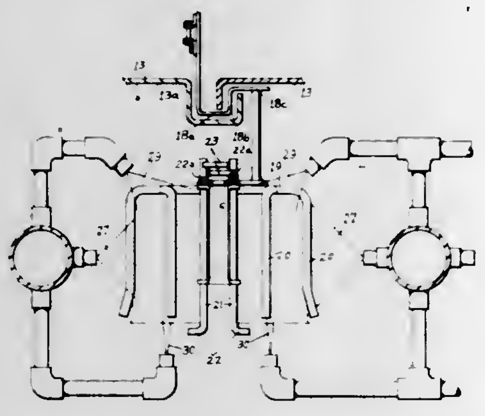
12 Claims. (Cl. 118—49)

1. Apparatus for applying inorganic coatings to articles of glassware comprising a generally horizontal conveyor adapted to transport glassware in an upright attitude, a housing defining a coating chamber above the conveyor, said chamber having a top wall and opposing side walls and inlet and discharge openings at opposite ends for the passage of glassware through the chamber on the conveyor, power operated air moving and controlling means in communication with said coating chamber and arranged to provide air flow in a closed loop with air passing generally normal to the direction of movement of the conveyor over glassware in the coating chamber

and with first and second air streams generally normal to the conveyor created in the chamber respectively adjacent said inlet and discharge openings, first and second adjustable baffle means located out of the passage of the glassware and disposed respectively adjacent said inlet and discharge openings in the coating chamber and operable respectively on said first and second air streams adjacent the openings whereby independently to adjust the air streams and thereby effect drift control and prevent flow through the openings, and a pressurized source of dry air carrying inorganic coating material in vapor form in communication with said coating chamber and with the air flowing therein so as to be mixed with said air and reactively applied to the glassware in the chamber.

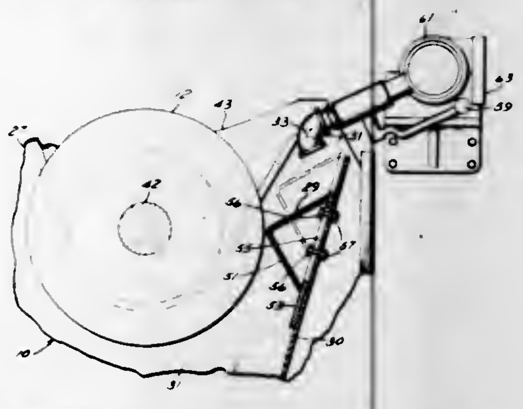


3,353,515
CAN TREATING APPARATUS
Ralph J. Stolle, Lebanon, and Elton G. Kaminski, Sidney, Ohio, assignors to The Stolle Corporation, Sidney, Ohio, a corporation of Ohio
Filed June 10, 1965, Ser. No. 462,870
6 Claims. (Cl. 118—73)



1. A can treating machine comprising a casing, a dividing wall in said casing separating it into a front section and a rear section, a plurality of sprockets rotatably mounted in said rear section, and an endless chain in operative relation to said sprockets, means for driving one, at least, of said sprockets intermittently to cause said chain to advance in equal increments along its course, an opening through said dividing wall along the path of said chain, the adjacent edges of said wall along said opening being arranged in spaced overlapping relation providing a labyrinth path through said wall, a plurality of bracket members secured at spaced points along said chain and having a generally S-shaped portion positioned to pass through said labyrinth path and extending into the front section of said casing, a can holder on each of said bracket members in said front section, and means to retain a can in each of said holders, and a plurality of jets for treating fluid disposed along the course of said chain, said jets being positioned to direct a stream of said treating fluid to a can momentarily stopped before it by said intermittent driving means.

3,353,516
FLOODED NIP COATER PAN
Robert K. Blackburn, Portland, and William E. Van Voorhis, Gorham, Maine, and Allan J. Nadeau and Arnold J. Schmitt, Beloit, Wis.; said Nadeau and said Schmitt assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Sept. 30, 1964, Ser. No. 400,407
8 Claims. (Cl. 118—249)



1. In a device for coating a travelling paper web, in combination,

a power driven backing roll partially wrapped by the travelling web,

a single applicator roll disposed beneath said backing roll and with said backing roll defining a coating nip,

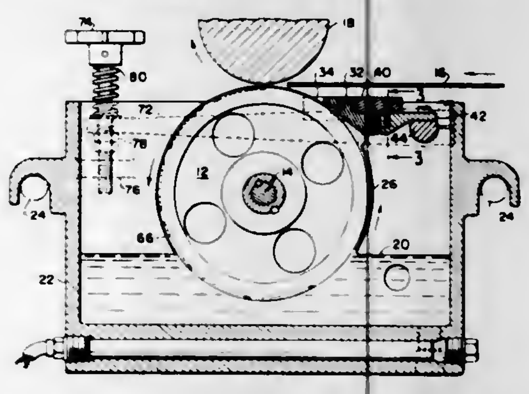
a coating pan extending beneath said single applicator roll and upwardly along opposite sides thereof, and having a rear wall on the incoming side of the nip between said applicator roll and said backing roll,

a weir mounted on the inside of said rear wall and extending across said pan and terminating into close proximity with said applicator roll,

coating supply means on the incoming side of the nip between said rolls for maintaining a continuous supply of coating material to said weir,

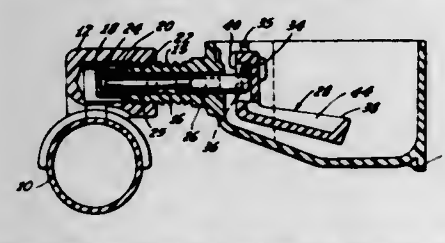
said weir forming a relatively low volume puddle of coating material on the uprunning side of said applicator roll maintained in the form of a low volume puddle by said coating supply means.

3,353,517
APPARATUS FOR APPLYING A FILM OF GLUE TO BOX BLANKS AND THE LIKE
Raymond C. Tower, Spencer, Mass., assignor to M. B. Claff & Sons, Inc., Brockton, Mass., a corporation of Massachusetts
Filed Jan. 14, 1965, Ser. No. 425,559
5 Claims. (Cl. 118—261)



1. A gluing mechanism for applying a glue film of predetermined thickness to box blanks and the like comprising a glue pot, a glue roll rotatably mounted in said pot, and a scraper element mounted in adjustably-spaced relation to the surface of the roll in the region of roll advance from the glue toward the point of application to the work, said scraper element comprising a block having an entrance portion converging toward the roll periphery, an exit portion in closely-spaced relation to the roll periphery for passage of a thin film of glue therebetween, and a channel extending transversely of the block intermediate the converging and the exit portions of the block and open toward the roll surface for conveying excess glue laterally of the block and roll and for discharging said excess into the pot, the periphery of the glue roll having a plurality of spaced open channels extending obliquely across the surface of the roll to cause the flow of excess glue in the channel in the scraper block to take place primarily in one direction.

3,353,518
WATERING SYSTEM FOR POULTRY
Harold W. Hart, Glendale, Calif., assignor to H. W. Hart Manufacturing Company, Glendale, Calif., a corporation of California
Filed Oct. 8, 1965, Ser. No. 494,054
13 Claims. (Cl. 119—75)



1. A method of supplying water to fowls, including the steps of:

providing a supply of water having a pressure variable in accordance with the age of the fowl to provide for an increase in water pressure as the age of the fowl increases,

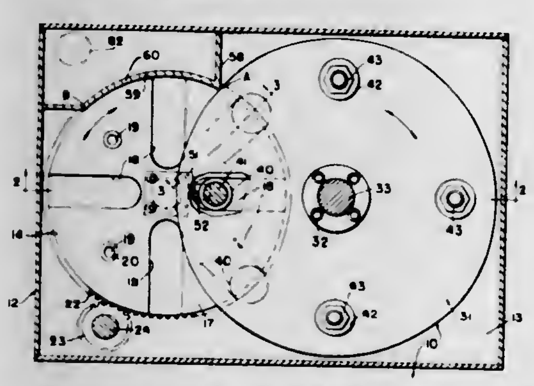
providing a watering cup,

providing a valve between the supply of water and the watering cup to obtain a controlled introduction of water from the supply of water to the watering cup,

providing in the watering cup a control member having characteristics of floating on the water in the cup and actuable by the fowl to obtain an operation of the valve for a controlled introduction of water to the watering cup in accordance with the variable pressure of the water and in accordance with the characteristics of the control member, and

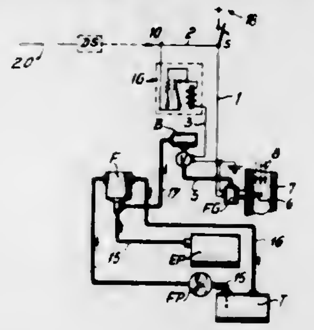
providing for variations in the characteristics of the control member relative to variations in the water pressure to require an increased force to be exerted on the control member to obtain an operation of the valve for the introduction of water to the watering cup as the age of the fowl increases.

3,353,519
ROTARY INTERNAL COMBUSTION ENGINE
Herman E. Reichart, 2810 W. Long Lake Road, Bloomfield Hills, Mich. 48013
Filed Nov. 26, 1965, Ser. No. 509,870
7 Claims. (Cl. 123—12)



1. A rotary internal combustion engine, comprising driving and driven rotors mounted on parallel, transversely spaced axes for movement in opposite rotative directions, said rotors having a substantial radial overlap on one another and being in rotatively sliding, sealed engagement in the area of overlap, one of said rotors having a plurality of radially outwardly extending combustion chambers opening through its periphery and exposed at the axial side thereof at which the rotors overlap, the other rotor sealing the combustion chambers axially in the area of overlap and being provided with a plurality of axially extending pistons entering and departing from said chambers in said area, and individual means on and rotating with said one rotor in communication with the respective combustion chambers thereof to produce combustion of fuel in said chambers in a phase between the entry and departure of said pistons.

3,353,520
ARRANGEMENT FOR HEATING THE CYLINDERS OF DIESEL ENGINES
Gustav Haag, Stuttgart-Schonberg, Germany, assignor to Robert Bosch GmbH, Stuttgart, Germany
Filed Sept. 8, 1965, Ser. No. 485,860
Claims priority, application Germany, Sept. 11, 1964, B 78,477
13 Claims. (Cl. 123—27)

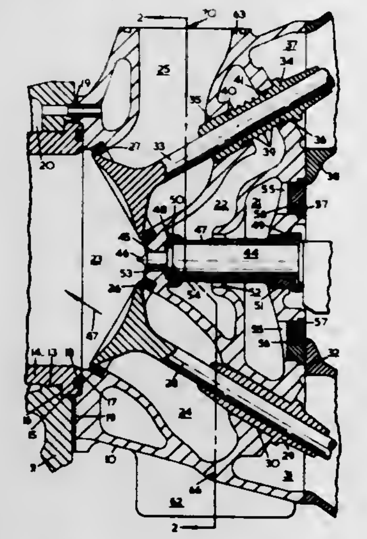


1. An arrangement for heating air which is sucked into a diesel engine, comprising an air conveying pipe; a glow plug comprising electric heating means and nozzle means positioned to exchange heat with said heating means and discharging into said pipe; conduit means for supplying fuel to said nozzle means so that such fuel is heated and produces flames on entry into said pipe; normally closed electric valve means provided in said conduit means; a source of electrical energy; switch means arranged to be closed and to thereby connect said heating heans in circuit with said source; and control means including means for intermittently opening and closing said valve means in response to completion of said circuit so as to produce intermittent flames.

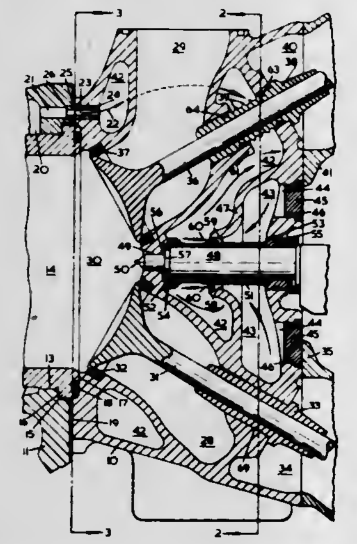
3,353,521
INTERNAL COMBUSTION PISTON ENGINES
Ralph Gilbert Ley, Stamford, England, assignor to Blackstone & Company Limited, Stamford, England
Filed Mar. 2, 1965, Ser. No. 436,621
Claims priority, application Great Britain, Mar. 3, 1964, 9,004/64
6 Claims. (Cl. 123—32)

1. A cylinder head, for an internal combustion piston engine, comprising a plurality of liquid-impervious and gas-impervious walls, one of said walls defining a concave substantially part-spherical combustion chamber, said walls defining attachment points for said cylinder head to be secured to a cylinder of said engine whereby the centre of curvature of said combustion chamber will lie substantially on the longitudinal axis of said cylinder, at least one of said walls defining an air inlet passage for supplying air to said combustion chamber, at least one of said walls defining an exhaust gas passage for conveying exhaust gases from said combustion chamber, said cylinder head defining an annular inlet valve seating at the junction of said air inlet passage with said combus-

tion chamber, said cylinder head defining an annular exhaust valve seating at the junction of said exhaust gas passage with said combustion chamber, said air inlet passage and said exhaust gas passage having respective centre lines which are smoothly curved in the same direction when viewed along said cylinder axis and that each of said passages when so regarded would have its curved centre line coincident with a continuous line having a curvature in one direction only whereby air flowing through said air inlet passage will generate a vortex about the longitudinal axis of said cylinder.

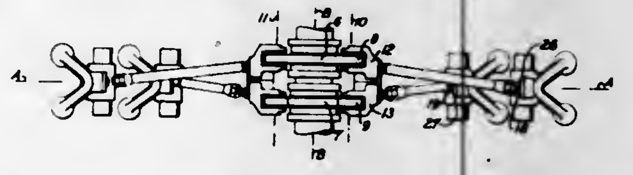


3,353,522
INTERNAL COMBUSTION PISTON ENGINES
Ralph Gilbert Ley, Stamford, England, assignor to Blackstone & Company Limited, Stamford, England
Filed Mar. 2, 1965, Ser. No. 436,620
Claims priority, application Great Britain, Mar. 3, 1964, 9,004/64
4 Claims. (Cl. 123—41.31)



1. A liquid-cooled cylinder head, for a fuel injection internal combustion piston engine, comprising a plurality of liquid-impervious and gas-impervious walls defining an air inlet passage, an exhaust gas passage, a first coolant chamber surrounding said exhaust gas passage, a coolant outlet from said first coolant chamber, a second coolant chamber, and a coolant inlet to said first coolant chamber, said cylinder head defining a second coolant inlet arranged to deliver coolant directly into the first coolant chamber to impinge on the exhaust gas passage, said coolant outlet being arranged adjacent the exhaust gas passage whereby substantially all the coolant that flows through the cylinder head will also flow over the exhaust gas passage, one of said walls defining a substantially part spherical surface for forming a boundary of a combustion chamber, said air inlet passage and said exhaust gas passage extending through said one wall into said combustion chamber, said first coolant chamber arranged immediately adjacent said one wall, another of said walls separating the first coolant chamber from the second coolant chamber whereby the first coolant chamber is arranged intermediate the second coolant chamber and said combustion chamber, said one wall defining inlet and exhaust valve seat means respectively at the junctions of the air inlet and exhaust gas passages with said combustion chamber, said inlet and exhaust valve seat means lying in respective inclined planes each substantially tangential to said part spherical surface for engagement by the heads of respective poppet valves, said cylinder head defining valve guide means for supporting the said poppet valves such that the poppet valve for the air inlet passage will be inclined away from the poppet valve for the exhaust gas passage, said one wall defining a seating between said inlet and exhaust valve seat means for supporting a fuel injector, said another wall defining a coolant passage interconnecting the first and second coolant chambers, and said coolant passage being arranged to direct a flow of coolant from the second coolant chamber to impinge on the said one wall between the seating for the fuel injector and the inlet and exhaust valve seat means.

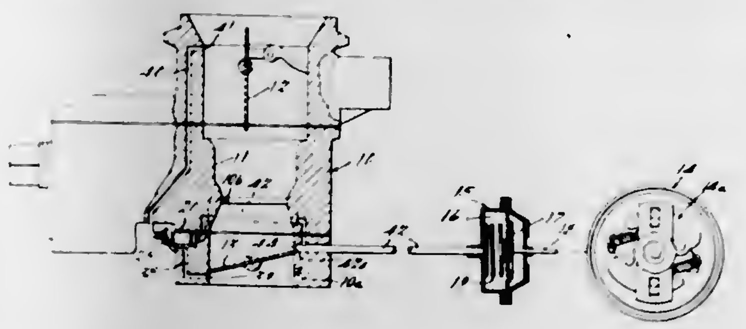
3,353,523
FOUR-STROKE TWIN COMBUSTION ENGINE
Alexandr Ivanovich Meden and Viktor Petrovich Surov, Kolomna, U.S.S.R., assignors to Kolomensky Teplovozostroitelny Zavod imeni V.V., Kuibysheva, U.S.S.R.
Continuation of application Ser. No. 398,012, Sept. 21, 1964. This application Dec. 30, 1966, Ser. No. 606,466
3 Claims. (Cl. 123—55)



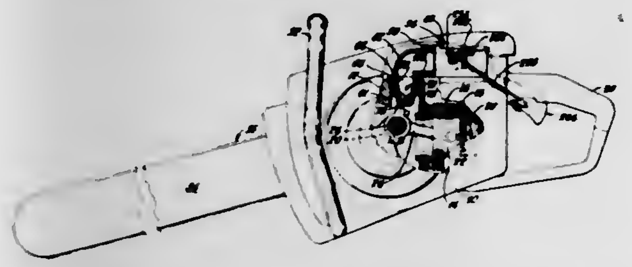
1. A four-stroke twin combustion engine comprising: two rows of cylinders with heads; a camshaft located between said rows of cylinders, intake and exhaust valves located in said cylinder heads; levers interacting with said valves; inclined rods having hinged connection with said levers, said levers being arranged in a plane perpendicular to the axis of the camshaft; tappets hinge-connected to said rods; a first set of cams mounted on the camshaft each operating the intake valves of respective opposed cylinders via corresponding tappets, inclined rods and levers; and a second set of cams mounted on the camshaft each operating the exhaust valves of respective opposed cylinders via corresponding tappets, inclined rods and levers.

3,353,524
METHOD OF OPERATING AN AUTOMOTIVE ENGINE
Jorma O. Sarto, Orchard Lake, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Original application Oct. 23, 1963, Ser. No. 318,285, now Patent No. 3,252,457, dated May 24, 1966. Divided and this application Oct. 13, 1965, Ser. No. 495,588
10 Claims. (Cl. 123—117)

1. In the method of operating a piston type internal combustion engine for an automotive vehicle having a piston operated crankshaft rotatable through a top center position and having an acceptable idle operating condition at optimum fuel economy, an electrical ignition system adjustable for advancing or retarding its firing with respect to said top center position, a fuel charging device, and a throttle valve for said fuel charging device movable between idle and load positions, the steps of retarding said ignition system to fire after crankshaft rotation beyond said top center position and simultaneously maintaining combustion in said engine by supplying fuel to said engine in an approximately stoichiometric fuel-air mixture and at an accelerated rate with respect to said optimum fuel economy only while said engine is idling or coasting at low speed with said throttle valve at said idle position, and while supplying fuel substantially as above, advancing said ignition system to fire prior to crankshaft rotation to said top center position during coasting of said engine at higher speed with said throttle valve at said idle position.



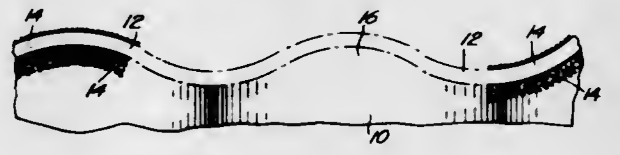
3,353,525
FUEL FEED SYSTEM AND THROTTLE CONTROL FOR INTERNAL COMBUSTION ENGINES
Warren D. Nutten, Erie, Mich., and Bernard C. Phillips, Toledo, Ohio, assignors to The Tillotson Manufacturing Company, Toledo, Ohio, a corporation of Ohio
Filed Sept. 7, 1965, Ser. No. 485,189
12 Claims. (Cl. 123—119)



1. A fuel feed system for a two cycle engine having a crankcase provided with passage means for admitting combustible mixture into the crankcase during reciprocation of the engine piston including, in combination, a carburetor having a fuel and air mixing passage in registration with said passage means, said carburetor having a fuel chamber, orifice means opening into the mixing passage for delivering fuel from said chamber into the mixing passage, a throttle valve in the mixing passage movable about an axis providing differential areas of the valve defined by the axis, and a bypass channel between the engine crankcase and the mixing passage whereby fluid pressures in the crankcase acting on the differential areas of the throttle valve influence the relative position of the throttle valve.

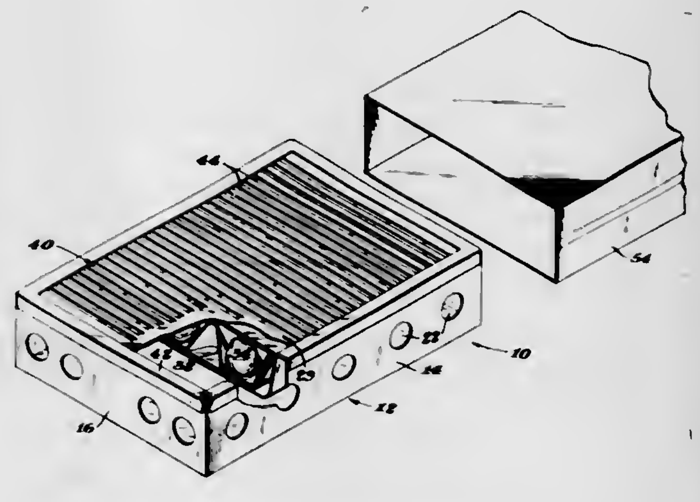
9. Charge forming apparatus including, in combination, a body provided with a mixing passage, a fuel chamber in the body, a fuel inlet in the body, valve means for the fuel inlet, control means for said valve means actuated by reduced pressure in the mixing passage, main and secondary orifices opening into the mixing passage for delivering fuel from the fuel chamber into the mixing passage, a throttle valve disc in said mixing passage, said secondary orifice opening into the mixing passage at the downstream side of the throttle valve, a shaft supporting the throttle valve disc, said shaft having its axis offset from the longitudinal axis of the mixing passage, actuating means for effecting opening and closing movements of the throttle valve, and means limiting movement of the throttle actuating means toward valve closing position whereby the throttle valve has unrestricted freedom of movement adjacent valve closing position.

3,353,526
ABRASIVE CUTTING TOOLS SUCH AS SAWS
Richard C. Daem, Nigel W. Gray, and Brian Young, Johannesburg, Transvaal, Republic of South Africa, assignors to Boart & Hard Metal Products S.A. Limited
Filed Oct. 12, 1964, Ser. No. 403,170
Claims priority, application Republic of South Africa, Oct. 18, 1963, 4,717/63; Aug. 19, 1964, 3,937/64
7 Claims. (Cl. 125—15)



1. An abrasive cutting tool in which the cutting edge comprises a core of non-abrasive material extending in zig-zag fashion across the means centerline of the material of the core with at least alternate limbs of the zig-zag crossing said centerline, and a single layer of abrasive grains adhering to each side of the core, that part of the core which is at the cutting edge being exposed.

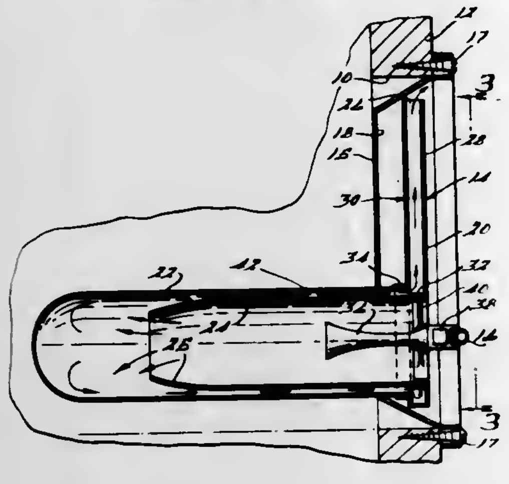
3,353,527
GRILLING APPARATUS
Robert F. Anderson, Midland, Mich., assignor to Imagineers Corporation, Midland, Mich., a corporation of Michigan
Filed Oct. 21, 1965, Ser. No. 499,392
12 Claims. (Cl. 126—25)



1. A disposable grill assembly comprising
(a) a box-like member having end walls, side walls, a bottom, and an open top, said box-like member being formed of paper-like material and having air circulation apertures formed therethrough said walls;
(b) a metal tray having a bottom, side and end walls, and an outwardly extending rim, said rim extending over said top of said box-like member, and the bottom and walls of said tray being spaced apart from the bottom and walls of said box-like member;
(c) an array of fuel elements, said fuel elements being disposed in said tray; and
(d) a foraminous grill element coupled to and supported from a peripheral section, said peripheral section being adapted to fit over said rim of said tray.

3,353,528
HEATER CONSTRUCTION

Donald E. Robinson, 39955 Six Mile Road, Northville, Mich. 48167
Filed Dec. 16, 1965, Ser. No. 514,358
12 Claims. (Cl. 126—91)



1. A heater comprising vent tube means comprising a first tubular body having an outlet for exhausting products of combustion at one end and a passageway connected to an inlet at an opposite end, chamber tube means comprising a second tubular body connected to said first tubular body and having one end opened and connected to said inlet and having an opposite end closed, and flame tube means comprising a third tubular body open at both ends and located within and spaced from said second tubular body and connected to said first tubular body with one of said both ends connected to said inlet and with the other of said both ends spaced from said opposite end of said second tubular body, said one of said both ends being in communication with the atmosphere, means for generally blocking said third body from said first body at said one of said both ends, burner means for providing a supply of fuel to be burned in said flame tube means and having an outlet located within said flame tube means and an air inlet located outside of said flame tube means whereby air from the atmosphere is drawn for combustion, and passage means defining a passage for the products of combustion from said flame tube means and between said second and third tubular bodies to said inlet, said passageway, and said outlet, said first tubular body extending generally vertically and with said second and third tubular bodies extending generally horizontally.

3,353,529
STATIONARY HOT AIR BUILDING HEATING SYSTEM USING A GAS TURBINE DRIVEN FAN

Andre Kovats, 13 Baker Road, Livingston, N.J. 07039
Filed June 10, 1966, Ser. No. 556,729
10 Claims. (Cl. 126—110)

1. A hot air heating system for continuous operation during a heating period comprising

a first air duct for distribution of primary heating air;

heat exchange means in series flow with the air duct having a primary side for flow of the heating air, a secondary side in heat exchange relationship with the primary side;

a fan in the first air duct for forced circulation of the heating air;

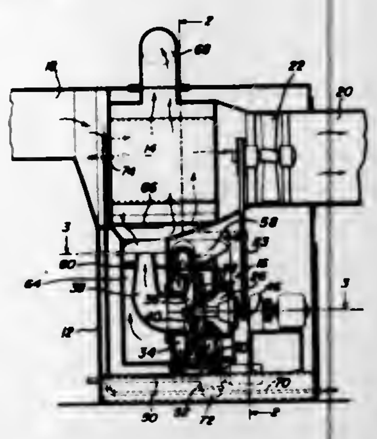
a gas turbine-compressor drive means connected to the fan;

means to supply secondary air to the turbine-compressor drive means;

combustion chamber means intermediate the turbine and compressor to provide an enthalpy input to the secondary air;

fuel valve means to vary the fuel input to the combustion chamber;

second duct means between the turbine outlet and heat exchange means secondary side to transmit the flow of turbine exhaust air to the heat exchange means secondary side;

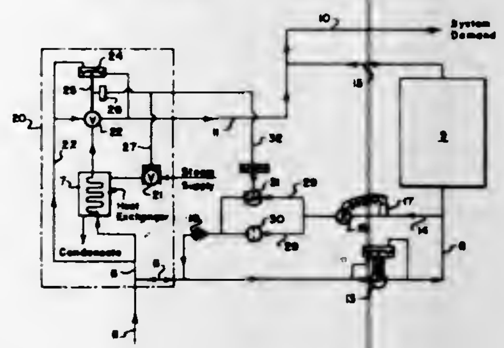


third duct means to introduce secondary cold air into the turbine exhaust air upstream of the heat exchange means to reduce the temperature of the flow on the heat exchange means secondary side; and

means to vary the ratio of secondary cold air added to the turbine exhaust air so that primary heating air is maintained at a substantially constant temperature during said heating period.

3,353,530
HOT WATER SUPPLY SYSTEM

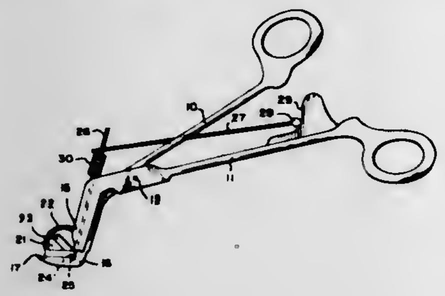
John T. Muller, Nutley, N.J., Edgar D. Hodgson, Jr., Salt Lake City, Utah, and Bernard H. Bremer, Allendale, N.J., assignors to Leslie Co., Lyndhurst, N.J., a corporation of New Jersey
Filed Apr. 8, 1966, Ser. No. 541,201
3 Claims. (Cl. 126—362)



1. In a hot water supply system including a hot water heater, a hot water storage tank, a cold water supply line having a branch line communicating with the heater and another branch line communicating with the storage tank, and a hot water supply line having a branch line communicating with the heater and another branch line communicating with the storage tank, the improvement which comprises a spring-loaded check valve positioned in the cold water branch line to the storage tank and operable to permit flow therethrough to the tank when the pressure in the tank is reduced by the demand to a level representative of the maximum heating capacity flow rate of the heater, and a by-pass reverse-flow circuit connected across the spring-loaded check valve in said cold water branch line, the by-pass circuit including a circulating pump operable in response to a water temperature in the storage tank below a predetermined storage temperature and a check valve disposed to permit flow from the pump through the by-pass line only in a direction opposite to the direction of flow of cold water through the spring-loaded check valve.

3,353,531
BIOPSY INSTRUMENT WITH SPECIMEN LIFTING MEANS

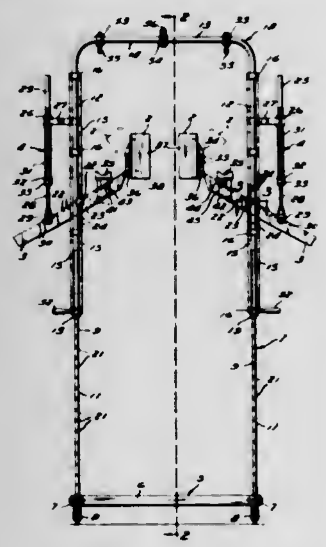
Thomas Anthony Armao, 1242 56th St., Brooklyn, N,Y. 11219
Filed Oct. 22, 1965, Ser. No. 501,068
8 Claims. (Cl. 128—2)



1. A biopsy instrument comprising a pair of elongated mutually hinged members extending in a common plane and containing a hinge, an activating handle integral with each elongated member, interengaging cutting members integral with the elongated members, which cutting members are in an upper and lower position relative to one another during the normal use of the instrument, said upper cutting member having a cutting edge which is substantially vertical in the normal use position of the instrument, said upper cutting member defining within it a specimen receiving cavity, said lower cutting member having a tip on the forward end thereof, means in at least said upper cutting member for effecting heat transfer between said upper cutting member and tissue being cut thereby, a specimen lifting member in said specimen receiving cavity in said upper cutting member for receiving in it a specimen cut between said cooperating upper and lower cutting members, and means coupled to said specimen lifting member for moving said specimen lifting member out of said cavity, said specimen lifting member having one end pivotally mounted on the elongated member on which the upper cutting member is mounted.

3,353,532
TRACTION APPARATUS

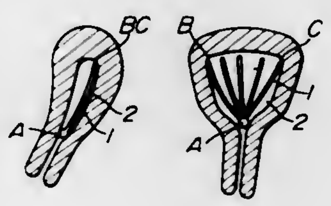
Luke C. Ellis, 19831 Saranac Drive, Fairview Park, Ohio 44126
Filed Oct. 26, 1964, Ser. No. 406,253
12 Claims. (Cl. 128—75)



1. Apparatus for applying suspension traction to a person while he is in an upright position, comprising supporting means embodying two spaced generally upright supporting members adapted to receive between them a person while he is in an upright position, means for engaging essentially only the generally upright sides of the chest of said person firmly in nonslipping relation, and means for supporting said engaging means from said generally upright supporting members at locations on said supporting members below and laterally of the location at which said engaging means engages the chest of the person, said engaging means and said supporting members cooperating to support the person substantially entirely by such enagement so the lower portion of his body is suspended without engagement of the spine by a body-supporting member.

3,353,533
INTRA-UTERINE CONTRACEPTIVE APPLIANCE

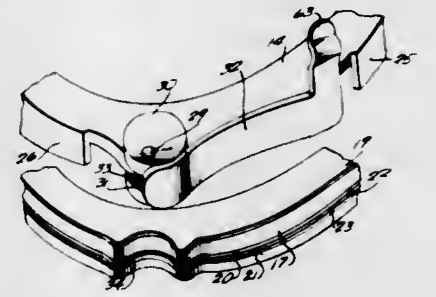
Atsumi Ishihama, 16–1 Aza Tenjin, Shingo, Morioka-shi, Japan
Filed July 12, 1965, Ser. No. 471,244
Claims priority, application Japan, Apr. 20, 1965, 40/22,976
1 Claim. (Cl. 128—130)



An intra-uterine contraceptive comprising a series of non-absorbent, elongated, elastic members having one end of each of said members integrated in a common joint, and other ends being free and extending away from said common point, said members being arranged to define a sector and two of said members being adapted to engage the walls of the uterine cavity thereby supporting said contraceptive.

3,353,534
DIVING HELMET

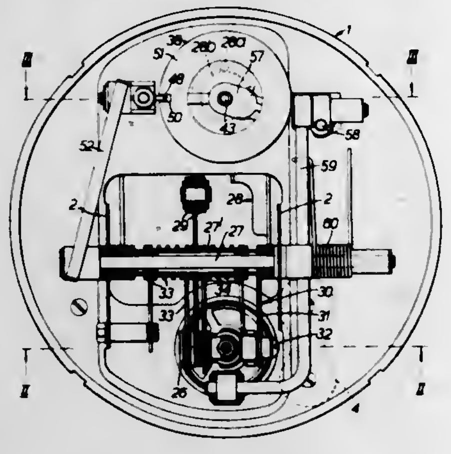
Hilbert J. Savoie, Jr., Marrero, La. (P.O. Box 98, Boutte, La. 70039)
Filed Oct. 13, 1964, Ser. No. 403,604
14 Claims. (Cl. 128—142.3)



1. A diver's helmet comprising a rigid main helmet body adapted to fit over a diver's head, a circumferential bottom flange on said body having a depending front skirt portion having a locking slot formed therein for receiving a projecting locking tongue of a top ring assembly of a diver's suit, a pair of locking clamps vertically pivoted to the opposite sides of said flange each provided with respective, spaced parallel top and bottom locking arms, said top arm engaging the top surface of said flange and said bottom arm engageable beneath the bottom surface of the top ring assembly of a diver's suit upon turning to a locking position, each locking clamp being provided with an operating arm extending forwardly along the flange when moved to place said bottom arm in said locking position.

3,353,535
ANESTHETIC AND ANALGESIC INHALER APPARATUS

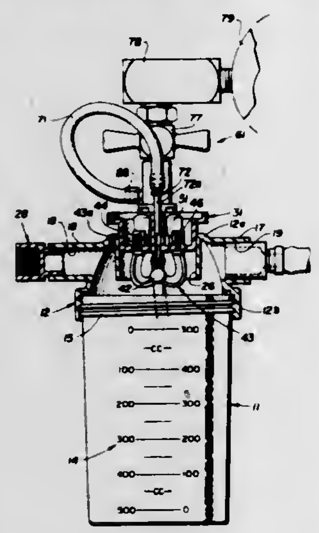
Frank Henry Gardner, Botley, England, assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 30, 1964, Ser. No. 407,793
11 Claims. (Cl. 128—188)



1. Anesthetic and analgesic inhaler apparatus comprising a vaporizing chamber to contain liquid agent for producing vapor, a valve at an outlet of said chamber, means for diluting with by-pass gas the gas/vapor from said chamber including a gas by-pass control member, control means which includes a cam means interchangeable for each agent and which is adjustable to give a chosen vapor concentration by varying said outlet valve opening; means actuable by said interchangeable cam means to adjust said by-pass control member to a position appropriate to the particular agent, and a second gas by-pass control member secured to said outlet valve for movement therewith and so as to co-act with the first said by-pass control member to provide according to said outlet valve opening optimum gas by-pass flow characteristics as predetermined for the particular agent.

3,353,536
NEBULIZER

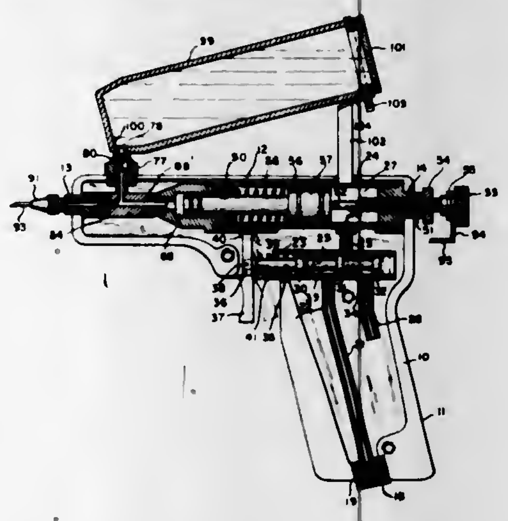
Forrest M. Bird, Airport, Box 970, Palm Springs, Calif. 92262, and Henry L. Pohndorf, 1227 Brewster Drive, El Cerrito, Calif. 94530
Filed Apr. 13, 1965, Ser. No. 447,852
8 Claims. (Cl. 128—194)



1. In a nebulizer for supplying small liquid particles in a mainstream of gases supplied to a patient, a container forming a chamber adapted to contain a liquid, a cover mounted on said container, the cover being formed with an inlet opening and an outlet opening for carrying mainstream gases to the patient, a nozzle mounted on said cover and having a passage therein for supplying gases into the chamber, an additional passage formed in said nozzle and communicating with said first named passage, means connecting said additional passage to the fluid in the reservoir, means mounted in the cover providing a surface disposed in front of the nozzle for breaking up liquid particles entrained in the gases passing from the nozzle, and a skirt disposed in the cover and surrounding the nozzle and having its lower extremity extending below said inlet and outlet openings and below the point at which the liquid particles impinge upon said surface, said skirt being disposed in front of said inlet opening and said outlet opening and in said mainstream gases so that the mainstream gases have a tendency to flow around the skirt.

3,353,537
AUTOMATIC MULTI-DOSAGE INOCULATING INSTRUMENT

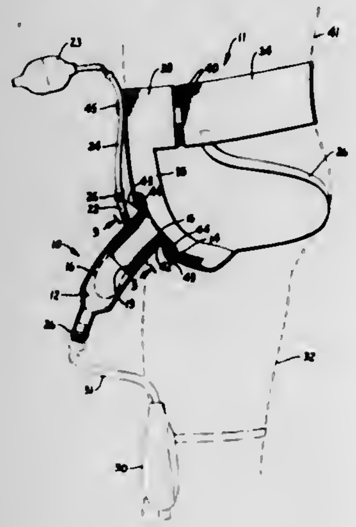
George W. Knox, Bethany Beach, Del. 19930, and William F. Crowe, Seaford, Del. 19973
Filed Aug. 11, 1965, Ser. No. 478,873
6 Claims. (Cl. 128—218)



2. In a high speed inoculating gun, a hollow casing in the form of a hand gun comprising a handle portion and a barrel portion, a compressed air line extending upwardly in said handle portion, an air valve cylinder disposed normally to said compressed air line at the upper extremity thereof and connected thereto, a piston slidable in said air valve cylinder, an exhaust duct extending from said air valve cylinder adjacent its rear extremity, a main cylinder disposed above and parallel to said air valve cylinder within the barrel portion of said casing and affixed in the extremities thereof, an air line connecting said cylinders, a piston slidable in said main cylinder, a spring in said cylinder ahead of said piston forcing it rearwardly therein, plug means in the rear extremity of said main cylinder provided with a screw-threaded axial orifice, a screw working in said orifice bearing at its forward extremity against said piston regulating its longitudinal position in said main cylinder, an air chamber provided in said main cylinder behind said piston, a vaccine chamber in said main cylinder ahead of said piston, a source of vaccine connected to said vaccine chamber, a one way valve spring pressed upwardly between said vaccine chamber and said vaccine source, a forward plug means screw-threadedly engaging the forward extremity of said main cylinder, an axial bore therethrough extending through the forward portion of the instrument, a one way valve spring pressed rearwardly in said bore, a needle assembly at the forward end of said bore, trigger means pivotally affixed at the underside of said main cylinder depending therefrom outwardly of said casing and pivotally attached to the forward extremity of the piston in said air valve cylinder, a spring within the forward extremity of said air valve cylinder about the forward extremity of said piston urging said trigger and piston forwardly, three equally spaced cylindrical baffles on said air valve cylinder piston closely and sealingly engaging the inner walls of said air valve cylinder, the central of said baffles lying between said compressed air line and the line to said main cylinder when the trigger is in forward position whereby upon depression of said trigger a charge of compressed air will be delivered to said main cylinder behind said piston, driving it forwardly to deliver a charge of vaccine from said vaccine chamber through said needle.

3,353,538
MALE URINAL WITH INFLATABLE SEALING MEANS

Richard B. Carrigan, 20 Dellwood Court, San Rafael, Calif. 94901
Filed Sept. 2, 1964, Ser. No. 393,949
6 Claims. (Cl. 128—295)

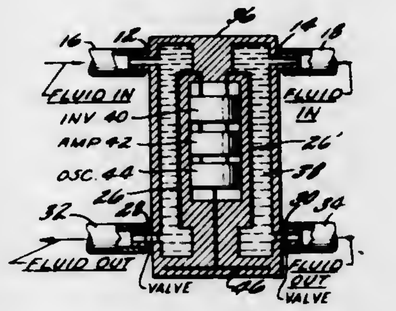


1. In a male urinal, an organ holding device comprising:
- (a) a soft rubbery receptacle for loosely receiving the organ of a user thereof;
- (b) an elongate inflatable annular bag of soft rubbery material loosely received in concentric relationship within said receptacle, said bag, upon inflation, being adapted to sealingly engage the outer periphery of an organ received in said receptacle with uniform pressure;
- (c) an annular seal between the rearmost edges of said bag and receptacle establishing the sole peripheral seal between said bag and receptacle, said seal being flexible and adapted to permit said bag to freely conform with the interior of said receptacle and an organ received therein; and
- (d) means to selectively inflate said bag by applying internal pressure thereto.

3,353,539
ELECTRICAL POWER GENERATOR EMPLOYING A BODY FLUID AS ELECTROLYTE AND METHOD OF OPERATION

Richard J. Preston, Springfield, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 31, 1963, Ser. No. 320,390
9 Claims. (Cl. 128—419)

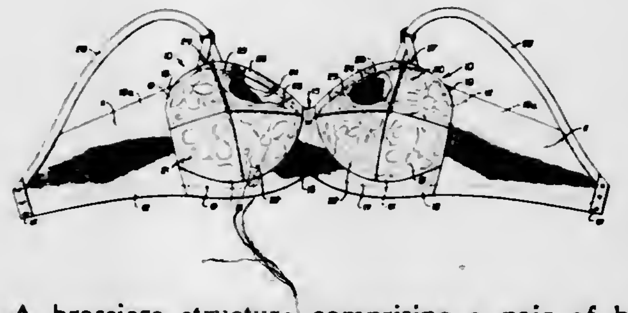
4. Apparatus for generating electrical power comprising a pair of electrodes,
a container enclosing said electrodes and having an inlet and an outlet,
means adapted to implant said container within a portion of a human body,
means adapted to provide a flow of a preselected body fluid into said container inlet, through said container, and from said container outlet,
means adapted to retain sufficient body fluid in said container to contact said electrodes, contact between said fluid and said electrodes producing a chemical reaction therebetween and generating a potential difference between said electrodes,



and a load electrically connected between said electrodes for producing power from said potential difference.

3,353,540
BRASSIERE

Olga Erteszek, Los Angeles, Calif., assignor to Olga Company, Van Nuys, Calif., a corporation of California
Filed July 6, 1965, Ser. No. 469,624
7 Claims. (Cl. 128—489)



1. A brassiere structure comprising a pair of breast cups the upper inner edge extents of which are elastically stretchable and converge downwardly to a juncture at the front center of the brassiere, and back strap sections connected to the outer sides of the cups, each of the cups comprising non-elastic fabric sections forming the outer upper and lower portions of the cup, and elastic fabric sections each forming an inner upper cup portion defined at its top by an elongated dimension of one of said convergent upper edge extents and occupying an area of the cup converging downwardly directly below the edge extent, each elastic fabric section being stretchable generally in the direction of the edge extent above.

3,353,541
TOBACCO SHEET MATERIAL

John D. Hind and Robert B. Seligman, Richmond, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
No Drawing. Filed June 16, 1966, Ser. No. 557,903
1 Claim. (Cl. 131—17)

Tobacco sheet material comprising finely divided tobacco bonded together by an adhesive derived from tobacco plant parts containing pectins having alkaline earth metal cross-links, said adhesive being prepared by the process comprising the steps of:
- (1) Contacting said tobacco plant parts with a treating solution containing a reagent comprising diammonium acid phosphate to destroy the alkaline earth metal cross-links;
- (2) At least partially releasing the resulting tobacco pectins from the interstices of the treated tobacco plant parts;

(3) Depositing said tobacco pectins on the treated plant parts; and

(4) Recovering the resulting mixture.

3,353,542
SMOKING TOBACCO INCLUDING RELEASABLE FLAVORANT

Keith D. Kilburn, Southampton, England, assignor to Brown and Williamson Tobacco Corporation, Louisville, Ky., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 429,672, Feb. 1, 1965. This application May 18, 1967, Ser. No. 639,585
8 Claims. (Cl. 131—17)

5. A smoking tobacco product having improved taste, flavor and aroma characteristics comprising smoking tobacco having incorporated therein a small amount of an ester of orthotitanic acid, said ester capable of being decomposed by the heat of burning tobacco to yield a flavorant to be carried by the smoke to the user.

3,353,543
SMOKE FILTER

Reavis C. Sproull and Richard M. Berger, Richmond, Va., assignors to American Filtrona Corporation, a corporation of New York
No Drawing. Filed Dec. 2, 1964, Ser. No. 415,482
The portion of the term of the patent subsequent to Nov. 16, 1982, has been disclaimed
8 Claims. (Cl. 131—265)

1. In a smoking means of the type wherein a quantity of tobacco is ignited and smoke is drawn therefrom by a smoker, the improvement which comprises a filter means interposed between the smoker and the tobacco, said filter means comprising an elongated plug disposed in said smoking means such that smoke passes therethrough to reach the smoker, said plug consisting essentially of the following constituents:

(a) from in excess of 20 to approximately 75 percent by weight of activated carbon particles, said activated carbon particles having a maximum dimension which is a small fraction of the minimum dimension of said plug;

(b) from in excess of 20 to approximately 75 percent by weight of granular tobacco particles, said tobacco particles having a maximum dimension which is a small fraction of the minimum dimension of said plug; and

(c) from at least 5 to approximately 30 percent by weight of a thermoplastic resin, said thermoplastic resin being operative essentially alone to effect bonding bridges between juxtaposed constituents through heating and subsequent cooling, with the temperature of the resin at which the bonding is effective exceeding that of the normal temperatures of smoke passing through said plug;

said plug further being characterized by:

(1) said activated carbon particles serving as the major active component of said plug and being active to remove both solid and gas phase constituents from smoke passing through said plug during utilization of said smoking means;

(2) said thermoplastic resin essentially alone serving as a binder between said constituents and defining a multiplicity of discrete bonding means predominantly individually smaller than said activated carbon and tobacco particles;

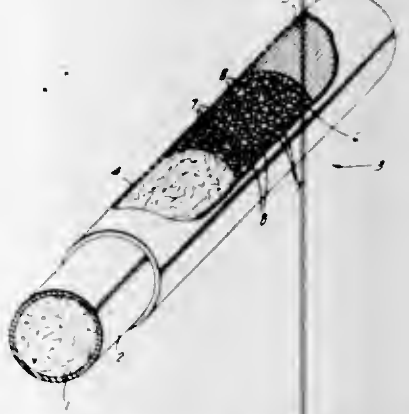
(3) said constituents cooperating through said bonding means to give structural continuity to said plug as a self-sustaining, substantially particulate stable body in the form of a continuous porous matrix with the discrete bonding means and constituents providing a labyrinth of smoke passages therethrough;

(4) said constituents being comingled in any cross-section of said body and with said activated carbon and tobacco particles randomly arranged in said plug such that a multiplicity of said activated carbon and tobacco particles are present in substantially any cross-section of said body; and

(5) said body deriving its stability substantially only from said cooperation between said bonding means and said constituents.

3,353,544
TOBACCO-SMOKE FILTERS

William Brian Fordyce, Romsey, and Henry George Horsewell, Totton, England, assignors to Brown and Williamson Tobacco Corporation, Louisville, Ky., a corporation of Delaware
Filed June 8, 1965, Ser. No. 462,430
Claims priority, application Great Britain, June 10, 1964, 24,119/64
13 Claims. (Cl. 131—267)



1. A method of producing a bonded, self-sustaining, porous tobacco smoke filter which comprises mixing particles of tobacco smoke filter material with particles of low melting bonding material selected from the group consisting of the hydrates of simple and complex crystalline metallic salts of inorganic acids and metallic salts of organic acids, the particle size of the bonding material being at least substantially equal to the particle size of filter material; feeding the mixture at a substantially constant rate onto a moving channel-shaped paper band; folding the paper band and mixture into a rod; heating the folded rod to a temperature not in excess of 250° C. to soften the low melting bonding material so that the softened low melting bonding maetrial contacts surfaces of the particles of filter material; and then cooling the heated rod to solidify the low melting bonding material to form a firmly bonded rod.

8. A tobacco smoke filter comprising a bonded, porous, self-sustaining rod formed of a mixture of particles of a tobacco smoke filter material and a particulate low melting bonding material selected from the group consisting of the hydrates of simple and complex crystalline metallic salts of an inorganic acid and metallic salts of an organic acid, the bonding material having a melting point not in excess of 250° C.; the particle size of the bonding material being at least substantially equal to the particle size of the filter material so that the bonding material is in adhesive contact with surfaces of the filter material to form a tobacco smoke filter.

3,353.545
WASHING MACHINE AND VALVE THEREFOR

Rudolph N. Price, 59 Mill Spring Road, Manhasset, N.Y. 11030
Filed Nov. 22, 1965, Ser. No. 508,984
16 Claims. (Cl. 134—95)

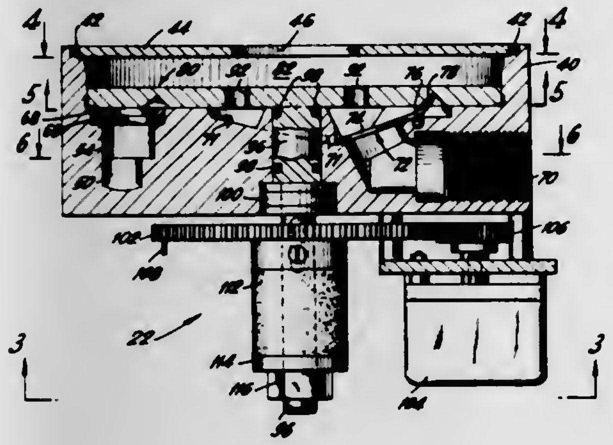
1. A rotary control valve for cycling the flow of at least one type of fluid, said valve comprising:

(a) a body member having a chamber therein;

(b) at least one fluid intake passageway having a first end in communication with the chamber in said body member to define a fluid outlet port, the opposite, second end of said passageway being adapted to receive the fluid to be controlled by said valve;

(c) a fluid discharge passageway having a first end in communication with the chamber in said body member and a second end terminating at the exterior surface of said body member;

(d) a flapper valve pivotally disposed in said body member in covering relationship to the first end of said discharge passageway, said flapper valve having a tail portion defining a cam follower;

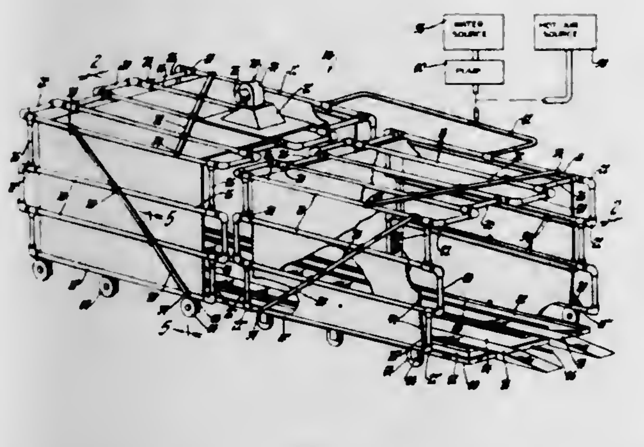


(e) a substantially flat cam member rotatably disposed in the chamber of said body member, said cam member having a first aperture arranged to register with the first end of said fluid outlet port, a plurality of second apertures in continuous communication with said fluid discharge passageway and a cam surface arranged to engage said flapper valve tail portion when the first cam aperture is out of registry with the outlet end of said fluid intake passageway; and

(f) means to rotate said cam member whereby said cam member aperture is intermittently registered with the outlet port of said body member intake passageway and said cam surface intermittently engages said flapper valve tail portion.

3,353,546
VEHICLE WASHING ASSEMBLY

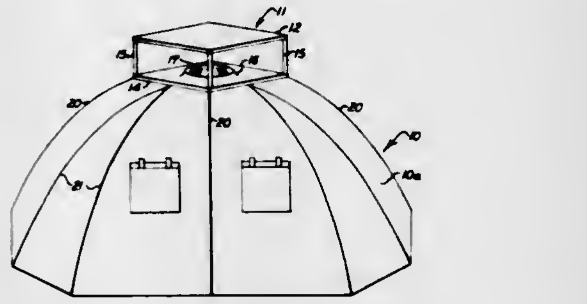
Kenneth J. Mahoney, 335 Douglas Drive, Bloomfield Hills, Mich. 48013
Filed Mar. 15, 1965, Ser. No. 439,803
14 Claims. (Cl. 134—123)



3. A vehicle washing assembly comprising: a pair of first and second frames which are independent of one another and self supporting, said first frame being telescopic with said second frame may be moved into said second frame, each frame including a plurality of horizontally extending frameworks pivotally interconnected so that each frame may be positioned to form an enclosure for a vehicle and may be independently folded into a compact unit.

3,353,547
PORTABLE SELF-SUPPORTING TENT

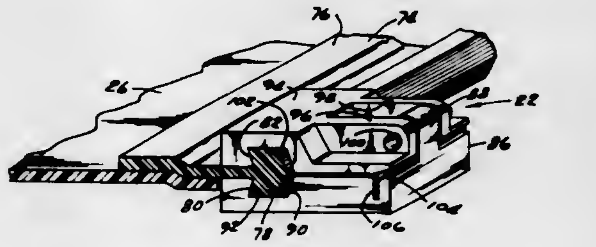
Penrose Lucas Albright, 1523 Woodacre Drive, McLean, Va. 22101
Filed Oct. 24, 1965, Ser. No. 504,954
5 Claims. (Cl. 135—1)



1. A collapsible tent comprising yieldable material and an arc shaped frame firmly connected to said yieldable material, said frame comprising a plurality of aligned segments each connected on one side to said yieldable material whereby said segments limit movement of said yieldable material in one direction into substantial alignment and permit pivotal movement in the other, wherein the faces of said segments connected to said yieldable material are of parallelogram geometry, said frame being rollable in one direction into substantially a helical form.

3,353,548
ANCHORING FLEXIBLE SHEETING

Karel J. Staller, Rutherford, N.J., assignor to Flexigrip, Inc., New York, N.Y., a corporation of New York
Filed Aug. 24, 1965, Ser. No. 482,204
5 Claims. (Cl. 135—5)



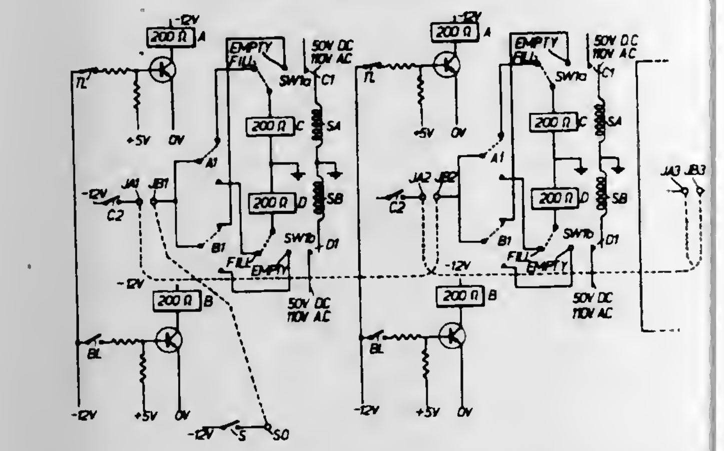
1. A fastener for releasably securing the ends of a sheet to an anchoring surface wherein an end of the sheet includes an enlarged portion, said fastener comprising:

(a) an anchor member formed of a relatively flat plate having one surface conformably shaped to the anchoring surface and having a groove in one end thereof,

(b) a clamping member formed of a relatively flat plate having a groove in one end thereof, the grooves of said anchor member and said clamping member forming a channel for the enlarged portion of the sheet, means at the other ends of said members for pivoting one with respect to the other and spaced from said channel,

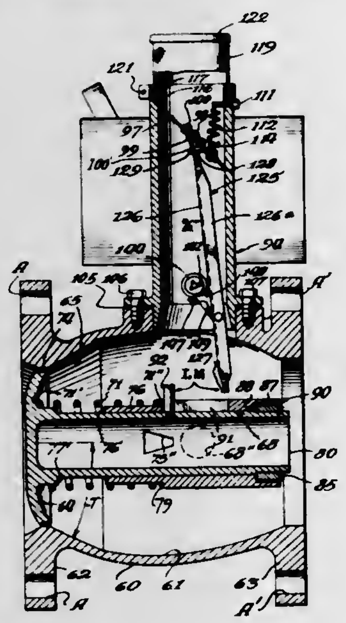
(c) releasable means for impeding pivotal movement of said clamping member with respect to said anchor member, and means for securing said base to the anchoring surface, whereby said members abut against each other when engaging the enlarged portion in said channel.

3,353,549
LIQUID FLOW CONTROL SYSTEMS
Eric H. Walker and Ian W. F. Paterson, Darlington, England, assignors to Whessoe Limited
Filed July 28, 1964, Ser. No. 385,582
Claims priority, application Great Britain, July 31, 1963, 30,343/63
5 Claims. (Cl. 137—101.25)



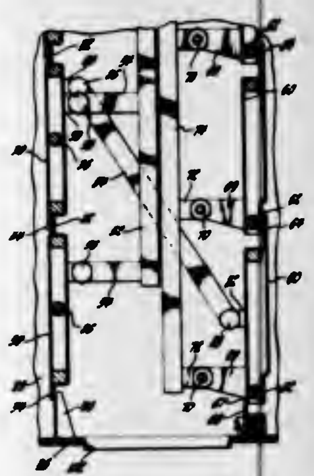
1. Liquid flow control system for filling and emptying a plurality of containers, said system comprising a plurality of normally closed inlet/outlet valves, one associated with each said container for admitting and extracting liquid to and from the associated container, a plurality of main switches each associated with at least one of said valves, said main switches each being operable to cause said valves to open, a plurality of upper limit switches and lower limit switches, one upper limit switch and one lower limit switch being associated with each container and responsive to predetermined upper and lower liquid levels in said associated container to cause the valve associated with that container to reclose, and means responsive to actuation of said limit switches of one container to initiate operation of the main switch of a subsequent container and changeover switch means connected to alternately render said upper limit switches operative with said lower limit switches inoperative, and vice versa.

3,353,550
SYSTEM FOR CONTROLLING FLOW AND PROPORTIONING LIQUIDS
Hilding V. Williamson and Eduard J. Job, Chicago, Ill., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 21, 1963, Ser. No. 317,542
8 Claims. (Cl. 137—114)



1. A flow control device for use in a flow system, said flow control device including a housing having a passage, flow-responsive means disposed in said passage for responding to a change in fluid medium flow, said flow-responsive means including a flow-responsive element, fluid bleed valve for selectively bleeding gaseous fluid into said passage, and means responsive to said flow-responsive element after sufficient movement of said flow-responsive element for operating said bleed valve to limit the fluid medium flow to a preselected level, said operating means including a lost-motion connection adapted and arranged so that the suction in said passage is limited to consequently limit fluid medium flow.

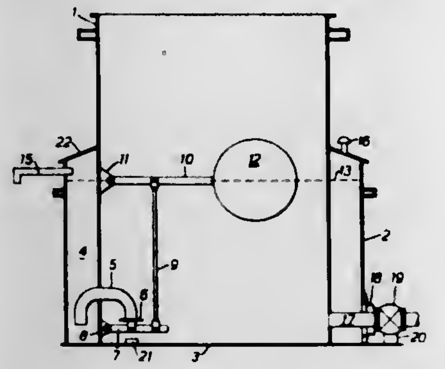
3,353,551
AIR BY-PASS ARRANGEMENT OPERATED BY DIFFERENTIAL AIR PRESSURE
Charles H. Smale, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 5, 1965, Ser. No. 477,466
6 Claims. (Cl. 137—114)



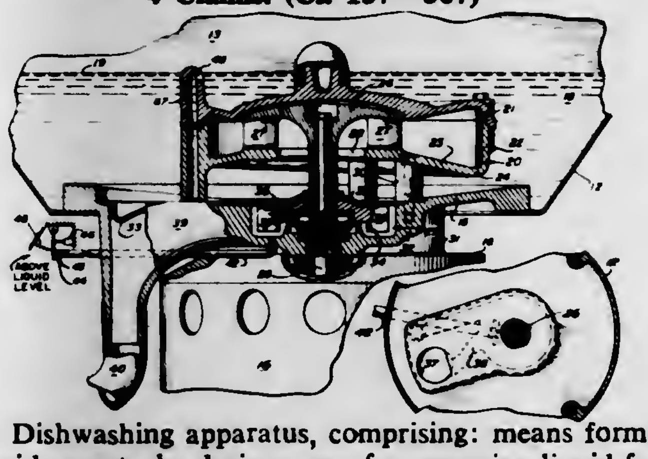
3. An outdoor air by-pass arrangement comprising a housing, opposed doors in said housing, one of said doors being pivotally mounted and balanced as to a first differential air pressure exerted against it, the other of said doors being pivotally mounted and unbalanced as to a second differential air pressure exerted against it, spring means linked to said doors urging them toward their closed positions, an opening in said housing connecting a zone between said doors to a sheltered ambient air zone, and the arrangement being such that an increase in said second differential air pressure is adapted to open said doors against the action of said spring means.

3,353,552
STORAGE TANKS
Walter A. Rowley, Darlington, England, assignor to Whessoe Limited
Filed Dec. 27, 1965, Ser. No. 516,626
Claims priority, application Great Britain, Dec. 23, 1964, 52,219/64
8 Claims. (Cl. 137—434)

1. A containment vessel for liquids comprising an inner shell wall, an outer shell wall of lesser height than the inner shell wall which surrounds and is spaced outwardly from the lower part of the inner shell wall, a bottom to which the inner and outer shell walls are connected at their lower ends, the inner shell wall with the bottom defining an inner tank adapted to contain liquid up to a first given maximum level, the lower part of the inner shell wall with the bottom and the outer shell wall defining an outer tank adapted to contain liquid up to a second given maximum level which is lower than the first level, the inner and outer shell walls being free to yield independently of one another in response to the hydrostatic pressure of liquid in said inner and outer tanks, a pipe for the delivery and withdrawal of liquid communicating with the inner tank, a liquid passage connecting the inner tank to the outer tank, a valve for opening and closing said passage, and means operating automatically to open the valve when the level of liquid in the inner tank falls below said second level and to close the valve when the level of the liquid in the inner tank rises above said second level.



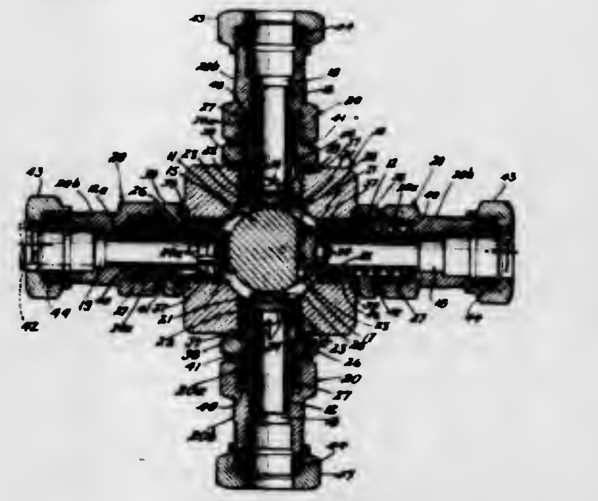
3,353,553
DISHWASHING APPARATUS
Wallace E. Lind, Anoka, Jack F. Clearman and Ival G. Dutcher, White Bear Lake, and Robert E. Johnson, St. Paul, Minn., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Sept. 17, 1965, Ser. No. 488,149
4 Claims. (Cl. 137—567)



1. Dishwashing apparatus, comprising: means forming a liquid receptacle; drain means for removing liquid from said receptacle; rotatable means; first pump means operable by said rotatable means for circulating liquid in said receptacle; second pump means operable by said rotatable means for expelling liquid through said drain means, said second pump means including a pump chamber having an inlet from said receptacle, an outlet to said drain means and a rotatable impeller in said chamber; and means for selectively introducing gaseous fluid to said pump chamber during rotation of said impeller to displace liquid in said chamber and prevent liquid flow through said second pump chamber.

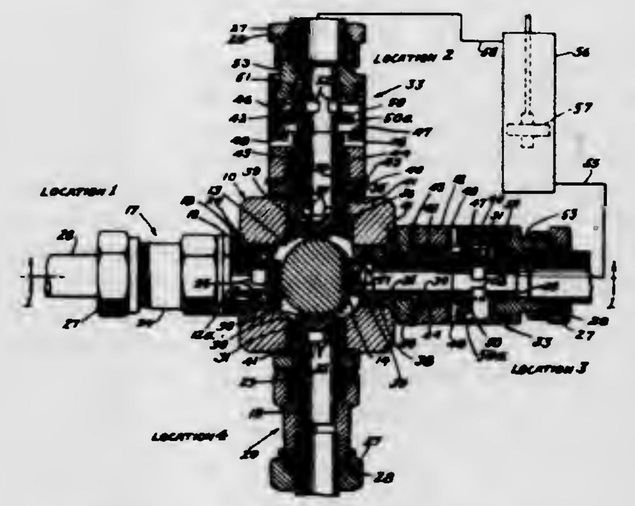
3,353,554
FLUID CONTROL VALVES
Basil A. Ludkin, Caterham, England, assignor of one-half each to Drallim Industries Limited, Upper Warlingham, England, a British company, and Angus W. Millard, Godstone, England
Filed Sept. 15, 1965, Ser. No. 487,492
9 Claims. (Cl. 137—595)

1. A multiple port control valve having
(a) a main body,
(b) a valve stem rotatably supported in said body with a cylindrical annular chamber around said stem,
(c) a plurality of valve connection assemblies radially disposed in said body with their axes perpendicular to said valve stem, one of said assemblies having
(1) a fixed cylindrical sleeve with an inward flange and a bevelled seat at the inner end,
(2) an axially movable sleeve mounted inside said cylindrical sleeve having an external annular flange, an inner closed end with an annular groove around it, an annular port connecting the inside of said movable sleeve and the annular chamber at a point adjacent said inner end,
(3) a resilient seal supported in said groove,
(4) a spring member reacting against the flange of said movable sleeve to urge the external annular flange toward the inward flange of said fixed sleeve,



(d) said valve stem having a flattened cam surface which may be rotated into alignment with said axially movable sleeve to allow said sleeve to move into open position with its end against said cam surface and said seal being remote from said seat so that the annular port connects said cylindrical annular chamber of said valve body to the hollow inner portion of said movable sleeve, said valve stem being rotatable to a position where the end of said movable sleeve is contacted by the cylindrical portion of said valve stem to urge said movable sleeve to closed position with the resilient seal engaged against said bevelled seat.

3,353,555
MULTIPLE CIRCUIT CONTROL VALVE
Basil A. Ludkin, Caterham, England, assignor of one-half each to Drallim Industries Limited, Upper Warlingham, England, a British company, and Angus W. Millard, Godstone, England
Filed Sept. 15, 1965, Ser. No. 487,491
13 Claims. (Cl. 137—596.2)



1. A selector valve construction having
(a) a main body having a central chamber and a plurality of radially disposed ports,

(b) a spindle in said chamber having its axis perpendicular to the plane of said ports and having a cam section in alignment with said ports,

(c) each of said ports having a connector assembly mounted therein,

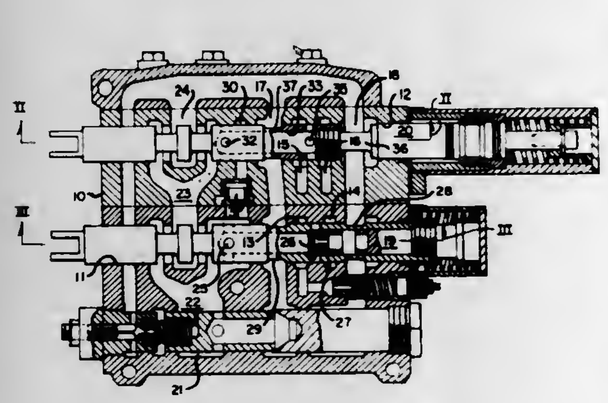
(d) one of said connector assemblies having
  (1) a connector member attached to said body and having a cylindrical cavity,
  (2) a valve device radially movable to an inner or outer position in said cavity by rotation of said spindle,
  (3) a spring reacting against said device to urge it inwardly,
  (4) a sealing ring engaging said valve device near its inner end and a second sealing ring engaging said valve device at an outer location,
  (5) a radially directed fluid passageway in said connector assembly, connecting with a radially extending pipe,
  (6) said connector assembly having a wall with an aperture near the sealing ring at the outer location, said aperture connecting to a passage leading outside said connector assembly,
  (7) movement of said valve device in one direction serving to open said aperture to connect said fluid passageway with said passage to the outside and movement in the other direction closing said aperture between said passageway and said passage thus providing for control of an external circuit independent of the flow circuits in said valve chamber.

3,353,556
CONTROL VALVES

Robert F. Hodgson, Canfield, Ohio, assignor to Commercial Shearing & Stamping Company, a corporation of Ohio

Filed Apr. 26, 1965, Ser. No. 450,958

5 Claims. (Cl. 137—596.12)



3. In a control valve, a valve body having a pair of spaced parallel elongated bores, a pair of side by side high pressure outlet passages connecting with each said bore and each leading to a motor port at the exterior of the body, exhaust passage means communicable through said bores with said high pressure outlet passage means, a hollow valve element in each of said bores movable axially therein from a neutral position to either of at least two operating positions to selectively govern communication between said outlet passages and said exhaust passage means, said body having an inlet and an outlet connected by a through passage which transversely intersects both said bores and through which pressure fluid supplied to the body inlet flows directly to the body outlet when said valve elements are in their neutral position, but which through passage is closed by either of said valve elements when said element is in either of its operating positions, said body having a parallel passage means extending transversely of and communicating with one of said bores and said through passage, said parallel passage selectively communicating through the hollow valve element of the said one bore with one of each of the high pressure outlet passages in the two operating positions and check valve means in said parallel passage.

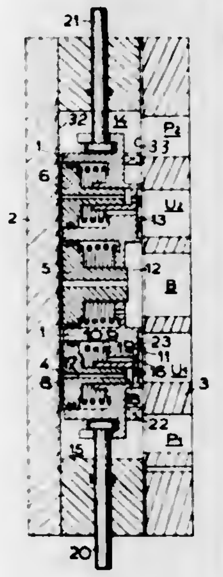
3,353,557
DISTRIBUTOR VALVE

Jacques Faisandier, 32 Blvd. Felix Faure, Chatillon-sous-Bagneux, Seine, France

Filed June 12, 1964, Ser. No. 374,589

Claims priority, application France, June 20, 1963, 938,759

4 Claims. (Cl. 137—625.48)



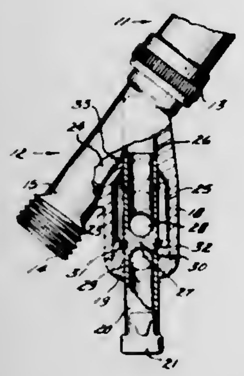
1. A reverse cycle valve comprising a chest having an internal chamber of a flat parallelpiped shape and including a pressure plate and a port-forming plate, parallel one with the other, and a valve member of a flat parallelpiped shape and having two faces slidably engaging said plates, respectively; the port-forming plate having a central port, two end ports, one on each side of said central port, and two intermediate ports, each between the central port and one of the end ports; the face of said valve member in contact with the said port-forming plate having three recesses covering respectively said central port and said two intermediate ports in the neutral position of the slide valve; said valve member having three cylinders respectively opening adjacent said pressure plate on three portions of said pressure plate, said portions being opposite said central port and said intermediate ports in the neutral position of the valve member; a piston disposed in each of said cylinders and defining a first chamber in each corresponding cylinder; each piston having a face engaging said pressure plate and including a recess formed in said face, each piston having a rod guided in a socket formed at the bottom of the corresponding cylinder, each rod defining in the corresponding socket a second chamber; a spring in each of the said first chambers being disposed so as to urge the corresponding piston onto said pressure plate; each of the said pistons and the corresponding piston rods having internal conduits to put the corresponding piston recess into communication with the corresponding second chamber; and conduits in said valve member to put each first and second chamber in communication with the corresponding recess formed in the face of said valve member; the whole formed by the chest and the valve member being symmetrical in relation to a perpendicular plane as regards the direction of movement of the valve member when the valve member is in its neutral position.

3,353,558
CONVENIENCE VALVE

Hayes M. Hobolth, 1750 Oak Grove Road, Howell, Mich. 48843

Filed Nov. 16, 1964, Ser. No. 411,443

4 Claims. (Cl. 137—625.48)



1. A convenience valve for hose connections and the like comprising:

(a) a Y-shaped base casting providing converging main and minor branches and defining two converging openings or cavities therethrough;

(b) a manually operable valve element axially and guidably moveable in one of the said cavities provided in the minor of said branches and having two separate tubular axial openings therethrough with spaced apart transverse passages, one to each of said tubular openings, said valve element progressively blocking the major of said branches upon opening; and

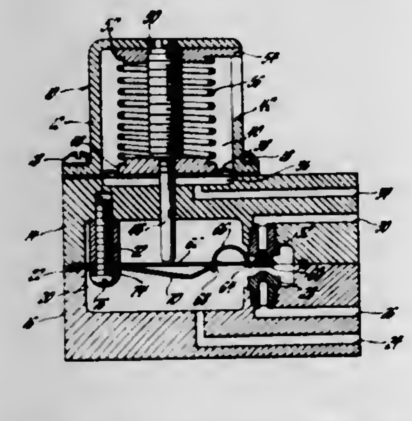
(c) an annular seal and stop element secured to said valve element for axial movement therewith and in interference relation against said base casting in one direction of movement of said valve element.

3,353,559
SNAP ACTING PNEUMATIC DIVERTING RELAY

James W. Phillips, South Bend, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed May 18, 1965, Ser. No. 456,775

6 Claims. (Cl. 137—625.66)



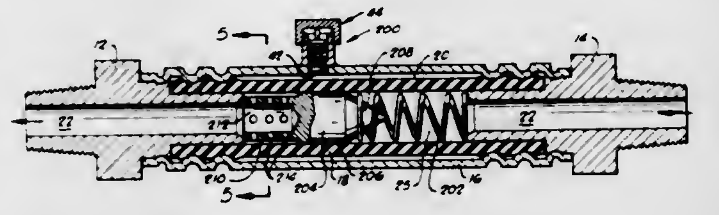
1. In a snap acting pneumatic relay, the combination comprising
  a casing having a pressure chamber and a flow chamber,
  means defining a wall of said casing separating said pressure and flow chambers so that said pressure chamber may be subject to pneumatic pressure independently of pressure in said flow chamber,
  a signal pressure port communicating with said pressure chamber,
  a common port communicating with said flow chamber,
a pair of branch ports communicating with said flow chamber,
valve means movably disposed in said flow chamber for alternate control of said pair of branch ports,
snap acting means operative to move said valve means,
a plunger rod slidably extending through the wall of said casing between said pressure chamber and said flow chamber with one end engaging said snap acting means,
a diaphragm element connected to an opposite end of said plunger rod and defining a movable wall of said pressure chamber for moving said plunger rod in response to signal pressures in said pressure chamber,
a first plate element fixed to said diaphragm element and said plunger rod for unitary movement therewith,
a second plate element spaced from said first plate element,
resilient means between said first and second plate elements for biasing said second plate element in opposition to signal pressures in said pressure chamber, and
means for adjusting said resilient means to select a set point for operation of said valve means by said snap acting means.

3,353,560
PULSATION DAMPING DEVICE

Doyle W. McCulloch, Blackwell, Okla., assignor to Mac/Bee Engineering Inc., Garland, Tex., a corporation of Texas

Filed Dec. 14, 1964, Ser. No. 418,067

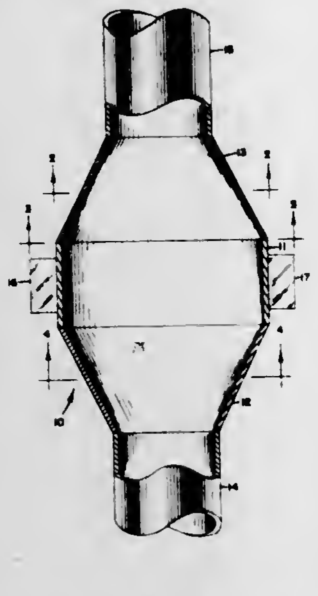
3 Claims. (Cl. 138—30)



1. A pulsation damping device comprising:
a pair of hollow end fittings arranged for connection in a fluid circuit;
a rigid, hollow outer member connected at each end with one of said end fittings and having an opening in the wall thereof;
a resilient tubular member having the ends thereof securely retained between said end fittings and outer member, said resilient tubular member and hollow end fittings forming a flow passageway through said device and said resilient tubular member and outer member forming an annular chamber therebetween;
a coiled, spring-like member disposed in said flow passageway between said end fittings, said coiled, spring-like member being spaced radially inwardly from said resilient tubular member when said resilient member is in its relaxed, unstressed condition;
a check valve mounted in said opening arranged to permit the introduction of fluid into said annular chamber, and to prevent the egress of fluid therefrom; and,
a pressurized, compressible fluid in said annular chamber exerting a force on said resilient tubular member tending to move said tubular member into engagement with said spring-like member, whereby pulsating fluid flowing through said passageway exerts a force on said tubular member opposing the force exerted by said compressible fluid, thereby modulating the amplitude of the pulsations of said flowing fluid.

3,353,561
PASS TUBE FOR GAMMA RAY DENSITOMETERS

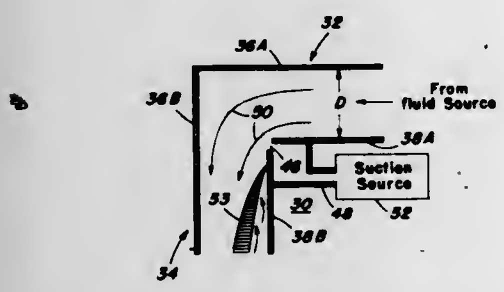
Frank J. Monteleone, Jr., Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Nov. 20, 1963, Ser. No. 325,034
2 Claims. (Cl. 138—37)



1. A pass tube for use with gamma ray densitometers comprising a substantially frustro-conical, elliptically-shaped inspection area that is contiguous with cylindrical inlet and outlet pipes, and the cross-sectional dimensions of said inspection area are equal to the cross-sectional dimensions of said inlet and outlet pipes.

3,353,562
GUIDING FLUID AROUND A BEND

Gunnar Heskestad, East Brunswick, N.J., assignor to American Standard Inc., a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 444,636
18 Claims. (Cl. 138—39)

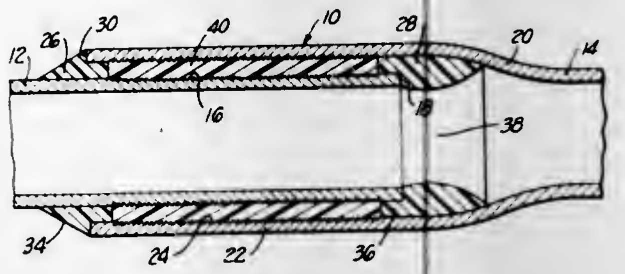


1. The method of guiding a fluid around a sharply defined discontinuous bend in a conduit comprising the step of applying a substantial rate of suction through a substantially continuous transverse slit along the discontinuity in the conduit wall nearest the center of curvature of the bend, to substantially reduce turbulence due to the flow of fluid through the conduit.

3,353,563
INSULATED JOINT

Walter C. Hutton, 1567 Waldren Ave., Los Angeles, Calif. 90041
Filed Apr. 1, 1966, Ser. No. 539,371
1 Claim. (Cl. 138—39)

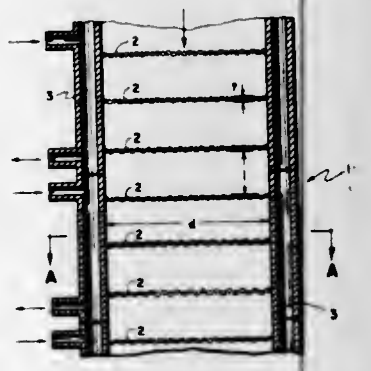
An electrically insulating pipe joint having
first and second electrically conducting tubes;
the first of said tubes having a uniform diameter;
the second of said tubes being belled so as to provide an enlarged uniform internal diameter;
said second tube being located so that the enlarged interial diameter thereof is located around said first of said tubes and the belled portion of said second of said tubes is located adjacent to the end of said first of said tubes;
first and second electrically non-conductive spacers holding said tubes separate and apart;
the first of said spacers being located between the exterior surface of the first of said tubes and the interior of the end of said second tubes;



the second of said spacers being located between the exterior of the end of the first of said tubes and the interior of the belled portion of the second of said tubes; and
electrically non-conductive material located in the area between said tubes bounded by said spacers;
the interior surface of said second of said spacers being curved inwardly towards the centers of said tubes so as to provide a restricted zone which causes a localized increase in the velocity of fluid flowing through said joint, such velocity tending to prevent contaminants from being deposited upon the interior surface of the second of said spacers.

3,353,564
LAMINAR FLOW DEVICE

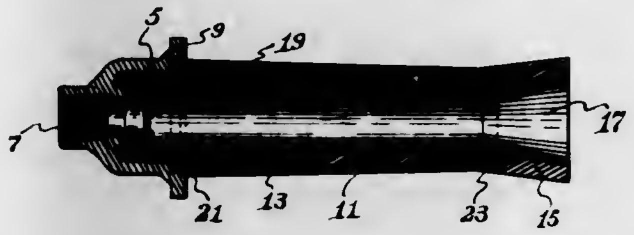
Jan V. Bergeijk, Rozendaal, Gelderland, and Hans Nieuwenhuijsen, Velp, Netherlands, assignors to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Oct. 20, 1964, Ser. No. 405,210
Claims priority, application Netherlands, Nov. 1, 1963, 300,045
6 Claims. (Cl. 138—41)



1. A flow tube for achieving uniform velocity distribution in viscous liquids, said flow tube having supported therein transversely to the axis of flow a plurality of perforated baffle means, each of said baffle means extending completely across said flow tube and successive baffle means being spaced at intervals less than ⅓ the inside diameter of said tube, the characteristic width of each perforation in said baffle means being less than 1/20 of said tube diameter, and the baffle means having a thickness less than twice the distance between adjacent perforations whereby to obtain laminar viscous liquid flow in which all liquid fractions will have a uniform residence time in said tube.

3,353,565
PIPE END INSERT

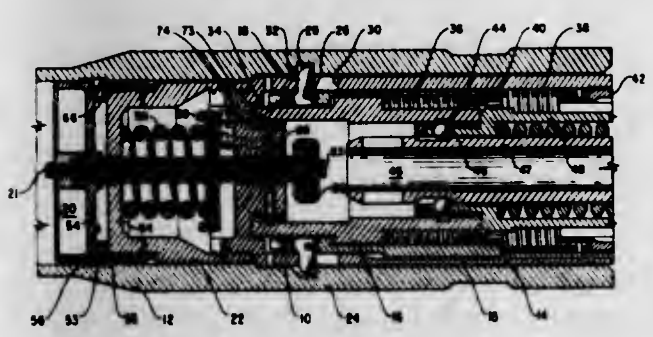
Junius Markham, Tulsa, Okla., assignor to Swel-Plug, Incorporated, Tulsa, Okla., a corporation of Oklahoma
Filed Sept. 21, 1964, Ser. No. 398,007
14 Claims. (Cl. 138—89)



1. A pipe end insert comprising
a rigid supporting structure,
an elongated hollow sleeve of elastic material having a first end secured to said rigid supporting structure and a second end adapted to be inserted into a pipe end, said second end of said sleeve being open for communication with the interior of the pipe so that said sleeve may be radially expanded by pressure in the pipe,
a flexible elongated radially expandible sheath carried by and surrounding said sleeve throughout at least a major portion of the length thereof, said sheath comprising a multiplicity of relatively straight flexible gripping elements arranged to extend generally longitudinally of said sleeve, said sheath adapted to be forced radially outward by said sleeve into frictional gripping engagement with the inner surface of the pipe upon expansion of said sleeve throughout at least a major portion of the length of said sheath.

3,353,566
END CLOSURE FOR NUCLEAR REACTOR CHANNEL

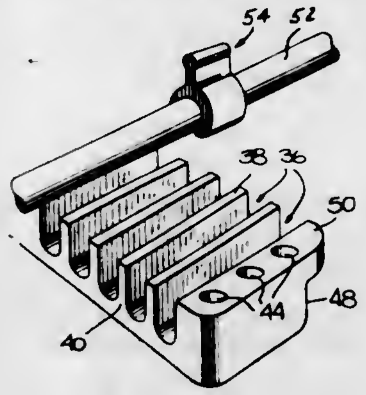
Martin D. Cepkauskas, Farmington, and John F. Rohlin, Wapping, Conn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 24, 1967, Ser. No. 619,135
5 Claims. (Cl. 138—89)



1. An end closure for a fuel element or process channel of a nuclear reactor of the type having a body portion and sealing means portion wherein an improved body portion comprises a first housing dimensioned for disposition within said channel for longitudinal movement therewith, a second housing disposed within said first housing for longitudinal mov ment therewith between extended and retracted positions, at least one latch means mounted on said second housing for engagement with latch receiving means in said channel through corresponding openings in said first housing when said second housing is in its extended position, a third housing disposed within said second housing for longitudinal movement therewith between extended and retracted positions, said third housing locking said latch means in engaging position when in its extended position, and resilient means for yieldably maintaining said second and said third housings in their extended positions.

3,353,567
RESILIENT PUMP TUBE ASSEMBLY

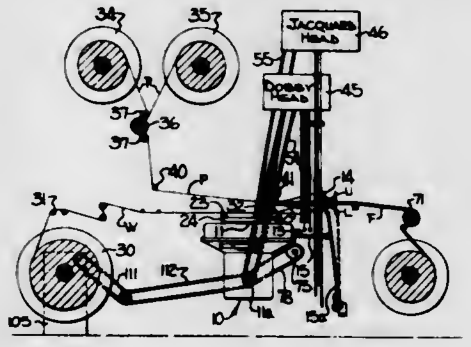
Jack Isreeli, Mamaroneck, N.Y., assignor to Technicon Corporation, a corporation of New York
Filed July 15, 1964, Ser. No. 382,846
3 Claims. (Cl. 138—106)



1. A resilient collar and tube assembly comprising: a tube having a given outer diameter and made of a resilient material; and two longitudinally spaced apart members, each having a leg portion and two arm portions with a common junction to form a substantially Y-shaped cross-section, and made of a resilient material; said arm portions having a mutual annular curvature, an inner diametrical spacing between said arm portions substantially equal to said given outer diameter of said tube, and junction remote ends having an inner chordal spacing therebetween which is less than said given outer diameter of said tube; and said tube being disposed between and adhered to said arm portions.

3,353,568
APPARATUS FOR MAKING FRIEZE PILE FABRICS

Walter J. Crenshaw, Clemson, Hoke S. Hicks, La France, and Efton O. Oakes, Sandy Springs, S.C., assignors to Riegel Textile Corporation, a corporation of Delaware
Filed May 5, 1966, Ser. No. 547,855
3 Claims. (Cl. 139—21)



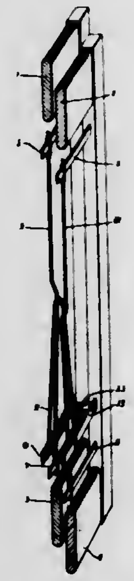
1. A shuttleless loom adapted for making frieze loop pile fabric from ground warps and pile warps comprising an oscillatable reed, a pair of upper and lower superposed reciprocating weft drawing rapiers movable into and through respective upper and lower warp sheds for engaging and pulling respective upper and lower weft yarns from respective stationary weft supplies through the sheds, a driven central mechanism having a main shaft arranged vertically in a median plane of the loom and operatively connected to said reed and said rapiers for oscillating said reed and reciprocating said rapiers, a first shed forming means for repeatedly forming said lower shed from ground warps, a second shed forming means for repeatedly forming both said upper shed and portions of

said lower shed from pile warps, separate pattern means connected to and operating each of said shed forming means and being operatively connected to said main shaft, a plurality of warpwise extending pile wires arranged in alternation with said pile warps and extending over the base fabric being woven and over and beneath which the respective upper and lower rapiers reciprocate, said reed, rapiers, shed forming means and pile wires being operable to weave said base fabric from ground warps and from said lower weft yarns while looping pile warps beneath certain spaced lower weft yarns and over intervening upper weft yarns supported on said pile wires to form pile loops of said pile warps on said base fabric whereby said upper weft yarns subsequently may be withdrawn from said pile loops.

3,353,569

DOUP HEDDLE CARRYING ROD FOR LENO AND CROSS WEAVING

Bernhard R. Koch, Horgenberg, Switzerland, assignor to Grob & Co. AG., Horgen, Switzerland
Filed Oct. 14, 1965, Ser. No. 495,790
Claims priority, application Switzerland, July 7, 1965, 10,406/65
8 Claims. (Cl. 139—51)

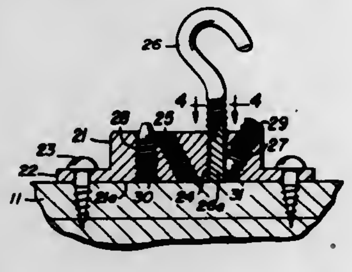


1. A loom harness for cross weaving having adjacent pairs of lifting heddles carrying a doup heddle loom harness comprising two parallel doup heddle carrying rods, each of said rods having a rib along at least part of its length projecting towards the other rod, each doup heddle having an end loop at each end carried on one of said rods and said end loops being formed with apertures which receive said ribs and allow such to project through the apertures of the end loops and rest on the adjacent lifting heddles.

3,353,570

HARNESS FRAME CONNECTOR

Henry D. Sweat, 809 Sessions St., Soperton, Ga. 30457
Filed July 21, 1966, Ser. No. 566,822
8 Claims. (Cl. 139—88)

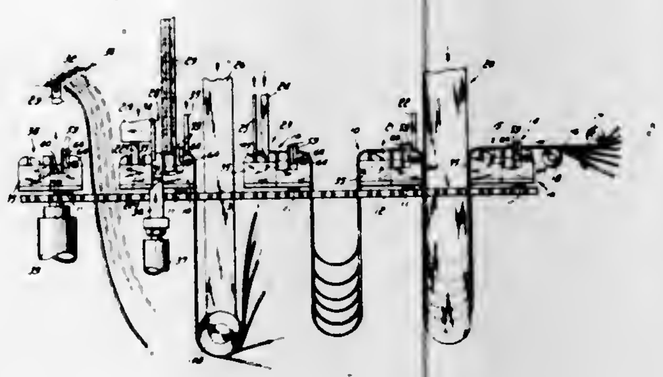


5. A harness strap connector usable selectively on upper and lower rails of a loom harness frame, said connector comprising a block including a central body and means for mounting said block on a frame rail, said central body being provided with a perpendicular screw-threaded bore and with an oblique screw-threaded bore, and a harness strap attaching hook having a screw-threaded shank receivable selectively in said perpendicular and said oblique bores.

3,353,571

APPARATUS FOR PREPARING INSULATING WIRES

Helmut E. Durr, Summit, and Frank Wahl, North Bergen, N.J., assignors to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 19, 1964, Ser. No. 390,625
21 Claims. (Cl. 140—1)



1. An apparatus for feeding and stripping groups of insulated wires from supplies of wires comprising:

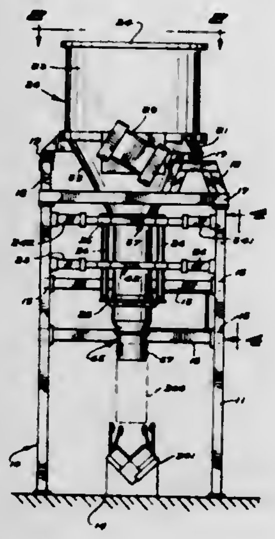
a plurality of like units,
means to support the units at spaced positions and move them intermittently in a given path between intervals of rest,
means to feed groups of insulated wires of predetermined varied lengths from supplies to the units,
separate means adapted to strip insulation from the trailing ends and the leading ends of the groups of wires, and
means for feeding successive holders into position to receive the groups of wires after the stripping operations are completed.

3,353,572

VIBRATORY VOLUMETRIC FEEDING AND BAG FILLING APPARATUS

Harold N. Anderson, Minneapolis, and Jack D. Helm, Maple Plain, Minn., assignors to Bemis Company, Inc., a corporation of Missouri
Filed July 12, 1965, Ser. No. 471,177
12 Claims. (Cl. 141—72)

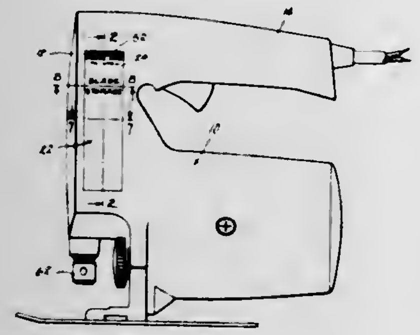
1. Apparatus for filling a bag comprising a frame mounted on a supporting surface to extend thereabove, a hopper including means having a discharge opening for retaining a supply of product, motor means supportedly mounted on the product retaining means for vibrating the product retaining means to impart a circulatory motion to the product and means for mounting the product retaining means on the frame a substantial distance above the supporting surface and cushioning the vibratory movement of the product retaining means relative the frame, means forming a volumetric measuring chamber dependingly secured to product retaining means to receive product passed through said discharge opening, said measuring chamber means including vertical tubular means for enclosing a hollow chamber, reciprocal first slide gate means supportedly mounted by said product receiving means for selectively permitting product flowing through the discharge opening flowing into the tubular means and alternately blocking flow of product through said opening to the tubular means, the upper end of said tubular means being supportingly attached to said first means and reciprocal second slide gate means in the lower end of said tubular means for selectively permitting discharge of product from said tubular means and alternately retaining product in said tubular means, bag holder means for releasably holding a bag above the supporting surface, and conduct product flowing from the tubular means into said bag while it is being held and said second slide gate means permits the discharge of product from the tubular means, means for mounting the bag holder means on the measuring chamber means in depending relation relative thereto and beneath the second slide gate means, and means for operating said slide gate means for retaining the first slide gate means to block the flow of product from the supply retaining means to the tubular means when the second gate means permits the discharge of product therefrom and the second slide gate means to block the flow of product from the tubular means to the bag holder means when the first slide gate means permits the flow of product from the supply retaining means to the tubular means, and the bag holder means to hold a bag when the second slide gate means permits the flow of product from the tubular means and thereafter release the bag while the second gate means again blocks the flow of product from the tubular means to the bag holder means.



3,353,573

PORTABLE POWER TOOL

Franklin C. Hitzeroth, Elgin, Ill., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed May 19, 1965, Ser. No. 456,957
4 Claims. (Cl. 143—68)

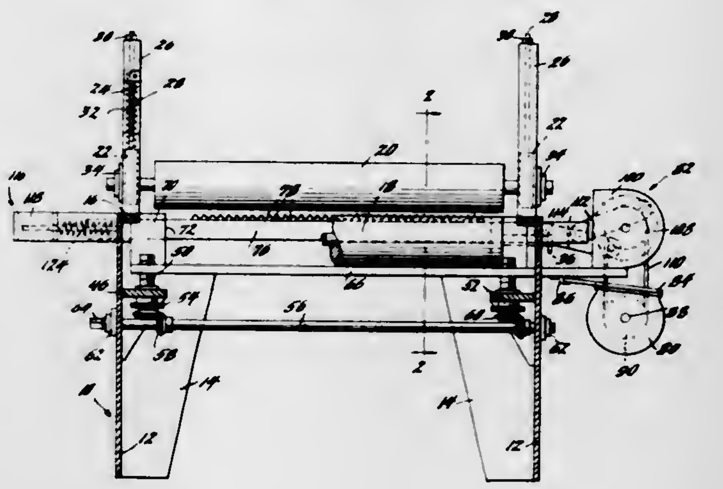


1. In a saber saw, a housing presenting wall portions including a generally upright post with a handle extending therefrom; an elongated recess in the wall portion defining said post; a blade storage cover adapted to be received in said elongated recess, said cover being formed as an integral one-piece structure of resilient material; cooperating readily separable retaining means respectively presented by said wall portion and said cover at one end of said cover when said cover is disposed in said recess; cooperating latch means respectively presented by said cover and said wall portion at the end of said cover opposite said one end when said cover is disposed in said recess, said cooperating latch means being disengaged from one another by bending said cover portion latch means with respect to the major portion of said cover, and a series of spaced projections from the cover on the side thereof adjacent the recess for retaining blades for said saber saw for storage within the recess, said cover being completely separable from the post to provide ready access to the blades outside said recess.

3,353,574

PANEL TEXTURING DEVICE

Andrew M. Kvalheim and Irwin S. Kvalheim, both of 823–825 Petaluma Blvd. S. (P.O. Box 77), Petaluma, Calif. 94952
Filed May 24, 1965, Ser. No. 458,036
9 Claims. (Cl. 144—2)



1. An apparatus for treating the surface of a wood panel including a frame structure, a work bed, and banks of rollers on each end of the work bed with respect to the direction of travel of the panel for supporting the wood panel passing in contact therewith, and a reciprocating cutter assembly including at least two elongated bars mounted for movement in the work bed transversely of the direction of travel of the wood panel through the apparatus, each bar having a length greater than that of said rollers, at least one powered crankshaft connected to and adapted to reciprocally drive said bars, a plurality of cutting teeth on at least one of said bars, through said work bed, for treating the surface of said wood panel, and counterbalancing means including means absorbing the thrust of the reciprocating, cutter bar.

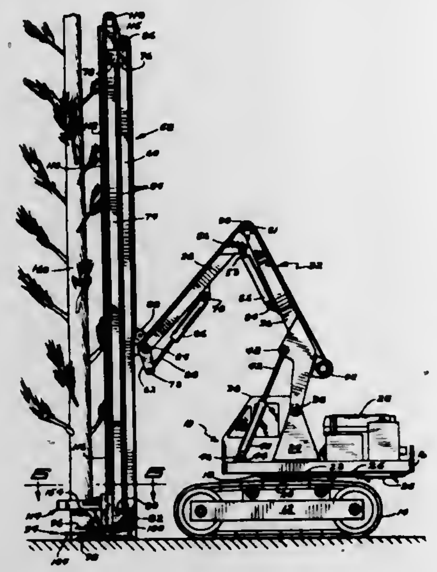
3,353,575

METHOD OF DELIMBING AND FELLING TREES

Robert W. Larson, Rte. 2, Lake Park Road, Ashland, Wis. 54806; Ole E. Olson, Caramat, Ontario, Canada; and Wilfrid D. Harkness, Steedman Drive, and William E. Mair, Manitoba St., both of Marathon, Ontario, Canada
Original application June 3, 1963, Ser. No. 285,114, now Patent No. 3,252,487, dated May 24, 1966. Divided and this application Oct. 19, 1965, Ser. No. 498,001
15 Claims. (Cl. 144—309)

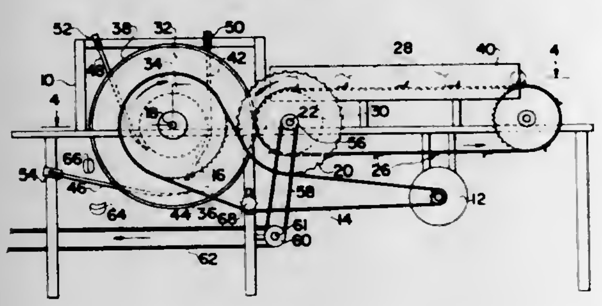
1. A method of removing branches from a vertical tree that comprises driving a knife head upwardly for substantially the height of the tree and solely in an axial

direction to shear the branches from the tree and imparting kinetic energy to the knife head substantially con-



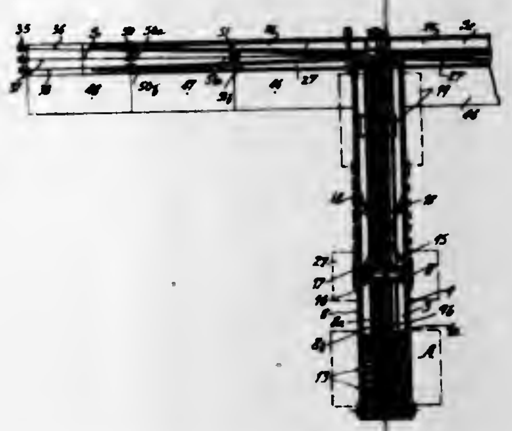
tinuously during such upward travel thereof to effect impact shearing of the branches.

3,353,576
SEED POTATO CUTTING MACHINE
Roy L. Cooper, Waterman, Ill. 60556
Filed Nov. 22, 1965, Ser. No. 508,929
6 Claims. (Cl. 146—78)



1. A seed potato cutting machine comprising
a support frame,
a plurality of thin circular disc cutters mounted in suitably spaced parallel relation on a common drive shaft extending across one end of said support frame,
potato feeding conveyor means mounted in said frame for conveying potatoes placed thereon near the other end of said support frame, to said disc cutters,
said conveyor means being adapted to push each potato into said plurality of disc cutters as the potato is cut thereby into slices so that each slice between a pair of said disc cutters is firmly held between them within the periphery of their full thickness at the base of their circumferential knife edges,
a stationary cutter bar extending into the space between each pair of said disc cutters and having a knife edge at its inner end extending across said space at a radius corresponding substantially to the center of said slices held between said disc cutters for cutting said slices in half, as each slice is moved past said inner end,
guide bars mounted on said frame and extending tangentially into said spaces for guiding the inner of said two halves out of said spaces behind said cutter bar knife edges, said cutter bar having a shank portion serving as a guide bar for extracting the outer of said two halves of its potato slice, and
motor means mounted on said frame connected to drive said conveyor means and said cutter drive shaft at suitable relative speeds.

3,353,577
MACHINE FOR CLEANING AND CALIBRATING VEGETABLES, MORE PARTICULARLY ASPARAGUS
Yvon Bruel and Alain Bruel, both of Domaine du Petit Chaumont, Aigues-Mortes, France
Filed Mar. 26, 1965, Ser. No. 443,044
Claims priority, application France, May 19, 1964, 2,017, Patent 1,395,455
4 Claims. (Cl. 146—81)

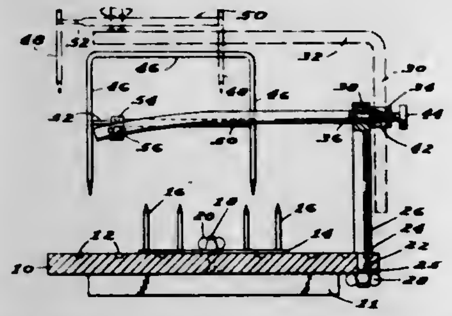


1. In combination in a machine for cleaning and calibrating asparagus:
(1) a first vertical support;
(2) a second vertical support;
(3) a first frame having an output end higher than its input end and resting on said supports, said frame having a double conveyor comprising an upper and a lower run travelling on a driven drum; said conveyor comprising at least two bands separated by an intermediate continuous flexible band having a height greater than said first two bands;
(4) a pair of cutting blades mounted on said first frame for cutting asparagus to a desired length;
(5) a pair of washing ramps for spraying wash liquids in and under said upper run of said double conveyor;
(6) Drying means positioned above said double conveyor between said output end and said washing means;
(7) a second horizontal frame positioned below said higher end of said first frame resting on said second support and carrying a pair of driven endless sorting conveyors;
(8) a selecting element constituted by a freely rotatable triangular prism-shaped member above said sorting conveyors and below said double conveyor for receiving cut asparagus therefrom;
(9) a pair of downwardly sloping surfaces disposed on either side of said selecting element above said sorting conveyors for alternately receiving asparagus thrown by said selecting element and thereby feeding said asparagus to one or the other of said sorting conveyors.

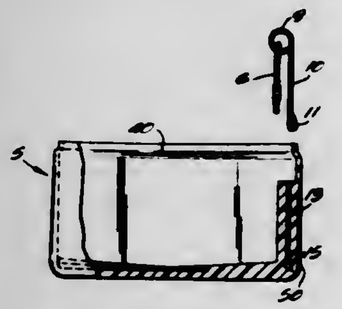
3,353,578
MEAT-HOLDING DEVICE
James N. Kalkanis, 5521 Chalmers, Detroit, Mich. 48213
Filed Feb. 3, 1966, Ser. No. 524,779
8 Claims. (Cl. 146—218)

1. In a meat holder, a carving board, a standard carried by the board to project upright therefrom, said standard provided with a mounting for a hanger, an L-shaped hanger having one arm slidably mounted within said mounting supporting the other arm overhanging the board, that arm of the hanger mounted within the mounting being slidably adjustable with respect thereto substantially parallel to the plane of the board to move the arm of the hanger overhanging the board toward and away from the

upright standard, said arm of the hanger which overhangs the board provided with a mounting pivotally supported thereon for swingable movement about an axis extending substantially parallel to the plane of the board, a prong element having a plurality of meat-engaging prongs, said prong element supported by the mounting upon said other arm of the hanger for swingable movement with its mounting angularly with respect to the plane of the board and for slidable movement with respect to its mounting diametrically with respect to the axis of the mounting.

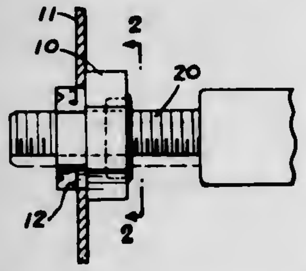


3,353,579
KEY CASE AND ITS MANUFACTURE
Kathleen Bechter, Akron, and John R. Russell, Cuyahoga Falls, Ohio, assignors to Steere Enterprises Inc., Tallmadge, Ohio, a corporation of Ohio
Filed Feb. 23, 1966, Ser. No. 529,540
5 Claims. (Cl. 150—40)



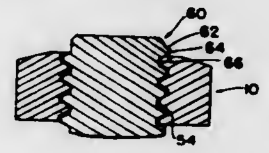
1. A key case which consists of a one-piece, stiffly flexible plastic case having a wall thereof provided with a thickened portion with a cavity therein which cavity opens into the interior of the case, a chain for keys and a support to which the chain is attached, with a portion of the support enclosed by and removably held within the cavity by friction, and an opening through the wall structure of the case near said cavity for the entry and removal of keys while on the chain.

3,353,580
NUT AND BOLT CONSTRUCTION
Benjamin C. Benjamin, Flint, Mich., assignor to F & E Manufacturing Company, Wyandotte, Mich., a corporation of Michigan
Filed May 12, 1966, Ser. No. 549,627
10 Claims. (Cl. 151—7)



1. A nut construction comprising a nut body having a threaded circular opening therethrough,
and an insert of low friction material having a non-circular opening therein,
said body and insert having interengaging portions frictionally yet rotatably mounting the insert on the body,
said non-circular opening having at least one diametral dimension less than the diameter of the circular opening,
and a bolt having a complementary non-circular configuration with a thread thereon whereby said nut and bolt can be threaded together,
said insert rotating relative to said body during the threading movement but operable to retard threading by frictional engagement of a portion thereof with a portion of the nut body.

3,353,581
NUT FASTENER
Edwin R. Evans, deceased, late of Orchard Lake, Mich., by The Detroit Bank and Trust Company, executor, Detroit, Mich., assignor to Lock Thread Corporation, Detroit, Mich., a corporation of Delaware
Filed June 18, 1965, Ser. No. 465,213
11 Claims. (Cl. 151—22)

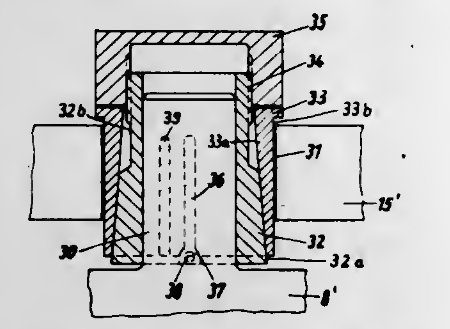


1. The combination of threadedly engaged male and female members, said female member having an aperture formed with a continuous internal female thread, the crest of said female thread in each of at least several convolutions having a plurality of circumferentially uniformly spaced lands located closer to the center of said aperture than the intervening portions thereof, the flanks and root of said female thread in each of the several convolutions aforesaid being uniformly spaced from the axis of said female member throughout the circumferential extent thereof, said female member having a maximum internal thread height no greater than 61343*p*, *p* being the thread pitch, said male member having an external thread height less than .61343*p*, the root of said male thread in those convolutions mating with the aforesaid convolutions of said female thread being uniformly spaced from the axis of said male member a distance greater than the spacing of said lands from the center of said aperture, whereby to provide a material interference between said crest of said female thread and said root of said male thread, relieved at the intervening portions of said crest, the crest and flanks in the aforesaid convolutions of said male thread being spaced uniformly from the axis of said male member and being free of interference with said female thread, said female member being substantially free running on a standard Unified bolt having an external thread height of no less than .61343*p*.

3,353,582
CONNECTING ARRANGEMENT FOR COVER, ESPECIALLY FURNACE COVERS
Alfred Vogt, Schaan, near Liechtenstein, assignor to Gustav Ospelt, Vaduz, Liechtenstein
Filed Jan. 29, 1965, Ser. No. 428,935
Claims priority, application Germany, Feb. 19, 1964, O 9,961
4 Claims. (Cl. 158—2)

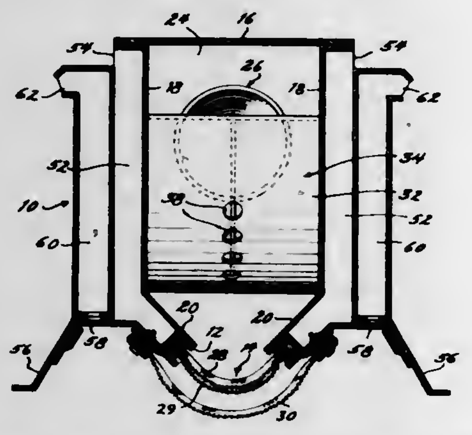
1. In combination with a cover, especially furnace door: a supporting member provided with means for hingedly connecting said supporting member to a frame, bolt means secured to said supporting member and having a substantially cylindrical peripheral surface, said cover having one end portion thereof provided with passage

means of substantially circular cross section, said bolt means extending into said passage means but having a diameter considerably less than the diameter of said passage means so as to confine an annular space with the surface of said passage means, two coaxially arranged slotted bushings arranged within said annular space and respectively having those peripheral wall surfaces thereof which face each other provided with substantially the same but inversely arranged taper and slidably engaging each other along said taper, said bushings having those peripheral surfaces thereof which face away from each other designed as cylindrical surfaces, the inner one of said two bushings having its inner peripheral surface in engagement with the cylindrical surface of said bolt means, and means arranged at that end of said inner bushing which is remote from said supporting member and operable to engage and move said outer bushing relative to said inner bushing so as to cause said outer bushing to engage and clamp-connect said cover to said bolt means.



3,353,583
INFRA RED RAY GENERATING SPACE HEATER

Frank J. Silhavy and Robert J. Debrey, Oak Park, Ill., assignors, by mesne assignments, to Caloric Corporation, Topton, Pa., a corporation of Pennsylvania
Filed Aug. 26, 1965, Ser. No. 482,696
4 Claims. (Cl. 158—114)



1. An infra red ray generator comprising an elongated casing having a bottom opening substantially coextensive therewith,

an arcuate, combustion sustaining screen covering said opening,

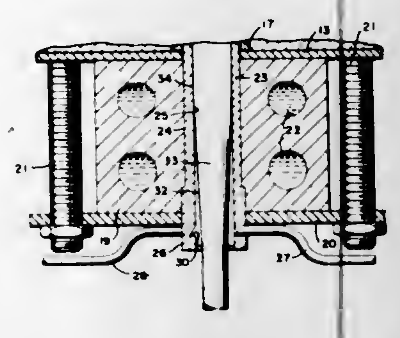
a pair of vertical flues disposed exteriorly of said casing and extending substantially the length of the casing and having bottom openings adjacent the respective edges of said screen to draw products of combustion off said screen, and

a pair of shields depending from opposite sides of said flues and spaced from, and substantially coextensive with, said screen to protect said screen from horizontal air currents,

said shields coacting with said flues to accelerate the flow of the products of combustion off said screen and up through said flues for discharge through exhaust openings in the upper portion of said flues.

3,353,584
CONTINUOUS CASTING COOLING METHOD AND APPARATUS

Oliver B. Atkin, Hamden, Conn., assignor to Anaconda American Brass Company, a corporation of Connecticut
Filed Dec. 10, 1964, Ser. No. 417,280
5 Claims. (Cl. 164—89)



1. In a method of continuously casting metal shapes wherein molten metal is fed through a vertical mold, solidified within the mold and contracted away from the walls of the mold while being continuously fed therethrough so as to define a separation between the metal shape and the walls of the mold which is open only at the outlet end of the mold, and withdrawn in its solidified metal shape, the improvement in combination therewith comprising feeding a thermal conducting liquid into the mold about the metal shape at the outlet end of the mold and forcing it into the separation between the metal shape and the walls of the mold in a direction opposite to the direction of travel of the metal shape by effecting capillarity between the liquid and the walls of the mold, and substantially filling the separation to the point of contact of the metal and mold with the liquid and maintaining liquid in the separation by capillary action so that the metal shape and the walls of the mold are placed in heat exchange relationship across the thermal conducting liquid filling the separation to promote cooling and accelerate solidification of the metal shape.

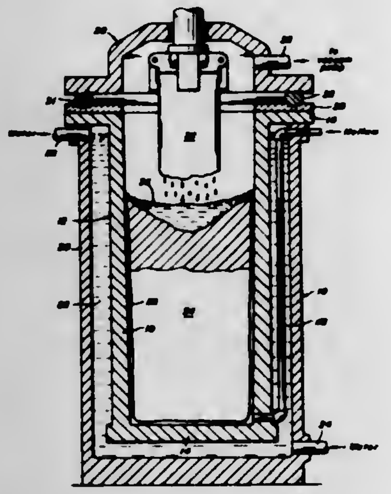
5. In continuous casting apparatus having a crucible of molten metal, a mold through which the molten metal flows from the crucible, cooling means within the mold to cool the molten metal and solidify it, and means for withdrawing the solidified metal from the mold, the improvement in combination therewith of a feeding system for continuously feeding a thermal conducting liquid in the separation formed between the metal shape and the inner walls of the mold by the contraction of the metal away from the mold upon solidification comprising at least one thermal conducting feed tube leading into the outlet end of the mold, a source of thermal conducting liquid to which the feed tube is connected, and obstruction means within the mold at the outlet end of the feed tube to retard flow of the liquid out of the mold and provide a seat for the liquid to assist in effecting capillarity between the liquid and the walls of the mold so that the liquid will be forced by capillary action into the separation between the mold and the metal shape substantially to the point of contact of the metal shape and mold to substantially fill the separation.

3,353,585
METHOD FOR CONTROLLING THE COOLING OF CAST METAL

Joseph M. Wentzell, Remsen, N.Y., assignor to Special Metals Corporation, New Hartford, N.Y., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,330
4 Claims. (Cl. 164—124)

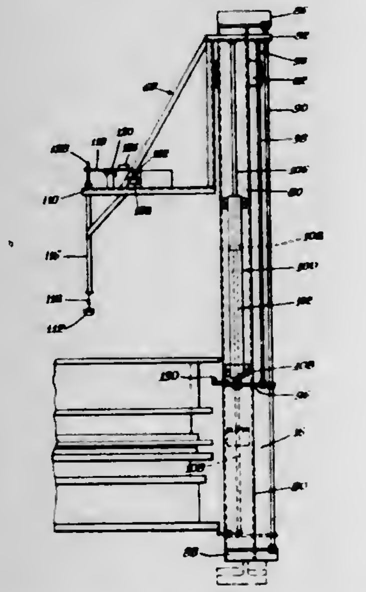
1. In the process of casting molten metal in a consumable electrode melting furnace equipped with a water-

cooled ingot mold, and a superstructure associated therewith including means to control the atmosphere in which such melting is performed, the ingot being characterized by solidifying progressively axially from the bottom of the ingot mold upwardly and in which the molten metal on top of the ingot forms a sealing contact with the mold wall, the improvement comprising injecting a gas characterized by a high coefficient of thermal conductivity adjacent the bottom of the ingot and into the space formed between the mold wall and the solidified portion of the ingot, said gas being under sufficient pressure to leak through the sealing contact formed by the molten metal on top of the ingot and the mold wall, and causing said gas to leak through the sealing molten metal contact while said control means maintains a controlled atmosphere over the said molten metal on top of the ingot.



3,353,586
HEIGHT CONTROL FOR MOLTEN METAL IN MOLD RISER

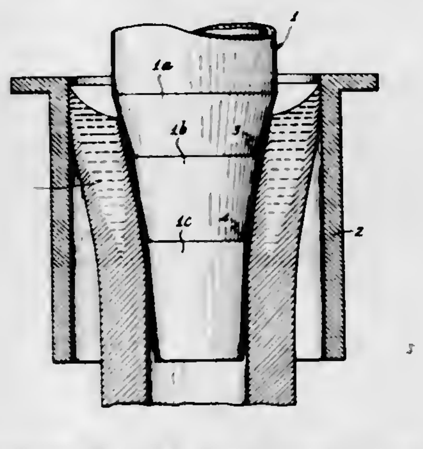
William G. Dressel, Elk Grove Village, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Apr. 14, 1965, Ser. No. 448,017
11 Claims. (Cl. 164—156)



1. Apparatus for use in conjunction with the casting of molten metal in a casting operation utilizing at least one mold having openings therein, comprising gauging means for gauging an external element of the mold, sensing means connected with said gauging means and movable into at least one of the openings of said mold, means for movement of said sensing and gauging means in generally vertical directions, said gauging means being movable to said external element to limit the extent to which said sensing means enters into said opening, and means operative for controlling said casting operation upon contact of molten metal with said sensing means.

3,353,587
APPARATUS FOR EFFECTING THE CONTINUOUS ROTARY CASTING OF HOLLOW STEEL BLANKS

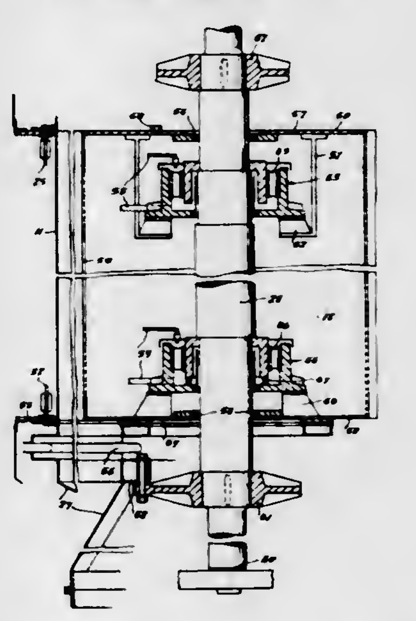
Louis Babel, Sauvigny-les-Bois, and Pierre Peytavin, Aulnoye-Aymeries, France, assignors to Societe civile dite: Societe Civile d'Etudes de Centrifugation, Paris, France
Filed Mar. 26, 1964, Ser. No. 355,027
Claims priority, application France, Mar. 27, 1963, 929,486
4 Claims. (Cl. 164—281)



1. An apparatus for the continuous rotary casting of hollow metal blanks wherein molten metal is cast between a rotating mold and a central mandrel having a temperature lower than that of said molten metal, said mandrel being in the form of at least two superimposed truncated cones, each of said cones diminishing in taper in the direction toward the lower end of said mandrel.

3,353,588
ROTARY REGENERATIVE HEAT EXCHANGERS

Herbert Brandt, 5961 Rothemuhle uber Olpe, and Herbert Sandmann, Hubertusweg, 5960 Olpe, both of Westphalia, Germany
Filed July 27, 1965, Ser. No. 475,124
Claims priority, application Germany, July 30, 1964, A 46,731
5 Claims. (Cl. 165—4)



1. A rotary regenerative heat exchanger which comprises an outer casing, a substantially cylindrical stationary regenerator disposed within the casing and having a central chamber therethrough, said casing having gas inlet and gas outlet means at opposite ends, a shaft passing axially through the chamber, means for supporting

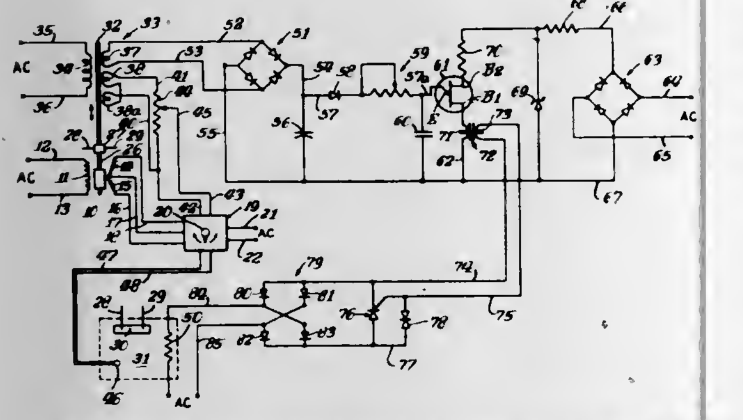
said shaft, two rotatable air duct members one disposed on each end of said shaft, said duct members being rotatable co-axially in relation to the stationary regenerator and each one having openings which pass over the end surfaces of the regenerator during rotation, means for leading air to one duct member, means for leading air from the other duct member, guide bearings disposed at one end of the shaft, combined guide and thrust bearings disposed at the other end of the shaft, means for supporting said bearings from the regenerator casing, said bearings being radially divided into at least two portions supporting and guiding said shaft disposed within said central chamber, said bearings being removable in whole or in part independently of said shaft, and access means into said chamber.

3,353,589
AUTOMATIC CONTROL CIRCUIT FOR REGULATING TEMPERATURE

Paul H. Tope, St. Joseph, Mich., and Burke J. Crane, Riverside, Ill., assignors to Whirlpool Corporation, a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 501,833

11 Claims. (Cl. 165—26)



1. Apparatus for maintaining a zone at a preselected temperature comprising:
  - means for changing the temperature in said zone including cooling means and heating means; means for sensing the temperature in said zone;
  - electrical circuit means for effecting the operating of said cooling means and said heating means;
  - means responsive to said sensing means for providing a voltage in said circuit means infinitely variable as a function of a deviation in the zone temperature below the preselected temperature;
  - and semiconductor control means responsive to said variable voltage in said circuit for variably energizing said heating means as a direct function of the amount of said temperature variation.

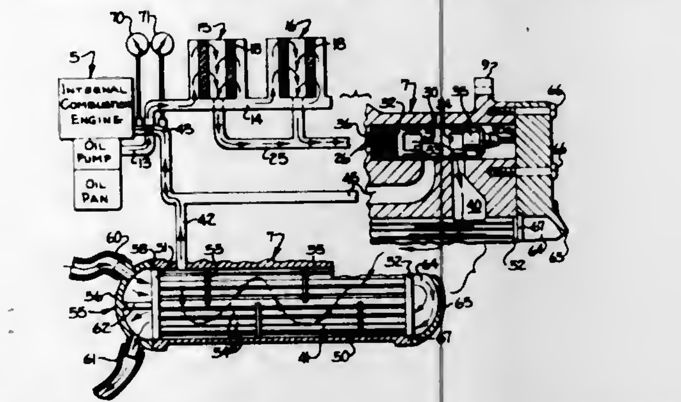
3,353,590
UNITARY OIL FILTERING AND COOLING ATTACHMENT FOR INTERNAL COMBUSTION ENGINES

John C. Holman, Charlotte, N.C., assignor to Holman and Moody, Inc., Charlotte, N.C., a corporation of North Carolina

Filed July 12, 1965, Ser. No. 471,327

4 Claims. (Cl. 165—35)

1. A unitary oil filtering and cooling attachment for an internal combustion engine comprising a unitary housing, oil conduit means formed by the internal walls of said housing for the passage of oil therethrough and adapted to communicate with the internal combustion engine for receiving oil from the engine and for returning oil to the engine, a plurality of filters carried by said housing and communicating in parallel with said conduit means for receiving and filtering the oil passing therethrough, temperature responsive valve means carried by said housing and communicating with said conduit means for receiving and responding to the temperature of the oil for controlling the flow of oil therethrough, cooling means disposed within said housing and communicating with said temperature responsive valve means and said conduit means for receiving and cooling oil passing therethrough from said temperature responsive valve means when the oil is above a predetermined temperature, and bypass means formed by said housing and communicating with said temperature responsive valve means and said conduit means for receiving and passing oil therethrough directly from said temperature responsive valve means to said conduit means and bypassing said cooling means when the oil is below a predetermined temperature, said temperature responsive valve means being a modulating valve which will allow oil to flow through both said cooling means and said bypass means within a predetermined range of oil temperatures.

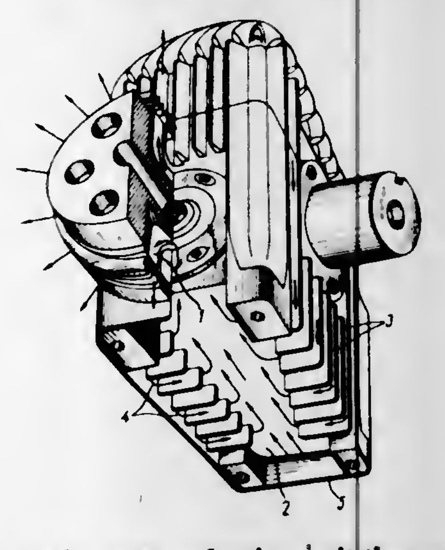


3,353,591
APPARATUS FOR COOLING GEAR REDUCTION UNITS

Pavel Samoilovich Zak, Moscow, U.S.S.R., assignor to Tsentralny Nauchno-Issledovatelsky Institut Teknologii i Mashinostroenia, Moscow, U.S.S.R.

Filed Feb. 15, 1965, Ser. No. 432,645

1 Claim. (Cl. 165—47)



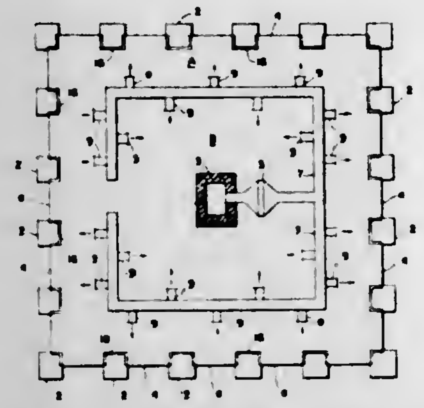
In an air cooled gear reduction unit the combination of a housing, a drive shaft mounted relative to the housing and carrying a driving gear thereon, a driven shaft mounted within the housing at right angles to the drive shaft and having a cooperative gear thereon, said housing having a bottom, a chamber beneath said cooperating gears, vertical cooling ribs extending in parallel spaced relation, a suction blower mounted on the driven shaft exteriorly of the housing, said housing including deflector components, said ribs providing communication to the space beneath said cooperating gear units, said space constituting a chamber extending parallel to the axis of the driven shaft and beneath the same, the arrangement being such that air is drawn into the housing to flow over said ribs to be directed thereby to said chamber beneath said cooperating gear units and is then constrained to flow parallel to the axis of the driven shaft for exhaust to atmosphere through said suction blower.

3,353,592
TEMPERATURE CONTROLLING APPARATUS

Florino Di Paolo, 1257 E. 102nd St., Brooklyn, N.Y. 11236

Filed Oct. 22, 1965, Ser. No. 501,785

12 Claims. (Cl. 165—50)



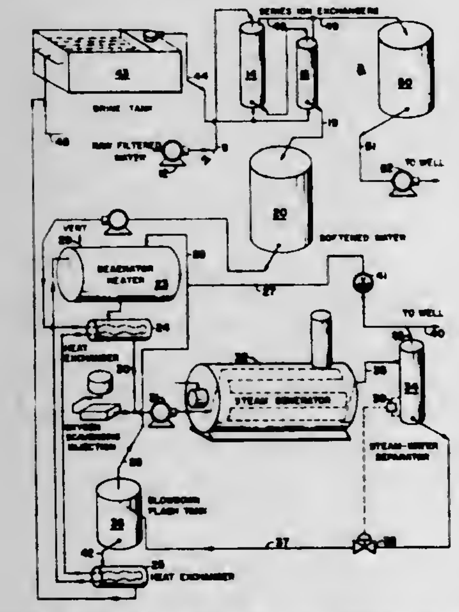
1. In a building having vertically extending supporting columns around its periphery and wall members extending between said columns to enclose said building, portions of said columns extending into the occupied area between the floor and ceiling of a story of said building, a thermal radiation system comprising thermal jackets surrounding said portions of said columns and extending vertically from floor to ceiling with said columns, said jackets having radiating surfaces and internal passages for the circulation of thermal fluid, a portion of the radiating surface for each jacket extending in a plane substantially transverse to the adjacent wall member, means at the top and bottom of said jackets connecting said passages to a source of thermal fluid, and means for regulating the temperature of the thermal fluid to thereby stabilize the thermal loading of the peripheral portion of said occupied area.

3,353,593
STEAM INJECTION WITH CLAY STABILIZATION

Thomas C. Boberg, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware

Filed Dec. 27, 1965, Ser. No. 516,469

7 Claims. (Cl. 166—4)



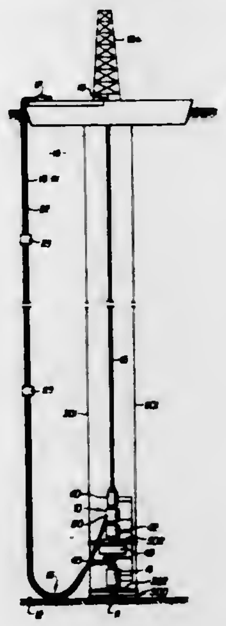
1. A thermal method for the recovery of oil from a porous subterranean oil-bearing reservoir which comprises in combination the steps of softening hard water by exchanging monovalent cations for at least a portion of the cations which contribute to the hardness of said water, generating steam from at least a portion of the resulting soft water, injecting at least a portion of said steam into the reservoir, and also injecting into the reservoir at least a portion of the cations removed from said hard water and producing oil from said reservoir.

3,353,594
UNDERWATER CONTROL SYSTEM

George E. Lewis, Arcadia, Calif., assignor to Hydril Company, Los Angeles, Calif., a corporation of Ohio

Filed Oct. 14, 1963, Ser. No. 315,827

16 Claims. (Cl. 166—.6)



1. For combination with fluid pressure responsive actuator apparatus at a submarine well head, first means to deliver fluid pressure at the well head location, electrically responsive second means for controlling delivery of fluid pressure between said first means and apparatus, said second means including electrical prime mover means and electrical prime mover operated valving movable in different modes to control said fluid pressure delivery to said apparatus, and loop circuit means including selectively energizable control sections remote from said second means, multiple branches electrically connected with said second means remotely from said sections rectifier means and a single transmission and return line electrically connected between said sections and branches for effecting valving movement in one mode in response to current flow in one direction through one of said sections, said line and one of said branches, and for effecting valving movement in another mode in response to current flow in another direction through another of said sections, said line and another of said branches.

3,353,595
UNDERWATER WELL COMPLETIONS

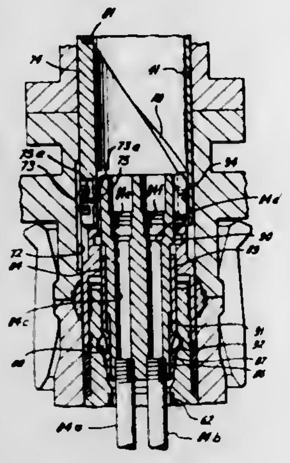
Bobby H. Nelson, David L. Gruller, and Leonard E. Williams, Houston, Tex., assignors to Cameron Iron Works, Inc., a corporation of Texas

Filed May 22, 1964, Ser. No. 369,500

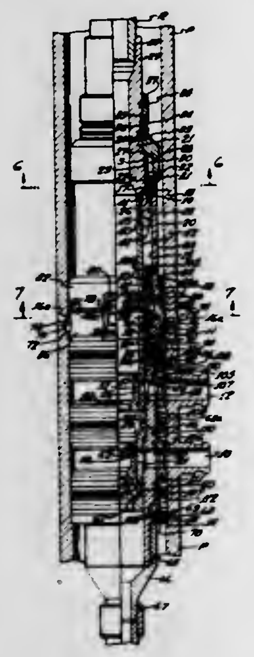
30 Claims. (Cl. 166—.6)

1. In a method of completing an offshore well including a casing head disposed at an underwater level, a guide system extending downwardly from the water level to the underwater level, and pressure control equipment releasably connected in a predetermined rotational position to the upper end of the casing head; the steps of lowering a tubing hanger having plural flow passages therethrough and tubing suspended from the passages through the con-

trol equipment, engaging the hanger with means on the pressure control equipment, as said tubing hanger is so lowered, to orient said tubing hanger into a desired rotational position within the casing head and landing it in such position, releasing the control equipment from the upper end of the casing head and raising it to water level, connecting a Christmas tree having plural flow passages therethrough to the guide system, and lowering the tree onto the upper end of the casing head and the tubing hanger with its flow passages accurately aligned with and sealed to the flow passages of the tubing hanger.

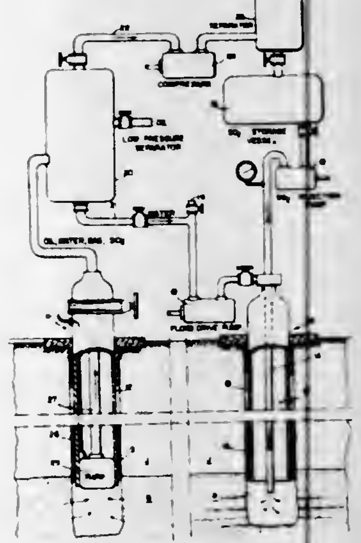


3,353,596
TUBING HANGER AND METHOD OF TESTING PACKING THEREON
Cicero C. Brown, Houston, Tex., assignor to The Atlantic Refining Company, a corporation of Pennsylvania
Filed June 30, 1965, Ser. No. 468,377
10 Claims. (Cl. 166—.6)



1. An underwater tubing head apparatus for producing a well drilled in a formation underlying a body of water, comprising in combination:
- a first tubular member having a side outlet and a second tubular member having a side outlet in axial registry with the side outlet of said first tubular member, said second tubular member being disposed within said first tubular member,
- means including a locking member for automatically locking said second tubular member against axial movement as said second tubular member is lowered to a position where said side outlet of said second tubular member are in axial registry with said side outlet of said first tubular member,
- means for biasing said locking member to locking position, and
- means independent of well pressure engageable with said locking member to hold said locking member in said locking position.

3,353,597
FORMATION FLOODING BY SULPHUR DIOXIDE FOR RECOVERING OIL AND GAS
Fritho R. Erick Mulder, Calgary, Alberta, Canada, assignor to Home Oil Company Limited, Alberta, Canada, a corporation of Canada
Continuation of application Ser. No. 350,838, Mar. 10. 1964. This application Jan. 16, 1967, Ser. No. 609,682
Claims priority, application Canada, Sept. 4, 1963 883,813
12 Claims. (Cl. 166—9)



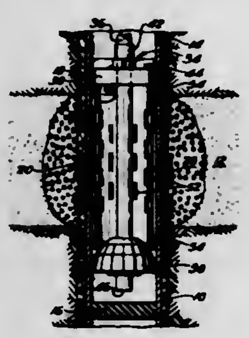
1. In the secondary recovery of petroleum from an oil-bearing earth formation penetrated by at least one injection well and by at least one recovery well spaced therefrom, the two step method which comprises
- (a) introducing liquefied sulphur dioxide into the formation through an injection well to form a bank of liquid sulphur dioxide in the formation adjacent said well and
- (b) thereafter introducing through said injection well a backing fluid comprising water acidulated by a minor proportion of dissolved sulphur dioxide into said formation immediately behind said bank sufficient to drive through the formation to said recovery well, said bank and petroleum displaced from the formation

and without cyclical repetition of steps (a) and (b), recovering said petroleum through said recovery well.

3,353,598
HIGH-PRESSURE STEAM DRIVE OIL PRODUCTION PROCESS
Robert V. Smith, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 11, 1964, Ser. No. 395,866
7 Claims. (Cl. 166—11)

1. A process for producing oil from an oil-bearing stratum which has been produced by natural fluid drive comprising the steps of:
- (a) water flooding a well pattern penetrating said stratum by injecting water under pressure into at least one injection well in said pattern to build up substantial pressure within the well pattern and in the surrounding stratum and producing fluids including oil thru at least one production well therein;
- (b) following step (a), without substantial reduction of pressure, steam flooding said pattern by injecting steam at a pressure substantially above stratum pressure at the end of step (a) thru at least one injection well in said pattern and producing fluids including oil from at least one production well in said pattern, the volume of the injected steam being in the range of about 0.2 to 0.65 of the pore volume of said pattern;
- (c) following step (b), terminating steam injection and driving injected steam thru said pattern with cool fluid to drive a resulting hot zone toward the production well(s) of step (b); and
- (d) recovering fluids including oil from the production well(s) of step (b) produced by step (c).

3,353,599
METHOD AND APPARATUS FOR STABILIZING FORMATIONS
Virgil N. Swift, Galliano, La., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 4, 1964, Ser. No. 387,345
17 Claims. (Cl. 166—15)



1. In a well bore penetrating an unconsolidated subterranean rock formation and containing a string of casing extending through said formation, said casing secured to the wall of the well bore by a sheath of cement and in fluid communication with the formation through a plurality of perforations extending through the wall of the casing and the cement sheath, a method to prevent the movement of formation particles in the formation and into the casing comprising squeezing a body of graded gravel into the formation behind the casing, and setting and expanding a thin-walled expansible permeable liner in forcible engagement with the wall of the casing whereby the internal diameter of the casing and liner is maintained substantially equal to the original internal diameter of the casing and whereby a force is exerted outwardly from the well bore upon the graded gravel at the perforations to substantially prevent movement of the gravel.

11. In a well apparatus for completing a well bore penetrating an unconsolidated subterranean rock formation comprising a string of casing cemented in the well bore through said formation and having a plurality of perforations extending through the cement and into the formation, and a gravel pack maintained behind the casing and cement in forcible engagement with particles of the formation, the improvement comprising a thin-walled expansible permeable liner permanently deformed into forcible engagement with the wall of the casing over the perforated interval of the casing whereby said liner is supported therein by compressive stresses sufficient to exert a force upon the gravel at the perforations to substantially prevent movement of the gravel, said liner having an inner diameter in its expanded condition substantially as large as the inner diameter of the casing.

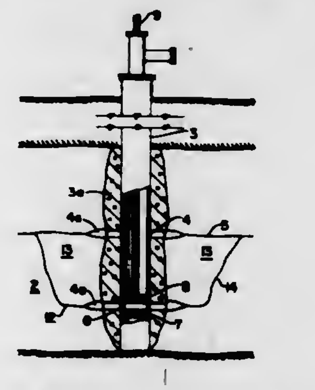
3,353,600
METHOD FOR PLUGGING PERFORATIONS
Max R. Annis and Fred A. Brooks, Jr., Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware
No Drawing. Filed Feb. 10, 1966, Ser. No. 526,406
10 Claims. (Cl. 166—22)

1. A method for the temporary plugging of perforations or similar openings in an oil or gas well which comprises:
- (a) adding graded particles of a dissolvable solid plugging agent to a temperature-sensitive, time-breaking oil-in-water emulsion of sufficient viscosity to suspend said particles, said emulsion being stable at normal atmospheric temperatures and having a predetermined breaking time at the formation temperature in said well;
- (b) injecting said emulsion containing the suspended particles into said well in a quantity sufficient to plug the perforations or other openings therein; and
- (c) thereafter injecting a liquid in which said particles are soluble into said well in a quantity sufficient to dissolve the particles plugging said perforations or other openings after sufficient time for the breaking of said emulsion has elapsed.

3,353,601
COMPOSITION AND USE THEREFOR FOR WATER SHUT-OFF
Francis E. Dollarhide and Eugene D. Mullen, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 26, 1965, Ser. No. 475,000
10 Claims. (Cl. 166—33)

1. The method of inhibiting the passage of water and aqueous liquids through fissures, fractures, and passageways in terranean and subterranean strata which comprises emplacing in said fissures, fractures, and passageways a mass of discrete particles of a size of from about 4 to about 325 mesh, said particles consisting essentially of a water-insoluble water-swellable cross-linked particulated polymer bonded by means of an interlayer of hardened resin composition, to hard granular nuclei which provide durable cores for said particles, said particulated polymer having an average particle size not greater than about 0.2 of that of said granular nuclei.

3,353,602
VERTICAL FRACTURE PATTERNS FOR THE RECOVERY OF OIL OF LOW MOBILITY
Jan Geertsma, Rijswijk, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Mar. 31, 1965, Ser. No. 444,216
Claims priority, application Great Britain, Sept. 10, 1964, 37,102/64
3 Claims. (Cl. 166—40)



1. A method of establishing a vertical fracture pattern in an oil-bearing formation comprising the steps of:
- (a) drilling a borehole into such an oil-bearing formation;

(b) fracturing said formation in the upper portion thereof to create a first substantially horizontal fracture extending radially outwardly from said borehole;
(c) reducing the pressure in said first horizontal fracture to below the overburden pressure;
(d) fracturing said formation in a portion below said first horizontal fracture to form a second substantially horizontal fracture extending radially outwardly from said borehole;
(e) pressurizing said first horizontal fracture to a pressure at least equal to the overburden pressure and maintaining said fracture at said pressure while
(f) forming a conical fracture by subjecting said formation to fracturing pressure at said second horizontal fracture, said conical fracture interconnecting said first and second horizontal fractures.

3,353,603
TREATMENT OF WELLS

Deral D. Knight, Houston, Tex., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware

No Drawing. Filed June 30, 1965, Ser. No. 468,600

5 Claims. (Cl. 166—42)

5. A method of acidizing calcareous and similar earth formations traversed by a well which comprises:
(a) admixing an aqueous solution of hydrochloric acid, from about 0.1% to about 1.5% by volume based on the volume of the aqueous solution of hydrochloric acid of an emulsifying and retarding agent comprising an alcohol sulfate derived from the reaction between straight chain primary alcohols having an average molecular weight of 200–210 with chlorosulfonic acid which is subsequently neutralized with a morpholene type nitrogen base, the emulsifying and retarding agent being in 56% solution, from about 0.1% to about 3.0% by volume based on the volume of the aqueous solution of hydrochloric acid of a corrosion inhibitor comprising an acetylenic alcohol and an amine selected from the group consisting of quaternary amines and heterocyclic amines, a surfactant, and from about 5% to about 25% by volume based on the volume of the aqueous solution of hydrochloric acid of a hydrocarbon oil to form an emulsion;
(b) injecting said emulsion into the well and into contact with the calcareous formation; and
(c) forcing said emulsion into the formation.

3,353,604
TREATMENT OF SUBSURFACE EARTHEN FORMATIONS

Daniel L. Gibson and Louis H. Ellers, Tulsa, Okla., Samuel R. West, Evansville, Ind., and Clare H. Kucera, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

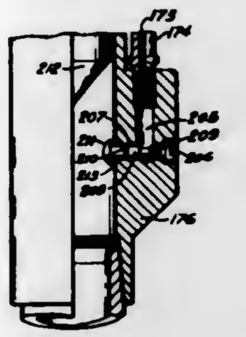
No Drawing. Filed Oct. 13, 1965, Ser. No. 495,673

8 Claims. (Cl. 166—42)

2. The method of fracturing subsurface fluid-bearing formations penetrated by a wellbore comprising injecting down the wellbore and into the formation an aqueous fluid containing dispersed therein an effective amount of an aldehyde polymer selected from the class consisting of paraformaldehyde, metaldehyde, and trioxane to serve as a temporary plugging agent of channels in the more accessible parts of the formation and subsequently injecting at greater than fracturing pressure an aqueous fluid containing little or no aldehyde polymer into the formation the fluid thereby being diverted to the less accessible portions of the formation.

3,353,605
WELL APPARATUS

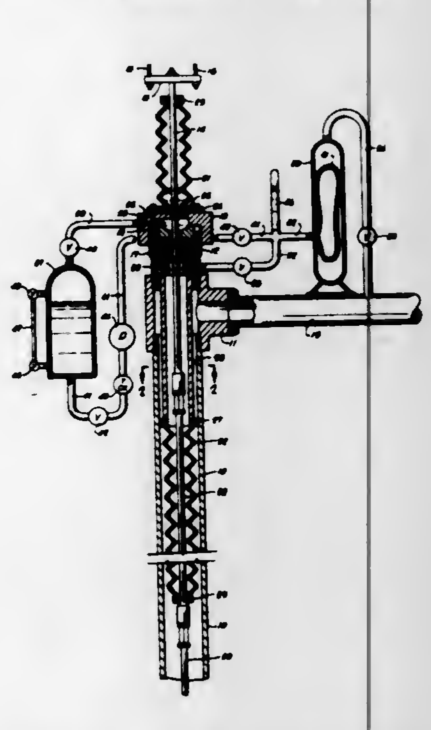
Henry U. Garrett and Clifford M. Peters, Longview, and Robert W. Dinning, Kilgore, Tex., assignors, by mesne assignments, to H. U. Garrett, Longview, Tex.
Application Apr. 16, 1962, Ser. No. 187,904, which is a division of application Ser. No. 484,164, Jan. 26, 1955, now Patent No. 3,045,759. Divided and this application June 6, 1966, Ser. No. 555,562.
4 Claims. (Cl. 166—53)



1. A mandrel for controlling flow of fluid from one point to another both of which are exterior thereof which comprises,
a tubular body adapted to be connected as a part of a well conduit,
a flow passageway in the body and constraining flow therethrough to be between said points which are both exterior of the body,
valve means permitting flow through said passageway when open and preventing flow through said passageway when closed,
and means movable through said conduit into said mandrel for opening and closing said valve means.

3,353,606
POLISHED ROD PROTECTOR

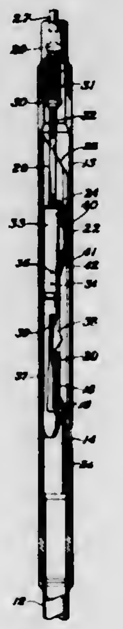
Robert K. Dyer, Oklahoma City, Okla. (Rte. 1, Box 219A, Allen, Tex. 75002)
Filed Aug. 6, 1965, Ser. No. 477,729
3 Claims. (Cl. 166—84)



1. In combination with a well including a string of well tubing, a stuffing box connected therewith and a polished rod extending through said stuffing box, an extensible closure around said polished rod below said stuffing box, the upper end of said closure being rigidly secured relative to said stuffing box and the lower end of said closure being secured to move relative to the movement of said polished rod, a surge tank, means communicating the interior of said surge tank with the interior of said closure, means connecting the interior of said tubing with said surge tank above the last said means, a fluid lubricant within said closure, and wherein said means connecting the interior of said closure with the interior of said surge tank includes a bladder in the latter.

3,353,607
FLOW VALVES AND CHOKES, AND MEANS FOR INSTALLING SAME

Myron M. Kinley, 103 Maple Lane, Chickasha, Okla. 73018
Filed June 7, 1965, Ser. No. 461,953
12 Claims. (Cl. 166—117.5)

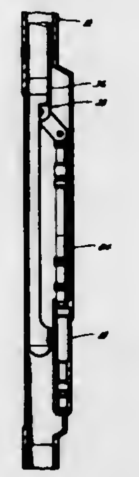


1. Apparatus for controlling the flow of fluid through the side wall of a string of tubing in a well comprising a section of tubing adapted to be made up with the string and having an opening in its side wall, a segment of a cylinder adapted to cover the opening, a longitudinally extending slot with an open upper end formed on the inside of said section for receiving said segment as it is lowered, means cooperating with said section and said segment for sealing said segment with the wall of said section around the opening in said section when said segment is in said slot, and means for inserting said segment into said slot after said tubing is in place in the well.

3,353,608
APPARATUS FOR INSTALLING AND REMOVING FLOW VALVES

Fred F. Beebe and Huston V. Butler, Ventura, Calif., assignors to Camco, Incorporated, Houston, Tex., a corporation of Texas
Filed Sept. 9, 1965, Ser. No. 485,998
4 Claims. (Cl. 166—117.5)

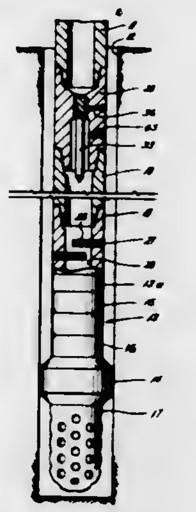
3. A flow control unit handling apparatus adapted for use in placing a flow control unit in a selected offset seat in a well tubing and for removing said unit therefrom comprising,
an elongated guide means adapted to be lowered through the well tubing and bypass said seat,
a shifting tool supported from said guide means and adapted to support a flow control unit,
releasable connecting means coacting between the guide means and the shifting tool for holding the shifting tool longitudinally aligned with said guide means and away from the offset seat as the guide means is lowered in the well tubing,
means for releasing the connecting means including a spring loaded actuating pin having a shoulder protruding upwardly adapted to contact a shoulder in the tubing when the apparatus is raised in the tubing for actuating the releasing means, and



means for moving the shifting tool away from the guide means and toward the offset seat when the connecting means is released.

3,353,609
DRILL STEM TESTING APPARATUS

Lloyd Jensen, Calgary, Alberta, Canada, assignor to Johnston Testers, Ltd., Calgary, Alberta, Canada, a corporation of Canada
Filed June 21, 1965, Ser. No. 465,432
5 Claims. (Cl. 166—149)



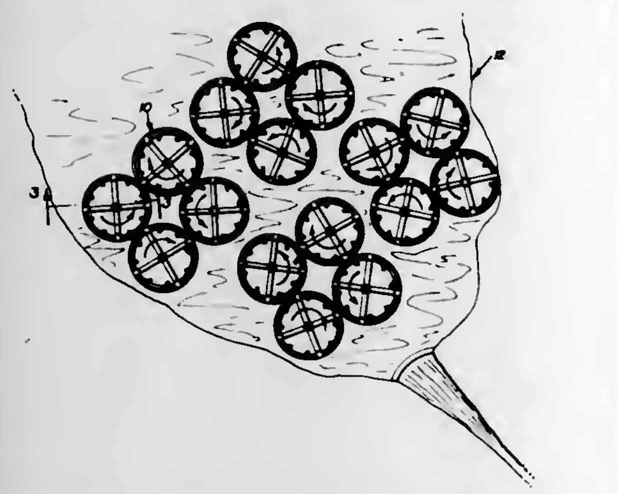
1. Drill stem testing apparatus for use in a well bore including a sample-receiving chamber formed by a string of pipe, a lower valve selectively operable in response to manipulation of the string of pipe in a well bore, an upper valve in said string of pipe below the upper end of the well bore, said upper valve being selectively operable in response to external control means, and an intermediate valve located just above said lower valve and selectively operable in response to means within said string of pipe.

3,353,610
LIQUID FILM MAINTAINING APPARATUS

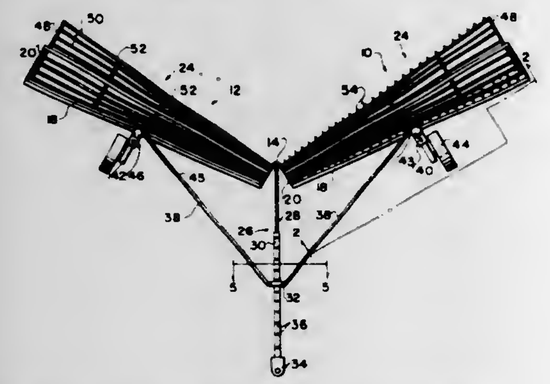
Steven P. Vidal, 1213 Gold SW., Albuquerque, N. Mex. 87102
Filed Aug. 1, 1966, Ser. No. 569,336
10 Claims. (Cl. 170—8)

1. Apparatus for preserving the distribution of a liquid film over the surface of a body of water comprising, barrier means enclosing a surface area on said body of water

for limiting displacement of said liquid film by wind, and vane means mounted by said barrier means for movement thereof under the influence of said wind to redistribute the liquid film displaced within said surface area enclosed by the barrier means.

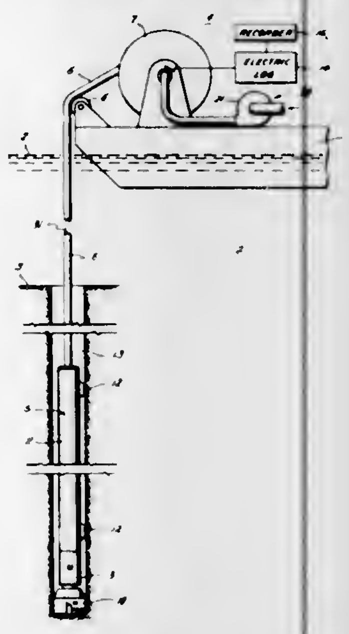


3,353,611
HARROW
Wylie A. Byrd, Rte. 2, Tulia, Tex. 79088
Filed Feb. 23, 1965, Ser. No. 434,470
11 Claims. (Cl. 172—240)



1. An agricultural implement comprising:
(a) a frame having two sections
(b) articulated about a vertical axis at the center,
(c) a conical frustum mounted in each section of the frame,
(d) the small ends of the frustums adjacent to the point of articulation,
(e) each frustum constructed of an open frame work with longitudinal bars extending along the full length of the surface,
(f) a plurality of earth working teeth attached to each bar,
(g) a tongue attached to the frame at the point of articulation and extending forward of the frame,
(h) a double hinge on the forward part of the tongue,
(j) a tension bar extending from the double hinge to each section of the frame at about the middle of each section,
(k) means for adjusting the length of the tongue between the articulation and the double hinge so that the two sections may be adjusted between a position of alignment and a position of angling rearwardly from the point of articulation,
(m) the frustums together with the frame sections having the same weight for length ratio throughout their length,.
(n) the bars having a uniform number of teeth per length throughout their length,
(o) a bracket on the frame section adjacent to the attachment of the tension bar to each of the frame sections,
(p) a wheel mounted on each of the brackets,
(q) and means for raising and lowering each of the wheels thus raising and lowering the frame sections for transportation,
(r) each frustum having bars extending along the surface,
(s) the teeth being spaced about eight inches apart on each bar,
(t) the large end of the frustums being about three times the size of the small end,
(u) the vertical axis about which the two sections are articulated being to the rear of the axis of the frustums.

3,353,612
METHOD AND APPARATUS FOR EXPLORATION OF THE WATER BOTTOM REGIONS
Clyde E. Bannister, 2727 Carolina Way,
Houston, Tex. 77005
Filed June 1, 1964, Ser. No. 371,279
37 Claims. (Cl. 175—6)



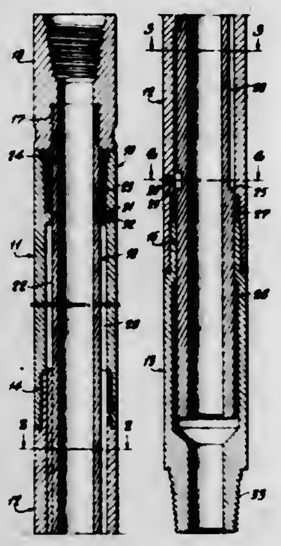
1. Apparatus for sub-surface exploration, comprising oscillating rotary drilling means including an inertia barrel, an oscillating motor supported at the end of a weight carrying suspension means to produce stable movement of said drilling means into the formation, and means for surveying a sub-surface characteristic of a formation as said drilling means bores into said formation.

14. Apparatus for sub-surface exploration, comprising a rotary, oscillating drill, means for energizing said drill to bore into a formation, means mounted on said drill to remove a sample from the borehole wall of the formation being drilled, said sampling means comprising a core barrel having a bit for cutting into the formation and arranged to remove a substantially vertical core, said core barrel being rotatably driven to remove the core as said drill bores into the formation.

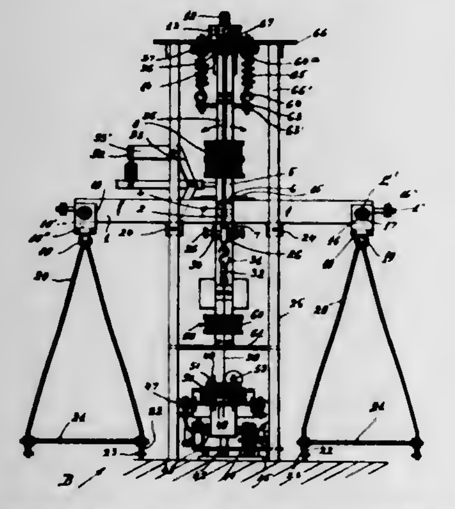
3,353,613
FLUID SPRING TENSILE ENERGY ACCUMULATOR AND SHOCK ABSORBING DEVICE FOR WELL PIPE STRINGS
Harry W. Harrison, Houston, Tex., assignor to Houston Engineers, Inc., Houston, Tex., a corporation of Texas
Filed Sept. 24, 1965, Ser. No. 489,936
9 Claims. (Cl. 175—293)

7. A combined tensile energy accumulator and shock absorbing device for well strings, said device comprising an elongated tubular body, means formed at one end of said body for detachably connecting a jarring tool, a mandrel slidably received in said body, means on said mandrel for detachably connecting a well pipe string, said mandrel

being formed exteriorly so as to provide a small diameter portion radially spaced throughout its length from the portion of said body disposed circumferentially therearound, and a larger diameter portion spaced close to but in non-fluid tight relation with the portion of said housing disposed circumferentially therearound, first packing means disposed within said body adjacent said small diameter portion of said mandrel, second packing means disposed within said body adjacent said larger diameter portion of said mandrel, said packing means, said body, and the exterior of said mandrel defining a closed, fluid tight chamber, the space below said second packing means freely communicating with said one end of said body, a compressible medium in said chamber, movement of said mandrel in one direction relative to said body effecting movement of said relatively large diameter portion of said mandrel into said closed fluid tight chamber to compress said compressible medium without formation of a vacuum therebelow thereby imposing a force in such direction on said jarring tool, subsequent actuation of the latter causing movement of said body relative to said mandrel to expend the stored energy and absorb shock caused by said jarring tool.

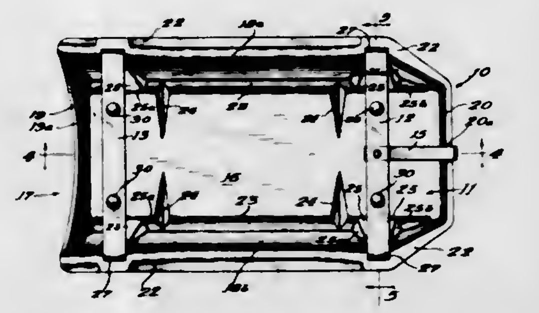


3,353,614
SENSITIVE RECORDING BALANCE AND SCALE FOR WEIGHING HEAVY LOADS
José Mireles Malpica, Montes Urales 355A,
Mexico City 10, Mexico
Filed Oct. 2, 1964, Ser. No. 401,132
17 Claims. (Cl. 177—201)



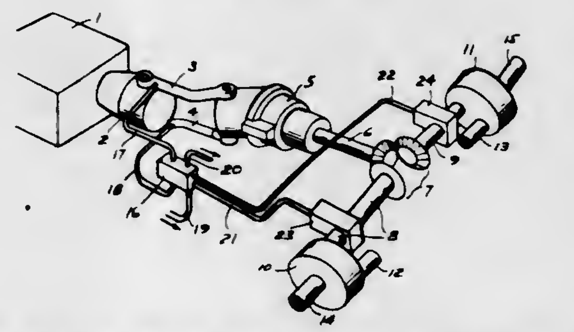
1. In a weighing device, a balance beam, means for supporting a load at one end of the beam, means for supporting a mass at the other end of the beam, a knife carried by the beam, bearing means, said knife presenting a knife edge in contact with the bearing means at a balancing position of the beam, magnetic means supporting said bearing means and beam so that the knife edge is substantially relieved of the weight of said beam, said load and said mass, other magnetic means adjacent the beam for damping oscillations of the beam, and means operatively in contact with the bearing means for indicating extent of contact pressure between the bearing means and knife edge.

3,353,615
DRIP TRAY AND INDICATOR DEVICE
Elic Nekimken, Wheeling, Ill., assignor to Thomas A. Schutz Co., Inc., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 488,607
6 Claims. (Cl. 177—245)



1. A combination drip tray, quantity indicator and support for a liquid container that has a spigot and support comprising: a tub-like body having a bottom wall and continuous upstanding peripheral wall means that includes a front wall; a plurality of relatively thin, generally parallel resilient supporting straps secured to said peripheral wall for supporting a container of liquid above said bottom wall and with the spigot wholly behind the front wall; and a projecting scale arm secured to one of said resilient supporting straps for movement therewith to indicate the quantity of liquid in a container supported on said straps, said scale arm extending through a slot in the perpheral wall of said body, and said peripheral wall being provided with scale markings alongside the slot which cooperate with said scale arm to provide a quantity indicator for said container support.

3,353,616
STEERING DEVICE FOR TRACK LAYING VEHICLES
Gustav Hilmer Tidemalm and Nils Olov Johansson, Karlskoga, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden, a Swedish corporation
Filed Oct. 20, 1965, Ser. No. 498,934
Claims priority, application Sweden, Nov. 17, 1964, 13,830/64
6 Claims. (Cl. 180—6.44)

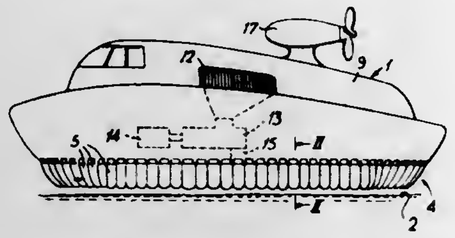


1. A steering device for a track laying vehicle having power driven driving shafts for driving the vehicle, said device comprising, in combination, hydraulic steering control means for selectively applying steering forces to the driving shafts of said vehicle, said steering control means having a pressure fluid inlet side and a pressure fluid outlet side, and safety valve means responsive to the fluid pressure, said valve means opening a fluid flow passage between said two sides of the steering control means when

and while the fluid pressure is below a predetermined value and including a delay means maintaining said fluid flow passage open for a predetermined period of time after the fluid pressure has increased above said predetermined value.

3,353,617
GAS-CUSHION VEHICLES

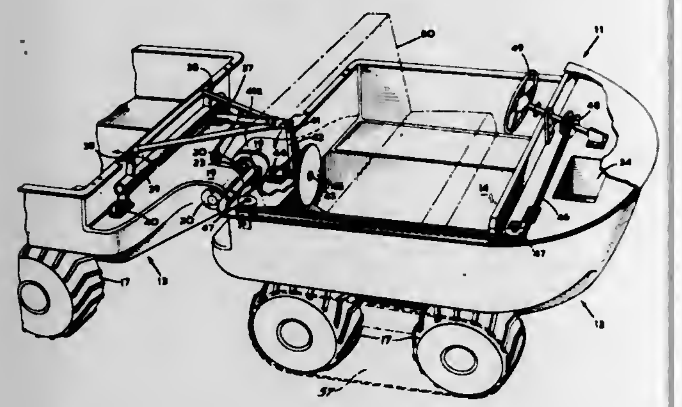
Leslie Arthur Hopkins, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed Aug. 9, 1965, Ser. No. 478,395
Claims priority, application Great Britain, Aug. 11, 1964, 32,774/64
5 Claims. (Cl. 180—7)



1. A gas-cushion vehicle which in operation has its cushion bounded for at least part of its periphery by a plurality of open-topped flexible wall members projecting downwardly from the vehicle body, said wall members being formed from sheet material inflatable to conform to desired shapes and each comprising an outer cushion-facing portion and two side portions extending inwardly from said outer portion into the space occupied by the cushion, and means for sealing the wall members to the vehicle body, said means comprising a plurality of spaced-apart components carried by one of the wall members and the vehicle body and each disposed so as to extend in overlapping relationship with a cushion-facing portion of a wall member and with the vehicle body, whereby the overlapping parts of a cushion-facing portion and a component are held together in substantially pressure-tight relationship by inflation pressure of the flexible wall member.

3,353,618
ARTICULATED VEHICLE

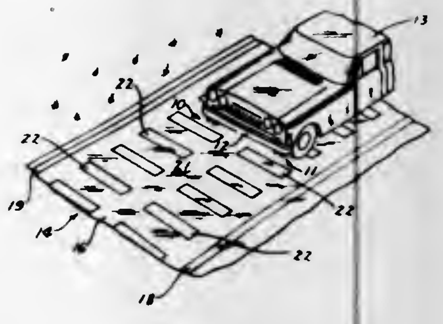
Alfred Gordon Fisher, 1152 Linbrook Road, Oakville, Ontario, Canada
Filed Sept. 27, 1965, Ser. No. 490,312
8 Claims. (Cl. 180—14)



1. An articulated vehicle comprising at least two vehicle units, each vehicle unit comprising a pair of longitudinally spaced wheel and axle assemblies upon which the respective unit is mounted for movement over the ground, the axes of rotation of all the said assemblies being parallel to one another, a driving motor mounted in one unit, driving means drivably connecting the motor and at least one of the assemblies of the said one unit, a first rotatable member rotatably mounted in the said one unit, driving means drivably connecting the motor and the said first rotatable member, a second rotatable member rotatably mounted in the other unit, a universal joint having its principal rotational axis generally parallel to the axes of rotation of the said assemblies and connecting the said first and second rotatable members to drivably connect the two rotatable members together and to articulately connect the two units together for relative pitching motion about the said principal rotational axis, for relative pivoting motion about a vertical pivot axis, and for relative rolling motion about a horizontal axis, driving means drivably connecting the said rotatable member of the other unit and at least one of said assemblies of the other unit and means interconnecting the said two vehicle units to constrain the units against relative pivoting motion about the said vertical pivot axis of greater than a predetermined extent.

3,353,619
AUTOMOTIVE SPEED ZONE CONTROL SYSTEM

Warren G. Lambert, 525 Aspen St., Morgantown, W. Va. 26505
Filed June 27, 1966, Ser. No. 560,605
3 Claims. (Cl. 180—98)



1. A speed control device for mounting on a motorized vehicle and operable for controlling the speed of the vehicle, traveling over a road, upon entering a speed zone, wherein the surface of the road in the speed zone is provided with a plurality of longitudinally spaced, transversely disposed stripes, the surface of the stripes having a texture different from that of the road, the device comprising in combination:

light source means mounted on the vehicle for directing a light ray against the road, the ray reflected at an intensity depending upon which surface it strikes;

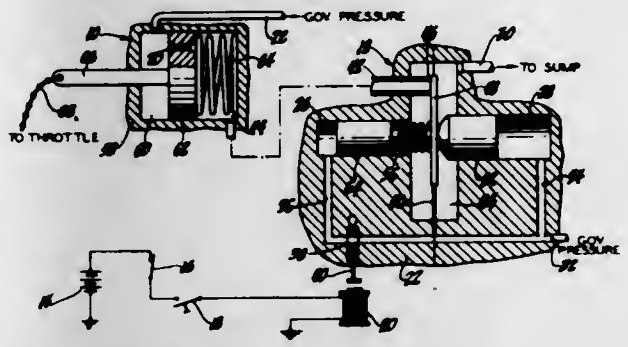
light receiving means mounted on the vehicle for receiving said reflected ray, and operable for developing an electric pulse in response to the intensity of said reflected ray, said receiving means comprising a relay switch electrically connected thereto and operable by said electric pulse, electric power means electrically connected to said switch means, and a solenoid electrically connected to said power means, said solenoid operable to energize a speed control means;

said speed control means comprising a core operably connected to said solenoid, gear means attached to said core, and valve means mounted in the air-intake passage to the carburetor of the motor, said valve means movable from a first position wherein the passage is substantially unobstructed to a second position wherein the passage is obstructed thus reducing the air intake of the motor, said gear means operable by said core for moving said valve means from said first position to said second position;

said valve means comprising a butterfly valve weighted on one edge thereof disposed in the throat of the carburetor, said valve means automatically resettable to said first position due to said weighted butterfly valve when the light ray strikes the road subsequent to striking one or more of the stripes.

3,353,620
VEHICLE ROAD SPEED CONTROL

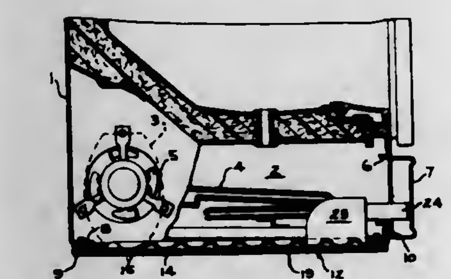
Kenneth G. Leslie, Fenton, and Harry C. Zeisloft, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 528,882
10 Claims. (Cl. 180—108)



1. A vehicle road speed control system comprising: a source of fluid pressure reflecting vehicle road speed;
- a fluid pressure actuated servomotor selectively controlling vehicle road speed and having
  - a power wall,
  - first and second fluid pressure chambers separated by said power wall,
  - means urging said power wall toward said first chamber,
  - and restrictive fluid flow means interconnecting said first and second chamber;
- valve means fluid connected with said second chamber and exhaust; and valve control means for said means including
  - opposed differential area fluid pressure responsive means receiving pressure from said source,
  - yieldable means intermediate said valve means and the smaller area fluid pressure responsive means,
  - and means selectively locking said smaller area fluid pressure responsive means against movement whereby changes in fluid pressure from said source act on the larger area fluid pressure responsive means and said yieldable means to control said valve means by modulating the opening thereof in accordance with said changes in fluid pressure and thereby control the fluid pressure differential across said servomotor power wall to move said power wall to control vehicle road speed.

3,353,621
AIR CUSHION APPLIANCE SUPPORTING DEVICE

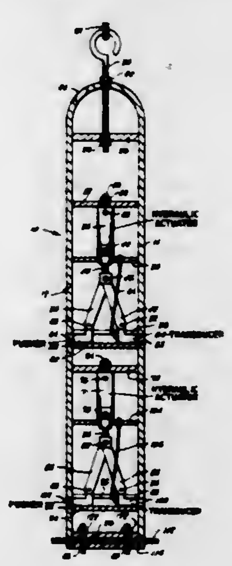
Merton L. Clevett, Jr., Lexington, Ky., assignor to General Electric Company, a corporation of New York
Filed Dec. 9, 1965, Ser. No. 512,722
2 Claims. (Cl. 180—124)



1. An air cushion device for lifting and transporting a household appliance comprising:
- a generally rectangular backing member and means for mounting said member on the bottom side of said appliance in a substantially horizontal position and in spaced relationship with the surface supporting said appliance,
- a flexible member attached at its periphery to the peripheral edges of said backing member and including a continuous relatively fluid tight peripheral portion forming a skirt portion extending inwardly beneath said backing member a distance such that the area thereof adjacent the inner edges of said skirt portion normally engage said supporting surface,
- said backing member including means for introducing air under pressure into said device within the area bounded by the inner edges of said skirt portion to create an air cushion beneath said backing member to raise said appliance from said surface,
- said flexible member comprising a flexible plastic film having therein a plurality of air passages spaced from the periphery thereof and dividing said film into said skirt portion and a central area forming limiting means for limiting outward horizontal movement of said skirt portion under the action of said air and to maintain said skirt portion in a substantially horizontally position and limit the total distance said appliance is raised to a fraction of an inch,
- the air passages at the front of said film being spaced a greater distance from the peripheral edges of said backing member than the remaining air passages.

3,353,622
NEAR-SURFACE VELOCITY LOGGER

Everett L. Erickson, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Aug. 20, 1962, Ser. No. 218,035
1 Claim. (Cl. 181—.5)

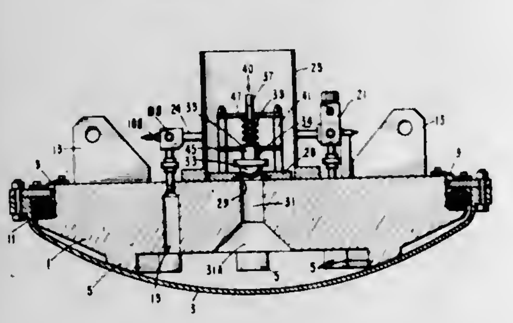


A downhole sonic velocity logging device comprising:
- an elongated casing having a longitudinal axis;
- means connected to the casing for lowering the casing into a bore hole;
- a pair of elongated guide means connected to the casing, the guide means being disposed at spaced points along the longitudinal axis and generally normal thereto;
- a transducer slidingly associated with each of the guide means adjacent one side of the casing;
- a pusher member slidingly associated with each of the guide means adjacent the other side of the casing;
- a hydraulic actuator connected to the casing and associated with each of the guide means and the respective transducers and pusher members, the actuator having a piston rod disposed generally along the longitudinal axis;
- an arm pivotally interconnecting the piston rod of each actuator and the associated transducer and pusher member such that movement of the piston rod will cause simultaneous movement of the respective trans-

ducer and pusher member outwardly from the casing into engagement with the walls of the bore hole;
a source of hydraulic power fluid connected to the hydraulic actuators for operating the actuators;
means connected to the casing for generating a sonic signal in the formation around the bore hole;
means carried by said casing for acoustically insulating said transducers from said signal generating means; and,
means connected to the transducers for measuring the time interval required for the sonic signal to travel through the formation between the transducers.

3,353,623
SEISMIC PULSE GENERATOR USING COMBUSTIBLE GAS

Tobias Flatow and Frank L. Chalmers, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware
Filed Feb. 10, 1966, Ser. No. 526,535
4 Claims. (Cl. 181—.5)

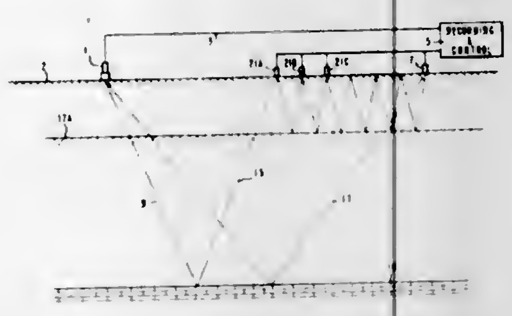


4. A seismic source for operating at water-covered layers of the earth for converting the energy of an explosive gas to seismic waves, comprising:
a heavy upper reaction plate having a recess around the outer edge of the upper surface thereof;
a toroidal resilient sealing member in said recess;
a curved dished earth coupling lower member extending up and over said sealing member and engaging the upper portion of said sealing member whereby said lower member, said reaction plate, and said sealing member form a closed chamber;
at least one gas inlet means in fluid communication with said closed chamber for injection of an explosive gas into said closed chamber;
at least one spark-producing means in fluid communication with said closed chamber for igniting explosive gas in said closed chamber;
exhaust port means extending through said reaction plate; and
valve means on said reaction plate normally closing said exhaust port and means adapted to open said exhaust port means responsive to a given pressure within said closed chamber.

3,353,624
MINIMIZING MULTIPLE REFLECTIONS BY THE APPLICATION OF A PARTICULAR SEISMIC WAVE TO THE EARTH

Vernon L. Redding, Bellaire, Tex., assignor to Esso Production Research Company, a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 528,930
6 Claims. (Cl. 181—.5)

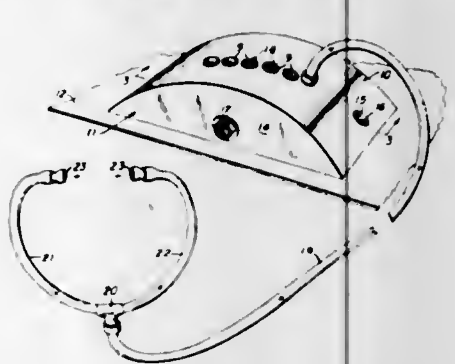
4. A method of seismic prospecting comprising:
(a) at a given seismic wave transmitting location, transmitting into the earth a seismic signal comprising the sum of a plurality of elongated vibratory seismic wave trains having the same wave shape and different amplitude, and spaced apart in time by a predetermined time interval, each of said wave trains being nonrepetitive for a given time duration;
(b) at at least one seismic wave receiving location, detecting earth vibrations resulting from seismic waves produced by said seismic signal being transmitted into the earth at said transmitting location, and recording the detected earth vibrations as a function of time;



(c) forming a correlogram by cross correlating an electrical signal which is a replica of one of said wave trains with an electrical signal reproduced from the recording of the earth vibrations formed by step (b); and
(d) repetitively repeating steps (a), (b), and (c) with different amplitudes of said seismic wave trains and different time intervals therebetween until correlogram events identifiable as resulting from multiple reflections are minimized.

3,353,625
ACOUSTIC MANIFOLD

Thomas Aloysius Scanlon, Barrington, R.I., assignor to PM & E Electronics, Inc., Providence, R.I., a corporation of Rhode Island
Filed Nov. 26, 1965, Ser. No. 509,820
11 Claims. (Cl. 181—31)

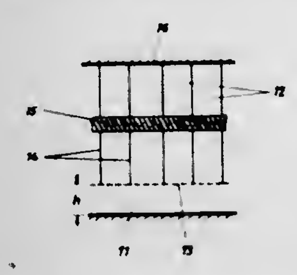


1. An acoustic manifold comprising a closed housing, a speaker mounted in said housing, said speaker being adapted to be electrically connected to an audio source, a plurality of valve means within said housing for communication with the interior thereof.

3,353,626
SOUND ABSORBING VENTILATION CONDUIT WITH SIDE BRANCH CHAMBERS

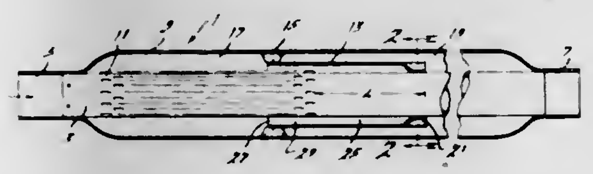
Lothar Cremer, Ulrich Kurze, and Matthias Hubert, Berlin, Germany, assignors to Lothar Cremer, Berlin, Germany
Filed Dec. 7, 1964, Ser. No. 416,568
Claims priority, application Germany, Dec. 9, 1963, C 31,629
8 Claims. (Cl. 181—42)

1. An absorption type sound-damping device for a gas conduit comprising a plurality of spaced transverse walls in said conduit defining at least one through-flow passage with laterally branching-off chambers which are separated from one another by said transverse walls, flow-conducting and air-permeable walls connected to said transverse walls and separating the chambers from the passage, and at least one narrow layer of porous sound-absorbing material in each of the chambers subdividing the same into a plurality of compartments of approximately equal depth.



3,353,627
MUFFLER WITH CONCENTRIC TUBES FORMING HELMHOLTZ CHAMBERS

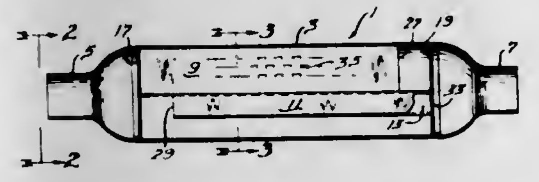
Robert A. Heath, Jackson, Mich., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Feb. 16, 1965, Ser. No. 433,225
13 Claims. (Cl. 181—48)



1. A gas muffler for attenuating sound of a predetermined frequency comprising an outer tube, an inner center tube, and an intermediate shell telescoped between said tubes, at least part of the space between said tubes forming a chamber of predetermined volume having a major portion located out of radial alignment with said shell, at least one cross section of said shell being connected in a gas tight joint to one of said tubes, said shell forming with the other of said tubes an annular passage of predetermined length and area and having first and second ends and both said ends being open, the first end of said passage opening to said predetermined volume chamber, said center tube forming the gas flow passage for said muffler, the length and area of said annular passage and the volume of said chamber being interrelated and selected to form a Helmholtz sound attenuating chamber for said predetermined frequency, and means forming a flow connection of said gas flow passage with the second end of said annular passage.

3,353,628
RETROVERTED FLOW MUFFLER WITH LONGITUDINAL PARTITIONS

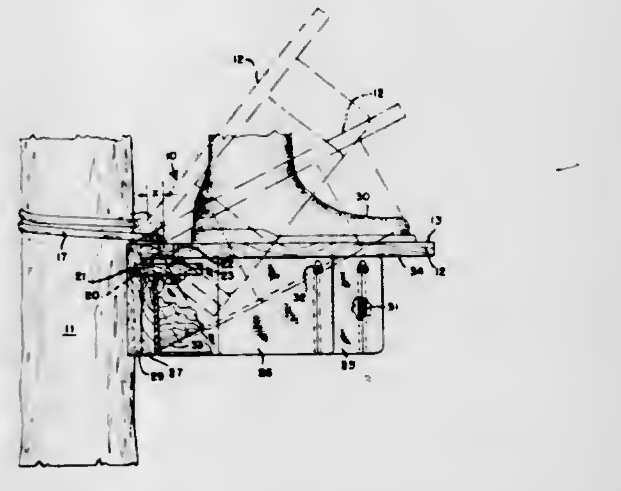
James R. Gilbert, Jackson, Mich., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Mar. 5, 1965, Ser. No. 437,427
2 Claims. (Cl. 181—53)



1. A triflow muffler comprising an elongated tubular housing having reduced ends forming inlet and outlet bushings, three longitudinal partitions inside said housing radiating from a common longitudinal axis extending lengthwise of the housing, said partitions defining an inlet passage, a return flow passage, and an outlet passage all extending lengthwise of the housing, partition means at each end of the longitudinal partitions extending transversely across the housing and closing the ends of the outlet and return flow passages at the inlet end of the muffler and the ends of the inlet and return flow passages at the outlet end of the muffler, and opening means adjacent the outlet end in the common partitions for the inlet and return flow passages and adjacent the inlet end in the common partition for the outlet and return flow passages to provide for cross over flow of gases from one passage to the next.

3,353,629
PACK FRAME AND TREE SEAT STRUCTURE

James W. Brunes, Pequot Lakes, Minn. 56472
Filed Aug. 10, 1966, Ser. No. 571,460
7 Claims. (Cl. 182—20)



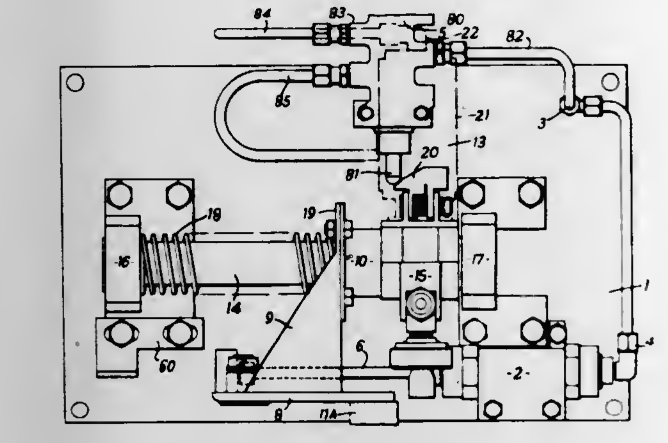
1. A pack frame and tree seat structure adapted to be used interchangeably as a pack frame and tree seat, said structure comprising
a substantially rigid back-engaging member having a front and back surface, said back-engaging member having a plurality of apertures therein,
a substantially rigid tree-engaging member affixed to said back-engaging member in substantially right angular relation,
rope means affixed, at one end, to said back-engaging member at one of the apertures therein, said rope means adapted to be used interchangeably as means attaching said pack frame and tree seat structure to the back of an operator and to an upright tree or the like,
a knap sack attached to the front surface of said back-engaging member and
means adjusting the tension of said rope means.

3,353,630
AUTOMATIC LUBRICATING APPARATUS

Denis Frederick Woor, Derriford, Plymouth, Devon, and Charles E. Higham, Brownhill, Plymouth, Devon, England, assignors to Tecalemit (Engineering) Limited
Filed May 28, 1965, Ser. No. 459,726
Claims priority, application Great Britain, May 29, 1964, 22,386/64
10 Claims. (Cl. 184—2)

1. Lubricating apparatus for automatically lubricating the bearings of the rollers of vehicles, comprising a support, a carriage slidable on the support, a mobile fluid-actuated lubricating gun which is mounted on the carriage and is disposed transversely to the path of movement of the carriage, a spring-urged trip pivotally mounted on the carriage, a source of compressed fluid, a changeover valve connected to said source, said valve being actuated by said trip, said gun including a barrel, a piston

slidable therein, a lubricant-injecting plunger carried by the piston for injecting lubricant from the gun into a nozzle which forms part of the gun and is adapted to engage lubricant points on the moving vehicle, the said piston acting to move the said lubricant ejecting plunger and the nozzle towards and away from the lubricating point, the flow of fluid to and from the gun barrel being controlled by said changeover valve, a trip plate pivotally mounted on the carriage, a trip plate cylinder, the flow of pressure fluid to said cylinder being controlled by said changeover valve, a piston slidable in said trip plate cylinder, a piston rod connected at one end to said piston, the opposite end of said rod engaging said trip plate, a pad on the trip plate which is displaceable from an inoperative position in which it is out of the path of said rollers into an operative position in which the pad lies in the path of said rollers and is entrained by the latter, such displacement being brought about by the forward slidable movement of the said piston in the trip cylinder.

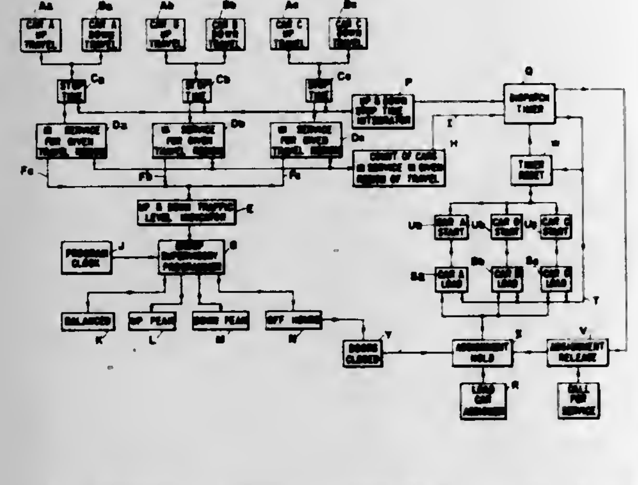


3,353,631
ELEVATOR DISPATCH CONTROL USING INTEGRATED STOP TIME AS A MEASURE OF TRAFFIC

Raymond A. Burgy, Maumee, Ohio, assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio

Continuation of applications Ser. No. 641,600, Feb. 21, 1957, and Ser. No. 683,327, Sept. 11, 1957. This application Mar. 30, 1959, Ser. No. 808,290

14 Claims. (Cl. 187—29)



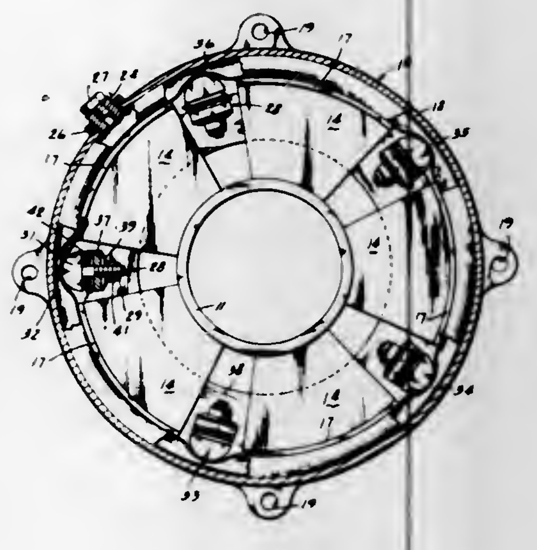
1. An elevator system comprising a car, a plurality of landings served by said car while traveling upward and downward, a source of current, a first and second capacitance connected in series across said source, a first and second resistance connected in series across said source, a connection between the junction of said capacitances and the junction of said resistances, means to alter the resistance across said first capacitance during stop time for upward car travel, means to alter the resistance across said second capacitance during stop time for downward car travel, and means responsive to the voltage across one of said capacitances for altering the mode of operation of said system.

3,353,632
SHAFT VIBRATION DAMPER

John M. Perhach, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan

Filed Jan. 27, 1966, Ser. No. 523,430

7 Claims. (Cl. 188—1)



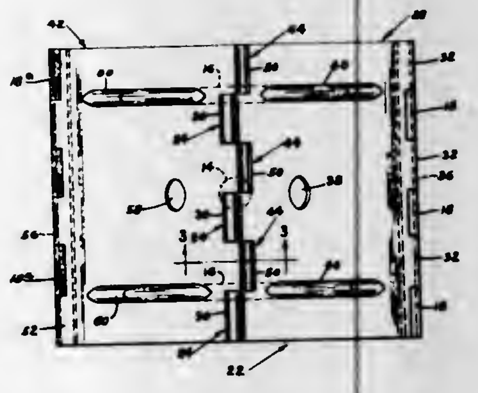
1. A shaft vibration damper comprising a collar arranged for displacement upon eccentric movement of a shaft received therein, a support mounting said collar and permitting relative motion therebetween, a resiliently deformable tube having a damping fluid confined therein and means providing a continuous annular fluid reservoir between said support and said collar, means connected to said collar to bear against said fluid reservoir, and constriction means operating radially on said reservoir to provide a constant area orifice for the flow of fluid in said reservoir.

3,353,633
CHOCK DEVICE FOR WHEELS

Lawrence Leonard and Richard L. Leonard, both of 106 Holyoke St., Lynn, Mass. 01905

Filed Mar. 17, 1966, Ser. No. 535,106

2 Claims. (Cl. 188—32)



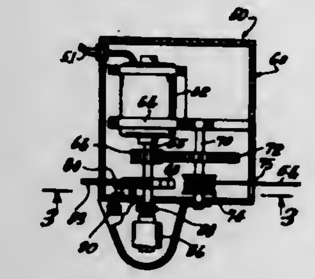
1. A chock device for wheels comprising a bottom, two sides and means movably connecting said sides to said bottom, each said side having a projecting member spaced laterally from each other and respectively extending diagonally upward in opposite directions in position of use and adapted to bear against the main body of the side opposite thereto when said sides, in position of use, extend diagonally towards each other, said sides being duplicates and interchangeable.

3,353,634
EMERGENCY BRAKE SYSTEM FOR AUTOMOBILES

Emanuel L. Farrar, 149 E. 117th St., Los Angeles, Calif. 90061

Filed Oct. 22, 1965, Ser. No. 501,903

1 Claim. (Cl. 188—106)



A safety brake control system for an automobile and the like having brakes on at least the rear wheels, an electrical battery, a hydraulic brake control system, a foot pedal normally depressible to actuate the hydraulic system to apply the brakes, a mechanical brake control system comprising cable means connected to the brakes and a handle actuable manually to tension the cable means to apply the brakes, and a trunk compartment, said safety brake control system comprising the combination of

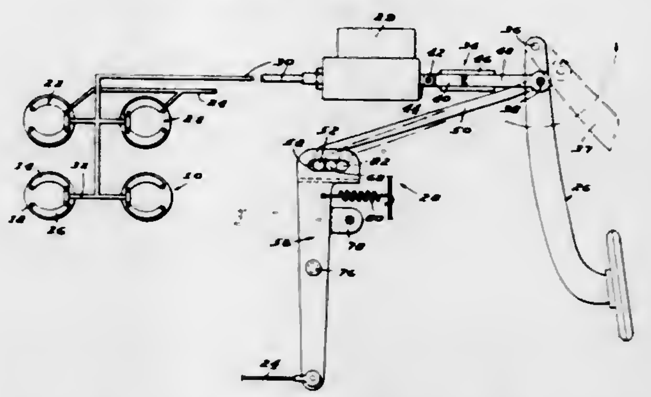
- a housing mounted in the trunk compartment of the automobile,
- a main electric motor mounted in the housing and having a motor shaft,
- a cable reel rotatably mounted in the housing and coupled to the motor shaft to be driven thereby in a forward cable winding direction,
- a cable wound on the reel with one end extending through an aperture in the housing and coupled to said cable means to apply the brakes in response to forward cable winding rotation of the reel,
- lost motion means incorporated in said coupling of the cable to the cable means and in said connection of the manual handle to the cable means to permit brake operation independently by said handle and said cable,
- a ratchet means mounted in the housing and coupled to the motor shaft to normally prevent rearward motor rotation,
- a handle operatively coupled to the ratchet means and accessible outside said housing for manually releasing the motor shaft for rearward rotation,
- a solenoid mounted in the housing and coupled to the ratchet means to release the same in response to solenoid energization,
- an auxiliary electric motor mounted in the housing and coupled through a friction slip clutch to the shaft of the main motor to drive the same rearwardly when the ratchet means are released,
- circuit means including a switch actuable automatically in response to abnormal depression of said foot pedal to supply electrical energy from the battery to the main motor to drive the same forwardly to wind the cable and apply the brakes,
- and circuit means including a switch manually operable to simultaneously energize the solenoid and supply electrical energy from the battery to the auxiliary motor to drive the main motor shaft rearwardly and release the brakes.

3,353,635
SINGLE PEDAL DUAL BRAKE SYSTEM

Waldemar R. Kotoucek, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 2, 1965, Ser. No. 511,104

16 Claims. (Cl. 188—106)



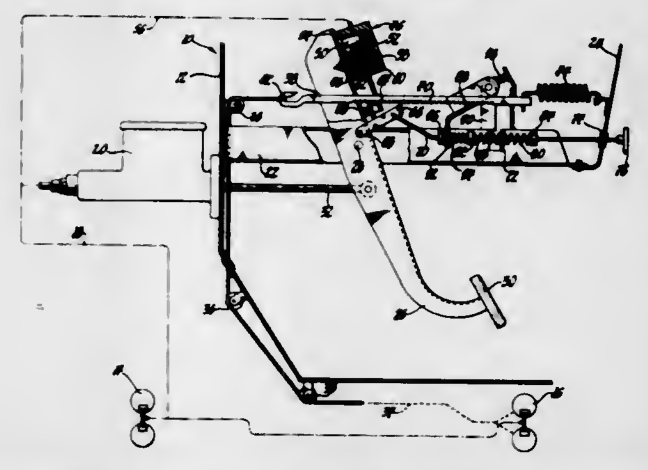
1. A braking system comprising a brake and means for actuating said brake, said actuating means including fluid pressure and mechanical brake apply means each operatively connected to said brake, control means including movable means common to and operatively connected to each of said brake apply means for actuating said apply means independently or in one sequence with respect to each other, and means for reversing the sequence of actuation of said fluid pressure and mechanical brake apply means by said movable means.

3,353,636
SINGLE LEVER PRIMARY AND SECONDARY VEHICLE BRAKE ACTUATING ARRANGEMENT

Jack B. Ridenour, Lansing, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 15, 1966, Ser. No. 579,670

6 Claims. (Cl. 188—106)



1. A single lever hydraulic primary brake and mechanical secondary brake arrangement for a vehicle, comprising:

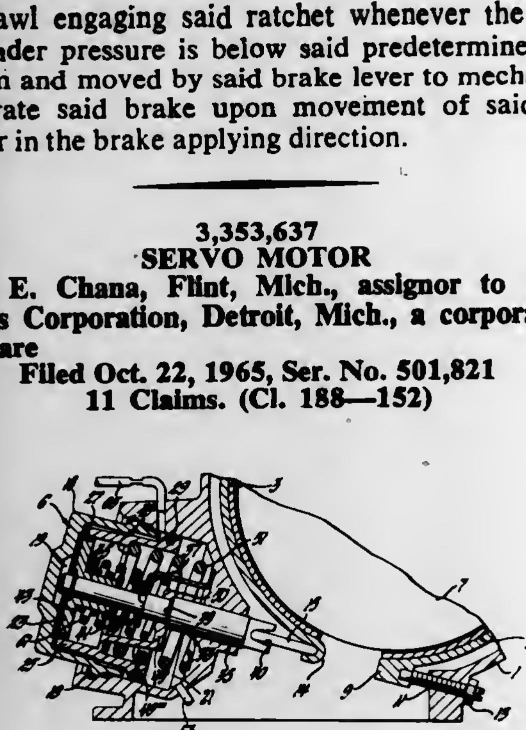
- a vehicle brake having hydraulic brake operating means and mechanical brake operating means,
- a hydraulic master cylinder connected to said hydraulic brake operating means to hydraulically operate said brake,
- mechanical linkage including a toothed ratchet connected to said mechanical brake operating means and movable to mechanically operate said brake,
- a single brake lever pivotally movable and connected to actuate said master cylinder when pivoted in one direction,
- and a ratchet tooth-engaging pawl on said brake lever normally engaging said toothed ratchet and having a power servo moving said pawl out of ratchet en-

gagement upon generation of a predetermined minimum master cylinder pressure,

said pawl engaging said ratchet whenever the master cylinder pressure is below said predetermined minimum and moved by said brake lever to mechanically operate said brake upon movement of said brake lever in the brake applying direction.

3,353,637
SERVO MOTOR

Howard E. Chana, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,821
11 Claims. (Cl. 188—152)

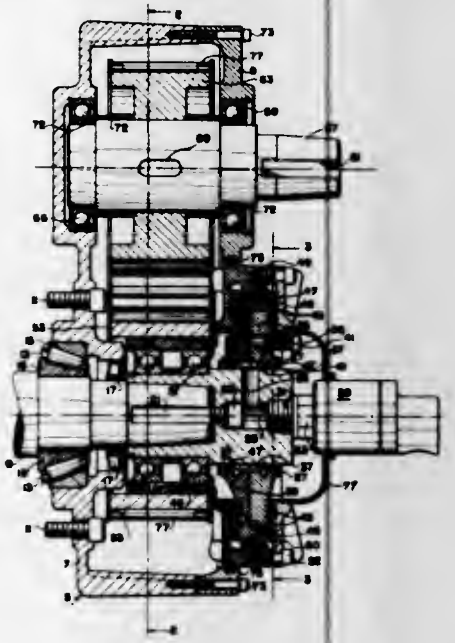


6. In a servo motor for moving relatively rotatable friction members into and out of full frictional engagement, a housing having a cavity therein, a piston assembly movably mounted in said cavity to define at least one fluid working chamber, means for supplying fluid under pressure to said working chamber, said piston assembly including primary and secondary pistons, an apply member operatively connected to one of the friction members, first resilient means in said cavity for urging said piston member to a predetermined position in said working chamber, second resilient means mechanically connecting said primary piston and said apply member for transmission of primary piston apply force to said apply member to initially move said apply member and take up clearance between the friction members and for subsequent deflection to increase the volume of said working chamber and reduce the rate that force is applied to the friction members by said primary piston, means for transmitting primary piston apply force to said secondary piston opposing the force of said first resilient means to permit said secondary piston to move in said cavity to further increase the volume of said fluid working chamber so that the rate that force is applied by the primary piston will be further reduced to calibrate the engagement of said friction members.

3,353,638
FLUID PRESSURE CLUTCH MEANS ASSEMBLY

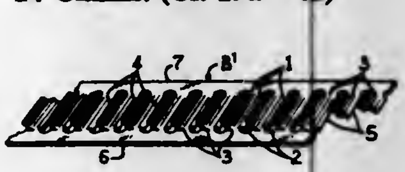
Richard M. Smoll, P.O. Box 822, Wichita, Kans. 67201
Filed May 10, 1965, Ser. No. 454,549
2 Claims. (Cl. 192—3.5)

1. A fluid pressure-operated clutch with off-set drive mechanism comprising, a housing having an inside part rigidly mountable by bolt means around a power in-put shaft rotatable in respect to said housing, roller bearing means having races therewith and a seal means rotatably mounting said shaft in said housing, a clutch shaft keyed to said power in-put shaft and rigidly mounted thereon by screw means to rotate with said power in-put shaft, said clutch shaft having pressure fluid conduit means therein, axial splines around the outside and a tapped tapered hole centered on the longitudinal axis thereof, a pressure fluid in-put shaft having a tapered threaded boss connecting same to the said clutch shaft tapered hole by screw means to rotate therewith and a pressure fluid conduit means along its axis, friction clutch means mounted upon said clutch shaft to rotate therewith and having two annular discs engaging the said splines of said clutch shaft, annular friction means rigidly mounted on the outside of each of said discs, thrust spring means mounted in said discs normally urging said clutch means toward released position, an expansible pressure fluid chamber between said discs, annular rings between said discs and between said discs and said clutch shaft sealing said fluid chamber, a rotatable power out-put element having a geared pulley turnably mounted on said clutch shaft by ball bearing means, interconnecting duct means through said clutch shaft communicating between said pressure fluid conduit means and said pressure fluid chamber for delivering pressure fluid into said chamber to move the said discs and friction means against said rotatable power out-put element, a power out-put geared pulley rigidly mounted by key means on a power out-put shaft turnably mounted by ball bearing means in said housing, a geared chain on said geared pulley of said power out-put element of said clutch means drivingly connected to said power out-put geared pulley, and an outside part of said housing mounted on and connected to said inside part of said housing by screw means.



3,353,639
STRIP PROVIDING COUPLING ELEMENTS COUPLING, WITH REGARD TO ROTATION, TWO CONCENTRIC MEMBERS, THE ELEMENTS OBTAINED FROM SAID STRIP AND ASSEMBLIES EMPLOYING SAID ELEMENT

François Andriussi, Saint-Martin d'Heres, France, assignor to Peugeot et Cie Societe Anonyme, Audincourt, Doubs, France, and Eurotechni Office European d'Etudes et de Realisations Techniques, Grenoble, Isere, France, both corporations of France
Filed June 15, 1965, Ser. No. 464,082
Claims priority, application France, June 17, 1964, 978,578; June 9, 1965, 19,980
14 Claims. (Cl. 192—41)



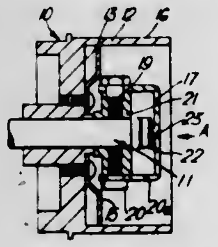
1. Strip for coupling two members having concentric cylindrical surfaces, said strip being resiliently bendable and comprising two faces, a row of pairs of tab portions which extend transversely of the strip, apertures in the strip located between adjacent pairs of tab portions and partly defined by said adjacent pairs of tab portions, each pair of tab portions being substantially contained in an

inclined plane intersecting the general plane of the strip, the tab portions of each pair of tab portions being symmetrical relative to the line of intersection of said general plane and said inclined plane and constituting two projections respectively projecting from said two faces of the strip, said projections having sharp edges for engaging said cylindrical surfaces and being resiliently yieldable upon application of force thereon in a direction perpendicular to said general plane.

3,353,640
COMBINATION HANDWHEELS AND HANDWHEEL CLUTCHES FOR SEWING MACHINES

Ivan Alexander Leslie, deceased, late of Nantwihh, England, by Catherine M. Leslie, executrix, Hereford, England, assignor to The Singer Company, Elizabethport, N.J., a corporation of New Jersey

Filed Aug. 27, 1965, Ser. No. 483,909
Claims priority, application Great Britain, Sept. 2, 1964, 35,937/64
3 Claims. (Cl. 192—67)



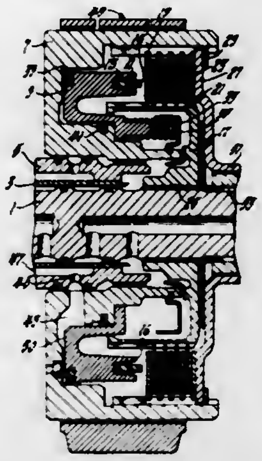
1. A combination handwheel and handwheel clutch for the end of a sewing machine shaft comprising a rotary member having a hole for rotatably mounting on the end of the sewing machine shaft, a hollow cylindrical portion extending from the outer end of the rotary member, a collar, a tiltable plate having a diameter slightly less than the inner diameter of the hollow cylindrical portion of the rotary member, a bracket protruding from the reverse side of the tiltable plate, pivot means for pivotally connecting the bracket to the collar, locking means for locking the collar to the sewing machine shaft so that the tiltable plate closes the open end of the hollow cylindrical portion on the rotary member, abutment means on the end of the rotary member from which the hollow cylindrical portion extends, a projection also protruding from the reverse side of the tiltable plate, and an over-center blade spring between the collar and the reverse side of the tiltable plate for holding the tiltable plate after light manual pressure on the obverse side selectively in a substantially perpendicular position relative to the sewing machine shaft with the projection on the tiltable plate abutting the abutment means to lock the rotary member to the sewing machine shaft and in an oblique position relative to the sewing machine shaft with the projection on the tiltable plate clearing the abutment means to permit the rotary member to rotate freely on the sewing machine shaft.

3,353,641
CLUTCH OR BRAKE UNIT

Howard E. Chana, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 18, 1965, Ser. No. 497,335
12 Claims. (Cl. 192—85)

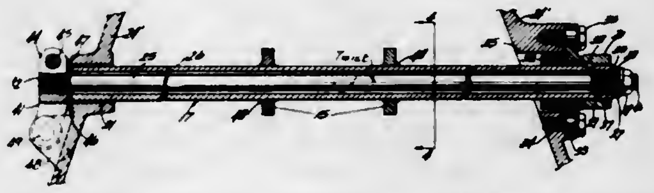
1. In a friction-drive-establishing device having a plurality of mutually engageable friction plates, movable motor means for applying a load to said members causing face-to-face engagement thereof, an elastomeric annular cushion, said motor means having an apply surface with a groove formed therein having a width substantially greater than the width of said cushion, said cushion being mounted in said groove and when relaxed having a portion extending beyond said apply surface, said cushion having a contact surface for initially applying a load to said plates on predetermined movement of said motor means toward said plates, said cushion when deflected into said groove having a slightly rising spring rate to condition said plates for a gradual rise in torque capacity, said cushion when deformed a predetermined amount having a rapidly rising spring rate thereby conditioning said plates for rapidly rising torque capacity on further increase in apply load.



3,353,642
FRICTION CLUTCHES

W. Vincent Thelander, Sugar Loaf Mountain Ranch, Box 385, Cave Creek, Ariz. 85331

Filed Jan. 10, 1966, Ser. No. 519,483
21 Claims. (Cl. 192—99)



1. In a friction clutch comprising a clutch plate adapted to be held in frictional engagement with a fly-wheel, a pressure plate for applying spring pressure to said clutch plate in engaged position, a back plate turning with the fly-wheel and operatively connected to turn with the pressure plate, a bearing disposed centrally relative to said clutch and mounted for axial movement to and from clutch engaging position, a fork engaging said bearing and oscillatable to transmit movement thereto, and means for transmitting clutch engaging pressure from said bearing to said pressure plate, the improvement which consists of a preloaded torsion bar serving as a source of clutch engaging spring pressure disposed outside of said clutch but operatively connected with said fork, whereby said bearing, which transmits the spring pressure from said torsion bar and fork to the pressure plate is continuously under spring pressure throughout the engagement of said clutch, and means for disengaging said clutch by relieving the pressure of said fork on said bearing.

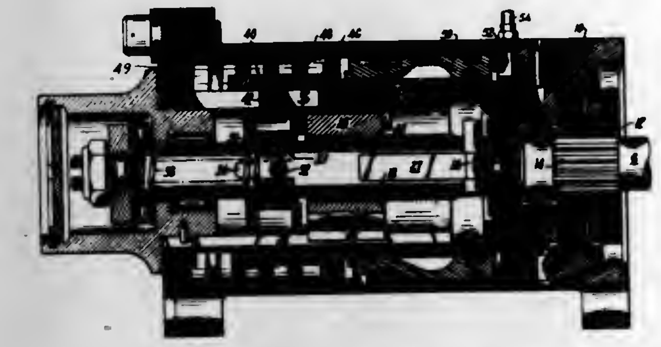
3,353,643
SHAFT STOPPING DEVICE

William M. Adamson, East Granby, and Norman B. Newton, South Glastonbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Feb. 2, 1966, Ser. No. 524,380
3 Claims. (Cl. 192—141)

1. A mechanical shaft stopping device comprising:
a housing;
a threaded shaft rotatably mounted in said housing;
means for connecting said shaft to a rotary input;

- a translating member threadedly mounted on said shaft, said translating member having a projecting portion extending parallel to said shaft;
- means on said housing for preventing rotation of said translating member;



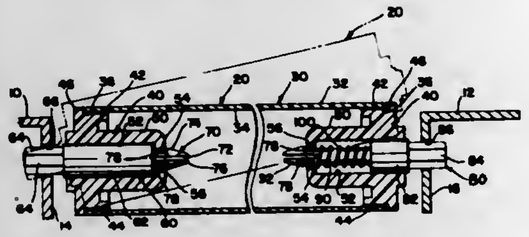
- a stop on said shaft having projecting portion designed to engage a projection on said translating member for stopping the shaft when the translating member moves into the rotary path of the stop, said stop being axially slidable on said shaft; and
- means for changing the axial position of said stop on said shaft in response to a control signal.

3,353,644
ROLLER FOR A CONVEYOR

Howard Hamilton McNash and William R. Fox, Cleveland, Ohio, assignors to Colonial Plastics Manufacturing Co., Cleveland, Ohio, a corporation of Ohio

Filed Jan. 24, 1966, Ser. No. 522,424

5 Claims. (Cl. 193—37)



1. In an end cap for use with a hollow, cylindrical sleeve to form a conveyor roller, said cap being molded from plastic and including: an outwardly facing, generally cylindrical mounting surface and an inner, generally cylindrical inner bearing surface, said mounting surface being adapted to be received within said sleeve and said bearing surface being adapted to receive a pin for rotatably mounting said cap with respect to a fixed object, the improvement comprising: said end cap including an aperture inward of said bearing surface; and, a pin having an outer bearing surface generally matching said inner bearing surface and a protrusion extending through said aperture; means on said protrusion for gripping said end cap to hold said pin in place; and, said pin having a second protrusion extending outboard of said end cap for mounting said cap onto a mounting plate.

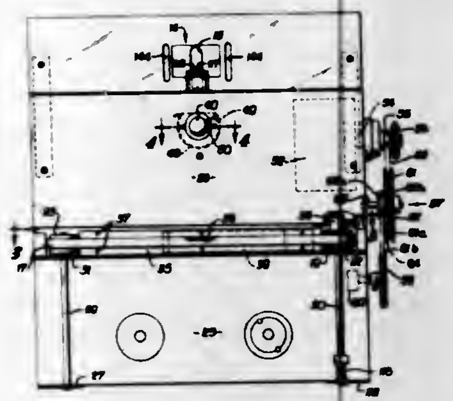
3,353,645
AMBULATORY TYPEWRITER APPARATUS HAVING ONLY ONE DRIVING MEANS

George Vincent Palmer, 8531 Hedges Way, Los Angeles, Calif. 90046

Filed June 16, 1965, Ser. No. 464,382

8 Claims. (Cl. 197—2)

1. In a typewriter of the type which is adapted to move over a print-receiving surface, and which has a driving power train including motive means for intermittently advancing the typewriter in a predetermined direction across the surface in response to typing thereon, a transport assembly comprising a frame disposed to generally receive the weight of the typewriter, a pair of rollers driven by the motive means and spaced apart in a direction corresponding to the direction of movement of a line of typing, a single endless belt trained around said rollers for cyclic movement to move said typewriter in said direction, said single belt being the sole traction means for said typewriter, said belt serving to support said frame from said print receiving surface, and a rotatable sphere carried by said frame to continuously engage said surface to support the typewriter during typing upon said surface, said sphere being disposed laterally to one side of said belt and extending downwardly beneath said typewriter sufficiently whereby the weight of the typewriter during typing is transmitted to said surface via said belt and said sphere.

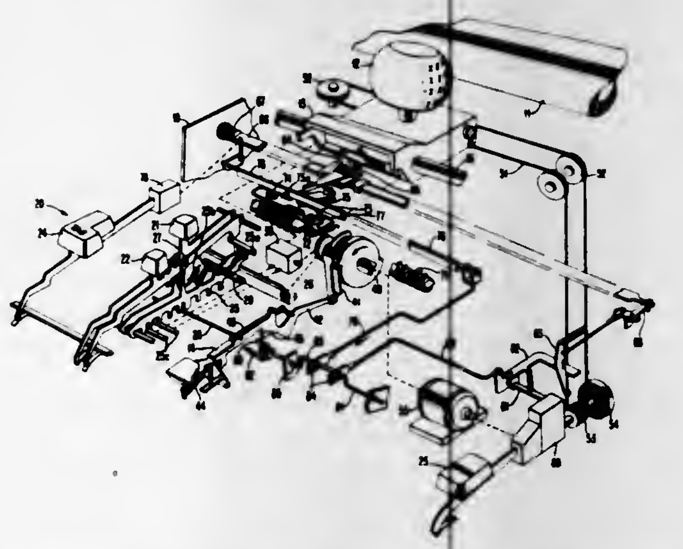


3,353,646
TYPEWRITER HAVING MEANS TO STORE CHARACTERS SELECTED DURING CARRIAGE MOVEMENTS

Richard J. Young, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 14, 1966, Ser. No. 579,305

8 Claims. (Cl. 197—16)



1. A typewriter having a keyboard, a platen, printing means cooperable therewith under the control of said keyboard, and means supporting said platen and said printing means for relative movement along a writing line, the improved control mechanism comprising:

- a transfer link individually associated with each character key of said keyboard, each of said transfer links having a normal inactive condition, a stored condition, and a control condition, each of said transfer links when in its control condition being operative to effect printing of an associated character;
- a cyclically operable print power control device for effecting print operation in conjunction with said transfer links;

- means normally operable upon the existence of any transfer link being in its stored condition for initiating a cycle of operation of said print power control device;
- means operated by said print power control device for placing stored transfer links into their control condition;
- a line return mechanism operatively connected to one of said printing means and said platen for causing relative movement thereof from an advanced line position to a new line position, said line return mechanism comprising a control member having a normal inactive position and an active position indicative of line return operation;
- a latch operatively associated with said control member for retaining said control member in its active position when independently moved thereto;
- means responsive to the attainment of a new line position by said printing means and said platen for moving said latch to unlatch said control member; and
- ancillary means cooperative with said cycle initiating means for preventing cycle initiation thereby that any time said carriage return control member is in its active position.

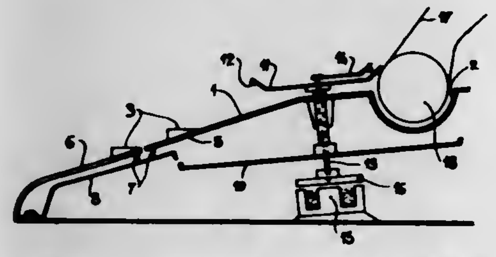
3,353,647
ELECTRIC TYPEWRITER WITH TYPE MOUNTED ON FLEXIBLE COMB

Gerard Hugel, Mulhouse, Haut-Rhin, France, assignor to Etablissements Masson, Lyon, France, a French joint-stock company

Filed May 11, 1966, Ser. No. 549,418

Claims priority, application France, May 12, 1965, 16,827

6 Claims. (Cl. 197—18)



1. A typewriter comprising control keys and a continuously rotating type-carrying member, said type-carrying member having radial arms, a stop member for each control key, each stop member being displaceable by its control key into the path of one of said radial arms so as to arrest the said arm and the type-carrying member so as to present a corresponding type on the type carrying member in printing position; each control key being disposed on one end of a resilient arm adapted to engage with and flex one of a series of counter resilient arms each of which carries a stop member for arresting engagement with one of said radial arms of said type-carrying member; and each of said radial arms being of different length for selective engagement by said stop members.

3,353,648
TYPEWRITER WITH TYPEWHEEL AND HAMMER MOUNTED ON MOVABLE CARRIAGE

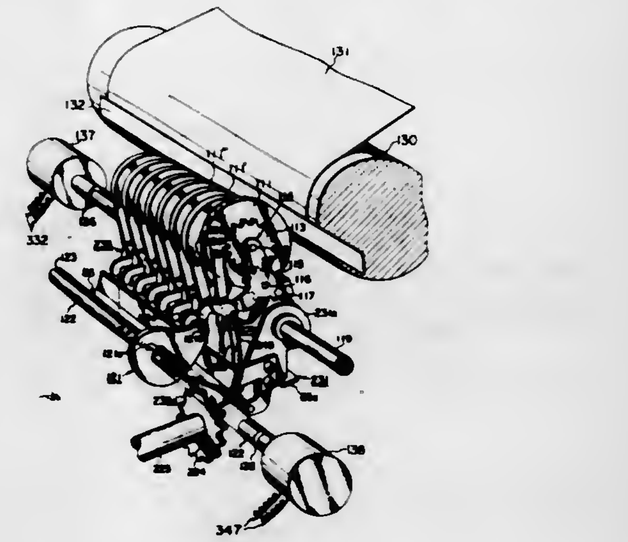
Sanae Amada, Reijiro Kawano, Masatsugu Arakawa, and Hiroshi Iwano, Kanagawa-ken, Japan, assignors to Fujitsu Limited, Kanagawa-ken, Japan, a corporation of Japan, and Kurosawa Tele-Communications Limited, Tokyo, Japan, a corporation of Japan

Filed Aug. 30, 1966, Ser. No. 576,000

Claims priority, application Japan, Aug. 31, 1965, 40/53,254

3 Claims. (Cl. 197—55)

1. A typewriter comprising a housing, carriage means slidably mounted in said housing, first drive means for slidably moving said carriage means comprising first motor means and timing belt means positively interconnected between said motor means and said carriage, slider means slidably mounted on said carriage, second drive means for slidably moving said slider means relative to said carriage means comprising second motor means and a positive drive gear train interconnecting said second motor means and said slide means, a plurality of adjacent type levers mounted for sliding movement with said slider means relative to said carriage means and for pivotal movement relative to said slider means, a typewheel rotatably mounted on each of said type levers, third drive



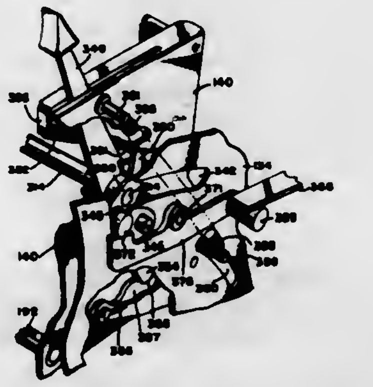
means for rotating said typewheels in unison comprising third motor means and a positive drive gear train interconnecting said third motor means and each of said typewheels, hammer means mounted on said carriage means adjacent said slider means for rotary movement only relative to said carriage means, fourth drive means for rotating said hammer means comprising fourth motor means positively and directly coupled to said hammer means and latch means associated with each of said type levers pivotally mounted on said slider means for releasable latching engagement with the teeth of the positive drive gear train drivingly connected to each of said typewheels.

3,353,649
ACCOUNTING MACHINE RECORD HANDLING APPARATUS

William B. Templeton, Northville, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 28, 1964, Ser. No. 421,434

2 Claims. (Cl. 197—127)

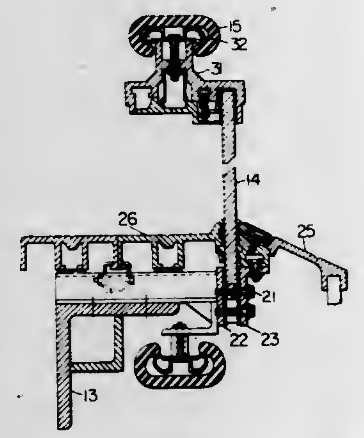


1. In a printing apparatus, supporting means, a platen mounted on said supporting means to pivot between an open record receiving position and a closed sheet holding position, means operable to pivot said platen between said positions, a pair of oppositely disposed connected together arms pivotally mounted on said supporting means,

a pair of sheet guide members carried by said arms, first cam means operatively connecting said arms to said platen pivot operable means to effect a pivoting of said arms in an opposite direction to the pivoting of said platen, sheet feed means mounted on said guide members including a driven feed roller and a pressure roller, said pressure roller being retractable from said feed roller to release a sheet, a rotatable shaft mounted on said guide members and extending axially between said arms, said shaft being operatively connected to said pressure roller to retract the latter upon rotation of said shaft in a predetermined direction, a pair of cranks affixed onto said shaft respectively adjacent said arms, second cam means on said supporting means, and cam followers carried by said cranks and riding on said second cam means to rotate said shaft by and upon pivoting of said arms.

3,353,650
TRANSPARENT BALUSTRADE FOR A PASSENGER CONVEYOR

Joris Theodor Schroeder and Gerhard Albert Kurt Otto, Berlin, Germany, assignors to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 10, 1966, Ser. No. 593,436
Claims priority, application Germany, May 20, 1966, F 30,159
6 Claims. (Cl. 198—16)

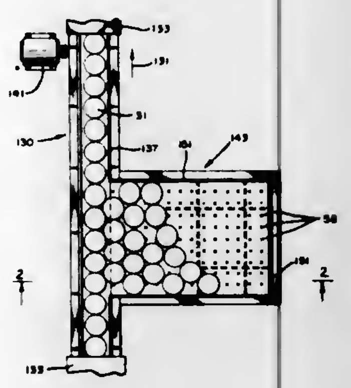


1. A transparent balustrade for a passenger conveyor, said balustrade having a handrail portion including a moving handrail supported on handrail guide support brackets, and a side panel section including a pluarlity of transparent side panels aligned in end to end relation and extending downwardly from said handrail portion to the vicinity of the moving conveyor surface, said balustrade being characterized by the absence of balustrade posts and in that the handrail portion is mounted directly on and supported solely by the transparent side panels along their upper edge, said handrail support brackets each having a downwardly opening longitudinal recess embracing a side panel along its top edge by a clamping member inserted into the recess from below and pressed upwardly by a lever to move said clamping member laterally so as to force the side panel along its top edge against one wall of the recess.

3,353,651
ARTICLE ACCUMULATOR

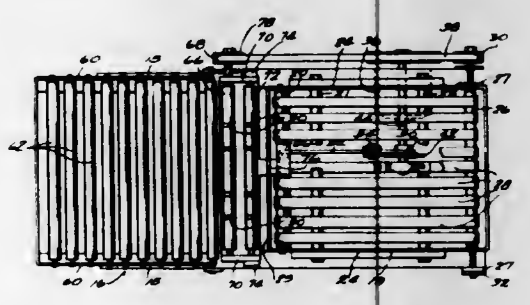
Clinton Clark Witmer, Modesto, Calif., assignor to Tri-Valley Growers, San Francisco, Calif., a corporation of California
Original application July 18, 1963, Ser. No. 296,046, now Patent No. 3,300,065, dated Jan. 24, 1967. Divided and this application Oct. 31, 1966, Ser. No. 590,737
8 Claims. (Cl. 198—32)

1. An accumulator for objects comprising:
a conveyor,
an air platform having an inclined top plate for supporting objects on an air cushion, and
means for positioning said platform adjacent said conveyor with the top plate inclined downwardly toward the conveyor to permit transfer of objects from the conveyor onto the air platform and back onto the conveyor from the air platform.



3,353,652
FEEDING AND INDEXING DEVICE FOR PACKAGE HANDLING APPARATUS

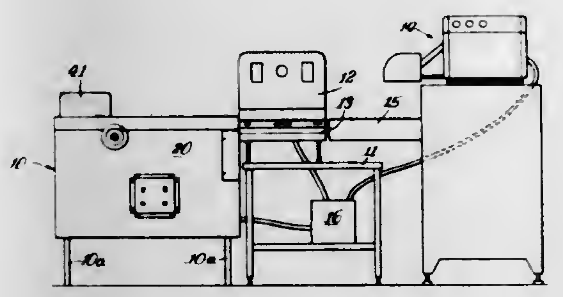
Phillip J. Fellner, Jr., Racine, Wis., assignor to Sturtevant Industries, Inc., Sturtevant, Wis., a corporation of Wisconsin
Filed May 25, 1967, Ser. No. 641,280
8 Claims. (Cl. 198—34)



1. A package indexing device comprising: a frame; an inclined conveyor mounted on the top of the frame; a belt-type conveyor mounted on the frame at the lower end of the inclined conveyor to form a continuation thereof; said belt-type conveyor having one end movable from an inoperative position above said inclined conveyor to an operative position with respect to said inclined conveyor; cam means for moving the end of the moving conveyor adjacent the lower end of the inclined conveyor from the inoperative position to the operative position substantially in alignment with the end of the inclined conveyor to thereby remove one package at a time from the inclined conveyor; stop means secured to the end of the moving conveyor adjacent the inclined conveyor to prevent the package on the inclined conveyor from coming into contact with the moving conveyor when in the inoperative position; a drive roller assembly including a drive roller positioned at the lower end of the inclined conveyor, said assembly being mounted for pivotal motion to move the drive roller from a position below the plane of the conveyor to a position above the plane of the conveyor to impart an initial motion of the lowest packages on the inclined conveyor when the belt type conveyor is moved to the operative position; and drive means for continuously driving the cam means and the drive roller; said stop means operatively engaging the drive roller assembly to move the drive roller to the position above the plane of the inclined conveyor when the stop means moves to the inoperative position.

3,353,653
PACKAGE INDEXING DEVICE

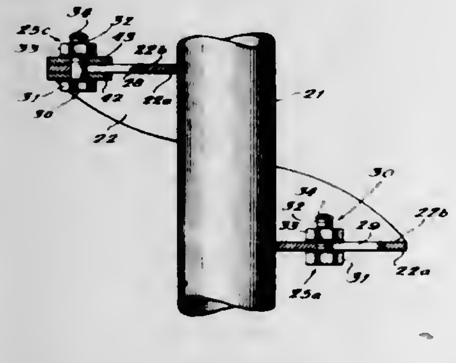
Bengt A. Arvidson, Villa Park, and Ernest C. Clement, Oak Park, Ill., assignors to Corley-Miller, Inc., a corporation of Ohio
Filed Aug. 3, 1966, Ser. No. 570,070
15 Claims. (Cl. 198—39)



1. A package indexer for advancing packages to be weighed and subsequently marked with a weight and package price wherein the packages can be received at random and of various sizes and shapes comprising, a weighing scale having a platform, a package stop in advance of said platform, means for cyclically moving said package stop between blocking and non-blocking positions, intermittently operable first means for advancing packages successively to said package stop, when the package stop is in blocking position, intermittently operable second means both in advance of and beyond the package stop and operable when the first means is not operable to move a package across the stop when the package stop is in non-blocking position and onto the scale platform including a power driven conveyor with conveying elements overlying substantially the entire scale platform at all times.

3,353,654
ANIMAL FEEDER WITH MATERIAL AGITATING AND EJECTING ELEMENTS

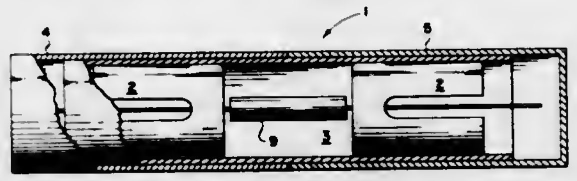
Robert G. Ferris, Harvard, Ill., assignor to Starline, Inc., a corporation of Illinois
Filed Aug. 12, 1966, Ser. No. 572,123
8 Claims. (Cl. 198—213)



1. A material feeding device comprising: an elongate substantially horizontal auger housing having at least one side opening slot therein; an auger rotatably mounted in said housing, and including helicoid flighting with opposite faces; material agitating and ejecting elements permanently and non-detachably mounted on the auger between the axis of the auger and the peripheral edge of the auger flighting, said elements being positioned entirely inwardly of the peripheral edge of the flighting and each having a portion extending outwardly from at least one face of the flighting; and means on the auger flighting allowing adjustment of the elements relative to the flighting to a selectable position.

3,353,655
PROTECTIVE PACKAGE

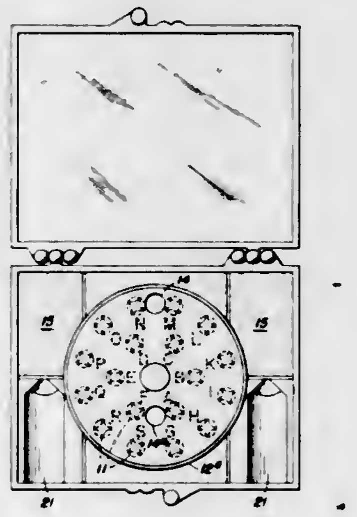
William L. Dalton, San Bruno, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed June 23, 1966, Ser. No. 559,857
3 Claims. (Cl. 206—1)



1. A package including a first cap means, a second cap means, a sleeve means having first and second open ends, and at least insert means, said first and second cap means substantially closing the said open ends of said sleeve means and substantially encasing the sleeve means, said insert means being enclosed in said sleeve means, said insert means further defined as having a substantially flat surface with a T-shaped opening therein, and a plurality of protrusions extending downwardly therefrom, the apex of said opening being substantially centered on said insert.

3,353,656
HOLDER FOR ELECTRON MICROSCOPY GRIDS

Stanley Brown, Bronx, N.Y., assignor to Better Equipment for Electron Microscopy Inc., Bronx, N.Y., a corporation of New York
Filed Mar. 12, 1965, Ser. No. 439,208
6 Claims. (Cl. 206—1)



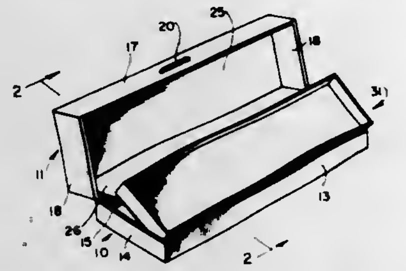
1. A container for small articles comprising in combination a base and a cover, said base being indented to provide a plurality of cruciform recesses, said cruciform recesses comprising mutually perpendicular slots with re-entrant angles thereof rounded off to form convex shoulders, said cover being pivotally mounted on said base and being provided with an access opening capable of registering with no more than one of said recesses at any given time.

3,353,657
DISPLAY BOX

Lewis Douglas Young, Providence, R.I., assignor to Douglas Young, Inc., Pawtucket, R.I., a corporation of Rhode Island
Filed June 27, 1966, Ser. No. 560,519
3 Claims. (Cl. 206—45.13)

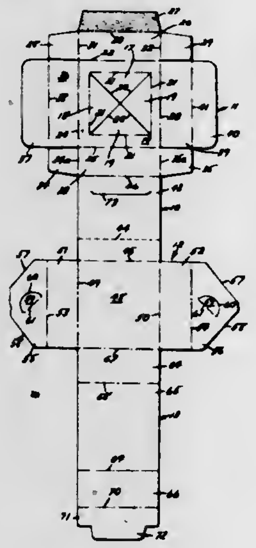
1. A display box comprising a bottom portion having a bottom and upstanding back, side, and front walls, a cover portion having a top and depending back, side, and front walls, said cover portion being hinged to said bottom portion along the rear edge thereof to swing relative thereto through 90 degrees, a tray having a bottom and up-

standing front, side, and rear walls positioned within the upstanding walls of said bottom portion, means supporting said tray in spaced relation to the front wall of said bottom portion, and lever means mounted on said cover portion for pushing said supporting means against said front wall of said bottom portion and for lifting the rear



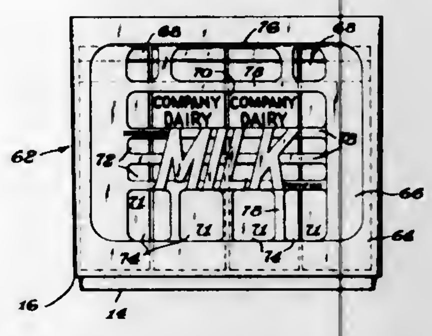
of said supporting means when said cover portion is swung to open position, whereby said tray will be inclined with reference to said bottom, said supporting means comprises a stiff sheet hinged to said lever means and having its front edge abutting the front wall of said bottom portion, said tray being mounted on said supporting sheet spaced from the front edge thereof.

3,353,658
COMBINATION DISPLAY AND SHIPPING PACKAGE
Erwin D. Ettin, Baldwin, N.Y., assignor to Salcoa Corporation, New York, N.Y.
Filed Oct. 14, 1964, Ser. No. 403,779
1 Claim. (Cl. 206—45.25)



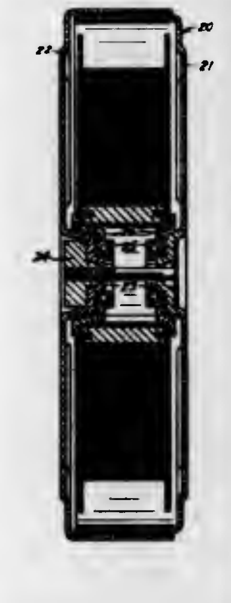
In a collapsible combination display and shipping package, the improvement comprising: a unitary blank of material including a box-forming element having a principal plane, a propping element foldably connected along a straight line to said box-forming element, and selectively engageable therewith at at least one point in spaced relation from said line to provide a supporting surface which is angularly disposed with respect to said principal plane; a wrapping element foldably connected to said propping element and of sufficient length to enclose said box-forming element and said propping element therebeneath; said wrapping element having means selectively interconnecting with a part of said propping element to maintain itself in engaged condition; said propping element including a cover member aligned with said box-forming element, first and second pairs of rectangularly-shaped flaps, interconnected to laterally extend from said propping element, and triangularly-shaped flaps interconnected to said rectangularly-shaped flaps, said triangularly-shaped flaps having tab means selectively engageable with said box-forming element to form a triangularly-shaped prop therefor.

3,353,659
PLASTIC TOTE CASE
Robert L. Beesley and Rudolph H. Matthias, Saginaw, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 18, 1965, Ser. No. 465,083
3 Claims. (Cl. 206—45.31)



1. The combination comprising a substantially rigid molded plastic tote case for holding a plurality of individual containers, said plastic tote case having a bottom wall, four sidewalls formed integrally with said bottom wall, at least one of said sidewalls defining a plurality of openings comprising at least one third of the area of said sidewall, one of said openings being centrally located in said sidewall, at least one container located in said case adjacent the central opening of the sidewall, said container having a graphical display area, the metes and bounds of said central opening being substantially the same as those of said display area of the container such that the display area is substantially exposed by said central opening, at least one cross-piece defined by said sidewall between said openings, said cross-piece including graphics to complement said display area.

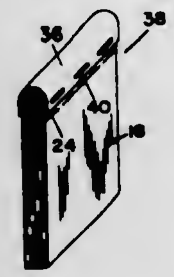
3,353,660
SHIPPING CONTAINER
Gerald H. Will, Arnolds Park, Iowa, assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Jan. 25, 1967, Ser. No. 622,848
9 Claims. (Cl. 206—52)



1. A transportation and storage container and at least one tape reel therein carrying magnetic recording tape, said container comprising an assemblable case and support means within the case for mounting said reel, said support means including (1) structure substantially fixing said reel against translatory motion within the container, and (2) low-friction means whereby said reel rotates with

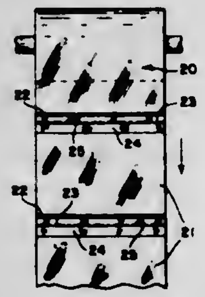
respect to the container, thereby permitting the reel to remain partially independent of rotary forces on the container.

3,353,661
PACKAGE OF PLASTIC BAGS
Hercules Membrino, 1934 Arch St., Philadelphia, Pa. 19103
Filed Nov. 5, 1965, Ser. No. 506,487
5 Claims. (Cl. 206—57)



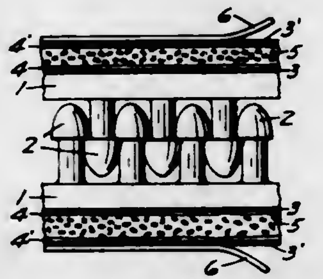
1. A bag unit comprising at least one pair of pockets, each pocket being defined by a front wall and a rear wall that are sealingly connected around the entire periphery of the pocket except at a mouth portion thereof, the mouth portion of each pocket being defined by an interrupted slit having at least one interruption, forming a nip, intermediate its ends, the interrupted slits of said pockets being in opposed positions relative to each other and being separated from each other by a spacer portion, said spacer portion being integrally connected to each of said pockets by said nips, said mouth portions of the pockets being completely open and unsealed except for said nips, and said spacer portion being substantially imperforate between its edges defined by said interrupted slits.

3,353,662
PLASTIC BAGS WITH METAL FOIL LAMINATED LIPS
John Harlan Pickin, Madison, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Apr. 15, 1964, Ser. No. 359,897
2 Claims. (Cl. 206—59)



1. A dispensing system for plastic bags comprising a long tubular body of very thin highly flexible thermoplastic sheet material which is normally flat wound into a roll, said body being heat sealed there across at longitudinally spaced transverse areas to divide it into individual bag sections and being provided with transverse weakened regions adjacent and parallel to said heat sealed areas, and transverse bands of crimpable material surface bonded to said body at the opposite sides of said weakened regions from said heat sealed areas so that each of said weakened regions extends across said body flanked on opposite sides by one of said bands and one of said heat sealed areas, whereby individual bag sections having said bands at their open ends may be detached from said body by tearing at said weakened sections.

3,353,663
ADHERENT FASTENERS
James H. Kayser, St. Paul, Minn., and William C. Flanagan, Jr., Hudson Township, St. Croix County, Wis., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Feb. 10, 1966, Ser. No. 526,628
10 Claims. (Cl. 206—59)



1. A fastener comprising a complementary pair of interengaging articles each having

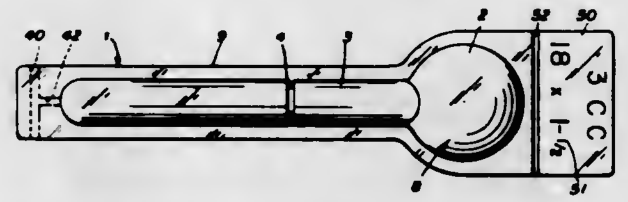
(1) a relatively rigid base which remains essentially undeformed at all times during use

(2) a mechanical functional surface on one side thereof comprising a multiplicity of engaging elements distributed thereover, said mechanical surface being capable of mechanical interengagement and holding with the separation from the mechanical functional surface of the other article and

(3) a pressure-sensitive surface on the reverse side thereof comprising a soft viscoelastic foam layer that is up to about ¼ inch thick and is continuously covered on the side thereof facing away from the base by a thin stretchy integral flat surfaced skin to which is united a continous, flat shiny-smooth viscoelastic aggressively-tacky pressure-sensitive adhesive coating, said pressure-sensitive surface being disposed to be pressed against and remain firmly affixed to a substrate,

the combination of physical properties of the mechanical and pressure-sensitive surfaces being such that the total resistance to a separating force is substantially greater between each pressure-sensitive surface and an ordinary substrate to which it is affixed than between the mechanical surfaces when the latter are interengaged.

3,353,664
MEDICAL INSTRUMENT PACKAGE
James L. Armentrout, Pasadena, and Pierre Vanat, Glendale, Calif., assignors to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed Aug. 29, 1966, Ser. No. 575,837
5 Claims. (Cl. 206—63.2)

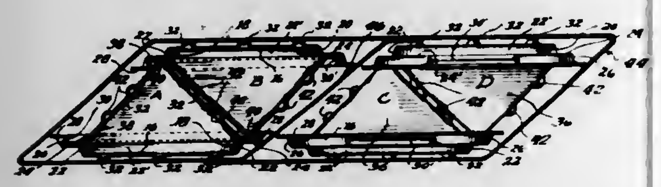


1. A sterile instrument package comprised of: a gas impervious lower panel of thermoplastic film with a bubble formed therein which has an elongated stem portion and a laterally enlarged head portion; said lower panel having a flange surrounding the bubble with an outer edge of said flange generally following the contour of the bubble to provide a flange of approximately constant width across a transition zone between the enlarged head portion and the stem portion of the bubble; a cover member comprised of a lamina of a gas impervious metal foil and a backing sheet, said metal foil being bonded to the flange by a peelable adhesive with the cover member

peeling smoothly across the generally constant width flange adjoining the transition zone in the bubble; said flange having a preformed groove extending between an outer edge and an inner edge of the flange with the metal foil of said cover member spanning the preformed groove in the flange to provide a vent for sterilizing gases to enter; a pair of pull tabs connected to said cover member and said flange, which pull tabs are unsealed to each other at least along a portion of their opposed facing surfaces, with one of said pull tabs bearing control indicia and being separable from the package to show what particular instrument has been used.

3,353,665
CONTAINERS AND A PACKAGE FORMED OF SUCH CONTAINERS

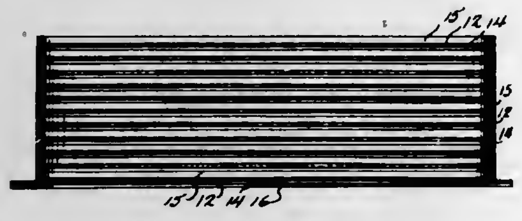
Edmund C. Iwanski, 5362 N. Nottingham Ave., Chicago, Ill. 60656
Filed Mar. 17, 1964, Ser. No. 352,608
7 Claims. (Cl. 206—65)



1. A package comprising a plurality of individual container units, each container unit having a base and a removable cover detachably secured to said base, said cover having equal sloping side walls converging toward a central apex at the uppermost portion and forming a wedge shape in section, said cover having an outwardly extending flange, said base having stepped side walls with the flange of the cover resting on one of the steps of said stepped walls and detachably secured thereto, said container units being positioned relative to each other so that one unit is inverted with respect to the other, with the apex of the cover of one unit resting inside the stepped side wall of the adjacent unit and on the outwardly extending flange of the base and with the side wall of one cover contiguous to the side wall of the adjacent cover.

3,353,666
GASKET PACKAGE

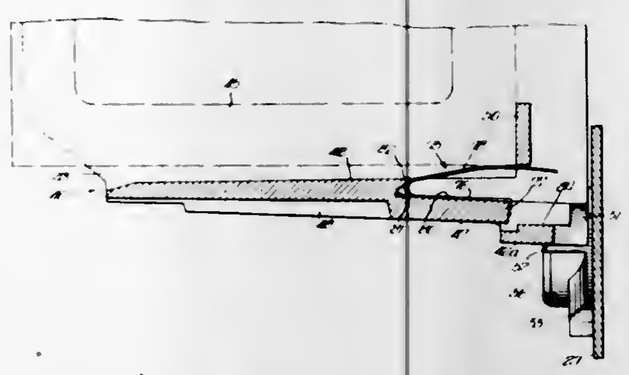
Ole S. Jensen, Cherry Hill, N.J., assignor to Mundet Cork Corporation, North Bergen, N.J., a corporation of New York
Filed Oct. 11, 1965, Ser. No. 494,375
3 Claims. (Cl. 206—65)



1. A stack of a plurality of gaskets releasably bonded together comprising a plurality of gaskets having a central portion thereof removed, each of the said gaskets having a pressure sensitive adhesive coated on the upper surface thereof at least along the periphery of the gaskets and a release coating on the under surface at least along the periphery of the gaskets, said gaskets being stacked together having the adhesive coated surface of one gasket facing and releasably adhered to the release coated surface of an adjacent gasket.

3,353,667
SLIDE TRAY

Walter J. Hall, Chicago, Ill., assignor, by mesne assignments, to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Original application Mar. 1, 1963, Ser. No. 262,098, now Patent No. 3,209,647, dated Oct. 5, 1965. Divided and this application May 3, 1965, Ser. No. 461,574
4 Claims. (Cl. 206—73)



1. In a circular slide tray, the construction comprising, inner and outer concentric walls having a plurality of radially disposed circumferentially spaced partitions arranged therebetween, said partitions defining therebetween a plurality of axially extending slide receiving spaces, said outer wall having a first inner face portion thereof of greater inside diameter than the inside diameter of the remaining inner face portion of the outer wall, said portions being separated by an annular shoulder, the edge portions of said partitions adjacent said first inner face portion being in uniform spaced relation with the latter thereby defining an annular space, an annular planar member extending in uniform, closed spaced relation with the edge of said outer wall adjacent said first portion thereof, said planar member having an edge thereof extending in adjacent relation with the inner confines of said annular space, annular spring clip retaining means mounted in said annular space, said retaining means being generally U-shaped in cross-section and having the bight portion thereof in engagement with said shoulder with one leg of the retaining means being in substantial coextensive contact with said first inner face portion and with the other leg of said retaining means consisting of a plurality of individual spring fingers, said spring fingers normally yieldably engaging fixed means adjacent the inner confines of said annular space and being arranged in respective slide receiving spaces for resilient engagement with the edges of slides received therein.

3,353,668
METHOD FOR IMPROVING THE BRIGHTNESS OF CLAY

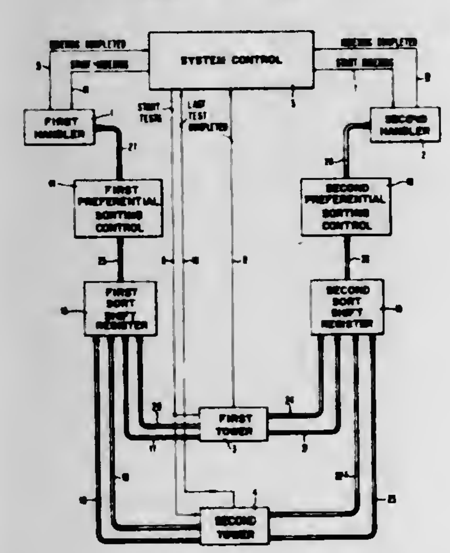
James B. Duke, Metuchen, N.J., assignor to Mineral & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland
No Drawing. Filed Dec. 16, 1963, Ser. No. 330,634
20 Claims. (Cl. 209—10)

10. In a method for improving the brightness of gray kaolin clay which comprises the steps of providing an aqueous slip of said clay, incorporating a dispersing agent therein, conditioning said dispersed aqueous slip of the clay for froth flotation with a collector reagent selective to colored impurities in said clay, subjecting the conditioned slip to froth flotation thereby producing a froth product which is a concentrate of colored impurities originally in said clay and a machine discharge product which is a concentrate of clay of enhanced brightness, and further increasing the brightness of clay in said machine discharge product by bleaching it with a reducing agent, the improvement which comprises

activating said aqueous slip of gray kaolin clay for flotation and bleaching by forming an aqueous slip consisting essentially of water, said clay and a water-soluble inorganic compound containing molecularly available oxygen, before said slip is conditioned for froth flotation, and agitating said slip until clay in said slip darkens substantially, whereby the slip thus darkened will brighten to a greater extent by combined flotation and treatment with reducing agent than it would in the absence of said activating treatment.

3,353,669
ELECTRICAL COMPONENT TESTER WITH DUPLEXED HANDLERS

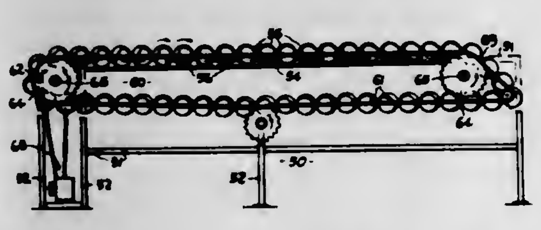
John W. Broderick, Hyde Park, Robert M. Fiorenza, Poughkeepsie, Charles A. Kelly, Wappingers Falls, and Michael Kozar, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 29, 1965, Ser. No. 468,323
16 Claims. (Cl. 209—73)


SYSTEM CONTROL
FIRST HANDLER
SECOND HANDLER
START TEST
LAST TEST COMPLETED
FIRST PREFERENTIAL SORTING CONTROL
SECOND PREFERENTIAL SORTING CONTROL
FIRST SORT SHIFT REGISTER
SECOND SORT SHIFT REGISTER
FIRST TOWER
SECOND TOWER

1. An apparatus for testing electrical components, said apparatus comprising a plurality of mechanical handlers for manipulating said components and an electrical tester for testing the characteristics of said components; each of said handlers including a test station, and means actuable to convey each of said components to said test station: said tester including means to actuate said handlers alternately so that one handler is conveying a component to its respective station while another handler is holding a component at its respective station for testing, and means to test the components alternately at each handler while it is holding a component at its respective test station.

3,353,670
SIZING MACHINE

Edward Hans Tul Bensemann, ℅ New Zealand Inventions Development Co. Ltd., 114 Taranaki St., Wellington, Wellington, New Zealand
Filed May 21, 1965, Ser. No. 457,711
Claims priority, application New Zealand, May 29, 1964, 138,326; Mar. 19, 1965, 141,061, 141,062
5 Claims. (Cl. 209—84)

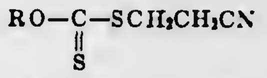


1. A machine for sizing articles such as fruit, comprising a frame, an endless member mounted to circulate within the frame, a plurality of spools carried by the endless member, each spool having a groove on its periphery. the groove of each spool being comprised of two halves in end-to-end relationship, each groove half increasing in width and depth peripherally from end to end thereof, from a shallow end to a deep end, the shallow end of one groove half being next to the deep end of the other groove half of the groove of each spool, adjacent spools having the same orientation relative to each other, means for circulating the endless member, and means for rotating the spools relative to the endless member with adjacent spools rotating in the same direction so that adjacent spools define between them an opening that progressively increases in size.

3,353,671
FLOTATION PROCESS WITH CYANOETHYL ALKYLXANTHATE ESTERS

Norbert M. Bikales, Livingston, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Original application Nov. 30, 1962, Ser. No. 241,144, now Patent No. 3,226,416, dated Dec. 28, 1965. Divided and this application Feb. 18, 1965, Ser. No. 433,789
4 Claims. (Cl. 209—166)

1. The process of beneficiating metal sulfide ores which comprises grinding said ores and subjecting the ground ore to froth flotation in the presence of a compound of the formula:



$$RO-\underset{\overset{\|}{S}}{C}-SCH_2CH_2CN$$

wherein R is an alkyl radical having three to eight carbon atoms, and to obtain a relatively high concentration of metal sulfide in the froth.

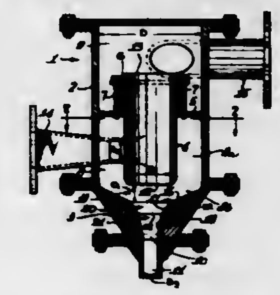
3,353,672
FROTH FLOTATION REAGENT

Ingmar Sollin, Morton Grove, Ill., assignor to International Minerals & Chemical Corporation, a corporation of New York
No Drawing. Filed May 21, 1964, Ser. No. 369,310
6 Claims. (Cl. 209—166)

1. In the beneficiation of phosphate ore containing siliceous gangue and phosphate rock by froth flotation, the improvement comprising conditioning said ore prior to flotation at a pH in the range of 6 to 9 in the presence of hydrocarbon oil and 0.4 to 2.5 lbs. per ton of said ore of a collector consisting essentially of C_{12} to C_{24} halogenated saturated fatty acids having melting points in the range of −10° C. to 40° C.

3,353,673
APPARATUS FOR SPECIFIC GRAVITY SEPARATION OF SOLID PARTICLES

Jan Visman, Edmonton, Alberta, Canada, assignor, by mesne assignments, to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed June 10, 1966, Ser. No. 556,756
6 Claims. (Cl. 209—211)



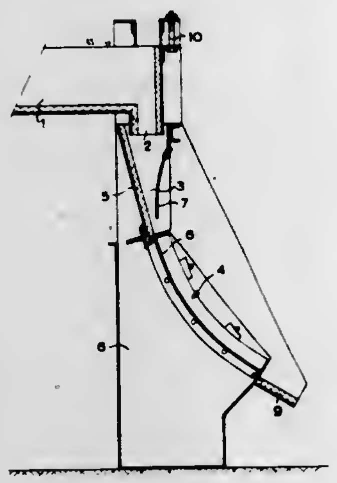
1. A compound water cyclone comprising a vessel, a tubular vortex finder axially arranged within said vessel

and having an upper edge and a lower edge, said vessel having a cyclone chamber therein, said chamber having an upper annular portion surrounding said vortex finder and a contiguous lower conical portion below said vortex finder, said conical portion having an apex orifice and three successive frusto-conical sections of decreasing included angle extending from said annular portion to said orifice, a first one of said frusto-conical sections having an included angle of about 100–140°, a second one of said frusto-conical sections having an included angle of about 70–80°, and a third one of said frusto-conical sections having an included angle of about 15–30°, said annular portion of said chamber having an inlet leading tangentially thereinto, said chamber having a cylindrical portion above said vortex finder and an outlet leading therefrom, said first and second frusto-conical sections having a first circular line of juncture lying in a first transverse plane, said second and third frusto-conical sections having a second circular line of juncture lying in a second transverse plane, the dimensions of said chamber being in accordance with the relationship

$$D=a\,D_0=b\,D_1=c\,D_2=e\,Cl=f\,D_{HR}=g\,D_{RE}$$

wherein D is the diameter of said upper portion of said chamber, D_1 is the inside diameter of said vortex finder, D_0 is the diameter of said inlet opening, D_2 is the diameter of said apex opening, D_{HR} is the diameter of said first circular line of juncture, D_{RE} is the diameter of said second circular line of juncture, and Cl is the perpendicular distance between said lower edge of said vortex finder and said first plane, and the coefficients have the following ranges: a, 3.5 to 5; b, 2 to 3; c, 4 to 6; e, 2.5 to 10; f, 2 to 3; g, 3 to 4.

3,353,674
APPARATUS FOR THE WET-SCREENING OF PARTICLES
Jan N. J. Leeman, Heerlen, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
Filed July 27, 1964, Ser. No. 385,224
Claims priority, application Netherlands, Aug. 1, 1963, 296,114
6 Claims. (Cl. 209—240)

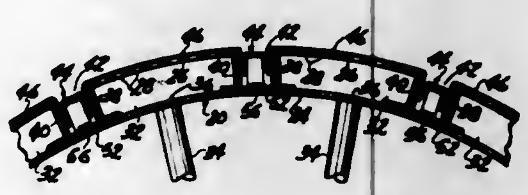


1. In an apparatus for the wet-screening of solid particles comprising a sloping concavely curved sieve bend screening surface and a feeding device suprajacent said sieve bend an adapted to direct a downwardly falling layer of particle containing liquid tangentially onto said sieve bend, the improvement wherein said feeding device includes:

(a) means defining a throat comprising a fixed position sloping wall and a movable wall spaced outwardly from and sloping downwardly toward said fixed wall, said movable wall being composed of a plate of resilient flexible material fixedly clamped at the upper end thereof at a substantial angle to the vertical; and

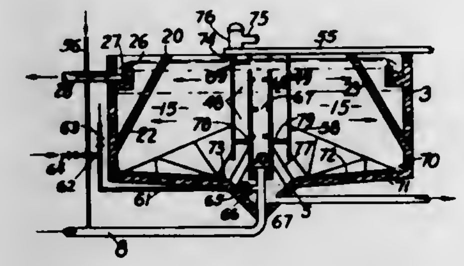
(b) a feeding launder for receiving particle containing fluid, said launder being mounted above said throat, said launder having a transversely elongated spout communicated thereto, said spout depending downwardly from said launder toward said throat.

3,353,675
DRUM FILTER ELEMENT ATTACHING MEANS
Edmond A. Glos II, Deerfield, Ill., assignor to Mero & Company, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 21, 1965, Ser. No. 499,498
10 Claims. (Cl. 210—238)



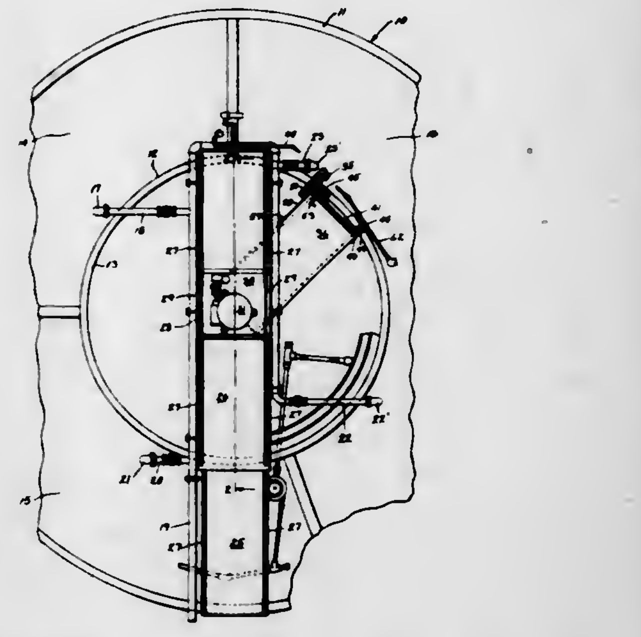
10. Apparatus for attaching elongate segments of web filtering material having peripherally beaded marginal edge portions to a filter drum having an elongate receiving opening in the surface thereof, said apparatus comprising an elongate, radially-outwardly facing channel receivable and securable within said opening and within which said beaded marginal edge portions of an adjacent pair of said segments are to be received, a pair of elongate, facing angle-like members receivable within said channel and each separately attachable to said channel, each of said elongate members including a radially disposed flange spaced respectively from the proximate flange of said channel a distance greater than the thickness of said web material but less than the thickness of the beaded marginal edge portion thereof, each of said elongate members also including a plurality of spaced-apart coplanar flanges perpendicular respectively to said radially disposed flanges at the radially outward ends thereof, the spaced-apart flanges of each of said elongate members being disposable alternately and in coplanar relationship between the spaced-apart flanges of the other of said elongate members, each of said spaced-apart flanges having an elongated slot therethrough, the radially inward edge of the radial flange of one of said pair of elongate members being engageable with the beaded marginal edge portion of one member of said pair of segments and the radially inward edge of the radial flange of the other of said pair of elongate members being engageable with the beaded marginal edge portion of the other member of said pair of segments whereby said respective beaded marginal edge portions are independently securable within and removable from said channel, and means on said channel for independently securing said spaced-apart flanges to said channel, said securing means comprising a plurality of stirrups extending upwardly from the web of said channel and between said radially disposed flanges, a pair of spaced-apart apertures in the top of each of said stirrups, one of each said pair of apertures being alignable with a slot in the spaced-apart flanges of one elongated angle-like member and the other of each said pair of apertures being alignable with a slot in the spaced-apart flanges of the other elongated angle-like member, a first set of spring-biased latch members, each latch member of said first set being receivable through an aligned aperture and slot in one of said elongated angle-like members to bias said beaded marginal edge portion of one member of said pair of segments radially inwardly within said channel, and a second set of spring-biased latch members, each latch member of said second set being receivable through an aligned aperture and slot in the other of said elongated angle-like members to bias said beaded marginal edge portion of the other member of said pair of segments radially inwardly within said channel.

3,353,676
RADIAL FLOW SETTLING TANK WITH COMPLETE VOLUMETRIC TRANSIT FOR WATER AND WASTE TREATMENT
A. Adler Hirsch, 141 Norwood St., Shreveport, La. 71105
Filed May 5, 1966, Ser. No. 547,901
1 Claim. (Cl. 210—197)



A radial flow settling tank consisting of
a circumferential wall,
a central receiving and dispensing structure composed of a central riser and a downdraft tube concentric thereto and spaced therefrom,
an influent line which delivers liquid to the bottom of said central riser,
a quiescent settling zone concentric with said downdraft tube and extending radially outward therefrom,
a sludge zone at the bottom of said settling zone,
a slightly sloping floor having a central sludge sump at the bottom of said tank,
a sludge draw off line connected to said central sump,
an effluent draw off line at said circumferential wall having a draw off collection means leading thereto, and
a bottom plate closing said central riser, said influent line terminating in a bell mouth which passes through said bottom plate,
a chemical feed line to introduce reagents into said influent line in advance of its entry into said central riser,
an injector means driven by a high pressure water line for recirculating sludge into said influent line below said bell mouth, said injector means drawing suction from said central sludge sump,
a chemical feed line connection to the high pressure water line to said injector,
a tier of shelves in said central riser with relatively large openings therein, said openings being staggered in position between adjacent shelves to promote turbulence,
a passageway at the top of said central riser leading into said concentric downdraft tube,
a floor near the bottom of said downdraft tube extending inwardly toward said central riser, an annular clearance between said floor and said central riser,
an extension on said downdraft tube below said floor of the downdraft tube for attachment of a mechanical rake to scrape sludge on said slightly sloping floor of said tank toward said central sump,
drive means at the top of said downdraft tube to rotate same and said mechanical rake attached thereto,
a source of power supported on top of said central riser for the purpose of rotating said mechanical rake,
piers at the bottom of said central riser to transmit the weight of said central receiving and dispensing structure, said source of power and said mechanical rake to the floor of said tank,
perforations in the cylindrical wall of said downdraft tube and terminating at the top of said sludge zone, plugs in some of said perforations to equalize the flow of liquid radially outward into said settling zone at all levels above said sludge zone,
an inclined orificed baffle wall extending substantially the full depth of the perforated section of said downdraft tube and facing same across said quiescent settling zone, said inclined orificed wall extending from said circumferential wall and extending the full circumference thereof,
said settling zone extending from said downdraft tube to said inclined orificed wall,
said inclined orificed wall and said circumferential wall forming a draw off zone from which effluent flows to said draw off collection means,
said inclined orificed wall and said perforated downdraft tube cooperating to retain uniform horizontal flow of liquid radially outward throughout said quiescent settling zone without vertical components of flow therein,
said inclined orificed wall withdrawing liquid from said quiescent settling zone with avoidance of terminal uplift of suspended matter, and
plugs in some of the orifices in said inclined orificed wall to regulate the uniformity of flow through said quiescent settling zone in direction and amount.

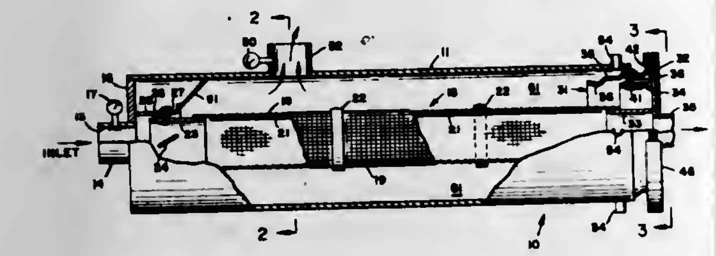
3,353,677
CIRCULAR LIQUID TREATMENT PLANTS HAVING SERVICE PLATFORMS
Paul M. Thayer, Milwaukee, Frank L. Schmit, Saukville, and Donald T. Trainor, Milwaukee, Wis., assignors, by mesne assignments, to Water Pollution Control Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 8, 1965, Ser. No. 438,007
6 Claims. (Cl. 210—220)



1. In a sewage treatment device having an outer tank and having a circular inner tank with a circular rim, there being devices in said outer tank which require servicing, including aerators, outwardly of said circular rim of said inner tank, an externally accessible stationary bridge over said device having a portion over the center of said inner tank, a service platform having an inner end supported for rotation on a vertical axis concentrically of said inner tank and positioned so that it is accessible for boarding from said bridge, means on an outer portion of said service platform coacting with the circular rim of said inner tank supporting said outer portion of the platform for movement on said rim, said platform being of substantially less length than the distance between the center of the inner tank and the rim of the outer tank so as to render a major portion of the outer tank accessible to a service man on the outer end of said platform whereby he may service said aerators in said outer tank from said outer end of the platform.

3,353,678
FILTER HAVING ASSEMBLING, SEALING AND FLUSHING MEANS

Peter F. Dragon, 5601 Castle Drive,
Oakland, Calif. 94611
Filed June 22, 1965, Ser. No. 465,910
5 Claims. (Cl. 210—236)

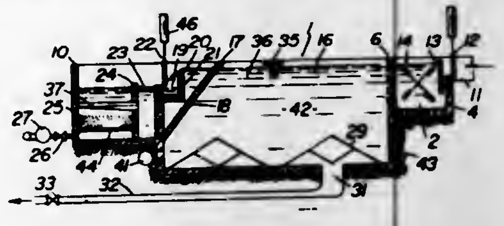


1. A filter adapted to be connected to a source of water under pressure to remove solid particles therefrom comprising an elongate cylindrical shell having first and second open ends, means mounted on the shell closing said first open end and forming an inlet at the first end of said shell adapted to be connected to the source of water pressure, means mounted on the shell forming a discharge outlet communicating through the side of the shell, an elongate filter cartridge disposed within the shell and extending substantially the entire length thereof, said cartridge including a filter membrane defining and surrounding a substantially unimpeded passageway for the flow of incoming water that extends the length of the cartridge, said cartridge having a lateral dimension substantially less than the corresponding dimension of the shell to provide a space between the cartridge and the shell, first sealing means for detachably coupling one end of the filter cartridge to the means forming the inlet to provide a substantially watertight seal therebetween, said filter cartridge including a head assembly for detachably coupling the other end of the filter cartridge to the second end of the shell, second sealing means forming a substantially watertight seal between the head assembly and the second open end of the shell to close said second open end, means mounted on the head assembly forming a first flush opening in communication with the passageway in said filter cartridge and in general alignment therewith for flushing out solids trapped in the cartridge, means for closing said first flush opening, means forming a second flush opening communicating with said space adjacent the second end of the shell for flushing out the fine particles collected at said end, and means for closing said second flush opening, said means forming said discharge outlet being located a substantial distance away from the second end of the shell so that the incoming water travels through the cartridge and out the discharge outlet, while the momentum of solid particles and fines carries them beyond the discharge outlet and toward the second end of the shell where a relatively low flow-rate volume is provided for the accumulation of larger material with the cartridge and of fine particles that pass the filter membrane, the fine particles being permitted to settle under gravity and collect at the lower region of the shell adjacent the second end from which both the larger materials and the fine particles can be periodically flushed.

3,353,679
TRIANGULAR-TYPE HORIZONTAL FLOW SETTLING BASINS

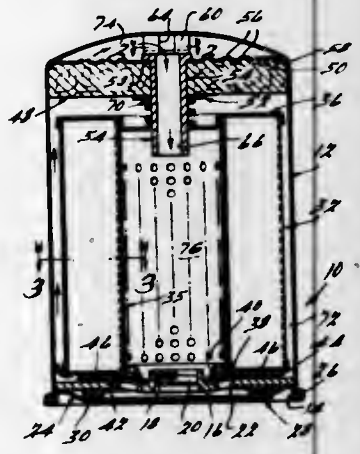
A. Adler Hirsch, 141 Norwood St.,
Shreveport, La. 71105
Filed Jan. 5, 1966, Ser. No. 518,831
8 Claims. (Cl. 210—259)

1. A triangular-type horizontal flow settling basin for liquids containing suspended solids having an influent end, an influent supply conduit to deliver liquid to said influent end, an effluent end, said effluent end being at a wall distal to said influent end, a settling zone intermediate said influent end and said effluent end, a distributive wall in advance of said settling zone separating same from said influent end, openings in said distributive wall, plugs in some of said openings to establish uniformity of flow therethrough, a substantially flat floor, means for removing settled sludge from said floor, an inclined orificed effluent baffle across the length of said wall at said effluent end and extending downwardly almost to the level of said sludge, plugs in some of the orifices in said inclined orificed effluent baffle to adjust the flow of liquid therethrough to establish uniformity across the entire area thereof, an effluent draw off bay between said inclined orificed effluent baffle and said wall at said effluent end, draw off means communicating with said bay, the side walls of said basin disposed divergently from said influent end toward said effluent end so as to cause uniform deceleration of the liquid as it advances across said settling zone.



3,353,680
DUAL ELEMENT PARALLEL FLOW FILTER ASSEMBLY

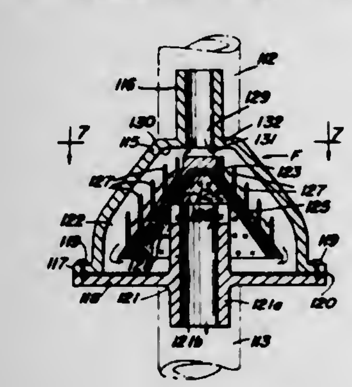
Louis F. Niebergall, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed July 6, 1964, Ser. No. 380,514
1 Claim. (Cl. 210—314)



A multi-stage parallel flow filter assembly of the throw away type comprising a filter housing, said filter housing comprising a generally cylindrical outer shell closed at one end by an integral end wall and closure means for the other end of said outer shell, a fluid outlet passage formed centrally in said filter housing closure means, fluid inlet means formed in said closure means around said fluid outlet passage, a first filter element contained in said filter housing and interposed in the path of fluid flow from said fluid inlet means to said fluid outlet passage, said first filter element having a substantially annular shape defined by an outer generally cylindrical surface and an inner generally cylindrical surface, said inner surface of said first filter element defining a central flow passage, first end closure means for said first filter element forming a seal for the end of said first filter element adjacent said housing closure means and for sealingly engaging said closure means around said fluid outlet passage whereby said central flow passage of said first filter element is in registry at one end thereof with said filter housing fluid outlet passage, said outer surface of said first filter element being spaced radially inwardly of said cylindrical portion of said outer shell for fluid communication with said fluid inlet means of said filter housing for radial fluid flow through said first filter element, an end cap sealingly engaging the other end of said first filter element and forming a closure for the other end of said central flow passage, a second filter element, said second filter element being of the depth type and having spaced first and second surfaces, the periphery of said second filter element between said surfaces being bonded to said outer shell adjacent said integral end wall, said first surface of said second filter element being axially spaced from said end cap of said first filter element and in fluid communication with said filter housing fluid inlet means, said second surface of said second filter element being spaced from said integral end wall and defining a fluid cavity therebetween, means forming a fluid passage between said fluid cavity and said central flow passage of said first filter element extending through said second filter element and through said end cap, and biasing means for urging said first end closure means into sealing engagement with said closure means of said filter housing.

3,353,681
LINT REMOVAL SYSTEM

William C. Silva, Herrin, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 6, 1965, Ser. No. 511,615
9 Claims. (Cl. 210—355)

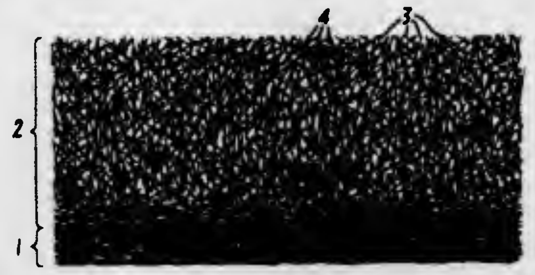


1. In a self-cleaning filter, a fluid container having first and second ports; a fixed member in said container and having openings extending therethrough; a movable member telescoped on said fixed member and disposed in the path of fluid from said first port, said movable member having openings extending therethrough and said fixed member having filtering projections extending through the openings in said movable member; means providing for the flow of lint-laden fluid under pressure through said first port, through said filtering projections to filter said fluid of lint, and through said second port; and means providing for the flow of fluid under pressure through said second port, through the openings in said fixed member to forcibly move said movable member to strip lint from said filtering projections and to discharge the lint through said first port.

3,353,682
FLUID-PERMEABLE FIBROUS MULTILAYER MATERIALS AND PROCESS OF MAKING THE SAME

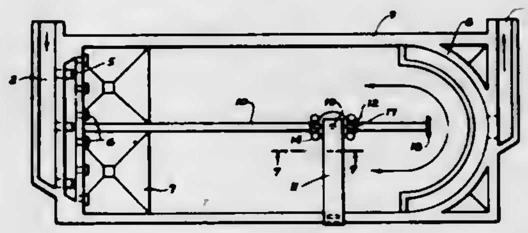
David B. Pall, Roslyn Estates, and Cyril A. Keedwell, Jericho, N.Y., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Filed Feb. 28, 1966, Ser. No. 530,735
27 Claims. (Cl. 210—505)

1. A process for preparing microporous integrated multilayer fluid-permeable material from a single dispersion of fibrous material in a dispersing liquid, which comprises flowing upon a foraminous support a dispersion in a dispersing liquid of fibrous material comprising at least 25% fibrous material, forming a plurality of flocculated clumped masses of deflocculated fibers together with a proportion of separate fibers in the dispersion, forming on the foraminous support a thin first microporous layer having fibers lying almost entirely in planes approximately parallel to the plane of the layer, and having a maximum pore diameter of less than 25 microns, by flow through the support of not over 20% of the dispersing liquid at a pressure differential of less than 12 inches of water, depositing the fibers upon the support to form the thin layer, and then flowing the remaining supernatant liquid of the dispersion through the thin layer, and depositing the remaining flocculated fibrous material of the dispersion including the clumps on the thin layer, to form thereon a fluid-permeable layer wherein a proportion of fibers extend in a direction outwardly from the thin layer at an angle greater than about 30°, sufficient to impart to the layer an average pore diameter of less than 150 microns and a voids volume of at least 75%.



3,353,683
LONGITUDINAL FLOW SETTLING TANK WITH MOVABLE SLUDGE SHIELD

Hellmut Karl Geiger, 1 Hardeckstrasse,
Karlsruhe 75, Germany
Filed June 16, 1966, Ser. No. 559,640
Claims priority, application Germany,
June 18, 1965, G 43,894
6 Claims. (Cl. 210—527)



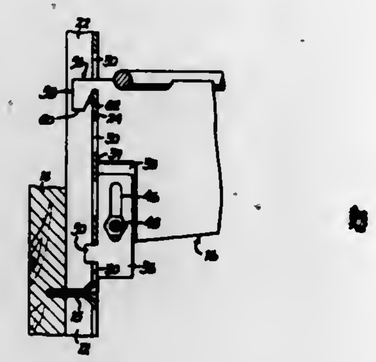
1. A longitudinal flow sludge-settling plant with a movable sludge shield, comprising a longitudinal tank; inlet means for sludge-containing liquid at one end of said tank; outlet means for sludge-free liquid at the opposite end thereof; a center wall disposed in said tank; a bridge and a shield attached thereto at its lower end for moving the sludge, traveling along said center wall; a semicircular track disposed at least at one end of the tank forming, together with said center wall and the side walls of the tank, a turning track for said bridge; means for moving said bridge along said center wall and track; means for securing said bridge on said center wall; means for turning the bridge as it moves along said track, and means for collecting the separated sludge at the bottom of the tank.

3,353,684
SHELF STRUCTURE

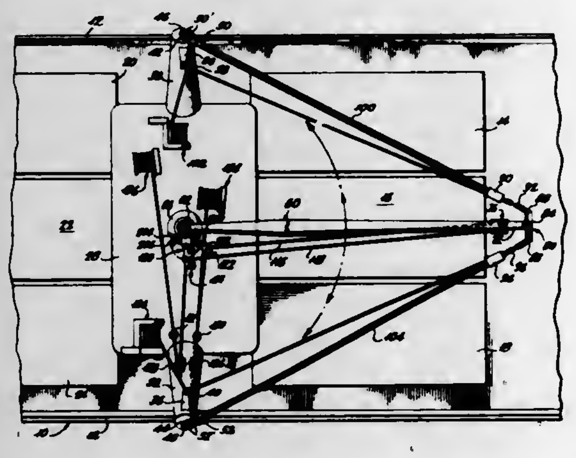
Robert G. Chesley, Farmington, Mich., assignor to Chesley Industries, Inc., Farmington, Mich., a corporation of Michigan
Filed Oct. 22, 1965, Ser. No. 502,141
5 Claims. (Cl. 211—176)

3. A shelf structure comprising a plurality of upright supports securable to a wall in spaced relation and each

having vertically spaced apart openings in a wall thereof, shelf support brackets, each being secured on one end only to said upright supports and including a hook member on the upper end thereof and having a portion extending through one of said openings and a downward extending portion engaging the rear wall of an upright support to support an end of a bracket against the front wall of an upright support, a locking arm member on the lower end of each bracket and extending through a lower opening on an upright support and having vertically adjustable means to cooperate with a respective upright support to lock a bracket end to an upright support and a shelf carried by said brackets.

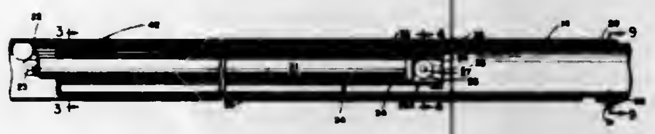


3,353,685
CARGO HANDLING APPARATUS
James F. Sykes, Hampton, and David E. Phillips, Newport News, Va., assignors to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia
Filed July 11, 1966, Ser. No. 564,385
9 Claims. (Cl. 212—3)



1. Cargo handling apparatus comprising a mast structure, a boom having a heel portion and a head portion, means mounting the heel portion of the boom for movement, means for moving the boom, cargo fall support means mounted at the head portion of said boom, said cargo fall support means being movably mounted with respect to said head portion, cargo fall means supported by said cargo fall support means, said cargo fall means including a pair of hoisting leads, and hoisting lead guide means for receiving and guiding said pair of hoisting leads, said hoisting lead guide means including a support structure swingably mounted adjacent the heel portion of the boom, a pair of fairlead blocks movably connected with said support structure, a pair of spaced fairlead block supports movably mounted on said support structure, said fairlead blocks being pivotally connected with said fairlead block supports, said hoisting lead guide means being disposed on only one side of the heel portion of the boom.

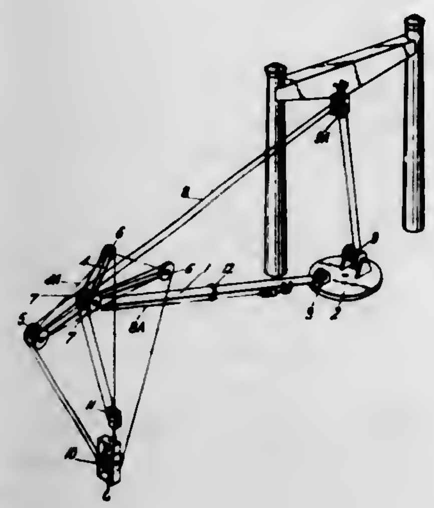
3,353,686
CRANE BOOM
David M. Cowan, Deerfield, Ill., assignor to The Hy-Dynamic Co., Lake Bluff, Ill., a corporation of Illinois
Filed Sept. 12, 1966, Ser. No. 578,712
10 Claims. (Cl. 212—55)



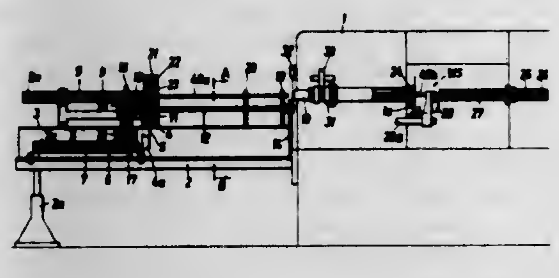
1. A crane, comprising a support, a turntable mounted on said support for rotation about a generally vertical axis, an elongated shipper mounted on said turntable for rotation about a generally horizontal axis, hydraulic means interconnecting said shipper and turntable for selectively positioning said shipper at various angles relative to the ground, a boom slidably mounted in said shipper for selective extension and retraction relative to said shipper, said boom being adapted to be extended relative to said shipper and having at the outer end thereof a crown assembly operably associated therewith and adapted for selective common movement with said boom, a hydraulic cylinder and piston rod unit located coaxially with and interiorly of said boom with the cylinder portion pivotally connected to the base of said shipper, means connecting the piston rod portion of said unit to said boom, said connecting means including a puller tube mounted coaxially with and interiorly of said boom with said unit being substantially received within said puller element, pin means coupling the piston rod portion of said unit to said puller element adjacent the outer end of said puller element, and segmental shaft means pivotally connecting said puller element to said boom adjacent the inner end of said puller element, said puller element being of smaller diameter than said boom sufficient to define an annular space between said puller element and said boom for telescopically receiving a boom extension coaxially with said boom.

3,353,687
CRANES
John S. Thomson, 104 Forsyth St., Greenock, Scotland
Filed Feb. 28, 1966, Ser. No. 530,274
Claims priority, application Great Britain, Mar. 10, 1965, 10,086/65
6 Claims. (Cl. 212—58)

1. A crane including a winch having a winding drum, a jib adapted to be mounted for independent luffing and slewing movement on a platform or deck, support means on the free end of the jib and carrying spaced pulley means disposed at the corners of an imaginary isosceles triangle, and additional pulley means mounted on said jib adjacent the point of intersection of the median to said base and the axis of the jib, said support means being adapted and arranged, so that, in use, the base of said triangle is substantially horizontally disposed transversely of and above the axis of the jib, and the median to said base is intersected by said axis so that minimal bending moment is produced in the jib when a load block connected to said spaced pulley means by reaches of rope formed by a single length of rope having its free ends attached to said winch and at least one of said free ends wound around said winding drum, said rope extending in substantially parallel reaches to the pulley means at the apex of said triangle, therearound and downwards to said load block, therearound and divergently upwards around the pulley means at each end of the base of said triangle, then over said additional pulley means and downwards to said load block.

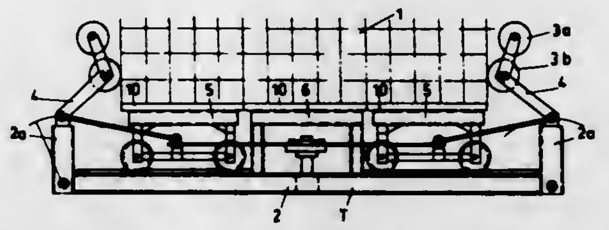


3,353,688
STOCK FEED MECHANISM
Karl Wilhelm Kuckelsberg, Babenhausen, Kreis Bielefeld, Germany, assignor to Werkzeugmaschinenfabrik Gildemeister and Comp., Akt.-Ges., Bielefeld, Germany
Filed Oct. 19, 1965, Ser. No. 497,995
Claims priority, application Germany, Oct. 20, 1964, W 37,794
15 Claims. (Cl. 214—1.3)



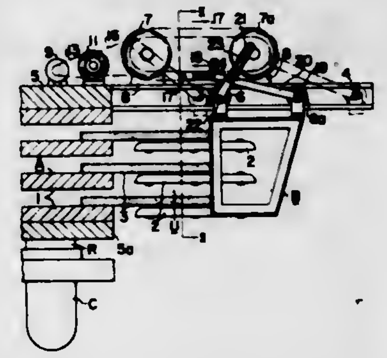
1. In a machine of the character described, a holder indexible about a predetermined axis and having a back end and a front end; a working station provided at the front end of said holder; an annulus of hollow spindles mounted in said holder, said spindles being equidistant from said axis and one thereof being in registry with said station during each interval between indexing movements of said holder; a magazine adjacent to the back end of said holder and located laterally of said one spindle, said magazine being arranged to accommodate a supply of elongated pieces of stock; and a stock feed mechanism including a frame adjacent to the back end of said holder, elongated ways provided on said frame and extending in parallelism with said one spindle, a feed carriage reciprocable along said ways, a transfer unit mounted on said frame and comprising supporting means for withdrawing pieces of stock seriatim from said magazine and for placing the thus withdrawn pieces into registry with said one spindle, and shifting means provided on said carriage and comprising a reciprocable plunger coaxial with said one spindle and arranged to advance a withdrawn piece of stock through said one spindle so that the leading end of the stock extends to said station.

3,353,689
APPARATUS FOR DIVIDING HARDENED PILES OF STONE
Wilhelm Dankelmeier, Hausbergerstr. 29, Neesen uber Minden, Germany, and Wolfgang Schumacher, Untere Bockgasse 6, Wurzburg, Germany
Filed Feb. 9, 1965, Ser. No. 431,419
Claims priority, application Germany, Feb. 11, 1964, P 33,567
3 Claims. (Cl. 214—6)



1. An apparatus for separating a stack of stones, bricks or like blocks into a plurality of smaller stacks, comprising at least three pallets which lie in a horizontal plane, the middle pallet being fixed and each of the outer pallets being supported on a carriage assembly which is movable towards and away from the fixed pallet; means capable of locating stones at a required position on the pallets as they are delivered onto the pallets, and an operating device adapted to move the outer pallets alternately into a closely adjacent and spaced apart relationship, whereby stones delivered onto the pallets which are closely adjacent one another can be engaged by said means to form a single compact vertical stack of pre-determined dimensions and whereby upon operation of said device the pallets move relatively away from each other so that each pallet carries a separate stack of stones; said means capable of locating stones comprising vertically spaced guide rollers and locating rollers operably associated with the operating device.

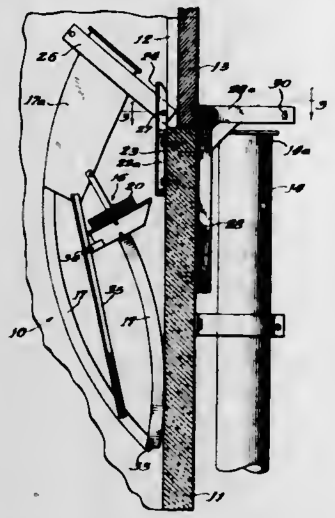
3,353,690
BOARD MATERIAL SHIFTING MECHANISM FOR A MULTIPLATEN HOT PRESS
Noriyuki Nagaoka, Nagoya-shi, Japan, assignor to Kabushiki Kaisha Taihei Seisakusho, Nagoya-shi, Japan, a joint-stock company of Japan
Filed Nov. 4, 1964, Ser. No. 408,942
1 Claim. (Cl. 214—16.6)



In a board material insertion and ejection apparatus of a multi-platen hot press, a mechanism for shifting board material sheets comprising at least one pair of sprocket wheels, driving means for driving one of said pair, a sprocket chain trained about said sprocket wheels, guide means, a pusher structure free to move along said guide means, said pusher structure moveable along said guide means in a direction to shift said board material sheets relative to said press, a link member connecting said sprocket chain to said pusher structure for imparting reciprocating movement to said pusher structure when said chain is driven, an arm pivotally connected to said pusher structure, said arm having an elongated slot therein, and a pin in said link positioned in said slot for sliding movement, whereby said arm during reciprocating movement of said pusher structure co-acts with said link member and pusher structure to maintain said chain in a substantially straight line between tangent points of said sprocket.

3,353,691
SILAGE DISTRIBUTOR

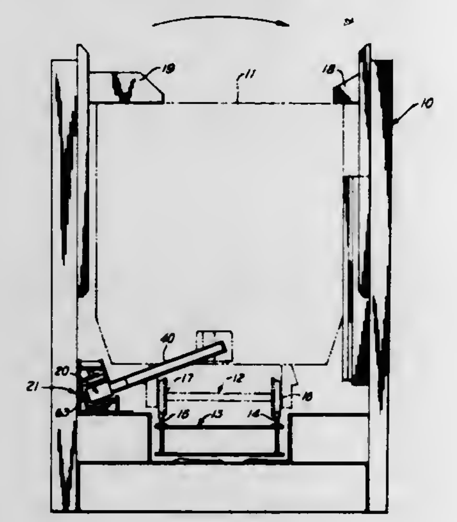
Loren P. Boppart and Gerald W. Berryhill, Harvard, Ill., assignors to Starline, Inc., a corporation of Illinois
Filed July 5, 1966, Ser. No. 562,741
8 Claims. (Cl. 214—17)



1. A silage distributor adapted to receive silage from the discharge end of an elevator filler pipe which is mounted on the exterior of a silo with its discharge end located adjacent an opening in the silo, comprising: a silage distributing means which has a silage receiving end adapted to receive silage from the discharge end of said filler pipe and a discharge end adapted to discharge silage into the silo; and means mounting said distributing means on the inside of the silo for pivotal movement between a storage position disposed entirely within the silo clear of the opening, and an operative position with its receiving end extending through said opening for receiving silage from said filler pipe.

3,353,692
CAR EJECTOR AND SYSTEM INCLUDING SAME

Carl Ludwig, Cleveland, Ohio, assignor to McDowell-Wellman Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 20, 1965, Ser. No. 488,572
14 Claims. (Cl. 214—55)

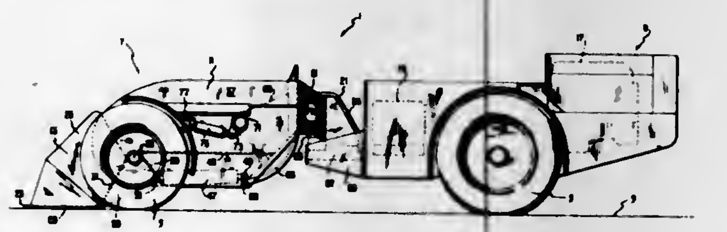


1. A railroad car ejector for a rotary dumper, comprising:

(a) a trackway within the dumper and having its longitudinal axis parallel to the longitudinal axis of the dumper;
(b) a carriage movable along the trackway;
(c) means for guiding the carriage along the trackway;
(d) means for moving the carriage along the trackway;
(e) an arm mounted on the carriage for rotating into pushing engagement with a car positioned within the dumper, said arm rotating in a plane parallel to the longitudinal axis of the dumper;
(f) means adjacent one end of the trackway for engaging and moving the arm into pushing relation with a car; and
(g) means adjacent the other end of the trackway for moving the arm into a retracted position where the carriage and arm can be returned for ejecting another car positioned in the dumper.

3,353,693
SELF-LOADING VEHICLE

Edward F. Zink, Knoxville, Tenn., assignor, by mesne assignments, to Joy Mannfacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Application Jan. 18, 1966, Ser. No. 526,013, which is a continuation of application Ser. No. 254,385, Jan. 28, 1963. Divided and this application Nov. 17, 1966, Ser. No. 595,221
7 Claims. (Cl. 214—78)

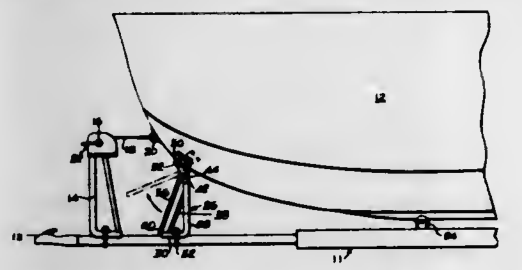


1. In a self-loading vehicle including an elongated material receiving body having a front wall, means pivotally mounted to one end of the material receiving body for loading material in said body upstanding spaced apart side walls, a rear end section, a bottom section provided with a dump opening, and closure means for said dump opening, the improvement in said closure means including a first plate member slidably supported adjacent said dump opening and having at least a portion thereof covering said dump opening when said first plate member is in a first position; a second plate member movable with respect to said body and spaced rearwardly of and at least in part upwardly of said first plate member and having a front end portion thereof hingedly connected to a rear end portion of said first plate member, and said second plate member being supported to move in an upwardly generally arcuate path such that said first plate member will move to a second position to open said dump opening over a path directed rearwardly and upwardly with respect to said dump opening.

3,353,694
BOAT RELEASE MEANS FOR BOAT TRAILER

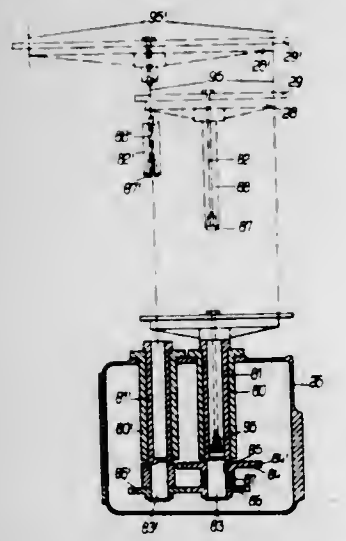
Anthony Mamo, 895 W. 19th St.,
Hialeah, Fla. 33010
Filed Dec. 23, 1965, Ser. No. 517,187
7 Claims. (Cl. 214—82)

1. In a boat trailer including boat support means rearwardly of hitch means, winch means at the forward end of said trailer for drawing a boat onto the boat support means and controlling the removal of the boat therefrom; the improvement comprising: release means mounted on said trailer between said winch and boat support means and separate and distinct therefrom, said release means comprising a standard including a generally vertically extending portion, a lever arm pivotally mounted on said standard, a manually-operable lever secured to said lever arm, and a cradle mounted on said lever arm for engaging the bow portion of a boat along the keel line whereby the boat is stabilized during transit and initial dislodgement is initiated by said boat release means independently of said winch means.



3,353,695
CHARGING DEVICE FOR MACHINES FOR WORKING OPTICAL LENSES

Ernst Loh, Wetzlar, and Wilhelm Döll, Burgsolms, Germany, assignors to Wilhelm Loh K.G. Optikmaschinenfabrik, Wetzlar, Germany, a corporation of Germany
Filed Sept. 21, 1965, Ser. No. 488,991
Claims priority, application Germany,
Sept. 23, 1964, L 48,851
9 Claims. (Cl. 214—89)

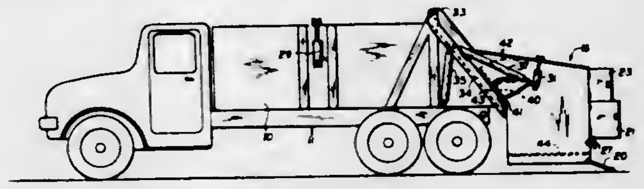


1. Charging device for machines for handling and working optical lenses, which operates automatically comprising a disc 5 rotatable by steps, a magazine plate receiving the blanks as well as the worked lenses and releasably secured on the rotary disc 5, and a swivel arm having a suction head, which is swivellable mechanically between the axis of the device receiving the lenses during their working and the axis of a reception aperture of the magazine plate, and manually between the latter and a position situated outside the magazine plate, for entrainment of the disc rotatable by steps, two parallel spindles are incorporated, whereof the axes are at such distance from each other that the pitch circles of magazine plates of different size and carried by the spindles come at least close or intersect at the reception point intended for reception of the lenses.

3,353,696
SCAVENGER VEHICLE

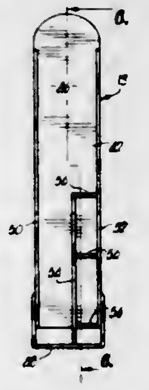
Joseph F. Goodman, 600 W. 52nd St.,
New York, N.Y. 10019
Filed Dec. 29, 1965, Ser. No. 517,411
3 Claims. (Cl. 214—501)

1. A scavenger vehicle comprising a main body portion for receiving refuse mounted on the bed of a truck and having both top and rear openings with openable closures therefor, an auxiliary body portion disposed rearward of the closure for said rear opening and joined pivotally at an upper edge to said main body portion for upending movement about said upper edge over and into the top opening of said main body portion, the top of said auxiliary portion having an opening through which refuse placed in said auxiliary body portion can pass into said main body portion when the auxiliary body portion is upended, means for permitting loading of said auxiliary body portion when it is in its upright position, means for upending said auxiliary body portion, closure means for the top opening of said auxiliary body portion which functions in closed position when said auxiliary body portion is upended to compact refuse within said main body portion.



3,353,697
FORK-LIFT FINGER CONSTRUCTION

Willis E. Martin, Tecumseh, and Paul H. Johnson and Floyd L. Reaser, Topeka, Kans., assignors to The Fleming Co., Incorporated, Topeka, Kans., a corporation of Kansas
Filed June 25, 1965, Ser. No. 466,971
2 Claims. (Cl. 214—620)

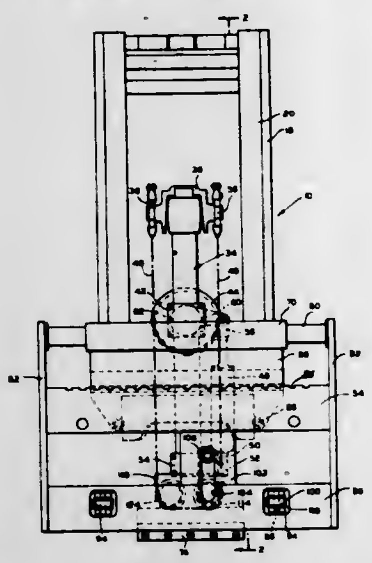


1. For use with an article-lifting apparatus having a mobile hoist provided with an L-shaped finger having an upright portion and a generally horizontally extending terminal portion shiftable through a generally upright, reciprocable path of travel, a finger extension comprising:

an elongated, rigid plate of greater length and width than said terminal portion of the finger;
an elongated strap member having opposed ends thereof secured to the plate adjacent one end of the latter, said member defining a loop adjacent said one end of the plate, the upright portion of the finger being received through said loop with the plate supported by said terminal portion of the finger disposed thereunder, the upper surface of said plate being provided with a downwardly extending bevel having a rounded, convex edge adjacent the other end of said plate; and
means on the plate engageable with the terminal portion of the finger for releasably holding the plate on the finger, said holding means including a pair of spaced, elongated, downwardly projecting flanges on said plate, said flanges extending longitudinally of the plate and disposed to oppositely engage the terminal portion of said finger, one of said flanges extending from the bight of said loop forwardly in parallelism with said other flange, a third flange extending in parallel relationship to said pair of flanges, and brace members secured to said plate and interconnecting said one flange with said third flange, said flanges tapering upwardly as the forwardmost ends thereof are approached.

3,353,698
ATTACHMENT FOR INDUSTRIAL TRUCK

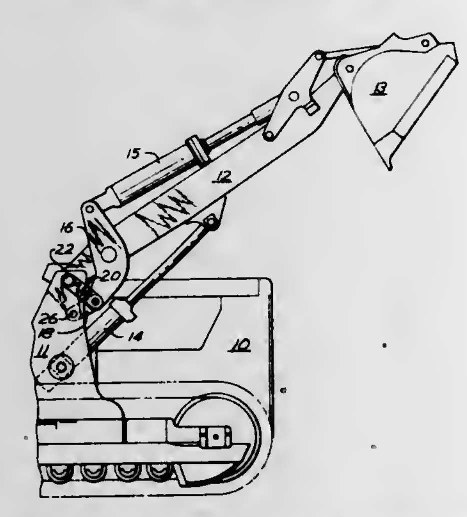
David H. Link, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 29, 1965, Ser. No. 517,355
8 Claims. (Cl. 214—730)



1. In an industrial truck having a load lifting upright assembly mounted at one end thereof, a load carriage assembly having first and second relatively movable portions mounted for elevation in the upright assembly, and extensible motor means in the upright assembly having a first pair of spaced elevatable wheel means supported from one end and rotatable on an axis generally transverse of the truck, second wheel means mounted below said first wheel means for rotation on an axis longitudinal of the truck, third wheel means mounted on the first portion of the carriage assembly for elevation therewith and rotatable on an axis longitudinal of the truck, a single endless flexible means reeving said first, second and third wheel means, the second portion of said carriage assembly being mounted for substantially horizontal movement relative to the first portion, means for actuating said flexible means to rotate said third wheel means, and means operatively connecting said third wheel means to said second carriage portion for actuating the latter in said substantially horizontal movement.

3,353,699
SUPPORT FOR LOADER LIFT ARM

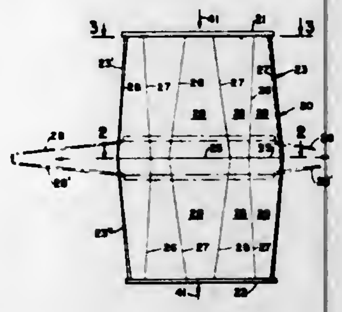
James Svoboda, North Aurora, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed July 11, 1966, Ser. No. 564,055
4 Claims. (Cl. 214—776)



1. In a tractor mounted loader which comprises lift arms supporting a loader bucket, a first pivot between a lift arm and the tractor, bucket tilt linkage which includes a lever pivoted to the lift arm and movable relative to the lift arm upon raising and lowering thereof, a link, a second pivot between said link and said lever, a third pivot between said link and the tractor, and a lift arm support link connectable between the first and second pivots.

3,353,700
CAN DEVICE

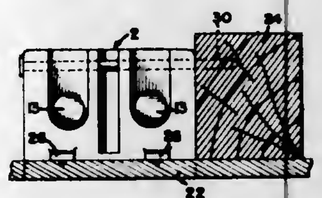
Ben F. Kalina, 211 8th Ave. W., Bowman, N. Dak. 58623
Filed May 6, 1965, Ser. No. 453,761
3 Claims. (Cl. 220—1)



1. A collapsible can comprising a pair of end caps, an annular wall, said annular wall forming a pair of frustoconical sections in opposed relation with the larger circumference of the sections disposed centrally of the sections and the smaller circumference of said sections disposed adjacent the ends of the can, said wall having an annular cut line in said wall annularly disposed about the larger circumference of the sections and a plurality of diagonal cut lines disposed transversely of said annular cut line and diagonally of one another, said can being adapted to receive pressure at said end caps to force said end caps together and cause said can to fracture along said cut lines.

3,353,701
MOLDED-INSULATION ELECTRICAL BOX HAVING INTEGRAL SPACER LUGS

Lewis E. Palmer, Washington, W. Va., assignor to Union Insulating Company, Parkersburg, W. Va., a corporation of West Virginia
Filed July 28, 1965, Ser. No. 475,452
2 Claims. (Cl. 220—3.5)



1. A molded plastic wiring box adapted for mounting in an opening contained in a relatively thin sheet secured to a vertical support, comprising

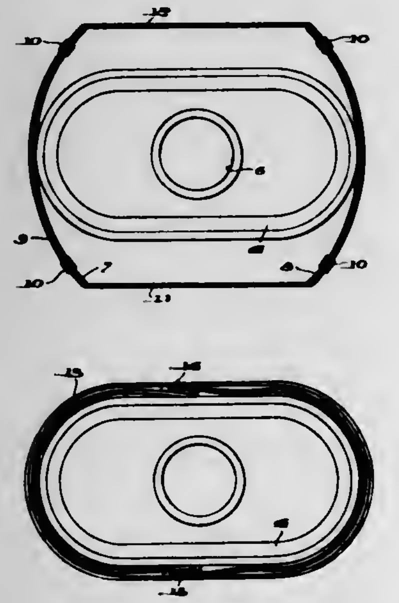
an open-front body molded of insulating material and including a vertical rear wall, opposed horizontal bottom and top walls, opposed vertical side walls, and a plurality of unitary lugs extending integrally from and normal to the external surface of each of said top and bottom walls, respectively, each of said lugs having a planar front surface adjacent, parallel with and spaced from the corresponding free front edges of said top and bottom walls a given distance substantially equal to the thickness of the sheet, one of said side walls being adapted to contiguously engage said support when the open front end of the body is mounted in said opening;

a pointed projection extending from the planar front surface of each of said lugs in the direction of, and spaced from the free front edge of, the corresponding one of said top and bottom walls;

and means for securing said body to the support when said body is inserted into the opening from the rear side of the sheet, whereby the body is accurately positioned and stabilized in the opening by the cooperation between said integral lug means and the rear face of the sheet prior to the securement of the box to the support.

3,353,702
BREATHING APPARATUS CANISTER

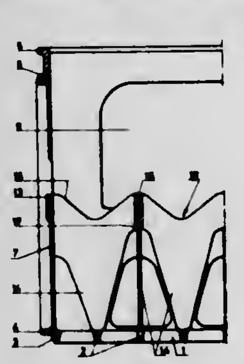
Walter G. Maiwald, Berlin, Germany, assignor to Auergesellschaft G.m.b.H., Berlin, Germany, a corporation of Germany
Filed Oct. 8, 1965, Ser. No. 494,149
Claims priority, application Germany, Oct. 14, 1964, A 47,348
5 Claims. (Cl. 220—15)



1. A canister having opposed sidewalls, a spring leaf secured to each said sidewall, each said spring leaf having a free end extending in the same direction from the canister and normally spaced therefrom, a sheet of flexible material connected between said free ends, said spring leaves normally maintaining said sheet taut and spaced from said canister.

3,353,703
PLASTIC CARRYING CRATE FOR BOTTLES

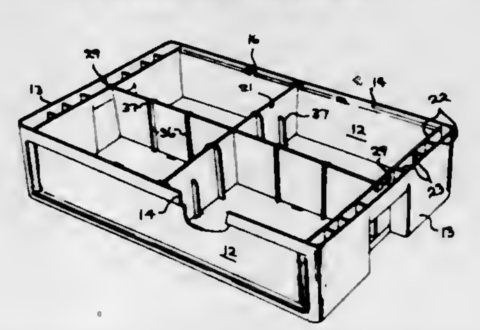
Otto Floris Bartoo, Rijswijk, South Holland, Teunis Ten Bruggencate, Voorburg, and Lodewijk, Gerard Gorter, Rijswijk, South Holland, Netherlands, assignors to Vereeniging Voor Zuivelindustrie en Melkhygiene, The Hague, Netherlands, a corporation of the Netherlands
Filed July 15, 1963, Ser. No. 294,919
Claims priority, application Netherlands, Aug. 1, 1962, 281.671
4 Claims. (Cl. 220—21)



1. A one-piece molded plastic bottle transport crate, comprising a rigid upper frame, a rigid bottom frame disposed below and spaced apart from said rigid upper frame, side walls forming corner portions rounded on the outside and rigidly connecting and spacing said frames, integral partition means disposed inside of said crate and consisting of longitudinal and transverse walls at a predetermined distance from each other, said partition means being adapted to secure the bottles in their position, said bottom frame including a grid of bars forming the crate bottom, said bars intersecting each other substantially perpendicularly and supporting said partition means, said longitudinal and transverse walls of said partition means being cut-away near the points of intersection forming downwardly directed cut-outs, at least some of said longitudinal and transverse walls being raised near the points of intersections and said longitudinal and transverse walls extending downwardly to and attached integrally to said bottom grid, and said longitudinal and transverse wall parts being connected with each other only at the area in which they are raised.

3,353,704
BEVERAGE CASE

Samuel L. Belcher, Toledo, and Robert F. De Brock, Maumee, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed May 25, 1965, Ser. No. 458,611
3 Claims. (Cl. 220—21)



1. A beverage bottle case formed of a plastic material and comprising a generally rectangular bottom, upstanding side and end walls rising from the periphery of the bottom, there being upstanding fingers formed integral with but spaced inwardly from the inner face of outwardly offset upper marginal portions of each side and end wall provided with key slots opening upwardly through the upper margin of said fingers, the bottom having a multiplicity of apertures therein arranged in a predetermined relationship to said key-slots, compartment or cell-creating dividers in the case, means separable connecting the ends of the dividers to selected key-slots, and guide pins depending from the bottom edge of the dividers and entering certain of the apertures.

3,353,705
SHIPPING CONTAINER

James T. Kane, Westfield, N.J., assignor to Eastern Steel Barrel Corporation, Bound Brook, N.J., a corporation of New Jersey
Filed Dec. 6, 1965, Ser. No. 511,682
2 Claims. (Cl. 220—67)

1. A steel drum comprising a cylindrical body having successively at its lower end

a first vertical wall,

a radially outwardly and downwardly extending lower segment of arcuate radial cross-section,

an upwardly extending portion of substantially semicircular radial cross section,

a radially inwardly and downwardly extending upper segment of arcuate radial cross section, and

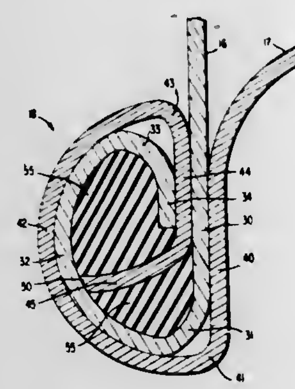
a downwardly extending second vertical wall,

a drum head having successively

a first vertical wall telescoped within said drum body first vertical wall and in annular face to face contact therewith, a substantially right angle bottom segment underlying and extending below and out of contact with said drum body lower segment,

a member of semicircular radial cross section overlying and in annular face to face contact with said drum body semicircular portion,

a substantially right angle top segment overlying and extending above and out of contact with said drum body upper segment,



a downwardly extending vertical wall sandwiched between and in annular face to face engagement with said drum body second vertical wall and said drum body first vertical wall at a location substantially horizontally aligned with said drum head first vertical wall to provide a four-ply joinder, and

a terminal rib extending slightly downwardly from the horizontal into edge contact with the inner face of said drum body semicircular portion.

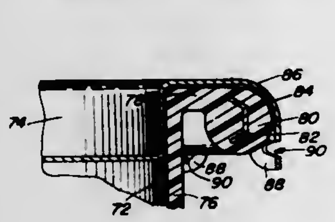
3,353,706

PLASTIC CONTAINER

Alva J. Godshalk, Homewood, Ill., assignor to Bennett Industries, Inc., Peotone, Ill., a corporation of Illinois

Filed Aug. 4, 1965, Ser. No. 477,117

3 Claims. (Cl. 220—73)



1. A reinforced container comprising:

an open end plastic pail having a generally cylindrical side wall structure and a bottom wall structure integral therewith,

a downwardly extending bead being formed adjacent the open end of the plastic pail and being offset outwardly from the side wall structure by a relatively narrow outwardly turned flange,

the downwardly extending bead, the top portion of the side wall structure, and the relatively narrow flange cooperating to form an inverted generally U-shaped strength-imparting arrangement at the open end of the plastic pail; and

a reinforcing channel formed of a material substantially more rigid than the plastic pail,

the said reinforcing channel comprising a closed loop generally circular member embedded in and completely surrounded by the said bead and extending below the open end of the plastic pail,

whereby the strength-imparting configuration and the reinforcing channel serve to support and reinforce the pail.

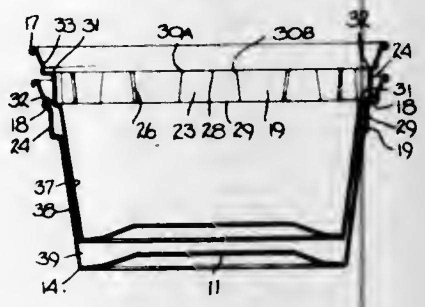
3,353,707

NESTABLE CONTAINER

Thomas H. Eyles, Leominster, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware

Filed Nov. 27, 1964, Ser. No. 414,296

13 Claims. (Cl. 220—97)



1. A nestable seamless plastic container of substantially uniform thickness comprising: a bottom; a sidewall portion extending upwardly from said bottom, said sidewall terminating in an open end portion; a stacking skirt formed in said sidewall portion; said stacking skirt including a plurality of circumferentially spaced stacking lugs offset radially outwardly from said skirt; each of said stacking lugs having a top portion, a bottom portion, a face portion, and edge portions which converge upwardly relative to each other; said skirt and said stacking lugs terminating at their upper ends in an outwardly extending upper stacking shelf; said stacking shelf forming the bottom portion of a groove adapted to receive the bead of a press fit lid; said groove also including a side portion, and a top portion which merges into the open end portion of the container; the outer surface of the bottom portions of the stacking lugs being greater in length than the distance between the tops of the inner edges thereof by more than twice the thickness of the sidewall of the container; said bottom portions of the stacking lugs of the container being adapted to rest on the stacking shelf of a next lower container when the containers are in nested relation with respect to one another.

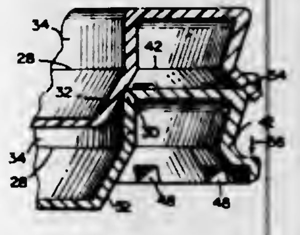
3,353,708

DISPOSABLE PLASTIC ARTICLE

Paul Davis, Beverly, Mass., assignor to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland

Filed Mar. 15, 1965, Ser. No. 439,858

4 Claims. (Cl. 220—97)



1. A disposable plastic article made of thin sheet material comprising,

a bottom wall lying substantially in a plane,

a side wall extending upwardly from the bottom wall,

a bend intermediate the top and bottom of the side wall, said side wall having an upper portion that extends upwardly and inwardly from the bend and a lower portion that extends continuously inwardly to said bottom wall,

a top wall extending outwardly from the top of the side wall,

a skirt extending downwardly from the outer edge of the top wall but terminating above said plane passing through said bottom wall,

said skirt comprising a downwardly and inwardly inclined portion extending from the top wall of the skirt with the inside of the skirt below the minimum diameter of the inclined portion being adapted to engage a point on the outside above the inclined portion of the skirt of an identical article nested beneath it and a downward and outwardly inclined portion depending from said inwardly inclined portion,

said side wall having an outer diameter at a first point below the upper portion substantially equal to the inner diameter of the upper portion of the side wall at a second point above the first point a distance equal to the distance between the points on the skirt whereby the side walls of identical articles nest at the first and second points when the points on the skirt nest.

3,353,709

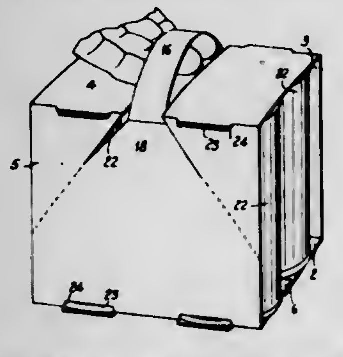
CARRIERS MADE FROM CARDBOARD OR SIMILAR MATERIALS

Frank D. Lawrence, 38 Bradford Road, Weymouth, Dorset, England

Filed May 27, 1965, Ser. No. 459,349

Claims priority, application Great Britain, June 2, 1964, 22,729/64; June 29, 1964, 26,771/64

8 Claims. (Cl. 220—112)



1. A blank of sheet material for making a carrier intended for packaging articles having at least upper parts of circular cross-section, said blank being divided into a plurality of end to-end connected panels by folding lines disposed substantially at right angles to the longitudinal axis of said blank, one of said panels comprising a strap handle defined by two spaced apart strap-defining slit means selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, which are formed in said one panel and which are continued by extension slit means, selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, formed in a pair of panels disposed one on either side of, and connected by a pair of folding lines to, said one panel, the central portion of the lifting strap being disposed substantially centrally between two adjacent article positioning means formed at one folding line of said pair of folding lines and two adjacent article positioning means formed at the other folding line of said pair of folding lines, these four article positioning means being arranged substantially symmetrically with respect to said longitudinal axis of said blank and permitting lateral movement of said parts of said articles adjacent to said article positioning means when said articles are packaged in said carrier formed from said blank.

3,353,710

REMOTE CONTROL APPARATUS FOR DISPENSING

Albert F. Romanowski, Greeneville, Tenn., assignor to Bowser, Inc., Greeneville, Tenn., a corporation of Indiana

Filed May 12, 1966, Ser. No. 549,726

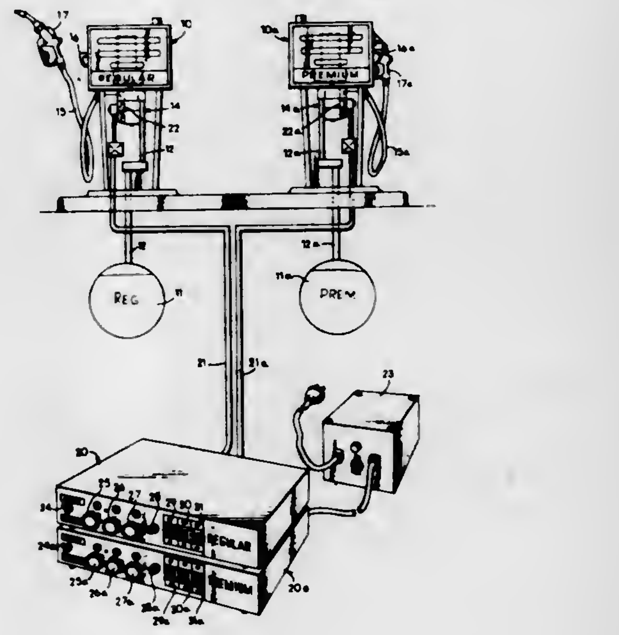
7 Claims. (Cl. 222—19)

1. Apparatus for remotely controlling the dispensing of gasoline from a dispenser comprising:

(a) a selectively operable hand switch for setting, by predetermined increments, a predetermined dollar amount therein indicated by a corresponding electrical condition;

(b) counting stepping switches adapted to be coupled to a dispenser for counting by said predetermined increment the dollar amount dispensed thereby, said dollar amount being indicated by a corresponding electrical condition;

(c) signal producing means coupled to said hand switch and to said counting stepping switches for producing a permissive signal in response to said electrical condition of said hand switch and said electrical condition of said counting stepping switches being unequal and for producing a blocking signal in response to said electrical condition of said hand switch and said electrical condition of said counting stepping switches being equal;



(d) control means coupled to said signal producing means and adapted to be coupled to said dispensing means for rendering said dispensing means operative in response to said permissive signal and for rendering said dispensing means inoperative in response to said blocking signal;

(e) and means coupled to said control means for selectively rendering said dispensing means operative independently of said signal producing means.

3,353,711

DEVICE FOR THE MIXING OF LIQUIDS

Georges Biezunski, Chaville, Jacques Maugest, Paris, and Robert Peres, Neuilly-sur-Seine, France, assignors to Compagnie Generale d'Automatisme, Societe Octel, and Compagnie d'Applications et Recherches Atomiques, all of Paris, France

Filed Jan. 27, 1965, Ser. No. 428,510

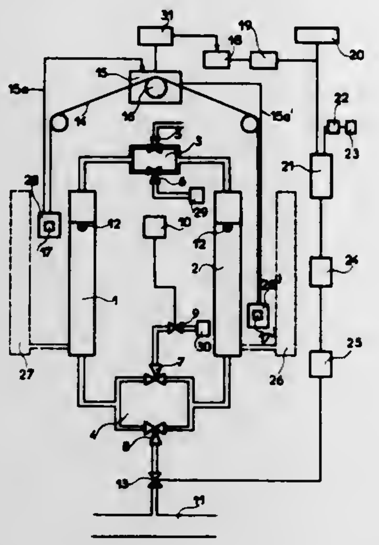
Claims priority, application France, Jan. 31, 1964, 962,261; Dec. 23, 1964, 999,808

31 Claims. (Cl. 222—28)

16. Apparatus for admixing an additive liquid with a liquid product circulating in a conduit means said apparatus comprising:

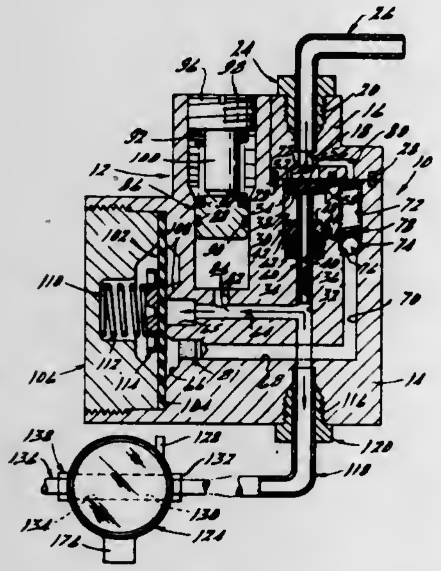
means for continuously supplying additive liquid comprising two containers and means, in cooperation with a controllable valve, for placing said containers alternately in communication with said conduit means,

means, for measuring the rate of flow of said additive liquid, comprising a float containing a radiation source, placed on the surface of said additive liquid in one of said containers, a means for detecting radiation emitted by said source cooperating with said source and movable by means of a motor controlled by said detection means, said measuring means furthermore comprising a tachometric coding means connected to the shaft of said motor, the signal given by said coding means being representative of the rate of flow of said liquid as it flows through said controllable valve.



3,353,712
FLUID DISPENSING SYSTEM INCORPORATING A FLUID ACCUMULATOR

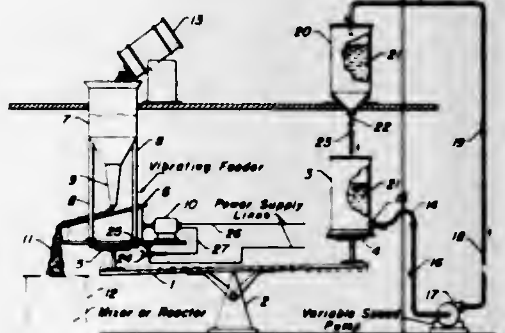
David B. Prescott, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Feb. 9, 1966, Ser. No. 526,154
10 Claims. (Cl. 222—56)



1. A fluid metering system for delivering fluid from a fluid inlet to a pressure responsive fluid dispensing device and for cyclically varying the fluid pressure upon the dispensing device for actuating the dispensing device, said system comprising fluid accumulator means adapted to store a predetermined volume of fluid under pressure, fluid displacement means for sequentially delivering predetermined volumes of fluid from said fluid inlet to said fluid accumulator means for charging said fluid accumulator means, fluid return passage means extending from said fluid accumulator means to said fluid inlet, check valve means in said fluid return passage means for precluding fluid flow from said fluid inlet to said fluid accumulator means through said fluid return passage means and for permitting flow from said fluid accumulator means to said fluid inlet through the fluid return passage means, relief valve means in said fluid return passage means, said relief valve means being responsive to the pressure in said fluid accumulator means and being normally closed for precluding fluid flow from said fluid accumulator means to said fluid inlet through said fluid return passage means until the pressure in said fluid accumulator means exceeds a predetermined value, and conduit means for providing for fluid communication between the outlet side of said fluid displacement means and the fluid dispensing device for delivering fluid thereto.

3,353,713
SYSTEM FOR CHARGING SMALL QUANTITIES OF GRANULAR MATERIALS

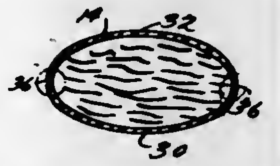
Norman H. Scott, Villa Park, and Kenneth D. Vesely, La Grange Park, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Mar. 2, 1966, Ser. No. 531,202
8 Claims. (Cl. 222—57)



1. An apparatus system for discharging small quantities of granular solids material from a feed hopper by the use of a controlled liquid flow rate from a separate liquid container, comprising in combination, an electric power operated feeder means having a power supply line thereto and positioned in association with a superposed feed hopper having a reduced area lower particle outlet therefrom, a balance beam with a deck means at one end thereof holding said feeder means, an opposing deck means for said balance beam holding a liquid retaining container for in turn maintaining a balancing weight for the feeder means, a liquid flow line and adjustable liquid discharge means connecting with said container for removing liquid therefrom at a controlled rate, and actuator means for operating said feeder means that is positioned to be responsive to the balancing beam movement whereby said feeder means will remain operative responsive to a greater weight on the feeder side of said balance beam, said actuator means comprising an electrical switching means in said power supply line which is opened and closed responsive to slight up and down movements of said balance beam and the feeder means supported thereby.

3,353,714
COLLAPSIBLE FLEXIBLE PLASTIC CONTAINER TUBE

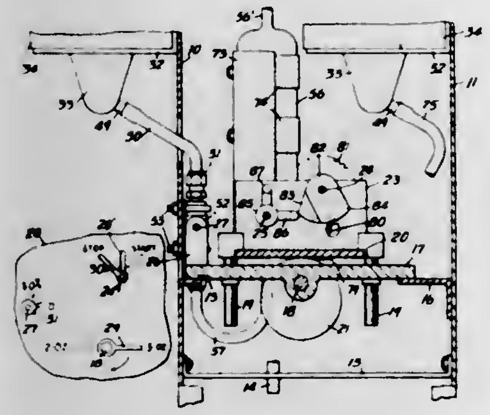
Louis J. Trecek, Metuchen, N.J., assignor, by mesne assignments, to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Nov. 10, 1965, Ser. No. 507,108
19 Claims. (Cl. 222—107)



1. A collapsible flexible plastic tubular sidewall for a container tube having a pair of substantially diametrically opposed, longitudinally extending, arcuately narrow regions of thickness discontinuity which extend along a majority of the length of the sidewall, the regions of thickness discontinuity each being thinner than the remainder of the sidewall, the remainder of the sidewall being of substantially uniform thickness.

3,353,715
MECHANICALLY OPERATED MIXED LIQUID DISPENSING MACHINE

Sanford Berman, Scotch Plains, and Edward L. Wright, Plainfield, N.J., assignors to Customline Control Products, Inc., Linden, N.J., a corporation of New Jersey
Filed Sept. 1, 1965, Ser. No. 484,207
16 Claims. (Cl. 222—129.4)

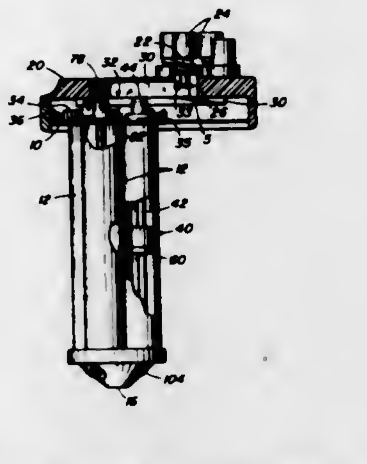


1. A machine of the character defined comprising a frame, means supporting two liquid containers in connection with the frame, a baseplate mounted in said frame, a platform movable toward and from said baseplate, means supporting a liquid mixture receiver in connection with the platform, a mixing valve rotatably mounted in the lower portion of said receiver, the lower portion of the receiver and said valve having cooperating means for delivery of a mixture of liquid from both of said containers to said receiver, other means at the lower portion of the receiver and on said valve for discharging the mixed liquid delivered to the receiver to a discharge tube supported in the frame, said first named means comprising chambers including means controlling the level of liquid discharged into said chambers, manually actuated means operatively engaging the platform for raising said receiver to a position controlling the volume of the liquid mixture delivered to said receiver consistent with the level of liquid in said chambers, and manually actuated means mounted in connection with said platform controlling first the movement of said valve into position for delivery of mixed liquid from said containers to said receiver and then discharge of the mixed liquid from the receiver through said discharge tube in each cycle of operation of the machine.

3,353,716
FLUID DISPENSER

Francis J. Fuchs, Jr., 9 University Way, Princeton Junction, N.J. 08550
Filed Oct. 11, 1965, Ser. No. 494,497
6 Claims. (Cl. 222—132)

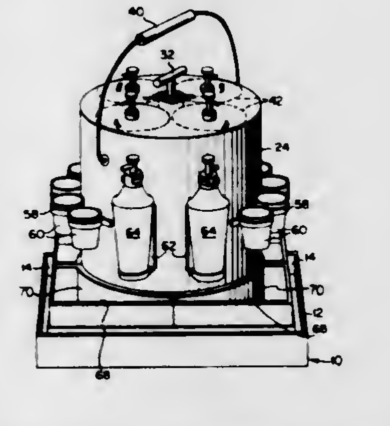
4. A fluid dispenser, for dispensing a plurality of volumes of different fluids in precise volumetric relation regardless of the total volume dispensed which comprises:
  a plurality of fluid compartments each provided with a fluid discharge passage;
  an assembly, including a rod and piston, positioned in each compartment;
  means for imparting reciprocating rotational movement to said rod;
  means, responsive to said reciprocating rotational movement, for alternately connecting said piston into and out of operative engagement with said rod; and



  selectively adjustable means operatively associated with each rod and for selectively imparting variable translational movement to said rods and to said pistons, when operatively connected to said rods, to cause said pistons to force variable amounts of fluid out of said fluid passages.

3,353,717
PORTABLE REFRESHMENT SERVER

Clark S. Edwards, 1933 Sutter St., San Francisco, Calif. 94115
Filed Feb. 16, 1966, Ser. No. 527,814
9 Claims. (Cl. 222—132)



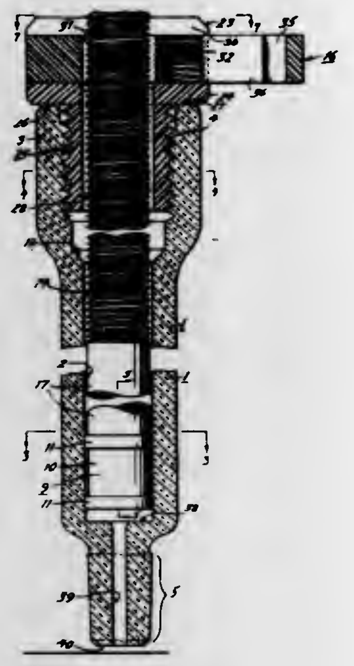
1. A refreshment server comprising an enclosure having a closed top and an open bottom, a tube secured to and depending from said top within said enclosure, a number of containers arranged around said tube within said enclosure, each having a dispensing mechanism arranged to protrude through said enclosure top, releasable means supporting said containers within said enclosure, a tray disposed below said enclosure, a base arranged below said tray, means pivotally supporting said tray upon said base, and means disposed in said tube and protruding above said enclosure top for detachably securing said enclosure to said tray and for lifting said enclosure including said containers from said tray upon detachment thereof.

3,353,718
SYRINGE, COLUMN OR THE LIKE

Joseph F. McLay, Warminster, Pa., assignor to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania
Filed May 24, 1966, Ser. No. 552,519
14 Claims. (Cl. 222—158)

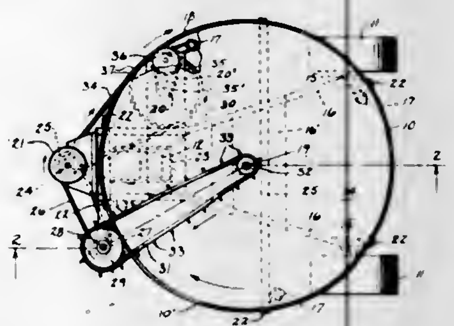
11. A syringe, column or the like, including a rigid transparent glass barrel having a glazed cylindrical bore and a discharge hole of substantially smaller diameter ex-

tending from the inner end of said bore to the exterior of the barrel and said barrel having its other end screw-threaded, a piston operatively disposed within said bore formed of a generally chemically inert and generally form-retaining though slightly resiliently deformable synthetic resin capable of forming an unlubricated non-seizing slidable fluid-sealing dry contact with the glazed surface of said bore, said piston having an integral piston-ring in proximity of each of its two ends, said piston-rings being of small axial extent and of a diameter which is larger than the diameter of its body portion intermediate the piston-rings thereof and which is sufficiently larger than the bore of the barrel in the uncompressed condition thereof so as to be resiliently compressed when the piston is operatively disposed in the bore of the barrel, a piston-rod having its inner end affixed to the piston and having a portion thereof externally screw-threaded and having an end thereof extending beyond the barrel and beyond the below-mentioned coupler-housing and rod-coupler, a coupler-housing formed of an impact-resistant synthetic resin screw-threadedly mounted to the threaded end of the glass barrel and having a piston-clearing passageway therethrough to permit the piston to be fully withdrawn, a screw-threaded rod-coupler movably mounted to the coupler-housing and arranged to be optionally moved into a coupling position in which its thread interengages the thread of the piston-rod and into an uncoupling position in which its thread is out of engagement with the thread of the piston-rod, said rod-coupler being arranged to provide a radial clearance for the piston when the rod-coupler is in its uncoupling position for permitting the piston to be fully withdrawn in an axial direction, and a handle carried by the outer extending end of the piston-rod.

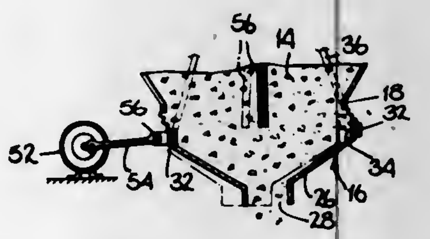


3,353,719
FEED DISPENSING CARTS FOR LIVESTOCK AND THE LIKE
George B. Bruecker, 1412 Oak Ridge,
Kaukauna, Wis. 54130
Filed Apr. 5, 1966, Ser. No. 540,404
8 Claims. (Cl. 222—178)

3. A mobile feed-dispensing cart, comprising: an upright body adapted to contain a quantity of feed, said body having a feed discharge opening adjacent its lower end; a rotatable floor member at the bottom of said body; a center idler shaft extending upwardly above said floor member; a motor mounted on the exterior of said cart body, said motor having a drive shaft; a vertical conveyor drive shaft on the exterior of said body in alignment with said discharge opening; means rotatably drivingly connecting said conveyor drive shaft to said motor drive shaft; an endless conveyor member trained about said conveyor shaft and about said center idler shaft, said conveyor member extending radially outwardly through said discharge opening and having means thereon adapted to engage and convey feed on said floor member radially outwardly through said opening; and floor driving means connected to said motor and adapted to rotatably drive said floor member to cause feed thereon to be continuously moved into contact with said endless conveyor member during the dispensing operation.



3,353,720
MATERIAL HANDLING EQUIPMENT
Ronald J. Ricciardi, Garfield, N.J. (121 Dayton Ave.,
Passaic, N.J. 07055)
Filed Oct. 24, 1965, Ser. No. 504,429
3 Claims. (Cl. 222—200)

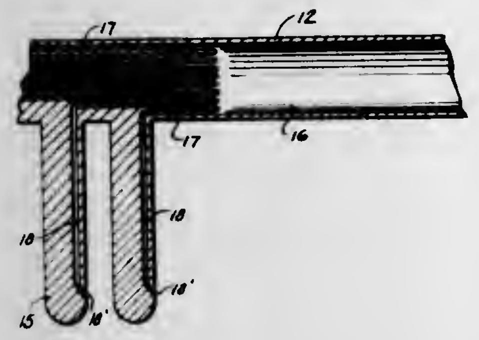


1. Apparatus for conditioning and dispensing particulate solid material comprisng an upper storage bin, a hopper bottom having sidewalls having a slope of between about 5 degrees and about 45 degrees with respect to the horizontal, a flexible sleeve interconnecting said bin and said hopper bottom, a frame connected to said hopper bottom, said frame having upwardly extending members, a pivot shaft extending transversely through said upper storage bin and being pivotally mounted thereon, said upwardly extending members being connected to said pivot shaft outwardly of said storage bin, said pivot shaft being located a distance from said hopper bottom of the order of about .1 to about 3 times the maximum circumference of said hopper bottom, and an agitator fixedly connected to said pivot shaft to extend downwardly within said upper storage bin, means connected to said hopper bottom for imparting arcuate reciprocating motion simultaneously to said hopper bottom and said agitator.

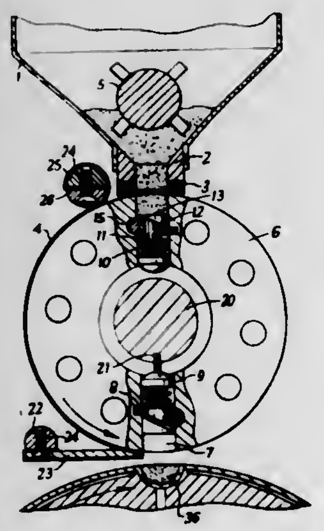
3,353,721
MULTI-USE APPLICATOR
Jefferson C. Love, 130 Ringdahl Court, Apt. 1,
Rome, N.Y. 13440
Filed Sept. 6, 1966, Ser. No. 577,238
5 Claims. (Cl. 222—209)

1. A multi-use applicator comprising, in combination, a body portion in the form of a comb, a hollow tubular

flexible handle secured to one end portion of said comb body portion along the same axis as the body portion, said body portion being provided with a plurality of mutually parallel channels parallel with the axis of the body portion operably communicating with an opening in said handle, each tooth of said body portion provided with a laterally disposed channel having an inlet communicating with one corresponding elongated channel outlet of said body portion for releasing medicated substance from said lateral channel when said flexible handle is compressed to force fluid into the channel.

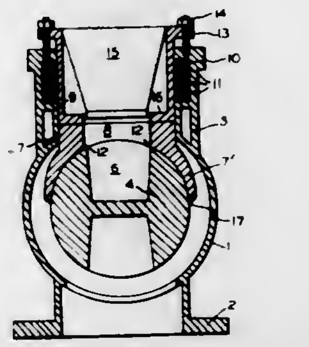


3,353,722
APPARATUS FOR MEASUREMENT AND FEEDING OF POWDERED MATERIALS
Maharaj Krishen Mehta, 279 Celyn Ave., Lakeside,
Glamorgan, Cardiff, Wales
Filed June 30, 1965, Ser. No. 468,515
Claims priority, application Great Britain,
July 8, 1964, 28,210/64
8 Claims. (Cl. 222—218)



1. Apparatus for dispensing measured quantities of powdered or granular material comprising a hopper for said material, a rotary feed roll mounted below the hopper, the periphery of the feed roll having charge chambers arranged in rows parallel to the axis of rotation of the feed roll, an ejector within each charge chamber, said ejector being displaceable from an inner position to an outer position to ensure the discharge of the material, an adjusting member associated with each ejector and having first and second inclined surfaces, said first inclined surface engaging a similarly-inclined surface of the ejector when the ejector is in its inner position, said adjusting member being movable transversely to the direction of movement of the ejector whereby the inner position of the ejector can be adjusted, and an operating member movable in a direction parallel to the axis of said feed roll and engaging said second inclined surface of the adjusting member of each of the charge chambers in one row to effect said transverse movement of the adjusting members.

3,353,723
ROTARY VALVE
Karl-Heinz Wieleba, Ravensburg, Wurttemberg, Germany, assignor to Escher Wyss G.m.b.H., Ravensburg, Wurttemberg, Germany, a corporation of Germany
Filed Aug. 6, 1965, Ser. No. 477,873
Claims priority, application Germany, Sept. 5, 1964,
E 27,733
1 Claim. (Cl. 222—368)



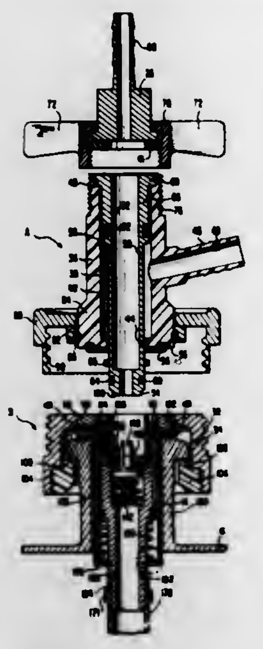
A rotary valve for batching and charging loose material into a container under internal pressure comprising

- (a) a housing formed with a through opening for the passage of said loose material;
- (b) a rotor supported for rotation in the housing and extending across said through opening, the rotor having a cylindrical portion provided with at least one recess for the reception of said loose material;
- (c) a sliding shoe located in said through opening at the material supply side of the rotor and provided with a perforation which registers with said recess when the latter is at the supply side of the rotor,
- (d) the shoe comprising a saddle having a cylindrical surface which mates with the cylindrical portion of the rotor, and a separate neck which is guided for sliding movement by the housing and has an end portion which extends outside the housing;
- (e) sealing means interposed between the outer periphery of the neck and the housing and preventing leakage between the interior and the exterior of the housing along the neck; and
- (f) at least one screw reacting between said end portion of the neck and the housing and adapted when turned to press the shoe against the rotor,
- (g) the screw being accessible from outside the housing and being isolated from said through opening.

3,353,724
BEER TAPPING DEVICE
Mack S. Johnston, 26 Hitching Post Drive,
Rolling Hills, Calif. 90274
Filed Oct. 22, 1965, Ser. No. 502,091
14 Claims. (Cl. 222—400.7)

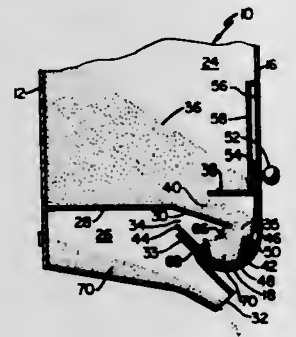
6. A siphon adapter for installation in a keg having top, bottom and side walls with an aperture in at least one keg wall, whereby the adapter seals said keg and provides means for removal of liquid therefrom, comprising, a main fitting member having a tubular body portion and a movable central sleeve, the space between said body portion and sleeve defining a gas passageway into said keg, the interior of said sleeve defining a liquid passageway out of said keg, a liquid valve seat in said sleeve, a liquid valve in said sleeve resiliently bearing on said valve seat, means on said liquid valve for engaging a probe inserted into the end of said passageway to open said liquid

valve, resilient gas valving means carried by said sleeve, and spring means acting on said sleeve to urge said resilient gas valving means against said body portion to close off said gas passageway.



3,353,725
MEASURING AND DISPENSING UNIT

Francisco J. Caceres, 2931 S. Adams St.,
Denver Colo. 80205
Filed Sept. 22, 1966, Ser. No. 581,318
13 Claims. (Cl. 222—456)

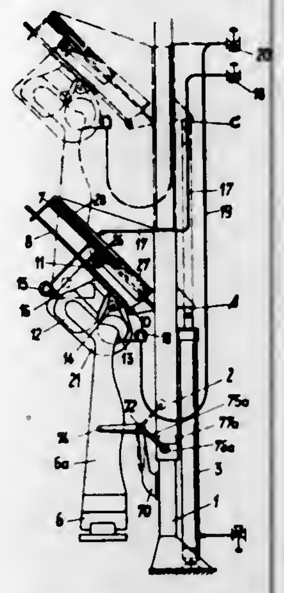


1. A measuring and dispensing unit comprising: a container; a partition dividing said container into a storage compartment and a charge compartment; a spout at one end of said container in communication with said charge compartment; a passageway for granular material between said charge compartment and said storage compartment; a measuring area including at least a part of said passageway; and adjusting means for adjusting the width of said passageway to thereby adjust the amount of material measured and entering said charge compartment as said unit is tilted in the direction of said spout to dispense material therefrom.

3,353,726
DEVICE FOR PULLING OFF STOCKINGS FROM FORMS AND DEPOSITING THEM

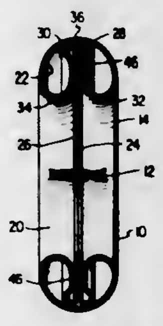
Curt Kronsbein, Hagen-Boelerheide, Germany, assignor to Maschinenfabrik Eugen Bellmann G.m.b.H., Hagen-Haspe, Germany, a firm
Claims priority, application Germany, Sept. 23, 1963,
M 58,300; Jan. 22, 1964, M 59,634
Filed Sept. 22, 1964, Ser. No. 398,339
25 Claims. (Cl. 223—112)

1. A device for pulling off stockings comprising a plurality of elongated forms disposed in generally side-by-side spaced relationship adapted to each externally telescopically support a stocking, a carriage means for moving said carriage in generally parallel relationship to the forms, a plurality of grippers, each form being provided with its own gripper, a frame carried by said carriage, means for moving said grippers generally transversely to the movement of said carriage and mean for actuating said grippers to grip portions of each of the stockings on each of the forms incident to simultaneous removal of each of the stockings from the forms upon the movement of said grippers and carriage.



3,353,727
GARMENT HANGER

Hubert B. Tillery and Luther D. Tillery, both of
6000 Wilson Ave., Kansas City, Mo. 64123
Filed May 27, 1965, Ser. No. 459,212
6 Claims. (Cl. 223—88)

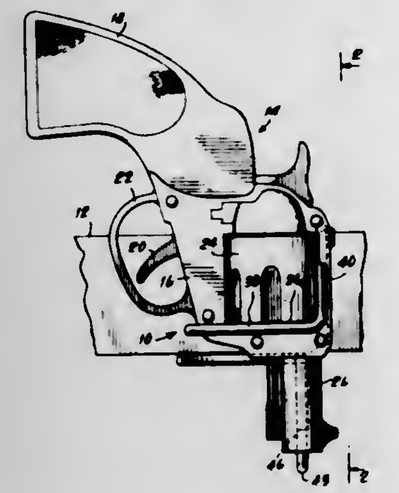


1. A garment hanger consisting of a substantially triangular-shaped closed frame formed from a unitary piece of material comprising a body which in cross section has a curved outer surface having a pair of inwardly curved portions, each of said inwardly curved portions provided with a reverse bend portion having a web portion of said piece of material, said web having a free edge terminating in the plane containing the lower surfaces of the inwardly curved portions, said web portion and reverse bend portions being secured to the inner surface of said curved outer surface, said web portion and reverse bend portions defining a partition arranged in a plane intermediate said inwardly curved portions and normal to said outer surface.

3,353,728
PISTOL HOLDER

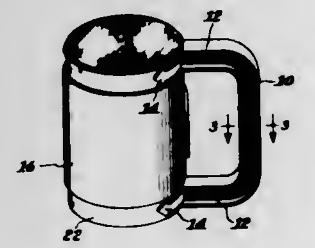
George H. Freed, Pine Brook, N.J., assignor of 50 percent
to Kenneth K. Klimback, West Caldwell, N.J.
Filed Mar. 16, 1966, Ser. No. 536,594
24 Claims. (Cl. 224—1)

1. A holder for carrying a barrel-type firearm or the like on the person, comprising a frame and means for mounting said frame in a given position on the person, said frame in said given position including laterally extending rigid ledge means upon which a barrel tip facing portion of the firearm can rest, and which serves to support the firearm in barrel-down position, said frame in said given position further including restraining means for restraining the firearm against lateral movement in any direction on said ledge means, and barrel engaging stabilizer means located below said ledge means and so configured that when said restraining means is engaged by the tip of the pistol barrel one of the two is substantially surrounded by the other to provide non-yieldable lateral restraint, while allowing free relative movement in a vertical direction, said ledge means, said restraining means, and said stabilizer means all being of substantially rigid, non-movable construction and rigidly mounted in fixed positional relationship to each other to define an opening in the side of said holder capable of accommodating unrestricted lateral egress of said pistol out from said holder when said pistol has first been raised so that its barrel tip has cleared said stabilizer means but has not yet cleared said restraining means, whereby said holder operates without use of movable parts to hold a pistol securely in place, and yet releases said pistol for lateral drawing movement upon a slight lifting movement of the pistol.



3,353,729
HOLDER FOR BEVERAGE CAN

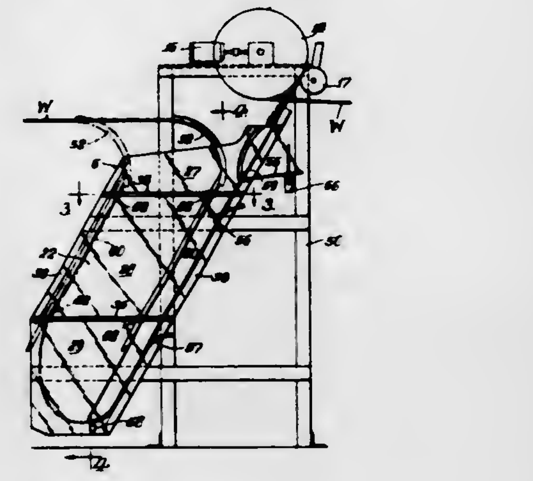
Robert S. Hull, New York, N.Y.
(248 North Road, Smoke Rise, N.J. 07405)
Filed May 15, 1967, Ser. No. 638,422
5 Claims. (Cl. 224—45)



1. A holder for cans of beverage comprising
a U shaped member having a straight section extending between two parallel legs extending at right angles thereto;
two flexible bendable prongs, each prong being secured to the free end of the corresponding leg; and
a rolled sheet of thin flexible material extending between the free ends of said legs parallel to said horizontal section, said sheet when unrolled with opposite ends thereof connected together defining a hollow cylinder open at both ends to receive a can of beverage, said prongs being adapted to be bent to contact said can at points above and below the cylinder, said member functioning as a handle.

3,353,730
WIRE SUPPLY APPARATUS

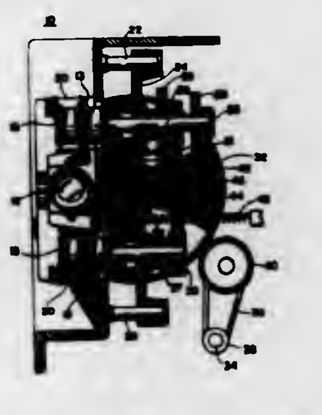
Ernest U. Lang, Niles, Mich., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 509,863
6 Claims. (Cl. 226—43)



1. In an apparatus for use between a source of wire supply and an intermittently operable device for successively forming articles of wire, the combination of slack wire accumulating means comprising an accumulator having an open end and defined by spaced apart inner and outer panels for receiving wire from said supply source through said open end in the form of an elongated loop between said inner and outer panels, and means for said accumulator for engaging the sides of said loop to adjust the width thereof to maintain the sides of said loop substantially straight within said accumulator, first motor means for drawing wire from said supply for storing in said accumulating means, first motor control means for varying the speed of rotation of said first motor means, and said first motor control including means for actuating said first motor means operable by wire passing through said accumulating means for varying the speed of said first motor means to provide for drawing of the wire from said supply for feeding to said accumulating means at a rate at which the closed end of said elongated loop is free of engagement with said accumulator in the normal operation of the apparatus.

3,353,731
SELECTIVE FILM DRIVE FOR FILM HAVING DIVERSE CHARACTERISTICS

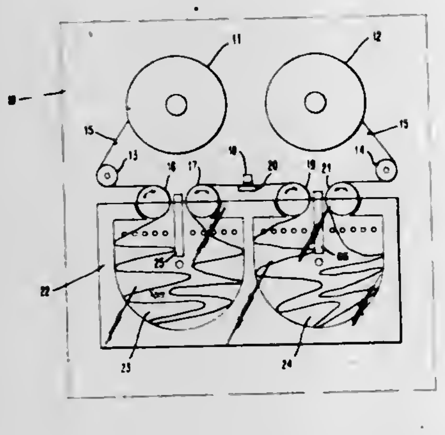
Toshiyuki Sato and Seki Kono, Nagoya, Japan, assignors to Elmo Company Limited, Nagoya, Japan
Filed Dec. 20, 1965, Ser. No. 523,827
3 Claims. (Cl. 226—54)



1. A film feed mechanism for use in a small-sized motion-picture projector for selectively projecting two types of motion picture film different in format and dimensions from each other, comprising a rotatory shaft, a pair of

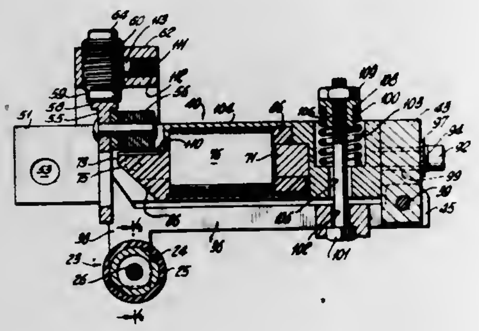
sprocket wheels disposed in spaced relationship on said rotatory shaft, one for each type of film, to continuously feed the associated length of motion-picture film, means for axially moving said rotatory shaft and said sprocket wheels to selectively put one of said sprocket wheels in its operative position, means for driving said rotatory shaft, and means for changing the number of revolutions per unit of time of said rotatory shaft from one to the other predetermined value simultaneously with said movement of said sprocket wheels whereby the length of film is intermittently transported in synchronization with the continuous transportation of the same provided by the selected one of said sprocket wheels in its operative position.

3,353,732
BULK STORAGE TAPE FEED
Trevor D. Reader, King of Prussia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 2, 1965, Ser. No. 469,206
16 Claims. (Cl. 226—97)



1. In a tape feed system, a vacuum loop box for storing tape in interleaving folds, said loop box having an open end, partition means equally dividing said open end into two openings, a capstan disposed in each opening, means associated with said capstans and said partition creating films of air on both sides of a tape which causes said tape to float therebetween as it passes between a selected capstan and said partition.

3,353,733
PINCH ROLLER MECHANISM
Ivan O. Fieldgate, Halesite, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Dec. 28, 1964, Ser. No. 421,383
2 Claims. (Cl. 226—176)



1. In a tape handler apparatus for processing information-bearing tape including:

transducer means adapted to transfer coded information between information processing apparatus and an elongated moving web;

a drive capstan including means to connect with a motive power source to cause rotation movement therein; and

a pinch roller drive mechanism supported in a predetermined special relationship with the drive capstan;

said pinch roller drive mechanism comprising:

a roller member formed of a predetermined material and including shaft means to support the roller member rotatably;

support means to which the shaft means is connected including means to permit the support means to pivot for moving the roller member between a retracted, inoperative position and an operative position;

mounting means for attaching the support means in said predetermined spacial relationship with said drive capstan including a bearing member in which said means to permit the support means to pivot is journaled;

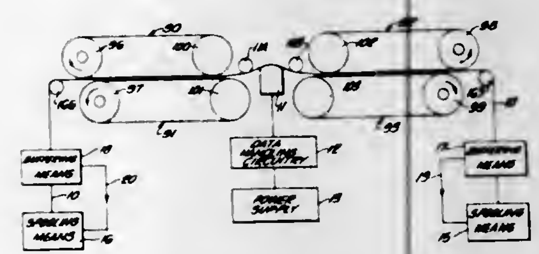
said bearing member including means to define at least one enlarged hole therethrough, and a bolt means smaller in diameter compared with the diameter of the enlarged hole for attaching the bearing member adjustably in position to the mounting means;

spring means to urge the support means into the retracted, inoperative position;

means to actuate the roller member for moving the support means into the operative position against the action of the spring means; and

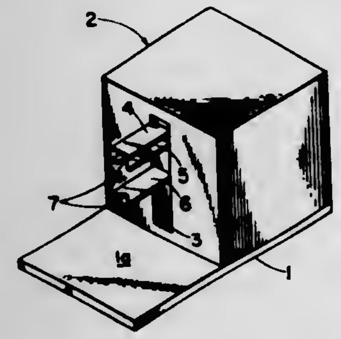
said support means being formed of a substantially rigid and inflexible member.

3,353,734
DRIVE SYSTEMS INVOLVING ELECTROSTATIC FORCES
Donald L. Burdorf, Arcadia, and James T. Blakistone and Irving Karsh, Los Angeles, Calif., assignors to Kinelogic Corporation, Pasadena, Calif., a corporation of California
Filed Apr. 3, 1963, Ser. No. 270,243
8 Claims. (Cl. 226—94)



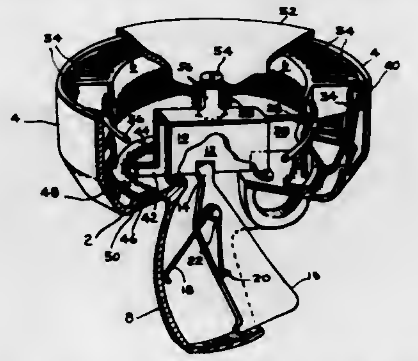
1. In a system of the character described, a first constantly rotating and insulated pulley, a second constantly rotating and insulated pulley, a first insulated post, a second insulated post, a first belt loosely extending over said first pulley and said first post and normally being in nondriving relationship to said first pulley, a second belt extending over said second pulley and said second post and normally being in nondriving relationship to said second pulley, means for applying an AC voltage between said first and second pulleys, said means comprising a transformer having a center-tapped secondary winding with the center tap thereon being grounded and with the outside terminals thereof being connected respectively to a corresponding pulley, means for applying an AC voltage between said posts, the last-mentioned means comprising a transformer having a center-tapped secondary winding with the center tap of the last-mentioned winding being grounded and with the outside terminals of the last-mentioned winding being connected respectively to a corresponding one of said posts.

3,353,735
APPARATUS FOR PREPARING CANDY APPLES
William L. Walters, Jr., 802 Beverly St., Covington, Va. 24426
Filed June 9, 1966, Ser. No. 556,392
6 Claims. (Cl. 227—2)



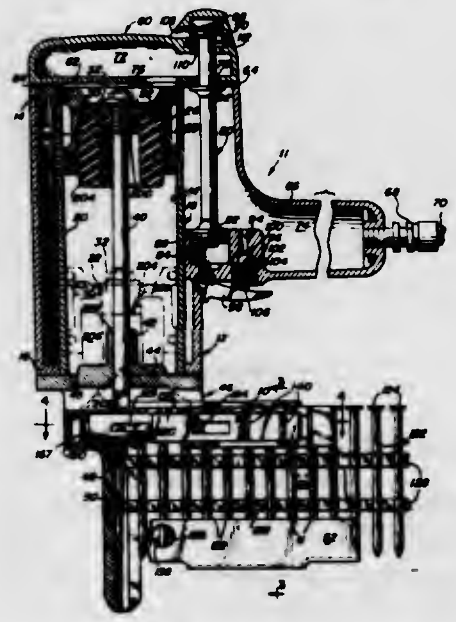
6. Apparatus for preparing candy apples comprising:
(a) a base plate,
(b) a pair of upright posts mounted on said base plate and extending from said base plate in spaced, parallel relationship to each other,
(c) a carriage plate,
(d) said carriage plate having at least two pairs of sleeve members attached to the rear surface thereof.
(e) one of said pairs of sleeve members engaging one of said upright posts, and the other of said pairs of sleeve members engaging the other of said upright posts,
(f) a cam plate attached to the rear surface of said carriage plate,
(g) portions of said cam plate defining a slot extending perpendicularly to said upright posts,
(h) a cam follower positioned within said slot,
(i) a motor having a rotatable shaft,
(j) a cam arm mounted adjacent one end thereof on said shaft,
(k) said cam follower being rotatably mounted on the opposite end of said cam arm,
(l) a switch arm mounted on said shaft,
(m) a normally closed micro-switch mounted on said base in the path of said switch arm as said switch arm rotates with said shaft,
(n) a normally open micro-switch mounted on the rear surface of said carriage plate,
(o) a pair of spaced stick guides mounted on the front surface of said carriage plate each having vertically aligned portions defining stick receiving notches,
(p) a pin member mounted for movement longitudinally thereof and extending through said carriage plate with one end of said pin member positioned adjacent to and for engagement with said normally open micro-switch and the other end of said pin positioned adjacent to said stick receiving notches for engagement by a stick, and
(q) a push bar mounted on the front surface of said carriage plate above said stick guides.

3,353,736
FASTENER CARTRIDGE AND ASSEMBLY
Hugo Bauer, 124 Summit Court, Westfield, N.J. 07090
Filed July 30, 1965, Ser. No. 475,923
4 Claims. (Cl. 227—107)



3. A fastener dispensing assembly including a fastener cartridge having a main cylindrical portion with radially extending spaced fin portions forming spaces between adjacent fins and a plurality of longitudinal slots in said main cylindrical portion between adjacent pairs of said fin portions and opening into said spaces, said spaces each being adapted to receive a fastener; and a main frame portion adapted to receive said cartridge, said main frame portion having slidably disposed thereon a discharge assistant, means for resiliently urging said discharge assistant into a rest position which is diametrically within said main cylindrical portion of said cartridge when said cartridge is disposed on said main frame, said main frame having disposed thereon operator controlled means for sliding said discharge assistant, said discharge assistant, when sliding in response to said operator controlled means, passing outwardly through one of the slots in said cartridge and moving the fastener which is disposed in the space related to the slot through which it slides radially outward in said space.

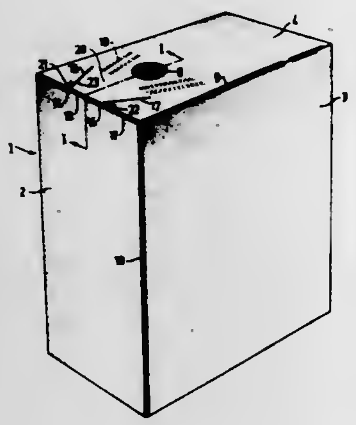
3,353,737
NAIL FEEDING MECHANISM FOR PNEUMATICALLY OPERABLE IMPACT TOOLS
Frank C. Howard, Wheeling, and Arthur Langas, Chicago, Ill., assignors to Signode Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516.325
10 Claims. (Cl. 227—136)



8. In a pneumatically operable nailing tool in combination a main cylinder having a side wall and upper and lower end walls, a piston axially reciprocable in the cylinder side wall between a retracted and an advanced position, valve means for selectively admitting air under working pressure to one end of the cylinder to drive the piston downwardly from its retracted position to its advanced position and for discharging air from said one end of the cylinder to permit return of the piston upwardly to its retracted position, a nail receiving magazine connected to the cylinder, means establishing a driver slot at the end of the magazine for receiving nails therefrom, a driver connected to the piston and in register with said driver slot for driving nails therefrom, a reciprocable trip latch movable toward and away from said driver slot for nail selecting and nail-impelling purposes respectively, means yieldingly biasing said trip latch toward said driver slot, a cylinder and plunger assembly operatively connected to said trip latch and effective upon application of air thereto to move the trip latch in a direction away

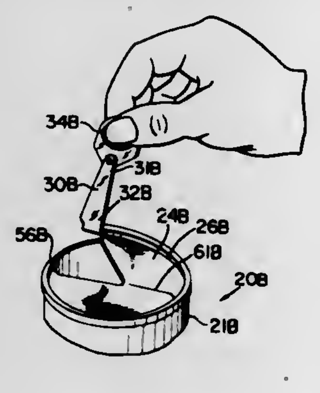
from the driver slot against the action of said biasing means, and means including a passage in one of the cylinder walls establishing communication between the other end of said cylinder and said cylinder and plunger assembly for supplying air to the latter at such time as the piston approaches its advanced position.

3,353,738
PACKAGE HAVING A SLIT FOLDING LINE FORMING A POURING EDGE
Jan-Erik Andreasson, Lund, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a Swedish company
Filed Feb. 8, 1966, Ser. No. 525,999
Claims priority, application Switzerland, Feb. 10, 1965, 1,775/65
5 Claims. (Cl. 229—7)



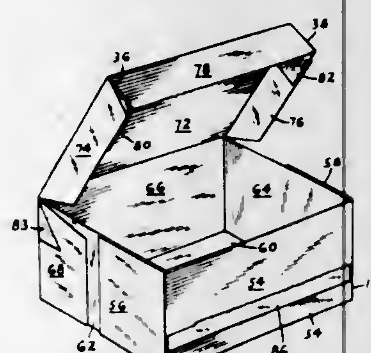
1. A package having at least two adjacent plane outer walls formed of relatively stiff material at substantially right angles to each other, a folding line between the adjacent edges of said two plane walls, means defining a pouring opening in one of said plane walls adjacent to but spaced a substantial distance from said folding line and a cut extending a substantial distance along said folding line adjacent to said means providing a pouring opening, said cut being adapted to provide a sharp edge at said folding line over which liquid may flow from said opening.

3,353,739
CONTAINER MEANS HAVING PULL-OFF WALL MEANS
Frank J. Schay, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,246
12 Claims. (Cl. 229—51)



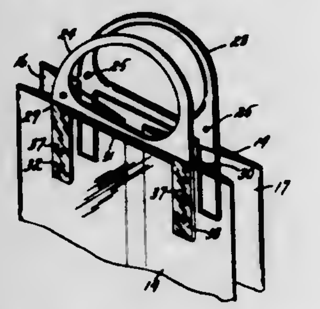
1. Container means comprising, first wall means defining a compartment and having first peripheral surface means defining large area access means therefor, pull-off wall means having second peripheral surface means corresponding in peripheral outline to said first peripheral surface means and having strip means comprising an integral part thereof, said strip means having a severable inner portion adapted to have pull means fastened thereto and an attached outer portion which remains attached to said pull-off wall means adjacent said second peripheral surface means upon severing said strip means, fastening means for fastening said wall means together by fastening said surface means together at an infinite number of independent fastening positions therealong, wherein said attached outer portion enables said strip means to be used to apply a concentrated pulling force the effect of which is to first pull a portion of said pull-off wall means free adjacent the initial position of said attached outer portion and with continued application of said pulling force said pull-off wall means is pulled free in a progressive manner at each of said fastening positions, and pull means having inner end means fixed to said inner portion to enable easier severing of said strip means, said strip means being defined by substantially U-shaped score means arranged in said pull-off wall means with its outwardly extending legs substantially transverse to said second peripheral surface means and the strip portion between the terminal ends of said outwardly extending legs defining said attached outer portion.

3,353,740
RECLOSABLE CARTON
Eric B. Outwater, New York, N.Y., assignor to International Paper Company, New York, N.Y., a company of New York
Filed Dec. 28, 1965, Ser. No. 517,028
2 Claims. (Cl. 229—51)



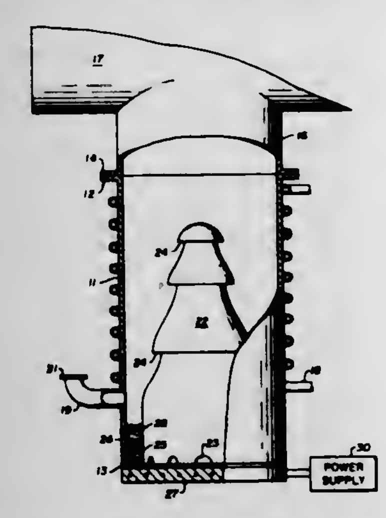
1. A tamperproof, reclosable, collapsible carton container for ice cream and other products, said carton being formed of a single blank suitably cut and scored to provide hingedly connected front, rear and bottom panels, a pair of inner end panel flaps connected to opposite end edges of said bottom panel, a pair of front panel flaps hingedly connected to opposite end edges of said front panel, a pair of rear panel flaps hingedly connected to opposite end edges of said rear panel, a cover panel hingedly connected to the upper edge of said rear panel, a pair of cover panel flaps hingedly connected to opposite end edges of said cover panel, a closure panel hingedly connected to the front edge of said cover panel, and a pair of closure panel flaps hingedly connected to opposite end edges of said closure panel, said front and rear panel flaps at each end of the carton being adhered to said inner end panel flaps and extending towards each other but ending in a spaced apart non-abutting relation, said closure panel flaps being adhesively secured in face to face relation with said cover panel flaps to connect said closure panel and cover panel flaps at their adjacent edges, said closure panel having vertically spaced fracturing scores positioned below said closure panel flaps and extending throughout the length of said closure panel, said closure panel also having a lower portion beneath the lower of said fracturing scores which portion is adhesively secured to said front panel.

3,353,741
HANDLE FOR SYNTHETIC RESINOUS BAGS
Seymour Kamins, Oceanside, and Norman Rosenberg, Bayside, N.Y., assignors to C-Thru Products Inc., Brooklyn, N.Y., a corporation of New York
Filed Aug. 9, 1965, Ser. No. 478,213
1 Claim. (Cl. 229—54)



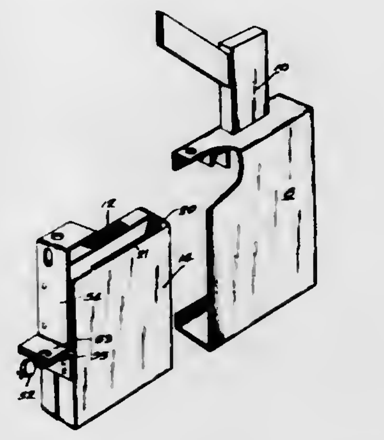
In a bag of thin flexible synthetic resinous sheet material having a mouth defined by two opposed walls, and a pair of synthetic resinous handle members each interconnected to one of said walls, said handle members having means for mutual interconnection, the improvement comprising: said handle elements each having a base member, said base member being interconnected substantially at an upper edge portion of a respective wall and confined to a relatively central portion thereof, said base portion having first and second ends; a leg portion extending downwardly from each of said first and second ends a distance sufficient to resist vertical strain on said bag and disposed in coplanar integral relation with respect to said base portion; said leg portions and base portion being interconnected to a planar surface of a corresponding wall as a result of heat-sealing, the interconnection of each of said leg portions being in the form of an elongated bar seal the axis of which is parallel to the axis of said leg portion; said base member being interconnected to a respective wall by a bar seal the axis of which is perpendicular to the axis of the bar seals between said leg portions and said respective walls.

3,353,742
BACK-STREAMING CONTROL IN A DIFFUSION PUMP
Thomas E. Bowman, Berkeley, and Patrick B. Kennedy, El Cerrito, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 14, 1965, Ser. No. 496,202
1 Claim. (Cl. 230—101)



A diffusion pump having an outer shell with a pumping fluid disposed therein together with means for heating said fluid and having an inner tubulation forming at least one vapor jet directed towards said shell and away from the region to be evacuated and wherein said pumping fluid in the annular space between said shell and said tubulation is exposed to said region to be evacuated comprising; a filling of loose granular material disposed in the lower portion of said pump at least in said annular space and exposed directly to said region to be evacuated between said tubulation and said outer shell and extending to a depth greater than the depth of said pumping fluid therein whereby back-streaming is reduced.

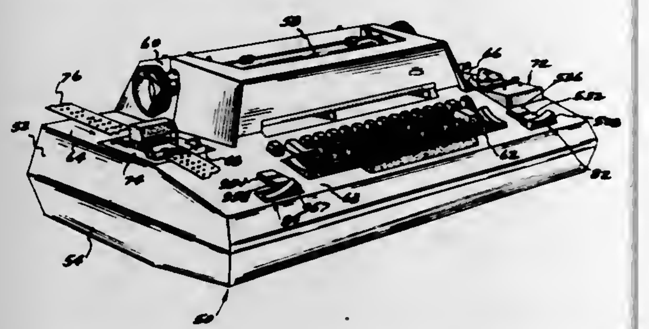
3,353,743
SELF-LOCKING COIN BOX
Ralph D. Amundsen, La Crosse, Wis., assignor to La Crosse Cooler Company, La Crosse, Wis., a corporation of Wisconsin
Filed Dec. 30, 1965, Ser. No. 517,577
1 Claim. (Cl. 232—15)



A portable coin box self-locking on removal of a receiving compartment into which the coin box may be inserted, said coin box comprising a container having mating sections having complementary portions together providing a coin admission slot, one section having a slot for the lock-lever-actuating finger hereinafter mentioned, the latter section having a wall portion and a partition spaced therefrom disposed in a plane in said slots, a lock lever disposed between said wall and partition and provided at an upper free end with the aforesaid actuating finger, a flange fixed to the lock lever near the finger and projecting across the partition to a position in which it is registrable with the coin admission slot, the lock lever being provided with a fulcrum upon which it is movable between a first slot-obstructing position and a second position in which the slot is open, the lock lever being provided at its lower end with a cam margin terminating in a shoulder, a latch lever disposed between the partition and the said wall and provided with a fulcrum and having an upper free end provided with a hook releasably engageable with said shoulder for holding the lock lever in said first position in which said flange obstructs the coin admission slot, means for biasing the lock lever and the latch lever toward the respective positions in which the hook is engaged with said shoulder, the latch lever having means to which the partition provides access for manipulation of the latch lever into position to its bias to release its hooked end from said shoulder, said means being accessible only on separation of said sections, and a detent for holding the latch lever cocked in a position in which the hook at its free end is precluded from engagement with said shoulder, said detent comprising a third lever mounted between the partition and said wall and having a notch in which the hook at the end of the latch lever is releasably engageable, the shoulder of the lock lever being engageable with the detent lever to release the latch lever from the detent lever when the lock lever is displaced against its spring bias from its said slot-obstructing position, the said compartment having means engaged by the finger upon insertion of the coin box for the oscillation of the lock lever to its last mentioned position and for thereby releasing the latch lever from its cocked position as aforesaid so that, upon return of the lock lever to a slot-obstructing position, the latch lever hook will engage the shoulder to obstruct the slot.

3,353,744
WRITING SYSTEM

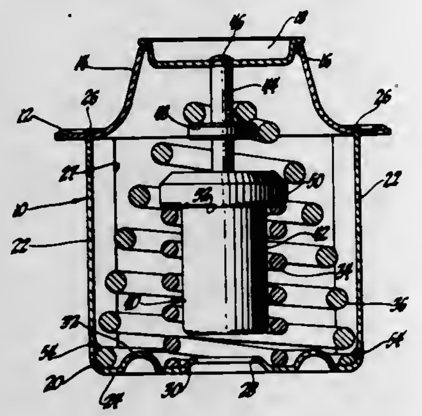
Paul E. Becking, Lake Orion, James D. Bungard, East Detroit, and Donald J. McCormick, St. Clair Shores, Mich., assignors to Dura Corporation, a wholly owned subsidiary of Walter Kidde & Company, Inc., Oak Park, Mich., a corporation of New York
Continuation of application Ser. No. 227,767, Oct. 2, 1962. This application June 7, 1966, Ser. No. 559,038
19 Claims. (Cl. 234—54)



1. Punch mechanism comprising a punch plate having a series of punch guide holes formed therein, punch means mounted in each of said guide holes for reciprocable movement between a non-coding position and a coding position, said punch means having axially elongated drive slots formed intermediate the ends thereof, individual drive means for mechanically actuating said punch means between said positions by selective driving engagement with said punch means in said drive slots, abutment portions formed on said drive means by stepped surfaces and being received in said drive slots, and a common operating means to vary the location of said abutment portions in said drive slots between a position whereat one of said stepped surfaces is located in said drive slots to engage said punch means and cause reciprocable actuation thereof and a position whereat one of said stepped surfaces is withdrawn from said drive slots for disengagement relative to said punch means and to prevent driving engagement therebetween.

3,353,745
POPPET VALVE THERMOSTAT COMPENSATED AS TO PRESSURE

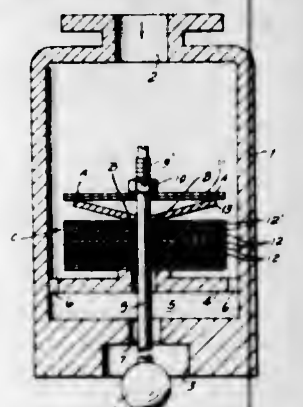
Paul K. Beatenbough, Medina, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 12, 1965, Ser. No. 507,393
7 Claims. (Cl. 236—34)



1. A thermostat valve assembly comprising a supporting flange element having a valve seat defining a discharge port for a fluid, a bracket fixed to said flange element and presenting an open structure defining an inlet for said fluid and including a plate spaced from said flange element, a valve arranged to seat on said valve seat on one side of said discharge port, a thermo-sensitive motor arranged on the other side of said discharge port and having telescopically arranged parts adaptable cooperatively to develop a force upon an increase in temperature, one of said parts being fixed to said valve to apply said force to the latter and the other being located between said supporting flange and said plate and movable to and from the latter first spring means urging said valve and said one of said motor parts against said force and toward said plate to close said discharge port, and second spring means being in compression between said other motor part and said plate urging both of the said motor parts and the said valve away from said plate.

3,353,746
THERMOSTATICALLY CONTROLLED VALVE FOR A STEAM TRAP OR THE LIKE

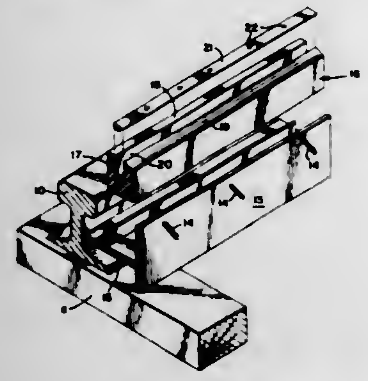
Werner Föller, Frankenthal, Pfalz, Germany, assignor to Klein, Schanzlin and Becker Aktiengesellschaft, Frankenthal, Pfalz, Germany
Filed July 22, 1965, Ser. No. 473,938
Claims priority, application Germany, July 24, 1964, K 53,560
10 Claims. (Cl. 236—59)



1. In a thermostatically controlled valve for a steam trap having a valve seat and a valve body to be moved against the pressure of a fluid flowing to the valve seat, in combination, a stationary abutment member upstream of said valve seat; a movable abutment member upstream of said valve seat, spaced from said stationary abutment member and connected to said valve body; and a column of superimposed elements located between said abutment members in the path of fluid flowing to said valve seat, said column engaging with opposite ends said abutment members, respectively, and said superimposed elements comprising a plurality of pairs of bimetal members curving in opposite direction during increase of the temperature of the fluid flowing to said valve seat, a single bimetal member adjacent one of the members of one pair of said bimetal members and curving during increase of the temperature of the fluid in the same direction as said one member of said one pair of members, and a preformed substantially conically shaped spring member sandwiched between said single bimetal member and said one bimetal member in such a manner that said spring member will contact with radially inner portions thereof the convexly curving surface of one of said bimetal members adjacent thereto and with radially outer surface portions thereof the concavely curving surface of the other of said bimetal members adjacent thereto, said column expanding during rise of the temperature of the fluid flowing to said valve seat to move at a predetermined temperature said valve body in engagement with said valve seat and to flex during further rise of the temperature said spring member to an increasing extent to and beyond a flat position so that said radially outer and said radially inner contact portions will move toward each other, whereby the stiffness of said spring member and the pressure at which said valve body is pressed against said valve seat is increased during rise of the temperature of the fluid and vice versa.

3,353,747
RAILWAY CROSSING

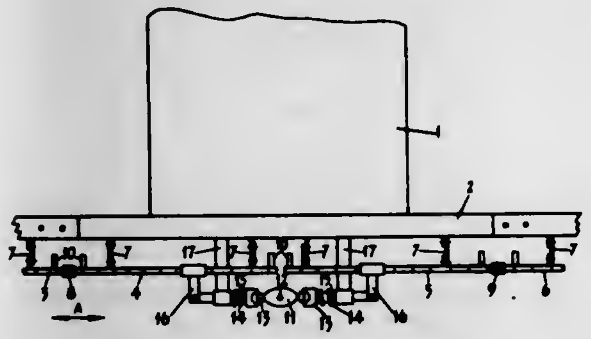
Paul Speer, Dallas, Tex., assignor to Speer Filler Strip Company, a corporation of Illinois
Filed Oct. 22, 1965, Ser. No. 502,235
10 Claims. (Cl. 238—8)



1. An improved rail crossing comprising, in combination, a rail providing a guide for a flanged wheel, a side wall disposed parallel to said rail, a bottom wall forming with said side wall and said rail an elongated narrow space into which the wheel flange passes, an elongated elastic strip disposed lengthwise in said space and resting on said bottom wall, said strip having therein a longitudinal channel opening at its top side, said strip having substantially U-shaped cross section with legs extending upwardly on both sides of said channel, each of said legs extending at least as high as the top of said rail.

3,353,748
VIBRATING DISTRIBUTOR BAR FOR AGRICULTURAL CHEMICALS

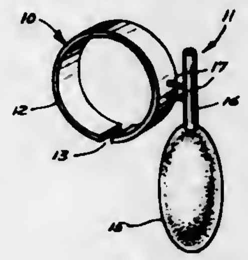
David Alan Harris, Fernhurst, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Dec. 30, 1964, Ser. No. 422,284
Claims priority, application Great Britain, Aug. 14, 1961, 29,244/61
8 Claims. (Cl. 239—102)



1. A sprinkler apparatus for distributing crop treating liquid compositions comprising a distributor having a liquid supply inlet and a plurality of liquid discharge orifices, said liquid discharge orifices having a diameter within the range of 0.01 to 0.125 inch, and said orifices being inclined at an angle between 0 and 90° below the horizontal, and means to reciprocate said distributor within an amplitude range of about ⅛ to about ½ inch at a frequency within the range of at least about 500 to about 3000 vibrations per minute to produce a continuous stream of relatively coarse liquid droplets having diameters such that the droplets are sufficiently large to avoid spray drift.

3,353,749
DEFENSE RING

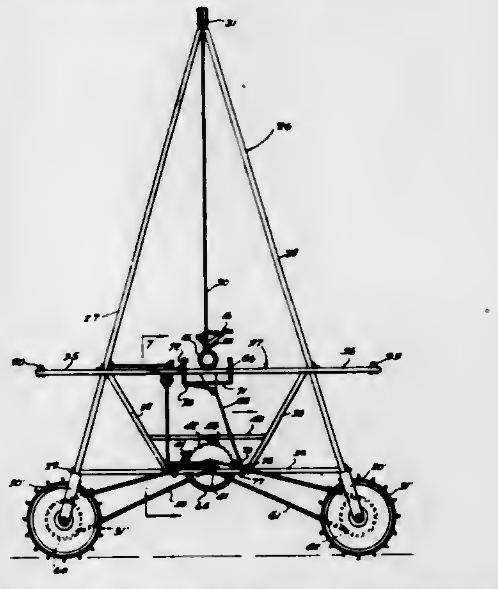
Henry A. Lahaug, P.O. Box 852, Jamestown, N. Dak. 58401
Filed Oct. 22, 1965, Ser. No. 500,693
2 Claims. (Cl. 239—154)



1. A defense ring or the like including:
(a) a ring portion arranged to be worn on a user's finger having:
    (1) a pair of receiving apertures arranged in side by side relation and extending outwardly through the band of the ring;
(b) a spray device including:
    (1) a compressible bulb portion provided for housing an amount of material to be sprayed therein;
    (2) a nozzle member arranged for directing the material from said bulb; and
    (3) a pair of outwardly extending capturing members on said nozzle in generally side by side relation receivable into said apertures of said band for attaching the spraying section to said band.

3,353,750
SELF-PROPELLED IRRIGATION SYSTEM OF THE RECIPROCABLE CABLE TYPE

Leo J. Dowd, 117 South Parkway, Columbus, Nebr. 68601
Filed Oct. 15, 1965, Ser. No. 496,380
8 Claims. (Cl. 239—177)

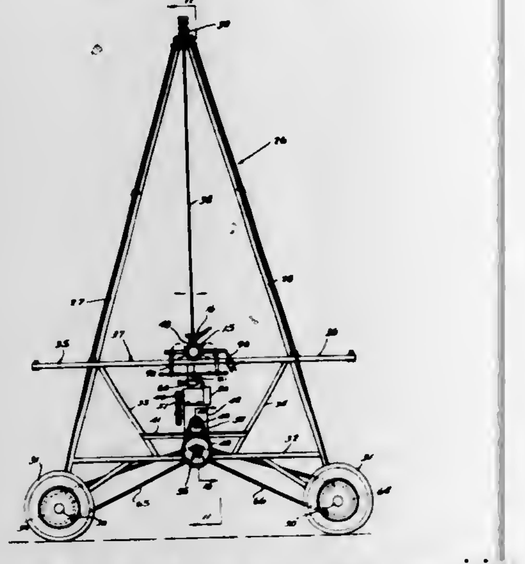


1. A self-propelled irrigation system comprising an upstanding water-supply conduit, an elongated horizontally-disposed water-distributing pipe having one end pivotally-connected to said supply conduit for movement of said distributing pipe about said supply conduit as an axis, a main mobile support disposed transversely of said distributing pipe adjacent the other end thereof and fixedly-carrying said distributing pipe, a plurality of discharge nozzles spaced along said distributing pipe between the ends thereof for spraying water onto the land as said distributing pipe moves about said supply conduit as an axis, a plurality of intermediate mobile supports arranged transversely of and at spaced locations along said distributing pipe between said main support and said one end of said pipe, means on each intermediate support for supporting the adjacent portion of said distributing pipe, a main ratchet wheel drive

means on said main support, a subsidiary ratchet wheel drive means on each of said intermediate supports, a flexible member disposed on one side of and in spaced relation with respect to said distributing pipe and having one end operatively-connected to said supply conduit and having the other end operatively-connected to the other end of said distributing pipe means for longitudinally reciprocating said flexible member in a path parallel to said distributing pipe, means drivingly-connecting each of said main and said subsidiary ratchet wheel drive means to said reciprocable flexible member including a ratchet wheel drive pawl, and a control means operatively-connected to the drive pawl of each subsidiary ratchet wheel drive means and operable to activate the ratchet wheel and the attendant drive means of an intermediate support in accordance with lagging of and out of longitudinal alignment of said intermediate support with the main support and the other intermediate supports, and operable to deactivate the drive pawl and the attendant drive means of said intermediate support in accordance with restoration of said intermediate support to the position of longitudinal alignment with the main support and the other intermediate supports.

3,353,751
SELF-PROPELLED IRRIGATION APPARATUS

Leo J. Dowd, 117 South Parkway,
Columbus, Nebr. 68601
Filed Aug. 6, 1965, Ser. No. 477,752
3 Claims. (Cl. 239—177)



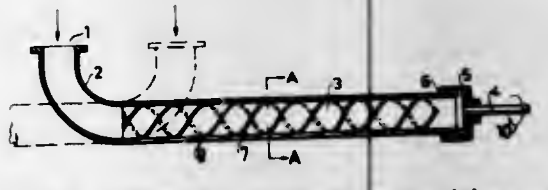
1. A self-propelled irrigation apparatus comprising an upstanding water supply pipe, an elongated horizontally disposed water distributing pipe having one end pivotally connected to said supply pipe for movement of said distributing pipe about said supply pipe as an axis, a main mobile support disposed transversely of said distributing pipe adjacent the other end thereof and fixedly carrying said distributing pipe, a plurality of discharge nozzles spaced along said distributing pipe between its ends for spraying water onto the land as the distributing pipe moves about said supply pipe as an axis, a plurality of intermediate mobile supports arranged transversely of and at spaced positions along said distributing pipe, means on each intermediate support suspendingly supporting the adjacent portion of said distributing pipe, an upstanding frame rising from said support, a pendulum within and having the upper end pivotally supported from said frame and having the lower end pivotally connected to the adjacent portion of said distributing pipe, electric motor drive means on each intermediate support, a control element operatively connected to the electric motor of each intermediate support and operable to energize the electric motor and activate its intended drive means in accordance with lagging behind of the intermediate support and to de-energize the electric motor and stop its intended drive means in accordance with restoration of said intermediate support to a position of alignment with said main support, and actuating means operatively-connected to the control element on each intermediate support, said actuating means comprising a pair of upstanding levers disposed within the frame of each intermediate support and on opposed sides of and spaced from said distributing pipe and connected to the frame for pivotal movement together about spaced horizontal axes between the upstanding position and positions sloping from one or the other side of their axes, and means connecting the adjacent control element to said pair of levers for movement with the latter levers, one of the levers of each pair being in bearing contact with said distributing pipe upon execution of the movement of the pair of levers to one side of their axes to shift the control elements to energize the electric motor and activate its attendant drive means in accordance with lagging behind of the intermediate support and the other of the levers of each pair being in bearing contact with said distributing pipe upon execution of the movement of the pair of levers to the other side of their axes to shift the control element to de-energize the electric motor and stop its attendant drive means in accordance with restoration of the intermediate support to a position of alignment with said main support.

ERRATUM

For Class 239—417.3 see:
Patent No. 3,353,257

3,353,752
LIQUID SPRAYING OR SCREENING DEVICE

Ernst Gustaf Rane Ranhagen and Erik Gustaf Ranhagen, Danderyd, Sweden, assignors to Aktiebolaget Karlstads Mekaniska Werkstad, Karlstad, Sweden, a joint-stock company of Sweden
Filed June 17, 1964, Ser. No. 375,882
Claims priority, application Sweden, June 19, 1963, 6,845/63
1 Claim. (Cl. 239—538)



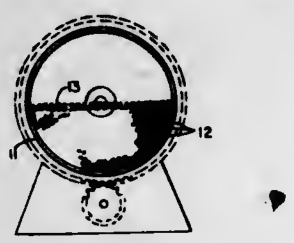
A screening device for a liquid comprising an outer cylindrical shell having a closed end, an inner cylindrical shell mounted within the outer shell in sealed contact therewith, one of said shells having a plurality of helical slots, the other of the shells having a plurality of slots which are inclined with respect to the helical slots in the said one shell, means for providing relative rotation between said shells to cause said slots to successively register with one another, means for directing a liquid to be screened against a first of said shells such that liquid passes through the registered slots while solids in the liquid are screened by said shells and means for collecting the thus screened liquid.

3,353,753
CATHODE RAY TUBE MANUFACTURE

Edgar W. Wolfgram, Glen Ellyn, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed July 22, 1965, Ser. No. 474,081
14 Claims. (Cl. 241—15)

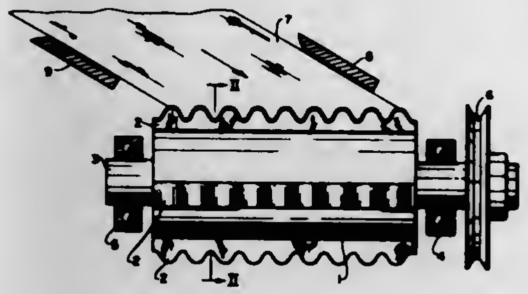
1. A method of preparing phosphor slurry for application to the screen of a color television picture tube, including the following steps: providing a rotatable mill having a chamber therein, partially filling the chamber with milling media having a first specific gravity, partially

filling the chamber with phosphor crystal charge of a second specific gravity and of a viscosity less than 8,000 centipoises, said first specific gravity having a ratio to said second specific gravity of between 0.7 to 1 and 1.5 to 1, and rotating the mill to wet and disperse the phosphor crystals in the charge and break up aggregates of such crystals.



3,353,754
PROCESS AND APPARATUS FOR CUTTING SYNTHETIC POLYMER SHEETS INTO CHIPS

James W. I. Heijnis and Aart C. Vrolijk, Arnhem, Netherlands, assignors to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Nov. 10, 1965, Ser. No. 507,091
Claims priority, application Netherlands, Nov. 25, 1964, 64—13,657
7 Claims. (Cl. 241—30)

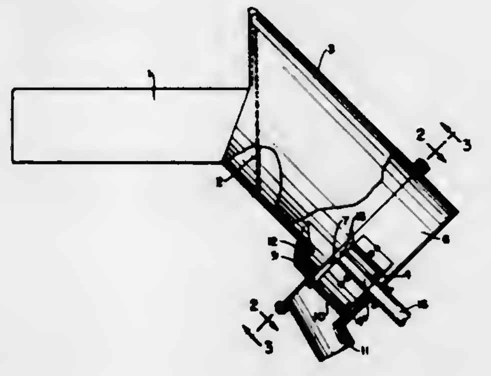


1. A method of cutting a continuously supplied plastic sheet into chips comprising feeding the sheet at an acute angle to stationary and rotatable knives having undulating cutting edges and maintaining the sheet's component of travel along the face of the stationary knife, between successive cuts, less than the depth of one of the stationary knife's undulations and maintaining the sheet's component of displacement over the knife's edge to about half the length of one of its undulations.

3,353,755
CUTTING MILL

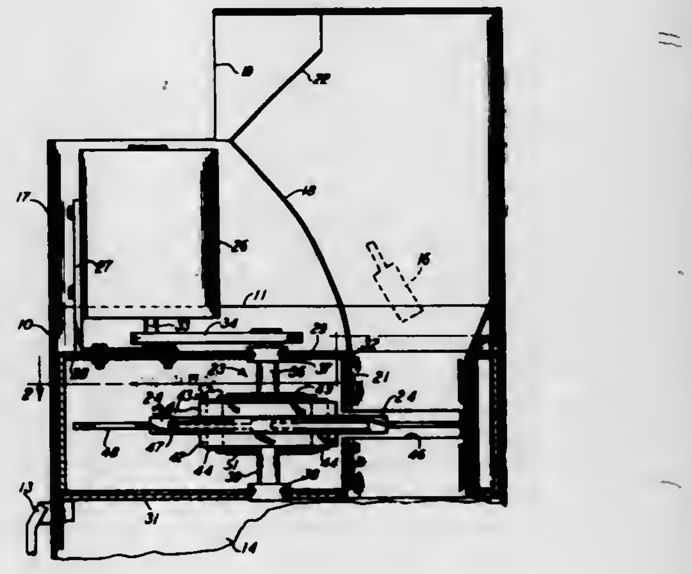
Walter Zimmermann, Goggingen, Germany, assignor to Alpine Aktiengesellschaft, Augsburg, Germany, a company of Germany
Filed Apr. 20, 1964, Ser. No. 361,615
7 Claims. (Cl. 241—73)

1. In a cutting mill for reducing the size of parts of material, particularly hollow bodies made of plastic or any other tough material, including a cylindrically shaped cutting chamber provided with spaced stator knives firmly mounted at the periphery thereof, a rotor fitted in the cutting chamber and equipped with cutting knives having cutting edges parallel to the axis of rotation of the rotor and cooperating with the stator knives, and a feeding funnel connected with the cutting chamber so as to feed the parts of material to be comminuted to the top face of said rotor, wherein the improvement comprises a cutting chamber having a diameter significantly larger than the diameter of the rotor for enabling the cutting-up of hollow bodies large-sized in relation to the rotor, the cutting chamber being provided with a recess in which the rotor is positioned, the rotor being located in such an eccentric position in the cutting chamber that, while the rotor is revolving, the outer edges of the knives fitted to said rotor, come into close relation to the interior wall of the cutting chamber said stator knives mounted in the cutting chamber extending in the direction of the rotor axis, one being provided on each side of the recess, and an outwardly bent sieve sheet located inside the recess between the two stator knives and arranged in concentric position with respect to the rotor.



3,353,756
BOTTLE BREAKER

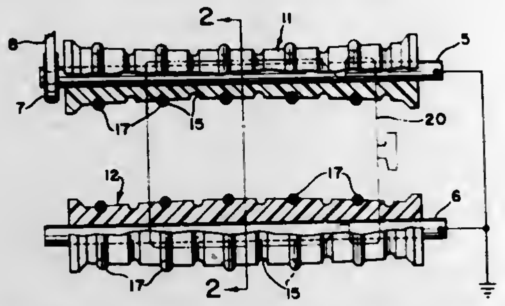
Donald J. Morgenson, Racine, Wis., assignor to Shatter King Mfg. Co. Inc., Racine, Wis., a corporation of Wisconsin
Filed Oct. 23, 1965, Ser. No. 502,975
5 Claims. (Cl. 241—99)



1. A bottle breaker comprising a rotatably mounted member, an arm pivotally carried by said member and with said arm extending to a radially outward position beyond the extent of said member and being fully retractable to a radially inward position in response to striking an unbreakable object, an enclosure disposed adjacent said arm and having an opening for receiving said arm when the latter is in the radially outward position and with said arm being clear of said enclosure and rotatable therepast with the rotation of said member when said arm is in the radially inward position, rotation mechanism connected to said member for rotating the latter, and a chute in registry with said enclosure for guiding into said enclosure bottles dropped into said chute.

3,353,757
MILL-JAR SUPPORT

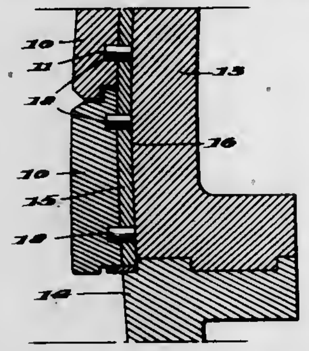
Alfred C. Coffman, Akron, Ohio, assignor, by mesne assignments, to U.S. Stoneware, Inc., a corporation of Massachusetts
Filed July 23, 1965, Ser. No. 474,393
5 Claims. (Cl. 241—176)



1. A mill-jar support and drive which comprise two horizontally spaced elastomer-covered metal rolls, the elastomer in at least one of which covers is electrically conductive, and longitudinally spaced wear-resistant elastomeric rings which stand out from the roll surfaces to support the jar, the rings being more abrasion resistant than the elastomeric cover but flattening under the weight of a jar so that the jar contacts the electrically conductive cover.

3,353,758
GYRATORY CRUSHER LINER

Henry P. Whaley, Aurora, Minn., and Gorden Felix Johnson, Pittsburgh, Pa., assignors to Erie Mining Company, Hoyt Lakes, Minn., a corporation of Minnesota
Filed Sept. 18, 1964, Ser. No. 397,376
4 Claims. (Cl. 241—300)

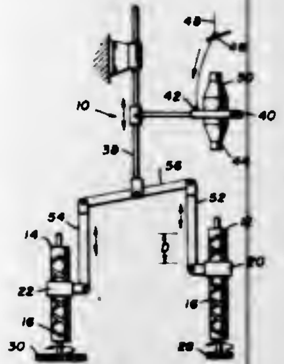


3. A gyratory crusher comprising (1) a crusher shell lined with (2) a plurality of courses of concaves, each concave consisting essentially of a heavy plate-like casting, curved conformably to the curvature of the inner surface of a crusher shell, said plate-like casting being provided with a plurality of cavities spaced about the convex side of the concave said cavities having a generally cylindrical cross-section and embracing relatively readily compressible spacing members, said spacing members extending beyond the convexly curved plane of the concave a predetermined distance to provide a relatively narrow space between concaves and crusher shell, and (3) a layer of castable backing material cast in situ in said narrow space between said concaves and said crusher shell.

3,353,759
DIFFERENTIAL TRAVERSE WINDING MECHANISM

Ernest M. Sternberg, Chapel Hill, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Original application Feb. 26, 1965, Ser. No. 435,636. Divided and this application Dec. 20, 1966, Ser. No. 603,350
7 Claims. (Cl. 242—26.1)

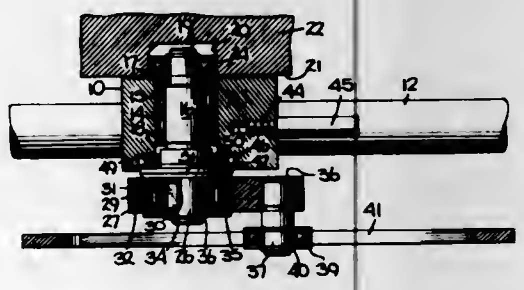
1. In a winding mechanism for use in strand winding operations, a traversing mechanism comprising a pair of reciprocably mounted input elements, means to reciprocate said elements through paths of pre-selected lengths at a pre-determined difference in velocities, said reciprocating means comprising a pair of rotatably mounted fishing-reel-type winding screws, each characterized by an endless, reverse helical groove formed along its surface, each of said input elements engaging one of said grooves to be urged therealong upon rotation of the screw to thereby describe said reciprocating paths, an output lever



means, linkage means interconnecting one end of said lever means with one of said input elements and operative to move said output lever means according to the individual movements of said pair of input elements, a reciprocably mounted strand traversing guide connecting said lever means at a point intermediate the ends thereof, whereby said traversing guide is caused to move in a direction and at a velocity according to the algebraic sum of the velocities of said input elements.

3,353,760
YARN WINDING APPARATUS

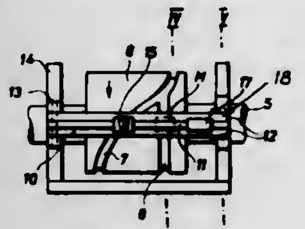
Gustav Brehm, Wattwil, Switzerland, assignor to Heberlein & Co. Ag., Wattwil, Switzerland, a corporation of Switzerland
Filed May 14, 1965, Ser. No. 455,853
Claims priority, application Switzerland, Oct. 13, 1964, 13,266/64
4 Claims. (Cl. 242—43)



1. Apparatus of the class described comprising, a grooved drum, means rotating said drum about its central longitudinal axis, a cross-head, yarn guide means carried by said cross-head, a shaft supporting said cross-head and having an eccentric pivot extending from one end and into the grove of said drum whereby rotation of said drum shifts said cross-head reciprocally, crank means comprising a lever and pin mounted on the other end of said shaft, a one-way clutch between said crank means and shaft to allow rotation of said shaft in one direction only, means including a plate formed with a slot angularly disposed relatively to said drum axis acting on said crank means to rotate said shaft through said clutch a desired annular distance upon each stroke of said cross-head, and brake means preventing undesirable rotation of said shaft, the braking force being greater than the rotational force exerted by said eccentric shaft pivot.

3,353,761
THREAD GUIDE ARRANGEMENT FOR A WINDING MACHINE

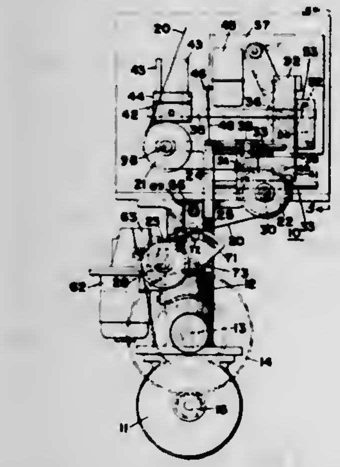
Felix Graf, Winterthur, Switzerland, assignor to Rieter Machine Works, Ltd., Winterthur, Switzerland, a corporation of Switzerland
Filed Mar. 11, 1966, Ser. No. 533,622
Claims priority, application Switzerland, July 30, 1965, 10,804/65
6 Claims. (Cl. 242—43)



1. A thread guide arrangement for a winding machine comprising
- a rotatable shaft,
- at least one drum mounted on said shaft, each said drum having a continuous undulating groove in the periphery thereof, and
- a guideway pivotally mounted adjacent each said drum in a horizontal plane passing through the axis of said shaft, said guideway including a longitudinally extending slot therein facing said drum for reciprocally guiding a thread guide therein, said slot having an enlarged opening near one end thereof for passage of a thread guide therethrough whereby a thread guide is positioned in said slot on pivotal movement of said guideway away from said drum and positioned in said groove on pivotal movement of said guideway towards said drum so as to be driven in reciprocating manner in said slot upon rotation of said drum.

3,353,762
WIRE-FEEDING AND TENSIONING APPARATUS

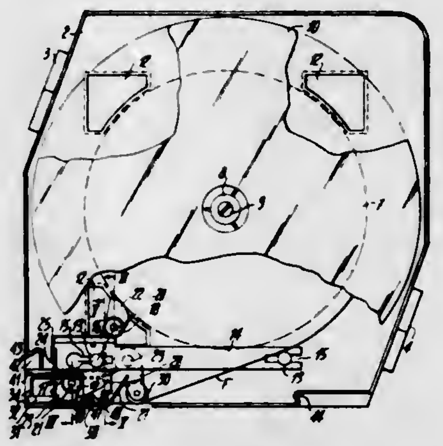
Louis A. Baselice, Turnersville, N.J., assignor to American Insulating Machinery Company, Philadelphia, Pa., a corporation of Pennsylvania
Original application Mar. 6, 1964, Ser. No. 350,034, now Patent No. 3,240,438, dated Mar. 15, 1966. Divided and this application Nov. 15, 1965, Ser. No. 513,897
2 Claims. (Cl. 242—45)



1. Wire-feeding and tensioning apparatus comprising
- a pair of pulleys rotatably mounted in fixed spaced position,
- a slide mounted for linear movement toward and from said pair of pulleys,
- a third pulley rotatably mounted on said slide and providing a loop in wire as pulled from one to the other of said pair of pulleys, the feeding tension on said wire tending to move the slide toward the other pulleys,
- speed-control means having a member movable to vary the speed at which the wire is pulled over said pulleys,
- an unbalanced lever mounted for angular movement about a fixed axis and coupled to said slide to provide a substantially constant bias tending to move the slide away from said pair of pulleys, and
- a second lever mounted for angular movement about a second fixed axis and interposed between said speed-control member and said unbalanced lever for multiplication of the force applied to said member as derived from change in position of said pulley-slide.

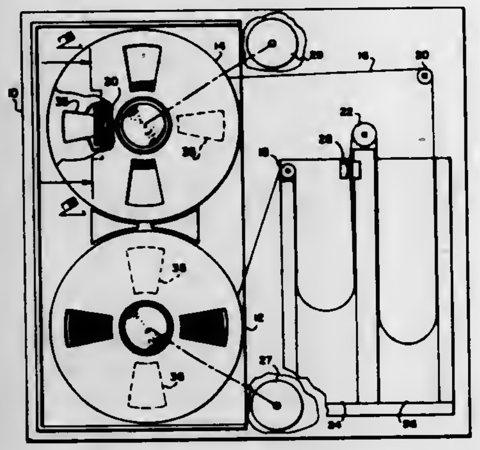
3,353,763
MEANS FOR LOCKING AND UNLOCKING THE SPOOL OF A FILM MAGAZINE

Bob Mouissie, Yverdon, Switzerland, assignor to Paillard S.A., Vaud, Switzerland, a corporation of Switzerland
Filed Oct. 21, 1965, Ser. No. 499,951
Claims priority, application Switzerland, June 24, 1965, 8,981/65
2 Claims. (Cl. 242—55.13)



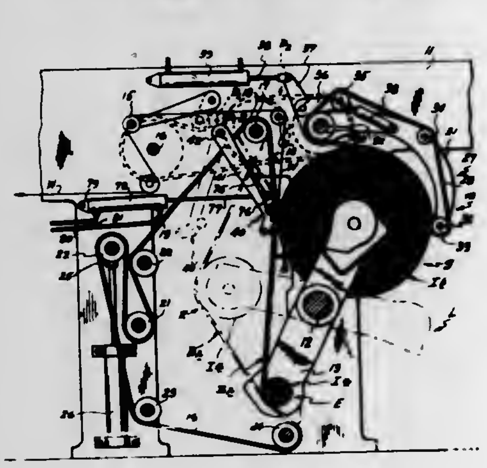
1. A magazine carrying a film spool and adapted to be fitted on a kinematographic projector provided with a pivotally carried roller, said roller adapted to engage the film on said spool when the magazine is in position on the projector and to urge the film out of the magazine, said projector also provided with a pusher member, said magazine comprising a casing adapted to be removably fitted on the projector, a spool revolvably carried by said casing, locking means carried by the casing and normally locking the spool against rotation, said locking means including a release member urged into operative position by engagement with said pusher member of the projector and adapted to automatically release the spool locking means upon fitting of the casing on the projector, guide means carried by the casing and guiding the free end of the film wound on the spool, a shoe normally holding said free end of the film against movement in its guide means and released by actuation of said release member simultaneously with release of the spool locking means, a feeler member mounted on the casing and bearing against the film so as to be subject to displacement due to tensioning of the film, latch means carried by said feeler for retaining the release member in its operative position, the tensioning of the film at the end of its projection urging the projector roller which is in engagement therewith into an inoperative position and releasing the feeler and the latch means carried by the feeler to thereby allow the release member of said locking means to return to its inoperative position whereby said spool is locked against rotation.

3,353,764
LOW TAPE SENSING APPARATUS
Richard L. Walker, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed May 25, 1966, Ser. No. 552,733
7 Claims. (Cl. 242—57)



1. A tape sensing apparatus comprising: a tape reel having first and second sidewalls; a reflected marker mounted on the inside of said first side wall of said reel, said marker being positioned so that it is covered when a predetermined quantity of tape is wound on said reel; a light source, said source being mounted adjacent said reel and directing light toward said marker, said light striking said marker when less than said predetermined quantity of tape is wound on said reel; and a light sensor mounted adjacent said reel and arranged so that light from said source is reflected from said marker to said sensor when less than said predetermined quantity of tape is wound on said reel.

3,353,765
PASTING ROLLERS FOR SPLICING ROLLSTAND
William F. Huck, 81 Greenway Terrace, Forest Hills, N.Y. 11375
Filed Sept. 7, 1965, Ser. No. 485,335
13 Claims. (Cl. 242—58.3)



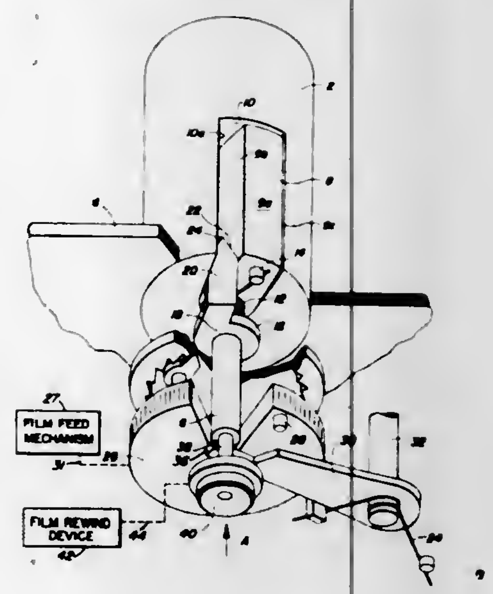
1. In a splicing rollstand for delivering a web continuously from one supply roll after another, including means for supporting a new web supply roll adjacent to a run of a web which is being unwound from an expiring web supply roll and is to be spliced to the periphery of the new roll,

the combination of means including a web positioning surface at the side of said web run away from said new roll for pressing together said web run and said periphery along a region of contact extending parallel to the axis of said new roll, to form a splice joining the same, and means for moving said surface in the direction of movement of the unwinding web run in said region, and at substantially the speed of such movement, as said web run and said new roll are pressed together, whereby said web run is spliced to the new roll without being braked by the pressure of said web positioning surface,

wherein said means for pressing together said web run and said periphery of the new roll incluces at least one roller extending generally parallel to the axis of said new roll, said means for moving the web positioning surface includes at least one drive belt in driving engagement with said roller to effect rotation thereof, and

said roller has a circumferential recess to receive said drive belt at the side of said roller facing toward said web run so that at least a portion of said web positioning surface is defined by the drive belt in said recess.

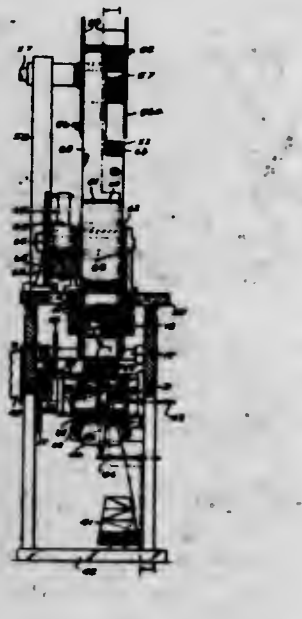
3,353,766
MEANS FOR RETAINING A FILM TO A CAMERA TAKE-UP SPOOL
Horst Simon, Fellbach, near Stuttgart, Germany, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 4, 1966, Ser. No. 547,520
Claims priority, application Germany, May 6, 1965, K 56,025
9 Claims. (Cl. 242—74.2)



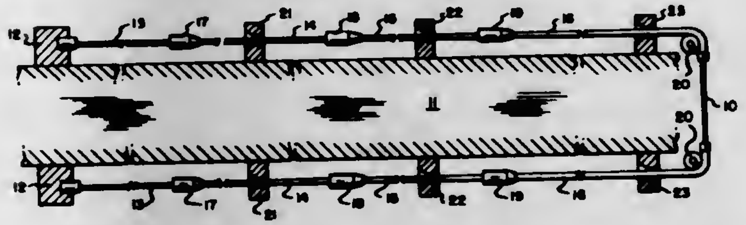
8. In a photographic or cinematographic camera having a film-feed mechanism for advancing film, the combination comprising: a take-up spool adapted to have film wound thereon during operation of the film-feed mechanism; film-retaining means operatively associated with said take-up spool for retaining the end of a film to said take-up spool; means for rendering said film-retaining means ineffective to retain a film end; and means for rendering said film-retaining means effective to retain a film in response to operation of the film-feed mechanism.

3,353,767
YARN PACKAGE
James R. Hodges, Green Acres, and Steve E. Zeis, Wilmington, Del., assignors to Joseph Bancroft & Sons Co., Wilmington, Del., a corporation of Delaware
Original application Aug. 3, 1965, Ser. No. 476,981. Divided and this application Dec. 21, 1966, Ser. No. 619,099
2 Claims. (Cl. 242—159)

1. A yarn package comprising a compact core of yarn, said core having an elongated cross-section, said yarn being laid in said core in the form of successive layers, each layer extending transversely of said core and being composed of a succession of overlapped, shingled portions.



3,353,768
ENERGY ABSORBING SYSTEM
Vincent C. J. Peterson, Huntingdon Valley, Pa., assignor to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 23, 1965, Ser. No. 515,979
2 Claims. (Cl. 244—110)



1. In apparatus for absorbing kinetic energy including anchorage means and load receiving means displaceable from an initial position with respect thereto, an improved energy absorbing device interconnecting the load receiving and anchorage means comprising

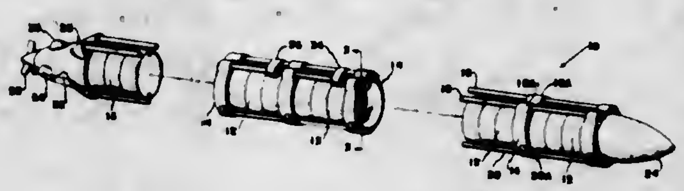
(a) a plurality of extensible cables capable of differing amounts of elongation under a given tensile load and joined end-to-end from the load receiving means to the anchorage means in order of ease of extensibility with the more easily extensible cable remote from the load receiving means, and

(b) stop means for preventing the more easily extensible cable or cables from elongating beyond the breaking point without interfering with the elongation of the less easily extensible cable or cables comprising

(i) respective fittings at the juncture between each cable and the adjoining less easily extensible cable, and

(ii) respective fixed stops positioned adjacent each such adjoining cable and configured to prevent movement of the associated fitting past the stop, each stop prior to application of the load being spaced along said adjoining cable from the associated fitting a distance less than the cumulative ultimate extensibility of the cable or cables extending from the anchorage means to said adjoining cable.

3,353,769
SPRAY APPARATUS FOR USE WITH AIRCRAFT
Harry T. Kifor, Canton, Ohio, and Orley R. Bourland, Jr., Walkersville, Md.; said Kifor assignor to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware, and said Bourland assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 10, 1965, Ser. No. 486,441
7 Claims. (Cl. 244—136)



1. In a spray tank apparatus for use with aircraft, the combination of

a plurality of cylindrically shaped tank drum shipping containers for liquid,

circular ring means clamping the containers in aligned end to end relationship,

frame means connecting and supporting the ring means,

an aerodynamically faired ram air turbine connected to the frame means at one end of the aligned containers, and driven by passing through the earth's atmosphere,

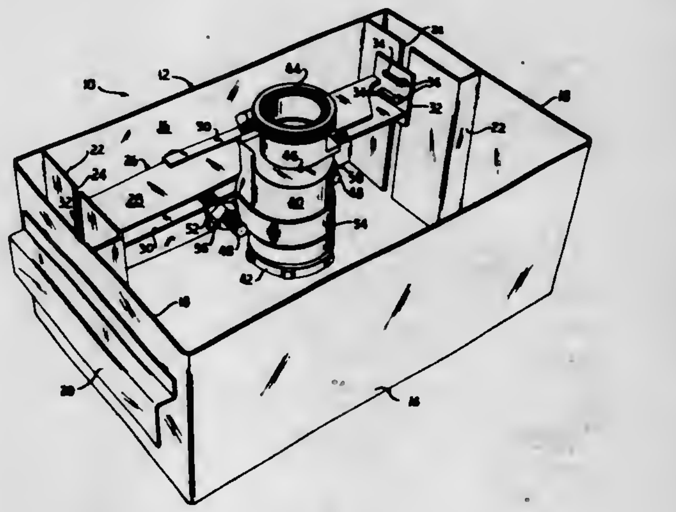
an air compressor mounted in aerodynamically faired relation to the turbine and driven thereby,

means to selectively introduce the air produced by the compressor into the containers,

spray nozzles associated with each container and coordinated with the selective introduction of air into the respective containers to discharge liquid from the containers in a spray, and

aerodynamic fairing means connected to the other end of the aligned containers to stabilize the aerodynamic flight characteristics of the apparatus.

3,353,770
UNIVERSAL PUMP BOX APPARATUS
Werner Sondheim, Memphis, Tenn., assignor to Permco Corporation, Memphis, Tenn., a corporation of Tennessee
Filed Oct. 21, 1966, Ser. No. 588,515
10 Claims. (Cl. 248—1)



1. Pump box apparatus comprising:

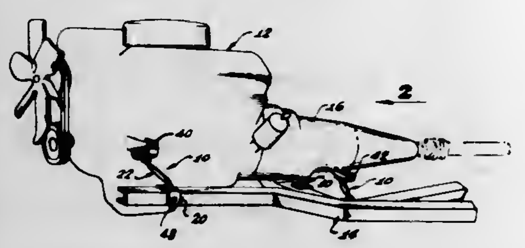
a housing,

a mounting rail,

means for adjustably securing said mounting rail to said housing to permit adjustment of said rail in any of two different directions, and means for adjustably securing a safety valve to said mounting rail, said valve-securing means being adjustable along the rail in a third direction whereby the position of a valve carried by the valve-securing means is adjustable in any of the three directions.

3,353,771
UNIVERSAL ENGINE MOUNT AND METHOD OF MOUNTING ENGINE

Clem Te Bow, Panorama City, Calif., assignor to C-T Automotive, Inc., North Hollywood, Calif., a corporation of California
Filed Dec. 30, 1965, Ser. No. 517,772
4 Claims. (Cl. 248—3)

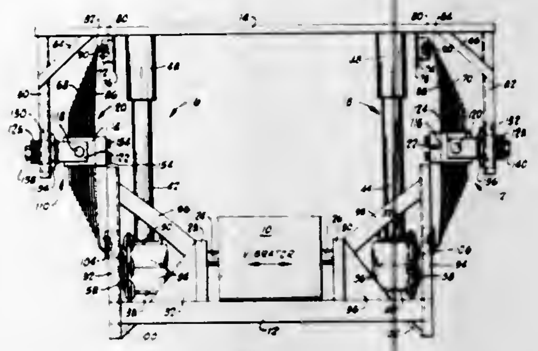


1. In combination with an engine and a supporting frame, means for mounting the engine on the frame including a plurality of spaced load-supporting mounts disposed, at least one each on opposite sides of the engine assembly, said mounts comprising:
first mounting brackets secured to said engine;
second mounting brackets secured to said frame;
elongated tubular sleeve assemblies, each including a pair of telescopically connected tubes and arranged for free elongation and retraction;
first universal joints connecting one of the ends of said sleeve assemblies to their associated first brackets;
second universal joints connecting the opposite ends of said sleeve assemblies to their associated second brackets;
whereby during installation of said mounts, said brackets are movable on said universal joints, and said pair of tubes are extensible and retractable for positioning the engine brackets and the frame brackets at the locations on the engine and frame to which they are secured, said tubes may be locked in position, and said universal joints may be locked in position;
means locking the members of each of said sleeve assemblies against movement relative to one another; and
means locking said universal joints from movement with relation to said tubes, to said brackets, and to one another, whereby a rigid connection is established between respective engine and frame brackets.

3,353,772
POSITIONING AND ISOLATION APPARATUS FOR A HORIZONTAL VIBRATOR

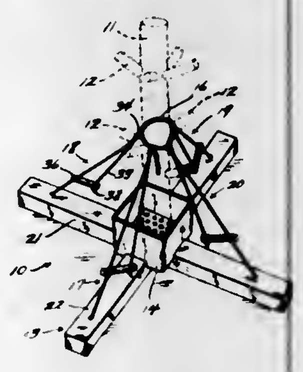
Delbert W. Fair and J. H. Miller, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Apr. 13, 1966, Ser. No. 542,315
9 Claims. (Cl. 248—20)

1. Apparatus for positioning and isolating a horizontal vibrator comprising:
a baseplate supporting the vibrator for coupling horizontal vibrations into an earth medium;
positioning mass means for bearing downward upon said base plate to insure firm positioning upon said earth medium; and
a pair of leaf spring means having their respective centers affixed to said positioning mass and being oppositely oriented with the upper ends of each spring means bearing upon said mass means and the lower ends of said spring means bearing upon said vibrator means to isolate the positioning mass from horizontal vibrations.



3,353,773
DECORATIVE CUT TREE HOLDER

James M. Budd, 518 N. 7th, Osage, Iowa 50461
Filed Sept. 10, 1965, Ser. No. 486,508
4 Claims. (Cl. 248—44)

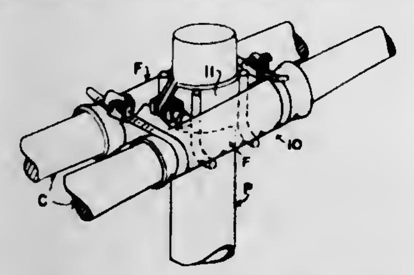


3. A holder for decorative cut trees and the like comprising in combination:
a base having a fluid tight, open top, water receptacle integrally formed therein for receiving within said receptacle the lower end of the trunk of a tree;
clamp means including a flexible member adapted to embrace the trunk of the tree above said base;
guy means including a plurality of elongated, flexible members extended in an arcuately spaced symmetrical manner between said clamp means and said base, each member doubled upon itself, said guy means including further a connector for each member, with the free end of each member connected to one end of said connector, and the portion of each said member between said base and said clamp means slidably inserted through the other end of said connector; and
means within said receptacle for gripping the trunk at the undersurface of the base thereof.

3,353,774
FASTENING DEVICES

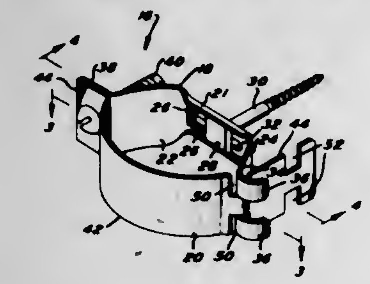
Robert Albert Thomas, Kortrijk, Belgium, assignor to Trefileries Leon Bekaert, PVBA, Zwevegem, Belgium
Filed Aug. 30, 1965, Ser. No. 483,671
Claims priority, application Netherlands, Oct. 15, 1964, 64—11,986
10 Claims. (Cl. 248—58)

1. A device for fastening cable means to a pole, comprising clamping means to engage around said pole and tightening means adapted to hold said clamping means in tight engagement with said pole, supporting means secured to said clamping means on respective opposite wall portions thereof, a casing comprisng two mating portions which together are adapted to embrace said cable means, one of said mating portions being rigidly secured to one of said supporting means, said mating portions being provided with at least one pair of longitudinal mating edges having interengaging oblique serrations, adjustable tensionable means, the other of said mating portions being held in engagement with said one of said mating portions by said tensionable means when said mating portions embrace said cable means and said tensionable means being adapted to be releasable when a pre-determined maximum tension is exceeded.



3,353,775
CONDUIT BRACKET

Carl J. Sebo, Clarks Summit, Pa., assignor to Atlas Electrical Fittings Co., Scranton, Pa., a corporation of Pennsylvania
Filed Oct. 19, 1965, Ser. No. 498,028
6 Claims. (Cl. 248—70)

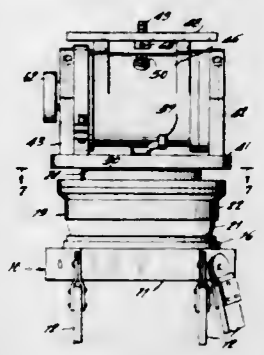


1. A conduit bracket for securing a conduit to a wall comprising a U-shaped base, a clamping section pivotably connected to said base and a securing member extending from said base, said base comprising a central section having a slotted opening for lateral adjustment of said securing member and a pair of side wings extending from said central section, a first of said side wings terminating in a flange, the other of said side wings terminating in a bifurcated bent arm which includes a pair of fingers which are bent back towards the central section, said clamping section having an arcuate section which terminates at one end in a flange which is complementary to the flange of said first side wing, said flanges being aligned for securing said conduit in said bracket, said arcuate section being terminated at its other end in an adjustable hinge attaching member having an endmost straight portion and a bent portion intermediate of said straight portion and said arcuate section, said hinge attaching member including a first pair of notches formed in said straight portion and a second pair of notches formed in said bent portion, said base and said clamping section being hingedly connectable together by inserting either said first or said second pair of notches between said fingers of said bifurcated arm of said base section whereby alternate positions are provided to accommodate small or large conduit sizes.

3,353,776
ARTICULATED TRIPOD HEAD

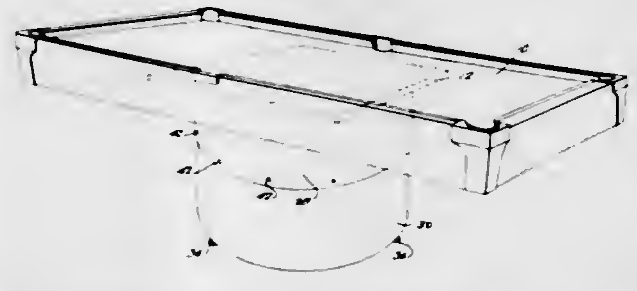
John A. Clemens, Bayside, N.Y., assignor to National Cine Equipment, Inc., New York, N.Y., a corporation of New York
Filed Apr. 6, 1966, Ser. No. 540,618
5 Claims. (Cl. 248—183)

1. An articulated tripod head comprising a base, a hemispheric leveling member tiltably carried upon the base, a cup-shaped housing secured to the leveling member, a bearing block freely carried within the cup-shaped housing, a quantity of silicone grease between the bearing block and cup-shaped housing to yieldably resist relative motion between the said block and housing, a tilt housing secured to the bearing block, an outer barrel axially and rotatably supported by the tilt housing, an inner barrel within the outer barrel fixedly supported by the tilt housing, a central barrel within the inner barrel coupled to the outer barrel for rotation with said outer barrel, a quantity of silicone grease between the adjacent surfaces of the outer barrel, the inner barrel, and the central barrel whereby relative motion between the outer barrel, the central barrel and the inner barrel is yieldably resisted and brake means for the said barrels.



3,353,777
REVOLVING BASE FOR POOL TABLE

Fred E. Knoedler, % Knoedler Manufacturers Inc., P.O. Box 397, Streator, Ill. 61364
Filed Oct. 23, 1965, Ser. No. 503,275
4 Claims. (Cl. 248—188.2)



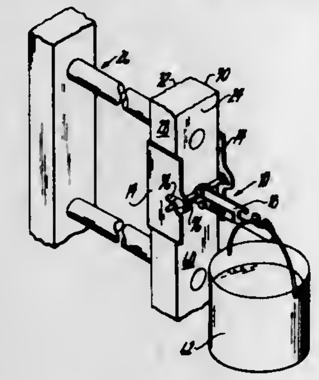
1. A revolvable base for a pool table comprising a generally rectangular frame for mounting said table, a revolvable upper drum comprising an upright cylinder with open ends, said frame being mounted on the upper end of the cylinder, a plurality of ball-bearing mounted rollers disposed along the lower edge of the cylinder, and a base drum supporting the upper drum, said base drum comprising a cylinder with an open upper end, said rollers engaging and riding upon the upper end edge of said base drum.

3,353,778
SUPPORT FOR BUCKETS

Gerard A. Sylvain, 12 Oakwood Drive, and George W. Kean, Woodland Drive, both of Granby, Conn. 06035
Filed Aug. 30, 1965, Ser. No. 483,618
10 Claims. (Cl. 248—211)

1. A support for buckets of the type provided with a bail and comprising a bracket and a supporting arm pivotally secured to the bracket and normally extending laterally outwardly therefrom in bucket supporting position, the said bracket including opposed side members arranged to receive a rail of a ladder therebetween for slidable adjustment thereon and securing means extending between the said side members adapted to secure and support the arm on the bracket for pivotal movement into and out of bucket supporting position and permitting adjustment of said side members toward and away from each other, hook means on said arm for receiving a

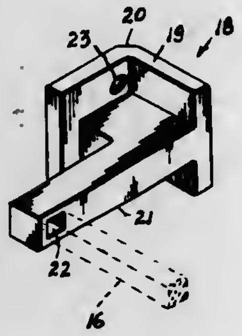
bucket by its bail, ladder engaging means associated with said arm and engageable with the rail of the ladder and arranged to cooperate with the bracket to secure the support in adjusted position on the ladder when the arm is



extending outwardly from the bracket in its normal position supporting a bucket, the weight of which serves to urge the ladder engaging means into abutting engagement with the rail of the ladder.

3,353,779
TOWEL RACK INSTALLATION

Clifford D. Baker, 269 Howard St.,
Ventura, Calif. 93003
Filed Nov. 19, 1965, Ser. No. 508,788
4 Claims. (Cl. 248—251)

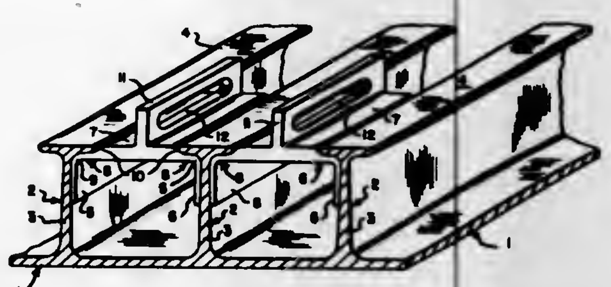


1. A special corner bracket for supporting one end of a towel bar at a corner of two right-angularly disposed building walls, said bracket being formed integrally from one piece of material and comprising a right-angular mounting member including first and second vertical wings connected together at the corner of the mounting member, said wings having outer faces and inner wall engaging faces, and a substantially L-shaped arm member including a rectangular base joined along two adjacent of its sides to the outer faces of the respective wings, and an arm extending horizontally from said base at right angles to the first wing and in laterally outwardly spaced relation from the plane of the outer face of the second wing, the outer end portion of said arm being provided with a towel bar receiving socket open in a direction away from the second wing, and the second wing being provided with apertures for reception of fastener elements.

3,353,780
CONTOURED TIE-DOWN INSERT FOR UPSTANDING T-BEAM ELEMENTS OF A CARGO-SUPPORTING FLOOR

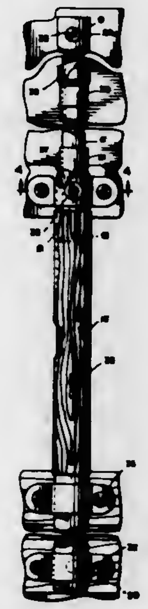
Charles W. Young, Catonsville, Md., assignor to Revere Copper and Brass Incorporated, New York, N.Y., a corporation of Maryland
Filed Apr. 25, 1966, Ser. No. 544,861
3 Claims. (Cl. 248—361)

1. A contoured tie-down insert adapted to be mounted between upstanding T-beam elements of a cargo-supporting floor and comprising two parallel side panels, a top panel, corner elements having substantially sigma-shaped exterior surfaces integrally formed with said panels and interconnecting the side wall panels with opposite edge portions of the top panel, one end portion of each sigma-shaped corner element being aligned with the plane of the side wall panel to which it is joined and the other end of the sigma-shaped corner element being aligned with the plane of the top panel to which it is joined, and an upstanding flange integrally formed with the center portion of the top panel and provided with a tie-down opening.



3,353,781
MIRROR BRACKET

Kenneth H. Gutner, 591 Roger Williams,
Highland Park, Ill. 60035
Filed July 5, 1966, Ser. No. 562,651
1 Claim. (Cl. 248—476)

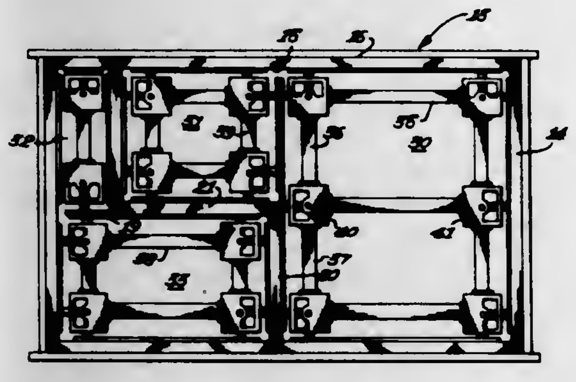


A mirror bracket for supporting a mirror above a dresser or the like which in a first condition is adapted to be partially telescoped and installed on and within the height of the mirror for shipment and thereafter extended to a second condition with the lower end of the bracket projecting below the mirror for attachment to a dresser, said bracket comprising a pair of outer tubular members in sleeves on an inner tubular member in coaxial relation, enter engaging means on said inner and outer layers preventing disassembly of said outer members from said inner member but permitting slideable movement of said outer members relative to said inner member, said inner engaging means including a constriction on each outer member and flared parts on said inner member, one of said outer members constituting a lower securing member when said bracket is disposed generally vertically and equipped with an opening adjacent each end thereof, an opening in said inner member adapted to be selectively aligned with said lower member opening to fix said bracket

in place on a mirror back for shipment when said inner member opening is aligned with the lowermost of said lower member openings and to support a mirror above a dresser when said inner member opening is aligned with the uppermost of said lower member openings, said upper member being equipped with aligned openings adjacent its upper and for the receipt of a screw for permanent affixing of said upper member to the rear top of a dresser.

3,353,782
FOAM INSULATION FORMING DEVICE

Thomas S. Zastrow, St. Paul, Minn., assignor to Remmele Engineering, Inc., St. Paul, Minn., a corporation of Minnesota
Filed Oct. 2, 1964, Ser. No. 401,203
3 Claims. (Cl. 249—152)



1. In apparatus for applying mechanical pressure to an article retained within external and internal walls defining a chamber during the frothing of a resin within said article, the article comprising a hollow structure having outer wall surfaces enclosing a core zone therebetween;

(a) an outer shell for said chamber adapted to receive said hollow core structure and having an inner wall disposed in abutting relationship to the outer wall surface of the hollow core structure of said article, and having means for blocking the walls of said outer shell in predetermined relative disposition; and

(b) internal toggle means having externally arranged surface adapted to be disposed in abutting relationship to the inner surfaces of said hollow shell, said internal toggle means comprising at least two spaced pivot blocks and at least two axially spaced rotatable shafts, each of said shafts being mounted within one of said pivot blocks and being journaled for pivotal rotation therewithin, eccentric means secured to each such shaft and adapted for rotation therewith and having an over-center toggle action providing a stable expanded disposition, a toggle linkage adapted for radial movement with respect to each said shaft and responsive to axial rotation thereof for coupling said eccentric means to said externally arranged surfaces, means for rotating each of said shafts, and means radially spaced from said shafts for coupling the rotation of each of said shafts between at least two of said pivot blocks.

3,353,783
CLOSED FLUID SYSTEM FOR SEALING VALVE CLOSURE ELEMENTS

Thomas J. Bolling, Jr., 5310 Glenmont,
Houston, Tex. 77036
Original application Aug. 2, 1964, Ser. No. 479,035, now Patent No. 3,321,176, dated May 23, 1967. Divided and this application Sept. 12, 1966, Ser. No. 599,656
1 Claim. (Cl. 251—172)

In a valve including a body having a transverse bore for fluid flow therethrough and having a lateral bore intersecting the transverse bore for receiving a slidably moving gate element for closing and opening the transverse bore to fluid flow and a movable stem extending into the body and connected to the element for closing and opening the transverse bore to fluid flow on movement of the element in the lateral bore, the improvement comprising:

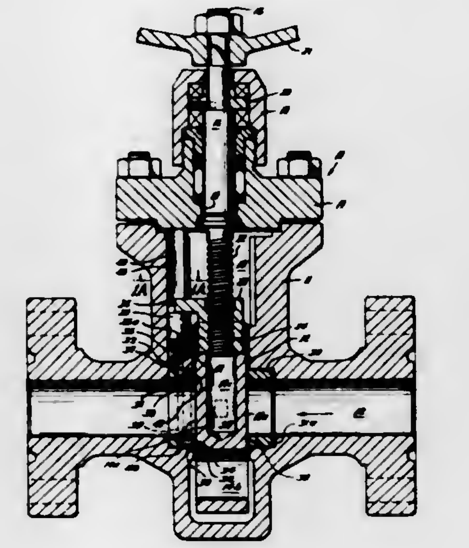
(a) resilient seal means carried by the valve body on one side of the gate element;

(b) a groove formed between the valve body and element and extending around the transverse bore for receiving said resilient seal means;

(c) said resilient seal means substantially filling the groove and movable relative to the groove to seal between the valve body and element;

(d) fluid passage means formed in the valve for communicating only with one side of said seal means;

(e) piston means received in one end of said fluid passage means to close off same and form a closed fluid receiving and retaining system in the valve between said piston and seal means and closing said fluid receiving and retaining system relative to said lateral and transverse bores, said system receiving and retaining fluid therein for movement by said piston means to urge said seal means to sealingly engage between the element and valve body when in closed position;



(f) means carried on the stem for actuating and moving said piston means on moving the element in the lateral bore toward a closed position, whereupon said piston means urges the fluid through said passage means to act only on said seal means and move only said seal means relative to said groove into sealing engagement between the valve body and element;

(g) spring means in said closed fluid receiving and retaining means and acting on said piston means to normally move it in said closed fluid system so as not to force fluid against said seal means, but yieldable when said means on the stem engages said piston to enable said piston means to move fluid against the fluid in said closed system and urge said seal means into sealing position, and said spring urging said piston means in an opposite direction when said means on the stem disengages said piston to relieve the fluid pressure in said closed system acting on said seal means to release it from sealing engagement with the element; and

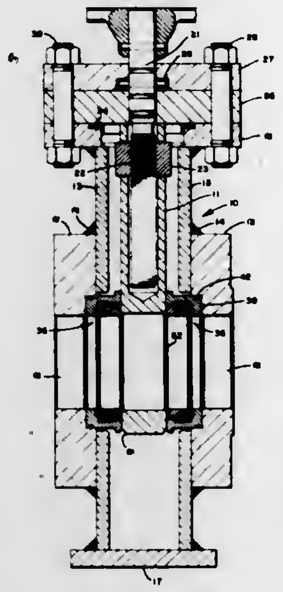
(h) a cylindrical member mounted in the valve and surrounding the transverse bore with spring means acting thereon to urge said cylindrical member into engagement with the side of the element opposite that with which said seal means engages.

3,353,784
VALVE CONSTRUCTION

Marvin H. Grove, Piedmont, Calif., assignor to M. & J. Valve Company, Houston, Tex., a corporation of Delaware

Filed Dec. 1, 1964, Ser. No. 415,075

1 Claim. (Cl. 251—174)



In a valve construction, a body part having aligned flow passages, a valve part disposed within the body part and movable between open and closed positions relative to the passages, the valve part having a valve working surface, and annular sealing means disposed to form a fluid-tight seal between the valve working surface and the body in a region surrounding the corresponding flow passage, said means comprising a sleeve-like seal ring formed of resilient material and having an outer uninterrupted cylindrical periphery, a relatively rigid metal carrier ring, the outer periphery of the carrier ring being bonded to the inner periphery of the seal ring over substantially the entire axial length thereof, said seal ring being relatively small in radial thickness compared to the radial thickness of the carrier ring, one end of said seal ring being adapted to contact and seal with respect to the valve working surface over an annular area limited by its said radial thickness, means on the body part serving to carry the seal ring and the carrier ring for some freedom of axial movement, spring means serving to apply thrust to urge the seal ring against said valve working surface, the carrier ring being formed to provide an annular shoulder substantially coincident with the other end of the seal ring, said spring means being seated on said shoulder and said other end of the seal ring, and means including a resilient seal ring of the O-ring type having sealing contact with the outer cylindrical periphery of said resilient seal ring for establishing a seal between said seal ring and the body part, said last named seal ring being accommodated within an annular recess formed in the body part.

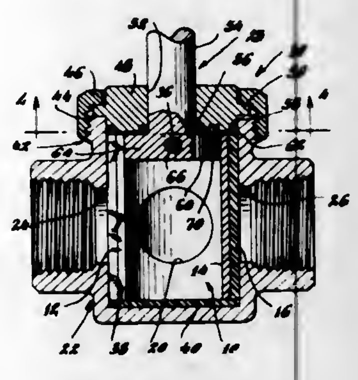
3,353,785
SPLIT SLEEVE PLUG VALVE HAVING BONDED POLYMERIC MATERIAL LAYER

Carl A. Eggers, Bridgeport, Conn., assignor to Jenkins Bros., Bridgeport, Conn., a corporation of New Jersey

Filed Jan. 21, 1965, Ser. No. 426,800

7 Claims. (Cl. 251—175)

7. In a plug valve having a valve body with means forming inlet and outlet openings and sealed means for rotating a plug in a bore of said valve body from an open to a closed position, a valve plug assembly comprising a longitudinally split cylindrical sleeve in the form of a slightly open ring in axial cross-section, said sleeve having means forming fluid passage openings therethrough, with at least one of said opening centers being disposed at least 90° from said split and a layer of polytetrafluoroethylene bonded to the exterior of said sleeve.

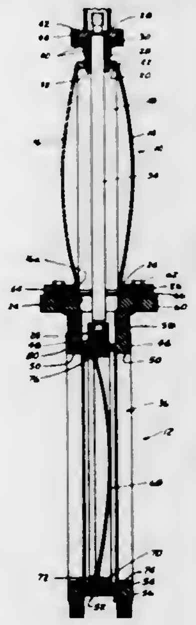


3,353,786
GATE VALVE BODY INCLUDING THIN DISHED PLATES

Marvin G. Combes, Castro Valley, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California

Filed Sept. 3, 1965, Ser. No. 484,891

6 Claims. (Cl. 251—329)



1. A valve structure comprising:
a first body section having opposing end walls of relatively thick material with flow openings therethrough,
a second body section having opposing end walls of thin material which are dished outward forming concave, generally spherical, inner surfaces, and
a body band secured between the edges of said thin end walls,
said body band being a channel member,
said thin end walls being welded around their peripheries to the legs of said channel member,
complementary means securing said body sections together to form a complete valve body enclosure.

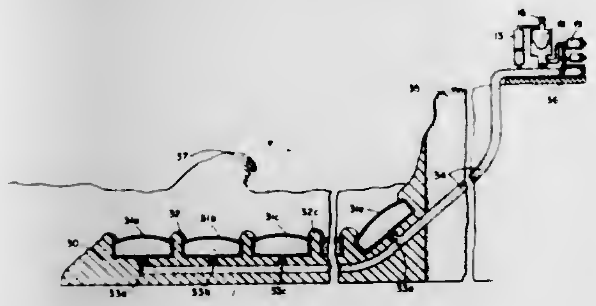
3,353,787
USEFUL POWER FROM OCEAN WAVES

Marcel S. Semo, 59 Linden St., Allston, Mass. 02134

Filed July 11, 1966, Ser. No. 564,127

4 Claims. (Cl. 253—4)

1. An apparatus for utilizing the energy of sea or ocean waves comprising:
(a) a plurality of elongated tubes spaced substantially parallel to the crest line of the waves and below the surface of the water; each said tube being closed at its ends and having a flexible exposed surface;
(b) conduit means extending from each said tube to a common conduit;
(c) valve means for each tube permitting ready flow of fluid into said common conduit but relatively slow backflow into said tube;
(d) said common conduit leading to the bottoms of two vessels; one said vessel having means separating incompressible fluid below from air above; said second vessel having means separating incompressible fluid below from air above; the air in said vessels being interconnected; said second vessel having a one-way inlet valve from the conduit and a one-way outlet valve; said first vessel means applying pressure on the air in response to the height of the tide; said second vessel means applying pressure on said air in response to the wave energy;



(e) fluid motor means connected to said one-way outlet valve and including a reservoir of incompressible fluid which has a one-way return valve to said conduit means;
(f) incompressible fluid filling said tubes and conduits and operable on said fluid motor means when pressure is applied to any of said flexible surfaces.

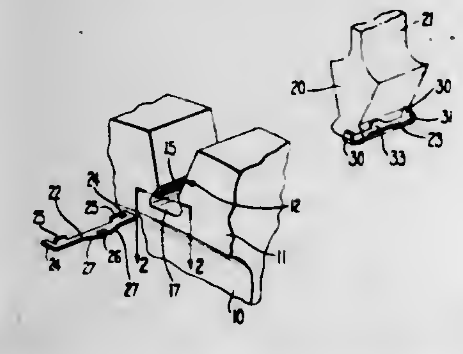
3,353,788
BLADED ROTOR FOR A FLUID FLOW MACHINE

Alan Francis Weeds, Nelson, England, assignor to Rolls-Royce Limited, Derby, England, a British company

Filed Dec. 5, 1966, Ser. No. 599,262

Claims priority, application Great Britain, Dec. 29, 1965, 55,139/65

12 Claims. (Cl. 253—77)



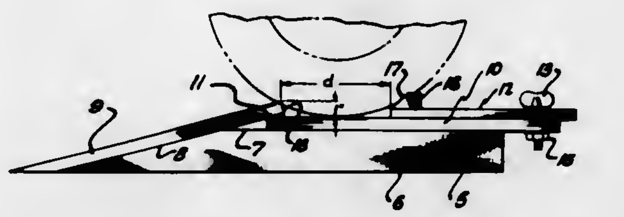
1. A bladed rotor for a fluid flow machine comprising: a rotor disc having a plurality of annularly spaced apart axially extending peripheral slots of dovetail shape; a plurality of blades having roots corresponding in shape to said dovetail shape of said slots, each slot having mounted therein the root of one of said blades; and locking means mounted in each slot radially inwardly of the respective root therein, said locking means having portions respectively engaging the rotor disc adjacent the slot and the respective root therein, said portions also engaging each other to resist axial movement of the respective root in the slot, and at least one of said portions of each locking means being flexible in a circumferential direction to accommodate the respective locking means and root in the respective slot, each locking means having a greater width circumferentially than that of the respective slot when the locking means is unflexed.

3,353,789
SAFETY JACK FOR AUTOMOTIVE VEHICLES AND THE LIKE

Louis F. Scott, R.R. 2, Cedar Springs Camp, Edwards, Mo. 65326

Filed May 2, 1966, Ser. No. 546,668

1 Claim. (Cl. 254—88)



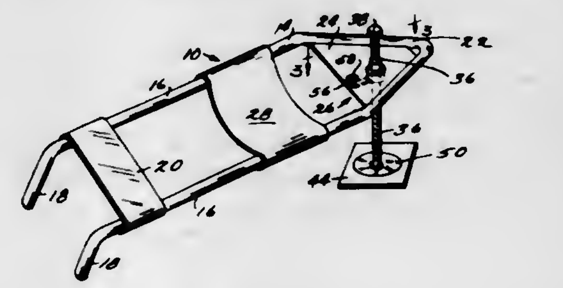
A ramp-type wheel jack of the character described, comprising a base having an inclined ramp on one end thereof; a first horizontally disposed member having a wheel engaging surface at the forward end thereof, mounted on the top of said base; a second horizontally disposed member mounted on said first member, the forward end of said second member being spaced rearwardly of said surface, said second member having an upstanding wheel engaging block secured to the forward end thereof; means adjustably mounting said second member on said first member; and said ramp at the end thereof adjacent to and forward of said surface being elevated above said surface, whereby the elevated portion of said ramp and said block confines said wheel on said surface.

3,353,790
LEVELING DEVICE FOR VEHICLES

Paul D. Drier, 26 Cedar St., Cortland, N.Y. 13045

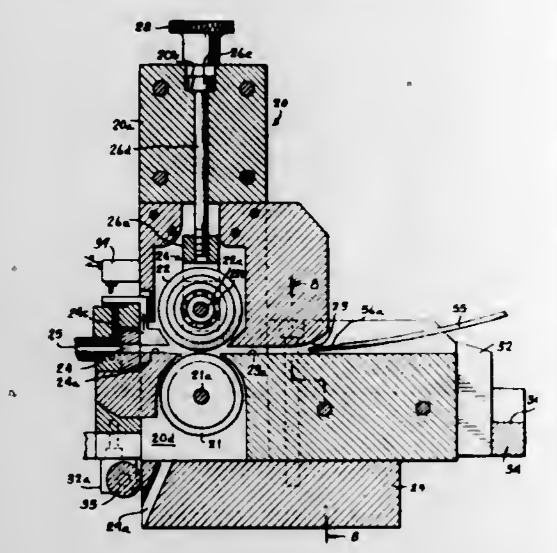
Filed Oct. 7, 1965, Ser. No. 493,791

14 Claims. (Cl. 254—126)



1. Apparatus for leveling a wheeled vehicle of the type having at least one pair of axially aligned wheels spaced transversely of the vehicle comprising: an elongated body; ground engaging means at one end of said body; means at the other end of said body for raising and lowering said body other end with respect to the ground and a cradle intermediate said body one end and said body other end for receiving and supporting one of the wheels of said pair whereby raising and lowering said body other end raises and lowers said wheel respectively to bring said vehicle to a level condition; said body comprising a U-shaped frame of metal, having two legs; said ground engaging means comprising the outer ends of said two legs; and said cradle comprising an upwardly concave element extending between and secured to said two legs intermediate the ends of said body, the concave element being curved about an axis extending in the direction of the elongation of said body.

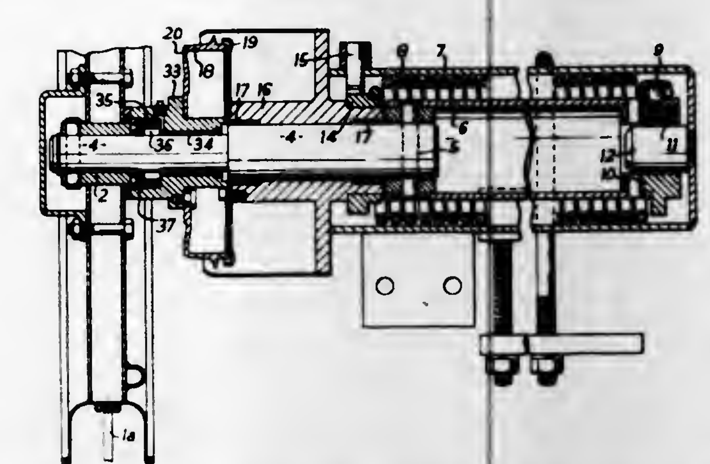
3,353,791
ELECTRIC WIRE THREADING APPARATUS FOR LAMP ARMS AND LIKE CONDUITS
Jerome Warshawsky, 3285 Bertha Drive,
Baldwin, N.Y. 11510
Filed July 2, 1965, Ser. No. 469,146
13 Claims. (Cl. 254—134.3)



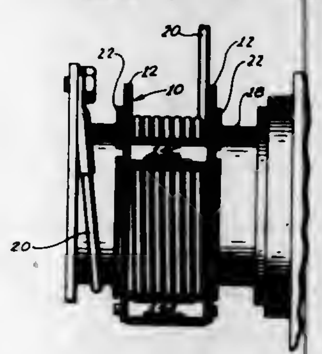
12. An apparatus for threading a relatively flexible, insulated electric cord in precut lengths through portable lamp conduits in the wiring of lamps, comprising a base supporting the apparatus for access by an operator, a passageway through said apparatus for said length of electric cord, an inlet guide end for said passageway positioned for access by a first hand of said operator for the feeding of a leading end of said length of electric cord into said passageway, the latter extending between spaced surfaces of a driven wheel and a coacting idler wheel, said driven wheel being mounted on a relatively fixed axis, power means for rotating said driven wheel, means mounting the idler wheel for resilient movement away from a predetermined spaced relation to the driven wheel for receiving said length of electric cord therebetween for propulsion through said passageway, an outlet guide end for said passageway leading from between said wheels, a nozzle terminating said outlet guide end and having an elongated delivery end terminating in a mouth, said nozzle being positioned for access by a second hand of the operator for manually fitting an end of a lamp conduit onto said delivery end for retention thereon while the length of electric cord is fed by said first hand into the inlet guide end and propelled by said wheels into and through said lamp conduit.

3,353,792
CRANES, GRABS AND THE LIKE
Robert Loudon Aitken, 117 Sedlescombe Road N.,
St. Leonards-on-Sea, Sussex, England
Filed June 28, 1966, Ser. No. 562,067
Claims priority, application Great Britain,
July 27, 1965, 32,148/65
2 Claims. (Cl. 254—150)

1. A spring driven reel mechanism for a line for attachment to a suspended load to prevent twisting, comprising a stationary member, a rotatable reel arranged coaxially with said stationary member, at least coiled spring connected between said reel and said stationary member, one end being drivingly connected to said rotatable reel and the other end being anchored to said stationary member, brake means comprising two relatively rotatable parts, one of said parts carrying friction elements pressed in slipping engagement against the other of said parts under constant load, and uni-directional clutch means coupled between one part of said brake means and one of said reel and said stationary member, the other part of said brake means being secured to the other of said reel and said stationary member, whereby said brake means applies a slipping and constant braking load to said reel upon rotation of said reel in the spring tensioning direction.



3,353,793
CABLE RETAINER
Donald M. Nelson, Anaheim, Calif., assignor to North American Aviation, Inc.
Filed July 1, 1966, Ser. No. 562,221
7 Claims. (Cl. 254—190)



1. A cable-retainer for retaining coils of cable on a reel, comprising:

a plurality of rollers; and

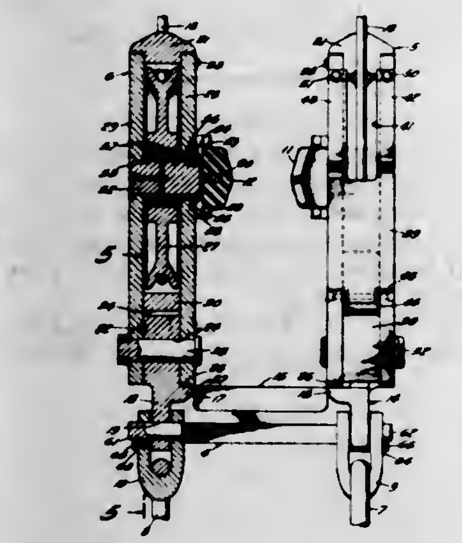
means for positioning said plurality of rollers in substantially rolling contact with the coils of cable on said reel, said positioning means comprising a pair of spaced-apart parallel arcuate supports positioned substantially perpendicular to the axis of said reel, with the rollers mounted transversely between said supports parallel to the axis of said reel—whereby each roller of said plurality constrains the coils of cable said supports being in the form of rings, and said cable-retainer is free-wheeling in its ability to roll relative to said reel and coiled cable.

3,353,794
TRAVELING BLOCK
Roger Smith, Jr., Houston, Tex., assignor to Byron Jackson, Inc., Long Beach, Calif., a corporation of Delaware
Filed Aug. 5, 1966, Ser. No. 570,559
8 Claims. (Cl. 254—192)

1. A traveling block assembly comprising in combination:

(a) a plurality of sheave blocks each of which has at least one sheave therein and inner and outer sheave guards thereon, one of which inner and outer sheave guards of each sheave block has on its base portion a land;

(b) an adaptor open on one side and with an unobstructed vertical opening to accommodate the vertical passage therethrough of an elongated object such as an oil well casing or the like, said adaptor having a generally horizontal U-shaped configuration with a back portion and side arms, each of said side arms having a depending skirt portion and an upstanding drilled lug portion, and each of said side arms having a land on the upper surface thereof;

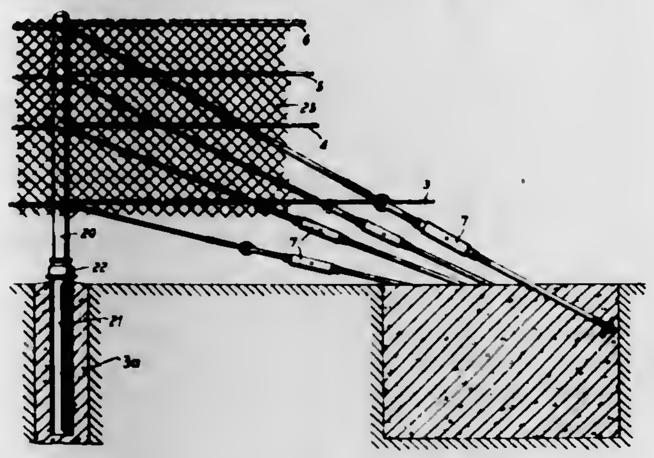


(c) means comprising the sole attaching means removably attaching each said sheave block to said adaptor side arm lug portion, with the land of said sheave block positioned complementary to the land on said side arm whereby said sheave block and adaptor are held by said lands and said sole attaching means in relatively rigid assembly when said attaching means is in place, but whereby said sheave block may be readily removed from said assembly for use separately thereof by removal of said sale attaching means;

(d) elevator means carried by said skirt means on said adaptor arms; and

(e) supporting means such as a wire line carried by said sheaves and adapted to be operated to support, raise, and lower said traveling block assembly.

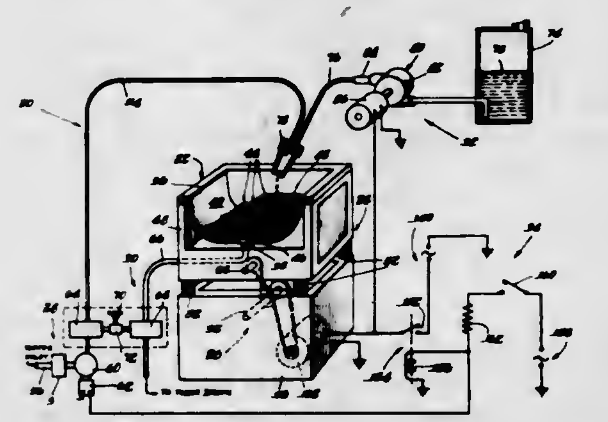
3,353,795
SAFETY FENCE FOR ROADS
Hugo Müller, Stuttgart, Germany, assignor to J. Bertram K.G., Soest, Westphalia, Germany
Filed Sept. 6, 1966, Ser. No. 577,229
6 Claims. (Cl. 256—13.1)



1. In a safety fence for delineating at least one boundary of a road and for preventing a colliding automobile from escaping that boundary, wherein said fence has a plurality of post members spaced in line along said road; each of said post members comprising an elongated upper post portion, a socket member firmly embedded in the ground, and a shear pin having its lower end embedded in said socket member and its upper end embedded in the lower end of said post portion, said shear pin being of material weaker in shear than the material of said upper post portion and said socket member; said post members having elongated cable means secured thereto, said cable means being anchored at opposite ends; and said cable means constraining the impact force of a vehicle which collides with sufficient force to cause said shear pins to fail, and reorienting the direction of travel of said vehicle through the increase of slack caused by successive breaking of said shear pins; the improvement wherein:

said shear pins have an effective cross-sectional dimension which is greater in a direction transversely of said line of posts than in the direction of said line parallel to posts, whereby the pins will shear in the direction of said cable means but will strongly resist shear forces in a transverse direction.

3,353,796
VIBRATORY BURNISHING SYSTEM WITH METERED FEED
Donald E. Roberts, 141 Rice Ave.,
Bellwood, Ill. 60104
Filed May 17, 1965, Ser. No. 456,185
9 Claims. (Cl. 259—2)

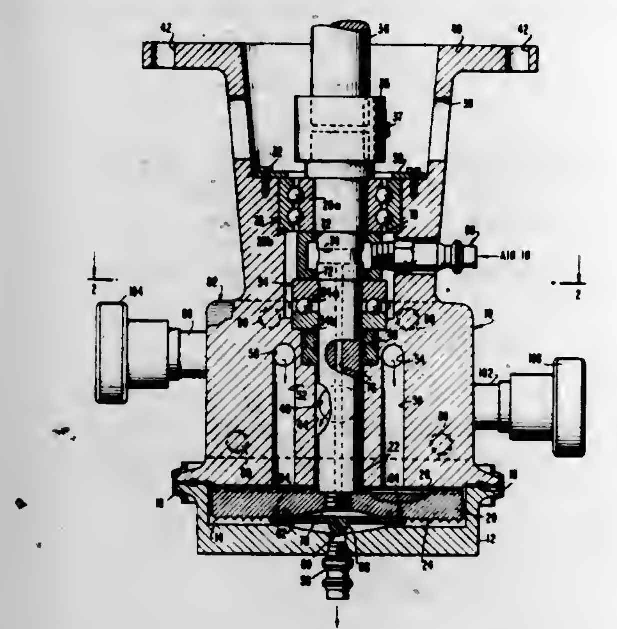


2. In a vibratory burnishing system, the combination comprising: first liquid handling means, including a delivery member adapted to direct flow into a vibratory work tub, means for passing a flow under pressure, and first flow regulating means disposed in fluid circuit between said delivery member and said last mentioned means; second liquid handling means, including a drain member adapted to receive flow from the vibratory work tub and second flow regulating means in said drain member; third liquid handling means, including a second delivery member adapted to direct flow into the vibratory work tub, pumping means for passing a flow under pressure, third flow regulating means disposed in fluid circuit between said second delivery member and said pumping means, and a drive motor for said pumping means; valve means connected in series fluid circuit with said first flow regulating means, including a valve operating member; and control means, including circuit means connecting said drive motor and said valve operating means for energization in unison and further including switch means for controlling said circuit means.

3,353,797
MIXING SYSTEM
Sergio Simonetti, Stamford, Conn., assignor to Sonic Engineering Corporation, Norwalk, Conn., a corporation of Connecticut
Filed July 8, 1964, Ser. No. 381,020
5 Claims. (Cl. 259—8)

3. In apparatus for mixing together a plurality of materials, the combination comprising a housing defining a mixing chamber, a mixing member positioned within the

chamber for mixing the materials, a shaft extending into the chamber through a passage in the housing and coupled to the mixing member for driving the mixing member, said housing including a plurality of inlets for introducing the materials to be mixed into the chamber and an outlet for discharging the mixed product from the chamber, one of the inlets communicating with said passage for introducing one of the materials at the shaft and through the passage into the mixing chamber, valve means carried on the mixing member for selectively opening and closing the outlet, a manifold coupled to the housing and including a plurality of outlets in communication with the inlets of the housing, said manifold including a plurality of material inlets and at least one solvent inlet all communicating with the outlets in the manifold for selectively applying materials to be mixed and a cleaning solvent to the housing, a container for holding a quantity of solvent, a conduit coupling the container to the solvent inlet of the manifold, means for applying a gas under pressure to the container to force the solvent within the container out of the container and through the conduit into the manifold and into and out of the mixing chamber to clean the mixing chamber with solvent following which gas under pressure passes through the conduit to dry those parts cleaned by the solvent, said shaft including a fluid passage in communication with said valve means, and means for supplying fluid to said fluid passage for selectively actuating said valve means.

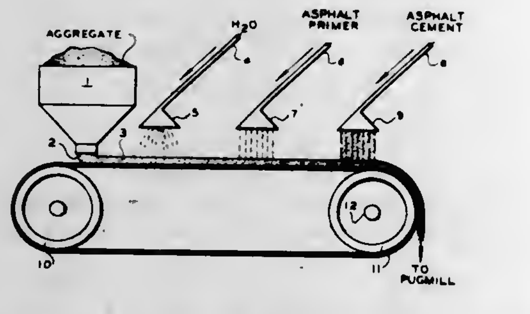


3,353,798
HOT-MIX COLD-LAY ASPHALT

Homer L. Draper and Dale F. Levy, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Apr. 18, 1966, Ser. No. 543,214

7 Claims. (Cl. 259—149)



7. A method of making a hot-mix cold-lay asphalt comprising supplying aggregate at a predetermined rate to a conveying zone, adding to aggregate in said conveying zone water and asphalt primer at a metered rate, adding to said aggregate, water and asphalt primer in said conveying zone asphalt cement at a metered rate, passing said mixture to a mixing zone wherein a homogeneous mixture is formed, said rate of adding water, asphalt primer and asphalt cement and said rate of supplying aggregate being synchronously interconnected so that a product having a predetermined range of constituents is formed regardless of the rate at which power is supplied.

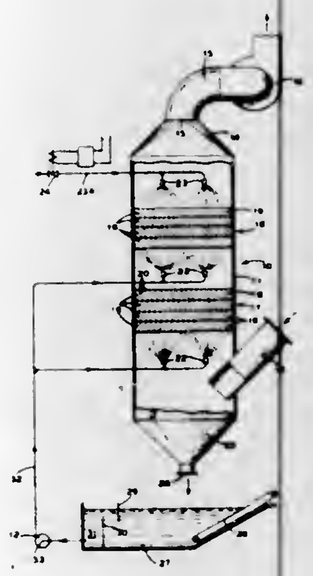
3,353,799
FLUID TREATING APPARATUS AND PACKING CONSTRUCTION THEREFOR

Earl P. Lions, Brussels, Belgium, and Jan Vom Baur, Dusseldorf, Germany, assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed May 12, 1964, Ser. No. 366,839

Claims priority, application Germany, June 22, 1963, J 23,751

2 Claims. (Cl. 261—3)



1. A wet dust collection apparatus comprising,
(a) an elongated chamber having its longitudinal axis vertically disposed,
(b) means for introducing dust laden air into said chamber adjacent its lower end and in a downward direction, at an angle to the axis of said elongated chamber,
(c) means defining a pure air outlet formed in the upper end of said chamber,
(d) means for circulating the dust laden air from said inlet to said outlet,
(e) a plurality of packing constructions disposed in said chamber between said inlet and said outlet,
(f) said packing construction being vertically spaced in said chamber,
(g) each of said packing constructions including a plurality of layers of unit cellular structures,
(h) each of said cellular structures defining a lattice of tubular shaped passageways extending through its respective layers,
(i) each of said passages of each of said layers having its central axis inclined at substantially 45° to the flow of air through said chamber,
(j) and each of said layers of the respective packing constructions being disposed in end to end relationship so that the respective passageways of adjacent layers are oppositely inclined to define a lattice of zig-zag passageways extending through the respective packings constructions,

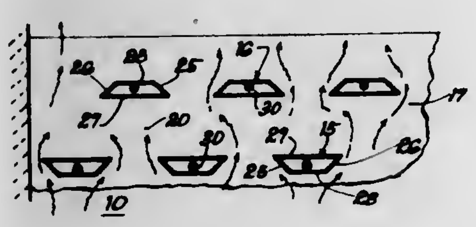
(k) means for intensely moistening the respective layers of said packing constructions with a liquid whereby the air flowing through the respective packing is washed by the liquid wetting the same, said means including spray nozzles positioned above the uppermost packing construction and directed downwardly and below each of said packing constructions and directed upwardly,
(l) means formed in the bottom of said chamber to define an outlet for the sludge resulting from the washing of the air,
(m) a sludge collector disposed beneath said sludge outlet for receiving the sludge,
(n) a conveyor means for removing the residue of said sludge from said recesses,
(o) means for recirculating the liquid of said sludge collector to said upwardly directed spray nozzles,
(p) means for supplying fresh liquid to the uppermost spray nozzle.

3,353,800
APPARATUS FOR REMOVING SOLIDS FROM HOT GASES

Wilmer C. Jens, Milwaukee, Wis., assignor to M. H. Detrick Company, Chicago, Ill., a corporation of Delaware

Filed Jan. 11, 1965, Ser. No. 424,589

7 Claims. (Cl. 261—3)



1. Apparatus for removing solids from hot gases comprising:
- a plurality of vertically disposed elongated tanks, each tank trapezoidal in horizontal cross section, the opposed non-parallel walls converging toward each other from the wider of the two parallel walls at angles of about 45° with said wider parallel wall;
- said tanks arranged in spaced relation with each other in two spaced rows extending transversely to the flow direction of the hot gases, the tanks in the upstream row having the narrower of the parallel walls and the converging walls facing upstream and the tanks in the downstream row having the wider of the parallel walls facing upstream, the tanks in one row staggered with respect to the tanks in the other row; and
- means providing a continuous supply of water to said tanks, whereby water overflows and flows downwardly on the outside of at least those walls facing upstream.

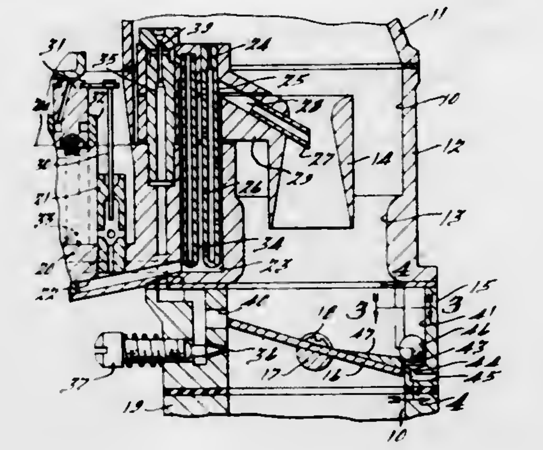
3,353,801
HOT START VENTING

Jorma O. Sarto, Orchard Lake, Mich., assignor to Chrysler Corporation, Highlcnd Park, Mich., a corporation of Delaware

Filed Apr. 26, 1966, Ser. No. 545,389

7 Claims. (Cl. 261—43)

1. In a carburetor for an internal combustion engine, a throttle body, a fuel-air induction conduit extending through said throttle body, throttle valve means having a valve element in said conduit movable between idle and open positions for controlling fluid flow in said conduit, means for venting gases in said conduit above said valve element to asmospheric pressure comprising a valve guide passage within the sidewall of said throttle body and opening into said conduit at a location immediately above said valve element when the latter is in the idle position, a vent duct communicating with said atmospheric pressure, a port connecting said guide passage and vent duct, the sidewall of said throttle body defining said guide passage also defining a valve seat around said port, vent valve means shiftable within said guide passage for seating at said valve seat to close said port and block communication between said induction conduit and atmospheric pressure, and interengaging means on said throttle valve means and vent valve means operable in response to closing of said valve element to said idle position for unseating said vent valve means from said valve seat to open said port and vent said induction conduit to said atmospheric pressure.



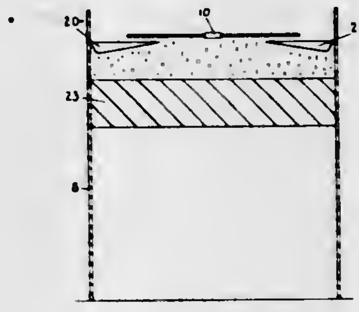
3,353,802
LIQUID DISTRIBUTOR

Kent Reaney Greer, Marple Bridge, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Apr. 18, 1966, Ser. No. 543,110

Claims priority, application Great Britain, Apr. 20, 1965, 16,542/65

5 Claims. (Cl. 261—110)



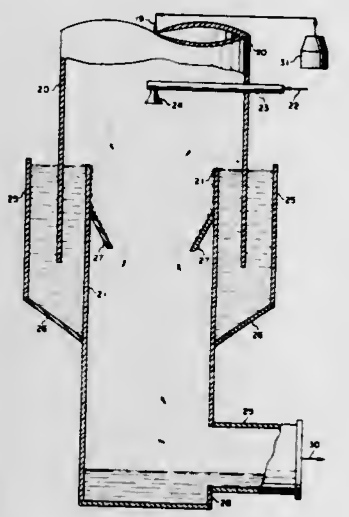
1. A gas-liquid contact structure enclosing a space of rectangular horizontal cross-section through which liquid can be caused to descend downwards, the structure having means for distributing liquid over a circular area, four catchment trays being located at equal intervals around the circumference of said circular area each substantially of right-angled triangular form so as to form in combination with said circular area a substantially square area, the edge of each tray opposite the right-angled corner overlapping said circular area to an extent sufficient for said liquid distributing means to deposit liquid on the overlapping part of the tray, the tray being perforated and inclined downwardly in a direction away

from said circular area, so that liquid deposited onto each tray runs towards the remoter parts thereof and passes through said perforations.

3,353,803
GAS QUENCHER

Peter M. Wechselblatt, New York, N.Y., and John G. Boresta, West Englewood, N.J., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed May 9, 1967, Ser. No. 637,250
12 Claims. (Cl. 261—116)

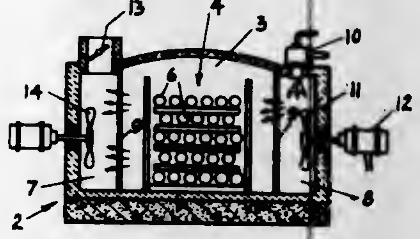


1. An apparatus for quenching a hot solids-laden gas stream derived from a gas source such as a furnace or the like which comprises a first vertical conduit, said first conduit extending downwards from said gas source, whereby said hot solids-laden gas stream flows vertically downwards through said first conduit, a second vertical conduit, said second conduit being coaxially aligned within the lower portion of said first conduit and extending downwards to a lower terminus below the lower end of said first conduit, an inverted frusto-conical baffle, said baffle extending inwards and downwards from the inner wall of said second conduit and terminating at a central opening, a third vertical conduit, said third conduit being substantially coaxial with and external to the lower portion of said first conduit, with the upper end of said third conduit terminating at a vertical elevation above the upper end of said second conduit, an annular baffle, said annular baffle extending outwards from the outer wall of said second conduit to the lower end of said third conduit, said first conduit terminating above said annular baffle, centrally disposed means within said first conduit and above said second conduit to spray water downwards and outwards into said gas stream above said second conduit, whereby a portion of the sprayed water descends into the annular space between said second conduit and said first conduit and thereby fills the annular space between said second conduit and said third conduit and above said annular baffle, and whereby excess water flows inwards over the upper end of said second conduit, and downwards as a liquid film on the inner surface of said inverted frustoconical baffle, and is projected into the accelerated gas stream at the central opening of said baffle, a lower terminal liquid retention chamber at the bottom terminus of said second conduit, and a fourth conduit, said fourth conduit extending substantially horizontally from the lower end of said second conduit and between said lower terminal liquid retention chamber and said annular baffle, to means for disposal of quenched gas and excess water.

3,353,804
APERTURED WALLS FOR INDUSTRIAL FURNACES

Walter Suydam, Mount Lebanon Township, Allegheny County, Pa., assignor to Loftus Engineering Corporation, Pittsburgh, Pa., a corporation of Maryland

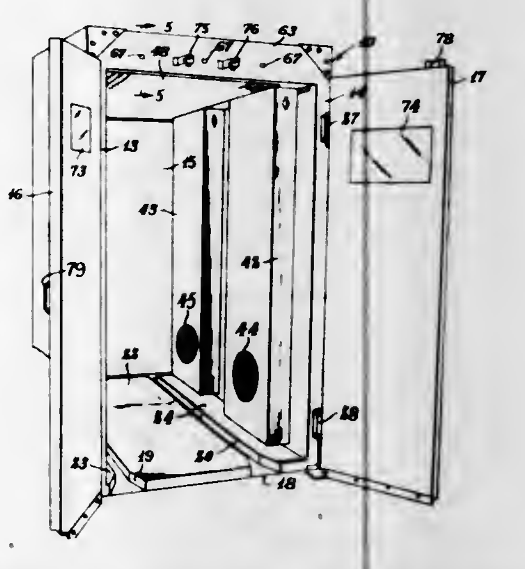
Filed June 24, 1965, Ser. No. 466,772
8 Claims. (Cl. 263—40)



1. In a furnace having a work-chamber in which to heat a work-load, a plenum, an apertured wall portion through which gas may flow from said plenum into said work-chamber, and means for impelling such flow of gas; the invention herein described wherein said wall portion comprises a frame structure including a set of elongate horizontally-spaced vertical frame members and a set of elongate vertically-spaced horizontal frame members, means for securing the spaced frame members of the two sets to one another in crossing relation to provide a multiplicity of rectangular openings in the frame structure, said horizontal frame members including upwardly and downwardly open grooves, a plurality of substantially rectangular heat-resisting panels having bottom and top edges respectively engaged in said upwardly and downwardly open grooves, the engaged panels being slideable in said grooves into overlapping relation with respect to one another for selectively adjusting the effective sizes of said openings, whereby to obtain over the area of said wall portion a selective distribution of the flow of gas from said plenum into said furnace chamber.

3,353,805
OVEN CHAMBER

George Price Grieve, Glenview, Ill.
(1350 N. Elston Ave., Chicago, Ill. 60622)
Filed Aug. 18, 1965, Ser. No. 480,594
5 Claims. (Cl. 263—40)

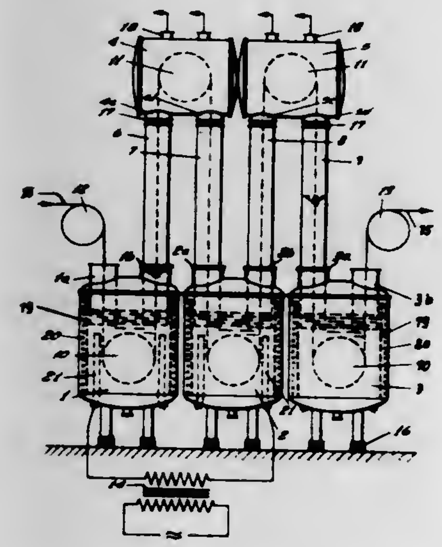


1. In an oven structure, air flow control means including walls and a first foraminous plate which is a part of a header, means defining a conduit which communicates with said header for supplying air thereto under pressure, a second foraminous plate mounted for linear sliding movement in face-to-face relationship to said first plate, said plates having their openings spaced and disposed for registering alignment affording full opening therethrough in one position and also for effective full closure when off register is effected by movement to a second position and further being continuously variable in effective opening between said positions, said header having an exhaust port in a position opposed to said first foraminous plate, and said exhaust port having an area less than the combined areas of the openings in the first foraminous plate.

3,353,806
APPARATUS FOR ANNEALING CONTINUOUS METAL BANDS IN A VACUUM

Albert Lichte, Wuppertal-Elberfeld, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany

Filed Mar. 11, 1963, Ser. No. 264,164
Claims priority, application Germany,
Mar. 30, 1962, Sch 31,223
3 Claims. (Cl. 266—3)



1. Vacuum annealing apparatus for the continuous through-pass thermal treatment of a metal band, comprising: at least three similar liquid-containers, at least two similar vacuum vessels arranged above the liquid-containers, there always being one less vacuum vessel than liquid-container, vertically extending connecting tubes placing the interior of each vacuum vessel in communication with the interior of two adjacent liquid-containers, means for guiding the band to be annealed through the liquid-containers, the connecting tubes and the vacuum vessels, at least two of the liquid-containers containing a metallic melt, at least one of said containers containing a fused salt, means for passing an electric heating current through the metallic melt into the band to be annealed and any vacuum vessel which is in communication with any container containing a fused salt providing a cooling zone for said heated band.

3,353,807
SMELTING FURNACE FOR THE PRODUCTION OF STEEL

Gustav Adolf Sixel, Dusseldorf-Kaiserswerth, and Walter Hess, Essen-Heidhausen, Germany, assignors to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany, a corporation of Germany

Filed Oct. 20, 1964, Ser. No. 405,221
Claims priority, application Germany, Oct. 29, 1963,
B 74.056
3 Claims. (Cl. 266—11)

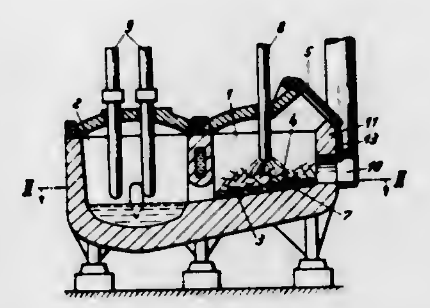
1. A smelting furnace for the production of steel by using a solid metallic charge, comprising

a smelting part including an inclined hearth,

a second part comprising a collecting part disposed at a level lower than that of said smelting part to be used as a refining part,

said smelting part communicating with said second part,

said smelting part having at least one burner adapted to be operated selectively with industrially pure oxygen and at least over 50% oxygen enriched air,

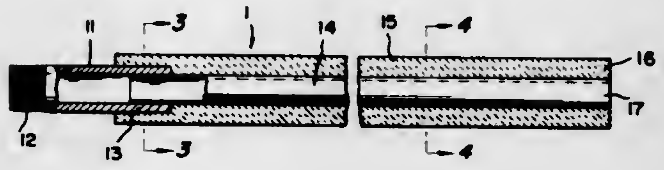


said inclined hearth being adapted to flow off the liquefied metal over a layer of carbonizing means disposed on said hearth into said second part, and

a gas off-take for the waste gases in said smelting part disposed opposite said second part and at a level disposed in a plane extending through said solid metallic charge.

3,353,808
REFRACTORY COATED OXYGEN LANCE

Louis E. Norburn, P.O. Box 817,
Danville, Va. 24541
Filed Feb. 23, 1965, Ser. No. 439,498
4 Claims. (Cl. 266—34)



1. An oxygen lance having an outlet end adapted to be immersed in a bath of molten steel for injecting oxygen or other gas into the bath, said lance comprising:

a short length of metal pipe having a relatively thick wall having sufficient bending strength to support itself within a steel furnace without bending, said pipe being adapted to be coupled to a gas line for feeding gas to said lance;

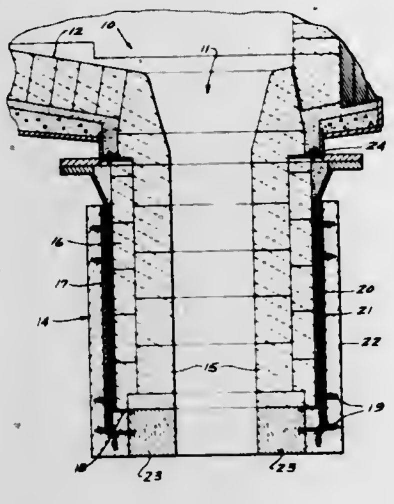
an elongated length of metal tubing having a relatively thin wall, relative to said pipe, fixed end-to-end to said pipe and in axial alignment with said pipe, said tubing serving as the outlet end of said lance; and

a heat-resisting insulating refractory coating covering said length of tubing and the end portion of said pipe adjacent to said tubing, said refractory coating being several times as thick as said tubing to reinforce said tubing sufficiently to prevent its bending when the lance is used in a steel furnace and to substantially protect said tubing from the heat of the steel furnace, the other end portion of said pipe being free of said refractory coating for coupling said lance to a gas line;

said tubing being sufficiently thin when expanded by the heat of a steel furnace to yield without breaking said refractory coating and being of an insufficient thickness to be theaded.

3,353,809
REFRACTORY POURING TUBE FOR DEGASSING VESSELS

Roger Snellman, 5746 Raven Road,
Birmingham, Mich. 48010
Filed Nov. 2, 1965, Ser. No. 506,096
3 Claims. (Cl. 266—34)



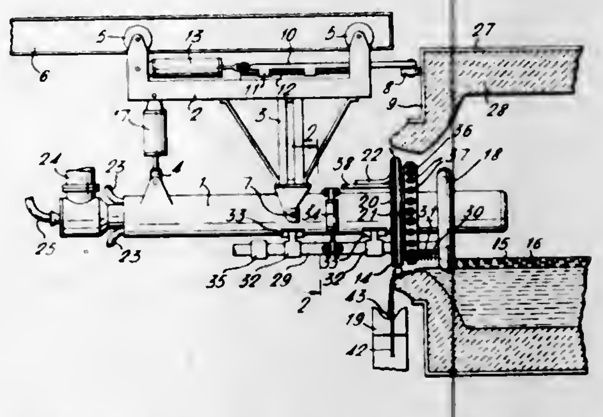
3. A device for degassing molten metal comprised of ladle means for containing molten metal, chamber means for removing gases from said metal, said chamber means positioned above said ladle means, and conduit means, said conduit means having an upper and a lower end, said conduit means beging fixed in open communication at its upper end to said chamber means and positioned for immersion of its lower end into said ladle means; said conduit means being comprised of a plurality of concentric, cooperatively interlocking cylinders, said cylinders being comprised of:

- an inner cylinder of high purity dead burned magnesite shapes,
- a cylinder of insulating refractory shapes contiguously surrounding the major extent of said inner cylinder,
- a metal supporting cylinder contiguously surrounding the major extent of said insulating refractory cylinder, said cylinder having inner and outer surfaces, there being metal flanges extending from the inner surface to support said magnesite and insulating refractory cylinders, there being metal anchors extending from said outer surface,
- a cylinder of compressible refractory material adjacent both inner and outer surfaces of the metal supporting cylinder,
- an additional cylinder of a material selected from the group consisting of fireclay and high alumina monolithic refractories, held in place by said anchors substantially entirely covering said outer surface of said metal cylinder and,
- there being a rim attached at said lower end of said conduit comprised of dense abrasive resistant refractories.

3,353,810
HEATING AND DISCHARGE APPARATUS FOR FUSED MATERIALS IN ROTARY FURNACES

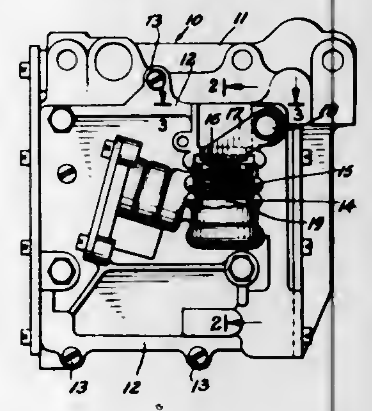
William Lyon Sherwood, 2678 Marine Drive,
West Vancouver, British Columbia, Canada
Filed Dec. 7, 1964, Ser. No. 416,407
9 Claims. (Cl. 266—37)

7. In a rotary furnace for continuous processing fused metal and slag floating on the metal, the combination comprising; an axial discharge opening discharging metal and slag over its lip; a slag dam attached to a support positioned within the furnace transversely across said discharge opening for obstruction of the free flow of slag longitudinally along the furnace centre into said discharge opening; at least two slag dividers arranged in the space and connecting between said slag dam and said discharge opening, one of said slag dividers being positioned on either side of the discharging metal stream, each obstructing the flow of slag transversely inwards from either side to the centre of the discharge opening, with one of said slag dividers being positioned at an adjustable distance from the discharging stream to thereby allow discharge of slag through said discharge opening to one side of the centrally discharging metal stream in a substantially separate slag stream.



3,353,811
MODIFICATION TO A 3-2 COASTING CONTROL VALVE

Michael Ratner, 225 W. 106th St.,
New York, N.Y. 10025
Filed Aug. 6, 1965, Ser. No. 477,860
6 Claims. (Cl. 267—1)



1. In a valve having a plunger mounted in a chamber and free to move vertically therewithin said plunger having a top mounted helical spring thereupon to resiliently restrict its upward movement the improvement comprising: a restraining member in contact with all of the uppermost part of said helical spring having a flat horizontal restraining surface abutting said spring; a vertical arm fixedly attached to said flat restraining surface and extending upwardly thereof; and means associated with said vertical arm to connect said arm to a fixed mounting independent of said plunger and chamber.

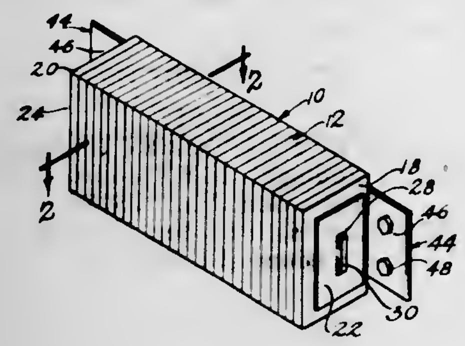
3,353,812
BUMPERS

Alvin Miller, 776 McDaniel St. SW., Atlanta, Ga. 30310
Filed Oct. 20, 1965, Ser. No. 498,509
5 Claims. (Cl. 267—1)

1. In a dock bumper or the like to be attached to a substantially rigid surface such as a boat dock or loading dock:

(a) a longitudinal stack assembly comprising a plurality of individual, resilient, cushion-like members constructed from rubber-like material, such as cut vehicle tires,

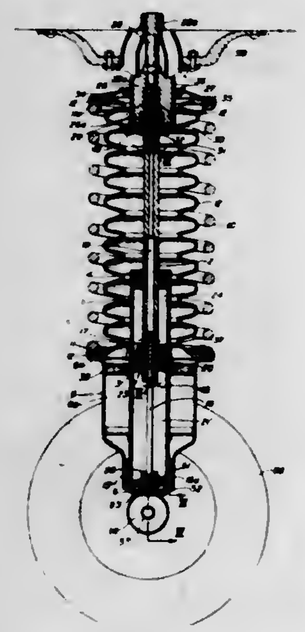
(b) a plurality of spaced support brackets on said bumper and at least one support bracket being movably connected to the stack near a respective end and each support bracket having a support portion extending from the end of a respective end of the stack with apertures therein to receive attachment means such as lag screws and the like,



(c) and a stack assembly means assembling said stack.

3,353,813
SHOCK ABSORBER FOR VEHICULAR SUSPENSION SYSTEMS

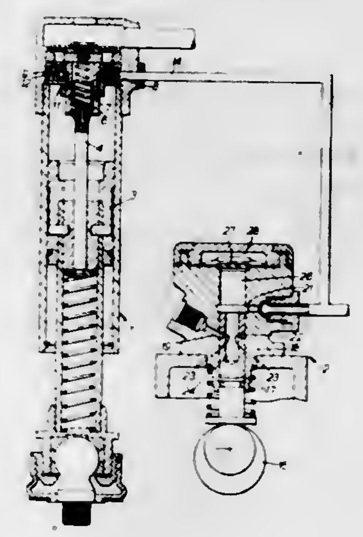
Hans Erdmann, Frankfurt am Main, and Leopold Franz Schmid, Stuttgart, Germany, assignors to Alfred Teves Maschinen- und Armaturenfabrik KG.
Filed Oct. 22, 1965, Ser. No. 500,574
Claims priority, application Germany, Feb. 5, 1965, T 27,944
19 Claims. (Cl. 267—8)



1. A vehicular suspension system comprising a dash-pot assembly with a hydraulic cylinder and a piston movable in said cylinder, said piston being provided with a restricted fluid passage; first anchor means rigid with said cylinder; second anchor means spaced from said first anchor means in line with said dash-pot assembly; expanding spring means bearing upon said first and second anchor means for maintaining same separated against the weight of a vehicle supported by the system; extensible link means interconnecting said piston and said second anchor means; and fluid-pressure-responsive means coupled with said dash-pot assembly for reducing the effective length of said link means to increase the stress of said spring means upon a movement of said anchor means toward each other by a relative motion of said piston and cylinder, said fluid-pressure-responsive means including a tubular stem forming an integral extension of said piston, said stem being part of said link means and having an axial bore defining a fluid chamber, a plunger in said chamber entrainable by said cylinder upon movement of the latter toward said second anchor means, and a hydraulic motor communicating with said chamber, said motor having a fixed part positively engaging said stem and a movable part positively engaging said second anchor means.

3,353,814
VEHICLE SUSPENSION SYSTEMS AND PUMPS FOR SUCH SYSTEMS

John Robert Rees and Douglas Bryan Wilkins, Birmingham, England, assignors to Girling Limited, Birmingham, England
Filed Oct. 25, 1965, Ser. No. 505,177
Claims priority, application Great Britain, Oct. 24, 1964, 43,448/64
5 Claims. (Cl. 267—64)



1. A suspension system including a suspension strut provided with inlet and outlet ports and associated valve means normally positioned to close both said ports, the valve means being moved to open the inlet port when the strut is compressed to a predetermined extent, and to open the outlet port when the strut is extended to a predetermined extent, and an independent pump connected to the said inlet for supplying fluid to the strut, the said pump being adapted to store a quantity of pressurised fluid for any period of a working stroke during which the said inlet port is closed.

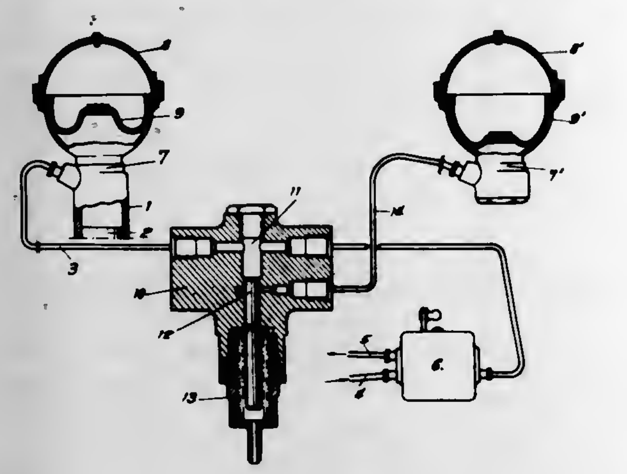
3,353,815
HYDRO-PNEUMATIC SUSPENSIONS

Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French company
Filed Nov. 1, 1965, Ser. No. 505,800
Claims priority, application France, Nov. 16, 1964, 995,057
6 Claims. (Cl. 267—64)

1. In a hydro-pneumatic vehicle suspension,

- a liquid-containing cylinder for connection to one member of a vehicle,
- a piston slidable in said cylinder for connection to another member of a vehicle said one member being movable relatively to the other member,
- a first gas-containing chamber communicating with the cylinder,
- a movable separator interposed between the liquid in the cylinder and the gas in the chamber,
- a second gas-containing chamber, and

means for placing the cylinder in communication with the second chamber above a predetermined load on



the vehicle whereby the resiliency of the suspension can be modified.

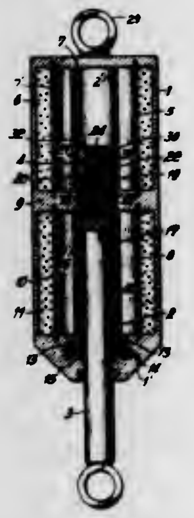
3,353,816
SELF-LEVELING HYDROPNEUMATIC SUSPENSION UNIT

Ludwig Axthammer and Felix Wössner, Schweinfurt, Germany, assignors to Fichtel & Sachs A.G., Schweinfurt (Main), Germany

Filed Dec. 1, 1965, Ser. No. 510,773

Claims priority, application Germany, Dec. 7, 1964, F 44,625

13 Claims. (Cl. 267—64)



1. A self-leveling hydro-pneumatic suspension unit comprising, in combination:

(a) a cylinder member having an axis and formed with a cavity therein;

(b) a piston member axially movable in said cavity and axially defining a chamber in a portion of the cavity, said chamber expanding and contracting during the axial movement of the piston member outward and inward of said chamber;

(c) two fastening means for fastening said members respectively to a suspended mass and to a structure from which said mass is to be suspended;

(d) a liquid substantially filling said chamber;

(e) yieldably resilient means for maintaining said liquid in the chamber under a pressure substantially greater than atmospheric pressure;

(f) an additional supply of said liquid;

(g) pump means for pumping liquid from said supply to said chamber in response to axial reciprocating movement of said piston member in a predetermined axial portion of said cylinder member;

(h) by-pass means responsive to a position of said piston member outwardly spaced from said predetermined portion of said cylinder member for connecting said chamber to said supply; and

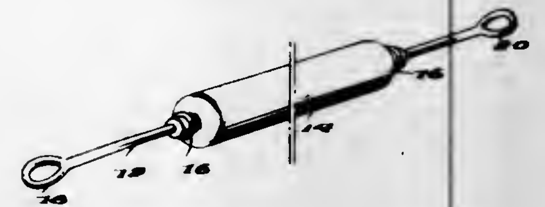
(i) pump inactivating means responsive to a predetermined pressure in said chamber for inactivating said pump means.

3,353,817
ELASTIC EXTENSION DEVICE

Harold N. Bollinger, 818 Woodhaven Drive, Richmond, Va. 23224

Filed May 26, 1965, Ser. No. 458,946

2 Claims. (Cl. 267—69)



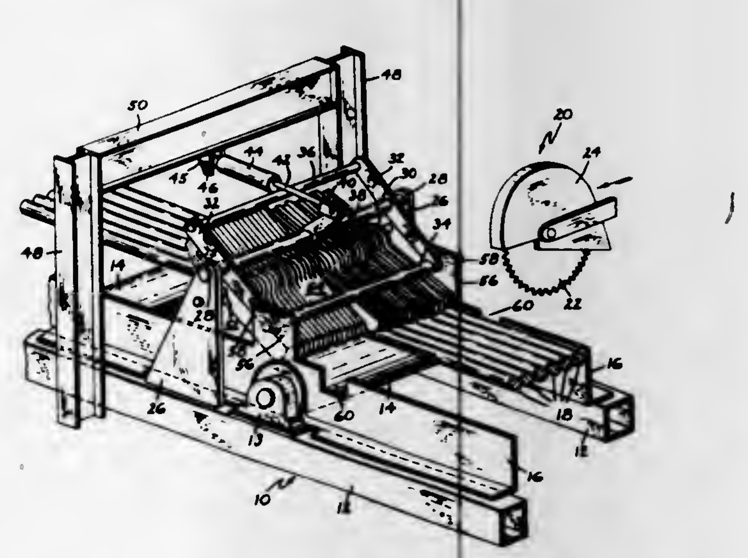
1. A rope take-up and shock absorber consisting essentially of a flexible, non-resilient rope and a resilient sleeve surrounding said rope, the portion of said rope within said sleeve being tightly coiled with the coils substantially filling the interior of said sleeve, and pressure clamp ring means tightly securing the ends of said sleeve to said rope at each end of the coiled portion thereof with the sleeve under a small amount of tension whereby said sleeve normally tends to maintain said portion in its coiled position.

3,353,818
HOLD-DOWN AND CLAMPING APPARATUS

William J. Hill, Holden, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts

Filed July 2, 1964, Ser. No. 379,922

5 Claims. (Cl. 269—153)



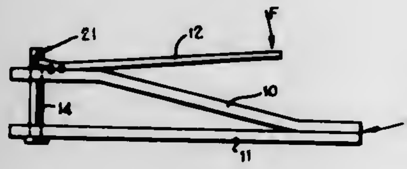
1. Apparatus for fixing a plurality of substantially laterally adjacent elongated elements resting on a common longitudinal support comprising the combination of: a plurality of holding members overlying said support and spaced vertically therefrom, each said holding member being pivotally mounted for individual movement about a common shaft extending in a direction transverse to the length of said support; means for pivotally lowering said holding members about said shaft towards said support to an operative position in contact with said underlying elongated elements and the unoccupied portions of said support; means for exerting a downward force on some of the holding members in contact with said elongated elements, and means for pivotally raising said holding members about said shaft from said operative position to a raised inoperative position when movement of said elongated elements along said support is desired.

3,353,819
FISH HOOK DEVICE

Roy L. Palmer, 356 Groton Road, Cortland, N.Y. 13045

Filed Nov. 9, 1964, Ser. No. 409,814

4 Claims. (Cl. 269—254)



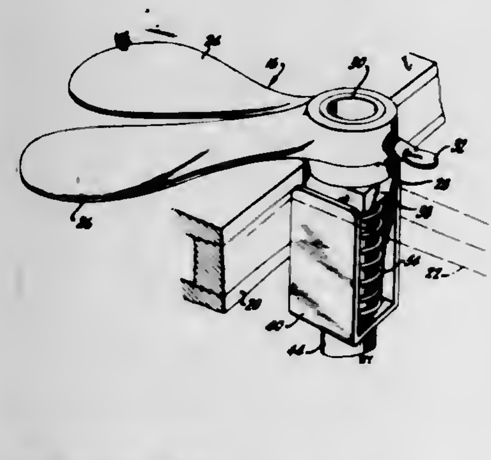
1. A clamping device including a spring, said spring composed of two flat resilient members, a lower member and an upper member, dispersed one above the other, said resilient members being fastened at one end, each of said resilient members having a hole through the end not fastened; a pin, said pin having a hook portion at one end, and a wide flanged portion at the other end; an upper lever arm, said lever arm bent in a shallow V shape, said lever arm having an opening through one end, said pin disposed through the holes of the upper and lower members of the spring, said hole of lever arm communicating with the hook portion of the pin and engaged thereto, grooved portions disposed on the upper face of the upper member of the spring, grooved portions on the lever arm in close proximity to the opening in said lever arm and communicating with said grooved portions on the upper face of said upper member of the spring.

3,353,820
RETRACTABLE SADDLE STANDARD

Robert J. Langren, Alameda, Calif., assignor to Gilbert Hyde Chick Company, Oakland, Calif., a corporation of California

Filed Sept. 22, 1964, Ser. No. 398,320

2 Claims. (Cl. 269—328)



1. In an orthopedic table:

(a) a vertically movable platform having an upper planar horizontal surface for supporting the lower portion of the trunk of a patient's body;

(b) a vertical standard;

(c) a sacral saddle releasably supported on the upper end of said standard; said planar horizontal surface extending under said sacral saddle and laterally at least to one edge of said platform;

(d) said vertical standard being movable between a first position in which its upper end supportingly engages said sacral saddle in its position of use, and a second position in which said upper end is below the lowest portion of said sacral saddle when said sacral saddle rests on said platform in the highest position of said platform; and

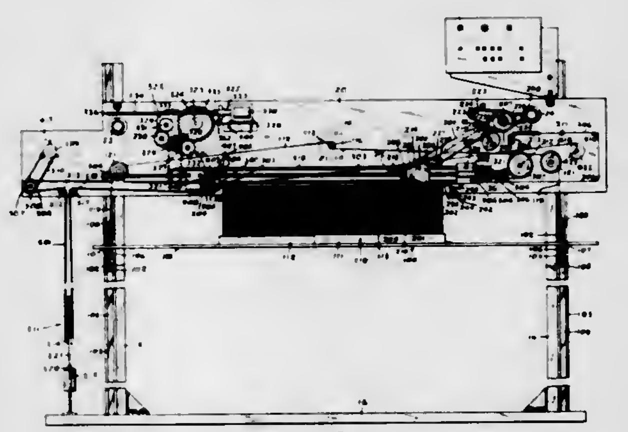
(e) means for lowering said standard, whereby said standard may be vertically withdrawn from supporting engagement with said sacral saddle when said saddle is encased in a cast applied to a patient and said patient is supported by said platform in the highest position of said platform.

3,353,821
PLY SEPARATOR CONVEYOR

Robert E. Smith, Chicago, Robert L. Kosrow, Elk Grove Village, and John G. Attwood, Oak Park, Ill., assignors to Union Special Machine Company, Chicago, Ill., a corporation of Illinois

Filed June 8, 1965, Ser. No. 462,795

16 Claims. (Cl. 271—16)



1. In an apparatus for automatically picking up and separating flat flexible material work pieces individually from a stack of such work pieces, and having means for lifting a portion of the top ply of the uppermost work piece off the stack without disturbing any of the plies beneath said top ply, means for lifting the remainder of said uppermost work piece off said stack and for supporting the separated work piece in a single layer above said stack, said last mentioned means comprising separator bar means, means for moving said bar means over said stack between the remainder of said uppermost work piece and the top of the work piece in the stack immediately beneath said uppermost work piece, and automatically retracting string grill means attached at one end to said separator bar means for supporting the separated work piece above the stack.

3,353,822
TRANSPORT DEVICE FOR BLANKS, ESPECIALLY FOR MACHINE TOOLS

Karl Dangelmaier, Eislingen (Fils), Karl Griesinger, Goppingen-Jebenhausen, Otto Kurz, Hattenhofen, and Franz Schneider and Herbert Scholl, Goppingen, Germany, assignors to Messrs. L. Schuler A.G., Goppingen, Germany

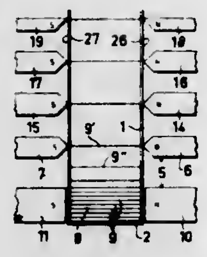
Filed Dec. 22, 1965, Ser. No. 515,546

Claims priority, application Germany, Jan. 5, 1965, Sch 36,336

8 Claims. (Cl. 271—18)

1. A device for transporting individual blanks of ferromagnetic material vertically of their plane along a path, especially a device for feeding blanks from the top of a stack to a machine tool, the stack being provided with spreading magnets, characterized in that pairs of poles

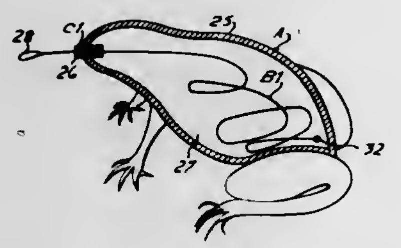
are arranged along the transport path of the blanks in planes extending vertically of the transport direction and



at least one pair of poles is adapted to be switched on and off for the purpose of shifting planes having a concentration of magnetic flux lines.

3,353,823
PNEUMATIC SQUEEZE TOY

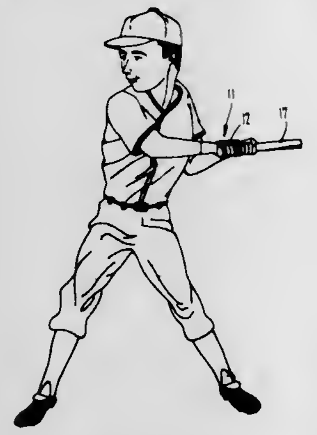
David Sobel, Havertown, Pa., assignor of fifty percent to Bilker and Moyerman, Philadelphia, Pa., a partnership of Pennsylvania
Filed Apr. 1, 1965, Ser. No. 444,617
4 Claims. (Cl. 272—8)



2. A squeeze toy comprising a hollow compressible casing having a collapsible chamber therein, a rigid capillary tube having a bore interconnecting the chamber with the atmosphere, and a filamentous member loosely contained in said chamber and having one end slidably received in said bore so that said filamentous member will be expelled through said capillary when said casing is compressed, the distal end of said filamentous member having a loop thereon so that the loop is adapted to engage an object.

3,353,824
BATTING AID AND METHOD OF USING SAME

Jack Hamson, Jr., 1274 Cotter Way, Hayward, Calif. 94541
Filed Aug. 11, 1964, Ser. No. 388,785
4 Claims. (Cl. 273—26)

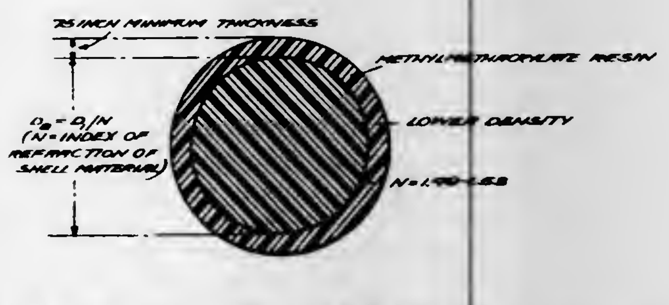


1. A batting improving method comprising securing a flat rigid strip to the back of a hand grasping a baseball bat adjacent the knob thereof, and swinging the bat with both hands through an arc while observing said strip and maintaining same at all times level to thereby produce a level swing.

2. A batting aid comprising a thin narrow strip of rigid material of a width and length many times greater than its thickness and having pairs of transversely aligned notches extending into its opposite side edges adjacent the opposite ends of the strip, each of said notches having at least two generally transversely extending spaced apart side edges, and a rubber band having opposite end portions engaged within said pairs of notches and maintained in position longitudinally of said strip by said notch edges, said rubber band extending transversely across a first face of said strip between transversely opposite notches and longitudinally across a second opposed face of said strip, said first face being substantially flat and devoid of protuberances between the ends of said strip.

3,353,825
BOWLING BALL

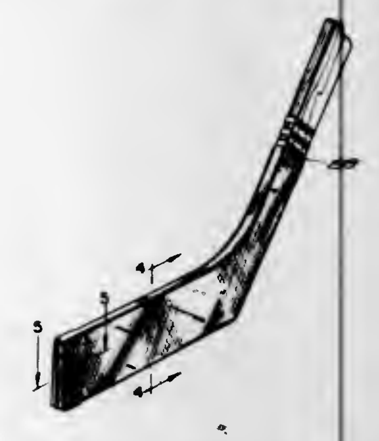
Robert Dreyer Bach, Arlington, Mass., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 13, 1965, Ser. No. 425,339
7 Claims. (Cl. 273—63)


.25 INCH MINIMUM THICKNESS
METHYLMETHACRYLATE RESIN
LOWER DENSITY
(N = INDEX OF REFRACTION OF SHELL MATERIAL)

1. A spherical bowling ball having:
(1) a core consisting essentially of a blend of a methacrylate resin and tris (dibromopropyl) phosphate, said blend of said core containing in excess of 15 weight percent of said phosphate but no greater than 40 weight percent of said phosphate; and
(2) a transparent shell consisting essentially of a methacrylate resin and having a density substantially lower than the density of said core, the characteristics of said core and shell being such that the outline of said core is not visible through said shell.

3,353,826
REINFORCED HOCKEY STICK

Alfred J. Traverse, 235 Central St., Laconia, N.H. 03246
Filed Apr. 6, 1965, Ser. No. 446,057
1 Claim. (Cl. 273—67)

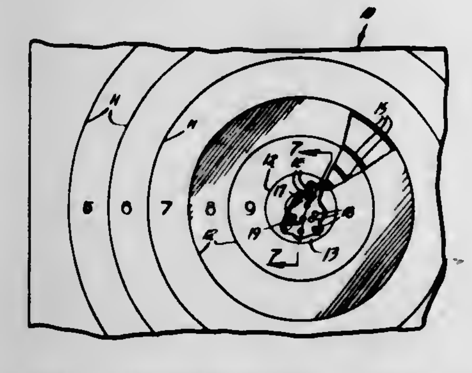


A hockey stick comprising a blade and shank, a tubular knitted sock tightly stretched over said blade and an adjoining part of said shank, and a coating of durable

synthetic resin material in which said sock is embedded covering said blade and part of the shank, said sock being a tubular knitted fabric of fiber glass yarn and a very fine nylon filament knitted together.

3,353,827
TARGET AND BACKING MEMBER THEREFOR

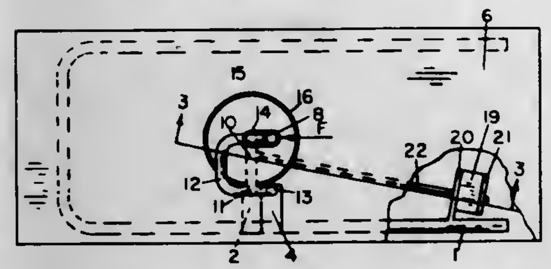
Angus Dun, Jr., Fairview Drive, Neshanic Station, N.J. 08853
Filed Apr. 28, 1964, Ser. No. 363,169
15 Claims. (Cl. 273—102.1)



2. A tearable target sheet having scoring indicia thereon including a bull's-eye, a penetrable resilient backing member of a color contrasting to that of the said bull's-eye; securing means attaching said backing member to said target sheet at spaced-apart areas for allowing said target sheet to tear in the vicinity of a projectile impingement, thereby allowing the backing member to show through the hole made in the target sheet by the projectile and rendering the point of impingement more visible due to the contrast in color of the backing member to that of the bull's-eye area, such backing member comprising a material characterized by the fact that it will stretch when being punctured by bullets passing through the target and the backing member so that the free portions of the backing member can stretch while the bullet is passing therethrough and can recover its original, unpunctured, unstretched condition save for a pinpoint opening in the center of the punctured area of the backing member after the bullet has passed therethrough, so that the portion defined by the spaced-apart areas of the backing member which have been penetrated by the bullet will be exposed through a portion of the target torn away by the passage of the bullet therethrough and will be visible to a person on the firing line due to the contrast in color of the backing member to that of the bull's-eye area.

3,353,828
SWINGABLE HORSESHOE STAKE WITH SHOCK ABSORBING MEANS

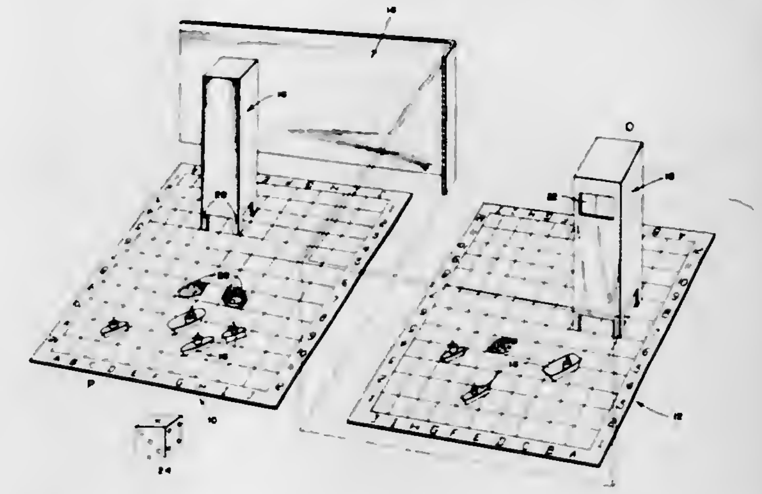
Vernon Kinser, 11103 Goethe, Detroit, Mich. 48214
Filed Feb. 11, 1965, Ser. No. 431,817
9 Claims. (Cl. 273—104)



1. A horseshoe pitching court comprising a frame, a stake, means swingably mounting said stake to said frame, portions of said mounting means being swingable with said stake, and shock absorbing means connected at one end to said frame and at the other end to a swingable portion of said mounting means.

3,353,829
GAME APPARATUS EMPLOYING SHIELDED GAME BOARDS WITH OPTICAL DEVICES FOR BOARD VIEWING

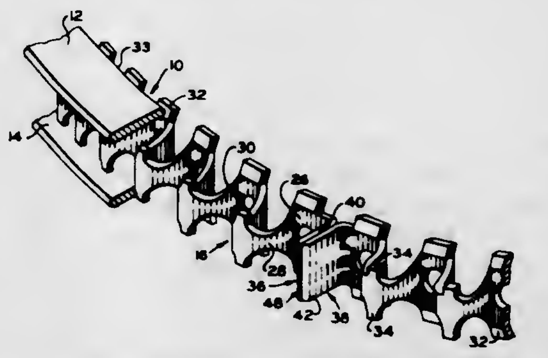
Richard G. Board, Bethesda, Md. (3000 Connecticut Ave., Washington, D.C. 20008)
Filed Feb. 9, 1965. Ser. No. 431,335
20 Claims. (Cl. 273—131)



5. A game of the type described comprising a game board, means for shielding at least a part of said board from the view of one player but permitting viewing of said part by another player when the players are in their normal playing positions with said shielding means substantially upright between them, a playing piece adapted to be located in said part by said other player, and an image-forming optical device arranged to permit inspection of selected regions of said part by said one player to determine whether said piece is located in the selected regions, said optical device having means for providing a predetermined field of view limited to permit viewing of only a fraction of said shielded part at one time and being at least in part movable relative to said board to provide images of different fractions of said shielded part at different times.

3,353,830
END SECURING MEANS FOR A SPACER EXPANDER OF A PISTON RING ASSEMBLY

Roscoe L. Bell, R.R. 1, Springport, Ind. 47386
Filed Mar. 23, 1964, Ser. No. 353,691
3 Claims. (Cl. 277—9.5)

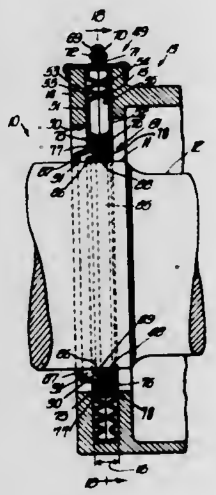


1. A piston ring assembly adapted to be installed in a groove in a piston which cooperates with the cylinder of an internal combustion engine, comprising an annular resilient rail having a radially outer periphery operative to pressingly and slidingly engage the cylinder, a spacer-expander having engaging means thereon engaging at least part of the radially inner surface of said rail and operative to force said rail radially outwardly, said spacer-expander being circumferentially compressible and expansible and having a split annular configuration thereby defining a pair of adjoining ends, abutment means carried by each

end of said spacer-expander and having abutting surfaces adapted to abuttingly engage each other so that said spacer-expander is operable in circumferential compression and expansion as a solid ring, and pressure-sensitive adhesive disposed on the abutting surfaces of said abutment means for adhesively securing said abutment means to each other, whereby upon said abutment means being pressed together the adhesive will adhesively retain the abutting relationship thereof.

3,353,831
DUST GUARD

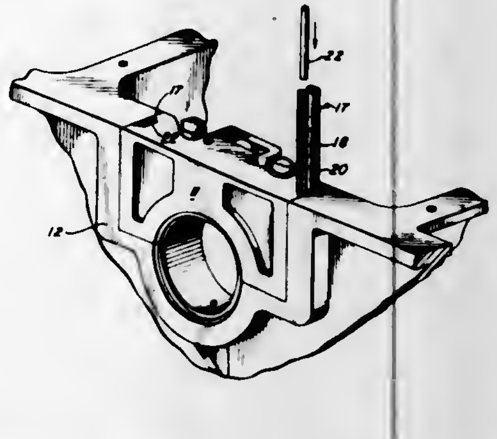
Theodore J. Sweger, Naperville, Ill., assignor to Illinois Railway Equipment Company, Chicago, Ill., a corporation of Illinois
Filed July 28, 1965, Ser. No. 475,512
4 Claims. (Cl. 277—68)



1. For combination with a railway car journal box having a dust guard well, a railway car axle in said journal box having a seat extending transversely of said dust guard well, and a dust guard body member in said dust guard well around said axle seat having an annular rib T-shaped in cross section with the head portion facing inwardly, means providing a sealing connection between said axle seat and said dust guard body member comprising: a flexible sealing ring having an outwardly facing clincher section for detachably engaging said head portion of said annular rib and an inwardly facing sealing section for sealing engagement with said seat, said sealing section including a cylindrical bumping surface and inner and outer laterally spaced apart annular sealing lips in tandem on one side of said bumping surface with a relatively small cross sectional area annular groove between said bumping surface and said inner sealing lip and a relatively large cross sectional area annular groove between said sealing lips, said bumping surface having a plurality of transversely extending grooves to facilitate flow of lubricant to said small cross sectional area annular groove, there being a plurality of transverse openings through said inner sealing lip placing said inner groove in communication therethrough with said outer groove to provide a reservoir to supply lubricant between the distal edges of said lips and said seat.

3,353,832
SEALING ASSEMBLY

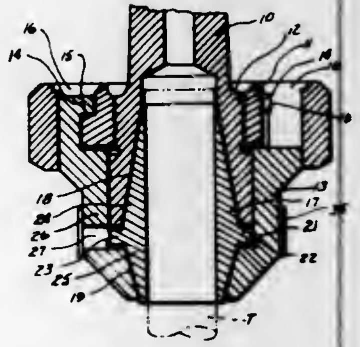
Robert E. Coulson, Chicago, Ill., assignor to Felt Products Mfg. Co., a corporation of Delaware
Filed May 24, 1965, Ser. No. 458,116
3 Claims. (Cl. 277—171)



1. A sealing assembly to prevent leakage between two mating surfaces, one of said mating surfaces defining a wedge-shaped recess having an open side contiguous to said mating surfaces, said sealing assembly comprising a wedge-shaped sealing strip having two parallel sides of different widths, said sealing strip being disposed in said recess with its wider parallel side adapted to engage said other mating surface, said sealing strip defining a groove in its narrower parallel side, and means disposed in said groove for forcing said sealing strip into sealing engagement with said other mating surface.

3,353,833
COLLET RELEASE

Albert Marini, Sr., Racine, Wis., assignor to Albert Marini and Florence Marini, co-partners, doing business as Marini Tool and Die Company, Racine, Wis.
Filed Sept. 24, 1965, Ser. No. 489,828
21 Claims. (Cl. 279—49)

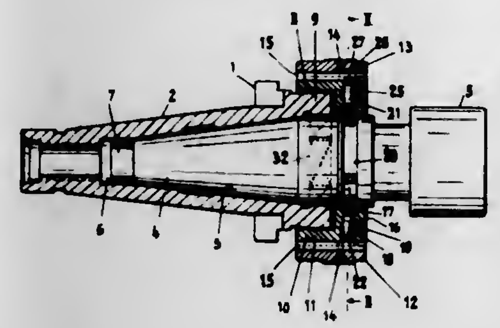


1. In a tool holder which includes a pair of coaxial clamping members arranged for relative axial and rotary movement and a collet therebetween, a collet release comprising: a pawl carried by one of said members, said pawl being radially biased toward said collet, and a radial projection on said collect opposing said pawl when one of said members is rotated in one direction relative to the other.

3,353,834
CHUCKS

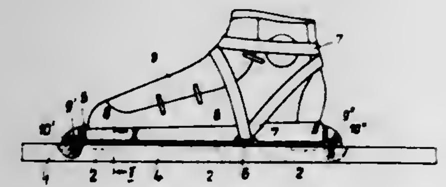
Otto Bay, Luzernstrasse 24, Subingen, Switzerland
Filed June 2, 1964, Ser. No. 371,964
9 Claims. (Cl. 279—82)

1. In a chuck, particularly for mounting a power driven rotary tool, in combination, an annular member adapted to be connected to a prime mover for rotation about its own axis, said annular member having an interior portion adapted to receive a portion of a tool and provided with a plurality of angularly spaced passages; a plurality of angularly spaced locking means respectively snugly received in said passages and thereby carried by said annular member for radial movement with respect thereto, each of said movable locking means having a portion adapted to engage said tool portion for locking engagement therewith against axial and radial movement of the tool; biasing means mounted on said annular member adjacent to one side of each passage for biasing said locking means radially outwardly away from said tool portion; and actuating means carried by said annular member for movement between a rest position and an actuating position and operatively engaging said locking means for moving the latter into locking engagement with said tool portion against the bias of said biasing means when said actuating means is moved to said actuating position.



3,353,835
MAGNETIC SAFETY SKI BINDING

Reinhold H. Sommer, Essen, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany, a corporation of Germany
Filed Aug. 7, 1964, Ser. No. 388,199
Claims priority, application Germany, Aug. 16, 1963, B 73,141; June 12, 1964, B 77,218
12 Claims. (Cl. 280—11.35)



10. A safety ski binding for releasably mounting a boot on a runner, comprising fixed abutment means on said runner bearing endwise upon said boot, and permanent-magnet retaining means including a pair of co-operating ferromagnetic elements disposed, respectively, on said runner and on the underside of said boot for exerting a magnetic force which normally prevents escapement of the boot from said abutment means in the absence of stress between said boot and said runner exceeding said magnetic force.

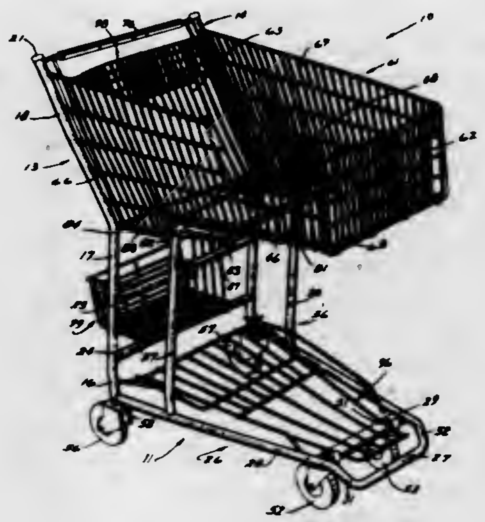
3,353,836
NESTING SHOPPING CARRIER

Lynn N. Davis, Emmett Township, Calhoun County, Mich., assignor to United Steel and Wire Company, Battle Creek, Mich., a corporation of Michigan
Filed Sept. 9, 1965, Ser. No. 486,164
11 Claims. (Cl. 280—33.99)

11. In a nesting shopping carrier construction, the combination comprising:

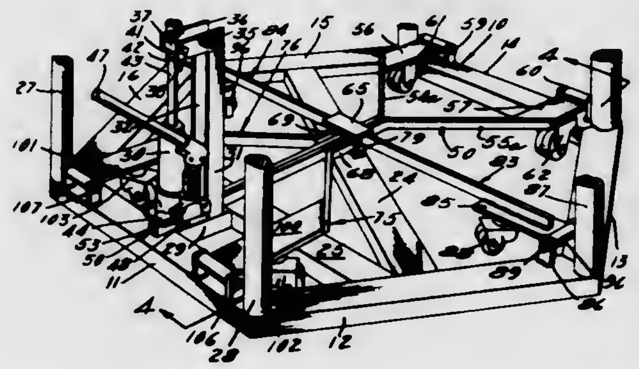
a frame having an underlying portion, and wheels supporting said frame;

a container having a bottom wall supported intermediate its ends on the underlying portion of said frame, said bottom wall having first and second portions with said first portion being downwardly stepped relative to said second portion, said first portion being located on one side of said underlying portion, the adjacent edges of said first and second portions being closely adjacent but laterally spaced from one another, said bottom wall further including an intermediate portion interconnecting the adjacent edges of said first and second portions, said first portion being adapted to receive the underlying portion of a similar carrier driven therein to allow nesting of such carriers.



3,353,837
LIFTING DEVICE

Stanley Marcyan, Warren, Mich., assignor to Walter Marcyan
Filed Mar. 8, 1966, Ser. No. 532,692
4 Claims. (Cl. 280—43.13)



1. In a lifting device for raising and lowering a platform base:

(a) a base normally supported on a base supporting surface thereunder;
(b) jack lifting means supported on said base and having a part which can be raised and lowered relative to said base;
(c) first bar means having one end adjacent and connected to said part of said lifting means,
(d) said first bar means extending across said base and being terminated from an intermediate point into bifurcated ends pivotally connected by first pivot means to said base at a first peripheral portion thereof relatively remote from said lifting means;
(e) first casters respectively extending downwardly from said bifurcated ends adjacent said first pivot means and adapted to make base supporting contact with said base supporting surface when the lifting

means moves the first bar means downwardly a predetermined amount;

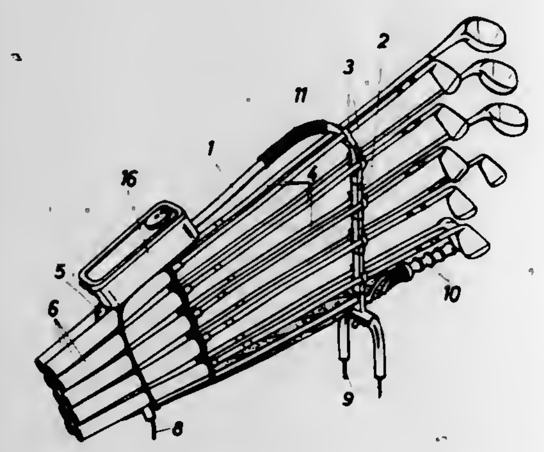
(f) second bar means formed of two spaced members having end portions terminating adjacent to and spaced apart to be in alignment with the bifurcated ends of said first bar means, said end portions of the second bar means being pivotally connected by second pivot means to a second peripheral portion of said base, said base portion also forming the base support for said jack lifting means and being relatively opposite to said first peripheral portion, said end portions converging inwardly towards each other so that the respective end portions at said intermediate point form an approximate V having said first bar means spaced therebetween;

(g) means at said intermediate point cooperatively associating said first bar means and the adjacent converging end portions of said second bar means to cause said second bar means to move downwardly a predetermined amount corresponding to the downward movement of the first bar means; and

(h) second casters respectively extending downwardly from said spaced members forming the second bar means adjacent the second pivot means adapted to make base supporting contact with said base supporting surface when the lifting means moves the first bar means downwardly said predetermined amount whereby said base is raised off the supporting surface and is supported on said casters,

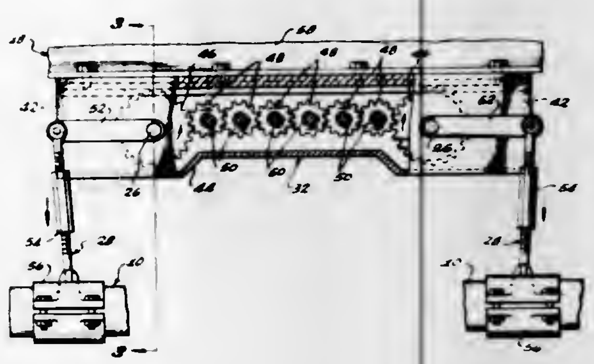
(i) said base being weighted to cause said base to be lowered when the lifting means raises the bar means a predetermined amount from their lowered position whereby the base makes a supporting contact with the supporting surface.

3,353,838
PORTABLE HOLDER FOR GOLF CLUBS
Leonhard Schmid, Kilianstrasse 5, Augsburg, Germany
Filed July 21, 1966, Ser. No. 566,904
Claims priority, application Germany,
Mar. 16, 1966, Sch 38,674
8 Claims. (Cl. 280—47.19)



1. A portable holder for golf clubs comprising a frame member having a carrying portion, a first limb having a plurality of supports for receiving club shafts and a second limb carrying a battery of tubular members for receiving and locating the grip ends of the clubs, the supports being mounted on opposite sides of the first limb and the tubular members being mounted on opposite sides of the second limb, each of the tubular members being disposed in axial alignment with a corresponding one of the supports and the axes of the individual tubular members of the battery being splayed apart so as to diverge from their ends remote from the supports to their ends facing the supports.

3,353,839
LEVELING DEVICE FOR AUTOMOTIVE VEHICLES AND THE LIKE
John C. Pistone, 7540 Canby Ave.,
Reseda, Calif. 94570
Filed Oct. 22, 1965, Ser. No. 501,656
8 Claims. (Cl. 280—104)



1. A leveling device to be mounted on a vehicle having an axle, wheels on the ends of said axle, a chassis overlying said axle, and springs mounting said chassis on said axle, said device being adapted to retain said chassis and axle in parallel relation and comprising:

an elongate hollow housing;

means for mounting said housing on the underside of said chassis;

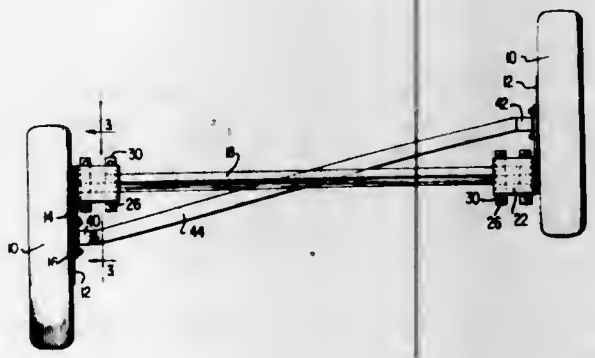
a pair of parallel rotary shafts mounted within said housing adjacent the ends thereof;

torque transmitting means driveably coupling said shafts in such manner that rotation of either shaft in a given direction effects rotation of the other shaft in the opposite direction, said torque transmitting means comprising a first pinion rigid on each shaft and a number of idler pinions rotatably mounted within said housing between said shafts and disposed in driving relation with one another and with said first pinions;

a transverse arm rigid on each shaft, said arms being rotatable to positions wherein both of said arms extend generally parallel to the longitudinal axis of said housing and toward the adjacent ends of said housing; and

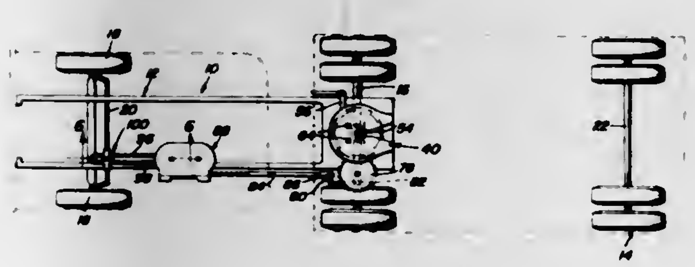
a link pivotally connected at one end to the outer end of each arm and having means at its other end for connection to the vehicle axle.

3,353,840
WHEEL AND AXLE ASSEMBLY
Richard R. Love, Box 468, Buhl, Idaho 83316
Filed May 13, 1965, Ser. No. 455,368
7 Claims. (Cl. 280—124)



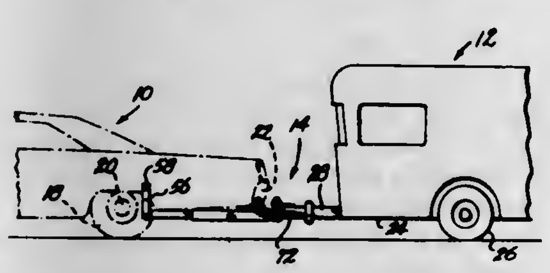
1. An axle assembly comprising a transverse member having secured to its ends a pair of crank arms arranged in spaced parallel relation to one another, said crank arms extending in opposite directions from the ends of said transverse member in planes normal thereto, an axle having its ends secured to the portion of said crank arms that project beyond said transverse member, said axle crossing said transverse member between said arms, the ends of said axle having wheels mounted thereon with said wheels being offset with respect to one another and said transverse member.

3,353,841
FIFTH WHEEL SAFETY DEVICE TO PREVENT JACK-KNIFING
Gary R. Neal, Baltimore, Md., assignor of thirty-three and one-third percent to James E. Neal, Jr., Baltimore, Md.
Filed Oct. 23, 1965, Ser. No. 505,317
7 Claims. (Cl. 280—432)



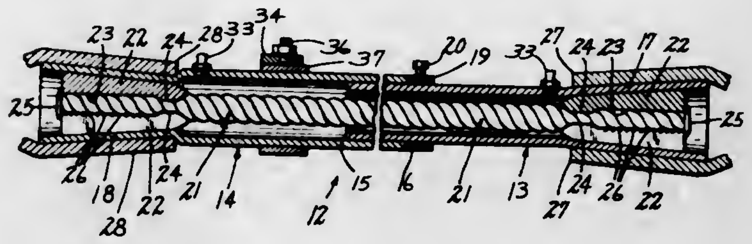
1. In combination with a wheeled draft vehicle and wheeled semi-trailer combination of the type wherein the draft vehicle includes steerable front wheels and the forward end portion of the semi-trailer and the rear end portion of the draft vehicle include first and second portions, respectively, pivotally secured together for relative rotation about an upstanding axis, pivot-limiting means connected between said draft vehicle and said semi-trailer operative to allow only slight relative pivotal movement between said draft vehicle and semi-trailer, motion-transmitting control means operatively connected to said steerable front wheels and to said pivot-limiting means and responsive to steering adjustment of said front wheels to allow a change in the relatively angularly displaced positions of said draft vehicle and semi-trailer, other than said slight relative pivotal movement, only to the relative positions which would normally be effected independently of the pivot-limting means if said steerable front wheels were held stationary in adjusted position and the combination was moving forward with no side slippage of the wheels of the draft vehicle and the semi-trailer.

3,353,842
TRAILER HITCH
Clyde P. Lewis, Ketchikan, Alaska
(Rte. 3, Box 635, Corvallis, Oreg. 97330)
Filed Mar. 25, 1966, Ser. No. 537,521
6 Claims. (Cl. 280—447)



1. Draft means for a trailer with frame, comprising towing structure adapted to tow the trailer, anchoring means for mounting the towing structure on the rear of a towing vehicle with the structure afforded a limited amount of play whereby the same is movable laterally of the vehicle, said anchoring means including means which on movement of the towing vehicle is operable to transmit a towing force from the vehicle to the towing structure, means producing for the towing structure when mounted on a vehicle an effective pivot about which the structure pivots, which pivot point is located forwardly on the vehicle from said anchoring means, said means comprising an elongated bar mounted on and extending forwardly from the towing structure and means mounting a forward end of the bar to the towing vehicle at a point located forwardly of said anchoring means, said towing structure extending in an elongated expanse rearwardly from the anchoring means to a point adapted to be connected with the frame of the trailer, said expanse of the towing structure being articulated with relative pivotal movement afforded between forward and rear portions of said expanse, and biasing means operatively interposed between the forward and rear portions of said expanse of the towing structure inhibiting dropping of the towing structure toward the ground in the region where said relative pivotal movement is afforded in said towing structure.

3,353,843
RESILIENT HITCH
Alan J. Lommen and Merrel M. Haakenson, both of Dickey, N. Dak. 58431
Filed Mar. 17, 1966, Ser. No. 535,204
9 Claims. (Cl. 280—486)



1. A shock absorber adapted to be interposed between a pair of relatively movable objects comprising:

(a) a pair of tubular telescoping members each having an axially outwardly flared outer end portion,

(b) adjustable means limiting inward telescoping movements of one of said members into the other of said members,

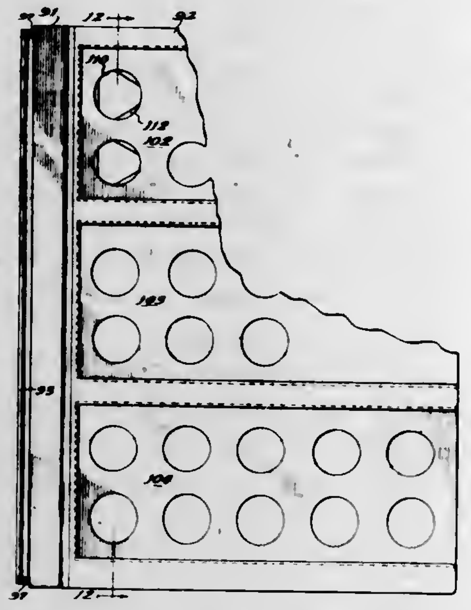
(c) a rope-like tie element formed from synthetic fibrous material extending axially within said tubular members,

(d) anchoring means associated with said flared outer end portions of said tubular members for anchoring an opposite end of said tie element to one each thereof, and

(e) means for detachably pivotally securing said flared outer end portions of said tubular members one each to one of a pair of relatively moving objects whereby to absorb tensional forces therebetween.

3,353,844
BOOK BINDING
Henry N. Staats, 1344 Linden Ave.,
Deerfield, Ill. 60015
Continuation of application Ser. No. 472,546, July 16, 1965. This application Mar. 7, 1967, Ser. No. 621,359
1 Claim. (Cl. 281—17)

A binder for leaves of a book, comprising: a backbone block of elongated substantially rigid material extending substantially from the top end to the bottom end of the book, said block having a constant cross-sectional configuration throughout such extent and one face exposed to the interior of the book, said backbone block having a plurality of side by side elongated open slots extending over the length of the block from the top end to the bottom end of the book, each slot having an opening throughout its length extending from the slot to said face of the block exposed to the interior of the book, each such opening being of lesser width than the slot with which such opening extends, at least one leaf for said book, said leaf having an edge located member having a narrow neck portion and an enlarged extremity portion on the neck portion, said edge located member being elongated and of a size to be received in one of the slots and associated openings in the backbone block upon endwise axial sliding assembly movement of the block and leaf relative to each other, means retaining said leaf and block in assembled relation, and a front cover and back cover removably carried by said backbone block for enclosing said leaf therein, said backbone block carrying said front and back cover by interconnecting means comprising walls forming a generally dovetail groove along the length of the block on a side thereof spaced from the face of the block exposed to the interior of the book and a mounting member secured to the front and back cover and removably caught in said dovetail groove to assemble the backbone block and covers together.



3,353,845
RATE-SAVING SHIPPING LABEL

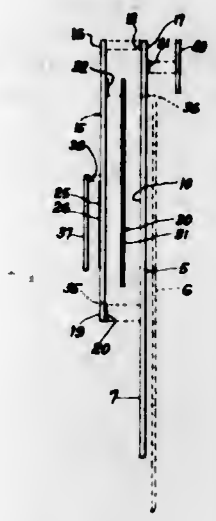
Jerimiah J. Curran, 1310 Jackson Ave.,
River Forest, Ill. 60305
Filed June 9, 1966, Ser. No. 556,371
7 Claims. (Cl. 282—23)

1. A rate-saving shipping label comprising:

a rear sheet adapted to be secured to a package, the upper area thereof adapted to have the names and addresses of the addresser and the ultimate addressee applied thereto;

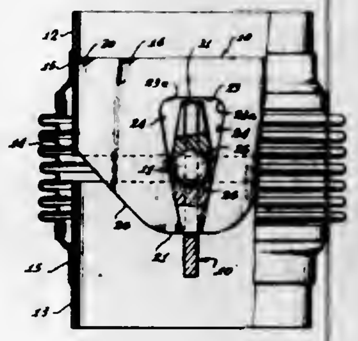
a front sheet covering at least the portion of said upper area of said rear sheet containing the name and address of the ultimate addressee and itself devoid of said name and address in readable form, the top marginal portion of said front sheet secured in use to said rear sheet and the bottom marginal portion of said front sheet secured to said rear sheet, the lower area of the label having the name and address of the intermediate addressee applied thereto, said front sheet adapted to be removed from the label by the intermediate addressee prior to shipping the package to the ultimate addressee, thereby exposing the name and address of the ultimate addressee: and

transfer means between said rear and front sheets adapted to be removed from the label by the intermediate addressee with said front sheet, said transfer means effective to apply to said rear sheet the ultimate addressee information applied to said front sheet, said front sheet having masking means on the area adapted to have the name and address of the ultimate addressee applied thereto, said masking means precluding the name and address of the ultimate addressee from appearing on said front sheet, whereby the label is effective to direct a package from an addresser to an intermediate addressee with the name and address of the ultimate addressee concealed, and thence to the ultimate addressee after removal of the front sheet by the intermediate addressee.



3,353,846
BELLOWS RESTRAINING DEVICE

John F. Peyton, Long Beach, Calif., assignor to Federal Mogul Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 18, 1965, Ser. No. 497,012
8 Claims. (Cl. 285—16)



1. In a bellows restraining device of the type having a pair of interlaced strut assemblies with nose pieces including a ball and socket means swivelly interconnecting said assemblies when under tension, a means for disengaging said ball and socket means comprising:

a flat plate in each of said strut assemblies, each of said plates having a pair of angularly related edges converging towards a nose piece and symmetrically disposed about an axis on opposite sides of a substantially triangular slot formed in said plate and having symmetrically disposed about said axis,

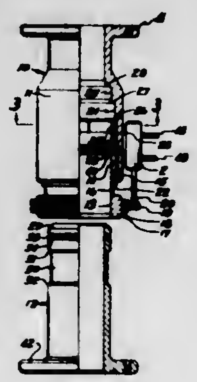
confronting surfaces, including each of said nose pieces and edges of said slots of said plates, having first portions to positively limit separating movement of said nose pieces within two perpendicular planes intersecting the center of said ball and socket means and adapted to limit such separating movement sufficiently to maintain said ball and socket means in self-centering operative association for reseating upon tensioning of said assemblies;

second portions of said confronting surfaces positively limiting pivotal movement of each of said assemblies about a pair of perpendicular axes intersecting the center of said ball and socket means and lying in said perpendicular planes;

each of said assemblies being pivotal about both said axes to move a nose piece of one of said assemblies into a corner of the slot of the other of said assemblies, one of the angularly related edges of the plate of said one assembly then providing clearance with the corner of said slot of the other assembly to move said first portions out of opposing registration to permit further separating movement of said nose pieces sufficiently to displace said ball and socket means out of said self-centering operative association and to allow access to substantially all surfaces of said ball and socket means.

3,353,847
POWERED QUICK COUPLING DEVICE

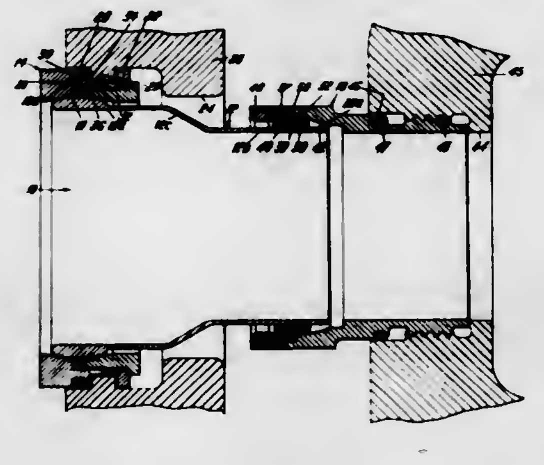
Cicero C. Brown, % Brown Oil Tools, Inc.,
P.O. Box 19236, Houston, Tex. 77024
Filed Sept. 2, 1965, Ser. No. 484,539
5 Claims. (Cl. 285—18)



1. A powered quick coupling device, comprising, a tubular box member having an axial bore, a tubular pin member dimensioned to be freely slidable into said bore and to define a substantial annular space between the pin and box members, an inwardly inclined annular shoulder in said bore, an annular seat in said bore spaced inwardly from said shoulder engageable by the end of the pin member to form a metal-to-metal seal therewith, said pin member having a circumferential recess spaced from said end and defined by spaced end walls, a resilient nonmetallic seal packing circumferentially disposed about said pin member between said recess and said end to seal with the wall of said bore, a split resilient latch ring slidably disposed in said bore about said pin member and initially seated against said shoulder, a locking collar slidably disposed about said pin member and extending into said annular space, a section of relatively coarse threads connecting the inner end of said collar to said box member, thrust means arranged in said bore between said collar and said latch ring operable in response to rotation of said collar relative to said box member in one direction to force said latch ring over said shoulder into said recess and into thrusting engagement with the forward end wall thereof to thereby lock the pin member against retractive movement relative to the box member with said end of the pin member disposed in said metal-to-metal sealing engagement with said annular seat, anti-friction bearing means operably disposed between said collar and said latch ring, and reversible power-operated means mounted on the box member operably connected to said drive collar for rotating the same.

3,353,848
SELF-ALIGNING PRESSURE SLEEVE

Robert Bleasby, Merton Park, England, assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Jan. 19, 1966, Ser. No. 521,648
Claims priority, application Great Britain, Jan. 22, 1965, 3,019/65
2 Claims. (Cl. 285—19)



1. A connector for providing access to a tube header housed within a shell of a tubular heat exchanger which shell has a hole therein normally closed by a removable closure comprising:

a first end ring having a generally cylindrical shape adaptable to be passed through a shell hole with radially inwardly projecting means in a shell, said first end ring having a first inner portion and a first outer portion, said first inner portion having an external thread adapted to engage a threaded header hole in a header after removal therefrom of a closure, said first outer portion extending beyond said header toward said shell hole, said first outer portion having a first internal thread;

a first sealing means between said first end ring and said header hole in the header;

a first insert means having a ring shape and a first external thread adapted to engage said first internal thread, said first insert and said first outer portion forming a first concave part-spherical surface;

a second end ring having a generally cylindrical shape, said second end ring having a second inner portion and a second outer portion, said second inner portion having externally mounted bayonet lugs adapted to engage said inwardly projecting means from the shell hole and further having a second internal thread;

a second sealing means between said second end ring and said shell hole;

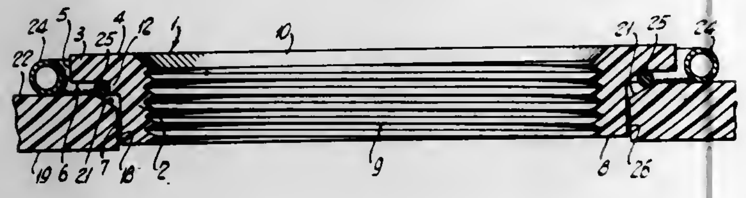
a second insert means having a ring shape and a second external thread adapted to engage said internal thread, said second insert and said second end ring forming a second concave part-spherical surface;

an intermediate sleeve having an intermediate inside end and an intermediate outside end, said intermediate sleeve including a second intermediate convex part-spherical surface at said intermediate outside end adapted to engage said second concave part-spherical surface;

a ring member slidably mounted on said intermediate inside end and having a first intermediate convex part-spherical surface adapted to engage said first concave part-spherical surface;

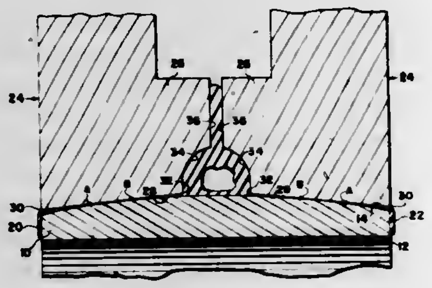
- a first intermediate sealing means located between said first intermediate convex part-spherical surface and said first concave part-spherical surface;
- a second intermediate sealing means located between said second end ring and said second insert means and between said second intermediate concave part-spherical surface and said second intermediate convex part-spherical surface;
- a third intermediate sealing means located between said ring member and said intermediate inside end; and
- a retaining ring located about said intermediate inside end adjacent said ring member to prevent said ring member from sliding off said intermediate inside end.

3,353,849
PLASTIC CONTAINER CLOSURE ASSEMBLY
Jeremiah Laurizio, New Providence, N.J., assignor to American Flange & Manufacturing Co., Inc., a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 431,069
2 Claims. (Cl. 285—21)



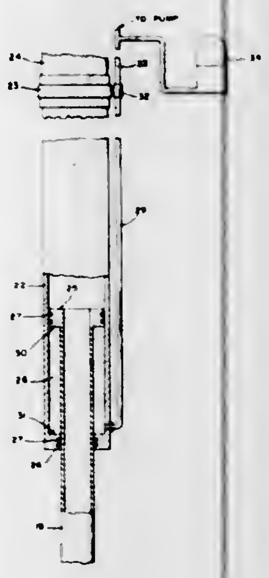
1. In container wall closure member assembly, a container wall molded of synthetic plastic material formed with an opening therethrough, a closure flange molded of synthetic plastic material comprising an interiorly threaded cylindrical neck terminating at one end in a circumferentially enlarged shoulder said shoulder having a flat upper surface, a lower annular surface and an outer edge, an annular projection at the juncture of said lower shoulder surface and said cylindrical neck, a metal conducting ring surrounding said flange neck and engaging said lower shoulder surface and said annular projection.

3,353,850
METHOD AND APPARATUS FOR HOLDING A PAIR OF HOLLOW METAL ARTICLES TOGETHER
Tom E. Butz, Chagrin Falls, and Seymour N. Schlein, University Heights, Ohio, assignors to The Fanner Manufacturing Company, a division of Textron Inc., Cleveland, Ohio, a corporation of Rhode Island
Filed Nov. 9, 1966, Ser. No. 593,197
1 Claim. (Cl. 285—284)



Means for joining a pair of hollow cast iron members which members each have a passage communicating with the exterior and terminating in an opening and wherein the walls of said passages taper outwardly toward said opening and wherein said passage has a smaller diameter where it communicates with the exterior and a larger diameter at the opposite end thereof, comprising a malleable metal tubular member disposed within each of said passages to provide interconnection therebetween, said tubular member having an outer surface which curves from a smaller diameter at the ends thereof to a larger diameter at the central portion thereof, said tubular member having a portion of its outer diameter larger than a portion of the diameter of the opening, said outer surface of the tubular member having a coating thereon of a synthetic resin having the property of adhering to and bonding metals, said resin being resistant to deterioration at temperatures above 225° F., said outer surface of said malleable member having line contact at tangency with each of said passages which line contact expands to area contact on deformation, said expanding area of contact causing a portion of the resin to be forced into interstices between said walls of the opening and the outer surfaces of said malleable member resulting in said area of contact having regions of essentially metal to metal contact and regions of resin interposed in the interstices between the metal surfaces, the opposing surfaces of said malleable member and said passages on both sides of said area of contact with each passage wall being essentially free of metal to metal contact and bridged by said resin, whereby a bond-seal is provided by said contact areas and a seal is provided by the bridging resin on each side thereof.

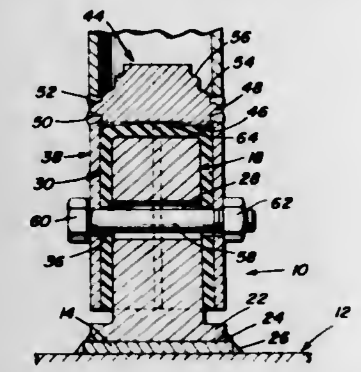
3,353,851
PNEUMATIC CYLINDER FOR APPLYING TENSION TO RISER PIPE
Renic P. Vincent, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Nov. 26, 1963, Ser. No. 325,855
4 Claims. (Cl. 285—302)



1. Means for stabilizing a riser pipe in deep water marine drilling operations by maintaining said riser pipe in tension, said riser pipe being connected between a floating vessel and the marine floor and including at least one telescoping section near the bottom of said vessel, said section comprising inner and outer conduit sections slidingly sealed to each other at the ends of said section thereby forming a fluid tight variable volume cell therebetween, each said end of said sections carrying a sealing means thereon which forms said cell between said inner and outer conduit, said variable volume cell being so constructed that the axial distance between the cell ends of said section can increase, thereby placing the riser pipe in tension, said tension being mantained by supplying only fluid under pressure to the variable volume cell

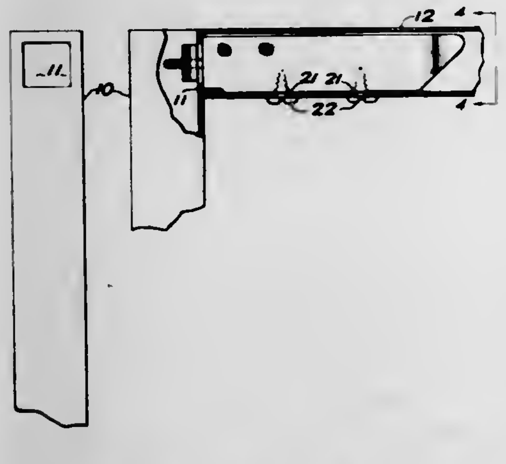
formed within said telescoping section by said conduit sections, whereby the tendency of said riser pipe to column buckling and bending during operations is minimized.

3,353,852
MOUNT FOR TRACTOR CANOPY POST
Donald L. Wood, Medford, Oreg., assignor to Concrete-Steel Corporation, a corporation of Oregon
Filed July 15, 1965, Ser. No. 472,189
13 Claims. (Cl. 287—20)



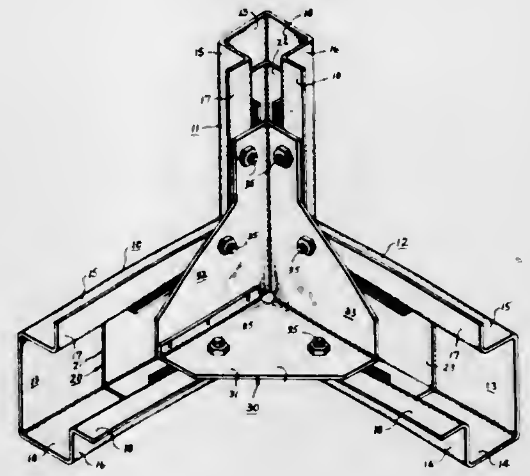
12. A mount for a canopy post comprising a projecting pedestal, said pedestal having a fixed end and a free end, a resilient cushioning boot received over said free end and enclosing a major portion of said pedestal, an elongated collar encircling said boot, a post receiving means fixed to one end of said collar and overlying the free end of said pedestal, said post receiving means having a plurality of different sized offset portions thereon to receive various sized hollow post ends, and fastener means engaging said collar to said pedestal with said resilient cushioning boot therebetween.

3,353,853
TUBE CONNECTING FASTENER
James H. Heywood, 1411 Doncaster, Youngstown, Ohio 44511
Filed May 3, 1965, Ser. No. 452,704
4 Claims. (Cl. 287—54)



1. A tube connecting fastener for securing hollow metal tubes to one another in right angular relation and comprising a U-shaped body member having a base portion and spaced arm portions, said base portion having a projecting shoulder of desirable configuration on the base thereof and said arm portion having a pair of oppositely disposed, longitudinally extending expansion members secured thereto in spaced relation so as to extend outwardly therebeyond, said members each having a longitudinal flange thereon one of said expansion members having a tab on a side opposite to said flange and extending outwardly a distance equal to the distance of said flange and adapted to loosely engage the flange of the other of said expansion members to hold the same in spaced relation, one of said expansion members has a flange of greater width than the space between said expansion members and is disposed at an angle thereto and is movable toward the flange on the other of said expansion members to move said flanges apart said flanges being apertured to receive metal screws for distorting said flanges to increase the effective spacing thereof when inserted in one of said metal tubes, a bolt positioned through the base of said U-shaped body member and extending in a direction opposite to said expansion members and an arcuate nut on said bolt of a configuration enabling it to be positioned through a shaped aperture in the other one of the hollow metal tubes said nut having outer dimensions greater than said aperture.

3,353,854
STRUCTURAL CORNER ASSEMBLY
Kenneth M. Hansen, New York, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 9, 1965, Ser. No. 447,018
5 Claims. (Cl. 287—189.36)



1. A structural assembly comprising:

(a) at least two elongated rigid structural members, each of said members comprising a generally channel-shaped member having a lengthwise extending opening and wall portions adjacent said opening terminating in flange portions extending generally perpendicular to said wall portions,

(b) a reinforcing member comprising at least two angularly diverging arm portions, each of said arm portions being shaped to fit within an end portion of one of said structural members and including portions projecting through said opening of said structural member beyond said flange portions,

(c) clamping means overlying said flanges of each of said structural members at said end portion thereof and spaced therefrom a small distance by said reinforcing member, and

(d) means connecting said clamping means to said flanges of said structural members and trapping said reinforcing member therebetween.

3,353,855
LOCK MECHANISM FOR A SLIDING PANEL
Norman Earle Smith, Miami Beach, Fla., assignor to Crossly Window Corp., Miami, Fla.
Filed Apr. 20, 1965, Ser. No. 449,933
8 Claims. (Cl. 292—65)

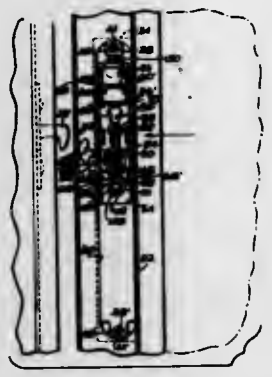
1. A lock mechanism for use in a hollow stile of a sliding panel moveable in a plane toward and away from

a jamb having a keeper projecting toward the plane of travel of the sliding panel comprising in combination:

an escutcheon plate having opposed inner and outer faces and means for engagement in the hollow stile, said escutcheon plate including an aperture extending through said faces,

guide-and-stop means extending laterally from the inner face of said escutcheon plate above said aperture said guide-and-stop means including a depending linear guide portion;

a manually-operable operator projecting through said aperture and including a stop portion engaging the inner surface of said escutcheon plate whereby the operator is retained in said aperture, said operator including an upper portion complementary to said linear guide portion of said guide-and-stop means whereby inward movement of said operator is restrained along a linear path into said hollow stile, said operator including a lower angular cam surface extending away from said guide-and-stop means;



latch slide means restrained on the inner face of said escutcheon plate for reciprocable movement toward and away from said aperture,

said latch slide means including an angular cam portion complementary to and engaged with said cam surface of said operator whereby reciprocable movement of said operator causes movement of said latch slide means normal to said operator;

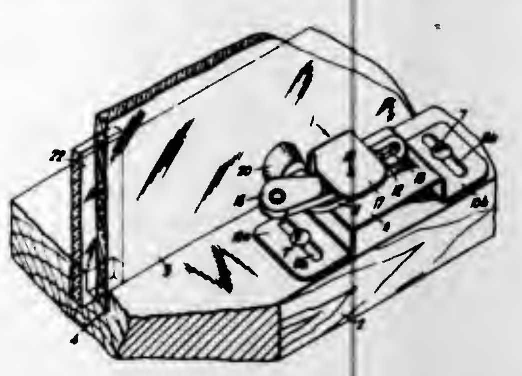
a latch pivotally mounted on said latch slide means and having relative pivotal movement with respect to said latch slide means about an axis perpendicular to said inner face and having common reciprocable movement with said latch slide means; and

biasing means engaged between said latch and said escutcheon plate and normally urging (*a*) said latch into a predetermined position with respect to said axis and (*b*) normally urging said latch slide means toward said guide-and-stop means to cause a force to be applied to said cam surface of said operator normally urging said operator toward the outer face of said escutcheon plate.

3,353,856
CAM LOCK

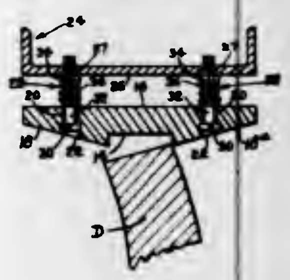
Louis George Green, Huntsville, Ontario, Canada, assignor of forty-nine percent to Norman C. MacDonald, Huntsville, Ontario, Canada
Filed Apr. 12, 1965, Ser. No. 447,226
Claims priority, application Canada, Jan. 29, 1965, 922,035
3 Claims. (Cl. 292—66)

1. A lock for sliding glass windows having a frame and at least two overlapping window panes, at least one of said panes being slidably mounted, said lock comprising a base plate adapted to be mounted on said frame adjacent the slidably mounted pane, a striker bar mounted on said base plate and means provided to engage said striker bar with said slidably mounted pane whereby said pane may be urged against a fixed pane and sealingly engaged with a jamb of said frame in a closed position, said means including a pin and slot connecting said base plate and said striker bar to permit both pivotal movement of the striker bar towards and away from the slidably mounted pane and slidable movement of the striker bar substantially parallel to the slidably mounted pane, an operating handle, first pivot means pivotally interconnecting said handle and said base plate and second pivot means connecting said handle and said striker bar and laterally spaced from said first pivot means, whereby, upon pivotal movement of said handle toward the slidably mounted pane, said striker bar engages said slidably mounted pane and urges said pane both outwardly and laterally, said second pivot means, when said lock is in an unlocked position, being located on the opposite side of said first pivot means from said slidably mounted pane and, when said lock is in a locked position, being located intermediate said first pivot means and said slidably mounted pane with said slot extending substantially parallel to the slidably mounted pane.



3,353,857
SNUBBER APPARATUS FOR A DOOR

William E. Mongor, Morrisburg, Ontario, Canada, assignor to Oliver C. Eckel, Carlisle, Mass.
Filed Sept. 22, 1965, Ser. No. 489,349
2 Claims. (Cl. 292—157)

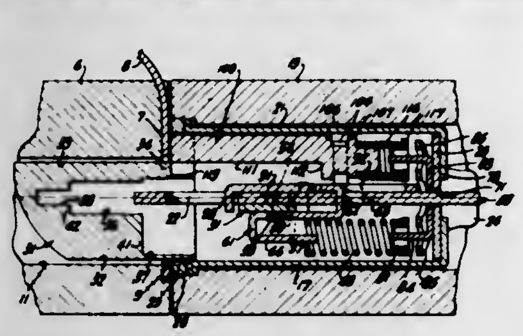


2. In combination, a door, a snubber, and a door frame normally spaced from said snubber and door, said snubber being directly above said door when the latter is in normal position and having a recess therein, means to movably attach said snubber to said frame, said door having a resilient portion that enters said recess and is adapted to bend when being forcibly moved out of said snubber recess.

3,353,858
LOCK UNIT WITH AN EXTENDABLE LATCH BOLT

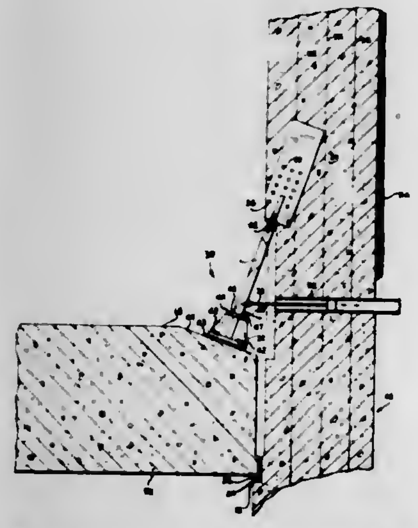
Ralph E. Neary, San Francisco, Lukas-Valentin Schmidt, San Mateo, and Carlton C. Tipping, Redwood City, Calif., assignors to Schlage Lock Company, a corporation
Filed June 18, 1965, Ser. No. 465,007
7 Claims. (Cl. 292—164)

7. A lock unit with an extendable latch bolt comprising a housing, a retractor bar, means for mounting said retractor bar for reciprocation in said housing through a predetermined distance, a lever, means for fulcruming said lever on said retractor bar for pivotal motion, a latch bolt, means for mounting said latch bolt for reciprocation in said housing, means for connecting one end of said lever to said latch bolt, and means movably mounted in said housing and connected to the other end of said lever for pivoting said lever and thereby reciprocating said latch bolt, independently of movement of said retractor bar, through a distance different than said predetermined distance.



3,353,859
OPEN END STRUCTURE HAVING A POSITIVELY ENGAGED CLOSURE

Morris Schupack, Stamford, Conn., assignor to The Preload Company, Westbury, N.Y.
Filed Mar. 23, 1965, Ser. No. 442,089
6 Claims. (Cl. 292—256)



2. In a large open-end structure of the type having an end portion, sidewalls and a removable top closure, an improved closure arrangement including a plurality of convolutions of prestressing tendons tensioned about the upper portion of the sidewalls and cooperating with vertical prestressing tendons in the sidewall to place said portion of the sidewall in a state of compression, closure support means about the interior of said sidewalls, thrust means arranged about the closure portion of the sidewall, thrust members swingably mounted at one end to the anchorage, means for moving the unmounted ends of the thrust members from a position adjacent the sidewall to a position in positive engagement with a seat on the top closure whereby said closure is positively locked in place.

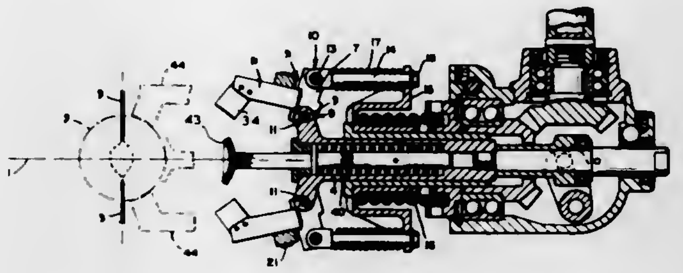
3,353,860
DRUPE GRIPPING DEVICE

Konrad E. Meissner, Alameda, Calif., assignor to Filper Corporation, San Ramon, Calif., a corporation of California
Filed Jan. 4, 1966, Ser. No. 518,606
7 Claims. (Cl. 294—100)

1. Drupe gripping means for tightly gripping the convex outer surface of a peach and the like around the latter adjacent to one side of a plane bisecting said peach for twisting one half of the body thereof from the pit therein, comprising:

(a) an annular row of adjacent pairs of peach gripping fingers generally facing the axis of said row and supported for generally radially inward movement from expanded positions outwardly of a peach adapted to be positioned on said axis and projecting into the area encircled by said row, to a contracted position in engagement with the convex surface of said peach adjacent to said one side of said plane;

(b) supporting means supporting adjacent pairs of said fingers at equally spaced points around said row for said generally radially inward movement and for movement of fingers of said adjacent pairs relative to each other;



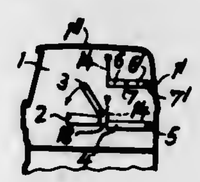
(c) connecting means connecting the fingers of said adjacent pairs for uniformly spacing said fingers from each other during said radially inward movement;

(d) each of said fingers being generally U-shape and of resilient, rubber-like material providing a closed end portion and a pair of spaced opposed leg portions;

(e) said connecting means being respectively connected with one of the leg portions of each adjacent pair of fingers and the closed end portion of each finger being disposed radially innermost relative to said axis of said row.

3,353,861
DRIVER'S CAB WITH AT LEAST ONE BUNK

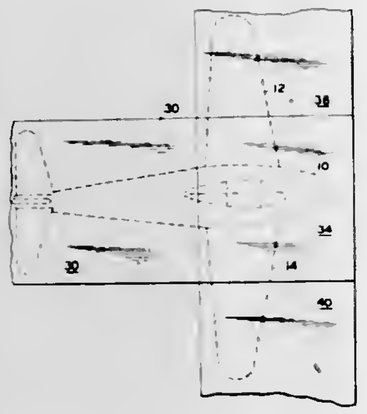
Hans Froitzheim and Karl Letzel, Sindelfingen, Wurttemberg, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed July 15, 1965, Ser. No. 472,114
Claims priority, application Germany, July 17, 1964, D 44,966
6 Claims. (Cl. 296—24)



1. In a driver's cab of a motor vehicle, the improvement comprising an upper bunk within and extending transversely to the longitudinal direction of said cab and located behind the back rest of the driver's seat and normally at a height approximately corresponding to the upper edge of said back rest, said bunk being divided transversely thereof, thus forming a front part and a rear part,

connecting means for pivotably connecting said front part to said rear part, said connecting means including means for locking said front part in different angular positions with respect to said rear part, means for permitting at least said rear part of said upper bunk to be pivoted upwardly from a horizontal position to a substantially vertical position adjacent to the rear wall of said driver's cab, means for locking said rear part at least in said substantially vertical position, said means for locking said front part with respect to said rear part adapted to lock said front part in a position at right angles to said rear part when said rear part is pivoted to said substantially vertical position.

3,353,862
TRAILER
Hans H. Tormolen, 3142 Sumter, Dallas, Tex. 75220
Filed Nov. 18, 1964, Ser. No. 412,047
11 Claims. (Cl. 296—26)



1. A trailer adapted to be drawn by a road vehicle, comprising:
- (a) a box-like frame structure, including, a floor frame, open-structure side and end frames attached to said floor frame and extending upwardly therefrom and a roof frame attached to the tops of said side and end frames;
- (b) a roof structure adapted to cover the top of said frame;
- (c) side and end walls adapted to cover the side and end frames, said side walls being single, unitary wall structures releasably attached to their corresponding side frames when in a covering position; and
- (d) at least one dual-motion, coupling means coupling said side walls to the top of their corresponding side frames and including a vertically-movable pivot element adapted to swing said side walls upwardly into a horizontal plane and a laterally-movable element adapted to move said side walls laterally with respect to said frame.

3,353,863
VEHICLE BODY PANEL CONSTRUCTION
Alphonsus E. Koot, Brea, Calif., assignor to Aluminum Body Corporation, Montebello, Calif., a corporation of California
Filed Sept. 29, 1965, Ser. No. 491,199
17 Claims. (Cl. 296—28)

1. A prefabricated knock down vehicle body construction comprising:

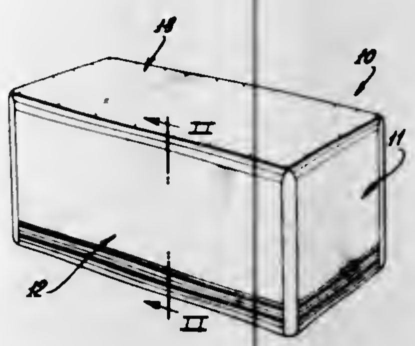
a roof panel having a frame including a plurality of roof rail members and interconnecting cross frame members and an outer facing skin overlying said frame, each said roof rail member including a rail member wall having a bottom footing edge and a bearing flange spaced outwardly of and inclined to said rail member wall;

side panels each having a frame including top and bottom longerons, side rail members and an outer side wall facing skin;

said top longeron including a longeron wall, a channel seat adjacent a lower portion of said longeron wall to receive a roof rail wall bottom footing edge and a bearing seat portion spaced from and inclined to said longeron wall to receive said roof rail bearing flange; and

a floor panel having a frame, including a pair of spaced opposed side flanges and a plurality of interconnecting floor panel cross frame members, and a floor covering over a portion of said panel cross frame members,

said side flanges having upper marginal areas extending above said floor panel cross frame members;



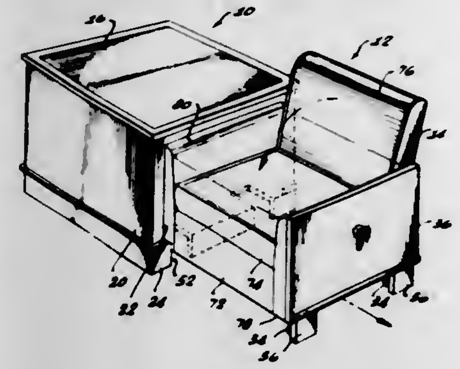
said side panel bottom longeron including a footing portion to seat upon said floor panel cross frame members adjacent said floor covering and side flanges, depending longeron flange means to extend down along side said floor panel side flanges and a downwardly opening flange receiving channel means between said footing portion and said depending longeron flange portion for receiving an upper marginal area of a floor panel side flange,

whereby said roof, side and floor panels may be readily placed in complete assembled relationship prior to fastening said panels together.

3,353,864
CONVERTIBLE TOP LATCH MECHANISM
Clifford R. Antaya, Southgate, and Robert M. Fox, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 502,985
3 Claims. (Cl. 296—121)

1. In combination with a vehicle body having a windshield support, a convertible top movable between raised and lowered positions, striker means mounted on the support, and latch means mounted on the top and movable between latched and unlatched positions to selectively engage and disengage the striker means in top raised position to selectively latch and unlatch the top with respect to the support, the improvement comprising latch blocking means associated with the latch means and operable to block movement of the latch means to latched position when the latch means fails to engage the striker means during movement from unlatched to latched positions

3,353,865
FURNITURE UNIT WITH EXTENSIBLE-RETRACTABLE CHAIR
Sidney Bass, 10751 Missouri Ave.,
Los Angeles, Calif. 90025
Filed June 6, 1966, Ser. No. 555,412
8 Claims. (Cl. 297—143)



1. A chair retractably extensible from the front of a unit of furniture having a horizontally disposed seat-height top, and including:

support means carried beneath said top;

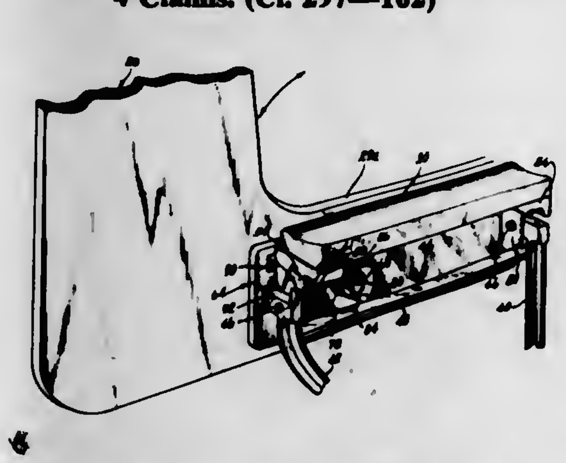
a generally rectangular frame having forward and rearward ends and front and rear sides;

means including guide means on one of said support means and frame and anti-friction means on the other thereof cooperable to mount said frame for guided movement between a retracted position underlying the top and an extended position projecting forwardly from the unit of furniture with said front side disposed right angularly with respect to said front of said unit of furniture;

a back carried by said frame and shiftable to move from a storage position overlying the extended portion of said frame to an erected position approximately parallel to said sides of said frame and projecting generally upward adjacent said rear sides; and

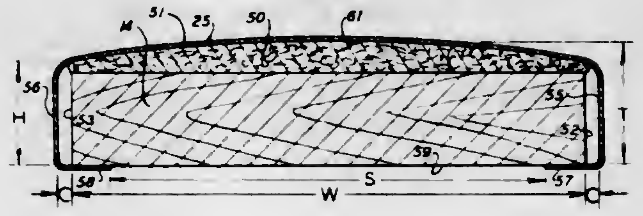
leg means comprising a pair of casters secured in laterally-spaced relationship to the underside of said frame adjacent the forward end thereof to support said forward end of the extended portion of said frame remote from the unit of furniture which supports the other end of the extended portion of said frame in the extended position thereof.

3,353,866
SEATING UNIT
Howard D. Chapman, Highland Park, and Henry C. Banke, Chicago, Ill., assignors to Clarin Mfg. Co., Chicago, Ill., a corporation of Illinois
Filed Aug. 22, 1966, Ser. No. 574,077
4 Claims. (Cl. 297—162)



1. A tablet arm assembly adapted to be supported adjacent a seating unit and movable between an operative position in which it provides a generally horizontal writing surface and a collapsed out-of-the-way position alongside the seating unit, said tablet arm assembly comprising a support positioned at one side of the seating unit, a bracket mounted on said support for hinged movement about a first fixed generally horizontal axis located above the seat of the seating unit and lying in a vertical plane generally normal to the front edge of the seat, a tablet arm having a generally planar writing surface, means securing said tablet arm to said bracket so as to permit hinged movement of said writing surface about said first axis between a generally horizontal and a generally vertical position, said latter-mentioned means including a shaft defining a second axis disposed generally normal to the plane of said writing surface and intersecting said writing surface adjacent the rearward edge thereof, said tablet arm being rotatable about the axis of said shaft when said writing surface is vertically disposed so as to swing said writing surface rearwardly to a position alongside the seating unit, said shaft being keyed to said tablet arm so as to rotate therewith, and stop means for limiting rotational movement of said tablet arm about said second axis including a plate keyed to said shaft and defining a pair of shoulders, and a member extending outwardly from said bracket and positioned thereon so as to be engaged by said shoulders of said stop means as said tablet arm rotates.

3,353,867
BENCH AND PLANK COVER
Paul G. Anderson, Ontario, Calif., assignor to Haak Mfg., Inc., San Bernardino, Calif., a corporation of California
Filed June 27, 1966, Ser. No. 560,710
2 Claims. (Cl. 297—219)

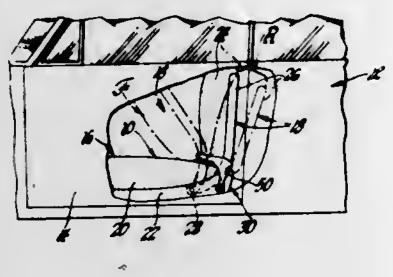


1. A weatherproof cover for the load-contacted stringers of seats and tables comprising a resilient pad extending the expanse of the stringer, a weatherproof sheath top covering the pad, a sheath side integral with the sheath top and extending downwardly from the top adjacent the stringer sides, the sheath top and the sheath sides defining a normally channel-shaped member, and a sheath side flange fixed to the sheath side and extending under the stringer bottom to retain the sheath about the stringer and resilient pad, each sheath side having a height less than the sum of the thicknesses of the stringer and the relaxed resilient pad such that the sheath top is transversely convex when in place on the stringer, the width of the sheath exceeding the width of the stringer at average ambient air humidity and the space between opposed sheath side flanges being less than the width of the stringer at zero humidity, and said stringer being free to move transversely with respect to the sheath side flanges.

3,353,868
ADJUSTABLE SEAT BACK MECHANISM
Dale W. Pigeon, Royal Oak, and Joseph D. Upchurch, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 13, 1965, Ser. No. 495,385
4 Claims. (Cl. 297—372)

1. A seating unit having a seat and a seat back, a pivotal connection between said seat and said seat back for pivotally supporting said seat back during forwardly and rearwardly pivotal movement relative to said seat, said

seat back having a seat forming position, a folded position pivoted forwardly about said pivotal connection from said seat forming position and above said seat, and a plurality of reclining positions pivoted rearwardly from said seat forming position to a final reclining position and being movable therebetween, adjusting mechanism operably connected to said seating unit for supporting and controlling movement of said seat back between said seat forming position and said reclining positions and for supporting said seat back in said seat forming position, and means for actuating said adjusting mechanism, said adjusting mechanism includes a manually rotatable cam rotatably mounted on said seat and a pin secured to said seat back, said pin bearing on said cam for supporting said seat back in said seat forming position and said reclining positions, and said pin cooperating with said cam for adjusting said seat back between said positions upon rotation of said cam.



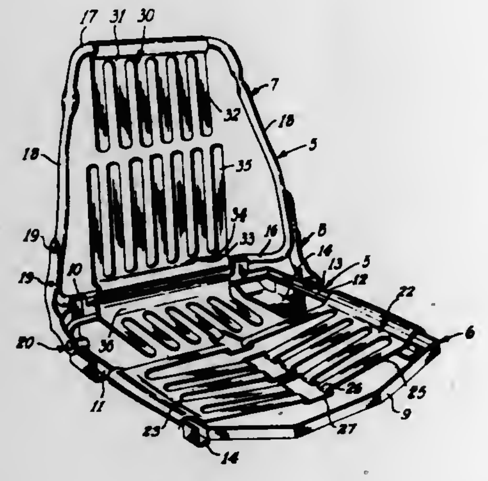
3,353,869

LOAD SUPPORTING STRUCTURES

Edward T. Getz, Cleveland Heights, and Matthew Pacak, Solon, Ohio, assignors to Eaton Yale & Towne Inc., a corporation of Ohio

Filed Dec. 23, 1965, Ser. No. 528,671

23 Claims. (Cl. 297—452)



1. A load supporting structure comprising:

frame means for supporting elastomeric material,

load supporting and transferring elements mounted on said frame means members in cantilevered relationship, the free ends of said elements disposed in non-overlapping relationship,

a layer of foamed elastomeric material bonded to at least the underside of said load supporting and transferring elements to coact with said elements and said frame means,

so that a load applied to the upper side of said loading supporting structure is proportioned between said foamed elastomeric material and said load supporting and transferring elements and thereby transferred to said frame means members.

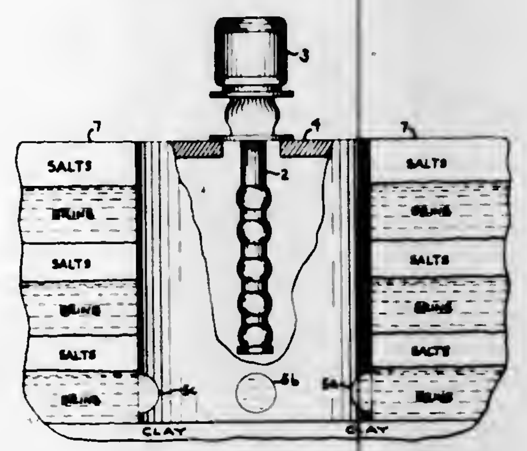
3,353,870

METHOD AND APPARATUS FOR RECOVERING A NATURALLY OCCURRING BRINE CONTAINING SODIUM CARBONATE

Carl P. Budke, Lone Pine, Calif., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 1, 1965, Ser. No. 460,445

6 Claims. (Cl. 299—5)



1. A method of recovering a naturally occurring brine containing sodium carbonate comprising positioning a sump in an excavation in said salt body, the bottom of said sump being positioned at least 3 feet below the surface of said salt body, providing a plurality of ports in the side of said sump and adjacent the bottom thereof, providing a ditch from said ports into the salt body to the surface of the body, said ditch being at a depth at least equal to the depth of said ports and extending laterally therefrom a considerable distance, pumping brine from said ditches through said ports and into the sump, thereby causing liquid positioned adjacent the ditches to travel a considerable distance through the horizontally disposed salt layers to thereby produce an enriched liquid entering the ditch.

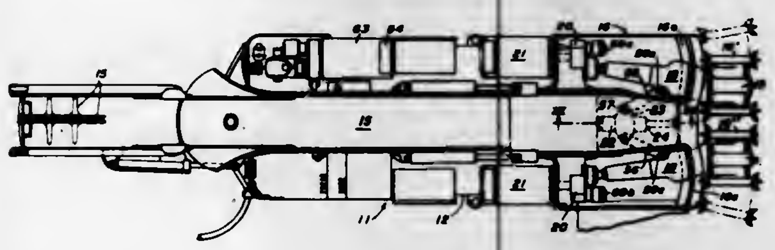
3,353,871

CONTINUOUS MINING MACHINE WITH OSCILLATING ROTARY CUTTER HEADS

Einar M. Arentzen, Charleroi, Pa., assignor to Lee-Norse Company, Charleroi, Pa., a corporation of Delaware

Filed Aug. 5, 1964, Ser. No. 387,583

16 Claims. (Cl. 299—71)



14. A mining machine comprising a chassis, a boom connected to the forward end of said chassis for vertical movement relative to said chassis, a pair of carriers mounted on said boom for side-by-side horizontal movement, a rotary cutter connected to the forward end of each of said carriers, motor means connected to said cutters for rotatably driving said cutters, hydraulically operated motor means connected to said boom and to each of said carriers for horizontally oscillating said carriers simultaneously in opposition to one another, and means for causing said hydraulically operated motor means to horizontally oscillate said carriers continuously during the normal operation of the mining machine.

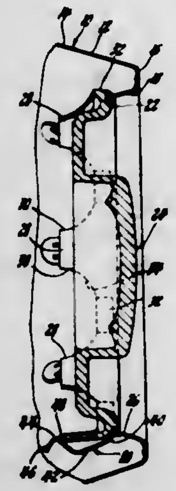
3,353,872

WHEEL COVER

Otto H. Bartz, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 9, 1966, Ser. No. 526,221

4 Claims. (Cl. 301—37)



1. The combination comprising, a wheel cover having an annular axially inwardly extending flange defining an opening therein and being provided with a plurality of spaced axially inwardly extending finger extensions, a medallion of a size to close said opening and being provided with a plurality of axially inwardly extending finger extensions radially juxtaposed to said cover finger extensions, means on said medallion engageable with means on said cover to limit axially outward movement of said medallion relative to said cover, each of said cover extensions having a retaining finger provided with a terminal portion engageable with the axially inner free end of a respective medallion finger extension, said cover finger extensions normally locating the terminal portions of said retaining fingers a lesser distance from said engageable means than the spacing between said engageable means and the free ends of said medallion finger extensions to provide a resilient axially outward bias to said medallion finger extensions.

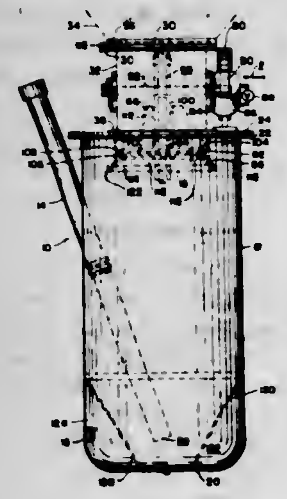
3,353,873

VALVE STRUCTURE FOR BULK MATERIALS

Harry W. Dietert, Kerrville, Tex., assignor to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan

Filed July 11, 1966, Ser. No. 564,407

8 Claims. (Cl. 302—53)



1. Bulk material transporting structure comprising a tank for collecting powdered material, a discharge conduit connected to said tank, means for pressurizing said tank and valve means through which powdered material may pass into said tank and for sealing said tank except for the discharge conduit and the pressurizing means including a vertically movable shaft, actuating mechanism for moving said shaft vertically, centering and aligning means secured to said shaft for positioning the shaft on closing of the valve, including a valve seat sleeve and a plurality of angularly spaced apart tapered camming members secured to and extending axially of the vertically movable shaft within said sleeve, a pair of rigid circular members, a resilient disc sandwiched between the rigid members and extending radially outwardly therefrom, means for securing the rigid members and disc to one end of the vertically movable shaft coaxially therewith, and wiping and sealing means also secured to said shaft for wiping and sealing the valve on closing of the valve.

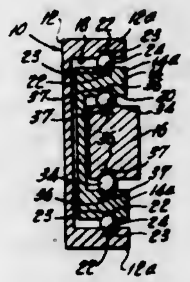
3,353,874

EXTENSIBLE SLIDE MECHANISM

Joseph T. Del Vecchio, Nanuet, and Charles Agnoff, Plainview, N.Y., assignors to Grant Pulley & Hardware Corporation, West Nyack, N.Y., a corporation of New York

Filed May 18, 1965, Ser. No. 456,736

1 Claim. (Cl. 308—3.8)



A slide mechanism comprising a series of telescoping slide sections, corresponding pairs of said sections having facing surfaces each of said surfaces having a longitudinally extending arcuately curved grooved therein with the grooves of corresponding pairs in superposed relation, each of said grooves having a longitudinally extending slot therein with the slots of corresponding pairs in superposed relation, said slots having at least one longitudinally extending indentation adjacent the base thereof, said slots being less wide than the arcuate width of said grooves, an insert matingly mounted within each of said slots said insert having a flat base and at least one longitudinally extending flange adjacent said base extending into said indentation, the width of said insert being less than the arcuate width of said groove, said inserts being harder than said sections, bearing elements between said corresponding pairs of inserts, and stop means mounted adjacent the ends of said sections abutting ends of corresponding inserts and limiting movement of said bearing elements.

3,353,875

LINEAR MOTION BEARING ASSEMBLY

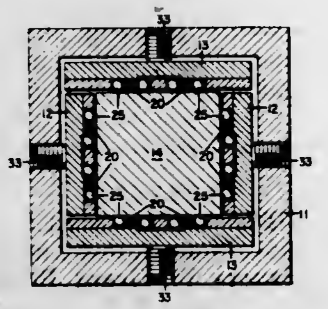
Maxwell R. Karge, 80 Park, Brockport, N.Y. 14420

Filed July 27, 1964, Ser. No. 385,446

21 Claims. (Cl. 308—6)

17. A linear motion ball bearing assembly comprising: a shaft having a plurality of planar surfaces; a plurality of gibs each bearing upon one of said planar surfaces of said shaft; and said gibs being retained in a housing wherein at least one of said gibs is adjustable for a predetermined preload relative to said shaft, at least one of said gibs comprising: an oblong base plate having formed in its upper face surface a shallow, centrally disposed. longitudinal recess and a pair of spaced, shallow, transverse recesses near respective opposite ends of said base

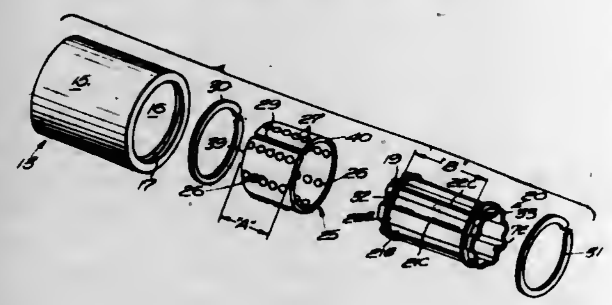
plate; a pair of generally linear, oblong, island members having rounded ends and secured to said upper surface of said base plate, said island members being arranged parallel to each other and adjacent said longitudinal recess on opposite sides thereof and extending between said transverse recesses; a unitary ball cage member formed as a plate overlying and secured to said base plate and cooperating with said island members to retain balls, said cage member having a pair of oblong, parallel, longitudinally disposed, spaced apertures formed therethrough, the



surfaces defining said apertures being disposed to surround said island members in spaced relation thereto; and a plurality of ball bearings substantially filling the spaces between each of said island members and said surfaces defining said apertures, each of said balls having a diameter greater than the thickness of said cage member and forming two generally linear, oblong ball races, the inner reach of each race being recessed relative to the outer reach of each race, and the balls in each of said outer reaches extending above the upper surfaces of said cage member and said island members.

3,353,876
PRE-LOADED AXIALLY EXTENSIBLE ANTI-FRICTION BEARING

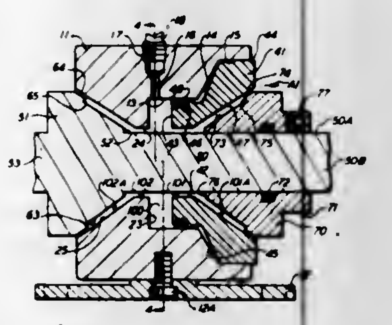
Robert Franklin Moyer, Warwick, R.I., assignor to Elastic Die Engineering Company, Warwick, R.I., a corporation of Rhode Island
Filed Nov. 6, 1964, Ser. No. 409,383
10 Claims. (Cl. 308—6)



3. A laterally extensible anti-friction bearing consisting of a bushing having an inside surface forming a race wall, two circular recesses, one in each end of said race wall to define the length of a path of travel, a retainer having a longitudinal split to provide a resilient retainer, said retainer being shorter in length than said length of a path of travel, roller elements, means rotatively holding said roller elements in a plurality of rows in said retainer, said roller elements engaging said race wall to slidably mount said retainer within said bushing, an inner race, of approximately the same length as the length of said path of travel, having a plurality of grooves, a plurality of interconnecting shoulders, a plurality of crowns formed in the back of said grooves, and a longitudinal split to provide a resilient inner race, said roller elements being larger in diameter than the space between said plurality of grooves and said race wall whereby said roller elements become pre-loaded, two annular recesses, one in each end of said inner race, two snap rings one in each annular recess, two retaining rings one in each circular recess, said retaining rings defining the length of travel of said bushings in relation to said retainer, said snap rings defining the length of travel of said inner race in relation to said retainer, and a post having an outer wall frictionally and slidably mounted upon said plurality of crowns, said bushing slidably mounted upon said post through said roller elements with a path of travel greater than the length of the path of travel of said race wall.

3,353,877
FLUID RADIAL AND THRUST BEARING

Herman Lindeboom, Warwick, R.I., assignor to Sealol, Inc., Warwick, R.I., a corporation of Delaware
Filed July 1, 1965, Ser. No. 468,894
7 Claims. (Cl. 308—9)

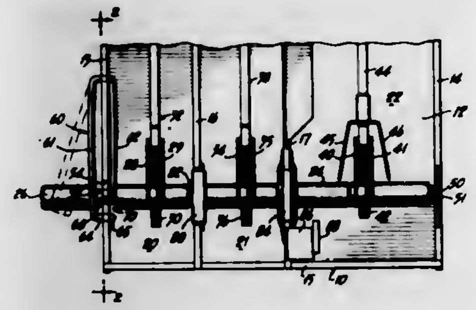


1. A pressurized fluid bearing for supporting both radial and thrust loads comprising a housing having a cone shaped bearing surface, a shaft bore, a chamber wall and an axial bore forming a chamber, an inlet port leading to said chamber, a relief wall and a sealing ring wall, a shaft having an enlarged head provided with a conical bearing surface, a sealing ring having a second cone shaped bearing surface, a second shaft bore, a second chamber wall, a packing wall, a second relief wall and a housing engaging surface, said packing wall and said sealing ring wall slidably engaging, respectively, said axial bore and said housing engaging surface, a fluid tight packing means between said packing wall and said axial bore, a mating disc provided with a third cone shaped bearing surface, means adjustably securing said mating disc to said shaft, said second shaft bore and shaft and said second and said third cone shaped bearing surfaces forming a first fluid passageway, having a first differential pressure generating means, said shaft bore and shaft and said cone shaped bearing surface and said conical bearing surface forming a second fluid passageway having a second differential pressure generating means, fluid from said inlet port passing into said chamber and simultaneously to both said first and second fluid passageways to provide separating forces in said first and second fluid passageways and automatic self adjusting of said sealing ring in relation to said second cone shaped bearing surface.

3,353,878
TUNER SHAFT MOUNTING ARRANGEMENT

Alarico A. Valdettara, Bloomington, and Jimmie E. Warthan, Stinesville, and Clifton C. Perry, Bloomington, Ind., assignors to Sarkes Tarzian, Inc., Bloomington, Ind., a corporation of Indiana
Filed Dec. 6, 1965, Ser. No. 511,845
7 Claims. (Cl. 308—24)

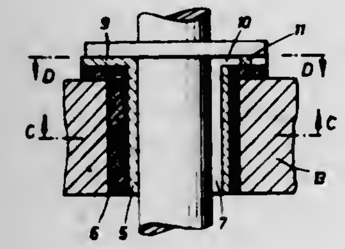
1. In a television tuner, a housing having a pair of opposed walls, a tuning shaft, means defining a first bearing surface in one of said walls, means defining a second bearing surface in the other of said walls, a single resilient member having a pair of opposed arm portions, one of said arm portions being positioned in engagement with said shaft in the vicinity of said other wall, and latching means provided on said other arm portion and said other



wall for retaining said other arm portion in such position that said one arm portion biases said shaft into engagement with both said first and second bearing surfaces.

3,353,879
SLEEVE BEARING

Raoul Jörn, Lindau (Bodensee), Germany, assignor to Metzeler A.G., Munich, Germany
Filed Aug. 3, 1965, Ser. No. 476,845
Claims priority, application Germany, Aug. 4, 1964, M 61,983
8 Claims. (Cl. 308—26)

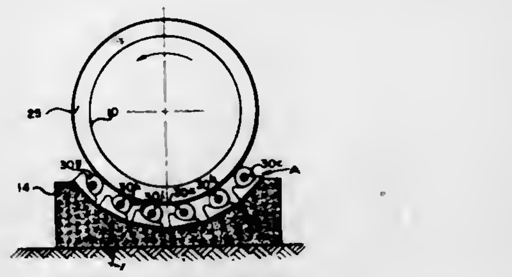


1. A sleeve bearing comprising, in combination, an inner sleeve of elastically deformable plastic material having an inner substantially cylindrical surface and being formed with a plurality of corrugations extending in axial direction through the length of said sleeve, spaced in circumferential direction from each other and forming axially extending expansion grooves open toward said inner surface, said corrugations having a wall thickness smaller than the remainder of said inner sleeve; an outer sleeve of elastically compressible rubber material surrounding said inner sleeve and tightly engaging the outer surface of the latter, said outer sleeve having in unstressed condition a given outer diameter; and a carrying member formed with a bore therethrough of a diameter smaller than said given diameter, said outer sleeve being received in said bore and tightly held therein in radial compressed condition.

3,353,880
APPARATUS FOR SUPPORTING HORIZONTAL ROTATING CYLINDERS

Harold F. Silver, Denver, Colo., assignor to American Factors Associates, Limited, Honolulu, Hawaii, a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,334
16 Claims. (Cl. 308—204)

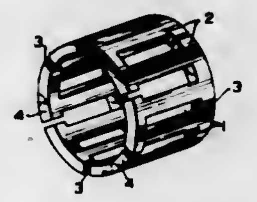
1. A roller support system for a rotary, generally horizontally disposed cylindrical member comprising at least two spaced sets cf rollers supporting a cylindrical member in rotative position; each set of rollers arranged to contact the cylindrical member on opposite sides of a vertical line through the axis thereof including a plurality of rollers, each roller of the set being separately supported for movement toward and away from the cylindrical member; a hydraulic cylinder operatively associated with each roller arranged to bias said roller toward the cylindrical member; and hydraulic line means connecting



each cylinder of each roller set for maintaining substantially the same pressure in each cylinder of the set whereby each roller continuously supports a substantially uniform portion of the weight of the rotating cylindrical member.

3,353,881
CAGE FOR ROLLER BEARINGS

Kurt K. Steinert, Herzogenaurach, Germany, assignor to Industriewerk Schaeffler, OHG., Herzogenaurach, Germany, a corporation of Germany
Filed Apr. 1, 1965, Ser. No. 444,682
Claims priority, application Germany, May 30, 1964, J 25,943
2 Claims. (Cl. 308—217)



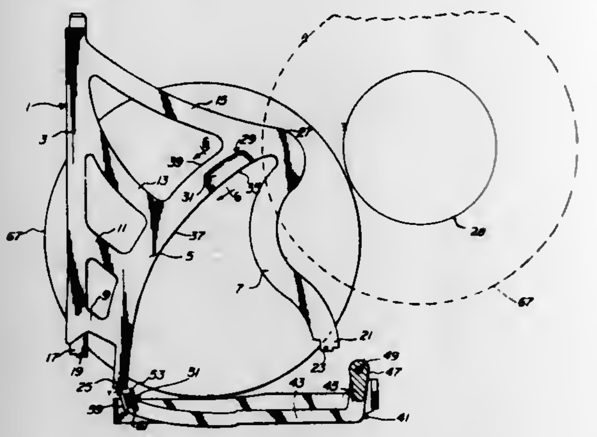
1. A radially compressible cage for roller bearings comprised of two annular rims in parallel planes connected with one another by a plurality of cage bars uniformly spaced about the periphery which define recesses for accommodating roller elements, the said rims being divided into segments at several points about their periphery with slots at the recesses having a smaller width than the width of the recesses and the slots being alternatively provided at successive recesses in both annular rims, the outer diameter of which will be elastically reduced upon application of radially-directed forces until the annular rim segments abut against each other.

3,353,882
PHONOGRAPH RECORD STORAGE ARRANGEMENT

Albinus G. Bodoh, Prospect Heights, and Daniel J. Siwy, Glenview, Ill., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed June 8, 1966, Ser. No. 556,139
7 Claims. (Cl. 312—10)

1. A record storage and playing arrangement for a phonograph having a turntable comprising:
a storage magazine comprising a plurality of record separators;
means providing a thickened portion in a specified area of each of said separators to provide a protrusion on each of two main sides thereof;
a storage chamber for an individual record formed by an adjoining pair of said record separators;
movable transfer means for removing records from said storage magazine and returning records to said storage magazine; and

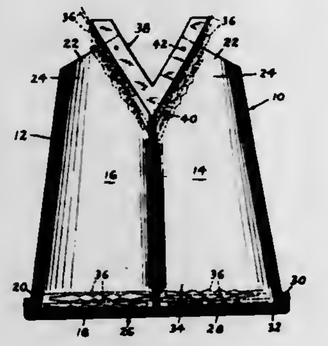
spreader means operatively associated with said transfer means, said spreader means adapted to be positioned, when said individual record is being played, between a pair of said protrusions, each of said protrusions in said pair of protrusions being on a separate one of said pair of separators forming said storage chamber;



whereby said pair of separators is forced apart in order not to contact and damage said record when it is being played.

3,353,883
DISPENSER

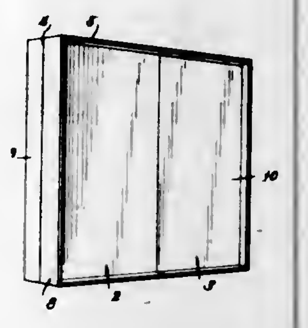
John Cairo, 8758 Bay Parkway, Brooklyn, N.Y. 11214, and Robert Migliore, 1495 Shore Parkway, Brooklyn, N.Y. 11214
Filed Sept. 8, 1965, Ser. No. 485,791
6 Claims. (Cl. 312—35)



6. A dispenser for hairpins, bobby pins and the like pins comprising a frame, said frame being provided with two semi-elliptical conical sections joined together, a chamber for storing pins disposed in each of the semi-elliptical conical sections, each chamber having a small angularly cut opening at the upper end thereof and a large opening at the lower end thereof, said large opening acting as an ingress for pins to be stored in the chamber, a magnet angularly disposed in the small opening at the upper end of each of said chambers and extending partially therefrom over the small opening such that a pin adhering to said magnet will be accessible and removable and another pin on said magnet will move up said magnet to an accessible position, when all the pins adhering to the magnet have been removed said frame is inverted such that some of the stored pins may fall against said magnet to replenish the pins on said magnet thereby holding said pins in an accessible position, and a cover removably fitted over the frame to close the large opening at the lower end of each chamber to prevent pins from falling therefrom.

3,353,884
COMPACT MULTI-PURPOSE DISPLAY MODULE

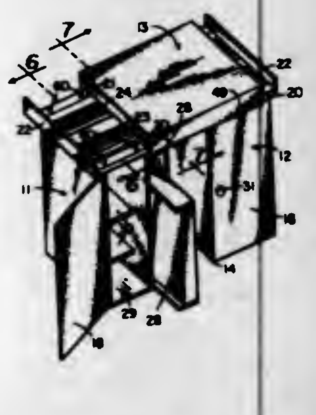
William H. Chaffee, 5510 S. Country Lane Road, Hinsdale, Ill. 60521, and Robert E. Vogele, 4116 Gilbert Ave., Western Springs, Ill. 60558
Filed Mar. 8, 1966, Ser. No. 532,732
11 Claims. (Cl. 312—199)



1. A display module for facilitating visual presentations comprising a primary display section, the primary section being provided with a supporting frame, an elongated channel member pivotally mounted upon the frame for rotation between open and closed positions, a visual display means supported within the channel of the channel member, a plurality of doors cooperably pivoted to the frame of the primary display section to enclose the primary display section and the channel member when the doors are in closed condition and to act to increase the display capacity of the primary display section by providing secondary display sections when in open condition, and channel defining means provided on the doors and on the primary display section, the channel defining means of the doors being located in parallel alignment with the channel defining means of the primary section when in open condition and being adapted to retain movable display supporting means to produce correlated visual displays.

3,353,885
EXPANSIBLE MULTI-PURPOSE CABINET

Howard C. Hanson, 577 Nothomb St., El Cajon, Calif. 92021
Filed Feb. 1, 1966, Ser. No. 524,008
1 Claim. (Cl. 312—205)



An expansible multi-purpose cabinet, convertible from a smaller closed lamp table to a larger open vanity, of the nature aforesaid, comprising, in combination:

similar paired opposed cabinet members slidably communicating with a top supported thereby, one of said cabinets having a vertically elongate storage cell to store top extensions;

a slidable track structure communicating between the upper portions of said cabinet members to allow slidable positioning of said cabinet members from a medial adjacent position to a lateral spaced position;

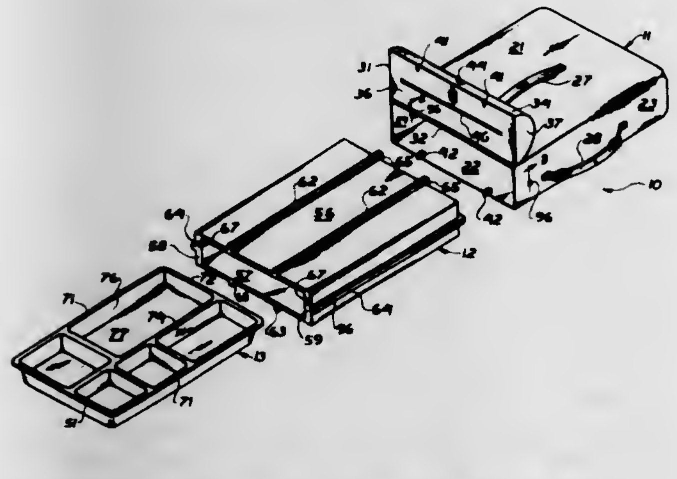
a top member supported above said track structure in immoveable relationship therewith, said top adapted to cover said cabinets when in medial adjacent position;

similar paired lateral top extensions adapted to fit laterally of said top member, when said cabinets are laterally extended, to form a continuous vanity top surface; and

a compound mirror member comprising a principal rearward element pivotably carried by the rearward edge of said top to raise vertically upward therefrom and having paired opposed wing mirrors pivotably carried by the vertical lateral edges of said principal mirror, said wing mirrors each being supported upon said top extensions by support buttons slidably carried in their lower edges to allow adjustable vertical positioning of all said mirrors.

3,353,886
THERMALLY INSULATED CONTAINER

Edward L. Tompkins, 5050 Roseville Road, D11, North Highlands, Calif. 95660
Filed Feb. 21, 1966, Ser. No. 529,046
8 Claims. (Cl. 312—214)



1. A thermally insulated container comprising:

(a) a hollow box including a top panel, a bottom panel, a pair of side panels, an end panel covering one end and a door hingeably and latchably mounted on said box to cover the other end thereof; and,

(b) a liner disposed within said box, said liner including an upper wall, a lower wall, a pair of side walls, an inner end wall, and a plurality of spacers mounted on the outside of said walls to position said liner snugly within said box with said walls of said liner separated from the adjacent walls of said box, the interior surfaces of said liner side walls and said inner end wall being formed with registering slots extending the length of said liner side walls and the width of said end wall to receive the laterally extending and inner end lips of a food tray in slidable and supporting relation, the vertical distance between said slots and said lower wall of said liner being greater than the vertical distance between said tray bottom and said lower wall of said liner.

3,353,887
MIRRORED MEDICINE CABINET

Carroll R. Cihlar, 4136 Raymond Ave., Brookfield, Ill. 60513
Filed Mar. 28, 1966, Ser. No. 537,923
4 Claims. (Cl. 312—227)

1. A medicine cabinet comprising:

a central mirror panel;

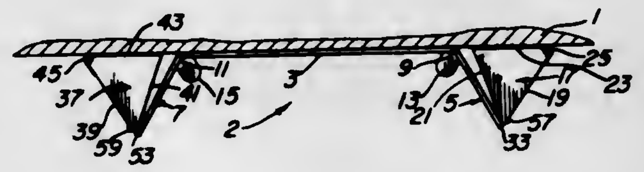
a first side mirror section positioned at one end of said central mirror panel;

a first shelf-containing storage member pivotally supported in a first storage space behind said first side mirror section so that shelves contained in said first storage member are normally hidden from view behind said first side mirror section and may be easily rendered accessible by rotation of said first storage member;

a second side mirror section positioned at a second end of said central mirror panel opposite said first end; and

a second shelf-containing storage member pivotally supported in a second storage space behind said second side mirror section so that shelves contained in said second storage member are normally hidden from view behind said second side mirror section any may be easily rendered accessible by rotation of said second storage member, wherein:

said first and second side mirror sections are each fixedly positioned at an obtuse angle with respect to said central mirror panel;



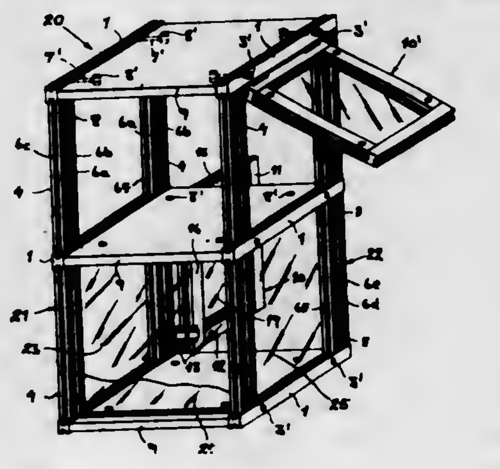
each of said first and second storage members has a triangular cross-section, with a side of the storage member corresponding to a first side of the triangle serving as a door to normally prevent access to an associated one of said storage spaces;

each of said storage members is pivotally supported at a vertex of said triangular cross-section formed by said first side of the triangle and a second side of the triangle; and

said second side of the triangle has a length equal to or less than the length of a line perpendicular to said side mirror section and extending from said side mirror section to said pivotally supported vertex.

3,353,888
ARTICLE OF FURNITURE ASSEMBLED FROM PREFABRICATED COMPONENTS

Giuseppe Pritelli, Jr., Cattolica, Forlì, Italy
Filed Jan. 20, 1966, Ser. No. 521,970
Claims priority, application Italy, Jan. 21, 1965, 1,316/65; Jan. 30, 1965, 1,951/65
9 Claims. (Cl. 312—257)



1. An article of furniture comprising a three-dimensional framework including two parallel upright frames each composed of at least two horizontal elongated ele-

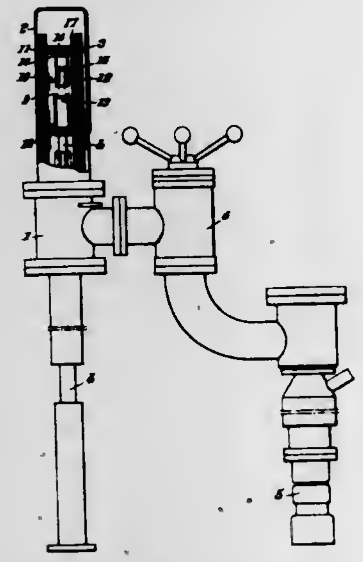
ments and at least one pair of vertical elongated elements extending along respective edges of at least one six-sided compartment, said pair of vertical elements and one of said horizontal elements together constituting a U-shaped module detachably secured to the other horizontal element for defining therewith a rectangular side surface of said compartment; at least two horizontal connecting plates secured to said horizontal elements of both frames for defining upper and lower wall surfaces of said compartment, said plates being provided with horizontal bores extending inwardly from the edges adjoining said horizontal elements, the latter having holes aligned with said bores; and fastening means passing through said aligned holes and bores for detachably securing said plates to said frames.

3,353,889

METHOD OF MANUFACTURING ELECTRON TUBES

René Legoux, Sceaux, France, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 14, 1966, Ser. No. 527,293
Claims priority, application France, Feb. 23, 1965, 6,689
4 Claims. (Cl. 316—17)



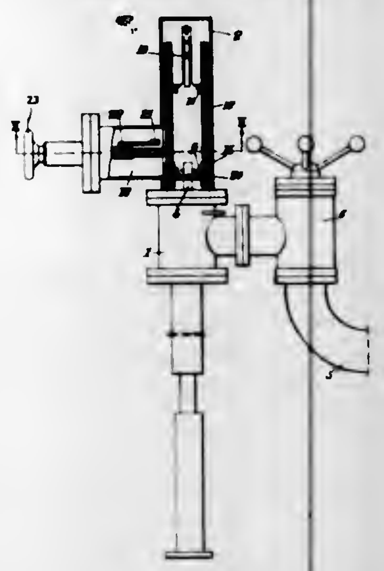
1. A method of manufacturing an electron discharge tube having a photo-sensitive layer in a vacuum space, in which the tube has parts which are degassed at a high temperature, two parts of the tube envelope to be joined being held at a given distance from each other, a photo-sensitive layer being provided and the envelope parts concerned being united to form a sealed tube by cold pressing, while the vacuum of the vacuum space is obviated and the ready tube is removed afterwards, characterized in that one of the two envelope parts is provided with an uninterrupted rim, the upwardly orientated side of which is provided with a groove, whereas the other part has a corresponding rim the downwardly orientated side of which has a profile suitable for co-operation with the first-mentioned rim, while the various tube parts are degassed, when the tube parts are remote from each other, a mass introduced into said groove consisting of soft material is melted, after which the parts are moved towards each other and away from each other so that the downwardly orientated rim of one of the tube parts is wetted by dipping in the bath of molten soft material in the groove of the other part, the parts being then cooled and the photo-sensitive layer being provided between the two parts of the tube envelope and finally the tube being sealed by pressing the two envelope parts provided at their rims with a layer of soft material one against the other in the cold state.

3,353,890

METHODS OF MANUFACTURING ELECTRON TUBES HAVING A PHOTO-SENSITIVE LAYER IN A VACUUM SPACE TUBES MANUFACTURED BY SAID METHODS AND DEVICES FOR CARRYING OUT SAID METHODS

René Legoux, Sceaux, France, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 14, 1966, Ser. No. 527,199
Claims priority, application France, Feb. 23, 1965, 6,690
3 Claims. (Cl. 316—19)



1. A method of manufacturing an electron tube having a sensitive layer readily decomposing under the action of heat, for example a vidicon tube, wherein in a vacuum space at two different places and at different temperatures, on the one hand a supporting body provided with a photo-sensitive layer and on the other hand the envelope mainly consisting of two portions with the further components of the electron tube, are degassed by heating, after which at a lower temperature the supporting body with the photo-sensitive layer is fastened in one of the envelope portions, the two envelope portions are united by pressing them together and the finished tube is removed from the vacuum space.

3,353,891

ZOOM LENS SYSTEM HAVING FRONT MOUNTED AXIALLY MOVABLE APERTURE STOP TO CONTROL NUMERICAL APERTURE DURING MAGNIFICATION CHANGE

Harold E. Rosenberger, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed June 18, 1964, Ser. No. 376,009
7 Claims. (Cl. 350—17)

1. In a microscope,

a zoom type of pancratic optical system comprising,

an objective formed from a positive lens group and a negative lens group in optical alignment therewith, said groups being movable axially simultaneously and continuously at different rates with respect to a stationary point on their optical axis such that a substantially stationary image is formed of a specimen by the system through a continuous progression of magnification including a magnification range of substantially 4, and

an eyepiece aligned with said objective and focused on said stationary image for viewing the same,

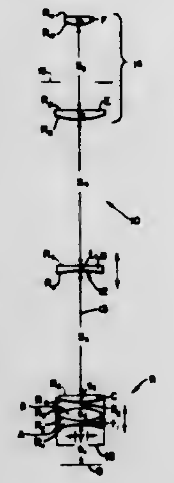
said positive lens group comprising a front block of transparent optical material spaced rearwardly from said specimen and designated I,

an aperture plate mounted on the front face of said block, the aperture therein being aligned optically with said group for varying the numerical aperture of the object side of said system substantially in proportion to the change of magnification of the system while maintaining the numerical aperture on the image side substantially constant,

a first and a second positive singlet lens comprised in said positive group and spaced rearwardly from said block and from each other and designated II and IV respectively, the lens surfaces thereof having the stronger curvature facing toward each other,

a positive doublet lens designated III comprised in said positive group and interposed between said singlet lenses and spaced axially from each, said doublet lens comprising a front negative lens element and a rear double convex lens element in contact therewith,

said negative lens group being of double concave form and being designated V,



the focal lengths F_I to F_{IV} and $-F'$ of the successive optical parts I to V respectively having numerical values in terms of F as set forth in the table of mathematical expressions herebelow,

$F_I=\infty$
$F_{II}=2.017$ F
$F_{III}=6.406$ F
$F_{IV}=2.462$ F
$-F'=1.498$ F

where F represents the equivalent focal length of said positive lens group,

$S_{10}=1.530$ F (least m)
$S_{10}=0.814$ F (middle m)
$S_{10}=0.382$ F (greatest m)
$S_{11}=0.044$ F
$S_{12}=0.006$ F
$S_{13}=0.006$ F
$S_{14}=.267$ F (least m)
$S_{14}=.955$ F (middle m)
$S_{14}=3.095$ F (greatest m)
$t_{10}=0.834$ F
$t_{11}=.222$ F
$t_{12}=.111$ F
$t_{13}=.205$ F
$t_{14}=.139$ F
$t_{15}=.044$ F (double concave element only)
$t_{16}=0.139$ F

wherein S_{10} to S_{14} represent the air spaces between the successive optical parts I to V, m represents the magnification of the object, and t_{10} to t_{16} represent the axial thicknesses of the successive optical parts.

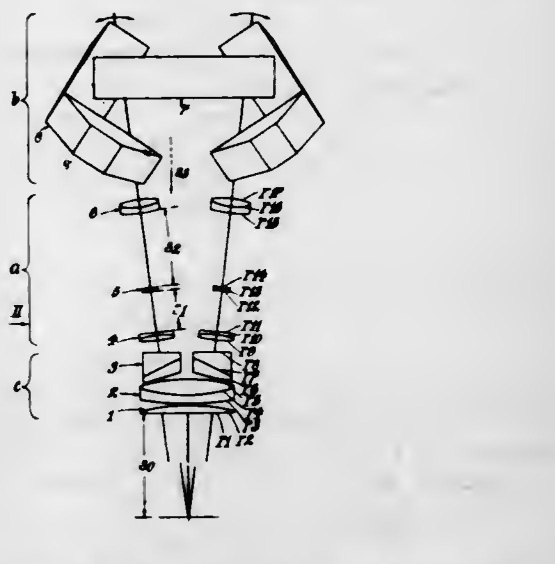
3,353,892

BINOCULAR STEREOSCOPIC MICROSCOPE HAVING SUBSTANTIALLY ACHROMATIC WEDGE PRISMS ADJACENT COMMON FRONT OBJECTIVE LENS

Thomas Alan Minns and Harold Horace Hopkins, Barnet, England, assignors to W. Watson & Sons Limited, Barnet, England, a British company

Filed Jan. 10, 1963, Ser. No. 250,592
Claims priority, application Great Britain, Jan. 12, 1962, 1,289/62
3 Claims. (Cl. 350—36)

1. A binocular stereoscopic microscope for providing two images of an object for the two eyes respectively of an observer, which microscope comprises a common front lens for receiving light from the object positioned on one side thereof and on the optical axis thereof, which front lens consists of a plurality of lens elements respectively having different refractive indices and dispersions so as to be substantially achromatic but has a small residual lateral chromatic aberration and in particular a secondary spectrum residual at least at parts thereof spaced away from its optical axis; a first optical system and a second optical system both positioned side-by-side on the other side of the common front lens and with their respective optical axes inclined to each other and also inclined to and spaced away from the optical axis of the front lens; and



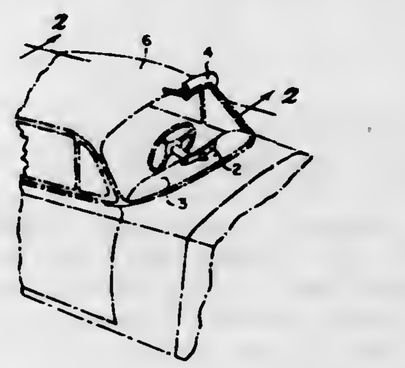
first and second deviating means located on the said other side of the front lens and on opposite sides of the optical axis of the front lens and spaced away therefrom, and respectively between the front lens and the first optical system, and the front lens and the second optical system; each of said deviating means comprising a substantially achromatic refracting wedge prism tapering toward the other and having more than one element, the elements having different refractive indices and dispersions so that the prism has a small secondary spectrum residual lateral chromatic aberration substantially equal and opposite to the residual lateral chromatic aberration of the front lens at the part thereof spaced away from the optical axis thereof which transmits light to the said deviating means.

3,353,893

REAR VIEW AUTOMOTIVE PERISCOPE UTILIZING TORIC MIRRORS

Steven H. Bamberger, Deal, N.J. 07723, and Milo O. Rudd, 2119 NE. 15th Terrace, Fort Lauderdale, Fla 33308

Filed Apr. 6, 1967, Ser. No. 628,885
2 Claims. (Cl. 350—55)



2. A vehicular two toric rear-view mirror system comprising:

(a) a first mirror mounted above the vehicle to receive rays from the rear and reflect them downwardly;

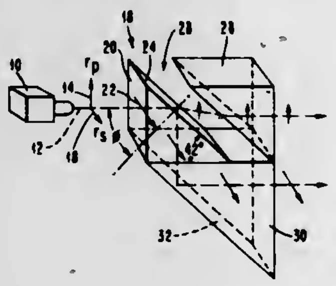
(b) said first mirror having a reflecting surface convex in the horizontal meridian and concave in the vertical meridian;
(c) a second mirror mounted below the first, positioned to receive the downwardly reflected rays from said first mirror and to direct said rays to the eye of a vehicle operator in normal operating position;
(d) said second mirror having a reflecting surface concave in the horizontal and vertical meridians;
(e) said mirrors being spaced apart a vertical distance approximately equal to the sum of the focal distances of the two mirrors in their respective vertical meridians; and
(f) wherein the focal distances in the horizontal section of the upper (f_{uh}) and lower (f_{lh}) mirrors, the distance between the mirrors (D), and the distance from the lower mirror to the observer's eye (E) are related by:

$$A=\frac{1000}{\frac{f_{lh}\cdot D+f_{lh}\cdot f_{uh}}{D+F_{uh}-f_{lh}}-E}$$

Wherein A is between 0.0 and 0.3.

3,353,894
ELECTRO-OPTIC LIGHT DEFLECTOR UTILIZING TOTAL INTERNAL REFLECTION

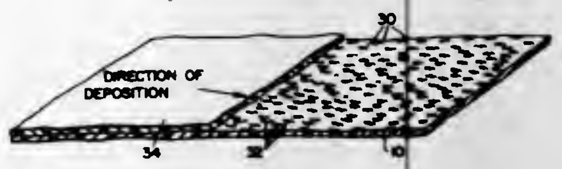
Thomas J. Harris, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 8, 1964, Ser. No. 373,499
9 Claims. (Cl. 350—150)



3. In a light deflector, the combination comprising:
means for selectively acting on a beam of plane polarized light to produce either of two linearly polarized light beams, the polarization direction of one beam differing by 90° from the polarization direction of the second beam;
first birefringent means having a plurality of faces, one said face disposed normally with respect to the path of said linearly polarized light beams and oriented parallel to the optic axis of said first birefringent means and at least a second face oriented at an angle with respect to said linearly produced light beams, the angle of incidence of said light beams on said second face invariably falling below the critical angle for the polarization direction of the one beam so that said one beam passes through said second face with substantially undiminished intensity, said angle of incidence of said light beams on said second face invariably falling above the critical angle for the polarization direction of the second beam so that said second beam is completely reflected by said second face;
second birefringent means spaced from said first birefringent means by an air gap and disposed in the path of said passed one beam, for realigning said one beam along its original direction by correcting any refraction imparted to it when said one beam exits into said air gap from said first birefringent means; and
reflective means disposed in the path of the reflected second beam for reflecting said second beam in a path parallel to and in displaced relation to said one beam.

3,353,895
LIGHT POLARIZER COMPRISING FILAMENTOUS PARTICLES ON SURFACE OF TRANSPARENT SHEET AND METHOD OF MAKING SAME

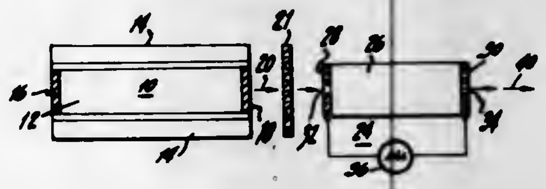
Eugene S. Emerson, Allston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Apr. 16, 1962, Ser. No. 187,679
19 Claims. (Cl. 350—155)



1. A transmission-type light polarizing material of high efficiency and relatively simple construction, comprising a transparent substrate composed of a sheet material selected from the group consisting of transparent glasses and plastics, the surfaces of which are perceptibly smooth consistent with casting and extrusion methods of production, a multiplicity of abbreviated microscopic mound-like protuberances distributed randomly throughout a surface of said substrate of a minuteness contributing to the smoothness of said surface, and a multiplicity of short, laterally and longitudinally spaced filamentous particles oriented predominantly in one given direction and distributed throughout and adhering to said substrate surface so as to be contiguous with given portions of said protuberances exclusive of their elevated portions but to be spaced from other portions thereof said particles when oriented in said given direction forming a plurality of side-by-side essentially-parallel filaments of a thickness and spacing less than one wavelength of the incident light to be transmitted to polarize said light.

3,353,896
LIGHT FREQUENCY SHIFTER

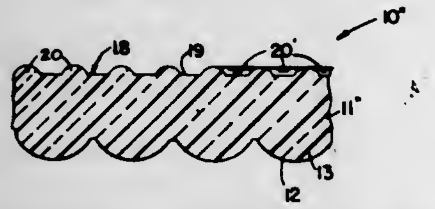
Donald J. Blattner, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 12, 1963, Ser. No. 287,253
4 Claims. (Cl. 350—160)



1. Optical apparatus comprising a source of light of a predetermined first fixed frequency, means for phase modulating light from said source with a linear signal having a given slope applied thereto to produce therefrom output light of a second fixed frequency which differs from said first frequency by an amount which is proportional to the value of said given slope, and means for applying a linear signal having said given slope to said means for phase modulating light.

3,353,897
DISPLAY DEVICES

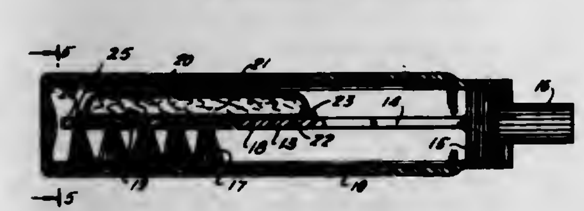
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Filed Oct. 23, 1965, Ser. No. 503,982
5 Claims. (Cl. 350—167)



1. An improved multipatterned display device operative to provide a variable light pattern to an observer which appears to shift as the angle between the observer and the device varies, comprising:
(a) a relatively thin sheet of transparent material having a front face and a rear face;
(b) a plurality of first transparent, parallel, elongated and closely spaced lens formations in said front face;
(c) a plurality of second elongated lens formations in said rear face parallel to said first lens formations and having a highly reflective coating thereon for reflecting the light which enters said sheet to a given observation point with a first brightness; and
(d) at least one third formation in said rear face interposed between said second formations and differing therefrom for reflecting the light which enters said sheet to a given observation point with a second brightness which is of less intensity than said first brightness.

3,353,898
POCKET SIZE COMBINATION TOOTHBRUSH AND PASTE DISPENSER

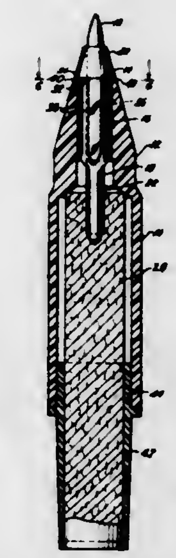
Martin J. Lamberti, 116—02 232nd St., Cambria Heights, N.Y. 11411
Filed Aug. 6, 1965, Ser. No. 477,883
2 Claims. (Cl. 401—132)



1. A toothbrush and paste dispensing combination consisting of a brush head having flat top and bottom surfaces, a handle extending from the rear end of said head, said head having bristles on the underside of a first portion thereof which extends from the front end thereof to a position spaced a substantial distance from the rear end thereof thereby leaving a substantial second portion of the head rearward of said bristles unprovided with bristles, said first portion only of said head having a plurality of passages extending therethrough between said bristles, a sealed sack of flexible material containing toothpaste and having a flat puncturable bottom, said sack having substantially the same length and width as said head and being mounted on the top side of said head with said bottom of the sack engaging the top surface of the head, and releasable adhesive means for securing said bottom of the sack to said top surface of the head.

3,353,899
FIBER TIPPED PEN

Emil Hechtle, Oradell, N.J., assignor to Radiant Pen Corporation, Kenilworth, N.J.
Filed June 23, 1965, Ser. No. 466,212
3 Claims. (Cl. 401—198)



1. A pen having a tubular barrel containing an ink supply and terminating in a mouth; a separate tubular tip holder seated in said mouth and extending therein to the ink supply; a pointed tip made of ink absorbing material positioned in the tubular holder and removable therefrom; a stop on the holder for positively locating the tip in writing position, and an opening in the tubular tip holder for allowing the ink supply to be absorbed by the tip when in position in the holder, said opening being located between the stop and the mouth of the tubular holder, said barrel being vented by providing a space between the tip holder and the barrel.

CHEMICAL

3,353,900
DYEING OF SYNTHETIC FIBERS

Julian J. Hirshfeld and Byron A. Sample, Jr., Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Feb. 11, 1966, Ser. No. 538,115
14 Claims. (Cl. 8—55)

1. A process of dyeing synthetic fibers which comprises contacting the fiber with an aqueous dyebath at a temperature within the range of from about 100° F. up to about the boiling point of the dyebath, said dyebath consisting essentially of a dye and furfural, the furfural at a concentration within the range of from about 5 grams per liter up to about the saturation point of the furfural in the aqueous dyebath.

3,353,901
INCREASING WASH FASTNESS OF DYES ON CELLULOSIC MATERIALS WITH N-METHYLOLATED QUATERNARY AMMONIUM UREIDO AND URETHANE COMPOUNDS

Carl Taube, Leverkusen, and Klaus Böckmann and Karl-Heinz Freytag, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Jan. 30, 1963, Ser. No. 255,098
Claims priority, application Germany, Feb. 21, 1962, F 36,082
1 Claim. (Cl. 8—74)

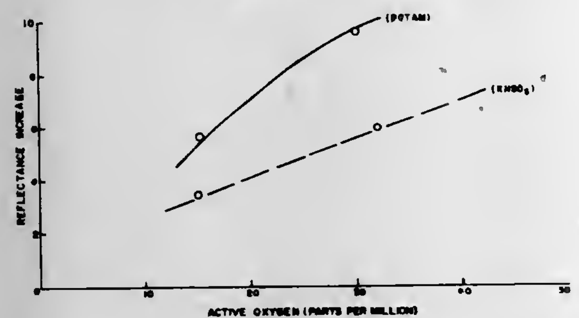
A process for improving the fastness to washing of dyeings and prints on cellulose-containing materials with dyestuffs containing water-solubilizing groups which consists in treating the dyeings and prints with an active amount of an aqueous solution of an N-methylolated nitrogen-containing compound having about 1–100 quaternary ammonium radicals, the nitrogen atom of each ammonium radical being connected to the nitrogen atom of ureido or a chain oxygen of urethane groups by bridging alkylene groups up to two times, quaternary ammonium radicals being connected to each other with

(1) alkylene,
(2) dialkylene ether, or
(3) trialkylene bisureido or dialkylene ureido moieties; the terminal ureido or urethane groups having an N-alkyl substituent.

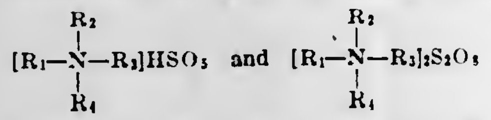
3,353,902

METHOD OF USING QUATERNARY AMMONIUM PEROXYSULFATES

Louis H. Diamond, Yardley, Pa., and John H. Blumbergs, Highland Park, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of New York
Filed May 8, 1964, Ser. No. 365,874
3 Claims. (Cl. 8—110)



1. A method for bleaching fabrics which comprises contacting said fabrics with an effective amount of a bleaching agent selected from the group consisting of



$$[R_1-\underset{R_4}{\overset{R_2}{N}}-R_3]HSO_5 \quad \text{and} \quad [R_1-\underset{R_4}{\overset{R_2}{N}}-R_3]_2S_2O_8$$

in which R_1, R_2, R_3 and R_4 are selected from the class consisting of saturated aliphatic, saturated cycloaliphatic, and phenyl groups having up to about 18 carbon atoms, said groups not being oxidized by peroxysulfates and being attached to the nitrogen atom through a carbon atom.

3,353,903

PREPARATION OF COTTON FABRICS FOR DYEING

Howard L. Potter and Neil J. Stalter, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 28, 1966, Ser. No. 530,387
6 Claims. (Cl. 8—111)

1. The method of preparing a woven cotton fabric for dyeing comprising subjecting said fabric in open width and extended state sequentially to at least the first two of the following three treatment stages:

Stage 1—
(a) dampening said fabric with an aqueous solution containing 6 to 13% caustic soda or caustic potash;
(b) subjecting the dampened fabric to the direct action of saturated steam at about atmospheric pressure for about 1 to 2 minutes; then
(c) rinsing the fabric with water;

Stage 2—
(a) dampening the fabric from Stage 1 with an aqueous solution containing (1) 1 to 5% caustic soda or caustic potash, (2) 0.2 to 2.5% H_2O_2, and (3) a peroxide stabilizer at a concentration effective to prevent excessive decomposition of the H_2O_2;
(b) subjecting the dampened fabric to the direct action of saturated steam at about atmospheric pressure for about 1 to 2 minutes; then
(c) rinsing the fabric with water;

Stage 3—
(a) dampening the fabric from Stage 2 with an aqueous solution containing (1) 0.8 to 3% caustic soda or caustic potash, (2) 0.2 to 2.5% H_2O_2, and (3) a peroxide stabilizer at a concentration effective to prevent excessive decomposition of the H_2O_2;
(b) subjecting the dampened fabric to the direct action of saturated steam at about atmospheric pressure for about 1 to 2 minutes; then
(c) rinsing the fabric with water.

3,353,904

CROSS-LINKING CELLULOSE AND STARCH WITH PERFLUOROPOLYENES HAVING AT LEAST TWO UNSATURATED TERMINAL GROUPS

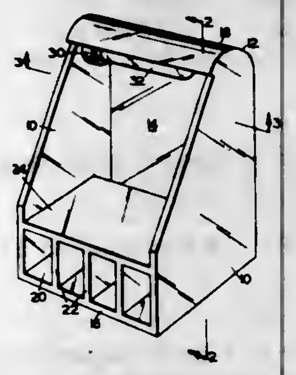
Robert D. Englert, Sierra Madre, Ronald Swidler, Pasadena, Lester P. Berriman, Arcadia, and Robert H. Wade, Altadena, Calif., assignors, by mesne assignments, to Koratron Company, Inc., a corporation of California
No Drawing. Filed Feb. 15, 1965, Ser. No. 432,863
17 Claims. (Cl. 8—120)

1. A process comprising reacting a perfluoropolyene having at least two unsaturated terminal groups with a cellulosic material, said reaction being carried out in the presence of a basic catalyst.

3,353,905

COMBINATION NIGHT-LIGHT AND TOILET ARTICLE HOLDER AND STERILIZER

Douglas G. Ellis, 7246 N. Newell Ave., Portland, Oreg. 97203
Filed Dec. 21, 1964, Ser. No. 419,813
1 Claim. (Cl. 21—102)



A combination night-light and toilet article holder and sterilizer comprising a pair of side walls, a bottom wall, a back wall, at least one upstanding partition projecting upwardly from said bottom wall and extending from front to rear for forming toilet article receiving compartments, said compartments being open at the front for insertion and removal of toilet articles from the front of said holder, a horizontal imperforate plate in said holder at the upper end of said partition for forming a shelf for a container to be seated thereon and sterilized, said plate extending rearwardly from the front of the holder and terminating short of the back wall to form a rear top opening in said compartments, a light bulb supported at the upper end of said holder above said horizontal shelf, a light bulb socket in said holder for supporting said light bulb, said bulb comprising a coated, sterilizing-type bulb, a portion of the bulb which is directed downwardly being uncoated whereby to direct sterilizing rays towards said shelf and said rear openings in said compartments, and a curved shield extending partly around said light bulb over the upper portion thereof, said curved shield being translucent for diffusing light from said bulb.

3,353,906

METHOD OF RECOVERING CHEMICALS FROM SPENT PULPING LIQUORS

Salvatore A. Guerrieri, Rowayton, Conn., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Aug. 25, 1964, Ser. No. 391,894
The portion of the term of the patent subsequent to June 6, 1984, has been disclaimed
10 Claims. (Cl. 23—48)

1. A process for recovering metal and sulfur values from a spent cooking liquor containing the same, said metal being selected from the group consisting of alkali and alkaline earth metals, comprising:

(a) introducing said liquor in a finely divided state and an oxygen containing gas into a combustion zone to effect combustion of the liquor at a temperature greater that 1700° F., the quantity of oxygen containing gas being sufficient to maintain combustion in a reducing atmosphere, said combustion producing from the liquor an inorganic smelt residue containing the metal and a combustion gas containing hydrogen sulfide;
(b) removing the inorganic residue smelt and the combustion gas from the combustion zone;
(c) separating the combustion gas from the smelt;
(d) reacting the combustion gas with an oxygen containing gas to convert the hydrogen sulfide to sulfur dioxide.

3,353,907

METHOD FOR PRODUCING RARE EARTH CHALCOGENIDES

Merrill W. Shafer, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 2, 1964, Ser. No. 401,099
5 Claims. (Cl. 23—50)

1. A method of preparing europium (II) chalcogenide compounds comprising the steps of:

(a) dissolving elemental europium and a chalcogen selected from the group consisting of sulfur and selenium in liquid ammonia,
(b) heating the liquid ammonia solution to a temperature of about the boiling point of said liquid ammonia to precipitate said europium (II) chalcogenide compound, and
(c) drying the precipitate by heating said precipitate in an oxygen and moisture free atmosphere and cooling said dried precipitate.

3,353,908

PROCESS FOR THE MANUFACTURE OF DICALCIUM PHOSPHATE

Joseph Cremer, Hermulheim, near Cologne, and Franz Rodis, Bad Hersfeld, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
No Drawing. Filed Oct. 23, 1962, Ser. No. 235,595
Claims priority, application Germany, Oct. 24, 1961, K 45,016
13 Claims. (Cl. 23—109)

1. In the process for the manufacture of dicalcium phosphate by reacting gypsum with a phosphate reactant selected from the group consisting of primary alkali metal phosphate, secondary alkali metal phosphate, primary ammonium phosphate and secondary ammonium phosphate, the improvement which comprises admixing reactants in about stoichiometric amounts and reacting the mixture by continuously removing the surfaces of solid reactants while being comminuted and mixed with the remaining starting components.

3,353,909

THERMALLY STABILIZED ALKALI METAL DITHIONATES

Alfons Janson and Franz Poschmann, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Dec. 17, 1963, Ser. No. 331,094
Claims priority, application Germany, Dec. 22, 1962, B 70,119
4 Claims. (Cl. 23—116)

1. An essentially anhydrous mixture of finely-divided, essentially dry, alkali metal dithionite and, as a stabilizer against self ignition of said dithionite, 2–20% by weight, based on said dithionite, of urea.

3,353,910

ALUMINA PARTICLES AND METHOD OF PREPARATION

Edward B. Cornelius, Swarthmore, Lee A. Cosgrove, West Chester, and George Alexander Mills, Swarthmore, Pa., assignors to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Jan. 17, 1963, Ser. No. 252,041
5 Claims. (Cl. 23—141)

1. The method of preparing discrete, coherent, spheroidal aggregates of aluminum trihydroxide having an average diameter in the range of about 0.5–5.0 mm. comprising the steps of:

(a) admixing powdered aluminum trihydroxide and an aqueous mineral acid having a concentration of from 15–60% acid for a period of about 25 minutes, said acid having been totally added to said trihydroxide during the initial half of said time period, the amount of acid added being stoichiometrically sufficient to react with only about 4–5% of said aluminum trihydroxide,
(b) aging the mass formed in step (a) for a period of at least two hours, under conditions which minimize changes in its moisture content, to permit completion of the reaction between said trihydroxide and said acid,
(c) deaggregating said crumbly mass into discrete coherent particles, having a size range substantially smaller than the size range of the desired end product, and
(d) rolling said discrete particles into large coherent spheroidal aggregates, having sufficient structural strength to withstand further handling and processing, said rolling being accomplished without the application of large particle-to-particle contact pressures.

4. An alumina particle suitable as a contact mass and catalyst support for promoting chemical reactions, said particle being characterized in having:

(a) an average diameter in the range of about 0.5–5.0 mm.,
(b) a packed bulk density in the range of about 0.65–0.73 kg./l. after calcination in bone dry air at about 900° F.,
(c) a total pore volume in the order of about 0.50–0.70 cc./gm.,
(d) about 25–65% of the total pore volume in pores of about 100–0.035 microns diameter,
(e) the remaining portion of the total pore volume in pores of about 0.035 micron and smaller in diameter, and
(f) a plate-to-plate hardness in the range of about 4.5–5.5 lbs.

3,353,911

PROCESS FOR REMOVING HYDROGEN FLUORIDE FROM A GASEOUS MIXTURE CONTAINING HYDROGEN FLUORIDE AND HYDROGEN CHLORIDE

Leopold Moller and John Lionel Pegler, Avonmouth, Bristol, England, assignors to Imperial Smelting Corporation (N.S.C.) Limited, London, England, a British company

No Drawing. Filed Oct. 11, 1966, Ser. No. 585,740
3 Claims. (Cl. 23—149)

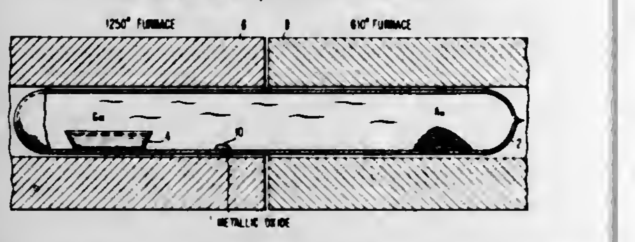
1. In the method of removing gaseous hydrogen fluoride from a gaseous mixture containing hydrogen chloride and hydrogen fluoride, the improvement which comprises bringing a mixture of the gases containing a major proportion of hydrogen chloride and a minor proportion of hydrogen fluoride into intimate contact with an aqueous absorbent solution of boric acid, said boric acid solution being saturated with hydrogen chloride from the gaseous mixture to inhibit absorption of hydrogen chloride from the gaseous mixture, and maintaining the partial pressure of the hydrogen chloride in the boric acid solution equal to the partial pressure of the hydrogen chloride in the gaseous mixture to facilitate absorption of the hydrogen fluoride from the gaseous mixture into the boric acid solution to form an aqueous solution of fluoboric acid.

3,353,912

PREPARATION OF HIGH-PURITY MATERIALS

Norman G. Ainslie, Mahopac, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 20, 1962, Ser. No. 180,970
18 Claims. (Cl. 23—204)



11. The method of preparing a group III–V semiconductor crystal with a high mobility in a fused silica vessel located in a reaction tube comprising the steps of:
placing a group III element in the fused silica vessel in a first portion of the reaction tube;
placing a group V element in a second portion of the reaction tube;
placing a quantity of metallic oxide in the first portion of the reaction tube where the quantity is selected such that oxygen with a room temperature pressure below 100 mm. of mercury is liberated at the synthesis temperature of a melt of said group III–V semiconductor;
evacuating the reaction tube;
heating the first portion of the reaction tube to a temperature above the melting point of said group III–V semiconductor and simultaneously heating the second portion of the reaction tube to a temperature above the vaporization point of said group V element to synthesize a group III–V melt in the vessel;
and subsequently cooling the melt in the vessel to form the high mobility group III–V crystal.

3,353,913

PURIFICATION OF HYDROGEN PEROXIDE

Donald O. Flach, Williamsville, and George W. Siwinski, North Tonawanda, N.Y., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 21, 1963, Ser. No. 252,562
4 Claims. (Cl. 23—207)

1. Method of purifying an aqueous acidic hydrogen peroxide solution having a pH of less than 5 and containing impurities from the group consisting of inorganic metal salts, organic impurities which derive from work solutions used in production of hydrogen peroxide by an organic process and mixtures of said inorganic and organic impurities, which impurities catalyze decomposition of the hydrogen peroxide, comprising adding a hydrogen peroxide-compatible alkali to said aqueous hydrogen peroxide solution in an amount to raise the pH thereof to 5.6 to 7.5, at a temperature between the freezing point and the boiling point of said solution, to cause said impurities to precipitate as insolubles, removing said insoluble impurities to provide remaining purified aqueous hydrogen peroxide solution containing only on the order of 0.06 to 0.10 parts per million of inorganic impurities where the impure hydrogen peroxide contained about 0.2 to 10 parts per million of said inorganic impurities, and acidifying said purified aqueous hydrogen peroxide solution to a pH of 1.2 to 3.5 with a hydrogen peroxide-compatible acid.

3,353,914

METHOD OF SEED-PULLING BETA SILICON CARBIDE CRYSTALS FROM A MELT CONTAINING SILVER AND THE PRODUCT THEREOF

Paul B. Pickar, Jr., Winter Park, Fla., assignor to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed Dec. 30, 1964, Ser. No. 422,316
6 Claims. (Cl. 23—208)

1. The process of growing a crystal of beta silicon carbide which comprises forming a charge of silver, silicon and carbon of high purity in a crucible having an inner surface resistant to molten silicon, the charge containing 60% to 85% silicon, 15% to 40% silver, and carbon in the amount 0.2% to 1% of the silicon combined and silver, outgassing the crucible and charge in a furnace under high vacuum at a temperature of the order of 800° to 900° C., introducing an inert gas into the furnace to a pressure of more than 1 atmosphere, melting the charge and establishing a temperature gradient in the molten bath in the crucible, so that the top of the melt is more than 50° C. cooler than the bottom of the melt and the temperature at the top of the melt is between 1450° C. and 1800° C., introducing a seed crystal into the top of the melt by means of a seed holder, causing relative rotating movement between the holder with its seed and the crucible containing the melt, causing the seed to be pulled gradually upwardly from the melt, removing the heat of crystal formation as it is produced, continuing the growing process until the seed has attained a length of several millimeters, and permitting the crucible, melt and crystal to cool slowly.

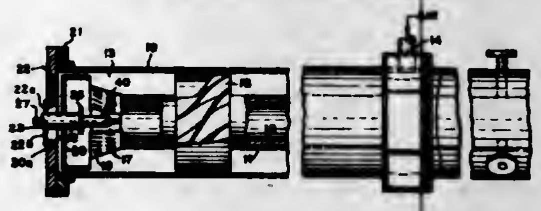
6. A crystal of beta silicon carbide prepared by the process of claim 1 and being of a pale yellow color, transparent, having a hardness of 9.5 Moh's scale, and containing no impurities detectable by standard spectrographic analytical techniques.

3,353,915

METHOD AND APPARATUS FOR MAKING CARBON BLACK

Burton F. Latham, Jr., and Robert G. James, Houston, Tex., assignors to Continental Carbon Company, Houston, Tex., a corporation of Delaware

Filed Dec. 4, 1964, Ser. No. 415,985
15 Claims. (Cl. 23—209.4)



1. The method of making carbon black which includes continuously establishing a mixture of fuel gas and combustion air within a substantially unobstructed cylindrical first zone; igniting said mixture while in said first zone; passing the burning mixture into a second zone comprising an elongated tube in axial alignment and open communication with said first zone; injecting carbon black producing feedstock by sonic energy waves into said second zone and into the ignited mixture therein; pyrolytically dissociating said feedstock to produce carbon black aerosol; and cooling the effluent and recovering the carbon black therefrom.

3,353,916

QUANTITATIVE RECOVERY OF BROMINE BY TWO STAGE CATALYTIC OXIDATION OF HYDROGEN BROMIDE

George R. Lester, Park Ridge, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Apr. 25, 1966, Ser. No. 544,830
5 Claims. (Cl. 23—216)

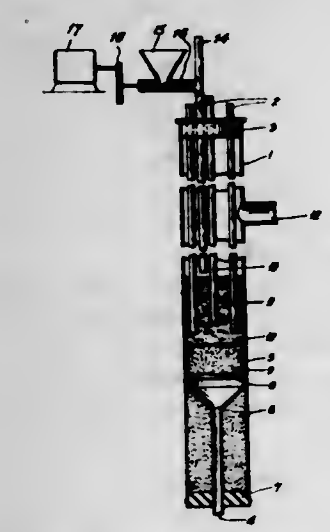
1. A process for the quantitative recovery of bromine from hydrogen bromide which comprises admixing hydrogen bromide and an oxygen-containing gas and passing the same through a first oxidation zone of a dual zone oxidation system at a temperature of at least about 225° C. in contact with a catalyst selected from the group consisting of the oxides and salts of cerium, manganese, chromium, iron, nickel and cobalt and converting a major portion of said hydrogen bromide to bromine, passing the first oxidation zone effluent containing residual hydrogen bromide through the second oxidation zone in contact with a copper oxide catalyst and converting the residual hydrogen bromide to bromine at reaction conditions to maintain in said second zone a temperature of from about 225° C. to about 350° C. and a temperature profile characterized by a substantially immobile catalyst peak temperature not exceeding about 350° C.

3,353,917

PRODUCTION OF PHOSPHORUS

George Jordan Harris, Beloeil, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Mar. 4, 1964, Ser. No. 349,424
Claims priority, application Canada, Aug. 3, 1963, 881,692
4 Claims. (Cl. 23—223)



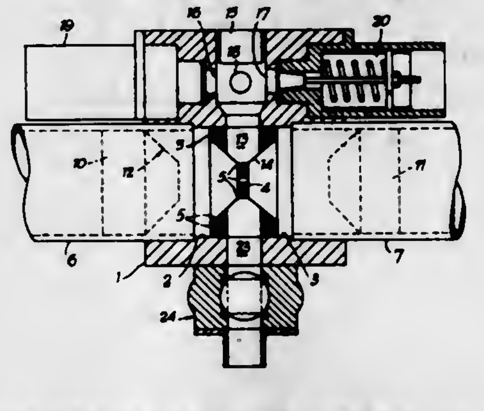
1. A process for the production of elemental phosphorus which comprises: (1) maintaining a bed of electrically conductive carbon particles in a fluidized state by the passage of an inert gas therethrough, (2) heating the fluidized bed at a temperature in the range of 1400° C.–1600° C. by the passage of an electrical current therethrough, (3) adding to the heated fluidized bed by increments a mixture of calcium phosphate and silica in an amount less than 10% by weight of the fluidized carbon bed, the SiO_2/Ca ratio of the calcium phosphate-silica mixture lying within the range of 0.75 and 1.50, the calcium phosphate, silica and carbon reacting to form elemental phosphorus, (4) sweeping the elemental phosphorus product from the fluidized bed with the inert fluidizing gas, and (5) separating the elemental phosphorus from the inert gas issuing from the fluidized bed.

3,353,918

APPARATUS FOR MANUFACTURING MOULDABLE URETHANE FOAMS

Alan Philip Perrin, 100 Harleyford Road, London SE. 11, England

Filed Oct. 24, 1963, Ser. No. 318,748
Claims priority, application Great Britain, Oct. 25, 1962, 40,492/62
16 Claims. (Cl. 23—252)



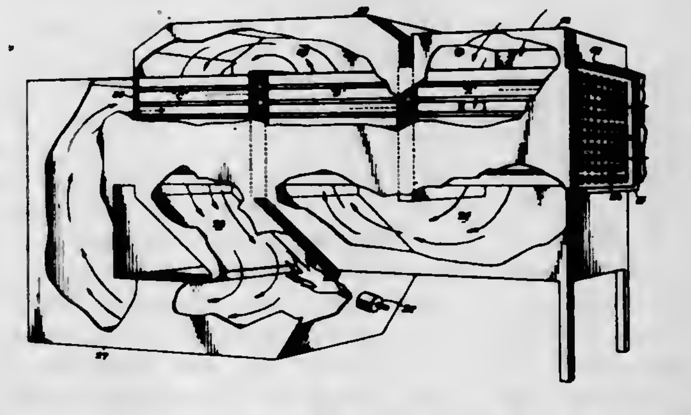
1. An apparatus for mixing material, for example, ingredients for the manufacture of urethane foam, comprising: a mixing device containing two chambers having adjacent ends interconnected with one another by wall means defining a plurality of openings through said adjacent ends and two pistons each slidably mounted in a respective one of the chambers; means for oscillating the pistons within the chambers to force ingredients in the mixing device back and forth through the openings to effect mixing of the ingredients, said wall means defining a discharge passage having a control valve interposed therein with which passage the openings communicate whereby the mixed ingredients may be discharged by convergence of the pistons with the wall with the valve open; the wall also including means defining an inlet passage communicating with the openings for charging the mixing device.

3,353,919

APPARATUS FOR THE ELIMINATION OF ODORS FROM NOXIOUS GASES

Richard Stockman, Friendship, N.Y., assignor, by mesne assignments, to The Air Preheater Company, Inc., a corporation of Delaware

Filed July 23, 1964, Ser. No. 384,592
2 Claims. (Cl. 23—277)



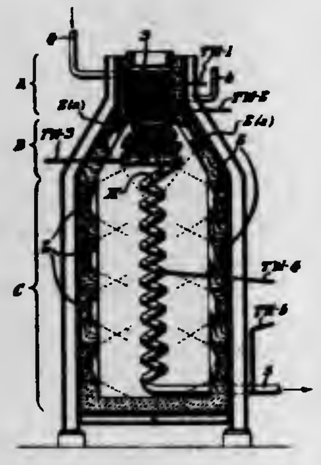
1. Apparatus for the purification of a noxious gas comprising in combination a housing having inlet means for a noxious gas and outlet means for a purified gas, a

heat exchanger in said housing having inlet and outlet ports for the noxious gas and inlet and outlet ports for the purified gas, said inlet means for the noxious gas arranged to coincide with the inlet port for the noxious gas and the outlet means for the purified gas arranged to coincide with the outlet port for the purified gas, duct means within said housing connecting the inlet port for purified gas to the outlet port for noxious gas, and a combustor in said duct means arranged to direct hot gases exhausting therefrom in opposition to the flow of noxious gases from said outlet port to provide optimum mixing of the noxious gases and hot exhaust gases before they are introduced into the inlet port for the purified gas.

3,353,920
HIGH SEVERITY PYROLYSIS APPARATUS
Maurice R. Kitzen, Elkins Park, Pa., assignor to Selas Corporation of America, Dresher, Pa., a corporation of Pennsylvania

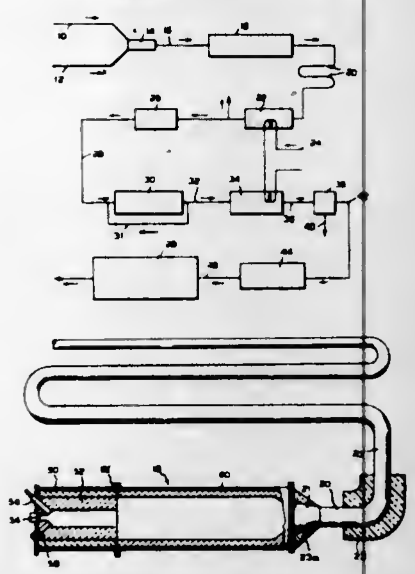
Filed Nov. 13, 1964, Ser. No. 411,079

1 Claim. (Cl. 23—277)



In an apparatus for high severity cracking of a hydrocarbon including a furnace section having radiant heating means therein, and having tubing disposed in said furnace section to conduct said hydrocarbon material through said furnace section, said furnace tubing being disposed to receive heat from said radiant heating means, said apparatus having an exhaust section substantially free of radiant heat for exhausting the products of combustion and heat generated in said furnace section and having a preheat section disposed between said furnace section and said exhaust section, the combination which comprises: preheater tube means disposed in said exhaust section and said preheat section and connected to receive said hydrocarbons from their source and to introduce said hydrocarbons into said furnace tubing, steam tube means extending into said exhaust section and connected to said preheater tube means for introducing steam into said preheater tube means to form a hydrocarbon-steam mixture, radiant heating means located in said preheat section to transfer heat to said preheater tubing means to heat said hydrocarbon-steam mixture to a point above its incipient cracking temperature, control means comprising a temperature sensing means in said exhaust section coacting with said radiant heatng means in said preheat section for controllably varying the location of said point of incipient cracking along said preheater tubing means, control means in said furnace section for controlling the temperature in said furnace section, and outlet means connected to said tubing in said furnace section for the products.

3,353,921
APPARATUS FOR PRODUCING INERT GAS
John H. Hirt, Monterey Park, Calif., assignor to Hirt Combustion Engineers, Montebello, Calif., a corporation of California
Filed Oct. 23, 1963, Ser. No. 318,439
1 Claim. (Cl. 23—281)



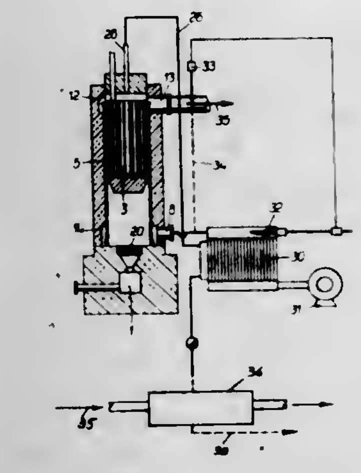
An apparatus for producing an inert gas consisting almost entirely of CO_2 and N_2 by the combination of air and natural gas, such apparatus comprising in combination:

(a) a mixing means for forming admixtures of air and natural gas in amounts required for substantially complete combustion,
(b) said mixing means having inlets for the introduction of air and natural gas and an outlet,
(c) an elongated refractory lined combustion chamber having an inlet and an outlet,
(d) a conduit connecting the outlet of said mixing means with the inlet of said combustion chamber,
(e) the outlet of said combustion chamber being connected to an elongated radiant cooling means,
(f) said elongated radiant cooling means comprising in sequence from the upstream end to the downstream end a first section that is uninsulated, a second section further downstream that is insulated and a third section still further downstream that is uninsulated, said second insulated section being spaced only a short distance from the outlet of the combustion zone and comprising means to increase the residence time and mixing of the combustion gases at a zone of elevated temperature so that the combustion gases will have an added amount of time to come to an equilibrium that favors the formation of CO_2 and minimizes the formation of O_2, CO and H_2.
(g) a compressor and means for connecting the outlet of said radiant cooling zone means with the inlet of said compressor,
(h) at least one cooling means and means for connecting the outlet of said compressor with the inlet of said one cooling means, and
(i) a receiver storage tank connected to the outlet of said one cooling means for receiving and storing compressed gases.

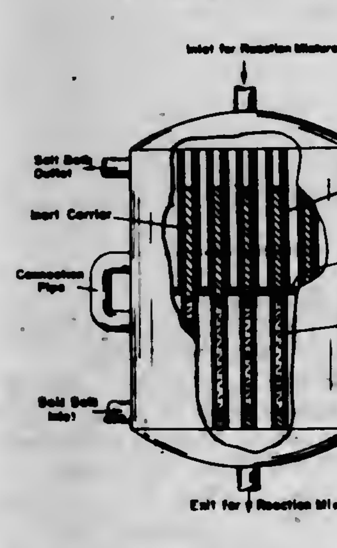
3,353,922
REDUCING GAS GENERATOR APPARATUS
Joachim Wünning, Leonberg, Wurttemberg, Germany, assignor to J. Aichelin, Korntal, near Stuttgart, Germany, a corporation of Germany
Filed May 17, 1965, Ser. No. 456,349
Claims priority, application Germany, May 22, 1964, A 46,112
13 Claims. (Cl. 23—281)

1. Reducing gas generator apparatus, comprising a unitary assembly of a combustion chamber, a heat exchanger

and a catalytic gas converter, said heat exchanger and catalytic gas converter being telescopically arranged within each other; the improvement wherein said catalytic converter is located immediately above said combustion chamber **1**, **4**; and the catalytic converter comprises a support **17** secured to the top **16** of said assembly, open tubes **6** secured to said support **17** and adapted to be charged with catalytic material and depending from said support **17** and a converter chamber housing **18** surrounding said tubes **6** and closed at the bottom **19**, said housing **18** and said tubes **6** directing reducing gas from said combustion chamber along said housing and through the tubes in counterflow relationship.



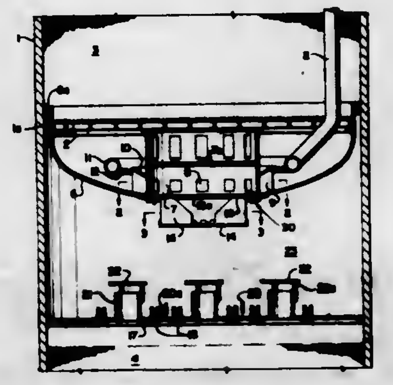
3,353,923
CATALYTIC REACTOR TUBE LINER
Hans Peters, Frankfurt am Main, Germany, assignor to Reichhold Chemicals, Incorporated, White Plains, N.Y.
Filed May 24, 1963, Ser. No. 283,013
Claims priority, application Germany, May 25, 1962, 29,482
3 Claims. (Cl. 23—288)


Inlet for Reaction Mixture
Salt Bath Outlet
Inert Carrier
Connection Pipe
Salt Bath Inlet
Supporting Tubes of Heat Resistant Steel
Tube Sheet for Support
Stainless Steel Catalyst Tubes
Exit for Reaction Mixture

1. In an apparatus for vapor phase catalytic oxidation of an aromatic hydrocarbon to produce an organic polybasic acid anhydride, wherein the hydrocarbon and an oxidizing gas are passed together through heated metal tubes containing the catalyst; the improvement wherein the tubing is provided with an interior surface comprising a chelate polymer.

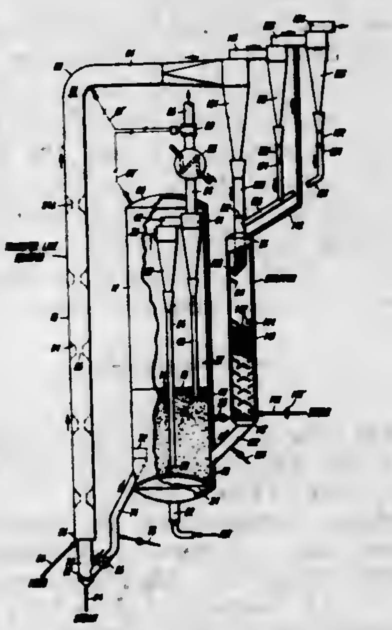
3,353,924
BED REACTOR WITH QUENCH DECK
James E. Riopelle, Scarsdale, N.Y., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 16, 1965, Ser. No. 472,571
8 Claims. (Cl. 23—288)

1. Apparatus for mixing a gaseous fluid with a mixed phase feed fluid comprising a gaseous and liquid component prior to contact with a stationary bed of particulate contact material which comprises:
a closed vessel;
a transverse plate having an opening therein supported by said vessel and dividing said vessel into an upper and a lower chamber;
mixed phase feed fluid inlet means cooperating with said upper chamber for introducing a mixed phase feed fluid into said upper chamber:



gaseous fluid inlet means cooperating with said upper chamber for introducing a gaseous fluid into said upper chamber;
fluid swirl-poducing means positioned above said plate adjacent the opening therein for swirling said fluids and discharging said fluids through said opening and into said lower chamber;
fluid swirl-breaking means positioned below said plate and adjacent said opening therein for stabilizing the swirling fluids exiting from said opening; and
a stationary bed of particulate contact material disposed below said swirl-breaking means.

3,353,925
APPARATUS FOR CONVERSION OF HYDROCARBONS
George P. Baumann, Sparta, and Felix J. Ponzek, Morris Township, Morris County, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Original application May 23, 1962, Ser. No. 197,087, now Patent No. 3,261,776, dated July 19, 1966. Divided and this application Nov. 8, 1965, Ser. No. 506,645.
4 Claims. (Cl. 23—288)



1. An elongated cylindrical transfer line catalytic cracking reactor having an inlet end and an outlet end and an unobstructed axial passageway, means whereby hydrocarbon vapors and solid particles are introduced into said transfer line inlet end and passed axially therethrough,

solids separating means at the outlet end of said transfer line reactor into which said transfer line reactor directly discharges for separating solid particles from hydrocarbon vapors, said transfer line reactor being provided with a plurality of internal Venturi-shaped contacting devices of a smaller diameter than the internal diameter of said transfer line reactor and spaced one from another along the length of said transfer line reactor and extending inwardly from the inner wall of said transfer line reactor whereby improved cocurrent contacting between the hydrocarbon vapors and solid particles is obtained and the velocity of the flow of the hydrocarbon vapors and the solid particles is increased as they pass through said Venturi-shaped devices and long back-mixing solid particles paths along the inner wall of said transfer line reactor are eliminated.

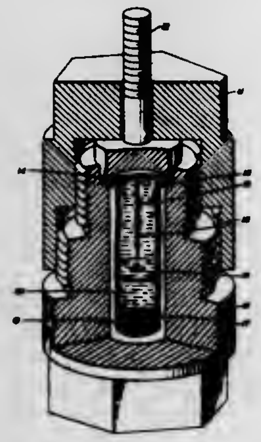
3,353,926

HYDROTHERMAL GROWTH OF ZINC OXIDE CRYSTALS WITH AMMONIUM ION ADDITIVES

Ernest D. Kolb, New Providence, and Robert A. Laudise, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 29, 1965, Ser. No. 491,096

3 Claims. (Cl. 23—301)



1. A method for growing zinc oxide crystals from a hydrothermal solution which comprises immersing a zinc oxide crystal seed and a mass of nutrient zinc oxide in an aqueous medium comprising lithium ions, ammonium ions and a metal hydroxide selected from the group consisting of alkali metal hydroxides, strontium hydroxide and barium hydroxide and mixtures thereof, the lithium ion, ammonium ion, ammonium ion and the metal hydroxide having concentrations of 0.1 to 4.0 molal, 0.05 to 1.0 molal and 2 to 8 molal, respectively, heating said medium to a temperature of at least 300° C. at a pressure of at least 3200 p.s.i. while maintaining a temperature difference between said seed and said nutrient mass of from 5 to 100° C.

3,353,927

DISSOLVING ROCK SALT CONTAINING CALCIUM SULFATE IN THE PRESENCE OF AN ANIONIC ORGANIC WETTING AGENT

Paul H. Ralston, Bethel Park, Pa., assignor to Calgon Corporation, a corporation of Pennsylvania

No Drawing. Filed Nov. 15, 1961, Ser. No. 152,662

13 Claims. (Cl. 23—312)

1. A method of preparing brine from an aqueous solvent and a solid alkali-metal halide containing calcium sulphate as an impurity comprising adding to the aqueous solvent no later than simultaneous with the contact of the solvent with the halide a compound having at least one active group selected from the class consisting of sulphonate, sulphate, carboxylate, and phosphate, said active group being attached to a hydrocarbon group containing between about 5 to 19 carbon atoms per active group, said compound combining with calcium to form a product that is less soluble than calcium sulphate.

3,353,928

PROCESS FOR TREATING RARE EARTH-FLUORINE MATERIALS

Mark M. Woyski, La Habra, James L. Bradford, Anaheim, and Henry H. Elliott, Fullerton, Calif., assignors to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Feb. 26, 1965, Ser. No. 435,745

11 Claims. (Cl. 23—318)

1. A process for halogenating a rare earth-fluorine compound which comprises: establishing a heated reaction zone, said zone containing a particulate rare earth-fluorine compound, providing said heated reaction zone with a fluorine acceptor selected from the group consisting of at least one of boron, silicon, germanium, phosphorus, arsenic and antimony, and a halogen selected from the group consisting of at least one of chlorine and bromine, and heating the resultant admixture for a period of time sufficient to convert at least the major portion of the rare earth values in said compound to water soluble rare earth halides.

3,353,929

PROCESS FOR THE RECOVERY OF URANIUM FROM URANIUM-CONTAINING NUCLEAR FUELS AND THE LIKE

Ottmar Knacke, Aachen, and Manfred Laser, Erich Merz, and Hans-Jürgen Riedel, Julich, Germany, assignors to Kernforschungsanlage Julich des Landes Nordrhein-Westfalen, Julich, Germany, a German institute

Filed Oct. 20, 1965, Ser. No. 498,817

Claims priority, application Germany, Nov. 21, 1964, K 54,588

10 Claims. (Cl. 23—326)

1. A process for the recovery of uranium from a uranium-containing substance in the solid state, comprising the steps of treating said substance in a particulate state at a temperature in excess of about 800° C. with sulfur hexafluoride to produce uranium hexafluoride from at least part of the uranium of said substance; and collecting the uranium hexafluoride thus produced.

3,353,930

PROCESS FOR THE PRODUCTION OF SOLUBLE COMPOUNDS

Hermann Clasen, Falkenstein, Taunus, Jürgen Müller, Langelsheim, Harz, and Rudolf Joppen, Frankfurt am Main, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

No Drawing. Filed Oct. 3, 1961, Ser. No. 142,506

Claims priority, application Germany, Oct. 19, 1960, M 46,885

1 Claim. (Cl. 23—365)

A process for producing lithium aluminum hydride which consists in grinding together sodium aluminum hydride and lithium chloride in diethyl ether.

3,353,931

TUNGSTEN-INDIUM POWDER BODIES INFILTRATED WITH COPPER

Edward J. Zdanuk, Lexington, and Richard H. Krock, Peabody, Mass., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed May 26, 1966, Ser. No. 553,154

8 Claims. (Cl. 29—182.2)

1. A composite material having a low volume of gas content for use as an electrical contact material in vacuum switching devices consisting of tungsten particles surrounded by and integrally joined with a matrix of a copper-indium alloy, said matrix having a high concentration of said indium in the interface region between said tungsten particles and said copper-indium alloy matrix thereby raising the overall electrical conductivity of said copper-indium alloy matrix.

3,353,932

COMPOSITE MATERIAL AND METHOD FOR MAKING SAME

Francis R. Shanley, Los Angeles, Calif., assignor to The Rand Corporation, Santa Monica, Calif., a non-profit corporation of California

Filed Apr. 5, 1965, Ser. No. 449,360

37 Claims. (Cl. 29—182.2)

1. A composite article which comprises:

a multiplicity of closely spaced pseudo-crystals generally randomly oriented with respect to each other, each of said pseudo-crystals comprising less than about 1% of the total volume of the composite article and comprising a plurality of bonded planes of alternating materials, each plane of material being generally parallel to the other within each of said pseudo-crystals, and one plane of material being composed of a relatively brittle material and the adjacent plane of alternating material being composed of a more ductile material;

and said more ductile material occupying the spaces between said pseudo-crystals and bonding said pseudo-crystals together, whereby the composite article is substantially more ductile than said relatively brittle material.

3,353,933

TUNGSTEN POWDER BODIES INFILTRATED WITH COPPER-TITANIUM ALLOYS

Edward J. Zdanuk, Lexington, and Richard H. Krock, Peabody, Mass., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Original application Mar. 11, 1966, Ser. No. 533,579, now Patent No. 3,303,026, dated Feb. 7, 1967. Divided and this application Oct. 21, 1966, Ser. No. 600,311

8 Claims. (Cl. 29—182.2)

1. A composite material having a low volume of gas content for use as an electrical contact material in vacuum switching devices consisting of tungsten particles surrounded by and integrally joined with an alloy matrix of copper-titanium, said matrix having a high concentration of said titanium in the interface region between said tungsten particles and said copper-titanium alloy matrix thereby raising the overall electrical conductivity of said copper-titanium alloy matrix.

3,353,934

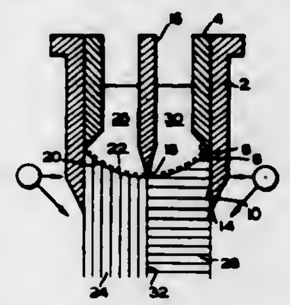
COMPOSITE-INGOT

Grover C. Robinson, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Original application Aug. 14, 1962, Ser. No. 218,205, now Patent No. 3,206,808, dated Sept. 21, 1965. Divided and this application Dec. 7, 1964, Ser. No. 423,888

2 Claims. (Cl. 29—187.5)

2. A composite metal ingot having as-cast structure throughout and adapted for subsequent processing by conventional mill practices, comprising a plurality of substantially parallel lengthwise components, at least one of said components having a composition of aluminous metal selected from the group consisting of aluminum and alloys thereof, and a component adjacent to the aluminous metal component having a composition of metal which is capable of alloying with said aluminous metal, said adjacent components being metallurgically bonded along a well-defined boundary therebetween and the components on opposite sides of said boundary having substantially uniform composition throughout.



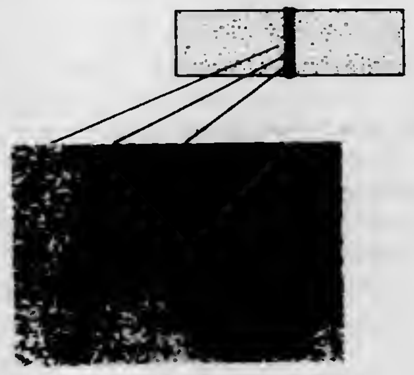
3,353,935

COMPOSITE PRODUCTS

Theodore Loring Oberle, Washington, Marion Roy Calton, East Peoria, Calvin David Loyd, Peoria, and Claude Foster White, Creve Coeur, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Original application Oct. 27, 1964, Ser. No. 407,955, now Patent No. 3,273,233, dated Sept. 20, 1966. Divided and this application Jan. 12, 1966, Ser. No. 535,630

9 Claims. (Cl. 29—191)



1. A composite product comprising two metal parts bonded together across a generally circular common interface and including a narrow zone of material extending from the interface into at least one part and composed of spirally displaced material heated to a plastic condition by rotational rubbing contact of the two parts during the bonding process and ending in an abrupt transition to material of the parent part not displaced by the bonding process, at least one part having a generally circular shape at the interface which permits rotational motion without exposing substantial portions of the interface during rotation, all of the material in said narrow zone having grain which is both extensively displaced in a spiral direction and refined by the last few turns of plastic forging produced in the zone as the resistance to twisting developed in the plastic material slows the rotation to a stop.

3,353,936

CHROMIZED FERROUS ARTICLE

George A. Samuel, Wimereux, Pas-de-Calais, France, and Jerome V. Bell, Wilmington, Del., assignors to Alloy Surfaces Company, Inc., Wilmington, Del., a corporation of Delaware

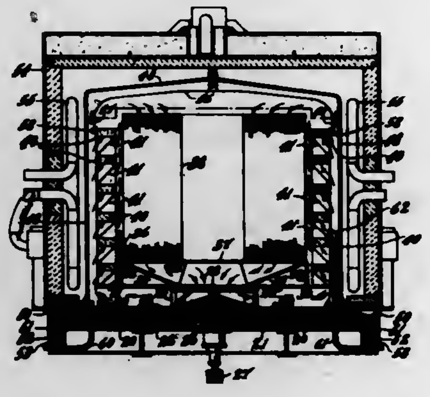
Original application Nov. 29, 1962, Ser. No. 240,858, now Patent No. 3,222,212, dated Dec. 7, 1965. Divided and this application Sept. 6, 1963, Ser. No. 307,263

The portion of the term of the patent subsequent to Dec. 7, 1982, has been disclaimed

9 Claims. (Cl. 29—196.6)

1. A chromized ferrous metal open coil having a content of an alloy in the metal of the class consisting of titanium, columbium, vanadium and tantalum of at least

four times the carbon content, with the uncombined carbon content of the metal being not in excess of 0.03%, and produced by a process which comprises providing a retort which is closed with respect to the atmosphere, placing in the retort ferrous metal work to be chromized and closing the retort, introducing into the retort a halogen acid gas, introducing into the retort a carrier gas free from nitrogen contamination, maintaining the retort and the work at a temperature of between 1500° and 2300° F., providing a source of chromium out of contact with the work, distributed in a series of layers through which the gas can flow sequentially, there being a ratio of the total surface area of the source of chromium to the total surface area of the work which is between 0.8 to 1 and 5 to 1, maintaining the source of chromium at a temperature between 1500° and 2300° F., providing a channel from the source of chromium to the work and providing a return channel from the work to the source of chromium, circulating the halogen gas and the carrier gas in admixture under positive pressure sequentially through the layers of the source of chromium and then in contact with the work to chromize the work and then back through the source of chromium to regenerate the gas, maintaining the chromizing potential high by withdrawing from the retort increments of carrier gas and halogen gas and maintaining a sufficiently low dew point in the inlet gases, so that the dew point in the exit gas is not in excess of +5° F., and continuing the circulation of the gas and the chromizing for a time of at least 5 hours.



3,353,937
COATED ALUMINUM COMPOSITION AND PROCESS
James M. Ford, William M. Minish, and Philip J. Willis, Saltville, Va., assignors to Olin Mathieson Chemical Corporation

No Drawing. Filed June 8, 1964, Ser. No. 373,505

9 Claims. (Cl. 44—3)

8. A heat-producing composition consisting essentially of—

Component:	Percent by weight
Caustic soda	40 to 67
Sodium chloride	0 to 25
Sodium nitrate	20 to 40
Sodium chlorite	0 to 10
Aluminum	2 to 8
Total	100

said aluminum being in the form of discrete particles having a uniform adherent coating of alkaline alkali metal salt, said coating amounting to 1 to 10 pounds per 100 pounds of aluminum.

3,353,938
ANTIKNOCK COMPOSITIONS AND MOTOR FUELS CONTAINING THEM
Edmund L. Niedzielski, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 12, 1963, Ser. No. 272,548
16 Claims. (Cl. 44—69)

13. A motor fuel for spark ignition engines which consists essentially of liquid hydrocarbons boiling in the gasoline range and

(A) a binary mixture of iron and nickel antiknock compounds in an amount to provide a total of from 0.1 to about 1 gram of metal per gallon of said fuel, said binary mixture consisting essentially of
  (a) about 85% to about 50% by weight of at least one member of the group consisting of dicyclopentadienyl iron and substituted-dicyclopentadienyl iron in which the substituents consist of one to two alkyl radicals of 1 to 2 carbon atoms, and
  (b) about 15% to about 50% by weight of at least one member of the group consisting of cyclopentadienyl nickel nitrosyl and substituted-cyclopentadienyl nickel nitrosyl in which the substituents consist of one to two alkyl radicals of 1 to 2 carbon atoms;
(B) a tetraloweralkyl lead antiknock compound in an amount to provide from about 1 to about 4.23 grams of lead per gallon of said fuel; and
(C) from 0.5 to about 2.5 theories, based on the metals, of at least 1 polyhalohydrocarbon lead scavenger.

3,353,939
NITRO BENZONITRILE ANTIMICROBIAL COMPOSITIONS AND PROCESS
William N. Cannon, Greenwood, and Granville Bruce Kline and Dwight E. Morrison, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
No Drawing. Filed Aug. 8, 1963, Ser. No. 300,923
7 Claims. (Cl. 44—75)

1. A hydrocarbon fuel composition comprising essentially a major portion of a hydrocarbon fuel and an inhibitory concentration of an antimicrobial compound selected from the group consisting of 2-nitrobenzonitrile. 2,4-dinitrobenzonitrile, 2-nitroterephthalonitrile, 3-nitrophthalonitrile, and 4-nitrophthalonitrile.

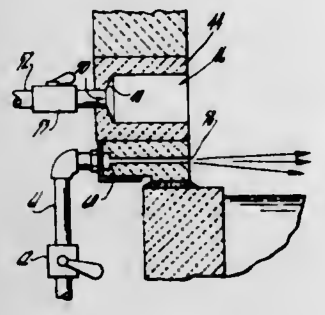
3,353,940
METHOD OF FORMING GLASS BEADS IN A MOLTEN METAL BATH
Hans R. Dolf, Mercer Island, Wash., assignor to Selas Corporation of America, Dresher, Pa., a corporation of Pennsylvania
Filed May 7, 1965, Ser. No. 454,007
9 Claims. (Cl. 65—21)

1. The method of forming glass beads which comprises introducing fine glass particles into a bath of molten metal at a temperature above the softening temperature of the glass whereby the particles will soften and be drawn by surface tension into spheres, moving the spheres through the metal to a zone having a temperature below the softening point of the glass whereby the spheres will solidify, and removing the solidified spheres from the molten metal.

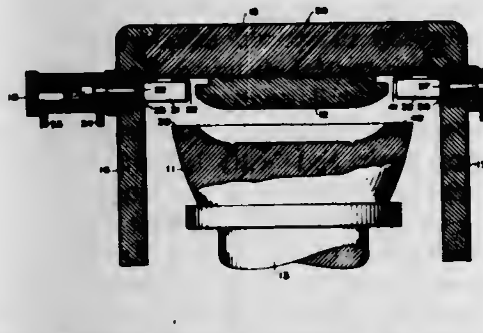
3,353,941
METHOD OF MELTING GLASS
George F. Hanks, Avon, and Alexander L. Bracken, Jr., West Hartford, Conn., assignors to Emhart Corporation, a corporation of Connecticut
Filed May 29, 1964, Ser. No. 371,239
2 Claims. (Cl. 65—32)

1. The method of making glass in an elongated furnace

having a rear end adapted to receive batches of glass-making ingredients and a front end adapted to discharge quantities of molten glass, comprising the steps of establishing a body of molten glass in the furnace, supplying heat to the furnace at burners disposed above the body of glass at points spaced along the length of said furnace by introducing a pre-mixed combusting mixture of fuel and air, introducing air under pressure to the furnace between the surface of the body of glass and the burners to provide a protective layer of air over the body of molten glass which inhibits reaction of the combusting mixture with the glass to form foam, withdrawing molten glass from the front end of the furnace, and adding batches of glass making ingredients at the rear end of the furnace to maintain a substantially constant depth for the body of molten glass.



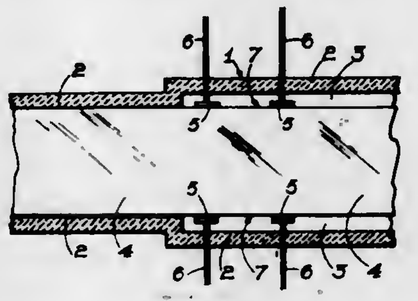
3,353,942
METHOD AND APPARATUS FOR PRESSING THERMOPLASTIC MATERIALS
Raymond R. Ambrogi and Arieh Carmi, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 8, 1964, Ser. No. 402,485
7 Claims. (Cl. 65—68)



5. The method of free pressing an article of thermoplastic material in a cavity formed between a press mold and cooperating plunger during a pressing operation, such method comprising, supplying a molten gob of said material to said mold; inserting at least one removable stop between parts of said mold and plunger to define vertical limits for said cavity, said gob having a volume less than such cavity; pressing said gob with sufficient pressure to cause said mold and plunger parts to contact said stop; and thereafter reducing the pressing pressure to a value sufficient only to continuously maintain the glass contacting surfaces of said mold and plunger in contact with the pressed surfaces of said gob following the removal of said stop, and then removing such stop.

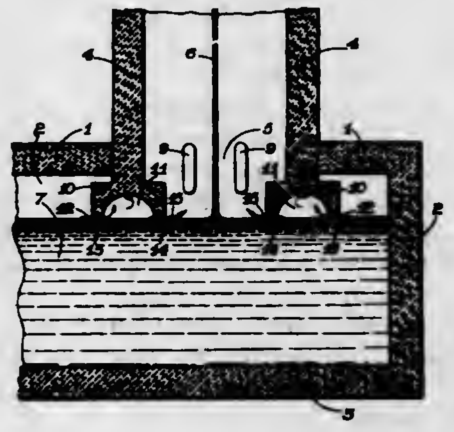
6. In an apparatus for free pressing articles of a thermoplastic material and including a press mold and cooperating plunger assembly, the combination comprising, at least one movable stop insertable between parts of said mold and plunger assembly for defining vertical limits for the pressing space therebetween, and motor means connected to each stop for actuating such stop to and from a position of insertion between said mold and plunger assembly parts.

3,353,943
APPARATUS FOR THE MANUFACTURE OF SHEET GLASS ON A MOLTEN BATH
Jean Loutte, Gouy-lez-Pieton, Belgium, assignor to Glaverbel, Watermael-Boitsfort, Belgium, a Belgian company
Filed Sept. 9, 1963, Ser. No. 307,461
Claims priority, application Luxembourg, Sept. 29, 1962, 42,442
13 Claims. (Cl. 65—182)



10. Apparatus for the manufacture of sheet glass, comprising a compartment containing a bath of molten material on which slides a ribbon of glass and having side walls spaced apart a distance greater than the width of the glass ribbon, a plurality of substantially vertically disposed discs having inner, vertically disposed, ribbon engageable faces located between said side walls and the side edges of the glass ribbon, and means associated with said side walls for supporting said discs for rotational movement in planes parallel to the side edges of the glass ribbon and partially immersed in the bath of molten material, so that the inner faces of such discs are engageable by the side edges of the glass ribbon and control the width of the glass ribbon, a roller connected to each of said discs and having a rotational axis common with the rotational axis of its associated disc, said roller having a diameter less than that of said disc, and projecting inwardly from the inner face of said disc so as to overlie and engage a side edge portion of the glass ribbon.

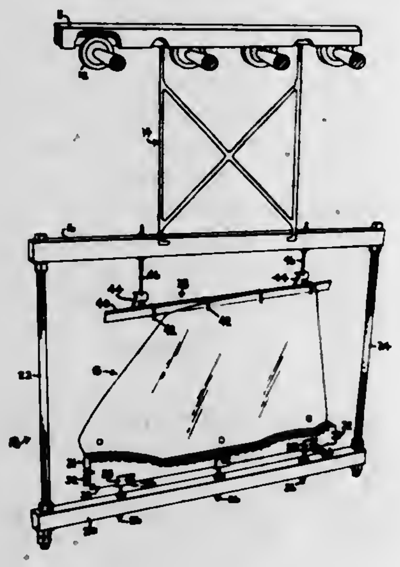
3,353,944
MEANS FOR THE THERMAL HOMOGENISATION OF GLASS FOR THE PURPOSE OF DRAWING IT IN SHEET FORM
Gustave Javaux, Brussels, Belgium, assignor to Glaverbel, Watermael-Boitsfort, Belgium, a Belgian company
Filed Sept. 10, 1963, Ser. No. 307,842
Claims priority, application Belgium, Oct. 31, 1962, 499,149
2 Claims. (Cl. 65—203)



1. In an apparatus for vertically drawing sheet glass from a bath of molten glass, a working compartment connected to glass melting means and containing the bath of molten glass, a drawing chamber formed over a portion of said working compartment and composed of two spaced, vertically disposed, refractory walls located on opposite sides of and in substantial parallelism with the glass sheet drawn from the bath, said parallel

refractory walls extending downwardly to points adjacently above the surface of the molten glass in such bath to provide therebelow gas passages between said working compartment and said drawing chamber, the bottom ends of said refractory walls each having an elongated concavity extending lengthwise of said wall and forming along the outer side of said wall an elongated entry lip for heterogeneous gas currents flowing into said concavity from the surface of said bath outside the area of said drawing chamber, and forming along the inner side of said wall an elongated discharge lip for gas passing from said concavity to said drawing chamber, each of said concavities being formed to constitute a mixing chamber enabling the heterogeneous gases passing under its associated entry lip to expand and intermix into a homogeneous mixture and to be discharged therefrom as a homogeneous stream of uniform temperature beneath said discharge lip thereof and into said drawing chamber.

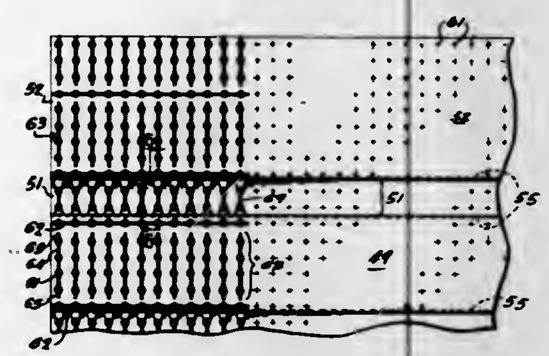
3,353,945
APPARATUS FOR SUPPORTING A GLASS SHEET IN AN UPRIGHT POSITION FOR HEAT TREATING
James H. Cypher, New Kensington, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 30, 1964, Ser. No. 407,766
6 Claims. (Cl. 65—273)



1. Apparatus for supporting a rigid sheet in a substantially vertical plane comprising a pair of elongated wall members spaced transversely from one another along their length, a first set of flat, flexible fingers attached at their outer ends to one of said elongated wall members and extending more than half the transverse distance toward the other of said elongated wall members, a second plurality of flat, flexible fingers attached at their outer ends to the other of said elongated wall members and extending more than half the transverse distance toward said one elongated wall member, said fingers having unattached inner ends and being spaced substantially equal distances from one another longitudinally of said elongated wall members and oriented with their flat surfaces facing upward to support the lower edge portion of a rigid sheet and means for balancing the rigid sheet in an upright position.

3. In apparatus for tempering glass sheets comprising a tunnel-like furnace, a pair of spaced plenums having spaced openings facing inward, a conveyor for transporting glass sheets successively through said furnace and between said spaced openings, a plurality of carriages for supporting glass sheets in a substantially vertical plane for movement along said conveyor, each carriage comprising a pair of elongated wall members spaced transversely from one another along their length, a first set of flat, flexible fingers attached at their outer ends to one of said elongated members and extending more than half the transverse distance toward said other elongated member, a second plurality of flat, flexible fingers attached at their outer ends to the other of said elongated members and extending more than half the transverse distance toward said one elongated member, said fingers having unattached inner ends and being spaced substantially equal distances from one another longitudinally of said elongated wall members and oriented with their flat surfaces facing upward to support the lower edge portion of a rigid sheet and means for balancing said glass sheets in an upright position.

3,353,946
BLASTHEAD STRUCTURE FOR TEMPERING GLASS SHEETS
Harold A. McMaster, Woodville, Ohio, assignor to Permaglass, Inc., Woodville, Ohio, a corporation of Ohio
Filed Jan. 29, 1964, Ser. No. 341,050
11 Claims. (Cl. 65—348)

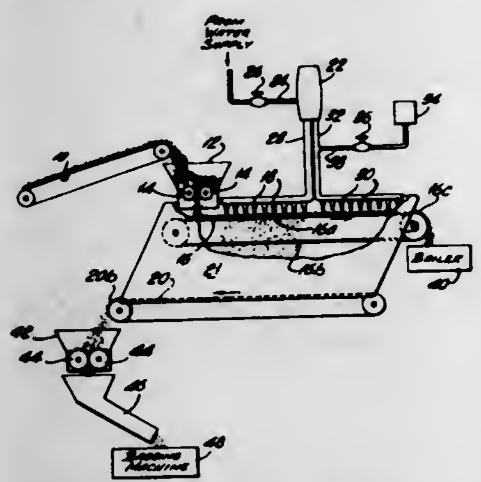


1. A blasthead structure for cooling a vertically disposed sheet of glass or the like comprising: a pair of spaced apart opposing blastheads for receiving a vertically disposed sheet therebetween, each blasthead including an end wall facing a like end wall of the opposite blasthead, a plurality of spaced nozzle members extending outwardly a substantial distance from each end wall toward the other end wall, each nozzle member directing fluid toward the other end wall, weir portions extending outwardly from each end wall toward the other and spaced from and surrounding a plurality of said nozzle members so as to define a compartment facing the opposite blasthead whereby the fluid that flows through said nozzle members to impinge a sheet will flow back to the compartment where the fluid flow is restricted between the sheet and the weir portion to provide a back pressure among and around said nozzle members to center the sheet between said blastheads, and exhaust means exteriorly of the compartment for receiving the fluid therefrom.

3,353,947
METHOD AND APPARATUS FOR THE SEPARATION OF STRAW AND MANURE
Friedrich S. Kramer, 60—01 C 194th St., Fresh Meadows, N.Y. 11365
Filed Apr. 29, 1964, Ser. No. 363,476
11 Claims. (Cl. 71—21)

1. Apparatus for receiving a composite mass of manure and straw to separate said manure from said straw and to treat the separated ingredients comprising
- shredding means at a given location for reducing the size of relatively large pieces of said composite and for loosening said ingredients from one another,
- a first movable conveyor for receiving the composite mass from said shredding means, said first conveyor comprising a screen-type belt,
- a second movable conveyor located generally beneath said first conveyor,

- first means at a first location above said first conveyor for blowing hot air and steam downwardly to separate said manure from the longer strands of said straw and to force said manure through said screen belt and onto said second conveyor, said longer strands of said straw being retained on said screen-type belt,



- second means above said first conveyor at a second location along said first conveyor for disinfecting said longer strands of straw,
- and third means for providing a substantial volume of relatively high velocity air to said first means, said third means also providing air pressure to said second means.

3,353,948
METHOD OF PREPARING AN ORGANIC SOIL CONDITIONER
George R. Sroda, Amherst Junction, Wis. 54407
No Drawing. Filed Sept. 9, 1964, Ser. No. 395,284
5 Claims. (Cl. 71—21)

1. The method of making a viable weed seed free natural organic soil conditioner which comprises the steps of: forming an elongated pile of a fibrous cellulosic viable weed seed free material selected from the group of cellulosic materials consisting of sphagnum peat moss, wood shavings, sawdust and peanut hulls of about 18 to 24 inches in depth; moistening said pile of fibrous material with about 10 times its weight of water; collecting turkey manure which has been rendered free of viable weed seeds by the grinding effect of the turkey's gizzard; spreading a layer of the viable weed seed free turkey manure on said pile of fibrous material in the ratio of about one part by weight of manure to ten parts by weight of fibrous cellulosic material and moistening the surface of the manure; forming an intimate admixture of said fibrous material and manure; and composting the admixture at a temperature of approximately 70° to 115° F. for approximately two weeks within a structural enclosure under conditions protected from the weather whereby the compost does not become contaminated with viable weed seeds whereby a viable weed seed free soil conditioner is produced without the necessity of prolonged composting of the components to effect the destruction of any viable weed seeds contained therein; and collecting a viable weed seed free organic soil conditioner.

3,353,949
METHOD FOR PREVENTING THE SEGREGATION OF MIXED FERTILIZER
Harold Henry Nau, Trenton, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Connecticut
No Drawing. Filed July 6, 1964, Ser. No. 380,680
9 Claims. (Cl. 71—64)

1. A method for preparing a granular primary fertilizer having micro and secondary nutrients uniformly distributed on the surface of said primary fertilizer which comprises the steps of: providing a solids mixture comprising from about 1% to 15% of a finely-divided nutrient material passing through a —100 mesh to —400 mesh screen and selected from the group consisting of micro nutrients, secondary nutrients and mixtures thereof and from about 99% to about 85% of a primary granular fertilizer passing through a —5 to about a +20 mesh screen, applying to said solids mixture a liquid conditioner comprising from about 30% to 70% of a material selected from the group consisting of water-soluble sugars, alkali metal lignin sulfonates and water-soluble fertilizers and the balance of said conditioner being water, said liquid conditioner being present in the range of from 1% to 10%, based on the weight of said solids mixture comprising primary fertilizer and nutrient, and, thereafter, mixing the overall resultant mixture until adhesion of said nutrient materials on the primary fertilizer is attained to the extent of at least 85%.

3,353,950
PROCESS FOR THE PRODUCTION OF FINELY PARTICULATE HIGH PURITY COPPER POWDER
Helmut Junghanss, Duisburg, Germany, assignor to Duisburger Kupferhutte, Duisburg, Germany, a corporation of Germany
No Drawing. Filed July 29, 1965, Ser. No. 475,873
Claims priority, application Germany, Aug. 12, 1964, D 45,177
7 Claims. (Cl. 75—.5)

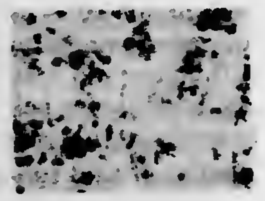
1. A process for the production of finely particulate, high purity copper powder wherein,
- (a) in a first stage, a solution containing bivalent copper and chloride ions is reduced and the so produced cuprous chloride is precipitated and separated,
- (b) in a second stage, an aqueous suspension of cuprous chloride is reacted with a compound yielding hydroxyl ions and the so produced cuprous oxide is precipitated and separated,
- (c) in a third stage the cuprous oxide from the second stage is disproportionated with an oxy acid to give copper powder and the cupric salt of the oxy acid and
- (d) in a fourth stage the cupric salt of the oxy acid is reacted with a reducing agent and a compound yielding chloride ions, and cuprous chloride is precipitated and recycled to the second stage.

3,353,951
FLUFFY IRON POWDER AND PROCESS FOR PREPARING SAME
William M. Shafer, Crown Point, Ind., and George Yurasko, Jr., Syosset, N.Y., assignors to The Glidden Company, Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 400,873, Oct. 1, 1964. This application May 9, 1966, Ser. No. 554,625
8 Claims. (Cl. 75—.5)

1. A process for producing iron powder which comprises the steps of:
- (a) forming a uniformly blended powdered mixture comprising:
  - (1) finely divided iron oxide having an oxygen content between about 6 and 30 weight percent, basis the weight of the iron oxide, and containing less than about one weight percent of acid insolubles;
  - (2) finely divided, solid, carbonaceous material, in an amount sufficient to provide an iron oxide oxygen to free carbon atomic ratio in said mixture of from about 1.5:1 to about 3:1; and
  - (3) optionally up to about 3 weight percent, basis the weight of the iron oxide, of a finely divided metal carbonate selected from the group consisting of alkali and alkaline earth metal carbonates;

(b) contacting said mixture in a reduction zone, at a temperature between about 1550° F. and about 1850° F., with a flow of hydrogen-containing reduction gas having a dew point below about 120° F. for a time sufficient to reduce the iron oxide in said mixture and to form a coalesced mass consisting essentially of porous iron having an oxygen content below about 2.0 percent and a carbon content below about 0.2 percent; and

(c) cooling said mass to below about 100° F. under non-oxidizing conditions.

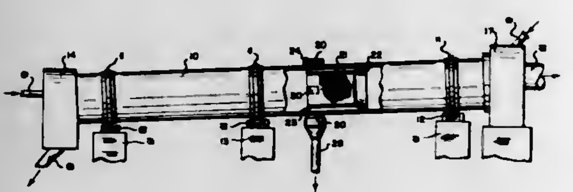


3,353,952
METHOD AND APPARATUS FOR PRODUCING PELLETS OF FINELY DIVIDED MATERIALS

Eyvind Kjellerup Hansen, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware

Filed June 11, 1965, Ser. No. 463,229

4 Claims. (Cl. 75—3)



1. A method of producing hard pellets of a finely divided material suitable for charging into a smelting furnace which comprises tumbling raw pellets in a mixture with a sufficient quantity of finely divided material that the finely divided material cushions the raw pellets, and protects them against damage resulting from impact against one another, advancing the tumbling mixture along a path, flowing gases of combustion of burning fuel countercurrent to the advancing mixture to preheat and partially harden the raw pellets without rapid preheating to the extent that they can be advanced and tumbled alone without breaking from tumbling, separating the finely divided material from the preheated pellets, continuing the tumbling and advance of the preheated pellets in a direction countercurrent to the gases of combustion for a sufficient time to heat harden the advancing pellets.

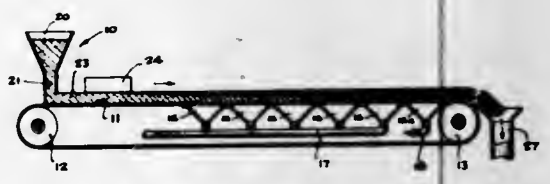
2. In a rotary kiln which comprises a generally cylindrical shell mounted for rotation on its longitudinal axis, means for introducing into the shell at one end a mixture of finely divided material and pellets of the material, the mixture advancing through the shell as the shell rotates, and means for burning fuel within the shell adjacent to its other end, the gases of combustion traveling through the shell countercurrent to the advancing mixture, the combination of a screen of less diameter than the shell mounted inside of and coaxially with the shell a substantial distance from both ends of the shell and circumferentially spaced openings extending through the shell wall, the circumferentially spaced openings through the shell wall being covered by the screen and the screen passing the finely divided material and retaining the pellets, and means for receiving the material issuing through the circumferentially spaced openings.

3,353,953
PROCESS OF PURIFYING AN ARSENIC-CONTAINING IRON ORE

Arthur M. Schwarz, Munster, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed Nov. 24, 1964, Ser. No. 413,418

22 Claims. (Cl. 75—6)



1. In a process of purifying an arsenic-containing iron ore comprising heating a finely divided arsenic-containing iron ore supported on a continuously moving conveyor means by forcing a gas through said iron ore to cause a heat front to move progressively therethrough and heat the said iron ore, the improvement comprising; collecting the gases from a section of said conveyor means where said heat front passes through the final portion of said iron ore on said conveyor means separately from the remaining gas passing through the remaining portion of said iron ore, and conveying said gases separately from said remaining gas to apparatus for removing therefrom gaseous arsenic substances and arsenic-containing dust particles therefrom; whereby only a portion of the heating gas is passed through apparatus for removing arsenic.

3,353,954
METHOD OF PRODUCING COMPACTS BY REACTING PARTICULATE INGREDIENTS

Lloyd Stuart Williams, East Hawthorn, Victoria, Australia, assignor to Commonwealth Scientific and Industrial Research Organization, Melbourne, Victoria, Australia, a body corporate

No Drawing. Continuation of application Ser. No. 39,202, June 28, 1960. This application Jan. 18, 1965, Ser. No. 426,407

Claims priority, application Australia, June 30, 1959, 50,338/59

12 Claims. (Cl. 75—201)

1. A process for locating bodies in composite articles essentially by means of a continuous phase of intermetallic type compound which is formed in situ comprising:

placing powdered materials capable of reacting to form at least one intermetallic type compound selected from the group consisting of beryllides, titanides, zirconides, borides, aluminides, silicides, germanides, stannides, and antimonides in contact with the bodies to be located,

heatng said materials under a pressure in excess of atmospheric pressure to a temperature at least sufficient to initiate and sustain between said powdered materials a reaction by which said intermetallic type compound is formed,

wherein said powdered materials are selected so that during the course of said reaction the reaction mixture and nascent compound exhibit transient plasticity and undergo a marked contraction in solid volume while positively maintaining pressure on the reaction mixture throughout the reaction,

whereby a continuous phase of said intermetallic type compound is formed which locates the bodies.

3,353,955
STRATUM TRANSFER PROCESS BASED ON ADHESIVE PROPERTIES OF PHOTOPOLYMERIZABLE LAYER

Richard Sheldon Colgrove, Milltown, N.J., assienor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 14, 1964, Ser. No. 403,938

11 Claims. (Cl. 96—28)

1. A process for image reproduction from a photopolymerizable element having (1) a transparent support, (2) a photopolymerizable layer no greater than 0.0005 inch thick and solid at room temperature, and (3) a second support selected from the group consisting of solid synthetic polymeric sheets, fibrous sheets and metal sheets, said photopolymerizable layer being laminated between said supports, at a temperature of at least 50° C. and adhering more strongly to one support in its exposed state, said process comprises imagewise exposing of said photopolymerizable element to actinic radiation through said transparent support of said element and separating by peeling said supports of the exposed photopolymerizable element apart at room temperature thereby obtaining a positive and negative of said image.

3,353,956
PHOTOGRAPHIC DIFFUSION TRANSFER PROCESSES UTILIZING AN IMIDAZOLE AND AN IMAGE-RECEIVING ELEMENT CONTAINING A POLYMERIC ACID LAYER

Howard G. Rogers, Weston, Richard W. Young, Wellesley Hills, and Dorothy C. Mendelsohn, Cambridge, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Feb. 18, 1963, Ser. No. 259,436

9 Claims. (Cl. 96—29)

1. In a process for forming a color image by diffusion transfer, wherein an exposed photosensitive element comprising a silver halide emulsion and a dye developer is developed to provide an imagewise distribution of diffusible dye developer which is transferred by diffusion to a superposed image-receiving layer to impart to said image-receiving layer a positive color image, wherein the image-receiving element containing said image-receiving layer also contains a layer of a polymeric acid positioned between the support and said image-receiving layer, the improvement wherein said development and transfer are effected in the presence of an imidazole which is soluble in aqueous alkali, said imidazole being selected from the group consisting of imidazole and imidazoles containing substituents selected from the group consisting of alkyl, hydroxylalkyl, alkylamino, carboxy and carboxymethylamino, said imidazole being free of rings other than the imidazole ring.

3,353,957
PHOTOGRAPHIC PROCESS

Ralph Kingsley Blake, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 12, 1964, Ser. No. 403,329

8 Claims. (Cl. 96—29)

5. A process which comprises:

(a) exposing, imagewise, the outer light-sensitive silver halide emulsion layer of a photographic element having a contiguous inner, non-fogged silver halide layer on a support, the silver salt in said inner layer being at least as soluble in aqueous developer solution as the silver salt in the outer layer,

(b) developing said exposed outer layer to form a silver image in said layer, by a developer composition substantially devoid of silver diffusion transfer characteristics;

(c) developing the outer layer with an aqueous developer solution having silver diffusion characteristics containing:

  (i) a developing agent taken from the group consisting of a polyhydroxybenzene, p-aminophenol and 2,4-diaminophenol,

  (ii) at least one developing agent taken from the group consisting of a polyhydroxybenzene, p-aminophenol, 2,4-diaminophenol, p-methylaminophenol, 1-phenyl-3-pyrazolidone, 1-phenyl-4-methyl-3-pyrazolidone, and ascorbic acid, and

  (iii) a silver halide solvent, and

(d) removing the outer layer.

3,353,958
PHOTOGRAPHIC COMPOSITIONS AND PROCESS

Jerome Albert Moede, Rochester, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 24, 1964, Ser. No. 339,849

18 Claims. (Cl. 96—87)

1. A dimensionally stable drafting film comprising (1) a biaxially-oriented polyester film of at least one dicarboxylic acid and at least one dihydric alcohol having on at least one surface, in order (2) an essentially hydrophobic vinylidene chloride copolymer containing at least 35% by weight of vinylidene chloride and (3) a hydrophobic film layer of methyl methacrylate polymer having a Tukon film hardness above 10 KHN, said film containing up to 1 part by weight of matting agents per 1 part of said acrylate polymer and a silica hydrosol having about 3 to 25% of silicon dioxide based upon the weight of said acrylate polymer.

3,353,959
FLAVORINGS CONTAINING CYCLOHEXANESULFAMIC ACID AND CYCLAMATE SALTS FOR CASEIN-CONTAINING PRODUCTS

William D. Rutz, Tulsa, Okla., assignor to Donald F. Gregg, Sibley, Iowa

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,346

11 Claims. (Cl. 99—28)

2. A flavoring additive for a liquid dairy-type beverage containing casein comprising 0.20 to 1.25 grams of cyclohexanesulfamic acid, 0.10 to 1.25 grams of a physiologically acceptable cyclamate salt and about 0.20 gram of flavor, the above amounts of flavoring additive being sufficient to flavor about one quart of said liquid dairy-type beverage.

3,353,960
PROCESS FOR PRODUCING BREWERS' WORT WITH ENZYMES

Vincent S. Bavisotto, Whitefish Bay, Wis., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 1, 1966, Ser. No. 591,136

8 Claims. (Cl. 99—52)

1. In a process for making beer the improvement in preparing the wort which comprises the steps of adding proteolytic enzyme to a malt mash, in amounts of from about 0.1% to about 1.0% by weight based on the weight of the malt, raising the enzyme-containing mash to a temperature of about 35° C. to about 70° C., maintaining said temperature for a period of from about 10 minutes up to about 90 minutes, thereafter adding liquefied cereal grain to said enzyme-containing mash in a proportion of from about 45% to about 60% by weight based on the total weight of malt and cereal grain, raising the temperature of the entire mass to about 65° C. to 75° C. and maintaining the latter temperature for a period of from about 30 minutes to about 60 minutes.

3,353,961
STABILIZED FLAVORING CONCENTRATES

Clarence K. Simon, Forest Hills, N.Y., assignor to Dominion Products, Inc., Long Island City, N.Y., a corporation of New York
No Drawing. Filed Dec. 30, 1963, Ser. No. 334,624
17 Claims. (Cl. 99—78)

1. A concentrate devoid of brominated oils for preparing citrus drinks comprising a substantially anhydrous mixture of essential orange oil terpenes and glyceryl abietate, said essential oil terpenes being a fraction of essential orange oil and having a specific gravity of 0.8 to 0.9, and said concentrate containing between 100 to 200 parts by weight of orange oil terpenes and 250 to 300 parts by weight of triglyceryl abietate.

3,353,962
PROCESS OF MAKING POTATO CHIPS

Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed July 14, 1964, Ser. No. 382,498
6 Claims. (Cl. 99—100)

1. The process of producing potato chips from thinly sliced potatoes, comprising the steps of:

(a) introducing the potato slices to be cooked into a body of edible oil heated to a temperature above the boiling point of water and not in excess of about 380° F.;

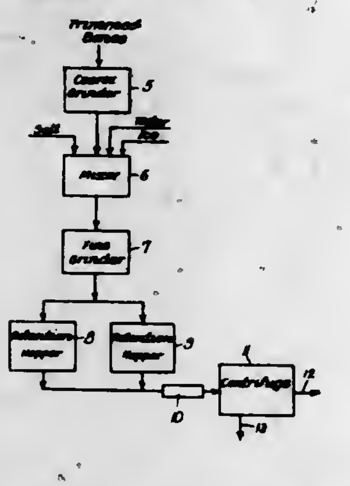
(b) moving said potato slices through the body of hot oil to evaporate a portion of the water contained in the potato slices therefrom;

(c) removing said potato slices from said hot oil while they still have a moisture content of from about 5 to about 20 percent and before substantially any color is developed therein; and

(d) thereafter removing substantially all of the remaining water from said partially dehydrated slices and developing color therein by conveying said partially dehydrated slices in a layer one slice thick through a radiant heating zone and directing radiant energy peaking in the range of about 6 to about 3.5 microns against said slices as they move through said radiant heating zone.

3,353,963
SAUSAGE MANUFACTURE

Everett V. Podebradsky and Russell H. Maas, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 23, 1964, Ser. No. 339,704
4 Claims. (Cl. 99—109)



1. The method of obtaining from trimmed bones an aqueous slurry of undenatured meat which may be used in the manufacture of sausage products which comprises grinding a mixture of trimmed bones having residual meat thereon, ice, water and at least about 2% by weight of sodium chloride based on the combined weights of bones, ice and water in said mixture to form a cold slurry, allowing said slurry to stand so as to solubilize a substantial portion of the salt-soluble protein content of said cold slurry, and separating said cold slurry, and separating said cold slurry into a substantially bone-free slurry fraction and a solids fraction containing the bone particles.

3,353,964
CORANDOMIZED MARGARINE OILS

Paul Seiden, Burlington, Ontario, Canada, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Aug. 21, 1964, Ser. No. 391,293
Claims priority, application Canada, Sept. 23, 1963, 885,132, Patent 718,373
5 Claims. (Cl. 99—118)

1. A margarine oil adapted to be manufactured into a margarine of good spreadability, oil-off, slump and eating qualities comprising at least about 5% by weight of corandomized triglycerides containing saturated short chain fatty acids having from 6 to 14 carbon atoms and saturated long chain fatty acids having from 20 to 22 carbon atoms, the amount of the saturated long-chain fatty acids being bout 0.3% to about 5.0% by weight of the margarine oil, the ratio of the saturated short chain fatty acids in the margarine oil to the saturated long chain fatty acids in the margarine oil being from 100:1 to 1:1.

3,353,965
TOPPING COMPOSITION

Bernard A. Patterson, 4040 N. Le Claire, Chicago, Ill. 60640
No Drawing. Filed Feb. 4, 1964, Ser. No. 342,555
9 Claims. (Cl. 99—139)

1. A high fat emulsion composition capable of being whipped into a rigid foam, and being capable of being thawed from below the freezing point to above freezing temperatures without breaking the emulsion which comprises a thoroughly blended mixture of an edible vegetable glyceride fat, a proteinaceous bodying agent, invert sugar, a non-toxic, non-ionic surface active emulsifying agent, water, and stearyl monoglyceridyl citrate in an amount sufficient to stabilize the emulsion.

3,353,966
SALAD OILS AND METHOD OF MAKING THEM

Frederick R. Hugenberg, Deer Park, and Edwin S. Lutton, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 27, 1964, Ser. No. 355,424
8 Claims. (Cl. 99—163)

1. A clear glyceride salad oil having improved resistance to deposition of high-melting solids and compirsing a base salad oil having dissolved therein from about 0.001% to about 1%, by weight, of esterified carbohydrate substance selected from the group consisting of oligosaccharides and polysaccharides having from 2 to about 15 saccharide units per molecule, said carbohydrate substance being from about 50% to about 100% esterified, based on the total hydroxyl equivalency of carbohydrate substance and esterifying hydroxy fatty acid, from about 15% to about 85% of the esterifying carboxyl equivalency being contributed by material selected from the group consisting of saturated and unsaturated hydroxy fatty acids having from about 14 to about 22 carbon atoms and from 1 to about 8 hydroxyl groups, from about 15% to about 85% of the esterifying carboxyl equivalency being contributed by saturated fatty acids having from about 14 to about 22 carbon atoms, and any balance of the esterifying carboxyl equivalency being contributed by material selected from the group consisting of fatty acids having from 2 to about 12 carbon atoms and unsaturated fatty acids having from about 14 to about 22 carbon atoms.

3,353,967
SALAD OILS AND METHOD OF MAKING THEM

Edwin S. Lutton, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 27, 1964, Ser. No. 355,486
9 Claims. (Cl. 99—163)

8. A clear glyceride salad oil having improved resistance to deposition of high-melting solids and comprising a base salad oil having dissolved therein from about 0.001% to about 1%, by weight, of a mixed polysaccharide ester of long-chain unsaturated fatty acid dimer having from about 28 to about 44 carbon atoms in the dimer and long-chain saturated fatty acids having from about 14 to about 22 carbon atoms, said polysaccharide having from about 2 to about 15 saccharide units per molecule and being at least one-half esterified, and said unsaturated fatty acid dimer and saturated fatty acid being in a ratio of from about 1:6 to about 6:1.

3,353,968
FOOD PACKAGE FOR USE IN MICROWAVE HEATING APPARATUS

Edward Z. Krajewski, Minneapolis, Minn., assignor to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware
Original application Feb. 1, 1963, Ser. No. 255,639, now Patent No. 3,271,552, dated Sept. 6, 1966. Divided and this application May 16, 1966, Ser. No. 550,478
5 Claims. (Cl. 99—192)

1. A frozen food package adaptable for reheating in a microwave oven comprising centrally located frozen food, a dielectric wrapper, and means for concentrating microwave energy in selected portions of said frozen food, said means comprising at least two non-contacting spaced thin elongated strips of conductive material attached to said wrapper.

3,353,969
METHOD OF SPRAY DRYING TOMATOES CONTAINING SEEDS

Peter P. Noznick and Robert H. Bundus, Chicago, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed May 11, 1964, Ser. No. 366,610
4 Claims. (Cl. 99—204)

1. A process comprising spray drying a tomato puree containing tomato seeds divided sufficiently to pass through a 40 mesh sieve to provide a nontacky spray dried product.

3,353,970
METAL SPATTER-FOULING INHIBITING MATERIAL AND METHOD

Lester T. Bowers, Oreland, and John J. McDonnell, Roslyn, Pa., assignors to Scott Chemical and Welding Products Co., Inc., Oreland, Pa., a corporation of Pennsylvania
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,115
6 Claims. (Cl. 106—2)

6. The method of inhibiting splatter of metal in welding and inhibiting adherence of metal spatter to metal, which comprises, coating spatter-subject metal areas with camphor by rubbing said metal areas with a solid body of camphor.

3,353,971
ETHYLCELLULOSE LATEX POLISH COMPOSITION

Albert B. Savage, Midland, and Julius C. Aldrich, Mount Pleasant, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Jan. 11, 1963, Ser. No. 250,767
3 Claims. (Cl. 106—5)

1. Water-borne, ethylcellulose, latex-based polish composition comprising a homogeneous blend of (I) an aqueous colloidal suspension of solid polymer composed of from 30 to 35 weight percent of ethylcellulose ether latex solids having an ethoxyl content per glucose unit of from 48.5 to 49.5 percent containing at least one emulsifying agent in amount sufficient to maintain the pH of said latex of from at least 8.5 to about 9, the total weight of said aqueous colloidal suspension being equal to 100 weight percent; and (II) at least one aqueous wax emulsion composed essentially of a wax material selected from the group consisting of a hard wax and a semihard wax, the total weight of said aqueous wax emulsion being equal to 100 weight percent, said blend containing from about 1 part of I to from about 1 to about 2.25 parts of II.

3,353,972
FLEXOGRAPHIC INKS CONTAINING SOLUBLE DYES

Gabriel John Sinclair, Hasbrouck Heights, N.J., assignor to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Filed Sept. 21, 1964, Ser. No. 398,033
5 Claims. (Cl. 106—22)

1. A flexographic printing ink consisting essentially of a solution of from 15 to 30% of the weight of the ink of an alcohol-soluble resin, of from 8 to 11% of the weight of the ink of a dye selected from the group consisting of colored quaternary ammonium triphenylmethane salts and colored quaternary ammonium diphenylmethane salts and from 10 to 20% of the weight of the ink of 4,4-bis(p-hydroxyphenyl) pentanoic acid in a predominantly lower alkanol solvent, said lower alkanol being selected from the group consisting of alkanols having from 1 to 3 carbon atoms.

3,353,973
METHOD AND COMPOSITION FOR TINTING OIL AND WATER BASE PAINTS

Otto Jensen, Viby Jylland, Denmark, assignor to Conchemco Inc., Kansas City, Mo., a corporation of Missouri
No Drawing. Filed Oct. 14, 1965, Ser. No. 496,137
11 Claims. (Cl. 106—308)

1. A composition in free flowing powder form for use in tinting organic solvent thinned paints and water thinned paints consisting essentially of a member selected from the group consisting of a pigment and a mixture of a pigment and an extender, coated with a surface active composition which is non-liquid at room temperature and having at least one water soluble, oil soluble anionic surfactant component and a surfactant component selected from the group consisting of an alkaline earth salt of an N-acyl sarcosine, an alkali metal salt of an N-acyl sarcosine, and mixtures thereof, there being from about 7% to approximately 60% by weight of said pigment, from about 24% to approximately 50% by weight of the surface active composition, and from about 13% to approximately 52% by weight of said extender when used, said anionic surfactant component being present in a range of about 22% to approximately 74% by weight of the total surface active composition and the sarcosine salt surfactant component being present in a range of about 26% to approximately 78% by weight of the total surface active composition.

7. A method of preparing a composition in free flowing powder form for use in tinting paints comprising the steps of forming a solution containing at least one water soluble, oil soluble anionic surfactant component and a surfactant component selected from the group consisting of an alkaline earth salt of an N-acyl sarcosine, an alkali metal salt of an N-acyl sarcosine, and mixtures thereof. adding to the solution a member selected from the group consisting of a pigment and a mixture of a pigment and an extender, on a final dry weight basis, there being from

about 7% to approximately 60% by weight of said pigment, from about 24% to approximately 50% by weight of the surface active composition, and from about 13% to approximately 52% by weight of said extender when used, said anionic surfactant component being present in a range of about 22% to approximately 74% by weight of the total surface active composition and the sarcosine salt surfactant component being present in a range of about 26% to approximately 78% by weight of the total surface active composition, drying the mixture formed thereby, and pulverizing the dried mixture to produce said free flowing powder.

3,353,974
PIGMENTED MASTERBATCH COMPOSITIONS AND A METHOD FOR PREPARING SAME
Stanley C. Trimble, Kenneth D. Hewitt, and Fred S. Thornhill, Houston, Tex., assignors to Continental Carbon Company, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 4, 1965, Ser. No. 492,940
9 Claims. (Cl. 106—31)

1. A process for dispersing a pigment selected from the group consisting of an inorganic pigment, an organic pigment and mixtures thereof in a non-resinous matrix selected from the group consisting of a nonvolatile hydrocarbon oil, an organic wax and mixtures thereof, said matrix being capable together with the pigment of providing a mixture of sufficient plasticity to develop a high shear in an extruder which comprises extruding a plastic mixture of the pigment and matrix to the extent necessary to produce a homogeneous dispersion of the pigment throughout the matrix with concomitant reduction of the agglomerates present to a particle size of less than one micron.

3,353,975
LOW DENSITY INSULATION BONDED WITH COLLOIDAL INORGANIC MATERIALS
Richard F. Shannon, Lancaster, Ohio, and Marshall C. Armstrong, Succasunna, N.J., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
No Drawing. Filed Aug. 15, 1966, Ser. No. 572,198
8 Claims. (Cl. 106—65)

1. A method of producing a strong light weight porous article of bonded porous aggregate, said method comprising: wetting from approximately 60 to 98 parts by weight of porous inorganic siliceous particles from the group consisting of expanded perlite, expanded vermiculite, glass foam, clay beads, cellular pumice, expanded clay, and cellular diatomite with a liquid bath of a material from the group consisting of hydrolzed unpolymerized organo silanes and hydrolyzable unpolymerized organo silanes, coating the organo silane wetted particles with from approximately 2 to approximately 40 parts by weight of an inorganic binder dispersed in water while the organo silane is in a substantially nonpolymerized condition, said binder being selected from the group consisting of silica sols, alumina sols, mono-aluminum phosphate, magnesium oxychlorides, magnesium oxysulfates, magnesium oxyphosphates, and sodium borosilicate, molding the coated porous inorganic siliceous particles into an article, and drying the molded article at a temperature above approximately 250° F.

3,353,976
REFRACTORY AND METHOD
Frank F. Raine and Gerald E. Cooper, Mexico, Mo., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
No Drawing. Filed Jan. 24, 1966, Ser. No. 522,376
11 Claims. (Cl. 106—65)

1. A fired synthetic refractory composition made from a batch consisting essentially of alumina hydrate material in an amount sufficient to yield from 85 to 95 parts by weight Al_2O_3, sufficient finely divided silica yielding material to yield from 4 to 8 parts by weight SiO_2, sufficient finely divided titania yielding material to yield from 2 to 4 parts by weight TiO_2, and sufficient finely divided iron oxide yielding material to yield from 1 to 2 parts by weight Fe_2O_3.

3,353,977
PRODUCTION OF POLYHALOGENATED COPPER PHTHALOCYANINES HAVING HIGH COLOR STRENGTH AND SOFT GRAIN
Joachim Kranz, Ludwigshafen (Rhine), and Rudolf Polster, Frankenthal, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed July 8, 1965, Ser. No. 470,573
Claims priority, application Germany, July 18, 1964, B 77,738
5 Claims. (Cl. 106—288)

1. A process for the production of a polyhalogenated copper phthalocyanine which has great color strength and a soft texture which comprises heating to a temperature ranging from 60° to 220° C. for at least one hour a polyhalogenated copper phthalocyanine containing from 10 to 16 halogen atoms selected from the group consisting of chlorine and bromine with once to twenty times the amount by weight of an o-nitrophenol thereafter adding dilute alkali to the resultant mixture in an amount sufficient to dissolve the o-nitrophenol and separating the pigment from the o-nitrophenol-containing dilute alkali.

3,353,978
SELF-EXTINGUISHING PITCH FOAMS
William R. Davie, Aliquippa, Pa., assignor to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed Aug. 14, 1964, Ser. No. 389,764
12 Claims. (Cl. 106—275)

1. A process comprising heating an aromatic pitch having a hydrogen to carbon ratio of less than 1:1 to at least 150° C. in the presence of sufficient sulfur to foam the composition and permitting said composition to foam and cooling while retaining the voids therein to form a solid, thermoplastic, self-extinguishing foam.

3,353,979
MOLYBDATED ZINC OXIDE PIGMENTS AND METHOD FOR THE PREPARATION THEREOF
James V. Hunn, Avon Lake, Ohio, assignor to The Sherwin-Williams Company, Cleveland, Ohio, a corporation of Ohio
Filed June 29, 1964, Ser. No. 379,444
4 Claims. (Cl. 106—292)

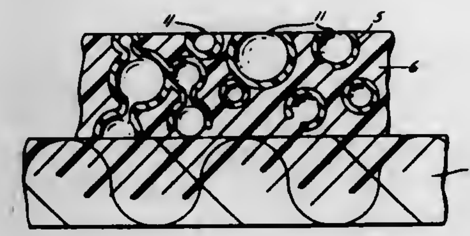
1. A method of preparation of a molybdated zinc oxide pigment which comprises reacting together in an aqueous environment in excess of one mol of pigmentary zinc oxide and up to 10 moles thereof for each mol of molybdenum trioxide and recovering a corrosion inhibitive pigmentary product therefrom free from elements other than those inherent in the named reactants.

3,353,980
PROCESS OF MODIFYING FURNACE CARBON BLACK
Paul H. Johnson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 8, 1964, Ser. No. 373,447
7 Claims. (Cl. 106—307)

1. A process for preparing a treated furnace carbon black having properties comparable to those of channel process carbon black which comprises thermally decomposing a hydrocarbon in a carbon black furnace under conditions of free carbon formation in the presence of

from 2 to 10,000 parts by weight per million parts by weight of carbon black produced of an alkali metal having an atomic number of at least 19; pelleting the carbon black; partially oxidizing the pelleted carbon black so produced with an oxygen-containing gas stream at a temperature in the range of about 600 to 1000° F. until DPG absorption values for the black are in the range of about 15 to 20 microequivalents per gram; cooling the black to a temperature between about 100 and 300° F.; and partially oxidizing the black with an ozone-containing gas until the DPG absorption value of the black is in the range of about 40 to 50 microequivalents per gram.

3,353,981
PLASTIC ARTICLES OF MANUFACTURE AND METHODS OF PREPARING THE SAME
Ezekiel J. Jacob, Brooklyn, N.Y., assignor of one-half to Michael S. Striker, New York, N.Y.
Filed Jan. 28, 1963, Ser. No. 254,073
11 Claims. (Cl. 117—8)



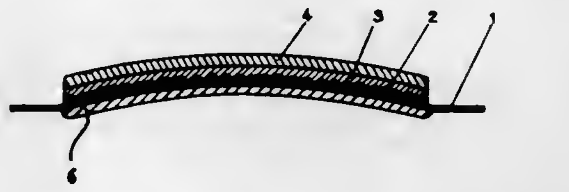
1. As a new article of manufacture, a coated fabric, comprising, in combination, a fabric layer; and an impregnating coating on said fabric consisting essentially of a plastic having cohesively embedded therein and distributed therethrough hollow synthetic resin bodies, said coating having one face in contact with said fabric and an opposite face further distant from said fabric, and the major portion of said hollow synthetic resin bodies being located closer to one than to the other of said faces.

3,353,982
PROCESS FOR MAKING A FILTER
Emil Blaha, Montgomery County, Pa., assignor to Selas Corporation of America, a corporation of Pennsylvania
No Drawing. Filed May 1, 1964, Ser. No. 364,315
5 Claims. (Cl. 117—8)

1. The method of making a filter which comprises providing a rigid porous support having pores larger than those of the finished filter and having a surface the shape the filter is to take, filling the pores on said surface with a filler, placing a film of a metal oxide and a binder on said surface of a thickness substantially equal to that of the finished filter, heating the support and film to a temperature sufficient to burn out the binder and decompose the oxide to substantially pure metal, thereby to produce on said support an integral thin, porous metal film, and leach out the filler from the pores of said support.

5. The method of making a supported metal filter which comprises preparing a porous ceramic support having pores of a predetermined size by filling the pores on at least one surface thereof with a filler and smoothing said surface, coating said surface with a film of a solution consisting of powdered silver oxide, a binder and a solvent for the binder, permitting the solvent to evaporate, heating the support to burn out the binder and decompose the silver oxide to a porous film of substantially pure silver integrally attached to the support with the pores in the silver smaller than the pores in said support, and leaching the filler from the pores of said support.

3,353,983
FLUORESCENT SCREEN FOR BRIGHTNESS AMPLIFIER TUBES AND METHOD OF MAKING THE SAME
Lucien Francis Guyot, Paris, France, assignor to Compagnie Francaise Thomson-Houston, Paris, France, a corporation of France
Filed Aug. 12, 1963, Ser. No. 301,387
Claims priority, application France, Sept. 4, 1962, 908,540, Patent 1,344,948
4 Claims. (Cl. 117—33.5)



1. In a brightness amplifier fluorescent screen assembly comprising a supporting plate made from a material transparent to light rays, a photocathode element applied to one side of said plate, a layer of fluorescent crystals deposited on the opposite side of the plate, and a reflective metal coating overlying said layer, the improvement comprising the combination of an inorganic binder substance selected from the group consisting of borax and an alkaline earth metal silicate mixed with said layer for binding the crystals thereof, and a discrete substantially continuous film of silicone resin applied over said fluorescent crystal layer in said inorganic binder and disposed beneath said metal coating so as to be located therebetween to provide an unbroken separation between said layer and coating and a smooth reflective undersurface for said coating.

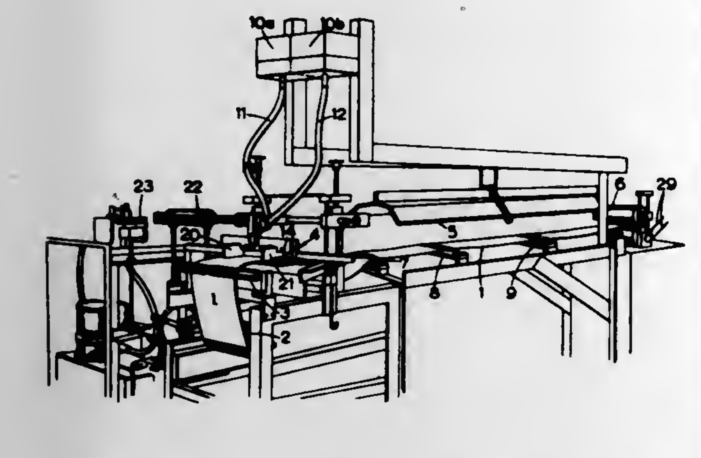
3,353,984
METHOD FOR THE PREPARATION OF LIGHT-SENSITIVE DIAZOTYPE MATERIALS AND IMPROVED MATERIALS PREPARED BY SUCH METHOD
Raphael Landau, 9 Markhams Drive, Woodford Green, Essex, England
No Drawing. Filed Apr. 15, 1964, Ser. No. 360,131
Claims priority, application Great Britain, Apr. 18, 1963, 15,269/63; May 24. 1963, 20,834/63
12 Claims. (Cl. 117—34)

1. A method of preparing a light-sensitive diazo-type material which method comprises applying to a base material a first solution or dispersion containing a diazonium compound to form a first coating and subsequently applying directly over the said first coating a second solution or dispersion containing a diazonium compound and a precipitant for the diazonium compound to form a second coating, the said second coating being contiguous with the first coating, said precipitant being selected from the group consisting of thiocyanates, tungstates, fluoroborates, silicofluorates, chlorides and sufates of the alkaline or alkaline earth metals, water soluble ferrocyanides and sulphonated benzene or naphthalene.

3,353,985
FLOOR COVERINGS AND THE LIKE
Alan Morley Harrison, Welwyn, England, assignor to Welwyn Plastics (1955) Limited, Welwyn, England, a British company
Filed Jan. 23, 1964, Ser. No. 339,726
Claims priority, application Great Britain, Jan. 24, 1963, 3,100/63
2 Claims. (Cl. 117—37)

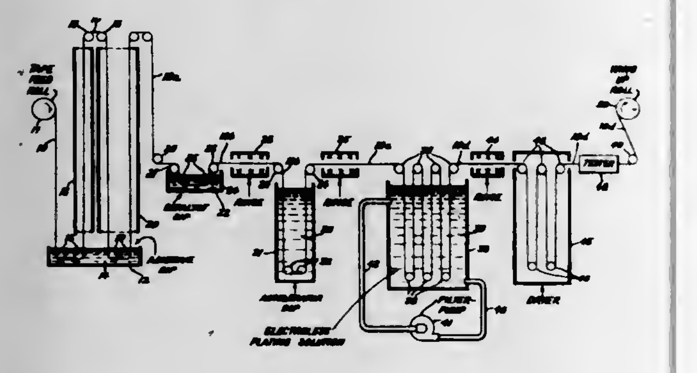
1. A method of applying a coating of thermoplastic material capable of being cured by heat to a base material in sheet form, comprising applying a basic coating of thermoplastic material to a moving sheet of the base material, passing the moving coated sheet under a

transversely oscillating doctor knife having an operative edge which defines the thickness of the applied coating, simultaneously, and while doctoring the base coating, applying through transversely spaced separate orifices in said operative edge, additional thermoplastic material of a character similar to the base coating but of a different color; and doctoring with said oscillating doctor knife said basic coating and said additional material while it is being applied to form a patterned coating on said sheet of base material, and subsequently curing said applied coating.



3,353,986
ELECTROLESS DEPOSITION OF COBALT-IRON-PHOSPHOROUS MAGNETIC MATERIAL

Joseph Simon Mathias, Riverton, N.J., and Joseph John McGee, Colwyn, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 20, 1963, Ser. No. 324,949
9 Claims. (Cl. 117—47)



7. A method of effecting the electroless deposition of a ferromagnetic alloy consisting essentially of about 90% by weight cobalt and substantially equal, minor amounts by weight of iron and phosphorus from an electroless plating solution onto a surface of a substrate made up of polyethylene terephthalate resin which comprises coating said surface of said substrate with a layer of adhesive material, contacting the adhesive coated surface with an aqueous palladium-containing solution, contacting the thus-treated surface with an aqueous solution containing a water-soluble salt of a metal selected from the group consisting of tin and titanium and contacting the resulting treated surface of said substrate with an aqueous electroless plating solution having the composition 20–40 grams per liter cobalt sulfate, 40–80 grams per liter ammonium sulfate, 100–600 grams per liter Rochelle salt, 10–30 grams per liter sodium hypophosphite, 0–1.5 cc. per liter of 1.0–2.0 grams per liter aqueous solution of potassium thiocyanate and a minor amount in the range about 1.5 grams per liter of ferrous ammonium sulfate, said plating solution being effective to electrolessly deposit on the surface a ferromagnetic alloy consisting essentially of about 90% by weight cobalt and minor, substantially equal amounts of iron and phosphorus.

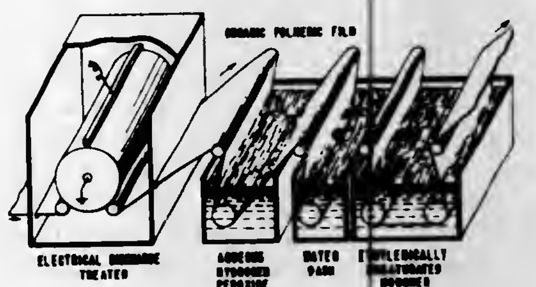
3,353,987
PROCESS OF PREPARING FILMY ADHESIVE

Kazuo Manaka and Tamotsu Tomioka, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
No Drawing. Filed Dec. 26, 1963, Ser. No. 333,713
Claims priority, application Japan, Dec. 26, 1962, 37/57,781
4 Claims. (Cl. 117—47)

1. A process of preparing a filmy adhesive which comprises irradiating with high energy radiation a polyamide resin film having in association therewith a solution of an epoxy monomeric compound selected from the group consisting of glycidyl acrylate and glycidyl methacrylate, thereby effecting the graft polymerization of the polyamide resin and the epoxy monomeric compound to form a complex film, and thereafter applying a solution of a phenol resin selected from the group consisting of novolak and resole phenolic resins to the surface of said complex film.

3,353,988
GRAFT POLYMERIZATION ON POLYMERIC SUBSTRATES

Leon Edward Wolinski, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 20, 1964, Ser. No. 368,892
4 Claims. (Cl. 117—47)


ORGANIC POLYMERIC FILM
ELECTRICAL DISCHARGE TREATER
AQUEOUS HYDROGEN PEROXIDE
WATER WASH
ETHYLENICALLY UNSATURATED MONOMER

1. A process which comprises, in combination, the sequential steps of (1) subjecting an organic polymeric shaped structure to the action of an electrical discharge in air at substantially atmospheric pressure between spaced electrodes maintained at a voltage differential in excess of about 1000 volts, said electrical discharge having an average energy level below 15 electron volts; (2) contacting the surface of the resulting polymeric shaped structure with an agent capable of providing a source of free radicals; and (3) substantially immediately thereafter contacting the surface of the polymeric shaped structure with an ethylenically unsaturated monomer whereby to form on said surface an adherent polymeric coating.

3,353,989
METHOD OF PRODUCING N-CHLORAMIDE VESICANT PROTECTIVE FABRIC AND THE RESULTING FABRIC

Carlo G. De Marco, Cochituate, Mass., assignor to The United States of America as represented by the Secretary of the Army
No Drawing. Filed June 16, 1964, Ser. No. 375,673
5 Claims. (Cl. 117—62.1)

1. The method of providing an air-permeable protective fabric resistant to penetration of vesicant gases which comprises impregnating a fabric having at least a 50% fibrous cellulosic content with a methylol derivative of a nitrogenous resin-forming material capable of forming resins having sites which will react with chlorine ions to form N-chloramides, curing the resin-forming material on the fabric to form an insoluble resin finish permanently fixed to the fabric and wherein the amount of resin add-on is from 10% to 15% by weight of the dry fabric, and treating the resin-finished fabric with a chlorinating agent that will react with the resin and form the N-chloramides.

3,353,990
NOVEL COATED POLYSTYRENE ARTICLES AND METHOD FOR PRODUCING THE SAME

Richard D. Vieth, Butler, and Joseph A. Dooley, Cedar Grove, N.J., and Elihu J. Aronoff, Glen Oaks, and Richard Bolstad, Brooklyn, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Filed Jan. 31, 1964, Ser. No. 341,734
16 Claims. (Cl. 117—138.8)

1. An article comprising a polystyrene substrate carrying a thermoplastic coating of a copolymer consisting essentially of from 70% to 80% vinylidene chloride and at least 15% of an acid component selected from the group consisting of acrylic acid, methacrylic acid, and itaconic acid.

3,353,991
CRYSTALLINE POLYPROPYLENE COATED WITH A VINYLIDENE CHLORIDE COPOLYMER

William D. Shelburg, Bay City, and Robert F. Hettler, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 2, 1964, Ser. No. 348,798
1 Claim. (Cl. 117—138.8)

A coated product comprising a polypropylene film of predominantly crystalline structure having a self-anchoring coating comprising a substantially homogeneous copolymer of:

(a) from 80 to 85 weight percent vinylidene chloride,
(b) from 9 to 14 weight percent acrylonitrile,
(c) from 4 to 6 weight percent methyl methacrylate, and
(d) about 0.5 weight percent of an unsaturated aliphatic acid selected from the group consisting of acrylic acid, methacrylic acid and itaconic acid, the proportions being selected to total 100 percent.

3,353,992
COATING OF POLYMER FILM AND SHEET

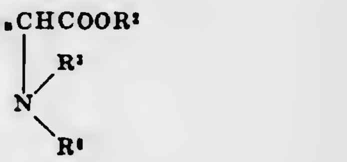
Dallas G. Grenley, Midland, and Harold J. Townsend, Saginaw, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 9, 1964, Ser. No. 350,559
10 Claims. (Cl. 117—138.8)

1. A composite article comprising a polymer substrate of a monoethylenically unsaturated hydrocarbon selected from the group consisting of polystyrene, polypropylene and polyethylene, and having on at least a portion of the surface thereof a coating consisting essentially of a copolymer containing in chemically combined form (a) from 80 to 87 percent by weight of vinylidene chloride, (b) from 8 to 20 percent by weight of a monomer selected from the group consisting of methyl acrylate, methyl methacrylate, acrylonitrile, ethyl acrylate and mixture thereof, and (c) from 2 to 9 percent by weight of at least one monomer selected from the group consisting of alkyl acrylates wherein the alkyl group contains from 2 to 22 carbon atoms, vinyl chloride, butadiene and mixtures thereof, with the proviso that the acrylate monomer of (c) contains from 3 to 22 carbon atoms when the monomer of (b) is ethyl acrylate, and with the further limitation that said copolymers show no appreciable change in the stress-strain relationship of a polymer film when cast from a latex and stored at a temperature of between 0 and 50° centigrade and the polymer film so cast shall absorb less infrared radiation at a wave length of 9.58 microns than at a wave length of 9.45 microns.

3,353,993
METHOD FOR IMPARTING ANTISTATIC PROPERTIES TO TEXTILE MATERIALS

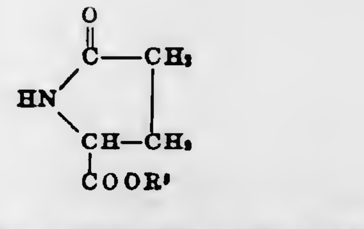
Tokurou Kida, Otokuni-gun, Kyoto, Shougo Matsuda and Seiichi Saito, Takatsuki-shi, Osaka, and Masaharu Yuasa, Nakagyo-ku, Kyoto, Japan, assignors to Asahi Chemical Industry Co. Ltd. and Tanabe Seiyaku Co. Ltd., Osaka, Japan
No Drawing. Filed Apr. 28, 1964, Ser. No. 363,295
5 Claims. (Cl. 117—139.5)

1. Method for imparting antistatic properties to textile materials made of synthetic fibers whch comprises applying to said materials, as an antistatic agent, a compound selected from the group consisting of:



$$\mathrm{R^1OOC(CH_2)_n\underset{\displaystyle N(R^3)R^4}{\underset{|}{C}}HCOOR^2}$$

and



wherein R^1 and R^2 are selected from the group consisting of hydrogen and a hydrocarbon radical except that both are not hydrogen simultaneously, R^3 and R^4 are selected from the group consisting of hydrogen, an alkyl and an acyl radical, R^5 is an aliphatic hydrocarbon radical and *n* represents an integer of 1 and 2, and drying said materials.

3,353,994
NOVEL RETICULATED PRODUCTS

Robert E. Welsh, Claymont, Del., and Albert L. McConnell, Chester, Pa., assignors to Scott Paper Company, Philadelphia, Pa. a corporation of Pennsylvania
No Drawing. Filed May 7 1964, Ser. No. 365,793
15 Claims. (Cl. 117—221)

1. A process for tenaciously depositing, by means of an explosive flame front, a solid particulate material on a reticulated, organic, polymeric material and comprising the steps of: temporarily attaching, at least once, said particulate material on the strands and nexae of said reticulated material by intimately dispersing said particulate material throughout the organic body subjecting said thus-covered organic material to an explosive flame front, at least once, and recovering a fused article of manufacture.

3,353,995
REMOVAL OF FERROUS SULFIDE DEPOSITS

Fred Norman Teumac, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 26, 1964, Ser. No. 355,113
7 Claims. (Cl. 134—3)

1. A method of removing ferrous sulfide from ferrous metal surfaces comprising providing an aqueous solution containing from about one to about ten percent by weight of an acid selected from the group consisting of hydrochloric and sulfuric acids, from about 0.1 to about 1.0 percent by weight of copper ion, and a thiourea compound selected from the group consisting of thiourea, 1,3-dimethyl thiourea, 1,3-diethyl thiourea, allyl thiourea, ethylene thiourea, and 1,3-diisopropyl thiourea, said thiourea compound being present in an amount equivalent to an amount of thiourea from about 2 to about 20 times the weight of copper ion present, and contacting the ferrous sulfide-containing ferrous metal surface with said aqueous solution, thereby to remove ferrous sulfide.

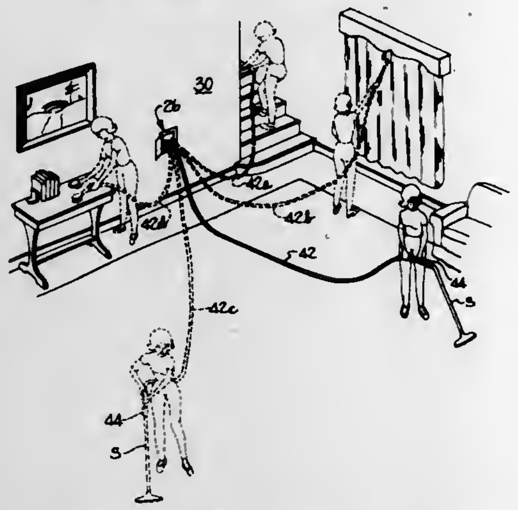
3,353,996

SUCTION CLEANING SYSTEM AND METHOD

James C. Hamrick, Matthews, N.C., assignor to Jet Line Products, Inc., Matthews, N.C., a corporation of North Carolina

Filed May 24, 1965, Ser. No. 458,178

20 Claims. (Cl. 134—21)



1. A method of cleaning utilizing a suction cleaner having a conduit communicatively connected to a suction source and an elongate pliable hose positioned for longitudinal movement within the conduit and also communicating with the suction source, said method comprising the steps of withdrawing any desired length of the hose from the conduit for reaching any area to be cleaned, conducting a suction current through the conduit and hose, applying a suction current through the medium of the hose to the area to be cleaned, and upon completion of cleaning, effecting retraction of the withdrawn length of hose into the conduit under the impetus of the force of the suction from said source by restricting the flow of the suction current from the hose into the conduit.

3,353,997

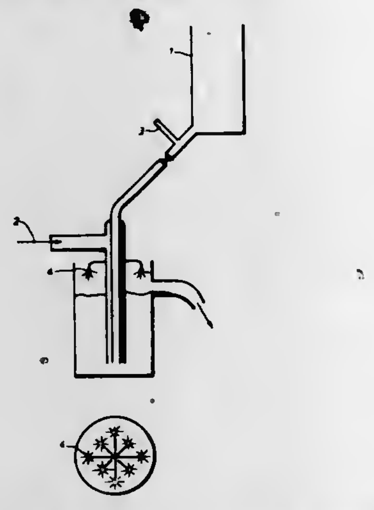
PROCESS FOR REMOVING WASTE MATERIAL FROM CHLOROSILANE SYNTHESIS REACTORS

Engelbert Walaschewski, Cologne-Stammheim, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Aug. 10, 1964, Ser. No. 388,500

Claims priority, application Germany, Aug. 6, 1963, F 40,428

1 Claim. (Cl. 134—22)



In a process for the removal of waste material from organochlorosilane synthesis reactors operated with chlorohydrocarbon and silicon powder, the improvement which comprises blowing the contents of the reactor which have become unusable, before entry of air, into a container filled with water and agitated, while maintaining the operating temperature, the surface of the contents of the container being additionally and simultaneously sprayed with water from a number of nozzles.

3,353,998

ALKALINE BATTERY CELLS WITH SILVER-OXIDE OR SILVER ELECTRODES

Erich Langguth, White Plains, and Louis Belove, Ardsley, N.Y., assignors to Sonotone Corporation, Elmsford, N.Y., a corporation of New York

Filed Feb. 2, 1965, Ser. No. 429,876

3 Claims. (Cl. 136—6)

1. In an alkaline rechargeable storage battery cell having at least two opposite-polarity porous cell electrodes comprising a positive electrode and a negative electrode, a porous insulating separator between said two electrodes and alkaline electrolyte in the pores of and between said electrode plates and in said separator for maintaining electrolytic charge and discharge operations between said positive and negative electrodes across said separator,

the charged active material of said positive electrode consisting of silver oxide selected from the group consisting of silver (II) oxide—Ag(II)O—and silver (I) oxide—Ag_2(I)O—which silver oxide is converted by the discharge into silver—Ag—and which silver oxide is being transferred incident to the operation of said cell from said positive electrode to said negative electrode and causes reduction of the effective capacity of said cell,

and in combination therewith the improvement comprising

an electrically conductive porous sheath consisting of sintered nickel particles enclosing all exposed surfaces of said positive electrode and having electroconductive connections to said enclosed positive electrode,

the pores of said sintered nickel-particle sheath containing nickel hydroxide which in the charged state consists of nickel (III) oxyhydroxide—NiO(OH)—and is converted by the discharge into nickel (II) hydroxide—$Ni(OH)_2$—which nickel hydroxide has the property of suppressing transfer of said silver oxide of said positive electrode to said negative electrode in the charging and discharging operations of said cell.

3,353,999

CONDUCTIVE FILM BATTERY

Robert Otto Osborn, Snyder, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 21, 1964, Ser. No. 419,707

4 Claims. (Cl. 136—83)

1. An encapsulated electrochemical cell consisting essentially of electrochemically active materials therewithin in cooperative electrical association with

(a) an anode collector of an electrically conductive and flexible film structure consisting essentially of organic polymeric material and up to 30% carbon black, and

(b) a cathode collector of an electrically conductive film structure consisting essentially of organic polymeric material and up to 30% of carbon black, said cathode collector disposed adjacent to said anode collector in substantially planar relation thereto, and each of said collectors separated from the other by

(c) at least one electrode of electrochemical active material disposed adjacent to and contacting one of said collectors and

(d) an insulating sheet spacer of substantially planar construction having a tablet electrolyte disposed therein between said electrodes and having said anode collector hermetically sealed to one surface thereof and said cathode collector hermetically sealed to the opposite surface thereof.

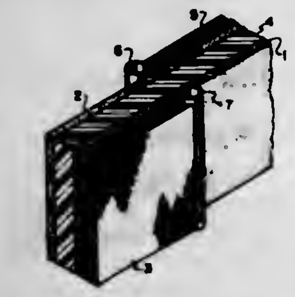
3,354,000

ELECTROCHEMICAL CELL

Herbert P. Dengler, Fair Haven, and Thomas A. Reiter, Chatham, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Nov. 8, 1963, Ser. No. 322,284

12 Claims. (Cl. 136—86)



12. An electrochemical cell pack comprising in combination an electrode assembly, an apertured fuel tube, an apertured oxidant tube, a fuel spacer, an oxidant spacer, and a longitudinally apertured, fully enclosed, cell container adapted to retain said electrode assembly, fuel and oxidant spacers, said electrode assembly comprising an anode, a cathode and an electrolyte spacer, said fuel tube situated at the center of and in contact with said anode, said oxidant tube situated in contact with the cathode parallel to said fuel tube, said fuel spacer extending from said fuel tube to one end of said electrode assembly, said oxidant spacer extending from said oxidant tube to the end of said electrode assembly opposite the end to which the fuel spacer is extended, said electrode assembly, said fuel spacer and said oxidant spacer being wound about said fuel tube and said oxidant tube and retained in said cell container.

3,354,001

METHOD FOR INCREASING THE POROSITY OF A PREDOMINATELY NICKEL-CONTAINING POROUS ELECTRODE

John J. Kelley, Levittown, N.J., assignor to The Electric Storage Battery Company, a corporation of New Jersey

No Drawing. Filed Mar. 14, 1963, Ser. No. 265,045

4 Claims. (Cl. 136—120)

1. A method for increasing the porosity of a predominately nickel-containing, porous electrode which comprises oxidizing said electrode by heating it in an atmosphere containing oxygen to a temperature ranging from about 500° C. to about 800° C. in a manner which does not cause excessive agglomeration of the nickel particles, and thereafter reducing said electrode by heating it in a reducing atmosphere to a temperature ranging from about 200° C. to about 500° C., with said temperatures being selected so that the reducing temperature is substantially less than the oxidizing temperature.

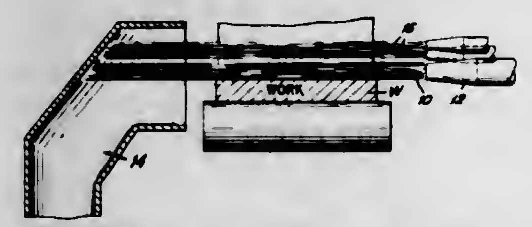
3,354,002

THERMOCHEMICAL SCARFING METHOD

Cecil R. Gingerich, Farmington, Mich., and Rudolph F. Hinschlager, West Orange, and Allan R. Wandelt, Warren Township, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed Mar. 10, 1966, Ser. No. 533,277

8 Claims. (Cl. 148—9.5)



1. In a thermochemical scarfing process wherein a stream of oxidizing gas is directed against a reaction zone of molten metal on the surface of a metal body to produce a thermochemical reaction thereon, and relative movement between such stream and the body is produced for continuing such reaction along the length of such surface, the improvement for granulating and trapping molten slag produced during such reaction which comprises:

(1) directing at least one main fluid stream transversely of said surface in front of said reaction zone, while maintaining such fluid stream in immediate adjacency to such surface, to trap and granulate a substantial portion of such slag, and push it laterally off said surface, and

(2) directing at least one additional fluid stream transversely of said surface in front of said reaction zone, said additional fluid stream being positioned with its central axis further above the surface of the body than the central axis of said main fluid stream, whereby substantially all of the granulated slag deflected by said main stream in addition to substantially all ungranulated slag which does not come into contact with said main stream will be trapped by said additional fluid stream and pushed off laterally from the surface of the body.

3,354,003

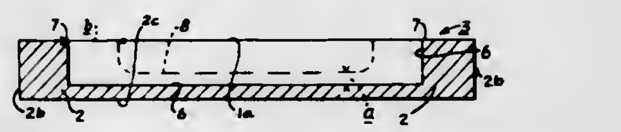
SEMI-CONDUCTOR JUNCTION WITH A DEPLETION LAYER

Arthur Langridge, William B. Glass, Henry William Grimwood, and Brian A. Hegarty, King's Cross, London, England, assignors to Westinghouse Brake and Signal Company Limited, London, England

Filed Oct. 14, 1963, Ser. No. 315,843

Claims priority, application Great Britain, Oct. 31, 1962, 41,189/62; Mar. 22, 1963, 11,420/63; Apr. 23, 1963, 15,945/63; July 31, 1963, 30,342/63

8 Claims. (Cl. 148—33)



1. A semi-conductor junction element comprising a slice of semi-conductor material having a peripheral side face and first and second opposed end faces;

said slice including a shell region of one type of conductivity and of low resistivity, said shell region including said first end face and at least a portion of said peripheral side face, said shell region containing also a cavity;

said slice including also a core region of the opposite type of conductivity and of high resistivity, said core region being contained at least partially within said cavity and including at least a portion of said second end face;

said core and shell regions defining therebetween a P-N junction having a first mid-portion adjacent said first end face and a second portion adjacent said peripheral side face and said second end face, said P-N junction forming in said core section a depletion layer following generally the configuration of the cavity wall,

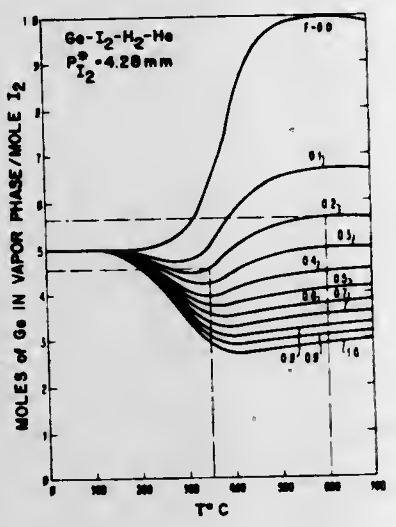
at least that portion of the depletion layer adjacent said peripheral side surface being formed by diffusion and having an extent (*b*) measured along the surface of the slice between the limit of the depletion layer and the periphery of the junction that is greater than the layer thickness (*a*) at said first mid-portion of the P-N junction, whereby the avalanche voltage across the first midportion of the P-N junction is less than the break-down voltage at the second portion of the P-N junction.

3,354,004

METHOD FOR ENHANCING EFFICIENCY OF RECOVERY OF SEMI-CONDUCTOR MATERIAL IN PERTURBABLE DISPROPORTIONATION SYSTEMS

Arnold Reisman and Melvin Berkenblit, Yorktown Heights, and Satenik A. Alyanakyan, New York, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 17, 1964, Ser. No. 411,881
20 Claims. (Cl. 148—175)



1. A method for enhancing the efficiency of recovery of semi-conductor material in perturbable disproportionation systems comprising the steps of:

reacting germanium with a hydrogen, inert gas, halide mixture to produce a mixture of compounds of said elements in the vapor phase and

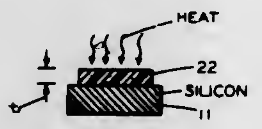
perturbing the equilibrium vapor phase content of germanium in said mixture by introducing at least one of the perturbing gases selected from the group consisting of hydrogen, hydrogen and an inert gas to cause epitaxial deposition of germanium on a substrate.

3,354,005

METHODS OF APPLYING DOPING COMPOSITIONS TO BASE MATERIALS

Donald C. Lepiane, Reading, and Henry N. Zimmerman, Kutztown, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 23, 1965, Ser. No. 503,586
9 Claims. (Cl. 148—186)



1. In a process of diffusing a doping agent into a surface of a body of base material, wherein solid particles of a doping composition containing the doping agent are applied to the surface of the base material and heated to a temperature sufficient to cause the doping agent to diffuse into the surface of the base material, an improved method of applying a predetermined amount of the doping composition to the body of base material, which comprises:

(a) forming a suspension of particles of the doping composition in a liquid organic carrier of a type which can be solidified and which, in solid form, can be vaporized at a temperature below the diffusion temperature;

(b) solidifying the suspension to form a solid composite mass of the particles suspended in a matrix of the solid form of the carrier; and

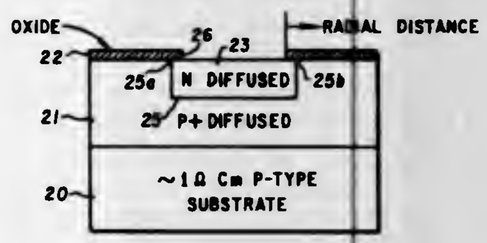
(c) placing a predetermined portion of the solid mass on the surface of the body of base material, the size of the portion being selected to provide the desired amount of suspended doping agent for the diffusion operation, after which the assembly may be heated to drive off the carrier and cause the doping agent to diffuse into the surface of the base material.

3,354,006

METHOD OF FORMING A DIODE BY USING A MASK AND DIFFUSION

Russell K. Long, Mountain View, Calif., and Jack P. Mize, Riviera Beach, Fla., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 1, 1965, Ser. No. 436,393
6 Claims. (Cl. 148—187)



1. The method af manufacturing a Zener diode comprising the steps of:

(a) diffusing a P conductivity-type impurity into a surface of the P conductivity-type substrate to form a P+ conductivity-type region therein;

(b) masking said surface of said P+ conductivity-type region with an oxide layer;

(c) removing a portion of said oxide layer to expose a portion of said surface of said P+ conductivity-type region; and

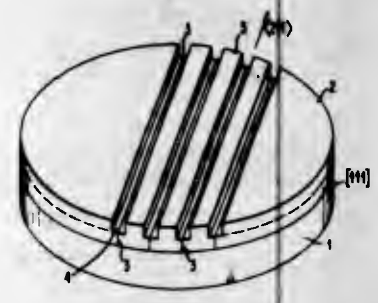
(d) diffusing an N conductivity-type impurity into said portion of said surface of the diffused P+ conducductivity-type region through said opening in said oxide layer to form an N conductivity-type region therein, the interface between said P+ conductivity-type region and said N conductivity-type region constituting the junction of said Zener diode.

3,354,007

METHOD OF FORMING A SEMICONDUCTOR BY DIFFUSION BY USING A CRYSTAL MASKING TECHNIQUE

Michael Michelitsch, Stuttgart, Vaihingen, Germany, assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 2, 1965, Ser. No. 445,065
Claims priority, application Germany, June 9, 1964, J 25,999
15 Claims. (Cl. 148—187)



2. A method for producing apertures in a masking material comprising the steps of:

selecting a semiconductor substrate material having a given temperature coefficient of expansion,

depositing on a surface of said substrate in bonded relationship therewith a dielectric masking material having a temperature coefficient of expansion different from said given temperature coefficient of expansion,

grooving said masking material to produce crevices along the lengths of grooves produced thereby, and

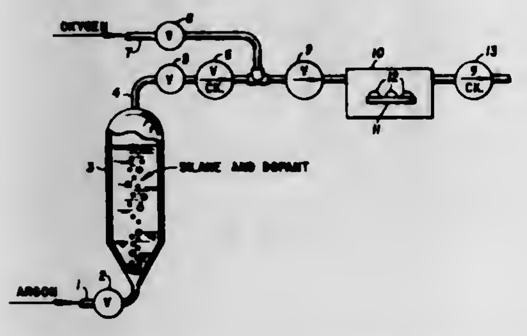
heating said substrate and said masking material to a temperature sufficient to cause the formation of apertures in the form of crystallographically oriented crevices in said grooves.

3,354,008

METHOD FOR DIFFUSING AN IMPURITY FROM A DOPED OXIDE OF PYROLYTIC ORIGIN

John C. Brixey, Jr., and Kenneth E. Statham, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Continuation of application Ser. No. 359,883, Apr. 15, 1964. This application Sept. 21, 1966, Ser. No. 581,118
9 Claims. (Cl. 148—187)



1. A method of selectively diffusing an impurity into a semiconductor device comprising the steps of:

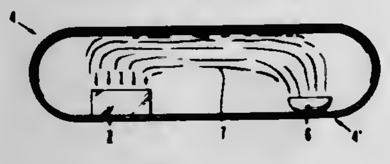
depositing an impurity containing oxide upon the surface of said semiconductor device, selectively removing a portion of said oxide to leave the desired configuration and diffusing the impurity into the device from the remaining oxide.

3,354,009

METHOD OF FORMING A FABRICATING SEMICONDUCTOR BY DOUBLY DIFFUSION

Gerald Mandel, deceased, late of Croton-on-Hudson, N.Y., by Kay Mandel, administratrix, Croton-on-Hudson, N.Y., and Frederick F. Morehead, Jr., Yorktown Heights, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 29, 1965, Ser. No. 468,165
7 Claims. (Cl. 148—189)



1. A method for fabricating ternary semiconductor materials which includes the steps of:

(a) establishing a heating and vaporizing zone;

(b) placing a cadmium telluride semiconductor binary compound crystal into one portion of said heating and vaporizing zone;

(c) placing a reservoir of diffusing material in another portion of said heating and vaporizing zones, said diffusing material being a mixture of from 4% to 49% of zinc, 49% to 99% of cadmium, and 1% phosphorous;

(d) doubly diffusing the zinc and phosphorous into said cadmium telluride crystals under a cadmium atmosphere, said double diffusion being effected by heating said cadmium telluride crystals to a temperature below its melting and dissociation points and within the range of 650° to 1000° C., while maintaining the temperature of said diffusion mixture at about 50° below that at which the cadmium telluride crystal is heated; and

(e) heating for a period extending from about one day to two weeks to thereby recover a doubly diffused semiconductor ternary material.

3,354,010

FLEXIBLE EXPLOSIVE CONTAINING RDX AND/OR HMX AND PROCESS THEREFOR

John D. Hopper, Succasunna, and Franklin B. Wells, Hackettstown, N.J., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Jan. 27, 1967, Ser. No. 612,766
5 Claims. (Cl. 149—18)

1. A method for the preparation of a self-supporting, resilient, high-powered, brisant, flexible sheet explosive composition of moderate cap sensitivity, low impact sensitivity, and good thermal stability and water resistance comprising the steps of

mixing about 63 parts of a high explosive comprising dry cyclotetramethylenetetranitramine (HMX) containing about 1.2–1.55% dry cyclotrimethylenetrinitramine (RDX) and about 28.2 parts tributyl acetylcitrate at about 135° F. to form a pasty mass,

mixing thereinto about 8 parts of high viscosity, alcohol-wet nitrocellulose containing about 12.1 to 12.5% nitrogen and 0.8 part of a pigment consisting of 1 part lampblack and 8 parts chrome yellow, medium, to form a mixture,

adding ethanol to said mixture to form a stiff dough,

mixing said dough at a temperature in the neighborhood of about 135° F. and

roll-milling said mixed dough at about 135° F. to form said flexible sheet explosive composition.

3,354,011

PROPELLANT COMPRISING A PERFLUOROGUANIDINE CONTAINING OXIDANT AND A FUEL

James L. Kroon and Ralph A. Davis, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application July 14, 1961, Ser. No. 126,441. Divided and this application Mar. 29, 1963, Ser. No. 270,490
1 Claim. (Cl. 149—22)

In a propellant containing an oxidant and a fuel, said oxidant consisting essentially of a mixture of perfluoroguanidine and an oxygen containing oxidant selected from the group consisting essentially of perchlorates, nitrates, nitrogen tetroxide and tetranitromethane and said fuel being a member selected from the group consisting essentially of tetraborane, hydrazine, lithium, aluminum, beryllium and hydrides of these metals, the amount of said oxidant being sufficient to oxidize the carbon in said perfluoroguanidine and said fuel member.

3,354,012

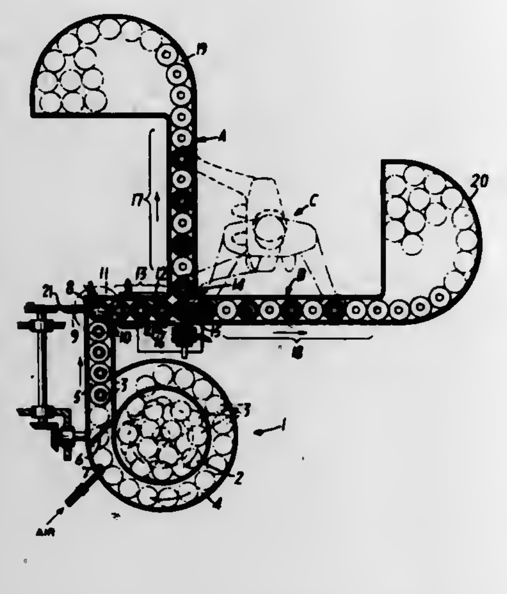
PROCESS AND APPARATUS FOR CAPPING FILTER ELEMENTS

Herbert L. Forman, Roslyn Estates, and David B. Pall, Plainview, N.Y., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York

Filed Jan. 14, 1964, Ser. No. 337,594
10 Claims. (Cl. 156—69)

1. A process for mass producing filter cartridges in a continuous assembly line, applying the required assembling operation steps sequentially to the cartridges as they move along the line, comprising, in combination, the steps of arranging rimmed end caps for the cartridges in a

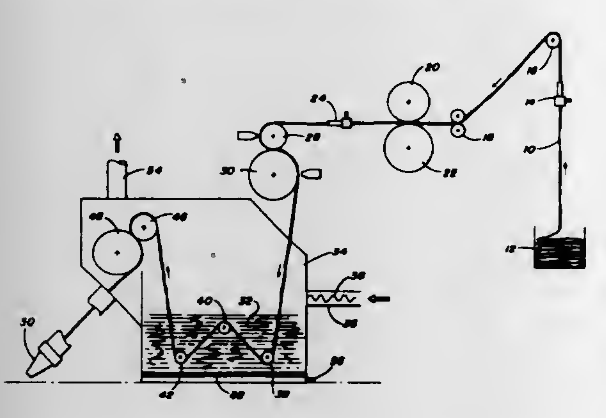
row; progressively moving the row of end caps forward; applying a portion of flowable adhesive to each end cap; distributing the adhesive uniformly over the cap surface while retaining it within the rim of the cap and while maintaining the adhesive in a flowable condition; embedding one end of a tubular filter element in the adhesive to seal the entire end of the tubular filter element to the end cap; hardening the adhesive to form a bond retaining the end cap on the end of the element while



progressively moving the row of capped cartridges forward, the hardening being coordinated timewise with the progressive movement so as to be substantially complete when the capped cartridge has reached the end of the line; retrieving the capped cartridge; inverting the cartridge, and embedding the other end thereof in an adhesive-containing end cap in the line; hardening the adhesive in a like manner; and collecting the completed cartridge at the end of the line.

3,354,013
METHOD AND APPARATUS FOR APPLYING PARTICULATE ADDITIVES TO CONTINUOUS FILAMENT TOW

Robert L. Terrell and Joel B. Stevens, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 26, 1963, Ser. No. 326,095
6 Claims. (Cl. 156—152)



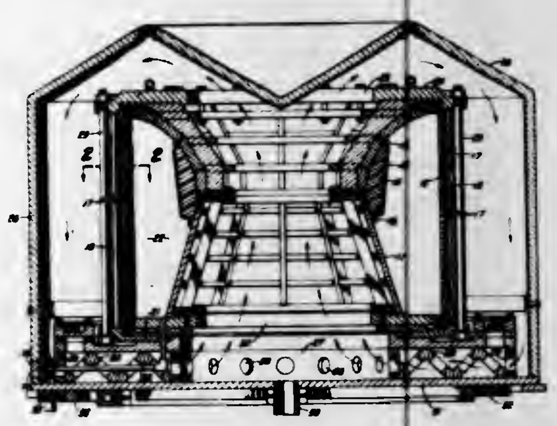
3. A process for the application of additives to filamentary material which comprises feeding the material from a source of supply, applying a bonding agent to said material, retaining the additive in an enclosed chamber, forming a fluidized bed by passing a gaseous medium upwardly into the chamber through said additive, and circuitously passing said filamentary material through said bed so that a substantially uniform amount of additive becomes adhered to the material.

4. The process according to claim 3 wherein the said filamentary material is in tow form and is banded and bloomed prior to the addition of the bonding agent thereto.

6. The process according to claim 4 wherein the said tow is subsequently fed to a filter forming device.

3,354,014
PRESSURE LAMINATING PROCESS AND APPARATUS

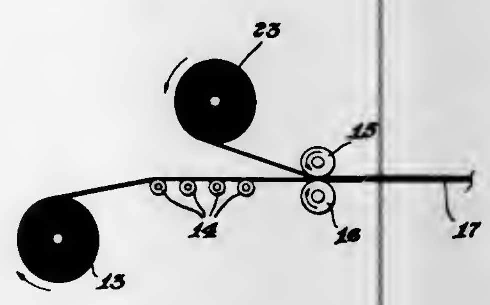
Eugene G. Schick, Newport Beach, and Arthur R. Church, Downey, Calif., assignors to Swedlow Incorporated, Los Angeles, Calif., a corporation of California
Filed Apr. 27, 1964, Ser. No. 362,866
8 Claims. (Cl. 156—189)



8. A pressure curing process comprising positioning a curable material on a mandrel, covering said curable material with a protective sheet, securing the edges of said sheet to said mandrel, surrounding said mandrel with a wall, said wall being spaced from said protective sheet and being adapted to cooperate with said mandrel to form a pressure chamber, providing said wall with at least one layer of wound pre-tensioned cable on the outer surface thereof, and introducing a pressurizing fluid into the space between said wall and said mandrel whereby pressure is exerted on said material through said protective sheet.

3,354,015
METHOD OF PROTECTING POLISHED METAL SURFACES

Galen J. Klusmire, Midland, Mich., William H. Borough, Downey, Calif., and Jacob Eichhorn, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 14, 1964, Ser. No. 389,733
6 Claims. (Cl. 156—306)



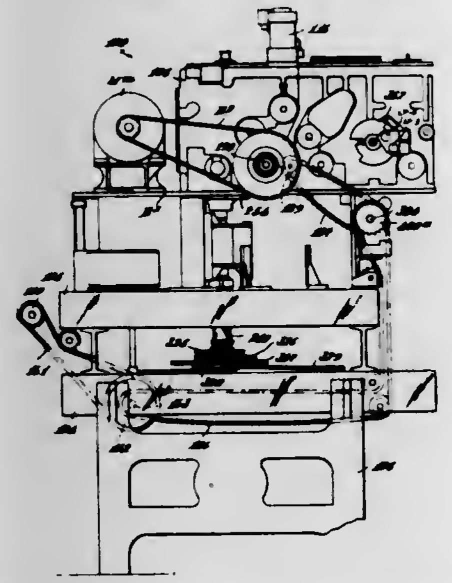
1. In the method of temporarily protecting a finished metallic surface with a synthetic, resinous, flexible sheet material, the improvement consisting of:

(1) contacting a finished metallic surface with a synthetic, resinous, flexible sheet material selected from the group consisting of chloroethylene polymer and copolymers of between about 90 and 97 weight percent ethylene and between about 10 and 3 weight percent of a comonomer selected from the group consisting of acrylic acid, vinyl acetate and the lower acrylates which is essentially electrically neutral with respect to said finished metallic surface. and

(2) applying said sheet material to said finished metallic surface under pressure sufficient to remove essentially all of the air between said sheet material and said finished metallic surfaces.

3,354,016
ROTARY-TYPE LABELING MACHINE

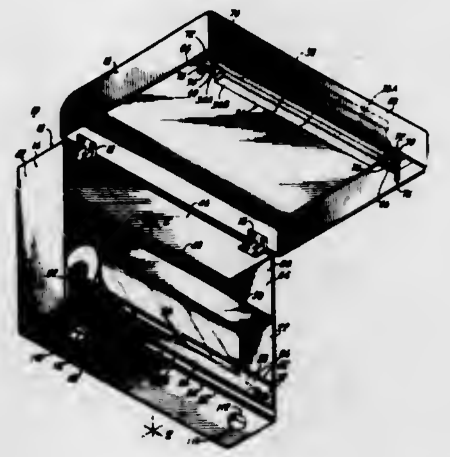
Sidney T. Carter, Shrewsbury, Mass., assignor to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin
Filed Oct. 1, 1963, Ser. No. 313,070
34 Claims. (Cl. 156—363)



22. In a labeling machine of the kind wherein means, driven by an electric motor, advances bottles to be labelel, one-by-one, through the field of action of label-applying means, and wherein the label-applying means comprises a picker, a rockshaft to which the picker is secured, a label magazine, and picker-actuating means operative normally to move the picker, cycle-after-cycle, from a label-receiving position in the magazine to a label transfer position at which the label, which the picker received at the magazine, is separated from the picker, said picker-actuating means comprising a constantly rotating cam, a lever, means whereby the rotating cam rocks the lever, and a link for transmitting motion from the lever to the picker shaft thereby to rock the picker, in combination, a movable fulcrum for said lever, and means operative so to shift said movable fulcrum, in the absence of a bottle at the transfer station, to receive a label from the picker at the appropriate time in the cycle, so to shorten the path of the picker that it does not reach label-receiving position at the magazine, further characterized in that the article to be labeled is a bottle, the bottle is carried by a rotating turntable through the field of action of the label-applying means; botles are received from a supply and fed in accurately spaced relation to the turntable by a start wheel; and wherein detector means, including a detector switch in the circuit of the drive motor, is arranged adjacent to the star wheel and is sensitively responsive to the failure of bottles to approach the star wheel in an unbroken procession. and further characterized in that the means for shifting the fulcrum of the cam-actuated lever comprises a fluid-pressure motor having a solenoid valve in circuit with said detector switch for controlling the admission of pressure fluid to said motor, the parts being so arranged that, upon failure of bottles to approach the star wheel at the normal rate, the solenoid valve so admits pressure fluid to the motor thereby to shift the lever-fulcrum to abnormal position.

3,354,017
BAG MAKING APPARATUS

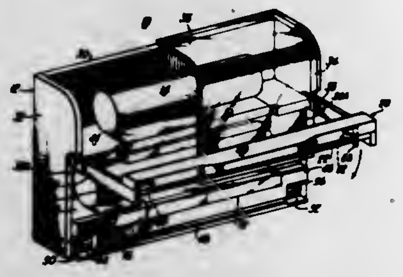
William H. Lazear and Robert F. Hrudka, Winnetka, Ill., assignors to H & L Machine Corp., Winnetka, Ill., a corporation of Illinois
Filed Apr. 20, 1964, Ser. No. 361,196
1 Claim. (Cl. 156—494)



A device for making bags from thermoplastic multilayer tubular film, including in combination, a stationary compartment having a plurality of spaces for reception of rolls of the film in flattened condition, said compartment having another space forward of the first ones, a sub-assembly mounted at the upper part of said other space including a strip of insulating material having at its side adjacent the film receiving spaces a substantially flat clamping surface and at its front end an anvil comprising an inclined surface projecting above a front wall of the compartment and constituting a step therewith, said strip having a transverse recess between the clamping surface and anvil, said recess having a plurality of ventilating apertures therealong, and said strip having access openings adjacent its ends, the sub-assembly including also flexible terminals at the opposite ends of the strip accessible through said access openings, the sub-assembly including also a resistor and fuse arranged in series with one of said terminals supported at the underside of the strip, heat insulating strips at the edges of the spaces on opposite sides of the resistor, the compartment having other ventilating openings at its underside leading to said other space, a cover hingedly secured to the compartment, said cover having at its forward underside above the first mentioned sub-assembly a second detachably mounted sub-assembly including a strip of insulating material to a side of which is secured a resilient compressible clamping element opposite the first mentioned clamping element, said sub-assembly including an expansible heated wire type film sealing and severing element disposed forward of the clamping element and adapted to enter said groove when the cover closes the compartment, said sub-assembly including also resilient supporting arms for the wire whereby the wire is moved toward the clamping elements when it is energized and heated, film tensioning means comprising a flexible plate detachably mounted in the cover in front of the sub-assembly and including a foot portion opposite the anvil, said foot portion being adapted to slide along the anvil surface and down the step constituted by the projecting portion of the anvil and thereby tension film between it and the anvil, said compartment including adjustment means for determining the extent of movement of the cover relative to the compartment, said adjustment means being effective in a first position to limit movement of the cover so that the foot portion of the tensioning means does not move off the inclined surface of the anvil, and being effective in a second position to enable the cover to move so that the foot of the tensioning means moves down and off the inclined surface and the step, said heated wire element being so disposed that in the first position of said adjustment means it remains substantially in the plane of the film between the clamping means and anvil and in the second position it goes slightly across the plane of the film.

3,354,018
APPARATUS FOR HEAT SEALING INCLUDING A CLAMP AND A HEATED WIRE

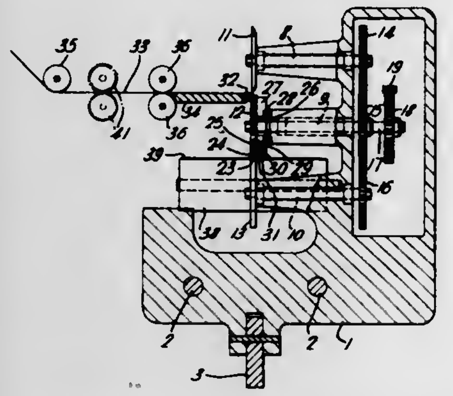
William H. Lazear, Winnetka, Ill., assignor to H & L Machine Corp., Winnetka, Ill., a corporation of Illinois
Filed Nov. 29, 1963, Ser. No. 326,817
10 Claims. (Cl. 156—515)



1. Apparatus for making a bag from tensioned tubular thermoplastic film comprising fixed film clamping means, supporting structure movable transversely of the film, film clamping means mounted on said structure for holding film against the fixed clamping means, heated wire type means mounted on said support for movement transversely of the film path with the support, and means on said structure for effecting movement of said heated wire generally in the plane of the film path toward the held end of the film.

3,354,019
MECHANISM FOR PRODUCING AND APPLYING TEAR STRIPS

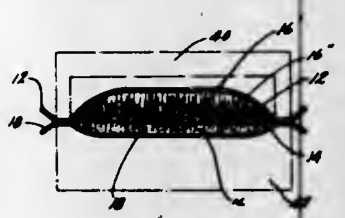
Robert William Davies, London, England, assignor to The Molins Organisation Limited, London, England, a corporation of Great Britain
Filed Nov. 10, 1964, Ser. No. 410,073
Claims priority, application Great Britain, Nov. 13, 1963, 44,733/63
7 Claims. (Cl. 156—519)



1. Mechanism for producing tear-strips and applying the tear-strips to a web of wrapping material, in which tear-strips are severed from a web of tear-strip material by cutting the latter transversely of its length, comprising means for continuously feeding the wrapper web, means for periodically advancing a web of tear-strip material, a fixed knife, a movable knife arranged to coact with said fixed knife to periodically sever two strips from the web of tear-strip material, said movable knife and said web advancing means being arranged to operate alternately, two transfer members arranged to oscillate simultaneously in timed relationship with the operation of the movable knife so as to move the strips so severed from positions adjacent the movable knife into contact with the wrapper web, so that the said strips can be joined thereto and return to move further severed strips similarly, said two transfer members being disposed at positions spaced along the length of the wrapper web by a distance not less than the length of one tear-strip.

3,354,020
DECORATIVE RETICULATED FOAM-FIBROUS PAD AND METHOD OF MAKING THE SAME

Richard S. Copeland, Grand Rapids, Mich., assignor to Sackner Products, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Feb. 17, 1964, Ser. No. 345,416
4 Claims. (Cl. 161—53)

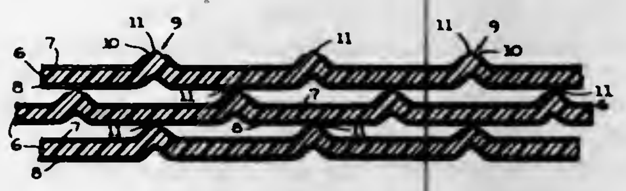


1. A decorative embossed laminate comprising: a layer of skeletal, open-cell, resilient, polymeric foam forming a matrix; polymeric, fusible, synthetic fibers having one portion embedded in said layer, and the end portions extending from the surfaces thereof and substantially normal to the plane of said layer on at least one side of said matrix; an embossable thermoplastic, decorative cover sheet over the end portions extending perpendicularly from one surface of said matrix; and said embossable sheet being fused to said matrix layer through said fibers in a selected pattern.

4. A method of forming a decorative laminate comprising the steps of: providing a resilient matrix layer of skeletal foam; distributing a great number of short polymeric, fusible, synthetic fibers on a face of said layer; needling said fibers down into said matrix with one end portion of said fibers being embedded in said matrix and the other end portion of said fibers being needled through said matrix and protruding from the opposite face, generally parallel to each other, and generally normal to the matrix; applying a reinforcing sheet to the side of said matrix opposite the side from which said fibers protrude; needling through said matrix, fibers, and sheet to drive fibers through said sheet and secure said sheet to the pad; applying an embossable, thermoplastic, decorative sheet over the protruding portions of said fibers; and embossing said laminate by dielectrically fusing said sheet through said fibers to said matrix and to said reinforcing sheet.

3,354,021
THERMAL INSULATING DEVICES

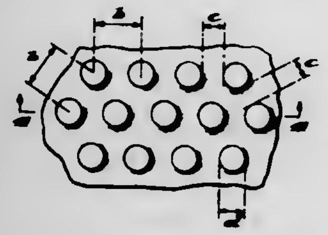
Jean Royet, Saint-Maur, France, assignor to Compagnie Generale d'Electricite, Paris, France, a corporation of France
Filed June 23, 1965, Ser. No. 466,355
Claims priority, application France, Sept. 18, 1963, 947,900
9 Claims. (Cl. 161—111)



1. A film element to be assembled in plural superimposed layers into a thermal insulating stack comprising a plastic base having two faces, a metal coating on at least one face thereof, a series of individual protrusions in said element over at least one entire face thereof, each protrusion including a disrupted area of one of said metal coatings and an apical portion of said plastic face projecting beyond said disrupted area, said apical portions of said element constituting the sole, substantially point contact with an adjacent superimposed film element when assembled into a stack.

3,354,022
WATER-REPELLANT SURFACE

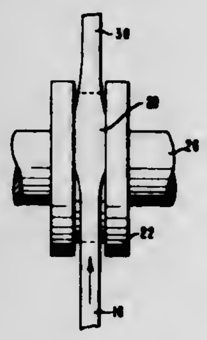
Robert Harold Dettre, Wilmington, Harold Leonard Jackson, Hockessin, and Rulon Edward Johnson, Jr., Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 31, 1964, Ser. No. 356,155
8 Claims. (Cl. 161—123)



1. A solid composition having projections extending from the surface thereof, said projections having an average distance of not greater than 1000 microns between adjacent projections and having an average height of at least .5 times the average distance, said projections spaced such that the air content of the surface of the composition is at least 60% air, said projections shaped such that a line drawn tangent to the sides thereof makes an angle between the tangent and the plane of said surface of at least 80° when measured through the projection, said surface of said projection having an intrinsic advancing water contact angle of greater than 90° and an intrinsic receding water contact angle of at least 75°, said surface having a lower tilt angle for water than the corresponding smooth surface.

3,354,023
ORIENTED POLYMERS

Gordon Beale Dunnington, Wilmington, and Reuben Thomas Fields, Brandywine Hills, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 275,480
19 Claims. (Cl. 161—165)



1. A shaped article formed of a crystalline, synthetic, thermoplastic resin, said article being at least 10 mils thick, at least one-quarter inch wide, and of uniform cross-section, in which the resin has an axial orientation in the longitudinal direction of said article and the tensile modulus along the longitudinal axis of said article is at least 1.75 times the tensile modulus of the same resin in the unoriented condition and which article has a tensile strength in the longitudinal direction of above 40,000 p.s.i. and in which shape the half maximum tilting of the polymer chains from the longitudinal direction toward the thickness direction is less than 23 degrees.

3,354,024
CELLULAR GLASS NODULES AND METHOD OF MAKING THEM

Dominic D'Eustachio, Pittsburgh, Walter D. Ford, Murraysville, and Howard E. Johnson, Trafford, Pa., assignors to Pittsburgh Corning Corporation, Port Allegany, Pa., a corporation of Pennsylvania
Filed July 23, 1963, Ser. No. 297,023
8 Claims. (Cl. 161—168)

1. As an article of manufacture, a cellular nodule comprising a core of a cellular glassy material having a plurality of small uniform cohered bubbles of glass and a thin outer skin of a glassy material having a composition other than the composition of said core of glassy material, said skin of glassy material comprising the reaction product of a glass former parting agent and a glass fluxing agent, said glass fluxing agent having a melting point lower than the melting point of said core of cellular glassy material.

5. The method of forming cellular glass nodules having an outer surface of a composition other than the composition of the inside comprising

admixing formulated glass particles and a cellulating agent,
wetting said admixture with a material containing a binder and a glass fluxing agent,
forming said wetted admixture into discrete pellets,
treating said pellets so that at least part of said glass fluxing agent migrates to the surface of said pellets,
coating the outer surface of said pellets with a glass former parting agent, and
heating said pellets to a temperature sufficient to flux at least a portion of said glass former parting agent on the surface of said pellet to form a surface coating of a glassy material having a composition other than the composition of the inside of said pellets and cellulate said pellets to form cellular glass nodules.

3,354,025
COLOR GRADATED LAMINATES

Ardashus A. Aykanian, Wilbraham, Mass., William Hing, New Hartford, N.Y., and Martin H. Wohl, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 18, 1964, Ser. No. 397,373
6 Claims. (Cl. 161—199)

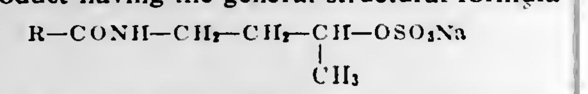
5. A laminated windshield comprising a polyvinyl butyral interlayer interposed between glass sheets, wherein the polyvinyl butyral interlayer in the upper portion of the windshield is characterized by having a pigmented strip extending longitudinally along the interlayer, wherein the pigmented strip gradually decreases from a maximum thickness at the upper edge of the pigmented strip to a minimum thickness at the lower edge of the strip; wherein the edge of the pigmented strip having the maximum thickness is substantially at the top edge of the windshield.

3,354,026
DE-INKING PRINTED WASTE CELLULOSIC STOCK

Robert H. Illingworth, Madison, N.J., assignor to Garden State Paper Co., Inc., Garfield, N.J., a corporation of Delaware
No Drawing. Filed Sept. 5, 1963, Ser. No. 306,705
5 Claims. (Cl. 162—5)

1. In a method of de-inking printed waste cellulosic stock, the improvement which comprises utilizing as the active de-inking agent between about 0.1 and 3 percent by weight of the waste cellulosic stock a product formed

by sulfating the fatty acyl derivative of 4-amino butanol-2, said product having the general structural formula



$$R{-}CONH{-}CH_2{-}CH_2{-}\underset{\displaystyle CH_3}{\underset{|}{CH}}{-}OSO_3Na$$

where R is a long chain alkyl group containing 9–19 carbon atoms.

3,354,027
DEINKING OF WASTE PAPER

Shafi Ul Hossain and Antal Anthony Pataki, Sault Ste. Marie, Ontario, Canada, assignors to Abitibi Power & Paper Company, Limited, Sault Ste. Marie, Ontario, Canada, a corporation of Canada

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,210

Claims priority, application Canada, Sept. 11, 1963, 884,272

3 Claims. (Cl. 162—5)

1. In a process for deinking waste paper the step of treating the waste paper in a solution containing a soluble alkaline deinking agent and polyvinyl pyrrolidone.

3,354,028
CLARIFYING WASTE EFFLUENTS FROM RE-INKING PROCESSES BY REVERSING THE EFFLUENT pH

Robert H. Illingworth, Madison, and Clyde A. Benson, Old Tappan, N.J., assignors to Garden State Paper Company, Inc., Garfield, N.J., a corporation of New Jersey

Filed Dec. 30, 1963, Ser. No. 334,399

5 Claims. (Cl. 162—5)

1. In a method of de-inking waste printed cellulosic material by a process which includes pulping the printed material in an aqueous admixture containing between about 0.1 and 5 percent by weight of a non-ionic, alkyl phenol-ethylene oxide condensate, the amount of the printed cellulosic material in the aqueous admixture being less than about 10 percent by weight of the solution, continuing pulping until the ink particles have separated from the cellulosic fiber, diluting the resulting admixture to a solid content of between about 0.1 and 1.5 percent, and removing the resulting pulp from the solution to leave an aqueous effluent, and having foreign matter including ink particles suspended therein, the improvement which comprises treating the effluent sequentially with alum and alkali in amounts sufficient to change the pH of the effluent first in one direction by at least 2 pH units and then in the opposite direction by at least 2 pH units to thereby substantially flocculate the suspended foreign matter, and separating the flocculated foreign matter from the aqueous effluent to obtain a clarified water phase.

3,354,029
METHOD OF ALKALINE DIGESTION OF CELLULOSIC MATERIALS

Nils Hartler and Ronnie Aurell, Stockholm, Sweden, assignors to Stiftelsen Svensk Cellulosaforskning, Stockholm, Sweden, a corporation of Sweden

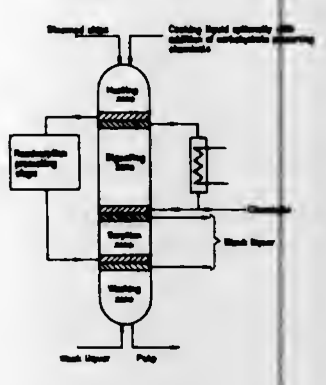
Filed Apr. 22, 1964, Ser. No. 361,759

Claims priority, application Sweden, May 2, 1963, 4,846/63; Mar. 17, 1964, 3,307/64

10 Claims. (Cl. 162—41)

1. In the preparation of cellulose pulp wherein cellulosic materials are digested with an alkaline cooking liquor at an elevated temperature in a cooking period, the improvement which comprises drawing off from 50 to 75% by volume of the cooking liquor during an early stage of the cooking period when the proportion of hemicelluloses therein is in the range 0.1 to 6% based upon the cellulosic material being digested, and admixing said withdrawn liquor with cellulose pulp and cooking liquor during the final stage of the cooking period whereby hemicelluloses in said withdrawn liquor are absorbed on the pulp without substantial degradation of said hemicelluloses.

8. In the preparation of cellulose pulp wherein cellulosic materials are digested with an alkaline cooking liquor at an elevated temperature during a cooking period, the improvement which comprises adjusting the pH of the cooking liquor to 11.5–13 by adding sulfuric acid thereto in the final stage of the cooking period so that hemicelluloses dissolves in the said liquor during the cook are absorbed on the pulp without substantial degradation of said hemicelluloses or substantial precipitation of lignins.



3,354,030
ALKALINE SULFITE DIGESTION FOLLOWED BY ACID DIGESTION WITH BISULFITE

Robert C. Williams, Donald L. Joyce, and Edwin Lee Showalter, Richmond, Va., assignors to Albemarle Paper Company, a corporation of Virginia

No Drawing. Filed Oct. 23, 1963, Ser. No. 318,171

8 Claims. (Cl. 162—86)

1. A multistage pulping process for the production of high yield pulp having a lignin content less than 20 percent by weight based upon the weight of the pulp comprising, in combination, the consecutive steps of,

(a) at least once alkali digesting, and then blowing from said alkali digesting, particles of fibrous cellulosic material, said alkali digesting being by contacting said particles of fibrous cellulosic material for a period of about 10 to about 60 minutes with an aqueous solution of a sulfite compound having an initial pH of about 8.0 to about 11.0 at a temperature of about 280° F. to about 400° F. and a pressure of about 50 to about 150 p.s.i.a., said aqueous solution of a sulfite compound being present in a volume sufficient to provide a solution to particles volume ratio of about 3 to 1 to about 6 to 1 and said sulfite compound being present in a concentration sufficient to provide at least about 5 percent by weight based upon the dry weight of said particles, and then

(b) at least once, acid digesting, and then blowing from said acid digesting, the alkali digested and blown particles of fibrous cellulosic material to recover said high yield pulp, said acid digesting being by contacting said alkali digested and blown particles of fibrous cellulosic material for a period of about 10 to about 60 minutes with an aqueous solution of a bisulfite compound having an initial pH of about 4.3 to about 6.9 at a temperature of about 280° F. to about 400° F. and a pressure of about 50 to about 150 p.s.i.a., said aqueous solution of a bisulfite compound being present in a volume sufficient to provide a solution to particles volume ratio of about 3 to 1 to about 6 to 1 and said bisulfite compound being present in a concentration sufficient to provide at least about 5 percent by weight based upon the dry weight of said particles.

3,354,031
CEMENT-ASBESTOS PRODUCTS AND IMPROVEMENT IN THE MANUFACTURE THEREOF

John J. Kozacik, Cincinnati, Ohio, assignor to Philip Carey Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed July 16, 1964, Ser. No. 383,235

17 Claims. (Cl. 162—145)

1. As a fibrous mineral reinforcement for a cement-asbestos sheet product waterlaid from a slurry of Portland cement and asbestos fibers, a mineral fiber mixture consisting of a major proportion of asbestos fibers, of which a substantial proportion is of soft chrysotile asbestos fibers, and a minor proportion of harsh mineral glass fibers, said mineral glass fibers being in the range of about 5 microns to about 25 microns in diameter, said mineral glass fibers constituting from about 2% to about 25% by weight of said mineral fiber mixture.

3,354,032
PRODUCTION OF PAPER OF CELLULOSE AND POLYAMIDE FIBERS

Erwin Sommer, Obernburg (Main), and Klaus Gerlach, Obernau, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany

No Drawing. Filed Apr. 30, 1964, Ser. No. 364,012

Claims priority, application Germany, May 2, 1963, V 24,013

8 Claims. (Cl. 162—146)

1. In a process for the production of a paper sheet from an aqueous dispersion of cellulose and polyamide fibers by water-laying said fibers as a fibrous web on a paper-making machine, the improvement which comprises: pretreating said polyamide fibers under an acid pH, prior to combination with the cellulose fibers in said aqueous dispersion, with an aqueous solution of the sodium salt of a styrene-maleic acid copolymer.

3,354,033
COMPOSITIONS CONTAINING MONOSUBSTITUTED 2-BROMOACETOPHENONES AND PROCESSES OF UTILIZING THE SAME

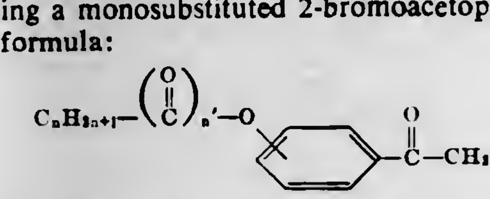
Stanley J. Buckman, John D. Pera, and Fred W. Raths, Memphis, Tenn., assignors to Buckman Laboratories, Inc., Memphis, Tenn., a corporation of Tennessee

No Drawing. Filed June 1, 1964, Ser. No. 371,836

The portion of the term of the patent subsequent to July 5, 1982, has been disclaimed

6 Claims. (Cl. 162—161)

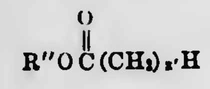
1. A stable water-dispersible composition of matter comprising a monosubstituted 2-bromoacetophenone having the formula:



wherein *n* and *n'* are integers varying from 0 to 1 and when *n* is 0, *n'* is 0, characterized in that when *n* is 1 and *n'* is 0 the point of attachment is at any one of the positions designated as ortho, meta, and para and when *n* and *n'* are each 0 and when *n* and *n'* are each 1 the point of attachment is at any one of the positions designated as meta and para, a glycol ether having the formula:

$$H(OC_3H_6)_xOC_yH_{2y+1}$$

wherein *x* and *y* are integers varying from 1 to 3 and 1 to 4, respectively, and formed by reacting propylene oxide with an aliphatic alcohol containing from 1 to 4 carbon atoms, or an ester having the formula:



$$R''O\overset{\displaystyle O}{\overset{\|}{C}}(CH_2)_{x'}H$$

wherein *x'* is an integer varying from 1 to 2 and R'' is selected from the group consisting of straight and branched chain alkyl radicals and alkoxy substituted straight and branched chain alkyl radicals containing from 1 to 6 carbon atoms, and a dispersant having the formula:

$$R'{-}O{-}(RC_2H_3{-}O)_zH$$

wherein *z* is an integer varying from 1 to 20, R is selected from the group consisting of hydrogen and methyl, and R' is selected from the group consisting of straight and branched chain alkyl substituted benzenes and straight and branched chain alkyl radicals, wherein the alkyl radical contains from 6 to 20 carbon atoms, characterized further in that the bromoacetophenone content varies from 5 to 50, that of the glycol ether or the ester varies from 0 to 95, and that of the dispersant varies from 0 to 95, all in percent by weight of the composition.

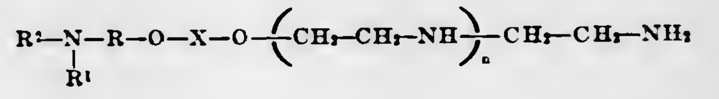
3,354,034
NOVEL CATIONIC STARCH DERIVATIVES

Wadym Jarowenko, Plainfield, N.J., assignor to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application Mar. 23, 1964, Ser. No. 354,114, now Patent No. 3,331,833, dated July 18, 1967. Divided and this application Jan. 3, 1967, Ser. No. 606,568

2 Claims. (Cl. 162—175)

1. A cellulosic paper having intimately dispersed therein a novel cationic starch derivative having the structural formula:



$$R^2{-}\underset{\displaystyle R^1}{\underset{|}{N}}{-}R{-}O{-}X{-}O{-}\left(CH_2{-}CH_2{-}NH\right)_n{-}CH_2{-}CH_2{-}NH_2$$

wherein X is starch, R is a radical selected from the group consisting of alkylene and hydroxyalkylene radicals, each of R^1 and R^2 is a radical selected from the group consisting of alkyl, aryl and aralkyl radicals, and *n* is an integer having a value of at least 0.1; said derivative containing on a dry basis from about 0.08 to 10.0% by weight of nitrogen.

3,354,035
CONTINUOUS PROCESS OF DRYING UNCOATED FIBROUS WEBS

Bruce C. Gottwald, Richmond, Va., Brenton S. Halsey, Newburgh, N.Y., Robert C. Williams, Richmond, Va., and John M. Haigh, Magnolia, Mass., assignors to Albemarle Paper Company, Richmond, Va., a corporation of Virginia

Filed Nov. 8, 1966, Ser. No. 600,334

5 Claims. (Cl. 162—206)

1. A continuous process for drying an uncoated fibrous web material containing volatile liquid comprising the combination of simultaneous steps of

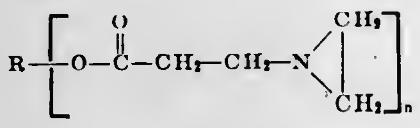
(a) contacting said uncoated fibrous web material continuously with a substantial portion of a rotating drum surface heated to a temperature of at least about 250° F., and

(b) pressing, with a continuous pliable member more porous than said uncoated fibrous web material, substantially all of the contacting material against said substantial portion of a rotating drum surface at a pressure of at least about 5 p.s.i. and at least as great as the vapor pressure of said volatile liquid at said temperature of the heated drum surface.

3,354,036
METHOD OF PRODUCING DEPRESSION

Arthur G. Jelinek, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 19, 1963, Ser. No. 324,888
4 Claims. (Cl. 167—65)

1. The method of effecting depression of the central nervous system which comprises administering to a warm-blooded animal a pharmaceutically effective amount of a compound of the formula



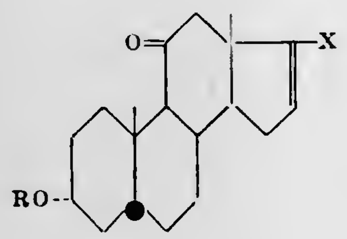
$$R\left[-O-\overset{\overset{O}{\|}}{C}-CH_2-CH_2-N\begin{matrix}CH_2\\ |\\ CH_2\end{matrix}\right]_n$$

where R is selected from the group consisting of polyvalent saturated aliphatic hydrocarbon of less than seven carbon atoms, polyvalent saturated aliphatic hydrocarbon of less than seven carbon atoms the chain of which is interrupted by oxygen, and polyvalent saturated aliphatic hydrocarbon of less than seven carbon atoms the chain of which is interrupted by sulfur, and *n* is 2 through 4.

3,354,037
17-HALO-Δ^{16}-5β-ANDROSTENE-3α-OL-11-ONE AND 3-ACYL ESTERS THEREOF

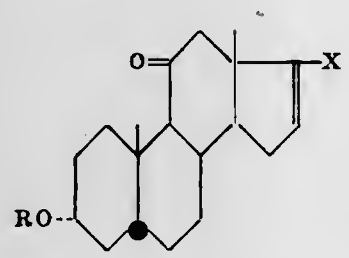
Daniel Bertin, Hauts-de-Seine, Montrouge, and Jacques Perronnet, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France
No Drawing. Filed Mar. 8, 1966, Ser. No. 532,563
Claims priority, application France, Mar. 16, 1965, 9,431; June 16, 1965, 21,025
16 Claims. (Cl. 167—65)

13. A tranquilizing composition comprised of at least one 17-halo-Δ^{16}-5β-androstene of the formula



wherein X is a halogen selected from the group consisting of chlorine, bromine and iodine and R is selected from the group consisting of hydrogen and an acyl radical of an organic carboxylic acid having 1 to 10 carbon atoms, and a major amount of a pharmaceutical carrier.

15. A method of tranquilizing mammals which comprises administering to mammals an effective amount of at least one 17-halo-Δ^{16}-5β-androstene of the formula



wherein X is a halogen selected from the group consisting of chlorine, bromine and iodine and R is selected from the group consisting of hydrogen and an acyl radical of an organic carboxylic acid having 1 to 10 carbon atoms.

3,354,038
SERIAL PASSAGING TISSUE CULTURED CANINE DISTEMPER VIRUS TO FORM ATTENUATED VACCINE SHORT OF VIRUS-ANTIGENICITY DECREASING PASSAGES

Edmund P. Bass, White Hall, Ill., assignor to Affiliated Laboratories Corporation, White Hall, Ill., a corporation of Illinois
No Drawing. Filed Dec. 2, 1964, Ser. No. 415,487
4 Claims. (Cl. 167—78)

1. The process of producing a vaccine for immunizing canines against canine distemper which comprises introducing an inoculum of canine distemper virus capable of producing a cytopathogenic effect into a nontoxic fluid tissue control medium containing viable cells of tissue selected from the group consisting of canine tissue and ferret tissue, incubating said tissue culture medium until multiplication of the virus has begun as characterized by the occurrence of cytopathogenic effect, and thereafter separating an inoculum of said virus and serially passing the virus through other cultures for at least about 10 but not more than about 34 passages.

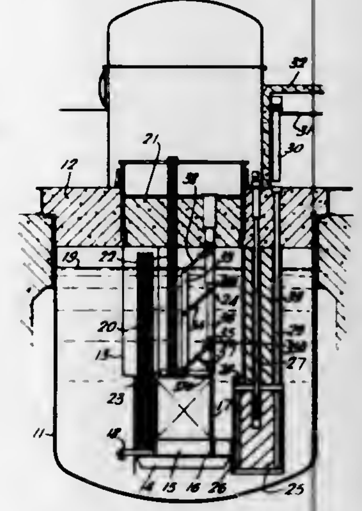
3,354,039
UREA CROSS-LINKED POLYPEPTIDES DERIVED FROM GELATIN FOR THE TREATMENT OF HUMAN HAIR

Heinz Lukesch, Hamburg-Sasel, and Günther Bechmann, Hamburg-Altona, Germany, assignors to Hans Schwarzkopf, Hamburg-Altona, Germany
No Drawing. Filed Jan. 7, 1964, Ser. No. 336,114
Claims priority, application Germany, Jan. 8, 1963, Sch 32,569
6 Claims. (Cl. 167—87.1)

1. A mixture adapted to be sprayed from a pressure container provided with a spray nozzle, said mixture comprising a hair treating agent consisting essentially of a carrier substance compatible with human hair and having between about 0.3% and 3% of urea cross-linked polypeptides derived from gelatin and having an average molecular weight of between about 20,000 and 60,000 distributed therethrough, and a liquefied gas having at atmospheric pressure a boiling point below ambient temperature.

3,354,040
NUCLEAR REACTOR INSTRUMENTATION AND SERVICING ARRANGEMENT

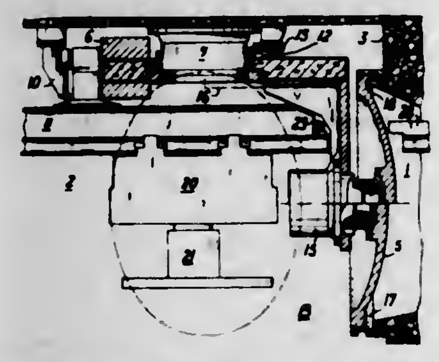
Alexander Gilchrist Frame, Wilmslow, and Horace Frank Parker, Culcheth, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Aug. 25, 1965, Ser. No. 482,388
Claims priority, application Great Britain, Aug. 28, 1964, 35,459/64
3 Claims. (Cl. 176—19)



1. A fast nuclear reactor comprising a vessel, a core having fuelled coolant flow channels with their outlets at one end of the core, structure for supporting the core within the vessel, a carrier structure spaced from the aforementioned end and rotatable as a single mass about an axis substantially coincident with that of the core, instrumentation columns bearing instrumentation comprising at least temperature measuring means, said columns being mounted in a parallel arrangement on the carrier structure to project therefrom towards the aforementioned end of the core for registering the instrumentation unattachedly with respective coolant channel outlets in an operating position of the carrier structure, and a fuel handling means for gaining access to fuel in the coolant flow channels through a clear path defined by and extending radially between the instrumentation columns, whereby said clear path in conjunction with the rotational capability of said carrier structure allows access by the fuel handling means to any position in the core.

3,354,041
NUCLEAR REACTOR REFUELLING DEVICE

Michel Aubert, Fontenay-aux-Roses, Daniel Brouard, Clamart, and Pierre Rouge, Orsay, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Nov. 1, 1965, Ser. No. 505,886
Claims priority, application France, Nov. 18, 1964, 995,388
3 Claims. (Cl. 176—30)

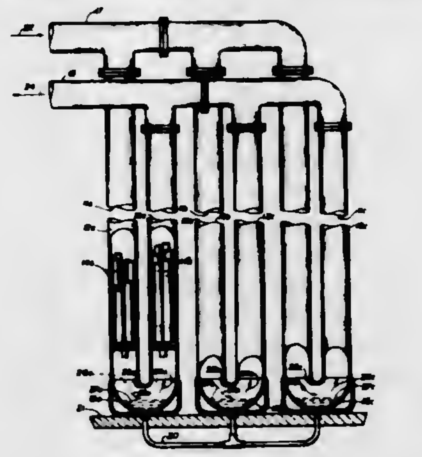


1. Refuelling device for gas-cooled nuclear reactors of the type comprising a moderator structure through which are formed channels designed to receive fuel elements, and a "garret" provided within the reactor containment shielding and separated from the vault which contains the reactor core by a wall pierced by pluggable openings which provide access to said fuel channels, wherein said device comprises a storage system disposed within said garret, a handling system whereby fuel element magazines can be taken from and deposited in the storage system and fresh fuel elements can be exchanged for spent elements contained in a fuel channel, and a system for inserting fuel element magazines into the garret and transferring them to the storage system, and for withdrawing said magazines from said storage system and conveying them outside of the garret, said fuel-element insertion system being disposed within a tunnel provided with a lock-chamber which is located within the thickness of said reactor containment shielding, the orifice which puts said lock-chamber into communication with said garret being closeable by means of a door pivotally mounted on said reactor containment shielding and means associated with said door to move it within said garret.

3,354,042
STEAM SUPERHEATING NUCLEAR REACTOR HAVING STEAM FLOW EQUALIZER

Thomas B. Murdock, San Jose, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 24, 1967, Ser. No. 626,369
5 Claims. (Cl. 176—59)

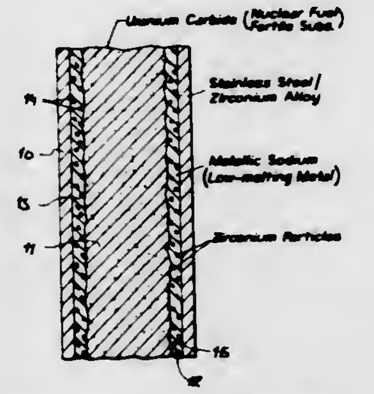
1. In a steam superheating nuclear reactor core having at least two fuel element assemblies having a common inlet and a common outlet, each of said fuel element assemblies including therein a partitioned chamber disposed at a common level wherein condensate from said fuel element assembly may collect and at least partially block steam passage therethrough, the improvement comprising



manifold means intercommunicating said partitioned chambers of said fuel element assemblies for equalizing the level of condensate trapped therein, thereby providing for equalized volumetric steam flow through said fuel element assemblies.

3,354,043
FUEL ELEMENT FOR NUCLEAR REACTORS

Alfred Boettcher, Aachen, Germany, assignor to Kernforschungsanlage des Landes Nordrhein-Westfalen-e.V., Julich, Germany, a corporation of Germany
Filed Jan. 3, 1966, Ser. No. 518,072
Claims priority, application Germany, Jan. 13, 1965, K 55,003
3 Claims. (Cl. 176—72)


Uranium Carbide (Nuclear Fuel Fertile Subs.)
Stainless Steel / Zirconium Alloy
Metallic Sodium (Low-melting Metal)
Zirconium Particles
14
10
13
11
16
12

1. A fuel element for a nuclear reactor comprising:
a carburizable-metal shell composed of steel, zirconium or a zirconium alloy;
a mass of a carbon-containing fissionable material of a fissionable-element carbide within said shell;
a metallic filler of a low-melting metal selected from the group consisting of sodium, potassium, mercury, bismuth, lead and amalgams and alloys thereof disposed between said mass of fissionable material and said shell; and
at least one metallic body of zirconium-containing metal imbedded in said filler for limiting carburization of said shell.

3,354,044
NUCLEAR REACTOR FUEL

John Archibald Law Robertson, Deep River, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada
No Drawing. Filed Dec. 17, 1964, Ser. No. 419,226
Claims priority, application Canada, Oct. 10, 1962, 859,858
8 Claims. (Cl. 176—68)

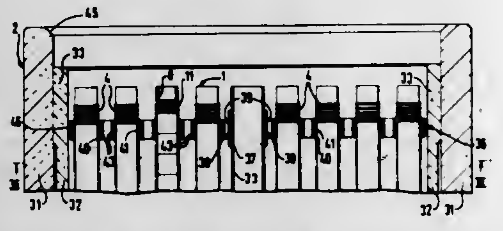
1. A method of improving the properties of a nuclear reactor fuel element, the fuel therefor comprising initially a shaped ceramic mass of a hyperstoichiometric dioxide

of a metal selected from the group consisting of uranium, plutonium, thorium and mixtures thereof, and a deoxygenating getter metal selected from the group consisting of thorium, uranium, plutonium, tantalum, molybdenum, tungsten and mixtures thereof, which comprises heat treating the shaped hyperstoichiometric dioxide mass and getter metal at a temperature of above about 1500° C. under at least substantially oxygen-free deoxygenating conditions, until at least part of said dioxide mass becomes hypostoichiometric the oxygen to metal ratio of said dioxide mass being reduced to below 2.0 but above 1.90, the assembled fuel element including said so treated dioxide mass and getter metal.

6. A nuclear reactor fuel element in which the fuel therein comprises a shaped ceramic mass of a hypostoichiometric dioxide of a metal selected from the group consisting of uranium, plutonium, thorium and mixtures thereof, the fuel element including a getter metal selected from the group consisting of thorium, uranium, plutonium, tantalum, molybdenum, tungsten and mixtures thereof associated with said shaped ceramic mass.

3,354,045
NUCLEAR REACTOR FUEL ELEMENTS

Derek Macfall, Winsford, Colin Edgar Butterfield, Westhoughton, and Roy Stuart Butterfield, Culcheth, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Nov. 26, 1965, Ser. No. 509,982
Claims priority, application Great Britain, Dec. 10, 1964, 50,344/64
10 Claims. (Cl. 176—78)



1. A plurality of stacked nuclear reactor fuel elements, each of the kind having a cluster of parallel fuel rods disposed within a sleeve of structural material, comprising support means for supporting the cluster of parallel fuel rods at their lower ends and also for independently supporting said sleeve at its lower end, a tubular central longitudinal member mounted on said support means, and a lateral spacing member mounted on said central longitudinal member and disposed in the region of the upper ends of said fuel rods for laterally spacing said fuel rods, said fuel rods being slidable relative to said lateral spacing member and said lateral spacing member being slidable relative to said sleeve, and including a lifting member secured to the support means of the lowermost fuel element and disposed to extend through the tubular central longitudinal members of the stacked fuel elements, thereby forming a demountable assembly of fuel elements for charging into and discharging from a fuel element channel of a nuclear reactor by manipulation of said lifting member.

2. A nuclear reactor fuel element having a cluster of parallel fuel rods disposed within a sleeve of structural material, support means for supporting said fuel rods at their lower ends and comprising an annular member having an annular flange and an upper peripheral portion, said annular flange supporting said sleeve and said upper peripheral portion having secured thereto a support grid for supporting said fuel rods, a central longitudinal member mounted on said support means, and a lateral spacing member mounted on said central longitudinal member, disposed in the region of the upper ends of said fuel rods and slidable relative to said sleeve, the said fuel rods being slidable within said lateral spacing member.

3,354,046
METHOD OF TREATING STARCH SLURRIES TO IMPROVE THEIR FILTERABILITY

Robert V. MacAllister and Edward K. Crosby, Clinton, and Robert E. Lanphere, Camanche, Iowa, assignors to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 30, 1964, Ser. No. 422,435

8 Claims. (Cl. 195—7)

1. A method of producing starch which comprises treating an aqueous slurry of starch granules containing some swollen or damaged starch granules with a starch hydrolyzing enzyme in an amount and under conditions effective to water solubilize substantially all of said swollen or damaged granules without effecting an appreciable decrease in the viscosity of the slurry and thereby improving the filterability of the slurry, filtering the slurry to obtain starch granules and then drying the filtered starch granules.

3,354,047
PROCESS FOR THE RECOVERY OF HYDROCARBON FERMENTATION PRODUCTS

Donald O. Hitzman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed July 26, 1963, Ser. No. 297,940

6 Claims. (Cl. 195—2[illegible])

1. The process of producing hydrocarbon fermentation products selected from the group consisting of acids, alcohols, ketones, esters and aldehydes which comprises the steps of:

mixing hydrocarbon utilizing microorganisms selected from the group consisting of yeasts, molds, algae and bacteria with an aqueous mineral salt solution suitable for the culture of the selected microorganisms and about 10 grams per liter of a paraffinic hydrocarbon in the range of methane to hexadecane, inclusive;

fermenting the mixture at a temperature of 20 to 50° C. for a time sufficient to produce said fermentation products in a recoverable yield;

the mixture then comprising as separable components fermentation products, unreacted hydrocarbon, and aqueous salt solution;

concentrating said fermentation products by freezing the one of said components which has the highest freezing point by only lowering the temperature until that component has crystallized;

filtering out said resulting crystals; and

reusing the aqueous salt solution containing some of the live microorganisms for further fermentation.

3,354,048
SYNTHESIS OF STEROIDS

Edward J. Becker, Princeton, Robert B. Robison, North Brunswick, and Patrick A. Diassi, Westfield, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Dec. 2, 1964, Ser. No. 415,502. Divided and this application Oct. 28, 1966, Ser. No. 604,499

1 Claim. (Cl. 195—51)

The process for preparing $11\alpha,15\alpha$ - dihydroxy-A-norprogesterone and $12\beta,15\alpha$ - dihydroxy-A-norprogesterone which comprises subjecting A-norprogesterone to the action of the microorganism *Colletotrichum linicolae* under oxidizing conditions and recovering the dihydroxy-A-norprogesterones formed.

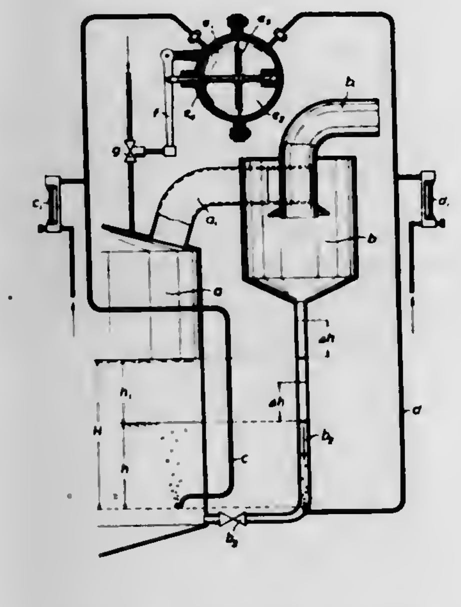
3,354,049
DRY STARTER COMPOSITION

Verle W. Christensen, Madison, Wis., assignor to Marschall Dairy Laboratory, Inc., Madison, Wis., a corporation of Wisconsin
No Drawing. Filed July 30, 1965, Ser. No. 476,141
11 Claims. (Cl. 195—100)

1. A composition of matter comprising a substantially dry mixture of nonfat milk powder having a particle size distribution such that not more than 30% thereof passes a 100 mesh sieve and not more than 10% thereof is retained by a 50 mesh sieve U.S. sieve series, and an ammonium orthophosphate together with an alkali metal orthophosphate, the total amount of said phosphates being from about 10 to about 22.5% by weight of the composition, and the amount of ammnium orthophosphate being greater than the amunt of the alkali metal orthophosphate.

3,354,050
ARRANGEMENT FOR DESTROYING FOAM IN FERMENTORS

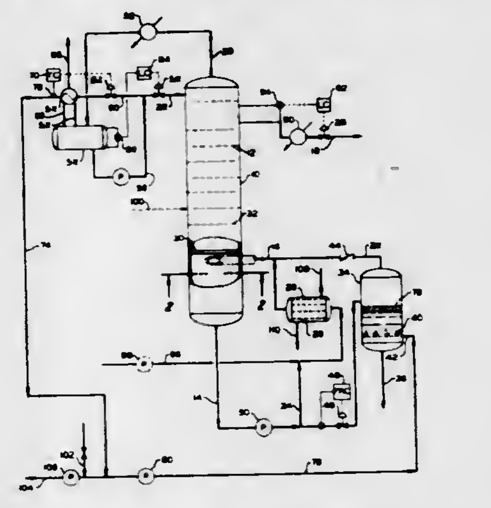
Karl Rungaldier and Ernst Braun, Vienna, Austria, assignors to Patentauswertung Vogelbusch Gesellschaft m.b.H., Vienna, Austria, a company of Austria
Original application June 14, 1961, Ser. No. 117,028, now Patent No. 3,249,515, dated May 3, 1966. Divided and this application Feb. 3, 1966, Ser. No. 524,761
Claims priority, application Austria, June 20, 1960, A 4,690/60; Apr. 10, 1961, A 2,847/61
10 Claims. (Cl. 195—134)



1. An apparatus for controlling foaming of an aerated body of a fermenting liquor comprising, in combination:
(a) a container for receiving said body;
(b) a discharge conduit communicating with a top portion of said container for discharging a mixture of waste gas and foam from said container;
(c) separator means in said conduit for continuously separating the gaseous constituents from the other constituents of the withdrawn mixture;
(d) a return conduit communicating with said separator means and a bottom portion of said container for returning said other constituents to said container in a continuously flowing stream;
(e) signal generating means for producing a signal responsive to the rate of flow of said stream;
(f) control means operatively connected to said signal generating means and said container for controlling admission of a foam controlling agent to said body in said container responsive to said signal; and
(g) means for admitting said foam controlling agent to said container.

3,354,051
APPARATUS FOR PREVENTING FOAMING IN A FRACTIONATOR

John Mitacek, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 418,190
3 Claims. (Cl. 202—153)



1. Apparatus comprising in combination:
(1) an upright cylindrical fractionating column having trays in an upper section and a kettle section, an overhead outlet, a side stream outlet, and a bottoms outlet;
(2) common inlet means for reboil liquid and fresh feed to the column of (1) comprising a conduit entering the vertical wall of said column substantially horizontally and tangentially thereof substantially above the normal liquid level in said kettle section and below the lowermost tray in said upper section;
(3) a horizontal annular plate below said lowermost tray and adjacent the upside of the inlet means of (2), providing a substantial central opening at the inner periphery of said plate for flow of vapors directly along the bottom of said plate and thence upwardly into said upper section;
(4) a reboiler outside of said column;
(5) an effluent line for kettle product leading from the bottoms outlet of (1);
(6) conduit means connecting an intermediate section of the effluent line of (5) with the reboiler of (4) and said reboiler with the inlet means of (2); and
(7) a fresh feed line connecting with conduit means (6) upstream of the reboiler for introducing fresh feed to said column in admixture with reboil liquid.

3,354,052
APPARATUS FOR DISTILLING AND CONTROLLING PROPORTION OF COMPONENTS OF A MIXTURE

Edward L. Williams, Tulsa, Okla., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed May 18, 1964, Ser. No. 368,250
6 Claims. (Cl. 202—160)

1. In a processing apparatus for producing a first constituent and at least one other constituent and wherein the concentration of said first constituent in said mixture is dependent upon a controllable process condition, the improvement comprising means for controlling said process to produce a product containing a specific concentration of said first constituent which comprises

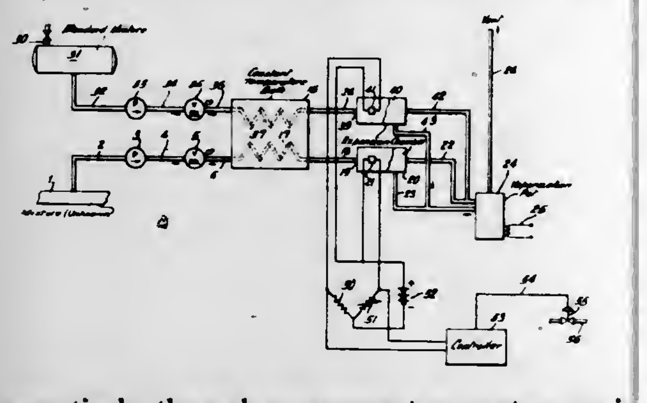
means for substantially continuously withdrawing at least a sample portion of said fluid mixture

means for providing a source of reference fluid mixture consisting of said fluid mixture containing said specific concentration of said first constituent

first adiabatic expansion means for receiving said withdrawn sample portion of said fluid mixture and for adiabatically expanding said sample portion of said fluid mixture from an initial temperature T_1 and an initial pressure P_1 into a first zone at a lower pressure P_2,

second adiabatic expansion means for receiving said reference fluid mixture and for adiabatically expanding at least a portion of said reference fluid mixture from said initial temperature T_1 and said initial pressure P_1 into a second zone at said lower pressure P_2,

means comprising a constant temperature bath having corresponding first and second constant temperature coils for simultaneously passing said sample portion of said fluid mixture and said reference fluid mixture,



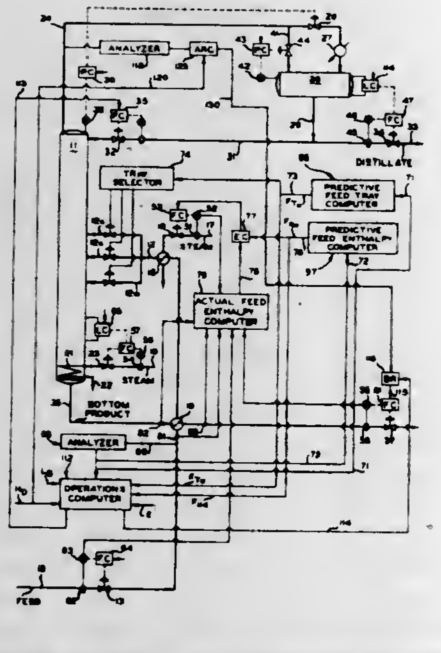
respectively, through a common temperature environment so that said sample and reference fluid mixtures will be at substantially the same initial temperature when supplied to said first and second adiabatic expansion means, respectively,

means for generating a signal which is a measure of the difference in temperature of the expanded fluid mixture in said first zone T_2 and the expanded reference fluid mixture in said second zone T'_2 and

means for employing said signal to change said process condition such that said difference in temperatures T_2 and T'_2 is brought to zero and said product is produced containing said specific concentration of said first constituent.

3,354,053
CONTROLLING HEAT SUPPLY AND PRODUCT PURITIES IN THE OPERATION OF A DISTILLATION COLUMN

Merion L. Johnson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Continuation of application Ser. No. 246,998, Dec. 26, 1962. This application Dec. 27, 1966, Ser. No. 613,699
2 Claims. (Cl. 203—1)


ANALYZER
ARC
DISTILLATE
TRAY SELECTOR
PREDICTIVE FEED TRAY COMPUTER
PREDICTIVE FEED ENTHALPY COMPUTER
STEAM
ACTUAL FEED ENTHALPY COMPUTER
STEAM
BOTTOM PRODUCT
ANALYZER
OPERATIONS COMPUTER
FEED

1. In a process wherein a multicomponent feed stream is heated in a preheater and the resulting heated feed stream is itnroduced into one of several trays in a fractional distillation column and separated therein into a vapor stream and a liquid product stream having a specified purity, said vapor stream is condensed, some of the condensed vapor stream is yielded as a distillate product stream having a specified purity, and heat is supplied to the reboiler of said column, a control method for supplying sufficient heat to said column to produce said products having specified purities while minimizing the cost of supplying heat to said preheater and reboiler, said method comprising the steps of measuring process variables indicative of the feed flow rate of said column; producing signals responsive to said measurements representative of the feed flow rate to said column; analyzing said feed stream to determine the concentration of components in said feed stream; producing signals representative of the concentration of at least one of said specified components; combining said signals in an operations computer based on the following expression:

$$X=f(F, F_c, E, F_T, F_e, H_D, L_B)$$

where:

X=predicted value for one of column reflux flow rate and heat input rate
F=flow rate of said feed stream
F_c=generic symbol for the amounts of said feed components expressed as fractions of said feed stream
E=tray efficiency of said column
F_T=feed tray of said column, numbering trays from the top of said column
F_e=enthalpy of said feed stream
H_D=specified liquid fraction of heavy key component in said distillate product stream
L_B=specified liquid fraction of light key component in said bottom product stream

producing a signal representative of X; producing in a predictive feed enthalpy computer a signal representative of the optimum feed enthalpy based upon the following expressions:

$$C_{TS}=C_{PS}+C_{RS}$$

wherein C_{TS} is the total cost of the heat supplied to the column by the reboiler represented by C_{RS} and the feed preheater, represented by C_{PS}, and

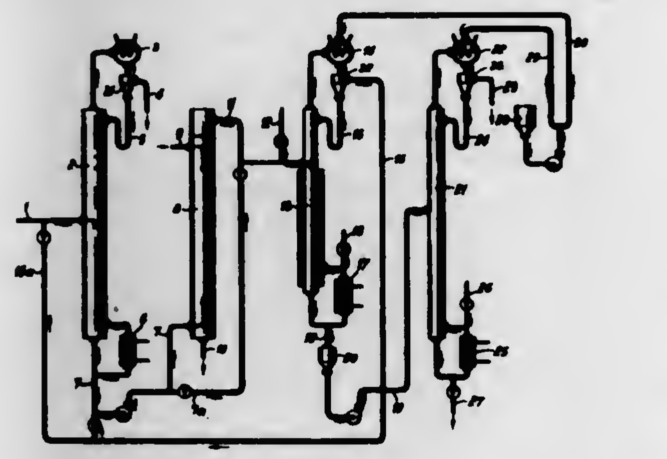
$$\frac{\partial C_{TS}}{\partial F_e}=0$$

which is the partial derivative of $C_{TS}=C_{PS}+C_{RS}$ with respect to feed enthalpy, F_e, comparing in a predictive feed enthalpy controller the signal representative of the predicted optimum feed enthalpy with the signal representative of the actual feed enthalpy which is determined by an actual feed enthalpy computer; adjusting the flow rate of heat supplied to said feed preheater with the signal produced by said comparison of said actual feed enthalpy with said predicted optimum feed enthalpy thereby producing terminal product streams having specified purities at a minimum total cost of heat supplied to said column.

3,354,054
PROCESS FOR ISOLATING AND PURIFYING 1-CYANOBUTADIENE-(1,3) BY PLURAL STAGE DISTILLATION IN THE PRESENCE OF NITROGEN OXIDE

Kurt Sennewald, Knapsack, near Cologne, and Peter Wirtz, Cologne-Lindenthal, Germany, assignors to Knapsack Aktiengesellschaft, a corporation of Germany
Filed June 1, 1964, Ser. No. 371,359
Claims priority, application Germany, May 30, 1963, K 49,862
8 Claims. (Cl. 203—8)

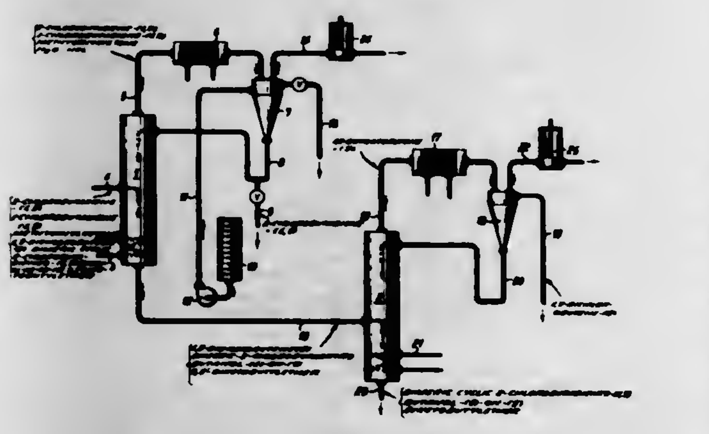
1. A continuous process for isolating and purifying 1-cyanobutadiene-(1,3) from a crude liquid mixture containing said 1-cyanobutadiene-(1,3) which comprises admixing the crude liquid with a phenol and a non-volatile acid serving as a stabilizer; introducing the resulting stabilized mixture into the upper portion of a first distilling stage; removing low-boiling constituents of said stabilized mixture at the top portion of the said first distilling stage at a temperature within the range of about 38° C. to 58° C. and under a pressure within the range of about 100 to 400 mm. mercury; introducing gaseous nitrogen monoxide into the lower portion of said first distilling stage above a sump zone therein; passing the cyanobutadiene-containing product collected in said sump zone of said first distilling stage approximately into the center portion of a second



distilling stage operated under reduced pressure; withdrawing monomeric cyanobutadiene at the top portion of said second distilling stage; introducing gaseous nitrogen monoxide into the lower portion of said second distilling stage above a sump zone therein; retaining dimeric and polymeric cyanobutadiene and high-boiling contaminants in said sump zone of said second distilling stage, the said sump zone in the said second distilling stage being maintained at a maximum temperature of 75° C.; and expelling the dimeric and polymeric cyanobutadiene and the high-boiling contaminants from the sump zone in the said second distilling stage.

3,354,055
PURIFICATION OF 1,3-DICHLORO-BUTENE-(2) BY PLURAL STAGE VACUUM DISTILLATION

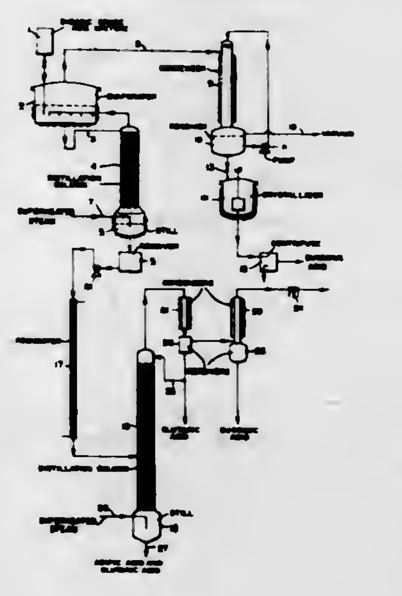
Kurt Sennewald and Wilhelm Vogt, Knapsack, near Cologne, Hans Weiden, Rodenkirchen, near Cologne, Karl Kaiser, Bruhl, near Cologne, and Peter Komischke, Efferen, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, a corporation of Germany
Filed May 6, 1964, Ser. No. 365,393
Claims priority, application Germany, May 15, 1963, K 49,744
6 Claims. (Cl. 203—8)



1. A continuous process for isolating and purifying 1,3-dichlorobutene-(2) which comprises introducing the high boiling fraction from a 2-chlorobutadiene-(1,3) purification process consisting essentially of 1,3-dichlorobutene-(2), dimeric cyclic 2-chlorobutadienes-(1,3), butanol-(1)-on-(3), 3,3'-diketobutylether, 1-chlorobutadiene-(1,3), methylvinylketone, residual 2-chlorobutadiene-(1,3) and water into a first heated distilling stage operated under a pressure within the range of about 200 to 300 mm. mercury; removing at the top portion of said first distilling stage at a temperature of about 40–50° C. a mixture consisting of residual 2-chlorobutadiene-(1,3), 1-chlorobutadiene-(1,3), methylvinylketone, water, hydrogen chloride and a small proportion of 1,3-dichlorobutene-(2); introducing the product obtained in the lower portion of said first distilling stage into a second heated distilling stage operated under a pressure within the range of about 60 to 80 mm. mercury; removing at the top portion of said second distilling stage at a temperature of about 61–65° C. 1,3-dichlorobutene-(2) slightly contaminated with 1-chlorobutadiene-(1,3), 2-chlorobutadiene-(1,3) and methylvinylketone; and allowing dimeric cyclic 2-chlorobutadienes-(1,3), butanol-(1)-on-(3), 3,3'-diketobnutylether and small proportions of 1,3-dichlorobutene-(2) to collect in the lower portion of said second distilling stage.

3,354,056
STEAM DISTILLING AND CRYSTALLIZATION TO SEPARATE SUCCINIC ACID, GLUTARIC ACID AND ADIPIC ACID FROM MIXTURE THEREOF

Anton Wegerich, Limburgerhof, Pfalz, Ernst Fuerst, Neustadt, Weinstrasse, and Erich Haarer and Hubert Corr, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed June 23, 1964, Ser. No. 377,234
Claims priority, application Germany, June 26, 1963, B 72,428
4 Claims. (Cl. 203—48)



1. A process for the separation of succinic acid, glutaric acid and adipic acid from mixtures containing such dicarboxylic acids which comprises introducing a mixture containing said dicarboxylic acids at a pressure of 40 to 200 mm. Hg into an evaporating zone including a steam distillation zone, the inner wall of which is heated to at least 180° C. and wherein said zone's bottom temperature is kept at 195° to 220° C., evaporating essentially the succinic acid portion of said mixture by means of steam stripping distillation, cooling the effluent vapors to room temperature in an aqueous medium, separating the succinic acid by crystallization of the succinic acid in the resultant aqueous layer, withdrawing a portion of the bottoms from the evaporating zone and separating it

by steam stripping distillation under subatmospheric pressure of 30 to 100 mm. Hg at the top of the evaporating zone and bottoms temperature of 180° C. to 200° C. into an overhead fraction consisting substantially of glutaric acid and a bottoms fraction consisting substantially of adipic acid.

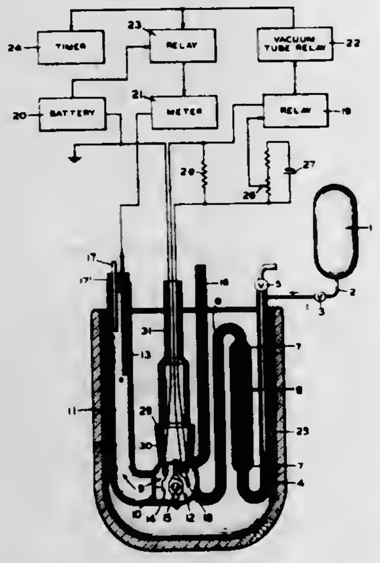
3,354,057

METHOD AND APPARATUS FOR DETERMINATION OF WATER IN LIQUID AMMONIA

William C. Klingelhoefer, Hopewell, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Sept. 27, 1963, Ser. No. 312,048

11 Claims. (Cl. 204—1)



1. A method for the determination of water, having up to approximately 100 p.p.m., in liquid ammonia which comprises dissolving an alkali metal halide salt in a liquid ammonia sample to be tested, subjecting the halide containing ammonia sample to electrolysis in a cell having an anode and cathode chamber separated by a semiporous membrane to provide an anolyte and catholyte, determining the end point of the reaction of the water with the discharged alkali metal atoms, and maintaining the halide containing ammonia sample in the liquid state during the determination of the end point.

3,354,058

ELECTROLYTIC RECORDING PAPER CONTAINING A POLYHYDROXY BENZENE MARKING COMPOUND AND AN ORGANIC DICARBOXYLIC ACID

Robert S. Ives, Lexington, Mass., assignor to Milton Alden, Needham, Mass.

No Drawing. Filed Oct. 7, 1963, Ser. No. 314,534

14 Claims. (Cl. 204—2)

1. An electrolytic recording material for recording with a lake-forming metal electrode, comprising a support impregnated with a water solution containing a strong electrolyte, a lake-forming polyhydroxy benzene, and an organic dicarboxylic acid selected from the group consisting of phthalic acid, hydrogenated phthalic acid, "nadic" acid and anhydrides thereof.

3,354,059

ELECTRODEPOSITION OF NICKEL-IRON MAGNETIC ALLOY FILMS

Herman Koretzky, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed Apr. 9, 1965, Ser. No. 447,076

12 Claims. (Cl. 204—12)

1. An aqueous acidic bath for the electrodeposition of a crack free nickel-iron alloy containing nickel ions, iron ions and an antioxidant selected from the group consisting of ascorbic acid and isoascorbic acid in an amount sufficient to produce a crack-free electrodeposit.

4. An aqueous acidic bath for the electrodeposition of a crack free nickel-iron alloy film comprising:

48.00–113.00 gm./l. of solution of Ni^{++};
1.44–2.82 gm./l. of solution of Fe^{++};
0–0.50 gm./l. of solution of Cu^{++};
0–3.00 gm./l. of solution of Co^{++};
0–0.50 gm./l. of solution of $NaH_2PO_2 \cdot H_2O$; and
1.00–5.00 gm/l. of solution of an antioxidant selected from the group consisting of ascorbic acid and isoascorbic acid.

10. The process of preparing a continuous self-supporting nickel-iron alloy film comprising the steps of:

(A) providing a clean, conducting strippable substrate surface;
(B) subjecting said substrate surface to electrolytic action as the cathode in an aqueous acidic electrolyte comprising:
  48.00–113.00 gm./l. of solution of Ni^{++};
  1.44–2.82 gm./l. of solution of Fe^{++};
  0–0.50 gm./l. of solution of Cu^{++};
  0–3.00 gm./l. of solution of Co^{++};
  0–0.50 gm./l. of solution of $NaH_2PO_2 \cdot H_2O$; and
  1.00–5.00 gm/l. of solution of an antioxidant selected from the group consisting of ascorbic acid and isoascorbic acid to electrodeposit a continuous self-supporting nickel-iron alloy film;
(C) rinsing and drying said plated alloy film; and
(D) stripping said continuous and self-supporting alloy film from said substrate.

3,354,060

PROCESS FOR THE FORMATION OF A FUEL CELL ELECTRODE CONTAINING AN INTIMATE MIXTURE OF PLATINUM AND A SECOND METAL

Ralph W. Carl, Munster, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed July 31, 1963, Ser. No. 299,113

9 Claims. (Cl. 204—35)

1. A process for preparing a platinum electrode exhibiting a low activation polarization, said electrode comprising a predominantly platinum layer containing an intimate mixture of platinum and copper on a porous electrode support, which process comprises forming said intimate mixture by the electrolytic codeposition of said platinum and said copper on said support, and removing a portion of said copper from said platinum layer to increase the internal surface area of said platinum layer and expose additional amounts of said intimate mixture.

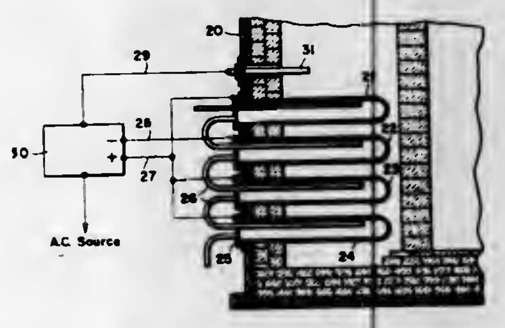
3,354,061

METHOD AND APPARATUS FOR ANODIC PROTECTION

Zisis Andrew Foroulis, Somerville, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed June 3, 1963, Ser. No. 285,034

10 Claims. (Cl. 204—147)



4. A method for inhibiting the corrosion of metallic surfaces in contact with a hot corrosive liquid which comprises passing an electric current between said metallic surface and a normally corrosive cathode electrically insulated from said metallic surface and in contact with said corrosive liquid, sizing said cathode to have a surface area substantially equal to the product of the surface area of said metallic surface connected as anode times the ratio of the current density required for the anodic protection of said metallic surfaces connected as anode to the current density required for the cathodic protection of the cathodes, said electric current being of a magnitude sufficient to passivate the metallic surface connected as an anode, thereafter supplying sufficient electric current between said cathode and anode to maintain the average potential of said metallic surface within the passive potential range as measured by a platinum reference electrode immersed in said corrosive liquid.

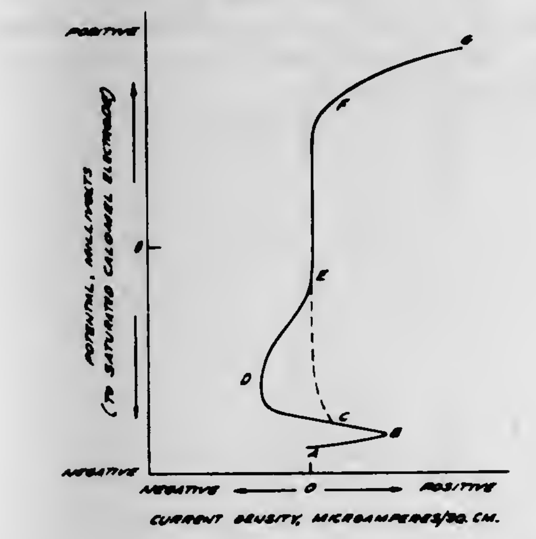
3,354,062

PREVENTION OF CORROSION IN ALKALI METAL HALIDE SOLUTIONS BY AMMONIA ADDITION

Louis M. Dvoracek, Brea, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Sept. 21, 1964, Ser. No. 397,710

11 Claims. (Cl. 204—147)



1. The method of preventing corrosion of ferrous metals in contact with a corrosive aqueous alkali metal halide solution which comprises: adding ammonia to said aqueous solution to provide therein an ammonia concentration between about 2 and about 20 weight percent ammonia and to produce a stable passive electrostatic potential between said metal and said solution.

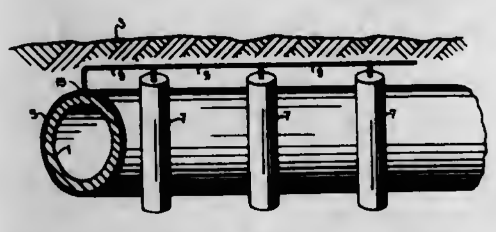
3,354,063

METHOD AND SYSTEM FOR PROTECTING CORROSIBLE METALLIC STRUCTURES

George T. Shutt, Warson Woods, Mo.
(2510 S. Brentwood, St. Louis, Mo. 63144)

Filed May 9, 1966, Ser. No. 548,675

38 Claims. (Cl. 204—148)



27. A method for protecting corrosible metallic structures comprising the steps of applying on the surface of the metallic structure an electrically conductive coating comp.ising a nonconductive binder and particles of a conductive metal which is more anodic than the metal of said structure, and placing the coated metallic structure in an electrolyte in the presence of an ionizable compound in addition to any compound which may be present in the electrolyte and which ionizable compound controls the passivating characteristics of the coating in the electrolyte.

3,354,064

METHOD FOR CHANGING THE PHYSICAL CHARACTERISTICS OF AN ARTICLE BY ELECTRON BOMBARDMENT

Eugene C. Letter, Penfield, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

No Drawing. Filed Mar. 30, 1964, Ser. No. 355,957

13 Claims. (Cl. 204—157.1)

1. A method for changing the physical characteristics of an article comprising the step of providing an article having fluoride and reducible lead ions therein and the step of reducing the lead ions by subjecting the article to electron bombardment.

3,354,065

METHOD OF PRODUCING ALCOHOL CONTAINING CHLORINE

Tatsuo Matsuda, Showa-ku, Nagoya-shi, and Takaari Yumoto, Mizuho-ku, Nagoya-shi, Japan, assignors to Agency of Industrial Science & Technology, Chiyoda-ku, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Oct. 8, 1962, Ser. No. 229,191

1 Claim. (Cl. 204—158)

A method of manufacturing alcohol containing chlorine selected from the groups consisting of $CHCl_2CCl_2ROH$ and $CCl_2{=}CClROH$ which comprises the application of irradiation by ionizing radioactive rays on the mixture of tetrachloroethylene and alcohols (ROH).

3,354,066

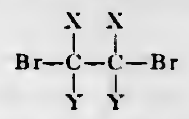
ALLYLIC BROMINATION PROCESS

Earl S. Huyser, Lawrence, Kans., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 21, 1963, Ser. No. 303,647

4 Claims. (Cl. 204—158)

1. A continuous process for making an allylic bromide which comprises contacting 1–10 mole equivalents of a compound having a replaceable allylic hydrogen atom with a polyhalogenated ethane having the formula



$$Br-\underset{Y}{\overset{X}{C}}-\underset{Y}{\overset{X}{C}}-Br$$

wherein X is selected from the group consisting of fluorine, chlorine, and bromine and Y is selected from the group consisting of hydrogen and X at a temperature of 0–150° C. under free radical initiating conditions, thereby forming a reaction mixture comprising said allylic bromide and a halogenated ethylene corresponding to the polyhalogenated ethane, separating the halogenated ethylene from said mixture, reacting the halogenated ethylene with bromine to regenerate said polyhalogenated ethane, and returning the regenerated polyhalogenated ethane to the process.

3,354,067

METHOD OF PREPARING TRIALKYLBORON COMPOUNDS

Joseph L. Shepherd, Sunland, and Samuel Witz, West Covina, Calif., and Ellis I. Hormats, Rochester, N.Y., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Mar. 23, 1959, Ser. No. 801,396

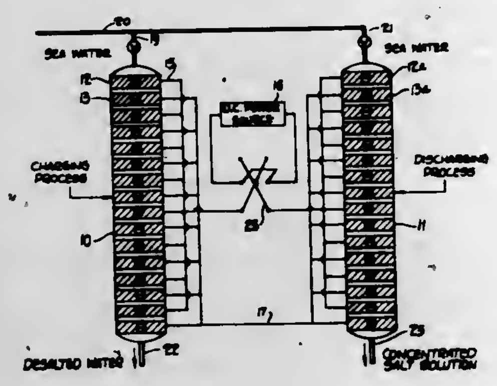
18 Claims. (Cl. 204—168)

1. The method of preparing trialkylborons, which comprises subjecting a gaseous mixture of a borontrihalide and a lower alkane to the discharge produced by a silent

discharge tube to form an alkyldihaloborine and effecting disproportionation of the alkyldihaloborine to form the corresponding trialkylboron.

3,354,068
METHOD OF DEIONIZATION UTILIZING A LOW ELECTROSTATIC POTENTIAL

Robert A. Rightmire, Twinsburg, Glenn R. Brown, Solon, and Richard L. Rowland, Cleveland, Ohio, assignors to The Standard Oil Company, a corporation of Ohio
Filed June 7, 1962, Ser. No. 200,722
1 Claim. (Cl. 204—180)



In a method of removing a polar solute from a solution comprising a polar solvent in which the solute is dissolved and ionized,

the steps of

providing at least one first pair of spaced electrodes of porous electrically-conductive material,

moving a first stream of said solution past said electrodes to form a first pair of spaced interfaces at said electrodes,

applying a direct current electrical potential to said first pair of electrodes to electrostatically charge said first interfaces and isolate in the region of one of said first interfaces, ions of positive charge, and to isolate in the region of the other of said first interfaces, ions of negative charge, without current flow between said first interfaces through said first stream of solution,

maintaining said electrostatic potential across said first interfaces in the range between the electrocapillary maximum of said solute at said interfaces and the decomposition potential of said solute at said interfaces,

removing solute depleted solution away from the vicinity of said first interfaces as a recovered product,

providing at least one second pair of spaced electrodes of porous, electrically-conductive material,

moving a second stream of said solution past said second electrodes to form second spaced interfaces at said second electrodes,

subsequently applying a direct current electrical potential, including the acquired potential from said first interfaces to said second interfaces to electrostatically charge said second interfaces and isolate in the region of one of said second interfaces, ions of positive charge, and to isolate in the region of the other of said second interfaces, ions of negative charge, without current flow between said second interfaces through said second stream of solution,

regulating said potential across said second interfaces in the range between the electrocapillary maximum of said solute at said second interfaces and the decomposition potential of said solute at said second interfaces,

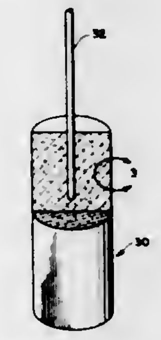
removing solute depleted solution away from the vicinity of said second interfaces,

and repeating the foregoing cycle by discharging said second interfaces to said first interfaces as a portion of a potential applied thereto to again remove ions from a first stream,

whereby ions are first attracted to said first interfaces for separation from a portion of said first stream, then the charge accumulated at said first interfaces is moved to said second interfaces to thereafter attract ions to said second interfaces for separation from a portion of said second stream, at the same time discharging said first interfaces to release accumulated ions from said first interfaces back into another portion of said first stream, thus recharging said first interfaces for recycle, and subsequently reversing the process to again accumulate ions at the first interfaces and discharge the second interfaces for regeneration of the second interfaces.

3,354,069
ELECTRODE COMPONENT AND METHOD OF MAKING THE SAME

Paul Jerrold-Jones, Claremont, and Maurice L. Deushane, Whittier, Calif., assignors to Beckman Instruments Inc., a corporation of California
Filed Mar. 10, 1964, Ser. No. 350,821
11 Claims. (Cl. 204—195)



1. An electrode component for the measurement of electromotive force comprising:
- a porous unitary body of a compressed powdered metal; and
- a molten sparingly soluble salt of said metal in solid state filling the interstices of said porous body thereby providing a nonporous electrode component.

3,354,070
OVERFLOW CELL FOR PLATING STRIP

Daniel T. Carter, Penn Township, Westmoreland County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Jan. 24, 1964, Ser. No. 339,932
6 Claims. (Cl. 204—206)

1. Electroplating apparatus for plating a permanent coating of a metal on a moving strip serving as a cathode and having:

(a) a tray adapted to contain flowing electrolyte and to serve as an anode;

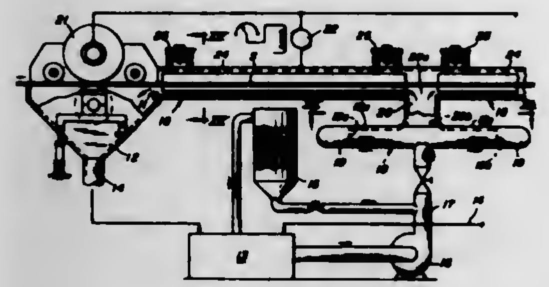
(b) a weir disposed at one end of said tray to determine the level of flowing electrolyte in said tray;

(c) means for transporting said moving strip through said flowing electrolyte and over said weir at a level just below the surface of said flowing electrolyte to substantially eliminate plating of the upper surface of said moving strip;

(d) said tray having an electrolyte inlet spaced from said weir and extending substantially the full width of said tray;

(e) collecting means adjacent said weir for collecting the overflow of electrolyte from said weir;

(f) an inlet chamber in communication with said electrolyte inlet and said collecting means for reducing the velocity of electrolyte flow from said collecting means to said electrolyte inlet and for eliminating any fountain effect, excessive turbulence and splashing as said electrolyte flows into said electrolyte inlet and toward said weir;

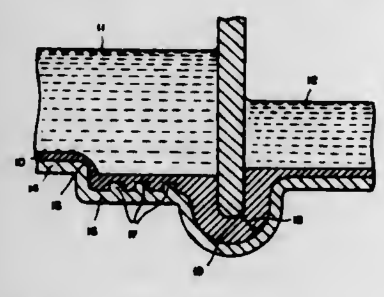


(g) said inlet chamber having an inlet means having a cross sectional area substantially less than the cross sectional area of said electrolyte inlet, an outlet having a cross sectional area substantially the same as said electrolyte inlet and a tapering body portion connecting said inlet means to said outlet; and

(h) circulating means connected to said collecting means and to said inlet chamber for circulating said electrolyte between said electrolyte inlet and said weir.

3,354,071
AMALGAM SEAL FOR ALKALI METAL CHLORIDE ELECTROLYTIC CELLS

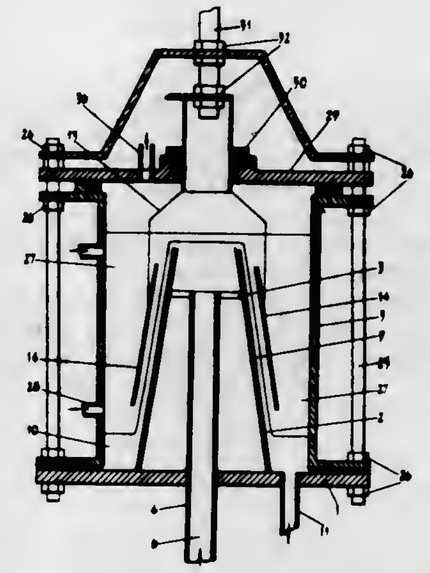
Werner Honsberg, Bad Durkheim, and Heinrich Mueller, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Feb. 5, 1964, Ser. No. 342,727
Claims priority, application Germany, Feb. 19, 1963, B 70,790
3 Claims. (Cl. 204—219)



1. A horizontally flowing mercury cathode cell having a mercury amalgam seal at the outlet end thereof, said mercury seal comprising: a transverse trough extending below the bottom of said cell and adapted to contain amalgam into which a transverse partition projects downwardly, said bottom of said cell having a downwardly offset portion thereof adjacent said trough and on the inlet side of said trough, and a plurality of transverse projections extending upwardly from the bottom of said offset portion, said projections being adapted to provide obstacles in the path of the flowing amalgam as it enters the inlet side of said trough.

3,354,072
ELECTROLYTIC CELL HAVING VERTICALLY DISPOSED ELECTRODES

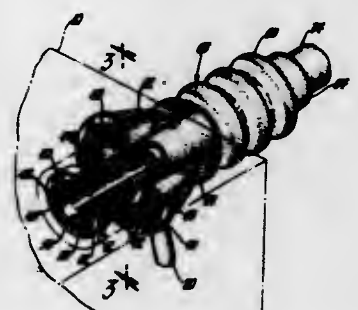
Sidney Thomas Glover, Runcorn Heath, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed July 18, 1963, Ser. No. 295,929
Claims priority, application Great Britain, July 18, 1962, 27,610/62
3 Claims. (Cl. 204—219)



1. Electrolytic cell for the manufacture of chlorine by electrolysis of brine having a vertically disposed cathode support in the form of a frustrum of a cone provided with means for flowing a mercury cathode film thereon, and an adjacent, substantially parallel anode comprising titanium having a coating of a platinum metal on the surface thereof.

3,354,073
ELECTRICAL STOCK REMOVAL APPARATUS

Alfred J. Williams, Jr., Berkley, and Douglas J. Johns, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 22, 1963, Ser. No. 325,674
18 Claims. (Cl. 204—224)



1. In electrical stock removal apparatus, the combination of a conductive cutting tool adapted to have the machining surface thereon spaced from a conductive workpiece so as to form a machining gap therebetween and define a certain work area on the workpiece, means supplying machining fluid to the gap, a source of electrical power connected to the cutting tool and adapted to be connected to the workpiece, and means facilitating both manual transportation and manual feeding of the cutting tool relative to the workpiece so as to effect an electrical stock removing discharge across the gap thereby causing

stock to be removed from the work area on the workpiece, the means including holder means adapted to afford a manually movable and insulated support for the cutting tool and guidance means for the cutting tool, the guidance means including spacing means movably positioned on the cutting tool machining surface so as to engage the work area and maintain the gap spacing of the cutting tool relative to the workpiece and insulating spacing means on the cutting tool, the insulating spacing means being constructed so as to enter the work area as stock is removed for aiding in maintaining the lateral alignment of the cutting tool relative to the workpiece.

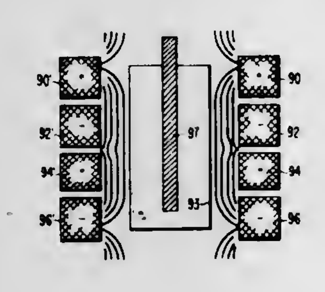
3,354,074

CYLINDRICAL CATHODE SPUTTERING APPARATUS INCLUDING MEANS FOR ESTABLISHING A QUADRUPOLE MAGNETIC FIELD TRANSVERSE OF THE DISCHARGE

Eric Kay, Campbell, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Original application Sept. 16, 1963, Ser. No. 309,159, now Patent No. 3,282,816, dated Nov. 1, 1966. Divided and this application Aug. 22, 1966, Ser. No. 574,216

7 Claims. (Cl. 204—298)



1. Apparatus of the hollow cathode type for coating an article by sputtering comprising:

- a hollow cathode-electrode, said electrode comprising a metallic shell element having an inner cylindrical surface and an outer surface, said inner surface having a smooth surface layer of depository material to be eroded;
- an anode-electrode arranged to be surrounded and at least partially enclosed by said inner surface so that a glow discharge may be invoked between said anode and said inner surface;
- means for sealing the ends of said hollow cathode against the atmosphere;
- means for evacuating the interior of said sealed cathode and creating and maintaining a suitable pressure of ionizable gas within said interior;
- potential source means for impressing a suitable voltage between said anode and said cathode to thereby obtain abnormal glow discharge conditions within said cathode; and
- magnetic field means arranged to superpose a cylindrical quadrupole magnetic field to said discharge.

3,354,075

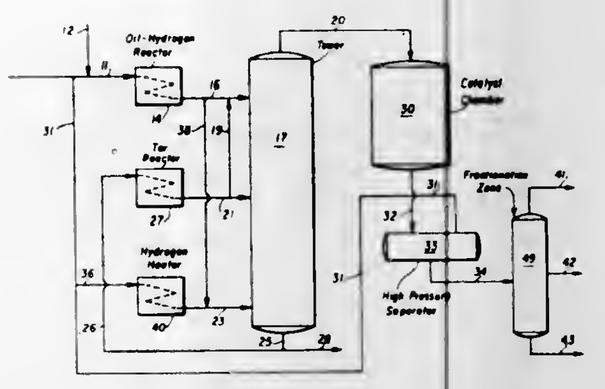
TREATMENT OF HYDROCARBONS IN PLURAL STAGES TO PRODUCE LOWER BOILING HYDROCARBONS

Charles H. Brodeur, Beacon, N.Y., and Warren G. Schlinger, Pasadena, Calif., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 29, 1965, Ser. No. 517,390

9 Claims. (Cl. 208—58)

1. A process for the hydroconversion of a hydrocarbon liquid which comprises passing said hydrocarbon liquid in the presence of between about 1,000 and 100,000 s.c.f. of hydrogen per barrel of said hydrocarbon liquid through a tubular reaction zone under conditions of turbulent flow at a temperature between about 750 and 950° F. and a pressure between about 500 and 20,000 p.s.i.g. for a residence time between about 5 and 100 seconds, removing from said tubular reaction zone a first effluent containing a gaseous phase comprising hydrogen and vaporous hydrocarbons and a liquid phase comprising unvaporized hydrocarbons, stripping said liquid phase with hot hydrogen, passing at least a portion of said stripped liquid phase to a second reaction zone maintained at a temperature between about 700 and 950° F. and a pressure between about 500 and 20,000 p.s.i.g. for a residence time between about 5 and 100 seconds, the temperature in said second reaction zone being lower than the temperature in the tubular reaction zone, removing from said second reaction zone a second effluent containing a gaseous phase comprising vaporous hydrocarbons and a liquid phase comprising unvaporized hydrocarbons and combining the liquid phases of said first and second effluents the sole reactant feed to said second reaction zone being liquid material recovered from the stripping step.



3,354,076

PROCESS FOR THE HYDROCRACKING OF HYDROCARBON OILS UNDER REACTION CONDITIONS SO AS TO RETAIN SUBSTANTIAL AMOUNTS OF AROMATICS IN THE NAPHTHA PRODUCT

Harold Beuther, Gibsonia, and Bruce K. Schmid, McCandless Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,475

20 Claims. (Cl. 208—111)

1. The process for hydrocracking a petroleum fraction which boils above about 400° F., which is substantially free of asphaltic material, which contains a substantial amount of aromatic hydrocarbons and which contains less than about 20 p.p.m. of nitrogenous impurities to produce substantial mounts of hydrocarbons boiling in the gasoline range with concomitant high retention of aromatics, which process comprises contacting said hydrocarbon feed stock with hydrogen in the presence of a hydrogenating catalyst composited with an acidic siliceous cracking catalyst, at a hydrogen partial pressure of between about 1500 and 4000 p.s.i. and at a minimum liquid hourly space velocity given by the formula $LHSV=2.0+0.001P-0.02A$, where $P=$hydrogen partial pressure in p.s.i.g. and $A=$aromatic content of the feed in percent by volume, at a temperature of between about 700° and 900° F., said conditions of temperature, pressure and space velocity being adjusted to maintain a conversion level of from about 40% to 75% during the on-stream reaction whereby a hydrocracked 180°–400° F. naphtha product which contains aromatic hydrocarbons in an amount at least approximately 60% that of the feed is obtained.

3,354,077

STABILIZED ZEOLITES AND USE THEREOF FOR HYDROCARBON CONVERSIONS

Rowland C. Hansford, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Mar. 30, 1966, Ser. No. 538,606

10 Claims. (Cl. 208—111)

8. A catalyst composition comprising a minor proportion of a Group VIII metal hydrogenation component homogeneously combined with a major proportion of a stabilized hydrogen zeolite of the Y crystal type, said hydrogen zeolite being one which was initially unstable and subject to loss of at least about 10% of its surface area and crystallinity when heated in its hydrated state at temperatures between 300° and 500° F., and containing less than about 3% by weight of Na_2O, at least about 40% of the ion-exchange capacity thereof being satisfied by hydrogen ions, said unstable hydrogen zeolite having been thereafter stabilized against hydrothermal degradation without substantial reduction in surface area, by heating the same at temperatures between about 700° and 1,200° F. in contact with a vapor phase comprising at least about 0.4, but not more than about 10, p.s.i.a. partial pressure of water vapor, there having been substantially no previous contacting of said hydrogen zeolite with water vapor of greater than about 2 p.s.i. partial pressure within the temperature range of about 300°–500° F.

10. A hydrocracking process for the conversion of a gas oil feedstock to hydrocarbons boiling in the gasoline range, which comprises contacting said feedstock plus added hydrogen with a hydrocracking catalyst at a temperature between about 400° and 850° F. and at elevated pressures, and recovering gasoline-boiling-range hydrocarbons, said added hydrogen comprising a recycle gas from said hydrocracking containing water vapor in a proportion at least equivalent to its saturation partial pressure therein at 100° F., said catalyst being a hydrothermally stabilized catalyst as defined in claim 8.

3,354,078

CATALYTIC CONVERSION WITH A CRYSTALLINE ALUMINOSILICATE ACTIVATED WITH A METALLIC HALIDE

Joseph N. Miale, Trenton, N.J., and Paul B. Weisz, Media, Pa., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Feb. 4, 1965, Ser. No. 430,451

21 Claims. (Cl. 208—120)

1. A method for effecting transformation of organic compounds, catalytically convertible in the presence of acidic catalyst sites, which comprises contacting the same under conversion conditions with a catalyst of a crystalline aluminosilicate comprising cations selected from the group consisting of hydrogen and hydrogen precursor ions, which has undergone contact prior to completion of said transformation with a volatile metal halide selected from the group consisting of metal chloride, metal bromide, metal iodide and mixtures thereof, present in an amount sufficient effectively to enhance the activity of said catalyst, which crystalline aluminosilicate has rigid three-dimensional networks made up of unit cells characterized by the substantial absence of change in unit cell dimensions upon dehydration and rehydration and by a uniform pore structure.

10. A method for cracking a hydrocarbon charge which comprises contacting the same under catalytic cracking conditions with a catalyst of a crystalline aluminosilicate comprising cations selected from the group consisting of hydrogen and hydrogen precursor ions, which crystalline aluminosilicate has undergone contact prior to completion of said cracking with a volatile metal halide selected from the group consisting of metal chloride, metal bromide, metal iodide and mixtures thereof present in an amount sufficient effectively to enhance the activity of said catalyst.

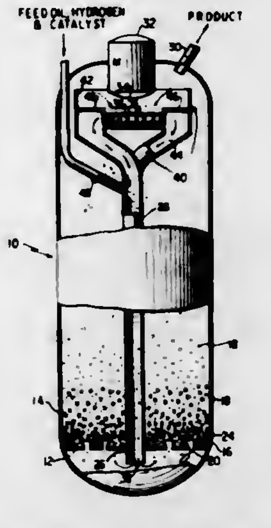
3,354,079

APPARATUS AND PROCESS FOR TREATING A LIQUID WITH A GAS

Roger P. Van Driesen, Hopewell, N.J., assignor to Cities Service Research and Development Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 3, 1964, Ser. No. 349,087

14 Claims. (Cl. 208—143)



1. Apparatus comprising a reaction vessel, a generally vertical recycle conduit disposed in said vessel and spaced from the interior walls thereof, said recycle conduit having a closed top and an open bottom, a pump inlet in said reaction vessel adapted to receive liquid within the upper part of the reaction vessel, a pump discharge outlet within the top of the recycle conduit for discharging liquid from said inlet into the recycle conduit, a feed line passing through a wall of the reaction vessel in fluid communication with an upper portion of the recycle conduit below the pump discharge outlet, said pump discharge outlet and said closed top of the recycle conduit preventing feed from passing out through the top of the recycle conduit and a product outlet passing through a wall of said reaction vessel.

8. An exothermic conversion process which comprises maintaining a mass of catalyst particles within a reaction zone, said mass spaced from the top and bottom of said zone, contacting a mixture of liquid and gaseous reactants with the catalyst by passing the reactants upwardly through said catalyst mass and exothermically reacting the same, continuously recirculating liquid through the reaction zone by passing a portion of liquid within the reaction zone above the catalyst mass downwardly in a confined stream within the reactor, providing the downwardly flowing stream with a downward vector of force effective to increase its downward velocity, introducing liquid reactant feed and gaseous reactant into said downwardly flowing stream at an elevation below that at which the downward vector of force is applied while simultaneously preventing the liquid reactant feed and gaseous reactant from moving upward beyond the elevation at which the downward vector of force is applied, and discharging said stream in the space below the said catalyst mass.

3,354,080

PROCESS FOR THE REMOVAL OF MERCAPTANS FROM HYDROCARBONS

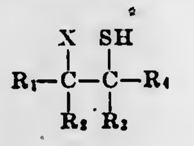
John H. Haslam, Landenberg, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 4, 1965, Ser. No. 430,448

8 Claims. (Cl. 208—231)

1. A process for extracting simple mercaptans from hydrocarbons which comprises contacting the hydrocar-

bon with an aqueous alkali solution containing at least 0.01% by weight, based on the total weight of the solution, of a mercapto compound of the formula



$$R_1-\overset{X}{\underset{R_2}{C}}-\overset{SH}{\underset{R_3}{C}}-R_4$$

where —X is —SH, —OH or —NH_2 and R_1, R_2, R_3 and R_4 are hydrogen, alkyl of 1 to 10 carbons, alkoxyalkyl of 2 to 7 carbons, hydroxyalkyl of 1 to 4 carbons, cycloalkyl of 4 to 8 carbons, hydroxycycloalkyl of 4 to 8 carbons or mercaptohydroxycycloalkyl of 4 to 8 carbons, with the proviso that R_1, R_2, R_3 and R_4 taken together contain a total of less than 11 carbon atoms.

3,354,081
PROCESS FOR DESULFURIZATION EMPLOYING K_2S

Clyde L. Aldridge, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 1, 1965, Ser. No. 484,425

4 Claims. (Cl. 208—235)

3. An improved continuous process for removing sulfur from petroleum residuums containing 0.5 to 10.0 wt. percent sulfur in the form of sulfides, disulfides and sulfur substituted ring compounds comprising the steps of contacting the residuum with a treating agent consisting of K_2S at a temperature in the range of 300–1000° F. in the presence of 5–30 wt. percent H_2O based on K_2S, separating desulfurized residuum from the spent K_2S treating agent, contacting spent K_2S treating agent with steam at a temperature in the range of 400 to 1000° F., recovering regenerated K_2S treating agent and recycling the treating agent to the residuum contacting step.

3,354,082
EFFLUENT WATER PURIFICATION PROCESS

Max Dubach, Riedholz, Switzerland, assignor to Cellulosefabrik Attisholz A.G. vormals Dr. B. Sieber, Attisholz, Switzerland

No Drawing. Filed Mar. 4, 1965, Ser. No. 437,274

Claims priority, application Switzerland, Mar. 10, 1964, 3,074/64

1 Claim. (Cl. 210—15)

A process for the microbiological purification of domestic effluent water by means of an activated sludge system which comprises:

(a) decomposing organic impurities in said water in a first aerating stage by means of bacteria while maintaining optimum life conditions for the bacteria by maintaining a relatively low oxygen content;

(b) conveying the thus treated water to a first sedimentation stage for sedimentation of bacteria sludge;

(c) removing sedimented bacterial sludge from the first sedimentation state, separately aerating said sludge to effect a mineralization of said sludge and discharging the mineralized sludge from the system;

(d) conveying the water from the first sedimentation stage to a second separate aerating stage in substantially oxygen free condition for destruction of bacteria in said water by means of bacteriophagic organisms while maintaining optimum life conditions for said bacteriophagic orangisms in said second aerating stage by maintaining a relatively high oxygen content; and

(e) conveying the thus treated water to a second sedimentation stage, whereby biologically purified water is obtained.

3,354,083
SEPARATION OF FRESH WATER FROM AQUEOUS SOLUTIONS

Sing-Wang Cheng, No. 6–2 Kinchow St. CS, and Chen-Yen Cheng, % Department of Chemical Engineering, National Taiwan University, both of Taipei, Taiwan

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,112

13 Claims. (Cl. 210—59)

1. In the process of effecting rectification of an aqueous solution into relatively rich and lean portions by a first step of partially freezing the aqueous solution by removal of heat energy therefrom to form ice, a second step of separating the ice from the mother liquor, and a third step of melting the separated ice by the addition of heat energy so that the mother liquor and the melted ice respectively constitute the relatively rich and lean portions; the improvement comprising conducting the first step by maintaining a heat exchange relation between the aqueous solution and an at least partially frozen material while also maintaining such material under a pressure such that the prevailing liquid-solid transition temperature thereof is less than the currently prevailing freezing temperature of the aqueous solution to thereby melt at least a portion of said material, and conducting the third step by maintaining a heat exchange relation between the separated ice and at least a part of the portion of the material melted in the first step while also maintaining the latter under a pressure such that the prevailing liquid-solid transition temperature thereof is higher than the currently prevailing liquid-solid transition temperature of the separated ice.

3,354,084
AQUEOUS GEL OF WATER-SWELLABLE ACRYLIC POLYMER AND NON-IONIC FILLER

Melvin F. Katzer, Danville, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 24, 1964, Ser. No. 377,533

7 Claims. (Cl. 252—2)

1. A gelled aqueous dispersion comprising, in admixture, water and from about 0.05 up to about 2 percent by weight, based on the weight of water, of an admixture of one part by weight of a particulate, water-swellable acrylic polymer and from about 0.1 to about 2 parts by weight of a finely divided, essentially non-ionic solid insoluble in water and opaque to light.

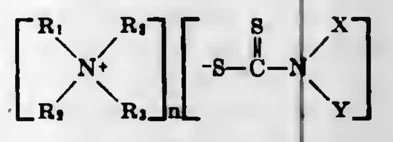
3,354,085
LUBRICANTS CONTAINING QUATERNARY AMMONIUM DITHIOCARBAMATES

Bruce W. Hotten, Orinda, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed May 28, 1965, Ser. No. 459,910

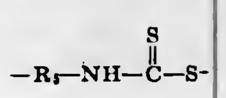
8 Claims. (Cl. 252—33.6)

1. A composition comprising a major portion of a lubricant and a minor amount sufficient to inhibit oxidation of a quaternary ammonium dithiocarbamate of the general formula:



$$\left[\begin{matrix}R_1 & & R_4\\ & N^+ & \\ R_2 & & R_3\end{matrix}\right]_n\left[-S-\overset{S}{\overset{\|}{C}}-N\begin{matrix}X\\ \\ Y\end{matrix}\right]$$

in which R_1, R_2, R_3 and R_4 are selected from the group consisting of alkyl, aryl, alkaryl and aralkyl radicals of up to 24 carbon atoms and the sum of the carbon atoms in R_1, R_2, R_3 and R_4 is greater than 8, X and Y are selected from the group consisting of hydrogen, alkyl radicals of 1 to 6 carbon atoms and electronegative radicals of the formula:



$$-R_5-NH-\overset{S}{\overset{\|}{C}}-S-$$

in which R_5 is selected from the group consisting of alkylene, arylene, alkarylene and aralkylene radicals of not more than 15 carbon atoms and *n* is 1 to 3 equal to the number of negative charges on the dithiocarbamate anion.

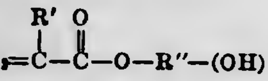
3,354,086
GREASE LUBRICANT

Jerome Panzer, Roselle Park, James Nixon, Elizabeth, and Rudolph Kassinger, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 28, 1964, Ser. No. 371,088

5 Claims. (Cl. 252—40.7)

1. A lubricating grease composition comprising a major amount of lubricating oil, about 5 to 40 wt. percent of calcium mixed salts of about 4 to 25 moles of acetic acid per mole of C_6 to C_{30} fatty acid, and as an inhibitor against hardening about 0.05 to 3.0 wt. percent of an oil-soluble polymer having a molecular weight of about 20,000 to 1,000,000 consisting essentially of: (A) a fully esterified ester of a C_1 to C_{20} saturated aliphatic alcohol and a C_3 to C_4 aliphatic unsaturated carboxylic acid having 1 to 2 carboxylic acid groups, (B) an ester of vinyl alcohol and a C_2 to C_6 saturated aliphatic monocarboxylic acid and (C) a polar monomer selected from the group consisting of 2-N-vinyl pyrrolidone, maleic anhydride, and hydroxyalkyl acrylates of the formula:



$$CH_2=\overset{R'}{C}-\overset{O}{\overset{\|}{C}}-O-R''-(OH)_n$$

where R′ is selected from the group consisting of hydrogen and C_1 to C_2 alkyl groups, R″ is a saturated aliphatic hydrocarbon group of 2 to 6 carbon atoms and *n* is 1 to 5, said copolymer being formed of about 0.1 to 2 molar proportions of ester of said C_3 to C_4 carboxylic acid, and about 0.1 to 0.5 molar proportions of said molar monomer per molar proportion of said vinyl alcohol ester and wherein said mixed salts are prepared in situ by neutralization of said acetic and C_6 to C_{30} fatty acids with alkaline earth metal base in at least a portion of said lubricating oil and in the presence of said oil soluble polymer.

3,354,087
MINERAL LUBRICATING OIL CONTAINING ACRYLATE THIO POLYMER AS VISCOSITY INDEX IMPROVER

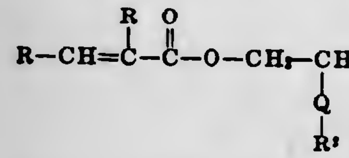
Frederick E. Bailey, Jr., Charleston, W. Va., Edward M. La Combe, Williamsville, N.Y., and Russell H. Raines, Nitro, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 19, 1966, Ser. No. 566,193

2 Claims. (Cl. 252—48.6)

1. A lubricating composition comprising a mineral oil of lubricating viscosity and a small amount, sufficient to enhance the viscosity index of said mineral oil, of a resinous copolymer of:

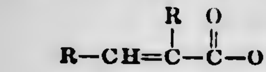
(a) from about 2 to about 20 weight percent of a compound represented by the formula:



$$R-CH=\overset{R}{C}-\overset{O}{\overset{\|}{C}}-O-CH_2-\underset{\underset{R^2}{|}}{\underset{Q}{\underset{|}{CH}}}-\underset{\underset{R^2}{|}}{\underset{Q}{\underset{|}{CH_2}}}$$

wherein each R individually represents hydrogen or methyl, wherein each R^2 individually represents alkyl of from 1 to 4 carbon atoms, and wherein Q represents thio or sulfonyl; and

(b) from about 80 to 98 weight percent of at least one compound of the formula



$$R-CH=\overset{R}{C}-\overset{O}{\overset{\|}{C}}-O-R^3$$

wherein each R individually represents hydrogen or methyl, and wherein R^3 represents alkyl of from 1 to 18 carbon atoms provided that sufficient R^3 alkyl of at least 8 carbon atoms is present to impart oil solubility to said resinous copolymer.

3,354,088
AEROSOL HARD SURFACE CLEANER

Lyle F. Elmquist, North St. Paul, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Sept. 16, 1963, Ser. No. 309,299

2 Claims. (Cl. 252—90)

1. A package consisting of a pressure-tight container having a valve-controlled opening charged with an aerosol hard surface cleaner consisting of the following ingredients in parts by weight:

Volatile propellant	5–15
Amorphous silica	1–2
Amphoteric detergent	2.5–10
Water	50–70
Lower aliphatic alcohol	7.5–15
Liquid hydrocarbon	2.5–7.5
Glycerin	2.5–7.5
Auxiliary cleanser	.10–5

wherein said amorphous silica has a particle size range of about 0.005 to about 0.1 micron, said amphoteric detergent is selected from the group consisting of

$$R'NHCR_2CR_2COOX$$

and $R'N(CR_2CR_2COO)_2X_2$ where R is selected from the group consisting of hydrogen and lower alkyl radicals containing less than four carbon atoms, R′ is an aliphatic hydrocarbon radical containing 8 to 22 carbon atoms and X is selected from the group consisting of hydrogen, alkali metal, and ammonium.

3,354,089
WINDSHIELD WIPERS

David E. York, Warwick, R.I., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 31, 1964, Ser. No. 422,552

7 Claims. (Cl. 252—91)

1. A method for wiping and cleaning glass surfaces comprising the use of wet-strengthened paper towel having incorporated therein from about 0.1 percent by weight to about 2.5 percent by weight, based on the weight of the dry paper fibers in said towel, of dioctyl sodium sulfosuccinate; and from about 0.01 percent by weight to about 1.5 percent by weight, based on the weight of dioctyl sodium sulfosuccinate, of citric acid sequestering agent.

3,354,090
PREPARATION OF STABLE, FREE-FLOWING MIXTURES OF ALKALI METAL DICHLOROISOCYANURATES AND SODIUM TRIPOLYPHOSPHATE

Russell R. Keast, Yardley, Pa., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 1, 1965, Ser. No. 460,501

12 Claims. (Cl. 252—99)

1. Process of producing fast-dissolving, stable, free-flowing mixtures of an alkali metal dichloroisocyanurate and a hydratable salt selected from the group consisting of sodium tripolyphosphate, tetrasodium pyrophosphate, trisodium phosphate, sodium carbonate and borax which comprises reacting trichloroisocyanuric acid and an alkali metal cyanurate in a reaction mixture containing at least

about 11% by weight of water at temperatures of up to about 80° C., adding a hydratable salt to the above reaction mixture in amounts sufficient to absorb all of the water in said reaction mixture as water of hydration and to obtain a water content in the resulting final mixture of no greater than about 16% by weight of said final mixture, and recovering a free-flowing, fast-dissolving, stable mixture of an alkali metal dichloroisocyanurate and the said salt.

3,354,091

HOMOGENEOUS HEAVY-DUTY LIQUID DETERGENT

William Ralph Hearn and Allister Neil MacLean, Scarborough, Ontario, and Frederick William Trusler, Toronto, Ontario, Canada, assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 861,191, Dec. 22, 1959. This application Aug. 10, 1965, Ser. No. 478,764

5 Claims. (Cl. 252—137)

1. A substantially homogeneous, pourable, heavy-duty aqueous liquid detergent composition which consists essentially of alkali metal anionic organic sulfonated detergent containing a long chain of at least 8 carbon atoms in an amount from about 5 to 30% by weight, a potassium polyphosphate salt in an amount from about 10–30% by weight and normally soluble in the amount of water present, and as a hydrotrope a lower alkyl aryl sulfonate salt selected from the group consisting of alkali metal toluene and xylene sulfonates in an amount of from about 4 to 12% by weight, the aqueous composition containing detergent, polyphosphate and lower alkyl aryl sulfonate forming a homogeneous solution having the detergent and polyphosphate fully solubilized therein, and about 0.1 to 2% by weight of an alkali metal carboxymethylcellulose normally tending to separate from said solution of detergent and polyphosphate, and hydrogenated castor oil in an amount from about 0.1 to 1% by weight and sufficient to inhibit the separation of said carboxymethylcellulose salt.

3,354,092

AMMONIATED GRANULAR CLEANER

Ronald A. Perry, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 452,850, May 3, 1965. This application Dec. 5, 1966, Ser. No. 599,674

3 Claims. (Cl. 252—137)

1. A water-soluble ammoniated, non-caking, alkaline, granular, crystalline, hard-surface cleaning composition consisting essentially of:

(A) from 0% to about 34% ammonium dihydrogen phosphate;

(B) from 0% to about 20% diammonium hydrogen phosphate; and

(C) from about 40% to about 97% of at least one granular alkaline material selected from the group consisting of trisodium phosphate, disodium hydrogen phosphate, sodium tripolyphosphate, tetrasodium pyrophosphate, sodium carbonate, sodium sesquicarbonate, sodium tetraborate pentahydrate, and mixtures thereof; the total of A plus B being sufficient to provide from about 0.75% to about 5% ammonia by weight of the composition, said composition giving a pH of from about 9.5 to about 10.5 when it is dissolved in water at a concentration of from about 1% to about 2% by weight.

3,354,093

REMOVAL OF POLYMERIZED MATERIALS FROM SURFACES

Julius E. Early and Harwell E. Benjamin, Borger, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Jan. 15, 1965, Ser. No. 425,953

3 Claims. (Cl. 252—170)

1. A method of removing synthetic rubber polymeric depositions from surfaces, said depositions consisting essentially of conjugated dienes having from 4 to 6 carbon atoms per molecule, said method comprising contacting said depositions with at least one material selected from the group consisting of benzene, toluene, ethylbenzene, propylbenzene and isopropylbenzene and from about 0.05 to about 5 weight percent of tetramethylene oxide based on the total weight of these two materials.

3,354,094

COMPOSITION AND METHOD FOR TREATING SCALE

Karl C. ten Brink and Jack F. Tate, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 8, 1964, Ser. No. 381,232

12 Claims. (Cl. 252—180)

1. A method of controlling the build-up of calcium sulfate scale deposits in an aqueous system which comprises incorporating in said system an aqueous scale treating composition consisting essentially of a non-catalytic heat modified starch material and an inorganic alkaline reagent, said alkaline reagent consisting of a hydroxide of sodium, potassium or calcium and being present in said composition in an amount sufficient to dissolve said starch material and to provide a pH of at least 7.1 to said aqueous composition, said treating composition being used in an amount sufficient to inhibit the development of scale in said system, said non-catalytic heat modified starch material being prepared by the method consisting of (a) the non-catalytic dry roasting of starch at 300–400° F. for a period of at least 36 hours or (b) the non-catalytic dry roasting of a hypochlorite oxidized starch at 300–400° F. for a period of 15 minutes to 6 hours.

3,354,095

SOLID, SUBSTANTIALLY SPHERICAL, HARD PARTICLES AND PREPARATION THEREOF

Alfred J. Burzynski and Robert E. Martin, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

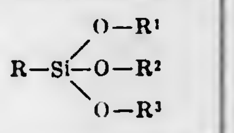
No Drawing. Filed July 23, 1964, Ser. No. 384,766

13 Claims. (Cl. 252—316)

1. A method of producing solid, substantially spherical, hard particles of organopolysiloxane which consists essentially of the following steps:

(I) mixing with agitation

(A) an organotrialkoxysilane of the formula



$$R{-}Si\begin{cases} O{-}R^1 \\ O{-}R^2 \\ O{-}R^3 \end{cases}$$

wherein R represents a radical selected from the group consisting of alkyl radicals having from 1 to 4 carbon atoms, inclusive, and alkenyl radicals having from 2 to 4 carbon atoms, inclusive, and R^1, R^2 and R^3 each represent a methyl or ethyl radical,

(B) an aqueous medium having a pH below 6 and comprising water in an amount in excess of 3 moles thereof per mole of the organotrialkoxysilane of (A), and

(C) an emulsifying agent

at an elevated temperature of above 30° C. until the mixture becomes clear;

(II) cooling the mixture after it clears;

(III) adding a base to provide a pH of the mixture of from over 7 to about 10 whereby the mixture becomes cloudy due to formation of droplets;

(IV) heating and stirring the mixture to an elevated temperature of from 40° C. to 90° C.;

(V) continuing stirring at said temperature until said droplets become solid, substantially spherical, hard particles of cross-linked organopolysiloxanes; and

(VI) isolating the said particles from the aqueous medium in which they were formed.

3,354,096

PELLETED ZEOLITE COMPOSITIONS POSSESSING IMPROVED CRUSHING STRENGTH

Dean Arthur Young, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Apr. 6, 1965, Ser. No. 446,110

15 Claims. (Cl. 252—435)

1. A mechanically stable, adsorbent composition comprising a phosphate-bonded pellet of crystalline, aluminosilicate zeolite, said zeolite having a SiO_2/Al_2O_3 mole-ratio between about 3 and 12, and wherein the phosphate bond is produced by calcining an acidic co-pelleted mixture of said zeolite and a phosphorus oxide precursor selected from the group consisting of phosphoric acid, ammonium salts of phosphoric acid, and mixed hydrogen and/or ammonium phosphates of weakly basic polyvalent metal cations having an ionic radius of less than about 1.0 angstrom, sufficient of said phosphorus oxide precursor being employed to yield a final composition containing 1–50% by weight of phosphate calculated as P_2O_5.

3,354,097

UNSUPPORTED FILM OF POLY (ISOBUTYLENE OXIDE)

Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed June 29, 1961, Ser. No. 120,495

1 Claim. (Cl. 260—2)

An unsupported film of the polymer, a crystalline poly (isobutylene oxide), having a melting point of from 167° to 177° C. and having a reduced specific viscosity of at least about 0.4 as measured on a 0.1 percent solution in α-chloronaphthalene at 135° C., said poly(isobutylene oxide) being insoluble in acetone, benzene, chloroform, methanol and tetrahydrofuran at both room temperature and at their boiling points.

3,354,098

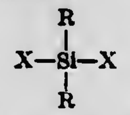
ELASTOMERIC SILAZANE POLYMERS AND PROCESS FOR PREPARING THE SAME

James D. Byrd, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

No Drawing. Filed May 31, 1966, Ser. No. 554,949

6 Claims. (Cl. 260—2)

1. The process for preparing an elastomeric silazane polymer which comprises combining a diorganodihalogenosilane having the formula



$$\begin{array}{c} R \\ | \\ X{-}Si{-}X \\ | \\ R \end{array}$$

where X is a halogen atom and R is a monovalent hydrocarbon radical with a bifunctional amine having the formula

$$H_2NR'NH_2$$

where R′ is a divalent hydrocarbon radical and an acid acceptor selected from the group consisting of tertiary amines, alkali metal carbonates and alkali metal bicarbonates in an inert organic solvent, the molar ratio of said silane to said amine being from about 2:1 to 1:1 and the molar ratio of said acid acceptor to said silane being at least about 2:1, heating the resulting mixture under reflux conditions for at least 30 minutes, separating the resulting by-product acid hydrohalide salt from the resulting polymer and recovering said polymer.

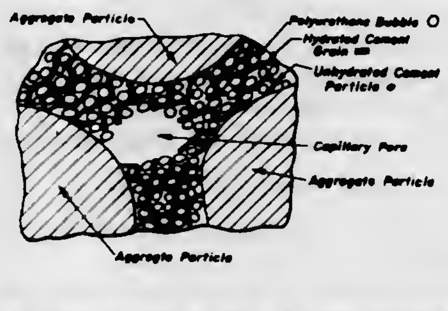
3,354,099

POLYURETHANE-HYDRAULIC CEMENT COMPOSITIONS AND PROCESS FOR MANUFACTURING THE SAME

Frederick C. Stegeman, 9 Reedsdale St., Allston, Mass. 02134

Filed Mar. 10, 1964, Ser. No. 350,823

12 Claims. (Cl. 260—2.5)



1. A process of manufacturing a polyurethane-hydraulic cement body which comprises:

mixing dry hydraulic cement particles with a partially reacted mixture of at least one organic polyfunctional isocyanate compound wherein the functional groups are isocynato radicals and at least one polyfunctional compound each of the functional groups of which contains an active hydrogen atom and capable of forming a polyurethane;

forming said mixture into a desired shape;

exposing said mixture to gas containing water vapor at a temperature of from 15 to 100° C., the quantity of water vapor in said gas being at least that of a specific humidity of at least 50% and being not greater than 200 grains per pound of dry air, said water vapor permeating said mixture and reacting with isocyanato radicals on said isocyanate compound so as to yield carbon dioxide gas and amines, this gas causing the formation of gas pockets within the mixture, these amines further reacting said polyfunctional compounds further reacting during said exposure to water vapor so as to form a polyurethane resin body structure during such exposure;

hydrating said hydraulic cement particles within said body; and

drying said body at a temperature below the decomposition temperature of hydrates formed from said hydraulic cement particles.

12. A polyurethane-hydraulic cement body produced by the process defined in claim 1.

3,354,100

POLYURETHANES PREPARED FROM REACTION PRODUCTS OF POLYOXYALKYLENE POLYOLS AND ORTHOESTERS

William C. Kuryla, St. Albans, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation of abandoned application Ser. No. 292,150, July 1, 1963. This application Oct. 3, 1966, Ser. No. 583,978

2 Claims. (Cl. 260—2.5)

1. A polyurethane prepared by reacting:

(a) an organic polyisocyanate, and

(b) an ester exchange reaction product having a hydroxyl number in the range of about 20–700 prepared by reacting in the presence of an acid catalyst at a temperature of about 35°–120° C. for about 0.5–24 hours:

(i) a polyoxyalkylene polyol having from 2 to 8 hydroxyl groups wherein the oxyalkylene groups thereof have from 2 to 4 carbons atoms, and,

(ii) an orthoester of the formula:

$$RC(OR^1)_3$$

wherein R represents hydrogen or a radical having up to 20 carbon atoms selected from the group consisting of alkyl, cycloalkyl, aralkyl, aryl, and alkaryl, and wherein R^1 represents an alkyl radical of up to 12 carbon atoms.

3,354,101

PREPARATION OF ORGANOSILICON COMPOUNDS

Thomas C. Williams, Lancaster, and George M. Omietanski, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 29, 1964, Ser. No. 422,002

12 Claims. (Cl. 260—9)

1. A process for preparing organosilicon compounds which comprises reacting

(I) a hydrosilicon compound selected from the group consisting of

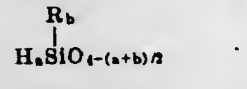
(1) hydrosilanes represented by the formula:

$$R_xSiH_{4-x} \qquad (A)$$

wherein R is selected from the group consisting of a monovalent hydrocarbon group, a monovalent functionally substituted hydrocarbon group, and a monovalent functional group wherein the above functional group and functional substituents are selected from the class consisting of alkoxy, aryloxy, acyloxy, oxirano, cyano, fluoro, amino, amido, hydroxy, carboxy and acyl groups; and wherein *x* represents an integer of from 1 to 3 inclusive; and

(2) hydrosiloxanes composed essentially of groups having the formula:

(B)



$$\overset{\displaystyle R_b}{\underset{|}{}}\!\!\!H_aSiO_{4-(a+b)/2}$$

wherein R is the same as defined above; *a* represents an integer from 1 to 3 inclusive; *b* represents a value of from 0 to 2 inclusive; and $(a+b)$ represents an integer of from 1 to 3 inclusive; and

(3) hydrosilicon copolymers composed of units represented by the Formula B above and units represented by the formula:

$$R_cSiO_{4-c/2} \qquad (C)$$

wherein the ratio of (B) to (C) can range from 700:1 to 1:700; and wherein R is the same as defined above, and *c* has a value of from 0 to 3 inclusive; and

(II) an active hydrogen atom containing compound selected from the group consisting of carboxylic acids, amines, mercaptans, thioacids, water, monomeric alcohols, polyols, silanols, and siloxanols, in the presence of

(III) an acid acceptor selected from the group consisting of pyridine, picoline, collidine, quinoline and triethylamine; and

(IV) a positive halogen compound having an atomic weight greater than 19 in which a halogen atom is the positive end of a dipole in a molecule in which the remainder of the molecule is nucleophilic.

3,354,102

FLAME-RESISTANT RESINOUS COMPOSITIONS BASED UPON EPOXY RESINS AND HALOGENATED POLYACIDS AND PROCESS FOR PREPARATION OF SAME

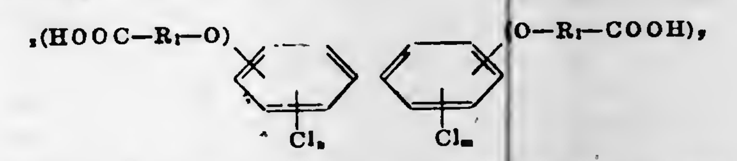
Jacques Vuillemenot, La Mulatiere, France, assignor to Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine, a corporation of France

No Drawing. Filed Feb. 27, 1963, Ser. No. 261,468

Claims priority, application France, Mar. 2, 1962, 889,778

21 Claims. (Cl. 260—18)

1. A flame resistant resinous thermosetting composition comprising a mixture of at least one epoxy resin containing at least 2 epoxy groups per molecule and selected from the group consisting of glycidic polyethers resulting from the reaction between hydroxylated alcoholic and phenolic compounds and an epihalogenohydrine and of non-glycidic compounds selected from the group consisting of epoxidized polyolefins, epoxidized derivatives of glycerides of unsaturated fatty acids and diepoxidized derivatives of dipentene and of vinyl 1 cyclohexene 3, and a halogenated polyacid having the general formula:



in which R_1 is selected from the group consisting of a divalent saturated and a divalent unsaturated aliphatic hydrocarbon radical, the amount $(x+y)$ is an integer number having a value from 2 to 4, $(m+n)$ is an integer number having a value from 8 to 6 and the amount $(x+y+m+n)$ always has the value 10, said polyacid being present in an amount corresponding to from 0.6 to 1.2 carboxy equivalent per epoxy equivalent.

3,354,103

SEQUESTERING ION EXCHANGE RESINS WHICH ARE POLYIMINE REACTION PRODUCTS

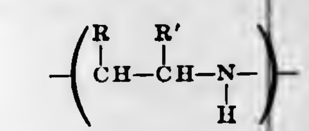
Le Roy A. White, Root Road, Somers, Conn. 06071

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,737

9 Claims. (Cl. 260—2.2)

1. A crosslinked sequestering resin comprising the reaction product of:

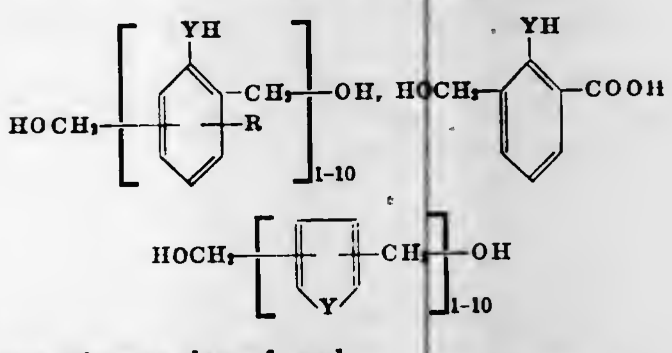
(A) a polyimine consisting essentially of units of the formula



$$-\!\left(\begin{array}{c}R\\|\\CH\end{array}\!-\!\begin{array}{c}R'\\|\\CH\end{array}\!-\!\begin{array}{c}\\ N\\|\\H\end{array}\!-\right)\!-$$

(B) a metal-replaceable-hydrogen containing organic compound selected from the group consisting of:

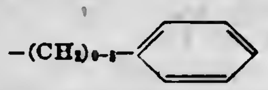
$$XCHRCOOH,\ XCHRPO_3H_2$$



and mixtures thereof; and

(C) a crosslinking agent for a polyamine selected from the soluble amine reactive group consisting of epoxy crosslinking agents, polyisothiocyanates, sulfones, aldehydes, phenolic condensation products, ethers, mercapto crosslinking agents, halogenated hydrocarbons, polyisocyanates, aniline-aldehyde condensation

products, and melamine-aldehyde condensation products; wherein R and R' are selected from the group consisting of —H, —F, $—C_mH_{2m+1}$,



and $—CH_2OH$, wherein *m* is an integer of 1–5; X is selected from the group consisting of Cl, Br, and I; and Y is selected from the group consisting of S and O.

3,354,104

PIGMENT DISPERSANTS COMPRISING PHOSPHONIC ACID DIELS-ALDER ADDUCTS OF VEGETABLE OIL MATERIALS

Raymond Noel Faulkner, Hanworth, and Nirmal Sen, Welwyn Garden City, England, assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Mar. 16, 1965, Ser. No. 440,334

4 Claims. (Cl. 260—22)

1. The Diels-Alder adduct of (a) about from 1.0 to 1.7 mole equivalents of a vinyl phosphonic compound selected from the group consisting of vinyl phosphonic acid and vinyl phosphonic dichloride and (b) about 1.0 mole equivalent of a vegetable oil-based material selected from the group consisting of methyl 9,11-linoleate, isomerized safflower oil, and dehydrated castor oil.

4. A titanium dioxide-containing phthalocyanine blue-tinted long oil alkyd paint containing about from 1 to 4 percent by weight of the alkyd solids of a vinyl phosphonic adduct, as defined in claim 1, as a flotation inhibitor.

3,354,105

COAL TAR POLYHYDROXYETHER COMPOSITION

George E. Trieschock, Westfield, N.J., assignor, by mesne assignments, to United States Steel Corporation, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed June 1, 1964, Ser. No. 371,769

18 Claims. (Cl. 260—28)

1. A composition comprising coal tar pitch and a polymer having the formula

$$\left[O—R—OCH_2CHOHCH_2\right]_n$$

where *n* is an integer of at least 80 and R is the divalent residue of a dihydric phenol after removal of both hydroxyl hydrogens, wherein the pitch is 40 to 98% of the total pitch and polymer.

5. A composition according to claim 1 wherein the pitch is 40 to 98% of the total of the pitch and polymer and there is also included in the composition 2–25% of a diolefin-acrylonitrile rubber based on the total composition and 2–10% of the total composition of a liquid polymer of a conjugated diolefin having 4 to 5 carbon atoms.

3,354,106

SEALING WAX COMPOSITION

Stephan Ilnyckyj and David M. MacLeod, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 29, 1965, Ser. No. 452,021

3 Claims. (Cl. 260—28.5)

1. Improved paraffin wax composition having incorporated therein from about 10 to 50% by weight of a wax-soluble copolymer of ethylene and vinyl acetate, said copolymer having a number average molecular weight in the range from about 3,500 to about 8,000 and having a vinyl acetate content in the range from about 15 to about 34% by weight, said copolymer having a specific viscosity (1 wt. percent copolymer in toluene at 125° F.) in the range from about 0.35 to about 0.65.

3,354,107

TACKIFYING CEMENTS FOR EPM AND EPDM RUBBERS

Parviz Hamed, Akron, Ohio, assignor to B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 28, 1965, Ser. No. 491,008

4 Claims. (Cl. 260—31.2)

1. A tackifying cement for providing building tack to ethylene-propylene copolymer and ethylene-propylene-diene terpolymer elastomers comprising a blend of separate solutions of:

(1) 100 parts of a base polymer comprising a terpolymer of ethylene, propylene and a material selected from the group consisting of straight chain and cyclic diolefins,

(2) 5–25 parts of a cohesive agent selected from the group consisting of polychloroprene, butyl rubber, halogenated butyl rubber, chlorosulfonated polyethylene, chlorinated polyethylene and polyisobutylene,

(3) a mixture in solution of:

(a) 10–40 parts of tackifying resin selected from the group consisting of oil soluble alkyl-substituted phenol-formaldehyde resins, alkyl-substituted phenol-acetylene resins and terpene resins, said alkyl-substituent groups containing 1–20 carbon atoms,

(b) 20–100 parts of a low molecular weight poly-alpha olefin based on a monomer containing 3–6 carbon atoms,

(c) from 10% to 30% by weight of said tackifier resin (a) of a material selected from the group consisting of naphthoic acid esters and naphthoic acid metal salts.

3,354,108

GRAFT BLEND OF DIENE RUBBER POLYMERIC COMPOSITIONS HAVING IMPROVED TOUGHNESS

Leo P. Paradis, Wilbraham, and William J. Hall, North Wilbraham, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 19, 1964, Ser. No. 376,552

7 Claims. (Cl. 260—31.4)

1. A composition comprising an intimate mixture of (A) a graft blend of 5–40 parts by weight of a diene rubber and, correspondingly, 95–60 parts by weight of a resinous interpolymer of a monovinylidene aromatic hydrocarbon and an unsaturated nitrile of the group consisting of acrylonitrile, methacrylonitrile, and mixtures thereof, at least a portion of said resinous interpolymer having been prepared by polymerizing the resin-forming monomers in the presence of the diene rubber, and (B) about 0.2–10%, based on the weight of said blend, of a polyethylene glycol compound of the group consisting of a polyethylene glycol having an average molecular weight of between about 6500 and 20,000 and the C_1–C_{20} alkyl ethers and C_1–C_{20} alkanoic esters thereof.

3,354,109

HEAT-FUSIBLE COMPOSITION COMPRISED OF VINYL HALIDE RESIN, EPOXY RESIN AND ACID PLASTICIZER

Robert W. Evans, Hamburg, Mich., and William D. Todd, Bay Village, and Henry J. Essig, Westlake, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 19, 1963, Ser. No. 324,819

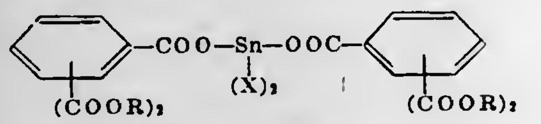
11 Claims. (Cl. 260—31.8)

1. A vinyl halide resin fluid composition capable of being cured to form a hard, flexible product comprising (a) 100 parts by weight of a vinyl halide resin in powder form, said vinyl halide resin being selected from the group consisting of homopolymers of vinyl halides and copoly-

mers of vinyl halides and other monoethylenically unsaturated monomers copolymerizable therewith in which the vinyl halide is in a major proportion, (b) from about 30 to about 100 parts by weight of an acid plasticizer, said acid plasticizer being a liquid mono ester of a dibasic acid said ester grouping known to impart plasticization to the polyvinyl halide resin and at least one carboxyl group, and (c) from about 20 to about 90 parts by weight of a polyepoxide having a melting point less than about 50° C., an average molecular weight within the range of about 300 to about 700 and an epoxy equivalency within the range of 1 to 2 said polyepoxide being a glycidyl polyether of a dihydric phenol.

3,354,110
VINYL RESINS CONTAINING METAL SALTS OF BENZENE TRICARBOXYLIC ACIDS
James E. Horan, Chicago, Ill., and Richard E. Van Strien, Griffith, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Original application Apr. 30, 1962, Ser. No. 191,283, now Patent No. 3,244,737, dated Apr. 6, 1966. Divided and this application Feb. 26, 1965, Ser. No. 444,485
4 Claims. (Cl. 260—31.8)

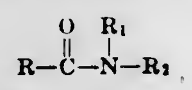
1. A composition comprising (A) a polymerized vinyl material containing at least about 20% of vinyl chloride units based on the vinyl units in said material, and (B) about 1–75 weight percent of said vinyl material of a compound having the formula:



wherein R and X are each C_{1-18} alkyl.

3,354,111
PIGMENT DISPERSIONS
William B. Henderson and Gerd R. Baur, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Apr. 20, 1964, Ser. No. 361,250
8 Claims. (Cl. 260—32.6)

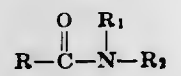
1. A solution suitable for the production of shaped articles comprising a dispersion of from about 10 to 50 percent by weight of finely divided pigment in from about 50 to 90 percent by weight of an amide selected from the group consisting of amides having the formula



$$R-\overset{\overset{\displaystyle O}{\|}}{C}-\overset{\overset{\displaystyle R_1}{|}}{N}-R_2$$

wherein R is a hydrocarbon radical containing from about 11 to 21 carbon atoms and R_1 and R_2 are lower alkyl radicals of 1 to 4 carbon atoms and mixtures of said amides in a solution of a synthetic linear polymer, said dispersion being present in amounts sufficient to provide about 0.01 to 5.0 percent by weight of pigment in a shaped article prepared from said solution.

4. A pigment dispersion comprising a suspension of from about 10 to 50 percent by weight of a finely divided pigment dispersed with from about 50 to 90 percent by weight of a member selected from the group consisting of amides having the formula



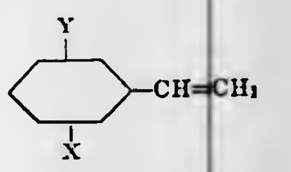
$$R-\overset{\overset{\displaystyle O}{\|}}{C}-\overset{\overset{\displaystyle R_1}{|}}{N}-R_2$$

wherein R is a hydrocarbon radical containing from about 11 to 21 carbon atoms and R_1 and R_2 are lower alkyl radicals of 1 to 4 carbon atoms and mixtures of said amides.

3,354,112
PROCESS FOR PREPARING FLUID, NON-PLASTICIZED VINYL CHLORIDE POLYMER COMPOSITIONS AND THERMOSET POLYMERS HAVING REINFORCING FIBROUS MATERIAL EMBEDDED THEREIN
John P. Bruce, Cumberland, Md., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Jan. 25, 1965, Ser. No. 427,951
9 Claims. (Cl. 260—32.8)

1. A method for preparing a fluid, non-plasticized, vinyl chloride polymer composition capable of being converted to a thermoset product which comprises:

(I) preparing a mixture of
- (a) from between about 12 and 60 percent by weight of vinyl chloride,
- (b) from between about 6 and 15 percent by weight of at least one monovinyl aromatic compound having the formula



wherein X and Y each represent a member of the group consisting of hydrogen, halogen and lower alkyl radicals containing from 1 to 4 carbon atoms,
- (c) from between about 1 and 5 percent by weight of at least one polyethylenically unsaturated monomer selected from the group consisting of allyl acrylate and allyl methacrylate,
- (d) from between about 1 and 5 percent by weight of acrylonitrile, and
- (e) from between about 15 and 80 percent by weight of a non-polymerizable organic ketone solvent therefor, and

(II) polymerizing the monomeric constituents of said mixture to substantial completion in the presence of catalytic amounts of a free-radical initiating agent while utilizing autogeneous pressure and a temperature between about 75 and 100° C.

3,354,113
COLOR IMPROVEMENT OF ACRYLIC SPIN DOPES
Dudley W. Cheape, Jr., and Julian J. Hirshfeld, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Oct. 2, 1964, Ser. No. 401,230
4 Claims. (Cl. 260—32.6)

1. A process for reducing the discoloration in a fiber forming acrylonitrile-based, polymeric dope being caused by the addition of heat to the same comprising charging a solvent for acrylonitrile-based polymers with an acid selected from the group consisting of hydrochloric acid and phosphoric acid; wherein, when hydrochloric acid is used it is present in amounts ranging from about 0.5% to about 10%, and when the phosphoric acid is used it is present in amounts ranging from about 1.0% to about 3.0%, and a metal being compatible with said solvent and being selected from the group consisting of zinc and aluminum; wherein, when zinc is used it is present in amounts ranging from about 0.3% to about 2.0%, and when aluminum is used it is present in amounts ranging from about 1.7% to about 2.0%, said acid and said metal reacting in said solvent medium to give off hydrogen gas and adding to said solvent an acrylonitrile-based polymer, said solvent dissolving said polymer upon agitation and the addition of heat, the percents based on weight of the polymer.

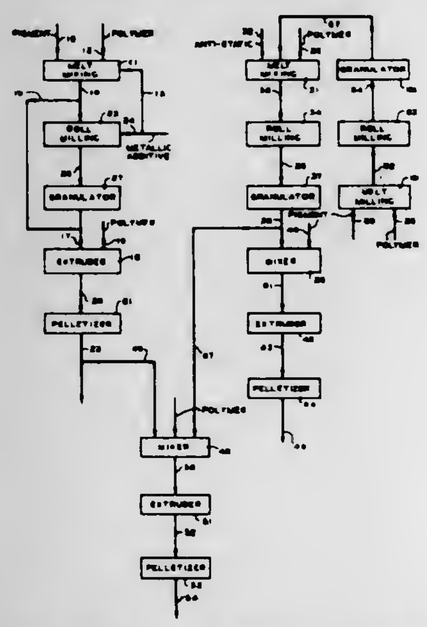
3,354,114
POLYSTYRENE FIBER-FINELY DIVIDED SILICA THICKENING AGENT, AND ORGANIC LIQUID MATERIALS THICKENED THEREWITH
Carroll Francis Doyle, Ellicott City, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Mar. 3, 1964, Ser. No. 349,134
12 Claims. (Cl. 260—40)

1. Polystyrene fibers having an ultimate particle size with a major dimension less than about 50 microns and a length to diameter ratio greater than about 500 to 1. said fibers being derived from oriented expanded polystyrene.

10. A method for preparing an intimate mixture of fine sized silica having a particle size less than about 10 microns and fibrous polystyrene having a major dimension of less than about 10 microns at a length to diameter ratio greater than about 100 to 1, said mixture having from about 10 to 90% by weight of said silica and from about 90 to 10% by weight of said polystyrene comprising introducing oriented expanded polystyrene into the grinding chamber of a fluid energy mill, simultaneously introducing into said chamber silica aerogel whereby the said polystyrene is simultaneously comminuted and intimately mixed with the said silica aerogel.

11. Process for thixotropically thickening liquid polyesters which comprises incorporating therein from about 0.1 to about 5.0 parts per hundred parts, by weight, of said polyester of an intimate mixture of fine sized silica having a article size less than about 10 microns and fibrous polystyrene having a major dimension less than about 10 microns in a length to diameter ratio greater than about 100 to 1, said mixture having from about 10 to 90% by weight of said silica and from about 90 to 10% by weight of said polystyrene.

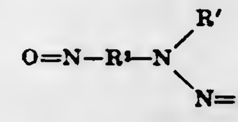
3,354,115
MULTIPLE ADDITIVE DISPERSION IN 1-OLEFIN POLYMERS
Robert T. Brandle and James R. Nutt, Houston, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,312
8 Claims. (Cl. 260—41)



1. A process which comprises (1) melt blending an anti-static additive with a first portion of a 1-olefin polymer, (2) forming a solid polymer containing said anti-static additive, (3) melt blending a second portion of said 1-olefin polymer with a pigment additive, (4) after step (3) has been conducted for from about 2 to about 5 minutes, blending a metallic additive selected from the group consisting of aluminum, bronze and copper with the melted 1-olefin polymer containing said pigment additive, the blending time for step (4) being in the range of 5 to 50 percent of the time required for step (3), (5) forming a solid 1-olefin polymer containing said pigment and metallic additives, (6) melt blending said 1-olefin polymer containing said anti-static additive and said 1-olefin polymer containing said pigment and metallic additives, and (7) forming a solid 1-olefin polymer containing said pigment, metallic and anti-static additives.

3,354,116
COMPOUNDING PROCEDURE FOR ACIDIC-TERMINATED POLYMERS
Jerry T. Gruver and Gerard Kraus, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 12, 1964, Ser. No. 410,737
8 Claims. (Cl. 260—41.5)

1. A method for increasing the tensile strength of acidic-terminated unsaturated polymer vulcanizates; said method comprising the step of pretreating an acidic-terminated unsaturated polymer, prior to compounding with carbon black and curing, with a compound having the formula:



$$O{=}N{-}R^2{-}N\begin{matrix}\diagup R' \\ \diagdown N{=}O\end{matrix}$$

wherein R^2 is an aromatic nucleus selected from the group consisting of a benzene nucleus, a naphthalene nucleus, an alkyl substituted derivative thereof with the alkyl groups containing from 1 to 6 carbon atoms, and R' is selected from the group consisting of hydrogen and alkyl radicals containing from 1 to 4 carbon atoms at a temperature within the range of about 100–300° F., said compound being present in the range of about 0.5 to 10 parts by weight compound per 100 parts by weight polymer; and curing the pretreated polymer to produce a vulcanizate having an improved tensile strength over a vulcanizate not so treated.

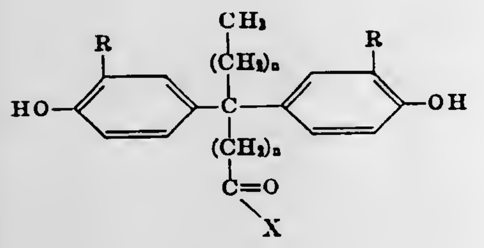
3,354,117
STABILIZED POLYOLEFINS
Heinz Schmidt, Frankfurt am Main, Otto Mauz, Niederhofheim, Taunus, and Felix Schulde, Neuenhain, Taunus, Germany, assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 29, 1967, Ser. No. 626,714
Claims priority, application Germany, Aug. 27, 1960, F 31,989
1 Claim. (Cl. 260—45.85)

A composition of matter comprising polypropylene; about 0.1 to 2% based on the weight of polypropylene of the reaction product obtained by refluxing 4,4'-thiobis(6-t-butyl-m-cresol) in toluene for about 2 to about 8 hours with a phosphorous compound selected from the class consisting of PCl_3 and $O{=}PCl_3$, said 4,4'-thiobis(6-t-butyl-m-cresol) and said phosphorous compound being reacted in a molar ratio of about 3:1; up to about 0.5% of the condensation product of 2 moles of nonyl phenol and 1 mole of acetone; and up to about 0.5% of dilauryl thiodipropionate.

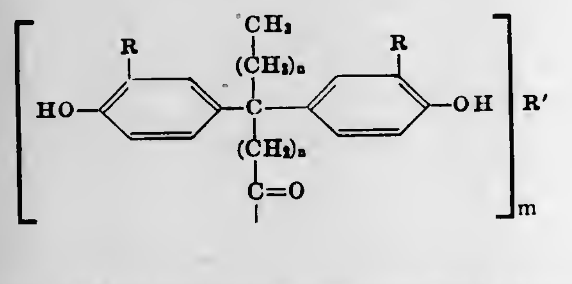
3,354,118
STABILIZATION OF POLYOLEFINS
Otto Mauz and Eberhard Prinz, Frankfurt am Main, Germany, assignors to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Aug. 24, 1964, Ser. No. 391,748
Claims priority, application Germany, Aug. 30, 1963, F 40,633
5 Claims. (Cl. 260—45.85)

1. A composition comprising a polymer of propylene and 0.05 to 5% based on the weight of the polymer of a two-component stabilizer consisting of components A and

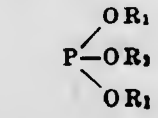
B in a weight ratio of 1:5 to 2:1; said component A being a bisphenol alkanoic acid derivative selected from the class consisting of compounds having the structural formula



and compounds having the general formula



where R is selected from the class consisting of hydrogen, aliphatic radicals having 1 to 18 carbon atoms and halogen; n is an integer from 0 to 8; X is selected from the class consisting of 1 to 18 carbon atom alkoxy radicals and 2 to 18 carbon atom alkoxy radicals having 1 to 5 free hydroxyl groups, and R′ is a multivalent hydrocarbon radical obtained by displacement of 2 to 6 hydroxyl hydrogen atoms from a 2 to 18 carbon atom polyhydric alcohol having 2 to 6 hydroxyl groups and m is an integer from 2 to 6 whose value is equal to the valence of R′ and said component B being an organic phosphite of the general formula



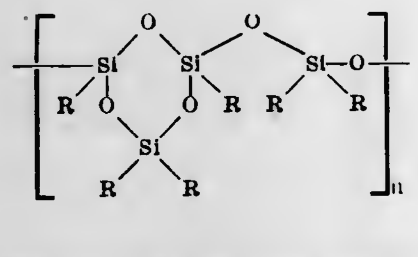
$$P\begin{cases}OR_1\\ OR_2\\ OR_3\end{cases}$$

where R_1, R_2, and R_3 are monovalent hydrocarbon radicals independent of one another selected from the class consisting of 8 to 18 carbon alkyl, aryl, alkaryl, and aralkyl radicals.

3,354,119
CYCLIC SILOXANE-CONTAINING SILICONE POLYMERS

Tse C. Wu, Waterford, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Continuation of application Ser. No. 299,153, Aug. 1, 1963, now Patent No. 3,297,632, dated Jan. 10, 1967. This application Apr. 18, 1966, Ser. No. 547,389
2 Claims. (Cl. 260—46.5)

1. A polymeric material consisting essentially of recurring units of the formula,

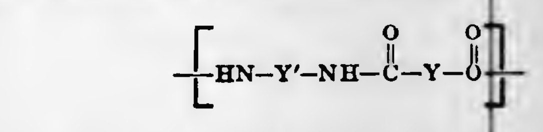


where R is selected from the class consisting of monovalent aryl radicals and halogenated monovalent aryl radicals, and n is an integer equal to 5 to 50, inclusive.

3,354,120
POLYAMIDES PREPARED FROM 5,5′-DIAMINOINDIGO

Hartwig C. Bach, Durham, and Jack Preston, Raleigh, N.C., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Feb. 26, 1964, Ser. No. 347,355
12 Claims. (Cl. 260—47)

1. An amide-heterocyclic polymer composed of regularly recurring structural units of the formula



$$-\left[HN-Y'-NH-\overset{O}{\overset{\|}{C}}-Y-\overset{O}{\overset{\|}{C}}\right]-$$

wherein Y and Y′ are selected from the group consisting of Ar and Ar′—X—X—Ar′ where Ar is a hydrocarbon aromatic divalent radical, Ar′ is a hydrocarbon aromatic trivalent radical, X is a heterocyclic radical of 5 to 6 ring members containing from 1 to 2 hetero atoms selected from As, N, O, P, S and Se, X is fused to adjacent carbon atoms of Ar′, all occurrences of X in the recurring unit must be the same, and wherein at least one

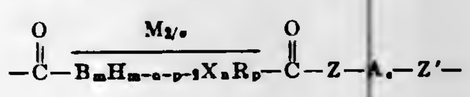
$$Ar'-X-X-Ar'$$

radical must be present in each recurring structural unit, and wherein a point of symmetry is present in each repeating unit.

3,354,121
POLYMERS OF POLYHEDRAL BORON COMPOUNDS

Walter H. Knoth, Jr., Mendenhall, Pa., and Rudolph H. Michel, Tonawanda, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 20, 1963, Ser. No. 260,347
19 Claims. (Cl. 260—47)

1. A boron-containing polymer consisting essentially of recurring units of the formula

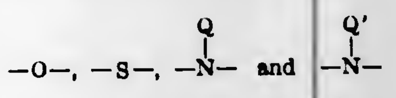


$$-\overset{O}{\overset{\|}{C}}-\overset{M_{2/v}}{\overline{B_mH_{m-n-p-2}X_nR_p}}-\overset{O}{\overset{\|}{C}}-Z-A_s-Z'-$$

wherein
M is a cation;
v is the valence of M;
$2/v$ is the ratio of M groups to one

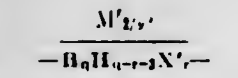
$$-B_mH_{m-n-p-2}X_nR_p-$$

group;
X is halogen;
R is aliphatically saturated hydrocarbyl of 1–18 carbon atoms;
m in a cardinal number selected from the class consisting of 10 and 12;
n is a cardinal number of from 0 to $m-2$, inclusive;
p is a cardinal number of from 0 to 2, inclusive, being 0 when m is 12, and the sum of n and p being at most $m-2$;
Z and Z′ each are groups selected from the class consisting of



$$-O-,\ -S-,\ -\overset{Q}{\overset{|}{N}}-\ \text{and}\ -\overset{Q'}{\overset{|}{N}}-$$

in which Q and Q′ are selected from the class consisting of hydrogen, lower alkyl, and when joined together, alkylene;
s is a cardinal number of from 0 to 1, inclusive, being 1 when Z and Z′ are selected from the class consisting of —O— and —S—; and
A is selected from the class consisting of (1) a divalent aliphatically saturated hydrocarbyl group of 2–18 carbon atoms which may be interrupted by up to 2 separated atoms selected from the class consisting of oxygen, sulfur, and nitrogen, and, (2) when Z and Z′ are oxygen, A can be a divalent boron cage group having the structure



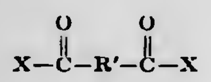
$$\overset{M'_{2/v'}}{\overline{-B_qH_{q-r-2}X'_r-}}$$

wherein M′ is a cation, v' is the valence of M′, $2/v'$ is the ratio of M groups to one $-B_qH_{q-r-2}X'_r$ group, X′ is halogen, q is a cardinal number selected from the class consisting of 10 and 12, and r is a cardinal number of from 0 to $q-2$, inclusive.

3,354,122
POLYMERS OF POLYACYLHYDRAZONES AND PROCESS OF PREPARATION THEREFOR

Rudolph Henry Michel, Tonawanda, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 21, 1962, Ser. No. 246,346
7 Claims. (Cl. 260—63)

1. A process for preparing tractable polyacylhydrazones comprising: reacting approximately equimolar amounts of at least one organic dicarboxylic acid dihydrazide and at least one compound of the formula:



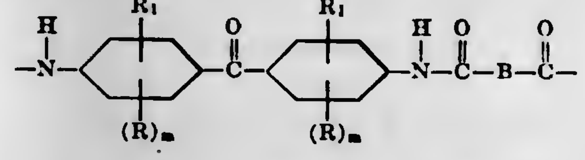
$$X-\overset{O}{\overset{\|}{C}}-R'-\overset{O}{\overset{\|}{C}}-X$$

where R′ is a hydrocarbon radical of from 0 through 18 carbon atoms and X is selected from the group consisting of hydrogen and alkyl in a solvent selected from the group consisting of hexamethylphosphoramide, N-methylpyrrolidone, dimethylsulfoxide, trifluoroacetic acid, N,N′-dimethylacetamide, hexafluoroacetone hydrate and sym-dichlorotetrafluoroacetone hydrate, whereby said polyacylhydrazone is characterized by an inherent viscosity of at least 0.4 when measured at 30° C. in a 0.25% by weight solution thereof in hexamethylphosphoramide or dimethylsulfoxide.

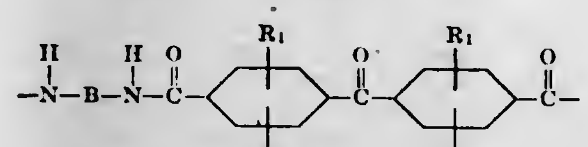
3,354,123
AROMATIC POLYAMIDES CONTAINING THE BENZOPHENONE NUCLEUS

Paul Winthrop Morgan, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 17, 1963, Ser. No. 288,479
7 Claims. (Cl. 260—65)

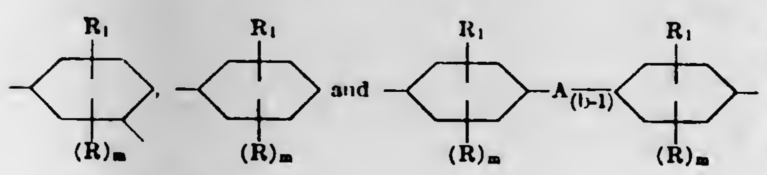
1. A linear, fiber-forming, synthetic polycarbonamide wherein recurring carbonamide linkages are an integral part of the polymer chain from the class consisting of a homopolymer and a copolymer, the said homopolymer and copolymer consisting of recurring units of the class consisting of



and



wherein B is a divalent radical from the class consisting of

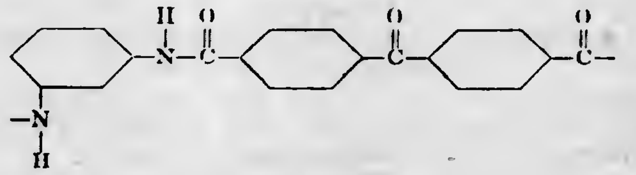


and wherein the hexagon represents the benzene nucleus, A is a divalent radical from the class consisting of $-SO_2-$,

$$-\overset{O}{\overset{\|}{C}}-$$

and $-CH_2-$, b is a number of from one to two inclusive, R is a monovalent nuclear carbon substituent from the class consisting of hydrogen, halo, lower alkyl, lower alkoxy, and carbalkoxy, R_1 is a monovalent nuclear carbon substituent from the class consisting of carboxy and R, and m is a number from zero to two inclusive, the said polycarbonamide having a melting point of at least about 375° C. and an inherent viscosity of at least about 0.6 in concentrated sulfuric acid at 30° C. at a concentration of 0.5% by weight.

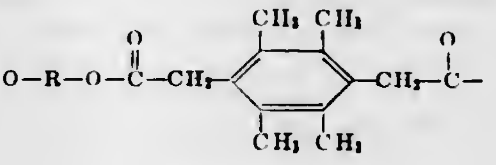
2. The polycarbonamide of claim 1 wherein the recurring unit is



3,354,124
POLYESTERS FROM 3,6-BIS(CARBOXYMETHYL) DURENE

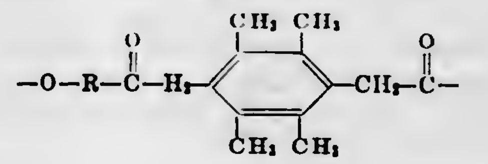
Eckhard Christian August Schwarz, Grifton, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington Del., a corporation of Delaware
No Drawing. Filed June 30, 1964, Ser. No. 379,359
7 Claims. (Cl. 260—75)

1. A linear polyester selected from the class consisting of homopolyesters consisting essentially of recurring units of the formula



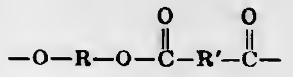
(I)

and copolyesters consisting essentially of recurring units of the formulas:



(I)

and



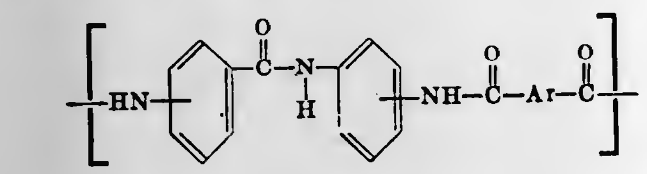
$$-O-R-O-\overset{O}{\overset{\|}{C}}-R'-\overset{O}{\overset{\|}{C}}-$$ (II)

wherein R is the radical remaining after removal of the hydroxyl groups from a diol selected from the group consisting of ethylene glycol, butylene glycol, hexamethylene glycol, decamethylene glycol, polyethylene ether glycol, polypropylene ether glycol, trans-1,4-bis(hydroxymethyl) - cyclohexane, 3,6 - bis(β - hydroxyethyl)durene, trans/trans-1,1-bicyclohexane-4,4′-dimethanol, and bisphenol A, and wherein R′ is the radical remaining after removal of the carboxyl groups from a dicarboxylic acid selected from the group consisting of adipic acid, sebacic acid, hexahydroterephthalic acid, terephthalic acid, 2,6-naphthalic acid, 2,7-naphthalic acid, diphenoxyethane-4,4′-dicarboxylate, bis-carboxyphenyl ketone, and p,p′-sulphonyldibenzoic acid.

3,354,125
POLYMERS FROM DIAMINOBENZANILIDES

Ralph W. Smith and William A. H. Huffman, Durham, and Jack Preston, Raleigh, N.C., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed July 29, 1963, Ser. No. 298,467
14 Claims. (Cl. 260—78)

1. A wholly aromatic polyamide composed of structural units of the formula

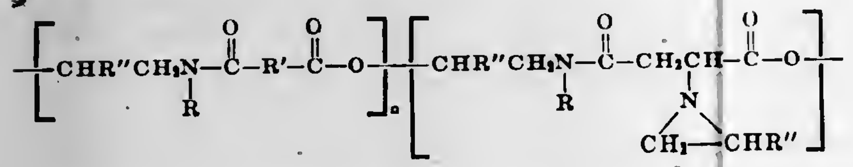


wherein Ar represents a divalent hydrocarbon aromatic radical and wherein the valence bonds are oriented other than ortho.

3,354,126
POLYESTER-POLYAMIDES CONTAINING AZIRIDINE GROUPS

George E. Ham, Lake Jackson, and Jane E. Stevens, Austin, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 11, 1964, Ser. No. 351,215
13 Claims. (Cl. 260—78)

1. A polyester-polyamide resin consisting essentially of units having the formula:

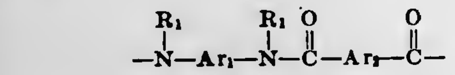


wherein R is a lower alkyl radical free of substituents reactive with the aziridine ring, R′ is the divalent hydrocarbon radical formed by removal of the caboxyl groups from a dicarboxylic acid, each R″ is hydrogen or a lower alkyl radical, and *n* is a number having an average value of 0 to 2 and may be different in successive polymer units.

3,354,127
AROMATIC COPOLYAMIDES

Harold Wayne Hill, Jr., Bartlesville, Okla., and Stephanie Louis Kwolek and Wilfred Sweeny, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 109,832, May 15, 1961. This application Apr. 18, 1966, Ser. No. 543,078
6 Claims. (Cl. 260—78)

1. A linear high molecular weight polyamide in which at least about 90% of the repeating structural units have the structure



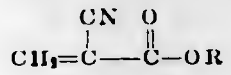
$$-\overset{R_1}{\overset{|}{N}}-Ar_1-\overset{R_1}{\overset{|}{N}}-\overset{O}{\overset{\|}{C}}-Ar_2-\overset{O}{\overset{\|}{C}}-$$

where R_1 is selected from the group consisting of hydrogen and lower alkyl, and Ar_1 and Ar_2 are divalent carbocyclic aromatic radicals having resonance, the intralinear polymer bonds of which are attached directly to non-adjacent carbon atoms in the respective rings of these aromatic radicals, said bonds being positioned in the meta position in 50–80% of the Ar_2 radicals and in the para position in the remaining Ar_2 radicals, said polyamide having an inherent viscosity of at least 0.6 at 30° C. in concentrated sulfuric acid at a polymer concentration of 0.5% by weight.

3,354,128
ALPHA-CYANOACRYLATE/PHTHALIC ACID ESTER ADHESIVE COMPOSITIONS

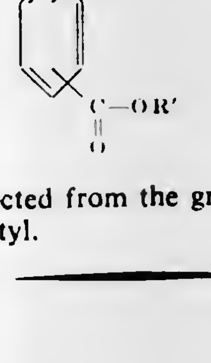
Thomas H. Wicker, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Sept. 1, 1964, Ser. No. 393,740
9 Claims. (Cl. 260—78.5)

1. An adhesive composition comprising an α-cyanoacrylate ester of the formula:



$$CH_2=\overset{CN}{\overset{|}{C}}-\overset{O}{\overset{\|}{C}}-OR$$

wherein R is selected from the group consisting of alkyl from 1 to 8 carbon atoms, allyl, methallyl, cyclohexyl and phenyl, and about 1 percent to about 25 percent by weight of a phthalic acid ester of the formula:



wherein R′ is selected from the group consisting of allyl, methallyl and crotyl.

3,354,129
PRODUCTION OF POLYMERS FROM AROMATIC COMPOUNDS

James T. Edmonds, Jr., and Harold Wayne Hill, Jr., Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 27, 1963, Ser. No. 327,143
15 Claims. (Cl. 260—79)

1. A process for the production of a polymer which comprises reacting at least one polyhalo-substituted aromatic compound wherein the halogen atoms are attached to ring carbon atoms with an alkali metal sulfide in a polar organic compound at an elevated temperature for a time sufficient to obtain said polymer, said polar organic compound being a material that will substantially dissolve both the alkali metal sulfide and the polyhalo-substituted aromatic compound.

7. The product formed by the process of claim 1 wherein said polyhalo-substituted aromatic compound is 2,5-dibromothiophene.

3,354,130
PROCESS FOR THE PRODUCTION OF THERMOSETTING RESINS

Karl-Heinz Hornung and Erwin Heinrich, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany
No Drawing. Filed July 29, 1964, Ser. No. 386,048
Claims priority, application Germany, Aug. 28, 1963, C 30,788
24 Claims. (Cl. 260—79.5)

1. In a process for the production of heat-hardenable resins by the condensation of epoxide-containing polymers with mercaptocarboxylic acids, the step which comprises reacting an epoxide-containing polymer having an epoxide-oxygen content ranging from 0.1 to 15%, with from 0.1 to 30 molar percent of a mercaptoacetic acid per mol of epoxide.

3,354,131
INHIBITING PRE-VULCANIZATION WITH POLYSULFIDES

Chester D. Trivette, Jr., St. Albans, W. Va., and Aubert Y. Coran, Creve Coeur, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Mar. 22, 1967, Ser. No. 625,025
20 Claims. (Cl. 260—79.5)

1. Method of inhibiting pre-vulcanization of sulfur-vulcanizable rubber containing sulfur vulcanizing agent in vulcanizing amount and organic accelerator in accelerating amount which comprises incorporating therein, in minor amount effective to inhibit pre-vulcanization within the range of 0.01 to 2.25 parts per 100 parts of rubber, inhibitor of the formula

$$R—S_x—R'$$

where R and R′ are organic radicals containing 1–20 carbon atoms, inclusive, selected from a group consisting of aralkyl, aryl, alkaryl, alkyl, alicyclic, tetrahydrofurfuryl, furfuryl, and alkoxyalkyl, and *x* is 2 to 5, inclusive.

3,354,132
POLYMERIZATION OF BICYCLIC MONOTERPENES WITH AN ALKYL TIN HALIDE-ALUMINUM CHLORIDE CATALYST

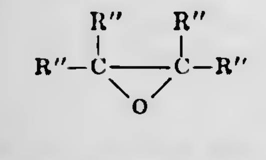
Alan D. Sproat, Verona, Pa., assignor to Pennsylvania Industrial Chemical Corporation, Clairton, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 2, 1964, Ser. No. 394,034
15 Claims. (Cl. 260—88.2)

9. That method of polymerizing a mixture of at least two cyclic unsaturated hydrocarbons comprising the steps of forming a solution of an alkyl tin halide and aluminum chloride in a dry inert solvent in a closed container, adding said hydrocarbon mixture incrementally and with stirring to said solution while controlling the temperature in the liquid body at about minus 25° C. to plus 50° C. and continuing to do with stirring for a least 15 minutes after the addition of said hydrocarbon mixture, hydrolyzing the catalyst, separating the resultant hydrocarbon phase and washing it with water, then heating to drive off solvent followed by steam distilling, and recovering solid polymer.

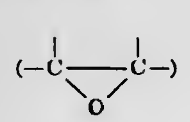
3,354,133
VULCANIZABLE COPOLYMERS OF TETRAHYDROFURAN WITH UNSATURATED EPOXY COMPOUNDS PREPARED IN THE PRESENCE OF ORGANOANTIMONY HEXACHLORIDE

Henry L. Hsieh, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Sept. 18, 1964, Ser. No. 397,616
7 Claims. (Cl. 260—88.3)

1. A process for polymerizing a mixture of tetrahydrofuran and an unsaturated epoxy compound having from about 4 to 20 carbon atoms per molecule and represented by the formula



wherein R″ is selected from the group consisting of hydrogen, saturated aliphatic, saturated cycloaliphatic, monoolefinic aliphatic, diolefinic aliphatic (conjugated and non-conjugated), monoolefinic cycloaliphatic, diolefinic cycloaliphatic (conjugated and non-conjugated), aromatic radicals, and combinations thereof, and can contain oxygen in the form of an acyclic ether linkage (—O—) or an oxirane group

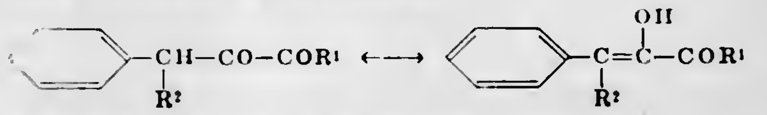


and the compound can contain 1 or 2 olefinic linkages, 1 or 2 oxirane groups, and 0 or 1 ether linkages which comprises contacting said mixture with a catalyst compound having the formula R'_3CSbCl_6 wherein each R′ is a radical selected from the group consisting of methyl, phenyl, 1- and 2-naphthyl, and 2-, 3-, and 4-biphenylyl groups and alkyl, alkenyl, and alkoxy substituted forms of said phenyl, naphthyl, and biphenylyl groups, said substituted forms not to exceed a total of 6 carbon atoms in the substituents, said epoxy compound being present in the range of 4 to 96 parts by weight per 100 parts by weight of the mixture, and said catalyst compound being present in the range of about 0.5 to 10 millimoles per 100 grams of said mixture.

3,354,134
HOMO- AND COPOLYMERIZATION OF VINYL MONOMERS USING TAUTOMERIC PYRUVIC ACID DERIVATIVES AS CATALYSTS

Heinrich Hopff, Zurich, Switzerland, and Eduard Kleiner, Ardsley, N.Y., assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
No Drawing. Filed Nov. 10, 1964, Ser. No. 410,300
Claims priority, application Germany, Nov. 14, 1963, D 42,933
6 Claims. (Cl. 260—89.5)

1. In a process for the polymerization of at least one vinyl monomer containing a terminal $CH_2{=}C<$ group, the step of carrying out such polymerization in contact with a catalytically effective amount of at least one tautomeric compound of the formulae:



wherein R^1 is selected from the group consisting of $—OH$, $—OCH_3$, $—OC_2H_5$, $—OC_3H_7$ and $—NH—C_6H_5$ and R^2 is selected from the group consisting of hydrogen, —CN alkyl of 1–3 carbon atoms and aryl.

3,354,135
PROCESS FOR THE STABILIZATION OF VINYL HALIDE POLYMERS BY TREATING IN THE PRESENCE OF HYDROFLUORIC ACID

Luciano Scarso, Milan, and Giorgio Boccato and Adelio Rigo, Venezia, Italy, assignors, by mesne assignments, to Montecatini Edison S.p.A., Milan, Italy
No Drawing. Filed Dec. 12, 1963, Ser. No. 330,011
Claims priority, application Italy, Dec. 22, 1962, 25,130/62
15 Claims. (Cl. 260—92.8)

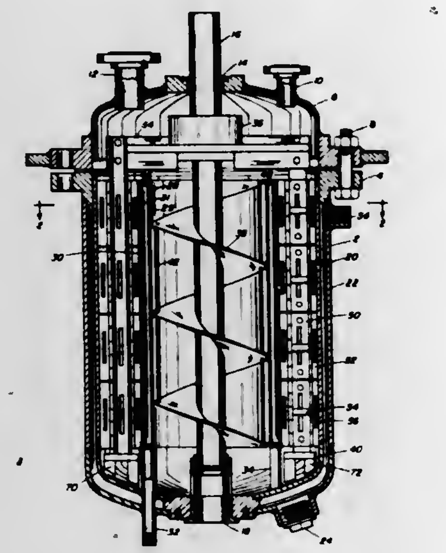
1. A process for increasing the heat and light stability of polymeric substances from the group of vinyl polymers and copolymers wherein said substances are treated with an organic aromatic compound in the presence of hydrofluoric acid and the treatment of the polymeric substance is carried out in the liquid phase with said polymeric substance suspended in the aromatic compound in the presence of the hydrofluoric acid, at a temperature varying from −15° C. to +200° C.

3,354,136
MATERIAL TREATMENT METHODS

James R. Crawford, New Canaan, Conn., assignor to Crawford & Russell Incorporated, Stamford, Conn.
Application May 17, 1963, Ser. No. 281,303, now Patent No. 3,206,287, dated Sept. 14, 1965, which is a continuation of abandoned application Ser. No. 28,166, May 10, 1960. Divided and this application Mar. 8, 1965, Ser. No. 437,677
3 Claims. (Cl. 260—93.5)

1. The method of mixing materials in polymerization reactions while controlling the temperature of the material mass, comprising the steps of

(A) bringing the materials together,
(B) moving the materials through a longitudinally-elongated first treatment zone bounded by a first imperforate and unbroken heat transfer surface forming a right circular cylinder,
(C) traversing angularly inclined blade means along the first heat transfer surface and thereby
  (1) removing materials deposited on said first surface, and
  (2) imparting motion to the removed materials in a direction substantially transverse to the longitudinal path of the materials passing through the first treatment zone,



(D) forcing the materials through a second longitudinally-elongated annular second treatment zone surrounding and communicating at both ends for recirculation with the first treatment zone and bounded by a pair of coaxial right circular cylindrical second heat transfer surfaces remote from said first surface while traversing angularly inclined blade means along the second heat transfer surfaces and thereby
  (1) removing materials deposited on said second surfaces and
  (2) imparting motion to the removed materials in a direction substantially transverse to the direction of forced movement of the materials through said second treatment zone,

whereby the materials are thoroughly mixed by compound eddy motion and the temperature of the materials is closely controlled by said heat transfer surfaces.

3,354,137

PROCESS FOR ISOLATING ACETYLENE POLYMERS FROM SCRUBBING OILS

Alexander Ohorodnik, Liblar, and Günter Legutke, Bruhl, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, a corporation of Germany
No Drawing. Filed Dec. 1, 1964, Ser. No. 415,171
Claims priority, application Germany, Dec. 4, 1963, K 51,532
9 Claims. (Cl. 260—94.1)

1. A process for isolating acetylene polymers from scrubbing oils, which comprises allowing a liquid film of a scrubbing oil enriched with acetylene polymers to flow downwardly over a heated surface area under reduced pressure at a temperature not exceeding about 150° C., evaporating the scrubbing oil and immediately quenching the unevaporated acetylene polymer residue after passing over the heated surface area at a temperature below the decomposition point of the polymers.

3,354,138

PRODUCTION OF ANTISTATIC POLYMERS

Robert H. Burr, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 22, 1963, Ser. No. 325,775
4 Claims. (Cl. 260—94.9)

1. A process which comprises melt blending a 1-olefin polymer prepared from the polymerization of a 1-olefin having a maximum of 6 carbon atoms per molecule with polyethylene glycol and mineral oil, forming an article from the resulting blend, and flame treating said formed article.

3,354,139

PROCESS FOR POLYMERIZING OLEFINS

Edwin J. Vandenberg, Blue Rock Manor, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed May 18, 1955, Ser. No. 509,396
15 Claims. (Cl. 260—94.9)

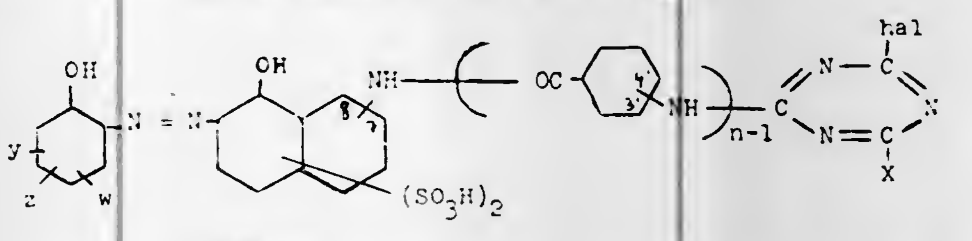
13. The process for polymerizing ethylene to solid polymers which comprises contacting ethylene with a catalyst produced by admixing (1) a titanium halide, (2) a haloalkane having at least one carbon atom substituted by at least three halogens, wherein the halogen is a member of the class consisting of chlorine and bromine, and (3) a reducing agent having at least one metal to hydrocarbon bond, said halohydrocarbon being admixed in at least equimolar quantities on the basis of the titanium halide but insufficient to retard polymerization.

3,354,140

METAL-CONTAINING REACTIVE MONOAZO DYESTUFFS CONTAINING A TRIAZINE GROUP

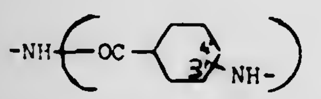
Jakob Benz, Oberwil, Basel-Land, and Hanspeter Uehlinger, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz AG), Basel, Switzerland
No Drawing. Filed Dec. 11, 1964, Ser. No. 417,840
Claims priority, application Switzerland, Apr. 10, 1959, 71,848/59
7 Claims. (Cl. 260—146)

1. A member selected from the group consisting of the 1:2-chromium and the 1:2-cobalt complex compounds of the monoazo dyestuff of the formula



wherein
- *w* is a member selected from the group consisting of hydrogen and chlorine,
- *y* is a member selected from the group consisting of hydrogen, chlorine, and nitro,
- *z* is a member selected from the group consisting of hydrogen, chlorine, bromine and nitro, at least one of *w*, *y* and *z* being different from hydrogen,
- hal is a member selected from the group consisting of chlorine and bromine,
- X is a member selected from the group consisting of amino, lower alkylamino, di-(lower alkyl)-amino, lower hydroxyalkylamino, di-(lower hydroxyalkyl)-amino, lower alkoxy-lower alkylamino, lower carboxyalkylamino, N-lower alkyl-N-lower carboxyalkylamino, lower sulfoalkylamino, lower hydroxysulfoalkylamino, N-lower alkyl-N-lower sulfoalkylamino, phenylamino, N-lower alkyl-N-phenylamino, N-lower hydroxyalkyl-N-phenylamino, carboxy phenylamino, monosulfophenylamino, disulfophenylamino, monosulfonaphthylamino, disulfonaphthylamino, lower alkylphenylamino, lower alkoxyphenylamino, chlorophenylamino, cyclohexylamino, methylcyclohexylamino and benzylamino,
- *n* is one of the integers 1 and 2,

the group

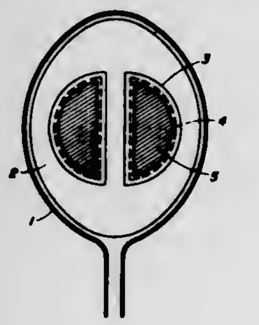


is attached to the naphthalene nucleus in one of the positions 7 and 8 and the —NH— group is attached to one of the positions 3′ and 4′ of the phenylene nucleus.

3,354,141

METHOD FOR PREPARING VISCOSE SPINNING SOLUTION

Ivan Michael Kasser and Alexander Kasser, both of 159 Gates Ave., Montclair, N.J. 07042
Filed Feb. 6, 1964, Ser. No. 342,956
3 Claims. (Cl. 260—217)



1. Process for the production of a viscose solution useful in the production of rayon fiber, rayon cord, cellophane and the like that comprises:
(a) preparation of a cellulosic pulp from microcelled grain parchment materials yielding a near pure substantially undegraded cellulosic pulp substantially free of lignin and pentosans by steps which comprise (1) a pretreatment step employing in solution approximately 1–2 percent sulfuric acid by weight with reference to raw material at a temperature of approximately 150° C. (2) washing said pulp (3) filtering said pulp (4) a 15 to 30 minute digestion step employing in solution approximately 12 to 18 percent alkali and 30 to 40 percent sulfidity at a temperature of approximately 165° C. (5) washing said pulp (6) filtering said pulp (7) a multistage chlorine bleaching step wherein from 40 to 65 percent of consumed chlorine is supplied as chlorine dioxide and includes purification with concentrated sodium hydroxide solution prior to the final chlorine dioxide stage and (8) drying the pulp so produced;
(b) steeping and pressing the pulp in the conventional manner;
(c) macerating the pulp for a brief period only;
(d) in the absence of any aging proceeding with xanthation, mixing, filtration, degassing and ripening, whereby a viscose solution is produced.

3,354,142

HARMIDINE AND DERIVATIVES THEREOF

Salimuzzaman Siddiqui, Karachi, Pakistan, assignor to Pakistan Council of Scientific and Industrial Research, Karachi, Pakistan
No Drawing. Filed Aug. 21, 1962, Ser. No. 218,460
2 Claims. (Cl. 260—236)

1. A process for the isolation of an alkaloid "harmidine" from *Peganum harmala,* which comprises the steps of:
(a) leaching powdered seeds of *Peganum harmala* with an alcohol selected from the group consisting of methanol and ethanol to form a solid residue and an extract;
(b) removing the alcohol from the resulting extract to obtain a viscous residue;
(c) partitioning the resulting viscous residue between water and petroleum ether, thereby obtaining an ethereal and an aqueous phase;
(d) treating the aqueous phase with ammonia to bring the pH from the original 4.5 to 6.5 and then with ammonium sulphate, removing the resinous impurities, charcoaling the solution and filtering;
(e) adding a concentrated solution of potassium iodide to the filtrate and collecting the resulting precipitate of crude hydroiodides of the bases;
(f) dissolving the crude hydroiodides in hot dilute alcohol, charcoaling and filtering through a hot funnel, and cooling the resulting clear solution, thereby obtaining a golden yellow crystallizate of the hydroiodide;
(g) treating the hydroiodide with dilute ammonia with slight warming, and collecting the liberated buff coloured bases, and dissolving the liberated bases in dilute acetic acid, keeping the pH of the solution at about 6–6.5;
(h) adding dilute ammonia to the clear acetic acid solution of the bases till the pH is brought to about 7.2, heating the solution to hydrolyze the acetate of harmine, filtering off the base while hot, and repeating this step with the filtrate showing a reduced pH around 6.8 till there is no further precipitation of the base at pH 7.4 while hot; and
(i) treating the final filtrate obtained in step (h) with an excess of ammonia to bring the pH above 8, to produce the alkaloid harmidine.

3,354,143

PROCESS FOR PREPARING FERULATES FROM ALKALI FOOTS OF VEGETABLE OILS

Minoru Takubo, Funabashi, Koichi Tachibana, Suginami-ku, Tokyo-to, and Shuji Watanabe, Nakanoku, Tokyo-to, Japan, assignors to Toyo Koatsu Industries, Incorporated, Chuo-ku, Tokyo-to, Japan, a corporation of Japan
No Drawing. Filed Sept. 4, 1963, Ser. No. 306,615
Claims priority, application Japan, Sept. 22, 1962, 37/40,926
4 Claims. (Cl. 260—236.5)

1. Process for obtaining a therapeutically active extract from alkali foots obtained by alkali-refining vegetable oils containing ferulates comprising leaching said alkali foots at a temperature of about 20° to 40° C. with one to six times the volume of said alkali foots of a leaching solvent selected from the class consisting of methanol, ethanol and acetone to remove water and soap components and leave a residue at a temperature of about 20° to 40° C.; extracting said residue with a substantially non-aqueous extracting solution of an alkaline substance from the class consisting of an alkali metal hydroxide, an alkali metal carbonate and an alkali metal bicarbonate in an amount of not more than 0.5 N in a solvent from the class consisting of methanol, ethanol and acetone, said solvent containing less than 10% water; and neutralizing the resulting extract with a non-aqueous solution of a

monocarboxylic acid to a pH of 6.0 to 9.0, thereby precipitating said therapeutically active extract.

3,354,144

DICYANOMETHYLENEIMINO COMPOUNDS AND THE PREPARATION THEREOF

Engelbert Ciganek, Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 7, 1964, Ser. No. 336,139

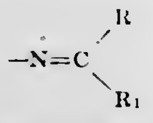
9 Claims. (Cl. 260—239)

1. Dicyanodiazomethane.

2. A compound of the formula

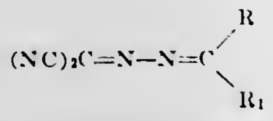
$$(NC)_2C{=}N{-}Y$$

wherein Y is a diarylmethyleneimino radical of the formula

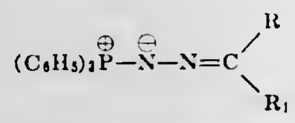


where R and R_1 are members selected from the group consisting of separate and conjoined hydrocarbon and halohydrocarbon aromatic radicals.

8. Process for the preparation of a compound of the formula



wherein R and R_1 are members selected from the group consisting of separate and conjoined hydracarbon and halohydrocarbon aromatic radicals, which comprises contacting and reacting a diaryl ketone triphenylphosphazine of the formula



wherein R and R_1 are as defined above, with carbonyl cyanide in a non-hydroxylic reaction medium at a temperature in the range from 0° C. to 100° C.

9. Process for the preparation of dicyanodiazomethane which comprises oxidizing carbonyl cyanide hydrazone with a stoichiometric excess of lead tetraacetate in a hydrocarbon carbonitrile reaction medium under anhydrous conditions at a temperature in the range from −25° C. to +60° C.

3,354,145

6-AMINO-PENICILLANIC ACID DERIVATIVES

Peter Baumann, Fullinsdorf, Basel-Land, and Markus Zimmerman, Riehen, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

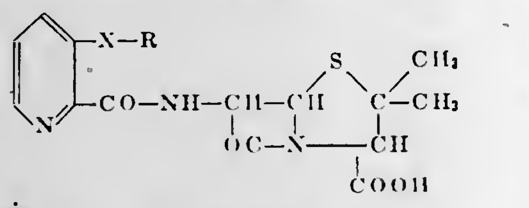
No Drawing. Filed Jan. 24, 1966, Ser. No. 522,394

Claims priority, application Switzerland, Jan. 29, 1965, 1,282/65

11 Claims. (Cl. 260—239.1)

1. A compound selected from the class consisting ot

(i) a 6-amino-penicillanic acid derivative of the formula



wherein

X represents oxygen or sulfur and

R represents straight-chain alkyl of from 1 to 4 carbon atoms or straight-chain alkenyl of from 2 to 4 carbon atoms, and

(ii) a pharmaceutically acceptable salt thereof with a base.

3,354,146

PROCESS FOR THE PRODUCTION OF CYCLOPENTANO OMEGA-OENANTHOLACTAM

Albert Schnider and Kaspar Ryffel, Domat-Ems, Grisons, and Werner Hurschler, Chur, Grisons, Switzerland, assignors to Inventa A.G. für Forschung und Patentverwertung, Zurich, Switzerland

No Drawing. Filed May 25, 1965, Ser. No. 458,778

9 Claims. (Cl. 260—239.3)

1. A process for the manufacture of cyclopentano-omega-oenantholactam which comprises dehydrating cyclodecanol-(6)-one-(1); hydrogenating the product thus obtained; oximating the resulting cis-trans 2-keto-bicyclo (5:3:0)-decane isomer mixture; and subjecting the isomer oxime mixture to a Beckmann-type rearrangement to yield cyclopentano-omega-oenantholactam consisting of the isomers 2,3-cis-cyclopentano-omega-oenantholactam, 2,3-trans-cyclopentano-omega-oenantholactam, 6,7 - trans-cyclopentano-omega-oenantholactam and 6,7-cis-cyclopentano-omega-oenantholactam.

3,354,147

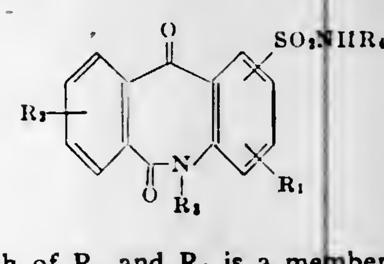
SULFAMYL-MORPHANTHRIDINE-6,11-DIONES

Lincoln Harvey Werner, Summit, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 5, 1965, Ser. No. 506,590

7 Claims. (Cl. 260—239.3)

1. A member selected from the group consisting of a sulfamyl-morphanthridine-6,11-dione having the formula



in which each of R_1 and R_2 is a member selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, lower alkylmercapto, halogeno, trifluoromethyl, lower alkanoyl, nitro and di-lower alkylamino and each of R_3 and R_4 is a member selected from the group consisting of hydrogen, lower alkyl and lower alkanoyl, the alkali metal salts of the compounds, in which at least one of R_3 and R_4 is hydrogen and the therapeutically useful acid addition salts of the compounds in which at least one of R_1 and R_2 is di-lower alkylamino.

3,354,148

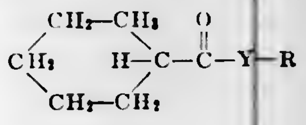
PROCESS FOR THE SIMULTANEOUS PREPARATION OF EPSILON-CAPROLACTAM AND AROMATIC ACIDS

Richard B. Lund, Morris County, Paul W. Simon, Somerset County, and John Vitrone, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 8, 1965, Ser. No. 512,533

7 Claims. (Cl. 260—239.3)

1. A process for the preparation of epsilon-caprolactam which comprises reacting an alicyclic compound selected from the group consisting of cyclohexane carboxylic acid, the anhydride thereof, and derivatives of cyclohexane carboxylic acid which are converted to the free acid form in an acid medium with an aromatic compound of the formula Y—R, wherein Y is a member selected from the group consisting of phenyl and naphthyl, and R is selected from the group consisting of hydrogen and alkyl groups of 1 to 7 carbon atoms, in a reaction medium containing polyphosphoric acid to form a ketone of the formula:



wherein Y and R have the meanings given above, and then subjecting said ketone to the action of a nitrosating agent in the presence of polyphosphoric acid to produce ϵ-caprolactam.

3,354,149

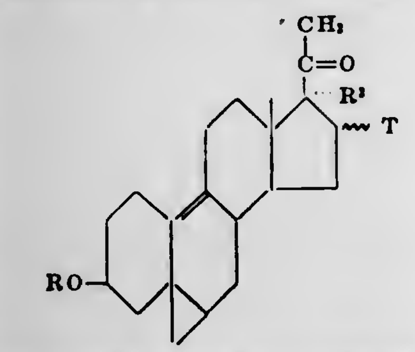
5β,6β-CYCLO-19-NOR-$\Delta^{9(10)}$-ANDROSTENES AND PREGNENES AND PROCESS THEREFOR

John A. Edwards, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

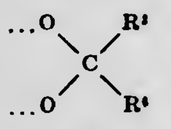
No Drawing. Filed Jan. 5, 1965, Ser. No. 423,567

22 Claims. (Cl. 260—239.55)

13. A compound represented by the general formula:



where R is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group containing less than 12 carbon atoms; R^3 is selected from the group consisting of hydrogen, a hydroxyl group and a hydrocarbon carboxylic acyloxy group containing less than 12 carbon atoms; T is selected from the group consisting of hydrogen, α-methyl, β-methyl, α-hydroxy and an α-hydrocarbon carboxylic acyloxy group containing less than 12 carbon atoms, and R^3 and T taken together represent the grouping:



wherein R^5 is selected from the group consisting of hydrogen and a lower alkyl group and R^6 is selected from the group consisting of hydrogen, a lower alkyl group and an aryl group containing up to 8 carbon atoms, inclusive.

3,354,150

PROCESS FOR THE PRODUCTION OF STEROID BROMOHYDRINS OR CYCLIC ETHERS DERIVED THEREFROM

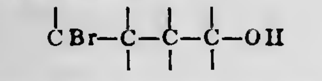
Derek Harold Richard Barton, London, England, assignor to Research Institute for Medicine and Chemistry, Inc., Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed May 10, 1965, Ser. No. 454,742

Claims priority, application Great Britain, May 15, 1964, 20,450/64

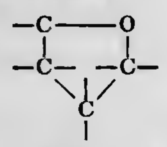
10 Claims. (Cl. 260—239.55)

1. A process for the preparation of a steroid bromohydrin containing the grouping

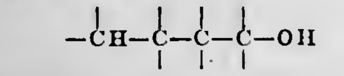


$$\overset{|}{C}Br-\underset{|}{\overset{|}{C}}-\underset{|}{\overset{|}{C}}-\underset{|}{\overset{|}{C}}-OH$$

or upon elimination of hydrogen bromide, a steroid compound containing the grouping



comprising reacting a nitrite ester of a steroid alcohol containing the grouping



$$-\overset{|}{C}H-\underset{|}{\overset{|}{C}}-\underset{|}{\overset{|}{C}}-\underset{|}{\overset{|}{C}}-OH$$

with free bromine radicals.

3,354,151

METHOD OF PREPARING 1β-METHYL-2,3α-METHYLENE-STEROIDS

Hans Muller and Friedmund Neumann, Berlin, and Rudolf Wiechert, Berlin-Wannsee, Germany, assignors to Schering A.G., Berlin, Germany

No Drawing. Filed Nov. 2, 1965, Ser. No. 506,111

Claims priority, application Germany, Dec. 5, 1964, Sch 36,207

2 Claims. (Cl. 260—239.55)

2. 1β - methyl - 2,3α - methylene - 5α - androstan - 17β-ol-17-tetrahydropyranylether.

3,354,152

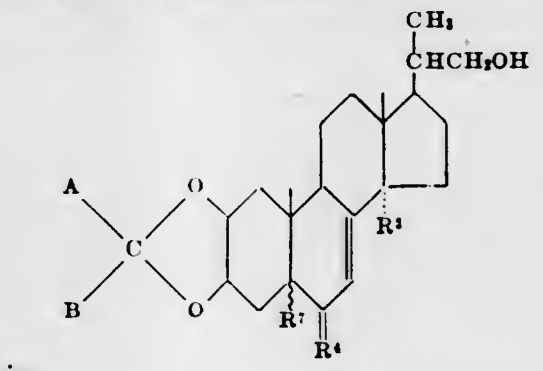
2β,3β - ALKYLIDENEDIOXY - 6 - OXYGENATED-Δ^7-STEROIDS AND PROCESS FOR THE PREPARATION THEREOF

John A. Edwards, John H. Fried, and John B. Siddall, Palo Alto, Calif., assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Jan. 26, 1966, Ser. No. 523,032

14 Claims. (Cl. 260—239.55)

8. Compounds of the formula:



wherein

each of A and B is hydrogen or lower alkyl;
R^3 is hydrogen or hydroxy;
R^4 is an oxygen atom or (hydrogen, hydroxy); and
R^7 is α-hydrogen, β-hydrogen or α-hydroxy.

3,354,153

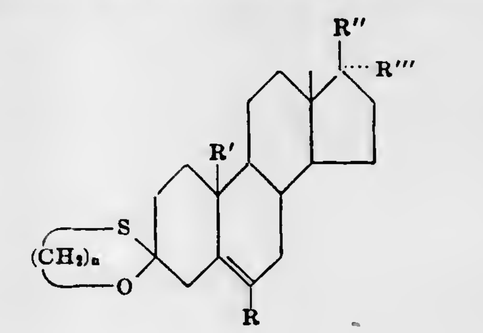
3-ALKYLENE HEMITHIOKETALS AND 3-ENOL ETHERS OF STEROIDS

George Karmas, Bound Brook, N.J., assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey

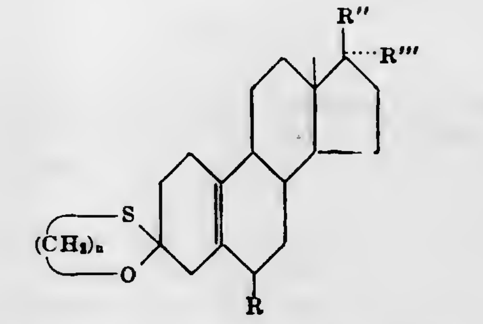
No Drawing. Filed Dec. 7, 1965, Ser. No. 512,200

9 Claims. (Cl. 260—239.55)

1. A compound selected from the group consisting of



and



wherein R is selected from the group consisting of hydrogen, methyl, fluoro and chloro, R′ is selected from the group consisting of hydrogen and methyl, R″ is selected from the group consisting of hydroxy, acetyl and acetoxy, R‴ is selected from the group consisting of hydrogen, lower alkyl of from 1 to 8 carbon atoms, lower acyloxy of from 1 to 8 carbon atoms and —C≡CX wherein X is selected from the group consisting of hydrogen, chloro and lower alkyl of from 1 to 8 carbon atoms and *n* is the integer 2 or 3.

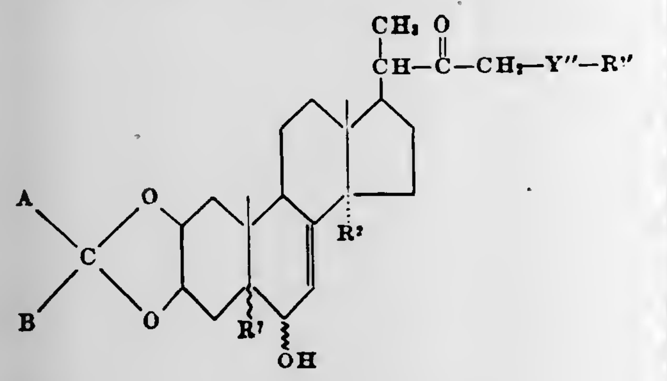
3,354,154
2β,3β - ALKYLIDENEDIOXY-6-HYDROXY-22 23-BIS-NORCHOL-7-ENOIC ACID ALKYL ESTERS AND PROCESS FOR THE PRODUCTION THEREOF

John A. Edwards, John H. Fried, and John B. Siddall, Palo Alto, Calif., assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Jan. 26, 1966, Ser. No. 523,019

12 Claims. (Cl. 260—239.55)

1. The process for the preparation of compounds of the formula:



wherein

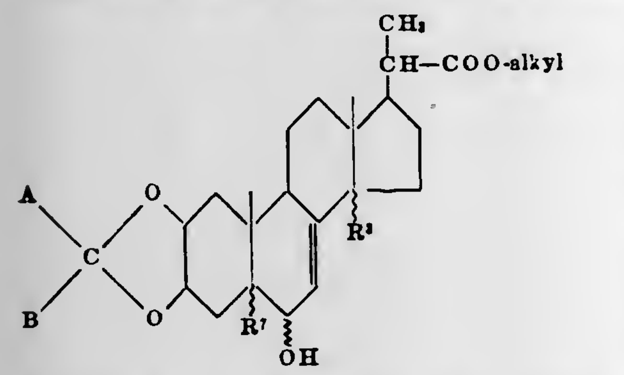
each of A and B is hydrogen or lower alkyl;

R^1 is hydrogen or tetrahydropyranyloxy;

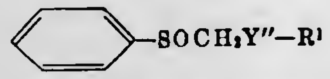
R^3 is hydrogen or hydroxy;

R^7 is α-hydrogen, β-hydrogen or α-hydroxy; and

Y″ is alkylene of from 2 to 7 carbon atoms, which comprises treating a compound of the formula:



wherein A, B, R^3 and R^7 are as previously defined, with a lithium salt of a sulfoxide of the structure



wherein Y″ and $R^{1'}$ are as previously defined, and thereafter treating the reaction product with aluminum amalgam.

3,354,155
AMINOALKYLPHOSPHONIUM COMPOUNDS AND PROCESS FOR THE USE THEREOF

James R. Tretter, East Lyme, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 12, 1964, Ser. No. 403,326

4 Claims. (Cl. 260—240)

1. A compound selected from the group consisting of those of the formula:

$$(R)_3P{=}CH{-}CH(R_1)CH_2A$$

wherein:

R is selected from the group consisting of alkyl of up to 6 carbon atoms, phenyl, aminophenyl and benzyl;

R_1 is selected from the group consisting of hydrogen and alkyl of up to 4 carbon atoms;

A is selected from the group consisting of amino, monoalkylamino, dialkylamino, piperidino, morpholino, piperazinyl, 4-alkylpiperazinyl, 4-hydroxyalkylpiperazinyl, 4-alkoxyalkylpiperazinyl, 4-aryloxyalkylpiperazinyl, 4-hydroxyalkyloxyalkylpiperazinyl, 4-alkylsulfonylpiperazinyl, 4 - dialkylsulfamylpiperazinyl, mono-lower alkenylamino, mono-lower cycloalkylamino, said alkyl, said lower alkenyl and said cycloalkyl groups containing up to about 4 carbon atoms, said aryl groups containing up to about 6 carbon atoms.

4. [3 - (1-piperazino)propylidene-1]triphenylphosphorane.

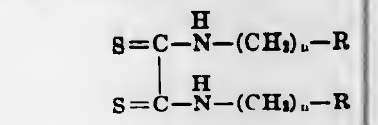
3,354,156
N,N′-DISUBSTITUTED DITHIOOXAMIDES AND PROCESS FOR THEIR PREPARATION

Gerhard R. Wendt, Havertown, and Elizabeth Hertz, Bryn Mawr, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 6, 1966, Ser. No. 599,405

15 Claims. (Cl. 260—246)

1. A compound selected from the group consisting of those of the formula

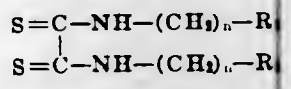


$$\begin{array}{l} S{=}C{-}\overset{H}{N}{-}(CH_2)_n{-}R \\ \;\;\;\; | \\ S{=}C{-}\overset{H}{N}{-}(CH_2)_n{-}R \end{array}$$

and the pharmaceutically acceptable acid-addition salts thereof, wherein *n* is an integer ranging from 2 to 4, inclusive, and R is selected from the group consisting of pyrrolidino, morpholino, piperazino, pyridyl, piperidino, 4-(halophenylcarbamoyl)piperazino and 4-(nitrophenylcarbamoyl)piperazino.

4. A compound according to claim 1 that is N,N′-bis(2-morpholinoethyl) dithiooxamide.

15. A process for preparing a compound according to claim 1 having the formula



$$\begin{array}{l} S{=}C{-}NH{-}(CH_2)_n{-}R_1 \\ \;\;\;\; | \\ S{=}C{-}NH{-}(CH_2)_n{-}R_1 \end{array}$$

wherein *n* is an integer from 2 to 4 and R_1 is a monocyclic heterocyclic group, which comprises reacting dithiooxamide and an amine of the formula

$$R_1{-}(CH_2)_n{-}NH_2$$

wherein *n* and R_1 are as hereinbefore defined, in an organic solvent at the reflux temperature of the mixture.

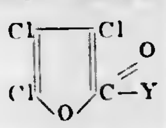
3,354,157
TRICHLOROFURAMIDES

Edward Leon, Tonawanda, Edward D. Weil, Lewiston, and Jerome Linder, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Original application June 2, 1961, Ser. No. 114,321, now Patent No. 3,158,624, dated Nov. 24, 1964. Divided and this application Nov. 23, 1964, Ser. No. 413,335

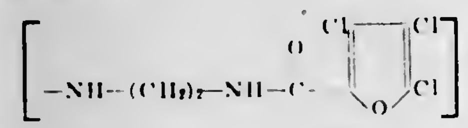
10 Claims. (Cl. 260—247.7)

1. A compound of the formula:

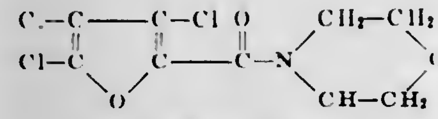


wherein Y is a monovalent radical selected from the group consisting of piperidino, morpholino, thiomorpholino,

N-lower-alkyl-piperazino, N-phenylpiperazino, pyrrolidino, piperazino, and



9.



3,354,158
PROCESS IMPROVEMENTS FOR PREPARING CYANURIC ACID

Eugene C. Sobocinski, St. Louis, and William F. Symes, Webster Groves, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 23, 1964, Ser. No. 420,764

5 Claims. (Cl. 260—248)

1. A process for the manufacture of cyanuric acid of improved color which comprises contacting for about 5 to about 60 minutes a 70 to 99% by weight aqueous urea synthesis solution which is at a temperature above 90° C. with a quantity of activated carbon which is from about .05% to about 1.0% by weight of the weight of urea in said solution; removing the activated carbon from said solution; pyrolyzing and calcinating said solution at a temperature in excess of 180° C. and at substantially atmospheric pressure whereby the urea is converted to cyanuric acid.

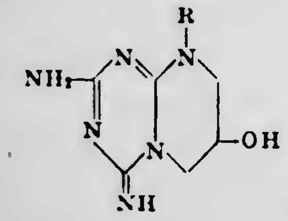
3,354,159
PYRIMIDO-1,3,5-TRIAZINOLS

William C. Anthony, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Dec. 2, 1965, Ser. No. 511,225

4 Claims. (Cl. 260—249.6)

1. A compound selected from the group consisting of the free base form and acid addition salts of a compound of the formula



wherein R is selected from the group consisting of allyl and alkyl of 1 to 8 carbon atoms, inclusive.

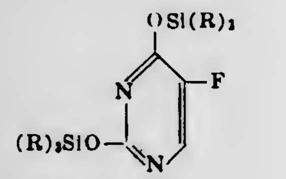
3,354,160
TRI-LOWER ALKYL-SILYL-5-FLUOROPYRIMIDINES

Robert Duschinsky, Essex Fells, and Thomas Francis Gabriel, West Paterson, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed July 22, 1965, Ser. No. 474,145

4 Claims. (Cl. 260—251)

3. A compound of the formula



wherein R is lower alkyl.

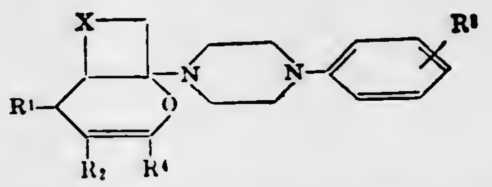
3,354,161
8a - (4-PHENYL - 1 - PIPERAZYL)-4a,5,6,7,8a-HEXAHYDRO-4H-1-BENZOPYRANS AND PROCESS

Robert Norman Schut, Edwardsburg, Mich., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

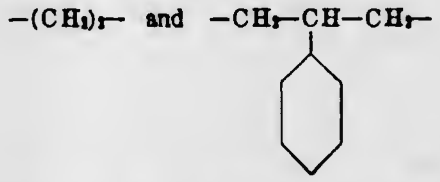
No Drawing. Original application July 16, 1964, Ser. No. 383,239, now Patent No. 3,309,370, dated Mar. 14, 1967. Divided and this application Sept. 2, 1966, Ser. No. 596,358

8 Claims. (Cl. 260—268)

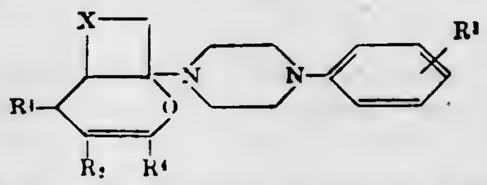
1. A compound selected from the group consisting of compounds of the formula



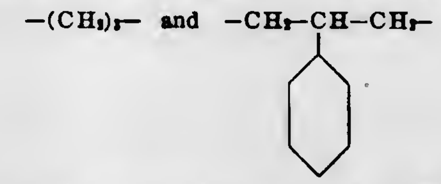
wherein R^1 is a member selected from the group consisting of hydrogen and phenyl, R^2 is a member selected from the group consisting of hydrogen and methyl, R^3 is a member selected from the group consisting of hydrogen and chloro, R^4 is a member selected from the group consisting of hydrogen and phenyl and X is a member selected from the group consisting of



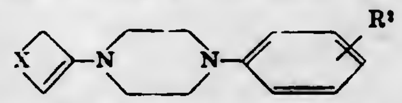
8. A process for the preparation of a compound of the formula



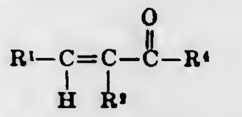
wherein R^1 is a member selected from the group consisting of hydrogen and phenyl, R^2 is a member selected from the group consisting of hydrogen and methyl, R^3 is a member selected from the group consisting of hydrogen and chloro, R^4 is a member selected from the group consisting of hydrogen and phenyl and X is a member selected from the group consisting of



which comprises reacting a compound of the formula

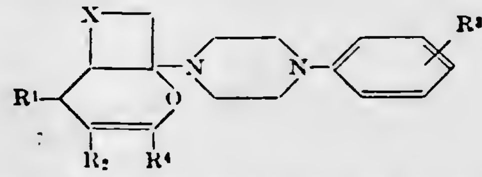


wherein R^3 and X are as above defined, with a compound of the formula



$$R^1{-}\underset{H}{C}{=}\underset{R^2}{C}{-}\overset{O}{\overset{\|}{C}}{-}R^4$$

wherein R^1, R^2 and R^4 are as above defined, to produce a compound of the formula



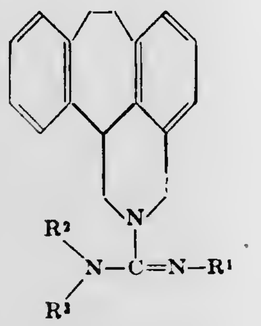
wherein R^1, R^2, R^3, R^4 and X are as above defined.

3,354,162

HEXAHYDROBENZO[6,7]CYCLOHEPTA[1,2,3-d,e] ISOQUINOLINE CARBOXAMIDINE

Leslie G. Humber, Dollard des Ormeaux, Quebec, and Martin A. Davis, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 29, 1966, Ser. No. 538,212
8 Claims. (Cl. 260—286)

1. A compound selected from the group which comprises compounds of the formula



wherein R¹, R², and R³ are selected from the group consisting of hydrogen and lower alkyl and may be identical or different substituents; and salts of said compounds with pharmacologically acceptable acids.

3. The sulfate salt of 1,2,3,7,8,12b-hexahydrobenzo [6,7]cyclohepta[1,2,3-d,e]isquinoline - 2 - carboxamidine, as claimed in claim 1.

3,354,163

N-DESMETHYLVINBLASTINE

Marvin Gorman, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
No Drawing. Filed Dec. 15, 1966, Ser. No. 601,858
4 Claims. (Cl. 260—287)

1. N-desmethylvinblastine.

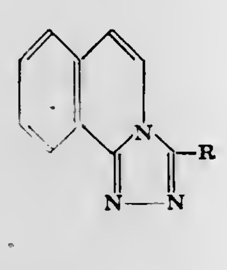
2. A method for the conversion of vincristine into N-desmethylvinblastine which comprises the steps of subjecting vincristine to prolonged exposure to elevated temperature at a pH in the range of about 1 to about 3, and recovering the N-desmethylvinblastine produced thereby.

3,354,164

S-TRIAZOLO-[3,4-a] ISOQUINOLINES AND PROCESS

John E. Francis, Pleasantville, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 23, 1965, Ser. No. 504,093
4 Claims. (Cl. 260—288)

1. A compound selected from those of the formula:



wherein R is hydrogen or alkyl; non-toxic acid addition salts thereof and non-toxic quaternary ammonium salts thereof,

2. 3-methyl-s-triazolo-[3,4-a] isoquinoline.

3,354,165

AKYLATION OF PYRIDINE COMPOUNDS

Richard C. Myerly and Kurt Weinberg, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 16, 1965, Ser. No. 472,673
8 Claims. (Cl. 260—290)

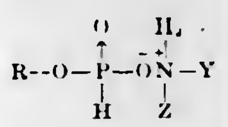
1. A process for selectively substituting a methyl group for a hydrogen atom in at least one of the positions alpha to a heterocyclic nitrogen atom of a pyridine compound which comprises contacting said pyridine compound with carbon monoxide and hydrogen in the presence of a catalyst of nickel and nickel oxide at a temperature of from about 150° C. to about 400° C.

3,354,166

N-SUBSTITUTED AMMONIUM SALTS OF MONO-ESTERIFIED PHOSPHONIC ACIDS

Albert Y. Garner, Yellow Springs, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 28, 1964, Ser. No. 399,819
9 Claims. (Cl. 260—293)

1. A compound of the formula



$$R-O-\underset{H}{\overset{\overset{O}{\uparrow}}{P}}-\overset{-}{O}\underset{Z}{\overset{\overset{H_2}{+}}{N}}-Y$$

wherein R is selected from the class consisting of alkyl radicals of from 1 to 8 carbon atoms and aryl radicals of from 6 to 10 carbon atoms, Y is selected from the class consisting of cycloalkyl radicals having from 5 to 6 carbon atoms in the ring and a total of from 5 to 8 carbon atoms, furfuryl and thenyl, and Z is hydrogen and wherein Y and Z when taken together stand for a bivalent alkylene radical having from 2 to 5 carbon atoms in the alkylene chain and a total of from 2 to 8 carbon atoms and completing a ring with the nitrogen atom.

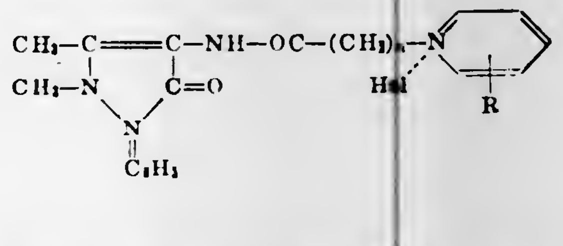
4. Piperidinium alkyl phosphonate wherein the alkyl radical has from 1 to 8 carbon atoms.

3,354,167

PYRAZOLONE DERIVATIVES AND PROCESS FOR THEIR PREPARATION

Josef Klosa, Berlin, Germany, assignor to Delmar Chemicals Limited, Montreal, Quebec, Canada, a corporation of Canada
No Drawing. Filed June 21, 1965, Ser. No. 465,740
Claims priority, application Germany, June 23, 1964, K 53,283
5 Claims. (Cl. 260—295)

1. A compound selected from the group consisting of pyridiniumacylamidopyrazolone derivatives of the formula:



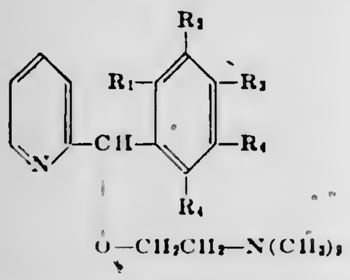
wherein Hal represents a halogen selected from the group consisting of chlorine, bromine and iodine, R represents a member selected from the group consisting of carbamoyl, formyl or bromine and *n* is an integer from 1 to 2 inclusive.

3,354,168

PHENYL PYRIDYL CARBINOL ETHERS

Wijbe Thomas Nauta, Amsterdam, Netherlands, assignor to N.V. Koninklijke Pharmacentische Fabrieken v/h Brocades-Stheeman & Pharmacia, Amsterdam, Netherlands
No Drawing. Original application Nov. 7, 1961, Ser. No. 150,658. Divided and this application Oct. 30, 1963, Ser. No. 319,951
Claims priority, application Netherlands, Nov. 11, 1960, 257,859
7 Claims. (Cl. 260—296)

1. A compound selected from the group consisting of bases of the formula



and non-toxic acid-addition salts thereof, wherein R_1 is lower alkyl of less than seven carbon atoms, R_5 is lower alkyl of less than five carbon atoms and R_2, R_3 and R_4 are each selected from the group consisting of hydrogen and lower alkyl of less than five carbon atoms, and the total number of carbon atoms of R_1, R_2, R_3, R_4 and R_5 is at least four.

3,354,169

LATEX MODIFIED CEMENT MORTAR COATING COMPOSITIONS AND METHOD OF COATING

Harvey H. Shafer and Laverne C. Wheeler, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 31, 1964, Ser. No. 422,524
13 Claims. (Cl. 260—29.7)

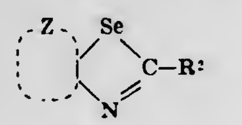
1. A cement mortar coating composition comprising a mixture of: Portland cement, from about 200 to 400 percent based on the weight of said cement of a mineral aggregate having an average particle size of from about 75 to 250 microns, from about 3 percent to about 20 percent based on the weight of said cement of an asbestos fiber filler, from about 20 to about 40 percent based on the weight of said cement of a sytrene-butadiene-1,3 copolymer having a styrene to butadiene weight ratio of about 30:70 to 70:30, water in amount of from about 45 to about 65 percent based on the weight of said cement and based on the weight of said copolymer, (a) from about 2 to about 10 percent of non-ionic surfactant, (b) from about 1 to about 7.5 percent of anionic surfactant, at least about 15 percent of which is a sodium alkyl sulfate in which the alkyl group contains 9 to 17 carbon atoms, and (c) from about 0.25 to about 0.8 percent of a polyorganosiloxane foam depressant, the sum of (a) and (b) not exceeding about 11 percent by weight of said copolymer and weight ratio of (a) to (b) being within the range of about 0.7:1 to 10:1.

3,354,170

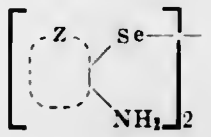
ARYLSELENAZOLE CHEMICAL SYNTHESES

Alan E. Rosenoff, Framingham, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
No Drawing. Filed Nov. 12, 1963, Ser. No. 323,046
2 Claims. (Cl. 260—298)

1. The process for preparing compounds having the formula



wherein Z represents the nonmetallic atoms necessary to complete a heterocyclic ring system of the benzoselenazole and naphthoselenazole series and R² represents an alkyl group having 1 to 3 carbon atoms inclusive, which comprises dispersing a diselenide of the formula



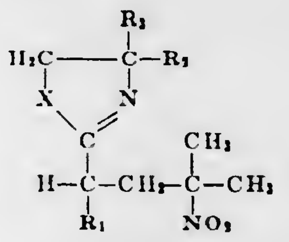
in a polar solvent, chilling the dispersion formed thereby to about 5° C., intermittently adding thereto an acylating agent comprising an acid halide selected from the group consisting of halides of acetic, propionic, butyric, and benzoic acids in small increments, continually chilling the reaction mixture so that the temperature of said mixture at no time exceeds more than about 10 centigrade degrees, and continuing said intermittent addition and chilling until the evolution of heat ceases, to provide compounds from the group consisting of bis(ortho-N-acylaminophenyl) diselenides and bis(ortho-N-acylaminonaphthyl) diselenides; and intermittently adding to the resulting dispersion a reducing agent selected from the group consisting of zinc and tin in small increments, continually chilling the reaction mixture so that the temperature of said mixture at no time exceeds more than about 10 centigrade degrees, and continuing said intermittent addition and chilling until the evolution of heat ceases, to provide the desired selenazoles.

3,354,171

NITROAZOLINE COMPOUNDS AND PROCESS THEREFOR

Herbert L. Wehrmeister, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland
No Drawing. Filed Sept. 20, 1965, Ser. No. 488,776
23 Claims. (Cl. 260—307)

1. The nitro-azoline compounds represented by the following structural formula:



wherein X is selected from the group consisting of —O— and

$$Y-\overset{|}{N}-$$

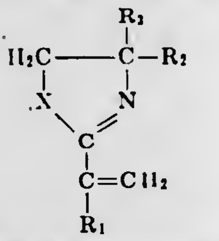
wherein Y is selected from the group consisting of hydrogen and lower alkyl, aryl, arylalkyl and hydroxyalkyl radicals of from 1 to 7 carbon atoms; R_1 is selected from the group consisting of hydrogen and alkyl, arylalkyl, alkenyl, and aryl radicals having from 1 to 20 carbon atoms; R_2 and R_3 are selected from the group consisting of hydrogen, alkyl radicals having from 1 to 3 carbon atoms, hydroxymethyl radical, and the acyloxymethyl group, said acyl group being an aliphatic, aromatic or aralkyl monocarboxylic acyl group of from 2 to 22 carbon atoms, with the proviso that when X is

$$Y-\overset{|}{N}-$$

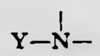
R_2 and R_3 are selected from hydrogen and alkyl radicals of from 1 to 3 carbon atoms.

17. A process for the production of a nitro azoline comprising the steps of:

(a) preparing a mixture, at a mole ratio of about 1:1, of a secondary nitroalkane with an ethenyl azoline represented by the following formula:

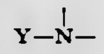


wherein X is selected from the group consisting of —O— and



$$Y{-}\overset{|}{N}{-}$$

wherein Y is selected from the group consisting of alkyl, aryl, arylalkyl, and hydroxyalkyl radicals; R_1 is selected from the group consisting of hydrogen, alkyl, arylalkyl, alkenyl, and aryl radicals having from 1 to about 20 carbon atoms; R_2 and R_3 are selected from the group consisting of hydrogen, alkyl radical having from 1 to 3 carbon atoms, hydroxymethyl radical, and the acyloxymethyl group, with the proviso that when X is



$$Y{-}\overset{|}{N}{-}$$

R_2 and R_3 are selected from hydrogen and alkyl radicals of from 1 to 3 carbon atoms,

(b) heating said mixture at reflux temperature in the presence of from about 0.5% to about 5% by weight, based on the weight of said ethenyl azoline of an acid condensation catalyst until the temperature has risen to about 150° C., and the said nitroazoline compound has been produced, and

(c) recovering the said nitro azoline.

3,354,172
TRIAMINOGUANIDINIUM 5-AMINOTETRAZOLATE AND ITS PREPARATION

Edward Andrew Takacs, Norwalk, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 12, 1966, Ser. No. 543,487

2 Claims. (Cl. 260—308)

1. The compound triaminoguanidinium 5 - aminotetrazolate.

2. A process for preparing the compound of claim 1 which comprises the steps of:

(1) forming a suspension of triaminoguanidine in methanol;

(2) adding 5-amino-tetrazole to said suspension whereby a solution of the resulting triaminoguanidine 5-amino-tetrazolate in the methanol is formed;

(3) evaporating off the methanol from said solution; and

(4) recrystallizing the residue from step (3).

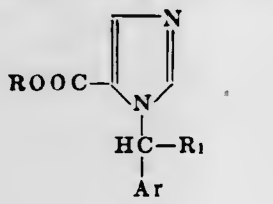
3,354,173
IMIDAZOLE CARBOXYLATES

Erik Fred Godefroi, Turnhout, and Cyriel Alphons Maria van der Eijcken, Vosselaar, near Turnhout, Belgium, assignors to Janssen Pharmaceutica, N.V., a corporation of Belgium

No Drawing. Filed Apr. 16, 1964, Ser. No. 360,441

7 Claims. (Cl. 260—309)

1. A compound selected from the group consisting of an imidazole carboxylate having the formula:



and a therapeutically active non-toxic acid addition salt thereof wherein R is a member selected from the group consisting of lower alkyl, halo-lower alkyl, allyl, 2-propynyl and lower alkoxy-lower alkyl; R_1 is lower alkyl; and Ar is a member selected from the group consisting of phenyl, halophenyl, lower alkylphenyl, lower alkoxyphenyl, thienyl and pyridyl.

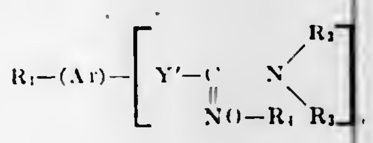
3,354,174
1- AND 2-BENZIMIDAZOLYL-LOWER-ALKYLAMIDOXIMES-, AMIDINES-, AND GUANIDINES

Malcolm R. Bell, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 19, 1964, Ser. No. 345,846

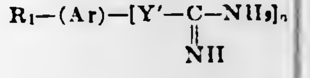
7 Claims. (Cl. 260—309.2)

1. A compound of the formula:



wherein Ar is a member of the group consisting of 1- and 2-benzimidazolyl; R_1 is from one to three members of the group consisting of hydrogen, halogen, lower-alkyl, lower - alkoxy, lower-alkylmercapto, lower-alkylsulfinyl, lower-alkylsulfonyl, nitro, trifluoromethyl, methylenedioxy, benzyloxy, benzyl, isonitrosomethyl, and di-lower-alkylaminomethyl. R_2 is a member of the group consisting of hydrogen, lower-alkyl, lower-alkanoyl, and hydroxy; R_3 is a member of the group consisting of hydrogen and lower-alkyl; R_4 is a member of the group consisting of hydrogen, lower alkanoyl, benzoyl, lower-alkyl, and benzyl; Y′ is a member of the group consisting of C_mH_{2m}, wherein *m* is an integer from 0 to 5, and hydroxy-lower-alkylene of from one to five carbon atoms and having the hydroxy group attached to the carbon atom adjacent to the amidoxime group; and *n* is one of the integers 1 and 2.

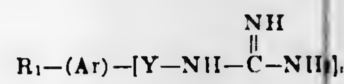
6. A compound of the formula:



$$R_1{-}(Ar){-}[Y'{-}\underset{\underset{NH}{\|}}{C}{-}NH_2]_n$$

wherein Ar is a member selected from the group consisting of 1- and 2-benzimidazolyl; R_1 is from one to three members of the group consisting of hydrogen, halogen, lower-alkyl, lower-alkoxy, lower-alkylmercapto, lower-alkylsulfinyl, lower-alkylsulfonyl, nitro, trifluoromethyl, methylenedioxy, benzyloxy, benzyl, isonitrosomethyl, and di-lower-alkylaminomethyl; Y′ is C_mH_{2m}, wherein *m* is an integer from 0 to 5; and *n* is one of the integers 1 and 2.

7. A compound of the formula:



$$R_1{-}(Ar){-}[Y{-}NH{-}\overset{\overset{NH}{\|}}{C}{-}NH_2]_n$$

wherein Ar is a member selected from the group consisting of 1- and 2-benzimidazolyl; R_1 is from one to three members of the group consisting of hydrogen, halogen, lower-alkyl, lower-alkoxy, lower-alkylmercapto, lower-alkylsulfinyl, lower - alkylsulfonyl, nitro, trifluoromethyl, methylenedioxy, benzyloxy, benzyl, isonitrosomethyl, and di-lower-alkylaminomethyl; Y is lower-alkylene of from one to six carbon atoms; and *n* is the integers 1 and 2.

3,354,175
2-(2′,5′-DIALKOXYBENZYL)-2-IMIDAZOLINES AND RELATED COMPOUNDS

Wolfgang Fruhstorfer, Darmstadt, Germany, Rudolf Hotovy, deceased, late of Darmstadt, Germany, by Hildegard Maria Hotovy, nee Weidl, legal representative, Darmstadt, Germany, and Siegmund Sommer, Darmstadt, Germany, assignors to E. Merck Aktiengesellschaft, Darmstadt, Germany

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,729

Claims priority, application Germany, Apr. 12, 1962, M 52,484

9 Claims. (Cl. 260—309.6)

6. 2-(2′,5′ - diethoxy - 4′,6′ - dimethylbenzyl) - 2-imidazoline.

8. 2 - (5′,8′-dimethoxy-1′,2′,3′,4′-tetrahydronaphthyl-1′)-2-imidazoline.

9. 2-(2′,5′-dimethoxybenzyl)-2-imidazoline.

3,354,176
VINYL CHLORIDE RESINS CONTAINING PLASTICIZERS STABILIZED WITH HYDROXY PHENYL PENTANOIC ACID ESTERS

Wesley D. Schroeder and Raymond J. Lawn, Pittsburgh, Pa., assignors, by mesne assignments, to United States Steel Corporation, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Jan. 23, 1964, Ser. No. 339,597

22 Claims. (Cl. 260—31.8)

1. A vinyl chloride resin composition containing a vinyl chloride resin selected from the group consisting of homopolymers of vinyl chloride and copolymers in which the vinyl chloride constitutes at least 80%, a plasticizer selected from the group consisting of dialkyl phthalate and di and tri alkyl trimellitates and also containing a small amount of a member of the group consisting of alkyl, phenyl, alkyl substituted phenyl, and phenylalkyl esters of 4,4-bis (hydroxyphenyl) pentanoic acid based on the weight of plasticizer and wherein the alkyl groups of the plasticizer have 4 to 13 carbon atoms.

3,354,177
PROCESS FOR THE PRODUCTION OF N-2-ACYLOXYETHYL-PHTHALIMIDES

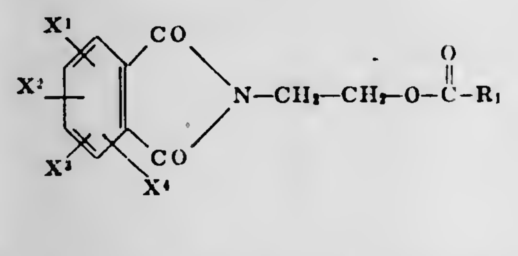
Wolfgang Seeliger, Marl, Germany, assignor to Chemische Werke Huls A.G., Marl, Germany

No Drawing. Filed July 30, 1965, Ser. No. 476,207

Claims priority, application Germany, Aug. 13, 1964, C 33,626

19 Claims. (Cl. 260—326)

1. A process for the production of N-2-acyloxy-ethyl-phthalimides of the formula

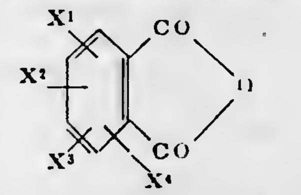


wherein

X^1, X^2, X^3 and X^4 each represents hydrogen, halogen, alkyl of 1–7 carbon atoms, carboxyalkyl of 1–8 carbon atoms, or X^1, X^2, X^3 and X^4 together represent a closed aromatic ring; and

R_1 represents hydrogen, alkyl of 1 to 18 carbon atoms, alkenyl of 2 to 18 carbon atoms, phenyl, or alkylphenyl wherein the alkyl group contains 1 to 4 carbon atoms,

said process comprising reacting, at 100–250° C., a phthalic acid anhydride compound of the formula



wherein X^1, X^2, X^3 and X^4 are defined as above, with a β-hydroxyethyl-carbonamide of the formula

$$HO{-}CH_2{-}CH_2{-}NH{-}CO{-}R_1$$

wherein R_1 has the previously indicated meaning.

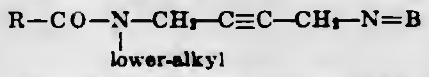
3,354,178
N-(4-AMINO-2-BUTYNYL)-N-ALKYLCARBOXAMIDES

William B. Dickinson, Loudonville, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 9, 1965, Ser. No. 447,105

5 Claims. (Cl. 260—326.3)

1. A compound of the formula



$$R{-}CO{-}\underset{\text{lower-alkyl}}{\underset{|}{N}}{-}CH_2{-}C{\equiv}C{-}CH_2{-}N{=}B$$

wherein R is selected from the group consisting of H and lower-alkyl and N═B is a basic tertiary amino radical selected from the group consisting of di(lower-alkyl) amino, N-lower-alkyl-N-lower - alkenylamino, di(lower-alkenyl)amino, N-lower-alkyl-N-cycloalkylamino, di(cycloalkyl)amino, N - (phenyl-lower-alkyl)-N-lower-alkylamino, pyrrolidino, piperidino, morpholino and thiamorpholino.

5. N-methyl-N-(4-pyrrolidino-2-butynyl)-acetamide.

3,354,179
PREPARATION OF OCTACHLOROTHIOLANE

Edmond R. Osgood, Painesville, Ohio, Lawrence E. Limpel, Yonkers, N.Y., Roger L. Annis, Mentor, Ohio, and Nathan J. Turner, Yonkers, N.Y., assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Nov. 20, 1964, Ser. No. 412,864

8 Claims. (Cl. 260—332.5)

1. A method for the preparation of octachlorothiolane which comprises the steps of (A) reacting hexachlorobutadiene with sulfur at a temperature of about 140–240° C., and removing sulfur chlorides by distillation as they are formed during the reaction, thus forming tetrachlorothiophene; (B) chlorinating the reaction mixture from step (A) at a temperature of about 50–200° C. to convert unreacted sulfur to sulfur chlorides and thus minimize tar formation and (C) chlorinating said tetrachlorothiophene at a pressure of about 100–200 p.s.i.g. and a temperature of about 70–90° C., in the presence of about 1–2% by weight, based on the weight of tetrachlorothiophene, of a catalyst selected from the group consisting of iodine and iodine halides.

3,354,180
METHOD FOR THE TREATMENT OF FORMS FOR MOLDING CONCRETE WITH WAX EMULSION RELEASE AGENT

Marilyn J. Ekiss, Seattle, Wash., George A. Weisgerber, Cranford, N.J., and Theodore F. Hand, Houston, Tex., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 21, 1962, Ser. No. 204,088

11 Claims. (Cl. 264—338)

1. A method for the treatment of forms for molding of concrete to prevent sticking of concrete to said forms and to permit the removal of said forms from hardened

concrete, which comprises applying to said forms a wax emulsion release agent consisting essentially of water containing about 2 to 40 wt. percent of a petroleum wax and about 0.1 to 5.0 wt. percent of an emulsifying agent, all of said wt. percent being based upon the total weight of said release agent, and allowing said release agent to dry whereby the water evaporates to leave a solid waxy film on said forms.

11. A method of molding concrete shapes in metal forms designed for reuse which comprises applying to said forms a wax emulsion release agent consisting essentially of water containing about 2 to 40 wt. percent of a petroleum wax and about 0.1 to 5.0 wt. percent of an emulsifying agent, all of said wt. percent being based upon the total weight of said release agent, allowing said release agent to dry whereby the water evaporates to leave a solid waxy film on said forms, pouring wet concrete into said forms, allowing said concrete to harden and then removing said forms from said concrete after said concrete hardens.

3,354,181
CHROMANS

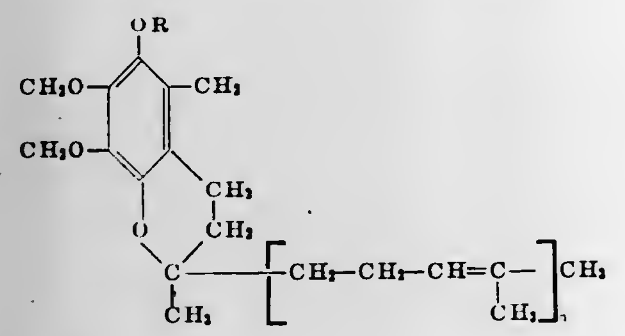
Urs Gloor, Riehen, Rudolf Ruegg, Bottmingen, and Ulrich Schwieter, Reinach, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Original application Aug. 3, 1959, Ser. No. 831,027, now Patent No. 3,118,914, dated Jan. 21, 1964. Divided and this application Feb. 14, 1963, Ser. No. 258,610

Claims priority, application Switzerland, Aug. 7, 1958, 62,670; Aug. 28, 1958, 63,369; Nov. 7, 1958, 65,910

6 Claims. (Cl. 260—345.5)

1. A compound represented by the formula



wherein R represents a member selected from the group consisting of hydrogen, lower alkanoyl and benzoyl, and *n* represents a number from 0 to 9, inclusive.

3,354,182
ANTHRAQUINONE DYESTUFFS

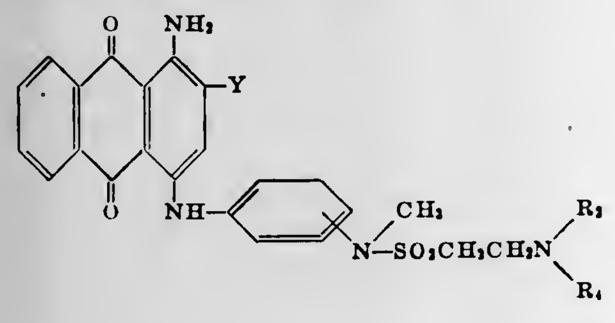
Rudolf Kühne and Fritz Meininger, Frankfurt am Main, Germany, and Rolf Pfirrmann, Lucerne, Switzerland, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 2, 1963, Ser. No. 313,181

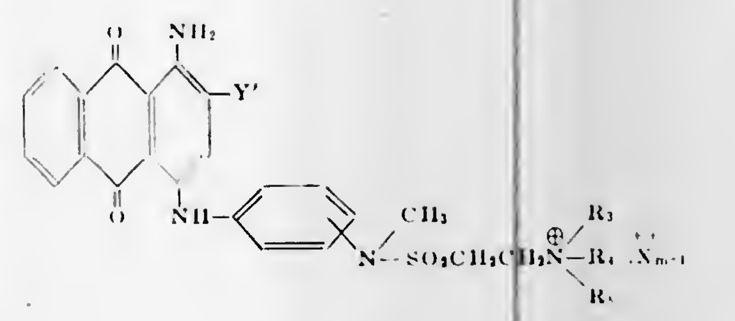
Claims priority, application Germany, Oct. 3, 1962, F 37,949

5 Claims. (Cl. 260—374)

1. A compound of the formula



or



wherein R_3, R_4 and R_5 are hydrogen, lower alkyl or phenyl, R_3 and R_4 together represent lower alkylene, R_3, R_4 and R_5 together with the nitrogen atom represent a pyridinium group, X is a chlorine anion, $-HSO_4$, SO_4 $_2$, $C_2H_5-O-SO_3$ or CH_3-O-SO_3, Y is hydrogen or $-SO_3H$, Y' is hydrogen or $-SO_3^{\ominus}$, and *m* is 1 or 2, being 1 when Y' is $-SO_3^{\ominus}$ the sulfonamido substituent being in the meta or para position on the pendant aryl moiety.

3,354,183
19-NOR-9β,10α-Δ^4-ANDROSTENES

Albert Bowers, Atherton, Calif., Pierre Crabbé, Mexico City, Mexico, and John Edwards, Los Altos, Calif., assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Mar. 8, 1965, Ser. No. 438,065

Claims priority, application Mexico, Dec. 4, 1961, 65,269

10 Claims. (Cl. 260—397.3)

3. 19-nor-9β,10α-Δ^4-androstene-3,11,17-trione.

3,354,184
PROCESS OF MANUFACTURING 16-METHYLENE REICHSTEIN'S COMPOUND S AND INTERMEDIATES OBTAINED THEREIN

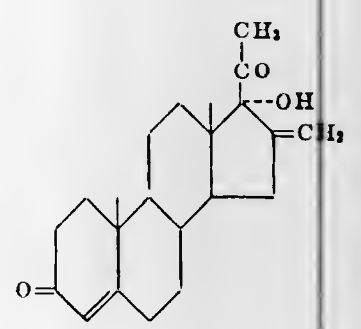
Fritz Von Werder, Klaus Bruckner, and Karl-Heinz Bork, Darmstadt, Germany, assignors to E. Merck Aktiengesellschaft, Darmstadt, Germany, a corporation of Germany

No Drawing. Filed May 11, 1960, Ser. No. 28,194

Claims priority, application Germany, May 22, 1959, M 41,596

12 Claims. (Cl. 260—397.4)

1. The compound



3,354,185
1,2 METHYLENE ANDROSTANE DERIVATIVES

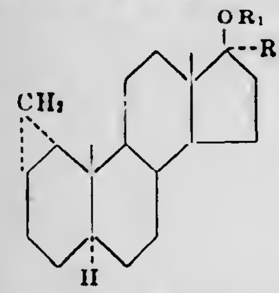
Rudolf Wiechert, Hans Mueller, and Friedmund Neumann, Berlin, Germany, assignors to Schering Aktiengesellschaft, Berlin, Germany

No Drawing. Filed Apr. 16, 1965, Ser. No. 448,854

Claims priority, application Germany, Apr. 25, 1964, Sch 35,037

6 Claims. (Cl. 260—397.5)

1. A compound having the general structural formula



wherein R_1 is a member selected from the group consisting of hydrogen and acyl, acyl being derived from an aliphatic carboxylic acid having from 1 to 11 carbon atoms, and R_2 is a member selected from the group consisting of lower alkyl, lower alkenyl and lower alkinyl containing from 1 to 4 carbon atoms.

3,354,186
16α-METHYL-1,4-PREGNADIENE-3,20-DIONES

Gerhard Raspé and Klaus Kieslich, Berlin-Charlottenburg, Erich Olivar, Berlin-Friedenau, Rudolf Müller, Berlin-Lankwitz, and Brigitte Wagner, Berlin-Halensee, Germany, assignors to Schering A.G., Berlin, Germany

No Drawing. Original application May 2, 1961, Ser. No. 107,029, now Patent No. 3,102,080, dated Aug. 27, 1963. Divided and this application Oct. 31, 1961, Ser. No. 148,810

Claims priority, application Germany, May 20, 1960, Sch 27,920

5 Claims. (Cl. 260—397.45)

1. 16α-methyl-1,4-pregnadiene - 11β,17α - diol - 3,20-dione.

3,354,187
BLEACHING DARK-COLORED SULFONATION PRODUCTS

Werner Stein, Erkrath-Unterbach, Otto Koch, Hilden, Rhineland, and Herbert Weiss, Cologne-Deutz, Germany, assignors to Henkel & Cie. G.m.b.H., Dusseldorf-Holthausen, Germany

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,683

Claims priority, application Germany, Mar. 9, 1962, H 45.104

16 Claims. (Cl. 260—400)

1. In the process for bleaching dark-colored acid sulfonation products obtained by α-sulfonating substantially saturated fatty acids having 6–28 carbon atoms, their esters with alcohols having from 1 to 20 carbon atoms and mixtures thereof with an excess of gaseous sulphur trioxide, the improvement of contacting the dark-colored acid α-sulfonation product with a member selected from the group consisting of hydrogen peroxide, and compounds giving rise to hydrogen peroxide in situ in an amount equivalent to about 0.2–6% by weight of hydrogen peroxide at a temperature between about 20–100° C. in the presence of sufficient added water to dilute the free SO_3 to a concentration below 90% but not less than a value corresponding to the sulfur trioxide content of a 20% sulfuric acid until the blue color value in the sulfonation product has been lowered to at least about 5, thereafter neutralizing at least 75% of the sulfo groups in said product, with a member selected from the group consisting of ammonium, alkali metal and alkaline earth metal hydroxides, carbonates and bicarbonates and alkylolamines having from 1 to 10 carbon atoms in their molecules and contacting the substantially neutralized product with a member selected from the group consisting of hydrogen peroxide, chlorous acid, hypochlorous acid, their salts and anhydrides in an amount equivalent to about 0.2–6% by weight of hydrogen peroxide until the product is substantially further lightened.

3,354,188
METHOD OF REFINING LIQUID FATS AND OILS

Helmut Bock, Ferlewang, Tiefenbach uber Oberstdorf, Germany, and Hermann Hommers, Krefelder Strasse 58, Krefeld-Urdingen, Germany

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,216

Claims priority, application Germany, Apr. 19, 1963, B 71,560

6 Claims. (Cl. 260—424)

4. A method of refining a crude edible oil which comprises:

(a) dispersing in said oil in the liquid state an effective amount of a refining agent selected from the group consisting of sulfuric acid, sulfurous acid, phosphoric acid, hydrochloric acid, formic acid, acetic acid, oxalic acid, citric acid, alkali metal salts of said acids having a pH not substantially greater than 7, and acetic anhydride, or an aqueous solution of said refining agent in the presence of a sufficient amount of an emulsifying agent to form an emulsion, the agent or the aqueous solution thereof constituting the dispersed phase of said emulsion and said oil constituting the continuous phase of the emulsion;

(b) adsorbing said dispersed phase on a particulate solid; and

(c) separating said solid having said dispersed phase adsorbed thereon from said continuous phase.

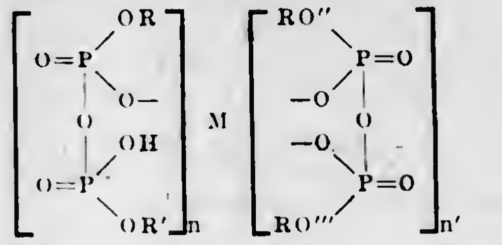
3,354,189
METAL (HYDROCARBYL AND ACID HYDROCARBYL PYROPHOSPHATES) AND AMINE ADDUCTS

Anthony J. Revukas, Cranford, N.J., assignor to Cities Service Oil Company, Bartlesville, Okla., a corporation of Delaware

No Drawing. Filed May 26, 1965, Ser. No. 459,089

10 Claims. (Cl. 260—429.5)

1. A compound having the formula:



wherein M is a Group II-B metal; *n* is an integer from 0 to 4; *n'* is an integer from 0 to 2; the sum of *n* plus 2*n'* is equal to the valence of the metal and is an integer from 2 to 4; and R, R', R'', and R''' are hydrocarbyl groups having from 1 to about 30 carbon atoms.

5. A compound of claim 1 wherein *n* is from 1 to 4 and *n'* is from 0 to 1.

8. An amine adduct of the compound of claim 5 wherein said amine contains from 1 to about 30 carbon atoms.

3,354,190
MAGNESIUM AND TIN DERIVATIVES OF FUSED-RING HYDROCARBONS AND THE PREPARATION THEREOF

Hugh E. Ramsden, Scotch Plains, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,348

13 Claims. (Cl. 260—429.7)

1. An adduct of magnesium with a C_{12} to C_{40} condensed ring aromatic hydrocarbon.

3,354,191
ALUMINUM TETRABROMOPHTHALATE
Edward C. Stivers, Atherton, Calif., assignor to Raychem Corporation, Redwood City, Calif., a corporation of California
No Drawing. Filed Mar. 27, 1963, Ser. No. 268,481
1 Claim. (Cl. 260—448)

Aluminum tetrabromophthalate.

3,354,192
HALOALKYLALUMINUM COMPOUNDS
Charles E. Frank and Jawad H. Murib, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Sept. 16, 1963, Ser. No. 309,282
17 Claims. (Cl. 260—448)

1. A process for the preparation of a stable haloalkylaluminum complex-compound of the formula

$$Z{:}Al(RX)_{3-n}Y_n$$

wherein Z is a Lewis base which does not contain a protonic hydrogen, R is a polymethylene radical of at least 4 carbon atoms in chain length, X is a halogen, and Y is a radical from the group consisting of hydrogen, halogen, and a lower alkyl, and *n* is an integer ranging from 0 to 2, inclusive, which comprises reacting a haloalkylborane of the formula

$$B(RX)_{3-n}Y'_n$$

wherein R, X, and *n* are as defined above, and Y′ is a radical from the group consisting of hydrogen, halogen, and a lower alkyl, with an organoaluminum compound of the formula

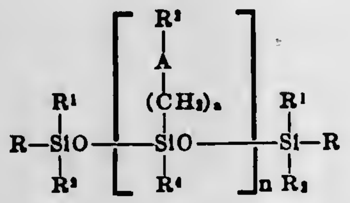
$$AlR'_{3-n}Y_n$$

wherein R′ is from the group consisting of hydrogen and lower alkyl radicals and Y and *n* are as defined above in the presence of a Lewis base, Z, as defined above.

17. A tri(chloroalkyl) aluminum complex of B,B′-dichloroethyl ether in which the average molecular weight of the chloroalkyl groups ranges up to about 700.

3,354,193
CARBORANE SUBSTITUTED SILOXANES
Marvin M. Fein, Westfield, Joseph Green, Dover, and Nathan Mayes, Ironia, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed Oct. 14, 1964, Ser. No. 403,923
25 Claims. (Cl. 260—448.2)

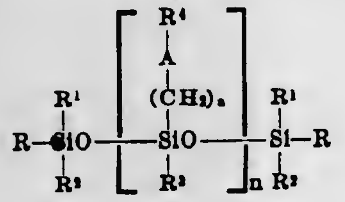
1. Carboranes within the formula:



$$R-\underset{R^2}{\overset{R^1}{Si}}O-\left[\underset{R^4}{\overset{R^3-A-(CH_2)_a}{Si}}O\right]_n-\underset{R_2}{\overset{R^1}{Si}}-R$$

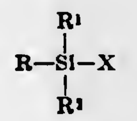
wherein R, R¹, R², R³ and R⁴ are selected from the group consisting of hydrogen, aliphatic, aryl and substituted aryl radicals, *n* is an integer greater than 0, *a* is an integer including 0, and and A is a carborane radical.

23. A process for preparing novel carborane-siloxanes of the formula:



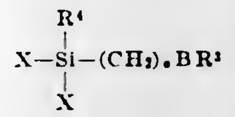
$$R-\underset{R^2}{\overset{R^1}{Si}}O-\left[\underset{R^3}{\overset{R^4-A-(CH_2)_a}{Si}}O\right]_n-\underset{R^2}{\overset{R^1}{Si}}-R$$

wherein R¹, R², R³ and R⁴ are selected from the group consisting of hydrogen, aliphatic, aryl and substituted aryl radicals, and *n* and *a* are integers greater than 1, A is a carborane radical, comprising contacting a silane reactant of the formula:



$$R-\underset{R^1}{\overset{R^1}{Si}}-X$$

wherein X is selected from the group consisting of hydrogen and alkoxy, and R and R¹ have the meaning ascribed to them above, with a carborane silane reactant of the formula:

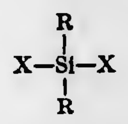


$$X-\underset{X}{\overset{R^4}{Si}}-(CH_2)_aBR^3$$

wherein X, *a*, R³ and R⁴ have the meanings ascribed to them above, in the presence of inert solvent and water, until the carborane-siloxane of the formula described above is formed, and isolating the products contained therein.

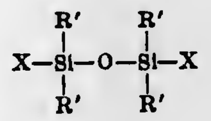
3,354,194
META-PHENYLPHENOXY SUBSTITUTED SILOXANES AND PROCESS THEREFOR
Herbert C. Kaufman, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Jan. 30, 1964, Ser. No. 341,425
15 Claims. (Cl. 260—448.8)

1. A method for preparing silicon-containing compounds which comprises: (A) reacting a material selected from the group consisting of a dihalosilane of the formula:



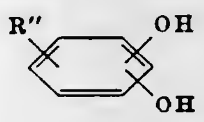
$$X-\underset{R}{\overset{R}{Si}}-X$$

wherein X is a halogen selected from the group consisting of chlorine, bromine and iodine and R is selected from the group consisting of alkyl of from 1 to 5 carbon atoms, phenyl and alkaryl of not more than 8 carbon atoms, and a dihalodisiloxane of the formula:



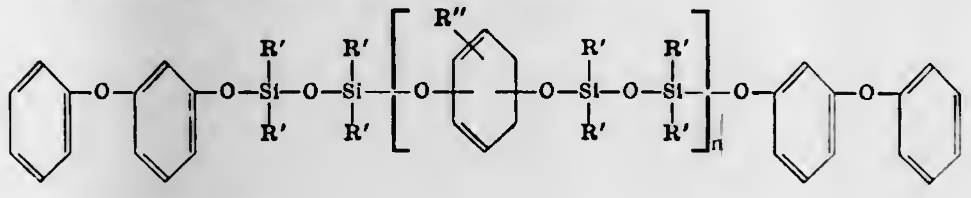
$$X-\underset{R'}{\overset{R'}{Si}}-O-\underset{R'}{\overset{R'}{Si}}-X$$

where X is a halogen selected from the group consisting of chlorine, bromine and iodine, and R′ is selected from the group consisting of alkyl of from 1 to 5 carbon atoms, phenyl and alkaryl of not more than 8 carbon atoms, with a compound of the formula:

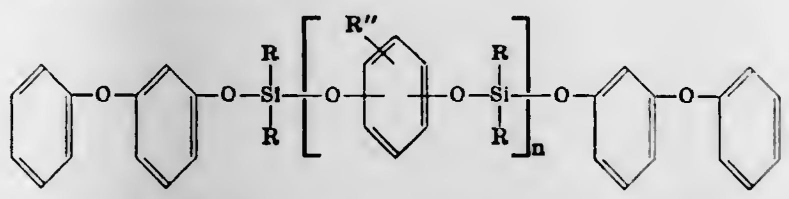


wherein R″ is selected from the group consisting of hydrogen, alkyl of 1 to 5 inclusive carbon atoms, phenyl and alkaryl of not more than 8 carbon atoms to form an intermediate product, and (B) reacting said intermediate product with meta-phenoxy phenol, there being from about 1.5 to about 4.0 moles of the said material reacted with each mole of the said compound and there being not less than about 1.0 mole of the said material reacted per mole of meta-phenoxy phenol.

13. A silicon-containing compound selected from the class consisting of compounds of the formula:



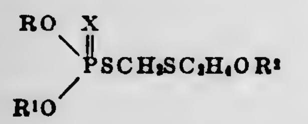
and of the formula:



wherein R and R′ are each selected from the group consisting of alkyl of from 1 to 5 carbon atoms, phenyl and alkaryl of not more than 8 carbon atoms, R″ is selected from the group consisting of hydrogen, alkyl of from 1 to 5 carbon atoms, phenyl and alkaryl of not more than 8 carbon atoms, and *n* is an integer from 1 to about 10.

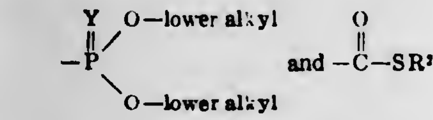
3,354,195
PHOSPHORO (MONO OR DI) THIOATE THIOCARBONATES
Edward N. Walsh, Chicago Heights, Ill., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 29, 1964, Ser. No. 341,103
12 Claims. (Cl. 260—455)

1. A compound of the formula:



$$\begin{matrix}RO\\ R^1O\end{matrix}>\overset{X}{\overset{\|}{P}}SCH_2SC_2H_4OR^2$$

where R and R¹ are lower alkyl, X is selected from the group consisting of oxygen and sulfur, and R² is selected from the group consisting of

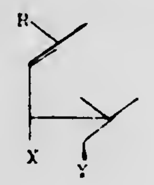


$$-\overset{Y}{\overset{\|}{P}}<\begin{matrix}O-\text{lower alkyl}\\ O-\text{lower alkyl}\end{matrix}\quad\text{and}\quad -\overset{O}{\overset{\|}{C}}-SR^3$$

where Y is selected from the group consisting of oxygen and sulfur and R³ is selected from the group consisting of lower alkyl and phenyl.

3,354,196
CHRYSANTHEMIC ACID INTERMEDIATES
Marc Julia, Paris, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate
No Drawing. Filed Dec. 9, 1963, Ser. No. 329,262
Claims priority, application France, Dec. 13, 1962, 918,530
10 Claims. (Cl. 260—465)

1. A compound of the formula:



in which R is hydrogen or methyl, X represents chlorine or bromine or a p-toluenesulphonyloxy, methanesulphonyloxy, acetoxy, benzoyloxy, or p-nitrobenzoyloxy group, and Y is —CN or —COOR′, where R′ is lower alkyl.

3,354,197
PROCESS FOR THE MANUFACTURE OF UNSATURATED NITRILES FROM OLEFINS AND AMMONIA
James Louis Callahan, Bedford, Berthold Gertisser, Cleveland Heights, and Joseph J. Szabo, Chagrin Falls, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
Original application Apr. 25, 1962, Ser. No. 190,038, now Patent No. 3,248,340, dated Apr. 26, 1966. Divided and this application Aug. 9, 1965, Ser. No. 510,414
6 Claims. (Cl. 260—465.3)

1. The process for the manufacture of acrylonitrile and methacrylonitrile from propylene and isobutylene, respectively, which comprises the step of contacting in the vapor phase at a temperature within the range from about 550 to about 1000° F. at which acrylonitrile and methacrylonitrile formation proceeds a mixture of ammonia, an olefin selected from the group consisting of propylene and isobutylene and oxygen in a molar ratio of olefin to ammonia of about 1:1 and a molar ratio of olefin to oxygen of from 1:1 to 1:2, with a catalyst composition consisting essentially of oxides of bismuth and molybdenum as the essential catalytic ingredients, the bismuth oxide being present in an amount to furnish a bismuth to molybdenum Bi:Mo atomic ratio of above 1:3, promoted by a mixture of oxides of boron and bismuth in the proportion of about 0.5 to about 1%, calculated as boron, and about 5 to about 10%, calculated as bismuth.

3,354,198
PROCESS FOR PRODUCTION OF OXYGENATED ORGANIC COMPOUNDS FROM DITERTIARY ALKYL HALIDES
Bernard S. Friedman, Chicago, Ill., assignor, by mesne assignments, to E. I. du Pont de Nemours and Company, a corporation of Delaware
No Drawing. Filed Nov. 29, 1961, Ser. No. 155,814
10 Claims. (Cl. 260—468)

1. A process for producing oxygenated organic compounds by reacting ditertiary alkyl halides having less than about 30 carbon atoms with carbon monoxide at a temperature from about 0 to about 100° C. and a pressure of from 1 atmosphere to 3000 p.s.i.g. while in contact with a catalytic amount of a catalyst consisting essentially of hydrofluoric acid, then reacting the resulting product with a material selected from the group consisting of water and primary and secondary alcohols containing up to 20 carbon atoms and recovering a dicarboxylic compound corresponding to the ditertiary alkyl halide.

3,354,199
PRODUCTION OF ETHYL ACRYLATE

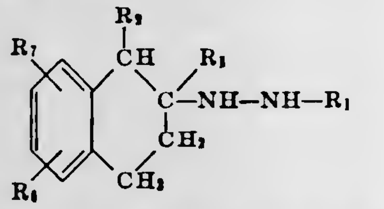
Stefan Kazimierz Lachowicz, Tunbridge Wells, Kent, Christopher John Brown, Walton-on-the-Hill, Tadworth, Surrey, Bertram Ernest Victor Bowen, Southborough, near Tunbridge Wells, Kent, and Frank Christopher Newman, Great Bookham, Surrey, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company
Filed May 11, 1964, Ser. No. 366,523
Claims priority, application Great Britain, May 25, 1963, 20,964/63
6 Claims. (Cl. 260—486)

1. A process for the production of ethyl acrylate which comprises continuously feeding ethyl acetate and a mixture containing acrylic acid and at least one mole of ethanol per mole of acrylic acid into a reactor maintained at an elevated temperature containing an acid catalyst, continuously distilling overhead a fraction containing acidic ethyl acrylate, ethyl acetate and substantially all the water produced in the esterification and introduced with the feed, recovering from said overhead fraction ethyl acetate and recycling said ethyl acetate with the feed in such an amount as to maintain a concentration of water in the reaction mixture of between 8 and 12% by weight and controlling the concentration of polymeric material by continued removal of a liquid stream from the reaction mixture.

3,354,200
2-(1,2,3,4-TETRAHYDRONAPHTHYL)-HYDRAZINES AND SALTS THEREOF

Charles Ferdinand Huebner, Chatham, N.J., assignor to Ciba Corporation, a corporation of Delaware
No Drawing. Filed Jan. 5, 1960, Ser. No. 486
4 Claims. (Cl. 260—501.11)

1. A member selected from the group consisting of a compound of the formula

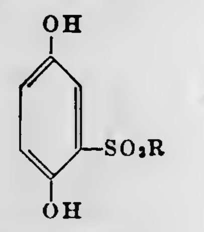


in which R_1 is a member selected from the group consisting of hydrogen, lower alkanoyl, isonicotinoyl and 5-methyl-1,2-oxazolyl-3-carbonyl, R_2 is a member selected from the group consisting of hydrogen, phenyl and benzyl, R_3 is a member selected from the group consisting of hydrogen and lower alkyl, R_6 is a member selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, chloro and trifluoromethyl, and R_7 is a member selected from the group consisting of hydrogen and lower alkoxy, and a therapeutically acceptable acid addition salt thereof.

3,354,201
p-DIHYDROXYBENZENE-SULFONATE OF DIETHYLAMINE

Antonio Esteve Subirana, Barcelona, Spain, assignor to Laboratoires Om Societe Anonyme, Geneva, Switzerland
No Drawing. Filed June 18, 1962, Ser. No. 202,981
Claims priority, application Switzerland, Jan. 29, 1962, 1,078/62
1 Claim. (Cl. 260—501.21)

A compound of the formula:



in which R is diethylammonium.

3,354,202
OXIDATION OF POLYMETHYLBENZENES TO BENZENE POLYCARBOXYLIC ACIDS

Wilford J. Zimmerschied, Crown Point, Donald E. Hannemann, Griffith, and Carl Serres, Jr., Whiting, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Apr. 30, 1963, Ser. No. 277,023
10 Claims. (Cl. 260—524)

1. A process for the preparation of benzene polycarboxylic acids of high purity in yields above 80 mole percent from the catalytic oxidation of a polymethylbenzene having 2 to 4 methyl groups with air in an oxidation zone in which is maintained a liquid phase of a monocarboxylic acid solvent selected from the class consisting of C_2 to C_8 saturated aliphatic monocarboxylic acids and benzoic acid, the liquid phase of said acid solvent having a catalyst system consisting essentially of ions of bromine and heavy metals, which process consists essentially of introducing into said liquid phase of said acid solvent containing ions of bromine and heavy metal at a temperature of 350 to 380° F. air and said polymethylbenzene simultaneously until an increase in temperature of said liquid phase occurs at an air rate of about 14 to about 40 s.c.f. per pound of said polymethylbenzene introduced, thereafter increasing the air input to a rate in the range of from about 50 to 71 s.c.f. per pound of said polymethylbenzene introduced to maintain a reaction temperature of said liquid phase in the range of from 400 to 475° F. and an average oxygen concentration in the gasiform mixture from said liquid phase of at least 2% and not exceeding a maximum of about 8% during the introduction of said polymethylbenzene, terminating the introduction of said polymethylbenzene when the weight ratio of said acidic solvent to said polymethylbenzene is in the range of 1 to 10 and continuing the air introduction for a time equal to about 0.1 to 1.0 times the time of introducing all of said polymethylbenzene wherein the total air introduced provides molecular oxygen in the range of from about 1.5 to about 2.0 moles per mole of said polymethylbenzene, terminating the introduction of air and withdrawing the resulting reaction mixture from the oxidation zone for recovery of the benzene polycarboxylic acid.

3,354,203
PREPARATION OF OMEGA-AMINO ACIDS

John C. Little, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Nov. 4, 1963, Ser. No. 321,355
9 Claims. (Cl. 260—534)

1. Method for making an omega-amino acid which comprises hydrogenating a water or aqueous ammonium hydroxide solution of a cyanoacid reactant having the formula

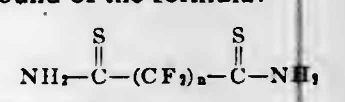
$$NC(CH_2)_n—C(R_1R_2)CO_2NH_4$$

wherein *n* is an integer from 0 to 9, R_1 and R_2 individually are H and taken together are =NOH, with hydrogen at a temperature between 0° and 200° C. and a hydrogen pressure of at least 1 atmosphere in the presence of a catalytic amount of ruthenium.

3,354,204
PERFLUOROALKYLTHIOAMIDES

Edwin Dorfman, Grand Island, and Claude Thomas Bean, Jr., Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Jan. 21, 1965, Ser. No. 427,116
5 Claims. (Cl. 260—551)

1. The compound of the formula:



$$NH_2—\overset{\overset{S}{\|}}{C}—(CF_2)_n—\overset{\overset{S}{\|}}{C}—NH_2$$

wherein *n* is from 1 to 3.

3,354,205
UREA SYNTHESIS PROCESS

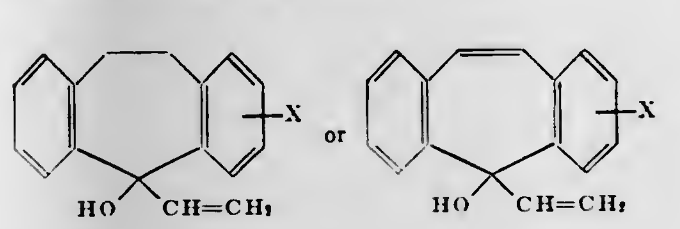
Jerome H. Marten, Nixon, N.J., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 26, 1964, Ser. No. 354,983
2 Claims. (Cl. 260—555)

1. In a urea synthesis process in which ammonia and carbon dioxide feed streams and recycled aqueous ammonium carbamate solution are reacted at elevated pressure to form urea, wherein said ammonia is present in excess over the stoichiometric requirement and at least one of said feed streams contains inerts, the reaction effluent stream is heated in a first stage at an intermediate reduced pressure to decompose ammonium carbamate and remove a first mixed ammonia-carbon dioxide off-gas stream containing inerts, the residual effluent stream is further heated in a second stage at a further reduced low pressure to decompose ammonium carbamate and remove a second mixed ammonia-carbon dioxide off-gas stream containing inerts, said mixed off-gas streams are cooled and partially condensed by scrubbing with aqueous ammonium carbamate solutions at their respective pressure levels, the residual off-gas phases are refluxed to remove residual carbon dioxide and produce final off-gas streams of purified ammonia containing inerts, and portions of said aqueous ammonium carbamate solutions are recycled to urea synthesis, the improved method of recycling said purified ammonia streams containing inerts and said aqueous ammonium carbamate solutions to urea synthesis which comprises compressing said low pressure second purified ammonia off-gas to the pressure level of said first purified ammonia off-gas, combining said first and second purified ammonia off-gas streams, cooling the combined off-gas stream to condense a portion of the contained ammonia and form a liquid ammonia phase, separating the residual gaseous phase comprising ammonia and inerts from the liquid ammonia phase, recycling said liquid ammonia phase to urea synthesis, pressurizing a portion of the low pressure aqueous ammonium carbamate solution to the intermediate pressure level of said combined off-gas stream, scrubbing said residual gaseous phase comprising ammonia and inerts with said pressurized aqueous ammonium carbamate solution, whereby ammonia vapor is absorbed from said residual gaseous phase into said aqueous ammonium carbamate solution, discharging said residual gaseous phase essentially comprising inerts after said scrubbing step, and recycling said aqueous ammonium carbamate solution containing dissolved ammonia to urea synthesis.

3,354,206
10,11-DIHYDRO-5-HYDROXY-5-VINYL-5H-DIBENZO-[a,d]CYCLOHEPTENES

Norman L. Wendler, Summit, and Robert D. Hoffsommer, Jr., and David Taub, Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Continuation of application Ser. No. 318,165, Oct. 23, 1963. This application Apr. 26, 1967, Ser. No. 634,439
17 Claims. (Cl. 260—556)

1. A compound of the formulae:



wherein X is hydrogen, halogen, loweralkoxy loweralkylsulfonyl or diloweralkylsulfamoyl.

3,354,207
METHOD OF PREPARING OXAMIDE

John A. Patterson, Fishkill, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 13, 1964, Ser. No. 359,409
3 Claims. (Cl. 260—561)

1. A method of preparing oxamide consisting essentially of contacting cyanogen with water in a mole ratio of cyanogen to water of between about 1:10 and 1:90 in the presence of a catalytic mixture consisting essentially of hydrochloric acid and a member selected from the group consisting of sulfuric, phosphoric acid and mixtures thereof at a temperature between about 10 and 100° C., said catalytic mixture containing between about 65 and 90 wt. percent hydrochloric acid, the remainder being said member, and said catalytic mixture comprising between about 20 and 40 wt. percent of the total reaction mixture.

3,354,208
PREPARATION OF ACRYLAMIDE

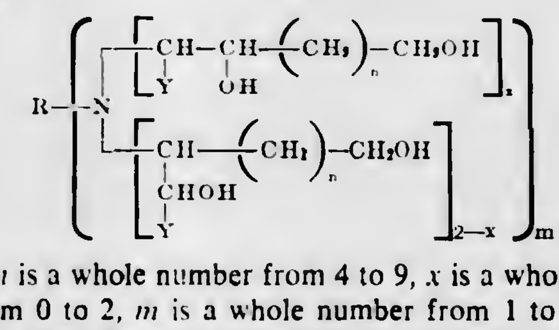
Richard Parke Welcher, Old Greenwich, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Aug. 20, 1964, Ser. No. 391,006
3 Claims. (Cl. 260—561)

1. A process for preparing acrylamide comprising continuously pyrolyzing 2 - acetoxypropionamide at from about 400° C. to 600° C., separating resulting acrylamide as it is formed, and recycling unpyrolyzed 2-acetoxypropionamide.

3,354,209
POLY(DIHYDROXYALKYL) TERTIARY AMINES

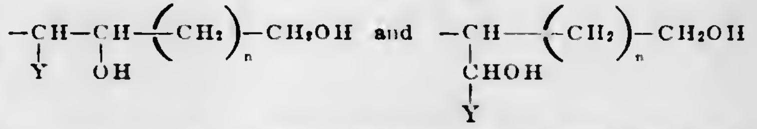
Karl Brack, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Feb. 19, 1964, Ser. No. 345,856
8 Claims. (Cl. 260—563)

1. A poly(dihydroxyalkyl) tertiary amine having the formula



$$R—N\left(\left[\underset{\underset{Y}{|}}{CH}—\underset{\underset{OH}{|}}{CH}—(CH_2)_n—CH_2OH\right]_x\left[\underset{\underset{\underset{Y}{|}}{CHOH}}{\underset{|}{CH}}—(CH_2)_n—CH_2OH\right]_{2-x}\right)_m$$

where *n* is a whole number from 4 to 9, *x* is a whole number from 0 to 2, *m* is a whole number from 1 to 2, Y is selected from the group consisting of hydrogen and alkyl radicals having 1 to 8 carbon atoms, and R is a radical selected from the group consisting of alkyl, hydroxyalkyl, cyclohexyl, phenyl, phenalkyl,



$$—\underset{\underset{Y}{|}}{CH}—\underset{\underset{OH}{|}}{CH}—(CH_2)_n—CH_2OH \text{ and } —\underset{\underset{\underset{Y}{|}}{CHOH}}{\underset{|}{CH}}—(CH_2)_n—CH_2OH$$

radicals when *n*, *x*, and Y are as above stated and *m* is 1, and a radical selected from the group consisting of alkylene, phenylene and alkphenylene radicals when *n*, *x*, and Y are as above stated and *m* is 2.

3,354,210
CYCLOHEXANE, -ENE, -DIENE-NF_2 REACTION PRODUCTS

Leland K. Beach, Westfield, Henry R. Ertelt, Fanwood, Donald A. Guthrie, Cranford, and Richard P. Rhodes, Newark, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Aug. 14, 1961, Ser. No. 131,421
13 Claims. (Cl. 260—563)

1. Cyclohexadiene-N_2F_4 reaction products having 1 to 5 NF_2 groups attached to ring nuclei carbon atoms in

compounds selected from the group consisting of mono (difluoramino) cyclohexadiene, bis (difluoramino) cyclohexene, tris (difluoramino) cyclohexene, tetrakis (difluoramino) cyclohexene, tetrakis (difluoramino) cyclohexane and pentakis (difluoramino) cyclohexane.

7. Process for preparing tris (NF_2) cyclohexene, which comprises reacting 1,4-cyclohexadiene with N_2F_4 under a pressure of about 100 to 900 mm. Hg absolute at 0° to 250° C.

3,354,211
COPOLYMERIZATION OF NF COMPOUND AND FORMALDEHYDE

Norman L. Madison, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 1, 1963, Ser. No. 321,391

7 Claims. (Cl. 260—564)

1. A copolymer of perfluoroguanidine and formaldehyde corresponding to the empirical formula

$$[(NF_2)_2CNF(CH_2O)_y]_x$$

where y is an integer ranging from 1 to about 6 and x is an integer greater than 1.

3. A process for preparing copolymers of perfluoroguanidine and formaldehyde having an empirical formula corresponding to $[(NF_2)_2CNF(CH_2O)_y]_x$ where y is an integer ranging from about 1 to about 6 and x is an integer greater than 1 which comprises;

(a) contacting perfluoroguanidine with formaldehyde at a $CH_2O/(NF_2)_2CNF$ gram mol ratio of about 1 to 1 in the presence of a catalyst selected from the group consisting of cesium fluoride and rubidium fluoride.

(b) reacting the admixture at a maximum temperature of about minus 20° C. for a period of at least several hours, and

(c) recovering the $[(NF_2)_2CNF(CH_2O)_y]_x$ polymer from the reaction mass.

3,354,212
PROCESS FOR REDUCING AROMATIC AND CYCLOALIPHATIC NITRO COMPOUNDS

Lorraine G. Donaruma, Media, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 9, 1961, Ser. No. 151,205

10 Claims. (Cl. 260—566)

1. A process for the reduction of aromatic and cycloaliphatic nitro compounds which comprises contacting said compounds with a chelate of a chelate-forming polymer selected from the group consisting of tropolone-formaldehyde, resorcylic acid-formaldehyde, salicylic acid-formaldehyde and poly(4-[bis(carboxymethyl)aminomethyl] styrene) having a variable valence metal selected from the group consisting of tin, iron, copper and uranium.

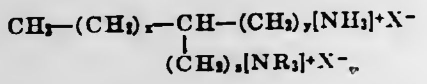
3,354,213
DERIVATIVES OF FATTY ACIDS

Eugene J. Miller, Jr., Wheaton, and Ago Mais, La Grange Park, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 22, 1964, Ser. No. 398,437

6 Claims. (Cl. 260—567.6)

1. The diquaternaries falling within the following formula:



$$CH_3-(CH_2)_x-\underset{\displaystyle (CH_2)_z[NR_3]^+X^-}{\underset{|}{CH}}-(CH_2)_y[NH_3]^+X^-$$

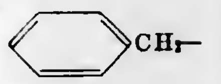
where

$x+y=$ 6 to 22

$z=$ 0 to 2

$X=Cl^-$, $\tfrac{1}{2}(SO_4^{--})$, Br^-, I^-, ana

$R=CH_{3}-$, CH_3CH_2-



or mixtures thereof.

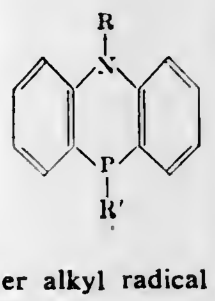
3,354,214
5-LOWER-ALKYL-10-PHENYL-5,10-DIHYDROPHENOPHOSPHAZINE COMPOUNDS

Christ Tamborski, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Sept. 15, 1964, Ser. No. 396.779

8 Claims. (Cl. 260—576)

1. A compound having the formula



wherein R is a lower alkyl radical and R' is a phenyl or a lower alkyl group.

5. A method for preparing a nitrogen-phosphorus heterocyclic compound comprising the steps of metalating with magnesium an N-alkyl-2,2'-dihalodiphenylamine wherein the halogen is selected from the group of chlorine and bromine and then reacting the metalated intermediate with a phenyldihalophosphine.

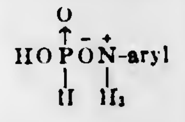
3,354,215
ARYLAMMONIUM PHOSPHONATES AND PREPARATION THEREOF

Albert Y. Garner, Yellow Springs, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,844

6 Claims. (Cl. 260—579)

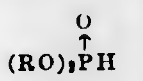
1. The arylammonium phosphonate of the formula



$$HO\underset{\underset{H}{|}}{\overset{\overset{O}{\uparrow}}{P}}\overset{-}{O}\underset{\underset{H_3}{|}}{\overset{+}{N}}\text{-aryl}$$

wherein aryl denotes a hydrocarbon benzenoid radical linked to the nitrogen through nuclear carbon, free of olefinic and acetylenic unsaturation, and containing from 6 to 12 carbon atoms.

3. The method which comprises heating a mixture of (1) a dialkyl phosphonate of the formula

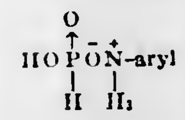


$$(RO)_2\overset{\overset{O}{\uparrow}}{P}H$$

wherein R is an alkyl radical of from 1 to 5 carbon atoms, (2) an amine of the formula

$$H_2N\text{—aryl}$$

where aryl denotes a hydrocarbon benzenoid radical linked to the nitrogen through nuclear carbon, free of olefinic and acetylenic unsaturation, and containing from 6 to 12 carbon atoms, to obtain an arylammonium phosphonate of the formula



$$HO\underset{\underset{H}{|}}{\overset{\overset{O}{\uparrow}}{P}}\overset{-}{O}\underset{\underset{H_3}{|}}{\overset{+}{N}}\text{-aryl}$$

where aryl is as defined above.

3,354,216
FLUORINATED POLYMERIC CARBONYLGUANIDYLENE AND PROCESS THEREOF

Donald R. Husted, St. Paul, and Robert J. Koshar, Lincoln Township, Washington County, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Mar. 31, 1960, Ser. No. 19,111

3 Claims. (Cl. 260—583)

1. Fluorinated polymeric carbonylguanidylene in which fluorine has replaced a sufficient number of hydrogen atoms and combined with sufficient carbon-nitrogen double bonds so that the fluorine content is at least from about 25 to about 60 percent of the total weight of the compound.

3,354,217
TRI(DIFLUORAMINO)METHYL BROMIDE AND PROCESS OF PREPARATION

Charles D. Burton, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 2, 1966, Ser. No. 524,971

7 Claims. (Cl. 260—583)

1. Tris(difluoramino)methyl bromide.

2. A process for preparing tris(difluoramino)methyl bromide which comprises;

(a) reacting perfluoroguanidine and hydrogen bromide in liquid sulfur dioxide at a temperature of from about minus 80° C. to about minus 55° C., the quantities of said perfluoroguanidine and hydrogen bromide at a minimum being about stoichiometric of that required for preparation of the 1:1 perfluoroguanidine·hydrogen bromide adduct;

(b) introducing fluorine into the resulting sulfur dioxide solution containing the 1:1 perfluoroguanidine·hydrogen bromide adduct while maintaining the reaction mass at a temperature of from about minus 55 to about minus 75° C., the amount of fluorine at a minimum being that required to react with said adduct to provide tris(difluoramino)methyl bromide, and

(c) separating said tris(difluoramino)methyl bromide from the reaction mass.

3,354,218
PROCESS FOR PREPARING 4-(2,6,6-TRIMETHYL-4-METHOXY - 1 - CYCLOHEXEN - 1 - YL) - 3 - BUTEN-2-ONE

Joseph Donald Surmatis, West Caldwell, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed May 10, 1963, Ser. No. 279,617

2 Claims. (Cl. 260—586)

1. A process for preparing 4-(2,6,6 - trimethyl - 4-methoxy - 1 - cyclohexen - 1 - yl) - 3 - buten - 2 - one (III) from 4-(2,6,6 - trimethyl - 1,3 - cyclohexadien-1-yl)-3-buten-2-one (II) comprising treating (II) with methyl sulfate to form III.

3,354,219
METHOD FOR PREPARATION OF ISOHUMULONE CONCENTRATES

Francis L. Rigby, Toronto, Ontario, Canada, assignor, by mesne assignments, to John I. Haas, Inc., Washington, D.C., a corporation of Delaware

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,232

1 Claim. (Cl. 260—586)

A method of preparing a concentrate of isohumulones comprising the steps of extracting and isomerizing humulones from hops by boiling them in a weak aqueous alkaline extractant solution for the humulones, removing hops from said extractant solution, acidifying said extractant to a pH of about 1 to form an isohumulone adsorbing precipitate, and mechanically separating said precipitate from said extractant to yield a sludge-like isohumulone rich product.

3,354,220
OXIDATION OF CARBONYL COMPOUNDS

Willem Brackman and Hendrik C. Volger, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 30, 1965, Ser. No. 452,389

Claims priority, application Netherlands, Sept. 8, 1964, 64—10,417

13 Claims. (Cl. 260—586)

1. A process for the oxidation of a monocarbonylic monoethylenic compound of 4 to 30 carbon atoms per molecule composed only of carbon, hydrogen and carbonyl oxygen atoms and having the ethylenic double bond as the only multiple linkage between aliphatic carbon atoms, said double bond being attached to a carbon atom once removed from the carbonyl carbon atom and there being a hydrogen atom linked to a saturated noncarbanyl carbon atom directly linked to at least one of the carbon atoms to which the double bond is attached, which comprises reacting said compound in an alcoholic alkaline liquid medium having a pH of at least 7.5 with oxygen-containing gas in the presence of from 0.001 to 0.1 mole per mole of said monocarbonylic compound of a copper salt soluble in the said medium, at a temperature from −60° C. to +60° C.

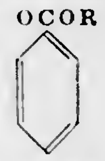
3,354,221
PRODUCTION OF PHENOLS

Phillip S. Landis, Woodbury, and Paul B. Venuto, Cherry Hill Township, Camden County, N.J., assignors to Mobil Oil Corporation, a corporation of New York

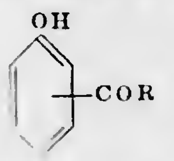
No Drawing. Filed Aug. 12, 1963, Ser. No. 301,660

13 Claims. (Cl. 260—592)

1. A method of carrying out a Fries rearrangement reaction, in which a phenolic ester of the type



is converted to a hydroxy ketone of the type



wherein R is selected from the group consisting of aliphatic and aromatic substituents and the —COR radical in the hydroxy ketone is in the ortho or para position, comprising carrying out said reaction at a temperature of about 50–400° C. in the presence of a solid porous crystalline aluminosilicate zeolite catalyst, said aluminosilicate having pores of a size sufficient to permit ingress of said phenolic ester and egress of said hydroxy ketone.

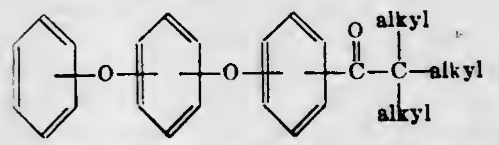
3,354,222
POLYPHENYL ETHER KETONES

Edward S. Blake and George F. Deebel, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 30, 1965, Ser. No. 476,153

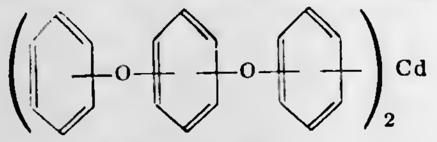
9 Claims. (Cl. 260—592)

1. A compound of the formula

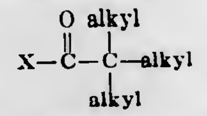


wherein alkyl contains from 1 to 5 carbon atoms.

7. The method which comprises contacting a bis(phenoxyphenoxyphenyl)cadmium of the formula



with an acyl halide of the formula



$$X-\overset{\overset{O}{\|}}{C}-\underset{\underset{alkyl}{|}}{\overset{\overset{alkyl}{|}}{C}}-alkyl$$

wherein X is halogen having atomic weight greater than 19, and alkyl contains from 1 to 5 carbon atoms.

3,354,223

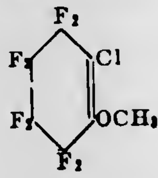
1-CHLORO-2-METHOXYOCTAFLUORO-CYCLOHEXENE-1

Richard F. Sweeney, Randolph Township, Morris County, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 28, 1964, Ser. No. 348,277

1 Claim. (Cl. 260—611)

A compound having the formula:



3,354,224

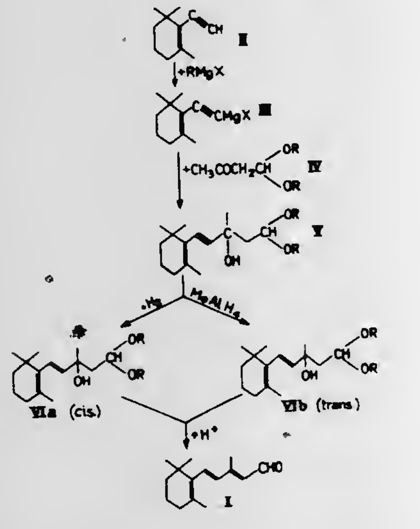
PROCESS OF PREPARING β-IONYLIDENE ACETALDEHYDE

Joseph Redel and Jean-Baptiste-Christian Boch, Neris-les-Bains, France, assignors to A. E. C. Societe de Chimie Organique et Biologique, Commentry, Allier, France, a corporation of France

Filed Mar. 13, 1964, Ser. No. 351,624

Claims priority, application France, Mar. 15, 1963, 928,126

7 Claims. (Cl. 260—611)



1. A process of preparing an ethylenic hydroxy-ketal consisting of a 5-(2',6',6'-trimethyl cyclohexen-1'-yl) 3-methyl 3-hydroxy 1,1-di-lower alkoxy 4-pentene, comprising converting 1-ethynyl 2,6,6-trimethyl cyclohexene into the corresponding Grignard reagent by reaction with a Grignard reagent having the formula RMgX, in which R is a lower alkyl group and X is a halogen selected from the group consisting of bromine and chlorine, in an ether, condensing said Grignard reagent so formed with a β-ketobutyraldehyde ketal, hydrolyzing the resulting reaction product thereby obtaining a C_{15} acetylenic hydroxy-ketal, and partially hydrogenating the latter by catalytic hydrogenation at a temperature between about 0 and 60° C. in the presence of a hydrogenation catalyst selected from the group consisting of Raney nickel deactivated by piperidine, Raney nickel deactivated by a mixture of zinc acetate and piperidine, palladium deactivated by quinoline, and palladium deactivated by pyridine, thereby obtaining said ethylenic hydroxy-ketal in the cis form.

7. The 5-(2',6',6'-trimethyl cyclohexen-1'-yl) 3-methyl-3-hydroxy-1,1-di-lower alkoxy-4-pentynes.

3,354,225

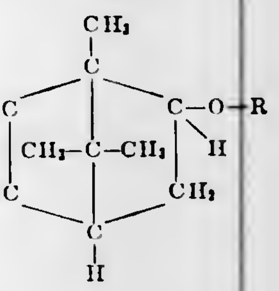
NOVEL CAMPHANE DERIVATIVES

Bernard J. Kane, Atlantic Beach, Fla., assignor to The Glidden Company, Cleveland, Ohio, a corporation of Ohio

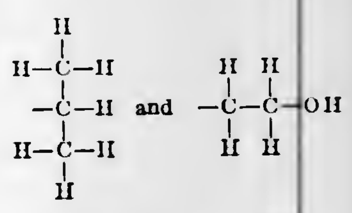
Filed Jan. 27, 1965, Ser. No. 428,382

3 Claims. (Cl. 260—611)

1. A compound of the formula:



where —R is selected from the group consisting of



$$H-\underset{\underset{H-\underset{\underset{H}{|}}{C}-H}{|}}{\overset{\overset{H-\overset{\overset{H}{|}}{C}-H}{|}}{-C}}-H \quad \text{and} \quad -\underset{\underset{H}{|}}{\overset{\overset{H}{|}}{C}}-\underset{\underset{H}{|}}{\overset{\overset{H}{|}}{C}}-OH$$

3,354,226

DERIVATIVES OF CHLOROMETHYLATED DIPHENYL ETHERS

Ehrenfried H. Kober, Hamden, and Henry F. Lederle, North Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

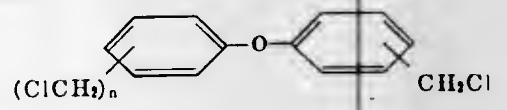
No Drawing. Filed Feb. 25, 1964, Ser. No. 347,132

5 Claims. (Cl. 260—613)

1. A reaction product prepared by (A) first reacting a fluoroalcohol of the formula:

$$X(CF_2)_zCH_2OH$$

wherein X is hydrogen or fluorine and *z* is an integer of from 1 to 7 inclusive, with the stoichiometric quantity of a material selected from the group consisting of sodium, sodium hydroxide, potassium hydroxide and sodium hydride, to form the corresponding alkali metal fluoroalcoholate, and (B) reacting the said fluoroalcoholate at a temperature of from about 60° to about 160° C. and in the presence of an inert solvent selected from the group consisting of benzene, toluene, and xylene, the amount of said fluoroalcohol employed varies from the stoichiometric quantity to twice the stoichiometric requirement, based on the chloromethylated diphenyl ether reactant, of the formula:



wherein *n* is an integer of from 0 to 2 inclusive whereby forming the said reaction product.

3,354,227

PROCESS FOR THE PREPARATION OF MONO-PHENYL ETHERS OF GLYCOLS

Ewald Katzschmann, Dortmund-Kruckel, Germany, assignor to Chemische Werke Witten G.m.b.H., Witten (Ruhr), Germany

No Drawing. Filed Nov. 14, 1963, Ser. No. 323,559

Claims priority, application Germany, Dec. 7, 1962, C 28,603

7 Claims. (Cl. 260—613)

1. A process for the preparation of a monophenyl ether of a glycol which comprises reacting an alkylene oxide having from 2 to 4 carbon atoms with a phenol for a sufficient time at a temperature of from 20° to 130° C. and a pressure of from 0 to 10 atmospheres in the presence of a weight ratio of water to the other constituents in the reaction mixture of at least 1:1 and from 0.5 to 20% by weight, based on the amount of phenol reactant, of a salt selected from the group consisting of alkali metal salts of halogen hydracids, sulfuric acid and nitric acid, alkaline earth metal salts of halogen hydracids, sulfuric acid and nitric acid, and mixtures thereof.

3,354,228

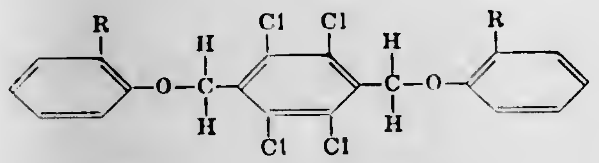
ALPHA,ALPHA'-DIPHENOXY-2,3,5,6-TETRACHLORO-p-XYLENES

Richard B. Lund, Whippany, Arleen C. Pierce, Parsippany, and Edith Turi, Livingston, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 24, 1964, Ser. No. 354,448

3 Claims. (Cl. 260—613)

1. A compound having the formula:



wherein R is a member of the group consisting of hydrogen and alkyl of 1–5 carbon atoms.

3,354,229

OXONATION OF CYCLODODECATRIENE TO C_{13} ALCOHOL

Neville Leverne Cull, Baker, and Lloyd Albert Pine, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 28, 1964, Ser. No. 340,820

7 Claims. (Cl. 260—617)

1. An improved process for the preparation of cyclododecyl carbinol which comprises reacting cyclododecatriene with carbon monoxide and hydrogen in the presence of a catalyst consisting essentially of $Co_2(CO)_8$ and a hydrocarbon soluble complex selected from the group consisting of

$$[Co_2(CO)_6(PR_3)_2]$$

and

$$[(C_nH_{2n-1})Co(CO)_y(PR_3)]_x$$

wherein R is an alkyl radical containing from 1 to 6 carbon atoms, *n* is an integer from 3 to 6 and *x* is 1 or 2 and y is 1 or 2 with the proviso that when *x* is 1 then *y* is 2 and when *x* is 2, then *y* is 1 and the weight ratio of cobalt as $Co_2(CO)_8$ to cobalt as hydrocarbon soluble complex is about 1:0.5 to 1:5.

3,354,230

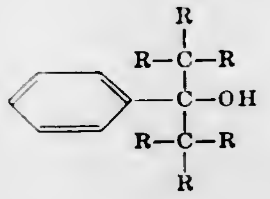
NOVEL CARBINOLS AND PROCESS FOR PREPARATION

Allan Murry Feldman, Norwalk, and Arthur Kentaro Hoffmann, New Canaan, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

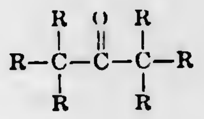
No Drawing. Filed Apr. 27, 1965, Ser. No. 451,305

3 Claims. (Cl. 260—618)

1. A process for preparing a novel carbinol of the formula



wherein the R groups are hydrocarbon radicals, each of which contains not more than 7 carbon atoms, selected from the group consisting of saturated acyclic and alicyclic radicals, and wherein two of such R's attached to the same or different carbon atoms, can, when taken with said carbon atoms, form a completed alicyclic ring of 5 to 6 carbon atoms, which comprises reacting a metal selected from the group consisting of potassium, rubidium and cesium with a mixture in benzene of a ketone of the formula



$$R-\underset{\underset{R}{|}}{\overset{\overset{R}{|}}{C}}-\overset{\overset{O}{\|}}{C}-\underset{\underset{R}{|}}{\overset{\overset{R}{|}}{C}}-R$$

wherein the R groups have the same significance as above, and hydrolyzing the resulting reaction product.

3,354,231

CATALYSTS FOR PRODUCTION OF 1-NAPHTHOL

Arthur L. Maloy, South Charleston, and Robert W. Cunningham, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 11, 1963, Ser. No. 308,092

4 Claims. (Cl. 260—621)

1. A catalyst consisting essentially of an admixture of nickel and, based on the weight of said nickel, from 0.5 to 4 weight percent chromium, substantially in the form of its oxide, from 1 to 3 weight percent of an alkali metal selected from the group consisting of sodium, potassium and mixtures thereof, a portion of said alkali metal being in the form of a sulfate of said alkali metal, the sulfur of said sulfate being present in a ratio from 1.2 to 8 based on the mole ratio of said alkali metal to said sulfur.

3. In a process for the catalytic dehydrogenation of a member selected from the group consisting of 1,2,3,4-tetrahydronaphthalene-1-one, 1,2,3,4-tetrahydro-1-naphthol, and mixtures thereof to form 1-naphthol, the improvement of conducting said dehydrogenation in contact with a catalyst consisting essentially of an admixture of nickel and, based on the weight of said nickel, from 0.5 to 4 percent chromium, substantially in the form of its oxide, from 1 to 3 weight percent of an alkali metal selected from the group consisting of sodium, potassium and mixtures thereof, a portion of said alkali metal being in the form of a sulfate of said alkali metal, the sulfur of said sulfate being present in a ratio from 1.2 to 8 based on the mole ratio of said alkali metal to said sulfur.

3,354,232
HIGH TEMPERATURE, SHORT-CONTACT-TIME PYROLYSIS OF CHLORODIFLUOROMETHANE

John Richard Soulen, Narberth, Pa., and William Henry Chappell, Jr., Delran, N.J., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,073
6 Claims. (Cl. 260—653)

1. The method which comprises pyrolyzing chlorodifluoromethane at a temperature of from about 1300° C. to about 2000° C. wherein the pyrolysis time is from about 0.0001 to about 0.06 second, a major product of the pyrolysis being 1,2-dichlorotetrafluoroethane.

3,354,233
PRODUCTION OF TETRAFLUOROETHYLENE

Louis G. Anello, Basking Ridge, and Cyril Woolf, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 1, 1963, Ser. No. 312,855
The portion of the term of the patent subsequent to July 25, 1984, has been disclaimed
7 Claims. (Cl. 260—653.5)

1. The process for making tetrafluoroethylene which comprises subjecting CF_2ClCF_2Cl in a reaction zone to the action of hydrogen in a quantity sufficient to react with a substantial amount of said CF_2ClCF_2Cl while maintaing a temperature substantially in the range of 350–450° C. and while in the presence of a catalyst which has been precipitated from a solution containing ammonium dichromate, a soluble salt of copper and a soluble salt of an alkaline earth metal, which precipitated catalyst has been ignited at elevated temperatures to liberate nitrogen and water until the precipitated catalyst becomes substantially dark brown to black in color, and recovering $CF_2{=}CF_2$ from the resulting reaction product.

3,354,234
REACTION OF AN OLEFIN WITH HCl OR HBr AND OXYGEN

Percy Hayden and Charles Fox, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Continuation of application Ser. No. 287,191, June 12, 1963. This application May 25, 1966, Ser. No. 552,982
Claims priority, application Great Britain, June 15, 1962, 23,106/62
6 Claims. (Cl. 260—656)

1. A process for the manufacture of a monohalogenated olefine selected from the group consisting of monochlorinated olefines and monobrominated olefines which comprises providing a gaseous mixture consisting essentially of an olefine, hydrogen halide selected from the group consisting of hydrogen chloride and hydrogen bromide, and a source of elemental oxygen, wherein the oxygen content of said gaseous mixture is less than 10% by volume, and contacting said mixture with a supported catalyst at a temperature between 200° C. and 600° C., the catalyst consisting essentially of a halide of a platinum-group metal and a halide of copper wherein the catalytic halides employed are those corresponding to the halogenated hydrocarbon produced.

3,354,235
OLEFIN POLYMERIZATION WITH A SUPPORTED NICKEL OXIDE CATALYST AND AN ORGANO-METAL COMPOUND

John P. Hogan and Alonzo G. Kitchen, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,549
7 Claims. (Cl. 260—683.15)

4. A process for polymerizing a mono-olefin to a low molecular weight polymer comprising contacting said mono-olefin under polymerization conditions in the presence of a catalyst prepared by admixing components con sisting essentially of (a) a nickel oxide supported on a porous particulate support selected from the group consisting of silica, alumina, and silica-alumina, and (b) an organometal compound having the formula MR_n wherein M is selected from the group consisting of aluminum, boron, zinc, gallium, cadmium, lithium, tin, indium, and thallium, R is selected from the group consisting of hydrogen, alkyl, cycloalkyl and aryl groups and combinations thereof having a total of 1 to 20 carbon atoms per molecule wherein at least one R group is a hydrocarbon radical, and n is equal to the valence of the metal M.

3,354,236
BUTENE PRODUCTION

Harvey S. Klein, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 24, 1967, Ser. No. 632,900
6 Claims. (Cl. 260—683.15)

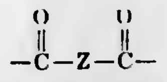
1. In the process of dimerizing ethylene to n-butenes in the liquid phase in the presence of palladium halide catalysts, wherein the molar ratio of palladium halide to ethylene is from 1:100 to 1:1,000, at a pressure of 150 p.s.i.g. to 1,000 p.s.i.g. and at a temperature of 40° C. to 120° C., the improvement which comprises conducting the dimerizing in the presence of an added organic sulfone co-catalyst wherein the molar ratio of added organic sulfone to palladium halide is from about 1:1 to about 10:1, said organic sulfone being represented by the formula RSO_2R wherein R independently is a hydrocarbyl group of from 1 to 10 carbon atoms with the proviso that the R's taken together in combination are a divalent radical which together with the sulfur atoms forms a cyclic sulfone.

3,354,237
ADHESIVE COMPOSITIONS OF POLYURETHANE ELASTOMER AND OIL-SOLUBLE PHENOLIC RESIN

Fred D. Shaw, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 28, 1964, Ser. No. 392,928
8 Claims. (Cl. 260—829)

1. A solvent-free thermoplastic adhesive composition consisting essentially of, in relative proportions, (a) 20 parts by weight of a thermoplastic secondary polyurethane elastomer and (b) 5 to 80 parts by weight of an oil-soluble phenolic resin selected from the group consisting of terpene-modified phenolic resins, furfural phenolic resins, phenolic-modified coumarone-indene resins and p-substituted phenol-aldehyde resins and mixtures thereof, said polyurethane elastomer being selected from the group consisting of the essential units —O—G—O—, —O—B—O—, and —D—, all connected by the bi-acyl radical

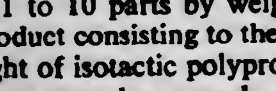


$$-\overset{O}{\overset{\|}{C}}-Z-\overset{O}{\overset{\|}{C}}-$$

and of the essential units —O—G—O— and —O—B′—O connected by the same bi-acyl radical, wherein

—O—G—O—

is a biradical obtained by removing the hydroxyl hydrogen atoms of a polyalkylene-ether glycol having a molecular weight of 800 to 3000, —Z— is a biradical obtained by removing the amine hydrogens from a diamine selected from the group consisting of piperazine, 2-methylpiperazine, 2,5-dimethylpiperazine, and 2,3,5,6-tetramethylpiperazine, —O—B—O— is a biradical obtained by removing the hydroxyl hydrogen atoms from a glycol having a molecular weight of less than about 200, —O—B′—O is a biradical obtained by removing the hydroxyl hydrogen atoms from a glycol selected from the group consisting of butanediol-1,4, neopentyl glycol, and mixtures thereof, and —D— is selected from the group consisting of —CH_2—CH_2, —CH_2—CH_2—CH_2—CH_2— and mixtures thereof, with the molar ratios of said essential units of said polyurethane elastomer in the order given being 1.0:1–3:0.75–1.5 and 1.0:1.0–10.0, and with the proviso that the first mentioned polyurethane elastomer, the combined units



$$(-D-\overset{O}{\overset{\|}{C}}-Z-\overset{O}{\overset{\|}{C}}-)_n$$

therein are so situated that the average value of n is greater than one.

3,354,238
BLENDS OF METHYL METHACRYLATE RESINOUS COPOLYMERS AND GRAFTED ELASTOMERS

Joseph Michael Schmitt, Ridgefield, Leo Augustine Landers, Stamford, and Joseph Francis Terenzi, Ridgefield, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 20, 1966, Ser. No. 603,167
8 Claims. (Cl. 260—876)

1. A molding composition characterized by a heat distortion temperature under load (264 p.s.i.) above about 75° C., a light transmission of at least about 85%, a yellowness index of 20% and below, an Izod impact strength of at least about 0.5 f.p.p.i. at 5% rubber and at least about 2.8 f.p.p.i. at 20% rubber and a high gloss comprising a physical blend of (A) 70%–95% of a hard, resinous terpolymer comprising from about 67–72 parts of methyl methacrylate, 18–22 parts of styrene and 8–12 parts of acrylonitrile and (B) 5%–30% of polybutadiene grafted with from about 67–80 parts of methyl methacrylate, 17–21 parts of styrene and 1–13 parts of acrylonitrile, the ratio of polybutadiene to monomer in (B) ranging from about 2:1 to 3:1, respectively.

3,354,239
POLYOLEFIN BLEND

Glen A. Short, Cherry Hill, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 8, 1967, Ser. No. 614,556
4 Claims. (Cl. 260—876)

1. A composition which consists essentially of 1 part by weight of isotactic polypropylene having blended therewith from 0.1 to 10 parts by weight of a modified polypropylene product consisting to the extent of at least about 50% by weight of isotactic polypropylene polymer chains, having ethylene-propylene copolymer attached to one end of at least a portion of said polypropylene chains, the total amount of ethylene units in said modified polypropylene product being in the range from 2 to 25% by weight and the total amount of ethylene units in said composition being in the range from 1 to 22% by weight.

3,354,240
REACTION PRODUCTS OF DIHYDROXYDIPHENYL COMPOUNDS WITH PHOSPHORUS SULFIDE OR PHOSPHORUS OXIDE AND AMINE SALTS THEREOF

Donald R. Pochowicz, Brookfield, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,735
11 Claims. (Cl. 260—924)

1. Aliphatic or aromatic monoamine or polyamine salt of the reaction product, formed at a temperature within the range of from about 100° to about 250° C., of from one to four mole proportions of a compound selected from the group consisting of 2,2′-dihydroxydiphenyl sulfide, 2,2′-dihydroxydiphenyl ether, 2,2′-dihydroxydiphenyl amine and 2,2′ dihydroxydiphenyl alkane with one mole proportion of phosphorus pentasulfide or phosphorus pentoxide.

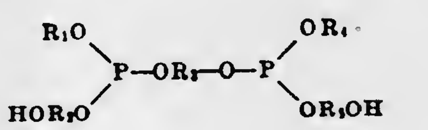
2. The reaction product, formed at a temperature within the range of from about 100° to about 250° C., of from one to four mole proportions of a compound selected from the group consisting of 2,2′-dihydroxydiphenyl sulfide, 2,2′-dihydroxydiphenyl ether and 2,2′-dihydroxydiphenyl amine with one mole proportion of a compound selected from the group consisting of phosphorus pentasulfide and phosphorus pentoxide.

3,354,241
DIPHOSPHITES

Millard S. Larrison, Livingston, N.J., assignor, by mesne assignments, to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Mar. 1, 1965, Ser. No. 436,349
12 Claims. (Cl. 260—929)

1. Diphosphites having the formula



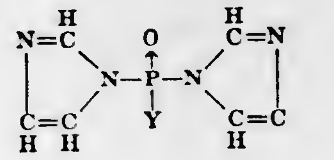
where R_1 and R_4 are selected from the group consisting of alkyl, phenyl, alkyl phenyl, naphthyl, chlorophenyl and bromo phenyl and R_2, R_3 and R_5 are selected from the group consisting of alkylene, alkyleneoxyalkylene and alkylene poly (oxyalkylene).

3,354,242
PROCESS OF MAKING ORGANIC PHOSPHORUS POLYMERS

Morris L. Nielsen, Dayton, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 24, 1964, Ser. No. 421,073
7 Claims. (Cl. 260—930)

1. The method of preparing a polymer which comprises heating at 50° to 300° C. a phosphorus compound of the formula



where Y is selected from the class consisting of (1) benzenoid hydrocarbyl radicals containing from 6 to 12 carbon atoms, being free of olefinic and acetylenic unsaturation and being linked through nuclear carbon to the remainder of the molecule, and (2) oxyhydrocarbyl radicals where hydrocarbyl is benzenoid containing from 6 to 12 carbon atoms and is free of olefinic and acetylenic unsaturation, with an arylene compound having the formula

HO—Z—OH

where Z is an arylene radical containing 6 to 15 carbon atoms and is free of olefinic and acetylenic unsaturation, and where the hydroxyl groups are attached directly to the aromatic nucleus and are separated by at least three carbon atoms.

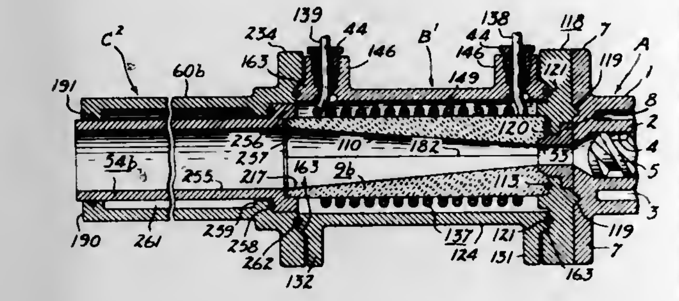
3,354,243

METHOD OF CURING RUBBER EXTRUSIONS

Howard M. Dodge, Hudson, Ohio, assignor to National Friction Products Corp., Cass County, Ind., a corporation of Indiana

Filed July 13, 1966, Ser. No. 564,814

8 Claims. (Cl. 264—25)



1. A process of making an article which is shaped by extrusion and is obtained in a cured state in a substantially continuous manner, which comprises substantially uniformly incorporating into a curable sponge compound comprising a blowing agent and an organic polymeric binder, which is suitably compounded to cure at elevated temperatures, at least 2 percent of the weight thereof of a finely divided magnetic iron oxide to form a mixture, extruding said mixture into an induction heating zone of desired cross sectional shape, comprising nonmagnetic walls wherein said mixture is subjected to a high frequency magnetic field to heat it to a vulcanizing temperature, maintaining the mixture in the desired cross sectional shaped form while moving it with respect to said zone and with respect to the confining walls of said zone, and passing the mixture continuously from said induction heating zone into lubricated contact with fluid heated walls of a curing chamber having a cross section of the desired shape, and thereafter maintaining said mixture at a vulcanizing temperature by contact with said heated walls of said curing chamber for a sufficient time to cause curing of said polymeric binder.

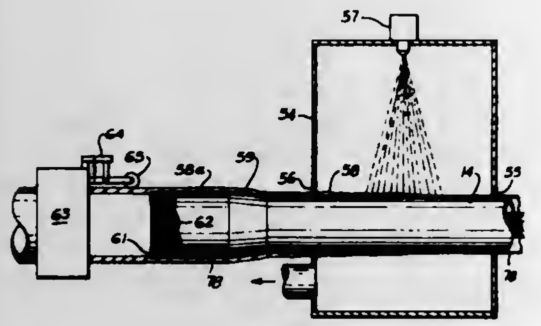
3,354,244

METHOD AND APPARATUS FOR THE MANUFACTURE OF FOAMED PLASTIC TUBING

Eugene M. Davidson, Houston, Tex., assignor to Hudson Engineering Corporation, Houston, Tex., a corporation of Texas

Filed Aug. 13, 1964, Ser. No. 389,359

20 Claims. (Cl. 264—51)



1. A process for the manufacture of tubes of foamed plastic material, comprising the steps of applying a continuous tubular sheet of thin parting plastic material around the outer surface of a mandrel; advancing the parting sheet longitudinally along the mandrel to one end thereof; depositing a foaming pre-plastic mixture upon the outer surface of the tubular sheet of parting plastic; foaming and curing the plastic in place; and cutting off the resulting tubes of foamed plastic material as they are advanced by the parting sheet beyond the one end of the mandrel.

3,354,245

METHOD AND COMPOSITION OF MATTER FOR FORMING CERAMIC STRUCTURES

Harley Banner Foster, 102 Elmwood, Greensboro, N.C. 27408

No Drawing. Filed Mar. 3, 1967, Ser. No. 620,281

33 Claims. (Cl. 264—60)

1. In a method of making pyrochemically bonded ceramic structural ware, the steps comprising:

- **(a) providing a mixture of fly ash, water, and a ceramic binder phase material whose Pyrometric Cone Equivalent falls within the inclusive range of 022 to 07;**
- **(b) forming said mixture into a piece of unitary green ware; and subsequently**
- **(c) firing the thus formed ware to the Pyrometric Cone Equivalent of the binder phase ceramic.**

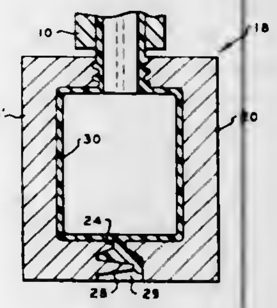
3,354.246

METHOD AND APPARATUS FOR BLOW MOLDING

Tony E. Branscum, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 20, 1963, Ser. No. 325,023

5 Claims. (Cl. 264—98)



1. In apparatus for blow molding which comprises at least a two-section mold means adapted to receive a parison; at least one mold section being provided in its parting face with an article cavity and at least one mold section being provided in its parting face with a relief cavity, said article cavity and relief cavity separated by compressing edges along the contours of said article cavity; the improvement which comprises a fixed restriction means in at least a portion of said relief cavity, said restriction means being so shaped as to allow displaced portions of the parison to flow into said relief cavity but by such flow to cause sufficient back pressure to build up substantially uniformly along said compressing edges that extrusion of other plastic material through said compressing edges is substantially prevented.

3. In the molding of plastic materials which comprises extruding a parison of molten plastic material, clamping at least a two-section mold about said parison, pinching off the parison around the contours of a cavity in said mold, thereby displacing a portion of the parison from the remainder of the parison in said cavity, and introducing positive air to the interior of said parison to force it to take the shape of said cavity; the improvement which comprises uniformly restricting the flow of plastic material displaced by the pinching off step such that sufficient back pressure builds up in said displaced plastic material to substantially prevent the flow of additional plastic material, from the cavity of said mold through the parting lines of said mold.

3,354,247

METHOD OF PRODUCING POROUS SEPARATORS

Ernst Zehender, Hohenacker, Kreis Waiblingen, and Siegfried Ziegler, Hildesheim, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed May 6, 1965, Ser. No. 453,647

Claims priority, application Germany, May 8, 1964, B 76,684

6 Claims. (Cl. 264—119)

1. A method of producing a porous, substantially plate-shaped body of substantially uniform porosity throughout, comprising the steps of forming a layer of a mixture of smaller and larger discrete granular particles of thermoplastic material having different diameters within the range of between about 20 and 200 microns; sintering said layer of smaller and larger discrete granular particles of thermoplastic material in heated condition while said thermoplastic granular particles are softened so as to adhere said particles to each other without substantial deformation thereof and to form thereby a coherent layer of said heated thermoplastic granular particles having interstices of different size therebetween; permitting the thus formed coherent layer of said heated thermoplastic granular particles to cool until said smaller thermoplastic granular particles have hardened while said larger thermoplastic granular particles remain still softened; subjecting the thus formed partly hardened sintered layer to compression, so as to compress said layer by compressing therein said still softened larger thermoplastic granular particles and to thereby substantially equalize the size of the interstices between all granular particles of said layer; and hardening the thus formed layer of thermoplastic granular particles so as to form a rigid, substantially plate-shaped body of substantially uniform porosity.

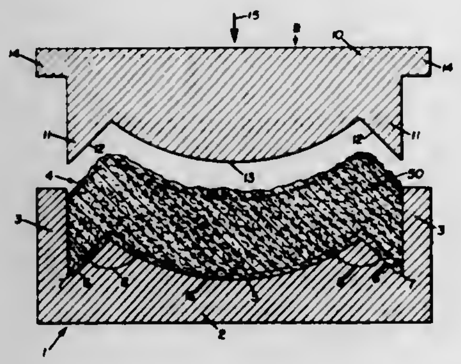
3,354,248

PROCESS AND MACHINE FOR PRODUCING MULTIDIMENSIONALLY MOLDED ARTICLES

Herbert Haas, Edmund Munk, and Gert Weinberg, Oberstenfeld, Wurttemberg, Germany, assignors to Furnier- und Sperrholzwerk J. F. Werz, Jr., K.G., Werzalit-Pressholzwerk, Oberstenfeld, Wurttemberg, Germany

Filed June 8, 1965, Ser. No. 462,365

9 Claims. (Cl. 264—119)



1. A process for producing molded articles having at least two dimensions with a relatively acute interior angle between one dimension and the other, said article being formed from a composition of comminute organic fibrous matter and a suitable adhesive, comprising:

- (a) filling the female die of a first set of male and female dies with a predetermined amount of said composition;
- (b) compressing, by co-action between said first set of dies said composition into a preform and forming an interior angle between one dimension and another of said preform, said angle being oriented to approximate the acute interior angle of the finished article; one dimension of said preform being contoured by compression between said first set of dies;
- (c) removing said preform from said first set of dies;
- (d) positioning said preform between a second set of male and female dies such that said contoured dimension of the preform slopes slightly away from its initial point of contact with the surface of the male die;
- (e) molding said preform in said second set of dies by heat and pressure to fully cure the adhesives and to conform said contoured dimension to the form of said male die surface without essentially altering said interior angle between one dimension and another;
- (f) removing said molded article from said second set of dies.

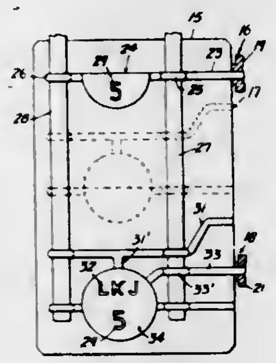
3,354,249

METHOD OF PRODUCING UNITED DUAL CHARACTER PARTS AND FACING PART

Louis H. Morin, Bronx, N.Y., assignor to Coats & Clark Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 17, 1964, Ser. No. 360,641

4 Claims. (Cl. 264—161)



1. The method of producing united plastic character and facing parts in different colors in a resulting end product, which consists in providing pairs of plastic injection nozzles simultaneously moved into injection position between a pair of dies having three molding stations, one pair of nozzles injecting plastic material simultaneously into a first and third station in forming one character part and one facing part, then, in another cycle of operation, moving the other pair of nozzles into injection position to inject material simultaneously into the second and third stations to form a second character part at said second station upon a first character part then positioned at said station, as well as to form a facing part on two character parts positioned at said third station, supporting the first pair of nozzles in inoperative position during said last named cycle of operation, then, in the next cycle of operation, again moving the first named pair of nozzles into injection position, with the second pair of nozzles supported in operative position, forming another first character part at the first station and a facing part on the two previously formed character parts then positioned at said third station, and forming the resulting end product comprising the three united parts by trimming the three united parts at a trimming station.

3,354,250
EXTRUSION METHOD AND APPARATUS

Joseph L. Killoran, Drummondville, Quebec, William K. Barnett, Weston, Ontario, and Joseph A. Guay, Drummondville, Quebec, Canada, assignors to Chemcell Limited, a corporation of Canada

Filed Feb. 26, 1964, Ser. No. 347,595

Claims priority, application Canada, Mar. 21, 1963, 871,454

15 Claims. (Cl. 264—176)

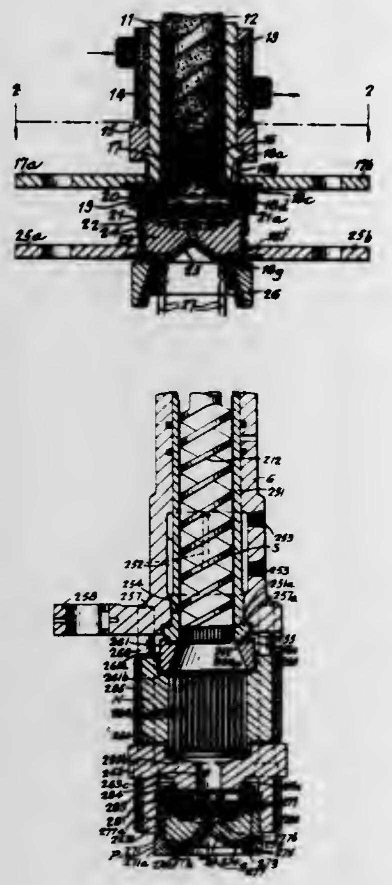
1. A method of producing artificial, filamentary products from powdered, fusible, resinous material, comprising:

continuously pressure-feeding the powdered resinous material in a steady stream from a supply source into an unobstructed confining passage terminating in an orificed heat conductive metal melting element heat insulated from said confining passage and remote from said feed,

applying a steady pressure against the resinous material in said passage so as to compress the resinous material in the passage against said melting element,

continuously cooling the resinous material up to entry of said material into said passage,

continuously heating said melting element so as to render fluid a layer of the resinous material adjacent to said melting element and continuously forcing through the orifices in the melting element small streams of the fluid material as fast as it is received,



controlling the feed to obtain a steady speed correlated to the temperature of the melting element and effective continuously to maintain the major part of the material in said confining passage as a plastic mass,

continuing to confine the resinous material in a further passage while passing it through the further passage and then urging it against a spinnerette,

continuously heating the spinnerette independently of the heating of the melting element effectively to heat the spinnerette uniformly to maintain in molten condition the resinous material adjacent to it and continuously drawing the molten resinous material in filamentary form through the spinnerette, the entire pressure feed being effected by a single pressure-feed screw in an integral unit.

3,354,251
PROCESS FOR THE REGULATION OF THE ELASTICITY MODULUS OF HIGHLY ELASTIC FIBERS AND FILMS

Wilhelm Thoma, Cologne-Flittard, and Heinrich Rinke, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Apr. 29, 1964, Ser. No. 363,611

Claims priority, application Germany, May 3, 1963, F 39,645

11 Claims. (Cl. 264—210)

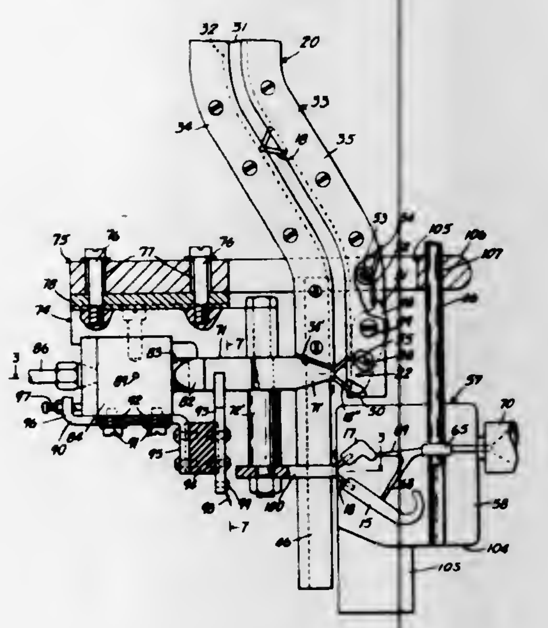
1. A process for the preparation of shaped polyurethane polymer which comprises preparing a solution of a polyurethane polymer in an inert solvent, said polyurethane polymer being the reaction product of an organic compound containing active hydrogen atoms, which are reactive with —NCO groups and an organic polyisocyanate, said solution being substantially free of —NCO groups, introducing into said solution a compound compatible therewith and capable of reacting with said polymer only upon imparting energy thereto, shaping said solution through a shaping aperture, stretching said shaped polymer and applying energy thereto to cause cross-linking in the stretched condition to thereby fix orientation.

3,354,252
METHOD OF FEEDING INSERTS FROM A PRELOADED MAGAZINE INTO A MACHINE MOLDING INSERT TRAVELERS

Louis H. Morin, Bronx, N.Y., assignor to Coats & Clark Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 11, 1964, Ser. No. 351,107

3 Claims. (Cl. 264—278)



1. The method of forming a traveler having a substantially L-shaped wire insert with an apex and two leg portions, which consists in delivering an insert from a preloaded magazine to a pickup station along a track ending adjacent a pair of dies at a molding station with the apex of said insert projecting from said track, then picking up said insert at the pickup station with pickup means engaging said projecting apex portion of said insert and delivering the same along a predetermined path to and supporting the insert at the molding station with the pickup means and the apex of said insert outside said dies of the molding station and the legs of said insert inside said dies, closing said dies while still holding said insert with said pickup means, molding a plastic traveler on said insert at said station by molding a plastic part on each of said legs of said insert while still holding said insert by said pickup means, removing said pickup means from said insert and returning it to its first position to grasp the next insert, and then with the use of a second pickup means cooperating with the apex of said insert feeding the molded traveler to a trimming and stripper station.

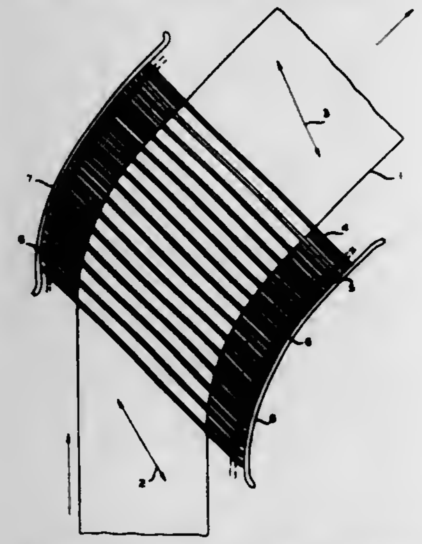
3,354,253
METHOD AND APPARATUS FOR STRETCHING THERMOPLASTIC FILM

Ole-Bendt Rasmussen, Copenhagen, Denmark, assignor to Phillips Petroleum Company, a corporation of Delaware

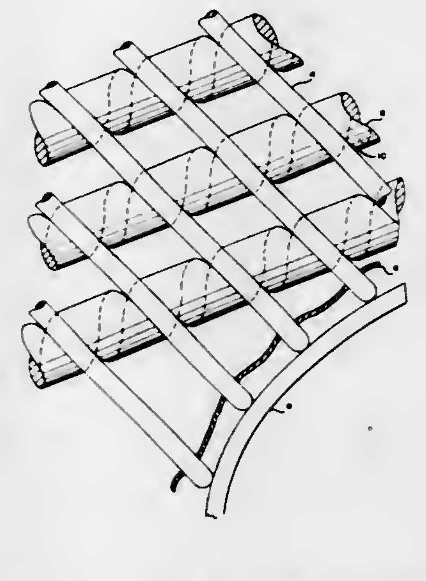
Filed Sept. 28, 1964, Ser. No. 399,794

Claims priority, application Great Britain, Oct. 7, 1963, 39,486/63

10 Claims. (Cl. 264—288)



1. A method of stretching an elongated sheet of plastic film which comprises gripping said sheet transversely in a plurality of closely spaced parallel zones which form an angle substantially below 90° to the lengthwise dimension of said sheet, moving said sheet forward lengthwise under tension while maintaining said gripping, gradually shifting said gripping zones axially while maintaining them parallel so as to change the direction of movement of said zones and sheet and increase the angle which said zones form with the length of said sheet, and then releasing said sheet from said gripping.



ERRATUM

For Class 264—338 see:
Patent No. 3,354,180

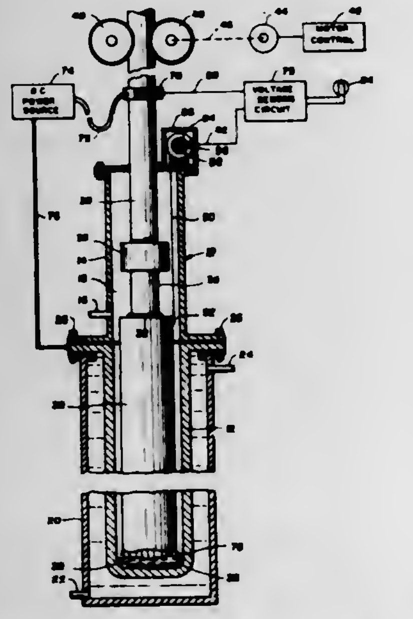
ELECTRICAL

3,354,254
FAILURE DETECTOR FOR CONSUMABLE ELECTRODE FURNACES

Harold S. Jackson, Troy, N.Y., and James B. Murtland, Jr., Natrona Heights, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania

Filed Sept. 15, 1964, Ser. No. 396,513

6 Claims. (Cl. 13—9)



1. In a consumable electrode furnace of the type in which an electrode is carried on the lower end of a vertically reciprocable ram, and wherein an arc is struck between the electrode and a molten pool of metal beneath it by electrically connecting two leads from an electrical power source to the ram and to a mold within which said molten pool is formed; the improvement of means for indicating an excessive rise in impedance between the lead connected to said ram and the electrode, comprising voltage sensitive circuit means connected between the electrode and the connection of said latter-mentioned lead to the ram, and alarm means connected to said circuit means and actuable when the voltage sensed by said circuit means rises above a predetermined level indicative of an excessive rise in impedance between said connection of the latter-mentioned lead to the ram and the electrode.

3,354,255
MEANS FOR TIGHTENING CURRENT SUPPLY PLATES ON ELECTRODES IN ELECTRIC FURNACES

Ernst Archinal, Hermulheim, near Cologne, and Georg Wehlitz, Efferen, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

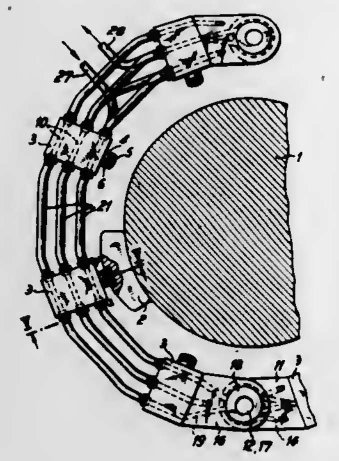
Filed June 29, 1964, Ser. No. 378,535

Claims priority, application Germany, June 29, 1963, K 50,097

11 Claims. (Cl. 13—16)

1. An apparatus for elastically tightening current supply plates on electrodes in electric furnaces consisting substantially of a cooled and hinged thrust collar allotted to each electrode concentrically encircling the electrode and provided with adjustable means applying contact pressure to the current supply plates in radial relationship with respect to the electrode axis, which comprises a thrust collar comprising at least two groups of a plurality of pipes complementary to each other so as to form a circle encircling the electrode so as to be radially spaced therefrom; a plurality of hinges connecting the

individual pipes so as to form an endless hinged collar, a plurality of casings, each individual casing receiving

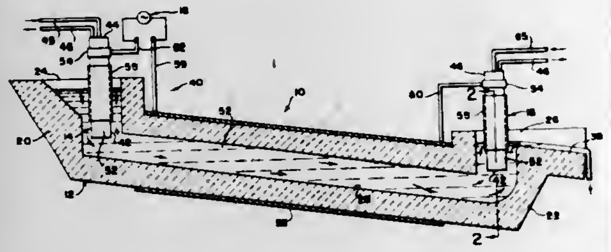


means applying contact pressure to the current supply plates and rigidly disposed in the individual groups of pipes locally allotted to each current supply plate.

3,354,256
APPARATUS FOR HEATING MOLTEN METALS

John T. Vaughan, Tampa, Fla., and Gerhard W. Seulen, Remscheid-Hasten, Germany, assignors to Alco Standard Corporation, Philadelphia, Pa., a corporation of Ohio

Filed Dec. 10, 1964, Ser. No. 417,395
8 Claims. (Cl. 13—23)



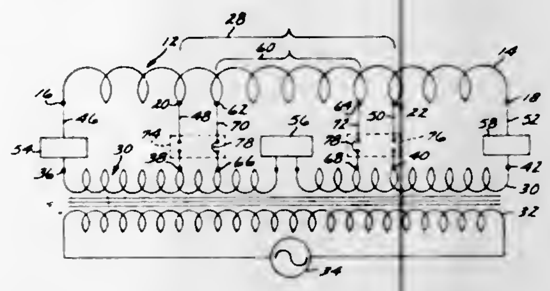
5. A resistance heating apparatus for molten metals comprising
- a tubular refractory vessel into which is charged molten metal to be heated,
- a pair of spaced electrodes each immersed within the molten metal adjacent opposite ends of said tubular vessel adapted to introduce an electrical current into the charge for heating it,
- an electrically conductive sleeve closely surrounding the metal charge and substantially coextensive longitudinally thereof, and
- means for passing an electrical current through said sleeve in a direction opposite to the current passing through said charge.

3,354,257
FURNACE HEATING APPARATUS

Karl A. Lang, 136 Venetia Drive, Long Beach, Calif. 90803

Filed July 25, 1966, Ser. No. 567,527
5 Claims. (Cl. 13—24)

1. Furnace heating apparatus comprising:
- an elongated heating element;
- element taps on said heating element defining a plurality of heating zones therebetween, including a short center zone between a first pair of said element taps, and a long center zone between a second pair of said element taps located outwardly of said first pair of element taps;
- a transformer;
- transformer taps on the secondary of said transformer defining a plurality of windings therebetween corresponding to said heating zones;
- first circuit means including a pair of first leads extending between said first pair of element taps and the corresponding ones of said transformer taps, said first leads being open and adapted to be closed to energize said heating element in said short center zone;

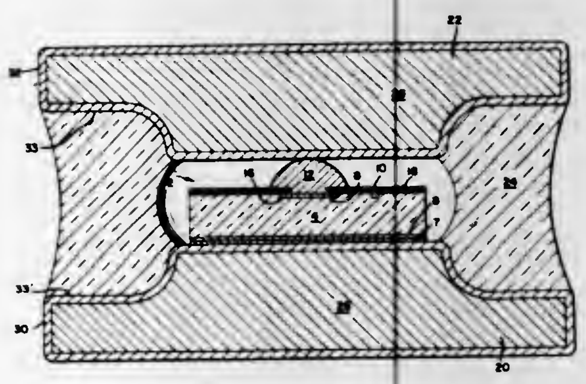


- second circuit means including a pair of second leads extending between said second pair of element taps and the corresponding ones of said transformer taps, said second leads being normally open and adapted to be closed to energize said heating element in said long center zone; and
- means for selectively closing various ones of said first and second leads.

3,354,258
PACKAGE FOR SEMICONDUCTOR DEVICES AND METHOD OF MAKING SAME

Frank J. Saia and Gilbert N. McIntyre, Costa Mesa, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed July 21, 1965, Ser. No. 473,779
3 Claims. (Cl. 174—52)



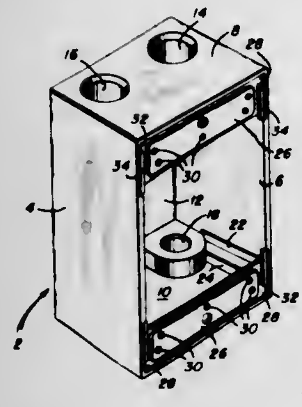
1. Semiconductor apparatus comprising:
- (A) a container including:
  - (1) a hollow body portion of glass containing at least 0.2% by weight of chromium;
  - (2) metallic end cap members bonded to the end portions of said glass body and forming hermetic glass-to-metal seals therewith;
- (B) and a semiconductor device mounted within said container and electrically connected to said metallic end cap members.

3,354,259
ELECTRIC OUTLET BOX

Harry Cagin, Bedford Heights, Ohio, assignor to Halex Die Casting Company, Bedford Heights, Ohio, a corporation of Ohio

Filed Mar. 11, 1966, Ser. No. 533,665
7 Claims. (Cl. 174—53)

4. An outlet box comprising a casting having a base, side walls, and end walls, recesses in the side walls adjacent the ends thereof contiguous to the end walls, a plurality of integral ribs extending upwardly from the base along the side walls adjacent the ends of the box and a lip integral with each of the edges of the side walls extending from the edges and being thinner than the side walls.

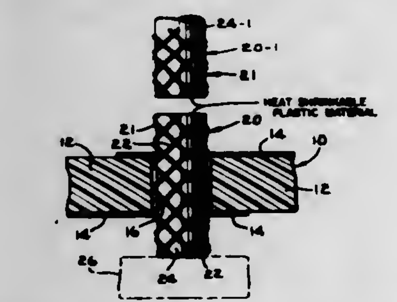


6. A method for making an outlet box having a mounting plate secured to an open end of the box comprising the steps of casting the box with recesses in opposed walls, forming a mounting plate having flanges on opposite edges thereof, inserting the mounting plate in the box with the flanges in the recesses, and peening wall sections of the box over the plate.

3,354,260
THROUGH-CONNECTORS FOR CIRCUIT BOARDS AND METHOD OF APPLYING SAME

Edmund D. Brandt, Chicago, and Dennis D. Varner, Wauconda, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed July 18, 1966, Ser. No. 566,095
3 Claims. (Cl. 174—68.5)



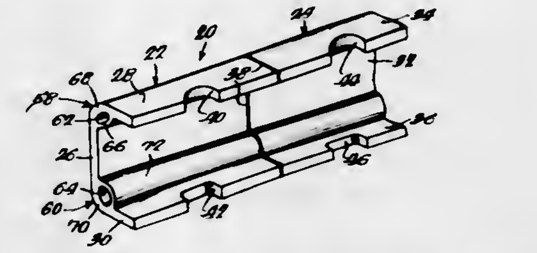
1. A composite electrical through-connector of the type described comprising:
- a single elongated plastic member of solid cross section constructed from heat-shrinkable material, said material having been changed from a dimensionally heat stable form to a dimensionally heat unstable form, said plastic member having a reduced cross section in the heat unstable form and being further characterized by being capable of being returned to its dimensionally heat stable form and expanded in cross section in response to the application of heat thereto; and
- an elongated flexible electrical conductor supported on said plastic member around and longitudinally thereof and capable of being expanded and contracted longitudinally of said member.

3,354,261
ELECTRIC BUS ELEMENT WITH COOLANT PASSAGES

Nicholas G. Polgov, Northbrook, Ill., assignor to H. K. Porter Company, Inc., Chicago, Ill., a corporation of Delaware

Filed Mar. 16, 1966, Ser. No. 534,724
10 Claims. (Cl. 174—133)

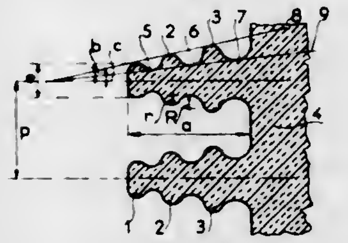
1. In a bus structure of the type which is cooled to increase the current-carrying capacity thereof, the improvement comprising, in combination, a bus conductor element including a pair of walls which intersect to define a corner where current flow is relatively concentrated, said corner being of increased thickness relative to the thickness of said pair of walls, and a duct formed inside of said corner in close proximity to the area of current concentration, said duct extending longitudinally through said bus element for conducting a coolant therethrough.



3,354,262
SELF-WASHING INSULATORS

Henri Meier, Tarbes, France, assignor to Compagnie Generale d'Electro-Ceramique, Paris, France

Filed May 15, 1967, Ser. No. 638,430
Claims priority, application France, May 20, 1966, 62,402
10 Claims. (Cl. 174—211)

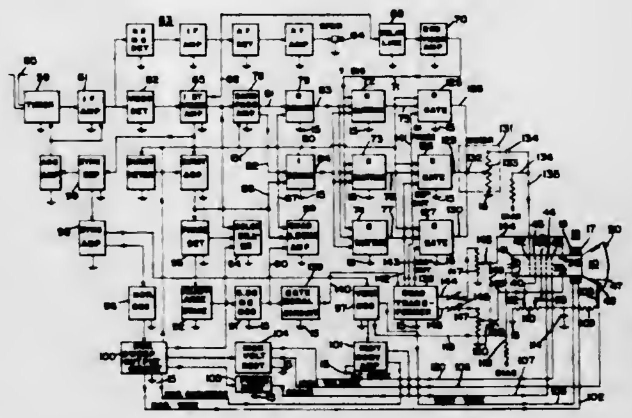


1. In an insulator of the type comprising a stem which constitutes a body of revolution, the improvement comprising one or more helical fins integrally formed therewith having at least three surface protuberances, with the dimensions of each fin being such that; the ratio of end thickness of the fin to fin pitch is less than 0.5, the radial length of the fin is greater than 20 mm., the thickness of the fin is on the order of 6 to 18 mm., and the fin pitch is on the order of 15 to 50 mm.

3,354,263
COLOR TELEVISION RECEIVER

Jerome C. von Benge, 1513 Pittston Ave., Scranton, Pa. 18505

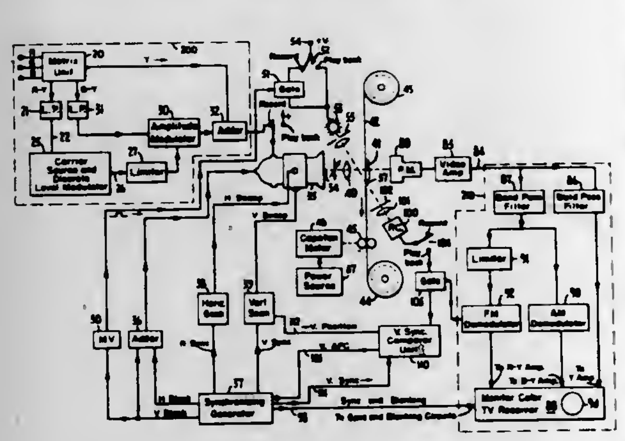
Filed Aug. 1, 1963, Ser. No. 299,285
6 Claims. (Cl. 178—5.4)



1. In a color television signal receiving system:
- a cathode-ray picture tube of the single-gun type and control means therefor for color picture reproduction,

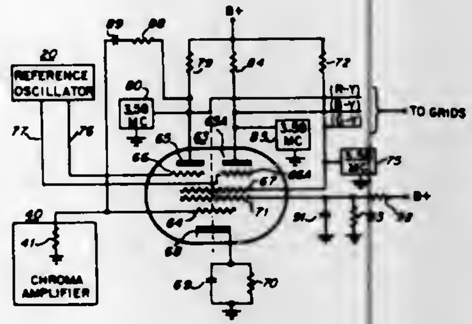
said picture tube having an image screen providing a plurality of scanning lines in spaced parallel relation,
each line comprising spaced parallel color stripes responsive to beam activation to emit all colors involved in a color picture transmission to be reproduced,
said control means providing tube and circuit elements connected for effecting line-sequential scanning of said screen,
with a single beam of less than scanning line width in a high-frequency oscillatory path across each line in a dot-sequential configuration and in synchronism with color signal information applied to the beam at each stripe,
said tube elements including a pair of beam-deflecting electrodes along the beam path and a signal input electrode for modulating the beam, and
said circuit elements including a plurality of color channels and color gates connected one in each color channel to apply color signal information to said input electrode in successive-phase quadrature relation in response to high-frequency deflection signals applied to said beam reflecting electrodes,
a quadrature transformer provided to jointly control said color gates and said deflection electrodes and including a signal input winding and a plurality of signal output windings,
one of said output windings providing in-phase signals to a first one of said gates and said deflection electrodes and 180° out-of-phase signals to a third one of said gates, and
another of said output windings providing 90° out-of-phase signals to a second one of said gates, and
a source of high-frequency oscillations connected to the signal input winding of said quadrature transformer, thereby to provide gating and beam-deflecting signals in synchronism.

3,354,264
RECORDING APPARATUS AND MEDIUM WITH DISCRETE LEVEL MODULATION
Peter C. Goldmark, Stamford, Conn., assignor to Columbia Broadcasting Systems, Inc., New York, N.Y., a corporation of New York
Filed Mar. 19, 1964, Ser. No. 353,197
32 Claims. (Cl. 178—5.4)



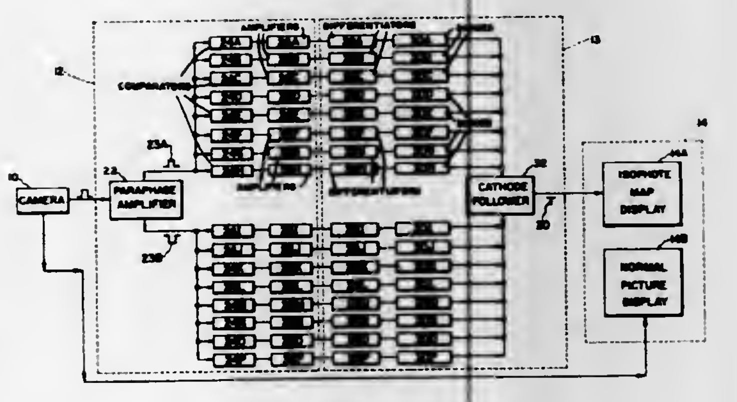
1. Recording apparatus comprising, signal transfer means, means to produce at a selected frequency a line by line transverse scanning by said means of a recording medium, source means of a carrier with a rest frequency which is an integral multiple of the line scan frequency, means responsive to an input signal having a numerically continuous variation to modulate a time characteristic of said carrier to different discrete levels of which each is produced by a respective one of successive ranges of said variation, and means to record said modulated carrier by said transfer means in scanned lines on said medium.

3,354,265
COLOR DEMODULATOR
Lin Kao, Evanston, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 6, 1965, Ser. No. 493,429
8 Claims. (Cl. 178—5.4)



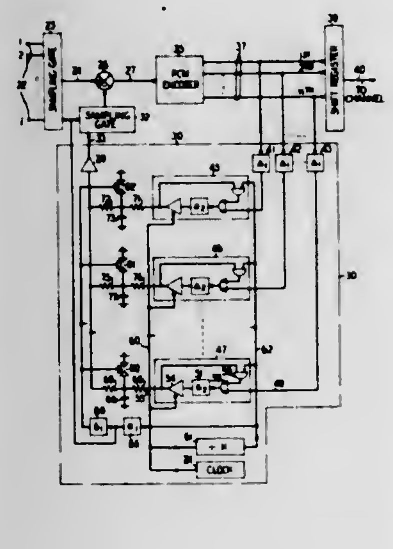
8. In a color television receiver, a color demodulator comprising; a twin hexode vacuum tube including, in the order named, a common cathode, a common control grid, a common shadow grid, a common screen grid, first and second suppressor grids and first and second anodes, said shadow grid being juxtaposed close to said screen grid and effectively shielding it from electrons passing from said cathode to said anodes; means applying a coded color signal including $R-Y$ and $B-Y$ information to said common control grid; means applying phase displaced demodulating reference signals to said first and said second suppressor grids respectively, the axes of demodulation being determined by said phase displacement and being selected to produce an $R-Y$ signal at said first anode and a $B-Y$ signal at said second anode; said screen grid having induced therein negative $R-Y$ and $B-Y$ signal currents which effectively make up a $G-Y$ signal; a feedback circuit interconnecting said first anode and said control grid for applying a small amount of $R-Y$ signal to said common control grid thereby augmenting the negative $R-Y$ portion of said $G-Y$ signal on said screen grid; and means coupling said $R-Y$, $B-Y$, and $G-Y$ signals to a color picture tube without intermediate amplification.

3,354,266
ISOPHOTE CONVERTER
Henry J. Dinenno, Downey, Calif., assignor to North American Aviation, Inc.
Filed May 25, 1964, Ser. No. 369,977
10 Claims. (Cl. 178—6.8)



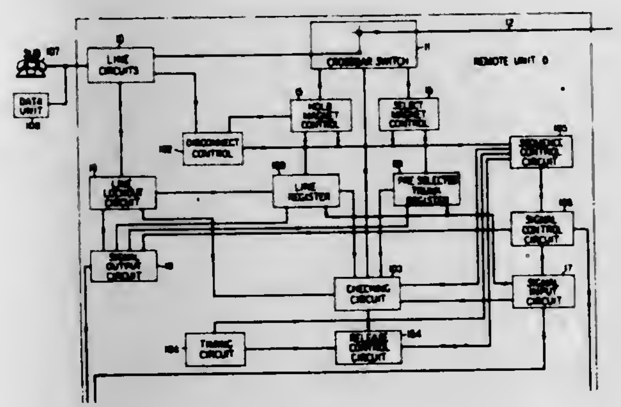
1. The combination comprising:
a source of information;
means, comprising electronic comparator circuitry, for quantizing the information from said source, and producing control-pulses corresponding to selected level changes of said information; and
means for causing said control-pulses to produce an isophote display.

3,354,267
DIFFERENTIAL PCM SYSTEM EMPLOYING DIGITAL INTEGRATION
Theodore V. Crater, Hanover Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 13, 1965, Ser. No. 425,275
7 Claims. (Cl. 179—15)



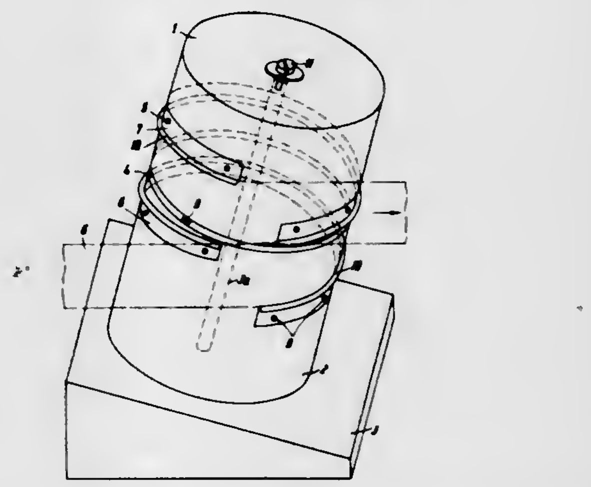
1. In combination, a source of a series of differential PCM code words, a digital memory connected to said source for storing said words, read-out means connected to said memory for delivering k consecutive words from said memory each time a new word in said series is received from said source, and accumulating means for forming the weighted sum of said k words to produce an analog signal sample.

3,354,268
SYNCHRONIZING CIRCUIT FOR CONCENTRATOR SIGNALING SYSTEM
John F. Rettig and Uberto K. Stagg, Jr., Columbus, Ohio, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 14, 1964, Ser. No. 344,981
15 Claims. (Cl. 179—18)



1. A signaling system including a transmitting unit and a receiving unit, oscillator means at said units, counting means at said units responsive to said oscillator means, and timing means at said receiving unit responsive to a signal indication from said transmitting unit for metering a predetermined time interval and apparatus controlled by said timing means for energizing said counting means at said receiving unit to a predetermined count indicative of said time interval to synchronize said counting means at said units.

3,354,269
ADJUSTABLE GUIDE MEANS FOR A HELICAL SCAN TAPE RECORDER
Wolfgang Rank, Kronach, Upper Franconia, Germany, assignor to Loewe Opta Aktiengesellschaft, Berlin, Germany, a company of Germany
Filed Nov. 26, 1962, Ser. No. 242,576
Claims priority, application Germany, Nov. 30, 1961, L 40,586
2 Claims. (Cl. 179—100.2)



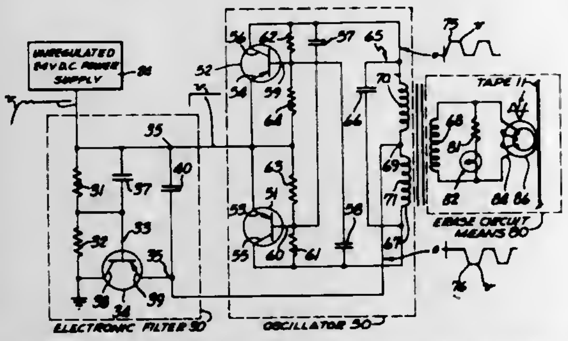
1. A tape recording and reproducing device for television signals, comprising a base, a pair of cylinders, a central bolt, a screw, driving means for said tape, tape guide means fastened on said cylinders, and a magnetic head; said cylinders having the same diameter, a first of said cylinders being mounted on said base and the second cylinder being coaxially arranged in a spaced apart relation by said central bolt, on which said second cylinder is fastened by way of said screw, said driving means wind said tape helically around said cylinders, said magnetic head being mounted on said bolt to rotate within the slot between said cylinders and to coact with said tape, said tape guide means consist of two stops, each of which being fixed on one of said cylinders helically in one turn, the distance between said stops corresponds approximately to the tape width, said distance being continuously adjustable by loosening said screw and by turning said second cylinder around its axis in relation to said first cylinder.

3,354,270
MAGNETIC ERASE HEAD CURRENT SUPPLY
Grant M. Smith, Cupertino, and Allen J. Trost, Santa Clara, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Oct. 1, 1963, Ser. No. 312,994
1 Claim. (Cl. 179—100.2)

An erase head current supply circuit for providing an alternating erase current to a magnetic erase head disposed against a magnetic recording medium, wherein said current supply circuit is energized by an unregulated voltage supply means having an output voltage with a ripple component, the combination comprising:
a solid state electronic filter operatively coupled to said unregulated voltage supply means for removing the ripple component from said output voltage and for transmitting a substantially constant output voltage;
said electronic filter comprising a transistor having base, collector and emitter electrodes, a capacitor and a biasing resistor circuit, wherein the capacitor is connected in series with said base electrode, the collector is connected to ground and the resistor is connected in part across the capacitor and in part from the base electrode to ground to define a filter circuit having an effective filter capacitance equal to the capacitance of the capacitor multiplied by the current gain of said transistor;

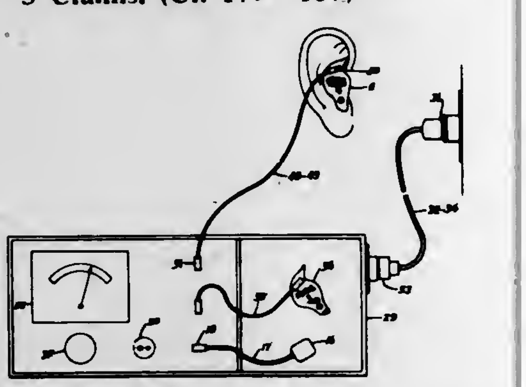
solid state amplifier oscillator means including a transformer primary, operatively coupled to said electronic filter means for forming an alternating current output signal; and

erase head circuit means defining an essentially pure inductance circuit operatively coupled to said amplifier oscillator means, wherein the inductance of the erase head circuit means is of a value to enable said solid state amplifier oscillator means to oscillate at



frequencies greater than 50 kilocycles per second and the head current to define an essentially pure sinusoidal waveform, said erase head circuit means including a transformer secondary coupled to the transformer primary and connected directly across an erase head driving coil to generate said essentially pure sinusoidal current in the driving coil to effectively reduce any flux in the medium to a zero value, and including a tally light coupled across the head winding to indicate the success of the erase process.

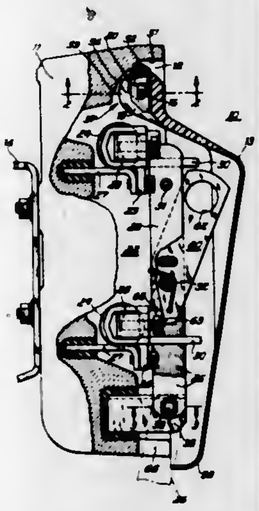
3,354,271
SEALED HEARING AID
Bernard E. McDermaid, 15 Birchwood Road, Mahtomedi, Minn. 55115
Filed Feb. 28, 1964, Ser. No. 348,068
3 Claims. (Cl. 179—107)



1. A hearing aid comprising: a molded case adapted to be completely supported by a human ear; an amplifier circuit, control switch, polarized connector adapted to be connected to an external power source, and a first rechargeable battery all within said case; a set of electrical circuit conducting members interconnecting said battery with said polarized connector; and a second group of conducting circuit members interconnecting said battery, said switch and said hearing aid circuit in such a manner that said hearing aid circuit is operable simultaneously with charging of said battery by power supplied through said polarized connector.

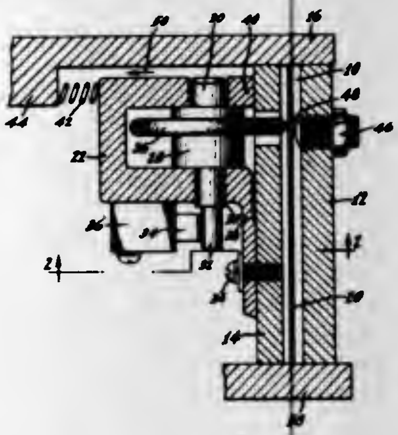
3,354,272
ENCLOSED DISCONNECT SWITCH
George R. McCloud, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Oct. 28, 1966, Ser. No. 590,300
1 Claim. (Cl. 200—48)

A housed switch comprising a hollow insulating housing having a front opening, a closure door, hinge pin means engaging the upper end of said door and said housing for pivotally mounting said door to said housing, first and second terminal means disposed within said housing, switch blade means pivotally mounted on said housing for movement between a closed position wherein said terminals are bridged and an open position wherein said switch blade is isolated from said terminals, a latch surface integrally formed on the upper end of said housing and comprising first and second shoulder portions formed on said housing and an interconnecting generally arcuate surface having its center of curvature substantially at the axis of said hinge pin means, a metallic detent latch member having elongate slot means for engaging said hinge pin means, spring means disposed between said latch member and said door and acting in



the direction of said slot means to urge said member away from said door and into engagement with said latch surface, said latch member being resiliently engageable with a first one of said shoulder portions when said door is in a closed position to resist rotation of said door toward its open position and with the other one of said shoulder portions when said door is in an open position to support the weight of said door and resist rotation of said door toward its closed position, said latch member being movable out of engagement with said shoulder portions and onto said arcuate surface for sliding movement to the other of its shoulder portions upon the application of sufficient force to the lower end of said door, said arcuate surface and on said shoulder portions providing a relatively low friction surface with respect to said metallic latch member.

3,354,273
TWO CARD DETECTOR
Lewis W. Bleiman, Northridge, Calif., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 24, 1965, Ser. No. 490,036
5 Claims. (Cl. 200—61.41)



1. An arrangement for detecting the presence of two cards comprising, in combination:

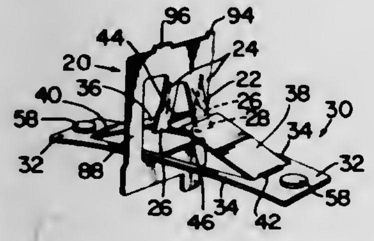
a passageway for said cards comprising a pair of walls spaced apart a distance greater than twice the thickness of a card;

means including a roller which is freely rotatable extending into the passageway to an extent sufficient to narrow down a portion of the passageway to a thickness larger than that required for the passage of one card but smaller than that required for the concurrent passage of two cards, whereby the roller remains stationary when only a single card passes the roller and rotates when two cards concurrently pass the roller; and

means responsive to the rotation of the roller for detecting the presence of two cards.

3,354,274
SWITCH WITH TRANSVERSE SHEET METAL SNAP ACTION MEMBERS

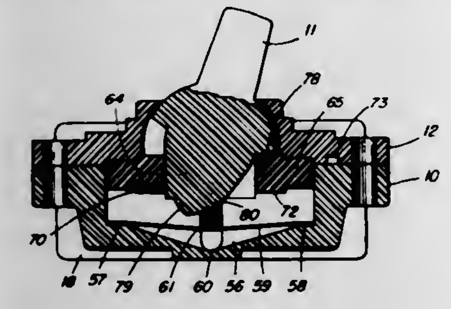
Werner Robert Bauer, Radnor, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed May 5, 1966, Ser. No. 547,980
14 Claims. (Cl. 200—67)



1. Snap action means including: an edgewise reciprocatable one-piece first sheet metal member having a central tongue and two outer tongues on either side of said central tongue, each of said tongues having a respective tongue end; a snap acting one-piece second sheet metal member transverse to said first sheet metal member, said second sheet metal member having two end contact bridge members joined by two outer tension strips and two inner inwardly directed legs between said tension strips and supported at their outer leg ends by said bridge members, and having their inner free leg ends in snap locking engagement with said free tongue ends, one of said free leg ends engaging said free end of said central tongue, and the other of said free leg ends engaging said two free tongue ends of said two outer tongues.

3,354,275
SILENT ELECTRIC SWITCH

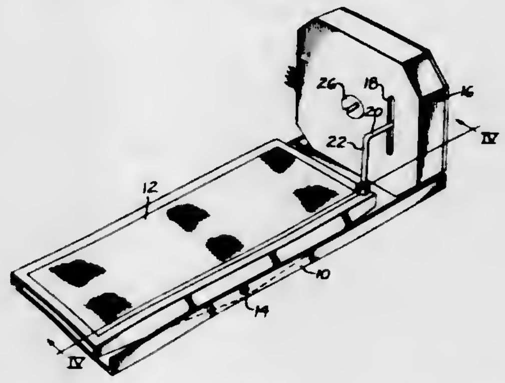
Harold E. Schleicher, West Hartford, Conn., assignor to The Arrow-Hart & Hegeman Electric Company, Hartford, Conn., a corporation of Connecticut
Filed Sept. 27, 1965, Ser. No. 490,322
5 Claims. (Cl. 200—68)



1. In an electric switch a hollow insulation casing, fixed and movable contact means mounted in said casing, an over-center operating member pivotally mounted in the casing and moving said movable contact means between switch positions for engagement with and disengagement from said fixed contact means, a leaf spring extending longitudinally of said casing and being supported at its ends, a cylindrical anti-friction roller extending transverse to the leaf spring and engaging the midportion of said leaf spring, said operating member having a convergently formed inner end portion engaging with said anti-friction roller, said spring and roller exerting pressure on the opposite sides of said convergent end portion in different switch positions to bias the operating member therein, and sound-deadening and energy-absorbing resilient bumpers mounted in said casing adjacent the "right" and "left" sides of said operating member, each bumper having first and second surfaces angularly disposed with respect to each other, said operating member having first and second surfaces on each of the "right" and "left" sides thereof complementary to and engageable with said first and second surfaces of the bumpers, a first surface on the right bumper being engaged by a first surface on the right side of the operating member simultaneously with engagement of a second surface on the left bumper being engaged with the second surface on the left side of the operating member, and vice versa, whereby the two sides of the operating member come into engagement with two bumpers, in each of said different switch positions.

3,354,276
FOOT-OPERATED SWITCH

Willie M. Shoffner, 318 S. Lutheran Church Road, R.R. 2, New Lebanon, Ohio 45345
Filed June 23, 1966, Ser. No. 559,894
8 Claims. (Cl. 200—86.5)



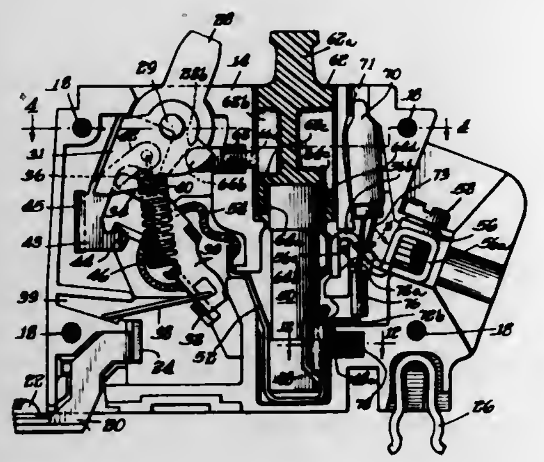
1. In a switch structure: a horizontal base member, a box fixed to one end of said base member and having a vertical wall extending transversely of the base member, a plate inside the box adjacent said vertical wall, means rotatably supporting the plate on said wall, switch means on the plate adapted to open and close in response to rotation of the plate in the box, a treadle tiltably supported on said base member and having one end near said wall outside said box, an angle rod fixed to the box end of said treadle and upstanding therefrom and having one end extending through said wall and engaging said plate so that tilting movement of said treadle will cause rotation of said plate in said box, and spring means acting between said base member and said treadle urging said treadle toward one operative position thereof while permitting tilting of the treadle on the base member to cause rotation of said plate to thereby cause actuation of said switch means.

3,354,277
FUSIBLE SWITCH FOR ELECTRICAL PANELBOARD

Harris I. Stanback and Harry W. Curtis, Lexington, Ky., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Dec. 23, 1964, Ser. No. 420,570
6 Claims. (Cl. 200—114)

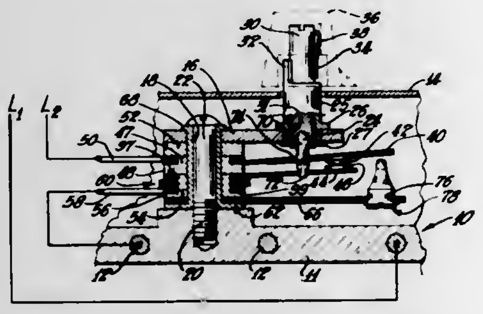
1. A fusible switch comprising a casing and a fuse clip secured in said casing, said fuse clip being generally U-shaped and including a generally flat bight portion and

a pair of spaced leg portions integral with and extending from said bight portion, and said fuse clip also having a shape such that said leg portions extend from said bight portion in a direction parallel to the longitudinal axis of a cartridge fuse when a ferrule of a cartridge fuse is mounted in said fuse clip, at least one of said leg portions being arcuately curved about an axis disposed between said leg portions and extending perpendicularly to said bight portion, and one of said leg portions having an extension thereon cooperating with said casing to secure said fuse clip therein and serving as a terminal for the connection to said fuse clip.



3,354,278
STACK-TYPE THERMORESPONSIVE SWITCH HAVING A SUPPLEMENTAL HEATER WITH ANNULARLY-SHAPED HEATER PORTION AND TERMINAL REGIONS

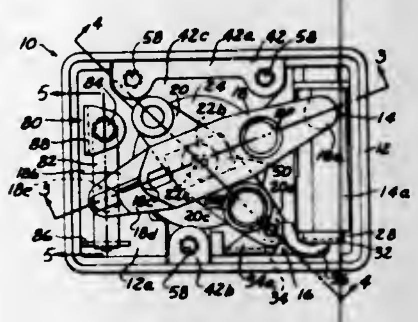
Frank T. Piacent and John W. Huffman, Mansfield, Ohio, assignors, by mesne assignments, to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Aug. 30, 1965, Ser. No. 483,682
12 Claims. (Cl. 200—122)



1. Switch mechanism, in combination, switch means including a relatively movable switch arm, a pair of cooperating switch contacts, one of said contacts being carried by the switch arm, a bimetal member, support means for said switch arm and bimetal member including insulating means retaining said arm and bimetal member in spaced relation, said bimetal member being disposed to influence the relative position of the other of said contacts, an electrically-energizable heating element mounted by said insulating means having an annularly-shaped heating portion and terminal portions for connection in circuit with said contacts, disc means of insulating material embracing both sides of the heating portion of said heating element intermediate the terminal portions, said heating element and disc means being mounted by the insulating means whereby heat generated by current flow through the heater is conducted to the bimetal member through the insulating means.

3,354,279
CONTROL APPARATUS

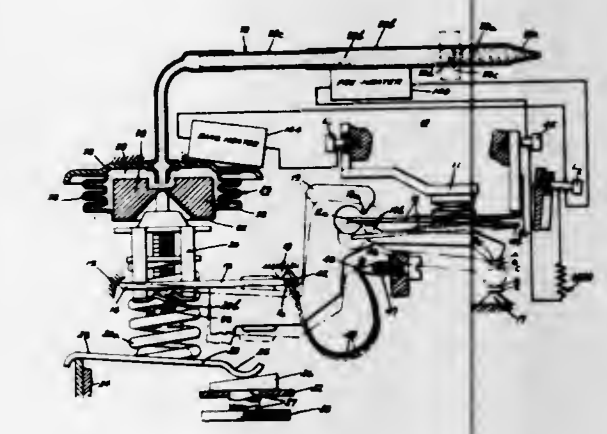
Charles C. Lamar, Chicago, Ill., assignor to Harper-Wyman Company, Hinsdale, Ill., a corporation of Illinois
Filed Oct. 1, 1965, Ser. No. 492,220
10 Claims. (Cl. 200—140)



1. A control comprising a generally rectangular housing, a pair of control devices mounted in said housing adjacent first and second corners of said housing, pivot means mounted in said housing adjacent third and fourth corners of said housing, a crossed pair of lever arms disposed approximately along the diagonals of said housing, each of said lever arms extending between one of said control devices and said pivot means, and condition responsive means in said housing for moving said levers to operate said control devices.

3,354,280
CONDITION RESPONSIVE ELECTRIC SWITCH MECHANISM

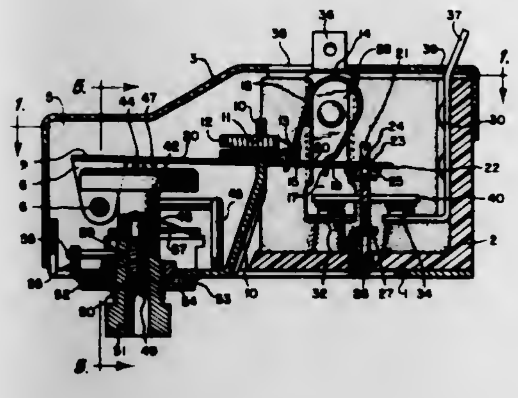
John L. Slonneger, Morrison, Ill., assignor to General Electric Company, a corporation of New York
Filed Feb. 8, 1966, Ser. No. 525,906
9 Claims. (Cl. 200—140)



1. A condition responsive electric switch mechanism comprising switch means having open and closed switch positions; switch actuating means movable between first and second positions in actuating relation with said switch means for operating said switch means between said open and closed switch positions; spring means connected to said switch actuating means for transferring said switch means between said open and closed switch positions; and temperature responsive means, including a sealed expansible assembly connected to said switch actuating means, for producing a thermal damping condition at preselected temperatures to cause the creation of resistive forces acting on said switch actuating means in opposition to forces of the spring means as said switch actuating means is operated at least beween said first and second positions, thereby controlling the velocity of said switch actuating means as it travels from said first to said second positions.

3,354,281
TEMPERATURE CONTROL DEVICE

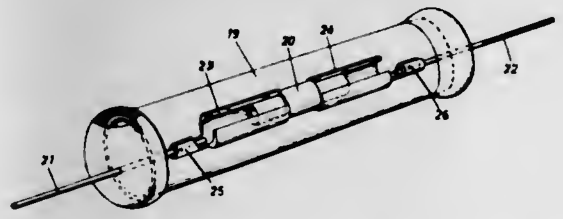
Paul T. Durst, Brookfield, and Robert J. Sutton, Chicago, Ill., assignors to General Electric Company, a corporation of New York
Filed Dec. 21, 1966, Ser. No. 603,581
6 Claims. (Cl. 200—140)



1. A temperature responsive device comprising:
(a) a frame;
(b) a substantially planar spring blade member;
(c) means mounting said blade member to said frame for pivotal motion about an axis substantially to one side of said member and adjacent an end thereof;
(d) a spring having one end pivotally mounted on said frame on the other side of said blade member, and having its other end pivotally mounted to said blade member, said spring being positioned so that its other end is more remote from the pivot axis of said blade member than its one end whereby said spring puts said blade member in tension;
(e) electrical contact means carried by said blade member adjacent the other end thereof;
(f) a temperature sensitive member arranged to exert a force on said blade member adjacent said one end thereof from the same side thereof as said pivot axis, said temperature sensitive member being movable generally perpendicular to said blade member in response to temperature changes;
(g) and means limiting movement of the other end of said blade member to maintain the junction point of said spring and said blade member always on the same side of a line connecting said pivot axis to the point at which said spring is pivotally mounted to said frame.

3,354,282
THERMAL FUSE WITH CAPILLARY ACTION

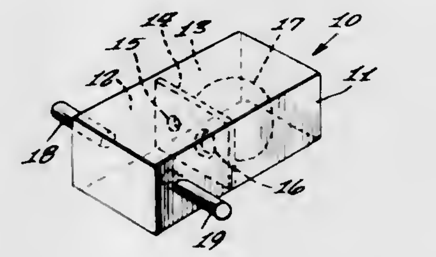
Norbert C. Batsch, Leaside, Ontario, Canada, assignor to Canadian General Electric Company Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed May 25, 1966, Ser. No. 552,930
4 Claims. (Cl. 200—142)



1. A thermal fuse for interrupting the current flow in response to its environmental temperature comprising a sleeve, a pair of lead terminals extending from said sleeve for connection in an external circuit, a fusible link disposed within said sleeve and joining said lead terminals, said fusible link having a predetermined melting temperature range and forming a current conducting path between said lead terminals, and hollow capillary means at each end of said fusible link and forming an electrical connection between said link and said terminals overlapping at least a portion whereby upon increase of the environmental temperature beyond the melting point of the link the melted link is withdrawn into the capillary means to permanently sever the link thereby ensuring that the current flow between said lead terminals is completely interrupted.

3,354,283
ELECTRICAL SWITCH

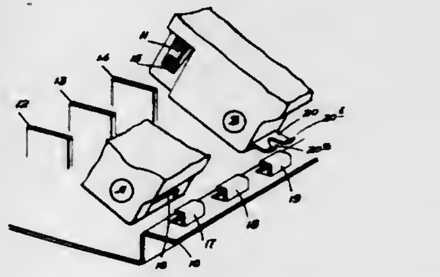
George J. Flynn, Jr., 5101 39th Ave., Long Island City, N.Y. 11104
Filed Oct. 14, 1966, Ser. No. 586,819
3 Claims. (Cl. 200—152)



1. An electrical switch, comprising in combination, a housing, said housing enclosing a pair of spaced apart chambers, said chambers being spaced apart by a transverse plate, said housing and said plate being of a nonelectrical conducting material, a pair of openings through said plate communicating between said chambers, one of said openings being relatively smaller than the other, a drop of mercury within said housing, said drop of mercury being movable through the relatively larger of said openings in said plate between said chambers by a sudden change in movement momentum of said housing, said relatively smaller opening in said plate serving to displace air into one of the chambers from which said drop of mercury has been evacuated by said sudden change in momentum of movement and said housing further including a pair of spaced apart contacts engageable by said drop of mercury so to either close an electrical circuit, open an electrical circuit, or momentarily engage the closing of a circuit.

3,354,284
ONE-HALF WIDTH CIRCUIT BREAKER MOUNTING MEANS

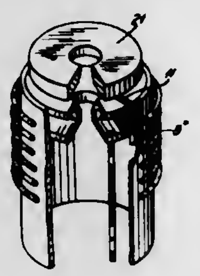
George W. Knecht, Brooklyn, N.Y., assignor to Murray Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York
Filed Mar. 2, 1966, Ser. No. 531,259
4 Claims. (Cl. 200—168)



1. In a circuit breaker of the type used with a mounting panel, including a flange having an inverted L-shaped cross-section, the improvement therein comprising: a resilient leaf extending from one end of the breaker for entering the inverted L-shaped portion of said mounting panel without substantial contact; and a sharp relatively hard edge upstanding from the external edge of said leaf, said edge normally contacting the underside of said L-shaped mounting panel member when said breaker is seated, whereby said breaker must be angled for entry

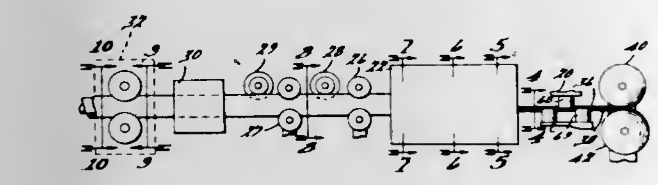
of said leaf under said inverted L-shaped mounting panel member and then angularly displaced to the normal seated position whereupon the edge of said leaf engages the underside of said member, preventing lateral or longitudinal movement of said breaker.

3,354,285
ELECTROMAGNETIC FLUX CONCENTRATOR FOR LEVITATION AND HEATING
Joachim Rexer, Parma, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Apr. 17, 1964, Ser. No. 360,650
1 Claim. (Cl. 219—7.5)



An apparatus for the levitation and heating of materials which comprises, in combination, (1) a source of alternating current (2) a first circumferentially discontinuous annular body formed of electrically conductive material being arranged with its central axis extending in a vertical direction, said annular body having an inner surface which is symmetrical about its vertical axis, said surface in downward extension converging at the vertical axis of said annular body and said annular body being connected to said source of alternating current to provide a flow of current through said annular body and the establishment of a vertically directed electromagnetic field (3) a second annular body formed of electrically conductive material being arranged above said first annular body in axial alignment and in flux linking relation therewith, said second annular body having an inner surface which is symmetrical about its vertical axis, said surface in upward extension converging at the vertical axis of said annular body.

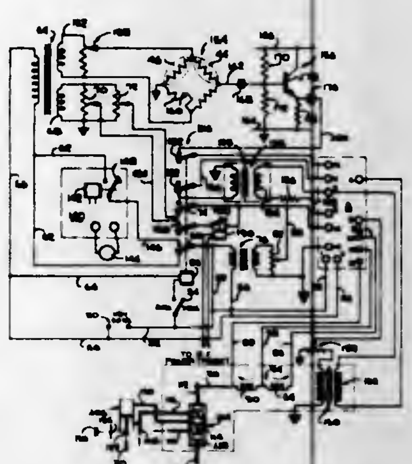
3,354,286
EXHAUST SYSTEM CONDUIT
Donald P. Worden, Racine, Wis., and Edward F. Abbott, Harrisonburg, Va., assignors to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Aug. 26, 1963, Ser. No. 304,391
3 Claims. (Cl. 219—8.5)



1. The method of forming multi-wall pipe or the like from a plurality of separate sheets of material comprising the steps of:

(1) roll forming flat sheet stock into tubular form having a longitudinally extending gap between opposite edges,
(2) aligning the gaps of a plurality of separate telescoped tubular forms,
(3) maintaining a stepped relationship between the edges of inner and outer tubular forms with the inner tubular forms having a narrower gap than the outer tubular forms, and
(4) applying pressure and electrical current to said inner and outer tubular forms to melt said edges and form a common integral joint therebetween.

3,354,287
WELDING CONTROL CIRCUIT
Joseph J. Sennello and Henry J. Keinanen, Oak Lawn, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 18, 1963, Ser. No. 317,175
21 Claims. (Cl. 219—110)

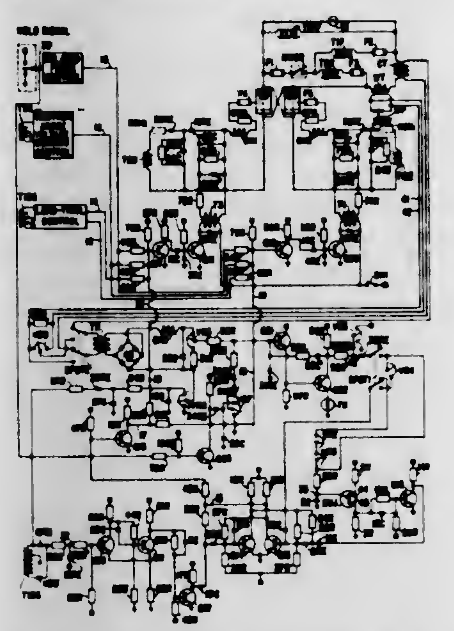


1. A metal welding control circuit for electrically controlling the welding energy input per unit length of metal from a heating source comprising, a signal mixing and amplifying means in said circuit, a power source for said circuit, a transducer having electrical input and mechanical output and being electrically connected to an output of said mixing and amplifying means for control by an output signal from said mixing and amplifying means, a heating source control variable by said transducer for controlling said heating source, means responsive to said mechanical output of said transducer for producing a transducer position signal, manually variable means for providing a compared or reference signal wholly independent of the transducer positions, said means responsive to said mechanical output and said manually variable means being electrically connected to said mixing and amplifying means, said mixing and amplifying means being responsive to said transducer and compared or reference signals fed thereto for providing said output signal which comprises a deviation signal between said transducer position signal and said compared or reference signal, and said transducer being responsive to said output signal to control said transducer position signal to a state of less deviation from said compared or reference signal to approximate said compared or reference signal and to control said heating source to adjust the welding energy input per unit length of metal.

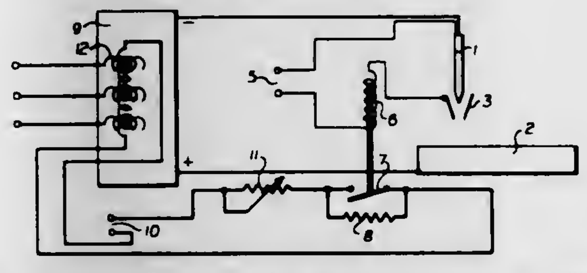
3,354,288
CONTROL APPARATUS
George O'Neal, Jr., Detroit, Mich., assignor to Weltronic Company, Southfield, Mich., a corporation of Michigan
Filed Aug. 30, 1963, Ser. No. 305,612
11 Claims. (Cl. 219—114)

1. A welding system having a pair of ignitrons connected in anti-parallel relation between a source of alternating current energy and a load, separate-excitation firing means for applying pulses of energy to the input circuits of the ignitrons in selected phase relation to the source, a controllable actuating means for said firing means, a first feedback signal source responsive to the current from said ignitrons to said load, a second feedback signal source responsive to the voltage drop across the work pieces being operated upon by said system, a reference signal source, means for selectively combining one of said feedback signal sources with said reference signal source to produce an error signal, inhibiting means

operable in synchronism with the alternating source for inhibiting said actuating means, interval defining means for rendering said inhibiting means effective for a given interval extending from the initiation of a half cycle of energy from said alternating source, and means responsive to said error signal for adjusting the given interval of said interval defining means.



3,354,289
METHOD OF INCREASING THE DURABILITY OF NOZZLES FOR ARC-PLASMA-TORCHES WITH HIGH POWER DENSITY AND A CONNECTION ARRANGEMENT FOR CARRYING OUT THE PROCESS
Lothar Haase and Rudolf Pochert, Dresden, Germany, assignors to Kjellberg Elektroden & Maschinen G.m.b.H. in Verwaltung, Finsterwalde, Germany, a corporation of Germany
Filed Aug. 15, 1966, Ser. No. 572,379
6 Claims. (Cl. 219—131)

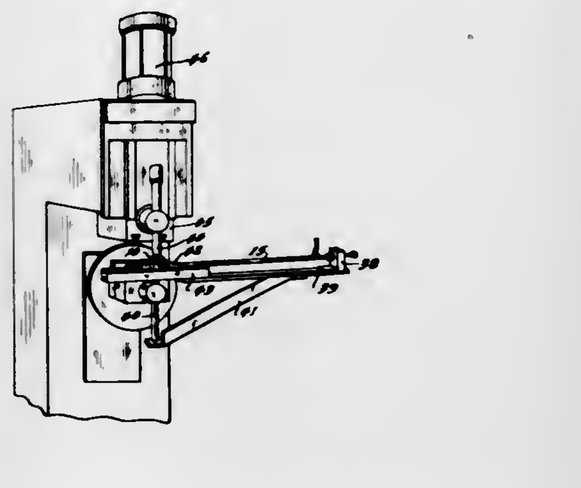


1. A connecting system for increasing the durability of nozzles for arc plasma torches with high power density, comprising:

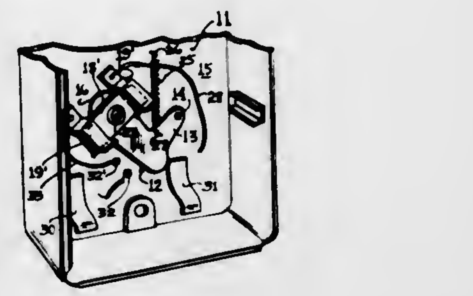
a main circuit of the plasma burner including a main arc power source, a cathode, a work piece and a dropping resistor, disposed in series therein,
means for bridging over said dropping resistor,
a pilot arc circuit,
said means for bridging over said dropping resistor comprising a make contact, and
a delay-action current relay disposed in said pilot arc circuit and operatively connected with said make contact.

3,354,290
FORMING PROJECTIONS ON TUBES
Robert E. Monroe and Julius J. Vagi, Columbus, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 6, 1965, Ser. No. 446,134
2 Claims. (Cl. 219—152)

1. A method for forming an exterior short localized projection on a zirconium-alloy tube, said method comprising supporting the tube on a water-cooled copper-alloy mandrel directly engaging the interior of the tube, applying with appreciable pressure for a short time against the exterior of the tube a water-cooled copper-alloy electrode having a concave cylindrical surface portion having a recess, the said surface portion engaging the tube exterior, and applying for a shorter time an alternating current of low voltage and high amperage between the electrode and the mandrel across the tube to form the said projection on the tube by thinning of the region of the tube wall engaged by the said surface portion of the electrode and flowing and thickening of the tube wall in the said recess in the said surface portion, the said thinning, flowing, and thickening of the tube wall being due to pressure against and electrical-resistance heating of the tube wall.



3,354,291
BATTERY-OPERATED CIGARETTE LIGHTER
John G. Behrendt, 1929 73rd Court, Elmwood Park, Ill. 60635
Filed May 14, 1965, Ser. No. 455,726
5 Claims. (Cl. 219—263)

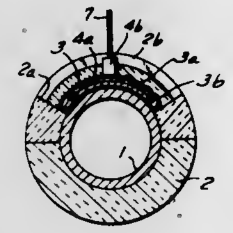


1. A battery-powered cigarette lighter in a housing including a nonconductive wall having a cigarette tip receiving opening formed therein, and a power circuit, including a battery, a cigarette igniting filament, a pair of spaced apart contacts, and a shutter formed of a conductive material normally closing the opening and movable from behind such opening into engagement with the pair of spaced contacts to complete a circuit through the cigarette igniting filament, wherein the improvement comprises:

(a) a nonconductive supporting plate carrying a cigarette igniting filament,
(b) current-conducting connector means carried by the wall of the housing and connected to the power circuit for mounting said supporting plate on to the wall with the filament carried thereby behind the opening formed therein and in circuit with the battery, and

(c) conductor means carried by said supporting plate and in circuit with the filament mounted thereon cooperating with said connector means for removably connecting said filament to said nonconductive wall and in circuit to said battery.

3,354,292
PIPE HEATING ARRANGEMENT
Walter C. Kahn, Westport, Conn., assignor to Electro-Trace Corporation, Danbury, Conn.
Original application July 26, 1963, Ser. No. 297,875. Divided and this application June 19, 1967, Ser. No. 647,070
7 Claims. (Cl. 219—301)



1. A pipe heating arrangement comprising, in combination, current conductive pipe means having a plurality of communicating sections and containing a fluid, at least one of the sections comprising a plurality of discrete portions communicating with one another; a plurality of thin flat elongated heating strips each including a thin resistance element, a pair of elongated electrodes electrically connected with said resistance element so that current flows transversely through said resistance element across the length of the same, electrical insulating means surrounding and substantially coextensive with said resistance element and electrodes, and connector means at the ends of said strips and having terminals connected with said electrodes, respectively, said strips being respectively disposed on the outer surfaces of said sections and said portions extending along the length of the same with said electrical insulating means insulating said heating strips from said sections and portions, and said connector means being respectively located at each end of at least one of said communicating sections and said portions; jumper wire means connecting the connector means at one end of said one section with the connector means at one end of at least one other section, and a single jumper wire connecting the connector means at one end of one jumper wire connecting the connector means at one end of one portion to the connector means at one end of an adjoining portion; switching means connected to said connector means at the other end of said one section and said one portion and adapted to be connected to a voltage source; and thermal insulating means surrounding said pipe means and said heating strips for minimizing heat radiation to the ambient atmosphere.

3,354,293
ELECTRIC FURNACE FOR CERAMICS
Rudolf Buchkremer, Nurnberg, Germany, assignor to Ludwig Riedhammer G.m.b.H., Nurnberg, Germany
Filed June 19, 1965, Ser. No. 462,663
Claims priority, application Germany, June 16, 1964, R 38,137
3 Claims. (Cl. 219—388)

1. An electrically-heated furnace for ceramics and walking beam conveyor therefor comprising the combination:

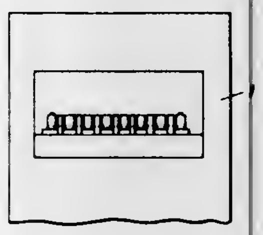
(a) a tunnel structure;

(b) means for heating the interior of said tunnel structure;

(c) a first set of spaced cross-members of ceramic material disposed within said tunnel structure transversely of the line of conveying movement therethrough;

(d) first carrier members each of ceramic material and of generally U-shape supported at their opposite ends on adjacent cross-members of said first set in end-to-end relationships for defining a first group of spaced longitudinally-disposed carriers;

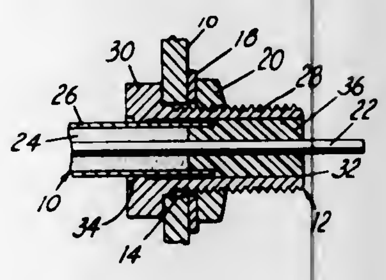
(e) a second set of spaced cross-members of ceramic material disposed within said tunnel structure transversely of the line of conveying movement therethrough and arranged in alternating disposition with respect to the cross-members of said first set;



(f) second carrier members each of ceramic material and of generally U-shape supported at their opposite ends on adjacent cross-members of said second set in end-to-end relationships for defining a second group of spaced longitudinally disposed carriers arranged in alternating disposition with respect to the carriers of said first group;

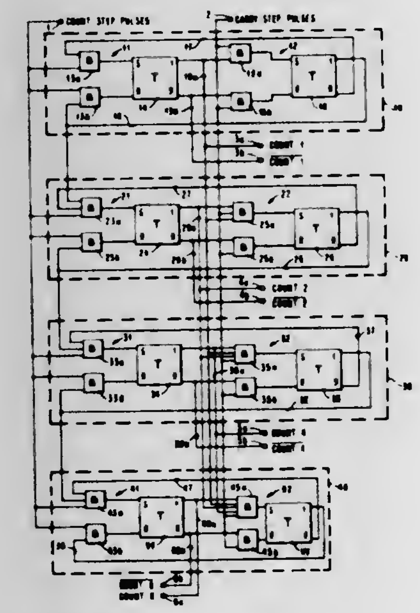
(g) means for displacing the cross members of said second set and the second carrier members relative to the cross members of said first set upwardly and forwardly in feeding direction and downwardly and rearwardly in non-feeding direction.

3,354,294
TUBULAR, ELECTRICAL, HEATING ELEMENT WITH BULKHEAD FITTING
Lyle T. Kollar and Raymond S. Stutsman, Allegan, Mich., assignors to Tru Heat Corporation, Allegan, Mich.
Filed Sept. 7, 1965, Ser. No. 485,299
5 Claims. (Cl. 219—536)



1. A tubular, electrical heating element and bulkhead fitting assembly comprising a tubular, electrical heating element and a bulkhead fitting anchored thereto, said heating element comprising a sheath and said bulkhead fitting comprising a generally cylindrical body having a longitudinally disposed passageway therethrough with the cross sectional profile of said passageway conforming substantially to the cross sectional profile of said sheath, said sheath prior to the anchoring of said fitting thereto being disposed substantially in sliding fit in said passageway, said fitting being anchored to said sheath by an inwardly extending, peripheral wedge portion of the body wall defining said longitudinal passageway at one end thereof, said wedge portion being upset into the space between the exterior surface of said sheath and said body wall defining said longitudinal passageway, said fitting having a radially inwardly opening annular groove formed therein and located in said passageway axially outwardly from said wedge portion, and an annular ring of resilient material located in said groove and bearing in sealing engagement around the exterior of said sheath.

3,354,295
BINARY COUNTER
Raymond Kulka, Wappingers Falls, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 29, 1964, Ser. No. 378,851
6 Claims. (Cl. 235—92)



1. A binary counter, comprising

a plurality of counter stages connected in cascade, each counter stage including first and second binary circuits,

a first source of pulses coupled to all of the first binary circuits,

a second source of pulses operable alternately with the first source and coupled to all of the second binary circuits,

the first binary circuit of each counter stage being connected to respond to the immediately preceding second binary circuit and the second binary circuit of each counter stage being connected to all of the preceding first binary circuits,

and means coupled to the outputs of the first binary circuits to indicate the count after each of the pulses supplied from the first source of pulses.

3,354,296
TRANSLATOR
Lawrence P. Horwitz, Chappaqua, and Richard M. Karp, New York, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 29, 1964, Ser. No. 378,569
8 Claims. (Cl. 235—154)

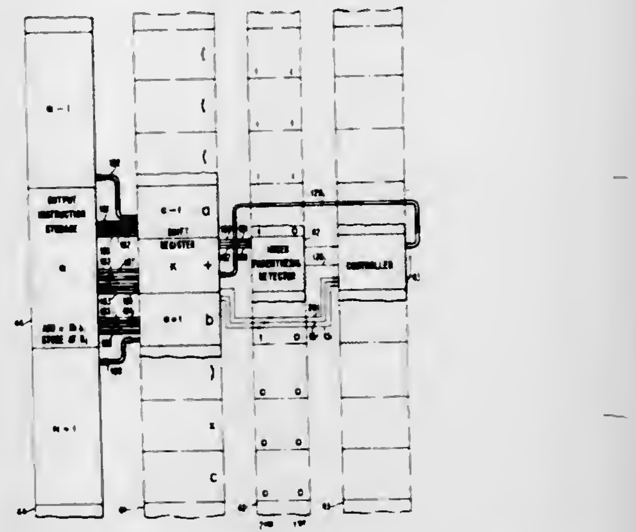
1. Apparatus for translating an input statement containing a series of characters and interspersed pairs of indication marks, each pair having at least one character located therebetween, into a plurality of output expressions, each expression being determined by the characters located between said pairs, comprising:

register means for storing said input statement;

detecting means for simultaneously interrogating said storage means and identifying all inner pairs having only characters located therebetween;

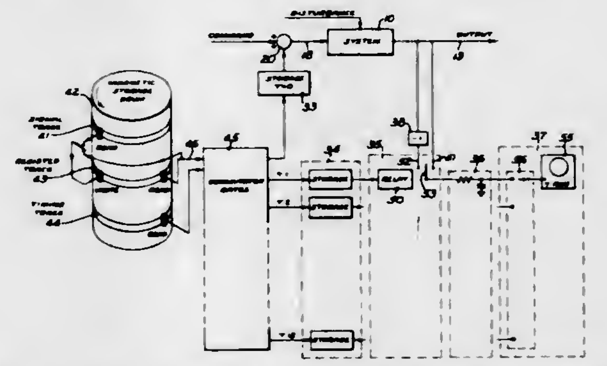
output means for providing machine expressions corresponding to the characters between respective identified inner pairs;

control means for removing said inner pairs and the characters located therebetween from said register means; and



said detecting means including means to identify new inner pairs having only characters located therebetween.

3,354,297
APPARATUS FOR MEASURING DYNAMIC CHARACTERISTICS OF SYSTEMS BY CROSSCORRELATION
George W. Anderson, Santa Ana, and John A. Aseltine, Los Angeles, Calif., and George R. Cooper, Lafayette, Ind., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Continuation of application Ser. No. 1,935, Jan. 12, 1960. This application Feb. 6, 1964, Ser. No. 343,917
5 Claims. (Cl. 235—181)



3. In a test signal source for a crosscorrelator for measuring the impulse response of a system and including a signal delay unit, the combination of:

means for producing a discrete-interval binary electrical pulse train that is periodic with the period divided into a prime number of equal intervals; and

means for coupling said pulse train to the system as an input and to the delay unit as an input.

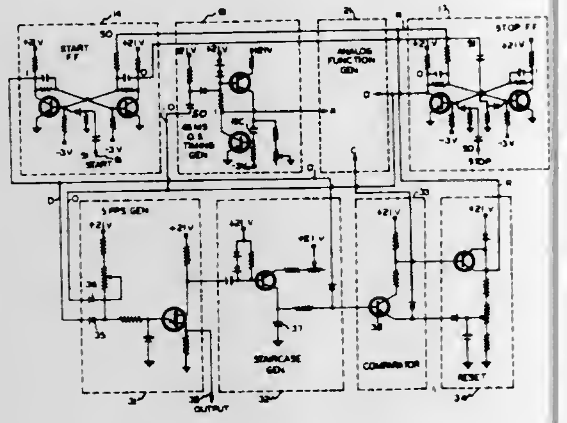
3,354,298
ELECTRONIC FUNCTION GENERATOR
Donald M. Danko, Parma, Ohio, assignor to Avtron Manufacturing, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 26, 1964, Ser. No. 347,504
5 Claims. (Cl. 235—197)

1. An analog function generator and computer circuit for generating a signal and for use with a first pickup means responsive to an event and a second pickup means responsive to another event, said circuit comprising

a relatively constant voltage D.C supply,

a start circuit including an electronic device connected responsive to energization from said first pickup means and connected to gate the D.C. supply from a non-conductive to a conductive sense,

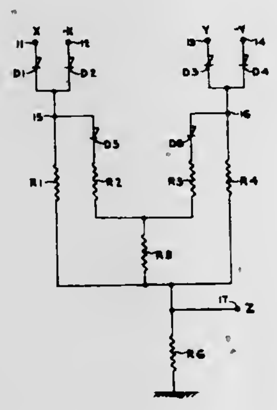
a time delay means connected to said start circuit and for gating said D.C. supply when the start circuit becomes conductive and for a predetermined time interval thereafter,
a function generator having a capacitor and having
  a charging circuit means connected to said time delay means and for charging said capacitor to a predetermined value when the time delay means becomes conductive and for holding the charge so long as the time delay means is conductive,



  a discharge circuit means connected to said time delay means and for discharging said capacitor as a function of time after the time interval of the time delay means has elapsed, and
a stop circuit means including an electronic device connected to the second pickup means and for rendering the function generator discharge circuit means non-conductive whereby to hold the charge on the function generator capacitor in memory for deriving a useful output therefrom.

3,354,299
ANALOG FUNCTION GENERATOR

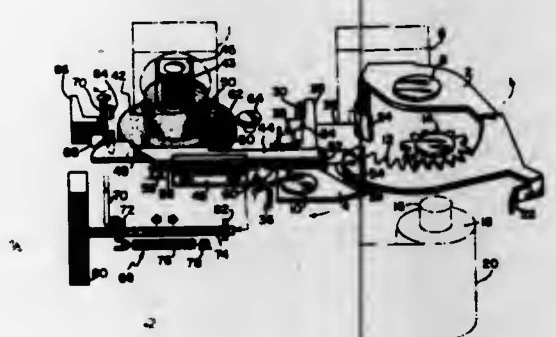
Keiva Feldman, Ottawa, Ontario, Canada, assignor to Computing Devices of Canada Limited, Ottawa, Ontario, Canada
Filed Oct. 12, 1964, Ser. No. 403,225
5 Claims. (Cl. 235—197)



3. An electrical circuit arrangement comprising,
a first and a second input terminal for receiving oppositely phased sources of a first voltage representing the value of a first quantity,
a third and a fourth input terminal for receiving oppositely phased sources of a second voltage representing the value of a second quantity,
a first unilaterally conducting device connected between said first input terminal and a first junction point,
a second unilaterally conducting device connected between said second input terminal and said first junction point,
said first and second unilaterally conducting devices being poled to conduct towards said first junction point,
a third unilaterally conducting device connected between said third input terminal and a second junction point,
a fourth unilaterally conducting device connected between said fourth input terminal and said second junction point,
said third and fourth unilaterally conducting devices being poled to conduct towards said second junction point,
an output terminal for providing a third voltage representing the value of the square root of the sum of the squares of said first and second quantities,
a first resistor connected between said first junction point and said output terminal,
a second resistor connected between said second junction point and said output terminal,
a fifth unilaterally conducting device and a third resistor connected in series between said first junction point and a third junction point,
a sixth unilaterally conducting device and a fourth resistor connected in series between said second junction point and said third junction point,
said fifth and sixth unilaterally conducting devices being poled to conduct towards said third junction point,
a fifth resistor connected between said third junction point and said output terminal,
and a sixth resistor connected between said output terminal and a common ground connection,
the resistance values of said first resistor, said second resistor, said third resistor, said fourth resistor, said fifth resistor and said sixth resistor being the ratio of about 1:1:0.31:0.31:0.41:0.10.

3,354,300
PHOTOGRAPHIC APPARATUS

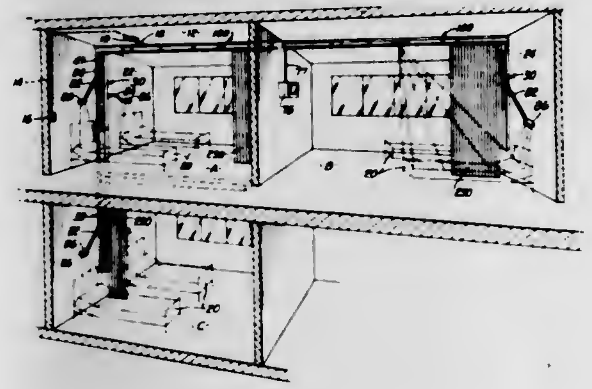
George W. Parsons, Hughesville, and Ronald G. Petts, Williamsport, Pa., assignors, by mesne assignments, to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Original application May 13, 1964, Ser. No. 367,125, now Patent No. 3,319,547, dated May 16, 1967. Divided and this application Dec. 19, 1966, Ser. No. 602,881
6 Claims. (Cl. 240—1.3)



1. Photographic apparatus comprising:
a casing including electrical contacts;
a rotatable spindle within the casing;
a mounting block and spring means formed on the spindle for rotation therewith, the block and spring means being accessible from outside the casing to detachably support and retain for rotation therewith a unitary flashlamp package comprising a plurality of photoflash lamps, each lamp having its own reflector and depending electrical contacts extending through the package base, the lamp electrical contacts selectively engageable with the casing electrical contacts at a firing locus, and
movable handle operating means accessible from outside the casing and means interconnecting the handle means and spindle to rotate the spindle and block and spring means predetermined amounts in response to actuation of the handle means and correspondingly rotate the supported flashlamp package to sequentially advance the lamps and their respective reflectors to the firing locus.

3,354,301
ROOM UTILITY AND SERVICE SYSTEM

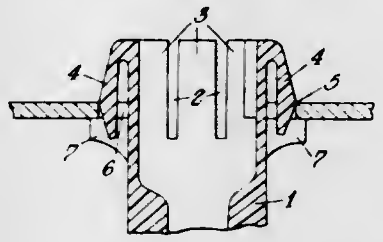
Mitchell Bobrick, 605 Erskine Drive, Pacific Palisades, Calif. 90272
Continuation of application Ser. No. 395,676, Sept. 11, 1964. This application Feb. 9, 1967, Ser. No. 629,045
18 Claims. (Cl. 240—2)



10. In a room utility and service system for providing a plurality of utility services on the walls and ceilings of a plurality of horizontally adjacent rooms separated by a common wall and each having a wall facing said common wall, opposed side walls joined to said common wall, and a floor, the combination of: an elongate, horizontally disposed ceiling structure mounted upon and extending along ceilings of said rooms spaced from and between said opposed side walls and through said common wall, said ceiling structure dividing each of said rooms into separate sectors each defined by said ceiling structure and one of said opposed side walls, said ceiling structure including a generally horizontally extending mounting plate and side members on said mounting plate, partition means between said side members defining continuous separated compartment means extending horizontally along said ceilings and through said common wall for the reception of various utility and service lines, said ceiling structure having horizontally oriented light fixture means in each of said rooms supported on and extending along said ceiling structure, certain of said light fixture means being at each side of said ceiling structure for separately illuminating each of said room sectors; and an elongate, vertically disposed wall structure mounted on and extending down at least one of said common or facing walls of each of said rooms, each of said wall structures intersecting said ceiling structure adjacent the intersection of the respective wall and ceiling, and each of said wall structures including a generally vertically extending mounting plate having side members, partition means between said side members defining continuous separated compartment means extending vertically down said wall and corresponding to and joining into said ceiling structure compartment means at said intersection for the reception of certain of said various utility and service lines, and said wall structures each forming a vertically oriented console thereupon, each of said consoles having a separate service panel facing and separately serving each of said room sectors, each of said service panels having utility and service outlets spaced above said room floors and connected to certain of said utility and service lines in said wall structure compartments.

3,354,302
MINIATURE LAMP HOLDERS

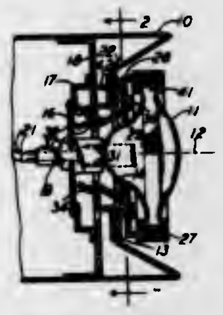
Eric Arthur Greasley, Stapleford, England, assignor to Pressac Limited, Long Eaton, England, a British company
Filed Oct. 8, 1965, Ser. No. 494,122
Claims priority, application Great Britain, Apr. 22, 1965, 16,969/65
2 Claims. (Cl. 240—8.16)



1. A lamp holder made of a synthetic plastic material and comprising a body part, a plurality of integral axially directed springy fingers provided at the lamp-receiving end of the holder, each of said fingers being formed with a turned back portion spaced from the outer face of the wall of the holder, each of said turned back portions having a bulged outer edge so as to co-act with a wedging action with the edge of an opening in which the holder is fitted, and a circumferential flange on the holder for limiting axial displacement of the holder, beyond the front face of the panel.

3,354,303
MECHANICAL AND ELECTRICAL PLUG-IN TYPE HEADLAMP MOUNTING

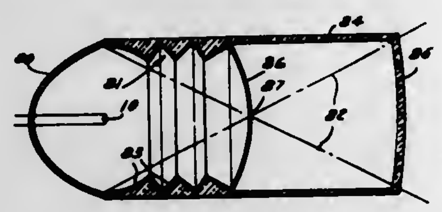
Raymond F. Manke, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Oct. 8, 1965, Ser. No. 494,147
5 Claims. (Cl. 240—41)



1. A mechanical and electrical plug-in type headlamp mounting comprising a support member having lamp-retaining means and having rotational orientation openings spaced around said support member, an electrical receptacle, a headlamp including a plug-in type of connector mating with said receptacle for electrical connection therebetween and with the direction of movement for plugging in being along the axis of the beam of light emitted by said headlamp, and combined snap-in spring and rotational restraining means connected with said headlamp, said spring portion of said means being releasably connected with said lamp-retaining means upon plug-in movement of said headlamp, said rotational restraining portion of said means being snugly disposed in said orientation openings to align said plug-in connector with said receptacle for plug-in connecting.

3,354,304
LIGHT REFLECTORS FOR PRODUCING A CONICAL DIVERGENT LIGHT BEAM

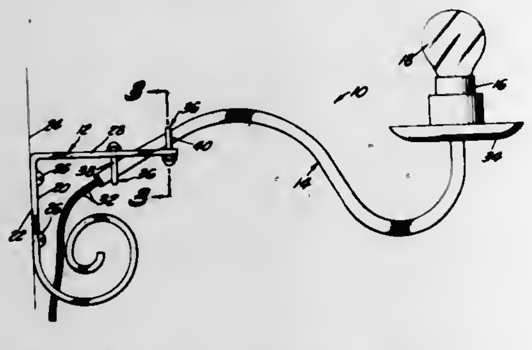
**Miller L. Freeman, 513 S. Pacific Ave.,
Glendale, Calif. 91204
Continuation of application Ser. No. 292,034, July 1, 1963, now Patent No. 3,283,142. This application Sept. 27, 1966, Ser. No. 582,361
6 Claims. (Cl. 240—41.35)**



1. A reflector system for directing radiant energy emitted by a source into a high intensity conical divergent beam in a forward direction, said system comprising:
   - (a) a source for emitting radiant energy substantially in all directions;
   - (b) a rear reflector partially surrounding said source for directly reflecting a first portion of the radiant energy of said source into a conical divergent beam in the forward direction and focused in a focal point; and
   - (c) a front reflector of generally cylindrical shape surrounding said source and said rear reflector, said front reflector having a plurality of individual reflecting surfaces spaced from each other, each providing means to reflect radiant energy from said source onto said rear reflector from which it is formed into said conical beam and focused with the major portion of the radiant energy emitted by said source into said focal point.

3,354,305
LIGHTING FIXTURE

**Edward Spicer, 11631 Dona Alicia Place, Studio City, Calif. 91604, and Nathan Cohan, 1029 Maybrook Drive, Beverly Hills, Calif. 90210
Filed Jan. 17, 1966, Ser. No. 520,949
17 Claims. (Cl. 240—73)**

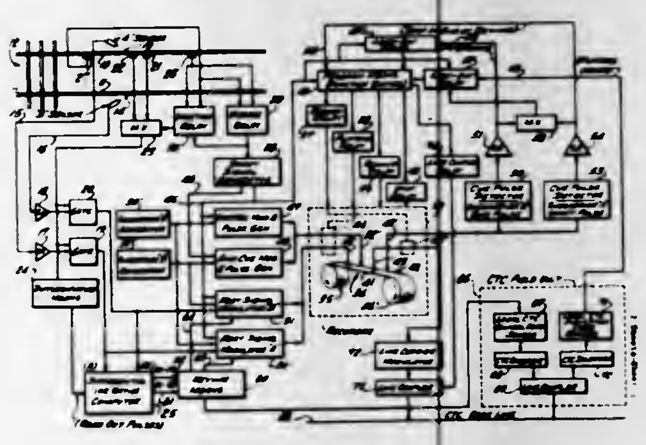


1. A lighting fixture comprising:

a main support including a relatively thin, plate-like bracket member having an opening therethrough, a fixture arm extending outwardly from said support and having an inner end disposed within said opening, said opening having a cross sectional dimension along a given axis of the opening which is substantially greater than the corresponding cross sectional dimension of said arm and, whereby said fixture arm is rotatable in a given direction relative to said bracket member to a limiting angular position wherein one side of said arm seats against the edge of said opening at one end of said axis, the opposite side of said arm seats against the edge of said opening at the opposite end of said axis, and said arm end is disposed at an acute angle relative to said bracket member, clamping means associated with said bracket member and disposed in clamping engagement with said arm for urging said arm end in said direction of rotation relative to said bracket member and into clamping engagement with said edges of said opening, thereby to releasably secure said arm to said support, and a lamp socket mounted on said fixture arm.

3,354,306
HOT-BOX DETECTOR

**Robert D. Liggett and James M. White, Jr., Jacksonville, Fla., and William M. Pelino, Garden City, N.Y., assignors to Servo Corporation of America, Hicksville, N.Y., a corporation of New York
Filed Apr. 28, 1964, Ser. No. 363,135
11 Claims. (Cl. 246—169)**

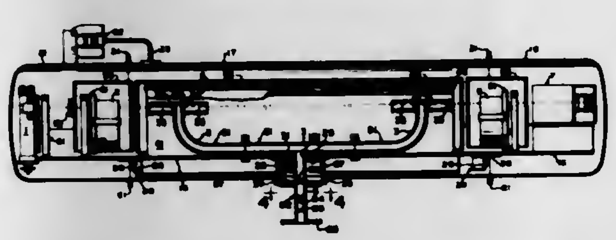


1. The method of detecting overheated journals on moving railroad trains with first and second electrical detector elements each producing an electrical signal in response to infrared radiation incident thereon, which comprises optically imaging said detector elements on fixed axes to concurrently observe corresponding heat-radiation profiles of passing trains for journal heat at correspondingly locations on opposite sides of the trains, modulating a first subcarrier frequency with the signal output of one of said detector elements, modulating a second subcarrier frequency with the signal output of the other of said detector elements, the difference between said subcarrier frequencies being relatively small compared with either of the subcarrier frequencies, transmitting said modulated subcarrier frequencies to a remote location as modulations of a single carrier frequency, demodulating said carrier frequency and said subcarrier frequencies at the remote location to derive reconstituted separate signal outputs corresponding to those of said detector elements, simultaneously differentially comparing said reconstituted separate signal outputs, whereby noise factors common to both transmissions are cancelled, and recording as a function of time the resulting signal difference between said reconstituted separate signal outputs.

5. Apparatus for detecting overheated journals on railroad trains moving past a given track location, comprising a first scanner fixedly mounted on one side of the track and a second scanner fixedly mounted opposite said first scanner on the other side of the track, each scanner including a detector element producing an electrical signal output responsive to incident infrared radiation and optical means imaging the same to an elevation at which journal heat radiations of corresponding opposed parts of passing trains will be concurrently scanned by said elements, first means modulating with a first carrier the signal output of one of said detectors, second means modulating with a second carrier the signal output of the other of said detectors, storage-tape recording means connected to the outputs of said first and second modulating means and simultaneously storing on a single recording tape the two modulated-carrier outputs, a remote observation station and a communication link from said station to the apparatus at said track location, threshold difference comparison means connected to the outputs of both detector elements and operative to produce an alarm signal output upon detection of an instantaneous detector-signal difference exceeding a given threshold level, alarm-indicating means at said observation station and connected via said link to the output of said difference-comparison means, said recording means including playback-control means including means at said observation station selectively operable via said link to call for the playback of a tape-stored recording via said link to said observation station, and indicating display means at said observation station and connected to said link and including demodulating means for reconstituting the detector output signals for indicating and display purposes at the observation station, whereby if an alarm condition is detected at the detector location, a detailed indication or display of the journal-heat profiles of a given train may be thereupon indicated or displayed at the observation station.

3,354,307
ATOMIC BEAM RESONANT DEVICE WITH A CAVITY RESONATOR HAVING TWO ARMS AND A LEG PORTION CONTAINING LOSSY MATERIAL

**Joseph H. Holloway, Topsfield, Mass., and Robert J. Rorden, Palo Alto, Calif., assignors, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Jan. 28, 1964, Ser. No. 340,767
7 Claims. (Cl. 250—41.3)**

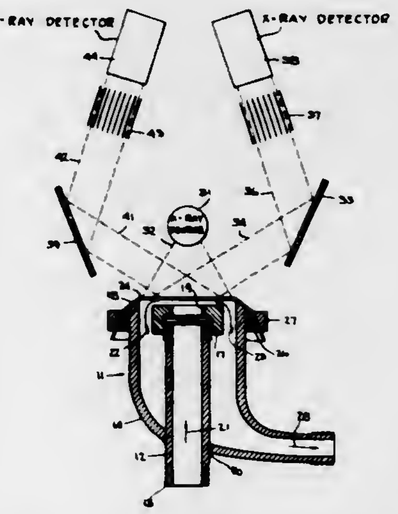


1. An atomic resonant apparatus including: means for producing a beam of atomic particles, a first state selector, means for exciting atomic resonance of said particles, a second state selector, means for detecting resonance of said particles to produce a resonance signal, said exciting means including a cavity resonator for applying microwave electromagnetic energy to said particles to produce atomic resonance of said particles, said cavity resonator having a particle-field interaction portion comprising a pair of arms, said cavity resonator further having a lossy leg portion electrically tightly coupled to said interaction portion and comprising a leg joined to said arms at a waveguide junction, the Q of said interaction portion being higher than 500 and at least twice the Q of said leg portion, whereby the total Q of said composite cavity is made substantially less than the Q of said interaction portion to render the detected atomic resonance signal less responsive to detuning effects of said resonator.

3,354,308
APPARATUS WITH MEANS TO MEASURE THE CHARACTERISTIC X-RAY EMISSION FROM AND THE DENSITY OF A MATERIAL

**Frederick Engel, Greenwich, and William R. Kiley, Ridgefield, Conn., assignors to Philips Electronics & Pharmaceutical Industries Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 152,532, Nov. 15, 1961. This application Apr. 30, 1965, Ser. No. 454,770
8 Claims. (Cl. 250—51.5)**

1. An X-ray measuring instrument for measuring material having first pre-determined X-ray fluorescence characteristics comprising:
   - (a) a sample cell comprising
     - (1) a first hollow pipe having an open end,
     - (2) a second hollow pipe extending into said first pipe and sealed liquid-tight thereto and having an open end within said first pipe facing in the same direction as the open end of said first pipe,
     - (3) an annular surface having second pre-determined X-ray fluorescence characteristics including at least one fluorescent wavelength different from said material, said annular surface being located on said open end of said second pipe, and
     - (4) an X-ray permeable, liquid-tight membrane covering said open end of said first pipe and spaced from said annular surface to permit said material to flow from one of said pipes to the other only by flowing through the annular space between said annular surface and said membrane;
   - (b) an X-ray source emitting X-rays having wavelengths shorter than the fluorescent X-rays of said annular surface and of said material, the X-rays from said source being directed through said annular space onto said surface;
   - (c) a first dispersive analyzing system comprising
     - (1) means to select fluorescent X-rays from a particular element in said material, and
     - (2) means to measure the intensity of the selected X-rays; and
   - (d) a second dispersive analyzing system comprising
     - (1) means to select X-rays having said one fluorescent wavelength, and
     - (2) means to measure the intensity thereof to determine the density of said element in said material.

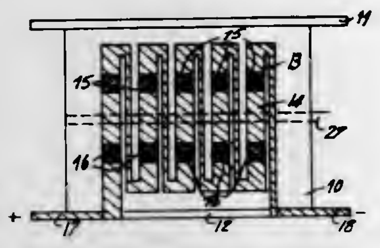


3,354,309
INFRARED DETECTING DEVICE OF THE THERMOPILE TYPE

**Victor Volkovisky, Paris, France, assignor to Compagnie des Compteurs, Paris, France, a company of France
Filed Dec. 18, 1964, Ser. No. 419,502
Claims priority, application France Dec. 24, 1963, 958,350, Patent 1,388,025
14 Claims. (Cl. 250—83)**

1. In a detector of the thermo-pile type for measuring the flux density of a radiation, more particularly in the spectrum range extending from the visible to the remote infra-red radiations, and generating a voltage signal having a mean value proportional to the magnitude of the radiation being measured, the combination comprising a relatively thin base member of insulating material, a thermo-pile constituted by a plurality of thermo-couples formed on said base member by a thin layer of two different alloys thereon having a high thermo-electric power,

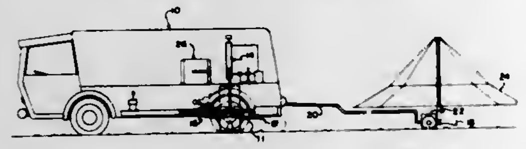
said alloy layers being overlapped to establish the hot and cold junctions of said thermo-couples, said hot and cold junctions being arranged in groups respectively on opposite sides of a median line separating the irradiated surface of said detector on said base into two halves, at least one of said halves being provided with a coating of a material having a high coefficient of absorption and means electrically connecting all of said thermo-couples additively in series.



3,354,310

A MOBILE DENSITY AND MOISTURE CONTENT SENSING DEVICE FOR CONTINUOUS LOGGING OF A TERRESTRIAL SURFACE

Gilbert Swift, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 315,901
17 Claims. (Cl. 250—83.3)

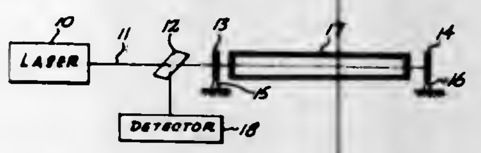


1. A mobile unit for logging a terrestrial surface to determine the moisture content and density thereof, said unit comprising:
- a front wheel drive land vehicle having a pair of coaxial rear wheels, each rear wheel being independently, springlessly attached to the frame of the vehicle;
- a nuclear density sensing device mounted in the vehicle;
- pivotally attached pairs of parallel bars in the rear portion of the vehicle, the nuclear density device attached to the pivotally attached parallel pairs, and centered between the wheels in the plane of the axles of the rear wheels, the longest effective axis of the nuclear density sensing device aligned with the axis of the axle, said density sensing unit positioned within the vehicle during transport;
- means in the vehicle attached to the density sensing device to lower the density sensing device a small spaced vertical distance above the terrestrial surface during the logging operation;
- the pivotally attached parallel bars maintaining the density sensing device substantially parallel to the terrestrial surface being traversed;
- a coaxial two wheeled trailer spaced from the rear of the vehicle;
- a nuclear moisture content sensing device mounted in the trailer in the plane of the axles of the wheels with the longest effective axis aligned with the axles;
- tires on the rear wheels of the vehicle and tires on the trailer having an area of contact commensurate with the effective longitudinal axis of the sensing devices;
- a rigid tow bar attaching the trailer to the rear of the vehicle thereby spacing the trailer a predetermined distance from the rear of the vehicle;
- the spacing between the vehicle and the trailer minimizing adverse radiation effects from either device; and
- means to continuously determine and record the responses from the two devices.

3,354,311

FRINGE MOVEMENT DETECTOR INCLUDING DUAL PHOTOCELLS

Victor Vali and Reuben S. Krogstad, Seattle, Robert W. Moss, Mercer Island, and Ronald L. Hagman, Renton, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Aug. 23, 1965, Ser. No. 481,697
13 Claims. (Cl. 250—204)

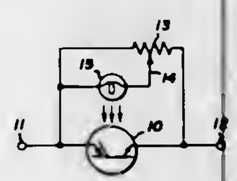


1. A system for detecting relative movement between two points comprising in combination: an interferometer including first and second mirrors respectively secured to said points and including means providing an interference pattern of radiant energy reflected from said mirrors with the displacement of said pattern being proportional to relative movement between said points; radiant energy detection means positioned with respect to said pattern to provide first and second signals respectively proportional to the intensity of first and second predetermined portions of said pattern; movable support means holding said detection means for movement; and means responsive to said first and second signals to provide an output signal having an amplitude proportional to the displacement of said pattern including drive means coupled with said support means and responsive to said first and second signals to move said support means in a direction to follow displacement of said pattern, and support return means returning said support means to an initial position after said pattern and support means have undergone a predetermined extent of movement.

3,354,312

PHASE CONTROL CIRCUITS FOR LIGHT ACTIVATED SWITCHES USING A VARIABLE RESISTOR WITH AN A.C. VOLTAGE ACROSS IT AS THE PHASE CONTROL

Edward K. Howell, Skaneateles, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 27, 1964, Ser. No. 355,201
19 Claims. (Cl. 250—206)

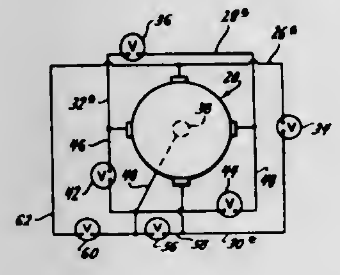


1. A phase control circuit for a light activated switch including a pair of supply terminals for connection to a source of pulsating voltage, a light activated switch having an anode and a cathode terminal, said anode and cathode terminals being coupled to said supply terminals whereby said light activated switch is energized by the said pulsating voltage source, said light activated switch having a threshold radiation level for firing and a low resistance when fired thereby presenting essentially a short circuit between said supply terminals when fired, a source of radiation located to irradiate said light activated switch, said source of radiation being coupled to said supply terminals whereby said source of radiation is energized by the said pulsating voltage source and de-energized when said light activated switch is fired, control means connected in circuit relation with said source of radiation and controlling the magnitude of the voltage applied to said source of radiation thereby controlling the intensity of said source of radiation and providing phase control firing of said light activated switch.

3,354,313

PHOTOSENSITIVE DEVICE FOR INDICATING POSITION AND INTENSITY WITH CENTRALLY LOCATED ELECTRODE

Albert E. Lombard, Jr., and James E. Dueker, St. Louis County, Mo., assignors to McDonnell Aircraft Corporation, St. Louis, Mo., a corporation of Maryland
Filed May 15, 1963, Ser. No. 280,597
9 Claims. (Cl. 250—212)

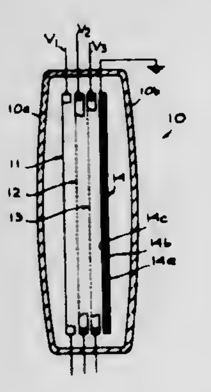


1. A light sensitive detector comprising an element having two intimately united layers of materials characterized by having different conductivity characteristics, one of said layers having a surface defining an observation field, a plurality of pairs of electrodes attached to said one layer in positions spaced about the field of observation, means for focusing light from a remote light source into a spot on said one layer in the observation field, means connected between selected pairs of said electrodes including means for sensing electric signals that vary in response to the location in the observation field where the light spot impinges relative to the said selected pairs of electrodes, another electrode attached to the element layer on the opposite side of the element, said other electrode being centrally located relative to the observation field, and means for measuring the intensity of the light spot impinging on the observation field connected between said other electrode and at least one of the aforesaid spaced electrodes, said intensity measuring means including means sensing signals that vary in response to the intensity of the light spot impinging on the observation field.

3,354,314

IMAGE CONVERTER APPARATUS USING FINE WIRE ELECTRON EMISSIVE SCREEN

Michael D. Petroff, Los Angeles, and Stanley F. Swiadek, Arcadia, Calif., assignors to National Engineering Science Company, Pasadena, Calif., a corporation of California
Filed Feb. 4, 1965, Ser. No. 430,389
6 Claims. (Cl. 250—213)

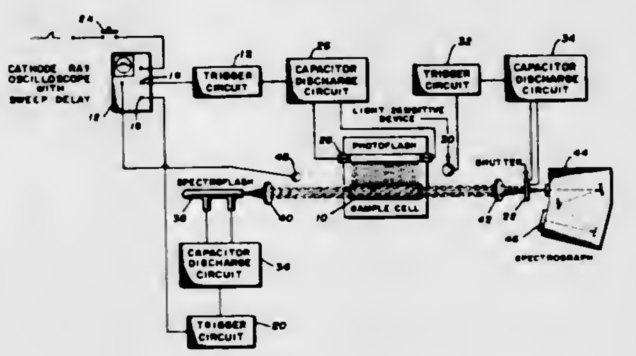


4. A millimeter-wave image converter apparatus comprising: a box-shaped housing structure open at the front and rear ends thereof; a tube for converting a millimeter-wave image to a visible image mounted in the rear opening of said housing structure; and a lens that is transparent to millimeter-wave energy mounted in the front opening of said housing structure, said lens being operable to focus millimeter-wave energy incident thereon on said converter tube, said tube including a fluorescent screen and a screen for absorbing millimeter-wave energy incident thereon, said latter screen including means for converting millimeter-wave energy absorbed at every point thereon to heat in proportion to the amount of energy absorbed thereat and additional means covering said means for releasing electrons at each point therefrom according to the heat generated at the corresponding point on said means; and electrical means for accelerating the electrons toward said fluorescent screen.

3,354,315

FLASH PHOTOLYSIS SPECTROSCOPIC SYSTEM

James B. Preston, Raleigh, Rollins S. Carter, Durham, and William C. Neely, Raleigh, N.C., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Aug. 25, 1964, Ser. No. 391,909
4 Claims. (Cl. 250—217)


CATHODE RAY OSCILLOSCOPE WITH SWEEP DELAY
TRIGGER CIRCUIT
CAPACITOR DISCHARGE CIRCUIT
TRIGGER CIRCUIT
CAPACITOR DISCHARGE CIRCUIT
LIGHT SENSITIVE DEVICE
PHOTOFLASH
SPECTROFLASH
SHUTTER
SAMPLE CELL
SPECTROGRAPH
CAPACITOR DISCHARGE CIRCUIT
TRIGGER CIRCUIT

2. A flash photolysis spectroscopic system for use in conducting spectrochemical analyses comprising a sweep delayable oscilloscope, a high intensity photoflash tube, first capacitor discharge circuit means interconnecting said photoflash tube with said oscilloscope to be triggered on commencement of a scope sweep, a spectroflash tube, second capacitor discharge circuit means interconnecting said spectroflash tube with said oscilloscope to be triggered at a predetermined interval after commencement of a scope sweep, a sample cell disposed to receive light emitted from said photoflash and spectroflash tubes, a spectrograph means optically aligned with said sample cell, a shutter mechanism optically interposed between said sample cell and said spectrograph means, a light-sensitive capacitor discharge circuit means connected to said shutter mechanism and operative to actuate said shutter mechanism to open position in response to energization of said photoflash tube, whereby said shutter mechanism is actuated only upon successful operation of said photoflash tube.

3,354,316

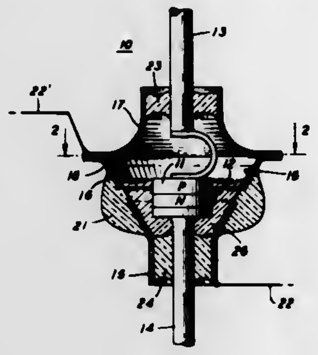
OPTOELECTRONIC DEVICE USING LIGHT EMITTING DIODE AND PHOTODETECTOR

George V. Deverall, Red Bank, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 6, 1965, Ser. No. 423,650
12 Claims. (Cl. 250—217)

1. An optoelectronic device comprising:
- a substantially cylindrical semiconductive diode for emitting light from a junction thereof in response to a predetermined voltage;
- a hollow frusto-conical photodetector surrounding the junction;
- the photodetector and the diodes being bonded together by arsenic-sulfur-iodine glass which completely surrounds said junction;

and an encapsulation for hermetically enclosing the diode;

at least part of the encapsulation being made of conductive material which is conductively connected to the photodetector.



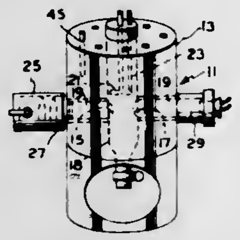
3,354,317

RADIATION SENSITIVE APPARATUS AND METHOD FOR ANALYZING MOLECULAR WEIGHT DISTRIBUTION IN POLYMERIC MATERIAL

Leon Walter Gamble, Baton Rouge, and Trent Lane, Baker, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Aug. 17, 1964, Ser. No. 390,080

6 Claims. (Cl. 250—218)



6. An apparatus of the character described comprising in combination, a temperature controlling block, a sample cell within the block and in close heat transmitting relationship therewith, quartz windows located within the walls of said cell and said block, said windows allowing the passage of light through said cell and said block, a light source located on said block, a photocell also located on said block for receiving light passed through said cell and the sample therein, a recording thermocouple in said cell, a temperature-sensing element in said block, a series of heating elements in said block uniformly spaced to keep the temperature of the block uniform there throughout the block during cooling, a temperature pronels to maintain a uniform gradient of temperature throughout the block durnig cooling, a temperature programming device for controlling the rate and uniformity of cooling and heating gradients, and means for continuously and automatically recording temperature and light measurements to produce a temperature-turbidity chart indicative of the changing of light transmission through the sample.

3,354,318

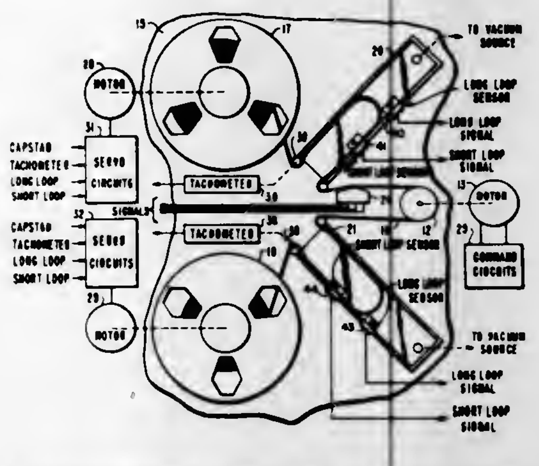
LOOP SENSING SYSTEM FOR MAGNETIC TAPE TRANSPORTS WHEREIN LOOP INTERCEPTS LIGHT BEAM

Sven E. Wahlstrom, Los Angeles, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Apr. 20, 1964, Ser. No. 360,911

6 Claims. (Cl. 250—219)

1. An optical sensing system for a vacuum chamber in a digital magnetic tape transport, said chamber including side and back walls joining to form a corner which extends along the line substantially parallel to the midline of the tape loop, said system including means providing a radiant energy path across said corner and radiant energy detector means disposed in said side wall.



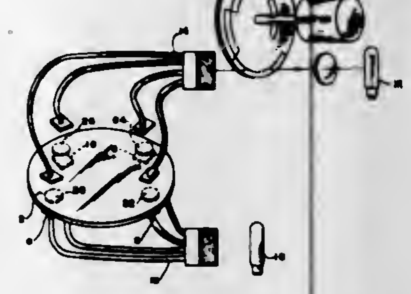
3,354,319

OPTICAL ILLUMINATION AND SENSING SYSTEM INCLUDING A PLURALITY OF OPTICAL FIBER MEANS

Erwin G. Loewen, East Rochester, and Robert J. Meltzer, Irondequoit, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed June 14, 1967, Ser. No. 645,933

9 Claims. (Cl. 250—227)



1. A scale illumination and sensing system comprising a plurality of light valves including a common scale, a plurality of reticles each in optical series with separate portions of said scale and lens means positioned between said scale and said reticles adapted for superimposing an image of a portion of said scale and said reticles of the other, means including a single light source and a first furcate bundle of optical fibers having a plurality of branches directing light toward said plurality of light valves, a single photosensor and means including a second furcate bundle of optical fibers with a plurality of branches, each of said branches being in optical series with a light valve and with a branch of said first bundle of optical fibers directing the light from said plurality of light valves to said photosensor.

3,354,320

LIGHT POSITION LOCATING SYSTEM

Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of John M. McLauchlan, Pasadena, Calif.

Filed Aug. 31, 1964, Ser. No. 393,464

6 Claims. (Cl. 250—232)

1. A light detection system contained in a housing for determining the position of a light source about a first and second axes of a space vehicle comprising:

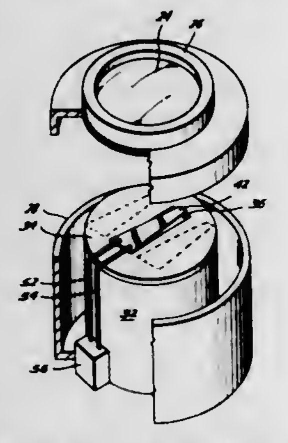
a light detector mounted in said housing, said light detector comprising a photomultiplier tube having a photosensitive surface in a plane parallel to that of said first and second axes, said light detector having first and second output states, said first state being an output pulse when said light source is detected by a photosensitive surface and said second output state being a lack of an output signal when no light source is detected by said photosensitive surface;

a position reference having a rectangular aperture therein mounted on said photosensitive surface in a plane parallel to that of said axes;

an optical system having a lens forming the outer surface of a portion of said housing and mounted in a plane parallel to that of said axes for focusing an image of said light source on said photomultiplier tube; and

means for alternately allowing said light source to be blocked and passed to said photosensitive surface through said aperture comprising a shutter having a trapezoidal shaped portion and first and second rectangular shaped portions, each of said portions being in a plane parallel to that of said axes, the width of said first and second rectangular portions being equal to the width of the parallel sides of said trapezoidal portion and being joined to the respective equal parallel sides, said shutter being interposed between said optical system and said light detector, drive system means for oscillating said shutter along an axis parallel to that of said parallel sides of said trapezoidal portion and parallel to the narrow sides of said rectanglar aperture, said drive system being mounted on said housing, said shutter being connected by means of said pair of leaves to a drive system mounted in said housing,

the time change of said light detector from one output state to the other of said output states and the time duration of said output states being indicative of the position of the light source along said first and second axes, respectively, when compared with a reference signal.



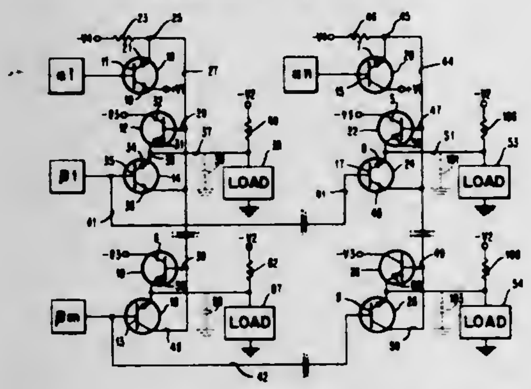
3,354,321

MATRIX SELECTION CIRCUIT WITH AUTOMATIC DISCHARGE CIRCUIT

Carl Heinz Meyer, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 16, 1963, Ser. No. 302,561

7 Claims. (Cl. 307—88.5)



7. A matrix selection circuit comprising: a first circuit, a plurality of second circuits, means coupling said first circuit with each of said second circuits, a plurality of third circuits, each different one of said third circuits being coupled to a different one of said second circuits as well as to said first circuit by a connection means, a load connected to the connection means between said second and third circuits, means to energize simultaneously said first circuit and any one of said second circuits thereby causing said load to be energized, after which the distributed capacitance associated with each selected load and which becomes charged up is automatically discharged by means of said third circuit.

3,354,322

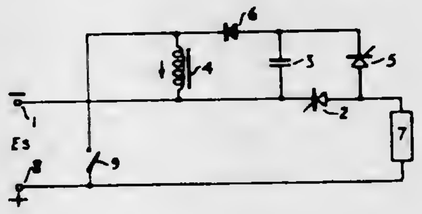
TURN-OFF ARRANGEMENT FOR A DIRECT CURRENT SWITCHING DEVICE WHICH IS RENDERED NON-CONDUCTING BY THE APPLICATION OF A REVERSE VOLTAGE

Robert H. Eastop, London, England, assignor to Westinghouse Brake and Signal Company, Limited, London, England

Filed June 30, 1964, Ser. No. 379,319

Claims priority, application Great Britain, July 8, 1963, 26,902/63

7 Claims. (Cl. 307—88.5)



1. A turn-off arrangement for a direct current switching device which is incorporated in a supply path from a supply source to a load terminal, the switching device being of a kind which is rendered conducting on application of a switching signal to said device, and is rendered non-conducting by the application of a reverse voltage, said arrangement comprising a unilaterally conductive current path, a storage capacitor in said path for storing said reverse voltage, a second switching device for applying said stored reverse voltage to said switching device in said supply path, an inductance in another supply path from said supply source to said load terminal and in parallel with said unilaterally conductive current path, and a third switching device for connecting said inductance in a path across said supply source, such that said storage capacitor is chargeable by current from said inductance which continues to flow in said inductance on switching off of said third switching device.

3,354,323

PULSE GENERATOR WITH DIRECT CONNECTION TO OUTPUT PULSE FORMER AND TIME DELAY IN BRANCH CIRCUIT

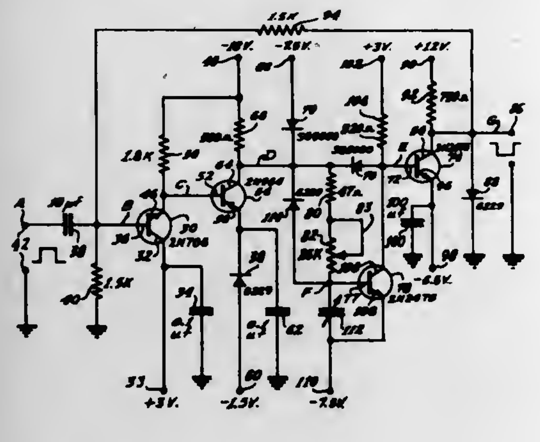
Sarkis M. Douaihy, Riverside, N.J., assignor to Computer Test Corporation, a corporation of Pennsylvania

Filed Nov. 27, 1964, Ser. No. 414,260

17 Claims. (Cl. 307—88.5)

1. A pulse generator circuit comprising output terminal means, pulse former switch means having two operating states for supplying different constant signal levels to said output terminal means when in one and the other of said states, a time delay circuit, trigger means having an output directly connected to an input of said pulse former means and responsive to an input signal for directly driving said pulse former means to one of said states independently of said time delay circuit and for initiating operation of said time delay circuit, branch circuit means including said time delay circuit and switch means responsive to a voltage in said time delay circuit for directly driving said pulse former means to the other of said states independently of said trigger means, said

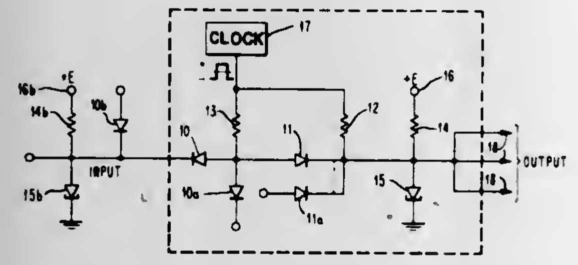
branch circuit being connected between said trigger output and an input of said pulse former means, and means responsive to the signal level at said output terminal



means for controlling said trigger means to maintain the state of said pulse former means in the absence of an input signal.

3,354,324
TUNNEL DIODE LOGIC CIRCUIT

Jack S. Cubert, Willow Grove, and Francis J. Ash, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 29, 1965, Ser. No. 443,477
13 Claims. (Cl. 307—88.5)

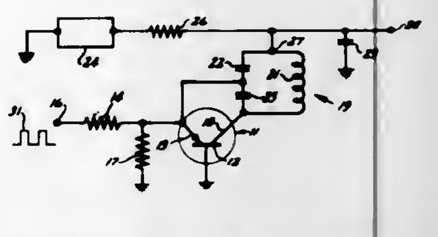


7. In combination, tunnel diode means, bias means connected to said tunnel diode means for biasing said tunnel diode for bistable operation, input means, first and second rectifier diodes connected in series opposing relation between said input means and said tunnel diode means, clock pulse supplying means, first resistor means connected between said clock pulse supplying means and the series connection between said first and second diodes, and second resistor means connected between said clock pulse supplying means and the connection between said series connected diodes and said tunnel diode.

3,354,325
BISTABLE ELECTRONIC CIRCUIT HAVING OSCILLATORY AND NON-OSCILLATORY STABLE STATES

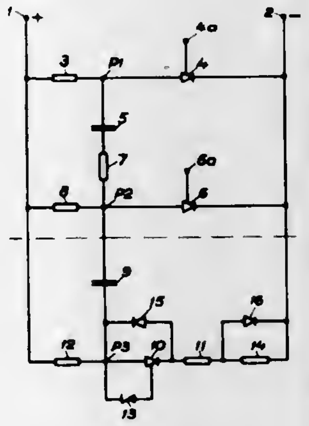
Carl L. Isborn, Richmond, Calif., assignor to Beckman Instruments, Inc., Fullerton, Calif., a corporation of California
Original application Oct. 5, 1959, Ser. No. 844,390, now Patent No. 3,240,955, dated Mar. 15, 1966. Divided and this application Apr. 1, 1965, Ser. No. 456,590
9 Claims. (Cl. 307—88.5)

1. In a bistable transistor circuit including a control electrode, a power supply and a source of reference potential, having oscillatory and non-oscillatory stable states for use as a binary counter, an improvement for rendering said bistable transistor circuit responsive to unipolar pulses, said improvement comprising a resistor connected in series between said power supply and said bistable transistor circuit, a capacitor connected in series with said resistor and having one terminal connected to the junction of said resistor and said bistable transistor circuit and the other terminal connected to said source of reference potential, and zero bias circuit on the control electrode of said bistable transistor circuit said zero bias circuit consisting of a closed D.C. current path having only series impedance elements which do not provide power.



3,354,326
DIRECT CURRENT STATIC SWITCH

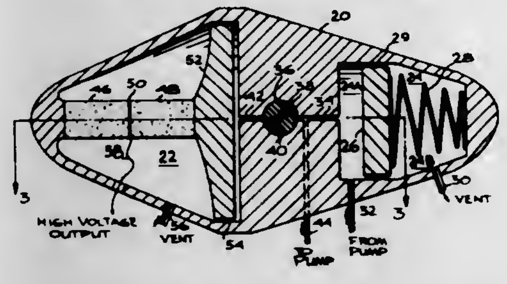
Karl Lennart Grees, Irsta, and Sven Olof Karlsson, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Claims priority, application Sweden, July 10, 1964, 8,467/64
Filed June 22, 1965, Ser. No. 465,891
4 Claims. (Cl. 307—88.5)



1. A direct current static switch for making and breaking a connection between a voltage source and a load impedance, said switch comprising a first controlled rectifier connected in series with said load impedance between a first and a second terminal, a second controlled rectifier, a first commutating capacitor and a first charging resistor; each of said controlled rectifiers having anode, cathode and gate electrodes; said cathodes of said first and second controlled rectifiers being connected to said second terminal, said second controlled rectifier and said first commutating capacitor being connected in series between the anode and cathode of said first controlled rectifier, said first charging resistor being connected between said first terminal and the junction point of said first commutating capacitor and said second controlled rectifier; wherein the improvement comprises a control means for automatically bringing said second controlled rectifier to the off-state, said control means including a second commutating capacitor, a controlled semi-conductor device having anode, cathode and gate electrodes, a second charging resistor, and a voltage sensing means; said second commutating capacitor and said controlled semi-conductor device being connected in series between the anode and cathode of said second controlled rectifier; said second charging resistor being connected between said first terminal and the junction point of said second commutating capacitor and said semi-conductor device; said voltage sensing means being connected between the anode and gate electrode of said semi-conductor device for applying a gating current to the gate electrode of said semi-conductor device at a predetermined voltage level.

3,354,327
FLUID PRESSURE ACTUATED PIEZOELECTRIC GENERATOR

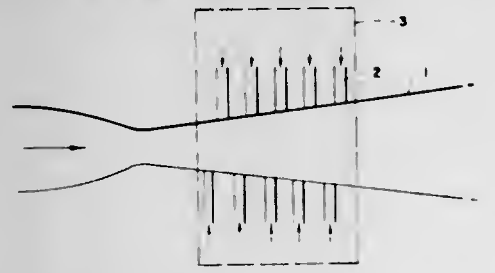
Glendon M. Benson, Danville, Calif., assignor to Physics International Company, San Leandro, Calif., a corporation of California
Filed Aug. 9, 1965, Ser. No. 478,223
16 Claims. (Cl. 310—8.7)



1. A high voltage generator comprising a piezoelectric body having opposite ends, means for substantially rigidly supporting one of said opposite ends of said body, piston means adjacent the other end for applying when actuated compressive pressure thereto, a source of fluid under a pressure required to actuate said piston means, valve means comprising a rotatable shaft first passageway, means through said shaft for coupling said source of fluid under pressure to one of said piston means when said shaft has a first position, second passageway means through said shaft disposed in said shaft adjacent to said first passageway means for relieving the pressure of the fluid already applied to said piston means when said shaft has a second position which is at an angle relative to said first position, and means for deriving an electrical output from said piezoelectric body.

3,354,328
MAGNETOHYDRODYNAMIC APPARATUS

Arthur Maitland, Newcastle, England, assignor to C. A. Parson & Company, Limited, Newcastle, England
Filed Sept. 25, 1963, Ser. No. 311,939
9 Claims. (Cl. 310—11)



1. Magneto-hydro-dynamic apparatus for the direct generation of electricity comprising:

a duct through which a thermally ionized gas rapidly is moveable in the direction of the longitudinal axis of said duct;

means to apply a magnetic field transverse to the longitudinal axis of the duct to produce an electric field which is perpendicular to both the direction of motion of said gas and said magnetic field;

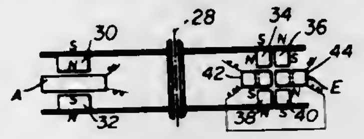
a plurality of light means external of said duct to produce radiation which causes photo-ionization of said gas;

a plurality of windows in said duct within said magnetic field disposed to admit said radiations into said duct within the magnetic field to photo-ionize said gas, said windows being arranged on opposite sides of said duct and in staggered relationship along the duct such that windows on opposite sides of the duct are out of alignment; and

electrodes on opposite sides of the duct and positioned to accept said electric current induced in said direction perpendicular to both said direction of motion of said gas and said magnetic field.

3,354,329
MAGNET ARRANGEMENT FOR ELECTRIC AND ELECTRONIC CLOCKS

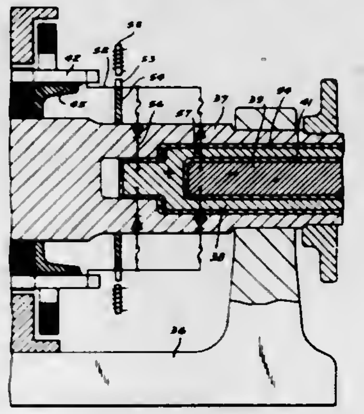
Robert Walter Reich, Merzhauserstr. 143, Freiburg im Breisgau, Germany
Filed Jan. 14, 1964, Ser. No. 337,597
10 Claims. (Cl. 310—36)



1. In a drive arrangement for an electric clock; coil means including excitation coil means and driver coil means, respective magnet means for cooperation with respective ones of said coil means, an oscillatory element carrying said magnet means, said coil means being respectively stationarily positioned adjacent the path of movement of the said magnet means on the oscillatory element at points removed from each other 180°, said magnet means presenting to said coil means first and second pole regions spaced 180° apart about the axis of oscillation of said oscillatory member, each said pole region effecting a flux linkage with a respective one only of said coil means in passing thereby.

3,354,330
DYNAMO-ELECTRIC MACHINE CARRYING RADIALLY MOUNTED RECTIFIERS

Bjarne Storsand, Watt, Zurich, Switzerland, assignor to Oerlikon Engineering Company, a corporation of Switzerland
Filed Oct. 29, 1965, Ser. No. 505,634
8 Claims. (Cl. 310—68)



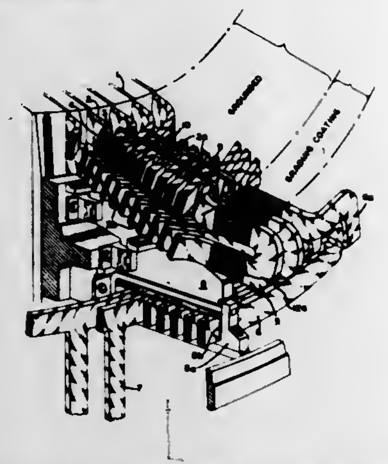
1. In a dynamo-electric machine, a rotor having windings, a hollow rotor shaft, a bus-bar concentrically secured within said shaft in coaxial insulated relation thereto, a rectifier housing extending through said hollow shaft and mounted on said bus-bar in radial disposition, said hollow shaft having a radial opening through which said housing may be inserted and withdrawn with respect to the bus-bar, the mounting of the housing being such that it may be readily inserted and removed, a semi-conductor rectifier within said housing, and means electrically connecting said rectifier in interposed relation between a rotor winding and said bus-bar.

3,354,331
HIGH VOLTAGE GRADING FOR DYNAMO-ELECTRIC MACHINE

Hermann L. Broeker, Schenectady, Felix Y. Dupont, Burnt Hills, and Alexander L. Lynn, Duanesburg, N.Y., assignors to General Electric Company, a corporation of New York
Filed Sept. 26, 1966, Ser. No. 581,804
2 Claims. (Cl. 310—196)

1. In a dynamoelectric machine,
a core member defining conductor slots,

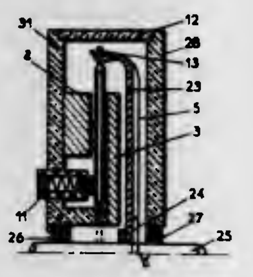
a plurality of insulated conductors disposed in said slots and emerging axially therefrom into an end turn region, said conductors extending circumferentially and being closely spaced in a first portion of the end turn region and then extending axially and being more widely spaced in a second portion of the end turn region more distant from the core slots than said first portion,



series loop conductors connecting together the axially extending conductors in the second portion of the end turn region,
conductive layers applied to the exterior of the conductor insulation in the first portion to hold them at the same potential as the core member, and
electrical stress grading layers applied to the exterior of the conductor insulation so as to contact said conductive layers and arranged to terminate in the second portion of the end turn region.

3,354,332
FLAT ANNULAR AIRGAP ELECTRIC ROTARY MACHINES

Jean Roger Henri Bonnefoy, Montrouge, France, assignor to Printed Motors Inc., New York, N.Y.
Filed Aug. 6, 1963, Ser. No. 300,286
Claims priority, application France, Sept. 11, 1962, 909,192
8 Claims. (Cl. 310—268)

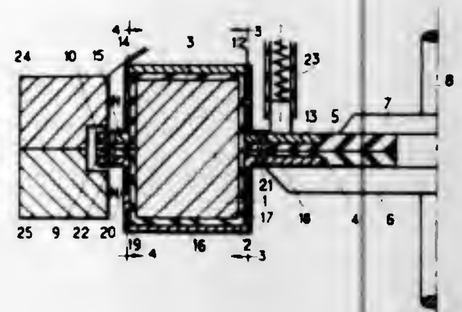


1. An electric motor of the type having a thin annular disk rotor and a rotating output member and in which the rotor rotates on the same axis as the output member, coupling means for connecting the outer periphery of said rotor to said output member and for placing said rotor under substantially uniform radial tension.

3,354,333
GRAMME ARMATURE DYNAMOELECTRIC MACHINE

Jacques Henry-Baudot, Antony, France, assignor to Printed Motors Inc., New York, N.Y.
Filed July 27, 1964, Ser. No. 385,221
Claims priority, application France, Aug. 21, 1963, 945,327, Patent 1,373,824
11 Claims. (Cl. 310—268)

1. A rotary disc-type dynamoelectric machine of the Gramme armature type comprising in combination:
a disc rotor member including a toroidal core and a flat annulus integral with and extending perpendicularly to the axis of rotation of said core, at least the core portion of said member being formed of magnetic material;
an insulating covering surrounding and adhered to said core;
a closed spiral winding comprising a series of conductive members intimately bonded to the exterior of said insulating covering, said winding including commutator sections overlying and intimately bonded to said flat annulus portion of said rotor member, there being the same number of commutator sections as there are turns in said winding, said winding and commutator sections substantially covering said rotor member;
a magnetic field structure at least partially surrounding said rotor member;
and brushes contacting said commutator sections.



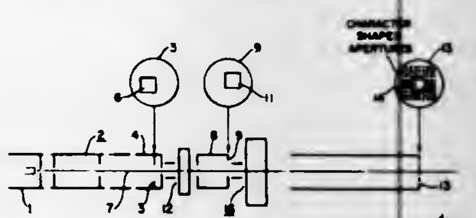
3,354,334
STORAGE TUBE TARGET AND METHOD FOR MAKING SAME

Pierre Bonvalot and Bernard Courtan, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fil, Paris, France
No Drawing. Filed Mar. 6, 1963, Ser. No. 263,131
Claims priority, application France, Mar. 28, 1962, 892,478
9 Claims. (Cl. 313—68)

1. A method for controlling, during manufacture, the remanence time of a storage tube target having a porous insulating layer providing induced conductivity properties, comprising the steps of:
selecting a predetermined amount of activating metal selected from the group consisting of manganese and copper and adding the same to the insulating layer prior to forming said layer.

3,354,335
ELECTRON GUN CONSTRUCTION FOR SHAPED-BEAM CATHODE-RAY TUBES PROVIDING VARIABLE BEAM SIZE

Charles R. Corpew, San Diego, Calif., assignor, by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Nov. 2, 1964, Ser. No. 408,190
8 Claims. (Cl. 313—77)

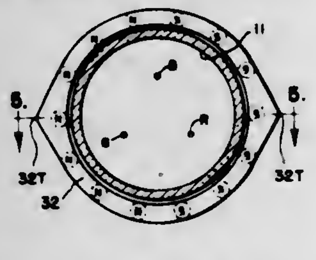


7. In a shaped-beam cathode-ray tube for operating in both the character writing mode and the spot writing mode, the combination comprising a beam shaping barrier having a plurality of character-shaped apertures and a noncharacter-shaped aperture formed therein, beam generating means for producing a beam of electrons of substantially greater cross-sectional size than the area occupied by any character-shaped aperture and directing said

beam of electrons toward said barrier, and beam control means positioned between said beam generating means and said barrier for selectively controlling the cross-sectional area of said beam including means for effecting selective interception of a portion of said beam only at such time as said beam is to be directed to a character-shaped aperture to reduce the size thereof to approximately the size of a character-shaped aperture.

3,354,336
RING MAGNETIZED ACROSS THICKNESS WITH TWO DIAMETRICALLY OPPOSED AND OPPOSITELY ORIENTED GROUPS OF MAGNETIC POLE PAIRS

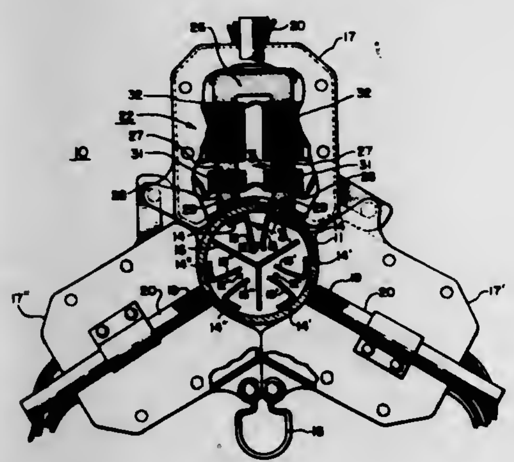
John L. Rennick, Elmwood Park, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,254
6 Claims. (Cl. 313—77)



3. A color purity correction device for deflecting a plurality of electron beams in a common direction, said device comprising:
a flat ringlike member of magnetizable material magnetized across its thickness dimension to establish two groups of magnetic pole pairs on diametrically opposed sides of said member, said pole pairs of one group being oriented oppositely to the pole pairs of the other group, for developing a composite magnetic field having opposing longitudinal components extending through the plane of said member and normal thereto and having aiding transverse field components establishing a non-uniform magnetic deflection field spaced from and extending substantially parallel to the plane of said member.

3,354,337
CONVERGENCE MAGNET POLE SHOES

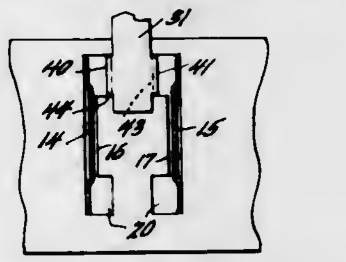
Raymond F. De Both, Broadview, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 28, 1966, Ser. No. 530,268
8 Claims. (Cl. 313—77)



1. In a convergence apparatus for use with a multi-beam cothode ray tube having a pole piece pair associated with at least one of the electron beams and comprising outwardly directed pole faces, an electromagnetic device for selectively positioning one of said beams comprising:
a core of magnetic material having a pair of spaced apart legs and supporting a convergence winding;
a pair of permeable pole shoes having respective areas greater than the area of a core leg extremity;
means for supporting said pole shoes adjacent the extremities of said core legs;
and means for mounting said core and said pole shoes upon the neck of said cathode ray tube with said pole shoes confronting said pole piece faces.

3,354,338
CONVERGENCE ELECTRODE HAVING POLE PIECES AND SNUBBERS IN SAME SLOTS

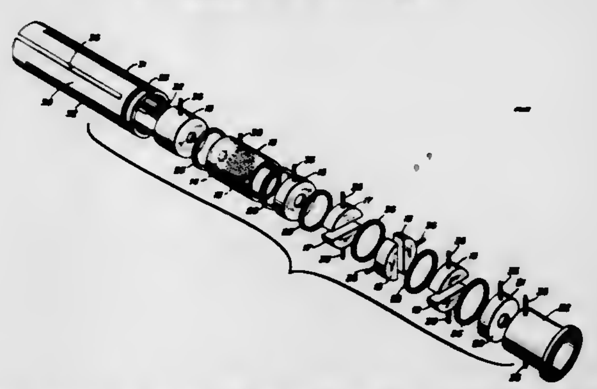
Edward E. Yorns, Owensboro, Ky., assignor to Kentucky Electronics, Inc., Owensboro, Ky., a corporation of Delaware
Filed Oct. 18, 1966, Ser. No. 587,519
3 Claims. (Cl. 313—77)



1. A dynamic convergence electrode for an electron gun of a cathode ray tube having therein at least one pair of elongated slots punched through a small segment of the cylinder walls with the elongated direction generally parallel to the electron beam path through the electrode and shaped with at least one generally normally extending transverse slot structure component, a pair of substantially L-shaped convergence pole pieces passing through the pair of elongated slots to reside on either side of the electron beam path, an elongated generally planar finger snubber member positioned on the outer surface of the electrode with two alignment tabs protruding generally normally from the plane of the finger and mating respectively in the transverse slot component of the same slot through which the pole pieces pass, thereby aligning the snubber member in place relative to the direction and placement of the slots, and means affixing said snubber member to the convergence electrode in said aligned place.

3,354,339
ELECTRODES STACKED IN SLOTTED TUBULAR SUPPORT

Alexander Bell, Carlsbad, Calif., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed May 9, 1966, Ser. No. 548,457
9 Claims. (Cl. 313—82)

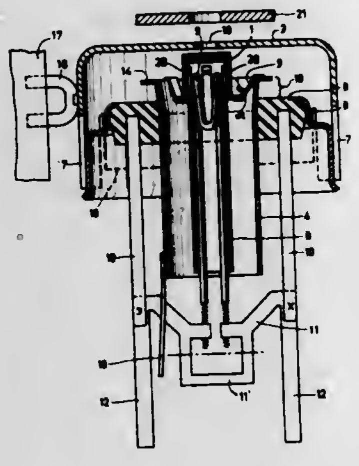


1. An electron gun construction for cathode ray tubes comprising:
an electron beam generating means for generating an electron beam,
a plurality of electron optical elements for controlling the position and cross-section of said electron beam,

each including at least one transversely disposed wiring lead connected thereto,
a tubular support member having said electron beam generating means and said electron optical elements mounted therein in coaxial relationship, and
a plurality of individual annular insulating spacers, each interposed between respective adjacent electron optical elements and having a thickness equal to the required spacing between said elements,
said tubular support member including a plurality circumferentially spaced longitudinal slots extending to one end thereof, said wiring leads connected to each electron optical element extending through said longitudinal slots.

3,354,340
CAP-SHAPED CONTROL ELECTRODE SECURING CATHODE BY THIN SUPPORTING MEMBERS

Friedrich Hermann Raymund Almer, Gerardus Servaas Marie Schrijnemakers, Adrianus Kuiper, and Alphonsus Petrus van Rooy, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 14, 1966, Ser. No. 591,367
Claims priority, application Netherlands, Oct. 22, 1965, 65—13,665
14 Claims. (Cl. 313—82)

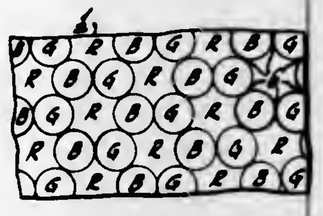


1. An electron source for an electron gun, comprising a perforated, cap-shaped control electrode in which a cylindrical cathode having an emissive end surface is secured by means of a plurality of thin supporting members, a supporting cylinder, an insulating body in the form of a cylindrical ring, and an annular metal body which is secured to the control electrode, characterized in that the outer cylindrical face of the insulating body is connected to the annular metal body and its inner cylindrical face is secured to the supporting cylinder by means of a substance fused thereon, the ends of the supporting cylinder projecting from the insulating body and the supporting members of the cathode being secured to the cathode support and to a flange provided on the end of the supporting cylinder adjacent the emissive surface of the cathode, while the annular metal body being secured to a plurality of tongues recessed in the cylindrical wall of the control electrode.

3,354,341
CATHODE RAY TUBE SCREEN WITH COLOR AREAS OF DIFFERING CONTOURS

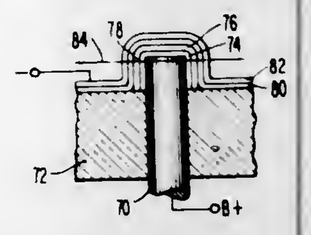
Daniel J. Donahue, Somerville, N.J., and Austin E. Hardy, Lancaster, Pa., assignors to Radio Corporation of America, a corporation of Delaware
Original application Oct. 9, 1961, Ser. No. 143,927. Divided and this application Mar. 21, 1966, Ser. No. 536,097
4 Claims. (Cl. 313—92)

2. A multi-color phosphor screen consisting essentially of a multiplicity of groups of at least two different elemental phosphor areas of respectively different color response characteristics, all of the elemental phosphor areas except one of each of said groups having a definite similar closed contour, and said one elemental phosphor area filling all of the target surface which is not occupied by said other elemental phosphor areas and joining the one phosphor areas of adjacent groups of said screen.



3,354,342
SOLID STATE SUB-MINIATURE DISPLAY APPARATUS

Frederick F. Ohntrup, Plymouth Meeting, Joseph L. McLaughlin, Springfield, and Robert E. Benn, Boromall, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 24, 1964, Ser. No. 346,967
4 Claims. (Cl. 313—108)

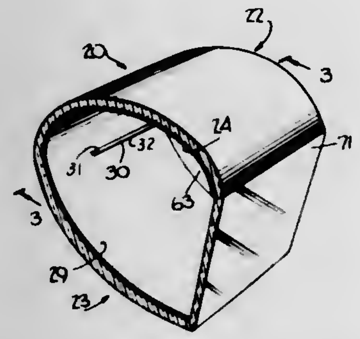


1. Semiconductor electroluminescent display apparatus comprising,
(a) an array of electrical conductors arranged in a pattern characteristic of intelligence,
(b) said conductors having an overlay of a semiconductor material of one conductivity type (N or P),
(c) an opposite conductivity type semiconductor material (P or N), forming a recombination junction at the interface between the two conductivity types,
(d) a conductor overlay on said material providing a good ohmic contact to the second mentioned conductivity type material,
(e) the surface of said conductors being lapped smooth thereby removing the shorting overlay material and exposing the recombination junctions at each conductor, and
(f) means for applying suitable electrical potentials between said conductors and said overlay material effective to cause recombination to occur in said junctions producing a visible pattern characteristic of said intelligence.

3,354,343
DUAL BEAM ELECTRIC LAMP

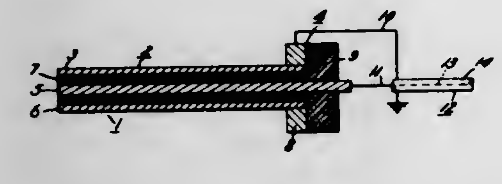
Elman B. Myers, Wayne, N.J., assignor to Elman B. Myers and Cecil R. Fuller, Spokane, Wash., a partnership
Filed May 19, 1964, Ser. No. 368,664
18 Claims. (Cl. 313—113)

1. A lamp comprising a first reflecting surface having a cross-section throughout the length thereof substantially in the form of a portion of a first conic section, a second reflecting surface disposed adjacent to said first reflecting surface and having a cross-section throughout the length thereof substantially in the form of a portion of a second conic section which is different from the first conic section, said first and second reflecting surfaces being disposed with the focus of the conic section of each of their respective cross-sections intersected by a common line, and a source of light disposed adjacent to the common line for directing light toward said first and second reflecting surfaces whereby each of said first and second reflecting surfaces are adapted to reflect a separate portion of the light from said source.



3,354,344
FLUID-WORKING SPARK DISCHARGE ELECTRODE ASSEMBLY

Edward C. Schrom, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 8, 1967, Ser. No. 641,076
10 Claims. (Cl. 313—130)

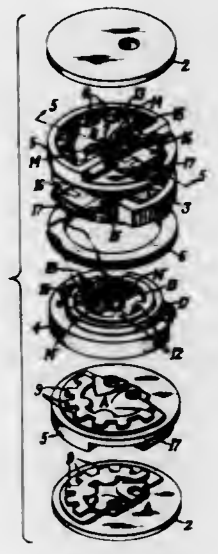


1. A spark discharge electrode assembly having a working tip portion immersed in a substantially non-compressible working fluid and a terminal portion, which comprises a longitudinally extending metal rod, a hollow coaxial metal sheath concentrically positioned with respect to and substantially coextensive with said rod to define a continuous annular space, solid dielectric means occupying said annular space flexibly bonding said sheath to said rod to form a unitary solid construction for substantially the entire length of the electrode assembly, said dielectric means comprising a plurality of particles of an insulating fired ceramic material flexibly bonded together by an elastomeric organic dielectric material having a durometer hardness of from about 50 to 150 measured on the Shore "A" scale to form a composite insulating body having substantially the same erosion characteristics during use as the conductive metal members, said terminal portion being disposed at the opposite end of said electrode assembly from said working tip and comprising an electrically conductive ring member affixed directly to the outer surface of said sheath member, and dielectric bushing means in contact with and separating said ring member from the adjacent end of said metal rod.

3,354,345
LIGHTNING ARRESTER SPARK GAP HAVING ARC-CONFINING CHAMBER WALLS OF GRADED POROSITY

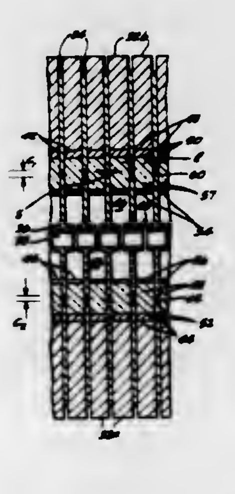
Earl W. Stetson, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed July 6, 1964, Ser. No. 380,422
18 Claims. (Cl. 313—153)

1. In a current interrupter, an arc chamber having ceramic walls each of which has a porosity gradient, a pair of electrodes in said chamber between which an arc is struck, said chamber having a region with relatively low porosity walls adjacent where an arc is struck between said electrodes, said chamber having an arc cooling region with relatively high porosity walls, and means for electromagnetically driving said arc from said region of low porosity walls into said region of high porosity walls.



3,354,346
TRAVELING-WAVE TUBE HAVING LOSS-FILLED, CAPACITIVELY-COUPLED CAVITIES COUPLED TO THE INTERACTION CELLS OF THE SLOW-WAVE STRUCTURE

Arne Lavik, Hawthorne, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Oct. 23, 1964, Ser. No. 406,120
6 Claims. (Cl. 315—3.5)



1. A traveling-wave tube comprising: means for providing a stream of electrons along a predetermined path, slow-wave structure means defining a plurality of intercoupled interaction cells disposed sequentially along and about said predetermined path for propagating electromagnetic wave energy in such manner that it interacts with said stream of electrons, means defining a plurality of cavities sequentially disposed along a direction parallel to said predetermined path, each of said cavities being electromagnetically coupled to one of said interaction cells and being resonant at a preselected frequency, means for providing capacitive coupling directly between adjacent ones of said cavities, and loss means disposed in each of said cavities for attenuating electromagnetic wave energy at the resonant frequency of the cavity.

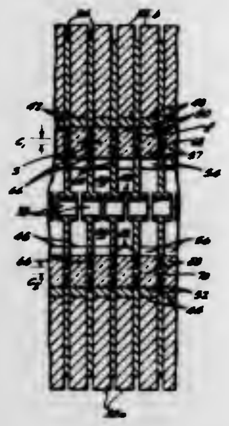
3,354,347

TRAVELING-WAVE TUBE HAVING LOSSY MATERIAL WALLS SEPARATING ADJACENT OSCILLATION SUPPRESSION RESONANT CAVITIES COUPLED TO SLOW-WAVE STRUCTURE INTERACTION CELLS

William Hant, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Oct. 28, 1964, Ser. No. 406,983

9 Claims. (Cl. 315—3.5)



1. A traveling-wave tube comprising: means for providing a stream of electrons along a predetermined path, slow-wave structure means defining a plurality of intercoupled interaction cells disposed sequentially along and about said predetermined path for propagating electromagnetic wave energy in such manner that it interacts with said stream of electrons, means defining a plurality of cavities sequentially disposed along a direction parallel to said predetermined path, each of said cavities being electromagnetically coupled to one of said interaction cells and being resonant at a preselected frequency, said cavity defining means including wall means at least a portion of which is of lossy material, said wall means defining an aperture for providing electromagnetic coupling directly between said adjacent ones of said cavities, and substantially lossless dielectric material disposed in each of said cavities.

3,354,348

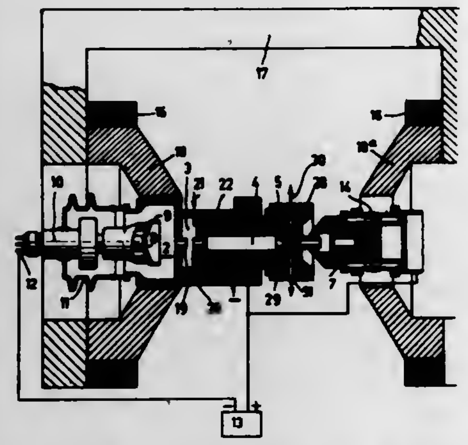
HARMONIC PRODUCING VELOCITY MODULATION TUBE HAVING PARTICULAR OUTPUT CAVITY STRUCTURE

Bernardus Bastiaan van Iperen, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 4, 1964, Ser. No. 349,399

Claims priority, application Netherlands, Mar. 5, 1963, 289,816

11 Claims. (Cl. 315—5.43)



1. A velocity modulated electron discharge tube for producing a harmonic of a high-frequency electromagnetic oscillation comprising in succession within an evacuated envelope means to generate and direct an electron beam along a given axis, a modulation system, a drift space, and an output system comprising a resonant cavity in the path of said electron beam coupled to a wave-guide through an annular gap formed by walls perpendicular to the axis of the electron beam, said gap having a radial dimension of approximately one-quarter wave-length at the harmonic frequency, said resonant cavity having spaced parallel side-walls extending in two planes substantially perpendicular to the electron beam axis.

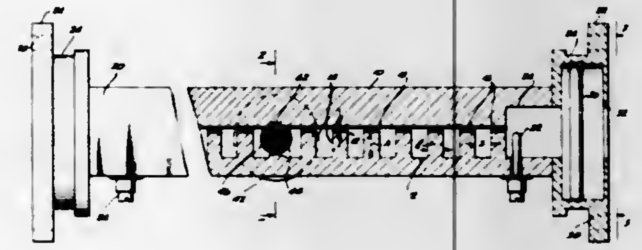
3,354,349

MULTIPACTOR SWITCH

Kenneth L. Horn, Hawthorne, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Dec. 7, 1964, Ser. No. 416,445

3 Claims. (Cl. 315—39)



1. A multipactor switch comprising: a housing defining a waveguiding surface for propagating electromagnetic wave energy within a predetermined frequency range along a predetermined direction, first and second opposing portions of said waveguiding surface being provided with a coating of a material having a secondary electron emission coefficient greater than unity, the respective coatings on said first and second portions being disposed parallel to said predetermined direction and spaced from one another by a preselected distance, means for establishing in the region between said coatings an alternating electric field having at least a component extending in a direction perpendicular to said coatings, the frequency f of said alternating electric field being related to said preselected distance so as to allow electrons to traverse said preselected distance in a time essentially equal to $(2n-1)2f$ where n is a positive integer, said waveguiding surface defining an aperture extending parallel to said predetermined direction, an electron gun including a thermionic electron emissive cathode disposed externally of said waveguiding surface in the vicinity of said aperture, means for maintaining said cathode at a predetermined negative potential with respect to said waveguiding surface, and means disposed in said aperture for improving the impedance match between said waveguiding surface and said electron gun as seen by electromagnetic waves propagating along said waveguiding surface.

3,354,350

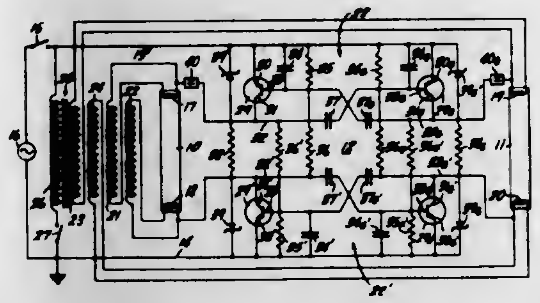
TWO ALTERNATE CONDUCTING MULTIVIBRATORS POWERED BY AC SOURCE

George Andrew Kappenhagen, Parma, and Robert James Avalon, Burton, Ohio, assignors to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 27, 1964, Ser. No. 406,766

10 Claims. (Cl. 315—205)

1. A multivibrator circuit comprising electronic switch means connected in series with a load across an alternating current source, unidirectional conductor means connected across the switch means and in series with the load, circuit means connected to the switch means for controlling the operation of the switch means at a selected frequency of operation which is different from the frequency of the alternating current source, and output means connected to the switch means to provide an output voltage which varies at the selected frequency.



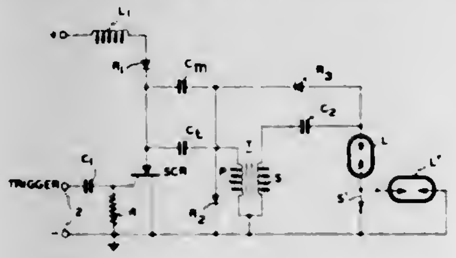
3,354,351

FLASH-PRODUCING APPARATUS EMPLOYING CIRCUITS INDEPENDENT OF RECOVERY TIME OF FLASH DEVICE

William A. Ward, Norwood, Mass., assignor to United States Scientific Instruments, Inc., Watertown, Mass., a corporation of Massachusetts

Continuation of application, Ser. No. 409,027, Nov. 4, 1964. This application Mar. 27, 1967, Ser. No. 626,344

3 Claims. (Cl. 315—240)



1. Electric discharge producing apparatus having, in combination, a normally non-conductive impedance breakdown load device, a transformer having a primary winding and a secondary winding, a normally non-conductive electric switch, triggering capacitance means connected in series with said primary winding across said switch, means for charging said capacitance means, trigger means for rendering said switch conductive to discharge said capacitance means therethrough, a capacitor connected in series with said secondary winding across said breakdown device for applying a triggering voltage to said device to render it conductive when said switch is rendered conductive, main storage capacitance means, means for charging said main storage capacitance means, and means including a rectifier connected in series with said breakdown device for discharging the energy stored in said main storage capacitance means through said switch, said rectifier, and said breakdown device when said breakdown device is rendered conductive, said rectifier being poled to pass said discharging energy with low impedance but to provide high impedance during charging of said main storage capacitance means.

3,354,352

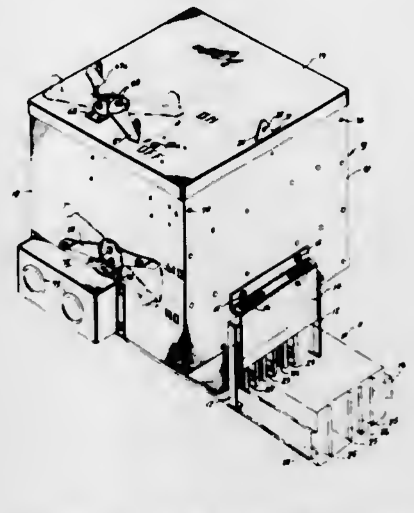
FUSIBLE BUSWAY PLUG

Lawrence C. Goodridge, Bristol, Conn., assignor to General Electric Company, a corporation of New York

Filed May 5, 1966, Ser. No. 548,006

6 Claims. (Cl. 317—100)

1. A busway plug device comprising:
- (a) a generally rectangular enclosure having top, bottom, and side walls;
- (b) a plurality of plug-in type electrical connectors supported on said bottom wall and projecting externally therefrom;
- (c) electrical control apparatus within said enclosure and connected electrically in series with said electrical connectors;
- (d) said electrical control apparatus comprising switch means for manually opening and closing an electrical circuit connected thereto and means for automatically opening said circuit upon the occurrence of predetermined current therethrough, said automatic opening means comprising heat-generating current-responsive means; and



- (e) means mounting said electrical control apparatus on at least one of said walls of said enclosure other than said bottom wall, whereby heat generated by said apparatus is transmitted to said one of said walls within said enclosure and dissipated by said one of said walls externally of said enclosure.

3,354,353

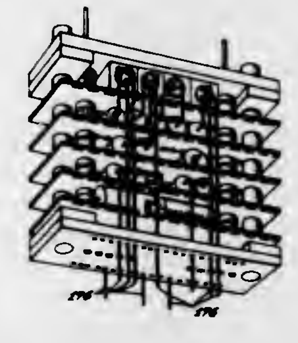
WELDED WIRE MODULE WITH STANDARDIZED BUS STRIPS

William G. Reimann, Los Angeles, and Marvin J. Vavra, Miraleste, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif.

Filed Nov. 6, 1961, Ser. No. 150,462

The portion of the term of the patent subsequent to Jan. 31, 1984, has been disclaimed

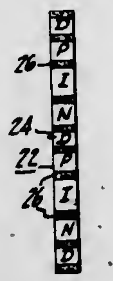
3 Claims. (Cl. 317—101)



1. In an electrical module, a plurality of parallel layers of electrical components, a series of elongated conducting elements separating said layers, said conducting elements comprising strips having a series of preformed bendable tabs selectively connected to component terminals for interconnecting some of the electrical components on said layers with the associated conducting elements, and means including a wiring array for interconnecting said components, said array including a set of regularly spaced layer interconnection wires extending parallel to said conducting elements in a plane along one end of said components, and a set of regularly spaced riser wires extending perpendicular to said conducting elements in another plane spaced outwardly from and generally parallel to said layer wiring plane.

3,354,354
OXIDE BONDED SEMICONDUCTOR WAFER UTILIZING INTRINSIC AND DEGENERATE MATERIAL

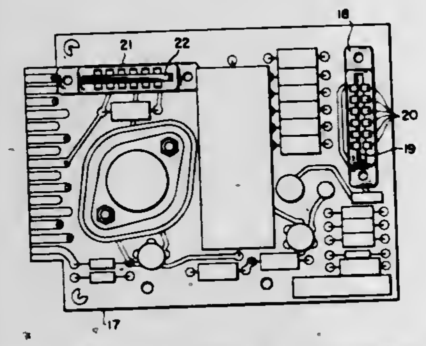
James A. Amick, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 24, 1964, Ser. No. 354,240
2 Claims. (Cl. 317—101)



1. A composite wafer comprising
(a) a plurality of pieces of silicon, at least one of said pieces being of a material selected from the group consisting of intrinsic semiconductor material and degenerate semiconductor material,
(b) portions ot each of said pieces being oxidized to silicon dioxide, and
(c) said pieces being joined to each other in said wafer by said silicon dioxide, at least one of said pieces having an unoxided surface forming a part of a surface of said wafer.

3,354,355
MODE SELECTION SWITCH

Arnie L. Cliffgard, Fountain Valley, Jack J. Keegan, Fullerton, and Jerrold H. Randall, Corona Del Mar, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Oct. 24, 1966, Ser. No. 589,041
7 Claims. (Cl. 317—101)

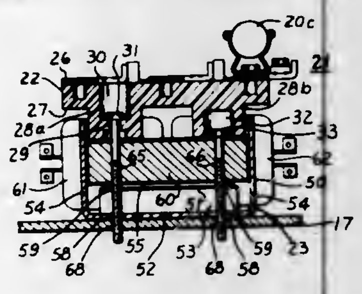


1. A mode selection switch comprising, a receptacle having a cavity containing a number of contacts between pre-selected ones of which alternate circuit modes are connected, a male insert including at least one printed circuit board section having conducting and insulating portions including means for insertion into said receptacle in more than one position, said pre-selected ones and said conducting portions upon insertion of said male insert in different positions thereof into said receptacle interconnecting different ones of said pre-selected ones of said contacts to establish different ones of said modes.

3,354,356
CARTRIDGE-TYPE FUSE MOUNTING BLOCK AND MOUNTING THEREFOR

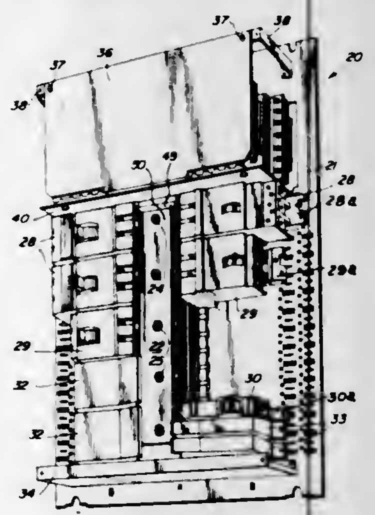
Dorn L. Pettit, Wauwatosa, Wis., and Howard P. Stock, Bellevue, Wash., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Sept. 29, 1965, Ser. No. 491,182
6 Claims. (Cl. 317—116)

1. An assembly of electrical components comprising:
a mounting panel,
an insulating block,
a pair of spaced conducting members secured to a top surface of the block, each of said members having a plurality of spaced threaded openings therein,
means positioned by selected ones of the plurality of spaced openings for mounting any one of a plurality of different sized cartridge-type fuses on the pair of conducting members,
and means including a pair of supports selectively positioned on the mounting panel to be spaced a predetermined distance from each other in either of two invertible positions for engaging portions of a core of a transformer and mounting the transformer on the mounting panel in a position wherein the core is spaced from and extends parallel to the panel and the block on the core of the transformer in spaced relation to the supports when the supports are positioned in one of the two invertible positions and the transformer included in the assembly has a rectangularly shaped core having a length greater than the spacing between the supports and for mounting the block in spaced relation to the panel and in engagement with the supports when the supports are positioned at said spaced distance in the other of the said two invertible positions and a transformer having a core length less than the spacing between the supports is included in the assembly and mounted between the space between the block and panel.



3,354,357
ELECTRICAL PANELBOARD

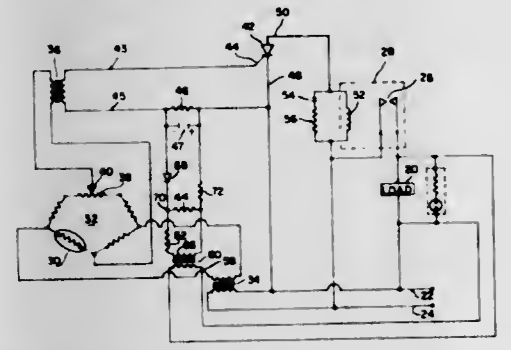
George N. Jorgensen and Harris I. Stanback, Lexington, Ky., and Robert W. Dunham, Cedar Rapids, Iowa, assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Dec. 20, 1966, Ser. No. 603,367
10 Claims. (Cl. 317—119)



1. An electrical panelboard comprising a generally flat mounting pan, a plurality of elongated flat bus bars mounted on said mounting pan with their flat sides parallel to said mounting pan, said bus bars being spaced from and aligned with each other in a direction perpendicular to said mounting pan, and a plurality of elongated insulators one more in number than the number of said bus bars, said insulators being spaced from and aligned with each other in a direction perpendicular to said mounting pan and being substantially coextensive longitudinally with said bus bars, said bus bars being interleaved between said insulators, each of said bus bars having a pair of exposed opposite longitudinal edge portions, and said bus bars and insulators being in contact with each other in such a manner that each of said bus bars is in direct contact on opposite sides respectively with a pair of adjacent ones of said insulators.

3,354,358
ANTICIPATING TEMPERATURE CONTROLLER

John R. Bray and George Bernard Price, Pensacola, Fla., assignors to Monsanto Company, a corporation of Delaware
Filed July 1, 1963, Ser. No. 291,892
1 Claim. (Cl. 317—148.5)

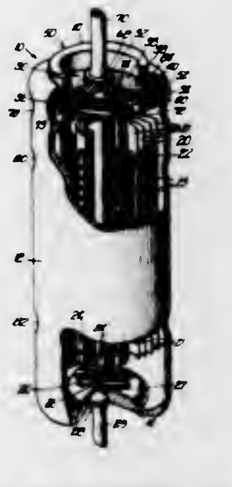


Apparatus for controlling a heater, comprising in combination:
(a) a bridge having therein a thermistor thermally coupled to said heater for sensing the temperature thereof and producing a control signal having a magnitude varying with deviations of the sensed temperature from a predetermined value.
(b) a silicon controlled rectifier having gate, cathode, and anode electrodes,
(c) AC power supply terminals,
(d) switching means, connected in series with said anode and said cathode electrodes across said power supply terminals, for connecting said heater across said power supply terminals when said rectifier conducts,
(e) an input circuit connected for applying said control signal across said gate and cathode electrodes. said input circuit including a series capacitor,
(f) a feedback network, energized by actuation of said switch means, for applying a charge to said capacitor opposing conduction of said rectifier, said network including series charging resistance for controlling the charging time constant of said capacitor,
(g) and a discharging resistor connected in parallel with said capacitor for controlling the discharging time constant of said capacitor,
(h) the impedances of said resistor, said resistance, and said capacitor being selected so that said silicon control rectifier is alternately enabled to conduct between 0.1 and 1.5 seconds and prevented from conducting between 0.1 second and 2.0 seconds.

3,354,359
ELECTROLYTIC CAPACITOR WITH COMPRESSED SEAL

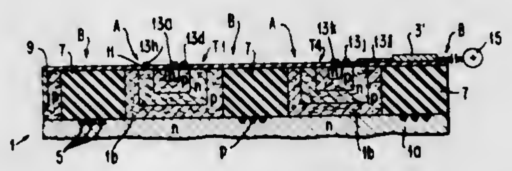
John R. Ford, Pickens, S.C., assignor to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware
Filed June 3, 1965, Ser. No. 461,115
9 Claims. (Cl. 317—230)

1. In an electrolytic capacitor of the class described, an end seal for a substantially cylindrical housing having a capacitor within said housing including at least one terminal element extending through said end seal, said end seal comprising a metallic insert with a hub having between and spaced from its ends an outwardly extending annular flange, and a resilient annulus of insulating material extending about said flange and inwardly over the opposite faces thereof in pressure sealing contact therewith, said annulus having upper and lower flanges extending about said hub in substantially concentric spaced relation thereto and also extending above and below said hub, the upper portion of said housing being formed under pressure about the peripheral portion of said annulus effective for providing a fluid tight seal therewith and between said annulus and said flange of said hub.



3,354,360
INTEGRATED CIRCUITS WITH ACTIVE ELEMENTS ISOLATED BY INSULATING MATERIAL

Frank J. Campagna, Brewster, Lawrence V. Gregor, Crompond, and Donald P. Seraphim, Bedford Hills, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 24, 1964, Ser. No. 421,029
9 Claims. (Cl. 317—234)



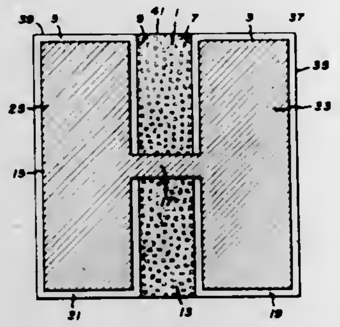
1. A semiconductor circuit arrangement comprising a semiconductor body of first conductivity type having a pattern of electrically isolated regions having surface portions and an inlaid pattern of insulating material, said patterns being complementary and defining a planar topology, active circuit elements formed within selected ones of said surface portions, and means for functionally interconnecting said active devices to form an operative circuit arrangement, said interconnecting means including first conductive means passing over said inlaid pattern and second conductive means passing beneath said inlaid pattern.

3,354,361
SANDWICHED CONSTRUCTION FOR A TUNNEL DIODE

Donald H. Kortkamp and James M. Smith, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York
Filed June 10, 1965, Ser. No. 462,947
4 Claims. (Cl. 317—234)

1. A tunnel diode comprising: a pair of side portions of glass, a slice of germanium of one conductivity type sandwiched between said glass side portions and having a first surface exposed between said glass side portions, a narrow strip of alloy material of opposite conductivity

inducing type extending lengthwise across a portion of said first surface of said slice of germanium and alloyed therewith to form a tunnel diode junction of cross-sectional area substantially equal to the area of said narrow strip, said strip having a width, as measured perpendicular to its lengthwise dimension and parallel to said first surface, substantially less than the spacing of said glass side portions, an electrical contact carried by one of said glass portions and connected to said strip of material, and means for making a second electrical contact to a surface of said slice of germanium opposite said first surface.

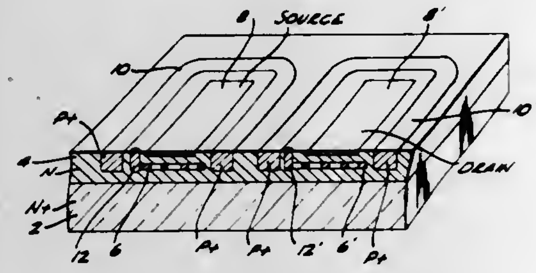


3,354,362
PLANAR MULTI-CHANNEL FIELD-EFFECT TETRODE

Rainer Zuleeg, Newport Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Mar. 23, 1965, Ser. No. 442,079

7 Claims. (Cl. 317—235)



1. A field-effect tetrode device comprising:
(a) a body of semi-conductor material of a first type of conductivity;
(b) a pair of grid control electrode members of semi-conductor material and of opposite conductivity type with respect to said first type disposed within and surrounded by said body of semi-conductor material in side-by-side fashion each of said grid control electrode members having a plurality of current conducting channels extending therethrough;
(c) a pair of electrically conductive electrode members disposed on a common surface of said body of semi-conductor material each overlying a respective one of said grid electrode members;
(d) a region of said body of semi-conductor material of a conductivity type opposite to said first type disposed on said common surface of said body and extending down thereinto so as to surround each of said grid control electrode members;
(e) and means in said semi-conductor body making separate electrical connections to said grid control electrode members.

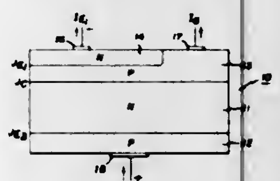
6. A field-effect tetrode device comprising:
(a) a body of semi-conductor material having a first type of conductivity and of predetermined resistivity;
(b) a first layer of semi-conductor material disposed on a first surface of and integral with said body of semi-conductor material, said first layer being of said first type of conductivity and of lower resistivity than said predetermined resistivity;
(c) a second layer of semi-conductor material disposed on another portion of said first surface of and integral with said body of semi-conductor material, said second layer being of said first type of conductivity and of lower resistivity than said predetermined resistivity;
(d) a first internal region of said semi-conductor body underlying said first layer and being in the form of a grid of semi-conductor material of a second type of conductivity opposite to said first type;
(e) a second internal region of said semi-conductor body underlying said second layer and being in the form of a grid of semi-conductor material of said second type of conductivity;
(f) and a region of said semi-conductor body disposed on said first surface thereof having said second type of conductivity and extending down into said semi-conductor body so as to surround said first and second internal regions thereof.

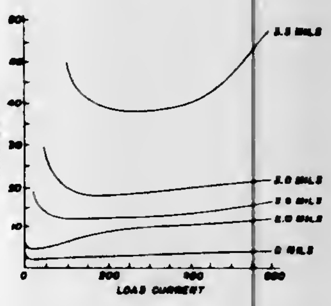
3,354,363
PNPN SWITCH WITH $10<\frac{N_B}{N_E}<100$ SO THAT CONDUCTIVITY MODULATION RESULTS DURING TURN-OFF

Joseph Moyson, Union Springs, and James Petruzella, Auburn, N.Y., assignors to General Electric Company, a corporation of New York

Original application June 4, 1963, Ser. No. 285,385. Divided and this application Apr. 12, 1965, Ser. No. 447,507

3 Claims. (Cl. 317—235)





1. A PNPN semiconductor triode switch comprising a semiconductor body including
(A) a body having four layers arranged in succession
  (a) contiguous layers being of opposite conductivity type
(B) low resistance connections to opposite terminal layers and to one intermediate layer,
(C) means to make the effective current gain of the first three contiguous layers including the said one intermediate layer as an end layer having a very low value and means to make the effective current gain of the other three contiguous layers less than unity but much greater than said first three layers whereby the sum of said current gains approach unity,
(D) the terminal layer opposite said one intermediate layer and the adjacent intermediate layer having average impurity concentrations N_E and N_B respectively such that

$$10<\frac{N_E}{N_B}<100$$

where N_E is between 10^{15} and 10^{17} atoms/cc.

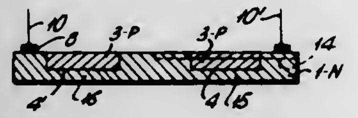
3,354,364
DISCONTINUOUS RESISTANCE SEMICONDUCTOR DEVICE

Tetsuro Nakamura, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed July 8, 1964, Ser. No. 381,097

Claims priority, application Japan, Aug. 22, 1963, 38/44,659

2 Claims. (Cl. 317—235)



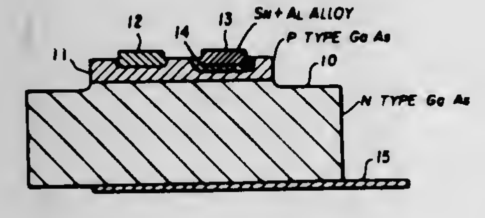
2. A semiconductor device comprising at least two U-shaped PN junctions in parallel-spaced relationship extending from the same surface of said device, a pair of terminals only, disposed to include said junctions therebetween; semiconductor material of the first type filling the interior of said U's; semiconductor material of the second type embracing the periphery of said U's and contacting said terminals; a surface concentration of semiconductor material of the second type and of higher impurity concentration than said semiconductor material of the second type disposed to include a portion of the surface of the first type semiconductor material within at least one, but less than all, of said U-shaped junctions and the nearest proximity terminal.

3,354,365
ALLOY CONTACT CONTAINING ALUMINUM AND TIN

Melvin Belasco, Dallas, and David Dexter Martin, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 29, 1964, Ser. No. 407,433

6 Claims. (Cl. 317—237)



3. A gallium arsenide transistor including a P-type conductivity region, a rectifying contact alloyed with a portion of said P-type conductivity region, said rectifying contact comprising an alloy consisting essentially of tin and about 0.2% to about 4.0% by weight of aluminum.

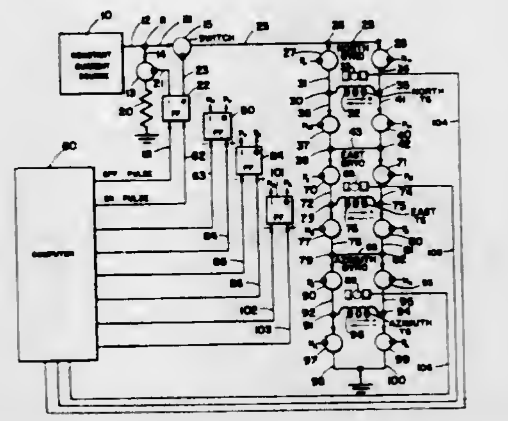
3,354,366
PULSE TORQUE CONTROL APPARATUS

Arney Landy, Jr., Roseville, and Tenny D. Lode, Edina, Minn., assignors to Honeywell Inc., a corporation of Delaware

Continuation of application Ser. No. 185,623, Apr. 6, 1962. This application Aug. 22, 1966, Ser. No. 574,246

8 Claims. (Cl. 318—18)

1. Apparatus for energizing reversible force producing means comprising, in combination: an energization source for providing pulses of substantially constant energy content; switching means; and control means connected to said switching means for operating said switching means for periodically connecting said energization source to the force producing means in a first orientation when a first sense of force is desired so that said pulses are applied to said force producing means in a first sense, in a second orientation when a second sense of force is desired so that said pulses are applied to said force producing means in a second sense, and alternately in the first and second orientations when substantially no force is desired so that said pulses are alternately applied to said force producing means in the first and second senses.

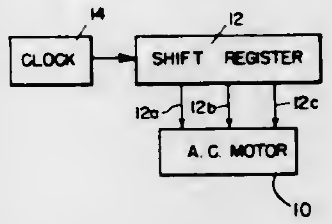


3,354,367
POLYPHASE DRIVE SYSTEM INCLUDING A SHIFT REGISTER

Thomas C. Stockebrand, Acton, Mass., assignor to Digital Equipment Corporation, Maynard, Mass.

Filed Jan. 12, 1965, Ser. No. 425,038

4 Claims. (Cl. 318—138)



1. A polyphase power source for driving an alternating current motor comprising a recirculating shift register having a plurality of electrical storage elements, the number of said elements corresponding to the number of phase windings in said motor, each of said elements producing an output signal having either one of two determined values, means defining a direct current path for electrically connecting the output signals from said elements to said motor, and means for supplying successive clock signals to said shift register, the elements of said shift register being interconnected such that upon application of said clock signals said elements produce signals having a determined phase relationship with one another and upon cessation of said clock signals said elements produce constant D.C. signals.

3,354,368
CONTROL SYSTEM FOR SYNCHRONOUS MOTOR

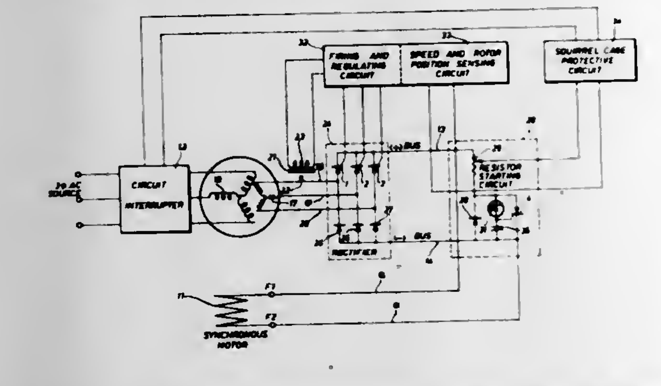
Dennis Francis Williamson, Peterborough, Ontario, Canada, assignor to Canadian General Electric Company, Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Jan. 28, 1965, Ser. No. 428,722

16 Claims. (Cl. 318—176)

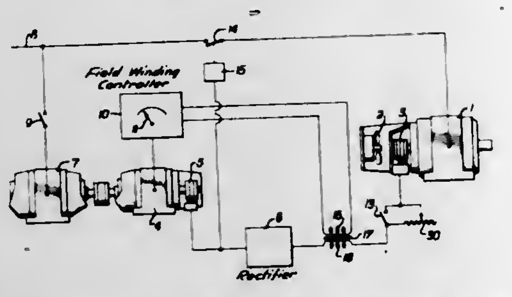
1. A system for controlling the starting and the excitation of a synchronous motor having a primary AC winding and a DC field winding comprising a resistance starting circuit having a field discharge resistance and unidirectional current conducting devices for connecting the resistance across said field winding during starting only of the motor; a circuit having at least one controlled unidirectional current conducting device for supplying unidirectional current to said field winding at a controlled rate during synchronous operation of the motor; a firing

circuit for intermittently rendering conductive the unidirectional current conducting device of said circuit; a sensing circuit responsive to rotor speed for suppressing firing of said firing circuit at rotor speeds below a predetermined speed set at a value a little below the synchronous speed and allowing firing of said firing circuit at rotor speeds above said predetermined speed; and a regulating circuit responsive to said unidirectional current for controlling the rate of firing of said firing circuit in inverse relation to the magnitude of said unidirectional current, whereby the field current is maintained relatively constant during synchronous operation of the motor.


CIRCUIT INTERRUPTER
FIRING AND REGULATING CIRCUIT
SPEED AND ROTOR POSITION SENSING CIRCUIT
SQUIRREL CAGE PROTECTIVE CIRCUIT
RESISTOR STARTING CIRCUIT
BUS
RECTIFIER
F1
F2
SYNCHRONOUS MOTOR

3,354,369
SYSTEM FOR CONTROLLING THE SPEED OR TORQUE OF ONE OR MORE INDUCTION MOTORS

John H. Wallace, West Haven, Conn., assignor to Emerson Electric Co., a corporation of Missouri
Original application Oct. 25, 1962, Ser. No. 232,944, now Patent No. 3,250,974, dated May 10, 1966. Divided and this application Feb. 14, 1966, Ser. No. 590,442
2 Claims. (Cl. 318—197)

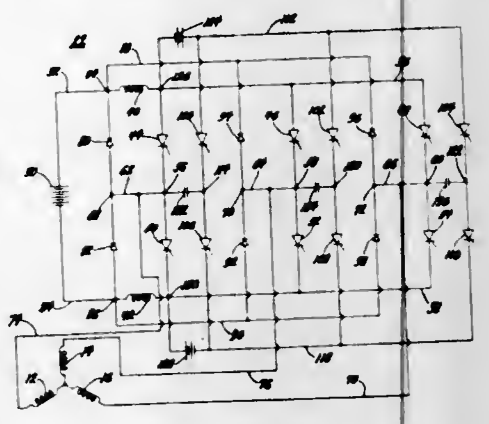


1. In combination: a drive induction motor having a wound rotor; a rectifier fed from the rotor; a regenerative unit having a direct current dynamo-electric machine, a magnetic field for the direct current machine, and an alternating current machine acting optionally as an induction motor or as an induction generator and coupled to the direct current machine; said drive motor rotor being mechanically separate from the direct current machine; means connecting the output of the rectifier to the direct current machine; a common source of electrical energy capable of connection to the drive motor and to the alternating current machine; a regulator for the magnetic field; and means responsive to the wound rotor current for controlling said regulator whereby torque of said drive motor is maintained substantially at a set value.

3,354,370
ELECTRICAL INVERTER HAVING SEPARATE SHUTOFF POWER SUPPLIES

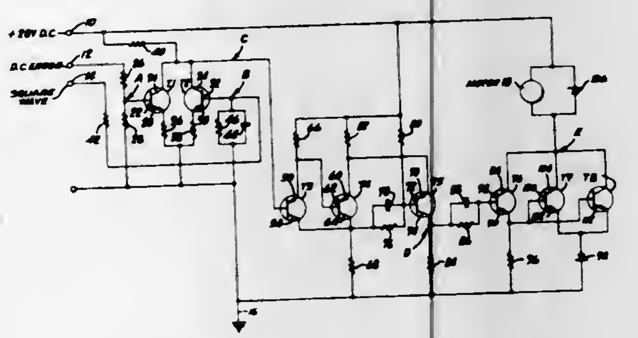
Thomas M. Corry, Goleta, and Richard W. Johnston, Santa Barbara, Calif., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 20, 1965, Ser. No. 457,386
5 Claims. (Cl. 318—227)

1. An inverter comprising, a pair of input conductors adapted to be connected wih a source of direct current, a plurality of pairs of power controlled rectifiers series connected across said input conductors, each pair of power controlled rectifiers being connected with an output terminal, first and second conductors energized respectively from shut-off power supplies, a plurality of pairs of shut-off controlled rectifiers series connected across said conductors connnected with a junction, a commutating capacitor connected between each output terminal of said pairs of power controlled rectifiers and each junction of said pairs of shut-off controlled rectifiers, and a diode connected across each power controlled rectifier, said diode being poled in such a direction as to form a bypass circuit for the discharge current of a commutating capacitor around the anode-cathode circuit of a respective power controlled rectifier.



3,354,371
PULSE WIDTH MODULATOR

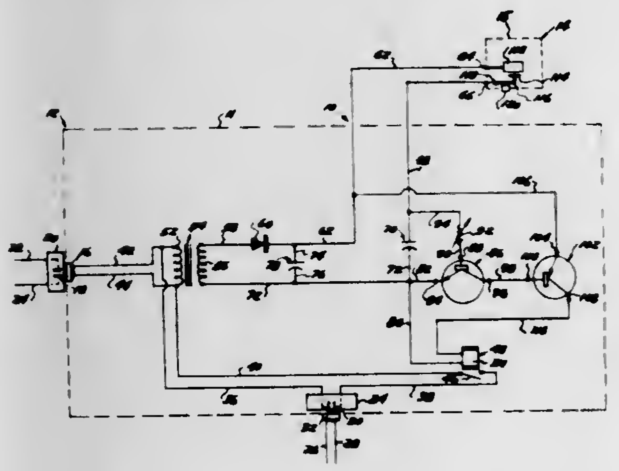
Gerald L. Ainsworth, Palo Alto, and James W. Hebb, Mountain View, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Feb. 12, 1964, Ser. No. 344,375
4 Claims. (Cl. 318—341)



1. A control system for regulating the supply of power to an electric motor in response to a DC error signal, comprising: a source of closely regulated square waves, an integrating capacitor coupled between the square wave source and ground, a first transistor having emitter, base, and collector, the base being coupled to the integrating capacitor, a second transistor having emitter, base, and collector, the base of the second transistor being coupled to receive the DC error signal, the collector of the second transistor being directly coupled to the collector of the first transistor, a third transistor having emitter, base, and collector, the base of the third transistor being coupled to the joined collectors of the first and second transistors, a fourth transistor having emitter, base, and collector, the base of the fourth transistor being coupled to the emitter of the third transistor, a fifth transistor having emitter, base, and collector, the emitter of the fifth transistor being directly joined to the emitter of the fourth transistor, the base of the fifth transistor being coupled directly to the collector of the fourth transistor, a sixth transistor having emitter, base, and collector, said sixth transistor connected in common collector configuration, the base of the sixth transistor being coupled to the collector of said fifth transistor, seventh and eighth transistors each having emitter, base, and collector, said bases of said seventh and eighth transistors connected to the emitter of said sixth transistor, said collectors of said seventh and eighth transistors connected to the collector of said sixth transistors, a diode coupling the emitters of said seventh and eighth transistors to ground, a power supply, said electric motor series connected between said power supply and the collectors of said sixth, seventh, and eighth transistors, and a diode in parallel with the electric motor.

3,354,372
DELAY-RESPONSIVE SHUT-OFF DEVICE FOR OPERATIONALLY - VIBRATING ELECTRIC EQUIPMENT

Jack O. Beasley, 7838 Terri Drive, Garden City, Mich. 48135
Filed Mar. 16, 1965, Ser. No. 440,080
7 Claims. (Cl. 318—460)



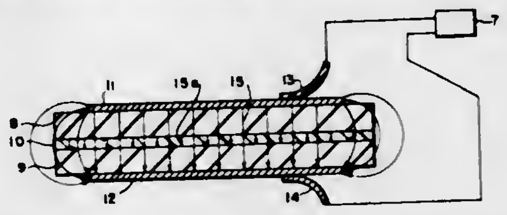
1. A delay responsive automatic shut-off arrangement for electric-motor-driven operational-vibration-emitting equipment, comprising

- an equipment motor energization circuit,
- a relay having an operating coil and a normally-open relay switch connected in controlling relationship with said motor energization circuit,
- a relay operating coil circuit effective upon energization to hold closed said normally-open relay switch,
- a normally-open operational-vibration-responsive control switch adapted to close in response to its reception of operational vibration from the equipment and adapted to open in response to cessation of such operational vibration,
- and electric means responsive to the closing of said control switch for energizing said relay operating coil circuit and responsive to a predetermined delay following such closing of said control switch for deenergizing said relay operating coil circuit.

3,354,373
FIXTURE FOR USE DURING THE POLARIZATION OF AN ELECTRET

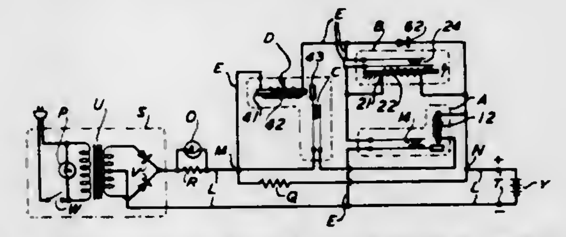
Peter Fatovic, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed May 14, 1964, Ser. No. 367,517
10 Claims. (Cl. 320—1)

7. A fixture for polarizing electret material comprising two flat electrodes adapted to sandwich electret material therebetween, and a virtually planar dielectric insulating plate separating the electret material from an electrode and having a dielectric constant which is greater than that of the electret material, said electrode being comprised of a metal coating adherently deposited on the dielectric insulating plate, covering the outside thereof except for a peripheral strip therearound, and further comprising clamping means for clamping the sandwich together and against the electret material so as to contain it wrinkle-free, and a base means for holding the plane of the sandwich in a vertical position during use.



3,354,374
CONTROL SYSTEM FOR BATTERY CHARGING

Austin W. Barry, Fanwood, N.J., assignor to G-V Controls Inc., Essex County, N.J., a corporation of New Jersey
Filed Dec. 27, 1965, Ser. No. 516,485
11 Claims. (Cl. 320—23)



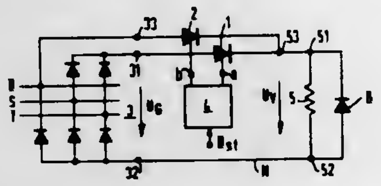
1. In a battery charger the combination, with a pair of terminals across which a battery may be connected and a two-conductor line through which fast-charge current may flow from a source to a battery present across said terminals, of a charge-sensing relay having an input circuit connected with said line and having an output switch operated in response to a state of completion of fast charge of a battery present across said terminals; a charge-current-reducing switching device connected with said line; control means for said switching device energizable to render and to maintain that device operative; means controlled by, and rendered operative in response to a state of operation of, said output switch for energizing said control means to render said switching device operative, said control means when said switching device is and said energizing means is not operative being connected in effective series relationship to said line for energization by a component of the reduced charge current thereby to maintain said switching device operative; and means rendering said charge-sensing relay ineffective during the flow of reduced or no charge current in said line.

3,354,375
THYRISTOR SYSTEM FOR CONTROLLING DIRECT CURRENT

Herbert Poppinger, Munich, Germany, Werner Volkmann, Erie, Pa., and Rainer Däubler, Kirchheim (Teck), Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Dec. 3, 1964, Ser. No. 416,198
Claims priority, application Germany, Dec. 5, 1963, S 88,572
9 Claims. (Cl. 321—5)

1. System for controlling the means value of a load current by periodic switching, comprising load buses, a first direct-current source and a first thyristor through which said first source is connected to said load buses for applying a first source voltage thereto, a second direct-current source having a periodic voltage which is at least temporarily zero and thereafter lower than said first source voltage in a first portion of each switching period and is higher than said first source voltage in the

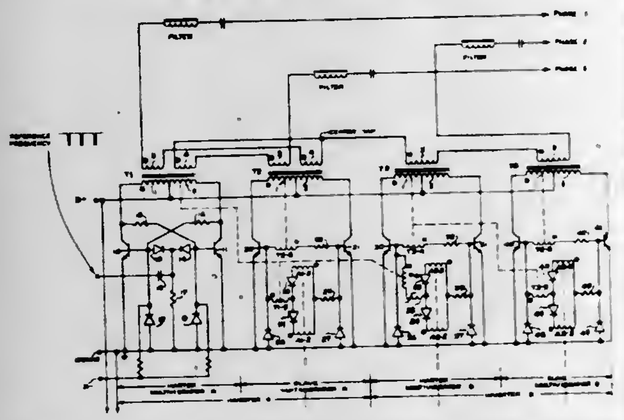
remaining portion of said period, a second thyristor through which said second source is connected to said load buses for applying said periodic voltage thereto, and



firing control means connected to said first and second thyristors for periodically firing them in sequence so as to energize said buses from said second source during said second portion of each period.

3,354,376
MASTER-SLAVE INVERTER VOLTAGE REGULATOR

Philip D. Corey, Crozet, and Loren H. Walker and Armistead L. Wellford, Waynesboro, Va., assignors to General Electric Company, a corporation of New York
Filed Dec. 11, 1964, Ser. No. 417,610
4 Claims. (Cl. 321—5)



1. In an inverter for producing three phase alternating current from direct current with first master and slave bistable circuits and second master and slave bistable circuits, said second master bistable circuit being slaved to said first master bistable circuit, a circuit for regulating said three phase alternating current comprising phase shift means coupled to said second master bistable circuit to shift the time of switching of said second master bistable circuit one-quarter cycle of said alternating current from the time of switching of said first bistable circuit; first means for controlling the time of switching between said first master and slave bistable circuits as a function of the relative magnitudes of the voltage between two of said phases and a reference voltage; second means for controlling the time of switching between said second master and slave bistable circuits as a function of the relative magnitudes of the voltage between two other of said phases and said reference voltage; and third means for controlling the time of switching between said first and second master bistable circuits about said one-quarter cycle point as a function of the relative magnitudes of the voltage between two other of said phases and a reference voltage.

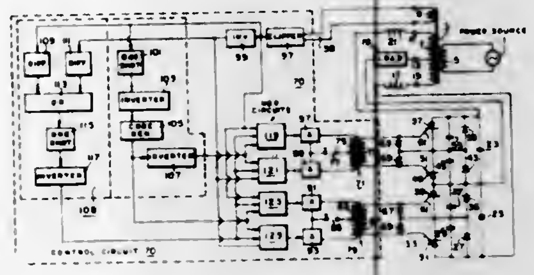
3,354,377
ELECTRICAL WAVE SHAPING APPARATUS AND CONVERSION APPARATUS

J. Venn Leeds, Jr., Houston Tex., assignor to Esso Production Research Company, a corporation of Delaware
Filed Aug. 5, 1965, Ser. No. 477,404
4 Claims. (Cl. 321—8)

2. Apparatus for controlling the phase of an alternating current applied to a load in accordance with the pulsed output signal of a binary code pulse generator, comprising:

power source means having a balanced output circuit winding having first and second outer terminals and a neutral terminal;

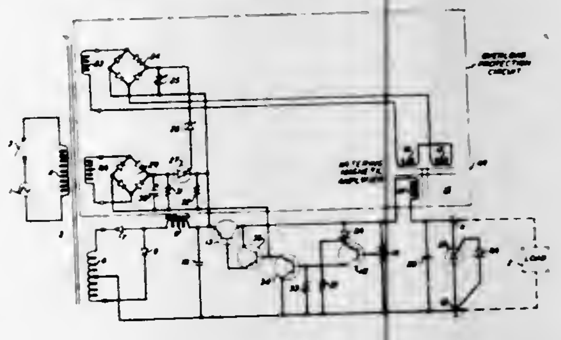
first and second circuit means including first and second circuit output bridge rectifiers for connecting the load between the neutral terminal and said first and second outer terminals, each of said first and second bridge rectifiers including a controlled rectifier having a control electrode for controlling current conduction therethrough in each of the conduction paths thereof; and



circuit means coupled to the control electrode of each of said controlled rectifiers and for connection to the code generator to render conductive the controlled rectifiers in said first bridge rectifier when said code generator produces a binary 1 signal at a polarity reversal across said balanced output circuit from a given polarity to the opposite polarity, and to render conductive the controlled rectifiers in said second bridge rectifier when said code generator produces a binary 0 signal at a polarity reversal across said balanced output circuit from said given polarity to the opposite polarity.

3,354,378
REGULATED POWER SUPPLY WITH OVERLOAD AND OVERVOLTAGE PROTECTION

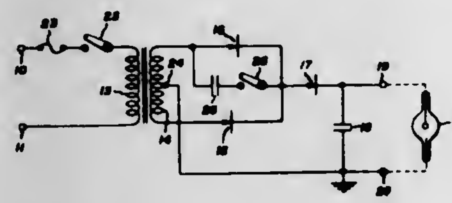
William E. Jewett, Basking Ridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 8, 1964, Ser. No. 416,838
6 Claims. (Cl. 321—14)



1. In a power supply of the type wherein a source of alternating-current voltage is applied through a first rectifier and a semiconductor regulating element to a pair of output terminals to supply a current to a load, a protective circuit comprising a magnetic amplifier having a primary winding connected serially with said regulating element to carry a current flowing to said output terminals and having a secondary winding, a second rectifier and means for coupling said source of alternating-current voltage serially across said secondary winding of said magnetic amplifier and said second rectifier to produce a rectified voltage directly related to the current flowing through said primary winding of said magnetic amplifier, a semiconductor controlled rectifier having a principal current path and a control current path, a Zener diode connected serially with said control current path across said second rectifier in a polarity to conduct in its Zener direction when said rectified voltage exceeds a maximum value, a third rectifier, means for coupling said source of alternating current voltage across said third rectifier to produce a rectified current, means for connecting said principal current path to said third rectifier to receive a rectified current after said Zener diode conducts, said rectified current stably exceeding the inherent holding current of said semiconductor controlled rectifier, and means for applying said rectified current to reverse bias said semiconductor regulating element.

3,354,379
RECTIFIER CIRCUIT WITH VOLTAGE MULTIPLICATION

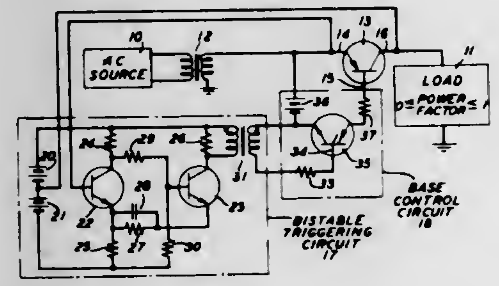
David L. Swain, La Canada, Calif., and Edward I. Lynch, East Syracuse, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 26, 1966, Ser. No. 523,082
3 Claims. (Cl. 321—15)



3. In combination a transformer having a primary winding and a secondary winding, a pair of unilaterally conducting devices each having an anode and a cathode, each anode connected to a respective end of said secondary winding, and the cathodes connected together, a third unilaterally conducting device having a cathode and an anode, the anode connected to the terminals of opposite polarity of said pair, a load circuit shunted by a capacitor, said load circuit connected between the cathode of said third device and a center tap on said secondary winding, a second capacitor shunting one of said pair of unilaterally conducting devices.

3,354,380
TRANSISTOR SWITCHING RECTIFIER WITH CONTROLLED CONDUCTION

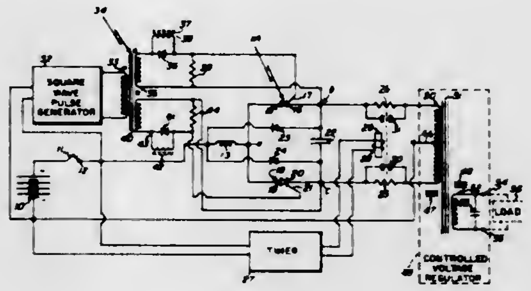
Gale S. Fly and Charles M. Leshe, Winston-Salem, N.C., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 28, 1965, Ser. No. 516,938
5 Claims. (Cl. 321—18)



1. In a rectifier for supplying power from a source of alternating current to a load which may have a power factor other than unity, at least one switching transistor having its emitter-collector path connected from one side of said source to one side of said load to convert the alternating current from said source to direct current, a bistable trigger circuit connected to switch to a first state of equilibrium when the voltage across the emitter-collector path of said transistor rises above the first predetermined level and to switch to a second state of equilibrium when said voltage falls below a second predetermined level, and means to switch said transistor into its conducting state when said trigger circuit switches into said first state of equilibrium and to switch said transistor back into its nonconducting state when said trigger circuit switches into said second state of equilibrium, whereby the time said transistor is in its conducting state is limited to the portion of each operating cycle during which said source supplies power to said load.

3,354,381
D.C. TO A.C. INVERTER CIRCUIT

Trevor Temple, Kingston, N.H., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Jan. 9, 1963, Ser. No. 250,340
12 Claims. (Cl. 321—45)



8. A D.C. to A.C. inverter circuit for providing a source of standby A.C. power from a D.C. source having positive and negative terminals, said inverter circuit comprising:

an inductor connected in series with one of the terminals of the D.C. source for providing isolation of the commutating current;

a pair of controlled rectifiers each having an anode, a cathode and a control-electrode, the anodes of said rectifiers connected in parallel with each other and in series with said inductor;

each of said control electrodes connected to a pulse generator, said generator being coupled across the D.C. source and provides a source of square wave actuating signals to alternately initiate conduction of each of said controlled rectifiers;

two diodes each having an anode and a cathode, each of said cathodes of said diodes electrically connected in parallel with each other and in series with said one terminal of the D.C. source, each of said anodes of said diodes connected to the cathode of one of said rectifiers;

a commutating capacitor connected across the cathodes of said rectifiers;

a controlled voltage regulator for converting the square wave produced by the alternate conduction of the controlled rectifiers to an A.C. signal;

two resistors, one of which is connected between one end of the voltage regulator and the cathode of one of said rectifiers and the other of which is connected between the other end of the voltage regulator and the cathode of the other of said rectifiers, said resistors providing current surge protection, insuring the charging of said commutating capacitor and providing means to permit the circuit to purge itself of residual flux;

a shunting contact connected across each of said resistors; and

means connected across the D.C. source for shorting said contacts after sufficient time has elapsed to allow the inverter circuit to purge itself of residual flux, thereby allowing the regulator to supply full voltage to a load.

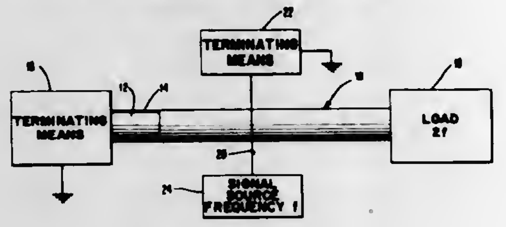
3,354,382

FREQUENCY DOUBLER WHEREIN TWO WIRES ARE PLACED IN AN ORTHOGONAL RELATIONSHIP WITH ONE WIRE HAVING A MAGNETIC FILM COATING

Lester M. Spandorfer, Cheltenham, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed June 29, 1965, Ser. No. 468,013

6 Claims. (Cl. 321—60)



6. In combination,
a first wire,
a thin anisotropic magnetic film coated onto said first wire and having its easy axis of anisotropy circumferential about the axis of said first wire,
a second wire placed into substantially orthogonal relationship with said first wire, and substantially juxtaposed therewith,
an alternating current source for providing an alternating current at a fixed frequency f, said source being coupled to one end of said second wire, and being of such magnitude that alternating current at twice said frequency f is induced in said first wire, and
a load circuit coupled to said first wire, said load circuit being adapted to utilize said alternating current at said frequency $2f$.

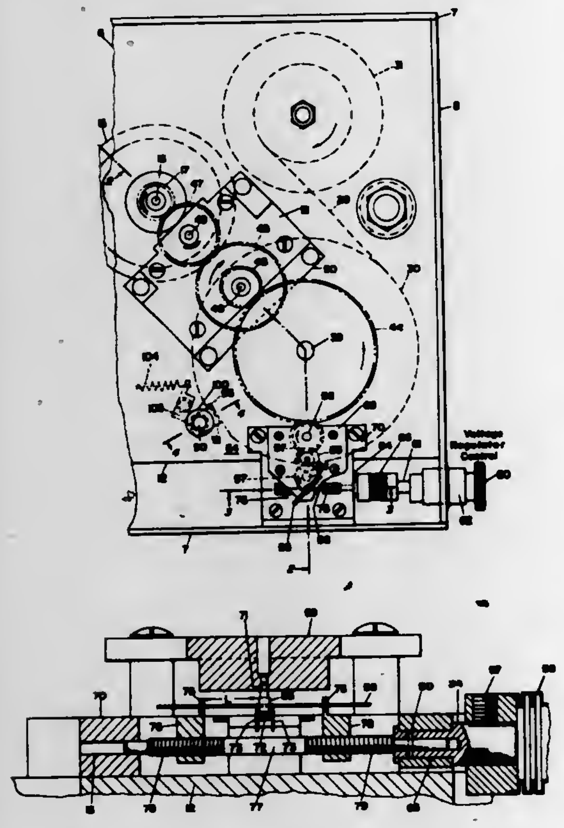
3,354,383

SPRING POWERED AND REGULATED GENERATOR

Walter T. Weismann, Hackettstown, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Aug. 27, 1964, Ser. No. 392,666

10 Claims. (Cl. 322—29)



8. A spring-powered electric generator unit comprising in combination, a constant-torque spring motor, an electric generator connected to be driven thereby as a rotary load with relatively low inertial coupling, and means connected with said motor for adjusting the generator speed and voltage output to different levels and maintaining the adjusted level substantially constant, said last named means including an escapement mechanism having an oscillatory pallet with a hair-spring control element of variable effective length to set the speed of operation and voltage output of the generator.

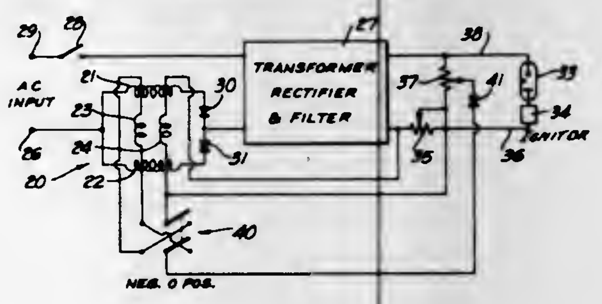
3,354,384

POWER SUPPLY IMPEDANCE CONTROL WITH POSITIVE SLOPE

Fred Benjamin, Fullerton, Calif., assignor to Christie Electric Corporation, Los Angeles, Calif., a corporation of California

Filed July 30, 1964, Ser. No. 386,354

13 Claims. (Cl. 323—89)



6. In an impedance control for a power supply for a xenon arc lamp, the combination of:
a power source having an output;
control means for varying the power output of said power source;
voltage detector means connected across the output of said power source and producing a control signal varying as a function of the output voltage of said power source; and
circuit means for connecting said control signal to said control means in controlling relation for increasing the output of said power source as said output voltage increases for increasing the output current.

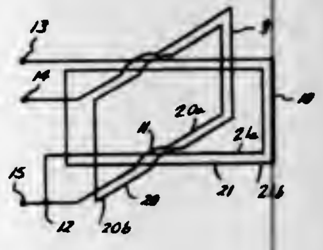
3,354,385

ELECTROMAGNETIC INSPECTION SYSTEM UTILIZING SEARCH COILS NESTED WITHIN ONE ANOTHER

Fenton M. Wood, Sugarland, and William T. Walters, Houston, Tex., assignors to American Machine and Foundry Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 29, 1964, Ser. No. 363,569

3 Claims. (Cl. 324—37)



1. An electronic search coil assembly suitable for use in the flaw inspection of a conductive elongate tubular member, comprising:
an inspection shoe positioned adjacent the exterior surface of said member, adapted to be moved relative to said surface,
a first search coil mounted in said inspection shoe, said coil circumscribing at least a first open loop, said loop substantially defining a planar coil face,
one part of said loop constituting a straight portion, and
a second search coil mounted in said inspection shoe in nesting relationship with said first coil, said coil circumscribing at least a second open loop of approximately the same size as said first loop, and said second loop also substantially defining a second planar coil face,
one part of said second loop constituting a straight portion,
said straight portion of said first loop and said straight portion of said second loop being disposed in a common plane which is substantially parallel to a tangential plane passing through the points on said conductive member nearest said coil assembly,
the face of said first loop intersecting the face of said second loop, and means to energize said first and second search coils to thereby induce flux into the surface of said conductive member,
whereby flux emanating from the conductive member intersects said first coil face at a different angle from the angle with which said flux intersects said second coil face.

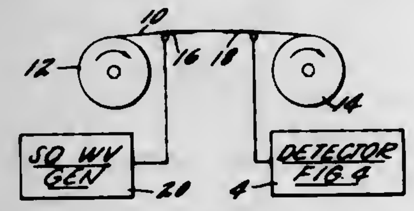
3,354,386

APPARATUS FOR DETECTING DISCONTINUITIES IN INSULATED CONDUCTORS INCLUDING CAPACITIVELY COUPLED SCHMITT TRIGGER MEANS

Louis J. Daigle, Manchester, and William Cohen, West Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Nov. 16, 1966, Ser. No. 594,914

1 Claim. (Cl. 324—51)



Apparatus for detecting discontinuities in insulated conductors comprising:
means for moving an insulated electrical conductor longitudinally along a predetermined path;
first and second longitudinally spaced contact means disposed along said predetermined path, each of said contact means contacting the insulation of said electrical conductor as it moves along said path, each of said contact means consisting solely of an electrically conductive plate having a finite area so as to form one plate of a respective capacitor, the other plate of the capacitor so formed with each contact means comprising the conductor under test;
a source of alternating electrical current connected to one of said contact means;
a detector connected to the other of said contact means, said detector comprising a Schmitt trigger having a pair of alternatively operable outputs;
a binary trigger settable to opposite ones of a pair of stable states in response to corresponding outputs from said Schmitt trigger;
a pair of pulse stretchers, each connected to a respective output of said binary trigger;
means connected to the outputs of said pulse stretchers for detecting the absence of a signal from both of said pulse stretchers concurrently;
bistable means responsive to said last named means to be set into a first state, and responsive to one of said pulse stretchers to be set into a second state;
and means responsive to the setting of said bistable means into said first state for providing an indication of a discontinuity in the conductor under test.

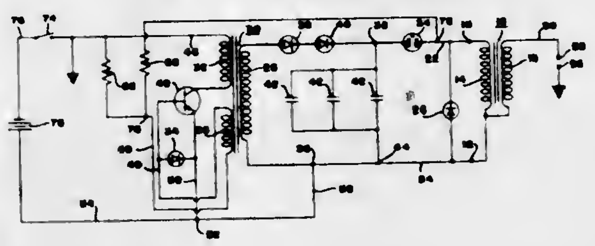
3,354,387

PORTABLE IGNITION COIL TESTER HAVING A TRANSISTOR OSCILLATOR POWER SUPPLY

John A. Whaley and Robert L. Lochmann, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 16, 1964, Ser. No. 351,960

6 Claims. (Cl. 324—55)



1. An ignition coil tester having an oscillator power supply comprising, a transformer having a primary winding, a secondary winding and a feedback winding, a transistor having emitter, collector and base electrodes, a source of direct current, means connecting the emitter and collector electrodes of said transistor in series with said source of direct current and in series with said primary winding, means connecting said feedback winding with the base of said transistor and with one terminal of said source of direct current, at least one capacitor, a charging circuit including a diode connecting said capacitor across said secondary winding, a discharge tube having a predetermined break down voltage, a pair of output terminals for said tester adapted to be connected across the primary winding of an ignition coil to be tested, means connecting said discharge tube in a series discharging circuit including said capacitor and said pair of output terminals of said tester, the junction of said battery source and an electrode of said transistor being connected in series with one of said output terminals, and circuit means serially connecting the other of said output terminals with the means connecting said feedback winding with said one terminal of said direct current source terminal and said transistor base electrode so that said oscillator is operating normally when connected to a normally closed primary of said ignition coil and is operating abnormally when connected with the primary winding of an ignition coil that is open.

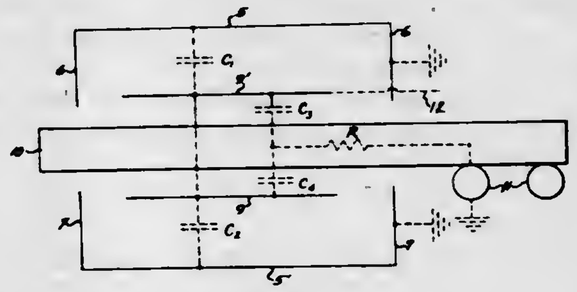
3,354,388

METHOD FOR MEASURING THE MOISTURE CONTENT OF WOOD

William D. Perry, Longview, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

Filed Dec. 31, 1962, Ser. No. 248,573

1 Claim. (Cl. 324—65)



A method of measuring the moisture content of a wood sample, comprising the steps of:
providing opposed, spaced electrodes having a hollow measurement site between them;
positioning a portion of said sample within said measurement site but spaced from said electrodes;
grounding said sample;

applying an alternating current potential between said electrodes and ground, such that the potential applied to said electrodes at any instanst is of the same magnitude and same polarity; and

measuring the flow of current between said electrodes and ground, whereby the measured current can be related to the internal resistance of said wood sample and to the moisture content thereof.

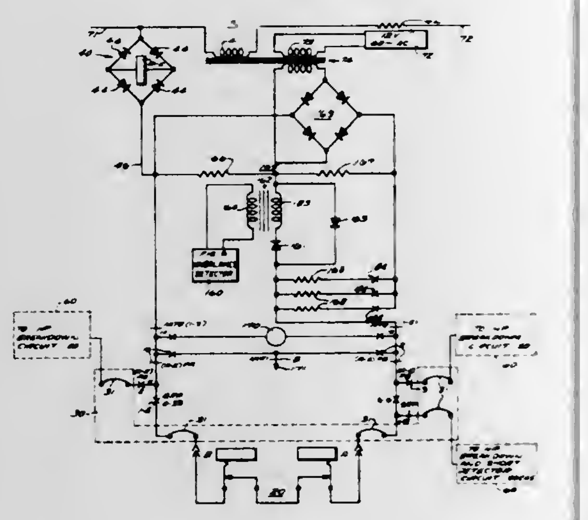
3,354,389

AUTOMATIC HIGH SPEED TEST APPARATUS FOR TESTING CONTINUITY AND SHORTS SIMULTANEOUSLY ON A PLURALITY OF CIRCUIT PATHS

Theodore L. Hordosi, Berkeley Heights, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 24, 1963, Ser. No. 318,606

9 Claims. (Cl. 324—73)



1. An apparatus for simultaneously testing a plurality of circuits for continuity and short circuit conditions comprising:

a power supply,

a plurality of transformers equal in number to the number of circuits under test, each transformer having a primary winding and a pair of secondary windings, the primary winding of each transformer being connected to the power supply and a first one of said secondary windings being connected in series with the like secondary winding of each transformer,

a plurality of short circuit detectors, each connected to a first one of said secondary windings,

a plurality of rectifying circuits,

a plurality of bridge circuits, each connected to a second one of said secondary windings through a rectifying circuit, and comprising a pair of ratio arm resistors, an arm including a standard resistance, and an arm designed to include the circuit to be tested,

an individual transformer connected across each bridge circuit,

an unbalance detector coupled to each individual transformer and actuable by a bridge unbalance signal when the resistance of the circuit under test is equal to or less than the standard resistance,

means for connecting successive groups of circuits to the bridge circuits for simultaneous testing, and

means coupled to each unbalance detector and each short circuit detector and responsive to a fault condition in at least one of the circuits under test for indicating the fault and stopping the progression of the test.

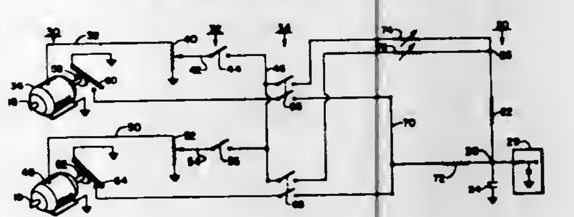
3,354,390

SIGNAL COMPARATOR USING CAPACITOR CHARGE AND DISCHARGE RATES

John M. Green, Pensacola, and Perry F. McKinney, Milton, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed June 3, 1963, Ser. No. 284,866

8 Claims. (Cl. 324—79)



1. A signal analyzer comprising in combination:

(a) a time constant circuit including a resistance and a capacitance connected in series between first and second terminals,

(b) a plurality of direct current signal sources, each said source having one terminal connected to said second terminal and having a remaining terminal,

(c) a numerator selector switch for connecting said remaining terminal of a selected one of said sources to a numerator terminal,

(d) a plurality of discharging switch means actuated at repetition rates proportional to corresponding variables,

(e) denominator selector switch means for connecting a selected one of said discharging switch means in parallel with said capacitor and for connecting said numerator terminal to said first terminal,

(f) and output means connected in parallel with said capacitor.

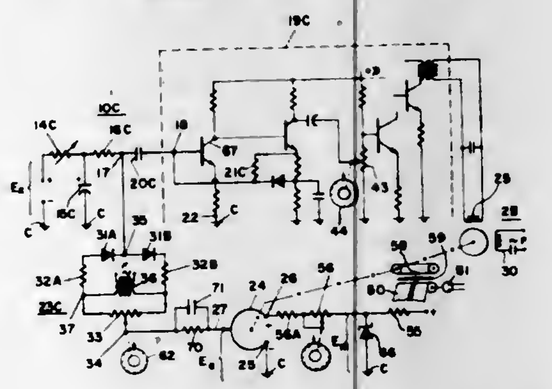
3,354,391

SERVO-TYPE MEASURING APPARATUS INCLUDING MODULATOR AND ANTI-HUNT MEANS MATCHED TO THE INPUT OF THE SERVO AMPLIFIER

James F. Payne, Jr., Abington, Pa., assignor to Leeds & Northrup, a corporation of Pennsylvania

Filed Feb. 24, 1964, Ser. No. 346,914

3 Claims. (Cl. 324—99)



1. A self-balancing system for measuring the unknown voltage of a DC source having output terminals respectively connected to a summing point and a common connection comprising

a transistor amplifier of the type having low input impedance and which has input terminals respectively connected to said summing point via coupling capacitance means and to said common connection,

means for producing an opposing DC voltage of known variable magnitude comprising a potentiometer network having a terminal connected to said common connection and including a balancing slidewire having a relatively adjustable contact,

reversible motor means energized by output-pulses of said amplifier and mechanically coupled to said slidewire,

a modulator connected solely between said slidewire contact and said summing point to provide for said amplifier input-pulses of polarity dependent upon the sense of unbalance of said known and unknown DC voltages,

continuously conductive constant impedance means providing the connection from said summing point to the corresponding terminal of said DC source of unknown voltage, the impedance of said continuously conductive constant impedance means being at least of the order of magnitude of the input impedance of said amplifier for enhanced conversion efficiency of said modulator, said continuously conductive constant impedance means jointly with said coupling capacitance means and the input impedance of the amplifier providing a damping component of said input-pulses which is proportional to slidewire velocity and is in algebraic addition to the error component corresponding with the difference between said opposed known and unknown voltages, and

a lead network in series with the modulator between said summing point and said slidewire contact to provide a supplemental damping component of said input-pulses which is proportional to slidewire velocity and is in algebraic addition to the error component corresponding with the difference between said opposed known and unknown DC voltages.

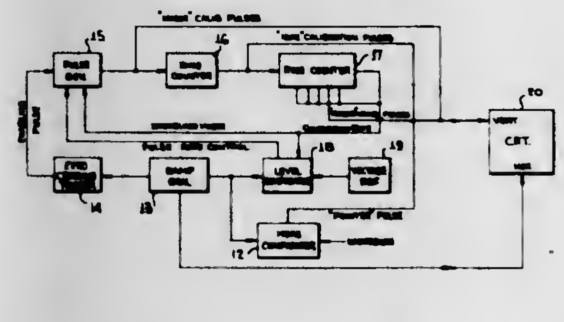
3,354,392

CATHODE RAY VOLTMETER USING SWEEP SIGNAL FOR SCALE GENERATION AND FOR INPUT SIGNAL LEVEL COMPARISON

Harold R. Newell, South Newbury, N.H., assignor to Mesur-Matic Electronics Corporation, Warner, N.H., a corporation of Delaware

Filed Sept. 2, 1964, Ser. No. 393,908

16 Claims. (Cl. 324—121)



16. Apparatus for indicating the level of an input signal on a display screen illuminated by the deflection of an electron beam comprising sweep circuit means for deflecting said beam along said screen to provide a scale base line, calibration signal means for repetitively deflecting said beam at preselected points along said scale base line to provide scale indicia and means for comparing the levels of said calibration signal and said input signal to produce a deflection of said beam along said base line at a point at which the levels of said signals are equal.

3,354,393

MECHANICAL APPARATUS FOR SUPPORTING A MAGNETIC CORE AND ELECTRICAL TEST CIRCUITRY THEREFOR

William L. Blackburn, Laurel Springs, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed May 18, 1964, Ser. No. 368,174

3 Claims. (Cl. 324—158)

1. Magnetic core testing apparatus comprising

a horizontal support plate,

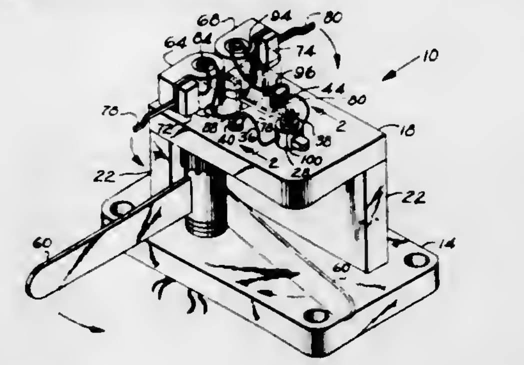
an insulating support member mounted vertically on said support plate,

a pair of conductive pins mounted in said insulating support member and extending vertically therefrom,

said pins being insulated from each other and adapted to be threaded through a toroidal magnetic core with the core seated on the insulating support post,

a pair of hollow insulating support posts mounted for rotation about vertical axes on said support plate remote from said insulating support member,

a contact arm secured to each support post and extending horizontally therefrom,



a first pair of conductive leads extending one from a contact arm and one form a conductive pin through the one hollow post for connection to test circuitry and a second pair of conductive leads extending one from the other contact arm and one from the other conductive pin through the other hollow post for connection to test circuitry,

said contact arm being rotatable in horizontal planes by said support posts into and out of contact with said conductive pins whereby two conductive test loops are provided for applying signals to and extracting signals from the magnetic core under test.

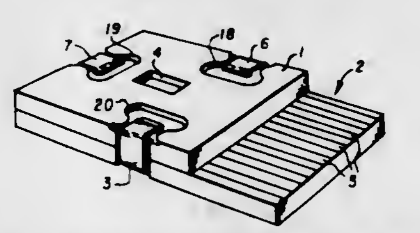
3,354,394

RECEPTACLE FOR TRANSISTORS OR INTEGRATED CIRCUITS TO BE TESTED

William R. James, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Continuation of application Ser. No. 387,863, Aug. 6, 1964. This application Jan. 12, 1967, Ser. No. 608,940.

1 Claim. (Cl. 324—158)



A receptacle adapted to receive a semiconductor device for testing, said semiconductor device having a plurality of external leads, said receptacle comprising:

(a) separable top and bottom sections of substantial electrically non-conductive material;

(b) said top section having a cavity receiver portion within a major face thereof, said cavity receiver portion having resilient pressing means therein;

(c) said bottom section having an opening in a major face thereof and extending vertically throughout said bottom section including another opening extending vertically from said cavity receiver portion throughout said top section, both of said openings being superimposed whereby said semiconductor device is exposed within said opening;

(d) a plurality of metallic strips in spaced-apart relationship upon said major face of said bottom section, said plurality of metallic strips extending from said opening and having end portions terminating at a single surface area of said major face;

(e) said top section covering said bottom section and so positioned to enable said resilient pressing means to effect contact between said plurality of external leads of said semiconductor device and said plurality of metallic strips;

(f) said top section being of smaller area than said bottom section so that said end portions of said metallic strips at said single surface area remain uncovered by said top section, thereby to enable said single surface area to be inserted in a test socket; and

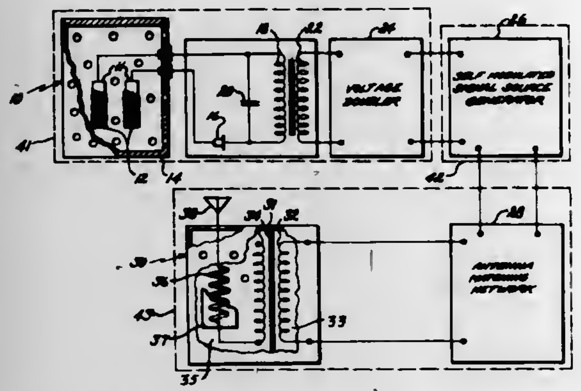
(g) a removable spring clamp for locking said top and bottom sections together.

3,354,395
AUTOMATIC EMERGENCY SIGNALING BEACON

John Wayne Merck, Glen Burnle, and Irving F. Barditch, Baltimore, Md., assignors by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

Filed Aug. 9, 1965, Ser. No. 478,494

1 Claim. (Cl. 325—116)



A self powered automatic emergency signaling beacon comprising: a sea water battery power supply, having electrodes of magnesium and amalgamated copper said electrodes being covered with a water soluble coating of polyvinyl alcohol; a controlled tunnel diode converter for changing the direct current of the battery into alternating current; a transformer connected to the converter for increasing the voltage of the battery power supply; a voltage doubler connected to the transformer for further increasing the voltage; a voltage controlled oscillator connected to said voltage doubler for generating a radio frequency signal; and a spring loaded waterproof antenna adapted to extend when immersed in water for emitting said signals when connected to the said oscillator.

3,354,396
DEVICE FOR GENERATING AN ELECTRIC SIGNAL COMPOSED OF AT LEAST TWO INTERLACED SIGNALS OF DIFFERENT BUT RELATING FREQUENCIES

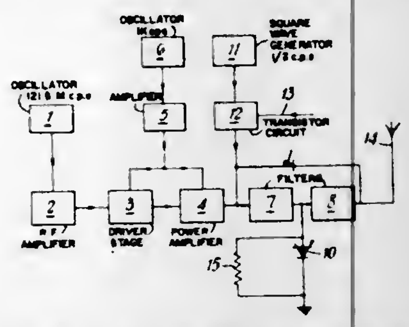
John N. Whittaker, Edgeware, and Peter W. Carney, Stanmore, England, assignors to Elliott Brothers (London) Limited, London, England, a company of Great Britain

Filed Nov. 16, 1964, Ser. No. 411,324

Claims priority, application Great Britain, Nov. 22, 1963, 46,239/63

13 Claims. (Cl. 325—153)

2. An electric signal generating device comprising means for generating a first signal at a first selected carrier frequency, means for modulating the first signal at a selected modulating frequency, means for applying the modulated first signal to second signal generating means operable in response to the first signal to generate a second signal modulated at the same frequency as the first signal and having a second carrier frequency which is a harmonic of the first carrier frequency, a unidirectional current conducting device connected across said second signal generating means to by-pass said second signal generating means when in the conducting condition, and switch means operable at a selected switching frequency to apply a bias signal to said unidirectional current device and said second signal generating means in the sense to switch said unidirectional current device between the conducting and non-conducting condition and said second signal generating means between the inoperative and operative condition to produce an output signal composed of said first and second signals interlaced with each other.

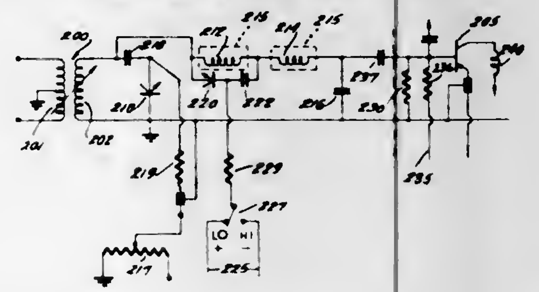


3,354,397
VOLTAGE VARIABLE DIODE CAPACITANCE TUNABLE CIRCUIT FOR TELEVISION APPARATUS

Karl Heinz Wittig, Los Angeles, Calif., assignor to Standard Kollsman Industries, Inc., Melrose Park, Ill., a corporation of Illinois

Filed Feb. 12, 1964, Ser. No. 344,317

21 Claims. (Cl. 325—459)



21. In a radio receiver, at least one tunable stage operating with a voltage-controlled diode element circuit connected to an inductive element for resonant tuning to a selected frequency by a continuously variable reverse polarity voltage, the improvement comprising: an additional voltage controlled diode element, additional inductance means circuit connected thereto, and a forward-reverse voltage polarity source for selectively switching said additional voltage-controlled diode element between a reverse and forward conducting condition to selectively switch the operating frequency of the tunable stage between predetermined frequency bands.

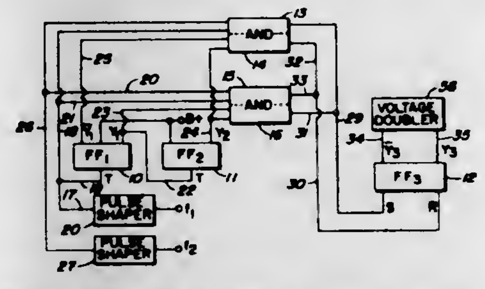
3,354,398
DIGITAL FREQUENCY COMPARATOR

Samuel L. Broadhead, Jr., Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed June 7, 1965, Ser. No. 461,769

20 Claims. (Cl. 328—133)

1. A frequency comparator comprising: a first signal receiving means and a second signal receiving means for receiving two signals of different frequencies to provide two outputs signals respectively having a first and a second frequency; first divider means for dividing at least one of said frequencies to provide a third and fourth output signal at a third frequency, said third and fourth outputs having different phases, second divider means for dividing said third frequency to provide a fifth output signal at a fourth frequency; four signal combining circuits, each of said combining circuits receiving two of said five output signals to provide two combined signals each of said five output signals going to at least one of said combining circuits, a determining circuit having two input terminals, each of said input terminals receiving one of said combined signals to provide an output from said determining circuit the polarity of which is dependent upon which of said combined signals has the highest frequency.

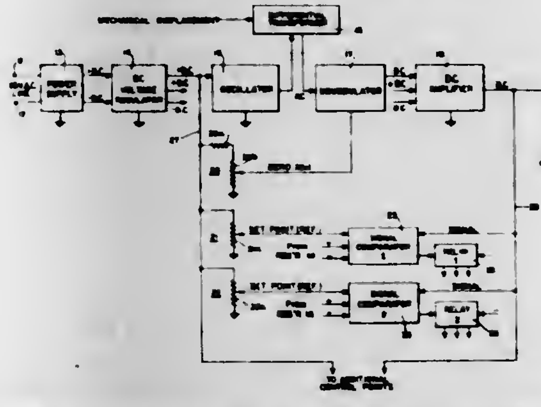


3,354,399
AMPLITUDE AND POLARITY SENSITIVE CONTROL SYSTEM

Grover K. Houpt, Lansdale, and Vernon Whittaker, Hatboro, Pa., assignors to Automatic Timing and Controls, Inc., King of Prussia, Pa.

Filed June 23, 1964, Ser. No. 377,228

4 Claims. (Cl. 328—147)



1. A control system for use with a variable transducer which modifies an input signal thereto as a function of a change in condition therein to produce an output signal, said system comprising:

(a) a source of a predetermined DC voltage,

(b) means coupled to said source for producing in response thereto an AC signal whose amplitude corresponds to the amplitude of said DC voltage, said producing means supplying said AC signal as the input to said transducer,

(c) means adapted to be coupled to said transducer for converting the output signal thereof to an output DC voltage corresponding thereto, and

(d) means to which said predetermined DC voltage and said output DC voltage are applied for controlling the operation of at least one utilization circuit in response to said applied DC voltages.

3,354,400
MAXIMUM AMPLITUDE DETECTOR CIRCUIT OF MAIN LOBE IN $\frac{\sin x}{x}$ WAVEFORM

Emery Heber, West Orange, and Nean K. Lund, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 24, 1964, Ser. No. 377,770

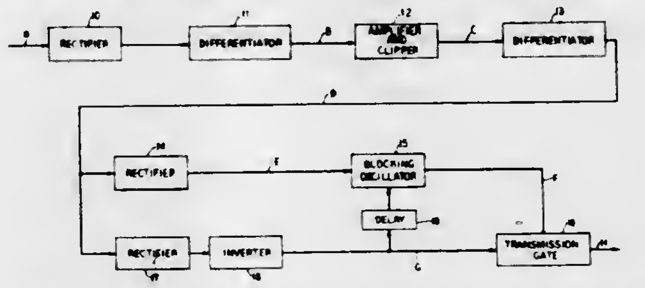
4 Claims. (Cl. 328—150)

1. A system for producing an output pulse corresponding in time to substantially the maximum amplitude of the main lobe only of a

$$\frac{\sin x}{x}$$

type of pulse wave train, said system comprising

means responsive to said side and main lobes to produce substantially square waves corresponding in time to substantially the positive going portions of said side and main lobes whereby the duration of said square wave corresponding in time to the positive going portion of said main lobe exceeds the durations of said square waves corresponding in time to the positive going portions of said side lobes,



means connected to the first-mentioned means to discriminate against said square waves corresponding in time to the positive going portion of said side lobes and producing an output pulse in response to the trailing edge of the relatively longer duration square wave corresponding in time to said positive going portion of said main lobe, and

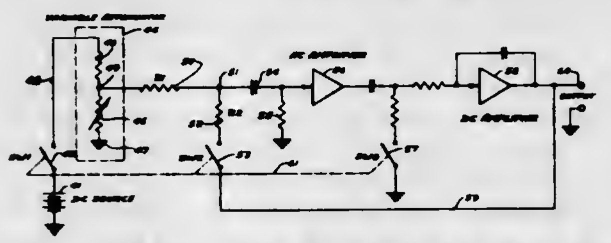
an output terminal connected to said discriminator to make available the output of said discriminator.

3,354,401
IMPEDANCE NETWORK SYSTEM

Tenny Lode, Mankato, Minn., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota

Filed Mar. 27, 1964, Ser. No. 355,275

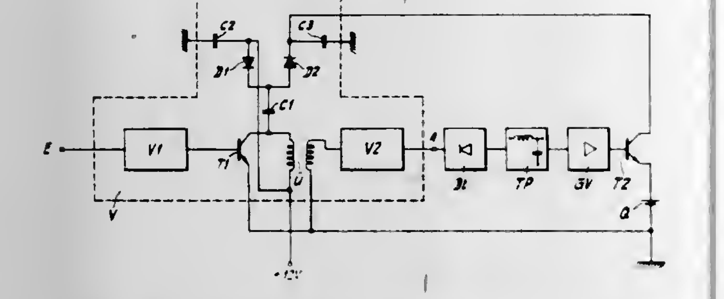
11 Claims. (Cl. 330—10)



1. An impedance network system for generating electrical signals which are a function of the impedance of a variable impedance element, said system including a variable attenuator having an element of variable impedance, said variable attenuator having an input section and an output section; means for impressing a first pulsating electrical signal at a particular frequency on said attenuator input section to produce at said output section a second electrical signal which is representative of a function of the impedance of said variable impedance element; a summing network having first and second input sections and an output section, said attenuator output section feeding said first summing network input section; an AC amplifier having an input circuit fed from said summing network output section and having an output circuit; a demodulator stage having an input section fed from said AC amplifier output circuit and having an output section; a modulator including an input section fed from said demodulator output section, an output section, and further including means therewith to modulate electrical signals impressed on said modulator input section with a pulsating electrical signal at said particular frequency and to impress said modulated signals on said output section; means to feed said signals from said modulator output section to said second input section of said summing network in bucking relationship to said second electrical signal at said first summing network input section; and means in said demodulator stage for removing the pulsating signal components at said particular frequency from the electrical signals impressed on said demodulator stage input section to provide a DC signal at the output section of said demodulator stage.

3,354,402
CIRCUIT ARRANGEMENT FOR THE AMPLIFICATION OF A.C. VOLTAGES

Peter Aemmer and Karl Schmutz, Zurich, Switzerland, assignors to Albiswerk Zurich A.G., Zurich, Switzerland
Filed Oct. 8, 1963, Ser. No. 314,736
Claims priority, application Switzerland, Oct. 8, 1962, 11,800/62
4 Claims. (Cl. 330—24)

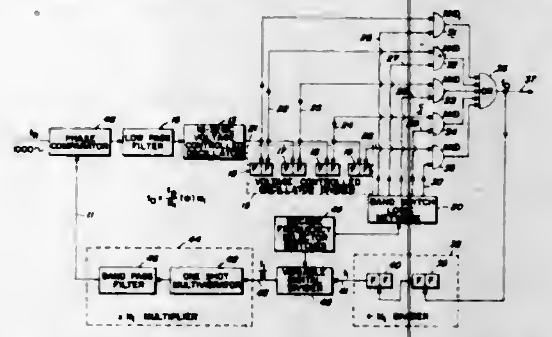


1. An A.C. amplifier arrangement including a multistage, automatically controlled, A.C. potential amplifier means having transformer means coupling successive stages; means applying amplitude modulated A.C. input signals to the input of the amplifier arrangement; detector means connected to the output of the amplifier arrangement and generating a pulsating unidirectional voltage having a level proportional to the A.C. potential produced by the amplifier arrangement; a low-pass filter connected to the output of the detector means; D.C. amplifier means connected to the output of the filter; a transistor having a base, an emitter and a collector, the D.C. amplifier output being connected directly to the base of the transistor; a collector-emitter circuit including, in series, a D.C. source, a pair of diodes having respective first terminals of opposite polarity interconnected at a common junction point, the transistor collector and the transistor emitter; a first capacitor coupling a winding of the transformer means to the common junction point of the diodes; and second capacitors connecting the other terminals of the diodes to ground whereby the diodes act as controlled damping elements of said A.C. potential amplifier means: the improvement comprising said D.C. amplifier having low ohmic output; and a low ohmic source of bias potential having one terminal connected to the emitter of said transistor and the opposite terminal connected to ground; whereby the collector current of said transistor controls the A.C. amplification of said controlled A.C. potential amplifier means by controlling the operating point, and thus the incremental resistance, of said diodes.

3,354,403
COUNTER STEP-DOWN FREQUENCY SYNTHESIZER

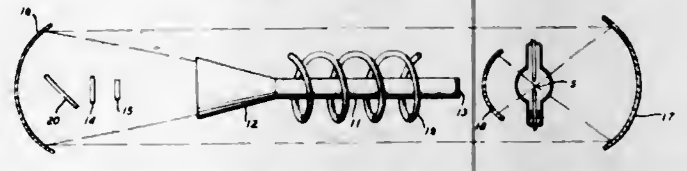
Tex C. Thomas, Garland, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Nov. 23, 1966, Ser. No. 599,341
10 Claims. (Cl. 331—18)

1. A digital frequency synthesizer comprising a voltage controlled oscillator, the output of said voltage controlled oscillator being controllable in discrete frequency steps over a predetermined frequency range, the output from said voltage controlled oscillator applied to a frequency dividing means and divided down to a predetermined feedback frequency equal that of said discrete output steps, a reference frequency source having a frequency equal that of said feedback frequency, phase comparison means to which said reference frequency source and said feedback signal are applied, the output from said phase comparison means being applied to said voltage controlled oscillator to complete a phase locked loop between the output and input of said variable controlled oscillator, said frequency dividing means comprising a fixed divider receiving the output from said voltage controlled oscillator and dividing the frequency and phase thereof by a factor N_1, a variable digital divider receiving the output from said fixed divider and dividing the output from said fixed divider by a preselected integer N where N is defined as the ratio of the voltage controlled oscillator output frequency to said reference frequency, a fixed frequency multiplier receiving the output from said variable digital divider and multiplying by said preselected integer N_1, and the output from said fixed multiplier being applied to said phase comparator for phase comparison with said reference frequency, whereby, for any selected synthesizer output frequency as defined by the product of said selected countdown factor N of said variable digital divider and said reference frequency, the highest frequency at which said variable digital divider operates is reduced by a factor of N_1 and synthesizer output frequency steps equal to the reference frequency are maintained.



3,354,404
END PUMPED OPTICAL MASER

Willard S. Boyle, Berkeley Heights, and Donald F. Nelson, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 29, 1961, Ser. No. 134,776
5 Claims. (Cl. 331—94.5)



1. In combination, an elongated rod of active maser material adapted to entrap by internal reflection light rays incident on an end surface thereof, means including a pair of reflecting elements aligned with opposite ends of said rod for forming an optical resonant cavity including the rod, means for pumping the rod to invert the population distribution between a pair of energy states therein comprising a light source and means for directing the light therefrom to incidence on an end surface of said rod, and means for abstracting from said resonant cavity coherent light wave energy of the frequency corresponding to the energy separation of said inverted states.

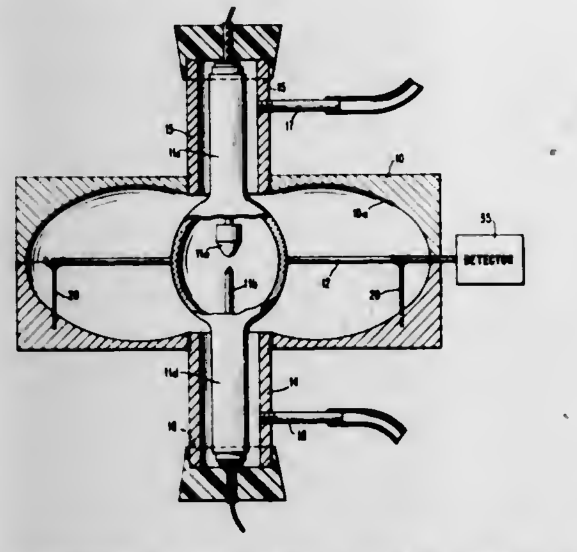
3,354,405
ENERGY COUPLING DEVICE

Herbert B. Bebb, Peekskill, and Robert J. Potter, Ossining, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 24, 1962, Ser. No. 219,323
2 Claims. (Cl. 331—94.5)

1. A maser system comprising:

(a) a reflector having a reflecting surface defined as that surface of revolution generated by revolving a plane elliptical curve enclosing a first focus of the ellipse and subtended by a line through the second focus of the ellipse about that line as an axis of revolution, the line and the major axis of the ellipse subtending an angle greater than zero degrees, whereby said first focus traces a circular locus,

(b) a high intensity substantially point source of excitation energy disposed within said reflector at said second point of focus,.

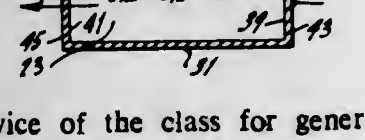


(c) an elongated active maser element formed in a substantially circular configuration with the ends thereof abutting one another in misaligned relationship disposed along the circular locus of said first focal point,

(d) and a light pipe abutting one of the offset ends of said element and extending through said reflector.

3,354,406
ELEMENT AND APPARATUS FOR GENERATING COHERENT RADIATION

Zoltan J. Kiss, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,652
5 Claims. (Cl. 331—94.5)



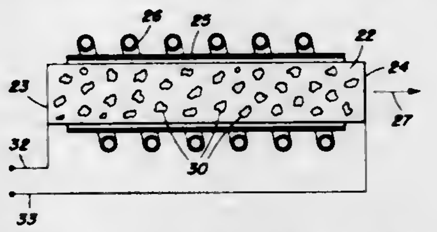
1. In a device of the class for generating radiation wherein said device comprises a semiconductor body having contiguous p-type and n-type regions forming a p-n junction therebetween,

the improvement comprising nonradioactive cations selected from the group consisting of lanthanides and actinides in at least one of said regions, whereby carriers may be injected through said junction into said one of said regions when said junction is forward biased, causing said cations to luminesce.

3,354,407
PIEZO-ELECTRIC MODULATION OF LASERS

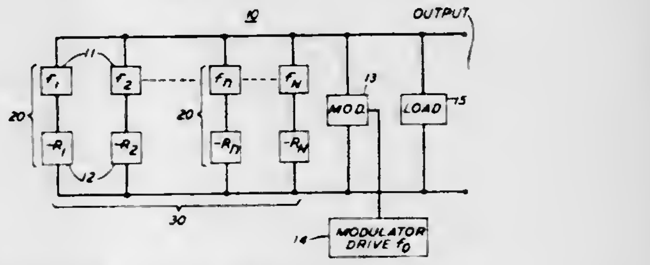
Dennis Howard Howling, Wayland, Mass., assignor to American Standard Inc., a corporation of Delaware
Filed Aug. 21, 1963, Ser. No. 303,589
3 Claims. (Cl. 331—94.5)

1. A laser modulation system comprising a rod consisting of a mixture of negative temperature material and a piezo-electric material, said rod having substantially flat and parallel end faces, a metallic and substantially totally reflective surface connected to one of said end faces, a metallic and partially reflective and partially transmissive surface member connected to the other of said end faces, said surface members forming a resonant cavity for said rod and being affixed to said rod and movable therewith, a first signal lead connected to one of said reflective surface members, a second signal lead connected to the other of said reflective surface members, said signal leads being adapted to receive a varying electrical signal for exciting the piezoelectric material to vary the length of said rod, a pumping means for exciting said negative temperature material whereby said surface members simultaneously act as electrodes for an electric field and as reflectors for a resonant cavity.



3,354,408
MICROWAVE PULSE GENERATOR

Merton H. Crowell, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 2, 1966, Ser. No. 546,768
12 Claims. (Cl. 331—107)



1. A microwave pulse generator comprising

means for establishing a plurality of microwave oscillating modes each separated by the same constant frequency,

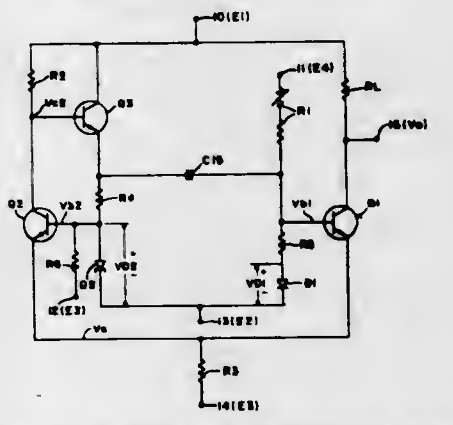
means for providing gain at each of said modes,

means for combining said modes, and

means for modulating said modes at the mode separation frequency thereby to couple together said modes and to produce a pulsed output.

3,354,409
HIGH-FREQUENCY ASTABLE NONSATURATING MULTIVIBRATOR

David T. Kan, Fort Lee, N.J., assignor to Fairchild Camera and Instrument Corporation, a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,477
8 Claims. (Cl. 331—113)



1. A high-frequency astable nonsaturating multivibrator comprising:

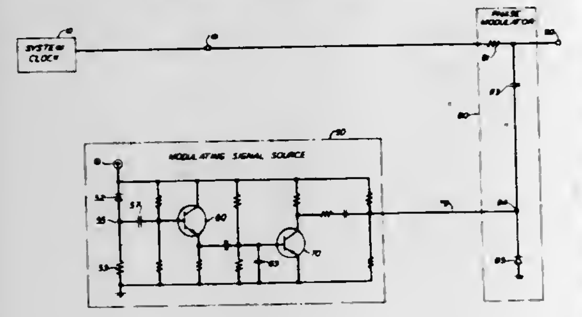
a plurality of power supply terminals;

a single storage capacitor;

a first circuit coupled to one pair of said supply terminals for charging said capacitor in a given direction, said circuit including resistance means and a first electronic device having a substantially constant voltage drop during conduction;
a second circuit coupled to a different pair of said supply terminals for charging said capacitor in the opposite direction, said circuit including resistance means and a second electronic device having a current-voltage characteristic of positive slope in two regions separated by a region of negative slope;
a pair of electronic switching devices coupled to a pair of said supply terminals, said devices having conductivity-controlling electrodes and having a common load impedance;
the conductivity-controlling electrode of one of said switching devices being coupled to said first charging circuit between said capacitor and said first electronic device and the conductivity-controlling electrode of the other of said switching devices being coupled to said second charging circuit between said capacitor and said second electronic device;
said second electronic device switching between said two regions of its characteristic in response to variations in the charge on said capacitor;
and an output terminal coupled to an output electrode of one of said switching devices.

3,354,410
METHOD FOR REDUCING INTERFERENCE CAUSED BY ELECTROMAGNETIC RADIATION FROM CLOCK CONTROLLED SYSTEMS

Hugh J. Beuscher, Oceanport, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 22, 1965, Ser. No. 474,104
10 Claims. (Cl. 332—18)

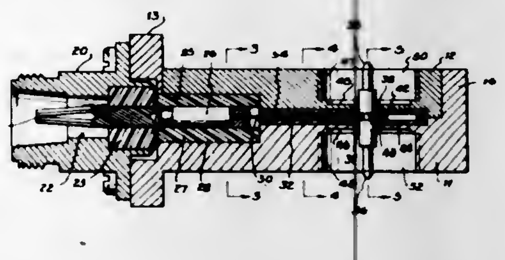


1. A method for reducing interference caused by electromagnetic radiation from a clock controlled system which comprises modulating the phase of the clock.

3,354,411
COAXIAL TRANSMISSION LINE T-JUNCTION HAVING RECTANGULAR PASSAGEWAY DIMENSIONED BEYOND CUTOFF FOR HIGHER ORDER MODES

Myron C. Selby, Boulder, Colo., assignor to the United States of America as represented by the Secretary of Commerce
Filed Oct. 22, 1965, Ser. No. 502,704
6 Claims. (Cl. 333—6)

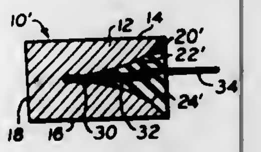
1. A coaxial transmission line T-junction comprising,
a metal housing,
a stem coaxial connector mounted on said housing,
a rectangular passageway formed in said housing,
an inner diaphragm disposed in and insulated from said rectangular passageway,
means disposed in said rectangular passageway and connecting said inner diaphragm to the inner conductor of said stem coaxial connector,
said rectangular passageway being dimensioned to provide a waveguide beyond cutoff for any higher order modes introduced by said connecting means,
a pair of outer diaphragms formed in said housing on opposite sides of said inner diaphragm,
said outer diaphragms each having a central iris therein,



a pair of pins projecting orthogonally from opposite sides of said inner diaphragm through said irises, and,
outer connector means formed in said housing coaxially about said pins to provide a pair of arm coaxial connectors.

3,354,412
STRIPLINE TERMINATION DEVICE HAVING A RESISTOR THAT IS SHORTER THAN ONE QUARTER WAVELENGTH

Mark Steidlitz, Cherry Hill, N.J., assignor to EMC Technology, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 1, 1965, Ser. No. 505,779
7 Claims. (Cl. 333—22)



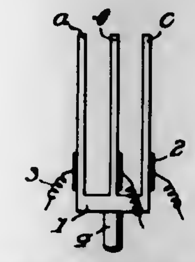
1. A resistive device for a line of stripline microwave circuitry, comprising a conductive body having top and bottom surfaces and a peripheral side wall, said conductive body having a substantially wedge shaped cavity extending in from said peripheral side wall, said cavity being of maximum thickness at said peripheral side wall and being symmetrical with respect to a plane including the apex of said wedge shaped cavity, a flat resistor disposed wholly within said cavity along said plane and being connected at one end to said conductive body in electrically conducting relation at the apex of said cavity, and means for connecting the other end of said resistor in electrically conducting relationship with stripline circuitry external of said device, the effective length of said resistor being shorter than one-quarter of the shortest wave length in the operating frequency range thereof.

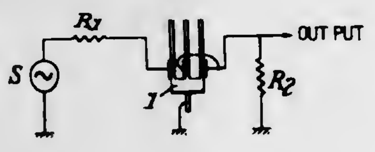
3,354,413
ELECTROMECHANICAL FILTER FOR LOW FREQUENCIES

Yasuo Ko, Sagamihara-shi, Kanagawa-ken, Japan, assignor to Kokusai Denki Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Filed Nov. 5, 1962, Ser. No. 235,487
Claims priority, application Japan, Nov. 13, 1961, 36/40,691; Mar. 26, 1962, 37/13,992
4 Claims. (Cl. 333—72)

1. An electromechanical filter comprising, a tuning fork having a plurality of arms, for each arm a piezoelectric transducer thereon adjacent a root thereof, means for impressing an electric signal on one of said transducers for vibrating said one of said arms thereby to vibrate the others of said arms, the others of said arms comprising

two arms, pick-off means comprising the transducers on the other arms of said tuning fork to pick-off inverse sig-

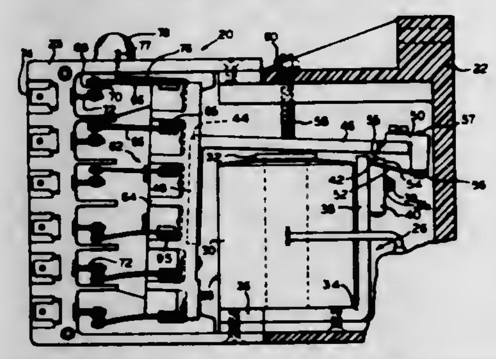




nals from said others of said arms as a combined output, whereby control of the pass band of said filter is a function of the resonant frequencies of said other arms.

3,354,414
RELAY WITH HINGE STRUCTURE

Chester H. Fluder, Wheeling, and Matthew R. Heeney, Niles, Ill., assignors to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 627,057
5 Claims. (Cl. 335—124)

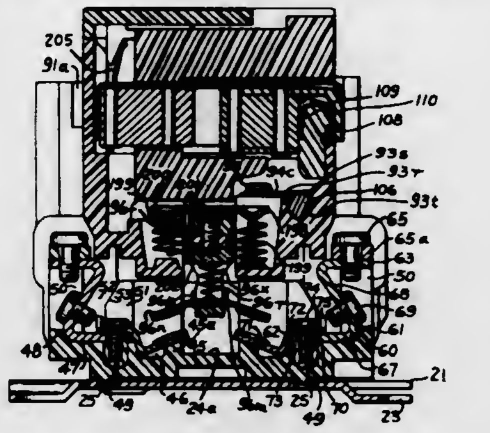


1. In a relay including a support, an L-shaped frame member secured to said support and having a base portion and an upstanding portion, an electromagnet having a coil and a core of magnetic iron extending therethrough and secured to said base portion whereby said core extends substantially parallel to said upstanding portion, the upper free end of said upstanding portion terminating substantially coplanar with the upper end of said core, an armature adapted to move toward and away from said core and upper end of said upstanding portion, a fixed contact on said support, and a movable contact on said armature coacting with said fixed contact to selectively engage same when the armature is in the energized or de-energized position, the improvement in hinge means mounting said armature on said upstanding portion of said frame member normally biasing said armature away from said core and upstanding portion and causing the armature when being pulled toward said core and upstanding portion to first engage the core, and laterally shift and then engage the upstanding portion of the frame member thereby causing wiping action of said contacts.

3,354,415
MULTIPLE CONTACT ELECTROMAGNETICALLY ACTUATED SWITCH AND ACCESSORIES THEREFOR

Joseph J. Gribble, Kenneth J. Marien, and Harold E. Whiting, Milwaukee, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed July 20, 1965, Ser. No. 473,299
23 Claims. (Cl. 335—131)

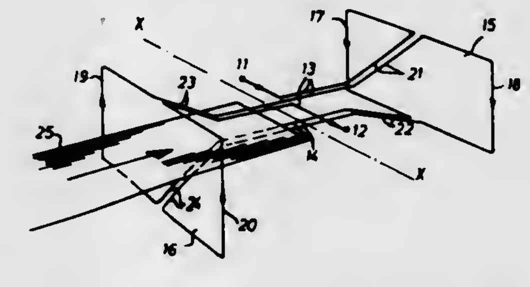
9. A switch assembly comprising: a base having a plurality of spaced compartments each having a pair of spaced stationary contacts mounted thereon, a housing detachably mounted on the base; a movable U-shaped contact guide and support having a pair of spaced arms engaging a pair of spaced side walls of the housing for guiding the movement of the U-shaped contact guide and support along an axis perpendicular to the base and having a portion integrally formed with the spaced arms carrying a plurality of spaced movable contacts each of which is positioned to bridge one of the pairs of stationary contacts; a magnet assembly having an armature movable in a linear path along an axis parallel to the base; and a bell



crank lever having: an actuating portion movable by the armature, a pair of spaced arms integrally formed at opposite ends of the actuating portion engaging the arms of the U-shaped contact guide and support and portions integrally formed at opposite ends of the actuating portion pivotally mounting the bell crank on the housing.

3,354,416
DEVICE FOR THE MAGNETIC ALIGNMENT OF MAGNETIC TAPE

Modest Charline Vereycken, Schelle, and Silvaan René Lambeir, Bonheiden, Mechlin, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a company of Belgium
Filed July 18, 1963, Ser. No. 296,425
Claims priority, application Belgium, July 25, 1962, 41,844, Patent 620,612
8 Claims. (Cl. 335—284)



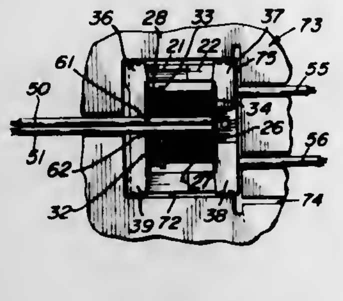
1. Magnetic aligning device for magnetic tape, consisting of at least one electromagnetic coil through which the magnetic tape is continuously passed, each winding of said electromagnetic coil comprising at least two parts that extend at either side closely and parallel to the magnetic tape, and that both pass at their ends into diverging parts, said diverging parts being situated with said parallel parts in planes that are normal to the plane of the magnetic tape, and being in pairs mutually connected by means of loops beside the magnetic tape.

3,354,417
COIL BOBBIN HAVING PROJECTIONS EXTENDING BEYOND MAGNETIC CORE

Dhu Aine J. Davis, Wheaton, Ill., assignor to Hermetic Coil Co., Inc., a corporation of Connecticut
Filed Feb. 17, 1966, Ser. No. 528,167
3 Claims. (Cl. 336—198)

1. A subassembly for an encapsulated inductor comprising: a tubular bobbin element having an axial bore; windings thereon; a core of generally rectangular cross section having a leg extending through the axial bore of the bobbin bore and extending outwardly beyond the said bobbin; and flaps on the bobbin in planes parallel

with said bore axis, overlying the face of the core outside the bobbin more and extending outwardly beyond the

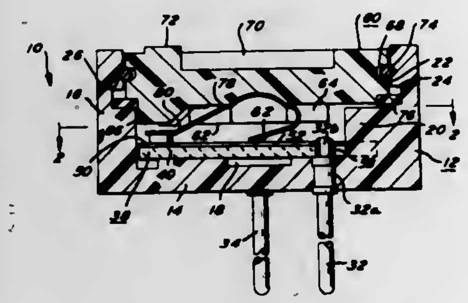


periphery of said core to position the subassembly in a mold.

3,354,418

VARIABLE RESISTOR

Harry B. Casey, Willow Grove, and John G. Woods, Philadelphia, Pa., assignors to IRC, Inc., a corporation of Delaware
Filed Nov. 4, 1964, Ser. No. 408,858
7 Claims. (Cl. 338—174)

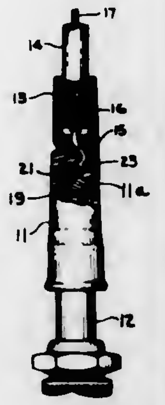


1. A variable resistor comprising:
a housing of an electrical insulating material having a circular base and a cylindrical wall extending from the edge of the base;
a pair of relatively rigid terminals extending through and secured to the base of the housing, each of said terminals having a pin projecting into the housing;
a flat circular disk of an electrical insulating material seated on the inner surface of the base of said housing, said disk having two openings therethrough through which the terminal pins extend;
a film of an electrical resistance material coated on the upper surface of said disk and extending in an arcuate path around the periphery of said surface of the disk with the path having a pair of spaced ends;
a contact termination film of an electrically conductive material coated on said surface of the disk and extending from one of said openings in the disk to the center of said disk;
a resistance path termination film of an electrically conductive material coated on said surface of the disk and extending from under one end of the resistance path to around the other opening in the disk;
means electrically connecting each of the terminal pins to its adjacent termination film;
a circular cover extending across the open end of the cylindrical housing wall;
means securing said cover to the housing but permitting rotation of said cover with respect to the housing; and
a contact of an electrically conductive metal carried on the inner surface of said cover, said contact having a pair of contact arms extending therefrom, one of said contact arms slidably engaging said resistance path and the other contact arm slidably engaging said contact termination film.

3,354,419

VARIABLE ANGLE SPARK PLUG CONNECTOR

Lloyd E. Miller, Jr., 7811 Erwin Road,
Coral Gables, Fla. 33143
Filed Sept. 21, 1964, Ser. No. 397,864
15 Claims. (Cl. 339—26)

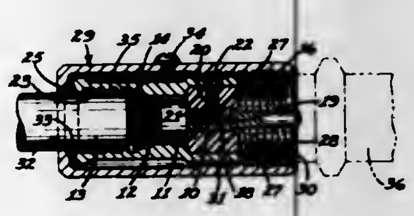


1. A variable angle spark plug connector for use with an engine in which the spark plugs are so located that their respective ignition wires are each disposed at somewhat different angles, each connector having two basic portions, each of nonconductive material, but containing in a central portion thereof, electrically conductive means in which a rotatable miter joint in involved that permits a wide range of angles between said portions, a first one of said portions configured to be connected to a spark plug and the second to an ignition wire, at least one of said portions being of compliant material, said miter joint remaining relatively movable in use but possessing a substantial amount of friction so that undesired relative rotation does not take place between said members.

3,354,420

COAXIAL CABLE CONNECTOR

Fred Mineck, Montclair, Calif., assignor of fifty percent to Ashal J. Calder, Ontario, Calif.
Filed Sept. 2, 1966, Ser. No. 576,876
3 Claims. (Cl. 339—103)

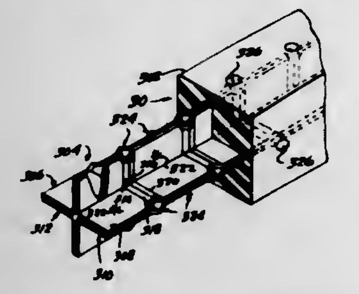


1. A connector for a coaxial cable having:
(A) a center conductor,
(B) and insulative covering for said center conductor,
(C) a ground shield around said insulative covering,
(D) and an outer covering sheath around said ground shield,
(E) a shield-engaging sleeve having elements for connection to a mating connector and including a threaded bore portion engaging said outer sheath terminating in a seal-engaging surface,
(F) a coupling and releasing member having a threaded bore portion for engaging a threaded portion on the mating connector and a reduced portion including a seal-engaging surface,
(G) and a seal ring fitting on the outside diameter of said sheath arranged to be compressed between said seal engaging surfaces when said conductor engaging sleeve and said coupling members are threadedly assembled together.

3,354,421

ELECTRICAL CONNECTOR

Samuel H. Rodgers III, Holiday Drive, P.O. Box 446,
Crossville, Tenn. 38555
Filed Feb. 12, 1965, Ser. No. 432,339
4 Claims. (Cl. 339—198)

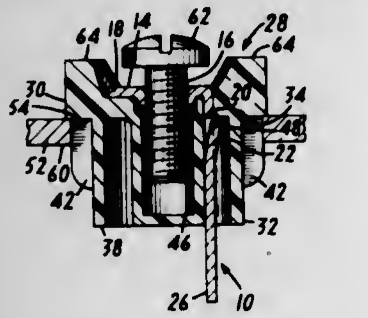


1. An electrical connector or clamp comprising a plurality of elongated right-angle members formed of an electrically-conducting material, the arms of said angle members being connected together to provide a substantially cruciform configuration in cross-section, each arm having transversely-extending longitudinally-spaced pairs of substantially rectangular panels, the panels of each pair having transverse edges which meet in an obtuse angle, said pairs of panels in one arm of one angle member being disposed in opposed end confronting relation relative to the corresponding pairs of panels formed in an adjacent one of said angle members to form a substantially rhombic socket between each two pairs of opposed panels, said cruciform connector being embedded in a block of electrically non-conductive material, and said block having a plurality of transverse passages each communicating at one end with one of said sockets and at the other end with an outer face of the block.

3,354,422

TERMINAL BUSHING ASSEMBLY

Rudolph M. Duris, South Norwalk, Conn., assignor to Edwards Company Inc., a corporation of Connecticut
Filed Aug. 6, 1965, Ser. No. 477,696
12 Claims. (Cl. 339—128)



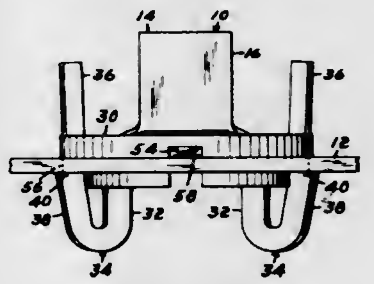
1. A terminal-bushing assembly for snap-in mounting in an opening in a panel to provide electrical connection between conductors located at opposite sides of said panel which comprises
- (a) a bushing of non-conductive material having
  - (1) a collar portion one surface of which is adapted to abut one side of said panel,
  - (2) a skirt portion integral with said abutting surface of said collar portion and having a smaller cross-section than that of said collar portion, said skirt portion being adapted to extend through said panel opening and beyond the side of said panel opposite the side abutted by said collar position,
  - (3) at least one locking finger comprising an integral section of said skirt portion which is movable by resilient flexure toward the interior of said skirt portion, the movable end of said locking finger being disposed adjacent and spaced from the abutting surface of said collar portion by a distance at least equivalent to slightly greater than the thickness of the panel upon which the terminal-bushing assembly is to be mounted, and the exterior surface of said locking finger being tapered outwardly in the direction from the free edge of said skirt portion to said collar portion,
- (b) electrically conductive terminal means comprising a strip of conductive metal having a right angle bend, one side of said bend being in the form of a ring seated in said collar portion and the other side being a strip extending through said skirt portion of the bushing, said ring being disposed over an opening in said collar portion and having a screw thread for receiving and holding a screw threaded down into the ring and the underlying opening in said collar portion,

whereby insertion of said skirt portion into a panel opening having substantially the same cross section as that of the skirt portion will cause said locking finger to first resiliently flex inwardly and then spring back outwardly, when the panel thickness has been cleared by the movable end thereof, to lock the assembly securely in place upon the panel.

3,354.423

WEDGE BASE BULB SOCKET

Armando J. Garcia, Medford, Mass., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Feb. 9, 1966, Ser. No. 526,117
4 Claims. (Cl. 339—128)



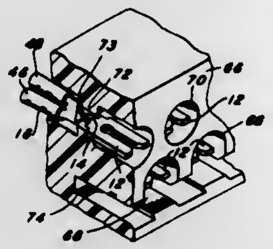
1. A housing for an electrical socket, engageable in an apertured supporting wall, comprising a body portion having a base portion and having a cavity formed therein opened at one end, a wing extending outwardly from each of opposite sides of said body portion, the wings being spaced from each other to provide a pair of spaced opposed slots, two retaining legs extending forwardly from said body portion, at least one of the legs having a terminal end bent back on itself, providing a bight portion and a free end, extending through and beyond one of said slots and extending along a portion of said body portion in spaced relation therewith, said legs adapted to cooperatively engage the edge of the apertured supporting wall and be disengaged therefrom by manual manipulation of said free end, and having an abutment means facing said wings, formed between the bight portion and the free end, which is adapted to engage a surface of the wall adjacent the aperture with said wings engageable with the opposite surface of said wall.

3,354,424

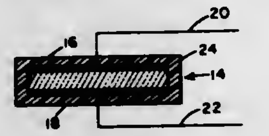
CONTACT WITH TWO PIN RECEIVING MEMBERS

Herbert E. Ruehlemann, Huntingdon Valley, Pa., assignor to Elco Corporation, Willow Grove, Pa., a corporation of Pennsylvania
Filed Mar. 16, 1965, Ser. No. 440,145
1 Claim. (Cl. 339—220)

In a connector member comprising an insulating casing with at least one sheet metal contact including a forward mating section having a flat surface portion and a body section, said contact further including an integral rear tail section having a base, said tail section extending rearwardly of the body section, said base lying at an acute angle with respect to the flat surface portion of said mating section, said contact and said casing having locking shoulder means, said body section comprising means which permit said tail section to be twisted to said acute angle so that said locking shoulder means cooperate with each other to prevent withdrawal of said contact from said casing, said tail section being comprised of two pin receiving receptacles of a frusto-conical configuration extending from said base and terminating in free edges lying near said base, each of said pin receptacles tapering inwardly and forwardly, whereby a pin inserted in one of said receptacles is engaged by a force proportional to the depth of insertion of said pin, said base having a dimple formed therein extending toward said free edges to separate said receptacles along a portion of the length thereof, each of said receptacles being positioned on a line lying at a 53° angle with respect to an edge of said connector casing, said 53° angle permitting maximum packing of a plurality of contacts.



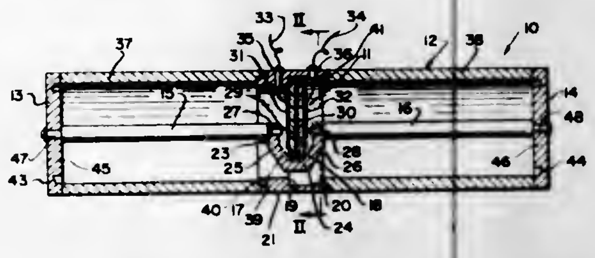
3,354,425
TRANSDUCING METHOD AND APPARATUS
Hans Jaffe, Cleveland Heights, and Don A. Berlincourt, Chagrin Falls, Ohio., assignors to Clevite Corporation, a corporation of Ohio
Filed Dec. 11, 1963, Ser. No. 329,721
4 Claims. (Cl. 340—10)



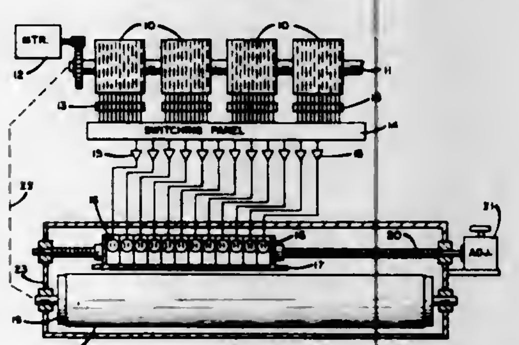
1. A process for piezoelectrically converting electric energy to hydrostatic mechanical energy or vice versa comprising the use of piezoelectric material consisting essentially of a compound having the compositional formula XYZ where X is at least one element selected from the group comprising antimony and bismuth, Y is at least one element selected from the group comprising sulfur, selenium and tellurium and Z is at least one element selected from the group comprising iodine, chlorine and bromine, electrically polarizing the piezoelectric material below the Curie point of the said material, applying to the piezoelectric material energy of one type selected from the class consisting of hydrostatic mechanical energy applied to all faces of said material and electrical energy, and obtaining from the piezoelectric material energy of the other type from the one applied.

3,354,426
PRESSURE GRADIENT HYDROPHONE
Frank Massa, Cohasset, Mass., assignor to Massa Division, Dynamics Corporation of America, Hingham, Mass.
Filed Jan. 28, 1966, Ser. No. 523,780
11 Claims. (Cl. 340—10)

1. In combination in a pressure gradient transducer, generally tubular housing means, end plates on opposite ends of said housing means having annular grooves therein defining relatively thin webs for flexural suspension of central piston portions thereof, transducer means comprising a multilaminar plate assembly with at least one element of said plate assembly comprising a transducer material capable of converting oscillatory mechanical bending stresses to alternating electrical signals, means for rigidly supporting one end of said multilaminar plate assembly at a point within said housing means intermediate said end plates to position the opposite end of said assembly beyond a center line of said tubular housing means, U-shaped yoke means having a bight portion secured to said opposite end of said assembly and having a pair of leg portions extending to said center line, a pair of rigid rods extending along said center line and rigidly connected to said central piston portions of said end plates and to said leg portions of said yoke means, and electrical terminal means for connecting said transducer material to an external circuit.



3,354,427
DISPLAYING SEISMIC DATA AS NARROW TRACES, WITHOUT COMPOSITING
Moses B. Widess, Fort Worth, Tex., and Karl Dyk, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Continuation of application Ser. No. 325,578, Nov. 22, 1963. This application Oct. 10, 1966, Ser. No. 598,555
8 Claims. (Cl. 340—15.5)



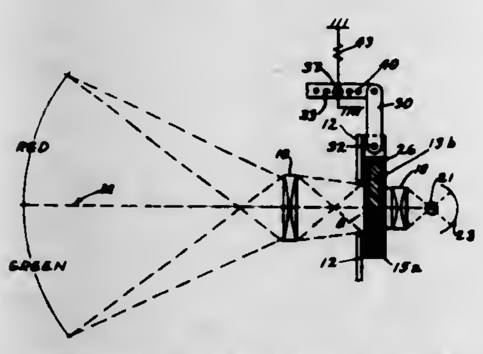
1. In seismic geophysical surveying, wherein the travel time to each reflection point or area of a subsurface reflecting interface is recorded in a plurality of different ways to provide a corresponding plurality of different but related reproducible traces, the steps comprising

reproducing each of said related traces corrected for normal moveout of desired signals and for static differences of travel time with respect to a reference datum,

separately re-recording, for each reflection point or area, each of said reproduced related traces, as one of a corresponding plurality of adjacent, constant-width, visible traces arranged in a systematic manner side-by-side in a group, and

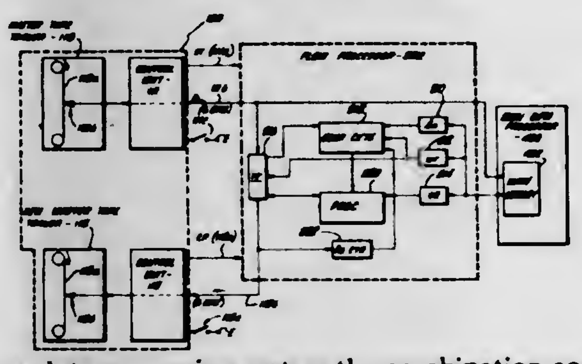
arranging on a display surface a plurality of said related-trace groups in the order of corresponding successive reflection points of areas along a seismic profile line, to produce a cross-section display in which said desired signals are shown as essentially continuous alignments that extend across a plurality of said related-trace groups, while non-random interfering waves may appear as non-continuous alignments or as characteristic patterns within said groups.

3,354,428
OSCILLATING COLOR FILTER SINGLE STATION RANGE LIGHT
Theodore H. Projector, 3304 Edgwood Road, Kensington, Md. 20795, and Robert S. Rinkinen, 4708 Topping Road, Rockville, Md. 20853
Filed Apr. 20, 1965, Ser. No. 449,580
4 Claims. (Cl. 340—29)



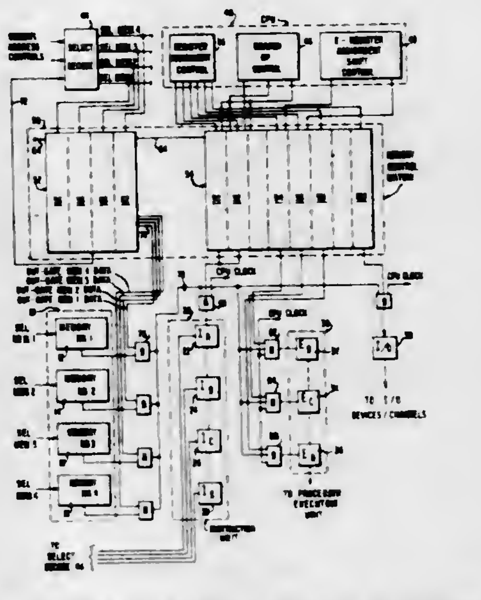
3. A navigational single station range light comprising a projection device and movable dual filter having two adjacent color areas, means for repetitively oscillating said filter between at least two positions so that the projected color beams thereof oscillate back and forth across a navigational course line to be followed, said means comprising a device for effecting equal dwell times for said beams at said positions.

3,354,429
DATA PROCESSOR
Charles E. Macon, Altadena, Robert S. Barton, Pasadena, Paul A. Quantz, Thousand Oaks, and George T. Shimabukuro, Monterey Park, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 18, 1965, Ser. No. 433,657
19 Claims. (Cl. 340—172.5)



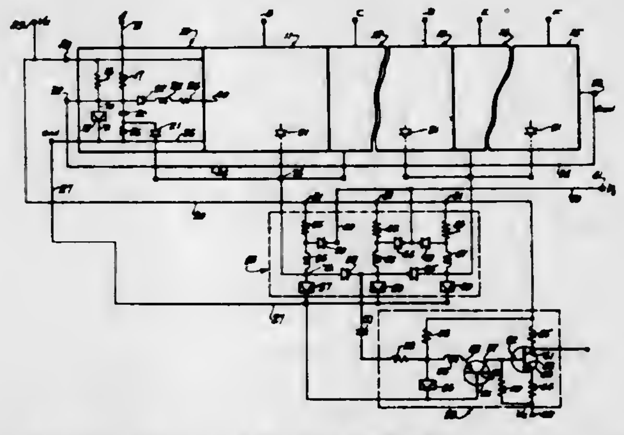
1. In a data processing system the combination comprising a bulk storage system having a plurality of fields of data stored therein including at least one unique signal delimiting each of said fields, said bulk storage system including means operative for continuously and sequentially reading out and then restoring a plurality of said fields, memory means for storing a plurality of operators and associated with at least some of said operators a plurality of delimiters arranged in a predetermined order for determining a field for processing, means for causing said memory means to sequentially read out a plurality of said operators and associated delimiters simultaneously with the continuous reading of the fields from said bulk storage device, controllable means for rapidly processing a field of data as it is read out of said bulk storage system and before it is restored in the bulk storage system in accordance with an operator read from the memory means, and means for comparing the delimiters associated with an operator being processed one by one, in said predetermined order with the delimiters read in said fields and for detecting an equality therebetween, said processing means being adapted in response to such detection for performing such processing operation on a field which is read out of said bulk storage system subsequent to the detected delimiter.

3,354,430
MEMORY CONTROL MATRIX
Carl Zeitler, Jr., and Lawrence J. Boland, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,421
6 Claims. (Cl. 340—172.5)



1. For use in a data processing system including memory means storing data at different addresses therein, a plurality of addressable data utilization means, and a central processing unit for controlling the transfer of addressed data between the memory means and a first addressed utilization means, the memory having a data access-time longer than the time of each operating cycle of the central processing unit; a control device synchronized with the central processing unit for addressing a second data utilization means during said memory access-time so that the data from the memory is transferred at the end of said memory access-time to said second utilization means instead of to said first data utilization means.

3,354,431
TUNNEL DIODE NEURISTOR PARITY GENERATOR
Carl Andrew Budde, Glendale, Calif., assignor to Electronic Specialty Co., Los Angeles, Calif., a corporation of California
Filed Apr. 13, 1964, Ser. No. 359,152
7 Claims. (Cl. 340—146.1)



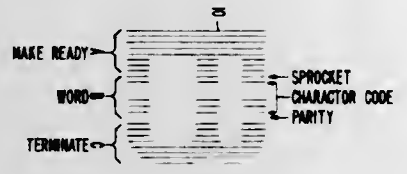
1. A parity bit generator comprising:

a tunnel-diode neuron module array having an input on each said neuron module in the array adapted to receive a respective digital bit in a digital word and each module in the array having output means;

OR gate means connected to said output means of said array and adapted to generate predetermined output pulses in response to the binary digital state of said bits in said digital word;

counter means having two states and being connected to said OR gate means and being responsive to said output pulses of said OR gate means to produce one bit for each two of said OR gate output pulses, the bit in one state of said counter means is indicative of an odd number of ones in said digital word and the bit in the other state of said counter means is indicative of an even number of said ones.

3,354,432
DOCUMENT READING SYSTEM
James J. Lamb, Sierra Vista, Ariz., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 23, 1962, Ser. No. 175,033
10 Claims. (Cl. 340—146.3)



7. In a character reading system for identifying a human language character made up of parallel fine lines of visually distinguishable and mechanically sensible material recorded on a carrier surface one in each of a plurality of closely spaced parallel line positions which are transverse to a plurality of parallel scanning zones, with said lines being interrupted or terminated in a manner to provide a visual gross outline of said character a portion of which extends the entire character width in at least one of said scanning zones, and where one or more lines are selectively omitted from a predetermined group of said spaced line positions in order to incorporate digital encoding of said character within its minute structure and where said predetermined group is intermediate a group of make-ready line positions of a first predetermined number more than one and a group of terminate line positions of a second predetermined number more than one, the combination comprising:

(a) a plurality of transducer means each individual to a different one of said recorded character zones for scanning the portion of said character therein in a direction substantially at right angles to its parallel line structure for generating a train of electrical pulses one for each line position having material therein such that the first appearing pulses in said train are those generated by the lines in said make-ready group and the last appearing pulses in said train are those generated by the lines in said terminate group;

(b) a plurality of first means each responsive to a said pulse train from a different one of said transducer means for counting said first appearing pulses therein to indicate when said first predetermined number has been generated;

(c) a plurality of registers one for each said transducer means;

(d) a plurality of gating means each responsive to said indication from a different said first means for filling the associated said register with the pulses in the associated said pulse train next following said first appearing pulses;

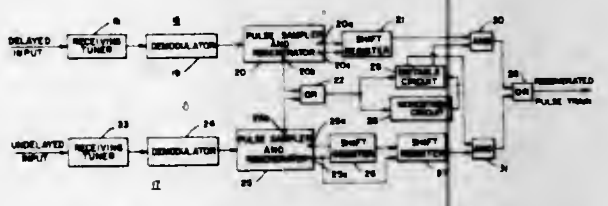
(e) a plurality of second means each indicating when all of said predetermined code group line positions should have been scanned by a different said transducer means;

(f) a plurality of third means each responsive to a different said second means indication for counting said last appearing pulses in the said associated pulse train to indicate when said second predetermined number has been generated;

(g) a plurality of fourth means each responsive to indications by at least both said first and said third means associated with a different transducer means to signify when said associated register is properly filled with a valid code group identifying the scanned recorded character; and

(h) fifth means simultaneously reading out from each register whose associated fourth means signifies that said register is filled with a said valid code group.

3,354,433
PULSE COMMUNICATION SYSTEM
Anatole Minc, Upper Brookville, N.Y., assignor to Tele-Signal Corporation, Woodbury, N.Y., a corporation of New York
Filed Sept. 30, 1963, Ser. No. 312,527
7 Claims. (Cl. 340—167)



2. A pulse communication system comprising a transmitter and a receiver, said transmitter comprising means for producing an information-carrying pulse train, signal delay means coupled to said pulse train producing means for delaying said pulse train for a predetermined time interval and signal transmission means coupled to said pulse train producing means and to said delay means for transmitting signals representative of delayed and undelayed pulse trains to said receiver, said receiver comprising first and second signal processing channels for receiving and processing signals representative of delayed and undelayed pulse trains respectively, each of said signal processing channels comprising sampling means for comparing characteristics of the pulse train processed in that channel with like characteristics of an undistorted pulse train, each of said channels further comprising distortion indicating means coupled to said sampling means for producing distortion indications in response to deviations in excess of a predetermined allowable limit of the characteristics of a processed pulse train from the like characteristics of said undistorted pulse train, said second channel further comprising means for delaying the pulse train processed in said second channel for a time duration equal to the time delay produced by said signal delay means in said transmitter, said receiver further comprising channel selection means for selecting the output of one of said channels and, in response to a distortion indication, for selecting the output of the other of said two channels for transmission, to a utilization device, of a single pulse train derived from substantially undistorted segments of the two pulse trains processed in said two channels.

3,354,434
CIRCUIT PROGRAMMING SYSTEM AND METHOD
Bernard Edward Shlesinger, Jr., 3906 Bruce Lane, Annandale, Va. 22003
Filed Jan. 17, 1964, Ser. No. 338,478
14 Claims. (Cl. 340—147)

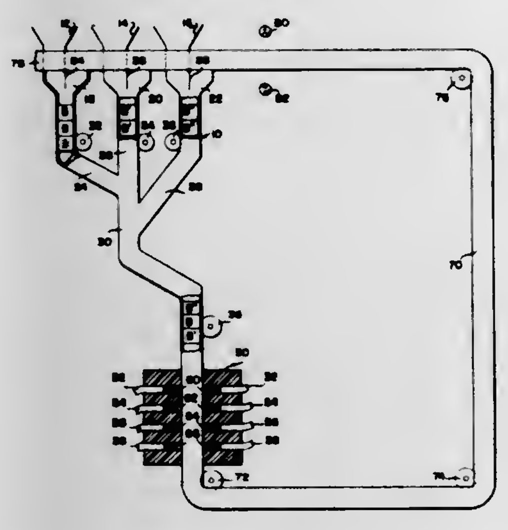
1. A programming switch system comprising:

(a) billet dispenser means,

(b) a switch block having a multisided passageway including a series of switch contact members in said passageway,

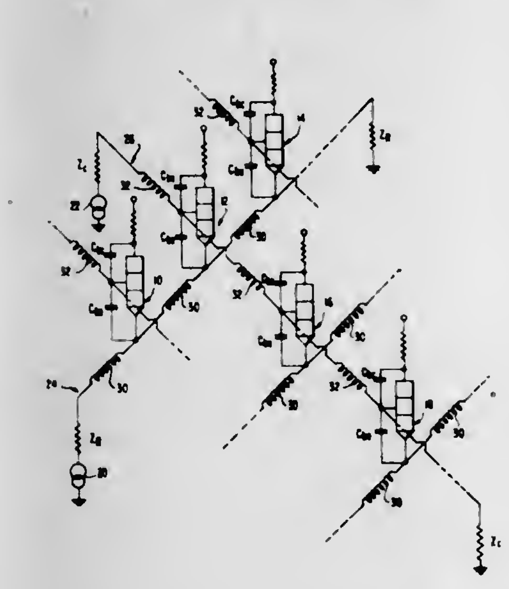
(c) a plurality of multisided billets in said billet dispenser means each having a cross-sectional configuration corresponding to and cooperating with said passageway and having at least one non-conducting surface and at least one conducting surface,

(d) means for programming, orienting and inserting a plurality of said billets sequentially in said passageway,



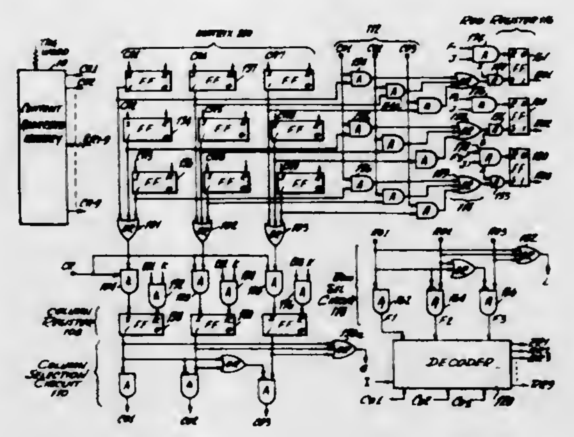
(e) whereby when said programmed and oriented billets are inserted in said passageway, the conductive surfaces of said billets will complete an electrical path between selected switch contact members in said switch block when moved into contact therewith.

3,354,435
TRANSMISSION LINE CONTROL OF TRANSISTOR SELECTION MATRIX
James K. Picciano, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 19, 1965, Ser. No. 433,982
6 Claims. (Cl. 340—166)



1. A transistor switch matrix having at least one row of transistors characterized by a drive line connecting all of the same terminals of each of the transistors in a row, said drive line being inductive and forming in combination with the stray reactances of said transistors a transmission line having a resistive characteristic impedance, and a pair of resistances each equal to said characteristic impedance terminating respectively both ends of said transmission line.

3,354,436
ASSOCIATIVE MEMORY WITH SEQUENTIAL MULTIPLE MATCH RESOLUTION
Robert O. Winder, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 8, 1963, Ser. No. 257,256
5 Claims. (Cl. 340—172.5)



1. An arrangement for determining the positions in a binary word of a group of bits of given value comprising, in combination,

a matrix of storage elements equal in number to the bits in said word and arranged in columns and rows;

means for applying, in parallel, the bits in said word to the respective storage elements in said matrix;

a column register having a number of stages equal to the number of columns in the matrix;

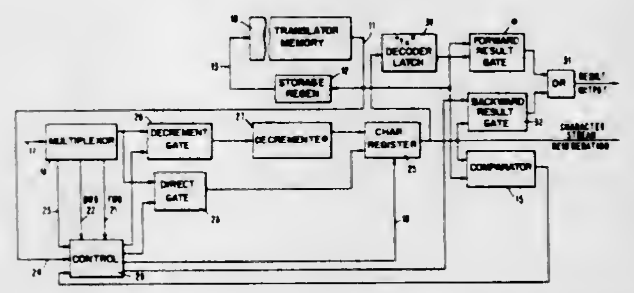
a row register having a number of stages equal to the number of rows in the matrix;

means for concurrently sensing all storage elements in said matrix for concurrently setting the stages of the column register corresponding to the columns of the matrix storing bits of said given value;

means responsive to a given set stage of the column register for concurrently reading out the column of the matrix corresponding to that stage, into the row register, thereby setting at least one stage in the row register; and

means for reading out, in time sequence, the respective set stages of the row register.

3,354,437
DATA TRANSLATION APPARATUS
John R. Carthew, Edward Loizides, and Louis A. Mitta, Hyde Park, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1964, Ser. No. 420,752
9 Claims. (Cl. 340—172.5)

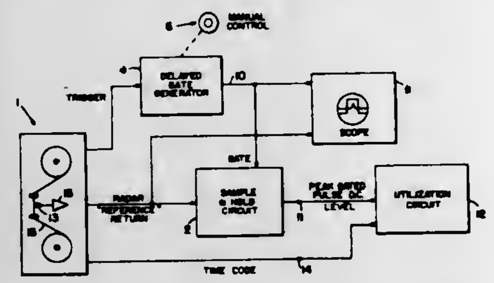


1. A code translator for effecting a code translation in a first direction from a character entered into the translator in a first code to that of a corresponding character stored in the translator in a second code or in a second direction from a character in the translator in a second code to the corresponding character exiting from the translator in a first code, said translations occurring in re-

sponse to a request for translation in a first or second direction, comprising

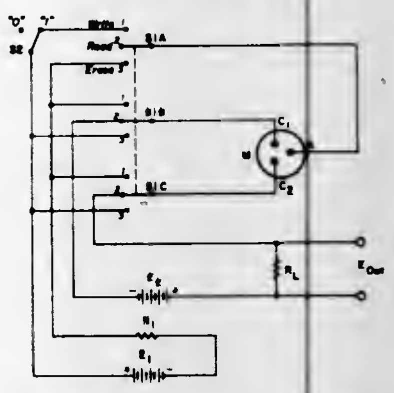
- a data path having an input for accepting a character and an output and means for regenerating the output to the input, said path further comprising means for altering a character by a fixed amount each time that it is regenerated through the means for altering of the data path, said means for altering being coupled to the input and output of the data path,
- means for storing a plurality of characters expressed in a second code with a predetermined reference manifestation,
- first control circuitry coupled for responding to a request for translation in the first direction and to the occurrence of the predetermined reference manifestation when a character in a first code is accepted in the data path to provide a first signal, the first control circuitry also being coupled for responding to the outputs of the data path and the means for storing to produce a second signal, when a request for translation has been made in the second direction and a character in a first code is accepted in the data path,
- second control circuitry coupled for responding to the first signal and the request for translation in the first direction to activate the means for altering a character in the data path each time the character is regenerated through the data path, the second control circuitry also being coupled for responding to the second signal and the request for translation in the second direction to produce a character for substitution in the data path and for activating the means for altering a character to alter the substitute character each time that it is regenerated in the data path,
- the regeneration of the character when translation is occurring in the first direction continuing until a predetermined test is satisfied and the regeneration of the character when translation is occurring in the second direction continuing until the predetermined reference manifestation stored in the storage device is detected by the first control circuitry,
- a first gate means coupled for responding to the occurrence of the predetermined test in a translation in the first direction to permit the next character stored in the means for storing to be gated as the result translated character for a translation in the first direction, and
- a second gate means coupled for responding to the detection by the first control circuitry of the predetermined reference manifestation to enable the second gate means to permit the next character appearing in the data path to be gated as the result translated character for a translation in the second direction.

3,354,438
RADAR VIDEO DATA REDUCTION SYSTEM
John R. Sandlin and Clyde S. Fuller, Satellite Beach, Fla., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Apr. 13, 1965, Ser. No. 447,931
7 Claims. (Cl. 340—172.5)



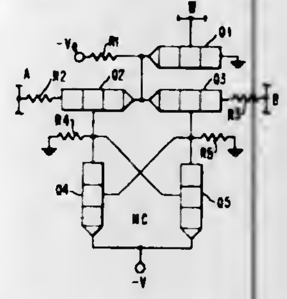
1. A data reduction system in which different information signals present data; said signals occur at different times from each other and each given signal is not continuous in time; a receiver means for detecting these information signals; first means having an output which is a series of discrete values representative of values of its input at a series of points in time; said receiver means having an output which is connected to the input of said first means; said first means further having a control input which controls the time when the first means will extract information from the receiver means; second means having an output so related to the different information signals that, upon being connected to the control input of said first means, only signals of a single one of the different information signals is extracted by the first means from said receiver means; and connections between said second means and the control input of said first means.

3,354,439
ELECTROCHEMICAL MEMORY
Roscoe W. Mitchell, Jr., Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Oct. 29, 1962, Ser. No. 233,787
3 Claims. (Cl. 340—173)



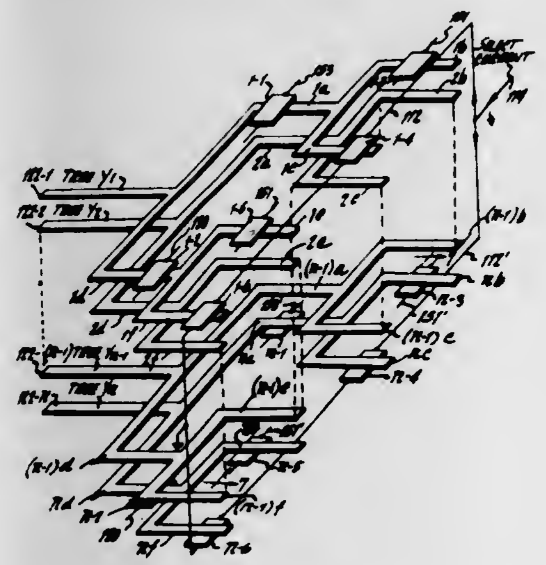
3. An electrochemical memory apparatus comprising an electrolytic cell, a "write" circuit, a "read" circuit and an "erase" circuit; said cell comprising an electrolytic bath, a pair of narrowly spaced inactive electrodes immersed therein, a third electrode immersed in said bath and composed of an electroplatable metal; said "write" circuit comprising a voltage source, the negative pole thereof being electrically connected to said narrowly spaced electrodes, and the positive pole thereof being electrically connected to said third electrode; said "read" circuit comprising means for detecting the presence of an electroplated metal bridge electrically connecting said narrowly spaced electrodes; said "erase" circuit comprising means for electrochemically returning the metal of said bridge to said third electrode; and switching means for selecting the desired one of said circuits.

3,354,440
NONDESTRUCTIVE MEMORY ARRAY
Arnold S. Farber, Yorktown Heights, and Eugene S. Schlig, Croton Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 19, 1965, Ser. No. 449,093
18 Claims. (Cl. 340—173)



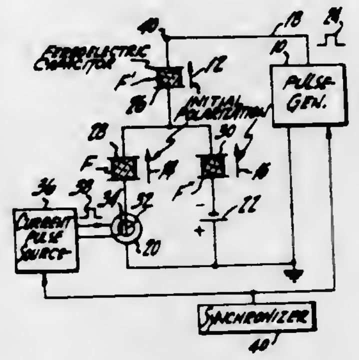
13. A memory cell comprising first and second transistors of same conductivity type and each transistor having an emitter and collector and a base circuit, a bistable storage element having first and second storage states and first and second input terminals connected in said base circuits of said first and second transistors, respectively, first means connected to said collector of said first transistor, second means connected to said collector of said second transistor, third means connected to said emitters of said first and said second transistors, said first and said second transistors being biased for normal transistor operation when said third means is singularly energized, said first and said second transistors being biased for saturated operation when said first and said second means, respectively, and said third means are concurrently energized, said base circuits of said first and said second transistors supporting conduction in said first and said second transistors, respectively, while said storage element is in said first and said second storage states, respectively, said storage element being responsive to said first and said second transistors when saturated to switch between said first and said second storage states, respectively, and sensing means connected to said collectors of said first and said second transistors, respectively, for ascertaining the storage state of said storage element, said first and said second storage states being indicated by normal transistor operation in said first and said second transistors, respectively, when said third means is singularly energized.

3,354,441
CRYOELECTRIC CIRCUITS
Robert A. Gange, Skillman, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 24, 1962, Ser. No. 219,143
3 Claims. (Cl. 340—173.1)



1. In combination, a plurality of substantially identical two dimensional superconductor tree networks stacked one over another and insulated from one another arranged with corresponding branches of each tree network in corresponding positions in each network; and means coupled to said networks for controlling, in unison, the inductance exhibited by each stack of aligned branches in said networks, said means including for each stack of aligned branches, not more than a single pair of superconductor control elements, each such pair of control elements, when in the superconductive state, providing a magnetic field shield to all branches aligned with that pair of elements, and, when in the nonsuperconductive state, permitting the inductance exhibited by all branches aligned with that pair of elements substantially to increase, and means coupled to said elements for selectively switching said elements between superconductive and nonsuperconductive states.

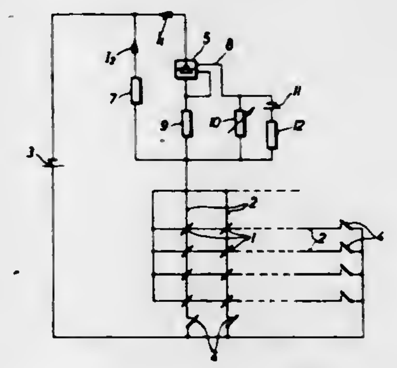
3,354,442
FERROELECTRIC SWITCHING CIRCUITS
Ennio Fatuzzo, Adliswil, Switzerland, assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 10, 1964, Ser. No. 350,736
12 Claims. (Cl. 340—173.2)



4. A switching circuit comprising, in combination:

- a preferred first path for the flow of charge including a first ferroelectric storage element;
- a nonpreferred second path for the flow of charge in parallel with the first path and including a second ferroelectric element polarized in the same direction as the first ferroelectric element and also including the winding of a magnetic core;
- means for changing the status of the second path to one which is preferred for the flow of charge over the first path comprising means for switching the magnetization of said core; and
- means for applying a charge to the two paths in a sense to tend to switch the polarization of said ferroelectric elements concurrently with the switching of said core.

3,354,443
DEVICE FOR TEMPERATURE COMPENSATION OF MAGNETIC STORAGE CORES IN DATA PROCESSING INSTALLATIONS
Karlheinz Kuhlmann, Wilhelmshaven, Germany, assignor to Olympia Werke AG., Wilhelmshaven, Germany
Filed Apr. 17, 1964, Ser. No. 360,518
Claims priority, application Germany, Apr. 18, 1963, O 9,353
6 Claims. (Cl. 340—174)

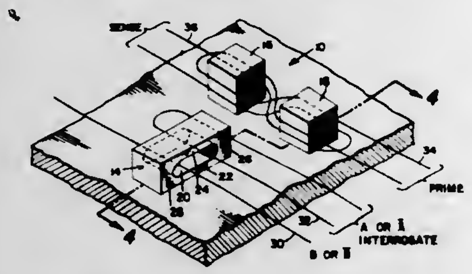


1. A temperature compensating device for controlling the switching current in magnetic switching cores comprising; first resistor means through which a portion of said switching current flows to create a first voltage drop thereacross, a continuously controllable current valve means in series with said first resistor and having voltage sensitive control means, temperature sensitive resistor means responsive to changing temperature conditions at said switching cores, a source of relatively constant current flowing through said temperature sensitive resistor means to provide a second voltage drop thereacross which is a function of temperature at said switching cores, said constant current being independent of the current through

said switching cores, and circuit means interconnecting said temperature sensitive resistor means with said first resistor means and said current valve means so that the difference between said first and second voltage drops is utilized in controlling said current valve means.

3,354,444
TWO PIECE MULTI-APERTURE LOGIC ELEMENT

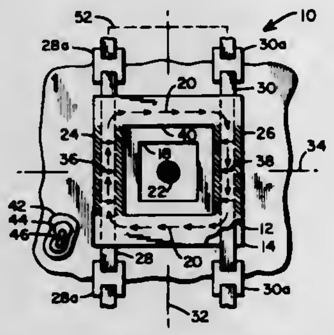
John T. Franks, Jr., Akron, and Anthony M. Apicella, Jr., Massillon, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed July 13, 1964, Ser. No. 381,994
8 Claims. (Cl. 340—174)



2. A magnetic circuit comprising
- a magnetic core having a pair of spaced body portions separated by first, second, third and fourth leg portions, the distance between the first and second leg portions being greater than the distance between the second and third leg portions and the second and fourth leg portions and the third and fourth leg portions,
- bias means for saturating the third and fourth leg portions in pre-determined directions,
- means for setting a stored variable bit of information as a flux pattern around said first and second leg portions,
- means linked with the second leg portion for selectively reversing the direction of the flux in the third and fourth leg portions, and
- means for sensing a flux change in either the third or fourth leg portions.

3,354,445
MATED-FILM ELEMENT WITH SINGLE VERTICAL WORD LINE

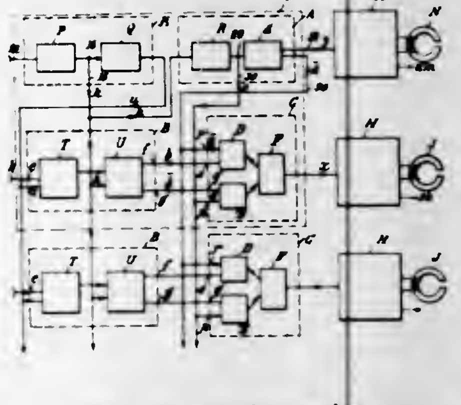
Leroy A. Prohofsky, Minneapolis, Minn. (Univac Park, St. Paul, Minn. 55116), and Robert J. Bergman, Univac Park, St. Paul, Minn. 55116
Filed Jan. 3, 1966, Ser. No. 518,372
12 Claims. (Cl. 340—174)



1. A magnetizable memory element, comprising:
- an electrically-insulating planar substrate member;
- said substrate member having an aperture therethrough;
- superposed first and second planar-closed-flux-path layers each of a magnetizable material;
- said first and second film layers each associated with said aperture for forming a planar-closed-flux-path thereabout;
- a conductive strip having portions sandwiched between said superposed layers;
- said superposed first and second layers forming memory portions in each of which said layers sandwich and envelop an associated portion of said conductive strip between said layers with said layers in said memory portion having sides overlapping said enveloped portions of said conductive strip for forming about said enveloped conductive strip portion a substantially-closed flux path that is orthogonal the longitudinal axis of said associated conductive strip portion;
- each of said memory portions and the associated enveloped conductive strip forming a memory area; and
- binary information stored in said memory areas in a first or second and opposite circumferential flux direction about said enveloped conductive strips.

3,354,446
BINARY MAGNETIC RECORDING SYSTEM

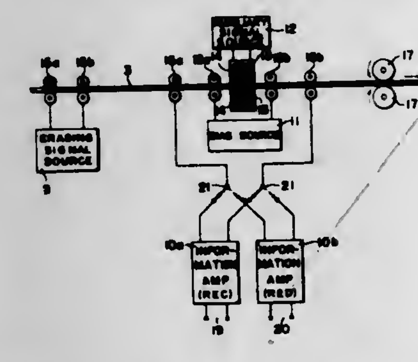
Michel Avril, Gif-sur-Yvette, Raymond Moreau, Yveline, and Alix Pages, Gif-sur-Yvette, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Jan. 14, 1964, Ser. No. 337,686
Claims priority, application France, Jan. 15, 1963, 921,493
6 Claims. (Cl. 340—174.1)



1. A device for recording information on a magnetic support and for reading the information thus recorded, said recording being effected in pure binary code, which device comprises, in combination:
- recording means comprising,
- on the one hand, for each binary order individually,
  - a register unit having an input receiving the successive bits of the corresponding order and two outputs supplying opposed signals, one of which represents the received bit and the other of which represents the negation of this bit,
  - an "exclusive OR" unit comprising two "AND" sub-units and an "inclusive OR" sub-unit, each said sub-unit having two inputs and an output, said two "AND" sub-units being mounted in parallel and having their outputs each connected to one of the inputs of said "inclusive OR" sub-unit, the output of said "inclusive OR" sub-unit forming the output of said "exclusive OR" unit,
  - a first current generator started by the output of the "exclusive OR" unit,
  - and a phase modulation information bit recording head, excited by the output of said first generator,
- and, on the other hand, for all the binary orders collectively,
  - a zero resetting pulse generator connected with every register unit for periodically resetting it to zero with a recurrence period equal to that of the information received,
  - a pilot unit, started by said zero resetting pulses, for delivering a pair of opposed signals with the same recurrence period but with a delay, shorter than the duration of this period, with respect to the zero resetting pulses, the first signal of every pair of signals delivered by the pilot unit being fed to one of the two inputs of one of the "AND" sub-units of all the "exclusive OR" units, the other input of this sub-unit being fed by the second signal from the register unit of the same binary order, whereas the second signal of every pair of signals delivered by the pilot unit feeds one of the two inputs of the other "AND" sub-unit of all the "exclusive OR" units, the other input of these other "AND" units being fed by the first signal of the register unit of the same order,
  - a second current generator started by one of the two output signals of the pilot unit,
  - and a phase modulation information bit recording head energized by the output of said second generator,
- and reading means comprising,
- on the one hand for each binary order individually,
  - a phase modulation recorded information bit reading head,
  - a first shaping unit having an input connected to said information bit reading head and adapted to produce shaped negative and positive pulses,
  - a register unit connected to said first shaping unit for receiving said shaped pulses and for delivering a usable bit pulse for the corresponding binary order,
- and, on the other hand, for all the binary orders collectively,
  - a phase modulation recorded reference bit reading head,
  - a second shaping unit having an input connected to said reference bit reading head for shaping the read reference bits, said reference bit reading head and said second shaping unit being analogous to the corresponding information bit reading head and first shaping unit,
  - a pilot unit connected to every register unit of said reading means for synchronizing the output of the information bits that have been read,
  - and a generator connected to every register unit of said reading means for resetting these register units to zero after delivery of the bits of all the binary orders.

3,354,447
THIN FILM TAPE RECORDER

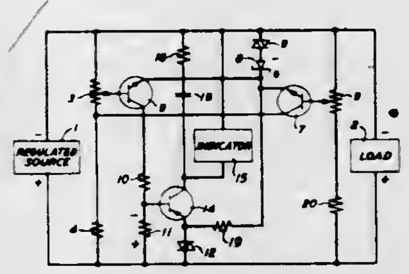
Shintaro Oshima, 426 2-chome, Higashi-machi, Kichijoji, Musashino-shi, Japan
Filed Dec. 4, 1964, Ser. No. 415,971
Claims priority, application Japan, Dec. 9, 1963, 38/65,922
22 Claims. (Cl. 340—174.1)



1. A magnetic recording system, comprising memory means consisting of a slender conductor coated with ferromagnetic thin film having an anisotropy, erasing means for erasing the effect of remnant magnetization of the slender memory means before recording thereon, information applying means for magnetizing the memory means in the direction of the anisotropy in accordance with the magnitude of an information signal which is less than the magnitude to generate a magnetomotive force equal to the coercive force of the magnetic material, exciting means for auxiliarily magnetizing the slender memory means in the direction orthogonal to the direction of the anisotropy thereby reducing the magnitude of the hysteresis loop of the ferromagnetic thin film viewed from the direction of the anisotropy, the information applying means comprising means further applying a bias magnetic field to the slender memory means in the direction of the anisotropy, said bias magnetic field being of a magnitude not to substantially vary the remnant magnetization of the magnetic material with respect to an original point of the hysteresis curve, magnetizations caused by the information applying means and the exciting means being caused to intersect at substantially right angles at an extremely short portion of the slender memory means, and means for moving the slender conductor along the longitudinal direction thereof at a substantially constant traveling speed, thereby shifting said intersecting magnetizations along the longitudinal direction of the slender memory means, whereby the information signal is memorized in the remnant state of the ferromagnetic thin film in accordance with said shifting of the intersecting magnetizations, and then the information signal so memorized is non-destructively derived from the slender memory means when the exciting means applies an appropriate magnetic field to the slender memory means in the operation of said means for moving the slender memory means.

3,354,448
HIGH SENSITIVITY VOLTAGE MONITOR

Stephen J. Brolin, Bronx, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 22, 1964, Ser. No. 420,325
5 Claims. (Cl. 340—248)

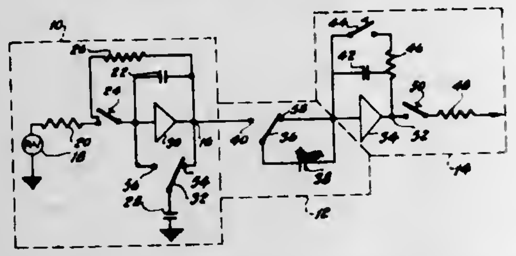


1. A voltage monitoring circuit comprising first and second transistors each having base, collector, and emitter electrodes, first voltage sampling means for applying a first predetermined portion of the voltage to be monitored to the base electrode of said first transistor, second voltage sampling means for applying a second predetermined portion of the voltage to be monitored to the base electrode of said second transistor, a source of reference voltage, means connecting said source of reference voltage to the emitter electrodes of each of said first and second transistors, an indicator connected to the collector electrode of said first transistor to register an excursion of the voltage at the base electrode of said first transistor to a magnitude less than the magnitude of said reference voltage, and means connecting the colector electrode of said second transistor to the base electrode of said first transistor to cause the bias at the base electrode of said first transistor to be reduced when an excursion of the voltage being monitored increases the voltage at the base electrode of said second transistor to a magnitude greater than the magnitude of said reference voltage, whereby said indicating means registers an abnormal voltage condition whenever

the magnitude of the first predetermined portion of the monitored voltage falls below the magnitude of the reference voltage or the magnitude of the second predetermined portion of the monitored voltage exceeds the magnitude of the reference voltage.

3,354,449
DIGITAL TO ANALOG COMPUTER CONVERTER

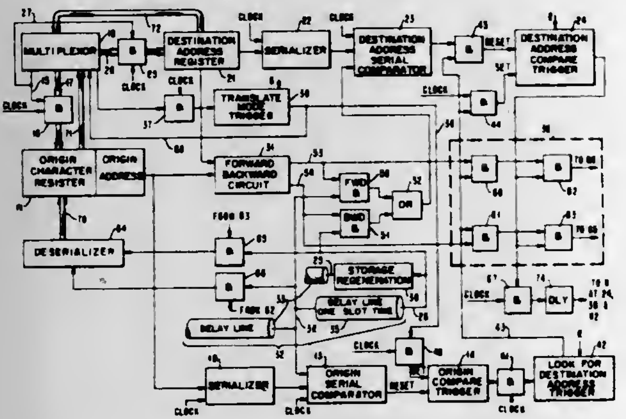
Arvin D. McGregor, Birmingham, Mich., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 16, 1960, Ser. No. 15,419
21 Claims. (Cl. 340—347)



11. A converter for converting a digital word including clock pulses and information bits into an analog signal comprising a source of reference voltage, a reference voltage capacitor and an operational amplifier in parallel, switch means operable to connect the source of reference voltage to said reference voltage capacitor to charge said reference voltage capacitor to a voltage representative of the most significant digit of a digital word, capacitor and switch means operatively associated with said reference voltage capacitor to reduce the reference voltage on said reference voltage capacitor a predetermined amount in response to each clock pulse in a serially received digital word, a sampling switch and capacitor operably associated with said reference voltage capacitor to sample the voltage present on the reference voltage capacitor between clock pulses only in response to an information bit in the digital word, storage means including a storage capacitor and an operational amplifier operably associated with said sampling switch and capacitor to receive, combine and store only voltages proportional to each voltage sampled during a digital word, and switch means operable to provide an analog output from said storage means at the end of each digital word.

3,354,450
DATA TRANSLATION APPARATUS

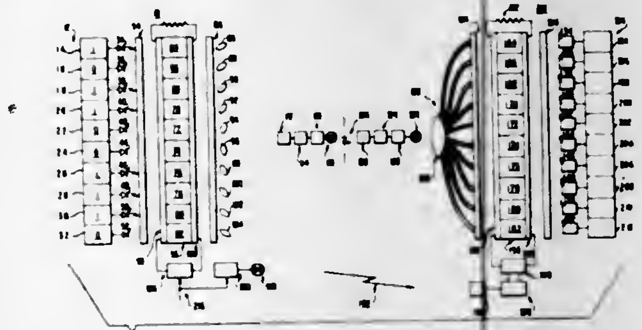
John R. Carthew, Rhinebeck, Edward Loizides and Louis A. Mitta, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 23, 1964, Ser. No. 377,357
14 Claims. (Cl. 340—347)



1. A translator for converting a character of information expressed in a first code to the same character of information expressed in a second code, comprising
means for retaining the character expressed in the first code and entered into the translator for translation into a second code,
means divided into plural serially arranged storage locations for storing a library of characters expressed in the first and second codes (said means being divided into slots at least equivalent in number to the number of characters stored), each character as expressed in the first and second codes being serially stored by code as a unique group of information bits in one of the storage locations,
means coupled to the retaining means and the storing means for comparing the character in the retaining means with the characters expressed in the first code and stored in the storing means until a comparison is effected,
and control means responsive to the occurrence of a comparison to effect the translation of the character in the retaining means as expressed in the first code to the same character expressed in the second code.

3,354,451
HIGH SPEED OPTICAL PARALLEL-TO-SERIAL AND SERIAL-TO-PARALLEL CONVERSION OF BINARY INFORMATION

Thomas J. Harris and Bankim R. Shah, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 30, 1964, Ser. No. 379,171
23 Claims. (Cl. 340—347)

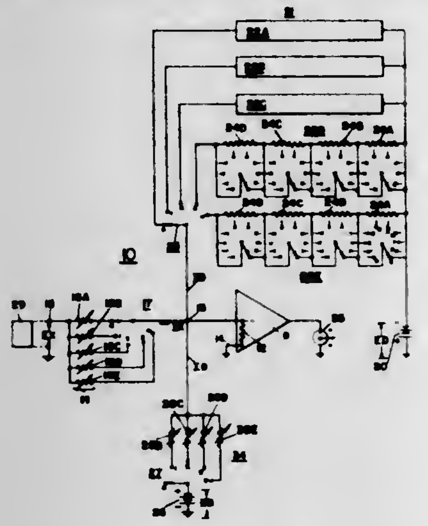


1. An optical converter for converting parallel information to serial information comprising:
(a) an electro-optical transmission line,
(b) means for directing polarized light beams in parallel arrangement onto selected portions of said transmission line,
(c) means for causing said transmission line to sequentially rotate the planes of polarization of said light beams, and
(d) means operable to convert the rotated light beams into electrical pulses.

3,354,452
LINEARIZED ANALOG-TO-DIGITAL CONVERTERS

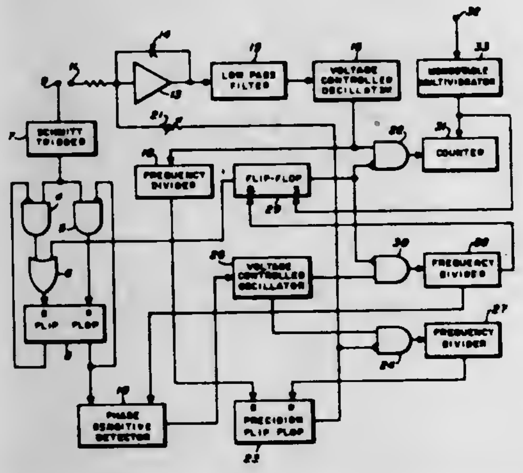
Irving Gary Bard, Philadelphia, and Richard S. Rogers, Norristown, Pa., assignors to Leeds & Northrup Company, a corporation of Pennsylvania
Filed Sept. 11, 1964, Ser. No. 395,669
7 Claims. (Cl. 340—347)

1. An analog-to-digital converter comprising
a comparator amplifier having a current-summing junction in its input circuit and decision means in its output circuit for response to balance of currents to said junction,
slope resistance means for connection between said junction and input terminals of the converter for traverse by analog current corresponding with the non-linear response characteristic of a transducer,
a first switching means for varying the effective value of said slope resistance means in steps respectively effecting match to the slopes of straight-line segments respectively intersecting pairs of breakpoints of said non-linear characteristic of said transducer,
means including a second switching means for supplying to said junction an offset current adjustable in steps to values respectively corresponding with said breakpoints, and
count resistance means for connection between said junction and a reference source for supplying to said junction a reference current adjustable in digital steps by a third switching means for analog-to-digital conversion of the transducer output in terms of its input variable.



3,354,453
ANALOG TO DIGITAL CONVERTER WITH INTERFERENCE SIGNAL REJECTION

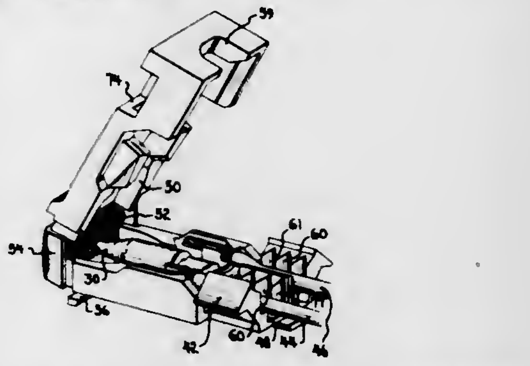
Forrest G. Hibbits and Paul M. Haas, San Diego, Calif., assignors, by mesne assignments, to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Nov. 5, 1964, Ser. No. 409,081
5 Claims. (Cl. 340—347)



3. In an integrating analog to digital converter having a readout timing means, the improved interference signal rejection system comprising:
(a) a phase sensitive detector having an output and first and second inputs, said first input adapted to be coupled to an interfering signal;
(b) an output from said readout timing means coupled to said second input;
(c) a voltage controlled control means for controlling said readout timing means, said voltage controlled control means having an input coupled to said phase sensitive detector output and having an output connected to said readout timing means; and
(d) phasing means coupled to said readout timing means and said phase sensitive detector first input for referencing the phase of any interfering signal to said readout timing means.

3,354,454
ONE-PIECE SIGNAL HOUSING

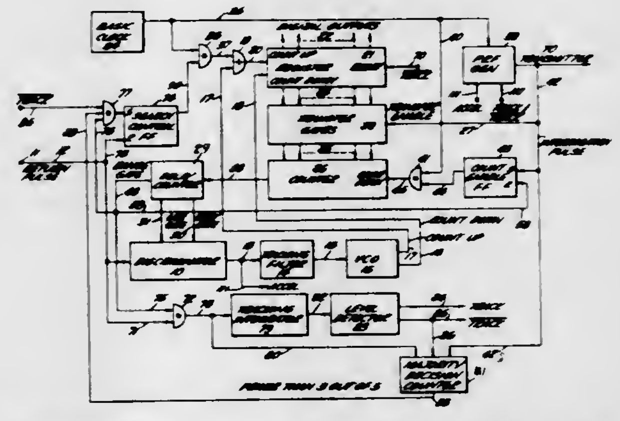
Herman Rueger, Lancaster, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation of application Ser. No. 362,146, Apr. 23, 1964, which is a continuation of application Ser. No. 132,670, Aug. 21, 1961. This application Nov. 4, 1966, Ser. No. 592,234
16 Claims. (Cl. 340—381)



8. For use in a signal structure containing a pilot lamp or the like having electrical leads, an integral one-piece housing of stiffly flexible insulating material comprising top and bottom members, hinge means connecting said members for movement between an open and closed position, said members having complementary cavities and forming when closed a chamber confining the pilot lamp in predetermined position, a wall section of said housing being translucent for transmitting the light of the lamp, means for supporting the housing in an aperture of a panel with said wall section in display position on one side of the panel, and latch means having complementary interengaging elements on the distal ends of said members for securing the housing in closed position.

3,354,455
DIGITAL DELAY MEASUREMENT SYSTEM

James B. Briggs, La Crescenta, and Marvin P. Vander Plaats, Baldwin Park, Calif., assignors to Hoffman Electronics Corporation, El Monte, Calif., a corporation of California
Filed June 14, 1966, Ser. No. 557,559
16 Claims. (Cl. 343—7.3)



1. A system for measuring the time delay between first and second time spaced signals comprising:
first means for comparing a second of said signals with a gate signal representing the predicted time of arrival of said second signal, said gate signal being generated in response to a first of said signals, and said first means providing an error signal proportional to the time deviation of said second signal from the predicted time represented by said gate signal,

second means coupled with the output of said first means for providing output signals as a function of said error signal,

third means coupled with said second means for accumulating and storing the output signals of said second means, the contents of said third means being representative of the predicted time delay between said first and second time spaced signals,

fourth means coupled with said third means for enabling the contents of said third means to change at a predetermined rate and to generate said gate signal after the occurrence of a predetermined change of said contents, and

fifth means for generating a plurality of said first signals coupled with said fourth means for controlling the operation thereof, said error signal from said first means being coupled to said fifth means to affect the rate at which said fifth means generates said first signals as a function of said error signal.

6. A system for measuring the time delay between first and second time spaced signals and for determining the receipt of said second signals comprising:

generating means for initiating the first of said time spaced signals at a plurality of rates,

range means responsive to said generating means for comparing the second of said time spaced signals with respective gate signals representing the predicted time of arrival of said second signals to provide an error signal, said range means including counting means responsive to said error signal, the contents of said counting means being proportional to the time delay between said first and second signals, and

searching means for controlling the operation of said range means and said generating means, said searching means being responsive to said gate signals and said second signals for causing said generating means to operate at a higher rate and for causing said counting means to operate at a higher rate until a predetermined number of said second signals are received by said system.

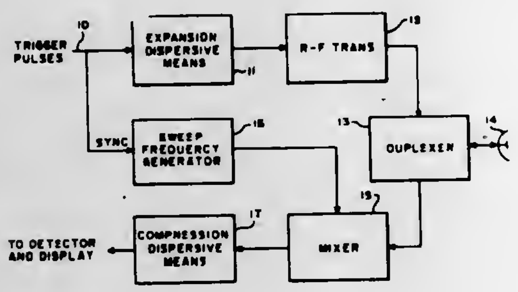
3,354,456

PULSE-TYPE OBJECT DETECTION APPARATUS

William J. Caputi, Jr., East Northport, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Oct. 30, 1964, Ser. No. 408,717

11 Claims. (Cl. 343—17.2)


TRIGGER PULSES
10
EXPANSION DISPERSIVE MEANS
11
R-F TRANS
12
SYNC
SWEEP FREQUENCY GENERATOR
16
13
DUPLEXER
14
15
TO DETECTOR AND DISPLAY
COMPRESSION DISPERSIVE MEANS
17
MIXER

1. In a pulse-type object detection apparatus, the combination which comprises

(a) means for transmitting dispersed pulses of predetermined frequency-time slope,

(b) means for receiving corresponding dispersed pulses from objects at a distance,

(c) means for producing a frequency sweep having a frequency-time slope different from that of the received dispersed pulses,

(d) mixer means supplied with said received dispersed pulses and said sweep for producing resultant dispersed pulses having a frequency-time slope substantially less than that of the received pulses,

(e) and compression dispersive means supplied with said resultant dispersed pulses for producing corresponding substantially non-dispersed pulses.

3,354,457

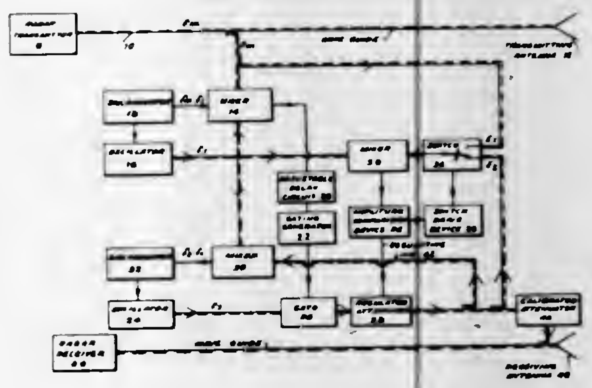
METHOD AND DEVICE FOR THE PRODUCTION OF A RADAR ECHO

Diethard G. Pfab, Munich, Germany, and Helmut A. Schwab, Dahlgren, Va., assignors to Eltro G.m.b.H. & Co., Heidelberg, Germany

Filed July 21, 1966, Ser. No. 566,807

Claims priority, application Germany, July 22, 1965, E 29,755

8 Claims. (Cl. 343—17.7)



2. For use with a radar transmitter and receiver which transmit and receive pulses characterized by carrier frequency and duration, an echo pulse generator comprising means responsive to pulses generated by the transmitter to generate corresponding pulses of like carrier frequency and duration, means to regulate the amplitude of said corresponding pulses in correspondence with the amplitude of the pulses generated by said transmitter, and means to couple the thusly regulated corresponding pulses to said receiver.

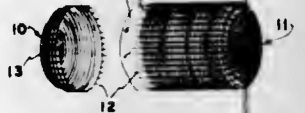
3,354,458

WIRE-FILM SPACE SATELLITE

Earl Rottmayer, Tallmadge, Ohio, assignor to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware

Filed May 20, 1966, Ser. No. 551,774

9 Claims. (Cl. 343—18)



1. In an inflatable satellite the combination of

an elongated geometrically shaped inflatable bladder having an axis,

a plurality of electrically conductive wires equally spaced around the outside of the bladder and secured thereto in aligned relation to the axis of the bladder when inflated, and

a single electrically conductive wire wrapped in equally spaced helical convolutions around the bladder so as to be substantially in crisscrossed relation to the plurality of aligned wires, and bonded to said wires at points of intersection whereby the wires are stretched to a cold worked state beyond their elastic limit but not beyond their ultimate strength upon the inflation of the bladder to a slightly enlarged form of its geometric shape.

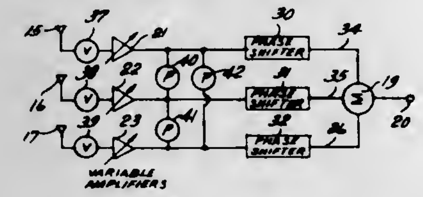
3,354,459

TRI-ORTHOGONAL ANTENNA SYSTEM WITH VARIABLE EFFECTIVE AXIS

Edmund I. Schwartz, Fairlawn, N.J., and James Chin-Bow, New York, N.Y., assignors to Devenco Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 5, 1965, Ser. No. 477,573

11 Claims. (Cl. 343—100)



5. An antenna system intended to receive a signal from a source and then transmit a signal having the same polarization as the received signal, comprising

(a) three antennas having mutually perpendicular axes and a common point of intersection,

(b) means for measuring the intensity of the signal received by each antenna,

(c) a circuit connected to each antenna for carrying a signal, to be transmitted, to its respective antenna, and

(d) means in each circuit for varying the intensity of the signal carried by the circuit,

whereby the intensity of the signal carried by each circuit can be made proportional to the intensity of the signal received by its respective antenna so that the spatial orientation of the vector representing the transmitted signal will be the same as the spatial orientation of the vector representing the received signal.

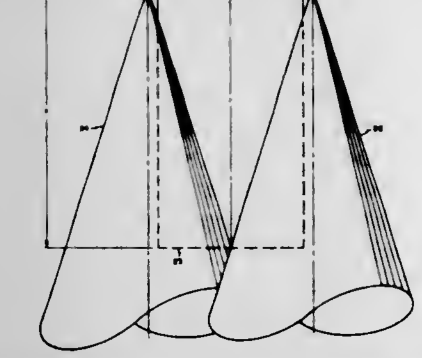
3,354,460

REDUNDANT RUNWAY LOCALIZER LANDING SYSTEM

Donald J. Toman, Pleasantville, N.Y., assignor to General Precision, Inc., a corporation of Delaware

Filed Jan. 16, 1967, Ser. No. 609,632

9 Claims. (Cl. 343—108)



1. The method of navigating an approaching aircraft toward a runway under conditions of poor visibility and ceiling comprising the steps of,

transmitting separate parallel localizer references from the region of said runway toward the region of said approaching aircraft,

detecting said separate parallel related localizers and deriving from each an electrical signal, the magnitude and polarity of each said signal representing the lateral deviation and direction respectively of said aircraft relative to said localizer references respectively, and

displaying to the pilot of said aircraft visual parallel displacements relative to a fixed reference point representing the instantaneous position of said aircraft, each of said displacements being proportional to a corresponding one of said signals.

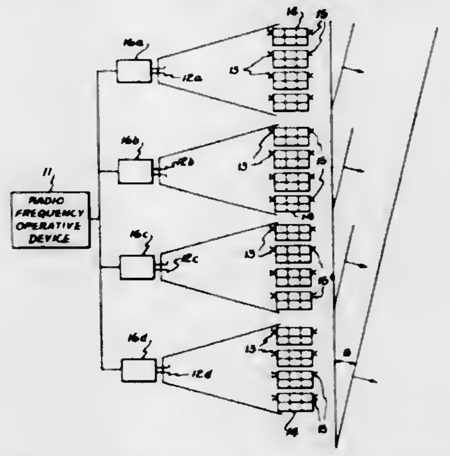
3,354,461

STEERABLE ANTENNA ARRAY

Kenneth S. Kelleher, 1115 Marine Drive, Alexandria, Va. 22307

Filed Nov. 15, 1963, Ser. No. 324,043

4 Claims. (Cl. 343—854)



1. A steerable antenna array comprising

transmitter means,

first antenna means coupled to said transmitter means for radiating electromagnetic wave energy,

first reflector means for reflecting the wave energy from said first antenna means,

second antenna means for receiving the reflected wave energy,

phase shifting means coupled to said second antenna means, said phase shifting means including

a three-port ferrite circulator and

a plurality of phase shift elements having diode-controlled transmission line sections of a predetermined electrical length to give a desired delay when switched in the transmission path, and

second reflector means for reflecting the wave energy from said phase shifting means back through said phase shifting means for radiation by said second antenna means.

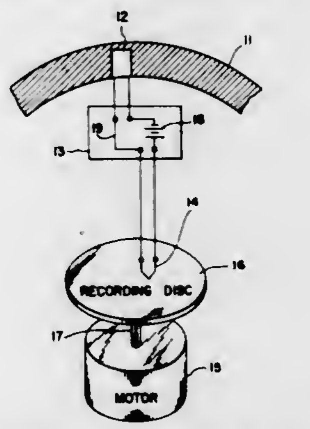
3,354,462

EVENT RECORDER

James M. Russell III, Newport News, and William E. Fox, Yorktown, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

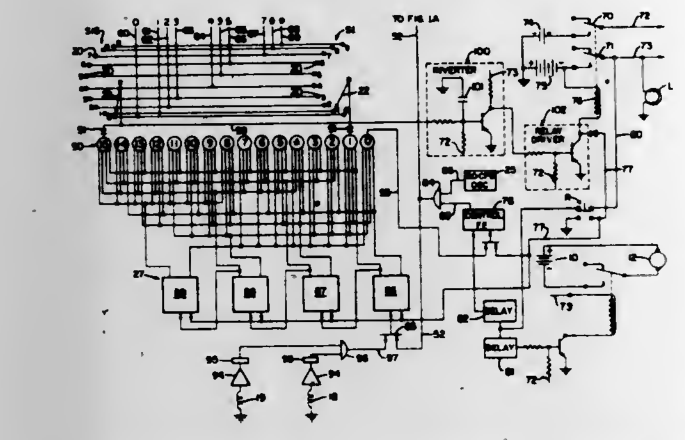
Filed Dec. 30, 1965, Ser. No. 517,858

7 Claims. (Cl. 346—50)



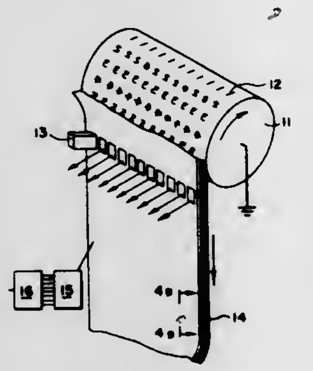
1. An event recorder comprising: a moving recording surface; means in close proximity to said recording surface for generating carbon when a pulse of electrical current is passed through it; and means responsive to an event for passing a pulse of electrical current through said means for producing carbon whereby the location of the resulting carbon spot on said recording surface indicates the time of the event.

3,354,463
FREQUENCY CODED DIGITAL RECORDING SYSTEM
Raymond B. Larsen, Broomfield, Colo., assignor to The Electric Information Company, Broomfield, Colo., a corporation of Wyoming
Filed Sept. 16, 1963, Ser. No. 309,098
9 Claims. (Cl. 346—74)



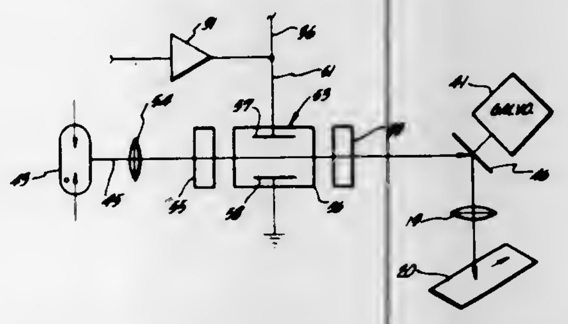
1. A recording system comprising a recording surface, recording means disposed for recording units of information on the recording surface, a plurality of frequency pulse generating means for generating pulses of different discrete frequencies, means applying selected combinations of the frequencies generated for simultaneous recording by said recording means on the recording surface according to a combinatorial code in which each different combination of frequencies recorded is representative of a different unit of information and timing signal generating means to produce timing signals for controlling the duration of recording and spacing between frequency pulses recorded on the recording surface.

3,354,464
METHOD OF ELECTROSTATIC PRINTING OF MULTIPLE COPIES
Kenmi Tsukatani, Tokyo, Masaaki Nagamine, Kawasaki, Yuji Hamada, Yamagata-shi, and Kiyoshi Takagi, Kawasaki, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Jan. 17, 1964, Ser. No. 338,345
Claims priority, application Japan, Jan. 21, 1963, 38/2,863
5 Claims. (Cl. 346—74)



1. The method of electric printing by electrostatically producing a latent image on insulating sheet material between backing electrode means and printing-face electrode means and thereafter developing a visible means by applying dielectric coloring substance to the image, which comprises simultaneously placing a number of sheets as a sheaf between the two electrodes, each individual sheet comprising a paper base coated on one side with a layer of dielectric recording material of more than 10^{13} ohm-cm. specific resistance, said dielectric recording material having finely distributed surface irregularities of a roughness depth between 2 and 20 microns, applying voltage between the electrodes across the thickness of the sheaf whereby a latent electrostatic charge image is formed simultaneously on the coating of each sheet, and then separating the sheaf into individual sheets prior to developing the visible images thereon.

3,354,465
CONSTANT DENSITY OSCILLOGRAPH TRACE
Charles H. Merritt, Altadena, and John H. Bennett, Granada Hills., Calif., assignors to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Oct. 22, 1965, Ser. No. 501,161
2 Claims. (Cl. 346—109)

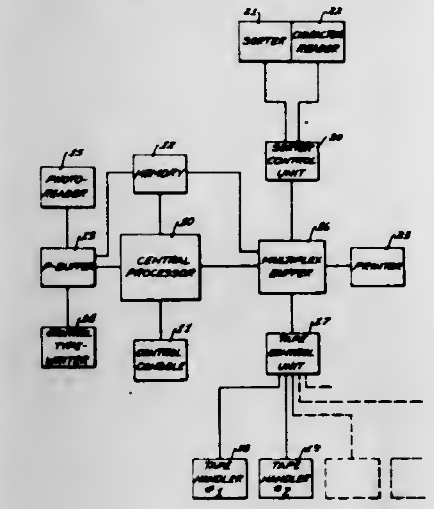


1. In a recording oscillograph including means for moving a light sensitive recording medium along a predetermined path, a constant intensity source of light radiation, means for directing a beam of the light radiation along a selected path intersecting said predetermined path to record upon a medium moving therealong an image of the beam, and means responsive to variations in an input signal to the oscillograph for deflecting the beam transversely of said predetermined path so that the recorded image forms a record of variations in the value of the input signal, the improvement comprising light modulating means responsive to variations in the input signal for varying the amount of light transmitted along said selected path from the light source to the recording medium in proportion to the rate at which the beam moves transversely of said predetermined path, the light modulating means including a light polarizer disposed across the beam, a polarized light analyzer disposed across the beam opposite the polarizer from the light source, a Kerr Cell disposed across the beam between the polarizer and the analyzer, a filter circuit to which the input signal is applied and constructed so that, when the input signal varies in a manner productive of a velocity of the beam transversely of the direction of medium movement greater than a selected velocity, the filter circuit passes as its output the input signal to an extent proportional to the difference between the instantaneous transverse velocity of the beam and the selected velocity, and means applying the output of the filter circuit to the Kerr Cell for driving the Kerr Cell.

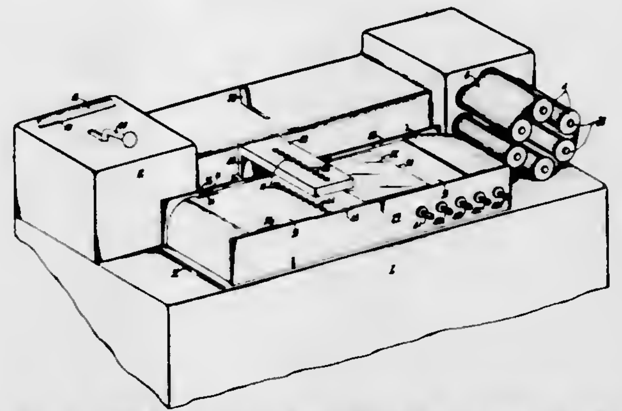
3,354,466
APPARATUS IN DATA PROCESSING SYSTEM FOR COORDINATING MEMORY COMMUNICATION AMONG PROCESSORS AND PERIPHERAL DEVICES
Henry L. Herold and Joseph Weizenbaum, Palo Alto, Calif., assignors to General Electric Company, a corporation of New York
Filed Feb. 12, 1960, Ser. No. 8,394
38 Claims. (Cl. 340—172.5)

1. In combination, a data storage unit for storing a plurality of data items, first means for handling data items, signalling means for providing a signal when said first means must communicate with said data storage unit, a data processing unit adapted to perform data processing operations on data items received thereby, and means responsive to said signal for providing communication between said first means and said data storage unit during a period of predetermined duration wherein no data item is transferred between said data storage unit and said data processing unit.

2. In combination, a data storage unit for storing a plurality of data items, first means for handling data items in sequence, signalling means for providing a signal when said first means must communicate with said storage unit, a data processing unit connected for access to said data storage unit and adapted to process data by executing operations thereon, means responsive to said signal for causing said data processing unit to discontinue data processing, means for providing communication between said first means and said storage unit following the discontinuation of said data processing, and means for causing said data processing unit to resume processing data following completion of said communication.



3,354,467
INFORMATION RETRIEVAL MACHINE AND METHOD
Francis Cheyney Beekley, West Hartford, Conn., assignor to The Beekley Corporation, West Hartford, Conn., a corporation of Connecticut
Filed May 27, 1964, Ser. No. 370,477
15 Claims. (Cl. 340—172.5)

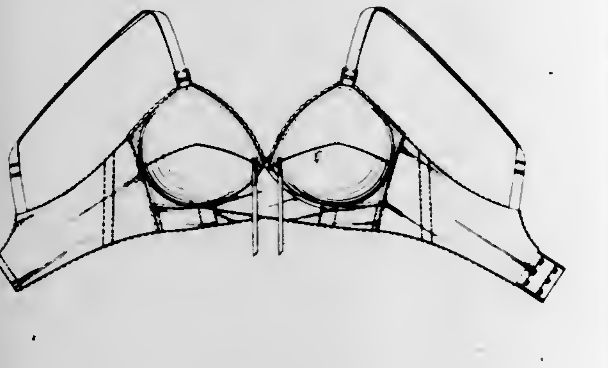


1. In a machine for identifying information sources which are indexed on input tapes according to selected characteristics and the like, a printing mechanism for printing the identification indicia information sources having the selected characteristics comprising in combination: a counter having a plurality of type wheels for printing the first portion of the identification indicia, a plurality of type arms operable independently of the counter each adapted to simultaneously print the terminal portion of the identification indicia for one or more of the information sources having the selected characteristics, a platen means cooperable with said type wheels and said type arms for printing the identification indicia, and an actuator means including a solenoid for moving said platen means relative to said type wheels and arms for printing.

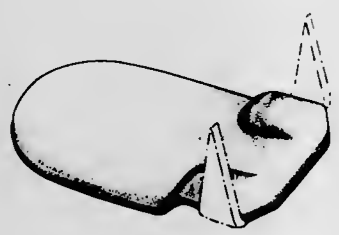
DESIGNS

NOVEMBER 21, 1967

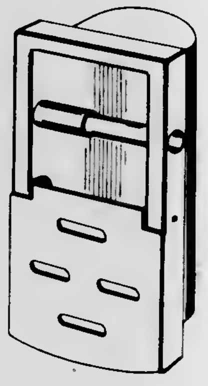
209,269
BRASSIERE
Moe Tuschman, Flushing, N.Y., assignor to Sarong, Inc.,
Dover, Del., a corporation of Delaware
Filed June 30, 1966, Ser. No. 2,885
Term of patent 14 years
(Cl. D2—24)



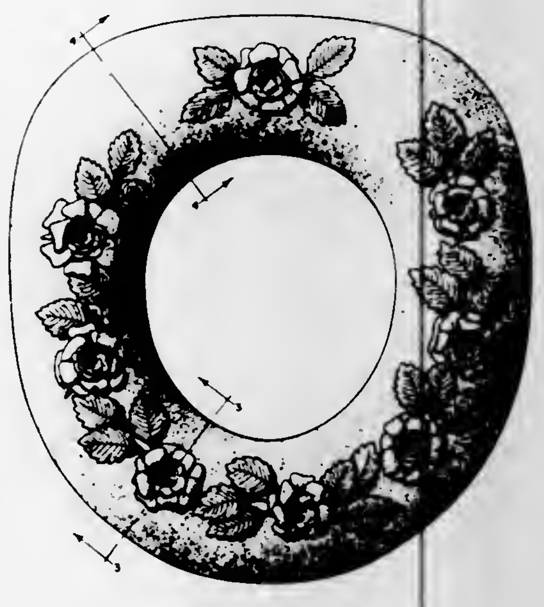
209,270
HOOK FASTENER
Robert T. Swartz, Lexington, Ky., assignor to
Talon, Inc., a corporation of Pennsylvania
Filed Apr. 7, 1966, Ser. No. 1,811
Term of patent 14 years
(Cl. D2—442)



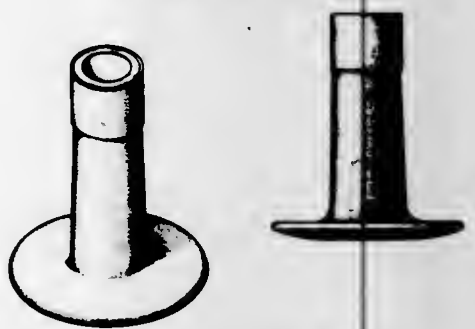
209,271
TOILET PAPER HOLDER
Morris Yavitch, 1008 Bendict Canyon Drive,
Beverly Hills, Calif. 90210
Filed Oct. 31, 1966, Ser. No. 4,476
Term of patent 14 years
(Cl. D4—3)



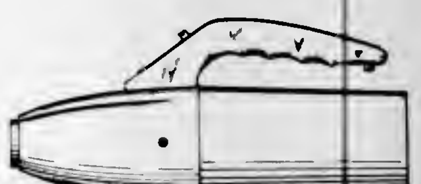
209,272
TOILET SEAT
Charles G. Tate, Jr., 19 Locust St.,
North Providence, R.I. 02906
Substituted for abandoned design application Ser. No. 83,706, Jan. 7, 1965. This application June 20, 1966, Ser. No. 4,078
Term of patent 14 years
(Cl. D4—5)



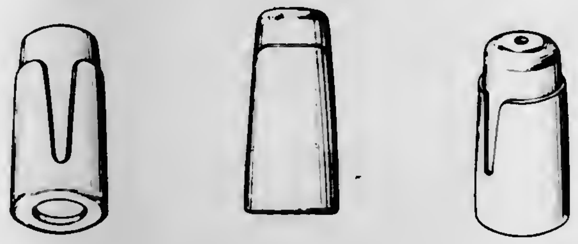
209,273
FLOOR GLIDE FOR A BED FRAME
Delmar C. Steinwedel, Seymour, Ind., and Stuart R. Paine, Louisville, Ky., assignors to Seymour Industries, Inc., Seymour, Ind., a corporation of Indiana
Filed Jan. 10, 1966, Ser. No. 550
Term of patent 14 years
(Cl. D5—2)



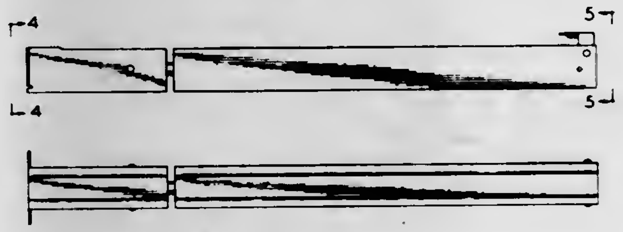
209,274
POWERED HAND-HELD AUTOMOBILE VACUUM CLEANER
Harold Richards, Eastchester, and Jean J. Schnoll, New York, N.Y., assignors to Perfect Film & Chemical Corporation
Filed Feb. 8, 1967, Ser. No. 5,725
Term of patent 14 years
(Cl. D9—2)



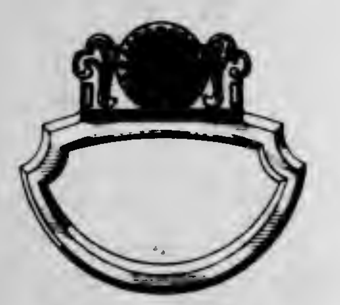
209,275
TOOTHBRUSH HOLDER
Abraham M. Wolfson, 400 E. Randolph St.,
Chicago, Ill. 60601
Filed Apr. 24, 1967, Ser. No. 6,800
Term of patent 14 years
(Cl. D9—2)



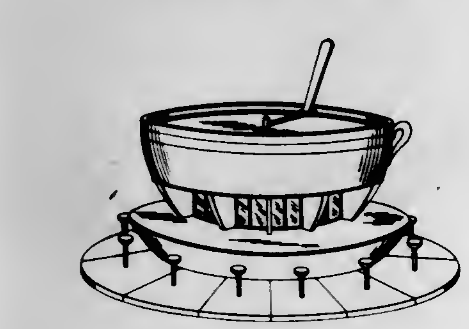
209,276
DOOR CLOSER
Sidney W. Mowrer, Jr., Ashland, Ohio, assignor to Shelby Corporation, Shelby, Ohio, a corporation of Ohio
Filed Feb. 3, 1966, Ser. No. 900
Term of patent 14 years
(Cl. D10—7)



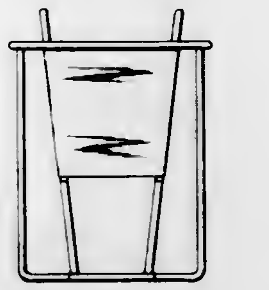
209,277
DRAWER PULL
Anthony J. Carsello, Hollywood, Calif., assignor to Ajax Hardware Manufacturing Corp., Industry, Calif., a corporation of California
Filed June 27, 1966, Ser. No. 2,830
Term of patent 14 years
(Cl. D10—8)



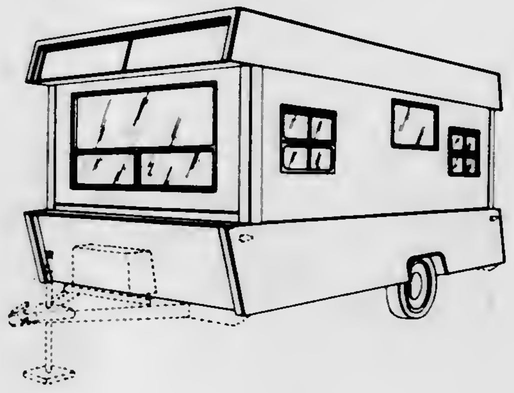
209,278
TAKE-OUT SNACK BAR
Fred J. Charles, 7727 Coolgrove Drive,
Downey, Calif. 90240
Filed June 16, 1966, Ser. No. 2,705
Term of patent 14 years
(Cl. D13—1)



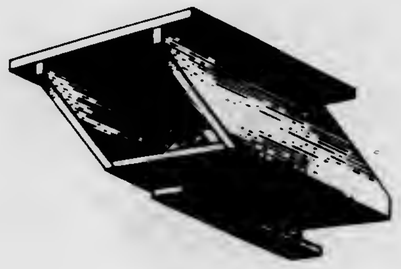
209,279
SHOPPING CART ATTACHMENT
Melvin Cohen, 150 Dayton Ave.,
Passaic, N.J. 07055
Filed Nov. 16, 1966, Ser. No. 4,699
Term of patent 14 years
(Cl. D14—3)



209,280
COLLAPSIBLE TRAVEL TRAILER
Leo J. Hagenson, Grantsburg, Wis., assignor to Rolite, Inc., Grantsburg, Wis., a corporation of Wisconsin
Filed Feb. 15, 1967, Ser. No. 5,827
Term of patent 14 years
(Cl. D14—3)

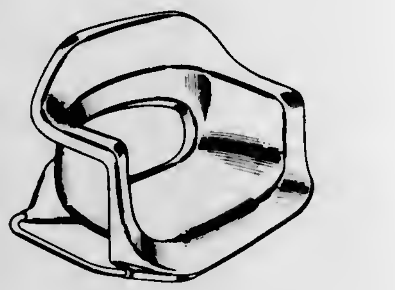


209,281
DETACHABLE SEAT FOR A PICNIC BENCH OR SIMILAR ARTICLE
Dillon C. Yeagley, 1737 S. Liberty Ave.,
Alliance, Ohio 44601
Filed Nov. 19, 1965, Ser. No. 88,154
Term of patent 14 years
(Cl. D15—8)



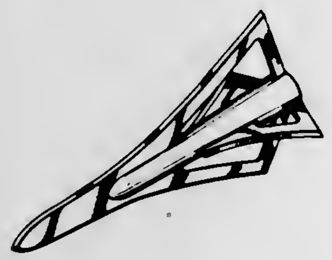
209,282
PORTABLE SEAT FOR ATTACHMENT TO A STEAM CABINET OR SIMILAR ARTICLE

Lewis W. Boyd, William R. Johnson, and Walter F. Gray, Battle Creek, Mich., assignors to Battle Creek Equipment Co., Battle Creek, Mich., a corporation of Michigan
Filed Sept. 26, 1966, Ser. No. 4,018
Term of patent 14 years
(Cl. D15—8)



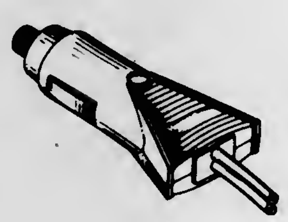
209,283
ARROWHEAD

Lonnie H. Smith, 500 Azalea Circle, Marietta, Ga. 30060
Filed Jan. 31, 1967, Ser. No. 5,625
Term of patent 14 years
(Cl. D22—12)



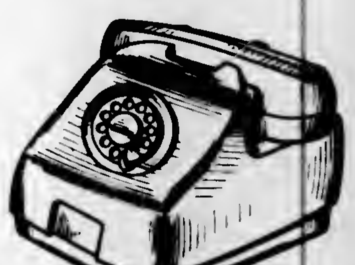
209,284
ELECTRICAL ACCESSORY PLUG FOR AUTOMOBILE CIGAR LIGHTERS OR THE LIKE

Albert G. Busch, 31 Melrose Lane, Deerfield, Lincolnshire, Ill. 60015
Filed Aug. 5, 1966, Ser. No. 3,357
Term of patent 14 years
(Cl. D26—1)



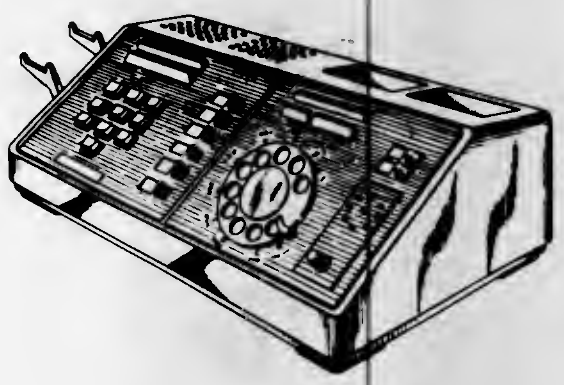
209,285
TELEPHONE INSTRUMENT

Akira Takayanagh and Yutaka Kimura, Tokyo, Yasunobu Asakawa, Yokohama-shi, and Kiyoshi Aihara, Haruhiko Ishii, and Shunichiro Miura, Tokyo, Japan, assignors to Nippon Telegraph & Telephone Public Corporation and Kabushiki Kaisha Tamura Denki Seisakusho, both corporations of Japan
Filed July 28, 1965, Ser. No. 86,347
Claims priority, application Japan Feb. 3, 1965
Term of patent 14 years
(Cl. D26—14)



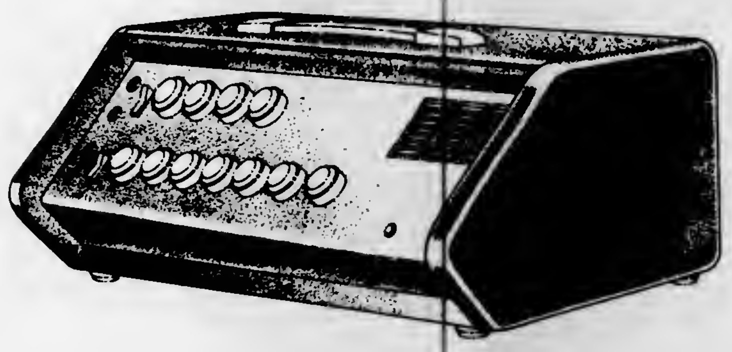
209,286
MULTIFEATURED SUBSCRIBER TELEPHONE STAND

Claude A. R. Kagan, Hopewell Township, Mercer County, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 10, 1965, Ser. No. 141
Term of patent 3½ years
(Cl. D26—14)



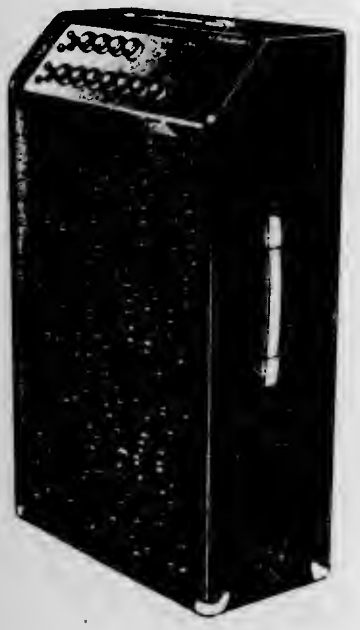
209,287
AMPLIFIER OR SIMILAR ELECTRONIC APPARATUS

Paul B. Spranger, Fullerton, Calif., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Mar. 25, 1966, Ser. No. 1,636
Term of patent 14 years
(Cl. D26—14)



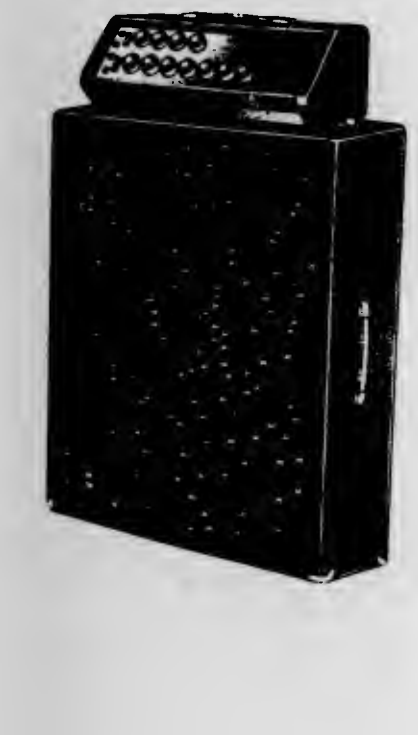
209,288
COMBINATION AMPLIFIER AND SPEAKER CABINET

Paul B. Spranger, Fullerton, Calif., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Mar. 25, 1966, Ser. No. 1,637
Term of patent 14 years
(Cl. D26—14)



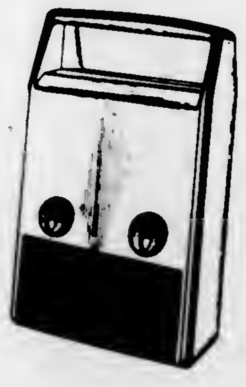
209,289
COMBINATION AMPLIFIER AND SPEAKER CABINET

Paul B. Spranger, Fullerton, Calif., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Mar. 25, 1966, Ser. No. 1,638
Term of patent 14 years
(Cl. D26—14)



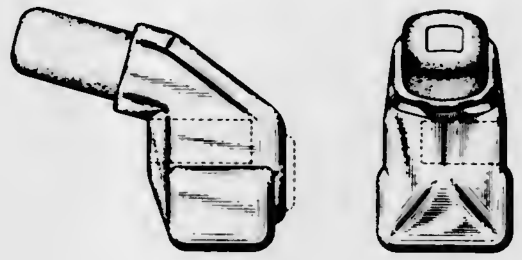
209,290
PORTABLE TAPE PLAYER HOUSING OR SIMILAR ARTICLE

Robert S. Schreibel, Minato-ku, Tokyo, Japan, assignor to Playtape, Inc., New York, N.Y., a corporation of New York
Filed July 18, 1966, Ser. No. 3,110
Term of patent 14 years
(Cl. D26—14)



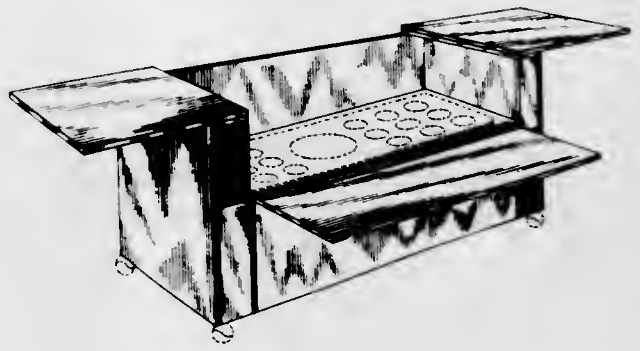
209,291
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed July 21, 1966, Ser. No. 3,170
Term of patent 14 years
(Cl. D26—14)

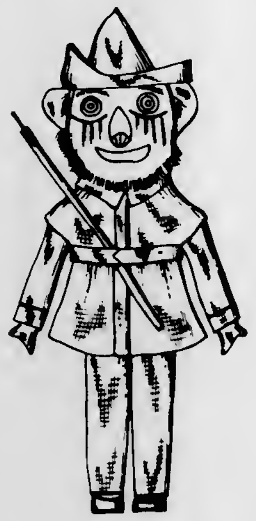


209,292
BAR CART

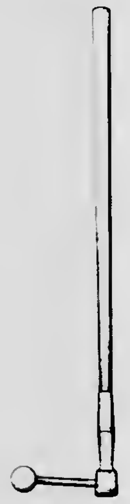
Nicholas A. Ungaro, Louisville, Ky., assignor to Kroehler Mfg. Co., Naperville, Ill., a corporation of Illinois
Filed Nov. 3, 1966, Ser. No. 4,530
Term of patent 14 years
(Cl. D33—19)



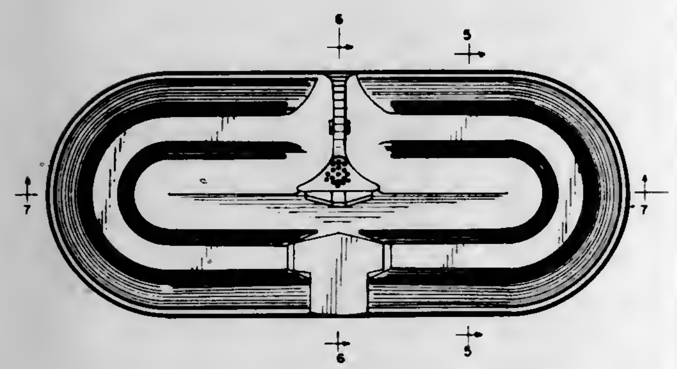
209,293
DOLL
Marguerite Mayeroff, P.O. Box 601,
Yerington, Nev. 89447
Filed Jan. 28, 1966, Ser. No. 896
Term of patent 14 years
(Cl. D34—4)



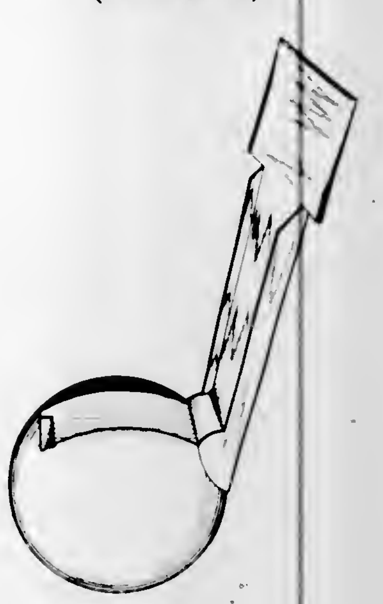
209,294
GOLF CLUB
Otis H. Hitt, 511 Middle St., Archbold, Ohio 43502
Filed Jan. 7, 1966, Ser. No. 533
Term of patent 14 years
(Cl. D34—5)



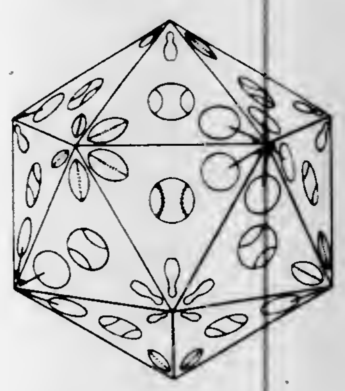
209,295
BOWLING BALL RACK
Ralph Grimes, 207 W. Plum St.,
Georgetown, Ohio 45121
Filed June 2, 1966, Ser. No. 2,520
Term of patent 14 years
(Cl. D34—5)



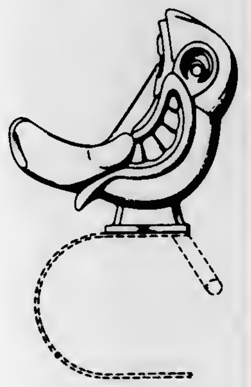
209,296
AMUSEMENT PUTTING DEVICE
John F. Draper, 571 Park Ave.,
Rialto, Calif. 92376
Filed July 18, 1966, Ser. No. 3,106
Term of patent 14 years
(Cl. D34—5)



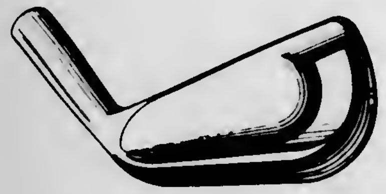
209,297
GAME DIE
William D. Hulser, 809 N. Spaulding,
Los Angeles, Calif. 90046
Filed Nov. 15, 1966, Ser. No. 4,669
Term of patent 3½ years
(Cl. D34—5)



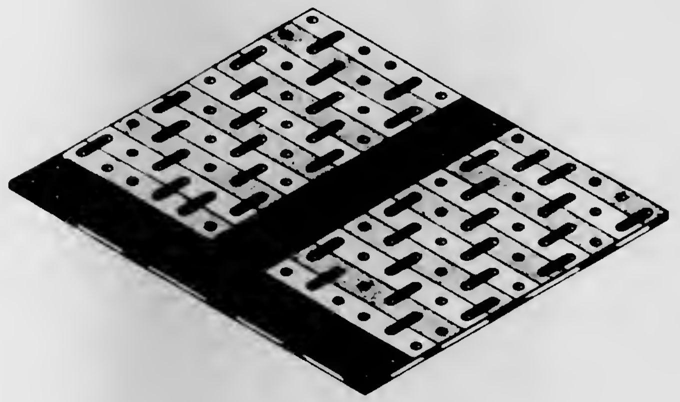
209,298
RIDER SEAT FOR PLAYGROUND APPARATUS
Ronald W. Zick, Torrance, Calif., assignor to Jamison, Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 6, 1966, Ser. No. 4,929
Term of patent 14 years
(Cl. D34—5)



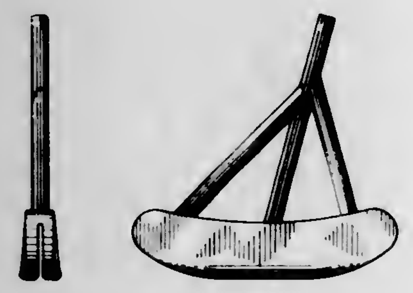
209,299
GOLF CLUB HEAD
James M. Long, South Hadley, Mass., assignor to A. G. Spalding & Bros. Inc., Chicopee, Mass., a corporation of Delaware
Filed Jan. 11, 1967, Ser. No. 5,381
Term of patent 3½ years
(Cl. D34—5)



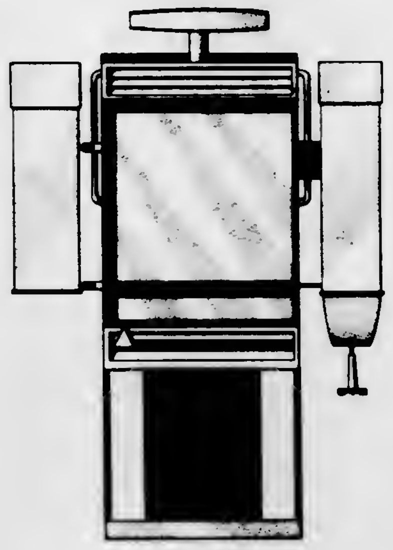
209,300
GAME BOARD
Enrique C. Ligeti, 8455 Beverly Lane, and Henry A. Keough, 7347 Limerick Court, both of Dublin, Calif. 94566
Filed Jan. 20, 1967, Ser. No. 5,491
Term of patent 3½ years
(Cl. D34—5)



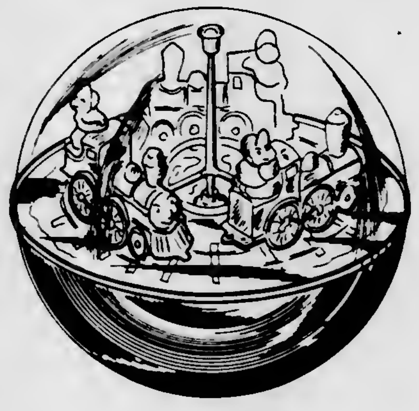
209,301
GOLF PUTTER HEAD
Edward V. Comitz, 4635 E. San Carlos Place,
Tucson, Ariz. 85716
Filed Apr. 7, 1967, Ser. No. 6,576
Term of patent 14 years
(Cl. D34—5)



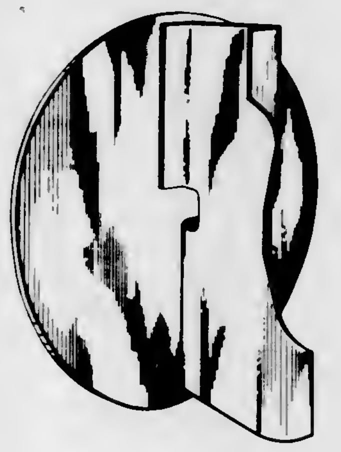
209,302
ICE CREAM MAKER TOY
Terry L. Bernard, 226 E. Crest, Reading, Ohio 45215
Filed Nov. 2, 1966, Ser. No. 4,520
Term of patent 14 years
(Cl. D34—15)



209,303
BALL TOY
Arthur Zadek, 7 Seminary Court,
Bergenfield, N.J. 07621
Filed Mar. 24, 1967, Ser. No. 6,376
Term of patent 14 years
(Cl. D34—15)



209,304
SNOW BLOWER FAN FOR SNOW REMOVAL EQUIPMENT
Lloyd C. Hahn, Vanderburgh County, Ind., assignor to Hahn Inc., Evansville, Ind., a corporation of Indiana
Filed June 13, 1966, Ser. No. 2,656
Term of patent 14 years
(Cl. D35—2)

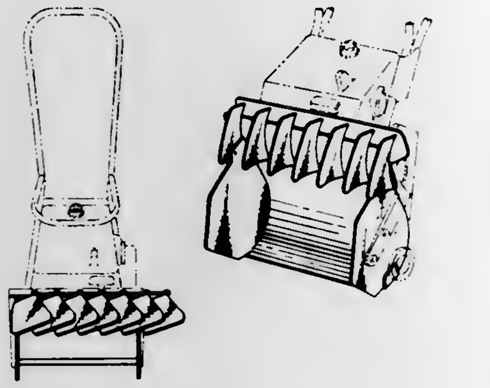


209,305
SNOW PLOW HOUSING

Byron L. Ertsgaard, Riverside, Calif., and John A. Gale, Wayzata, Minn., assignors to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota

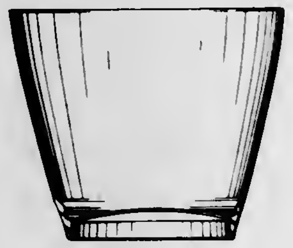
Original design application Feb. 5, 1965, Ser. No. 83,697, now design Patent No. 205,531, dated Aug. 16, 1966. Divided and this application June 30, 1966, Ser. No. 2,869

Term of patent 14 years
(Cl. D35—2)



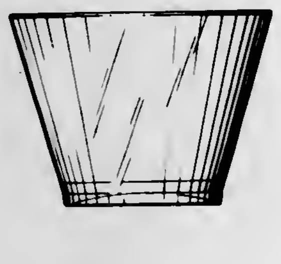
209,306
TUMBLER

Paul K. Schilling, St. Paul, Minn., assignor to Plastics, Inc., St. Paul, Minn., a corporation of Minnesota
Filed Mar. 7, 1966, Ser. No. 1,303
Term of patent 14 years
(Cl. D36—8)



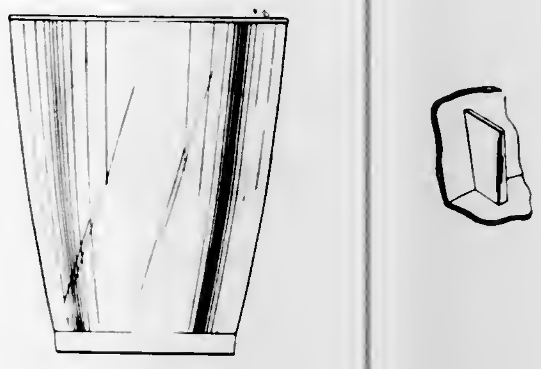
209,307
TUMBLER

Paul K. Schilling, St. Paul, Minn., assignor to Plastics, Inc., St. Paul, Minn., a corporation of Minnesota
Filed Mar. 7, 1966, Ser. No. 1,331
Term of patent 14 years
(Cl. D36—8)



209,308
TUMBLER

Paul K. Schilling, St. Paul, Minn., assignor to Plastics, Inc., St. Paul, Minn., a corporation of Minnesota
Filed Mar. 21, 1966, Ser. No. 1,554
Term of patent 14 years
(Cl. D36—8)

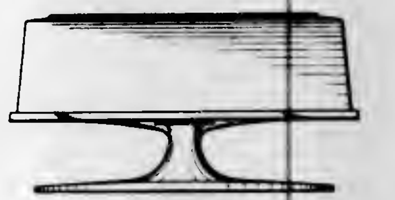


209,309
BUTTER DISH

Mel Appel, 9 Nottingham Road, Livingston, N.J. 07039, and Martin Schnur, 220 St. Cloud Ave., West Orange, N.J. 07052

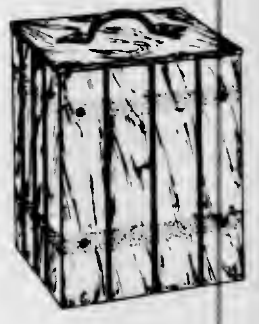
Original design application Nov. 2, 1966, Ser. No. 4,513. Divided and this application July 24, 1967, Ser. No. 8,199

Term of patent 14 years
(Cl. D44—5)



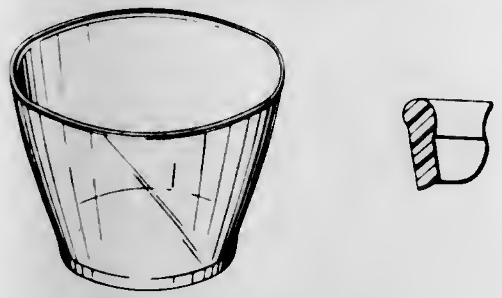
209,310
CANISTER

Mel Appel, Livingston, and Martin Schnur, West Orange, N.J., assignors to Elpo Industries Inc., Fair Lawn, N.J., a corporation of New Jersey
Filed Feb. 8, 1967, Ser. No. 5,722
Term of patent 14 years
(Cl. D44—6)



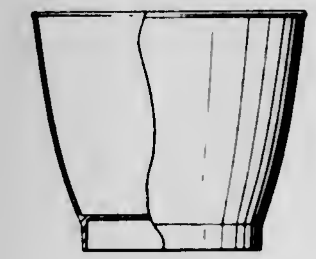
209,311
SALAD CUP

Paul K. Schilling, St. Paul, Minn., assignor to Plastics, Inc., St. Paul, Minn., a corporation of Minnesota
Filed Mar. 21, 1966, Ser. No. 1,562
Term of patent 14 years
(Cl. D44—9)



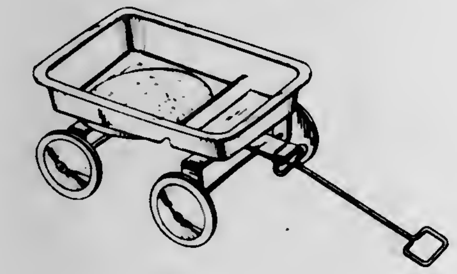
209,312
CONDIMENT CUP

Paul K. Schilling, St. Paul, Minn., assignor to Plastics, Inc., St. Paul, Minn., a corporation of Minnesota
Filed Mar. 21, 1966, Ser. No. 1,563
Term of patent 14 years
(Cl. D44—9)



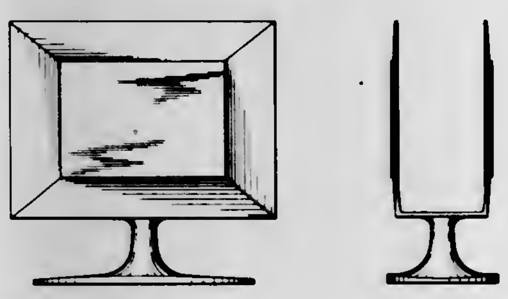
209,313
COASTER

Mel Appel, Livingston, and Martin Schnur, West Orange, N.J., assignors to Elpo Industries Inc., Fair Lawn, N.J., a corporation of New Jersey
Filed Feb. 8, 1967, Ser. No. 5,721
Term of patent 14 years
(Cl. D44—10)



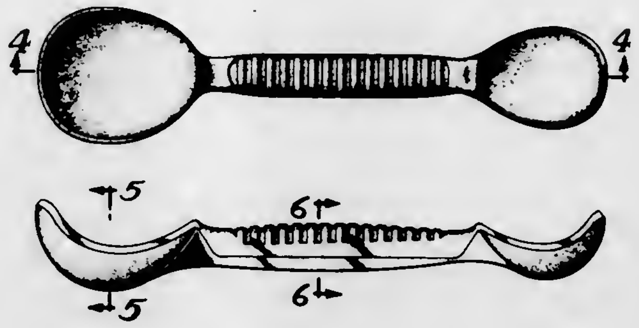
209,314
NAPKIN HOLDER

Mel Appel, 9 Nottingham Road, Livingston, N.J. 07039, and Martin Schnur, 220 St. Cloud Ave., West Orange, N.J. 07052
Filed Nov. 2, 1966, Ser. No. 4,513
Term of patent 14 years
(Cl. D44—24)



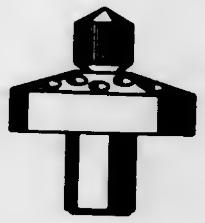
209,315
ICE CREAM SCOOP

Richard I. Page, Minneapolis, Minn., assignor to Foley Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 25, 1967, Ser. No. 5,559
Term of patent 14 years
(Cl. D44—29)



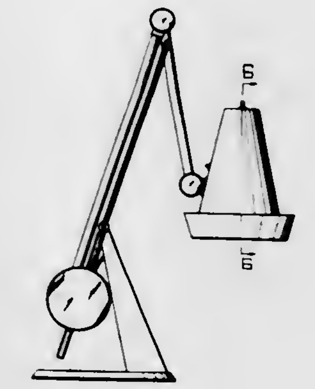
209,316
CANDLEHOLDER

Paul Voltaire, R.D. 2, New Milford, Conn. 06460
Filed May 11, 1967, Ser. No. 7,075
Term of patent 14 years
(Cl. D48—2)



209,317
DESK LAMP

You Hirose, 24—7, 3-ban-cho, Chiyoda-ku, Tokyo, Japan
Filed Oct. 21, 1965, Ser. No. 87,677
Term of patent 3½ years
(Cl. D48—20)

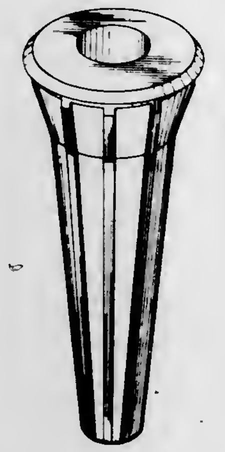


209,318

TORCH HOLDER

Dean Stone, Lisle, Ill., assignor to General Automotive Distributing, Inc., Naperville, Ill., a corporation of Illinois

Filed Jan. 19, 1967, Ser. No. 5,484
Term of patent 14 years
(Cl. D48—24)

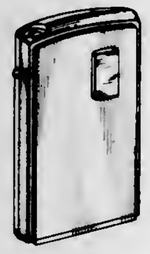


209,319

CIGARETTE LIGHTER

Seymour Rappoport, Rumson, N.J., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey

Filed July 27, 1966, Ser. No. 3,232
Term of patent 14 years
(Cl. D48—27)

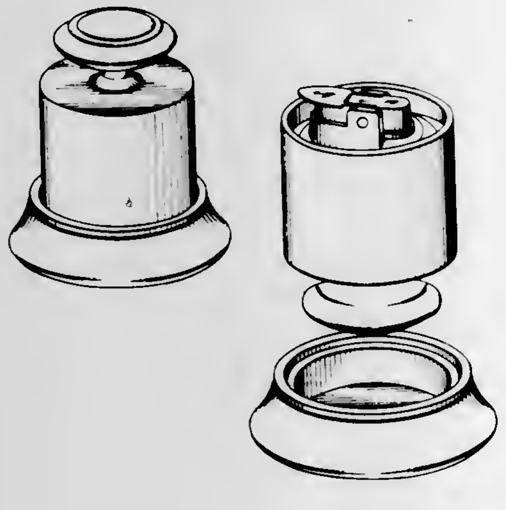


209,320

CIGARETTE LIGHTER

Seymour Rappoport, Rumson, N.J., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey

Filed Sept. 8, 1966, Ser. No. 3,775
Term of patent 14 years
(Cl. D48—27)

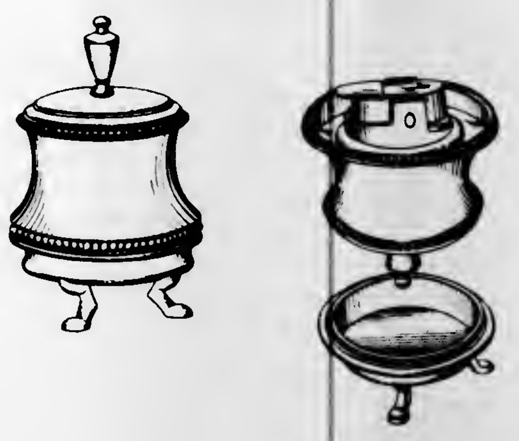


209,321

CIGARETTE LIGHTER

Seymour Rappoport, Rumson, N.J., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey

Filed Sept. 13, 1966, Ser. No. 3,844
Term of patent 14 years
(Cl. D48—27)

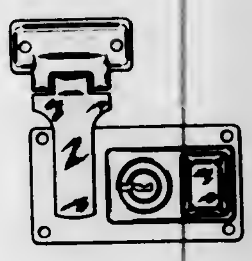


209,322

LUGGAGE LOCK OR SIMILAR ARTICLE

Charles S. Gehrie, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York

Filed July 26, 1966, Ser. No. 3,213
Term of patent 14 years
(Cl. D50—7)

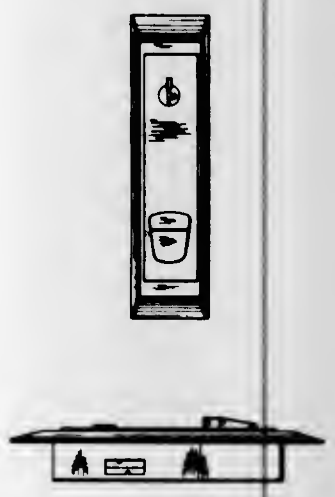


209,323

LOCK FOR LUGGAGE OR THE LIKE

Eric F. Constable, Solihull, England, assignor to C. W. Cheney & Son Limited, Birmingham, England, a British company

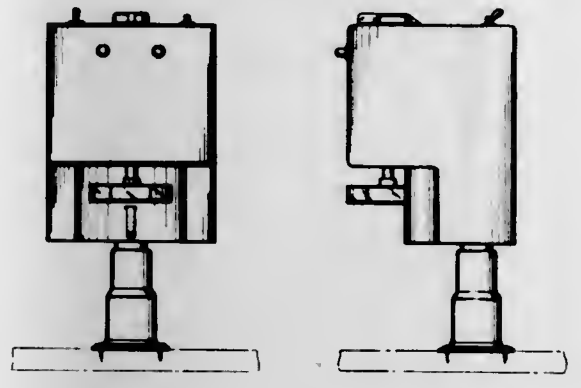
Filed Aug. 19, 1966, Ser. No. 3,540
Claims priority, application Great Britain Feb. 21, 1966
Term of patent 14 years
(Cl. D50—7)



209,324

COUNTER-MOUNTED DISPENSER FOR CONDIMENTS AND THE LIKE

Melvin J. Berkowitz, 2 Roan Lane,
La Due, Mo. 64758
Filed June 3, 1965, Ser. No. 85,561
Term of patent 3½ years
(Cl. D52—2)



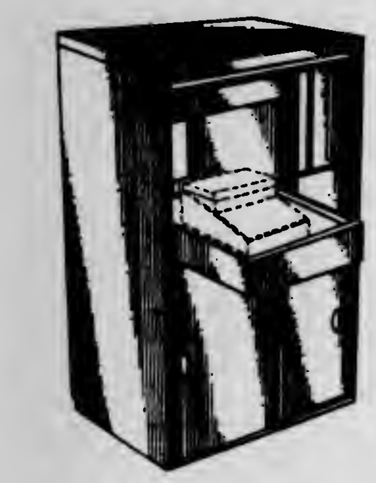
209,325

SERVICE STATION CABINET

Homer F. King, Elmhurst, Ill., assignor to Advertising Metal Display Co., Chicago, Ill., a corporation of Illinois

Original design application Jan. 24, 1966, Ser. No. 730, now design Patent No. 206,903, dated Feb. 7, 1967. Divided and this application Aug. 29, 1966, Ser. No. 4,909

Term of patent 14 years
(Cl. D52—2)

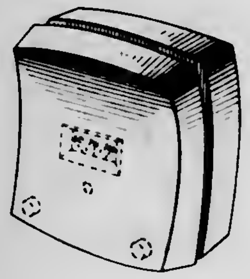


209,326

WALL THERMOSTAT CASING

Alan E. Maire, Goshen, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed July 13, 1966, Ser. No. 3,062
Term of patent 14 years
(Cl. D52—7)

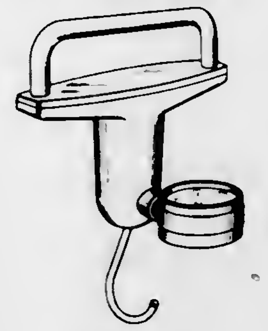


209,327

FLUID PRESSURE OPERATED SCALE

Eugene L. Kilbourn, Marshall, Mich., assignor to Progressive Dynamics, Inc., Marshall, Mich.

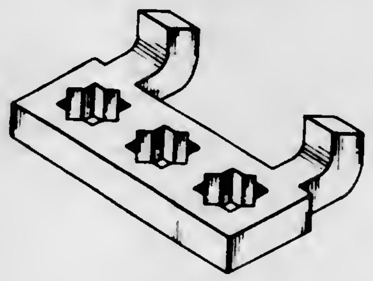
Filed Oct. 14, 1966, Ser. No. 4,273
Term of patent 7 years
(Cl. D52—10)



209,328

PEG BOARD BRACKET

Leerie O. Baker, College St., Greenville, Ill. 62246
Filed June 21, 1967, Ser. No. 7,540
Term of patent 14 years
(Cl. D54—1)

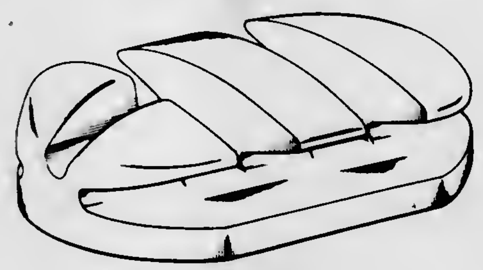


209,329

JAM CLEAT

Gerard F. Coderre, 524 Matson Hill Road, and Marcel W. Coderre, 41 Prospect St., both of Glastonbury, Conn. 06033

Filed Sept. 13, 1966, Ser. No. 3,850
Term of patent 14 years
(Cl. D54—11)

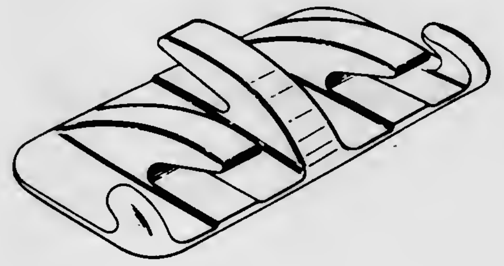


209,330

JAM CLEAT

Gerard F. Coderre, 524 Matson Hill Road, and Marcel W. Coderre, 41 Prospect St., both of Glastonbury, Conn. 06033

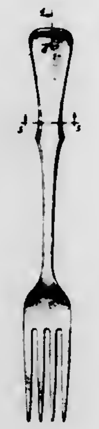
Filed Sept. 26, 1966, Ser. No. 4,031
Term of patent 14 years
(Cl. D54—11)



209,331

FORK OR SIMILAR ARTICLE

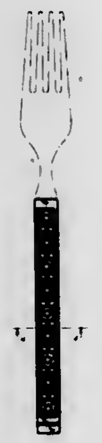
James Russell Price, Esmond, R.I., assignor to Gorham Corporation, Providence, R.I.
Filed Oct. 25, 1966, Ser. No. 4,424
Term of patent 14 years
(Cl. D54—12)



209,332

FORK OR SIMILAR ARTICLE

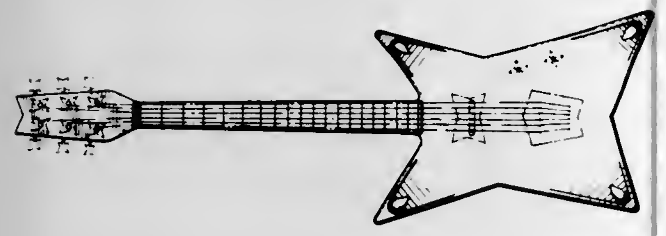
William J. Knope, Jr., Cranston, R.I., assignor to Gorham Corporation, Providence, R.I.
Filed Mar. 17, 1967, Ser. No. 6,278
Term of patent 14 years
(Cl. D54—12)



209,333

MUSICAL INSTRUMENT

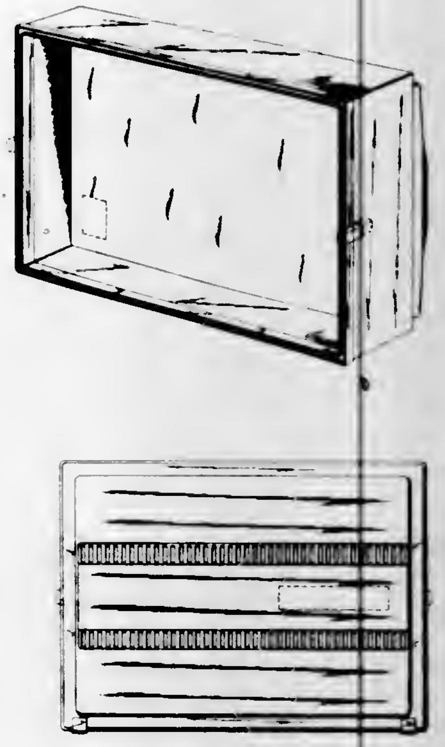
Julius Ketjen, 701 El Centro St., South Pasadena, Calif. 90038
Filed Sept. 23, 1966, Ser. No. 4,003
Term of patent 14 years
(Cl. D56—1)



209,334

COMBINED COVER AND SPEAKER ENCLOSURE FOR PHONOGRAPHS OR THE LIKE

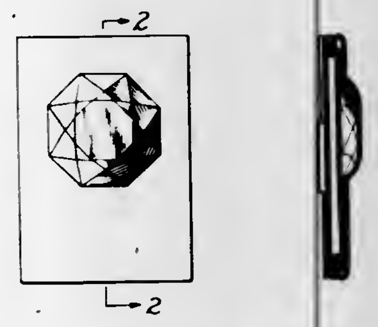
George M. Buckler, Baldwinsville, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 7, 1966, Ser. No. 519
Term of patent 14 years
(Cl. D56—4)



209,335

PACKAGE FOR NEEDLES OR THE LIKE

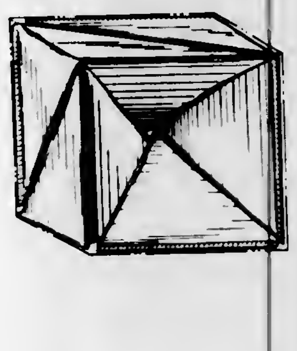
Karl-Heinz Deneke, auf dem Rott, Gressenich, near Aachen, Germany
Filed Oct. 1, 1965, Ser. No. 87,253
Term of patent 14 years
(Cl. D58—2)



209,336

ASSEMBLED PACKAGE OF CONTAINERS

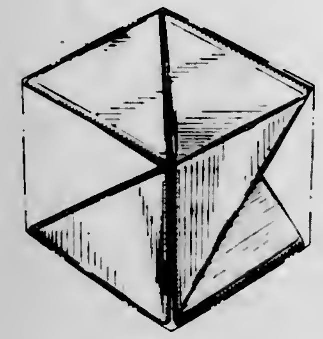
Ralph E. Dykes, 315 2nd St., Saddle Brook, N.J. 07662, and Robert M. Mitchell, 22 Beechwood Road, South Norwalk, Conn. 06854
Continuation of design application Ser. No. 75,504, June 24, 1963. This application June 20, 1966, Ser. No. 2,729
Term of patent 14 years
(Cl. D58—2)



209,337

ASSEMBLED PACKAGE OF CONTAINERS

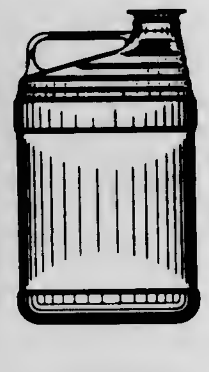
Ralph E. Dykes, 315 2nd St., Saddle Brook, N.J. 07662, and Robert M. Mitchell, 22 Beechwood Road, South Norwalk, Conn. 06854
Continuation of design application Ser. No. 75,490, June 24, 1963. This application June 20, 1966, Ser. No. 2,730
Term of patent 14 years
(Cl. D58—2)



209,338

JUG

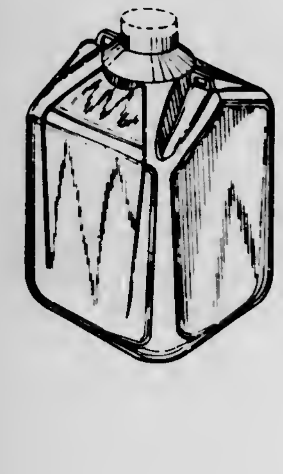
Warren L. Price, Elizabeth, N.J., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed June 23, 1966, Ser. No. 2,839
Term of patent 14 years
(Cl. D58—5)



209,339

PLASTIC JUG

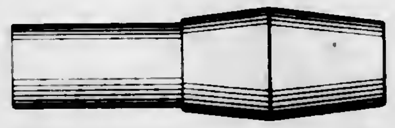
Norman A. Kelly, Wayne Township, Kosciusko County, Ind., assignor to Haskon, Inc., Warsaw, Ind., a corporation of Delaware
Filed Nov. 17, 1966, Ser. No. 4,716
Term of patent 14 years
(Cl. D58—5)



209,340

CONTAINER FOR CYLINDRICAL OBJECTS

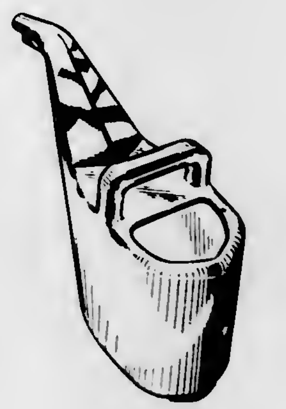
Robert E. Jones, Jr., Colorado Springs, Colo., assignor to Kaman Aircraft Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Nov. 20, 1964, Ser. No. 82,727
Term of patent 14 years
(Cl. D58—17)



209,341

WATERING CAN

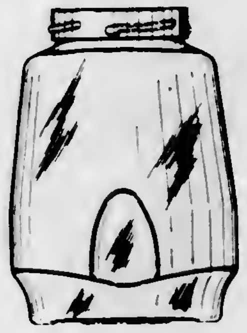
John A. Gale, Wayzata, Minn., assignor to Electro Specialty Manufacturing Co., Minneapolis, Minn., a corporation of Minnesota
Filed July 11, 1966, Ser. No. 3,011
Term of patent 14 years
(Cl. D58—17)



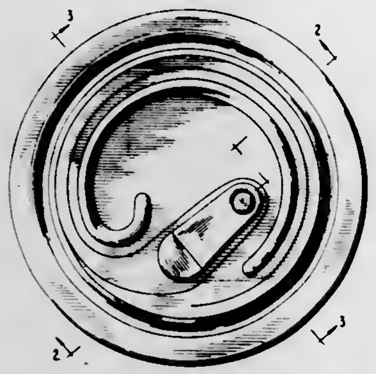
209,342

JAR

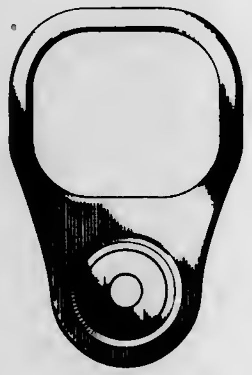
Ernest F. Thomson, New York, N.Y., and Carl G. Hebel, Haworth, N.J., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Original design application July 31, 1964, Ser. No. 81,089. Divided and this application May 24, 1966, Ser. No. 2,960
Term of patent 14 years
(Cl. D58—25)



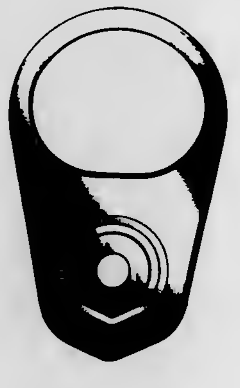
209,343
END CLOSURE FOR A CONTAINER
William T. Saunders, Weirton, W. Va., assignor to National Steel Corporation, a corporation of Delaware
Filed July 7, 1966, Ser. No. 3,900
Term of patent 14 years
(Cl. D58—26)



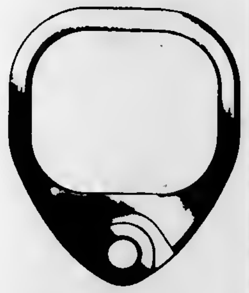
209,344
RING TAB FOR A TEAR STRIP OPENER
Francis M. Silver, Dayton, Ohio, assignor, by mesne assignments, Ermal C. Fraze, Dayton, Ohio
Filed Mar. 23, 1967, Ser. No. 6,343
Term of patent 14 years
(Cl. D58—26)



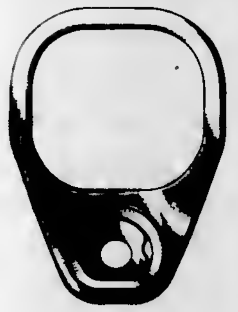
209,345
RING TAB FOR A TEAR STRIP OPENER
Francis M. Silver, Dayton, Ohio, assignor, by mesne assignments, to Ermal C. Fraze, Dayton, Ohio
Filed Mar. 23, 1967, Ser. No. 6,344
Term of patent 14 years
(Cl. D58—26)



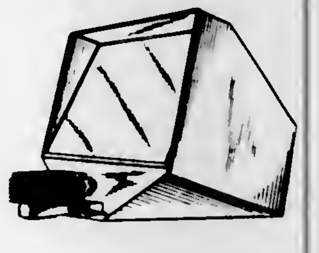
209,346
RING PULL FOR A TEAR STRIP OPENER
Francis M. Silver, Dayton, Ohio, assignor, by mesne assignments, to Ermal C. Fraze, Dayton, Ohio
Filed Mar. 23, 1967, Ser. No. 6,347
Term of patent 14 years
(Cl. D58—26)



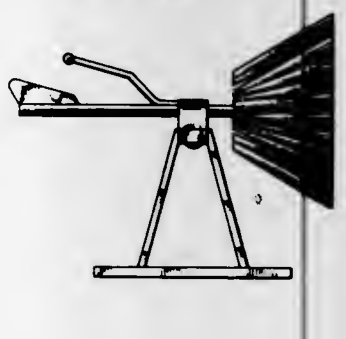
209,347
RING PULL FOR A TEAR STRIP OPENER
Francis M. Silver, Dayton, Ohio, assignor, by mesne assignments, to Ermal C. Fraze, Dayton, Ohio
Filed Mar. 23, 1967, Ser. No. 6,348
Term of patent 14 years
(Cl. D58—26)



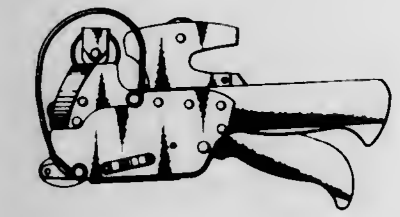
209,348
MICROFILM REAR PROJECTION VIEWER OR SIMILAR ARTICLE
Albert Libow, 163—17 130th Ave., Queens, N.Y. 11420
Filed Feb. 2, 1966, Ser. No. 887
Term of patent 3½ years
(Cl. D61—1)



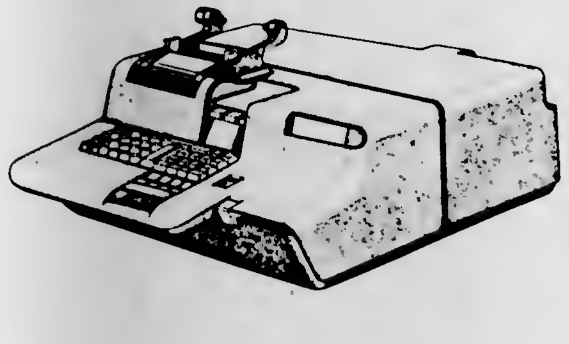
209,349
WINDMILL
William E. Fleming, 1218 N. Hewitt, Hastings, Nebr. 68901
Filed May 9, 1966, Ser. No. 2,224
Term of patent 14 years
(Cl. D62—2)



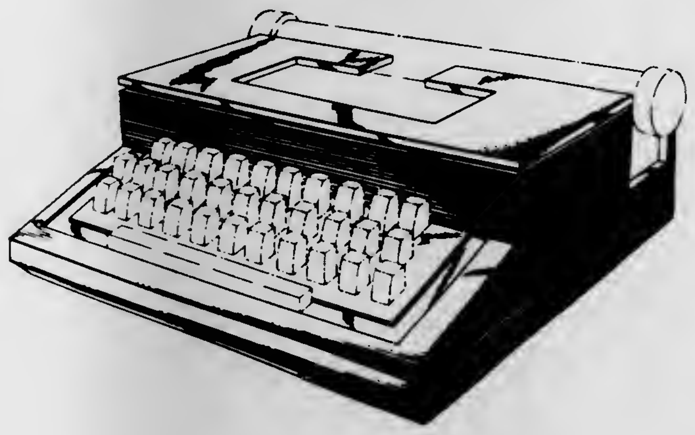
209,350
COMBINED LABEL PRINTER AND APPLICATOR OR THE LIKE
Yo Sato, Tokyo, and Seiji Nagashima, Ageo-shi, Japan, assignors to Sato Kiko Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Nov. 28, 1966, Ser. No. 4,828
Term of patent 7 years
Claims priority, application Japan June 13, 1966
(Cl. D64—10)



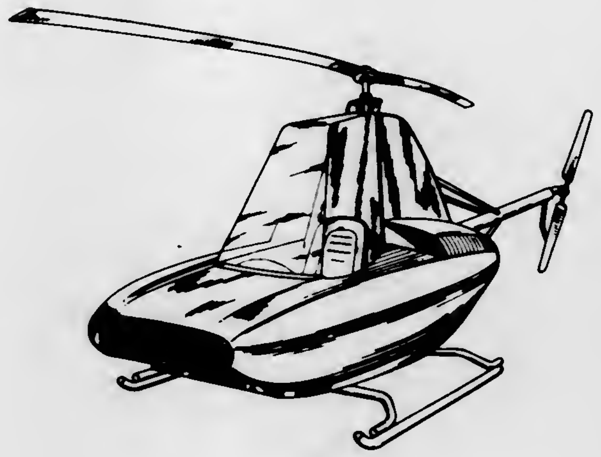
209,351
CALCULATING MACHINE
Mario Bellini, Milan, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy
Filed Apr. 25, 1966, Ser. No. 2,012
Term of patent 14 years
(Cl. D64—11)



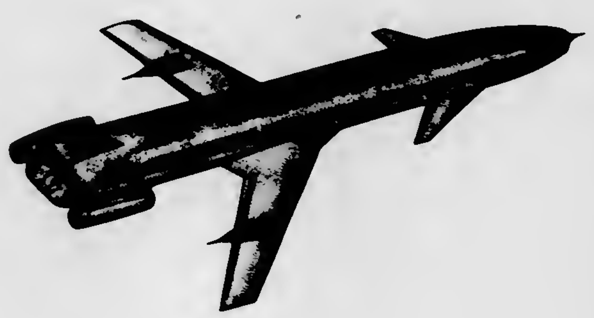
209,352
TYPEWRITER
Shigeaki Kuramochi, Tokyo, Japan, assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed June 21, 1966, Ser. No. 2,800
Term of patent 14 years
(Cl. D64—11)



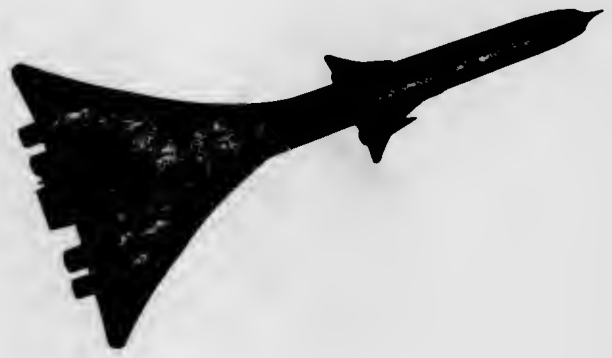
209,353
HELICOPTER
Buford J. Schramm, 115 N. Primrose, Alhambra, Calif. 91801
Filed Mar. 25, 1966, Ser. No. 1,635
Term of patent 14 years
(Cl. D71—1)



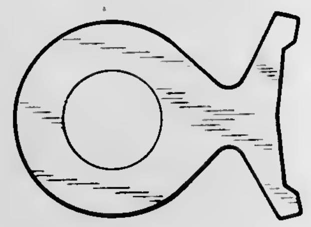
209,354
AIRCRAFT
Lawrence Bernard Rellis, 734 NW. 80th, Apt. 16, Miami, Fla. 33150
Filed Dec. 12, 1966, Ser. No. 4,994
Term of patent 14 years
(Cl. D71—1)



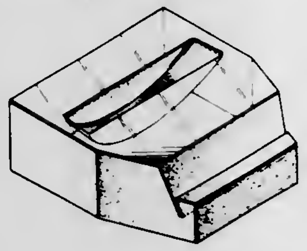
209,355
AIRCRAFT
Lawrence Bernard Rellis, 734 NW. 80th, Apt. 16, Miami, Fla. 33150
Filed Jan. 3, 1967, Ser. No. 5,271
Term of patent 14 years
(Cl. D71—1)



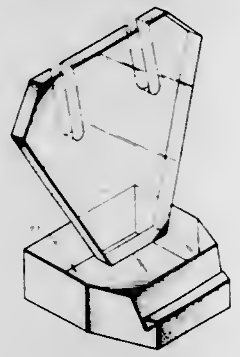
209,356
TAPE DISPENSER
Francois Le Merle, 136 Blvd. Serurier,
Paris 19, France
Filed Nov. 21, 1966, Ser. No. 4,763
Claims priority, application Germany May 24, 1966
Term of patent 14 years
(Cl. D74—1)



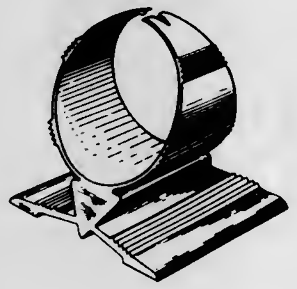
209,357
DISPLAY STAND FOR A RING OR THE LIKE
Oskar A. Semler, 1817 Bayview Ave.,
Belmont, Calif. 94002
Filed Oct. 20, 1966, Ser. No. 4,350
Term of patent 14 years
(Cl. D80—9)



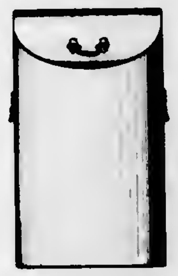
209,358
DISPLAY STAND FOR JEWELRY OR THE LIKE
Oskar A. Semler, 1817 Bayview Ave.,
Belmont, Calif. 94002
Filed Oct. 20, 1966, Ser. No. 4,352
Term of patent 14 years
(Cl. D80—9)



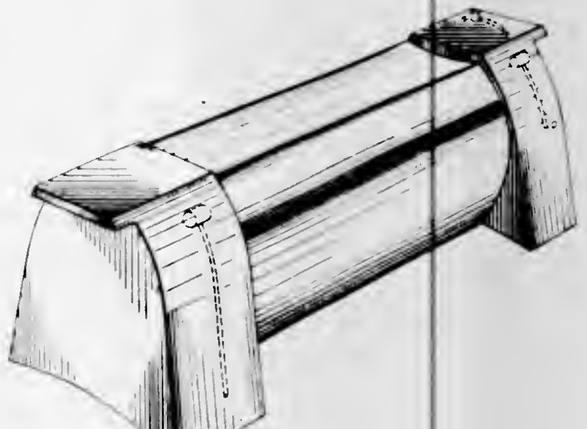
209,359
DISPLAY STAND FOR WATCHES
Fred G. Schuler, Youngstown, Ohio, assignor to General Extrusions, Inc., Youngstown, Ohio, a corporation of Ohio
Filed Dec. 13, 1966, Ser. No. 5,022
Term of patent 3½ years
(Cl. D80—9)



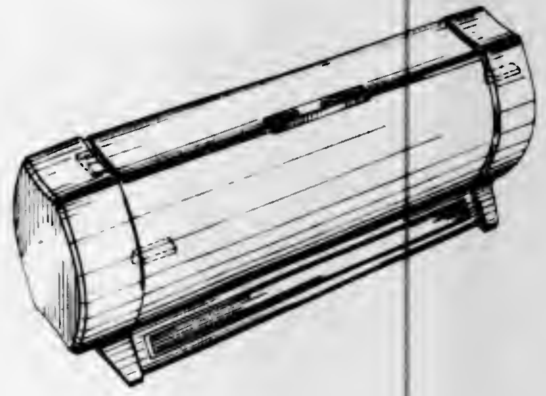
209,360
HEARTH SCUTTLE
Harold L. Carr, deceased, late of Big Rapids, Mich., by Mina F. Carr, administratrix, Rte. 2, Big Rapids, Mich. 49504
Filed Dec. 19, 1966, Ser. No. 5,110
Term of patent 14 years
(Cl. D81—3)



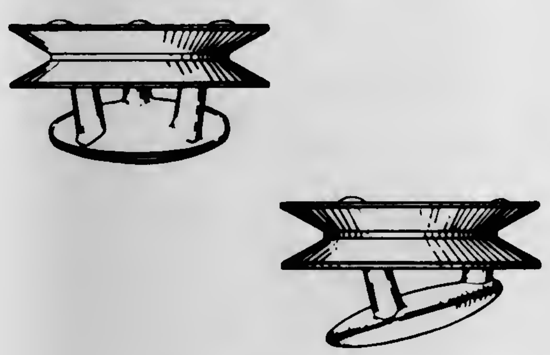
209,361
TOASTER OR THE LIKE
Earl E. Sutton, Mansfield, and Richard B. Hall, Akron, Ohio, assignors to Dominion Electric Corporation, a corporation of Ohio
Filed Jan. 13, 1967, Ser. No. 5,412
Term of patent 14 years
(Cl. D81—10)



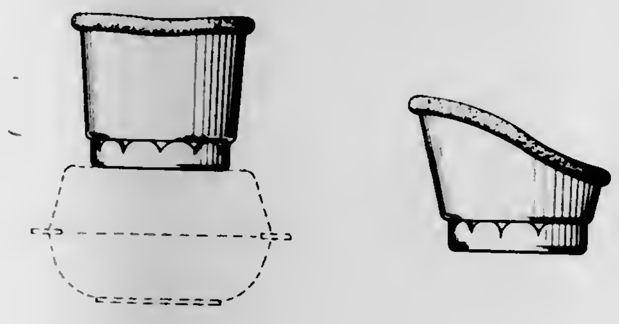
209,362
ELECTRIC TOASTER OR THE LIKE
Earl E. Sutton, Mansfield, and Richard B. Hall, Akron, Ohio, assignors to Dominion Electric Corporation, a corporation of Ohio
Filed Jan. 13, 1967, Ser. No. 5,415
Term of patent 14 years
(Cl. D81—10)



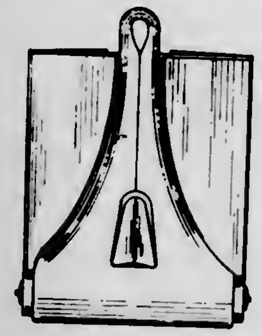
209,363
HEART VALVE
Denis Graham Melrose, London, England, assignor to National Research Development Corporation, London, England, a corporation of Great Britain
Filed Aug. 8, 1966, Ser. No. 3,380
Claims priority, application Great Britain Feb. 24, 1966
Term of patent 7 years
(Cl. D83—1)



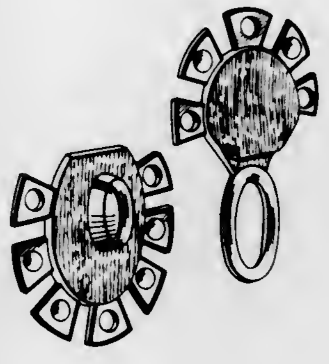
209,364
STEAM FACIAL APPLIANCE
Lawrence Katzman, New York, Edward Briggin, Brooklyn, Anthony N. D'Elia, Riverdale, and Edward M. Stoiarz, Yorktown Heights, N.Y., assignors to Kaz Manufacturing Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 3, 1967, Ser. No. 5,290
Term of patent 14 years
(Cl. D83—1)



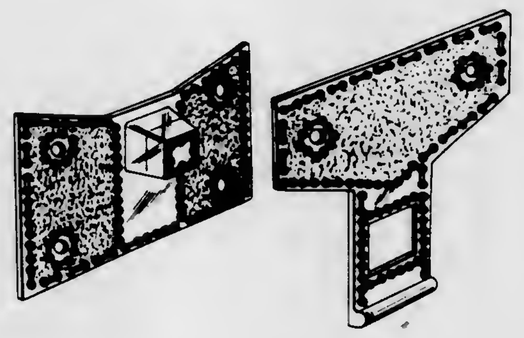
209,365
COMBINED FLASHLIGHT AND COMPACT, OR SIMILAR ARTICLE
Donald S. Hartwell, 134 Elton St.,
Providence, R.I. 02906
Filed Nov. 7, 1966, Ser. No. 4,572
Term of patent 14 years
(Cl. D86—10)



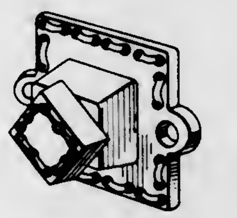
209,366
HANDBAG LOCK
David Damast, 22—14 40th Ave.,
Long Island City, N.Y. 11101
Filed Jan. 16, 1967, Ser. No. 5,423
Term of patent 3½ years
(Cl. D87—2)



209,367
HANDBAG LOCK
David Damast, 22—14 40th Ave.,
Long Island City, N.Y. 11101
Filed Jan. 16, 1967, Ser. No. 5,424
Term of patent 3½ years
(Cl. D87—2)

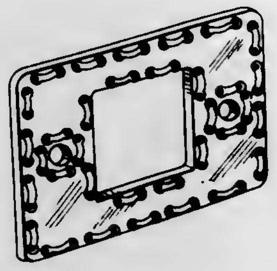


209,368
HANDBAG FASTENER
David Damast, 22—14 40th Ave.,
Long Island City, N.Y. 11101
Filed Feb. 16, 1967, Ser. No. 5,699
Term of patent 3½ years
(Cl. D87—2)



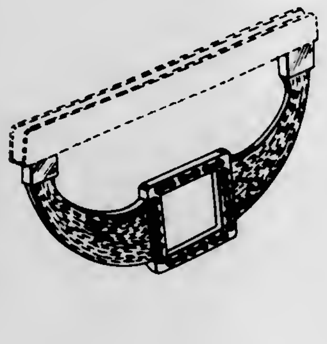
209,369
HANDBAG LOCK PLATE

David Damast, 22—14 40th Ave., Long Island City, N.Y. 11101
Filed Feb. 6, 1967, Ser. No. 5,700
Term of patent 3½ years
(Cl. D87—2)



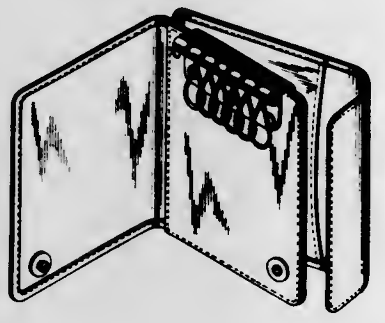
209,370
HANDBAG CLOSURE HASP

David Damast, 22—14 40th Ave., Long Island City, N.Y. 11101
Filed Feb. 6, 1967, Ser. No. 5,701
Term of patent 3½ years
(Cl. D87—2)



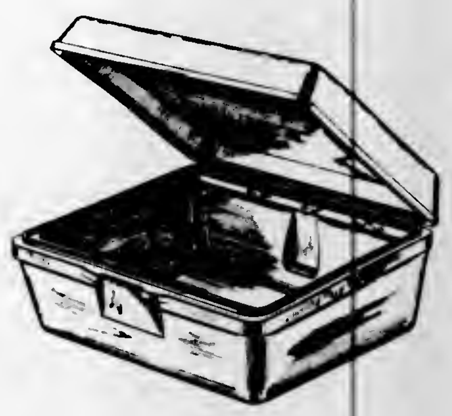
209,371
KEY CASE

Ludwig S. Schlessinger, New York, N.Y., assignor to Bond Street Ltd., New York, N.Y., a corporation of New York
Filed Aug. 10, 1965, Ser. No. 86,529
Term of patent 14 years
(Cl. D87—3)



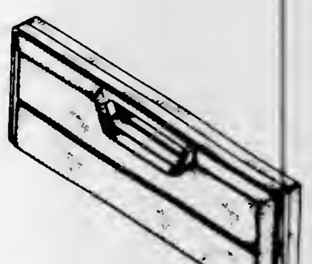
209,372
CARRYING CASE OR THE LIKE

Peter T. Schurman, Snyder, N.Y., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed June 21, 1965, Ser. No. 85,814
Term of patent 14 years
(Cl. D87—5)



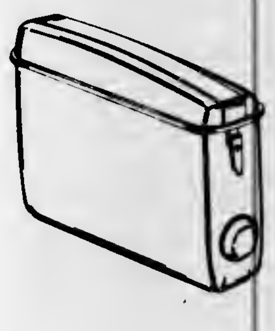
209,373
CASE FOR MUSICAL INSTRUMENT OR THE LIKE

Alfred Jack Gordon, 3600 Emery Road, Adrian, Mich. 49221
Filed Feb. 4, 1966, Ser. No. 925
Term of patent 14 years
(Cl. D87—5)



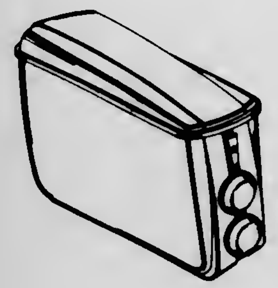
209,374
MOTORCYCLE SADDLE BAG

Paul R. Jones, Norwalk, and Harold H. Larsen, Long Beach, Calif., assignors to Bates Industries, Inc., Long Beach, Calif., a corporation of California
Filed Oct. 31, 1966, Ser. No. 4,468
Term of patent 14 years
(Cl. D90—3)



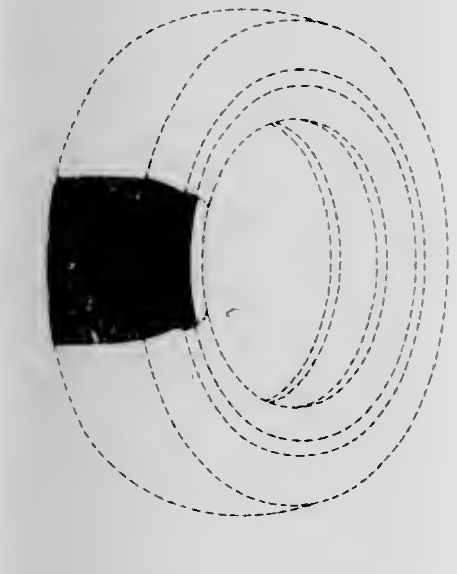
209,375
MOTORCYCLE SADDLE BAG

Paul R. Jones, Norwalk, and Harold H. Larsen, Long Beach, Calif., assignors to Bates Industries, Inc., Long Beach, Calif., a corporation of California
Filed Oct. 31, 1966, Ser. No. 4,491
Term of patent 14 years
(Cl. D90—3)



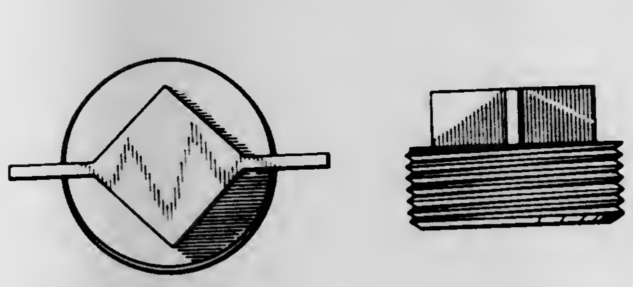
209,376
PNEUMATIC TIRE

Leonard C. Youngblood, Grosse Pointe Park, Mich., assignor to Uniroyal, Inc., a corporation of New Jersey
Filed Nov. 25, 1966, Ser. No. 4,808
Term of patent 14 years
(Cl. D90—20)



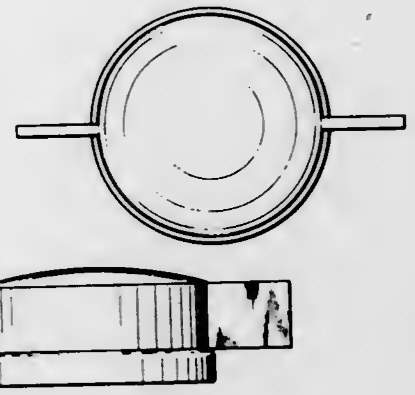
209,377
WINGED PIPE PLUG

David H. Pomroy, 805 Merrett Drive, Pasadena, Calif. 91104
Filed Oct. 6, 1966, Ser. No. 4,174
Term of patent 14 years
(Cl. D91—3)



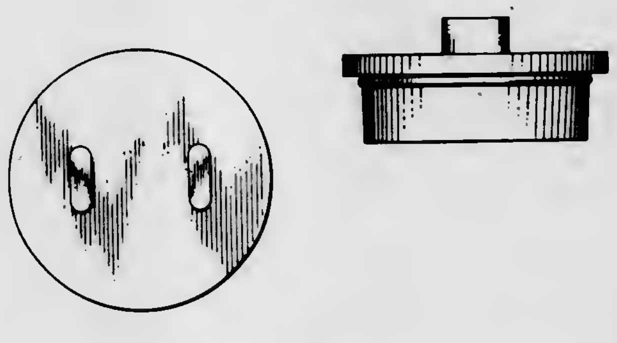
209,378
WINGED PIPE CAP

David H. Pomroy, 805 Merrett Drive, Pasadena, Calif. 91104
Filed Oct. 6, 1966, Ser. No. 4,175
Term of patent 14 years
(Cl. D91—3)



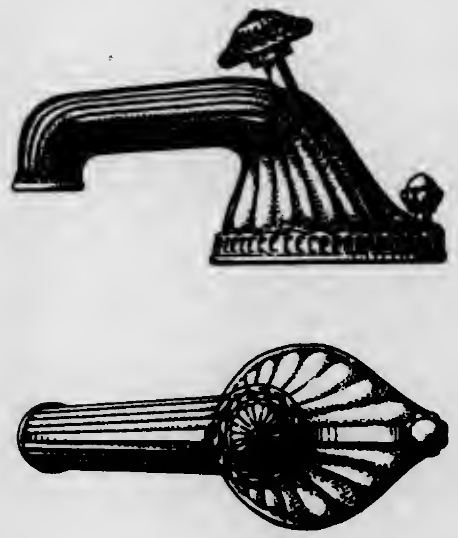
209,379
END PLUG FOR A CONDUIT OR THE LIKE

William G. Quick, 8919 E. Wedgewood St., Los Angeles, Calif. 90028
Filed Dec. 8, 1966, Ser. No. 4,971
Term of patent 14 years
(Cl. D91—3)



209,380
SINGLE CONTROL LAVATORY SPOUT

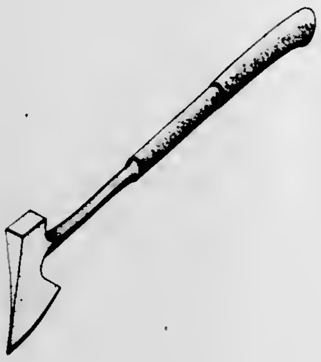
Ralph L. DuBois, 4242 111th St., Tulsa, Okla. 74135
Filed Jan. 16, 1967, Ser. No. 5,444
Term of patent 14 years
(Cl. D91—3)



209,381
AX

Aldor S. E. Reuterfors, Rockford, Ill., assignor to Estwing Manufacturing Company, Inc., Rockford, Ill., a corporation of Illinois

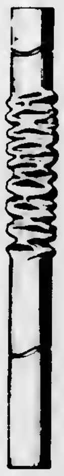
Filed Nov. 4, 1966, Ser. No. 4,556
Term of patent 14 years
(Cl. D93—4)



209,382
FLEXIBLE DRINKING STRAW

William Nardone, Revere, Mass., assignor to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland

Filed May 18, 1967, Ser. No. 7,174
Term of patent 14 years
(Cl. D94—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 21ST DAY OF NOVEMBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Agfa Aktiengesellschaft: *See—*
  - Frost, Paul, and Hennig. Re. 26,300.
- Burns, Vern V. Collapsible storage pouch. Re. 26,299, 11–21–67, Cl. 224—42.42.
- Chew, Norman B., to Freightliner Corp. Floating axle attachment. Re. 26,303, 11–21–67, Cl. 280—415.
- Cook, Maurice D., and P. T. Troell, to Harbison-Walker Refractories Co. Method of in situ fabrication of a monolith refractory lining. Re. 26,301, 11–21–67, Cl. 264—30.
- Embree, Harold K., to Ovalstrapping Ltd. Automatic strapping machine. Re. 26,307, 11–21–67, Cl. 100—4.
- Freightliner Corp.: *See—*
  - Chew, Norman B. Re. 26,303.
- Frost, Paul, and F. Hennig, to Agfa Aktiengesellschaft. Flash assembly for cameras. Re. 26,300, 11–21–67, Cl. 95—11.
- Golding, Frank E.: *See—*
  - Seed, Aniese E., and Golding. Re. 26,302.
- Harbison-Walker Refractories Co.: *See—*
  - Cook, Maurice D., and Troell. Re. 26,301.
- Hennig, Fridolin: *See—*
  - Frost, Paul, and Hennig. Re 26,300.
- Huang, Denis K., and H. B. Moors, to International Paper Co. Plastic coated container. Re. 26,305, 11–21–67, Cl. 229—17.
- International Paper Co.: *See—*
  - Huang, Denis K., and Moors. Re. 26,305.
- Jekat, Walter K., and T. A. Tokarczyk, to Worthington Corp. Rotary machine. Re. 26,306. 11–21–67, Cl. 103—87.
- Meshberg, Philip. Aerosol dispensing package. Re. 26,304, 11–21–67, Cl. 222—136.
- Moors, Harold B.: *See—*
  - Huang, Denis K., and Moors. Re. 26,305.
- Oury, John F., deceased (by A. M. Oury, and R. F. Oury). Method of and apparatus for transporting concrete. Re. 26,298, 11–21–67, Cl. 198—92.
- Oury, Robert F.: *See—*
  - Oury, John F. Re. 26,298.
- Ovalstrapping Ltd.: *See—*
  - Embree, Harold K. Re. 26,307.
- Seed, Aniese E., and F. E. Golding, to Toledo Scale Corp. Load cell apparatus. Re. 26,302, 11–21–67, Cl. 73—141.
- Tokarczyk, Tadeusz A.: *See—*
  - Jekat, Walter K., and Tokarczyk. Re. 26,306.
- Toledo Scale Corp.: *See—*
  - Seed, Aniese E., and Golding. Re. 26,302.
- Troell, Peter T.: *See—*
  - Cook, Maurice D., and Troell. Re. 26,301.
- Worthington Corp.: *See—*
  - Jekat, Walter K., and Tokarczyk. Re. 26,306.

LIST OF DESIGN PATENTEES

- Advertising Metal Display Co.: *See—*
  - King, Homer F. 209,325.
- Aihara, Kiyoshi: *See—*
  - Takayanagh, Akira, Kimura, Asakawa, Aihara, Ishii, and Miura. 209,285.
- Ajax Hardware Mfg. Corp.: *See—*
  - Carsello. Anthony J. 209,277.
- Appel, Mel, and M. Schnur. Butter dish. 209,309, 11–21–67, Cl. D44—5.
- Appel, Mel, and M. Schnur, to Elpo Industries Inc. Canister. 209,310, 11–21–67, Cl. D44—6.
- Appel, Mel, and M Schnur, to Elpo Industries Inc. Coaster. 209,313, 11–21–67. Cl. D44—10.
- Appel, Mel, and M. Schnur. Napkin holder. 209,314, 11–21–67, Cl. 44—24.
- Asakawa, Yasunobu: *See—*
  - Takayanagh, Akira, Kimura, Asakawa, Aihara, Ishii, and Miura. 209,285.
- Baker, Leerie O. Peg board bracket. 209,328, 11–21–67, Cl. D54—1.
- Bates Industries, Inc.: *See—*
  - Jones, Paul R., and Larsen. 209,374.
- Bates Industries, Inc.: *See—*
  - Jones, Paul R., and Larsen. 209,375.
- Battle Creek Equipment Co.: *See—*
  - Boyd, Lewis W., Johnson, and Gray. 209,282.
- Bellini, Mario, to Olivetti, Ing. C. & C., S.p.A. Calculating machine. 209,351, 11–21–67, Cl. D64—11.
- Berkowitz, Melvin J. Counter-mounted dispenser for condiments and the like. 209,324, 11–21–67, Cl. D52—2.
- Bernard, Terry L. Ice cream maker toy. 209,302, 11–21–67, Cl. D34—15.
- Bond Street Ltd.: *See—*
  - Schlessinger, Ludwig S. 209,371.
- Boyd, Lewis W., W. R. Johnson, and W. F. Gray, to Battle Creek Equipment Co. Portable seat for attachment to a steam cabinet or similar article. 209,282, 11–21–67, Cl. D15—8.
- Briggin, Edward: *See—*
  - Katzman, Lawrence, Briggin, D'Elia, and Stolarz. 209,364.
- Buckler, George M., to General Electric Co. Combined cover and speaker enclosure for portable phonographs. 209,334, 11–21–67, Cl. D56—4.
- Busch, Albert G. Electrical accessory plug for automobile cigar lighters or the like. 209,284, 11–21–67, Cl. D26—1.
- Carr, Harold L., deceased (by M. F. Carr, administratrix). Hearth scuttle. 209,360, 11–21–67, Cl. D81—3.
- Carr, Mina F.: *See—*
  - Carr, Harold L. 209,360.
- Carsello, Anthony J., to Ajax Hardware Mfg. Corp. Drawer pull. 209,277, 11–21–67, Cl. D10—8.
- Charles, Fred J. Take-out snack bar. 209,278, 11–21–67, Cl. D13—1.
- Cheney, C. W. & Son Ltd.: *See—*
  - Constable, Eric F. 209,323.
- Chevron Research Co.: *See—*
  - Price, Warren L. 209,338.
- Coderre, Gerard F., and M. W. Coderre. Jam cleat. 209,329, 11–21–67, Cl. D54—11.
- Coderre, Gerard F., and M. W. Coderre. Jam cleat. 209,330, 11–21–67, Cl. D54—11.
- Coderre, Marcel W.: *See—*
  - Coderre, Gerard F., and Coderre. 209.329.
  - Coderre, Gerard F., and Coderre. 209,330.
- Cohen, Melvin. Shopping cart attachment. 209,279, 11–21–67, Cl. D14—3.
- Columbia Broadcasting System, Inc.: *See—*
  - Spranger, Paul B. 209,287.
  - Spranger, Paul B. 209,288.
  - Spranger, Paul B. 209,289.
- Comitz, Edward V. Golf putter head. 209,301, 11–21–67, Cl. D34—5.
- Constable, Eric F., to Cheney, C. W. & Son Ltd. Lock for luggage or the like. 209,323, 11–21–67, Cl. D50—7.
- Dahlberg Electronics, Inc.: *See—*
  - Gelb, Robert L. 209,291.
- Damast, David. Handbag lock. 209,366, 11–21–67, Cl. D87—2.
- Damast, David. Handbag lock. 209,367, 11–21–67, Cl. D87—2.
- Damast, David. Handbag fastener. 209,368, 11–21–67, Cl. D87—2.
- Damast, David. Handbag lock plate. 209,369, 11–21–67, Cl. 87—2.
- Damast, David. Handbag closure hasp. 209,370, 11–21–67, Cl. D87—2.
- Deneke, Karl-Heinz. Package for needles or the like. 209,335, 11–21–67, Cl. D58—2.
- Dominion Electric Corp.: *See—*
  - Sutton, Earl E., and Hall. 209,361.
  - Sutton, Earl E., and Hall. 209,362.
- Draper, John F. Amusement putting device. 209,296, 11–21–67, Cl. D34—3.
- DuBois, Ralph L. Single control lavatory spout. 209,380, 11–21–67, Cl. D91—3.
- Dykes, Ralph E., and R. M. Mitchell. Assembled package of containers. 209,336. 11–21–67, Cl. D58—2.
- Dykes, Ralph E., and R. M. Mitchell. Assembled package of containers. 209,337, 11–21–67, Cl. D58—2.
- Electro Specialty Mfg. Co.: *See—*
  - Gale, John A. 209,341.
- Elpo Industries Inc.: *See—*
  - Appel, Mel. and Schnur. 209,310.
  - Appel, Mel., and Schnur. 209,313.
- Ertsgaard, Byron L., and J. A. Gale, to Toro Mfg. Corp. Snow plow housing. 209,305, 11–21–67, Cl. D35—2.
- Estwing Mfg. Co., Inc.: *See—*
  - Reuterfors, Aldor S. E. 209,381.
- Fleming, William E. Windmill. 209,349, 11–21–67, Cl. D62—2.
- Foley Mfg. Co.: *See—*
  - Page, Richard I. 209,315.
- Fraze, Ermal C.: *See—*
  - Silver, Francis M. 209.344.
  - Silver, Francis M. 209,345.
  - Silver, Francis M. 209,346.
  - Silver, Francis M. 209,347.
- Gale, John A.: *See—*
  - Ertsgaard, Byron L., and Gale. 209,305.
- Gale, John A., to Electro Specialty Mfg. Co. Watering can. 209,341, 11–21–67, Cl. D58—17.
- Gehrie, Charles S., to Presto Lock Co., Inc. Luggage lock or similar article. 209,322, 11–21–67, D50—7.
- Gelb, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 209,291, 11–21–67, Cl. D26—14.
- General Automative Distributing, Inc.: *See—*
  - Stone, Dean. 209,318.

General Electric Co. : *See—*
  Buckler, George M. 209,334.
General Extrusions, Inc. : *See—*
  Schuler, Fred G. 209,359.
General Foods Corp. : *See—*
  Thomson, Ernest F., and Hebel. 209,342.
Gordon, Alfred J. Case for musical instrument or the like. 209,373, 11–21–67, Cl. D87—5.
Gorham Corp. : *See—*
  Knope, William J., Jr. 209,332.
  Price, James R. 209,331.
Grace, W. R., & Co. : *See—*
  Schurman, Peter T. 209,372.
Grimes, Ralph. Bowling ball rack. 209,295, 11–21–67, Cl. D34—5.
Hagenson, Leo J., to Rolite, Inc. Collapsible travel trailer. 209,280, 11–21–67, Cl. D14—3.
Hahn Inc. : *See—*
  Hahn, Lloyd C. 209,304.
Hahn, Lloyd C., to Hahn Inc. Snow blower fan for snow removal equipment. 209,304, 11–21–67, Cl. D35—2.
Hall, Richard B. : *See—*
  Sutton, Earl E., and Hall. 209,361.
  Sutton, Earl E., and Hall. 209,362.
Hartwell, Donald S. Combined flashlight and compact. 209,365, 11–21–67, Cl. D86—10.
Haskon, Inc. : *See—*
  Kelly, Norman A. 209,339.
Hebel, Carl G. : *See—*
  Thomson, Ernest F., and Hebel. 209,342.
Hirose, You. Desk lamp. 209,317, 11–21–67, Cl. D48—20.
Hitt, Otis H. Golf club. 209,294, 11–21–67, Cl. D34—5.
Hulser, William D. Game die. 209,297, 11–21–67, Cl. D34—5.
Ishii, Haruhiko : *See—*
  Takayanagh, Akira, Kimura, Asakawa, Aihara, Ishii, and Miura. 209,285.
Jamison, Inc. : *See—*
  Zick, Ronald W. 209,298.
Johnson, William R. : *See—*
  Boyd, Lewis W., Johnson, and Gray. 209,282.
Jones, Paul R., and H. H. Larsen, to Bates Industries, Inc. Motorcycle saddle bag. 209,374, 11–21–67, Cl. D90—3.
Jones, Paul R., and H. H. Larsen, to Bates Industries, Inc. Motorcycle saddle bag. 209,375, 11–21–67, Cl. D90—3.
Jones, Robert E., Jr., to Kaman Aircraft Corp. Container for cylindrical objects. 209,340, 11–21–67, Cl. D58—17.
Kabushiki Kaisha T. D. S. : *See—*
  Takayanagh, Akira, Kimura, Asakawa, Aihara, Ishii, and Miura. 209,285.
Kagan, Claude A. R., to Western Electric Co., Inc. Multifeatured subscriber telephone stand. 209,286, 11–21–67, Cl. D26—14.
Kaman Aircraft Corp. : *See—*
  Jones, Robert E., Jr. 209,340.
Katzman, Lawrence, E. Briggin, A. N. D'Elia, and E. M. Stolarz, to Kaz Mfg Co., Inc. Steam facial appliance. 209,364, 11–21–67, Cl. D83—1.
Kaz Mfg. Co., Inc. : *See—*
  Katzman, Lawrence, Briggin, D'Elia, and Stolarz. 209,364.
Kelly, Norman A., to Haskon, Inc. Plastic jug. 209,339, 11–21–67, Cl. D58—5.
Keough, Henry A. : *See—*
  Ligeti, Enrique C., and Keough. 209,300.
Ketjen, Julius. Musical instrument. 209,333, 11–21–67, Cl. D56—1.
Kilbourn, Eugene L., to Progressive Dynamics, Inc. Fluid pressure operated scale. 209,327, 11–21–67, Cl. D52—10.
Kimura, Yutaka : *See—*
  Takayanagh, Akira, Kimura, Asakawa, Aihara, Ishii, and Miura. 209,285.
King, Homer F., to Advertising Metal Display Co. Service station cabinet. 209,325, 11–21–67, Cl. D52—2.
Knope, William J., Jr., to Gorham Corp. Fork or similar article. 209,332, 11–21–67, Cl. D54—12.
Kroehler Mfg. Co. : *See—*
  Ungaro, Nicholas A. 209,292.
Kuramochi, Shigeaki, to Louis Marx & Co., Inc. Typewriter. 209,352, 11–21–67, Cl. D64—11.
Larsen, Harold H. : *See—*
  Jones, Paul R., and Larsen. 209,374.
  Jones, Paul R., and Larsen. 209,375.
Le Merle, Francois. Tape dispenser. 209,356, 11–21–67, Cl. D74—1.
Libow, Albert. Microfilm rear projection viewer or similar article. 209,348, 11–21–67, Cl. D61—1.
Ligeti, Enrique C., and H. A. Keough. Game board. 209,300, 11–21–67, Cl. D34—5.
Long, James M., to A. G. Spalding & Bros. Inc. Golf club head. 209,299, 11–21–67, Cl. D34—5.
Louis Marx & Co., Inc. : *See—*
  Kuramochi, Shigeaki. 209,352.
Maire, Alan E., to Robertshaw Controls Co. Wall thermostat casing. 209,326, 11–21–67, Cl. D52—7.
Mayeroff, Marguerite. Doll. 209,293, 11–21–67, Cl. D34—4.
Melrose, Denis G., to National Research Development Corp. Heart valve. 209,363, 11–21–67, Cl. D83—1.
Mitchell, Robert M. : *See—*
  Dykes, Ralph E., and Mitchell. 209,336.
  Dykes, Ralph E., and Mitchell. 209,337.
Miura, Shunichiro : *See—*
  Takayanagh, Akira, Kimura, Asakawa, Aihara, Ishii, and Miura. 209,285.
Mowrer, Sidney W., Jr., to Shelby Corp. Door closer. 209,276, 11–21–67, Cl. D10—7.
Nagashima, Seiji : *See—*
  Sato, Yo, and Nagashima. 209,350.
Nardone, William, to Sweetheart Plastics, Inc. Flexible drinking straw. 209,382, 11–21–67, Cl. D94—3.
National Research Development Corp. : *See—*
  Melrose, Denis G. 209,363.
National Steel Corp. : *See—*
  Saunders, William T. 209,343.
Nippon Telegraph & Telephone Public Corp. : *See—*
  Takayanagh, Akira, Kimura, Asakawa, Aihara, Ishii, and Miura. 209,285.
Olivetti, Ing. C. & C., S.p.A. : *See—*
  Bellini, Mario. 209,351.
Page, Richard I., to Foley Mfg. Co. Ice cream scoop. 209,315, 11–21–67, Cl. D44—29.
Paine, Stuart R. : *See—*
  Steinwedel, Delmar C., and Paine. 209,273.
Perfect Film & Chemical Corp. : *See—*
  Richards, Harold, and Schnoll. 209,274.
Plastics, Inc. : *See—*
  Schilling, Paul K. 209,306.
  Schilling, Paul K. 209,307.
  Schilling, Paul K. 209,308.
  Schilling, Paul K. 209,311.
  Schilling, Paul K. 209,312.
Playtape, Inc. : *See—*
  Schreibel, Robert S. 209,290.
Pomroy, David H. Winged pipe plug. 209,377, 11–21–67, Cl. D91—3.
Pomroy, David H. Winged pipe cap. 209,378, 11–21–67, Cl. D91—3.
Presto Lock Co., Inc. : *See—*
  Gehrie, Charles S. 209,322.
Price, James R., to Gorham Corp. Fork or similar article. 209,331, 11–21–67, Cl. D54—12.
Price, Warren L., to Chevron Research Co. Jug. 209,338, 11–21–67, Cl. D58—5.
Progressive Dynamics, Inc. : *See—*
  Kilbourn, Eugene L. 209,327.
Quick, William G. End plug for a conduit or the like. 209,379, 11–21–67, Cl. D91—3.
Rappoport, Seymour, to Ronson Corp. Cigarette lighter. 209,319, 11–21–67, Cl. D48—27.
Rappoport, Seymour, to Ronson Corp. Cigarette lighter. 209,320, 11–21–67, Cl. D48—27.
Rappoport, Seymour, to Ronson Corp. Cigarette lighter. 209,321, 11–21–67, Cl. D48—27.
Reilis, Lawrence B. Aircraft. 209,354, 11–21–67, Cl. D71—1.
Reilis, Lawrence B. Aircraft. 209,355, 11–21–67, Cl. D71—1.
Reuterfors, Aldor S. E., to Estwing Mfg. Co., Inc. Ax. 209,381, 11–21–67, Cl. D93—4.
Richards, Harold, and J. J. Schnoll, to Perfect Film & Chemical Corp. Powered hand-held automobile vacuum cleaner. 209,274, 11–21–67, Cl. D9—2.
Robertshaw Controls Co. : *See—*
  Maire, Alan E. 209,326.
Rolite, Inc. : *See—*
  Hagenson, Leo J. 209,280.
Ronson Corp. : *See—*
  Rappoport, Seymour. 209,319–21.
Sarong, Inc. : *See—*
  Tuschman, Moe. 209,269.
Sato Kiko Kabushiki Kaisha : *See—*
  Sato, Yo, and Nagashima. 209,350.
Sato, Yo, and S. Nagashima, to Sato Kiko Kabushiki Kaisha. Combined label printer and applicator or the like. 209,350, 11–21–67, Cl. D64—10.
Saunders, William T., to National Steel Corp. End closures for a container. 209,343, 11–21–67, Cl. D58—26.
Schilling, Paul K., to Plastics, Inc. Tumbler. 209,306, 11–21–67, Cl. D36—8.
Schilling, Paul K., to Plastics, Inc. Tumbler. 209,307, 11–21–67, Cl. D36—8.
Schilling, Paul K., to Plastics, Inc. Tumbler. 209,308, 11–21–67, Cl. D36—8.
Schilling, Paul K., to Plastics, Inc. Salad cup. 209,311, 11–21–67, Cl. D44—9.
Schilling, Paul K., to Plastics, Inc. Condiment cup. 209,312, 11–21–67, Cl. D44—9.
Schlessinger, Ludwig S., to Bond Street Ltd. Key case. 209,371, 11–21–67, Cl. D87—3.
Schnoll, Jean J. : *See—*
  Richards, Harold, and Schnoll. 209,274.
Schnur, Martin : *See—*
  Appel, Mel, and Schnur. 209,309.
  Appel, Mel, and Schnur. 209,310.
  Appel, Mel, and Schnur. 209,313.
  Appel, Mel, and Schnur. 209,314.
Schramm, Buford J. Helicopter. 209,353, 11–21–67, Cl. D71—1.
Schreibel, Robert S., to Playtape, Inc. Portable tape player housing or similar article. 209,290, 11–21–67, Cl. D26—14.
Schuler, Fred G., to General Extrusions, Inc. Display stand for watches. 209,359, 11–21–67, Cl. D80—9.
Schurman, Peter T., to W. R. Grace & Co. Carrying case or the like. 209,372, 11–21–67, Cl. D87—5.
Semler, Oskar A. Display stand for a ring or the like. 209,357, 11–21–67, Cl. D80—9.
Semler, Oskar A. Display stand for jewelry or the like. 209,358, 11–21–67, Cl. D80—9.
Seymour Industries, Inc. : *See—*
  Steinwedel, Delmar C., and Paine. 209,273.
Shelby Corp. : *See—*
  Mowrer, Sidney W., Jr. 209,276.
Silver, Francis M., to E. C. Fraze. Ring tab for a tear strip opener. 209,344, 11–21–67, Cl. D58—26.
Silver, Francis M., to E. C. Fraze. Ring tab for a tear strip opener. 209,345, 11–21–67, Cl. D58—26.
Silver, Francis M., to E. C. Fraze. Ring pull for a tear strip opener. 209,346, 11–21–67, Cl. D58—26.
Silver, Francis M., to E. C. Fraze. Ring pull for a tear strip opener. 209,347, 11–21–67, Cl. D58—26.

Smith, Lonnie H. Arrowhead. 209,283, 11–21–67, Cl. D22—12.
Spalding, A. G., & Bros. Inc. : *See—*
  Long, James M. 209,299.
Spranger, Paul B., to Columbia Broadcasting System, Inc. Amplifier or similar electronic apparatus. 209,287, 11–21–67, Cl. D26—14.
Spranger, Paul B., to Columbia Broadcasting System, Inc. Combination amplifier and speaker cabinet. 209,288, 11–21–67, Cl. D26—14.
Spranger, Paul B., to Columbia Broadcasting System, Inc. Combination amplifier and speaker cabinet. 209,289, 11–21–67, Cl. D26—14.
Steinwedel, Delmar C., and S. R. Paine, to Seymour Industries, Inc. Floor glide for a bed frame. 209,273, 11–21–67, Cl. D5—2.
Stone, Dean. to General Automotive Distributing, Inc. Torch holder. 209,318, 11–21–67, Cl. D48—24.
Sutton, Earl E., and R. B. Hall, to Dominion Electric Corp. Electric toaster or the like. 209,362, 11–21–67, Cl. D81—10.
Sutton, Earl E., and R. B. Hall, to Dominion Electric Corp. Toaster or the like. 209,361, 11–21–67, Cl. D81—10.
Swartz, Robert T., to Talon, Inc. Hook fastener. 209,270, 11–21–67, Cl. D2—442.
Sweetheart Plastics, Inc. : *See—*
  Nardone, William. 209,382.
Takayanagh, Akira, Y. Kimura, Y. Asakawa, K. Aihara, H. Ishii, and S. Miura, to Nippon Telegraph & Telephone Public Corp. and Kabushiki Kaisha Tamura Denki Seisakusho. Telephone instrument. 209,285, 11–21–67, Cl. D26—14.
Talon, Inc. : *See—*
  Swartz, Robert T. 209,270.
Tate, Charles G., Jr. Toilet seat. 209,272, 11–21–67, Cl. D4—5.
Thomson, Ernest F., and C. G. Hebel, to General Foods Corp. Jar. 209,342, 11–21–67, Cl. D58—25.
Toro Mfg. Corp. : *See—*
  Ertsgaard, Byron L., and Gale. 209,305.
Tuschman, Moe, to Sarong, Inc. Brassiere. 209,269, 11–21–67, Cl. D2—24.
Ungaro, Nicholas A., to Kroehler Mfg. Co. Bar cart. 209,292, 11–21–67, Cl. D33—19.
Uniroyal, Inc. : *See—*
  Youngblood, Leonard C. 209,376.
Voltaire, Paul. Candleholder. 209,316, 11–21–67, Cl. D48—2.
Western Electric Co., Inc. : *See—*
  Kagan, Claude A. R. 209,286.
Wolfson, Abraham M. Toothbrush holder. 209,275, 11–21–67, Cl. D9—2.
Yavitch, Morris. Toilet paper holder. 209,271, 11–21–67, Cl. D4—3.
Yeagley, Dillon C. Detachable seat for a picnic bench or similar article. 209,281, 11–21–67, Cl. D15—8.
Youngblood, Leonard C., to Uniroyal, Inc. Pneumatic tire. 209,376, 11–21–67, Cl. D90—20.
Zadek, Arthur. Ball toy. 209,303, 11–21–67, Cl. D34—15.
Zick, Ronald W., to Jamison, Inc. Rider seat for playground apparatus. 209,298, 11–21–67, Cl. D34—5.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 21ST DAY OF NOVEMBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- A.B. Tetra Pak: *See—*
  - Andreasson, Jan-Erik. 3,353,738.
- ACF Industries, Inc.: *See—*
  - Rollins, Dallas W., and Becker. 3,353,505.
- A.E.C. Societe de Chimie Organique et Biologique: *See—*
  - Redel, Joseph, and Boch. 3,354,224.
- A.I.T. Industries, Inc.: *See—*
  - Stern, Albert. 3,353,303.
- A.M. Fish Holdings Ltd.: *See—*
  - Fish, Aaron M. 3,353,383.
- AMP Inc.: *See—*
  - Rueger, Herman. 3,354,454.
- Abbott, Edward F.: *See—*
  - Worden, Donald P., and Abbott. 3,354,286.
- Abel, Edmund A., Jr., to The Leece-Neville Co. Windshield wiper drive mechanism. 3,353,425, 11–21–67, Cl. 74—600.
- Abitibi Power & Paper Co., Ltd.: *See—*
  - Hossain, Shafi U., and Pataki. 3,354,027.
- Adams, Frederick L., to Dresser Industries, Inc. Tubing centralizer attachment for well spider. 3,353,235, 11–21–67, Cl. 24—263.
- Adamson, William M., and N. B. Newton, to United Aircraft Corp. Shaft stopping device. 3,353,643, 11–21–67, Cl. 192—141.
- Addressograph-Multigraph Corp.: *See—*
  - Schulze, John J. 3,353,281.
- Admiral Corp.: *See—*
  - Kao, Lin. 3,354,265.
- Aemmer, Peter, and K. Schmutz, to Albiswerk Zurich A.G. Circuit arrangement for the amplification of A.C. voltages. 3,354,402, 11–21–67, Cl. 330—24.
- Aerojet-General Corp.: *See—*
  - Shepherd, Joseph L., Witz, and Hormats. 3,354,067.
- Affiliated Laboratories Corp.: *See—*
  - Bass, Edmund P. 3,354,038.
- Agency of Industrial Science & Technology: *See—*
  - Matsuda, Tatsuo, and Yumoto. 3,354,065.
- Agnoff, Charles: *See—*
  - Del Vecchio, Joseph T., and Agnoff. 3,353,874.
- Aichelin, J. Stuttgart, Korntal B.: *See—*
  - Wünning, Joachim. 3,353,922.
- Ainslie, Norman G., to International Business Machines Corp. Preparation of high-purity materials. 3,353,912, 11–21–67, Cl. 23—204.
- Ainsworth, Gerald L., and J. W. Hebb, to Ampex Corp. Pulse width modulator. 3,354,371, 11–21–67, Cl. 318—341.
- Air Preheater Co., Inc., The: *See—*
  - Stockman, Richard. 3,353,919.
- Air Products and Chemicals, Inc.: *See—*
  - Cornelius, Edward B., Cosgrove, and Mills. 3,353,910.
- Air Reduction Co., Inc.: *See—*
  - Gardner, Frank H. 3,353,535.
- Aitken, Robert L. Cranes, grabs and the like. 3,353,792, 11–21–67, Cl. 254—150.
- Aktiebolaget Bofors: *See—*
  - Tidemalm, Gustav H., and Johansson. 3,353,616.
- Aktiebolaget Electrolux: *See—*
  - Nilsson, Bengt E. 3,353,338.
- Aktiebolaget Karlstads Mekaniska Werkstad: *See—*
  - Ranhagen, Ernst G. R. and E. G. 3,353,752.
- Albemarle Paper Co.: *See—*
  - Gottwald, Bruce C., Halsey, Williams, and Haigh. 3,354,035.
  - Williams, Robert C., Joyce, and Showalter. 3,354,030.
- Albiswerk Zurich A.G.: *See—*
  - Aemmer, Peter, and Schmutz. 3,354,402.
- Albright, Penrose L. Portable self-supporting tent. 3,353,547, 11–21–67, Cl. 135—1.
- Alco Standard Corp.: *See—*
  - Vaughan, John T., and Seulen. 3,354,256.
- Alden, Milton: *See—*
  - Ives, Robert S. 3,354,058.
- Aldrich, Julius C.: *See—*
  - Savage, Albert B., and Aldrich. 3,353,971.
- Aldridge, Clyde L., to Esso Research and Engineering Co. Process for desulfurization employing K2S. 3,354,081, 11–21–67, Cl. 208—235.
- Alfred Teves Maschinen- und Armalurenfabrik: *See—*
  - Erdmann, Hans, and Schmid. 3,353,813.
- Allegheny Ludlum Steel Corp.: *See—*
  - Jackson, Harold S., and Murtland. 3,354,254.
- Allied Chemical Corp.: *See—*
  - Anello, Louis G., and Woolf. 3,354,233.
  - Klingelhoefer, William C. 3,354,057.
  - Lund, Richard B., Pierce, and Turi. 3,354,228.
  - Lund, Richard B., Simon, and Vitrone. 3,354,148.
  - Newcome, Hal R. 3,353,244.
  - Orfeo, Sabatino R., and Murphy. 3,353,366.
  - Sweeney, Richard F. 3,354,223.
- Allis-Chalmers Mfg. Co.: *See—*
  - Gale, George D. 3,353,337.
- Allmanna Svenska Elektriska Aktiebolaget: *See—*
  - Grees, Karl L., and Karlsson. 3,354,326.
  - Kain, Per, and Torok. 3,353,384.
- Alloy Surfaces Co., Inc.: *See—*
  - Samuel, George A., and Bell. 3,353,936.
- Almer, Friedrich H. R., G. S. Schrijnemakers, A. Kuiper, and A. P. Van Rooy, to North American Philips Co., Inc. Cup-shaped control electrode securing cathode by thin supporting members. 3,354,340, 11–21–67, Cl. 31[illegible]—82.
- Alpine Aktiengesellschaft: *See—*
  - Zimmermann, Walter. 3,353,755.
- Aluminum Body Corp.: *See—*
  - Koot, Alphonsus E. 3,353,863.
- Alyanakyan, Satenik A.: *See—*
  - Reisman, Arnold, Berkenblit, and Alyanakyan. 3,354,004.
- Amada, Sanae, R. Kawano, M. Arakawa, and H. Iwano, to Fujitsu Ltd., and Kurosawa Tele-Communications Ltd. Typewriter with typewheel and hammer mounted on movable carriage. 3,353,648, 11–21–67, Cl. 197—55.
- Ambrogi, Raymond R., and A. Carmi, to Corning Glass Works. Method and apparatus for pressing thermoplastic materials. 3,353,942, 11–21–67, Cl. 65—68.
- American Chain & Cable Co., Inc.: *See—*
  - Peterson, Vincent C. J. 3,353,768.
- American Cyanamid Co.: *See—*
  - Bikales, Norbert M. 3,353,671.
  - Feldman, Allan M., and Hoffmann. 3,354,230.
  - Nau, Harold H. 3,353,949.
  - Schmitt, Joseph M., Landers, and Terenzi. 3,354,238.
  - Takacs, Edward A. 3,354,172.
  - Welcher, Richard P. 3,354,208.
- American Enka Corp.: *See—*
  - Bergeijk, Jan V., and Nieuwenhuijsen. 3,353,564.
  - Heijnis, James W. I. 3,353,211.
  - Heijnis, James W. I. 3,353,239.
  - Heijnis, James W. I., and Vrolikjk. 3,353,754.
- American Flange & Mfg. Co., Inc.: *See—*
  - Laurizio, Jeremiah. 3,353,849.
- American Factors Associates, Ltd.: *See—*
  - Silver, Harold F. 3,353,880.
- American Filtrona Corp.: *See—*
  - Sproull, Reavis C., and Berger. 3,353,548.
- American Home Products Corp.: *See—*
  - Humber, Leslie G., and Davis. 3,354,162.
  - Wendt, Gerhard R., and Hertz. 3,354,156.
- American Insulating Machinery Co.: *See—*
  - Baselice, Louis A. 3,353,762.
- American Machine & Foundry Co.: *See—*
  - Barton, William W., Holland, and Balton. 3,353,258.
  - Brackmann, Warren A., and Hibbitts. 3,353,430.
  - Wood, Fenton M., and Walters. 3,354,385.
- American Potash & Chemical Corp.: *See—*
  - Woyski, Mark M., Bradford, and Elliott. 3,353,928.
- American Radiator & Standard Sanitary Corp.: *See—*
  - Lions, Earl P., and Vom Baur. 3,353,79[illegible].
- American Standard, Inc.: *See—*
  - Heskestad, Gunnar. 3,353,562.
  - Howling, Dennis H. 3,354,407.
- Amick, James A., to Radio Corp. of America. Oxide bonded semiconductor wafer utilizing intrinsic and degenerate material. 3,354,354, 11–21–67, Cl. 317—101.
- Ampex Corp.: *See—*
  - Ainsworth, Gerald L., and Hebb. 3,354,371.
  - Smith, Grant M., and Trost. 3,354,270.
  - Wahlstrom, Sven E. 3,354,318.
- Amsted Industries Inc.: *See—*
  - Dressel, William G. 3,353,586.
- Amundsen, Ralph D., to La Crosse Cooler Co. Self-locking coin box. 3,353,743, 11–21–67, Cl. 232—15.
- Anaconda American Brass Co.: *See—*
  - Atkin, Oliver B. 3,353,584.
- Anderson, Maynard E.: *See—*
  - Lowell, Peter M., Balaz, and Anderson. 3,353,480.
- Anderson, Harold N., and J. D. Helm, to Bemis Co., Inc. Vibratory volumetric feeding and bag filling apparatus. 3,353,572, 11–21–67, Cl. 141—72.
- Anderson, George W., J. A. Aseltine, and G. R. Cooper, to Ford Motor Co. Apparatus for measuring dynamic characteristics of systems by cross correlation. 3,354,297, 11–21–67, Cl. 235—181.
- Anderson, Paul G., to Haak Mfg., Inc. Bench and plank cover. 3,353,867, 11–21–67, Cl. 297—219.
- Anderson, Robert F., to Imagineers Corp. Grilling apparatus. 3,353,527, 11–21–67, Cl. 126—25.
- Andreasson, Jan-Erik, to A.B. Tetra Pak. Package having a slit folding line forming a pouring edge. 3,353,738, 11–21–67, Cl. 229—7.
- Andriussi, Francois, to Peugeot et Cie Societe Anonyme, and Eurotechni Offic Europeen d'Etudes et de Realisations Techniques. Strip providing coupling elements coupling, with regard to rotation, two concentric members, the elements obtained from said strip and assemblies employing said element. 3,353,639, 11–21–67, Cl. 192—41.
- Anello, Louis G., and C. Woolf, to Allied Chemical Corp. Production of tetrafluoroethylene. 3,354,233, 11–21–67, Cl. 260—653.5.

- Annis, Max R., and F. A. Brooks, Jr., to Esso Production Research Co. Method for plugging perforations. 3,353,600, 11–21–67, Cl. 166—22.
- Annis, Roger L.: *See—*
  - Osgood, Edmond R., Limpel, and Annis. 3,354,179.
- Antaya, Clifford R., and R. W. Fox, to General Motors Corp. Convertible top latch mechanism. 3,353,864, 11–21–67, Cl. 296—121.
- Anthony, Russel W., to National Broach & Machine Co. Method and apparatus for correcting ovality of annular gears. 3,353,391, 11–21–67, Cl. 72—110.
- Anthony, Russell W., and C. H. Motz, to National Broach & Machine Co. Pitch diameter rounder. 3,353,392, 11–21–67, Cl. 72—110.
- Anthony, William C., to The Upjohn Co. Pyrimido-1,3,5-triazinols. 3,354,159, 11–21–67, Cl. 260—249.6.
- Antonucci, Carmine J., to Potter Instrument Co., Inc. High speed printer drum with print plate mounting means. 3,353,481, 11–21–67, Cl. 101—93.
- Apicella, Anthony M., Jr.: *See—*
  - Franks, John T., Jr., and Apicella. 3,354,444.
- Arakawa, Masatsugu: *See—*
  - Amada, Sanae, Kawano, Arakawa, and Iwano. 3,353,648.
- Archambault, Jerome L.: *See—*
  - Walker, Robert F., and Archambault. 3,353,283.
- Archinal, Ernst, and G. Wehlitz, to Knapsack-Griesheim Aktiengesellschaft. Means for tightening current supply plates on electrodes in electric furnaces. 3,354,255, 11–21–67, Cl. 13—16.
- Arentzen, Einar M., to Lee-Norse Co. Continuous mining machine with oscillating rotary cutter heads. 3,353,871, 11–21–67, Cl. 299—71.
- Armao, Thomas A. Biopsy instrument with specimen lifting means. 3,353,531, 11–21–67, Cl. 128—2.
- Armentrout, James L., and P. Vanat, to Pharmaseal Laboratories. Medical instrument package. 3,353,664, 11–21–67, Cl. 206—63.2.
- Armour and Co.: *See—*
  - Miller, Eugene J., Jr., and Mais. 3,354,213.
- Armstrong, Marshall C.: *See—*
  - Shannon, Richard F., and Armstrong. 3,353,975.
- Aronoff, Elihu J.: *See—*
  - Vieth, Richard D., Dooley, Aronoff, and Bolstad. 3,353,990.
- Arrow-Hart & Hegeman Electric Co., The: *See—*
  - Schleicher, Harold E. 3,354,275.
- Arvidson, Bengt A., to Corley-Miller, Inc. Package sealing machine. 3,353,333, 11–21–67, Cl. 53—379.
- Arvidson, Bengt A., and E. C. Clement, to Corley-Miller, Inc. Package indexing device. 3,353,653, 11–21–67, Cl. 198—39.
- Asahi Chemical Industry Co., Ltd.: *See—*
  - Kida, Tokurou, Matsuda, Saito, and Yuasa. 3,353,993.
- Aseltine, John A.: *See—*
  - Anderson, George W., Aseltine, and Cooper. 3,354,297.
- Ash, Francis J.: *See—*
  - Cubert, Jack S., and Ash. 3,354,324.
- Astek Instrument Corp.: *See—*
  - Daleo, Frank G. 3,353,408.
- Atkin, Oliver B., to Anaconda American Brass Co. Continuous casting cooling method and apparatus. 3,353,584, 11–21–67, Cl. 164—89.
- Atlantic Refining Co., The: *See—*
  - Brown, Cicero C. 3,353,596.
- Atlas Electrical Fittings Co.: *See—*
  - Sebo, Carl J. 3,353,775.
- Atomic Energy of Canada Ltd.: *See—*
  - Robertson, John A. L. 3,354,044.
- Attwood, John G.: *See—*
  - Smith, Robert E., Kosrow, and Attwood. 3,353,821.
- Aubert, Michel, D. Brouard, and P. Rouge, to Commissariat a l'Energie Atomique. Nuclear reactor refuelling device. 3,354,041, 11–21–67, Cl. 176—30.
- Auergesellschaft G.m.b.H.: *See—*
  - Maiwald, Walter G. 3,353,702.
- Aurell, Ronnie: *See—*
  - Hartler, Nils, and Aurell. 3,354,029.
- Automatic Radio Mfg. Co., Inc.: *See—*
  - Flint, Frank B., and Housman. 3,353,416.
- Automatic Sprinkler Corp. of America: *See—*
  - Kersey, Frank N., J. L. Kersey, Jr., and Kemp. 3,353,504.
- Automatic Timing and Controls, Inc.: *See—*
  - Houpt, Grover K., and Whittaker. 3,354,399.
- Avalon, Robert J.: *See—*
  - Kappenhagen, George A., and Avalon. 3,354,350.
- Avco Corp.: *See—*
  - Hawkins, Robert A. 3,353,399.
- Avril, Michel, R. Moreau, and A. Pages, to Commissariat a l'Energie Atomique. Binary magnetic recording system. 3,354,446, 11–21–67, Cl. 340—174.1.
- Avtron Mfg., Inc.: *See—*
  - Danko, Donald M. 3,354,298.
- Axthammer, Ludwig, and F. Wossner, to Fichtel & Sachs A.G. Self-leveling hydropneumatic suspension unit. 3,353,816, 11–21–67, Cl. 267—64.
- Aykanian, Ardashus A., W. Hing, and M. H. Wohl, to Monsanto Co. Color gradated laminates. 3,354,025, 11–21–67, Cl. 161—199.
- Babel, Louis, and P. Peytavin, to Societe Civile dite; Societe Civile d'Etudes de Centrifugation. Apparatus for effecting the continuous rotary casting of hollow steel blanks. 3,353,587, 11–21–67, Cl. 164—281.
- Bach, Hartwig C., and J. Preston, to Monsanto Co. Polyamides prepared from 5,5′-diaminoindigo. 3,354,120, 11–21–67, Cl. 260—47.
- Bach, Robert D., to E. I. du Pont de Nemours and Co. Bowling ball. 3,353,825, 11–21–67, Cl. 273—63.
- Bacher, Leo O., to McAx Corp. Insulated joint for panel walls. 3,353,318, 11–21–67, Cl. 52—408.
- Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See—*
  - Honsberg, Werner, and Mueller. 3,354,071.
  - Janson, Alfons, and Poschmann. 3,353,909.
  - Kranz, Joachim, and Polster. 3,353,977.
  - Wegerich, Anton, Fuerst, Haarer, and Corr. 3,354,056.
- Bailey, Frederick E., Jr., E. M. La Combe, and R. H. Raines, to Union Carbide Corp. Mineral lubricating oil containing acrylate thio polymer as viscosity index improver. 3,354,087, 11–21–67, Cl. 252—48.6.
- Baker, Clifford D. Towel rack installation. 3,353,779, 11–21–67, Cl. 248—251.
- Baker, Edgar G.: *See—*
  - Frieder, Leonard P., and Baker. 3,353,197.
- Balaz, Charles S.: *See—*
  - Lowell, Peter M., Balaz, and Anderson. 3,353,480.
- Baldwin-Lima-Hamilton Corp.: *See—*
  - Hoffmann, Leo. 3,353,397.
- Bally Case and Cooler, Inc: *See—*
  - Melcher, George W. 3,353,814.
- Balton, James A.: *See—*
  - Barton, William W., Holland, and Balton. 3,353,258.
- Bamberger, Steven H., and M. O. Rudd. Rear view automotive periscope utilizing toris mirrors. 3,353,893, 11–21–67, Cl. 350—55.
- Bancroft, Joseph, & Sons Co.: *See—*
  - Hodges, James R., and Zeis. 3,353,240.
  - Hodges, James R., and Zeis. 3,353,767.
  - Prosceno, Harry A., Schrader, and Zeis. 3,353,241.
  - Shrader, Victor H. 3,353,242.
- Banke, Henry C.: *See—*
  - Chapman, Howard D., and Banke. 3,353,866.
- Bannister, Clyde E. Method and apparatus for exploration of the water bottom regions. 3,353,612, 11–21–67, Cl. 175—6.
- Bard, Irving G., and R. S. Rogers, to Leeds & Northrup Co. Linearized analog-to-digital converters. 3,354,452, 11–21–67, Cl. 340—347.
- Barditch, Irving F.: *See—*
  - Merck, John W., and Barditch. 3,354,395.
- Barker, George. Grooved panel with load-bearing strips. 3,353,315, 11–21–67, Cl. 52—275.
- Barmer Maschinenfabrik Aktiengesellschaft: *See—*
  - Niemeyer, Walter. 3,353,213.
- Barnett, Louis H., and R. Haynie, to Loma Industries, Inc. Locking device for injection molding apparatus. 3,353,221, 11–21–67, Cl. 18—43.
- Barnett, William K.: *See—*
  - Killoran, Joseph L., Barnett, and Guay. 3,354,250.
- Barry, Austin W., to G-V Controls Inc. Control system for battery charging. 3,354,374, 11–21–67, Cl. 320—23.
- Bartlo, John S., and R. H. Provost, to Package Machinery Co. Heat sealing mechanism for wrapping machines. 3,353,332, 11–21–67, Cl. 53—379.
- Barton, Robert S.: *See—*
  - Macon, Charles E., Barton, Quantz, and Shimabukuro. 3,354,429.
- Barton, Derek H. R., to Research Institute for Medicine and Chemistry, Inc. Process for the production of steroid bromohydrins or cyclic ethers derived therefrom. 3,354,150, 11–21–67, Cl. 260—239.55.
- Barton, William W., M. B. Holland, and J. A. Balton, to American Machine & Foundry Co. Bowling pin. 3,353,258, 11–21–67, Cl. 29—463.
- Bartoo, Otto F., T. Ten Bruggencate, and L. G. Gorter, to Vereeninging Voor Zuivelindustrie En Melkhygiene. Plastic carrying crate for bottles. 3,353,703, 11–21–67, Cl. 220—21.
- Bartz, Otto H., to General Motors Corp. Wheel cover. 3,353,872, 11–21–67, Cl. 301—37.
- Baselice, Louis A., to American Insulating Machinery Co. Wire-feeding and tensioning apparatus. 3,353,762, 11–21–67, Cl. 242—45.
- Bashover, Albert, to Ideal Fastener Corp. Forming apparatus for helical slide fastener element. 3,353,217, 11–21–67, Cl. 18—19.
- Bass, Edmund P., to Affiliated Laboratories Corp. Serial passaging tissue cultured canine distemper virus to form attenuated vaccine short or virus-antigenicity decreasing passages. 3,354,038, 11–21–67, Cl. 167—78.
- Bass, Sidney. Furniture unit with extensible-retractable chair. 3,353,865, 11–21–67, Cl. 297—143.
- Bastian, James W. Pumping device. 3,353,491, 11–21–67, Cl. 103—149.
- Batsch, Norbert C., to Canadian General Electric Co. Ltd. Thermal fuse with capillary action. 3,354,282, 11–21–67, Cl. 200—142.
- Bauer, Helmut, to Maschmenfabrik Burckhardt A.G. Pistons for very high pressure operation in pumps or compressors. 3,353,456 11–21–67, Cl. 92—258.
- Bauer, Hugo. Fastener cartridge and assembly. 3,353,736, 11–21–67, Cl. 227—107.
- Bauer, Werner R., to Robertshaw Controls Co. Switch with transverse sheet metal snap action members. 3,354,274, 11–21–67. Cl. 200—67.
- Baumann, George P., and F. J. Ponzek, to Esso Research and Engineering Co. Apparatus for conversion of hydrocarbons. 3,353,925, 11–21–67, Cl. 23—288.
- Baumann, Peter, and M. Zimmerman, to Geigy Chemical Corp. 6-amino-penicillanic acid derivatives. 3,354,145, 11–21–67, Cl. 260—239.1.
- Baur, Gerd R.: *See—*
  - Henderson, William B., and Baur. 3,354,111.
- Bausch & Lomb Inc.: *See—*
  - Benford, James R. 3,353,440.
  - Letter, Eugene C. 3,354,064.
  - Loewen, Erwin G., and Meltzer. 3,354,319.
  - Rosenberger, Harold E. 3,353,891.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 21ST DAY OF NOVEMBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- A.B. Tetra Pak : *See*—
  - Andreasson, Jan-Erik. 3,353,738.
- ACF Industries, Inc. : *See*—
  - Rollins, Dallas W., and Becker. 3,353,505.
- A.E.C. Societe de Chimie Organique et Biologique : *See*—
  - Redel, Joseph, and Boch. 3,354,224.
- A.I.T. Industries, Inc. : *See*—
  - Stern, Albert. 3,353,303.
- A.M. Fish Holdings Ltd. : *See*—
  - Fish, Aaron M. 3,353,383.
- AMP Inc. : *See*—
  - Rueger, Herman. 3,354,454.
- Abbott, Edward F. : *See*—
  - Worden, Donald P., and Abbott. 3,354,286.
- Abel, Edmund A., Jr., to The Leece-Neville Co. Windshield wiper drive mechanism. 3,353,425, 11-21-67, Cl. 74—600.
- Abitibi Power & Paper Co., Ltd. : *See*—
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  - Schulze, John J. 3,353,281.
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  - Bass, Edmund P. 3,354,038.
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- Agnoff, Charles : *See*—
  - Del Vecchio, Joseph T., and Agnoff. 3,353,874.
- Aichelin, J. Stuttgart, Korntal B. : *See*—
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  - Tidemalm, Gustav H., and Johansson. 3,353,616.
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- Aktiebolaget Karlstads Mekaniska Werkstad : *See*—
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- Almer, Friedrich H. R., G. S. Schrijnemakers, A. Kuiper, and A. P. Van Rooy, to North American Philips Co., Inc. Cup-shaped control electrode securing cathode by thin supporting members. 3,354,340, 11-21-67, Cl. 313—82.
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  - Koot, Alphonsus E. 3,353,863.
- Alyanakyan, Satenik A. : *See*—
  - Reisman, Arnold, Berkenblit, and Alyanakyan. 3,354,004.
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  - Peterson, Vincent C. J. 3,353,768.
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  - Bikales, Norbert M. 3,353,671.
  - Feldman, Allan M., and Hoffmann. 3,354,230.
  - Nau, Harold H. 3,353,949.
  - Schmitt, Joseph M., Landers, and Terenzi. 3,354,238.
  - Takacs, Edward A. 3,354,172.
  - Welcher, Richard P. 3,354,208.
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  - Bergeijk, Jan V., and Nieuwenhuijsen. 3,353,564.
  - Heijnis, James W. I. 3,353,211.
  - Heijnis, James W. I. 3,353,239.
  - Heijnis, James W. I., and Vrolikjk. 3,353,754.
- American Flange & Mfg. Co., Inc. : *See*—
  - Laurizio, Jeremiah. 3,353,849.
- American Factors Associates, Ltd. : *See*—
  - Silver, Harold F. 3,353,880.
- American Filtrona Corp. : *See*—
  - Sproull, Reavis C., and Berger. 3,353,548.
- American Home Products Corp. : *See*—
  - Humber, Leslie G., and Davis. 3,354,162.
  - Wendt, Gerhard R., and Hertz. 3,354,156.
- American Insulating Machinery Co. : *See*—
  - Baselice, Louis A. 3,353,762.
- American Machine & Foundry Co. : *See*—
  - Barton, William W., Holland, and Balton. 3,353,258.
  - Brackmann, Warren A., and Hibbitts. 3,353,430.
  - Wood, Fenton M., and Walters. 3,354,385.
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  - Woyski, Mark M., Bradford, and Elliott. 3,353,928.
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  - Lions, Earl P., and Vom Baur. 3,353,799.
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- Ampex Corp. : *See*—
  - Ainsworth, Gerald L., and Hebb. 3,354,371.
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- Amsted Industries Inc. : *See*—
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Bay, Otto. Chucks. 3,353,834, 11-21-67, Cl. 279—82.
Bayside Watch Tool Co., Inc.: *See*—
  Humphrey, Robert. 3,353,412.
Beach, David E., to Eastman Kodak Co. Photographic still cameras with built-in flash. 3,353,468, 11-21-67, Cl. 95—11.5.
Beach, Leland K., H. R. Ertelt, D. A. Guthrie, and R. P. Rhodes, to Esso Research and Engineering Co. Cyclohexane, -ene, -diene-NF_2 reaction products. 3,354,210, 11-21-67, Cl. 260—563.
Bean, Claude T., Jr.: *See*—
  Dorfman, Edwin, and Bean. 3,354,204.
Bear Mfg. Co.: *See*—
  MacMillan, Charles W. 3,353,278.
Beasley, Jack O. Delay-responsive shut-off device for operationally-vibrating electric equipment. 3,354,372, 11-21-67, Cl. 318—460.
Beatenbough, Paul K., to General Motors Corp. Poppet valve thermostat compensated as to pressure. 3,353,745, 11-21-67, Cl. 236—34.
Beatrice Foods, Co.: *See*—
  Noznick, Peter P., and Bundus. 3,353,969.
Bebb, Herbert B., and R. J. Potter, to International Business Machines Corp. Energy coupling device. 3,354,405, 11-21-67, Cl. 331—94.5.
Bechmann, Günther: *See*—
  Lukesch, Heinz, and Bechmann. 3,354,039.
Bechter, Kathleen, and J. R. Russell, to Steere Enterprises, Inc. Key case and its manufacture. 3,353,579, 11-21-67, Cl. 150—40.
Beck, Roland D., and R. A. Palmer, to Robertshaw Controls Co. Pneumatic pushbutton construction. 3,353,452, 11-21-67, Cl. 91—36.
Becker, Carl E.: *See*—
  Rollins, Dallas W., and Becker. 3,353,505.
Becker, Edward J., R. S. Robison, and A. Patrick, to E. R. Squibb & Sons, Inc. Synthesis of steroids. 3,354,048, 11-21-67, Cl. 195—51.
Becker, William C., to Reynolds Metals Co. Method of making a carrying case for bottles or the like. 3,353,326, 11-21-67, Cl. 53—24.
Becking, Paul E., J. D. Bungard, and D. J. McCormick, to Dura Corp. Writing system. 3,353,744, 11-21-67, Cl. 234—54.
Beckman Instruments, Inc.: *See*—
  Isborn, Carl L. 3,354,325.
  Cliffgard, Arnie L., Keegan, and Randall. 3,354,355.
  Jerrold, Jones P., and Deushane. 3,354,069.
Bedker, Bruce D., to L. W. Bedker. Synchronized thread rolling tool. 3,353,390, 11-21-67, Cl. 72—104.
Bedker, Leo W.: *See*—
  Bedker, Bruce D. 3,353,390.
Beebe, Fred F., and H. V. Butler, to Camco Inc. Apparatus for installing and removing flow valves. 3,353,608, 11-21-67, Cl. 166—117.5.
Beekley, Corp., The: *See*—
  Beekley, Francis C. 3,354,467.
Beekley, Francis C., to The Beekley Corp. Information retrieval machine and method. 3,354,467, 11-21-67, Cl. 340—172.5.
Beesley, Robert L., and R. H. Matthias, to The Dow Chemical Co. Plastic tote case. 3,353,659, 11-21-67, Cl. 206—45.31.
Behrendt, John G. Battery-operated cigarette lighter. 3,354,291, 11-21-67, Cl. 219—263.
Belasco, Melvin, and D. D. Martin, to Texas Instruments Inc. Alloy contact containing aluminum and tin. 3,354,365, 11-21-67, Cl. 317—237.
Belcher, Samuel L., and R. F. De Brock, to Owens-Illinois, Inc. Beverage case. 3,353,704, 11-21-67, Cl. 220—21.
Bell, Alexander, to Stromberg-Carlson Corp. Electrodes stacked in slotted tubular support. 3,354,339, 11-21-67, Cl. 313—82.
Bell & Howell Co.: *See*—
  Hall, Walter J. 3,353,443.
Bell, Jerome V.: *See*—
  Samuel, George A., and Bell. 3,353,936.
Bell, Malcolm R., to Sterling Drug Inc. 1- and 2-benzimidazolyl-lower-alkylamidoximes-, amidines-, and guanidines. 3,354,174, 11-21-67, Cl. 260--309.2.
Bell, Roscoe L. End securing means for a spacer expander of a piston ring assembly. 3,353,830, 11-21-67, Cl. 277—9.5.
Bell Telephone Laboratories, Inc.: *See*—
  Beuscher, Hugh J. 3,354,410.
  Boyle, Willard S., and Nelson. 3,354,404.
  Brolin, Stephen J. 3,354,448.
  Crater, Theodore V. 3,354,267.
  Crowell, Merton H. 3,354,408.
  Deverall, George V. 3,354,316.
  Fly, Gale S., and Leshe. 3,354,380.
  Heber, Emery, and Lund. 3,354,400.
  Jewett, William E. 3,354,378.
  Kolb, Ernest D., and Laudise. 3,353,926.
  Rettig, John F., and Stagg. 3,354,268.
Beloit Corp.: *See*—
  Blackburn, Robert K., Van Voorhis, Nadeau, and Schmitt. 3,353,516.
Belove, Louis: *See*—
  Langguth, Erich, and Belove. 3,353,998.
Bemis Co., Inc.: *See*—
  Anderson, Harold N., and Helm. 3,353,572.
Bendix Corp., The: *See*—
  Perryman, George H. 3,353,487,
Benford, James R., to Bausch & Lomb Inc. Navigation pelorus. 3,353,440, 11-21-67, Cl. 88—2.3.

Benjamin, Benjamin C., to F & E Mfg. Co. Nut and bolt construction. 3,353,580, 11-21-67, Cl. 151—7.
Benjamin, Fred, to Christie Electric Corp. Power supply impedance control with positive slope. 3,354,384, 11-21-67, Cl. 323—89.
Benjamin, Harwell E.: *See*—
  Early, Julius E., and Benjamin. 3,354,093.
Benn, Robert E.: *See*—
  Ohntrup, Frederick F., McLaughlin, and Benn. 3,354,342.
Bennett Industries, Inc.: *See*—
  Godshalk, Alva J. 3,353,706.
Bennett, John H.: *See*—
  Merritt, Charles H., and Bennett. 3,354,465.
Bensemann, Edward H. T. Sizing machine. 3,353,670, 11-21-67, Cl. 209—84.
Benson, Clyde A.: *See*—
  Illingworth, Robert H., and Benson. 3,354,028.
Benson, Glendon M., to Physics International Co. Fluid pressure actuated piezoelectric generator. 3,354,327, 11-21-67, Cl. 310—8.7.
Bent, John H.: *See*—
  Bivans, Elbert L., and Bent. 3,353,330.
Benz, Jakob, and H. Uehlinger, to Sandoz Ltd. (a/k/a Sandoz A.G.). Metal-containing reactive monoazo dyestuffs containing a triazine group. 3,354,140, 11-21-67, Cl. 260—146.
Berg, Edward T. Panel covered structures. 3,353,316, 11-21-67, Cl. 52—302.
Bergeijk, Jan V., and H. Nieuwenhuijsen, to American Enka Corp. Laminar flow device. 3,353,564, 11-21-67, Cl. 138—41.
Berger, Fritz, to Firma Rheinmetall G.m.b.H. Impact fuze for a spinning projectile. 3,353,489, 11-21-67, Cl. 102—79.
Berger, Richard M.: *See*—
  Sproull, Reavis C., and Berger. 3,353,543.
Bergman, Richard I., to Princeton Chemical Research Inc. Recovery of entrained solids from gases. 3,353,334, 11-21-67, Cl. 55—94.
Bergman, Robert J.: *See*—
  Prohofsky, Leroy A., and Bergman. 3,354,445.
Berman, Sanford, and E. L. Wright, to Customline Control Products, Inc. Mechanically operated mixed liquid dispensing machine. 3,353,715, 11-21-67, Cl. 222—129.4.
Berkenblit, Melvin: *See*—
  Reisman, Arnold, Berkenblit, and Alyanakyan. 3,354,004.
Berlincourt, Don A.: *See*—
  Jaffe, Hans, and Berlincourt. 3,354,425.
Berriman, Lester P. :*See*—
  Englert, Robert D., Swidler, Berriman, and Wade. 3,353,904.
Berry, De Lette A.: *See*—
  Mundorff, Rewe P., and Berry. 3,353,294.
Berry, Frank, to Westinghouse Air Brake Co. Fluid pressure motor. 3,353,455, 11-21-67, Cl. 92—24.
Berryhill, Gerald W.: *See*—
  Boppart, Loren P., and Berryhill. 3,353,691.
Bertin, Daniel, and J. Perronnet, to Roussel-UCLAF. 17α-halo-Δ^{16}-5β-androstene-11-one 3α ol and compositions thereof. 3,354,037, 11-21-67, Cl. 167—65.
Bertram, J., K.G.: *See*—
  Muller, Hugo. 3,353,795.
Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung: *See*—
  Sixel, Gustav A., and Hess. 3,353,807.
  Sommer, Reinhold H. 3,353,835.
Beth, Walter F.: *See*—
  Seymour, James A., and Beth. 3,353,306.
Betrg. Edward T. Panel-covered structures. 3,353,316, 11-21-67, Cl. 52—302.
Better Equipment for Electron Microscopy, Inc.: *See*—
  Brown, Stanley. 3,353,656.
Beuscher, Hugh J., to Bell Telephone Laboratories, Inc. Method for reducing interference caused by electromagnetic radiation from clock controlled systems. 3,354,410, 11-21-67, Cl. 332—18.
Beuther, Harold, and B. K. Schmid, to Gulf Research & Development Co. Process for the hydrocracking of hydrocarbon oils under reaction conditions so as to retain substantial amounts of aromatics in the naphtha product. 3,354,076, 11-21-67, Cl. 208—111.
Beyer John H.: *See*—
  Winstead, Thomas W., and Beyer. 3,353,202.
Bianchetta, Donald L., to Caterpillar Tractor Co. Automatic accumulator bleed means. 3,353,495, 11-21-67, Cl. 103—223.
Biezunski, Georges, J. Maugest, and R. Peres, to Compagnie Generale d'Automatisme, Societe Octel, and Compagnie d'Applications et Recherches Atomiques. Device for the mixing of liquids. 3,353,711, 11-21-67, Cl. 222—28.
Big Rock Mountain Corp.: *See*—
  Pettit, Frank P. 3,353,503.
Bikales, Norbert M., to American Cyanamid Co. Flotation process with cyanoethyl alkylxanthate esters. 3,353,671, 11-21-67, Cl. 209—166.
Bilker and Moyerman: *See*—
  Sobel, David. 3,353,823.
Bill, Arthur, T. Steele, and M. Poucher, to Rolls-Royce Ltd. Aerofoil-shaped fluid-cooled blade for a fluid flow machine. 3 353,351, 11-21-67, Cl. 60—39.65.
Bird, Forrest M., and H. L. Pohndorf. Nebulizer. 3,353,536, 11-21-67, Cl. 128—194.
Bishop and Babcock Corp., The: *See*—
  Jaworski, Leonard S. 3,353,436.
Bishop, Jerald W.: *See*—
  Gilmore, Merwin W., and Bishop. 3,353,479.
Bivans Corp.: *See*—
  Bivans, Elbert L., and Bent. 3 353,330.
Bivans, Elbert L., and J. H. Bent, to Bivans Corp. Stuffer for traveling carton. 3,353,330, 11-21-67, Cl. 53—59.

Blackburn, Robert K., W. E. Van Voorhis, A. J. Nadeau, and A. J. Schmitt; said Nadeau and said Schmitt assors. to Beloit Corp. Flooded nip coater pan. 3,353,516, 11-21-67, Cl. 118—249.
Blackburn, William L., to Burroughs Corp. Mechanical apparatus for supporting a magnetic core and electrical test circuitry therefor. 3,354,393, 11-21-67, Cl. 324—158.
Blackstone & Co., Ltd.: *See*—
  Ley, Ralph G. 3,353,521.
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Blaha, Emil, to Selas Corp. of America. Process for making a filter. 3,353,982, 11-21-67, Cl. 117—8.
Blake, Edward S., and G. F. Deebel, to Monsanto Research Corp. Polyphenyl ether ketones. 3,354,222, 11-21-67, Cl. 260—592.
Blake, Ralph K., to E. I. du Pont de Nemours and Co. Photographic process. 3,353,957, 11-21-67, Cl. 96—29.
Blakistone, James T.: *See*—
  Burdorf, Donald L., Blakistone, and Karsh. 3,353,734.
Blanding, John E., E. C. Trageser, and J. V. Harrington, to General Dynamics Corp. Underwater well enclosing capsule and service chamber. 3,353,364, 11-21-67, Cl. 61—69.
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Bleiman, Lewis W., to Radio Corp. of America. Two card detector. 3,354,273, 11-21-67, Cl. 200—61.41.
Bliss, E. W., Co.: *See*—
  Wolf, Siegfried, and Young. 3,353,305.
Blumbergs, John H.: *See*—
  Diamond, Louis H., and Blumbergs. 3,353,902.
Board, Richard G. Game apparatus employing shielded game boards with optical devices for board viewing. 3,353,829, 11-21-67, Cl. 273—131.
Boart & Hard Metal Products S.A. Ltd.: *See*—
  Deem, Richard C., Gray, and Young. 3,353,526.
Boberg, Thomas C., to Esso Production Research Co. Steam injection with clay stabilization. 3,353,593, 11-21-67, Cl. 166—4.
Bobrick, Mitchell. Room utility and service system. 3,354,301, 11-21-67, Cl. 240—2.
Boccato, Giorgio: *See*—
  Scarso, Luciano, Boccato, and Rigo. 3,354,135.
Boch, Jean-Baptiste-Christian: *See*—
  Redel, Joseph, and Boch. 3,354,224.
Bock, Helmut, and H. Hommers. Method of refining liquid fats and oils. 3,354,188, 11-21-67, Cl. 260—424.
Bockmann, Klaus: *See*—
  Taube, Carl, Bockmann, and Freytag. 3,353,901.
Bodoh, Albinus G., and D. J. Siwy, to The Seeburg Corp. Phonograph record storage arrangement. 3,353,882, 11-21-67, Cl. 312—10.
Boeing Co., The: *See*—
  Vali, Victor, Krogstad, Moss, and Hagman. 3,354,311.
Boettcher, Alfred, to Kernforschungsanlage des Landes Nordrhein-Westfalen-e.v. Fuel element for nuclear reactors. 3,354,043, 11-21-67, Cl. 176—72.
Boland, Lawrence J.: *See*—
  Zeitler, Carl, Jr., and Boland. 8,354,430.
Bolkow Gesellschaft mit beschrankter Haftung: *See*—
  Emde, Gunter. 3,353,280.
Bolling, Thomas J., Jr. Closed fluid system for sealing valve closure elements. 3,353,783, 11-21-67, Cl. 251—172.
Bollinger, Harold N. Elastic extension device. 3,353,817, 11-21-67, Cl. 267—69.
Bolstad, Richard: *See*—
  Vieth, Richard D., Dooley, Arnoff, and Bolstad. 3,353,990.
Bonnefoy, Jean R. H., to Printed Motors Inc. Flat annular airgap electric rotary machines. 3,354,332, 11-21-67, Cl. 310—268.
Bonvalot, Pierre, and B. Courtan, to CSF-Compagnie Generale de Telegraphie Sans Fil. Storage tube target and method for making same. 3,354,334, 11-21-67, Cl. 313—68.
Boppart, Loren P., and G. W. Berryhill, to Starline, Inc. Silage distributor. 3,353,691, 11-21-67, Cl. 214—17.
Boresta, John G.: *See*—
  Wechselblatt, Peter M., and Boresta. 3,353,803.
Borg-Warner Corp.: *See*—
  Settimi, Raymond J. 3,353,234.
  Silva, William C. 3,353,681.
Bork, Karl-Heinz: *See*—
  Von Werder, Fritz, Bruckner, and Bork. 3,354,184.
Borough, William H.: *See*—
  Klusmire, Galen J., Borough, and Eichhorn. 3,354,015.
Bosch, Robert, G.m.b.H.: *See*—
  Haag, Gustav. 3,353,520.
  Heinzelmann, Josef, and Hugendubel. 3,353,492.
  Zehender, Ernst, and Ziegler. 3,354,247.
Bourland, Orley R., Jr.: *See*—
  Kifor, Harry T., and Bourland. 3,353,769.
Bowen, Bertram E. V.: *See*—
  Lachowicz, Stefan K., Brown, Bowen, and Newman. 3,354,199.
Bowers, Albert, P. Crabbe, and J. Edwards, to Syntex Corp. 19-nor-$9\beta,10\alpha$-Δ^4-androstenes. 3,354,183, 11-21-67, Cl. 260—397.3.
Bowers, Lester T., and J. J. McDonnell, to Scott Chemical and Welding Products Co., Inc. Metal spatter-fouling inhibiting material and method. 8,353,970, 11-21-67, Cl. 106—2.
Bowman, Thomas E., and P. B. Kennedy, to United States of America, Atomic Energy Commission. Back-streaming control in a diffusion. 8,353,742, 11-21-67, Cl. 230—101.

Bowser, Inc.: *See*—
  Romanowski, Albert F. 3,353,710.
Boyle, Willard S., and D. F. Nelson, to Bell Telephone Laboratories, Inc. End pumped optical maser. 3,354,404, 11-21-67, Cl. 331—94.5.
Brack, Karl, to Hercules Inc. Poly(dihydroxyalkyl) tertiary amines. 3,354,209, 11-21-67, Cl. 260—563.
Bracken, Alexander L., Jr.: *See*—
  Hanks, George F., and Bracken. 3,353,941.
Brackmann, Warren A., and K. Hibbitts, to American Machine & Foundry Co. High speed cigarette cutoff. 3,353,430, 11-21-67, Cl. 83—13.
Brackman, Willem, and H. C. Volger, to Shell Oil Co. Oxidation of carbonyl compounds. 3,354,220, 11-21-67, Cl. 260—586.
Bradford, James L.: *See*—
  Woyski, Mark M., Bradford, and Elliott. 3,353,928.
Bradford, Rex C., M. H. Cook, and H. R. Keleof, to International Business Machines Corp. Method of making a multitrack magnetic transducer head. 3,353,261, 11-21-67, Cl. 29—603.
Brandle, Robert T., and J. R. Nutt, to Phillips Petroleum Co. Multiple additive dispersion in 1-olefin polymers. 3,354,115, 11-21-67, Cl. 260—41.
Brandt, Edmund D., and D. D. Varner, to Western Electric Co., Inc. Through-connectors for circuit boards and method of applying same. 3,354,260, 11-21-67, Cl. 174—68.5.
Brandt. Herbert, and H. Sandmann. Rotary regenerative heat exchangers. 3,353,588, 11-21-67, Cl. 165—4.
Branscum, Tony E., to Phillips Petroleum Co. Method and apparatus for blow molding. 3,354,246, 11-21-67, Cl. 264—98.
Brashear, Danald W., to Hamilton Watch Co. Electric watch calendar mechanism. 3,353,348, 11-21-67, Cl. 58—58.
Brauer, Willi, to Langenstein & Schemann AG. Swaging hammers. 3,353,396, 11-21-67, Cl. 72—453.
Braun, Ernst: *See*—
  Rungaldier, Karl, and Braun. 3,354,050.
Bray, John R., and G. B. Price, to Monsanto Co. Anticipating temperature controller. 3,354,358, 11-21-67, Cl. 317—148.5.
Brehm, Gustav, to Heberlein & Co. A.G. Yarn winding apparatus. 3,353,760, 11-21-67, Cl. 242—43.
Briggs, James B., and M. P. Vanderplaats, to Hoffman Electronics Corp. Digital delay measurement system. 3,354,455, 11-21-67, Cl. 343—7.3.
Brixey, John C., Jr., and K. E. Statham, to Texas Instruments Inc. Method for diffusing an impurity from a doped oxide of pyrolytic origin. 3,354,008, 11-21-67, Cl. 148—187.
Broaderick, John W., R. M. Florenza, C. A. Kelly, and M. Kozar, to International Business Machines Corp. Electrical component tester with duplexed handler. 3,353,669, 11-21-67, Cl. 209—73.
Broadhead, Samuel L., Jr., to Collins Radio Co. Digital frequency comparator. 3,354,398, 11-21-67, Cl. 328—133.
Brodersen, Rolf K., to General Precision Inc. Gyro spring. 3,353,414, 11-21-67, Cl. 74—5.4.
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Broeker, Hermann L., F. Y. Dupont, and A. L. Lynn, to General Electric Co. High voltage grading for dynamoelectric machine. 3,354,331, 11-21-67, Cl. 310—196.
Brolin, Stephen J., to Bell Telephone Laboratories, Inc. High sensitivity voltage monitor. 3,354,448, 11-21-67, Cl. 340—248.
Brooks, Fred A., Jr.: *See*—
  Annis, Max R., and Brooks. 3,353,600.
Brouard, Daniel: *See*—
  Aubert, Michel, Brouard, and Rough. 3,354,041.
Brown, Albert P.: *See*—
  Nelson, Alden W., and Brown. 3,353,212.
Brown, Christopher J.: *See*—
  Lachowicz Stefan K., Brown, Bowen, and Newman. 3,354,199.
Brown, Cicero C., to The Atlantic Refining Co. Tubing hanger and method of testing packing thereon. 3,353,596, 11-21-67, Cl. 166—.6.
Brown, Cicero C. Powered quick coupling device. 3,353,847, 11-21-67, Cl. 285—18.
Brown, Glenn R.: *See*—
  Rightmire, Robert A., Brown, and Rowland. 3,354,068.
Brown, Stanley. to Better Equipment for Electron Microscopy, Inc. Holder for electron microscopy grids. 3,353,656, 11-21-67, Cl. 206—1.
Brown and Williamson Tobacco Corp.: *See*—
  Fordyce, William B., and Horsewell. 3,353,544.
  Kilburn, Keith D. 3,353,542.
Brownson, Ivan F. Double hook. 3,353,232, 11-21-67, Cl. 24—129.
Bruce, John P., to The Dow Chemical Co. Process for preparing fluid, non-plasticized vinyl chloride polymer compositions and thermoset polymers having reinforcing fibrous material. 3,354,112, 11-21-67, Cl. 260—32.8.
Bruckner, Klaus: *See*—
  Von Werder, Fritz, Bruckner, and Bork. 3,354,184.
Bruecker, George B. Feed dispensing carts for livestock and the like. 3,353,719, 11-21-67, Cl. 222—178.
Bruel, Alain: *See*—
  Bruel, Yvon and A. 3,353,577.
Bruel, Yvon and A. Machine for cleaning and calibrating vegetables, more particularly asparagus. 3,353,577, 11-21-67, Cl. 146—81.
Brunes, James W. Pack frame and tree seat structure. 3,353,629, 11-21-67, Cl. 182—20.
Buchkremer, Rudolf, to Ludwig Riedhammer G.m.b.H. Electric furnace for ceramics. 3,354,293, 11-21-67, Cl. 219—388.

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  - Buckman, Stanley J., Pera, and Raths. 3,354,033.
- Buckman, Stanley J., J. D. Pera, and F. W. Raths, to Buckman Laboratories, Inc. Compositions containing monosubstituted 2-bromoacetophenones and processes of utilizing the same. 3,354,033, 11–21–67, Cl. 162—161.
- Budd, James M. Decorative cut tree holder. 3,353,773, 11–21–67, Cl. 248—44.
- Budde, Carl A., to Electronic Specialty Co. Tunnel diode neuristor parity generator. 3,354,431, 11–21–67, Cl. 340—146.1.
- Budke, Carl P., to Pittsburgh Plate Gloss Co. Method and apparatus for recovering a naturally occurring brine containing sodium carbonate. 3,353,870, 11–21–67, Cl. 299—5.
- Bundus, Robert H. : *See*—
  - Noznick, Peter P., and Bundus. 3,353,969.
- Bungard, James D. : *See*—
  - Becking, Paul E., Bungard, and McCormick. 3,353,744.
- Bunyard, Alan D., G. F. Kendall, and H. Lowenthal, to Colibri Lighters Ltd. 3,353,375, 11–21–67, Cl. 67—7.1.
- Burdorf, Donald L., J. T. Blakistone, and I. Karsh, to Kinelogic Corp. Drive systems involving electrostatic forces. 3,353,734, 11–21–67, Cl. 226—94.
- Burgy, Raymond A., to Toledo Scale Corp. Elevator dispatch control using integrated stop times as a measure of traffic. 3,353,631, 11–21–67, Cl. 187—29.
- Burr, Robert H., to Phillips Petroleum Co. Production of antistatic polymers. 3,354,138, 11–21–67, Cl. 260—94.9.
- Burroughs Corp. : *See*—
  - Blackburn, William L. 3,354,393.
  - Macon, Charles E., Barton, Quantz, and Shimabukuro. 3,354,429.
  - Ohntrup, Frederick F., McLaughlin, and Benn. 3,354,342.
  - Templeton, William B. 3,353,649.
- Burton, Charles D., to The Dow Chemical Co. Tri(difluoramino)methyl bromide and process of preparation. 3,354,217, 11–21–67, Cl. 260—583.
- Burzynski, Alfred J., and R. E. Martin, to Owens-Illinois, preparation thereof. 3,354,095, 11–21–67, Cl. 252—316.
- Buthenhoff, Friedrich, to Maybach Motorenbau G.m.b.H.
- Butler, Huston V. : *See*—
  - Beebe, Fred F., and Butler. 3,353,608.
- Butterfield, Colin E. : *See*—
  - Macfall, Derek, and Butterfield. 3,354,045.
- Butterfield, Roy S. : *See*—
  - Macfall, Derek, and Butterfield. 3,354,045.
- Butz, Tom E., and S. N. Schlein, to The Fanner Mfg. Co., a Division of Textron Inc. Method and apparatus for holding a pair of hollow metal articles together. 3,353,850, 11–21–67, Cl. 285—284.
- Byrd, James D., to United States of America, National Aeronautics and Space Administration. Elastomeric silazane polymers and process for preparing the same. 3,354,098, 11–21–67, Cl. 260—2.
- Byrd, Wylie A. Harrow. 3,353,611, 11–21–67, Cl. 172—240.
- CSF-Compagnie Generale de Telegraphie Sans Fil : *See*—
  - Bonvalot, Pierre, and Courtan. 3,354,334.
- C-T Automotive, Inc : *See*—
  - Te Bow, Clem. 3,353,771.
- C-Thru Products, Inc. : *See*—
  - Kamins, Seymour, and Rosenberg. 3,353,741.
- Caballero, Edward A. Exhaust gas treatment. 3,353,335, 11–21–67, Cl. 55—94.
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- Caceres, Francisco J. Measuring and dispensing unit. 3,353,725, 11–21–67, Cl. 222—456.
- Cagin, Harry, to Halex Die Casting Co. Electric outlet box. 3,354,259, 11–21–67, Cl. 174—53.
- Cairo, John, and R. Migliore. Dispenser. 3,353,883, 11–21–67, Cl. 312—35.
- Calcier, Ashal J. : *See*—
  - Mineck, Fred. 3,354,420.
- Calgon Corp. : *See*—
  - Ralston, Paul H. 3,353,927.
- Caligiuri, John J., to J. V. Tripoli. Fluid centering and sensing devices. 3,353,402, 11–21–67, Cl. 73—37.5.
- Callahan, James L., B. Gertisser, and J. J. Szabo, to The Standard Oil Co. Process for the manufacture of unsaturated nitriles from olefins and ammonia. 3,354,197, 11–21–67, Cl. 260—465.3.
- Caloric Corp. : *See*—
  - Silhavy, Frank J., and Debrey. 3,353,583.
- Calton, Marion R. : *See*—
  - Oberle, Theodore L., Calton, Loyd, and White. 3,353,935.
- Calumet & Hecla, Inc. : *See*—
  - Kelstrom, Donald G. 3,353,389.
- Camco Inc. : *See*—
  - Beebe, Fred F., and Butler. 3,353,608.
- Cameron Iron Works, Inc. : *See*—
  - Nelson, Bobby H., Grulier, and Williams. 3,353,595.
- Campagna, Frank J., L. V. Gregor, and D. P. Seraphim, to International Business Machines Corp. Integrated circuits with active elements isolated by insulating material. 3,354,360, 11–21–67, Cl. 317—234.
- Campbell, John G. : *See*—
  - Webb, James E. 3,353,359.
- Canadian General Electric Co. Ltd. : *See*—
  - Batsch, Norbert C. 3,354,282.
  - Williamson, Dennis F. 3,354,368.
- Canadian Industries Ltd. : *See*—
  - Harris, George J. 3,353,917.
- Canadian Patents and Development Ltd. : *See*—
  - Mathews, Sydney T., and Kawerninski. 3,353,512.
  - Visman, Jan. 3,353,673.
- Cannon, William N., G. B. Kline, and M. Dwight, to Eli Lilly and Co. Nitro benzonitrile antimicrobial compositions and process. 3,353,939, 11–21–67, Cl. 44—75.
- Caputi, William J., Jr., to Cutler-Hammer, Inc. Pulse-type object detection apparatus. 3,354,456, 11–21–67, Cl. 343—17.2.
- Carl, Ralph W., to Standard Oil Co. Process for the formation of a fuel cell electrode containing an intimate mixture of platinum and a second metal. 3,354,060, 11–21–67, Cl. 204—35.
- Carmi, Arieh : *See*—
  - Ambrogi, Raymond R., and Carmi. 3,353,942.
- Carney, Peter W. : *See*—
  - Whittaker, John N., and Carney. 3,354,396.
- Carrigan, Richard B. Male urinal with inflatable sealing means. 3,353,538, 11–21–67, Cl. 128—296.
- Carroll, Albert P. Air and gas separator for descending water. 3,353,494, 11–21–67, Cl. 103—203.
- Carter, Rollins S. : *See*—
  - Preston, James B., Carter, and Neely. 3,354,315.
- Carthew, John R., E. Loizides, and L. A. Mitta, to International Business Machines Corp. Data translation apparatus. 3,354,437, 11–21–67, Cl. 340—172.5.
- Carthew, John R., E. Loizides, and L. A. Mitta, to International Business Machines Corp. Data translation apparatus. 3,354,450, 11–21–67, Cl. 340—347.
- Carsey, Eugene A., to The Kirk & Blum Mfg. Co. Oil mist and flotation dust collector. 3,353,340, 11–21–67, Cl. 55—324.
- Carter, Daniel T., to United States Steel Corp. Overflow cell for plating strip. 3,354,070, 11–21–67, Cl. 204—206.
- Carter, Sidney T., to Geo. J. Meyer Mfg. Co. Rotary-type labeling machine. 3,354,016, 11–21–67, Cl. 156—363.
- Case, J. I., Co. : *See*—
  - Lehmann, Harold A. 3,353,423.
  - Manke, Raymond F. 3,354,303.
- Casey, Haeey B., and J. G. Woods, to IRC, Inc. Variable resistor. 3,354,418, 11–21–67, Cl. 338—174.
- Castonguay, Roger. Overhead door and operating means therefor. 3.353,299, 11–21–67, Cl. 49—104.
- Caterpillar Tractor Co. : *See*—
  - Bianchetta, Donald L. 3,353,495.
  - Gardner. Charles W. 3,353,352.
  - Oberle, Theodore L., Calton, Loyd, and White. 3,353,935.
  - Svoboda, James. 3,353,699.
- Cellulosefabrik Attisholz A.-G. vorm, Sieber, B., Dr. : *See*—
  - Dubach, Max. 3,354,082.
- Century-Detroit Corp. : *See*—
  - Porath, Gordon H. 3,353,275.
- Cepkauskas, Martin D., and J. F. Rohlin, to United States of America, Atomic Energy Commission. End closure for nuclear reactor channel. 3 353,566, 11–21–67, Cl. 138—89.
- Chaffee, William H., and R. E. Vogele. Compact multi-purpose display module. 3,353,884, 11–21–67, Cl. 312—199.
- Chalmers, Frank L. : *See*—
  - Flatow, Tobias, and Chalmers. 3,353,623.
- Chana, Howard E., to General Motors Corp. Servo motor. 3,353,637, 11–21–67, Cl. 188—152.
- Chana, Howard E., to General Motors Corp. Clutch or brake unit. 3,353,641, 11–21–67, Cl. 192—85.
- Chapman, Howard D., and H. C. Banke, to Clarin Mfg. Co. Seating unit. 3,353,866, 11–21–67, Cl. 297—162.
- Chapman, Milford T., Jr. : *See*—
  - Davis, Bayard C., Singer, and Chapman. 3,353,260.
- Chappell, William H., Jr. : *See*—
  - Soulen, John R., and Chappell. 3,354,232.
- Charney, Michael, to Eastman Kodak Co. Photographic still cameras with built-in flash. 3,353,466, 11–21–67, Cl. 95—11.5.
- Charvat, Vernon K., to The Osborn Mfg. Co. Brush and brush material. 3,353,200, 11–21–67, Cl. 15—179.
- Chaumont, Henri J., to Compagnie de Saint-Gobain. Surface treatment of glass and apparatus therefor. 3,353,304, 11–21–67, Cl. 51—119.
- Cheape, Dudley W., Jr., and J. J. Hirshfeld, to Monsanto Co. Color improvement of acrylic spin dopes. 3,354,113, 11–21–67, Cl. 260—32.6.
- Chemcell Ltd. : *See*—
  - Killoran, Joseph L., Barnett, and Guay. 3,354,250.
- Chemical Construction Corp. : *See*—
  - Marten, Jerome H. 3,354,205.
  - Wechselblatt, Peter M., and Boresta. 3,353,803.
- Chemische Werke Huls A.G. : *See*—
  - Hornung, Karl-Heinz, and Heinrich. 3,354,130.
  - Seeliger, Wolfgang. 3,354,177.
- Chemische Werke Witten G.m.b.H. : *See*—
  - Katzschmann, Ewald. 3,354,227.
- Chemstron Corp. : *See*—
  - Williamson, Hilding V., and Job. 3,353,550.
- Cheng, Chen-Yen : *See*—
  - Cheng, Sing-Wang and Chen-Yen. 3,354,083.
- Cheng, Sing-Wang and Chen-Yen. Separation of fresh water from aqueous solutions. 3,354,083, 11–21–67, Cl. 210—59.
- Chesley Industries, Inc. : *See*—
  - Chesley, Robert G. 3,353,684.
- Chesley, Robert G., to Chesley Industries, Inc. Shelf structure. 3,353,684, 11–21–67, Cl. 211—176.
- Chevron Research Co. : *See*—
  - Hotten, Bruce W. 3,354,085.
- Chin-Bow, James : *See*—
  - Schwartz, Edmund I., and Chin-Bow. 3,354,459.
- Christiansen, Gerald E., to S. A. Young. Pop-up ball rod mounting. 3,353,192, 11–21–67, Cl. 4—208.
- Christensen, Verle W., to Marschall Dairy Laboratory, Inc. Dry starter composition. 3,354,049, 11–21–67, Cl. 195—100.
- Christie Electric Corp. : *See*—
  - Benjamin, Fred. 3,354,384.

- Chrysler Corp. : *See*—
  - Sarto, Jorma O. 3,353,524.
  - Sarto, Jorma O. 3,353,801.
- Chubb, John N., to United Kingdom Atomic Energy. Cryogenic devices. 3,353,365, 11–21–67, Cl. 62—55.5.
- Church, Arthur R. : *See*—
  - Schick, Eugene G., and Church. 3,354,014.
- Ciba Corp. : *See*—
  - Huebner, Charles F. 3,354,200.
  - Werner, Lincoln H. 3,354,147.
- Ciganek, Engelbert, to E. I. du Pont de Nemours and Co. Dicyanodiazomethane compounds, and the preparations thereof. 3,354,144, 11–21–67, Cl. 260—239.
- Cihlar, Carroll R. Mirrored medicine cabinet. 3,353,887, 11–21–67, Cl. 312—227.
- Cincinnati Milling Machine Co., The : *See*—
  - Schultz. Karl H., and Gorsler. 3,353,388.
- Cipolla, Peter L., to Simplomatic Mfg. Co. Pocket razor having blade storing means. 3,353,289, 11–21–67, Cl. 30—53.
- Cities Service Oil Co. : *See*—
  - Revukas, Anthony J. 3,354,189.
- Cities Service Research and Development Co. : *See*—
  - Van Driesen, Roger P. 3,354,079.
- Claff, M. B., & Sons, Inc. : *See*—
  - Tower, Raymond C. 3,353,517.
- Clarin Mfg. Co. : *See*—
  - Chapman, Howard D., and Banke. 3,353,866.
- Clark Equipment Co. : *See*—
  - Link, David H. 3,353,698.
- Clasen, Hermann, J. Müller, and R. Joppen, to Metallgesellschaft Aktiengesellschaft. Process for the production of soluble compounds. 3,353,930, 11–21–67, Cl. 23—365.
- Clausen, Phillip : *See*—
  - Goodman, Myron F., and Clausen. 3,353,476.
- Clearman, Jack F. : *See*—
  - Lind, Wallace E., Clearman, Dutcher, and Johnson. 3,353,553.
- Clemens, John A., to National Cine Equipment, Inc. Articulated tripod head. 3,353,776, 11–21–67, Cl. 248—183.
- Clement, Ernest C. : *See*—
  - Arvidson, Bengt A., and Clement. 3,353,653.
- Clendening, Francis J., Jr., to E. I. du Pont de Nemours and Co. Fluid jet twister. 3,353,344, 11–21–67, Cl. 57—34.
- Clevett, Merton L., Jr., to General Electric Co. Air cushion appliance supporting device. 3,353,621, 11–21–67, Cl. 180—7.
- Clevite Corp. : *See*—
  - Jaffe, Hans, and Berlincourt. 3,354,425.
- Cliffgard, Arnie L., J. J. Keegan, and J. H. Randall, to Beckman Instruments, Inc. Mode selection switch. 3,354,355, 11–21–67, Cl. 317—101.
- Cloud, Charles E., and R. G. King, to Cloud Machine Corp. Method of and apparatus for packaging elongated articles such as nipples. 3,353,329, 11–21–67, Cl. 53—30.
- Cloud, Charles E., and L. N. Krohn, to Cloud Machine Corp. Apparatus for changing the size of plastic film cupping die of packaging machine. 3,353,218, 11–21–67, Cl. 18—35.
- Cloud Machine Corp. : *See*—
  - Cloud, Charles E., and Krohn. 3,353,218.
  - Cloud, Charles E., and King. 3,353,329.
- Coats & Clark, Inc. : *See*—
  - Morin, Louis H. 3,354,249.
  - Morin, Louis H. 3,354,252.
- Coffin, Arthur G., Jr., and D. I. Saxon, to Eastman Kodak Co. Method and apparatus for crimping. 3,353,223, 11–21–67, Cl. 19—66.
- Coffman, Alfred C., to U.S. Stoneware, Inc. Mill-jar support. 3,353,757, 11–21–67, Cl. 241—176.
- Cohan, Nathan : *See*—
  - Spicer, Edward, and Cohan. 3,354,305.
- Cohen, Robert J., and O. M. Edelman, to General Precision Inc. Gyroscope flexible leads. 3,353,413, 11–21–67, Cl. 74—5.
- Cohen, William : *See*—
  - Daigle, Louis J., and Cohen. 3,354,386.
- Colgate-Palmolive Co. : *See*—
  - Hearn, William R., MacLean, and Trusler. 3,354,091.
  - Pickin, John H. 3,353,662.
- Colgrove, Richard S., to E. I. du Pont de Nemours and Co. Stratum transfer process based on adhesive properties of photopolymerizable layer. 3,353,955, 11–21–67, Cl. 96—28.
- Colibri Lighters Ltd. : *See*—
  - Bunyard, Alan D., Kendall, and Lowenthal. 3,353,375.
- Collins Radio Co. : *See*—
  - Broadhead, Samuel L., Jr. 3,354,398.
  - Thomas, Tex C. 3,354,403.
- Collins, Walter S. : *See*—
  - Grove, Robert K., Collins, and De Brock. 3,353,350.
- Colonial Plastics Mfg. Co. : *See*—
  - McNash, Howard H., and Fox. 3,353,644.
- Columbia Broadcasting System, Inc. : *See*—
  - Goldmark, Peter C. 3,354,264.
- Combes, Marvin G., to Grove Valve and Regulator Co. Gate valve body including thin dished plates. 3,353,786, 11–21–67, Cl. 251—329.
- Combs, George D. : *See*—
  - Deily, Fredric H., and Combs. 3.353,403.
- Commercial Shearing & Stamping Co. : *See*—
  - Hodgson, Robert F. 3,353,556.
- Commercial Solvents Corp. : *See*—
  - Wehrmeister, Herbert L. 3,354,171.
- Commissariat a l'Energie Atomique : *See*—
  - Aubert, Michel, Brouard, and Rouge. 3,354,041.
  - Avril, Michel, Moreau, and Pages. 3,354,446.
- Commonwealth Scientific and Industrial Research Organization : *See*—
  - Williams, Lloyd S. 3,353,954.
- Compagnie de Saint-Gobain : *See*—
  - Chaumont, Henri J. 3,353,304.
- Compagnie des Compteurs : *See*—
  - Volkovisky, Victor. 3,354,309.
- Compagnie Francaise Thomson-Houston : *See*—
  - Guyot, Lucien F. 3,353,983.
- Compagnie Generale d'Automatisme, Societe Octel : *See*—
  - Biezunski, Georges, Maugest, and Peres. 3,353,711.
- Compagnie d'Applications et Recherches Atomiques : *See*—
  - Biezunski, Georges, Maugest, and Peres. 3,353,711.
- Compagnie Generale d'Electro-Ceramique : *See*—
  - Meier, Henri. 3,354,262.
- Compagnie Generale d'Electricite : *See*—
  - Royet, Jean. 3,354,021.
- Computer Test Corp. : *See*—
  - Douaihy, Sarkis M. 3,354,323.
- Computing Devices of Canada Ltd. : *See*—
  - Feldman, Keiva. 3,354,299.
- Conchemco Inc. : *See*—
  - Jensen, Otto. 3,353,973.
- Concrete-Steel Corp. : *See*—
  - Wood, Donald L. 3,353,852.
- Conlee, George D., to Lovell Mfg. Co. Wringer. 3,353,382, 11–21–67, Cl. 68—257.
- Consolidated Electrodynamics Corp. : *See*—
  - Merritt, Charles H., and Bennett. 3,354,465.
- Continental Can Co., Inc. : *See*—
  - Sennello, Joseph J., and Keinanen. 3,354,287.
- Continental Carbon Co. : *See*—
  - Fergus, Vernon W. 3,353,208.
  - Latham, Burton F., Jr., and James. 3,353,915.
  - Trimble, Stanley C., Hewitt, and Thornhill. 3,353,974.
- Continental Oil Co. : *See*—
  - Erickson. Everett L. 3,353,622.
  - Fair, Delbert W., and Miller. 3,353,772.
- Continental Sensing, Inc. : *See*—
  - Davis, Bayard C., Singer, and Chapman. 3,353,260.
- Control Data Corp. : *See*—
  - McGregor, Arvin D. 3,354,449.
- Cook, Albert N. : *See*—
  - Peterson, Wesley R., Cook, Thompson, and Stolpen. 3,353,424.
- Cook, Miles H. : *See*—
  - Bradford, Rex C., Cook, and Kelsof. 3,353,261.
- Cooper, George R. : *See*—
  - Anderson, George W., Aseltine, and Cooper. 3,354,297.
- Cooper, Gerald E. : *See*—
  - Raine, Frank F., and Cooper. 3,353,976.
- Cooper, Roy L. Seed potato cutting machine. 3,353,576, 11–21–67, Cl. 146—78.
- Copeland, Richard S., to Sackner Products, Inc. Decorative reticulated foam-fibrous pad and method of making the same. 3,354,020, 11–21–67, Cl. 161—53.
- Coran, Aubert Y. : *See*—
  - Trivette, Chester D., Jr., and Coran. 3,354,131.
- Corey, Philip D., L. H. Walker, and A. L. Wellford, to General Electric Co. Master-slave inverter voltage regulator. 3 354,376, 11–21–67, Cl. 321—5.
- Corley-Miller, Inc. : *See*—
  - Arvidson, Bengt A. 3,353,333.
  - Arvidson, Bengt A., and Clement. 3,353,653.
- Cornelius, Edward B., L. A. Cosgrove, and G. A. Mills, to Air Products and Chemicals, Inc. Alumina particles and method of preparation. 3,353,910, 11–21–67, Cl. 23—141.
- Corning Glass Works : *See*—
  - Ambrogi, Raymond R., and Carmi. 3,353,942.
- Corpew, Charles R., to Stromberg-Carlson Corp. Electron gum construction for shaped-beam cathode-ray tubes providing variable beam size. 3,354,335, 11–21–67, Cl. 313—77.
- Corr, Hubert : *See*—
  - Wegerich, Anton, Fuerst, Haarer, and Corr. 3,354,056.
- Corry, Thomas M., and R. W. Johnston, to General Motors Corp. Electrical inverter having separated shutoff power supplies. 3,354,370, 11–21–67, Cl. 318—227.
- Cosgrove, Lee A. : *See*—
  - Cornelius, Edward B., Cosgrove, and Mills. 3,353,910.
- Couch, Billy A. : *See*—
  - McClure, Louis C., and Davis. 3,353,311.
- Coulbert, Clifford D. : *See*—
  - Webb, James E. 3,353,359.
- Coulson, Robert E., to Felt Products Mfg. Co. Sealing assembly. 3,353.832, 11–21–67, Cl. 277—171.
- Counciiman, Richard R., to Ling-Temco-Vought, Inc. Slide select and positioning device. 3,353,290, 11–21–67, Cl. 40—79.
- Courtan, Bernard : *See*—
  - Bonvalot, Pierre, and Courtan. 3,354,334.
- Cowan, David M., to The Hy-Dynamic Co. Crane boom. 3,353,686, 11–21–67, Cl. 212—55.
- Cowell, Robert L. : *See*—
  - Ryan, John W., Kossoff, May, and Cowell. 3,353,296.
- Cowles, Craig H. : *See*—
  - Whittingham, David J., Hopkins, and Cowles. 3,353,457.
- Crabbe, Pierre : *See*—
  - Bowers, Albert, Crabbe, and Edwards. 3,354,183.
- Craig, Kenneth B. : *See*—
  - Patten, Carl W., Jr., Wenker, and Craig. 3,353,370.
- Crane, Burke J. : *See*—
  - Tope, Paul H., and Crane. 3,353,589.
- Crater, Theodore V., to Bell Telephone Laboratories, Inc. Differential PCM system employing digital integration. 3,354,267, 11–21–67, Cl. 179—15.
- Crawford, James R., to Crawford & Russell Inc. Material treatment methods. 3,354,136, 11–21–67, Cl. 260—93.5.
- Crawford & Russell Inc. : *See*—
  - Crawford, James R. 3,354,136.

Cremer, Joseph, and F. Rodis, to Knapsack-Griesheim Aktiengesellschaft. Process for the manufacture of dicalcium phosphate. 3,353,908, 11-21-67, Cl. 23—109.
Cremer, Lothar, U. Kurz, and M. Hubert, to Lothar Cremer. Sound absorbing ventilation conduit with side branch chambers. 3,353,626, 11-21-67, Cl. 181—42.
Crenshaw, Walter J., H. S. Hicks, and E. O. Oakes, to Riegel Textile Corp. Apparatus for making frieze pile fabrics. 3,353,568, 11-21-67, Cl. 139—21.
Crest Lock Co., Inc.: *See*—
 Sheiman, Julius. 3,353,205.
Crincic, Laddie J. Collapsible safety helmet. 3,353,188, 11-21-67, Cl. 2—3.
Crompton & Knowles Corp.: *See*—
 Nelson, Alden W., and Brown. 3,353,212.
Crosby, Edward K.: *See*—
 MacAllister, Robert V., Crosby, and Lanphere. 3,354,046.
Crossly Window Corp.: *See*—
 Smith, Norman E. 3,353,855.
Crowe, William F.: *See*—
 Knox, George W., and Crowe. 3,353,537.
Crowe, Wylie W. Garbage destroyer. 3,353,508, 11-21-67, Cl. 110—8.
Crowell, Merton H., to Bell Telephone Laboratories, Inc. Microwave pulse generator. 3,354,408, 11-21-67, Cl. 331—107.
Cubert, Jack S., and F. J. Ash, to Sperry Rand Corp. Tunnel diode logic circuit. 3,354,324, 11-21-67, Cl. 307—88.5.
Cull, Neville L., and L. A. Pine, to Esso Research and Engineering Co. Oxonation of cyclododecatriene to cis alcohol. 3,354,229, 11-21-67, Cl. 260—617.
Cunningham, Robert W.: *See*—
 Maloy, Arthur L., and Cunningham. 3,354,231.
Curran, Jerimiah J. Rate-saving shipping label. 3,353,845, 11-21-67, Cl. 282—23.
Curtis, Harry W.: *See*—
 Stanback, Harris I., and Curtis. 3,354,277.
Customline Control Products, Inc.: *See*—
 Berman, Sanford, and Wright. 3,353,715.
Cutler, Duncan B., W. L. Warner, and W. A. Hadden, to Woodman Co., Inc. Gusset apparatus for bag form and fill machine and method. 3,353,327, 11-21-67, Cl. 53—28.
Cutler-Hammer, Inc.: *See*—
 Caputi, William J., Jr. 3,354,456.
Cypher, James H., to Pittsburgh Plate Glass Co. Apparatus for supporting a glass sheet in an upright position for heat treating. 3,353,945, 11-21-67, Cl. 65—273.
Daem, Richard C., N. W. Gray, and B. Young, to Boart & Hard Metal Products S.A. Ltd. Abrasive cutting tools such as saws. 3,353,526, 11-21-67, Cl. 125—15.
Dahly, Harold W. Cooling unit for a hat. 3,353,191, 11-21-67, Cl. 2—171.3.
Daigle, Louis J., and W. Cohen, to United Aircraft Corp. Apparatus for detecting discontinuities in insulated conductors including capacitively coupled Schmitt trigger means. 3,354,386, 11-21-67, Cl. 324—51.
Daimler-Benz Aktiengesellschaft: *See*—
 Froitzheim, Hans, and Letzel. 3,353,861.
Daleo, Frank G., to Astek Instrument Corp. Altimeter for producing data referenced to a predetermined pressure. 3,353,408, 11-21-67, Cl. 73—387.
Dalton, William L., to Lockheed Aircraft Corp. Protective package. 3,353,655, 11-21-67, Cl. 206—1.
Dangauthier, Marcel, to La Publicite Francaise. Gear box. 3,353,422, 11-21-67, Cl. 74—375.
Dangelmaier, Karl, K. Griesinger, O. Kurz, F. Schneider, and H. Scholl, to Messrs. L. Schuler A.G. Transport device for blanks, especially for machine tools. 3,353,822, 11-21-67, Cl. 271—18.
Dankelmeier, Wilhelm, and W. Schumacher. Apparatus for dividing hardened piles of stone. 3,353,689, 11-21-67, Cl. 214—6.
Danko, Donald M., to Avtron Mfg., Inc. Electronic function generator. 3,354,298, 11-21-67, Cl. 235—197.
Daubler, Rainer: *See*—
 Poppinger, Herbert, Volkmann, and Daubler. 3,354,375.
Davidson, Eugene M., to Hudson Engineering Corp. Method and apparatus for the manufacture of foamed plastic tubing. 3,353,244, 11-21-67, Cl. 264—51.
Davie, William R., to United States Steel Corp. Self-extinguishing pitch foams. 3,353,978, 11-21-67, Cl. 106—275.
Davies, Robert W., to The Molins Organisation Ltd. Mechanism for producing and applying tear strips. 3,354,019, 11-21-67, Cl. 156—519.
Davis, Bayard C., A. Singer, and M. T. Chapman, Jr., to Continental Sensing, Inc. Method of making shielded conductors. 3,353,260, 11-21-67, Cl. 29—573.
Davis, Dhu A. J., to Hermetic Coil Co., Inc. Coil bobbin having projections extending beyond magnetic core. 3,354,417, 11-21-67, Cl. 336—198.
Davis, Leland L. Elevated transportation system having improved supporting structure. 3,353,498, 11-21-67, Cl. 104—89.
Davis, Lynn N., to United Steel and Wire Co. Nesting shopping carrier. 3,353,836, 11-21-67, Cl. 280—33.99.
Davis, Martin A.: *See*—
 Humber, Leslie G., and Davis. 3,354,162.
Davis, Paul, to Sweetheart Plastics, Inc. Disposable plastic article. 3,353,708, 11-21-67, Cl. 220—97.
Davis, Ralph A.: *See*—
 Kroon, James L., and Davis. 3,354,011.
Davis, Vernon H.: *See*—
 McClure, Louis C., and Davis. 3,353,311.
Dayco Corp.: *See*—
 Richmond, Kenneth D. 3,353,419.
DeBoth, Raymond F., to Zenith Radio Corp. Convergence magnet pole shoes. 3,354,337, 11-21-67, Cl. 313—77.
Debrey, Robert J.: *See*—
 Silhavy, Frank J., and Debrey. 3,353,583.
Debrie, Andre V. L. C., to Societe des Etablissements Andre Debrie. Cinematograph apparatus. 3,353,442, 11-21-67, Cl. Cl. 88—24.
De Brock, Robert F.: *See*—
 Belcher, Samuel L., and De Brock. 3,353,704.
Deebel, George F.: *See*—
 Blake, Edward S., and Deebel. 3,354,122.
Deily, Fredric H., and G. D. Combs, to Esso Production Research Co. Field viscosimeter. 3,353,403, 11-21-67, Cl. 73—55.
Delmar Chemicals Ltd.: *See*—
 Klosa, Josef. 3,354,167.
Del Vecchio, Joseph T., and C. Agnoff, to Grant Pulley & Hardware Corp. Extensible slide mechanism. 3,353,874, 11-21-67, Cl. 308—3.8.
De Marco, Carlo G., to United States of America, Army. Method of producing N-chloramide vesicant fabric and the resulting fabric. 3,353,989, 11-21-67, Cl. 117—62.1.
Dengler, Herbert P., and T. A. Reiter, to Esso Research and Engineering Co. Electrochemical cell. 3,354,000, 11-21-67, Cl. 136—86.
Dental Mfg. Co. Ltd., The: *See*—
 Killick, Herbert P., and Hawtin. 3,353,450.
Detrick, M. H., Co.: *See*—
 Jens, Wilmer C. 3,353,800.
Detroit Bank and Trust Co.: *See*—
 Evans, Edwin R. 3,353,581.
Dettre, Robert H., H. L. Jackson, and R. E. Johnson, Jr., to E. I. du Pont de Nemours and Co. Water-repellant surface. 3,354,022, 11-21-67, Cl. 161—123.
Deushane, Maurice L.: *See*—
 Jerrold Jones, Paul, and Deushane. 3,354,069.
D'Eustachio, Dominic, W. D. Ford, and H. E. Johnson, to Pittsburgh Corning Corp. Cellular glass nodules and method of making them. 3,354,024, 11-21-67, Cl. 161—168.
Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See*—
 Hopff, Heinrich, and Kleiner. 3,354,134.
Devenco Inc.: *See*—
 Schwartz, Edmund I., and Chin-Bow. 3,354,459.
Deverall, George V., to Bell Telephone Laboratories, Inc. Optoelectronic device using light emitting diode and photodetector. 3,354,316, 11-21-67, Cl. 250—217.
Diamond Alkali Co.: *See*—
 Osgood, Edmond R., Limpel, and Annis. 3,354,179.
Diamond, Louis H., and J. H. Blumbergs, to FMC Corp. Method of using quaternary ammonium peroxysulfates. 3,353,902, 11-21-67, Cl. 8—110.
Dick, William R.: *See*—
 Gates, James T., Legue, and Dick. 3,353,347.
Dickinson, William B., to Sterling Drug Inc. N-(4-amino-2-butynyl)-N-alkylcarboxamides. 3,354,178, 11-21-67, Cl. 260—326.3.
Dierks, James E.: *See*—
 Horton, William H., and Dierks. 3,353,463.
Dietert, Harry W., Co.: *See*—
 Dietert, Harry W., and Steinmueller. 3,353,407.
 Dietert, Harry W. 3,353,873.
Dietert, Harry W., and R. E. Steinmueller, to Harry W. Dietert Co. Granular material testing apparatus. 3,353,407, 11-21-67, Cl. 73—101.
Dietert, Harry W., to Harry W. Dietert Co. Valve structure for bulk materials. 3,353,873, 11-21-67, Cl. 302—53.
Digital Equipment Corp.: *See*—
 Stockebrand, Thomas C .3,354,367.
Dinenno, Henry J., to North American Aviation, Inc. Isophote converter. 3,354,266, 11-21-67, Cl. 178—6.8.
Dinning, Robert W.: *See*—
 Garrett, Henry U., Peters, and Dinning. 3,353,605.
Di Paolo, Florino. Temperature controlling apparatus. 3,353,592, 11-21-67, Cl. 165—50.
Distillers Co. Ltd., The: *See*—
 Lachowicz, Stefan K., Brown, Bowen, and Newman. 3,354,199.
Dobner, Reinhold: *See*—
 Reeber, Rudolf, Dobner, and Tretow. 3,353,510.
Dodge, Gerald F., III, and M. A. Elliott, to General Electric Corp. Combination evaporator and radiant heater defrost means. 3,353,368, 11-21-67, Cl. 62—276.
Dodge, Howard M., to National Friction Products Corp. Method of curing rubber extrusions. 3,354,243, 11-21-67, Cl. 264—25.
Dodson, William C., Jr., and G. R. Long, to E. I. du Pont de Nemours and Co. Process of forming nonwoven fabric with opposed jets. 3,353,225, 11-21-67, Cl. 19—161.
Dolf, Hans R., to Selas Corp. of America. Method of forming glass beads in a molten metal bath. 3,353,940, 11-21-67, Cl. 65—21.
Doll, Wilhelm: *See*—
 Loh, Ernst, and Doll. 3,353,695.
Dollarhide, Francis E., and E. D. Mullen, to The Dow Chemical Co. Composition and use therefor for water shut-off. 3,353,601, 11-21-67, Cl. 166—33.
Dominon Products, Inc.: *See*—
 Simon, Clarence K. 3,353,961.
Donahue, Daniel J., and A. E. Hardy, to Radio Corp. of America. Cathode ray tube screen with color areas of differing contours. 3,354,341, 11-21-67, Cl. 313—92.
Donaruma, Lorraine G., to E. I. du Pont de Nemours and Co. Process for reducing aromatic and cycloaliphatic nitro compounds. 3,354,212, 11-21-67, Cl. 260—566.
Donovan, William F., to United States of America, Army. Ratchet. 3,353,454, 11-21-67, Cl. 92—5.

Dooley, Joseph A.: *See*—
 Vieth, Richard D., Dooley, Aronoff, and Bolstad. 3,353,990.
Dorfman, Edwin, and C. T. Bean, Jr., to Hooker Chemical Corp. Perfluoroalkylthioamides. 3,354,204, 11-21-67, Cl. 260—551.
Douaihy, Sarkis M., to Computer Test Corp. Pulse generator with direct connection to output pulse former and time delay in branch circuit. 3,354,323, 11-21-67, Cl. 307—88.5.
Douglas, Young, Inc.: *See*—
 Young, Lewis D. 3,353,657.
Dow Chemical Co., The: *See*—
 Beesley, Robert L., and Matthias. 3,353,659.
 Bruce, John P. 3,354,112.
 Burton, Charles D. 3,354,217.
 Dollarhide, Francis E., and Mullen. 3,353,601.
 Gibson, Daniel L., Ellers, West, and Kucera. 3,353,604.
 Grenley, Dallas G., and Townsend. 3,353,992.
 Ham, George E., and Stevens. 3,354,126.
 Huyser, Earl S. 3,354,066.
 Katzer, Melvin F. 3,354,084.
 Klusmire, Galen J., Borough, and Eichhorn. 3,354,015.
 Kroon, James L., and Davis. 3,354,011.
 Little, John C. 3,354,203.
 Madison, Norman L. 3,354,211.
 Savage, Albert B., and Aldrich. 3,353,971.
 Shafer, Harvey H., and Wheeler. 3,354,169.
 Shelburg, William D., and Hettler. 3,353,991.
 Snyder, Robert P. 3,353,219.
 Teumac, Fred N. 3,353,995.
Dowd, Leo J. Self-propelled irrigation system of the reciprocable type. 3,353,750, 11-21-67, Cl. 239—177.
Dowd, Leo J. Self-propelled irrigation apparatus. 3,353,751, 11-21-67, Cl. 239—177.
Downey, John T. Transversely curved aerial toy with weighted nose. 3,353,295, 11-21-67, Cl. 46—74.
Doyle, Carroll F., to W. R. Grace & Co. Polystyrene fibers, finely divided silica thickening agent, and organic liquid materials thickened therewith. 3,354,114, 11-21-67, Cl. 260—40.
Dragon, Peter F. Filter having assembling sealing and flushing means. 3,353,678, 11-21-67, Cl. 210—236.
Drallim Industries Ltd.: *See*—
 Ludkin, Basil A. 3,353,554.
 Ludkin, Basil A. 3,353,555.
Draper, Homer L., and D. F. Levy, to Phillips Petroleum Co. Hot-mix cold-lay asphalt. 3,353,798, 11-21-67, Cl. 259—149.
Dressel, William G., to Amsted Industries Inc. Height control for molten metal in mold riser. 3,353,586, 11-21-67, Cl. 164—156.
Dresser Industries, Inc.: *See*—
 Adams, Frederick L. 3,353,285.
 Swift, Gilbert. 3,354,310.
 Swift, Gilbert. 3,353,404.
Drier, Paul D. Leveling device for vehicles. 3,353,790. 11-21-67, Cl. 254—126.
Dryden, Hugh L., Deputy Administrator of the National Aeronautics and Space Administration with respect to an invention of J. M. McLanchlan. Light position locating system. 3,354,320, 11-21-67, Cl. 250—232.
Dubach, Max, to Cellulosefabrik Attisholz A.-G. vorm. B. Sieber, Dr. Effluent water purification process. 3,354,082, 11-21-67, Cl. 210—15.
Dueker, James E.: *See*—
 Lombard, Albert E., Jr., and Dueker. 3,354,313.
Duisburger Kupferhuette: *See*—
 Junghanss, Helmut. 3,353,950.
Duke, James B., to Mineral & Chemicals Philipp Corp. Method for improving the brightness of clay. 3,353,668, 11-21-67, Cl. 209—10.
Dulhunty, Philip W. Aerial navigation device. 3,353,274, 11-21-67, Cl. 33—107.
Dun, Angus, Jr. Target and backing member therefor. 3,353,827, 11-21-67, Cl. 273—102.1.
Dunham, Robert W.: *See*—
 Jorgensen, George N., Stanback, and Dunham. 3,354,357.
Dunnington, Gordon B., and R. T. Fields, to E. I. du Pont de Nemours and Co. Oriented polymers. 3,354,023, 11-21-67, Cl. 161—165.
Du Pont de Nemours, E. I., and Co.: *See*—
 Bach, Robert D. 3,353,825.
 Blake, Ralph K. 3,353,957.
 Ciganek, Engelbert. 3,354,144.
 Clendening, Francis J., Jr. 3,353,344.
 Colgrove, Richard S. 3,353,955.
 Dettre, Robert H., Jackson, and Johnson. 3,354,022.
 Dodson, William C., Jr., and Long. 3,353,225.
 Donaruma, Lorraine G. 3,354,212.
 Dunnington, Gordon B., and Fields. 3,354,023.
 Friedman, Bernard S. 3,354,198.
 Haslam, John H. 3,354,080.
 Herring, Milton S. 3,353,210.
 Hill, Harold W., Jr., Kwolek, and Sweeny. 3,354,127.
 Jelinek, Arthur G. 3,354,036.
 Knoth, Walter H., Jr., and Michel. 3,354,121.
 Moede, Jerome A. 3,353,958.
 Morgan, Paul W. 3,354,123.
 Michel, Rudolph H. 3,354,122.
 Miller, Ross J., and Sawyer. 3,353,485.
 Niedzielski, Edmund L. 3,353,938.
 Osborn, Robert O. 3,353,999.
 Potter, Howard L. and Stalter. 3,353,903.
 Schwarz, Eckhard C. A. 3,354,124.
 Shaw, Fred D. 3,354,237.
 Winstead, Thomas W., and Beyer. 3,353,202.
 Wolinski, Leon E. 3,353,988.
Dupont, Felix Y.: *See*—
 Broeker, Hermann L., Dupont, and Lynn. 3,354,331.
Dura Corp.: *See*—
 Becking, Paul E., Bungard, and McCormick. 3,353,744.
Duris, Rudolph M., to Edwards Co. Inc. Terminal bushing assembly. 3,354,422, 11-21-67, Cl. 339—128.
Durr, Helmut E., and F. Wahl, to Western Electric Co., Inc. Apparatus for preparing insulating wires. 3,353,571, 11-21-67, Cl. 140—1.
Durst, Paul T., and R. J. Sutton, to General Electric Co. Temperature control device. 3,354,281, 11-21-67, Cl. 200—140.
Duschinsky, Robert, and T. F. Gabriel, to Hoffmann-La Roche, Inc. Tri-lower alkyl-silyl-5-fluoropyrimedines. 3,354,160, 11-21-67, Cl. 260—251.
Dutcher, Ival G.: *See*—
 Lind, Wallace E., Clearman, Dutcher, and Johnson. 3,353,553.
Dvoracek, Louis M., to Union Oil Co. of California. Prevention of corrosion in alkali metal halide solutions by ammonia addition. 3,354,062, 11-21-67, Cl. 204—147.
Dwight, Morrison: *See*—
 Cannon, William N., Kline, and Dwight. 3,353,939.
Dyer, Robert K. Polished rod protector. 3,353,606, 11-21-67, Cl. 166—84.
Dyk, Karl: *See*—
 Widess, Moses B., and Dyk. 3,354,427.
Dynamit Nobel Aktiengesellschaft: *See*—
 Stadler, Hans, and Gawlick. 3,353,488.
EMC Technology, Inc.: *See*—
 Steidlitz, Mark. 3,354,412.
Early, Julius E., and H. E. Benjamin, to Phillips Petroleum Co. Removal of polymerized materials from surfaces. 3,354,093, 11-21-67, Cl. 252—170.
Eastern Steel Barrel Corp.: *See*—
 Kane, James T. 3,353,705.
Eastman Kodak Co.: *See*—
 Beach, David E. 3,353,468.
 Charney, Michael. 3,353,466.
 Coffin, Arthur G., Jr., and Saxon. 3,353,223.
 Ernisse, Paul J., and Montalto. 3,353,467.
 Horton, William H., and Dierks. 3,353,463.
 Keel, Alvin M., and Saxon. 3,353,222.
 Parsons, George W., and Petts. 3,354,300.
 Peterson, Dean M., and Pickering. 3,353,465.
 Simon, Horst. 3,353,766.
 Terrell, Robert L., and Stevens. 3,354,013.
 Wicker, Thomas H. 3,354,128.
Eastop, Robert H., to Westinghouse Brake and Signal Co., Ltd. Turn-off arrangement for a direct current switching device which is rendered non-conducting by the application of a reverse voltage. 3,354,322, 11-21-67, Cl. 307—88.5.
Eaton Yale & Towne, Inc.: *See*—
 Getz, Edward T., and Pacak. 3,353,869.
Eberman, Augustus H.: *See*—
 Jensen, Hans, and Eberman. 3,353,325.
Eckel, Oliver C.: *See*—
 Mongor, William E. 3,353,857.
Eclipse Sleep Products, Inc.: *See*—
 Kline, John C. 3,353,195.
Edelman, Oscar M.: *See*—
 Cohen, Robert J. and Edelman. 3,353,413.
Edmonds, James T., Jr., and H. W. Hill, Jr., to Phillips Petroleum Co. Production of polymers from aromatic compounds. 3,354,129, 11-21-67, Cl. 260—79.
Edson, Jerry W. Portable boat ramp. 3,353,363, 11-21-67, Cl. 61—67.
Edward Williams Holdings Ltd.: *See*—
 Stuart, Duncan J. K., and Queenborough. 3,353,429.
Edwards, Clark S. Portable refreshment server. 3,353,717, 11-21-67, Cl. 222—132.
Edwards Co. Inc.: *See*—
 Duris, Rudolph M. 3,354,422.
Edwards, John: *See*—
 Bowers, Albert, Crabbe, and Edwards. 3,354,183.
Edwards, John A., to Syntex Corp. 5β,6β-cyclo-19-nor-$\Delta^{9(10)}$-androstenes and pregnenes and process therefor. 3,354,149, 11-21-67, Cl. 260—239.55.
Edwards, John A., J. H. Fried, and J. B. Siddall, to Syntex Corp. 2β,3β-Alkylidenedioxy-6-oxygenated-Δ^{4}-steroids and process for the preparation thereof. 3,354,152, 11-21-67, Cl. 260—239.55.
Edwards, John A., J. H. Fried, and J. B. Siddall, to Syntex Corp. 2β,3β-alkylidenedioxy-6-hydroxy-22,23-bisnorchol-7-enoic acid alkyl esters and process for the production thereof. 3,354,154, 11-21-67, Cl. 260—239.55.
Edukit, Inc.: *See*—
 Walker, Robert F., and Archambault. 3,353,283.
Eggers, Carl A., to Jenkins Bros. Split sleeve plug valve having bonded polymeric material layer. 3,353,785, 11-21-67, Cl. 251—175.
Eichhorn, Jacob: *See*—
 Klusmire, Galen J., Borough, and Eichhorn. 3,354,015.
Ekiss, Marilyn J., G. A. Weisgerber, and T. F. Hand, to Esso Research and Engineering Co. Method for the treatment of forms for molding concrete with wax emulsion release agent. 3,354,180, 11-21-67, Cl. 264—338.
Eilers, Louis H.: *See*—
 Gibson, Daniel L., Eilers, West, and Kucera. 3,353,604.
Elastic Die Engineering Co.: *See*—
 Moyer, Robert F. 3,353,876.
Elco Corp.: *See*—
 Ruehlemann, Herbert E. 3,354,424.
Electric Information Co.: *See*—
 Larsen, Raymond B. 3,354,463.
Electric Storage Battery Co., The: *See*—
 Kelley, John J. 3,354,001.

- Electro-Trace Corp.: *See*—
  - Kahn, Walter C. 3,354,292.
- Electronic Specialty Co.: *See*—
  - Budde, Carl A. 3,354,431.
- Elgin Sweeper Co.: *See*—
  - Palmiter, Donald R., and Wilkening. 3,353,199.
- Elliott Bros. (London) Ltd.: *See*—
  - Whittaker, John N., and Carney. 3,354,396.
- Elliott, Henry H.: *See*—
  - Woyski, Mark M., Bradford, and Elliott. 3,353,928.
- Elliott, Marvel A.: *See*—
  - Dodge, Gerald F., III., and Elliott. 3,353,368.
- Ellis, Douglas G. Combination night-light and toilet article holder and sterilizer. 3,353,905, 11–21–67, Cl. 21—102.
- Ellis, Luke C. Traction apparatus. 3,353,532, 11–21–67, Cl. 128—75.
- Elmo Co. Ltd.: *See*—
  - Sato, Toshiyuki, and Kono. 3,353,731.
- Elmquist, Lyle F., to General Mills, Inc. Aerosol hard surface cleaner. 3,354,088, 11–21–67, Cl. 252—90.
- Eltro G.m.b.H. & Co.: *See*—
  - Pfab, Diethard G., and Schwab. 3,354,457.
- Emde, Günter, to Bolkow Gesellschaft mit beschrankter Haftung. Apparatus for the visible and audible presentation of information in a desired sequence. 3,353,280, 11–21–67, Cl. 35—9.
- Emerson Electric Co.: *See*—
  - Placent, Frank T., and Huffman. 3,354,278.
  - Wallace, John H. 3,354,369.
- Emerson, Eugene S., to Polaroid Corp. Light polarizer comprising filamentous particles on surface of transparent sheet and method of making same. 3,353,895, 11–21–67, Cl. 350—155.
- Emhart Corp.: *See*—
  - Hanks, George F., and Bracken. 3,353,941.
  - Lyle, Aaron K. 3,353,514.
- Engel, Frederick, and W. R. Kiley, to Philips Electronics & Pharmaceutical Industries Corp. X-ray analysis apparatus with means to measure the characteristic X-ray emission from and the density of a material. 3,354,308, 11–21–67, Cl. 250—51.5.
- Englert, Robert D., R. Swidler, L. P. Berriman, and R. H. Wade, to Koratron Co., Inc. Polyene treatment of cellulosic materials cross-linking cellulose and starch with perfluoropolyenes having at least two unsaturated terminal groups. 3,353,904, 11–21–67, Cl. 8—120.
- Ensor, Arthur J. Panel joint with hook-shaped bolt connecting device. 3,353,317, 11–21–67, Cl. 52—309.
- Erdmann, Hans, and L. F. Schmid, to Alfred Teves Maschinen- und Armalurenfabrik. Shock absorber for vehicular suspension systems. 3,353,813, 11–21–67, Cl. 267—8.
- Erickson, Everett L., to Continental Oil Co. Near-surface velocity logger. 3,353,622, 11–21–67, Cl. 181—.5.
- Erie Mining Co.: *See*—
  - Whaley, Henry P., and Johnson. 3,353,758.
- Ernisse, Paul J., and M. S. Montalto, to Eastman Kodak Co. Flash photography. 3,353,467, 11–21–67, Cl. 95—11.5.
- Ertelt, Henry R.: *See*—
  - Beach, Leland K., Ertelt, Guthrie, and Rhodes. 3,354,210.
- Erteszek, Olga, to Olga Co. Brassiere. 3,353,540, 11–21–67, Cl. 128—489.
- Escher Wyss G.m.b.H.: *See*—
  - Wieleba, Karl-Heinz. 3,353,723.
- Essig, Henry J.: *See*—
  - Evans, Robert W., Todd, and Essig. 3,354,109.
- Esso Production Research Co.: *See*—
  - Aldridge, Clyde L. 3,354,081.
  - Annis, Max R., and Brooks. 3,353,600.
  - Baumann, George P., and Ponzek. 3,353,925.
  - Beach, Leland K., Ertelt, Guthrie, and Rhodes. 3,354,210.
  - Boberg, Thomas C. 3,353,593.
  - Cull, Neville L., and Pine. 3,354,229.
  - Deily, Fredric H., and Combs. 3,353,403.
  - Dengler, Herbert P., and Reiter. 3,354,000.
  - Ekiss, Marilyn J., Weisgerber, and Hand. 3,354,180.
  - Flatow, Tobias, and Chalmers. 3,353,623.
  - Foroulis, Zisis A. 3,354,061.
  - Gamble, Leon W., and Lane. 3,354,317.
  - Ilnyckyj, Stephan, and MacLeod. 3,354,106.
  - Leeds, J. Venn, Jr. 3,354,377.
  - Mitchell, Roscoe W., Jr. 3,354,439.
  - Panzer, Jerome, Nixon, and Kassinger. 3,354,086.
  - Ramsden, Hugh E. 3,354,190.
  - Redding, Vernon L. 3,353,624.
- Etablissement Davey Bickford Smith & Cie Societe Anonyme Francaise: *See*—
  - Ingold, Alain, and Raynal. 3,353,262.
- Etablissements Masson: *See*—
  - Hugel, Gerard. 3,353,647.
- Ettin, Erwin D., to Salcoa Corp. Combination display and shipping package. 3,353,658, 11–21–67, Cl. 206—45.25.
- Evans, Edwin R., deceased, Detroit Bank and Trust Co., executor, to Lock Thread Corp. Nut fastener. 3,353,581, 11–21–67, Cl. 151—22.
- Evans, Robert W., W. D. Todd, and H. J. Essig, to The B. F. Goodrich Co. Heat-fusible composition comprised of vinyl halide resin, epoxy resin and acid plasticizer. 3,354,109, 11–21–67, Cl. 260—31.8.
- Everett, Wilhelm S. Combined fluid pump and pulsation dampener. 3,353,496, 11–21–67, Cl. 103—223.
- Eyles, Thomas H., to Foster Grant Co., Inc. Article of manufacture. 3,353,707, 11–21–67, Cl. 220—97.
- F & E Mfg. Co.: *See*—
  - Benjamin, Benjamin C. 3,353,580.
- FMC Corp.: *See*—
  - Diamond, Louis H., and Blumbergs. 3,353,902.
  - Flach, Donald O., and Siwinski. 3,353,913.
  - Keast, Russell R. 3,354,090.
- Fair, Delbert W., and J. H. Miller, to Continental Oil Co. Positioning and isolation apparatus for a horizontal vibrator. 3,353,772, 11–21–67, Cl. 248—20.
- Fairchild Camera and Instrument Corp.: *See*—
  - Kan, David T. 3,354,409.
- Faisandier, Jacques. Distributor valve. 3,353,557, 11–21–67, Cl. 137—625.48.
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  - Butz, Tom E., and Schlein. 3,353,850.
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  - Lohmar, Walther, Harnisch, Schmahl, Kohli, and Spenner. 3,353,398.
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  - Thoma, Wilhelm, and Rinke. 3,354,251.
  - Walaschewski, Engelbert. 3,353,997.
- Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
  - Kuhne, Rudolf, Meininger, and Pfirrmann. 3,354,182.
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  - Ramspeck, Howard B. 3,353,453.
- Fatovic, Peter, to Nothern Electric Co. Ltd. Fixture for use during the polarization of an electret. 7,354,373, 11–21–67, Cl. 320—1.
- Fatuzzo, Ennio, to Radio Corp. of America. Ferroelectric switching circuits. 3,354,442, 11–21–67, Cl. 340—173.2.
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- Federal Mogul Corp.: *See*—
  - Peyton, John F. 3,353,846.
- Feedmatic-Detroit, Inc.: *See*—
  - Ford, Arnold B. 3,353,254.
- Feld, Jack T.: *See*—
  - Lee, Jon W., and Feld. 3,353,472.
- Fein, Marvin M., J. Green, and N. Mayes, to Thiokol Chemical Corp. Carborane substituted siloxanes. 3,354,193, 11–21–67, Cl. 260—448.2.
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- Felt Products Mfg. Co.: *See*—
  - Coulson, Robert. 3,353,832.
- Fergus, Vernon W., to Continental Carbon Co. Apparatus for forming pellets. 3,353,208, 11–21–67, Cl. 18—1.
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- Ferri, Antonio, to General Applied Science Laboratories, Inc. Wind tunnel nozzle structure. 3,353,405, 11–21–67, Cl. 73—147.
- Ferris, Robert G., to Starline, Inc. Animal feeder with material agitating and ejecting elements. 3,353,654, 11–21–67, Cl. 198—213.
- Fichtel & Sachs A.G.: *See*—
  - Axthammer, Ludwig, and Wossner. 3,353,816.
- Fieldgate, Ivan O., to Potter Instrument Co., Inc. Pinch roller mechanism. 3,353,733, 11–21–67, Cl. 226—176.
- Fields, Reuben T.: *See*—
  - Dunnington, Gordon B., and Fields. 3,354,023.
- Filper Corp.: *See*—
  - Meissner, Konrad E. 3 353.860.
  - Owsley, William A. 3,353,459.
- Florenza, Robert M.: *See*—
  - Broderick, John W., Florenza, Kelly, and Kozar. 3,353,669.
- Firma F. Kuppersbusch & Sohne Aktiengesellschaft: *See*—
  - Wilhelm, Alfred, and Löhr. 3,353,477.
- Firma Gebr. Hilgeland: *See*—
  - Nebendorf, Heinrich, and Pieper. 3,353,417.
- Firma Rheinmetall G.m.b.H.: *See*—
  - Berger, Fritz. 3,353,489.
- Fischer, Artur. Device for drilling holes in masonry walls and the like. 3,353,437, 11–21–67, Cl. 85—68.
- Fischer & Porter Co.: *See*—
  - McLay, Joseph F. 3,353,718.
- Fish, Aaron M., to A.M. Fish Holdings Ltd. Door locking means. 3,353,383, 11–21–67, Cl. 70—151.
- Fisher, Albred G. Articulated vehicle. 3,353,618, 11–21–67, Cl. 180—14.
- Fisher, Frank F. Expanding control for self-feeding boiler tube expanders. 3,353,386, 11–21–67, Cl. 72—32.
- Fisher & Ludow Ltd.: *See*—
  - Orwin, Olaf J. B. 3,353,500.
- Flach, Donald O., and G. W. Siwinski, to FMC Corp. Purification of hydrogen peroxide. 3,353,913, 11–21–67, Cl. 23—207.
- Flanagan, William C., Jr.: *See*—
  - Kayser, James H., and Flanagan. 3,353,668.

- Flatow, Tobias, and F. L. Chalmers, to Esso Production Research Co. Seismic pulse generator using combustible gas. 3,353,623, 11–21–67, Cl. 181—.5.
- Fleming Co., Inc., The: *See*—
  - Martin, Willis E., Johnson, and Reaser. 3,353,697.
- Flexigrip, Inc.: *See*—
  - Stailer, Karel J. 3,353,548.
- Flint, Frank B., and R. W. Housman, to Automatic Radio Mfg. Co., Inc. Selective signaling apparatus. 3,353,416, 11–21–67, Cl. 74—10.6.
- Fluder, Chester H., and M. R. Heeney, to Vapor Corp. Relay with hinge structure. 3,354,414, 11–21–67, Cl. 335—124.
- Fly, Gale S., and C. M. Leshe, to Bell Telephone Laboratories, Inc. Transistor switching rectifier with controlled conduction. 3,354,380, 11–21–67, Cl. 321—18.
- Flynn, George J., Jr. Electrical switch. 3,354,283, 11–21–67, Cl. 200—152.
- Foley, Thomas P., to Potter Instrument Co., Inc. Laminated timing wheel for high speed printers. 3,353,483, 11–21–67, Cl. 101—98.
- Föller, Werner, to Klein Schanzlin and Becker Aktiengesellschaft. Thermostatically controlled valve for a steam trap or the like. 3,353,746, 11–21–67, Cl. 236—59.
- Ford, Arnold B., to Feedmatic-Detroit, Inc. Part feeding apparatus. 3,353,254, 11–21–67, Cl. 29—240.
- Ford, James M. W. M. Minish, and P. J. Willis, to Olin Mathieson Chemical Corp. Coated aluminum composition and process. 3,353,937, 11–21–67, Cl. 44—3.
- Ford, John R., to Sangamo Electric Co. Electrolytic capacitor with compressed seal. 3,354,359, 11–21–67, Cl. 317—230.
- Ford Motor Co.: *See*—
  - Anderson, George W., Aseltine, and Cooper. 3,354,297.
  - Kotoucek, Waldemar R. 3,353,635.
- Ford, Walter D.: *See*—
  - D'Eustachio, Dominic, Ford, and Johnson. 3,354,024.
- Fordyce, William B., and H. G. Horsewell, to Brown and Williamson Tobacco Corp. Tobacco-smoke filters. 3,353,544, 11–21–67, Cl. 131—267.
- Forman, Herbert L., and D. B. Pall, to Pall Corp. Process and apparatus for capping filter elements. 3,354,012, 11–21–67, Cl. 156—69.
- Foroulis, Zisis A., to Esso Research and Engineering Co. Method and apparatus for anodic protection. 3,354,061, 11–21–67, Cl. 204—147.
- Foster, Edson P. Felting needle. 3,353,243, 11–21–67, Cl. 28—4.
- Foster Grant Co., Inc.: *See*—
  - Eyles, Thomas H. 3,353,707.
- Foster, Harley B. Method and composition of matter for forming ceramic structures. 3,354,245, 11–21–67, Cl. 264—60.
- Foster Wheeler Corp.: *See*—
  - Bleasby, Robert. 3,353,848.
  - Gorzegno, Walter P. 3,353,360.
- Fox, Charles: *See*—
  - Hayden, Percy, and Fox. 3,354,234.
- Fox, Robert M.: *See*—
  - Antaya, Clifford R., and Fox. 3,353,864.
- Fox, William E.: *See*—
  - Russell, James M., III, and Fox. 3,354,462.
- Frame, Alexander G., and H. F. Parker, to United Kingdom Atomic Energy Authority. Nuclear reactor instrumentation and servicing arrangement. 3,354,040, 11–21–67, Cl. 176—19.
- Francis, John E., to Geigy Chemical Corp. S-triazolo-(3,4-*a*) isoquinolines and process. 3,354,164, 11–21–67, Cl. 260—288.
- Frank, Charles E., and J. H. Murib, to National Distillers and Chemical Corp. Haloalkylaluminum compounds. 3,354,192, 11–21–67, Cl. 260—448.
- Franks, John T., Jr., and A. M. Apicella, Jr., to Goodyear Aerospace Corp. Two piece multi-aperture logic element. 3,354,444, 11–21–67, Cl. 340—174.
- Freed, George H., 50% to K. K. Klimback. Pistol holder. 3,353,728, 11–21–67, Cl. 224—1.
- Freeman, Miller L. Light reflectors for producing a conical divergent light beam. 3,354,304, 11–21–67, Cl. 240—41.35.
- Freytag, Karl-Heinz: *See*—
  - Taube, Carl, Bockmann, and Freytag. 3,353,901.
- Frick Co.: *See*—
  - Garland, Milton W., and Peard. 3,353,367.
- Friden, Inc.: *See*—
  - Lowell, Peter M., Balaz, and Anderson. 3,353,480.
- Fried, John H.: *See*—
  - Edwards, John A., Fried, and Siddall. 3,354,152.
  - Edwards, John A., Fried, and Siddall. 3,354,154.
- Frieder, Leonard P., and E. G. Baker, to Gentex Corp. Life ring. 3,353,197, 11–21–67, Cl. 9—311.
- Friedman, Bernard S., to E. I. du Pont de Nemours and Co. Process for production of oxygenated organic compounds from ditertiary alkyl halides. 3,354,198, 11–21–67, Cl. 260—468.
- Friedman, Burnam I., J. S. Martinez, and D. Jortner, to TRW Inc. Radioisotope attitude control engine. 3,353,354, 11–21–67, Cl. 60—203.
- Frohlich, Alfons, to Opti-Holding AG. Slide-fastener strip. 3,353,233, 11–21–67, Cl. 24—205.11.
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- Froitzheim, Hans, and K. Letzel, to Daimler-Benz Aktiengesellschaft. Driver's cab with at least one bunk. 3,353,861, 11–21–67, Cl. 296—24.
- Fruhstorfer, Wolfgang, R. Hotovy, deceased (by H. M. Hotovy, nee Weidl, legal representative), and S. Sommer, to E. Merck Aktiengesellschaft. 2-(2′,5′-dialkoxybenzyl)-2-imidazolines and related compounds. 3,354,175, 11–21–67, Cl. 260—309.6.
- Fuchs, Francis J., Jr. Fluid dispenser. 3,353,716, 11–21–67, Cl. 222—132.
- Fuerst, Ernst: *See*—
  - Wegerich, Anton, Fuerst, Haarer, and Corr. 3,354,056.
- Fujitsu Ltd.: *See*—
  - Amada, Sanae, Kawano, Arakawa, and Iwano. 3,353,648.
  - Tsukatani, Kenmi, Nagamine, Hamada, and Takagi. 3,354,464.
- Fuller, Acil R.: *See*—
  - Myers, Elman B. 3,354,343.
- Fuller, Clyde S.: *See*—
  - Sandlin, John R., and Fuller. 3,354,438.
- Fuller, Lawrence E., to Byron Jackson, Inc. Power operated applicator tool for pipe protectors. 3,353,252, 11–21–67, Cl. 29—236.
- Furnier- und Sperrholzwerk J. F. Werz, Jr., K.G., Werzalit-Pressholzwerk: *See*—
  - Haas, Herbert, Munk, and Weinberg. 3,354,248.
- G-V Controls Inc.: *See*—
  - Barry, Austin W. 3,354,374.
- Gabriel, Thomas F.: *See*—
  - Duschinsky, Robert E. F., and Gabriel. 3,354,160.
- Gale, George D., to Allis-Chalmers Mfg. Co. Two-phase contactor. 3,353,337, 11–21–67, Cl. 55—232.
- Gamble, Leon W., and T. Lane, to Esso Research and Engineering Co. Radiation sensitive apparatus and method for analyzing molecular weight distribution in polymeric material. 3,354,317, 11–21–67, Cl. 250—218.
- Gange, Robert A., to Radio Corp. of America. Cryoelectric circuits. 3,354,441, 11–21–67, Cl. 340—173.1.
- Garcia, Armando J., to United-Carr Inc. Wedge base bulb socket. 3,354.423, 11–21–67, Cl. 339—128.
- Garden State Paper Co., Inc.: *See*—
  - Illingworth, Robert H. 3,354,026.
  - Illingworth, Robert H., and Benson. 3,354,028.
- Gardner, Charles W., to Caterpillar Tractor Co. Load balancing system for hydraulic jack. 3,353,352, 11–21–67, Cl. 60—51.
- Gardner, Frank H., to Air Reduction Co., Inc. Anesthetic and analgesic inhaler apparatus. 3,353,535, 11–21–67, Cl. 128—188.
- Garland, Milton W., and R. A. Peard, to Frick Co. Liquid refrigerant return system. 3,353,367, 11–21–67, Cl. 62—115.
- Garner, Albert Y., to Monsanto Research Corp. N-substituted ammonium salts of mono-esterified phosphonic acids. 3,354,166, 11–21–67, Cl. 260—293.
- Garner, Albert Y., to Monsanto Research Corp. Arylammonium phosphonates and preparation thereof. 3,354,215, 11–21–67, Cl. 260—579.
- Garrett Corp., The: *See*—
  - Patten, Carl W., Jr., Wenker, and Craig. 3,353,370.
- Garrett, Henry U., C. M. Peters, and R. W. Dinning. Well apparatus. 3,353,605, 11–21–67, Cl. 166—53.
- Garrison, Robert A., and C. F. Schoelm; said Schoelm assor. to said Garrison. Fluid operated booster having an accumulator safety system. 3,353,451, 11–21–67, Cl. 91—6.
- Gaski, John M. Neckwear and method of making the same. 3,353,190, 11–21–67, Cl. 2—153.
- Gates, James T., R. L. Legue, and W. R. Dick. Reminder clock. 3,353,347, 11–21–67, Cl. 58—6.
- Gates, Lauren W.: *See*—
  - Hill, Fredrick L., and Gates. 3,353,342.
- Gawlick, Heinz: *See*—
  - Stadler, Hans, and Gawlick. 3,353,488.
- Geertsma, Jan, to Shell Oil Co. Vertical fracture patterns for the recovery of oil of low mobility. 3,353,602, 11–21–67, Cl. 166—40.
- Geigy Chemical Corp.: *See*—
  - Baumann, Peter, and Zimmerman. 3,354,145.
  - Francis, John E. 3,354,164.
- Geiger, Hellmut K. Longitudinal flow settling tank with movable sludge shield. 3,353,683, 11–21–67, Cl. 210—527.
- Gelbach, Herman R., to J. C. Pemberton. Pressure responsive transducer. 3,353,409, 11–21–67, Cl. 73—398.
- General Aniline & Film Corp.: *See*—
  - Hall, Walter J. 3,353,667.
- General Applied Science Laboratories, Inc.: *See*—
  - Ferri, Antonio. 3,353,405.
- General Dynamics Corp.: *See*—
  - Blanding, John E., Trageser, and Harrington. 3,353,364.
  - Hammons, Carl A., Kalinke, and Smith. 3,353,371.
- General Electric Co.: *See*—
  - Broeker, Hermann L., Dupont, and Lynn. 3,354,331.
  - Clevett, Merton L., Jr. 3,353,621.
  - Corey, Philip D., Walker, and Wellford. 3,354,376.
  - Dodge, Gerald F., III, and Elliott. 3,353,368.
  - Durst, Paul T., and Sutton. 3,354,281.
  - Goodridge, Lawrence C. 3,354,352.
  - Hansen, Kenneth M. 3,353,854.
  - Herold, Henry L., and Weizebaum. 3,354,466.
  - Howell, Edward K. 3,354,312.
  - Kortkamp, Donald H., and Smith. 3,354,361.
  - Linkous, Clovis E. 3,353,251.
  - Moyson, Joseph, and Petruzella. 3,354,363.
  - Schrom, Edward C. 3,354,344.
  - Slonneger, John L. 3,354,280.
  - Stetson, Earl W. 3,354,345.
  - Swain, David L., and Lynch. 3,354,379.
  - Walker, Richard L. 3,353,764.
  - Worst, Joseph C. 3,353,377.
  - Wu, Tse C. 3,354,119.
- General Mills, Inc.: *See*—
  - Elmquist, Lyle F. 3,354,088.

- General Motors Corp.: *See—*
  - Antaya, Clifford R., and Fox. 3,353,864.
  - Bartz, Otto H. 3,353,872.
  - Beatenbough, Paul K. 3,353,745.
  - Chana, Howard E. 3,353,637.
  - Chana, Howard E. 3,353,641.
  - Corry, Thomas M., and Johnston. 3,354,370.
  - Kobrehel, Peter M. 3,353,229.
  - Leslie, Kenneth G., and Zeisloft. 3,353,620.
  - Percival, Worth H. 3,353,349.
  - Pigeon, Dale W., and Upchurch. 3,353,868.
  - Ridenour, Jack B. 3,353,636.
  - Smale, Charles H. 3,353,551.
  - Whaley, John A., and Lochmann. 3,354,387.
  - Williams, Alfred J., Jr., and Johns. 3,354,073.
- General Precision Inc.: *See—*
  - Brodersen, Rolf K. 3,353,414.
  - Cohen, Robert J., and Edelman. 3,353,413.
  - Tiplitz, Charles I., and Krupick. 3,353,415.
  - Toman, Donald J. 3,354,460.
- Gentex Corp.: *See—*
  - Frieder, Leonard P., and Baker. 3,353,197.
- Gerlach, Klaus: *See—*
  - Sommer, Erwin, and Gerlach. 3,354,032.
- Gertisser, Berthold: *See—*
  - Callahan, James L., Gertisser, and Szabo. 3,354,197.
- Gervais, Adrien C. Machine for laying a continuous protective sheet. 3,353,297, 11-21-67, Cl. 47—1.
- Getz, Edward T., and M. Pacak, to Eaton Yale & Towne, Inc. Load supporting structures. 3,353,869, 11-21-67, Cl. 297—452.
- Gevaert Photo-Producten N.V.: *See—*
  - Vereycken, Modest C., and Lambeir. 3,354,416.
- Gibson, Daniel L., L. H. Eilers, S. R. West, and C. H. Kucera, to The Dow Chemical Co. Treatment of subsurface earthen formations. 3,353,604, 11-21-67, Cl. 166—42.
- Gilbert, James R., to Walker Mfg. Co. Retroverted flow muffler with longitudinal partitions. 3,353,628, 11-12-67, Cl. 181—53.
- Gilmore, Merwin W., and J. W. Bishop, to Gilmore-Tatge Mfg. Co., Inc. Hay pelleting device. 3,353,479, 11-21-67, Cl. 100—86.
- Gilmore-Tatge Mfg. Co., Inc.: *See—*
  - Gilmore, Merwin W., and Bishop. 3,353,479.
- Gingerich, Cecil R., R. F. Hinschlager, and A. R. Wandelt, to Union Carbide Corp. Thermochemical scarfing method. 3,354,002, 11-21-67, Cl. 148—9.5.
- Ginter, James C. Brush having a disposable part and ejector therefor. 3,353,203, 11-21-67. Cl. 15—244.
- Girling Ltd.: *See—*
  - Rees, John R., and Wilkins. 3,353,814.
- Gläser, Georg: *See—*
  - Fröhlich, Alfons, Hochlehnert, and Gläser. 3,353,256.
- Glass, William B.: *See—*
  - Langridge, Arthur, Glass, Grimwood, and Hegarty. 3,354,003.
- Glaverbel: *See—*
  - Javaux, Gustave. 3,353,944.
  - Loutte, Jean. 3,353,943.
- Glenco Refrigeration Corp.: *See—*
  - Hellwell, Jerome P., and Schweizer. 3,353,301.
- Glidden Co., The: *See—*
  - Kane, Bernard J. 3,354,225.
  - Shafer, William M., and Yurasko. 3,353,951.
- Gloor, Urs, R. Ruegg, and U. Schwieter, to Hoffmann-La Roche Inc. Chromans. 3,354,181, 11-21-67, Cl. 260—345.5.
- Glos, Edmond A., II, to Mero & Co., Inc. Drum filter element attaching means. 3,353,675, 11-21-67, Cl. 210—238.
- Glover, Sidney T., to Imperial Chemical Industries Ltd. Electrolytic cell having vertically disposed electrodes. 3,354,072, 11-21-67, Cl. 204—219.
- Godefroi, Erik F., and C. A. M. Van Der Eycken, to Janssen Pharmaceutica, N.V. Imidazole carboxylates. 3,354,173, 11-21-67, Cl. 260—309.
- Godshalk, Alva J., to Bennett Industries, Inc. Plastic container. 3,353,706, 11-21-67, Cl. 220—73.
- Goetzewerke Friedrich Goetze A.G.: *See—*
  - Schumacher, Rolf, and Vossieck. 3,353,378.
- Goldmark, Peter C., to Columbia Broadcasting Systems, Inc. Recording apparatus and medium with discrete level modulation. 3,354,264, 11-21-67, Cl. 178—5.4.
- Goodman, Joseph F. Scavenger vehicle. 3,353,696, 11-21-67, Cl. 214—501.
- Goodman, Myron F., and P. Clausen, said Clausen assor. to said Goodman. Gastronomic machine. 3,353,476, 11-21-67, Cl. 99—328.
- Goodrich, B. F., Co., The: *See—*
  - Evans, Robert W., Todd, and Essig. 3,354,109.
  - Hamed, Parviz. 3,354,107.
- Goodridge, Lawrence C., to General Electric Co. Fusible busway plug. 3,354,352, 11-21-67, Cl. 317—100.
- Goodwill, Maurice W., and L. W. Haug. Modular roof construction unit and method of making same. 3,353,393, 11-21-67, Cl. 72—297.
- Goodyear Aerospace Corp.: *See—*
  - Franks, John T., Jr., and Apicella. 3,354,444.
  - Kifor, Harry T., and Bourland. 3,353,769.
  - Levesque, Charles R., and Mitchell. 3,353,446.
  - Rottmayer, Earl. 3,354,458.
- Goolsby, Teslie C., deceased (by B. Goolsby, executrix). Attachment for a cast cutter. 3,353,266, 11-21-67, Cl. 30—167.
- Gorman, Marvin, to Eli Lilly and Co. N-desmethylvinylbastine. 3,354,163, 11-21-67, Cl. 260—287.
- Gorsler, Frank W.: *See—*
  - Schultz, Karl H., and Gorsler. 3,353,388.
- Gorter, Lodewijk G.: *See—*
  - Bartoo, Otto F., Ten Bruggencate, and Gorter. 3,353,703.
- Gorzegno, Walter P., to Foster Wheeler Corp. Power plant with steam injection. 3,353,360, 11-21-67, Cl. 60—39.18.
- Gossett, Bryant W., and M. C. Henson, to Gossett Machine Work, Inc. Automatic sliver severing apparatus. 3,353,224, 11-21-67, Cl. 19—159.
- Gossett Machine Work, Inc.: *See—*
  - Gossett, Bryant W., and Henson. 3,353,224.
- Gottwald, Bruce C., B. S. Halsey, R. C. Williams, and J. M. Haigh, to Albemarle Paper Co. Continuous process of drying uncoated fibrous webs. 3,354,035, 11-21-67, Cl. 162—206.
- Grace, W. R., & Co.: *See—*
  - Doyle, Carroll F. 3,354,114.
- Graf, Felix. Thread guide arrangement for a winding machine. 3,353,761, 11-21-67, Cl. 242—43.
- Grant Pulley & Hardware Corp.: *See—*
  - Del Vecchio, Joseph T., and Agnoff. 3,353,874.
- Grasis, August R. Structural member. 3,353,820, 11-21-67, Cl. 52—693.
- Gray, Nigel W.: *See—*
  - Daem, Richard C., Gray, and Young. 3,353,526.
- Greasley, Eric A., to Pressac Ltd. Miniature lamp holders. 3,354,302, 11-21-67, Cl. 240—8.16.
- Green, John M., and P. F. McKinney, to Monsanto Co. Signal comparator using capacitor charge and discharge rates. 3,354,390, 11-21-67, Cl. 324—79.
- Green, Joseph: *See—*
  - Fein, Marvin M., Green and Mayes. 3,354,193.
- Green, Louis G., 49% to N. C. MacDonald. Cam lock. 3,353,856, 11-21-67, Cl. 292—66.
- Greer, Kent R., to Imperial Chemical Industries Ltd. Liquid distributor. 3,353,802, 11-21-67, Cl. 261—110.
- Grees, Karl L., and S. O. Karlsson, to Allmanna Svenska Elektriska Aktiebolaget. Direct current static switch. 3,354,326, 11-21-67, Cl. 307—88.5.
- Gregg, Donald F.: *See—*
  - Rutz, William D. 3,353,959.
- Gregor, Lawrence V.: *See—*
  - Campagna, Frank J., Gregor, and Seraphim. 3,354,360.
- Greiner, Otto. Self-adjusting beds. 3,353,193, 11-21-67, Cl. 5—66.
- Grenley, Dallas G., and H. J. Townsend, to The Dow Chemical Co. Coating of polymer film and sheet. 3,353,992, 11-21-67, Cl. 117—138.8.
- Gretsch, Fred, Mfg. Co., The: *See—*
  - Webster, James D. 3,353,483.
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- Griesinger, Karl: *See—*
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- Grimwood, Henry W.: *See—*
  - Langridge, Arthur, Glass, Grimwood, and Hegaery. 3,354,003.
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  - Beuther, Harold, and Schmid. 3,354,076.
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  - Vogt, Alfred. 3,353,582.
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  - Lazear, William H., and Hrudka. 3,354,017.
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- Haarer, Erich: *See—*
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- Haas, Herbert, E. Munk, and G. Weinberg, to Furnier- und Sperrholzwerk J. F. Werz Jr., K.G., Werzalit-Pressholzwerk. Process and machine for producing multidimensionally molded articles. 3,354,248, 11-21-67, Cl. 264—119.
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- Hadden, William A.: *See—*
  - Cutler, Duncan B., Warner, and Hadden. 3,353,327.
- Hadley, Wilfred N., to Riggs & Lombard, Inc. Fabric shearing machine having web smoothing means. 3,353,237, 11-21-67, Cl. 26—15.
- Hagman, Ronald L.: *See—*
  - Vali, Victor, Krogstad, Moss, and Hagman. 3,354,311.
- Haigh, John M.: *See—*
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- Halex Die Casting Co.: *See—*
  - Cagin, Harry. 3,354,259.
- Hall, Walter J., to Bell & Howell Co. Slide projector in combination with a sound tape and transparency slide holder. 3,353,443, 11-21-67, Cl. 88—28.
- Hall, Walter J., to General Aniline & Film Corp. Slide tray. 3,353,667, 11-21-67, Cl. 206—73.
- Hall, William J.: *See—*
  - Paradis, Leo P., and Hall. 3,354,108.
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- Ham, George E., and J. E. Stevens., to Dow Chemical Co. Polyester-polyamides containing aziridine groups. 3,354,126, 11-21-67, Cl. 260—78.
- Hamada, Yuji: *See—*
  - Tsukatani, Kenmi, Nagamine, Hamada, and Takagi. 3,354,464.
- Hamed, Parviz, to B. F. Goodrich Co. Tackifying cements for EPM and EPDM rubbers. 3,354,107, 11-21-67, Cl. 260—31.2.
- Hamilton Watch Co.: *See—*
  - Brashear, Donald W. 3,353,348.
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  - Kidera, Edward H., Hamkins, and Siddons. 3,353,501.
- Hammons, Carl A., E. B. Kalinke, and R. R. Smith, to General Dynamics Corp. Dual tube regenerative cryostat. 3,353,371, 11-21-67, Cl. 62—514.
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- Hand, Theodore F.: *See—*
  - Ekiss, Marilyn J. Weisgerber, and Hand. 3,354,180.
- Hanks, George F., and A. L. Bracken, Jr., to Emhart Corp. Method of melting glass. 3,353,941, 11-21-67, Cl. 65—32.
- Hannemann, Donald E.: *See—*
  - Zimmerschied, Wilford J., Hannemann, and Serres. 3,354,202.
- Hansen, Eyvind K., to F. L. Smidth & Co. Method and apparatus for producing pellets of finely divided materials. 3,353,952, 11-21-67, Cl. 75—3.
- Hansen, Kenneth M., to General Electric Co. Structural corner assembly. 3,353,854, 11-21-67, Cl. 287—189.36.
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- Hanson, Howard C. Expansible multi-purpose cabinet. 3,353,885, 11-21-67, Cl. 312—205.
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- Hardy, Austin E.: *See—*
  - Donahue, Daniel J., and Hardy. 3,354,341.
- Harkness, Wilfrid D.: *See—*
  - Larson, Robert W., Olson, Harkness, and Mair. 3,353,575.
- Harnisch, Hans J.: *See—*
  - Lohmar, Walther, Harnisch, Schmahl, Kohll, and Spenner. 3,353,398.
- Harper, Laffie. Method for forming double vanes. 3,353,248, 11-21-67, Cl. 29—157.
- Harper-Wyman Co.: *See—*
  - Lamar, Charles C. 3,354,279.
- Harrington, James V.: *See—*
  - Blanding, John E., Trageser, and Harrington. 3,353,364.
- Harris, David A., to Imperial Chemical Industries Ltd. Vibrating distributor bar for agricultural chemicals. 3,353,748, 11-21-67, Cl. 239—102.
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- Harris, Thomas J., to International Business Machines Corp. Electro-optic light deflector utilizing total internal reflection. 3,353,894, 11-21-67, Cl. 350—150.
- Harris, Thomas J., and B. R. Shah, to International Business Machines Corp. High speed optical parallel-to-serial and serial-to-parallel conversion of binary information. 3,354,451, 11-21-67, Cl. 340—347.
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- Harrison, Harry W., to Houston Engineers, Inc. Fluid spring tensile energy accumulator and shock absorbing device for well pipe strings. 3,353,613, 11-21-67, Cl. 175—293.
- Hart, Harold W., to W. H. Hart Mfg. Co. Watering system for poultry. 3,353,518, 11-21-67, Cl. 119—75.
- Hart, W. H., Mfg. Co.: *See—*
  - Hart, Harold W. 3,353,518.
- Hartler, Nils, and R. Aurell, to Stiftelsen Svensk Cellulosaforskning. Method of alkaline digestion of cellulosic materials. 3,354,029, 11-21-67, Cl. 162—41.
- Haslam, John H., to E. I. du Pont de Nemours and Co. Process for the removal of mercaptans from hydrocarbons. 3,354,080, 11-21-67, Cl. 208—231.
- Haug, Leslie W.: *See—*
  - Goodwill, Maurice W., and Haug. 3,353,393.
- Hawkins, Robert A., to Avco Corp. Shock testing machine. 3,353,399, 11-21-67, Cl. 73—12.
- Hawtin, Percy: *See—*
  - Killick, Herbert P., and Hawtin. 3,353,450.
- Hayden, Percy, and C. Fox, to Imperial Chemical Industries Ltd. Reaction of an olefin with HCl or HBr and oxygen. 3,354,234, 11-21-67, Cl. 260—656.
- Hayes, Brice E., to Hayes Track Appliance Co. Bumping post. 35,353,502, 11-21-67. Cl. 104—254.
- Hayes Track Appliance Co.: *See—*
  - Hayes, Brice E. 3,353,502.
- Haynie, Robert: *See—*
  - Barnett, Louis H., and Haynie. 3,353,221.
- Hearn, William R., A. N. Mac Lean, and F. W. Trusler, to Colgate-Palmolive Co. Homogeneous heavy-duty liquid detergent. 3,354,091, 11-21-67, Cl. 252—137.
- Heath, Robert A., to Walker Mfg. Co. Muffler with concentric tubes forming helmholz chambers. 3,353,627, 11-21-67, Cl. 181—48.
- Hebb, James W.: *See—*
  - Ainsworth, Gerald L., and Hebb. 3,354,371.
- Heber, Emery, and N. K. Lund, to Bell Telephone Laboratories, Inc. Maximum amplitude detector circuit of main lobe in sinx waverform. 3,354,400, 11-21-67, Cl. 328—150.
- Heberlein & Co. A.G.: *See—*
  - Brehm, Gustav. 3,353,760.
- Hechtle, Emil, to Radiant Pen Corp. Fiber tipped pen. 3,353,899, 11-21-67, Cl. 401—198.
- Heeney, Matthew R.: *See—*
  - Fluder, Chester H., and Heeney. 3,354,414.
- Hegaery, Brian A.: *See—*
  - Langridge, Arthur, Glass, Brimwood, and Hegaery. 3,354,003.
- Heijnis, James W. I., to American Enka Corp. Spinneret assembly. 3,353,211, 11-21-67, Cl. 18—8.
- Heijnis, James W. I., to American Enka Corp. Yarn texturizing method and apparatus. 3,353,239, 11-21-67, Cl. 28—1.
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- Hellwell, Jerome P., and A. E. Schweizer, to Glenco Refrigeration Corp. Thermal breaker strip. 3,353,301, 11-21-67, Cl. 49—489.
- Hellwell, Jerome P., and A. E. Schweizer, to Star Metal Corp. Thermal breaker strip. 3,353,321, 11-21-67, Cl. 52—716.
- Heinrich, Erwin: *See—*
  - Hornung, Karl-Heinz, and Heinrich. 3,354,130.
- Heinzelmann, Josef, and F. Hugendubel, to Robert Bosch, G.m.b.H. Lubricating pump. 3,353,492, 11-21-67, Cl. 103—157.
- Hellermann, Paul, G.m.b.H.: *See—*
  - Kabel, Heinrich. 3,353,227.
- Helm, Jack D.: *See—*
  - Anderson, Harold N., and Helm. 3,353,572.
- Helms, John D., to Texas Instruments Inc. Successively stacking, and welding circuit conductors through insulation by using electrodes engaging one conductor. 3,353,263, 11-21-67, Cl. 29—625.
- Henc, Edward V. Apparatus for working sheet material. 3,353,460, 11-21-67, Cl. 93—58.2.
- Henderson, William B., and G. R. Baur, to Monsanto Co. Pigment dispersions. 3,354,111, 11-21-67, Cl. 260—32.6.
- Henkel & Cie., G.m.b.H.: *See—*
  - Stein, Werner, Koch, and Weiss. 3,354,187.
- Henrickson, Henry G.: *See—*
  - Smith, Arthur D., Henrickson, and Langewis. 3,353,394.
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- Henry-Biabaud, Edmond, to Societe Anonyme Andre Citroen. Hydro-pneumatic suspensions. 3,353,815, 11-21-67, Cl. 267—64.
- Henson, Maurice C.: *See—*
  - Gossett, Bryant W., and Henson. 3,353,224.

- Hercules Inc.: *See*—
  - Brack, Karl. 3,354,209.
  - Mauz, Otto, and Prinz. 3,354,118.
  - Schmidt, Heinz, Macez, and Schulde. 3,354,117.
  - Vandenberg, Edwin J. 3,354,097.
  - Vandenberg, Edwin J. 3,354,139.
- Hermetic Coil Co., Inc.: *See*—
  - Davis, Dhu A. J. 3,354,417.
- Herold, Henry L., and J. Weizebaum, General Electric Co. Apparatus in data processing system for coordinating memory communication among processors and peripheral devices. 3,354,466, 11–21–67, Cl. 340—172.5.
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- Hertz, Elizabeth: *See*—
  - Wendt, Gerhard R., and Hertz. 3,354,156.
- Heskestad, Gunnar, to American Standard, Inc. Guiding fluid around a bend. 3,353,562, 11–21–67, Cl. 138—39.
- Hess, Walter: *See*—
  - Sixel, Gustav A., and Hess. 3,353,807.
- Hessler, Richard O., to Thiokol Chemical Corp. Method and apparatus for inducing fatigue cracks in structural materials. 3,353,401, 11–21–67, Cl. 73—37.
- Hettler, Robert F.: *See*—
  - Shelburg, William D., and Hettler. 3,353,991.
- Hewitt, Kenneth D.: *See*—
  - Trimble, Stanley C., Hewitt, and Thornhill. 3,353,974.
- Hewlett-Packard Co.: *See*—
  - Holloway, Joseph H., and Rorden. 3,354,307.
  - Mac Neil, Norman H. 3,353,410.
- Heywood, James H. Tube connecting fastener. 3,353,853, 11–21–67, Cl. 287—54.
- Hibbits, Forrest G., and P. M. Haas, to Honeywell Inc. Analog to digital converter with interference signal rejection. 3,354,453, 11–21–67, Cl. 340—347.
- Hibbitts, Kermit: *See*—
  - Brackmann, Warren A., and Hibbitts. 3,353,430.
- Hicks, Hoke S.: *See*—
  - Cranshaw, Walter J., Hicks, and Oakes. 3,353,568.
- Higham, Charles E.: *See*—
  - Woor, Denis F., and Higham. 3,353,630.
- Hill, Fredrick L., and L. W. Gates, to The Regents of the University of California. Harvester pickup. 3,353,342, 11–21–67, Cl. 56—327.
- Hill, Harold W., Jr., S. L. Kwolek, and W. Sweeny, to E. I. du Pont de Nemours and Co. Aromatic copolyamides. 3,354,127, 11–21–67, Cl. 260—78.
- Hill, Harold W., Jr.: *See*—
  - Edmonds, James T., Jr., and Hill. 3,354,129.
- Hill, Harvey J., to Roberts Consolidated Industries, Inc. Carpet gripper. 3,353,204, 11–21–67, Cl. 16—16.
- Hill, William J., to Morgan Construction Co. Hold-down and clamping apparatus. 3,353,818, 11–21–67, Cl. 269—153.
- Hind, John D., and R. B. Seligman, to Philip Morris Inc. Tobacco sheet material. 3,353,541, 11–21–67, Cl. 131—17.
- Hing, William: *See*—
  - Aykanian, Ardashus A., Hing, and Wohl. 3,354,025.
- Hinschlager, Rudolph F.: *See*—
  - Gingerich, Cecil R., Hinschlager, and Wandelt. 3,354,002.
- Hirsh, A. Adler. Radial flow settling tank with complete volumetric transit for water and waste treatment. 3,353,676, 11–21–67, Cl. 210—197.
- Hirsch, A. Adler. Triangular-type horizontal flow settling basins. 3,353,679, 11–21–67, Cl. 210—259.
- Hirshfeld, Julian J.: *See*—
  - Cheape, Dudley W., Jr., and Hirshfeld. 3,354,113.
- Hirshfeld, Julian J., and B. A. Sample, Jr., to Monsanto Co. Dyeing of synthetic fibers. 3,353,900, 11–21–67, Cl. 8—55.
- Hirt Combustion Engineers: *See*—
  - Hirt, John H. 3,353,921.
- Hirt, John H., to Hirt Combustion Engineers. Apparatus for producing inert gas. 3,353,921, 11–21–67, Cl. 23—281.
- Hitachi, Ltd.: *See*—
  - Kikuchi, Wahei, and Watanabe. 3,353,250.
- Hitzeroth, Franklin C., to McGraw-Edison Co. Portable power tool. 3,353,573, 11–21–67, Cl. 143—68.
- Hitzman, Donald O., to Phillips Petroleum Co. Process for the recovery of hydrocarbon fermentation products. 3,353,047, 11–21–67, Cl. 195—28.
- Hoboltb, Hayes M. Convenience valve. 3,353,558, 11–21–67, Cl. 137—625.48.
- Hochlehnert, Franz: *See*—
  - Fröhlich, Alfons, Hochlehnert, and Gläser. 3,353,256.
- Hodges, James R., and S. E. Zeis, to Joseph Bancroft & Sons Co. Method and apparatus for feeding yarn into a stuffer crimper. 3,353,240, 11–21–67, Cl. 28—1.
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- Hodgson, Edgar D., Jr.: *See*—
  - Muller, John T., Hodgson, and Bremer. 3,353,530.
- Hodgson, Robert F., to Commercial Shearing & Stamping Co. Control valves. 3,353,556, 11–21–67, Cl. 137—596.12.
- Hoffmann, Arthur K.: *See*—
  - Feldman., Allan M, and Hoffmann. 3,354,230.
- Hoffman Electronics Corp.: *See*—
  - Briggs, James B., and Vanderplaats. 3,353,455.
- Hoffmann-La Roche. Inc.: *See*—
  - Duschinsky, Robert E. F., and Gabriel. 3,354,160.
  - Gloor, Urs, Ruegg, and Schwieter. 3,354,181.
  - Surmatis, Joseph D. 3,354,218.
- Hoffmann, Leo, to Baldwin-Lima-Hamilton Corp. Stress distribution means. 3,353,397, 11–21–67, Cl. 72—455.
- Hoffsommer, Robert D., Jr.: *See*—
  - Wendler, Norman L., Hoffsommer, and Taub. 3,354,206.
- Hogan, John P., and A. G. Kitchen, to Phillips Petroleum Co. Olefin polymerization with a supported nickel oxide catalyst and an organometal compound. 3,354,235, 11–21–67, Cl. 260—683.15.
- Hoge, Carl G.: *See*—
  - MacFarlane, Charles E., and Hoge. 3,353,249.
- Holland, Milton B.: *See*—
  - Barton, William W., Holland, and Balton. 3,353,258.
- Holloway, Joseph H., and R. J. Rorden, to Hewlett-Packard Co. Atomic beam resonant device with a cavity resonator having two arms and a leg portion containing lossy material. 3,354,307, 11–21–67, Cl. 250—41.3.
- Holman, John G., to Holman and Moody, Inc. Unitary oil filtering and cooling attachment for internal combustion engines. 3,353,590, 11–21–67, Cl. 165—35.
- Holman and Moody, Inc.: *See*—
  - Holman, John C. 3,353,590.
- Home Oil Co. Ltd.: *See*—
  - Mulder, Fritho R. E. 3,353,597.
- Hommers, Hermann: *See*—
  - Bock, Helmut, and Hommers. 3,354,1[illegible]8.
- Honeywell Inc.: *See*—
  - Hibbits, Forrest G., and Haas. 3,354,453.
  - Landy, Arney, Jr., and Lode. 3,354,36[illegible].
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- Hooker Chemical Corp.: *See*—
  - Dorfman, Edwin, and Bean. 3,354,204.
  - Leon, Edward, Weil, and Linder. 3,354,157.
- Hopff, Heinrich, and E. Kleiner, to Deutsche Gold-und Silber-Scheideanstalt vormals Roessler. Homo- and copolymerization of vinyl monomers using tautomeric pyruvic acid derivatives as catalysts. 3,354,134, 11–21–67, Cl. 260—89.5.
- Hopkins, Harold H.: *See*—
  - Minns, Thomas A., and Hopkins. 3,35[illegible],892.
- Hopkins, John D.: *See*—
  - Whittingham, David J., Hopkins, and Cowles. 3,353,457.
- Hopkins, Leslie A., to Hovercraft Development Ltd. Gascushion vehicles. 3,353,617, 11–21–67, Cl. 180—7.
- Hopkins, Stephen. Waste collecting and compacting unit. 3,353,478, 11–21–67, Cl. 100—52.
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- Hordosi, Theodore L., to Western Electric Co., Inc. Automatic high speed test apparatus for testing continuity and shorts simultaneously on a plurality of circuit paths. 3,354,389, 11–21–67, Cl. 324—73.
- Hormats, Ellis I.: *See*—
  - Shepherd, Joseph L., Witz, and Hormats. 3,354,067.
- Horn, Kenneth L., to Hughes Aircraft Co. Multipactor switch. 3,354,349, 11–21–67, Cl. 315—39.
- Hornung, Karl-Heinz, and E. Heinrich, to Chemische Werke Huls Aktiengesellschaft. Process for the production of thermosetting resins. 3,354,130, 11–21–67, Cl. 260—79.5.
- Horsewell, Henry G.: *See*—
  - Fordyce, William B., and Horsewell. 3,353,544.
- Horton, John P., and A. T. Nielsen. Broom construction. 3,353,201, 11–21–67, Cl. 15—180.
- Horton, William H., and J. E. Dierks, to Eastman Kodak Co. Flash socket arrangement. 3,353,463, 11–21–67, Cl. 95—11.
- Horwitz, Lawrence P., and R. M. Karp, to International Business Machines Corp. Translator. 3,354,296, 11–21–67, Cl. 235—154
- Hossain, Shafi U., and A. A. Pataki, to Abitibi Power & Paper Co., Ltd. Deinking of waste paper. 3,354,027, 11–21–67, Cl. 162—5.
- Hotovy, Hidegard M.: *See*—
  - Fruhstorfer, Wolfgang, Hotovy, and Sommer. 3,354,175.
- Hotovy, Rudolf: *See*—
  - Fruhstorfer, Wolfgang, Hotovy, and Sommer. 3,354,175.
- Hotten, Bruce W., to Chevron Research Co. Lubricants containing quaternary ammonium dithiocarbamates. 3,354,085, 11–21–67, Cl. 252—33.6.
- Houdaille Industries, Inc.: *See*—
  - Perhach, John M. 3,353,632.
- Houpt, Grover K., and V. Whittaker, to Automatic Timing and Controls, Inc. Amplitude and polarity sensitive control system. 3,354,399, 11–21–67, Cl. 328—147.
- Housman, Robert W.: *See*—
  - Flint, Frank B., and Housman. 3,353,416.
- Houston Engineers, Inc.: *See*—
  - Harrison, Harry W. 3,353,613.
- Hovercraft Development Ltd.: *See*—
  - Hopkins, Leslie A. 3,353,617.
- Howard, Frank C., and A. Langas, to Signode Corp. Nail feeding mechanism for pneumatically operable impact tools. 3,353,737, 11–21–67, Cl. 227—136.
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- Hrudka, Robert F.: *See*—
  - Lazear, William H., and Hrudka. 3,354,017.

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- Hudson Engineering Corp.: *See*—
  - Davidson, Eugene M. 3,354,244.
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  - Placent, Frank T., and Huffman. 3,354,278.
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- Hugendubel, Fritz: *See*—
  - Heinzelmann, Josef, and Hugendubel. 3,353,492.
- Hughes Aircraft Co.: *See*—
  - Hant, William. 3,354,347.
  - Horn, Kenneth L. 3,354,349.
  - Lavik, Arne. 3,354,346.
  - Saia, Frank J., and McIntyre. 3,354,258.
  - Zuleeg, Rainer. 3,354,362.
- Hull, Robert S. Holder for beverage can. 3,353,729, 11–21–67, Cl. 224—45.
- Humber, Leslie G., and M. A. Davis, to American Home Products Corp. Hexahydrobenzo (6,7) cyclohepta (1,2,3-d,e) isoquinoline carboxamidine. 3,354,162, 11–21–67, Cl. 260—286.
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  - Smith, Horace L., Jr. 3,353,962.
- Hurschler, Werner: *See*—
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  - Schad, Robert D. 3,353,209.
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- Hyde, Gilbert, Chick Co.: *See*—
  - Langren, Robert J. 3,353,820.
- Hy-Dynamic Co., The: *See*—
  - Cowan, David M. 3,353,686.
- Hydrill Co.: *See*—
  - Lewis, George E. 3,353,594.
- IRC, Inc.: *See*—
  - Casey, Haeey B., and Woods. 3,354,418.
- Ideal Fastener Corp.: *See*—
  - Bashover, Albert. 3,353,217.
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  - Whitehurst, Joe R. 3,353,226.
- Illingworth, Robert H., to Garden State Paper Co., Inc. Deinking printed waste cellulosic stock. 3,354,026, 11–21–67, Cl. 162—5.
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- Illinois Railway Equipment Co.: *See*—
  - Sweger, Theodore J. 3,353,831.
- Ilnyckyj, Stephan, and D. M. MacLeod, to Esso Research and Engineering Co. Sealing wax composition. 3,354,106, 11–21–67, Cl. 260—28.5.
- Imagineers Corp.: *See*—
  - Anderson, Robert F. 3,353,527.
- Imperial Chemical Industries Ltd.: *See*—
  - Glover, Sidney T. 3,354,072.
  - Greer, Kent R. 3,353,802.
  - Harris, David A. 3,353,748.
  - Hayden, Percy, and Fox. 3,354,234.
- Imperial Smelting Corp. (N.S.C.) Ltd.: *See*—
  - Moller, Leopold, and Pegler. 3,353,911.
- Industriewerk Schaeffler, OHG.: *See*—
  - Steinert, Kurt K. 3,353,881.
- Ingold, Alain, and J. Raynal, to Etablissement Davey Bickford Smith & Cie Societe Anonyme Francaise. Manufacture of electric ignitors for detonators. 3,353,262, 11–21–67, Cl. 29—623.
- Inland Steel Co.: *See*—
  - Schwarz, Arthur M. 3,353,953.
- Interchemical Corp.: *See*—
  - Sinclair, Gabriel J. 3,353,972.
  - Vieth, Richard D., Dooley, Aronoff, and Bolstad. 3,353,990.
- International Business Machines Corp.: *See*—
  - Ainslie, Norman G. 3,353,912.
  - Bebb, Herbert B., and Potter. 3,354,405.
  - Bradford, Rex C., Cook, and Kelsof. 3,353,261.
  - Broderick, John W., Fiorenza, Kelly, and Kozar. 3,353,669.
  - Campagna, Frank J., Gregor, and Seraphim. 3,354,360.
  - Carthew, John R., Loizides, and Mitta. 3,354,437.
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  - Farber, Arnold S., and Schlig. 3,354,440.
  - Harris, Thomas J. 3,353,894.
  - Harris, Thomas J., and Shah. 3,354,451.
  - Horwitz, Lawrence P., and Karp. 3,354,296.
  - Kay, Eric. 3,354,074.
  - Koretzky, Herman. 3,354,059.
  - Kulka, Raymond. 3,354,295.
  - Mandel, Gerald, and Morehead. 3,354,009.
  - Michelitsch, Michael. 3,354,007.
  - Okcuoglu, Selahattin A. 3,353,418.
  - Picciano, Jaes K. 3,354,435.
  - Reisman, Arnold, Berkenblit, and Alyanakyan. 3,354,004.
  - Shafer, Merrill W. 3,353,907.
  - Young, Richard J. 3,353,646.
  - Zeitler, Carl, Jr., and Boland. 3,354,430.
- International Minerals & Chemical Corp.: *See*—
  - Sollin, Ingmar. 3,353,672.
- International Paper Co.: *See*—
  - Outwater, Eric B. 3,353,740.
- International Telephone and Telegraph Corp.: *See*—
  - Ray, William A. 3,353,353.
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  - Schnider, Albert, Ryffel, and Hurschler. 3,354,146.
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- Iwano, Hiroshi: *See*—
  - Amada, Sanae, Kawano, Arakawa, and Iwano. 3,353,648.
- Iwanski, Edmund C. Containers and a package formed of such containers. 3,353,665, 11–21–67, Cl. 206—65.
- Jackson, Byron, Inc.: *See*—
  - Fuller, Lawrence E. 3,353,252.
  - Knight, Deral D. 3,353,603.
  - Smith, Roger, Jr. 3,353,794.
- Jackson, Harold L.: *See*—
  - Dettre, Robert H., Jackson, and Johnson. 3,354,022.
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- Jaffe, Hans, and D. A. Berlincourt, to Clevite Corp. Transducing method and apparatus. 3,354,425, 11–21–67, Cl. 340—10.
- James, Robert G.: *See*—
  - Latham, Burton F., Jr., and James. 3,353,915.
- James, William R., to Texas Instruments Inc. Receptacle for transistors or integrated circuits to be tested. 3,354,394, 11–21–67, Cl. 324—158.
- Janson, Alfons, and F. Poschmann, to Badische Anilin-Soda-Fabrik Aktiengesellschaft. Thermally stabilized alkali metal dithionates. 3,353,909, 11–21–67, Cl. 23—116.
- Janssen Pharmaceutica, N.V.: *See*—
  - Godefroi, Erik F., and Van Der Eycken. 3,354,173.
- Jarowenko, Wadym, to National Starch and Chemical Corp. Novel cationic starch derivatives. 3,354,034, 11–21–67, Cl. 162—175.
- Javaux, Gustave, to Glaverbel. Means for the thermal homogenisation of glass for the purpose of drawing it in sheet form. 3,353,944, 11–21–67, Cl. 65—203.
- Jaworski, Leonard S., to The Bishop and Babcock Corp. Sheet metal screw-receiving fastener. 3,353,436, 11–21–67, Cl. 85—32.
- Jelinek, Arthur G., to E. I. du Pont de Nemours and Co. Method of producing depression. 3,354,036, 11–21–67, Cl. 167—65.
- Jenkins Bros.: *See*—
  - Eggers, Carl A. 3,353,785.
- Jens, Wilmer C., to M. H. Detrick Co. Apparatus for removing solids from hot gases. 3,353,800, 11–21–67, Cl. 261—3.
- Jensen, Hans, and A. H. Eberman, to Oscar Mayer & Co., Inc. Packaging of free flowing materials. 3,353,325, 11–21–67, Cl. 53—22.
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- Jensen, Otto, to Conchemco Inc. Method and composition for tinting oil and water base paints. 3,353,973, 11–21–67, Cl. 106—308.
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- Jerrold-Jones, Paul, and M. L. Deushane, to Beckman Instruments, Inc. Electrode component and method of making the same. 3,354,069, 11–21–67, Cl. 204—195.
- Jet Line Products, Inc.: *See*—
  - Hamrick, James C. 3,353,996.
- Jewett, William E., to Bell Telephone Laboratories, Inc. Regulated power supply with overload and overvoltage protection. 3,354,378, 11–21–67, Cl. 321—14.

- Job, Eduard J.: *See—*
  - Williamson, Hilding V., and Job. 3,353,550.
- Johansson, Nils O.: *See—*
  - Tidemalm, Gustav H., and Johansson. 3,353,616.
- Johns, Douglas J.: *See—*
  - Williams, Alfred J., Jr., and Johns. 3,354,073.
- Johnson, Albert D. Apparatus for stripping die cut blanks. 3,353,458, 11–21–67, Cl. 93—36.
- Johnson Gage Co., The: *See—*
  - Johnson, Stanley G. 3,353,277.
- Johnson, Gorden F.: *See—*
  - Whaley, Henry P., and Johnson. 3,353,758.
- Johnson, Howard E.: *See—*
  - D'Eustachio, Dominio, Ford, and Johnson. 3,354,024.
- Johnson, John L.: *See—*
  - Herr, Alfred B. 3,353,428.
- Johnson & Johnson: *See—*
  - Philippi, George J. 3,353,432.
- Johnson, Merion L., to Phillips Petroleum Co. Controlling heat supply and product purities in the operation of a distillation column. 3,354,053, 11–21–67, Cl. 203—1.
- Johnson, Paul H.: *See—*
  - Martin, Willis E., Johnson, and Reaser. 3,353,697.
- Johnson, Paul H., to Phillips Petroleum Co. Process of modifying furnace carbon black. 3,353,980, 11–21–67, Cl. 106—307.
- Johnson, Robert E.: *See—*
  - Lind, Wallace E., Clearman, Dutcher, and Johnson. 3,353,553.
- Johnson, Rulo E., Jr.: *See—*
  - Dettre, Robert H., Jackson, and Johnson. 3,354,022.
- Johnson, Stanley G., to The Johnson Gage Co. Differential gage indicating means, a thread gage combination and a differential thread gage combination. 3,353,277, 11–21–67, Cl. 33—199.
- Johnston, James H., to Texas Instruments Inc. Method of making composite tubular articles. 3,353,387, 11–21–67, Cl. 72—46.
- Johnston, Mack S. Beer tapping device. 3,353,724, 11–21–67, Cl. 222—400.7.
- Johnston, Richard W.: *See—*
  - Corry, Thomas M., and Johnston. 3,354,370.
- Johnston Testers, Ltd.: *See—*
  - Jensen, Lloyd. 3,353,609.
- Jones, Ralph E., H. Mahler, and C. E. Weller. Shoe fastener. 3,353,230, 11–21–67, Cl. 24—77.
- Jonker Business Machines, Inc.: *See—*
  - Jonker, Frederick. 3,353,441.
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- Joppen, Rudolf: *See—*
  - Clasen, Hermann, Müller, and Joppen. 3,353,930.
- Jordan, Donald J., to United Aircraft Corp. Turbofan lightweight thrust reverser. 3,353,355, 11–21–67, Cl. 60—226.
- Jorgensen, George N., H. I. Stanback, and R. W. Dunham, to Square D Co. Electrical panelboard. 3,354,357, 11–21–67, Cl. 317—119.
- Jörn, Raoul, to Metzeler A.G. Sleeve bearing. 3,353,879, 11–21–67, Cl. 308—26.
- Jortner, Donald: *See—*
  - Friedman, Burnam I., Martinex, and Jortner. 3,353,354.
- Journell, Thomas W.: *See—*
  - Oneson, Thomas M., Journell, and Smith. 3,353,473.
- Joy Mfg. Co.: *See—*
  - Zink, Edward F. 3,353,693.
- Joyce, Donald L.: *See—*
  - Williams, Robert C., Joyce, and Showalter. 3,354,030.
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- Kabushiki Kaisha Taihei Seisakusho: *See—*
  - Nagaoka, Noriyuki. 3,353,690.
- Kahn, Leo M. Apparatus for cleaning clothes and treating wash liquid. 3,353,378, 11–21–67, Cl. 68—18.
- Kahn, Walter C., to Electro-Trace Corp. Pipe heating arrangement. 3,354,292, 11–21–67, Cl. 219—301.
- Kain, Per, and V. Torok, to Allmanna Svenska Elektriska Aktiebolaget. Rolling mill. 3,353,384, 11–21–67, Cl. 72—19.
- Kaiser Aluminum & Chemical Corp.: *See—*
  - Raine, Frank F., and Cooper. 3,353,976.
  - Smith, Arthur D., Henrickson, and Langewis. 3,353,394.
- Kaiser, Karl: *See—*
  - Sennewald, Kurt, Vogt, Weiden, Kaiser, and Komischke. 3,354,055.
- Kalina, Ben F. Can device. 3,353,700, 11–21–67, Cl. 220—1.
- Kalinke, Elroy B.: *See—*
  - Hammons, Carl A., Kalinke, and Smith. 3,353,371.
- Kalkanis, James N. Meat holding device. 3,353,578, 11–21–67, Cl. 146—218.
- Kamins, Seymour, and N. Rosenberg, to C-Thru Products, Inc. Handle for synthetic resinous bags. 3,353,741, 11–21–67, Cl. 229—54.
- Kaminski, Elton G.: *See—*
  - Stolle, Ralph J., and Kaminski. 3,353,515.
- Kan, David T., to Fairchild Camera and Instrument Corp. High-frequency astable nonsaturating multivibrator. 3,354,409, 11–21–67, Cl. 331—113.
- Kane, Bernard J., to The Glidden Co. Novel camphane derivatives. 3,354,225, 11–21–67, Cl. 260—611.
- Kane, James T., to Eastern Steel Barrel Corp. Shipping container. 3,353,705, 11–21–67, Cl. 220—67.
- Kao, Lin, to Admiral Corp. Color demodulator. 3,354,265, 11–21–67, Cl. 178—5.4.
- Kappenhagen, George A., and R. J. Avalon, to The Ohio Crankshaft Co. Two alternate conducting multivibrators powered by AC source. 3,354,350, 11–21–67, Cl. 315—205.
- Karge, Maxwell R. Linear motion bearing assembly. 3,353,875, 11–21–67, Cl. 308—6.
- Karlsson, Sven O.: *See—*
  - Grees, Karl L., and Karlsson. 3,354,326.
- Karmas, George, to Ortho Pharmaceutical Corp. 3-alkylene hemithioketals and 3-enol ethers of steroids. 3,354,153, 11–21–67, Cl. 260—239.55.
- Karp, Richard M.: *See—*
  - Horwitz, Lawrence P., and Karp. 3,354,296.
- Karsh, Irving: *See—*
  - Burdorf, Donald L., Blakistone, and Karsh. 3,353,734.
- Kasser, Alexander: *See—*
  - Kasser, Ivan M. and A. 3,354,141.
- Kasser, Ivan M. and A. Method for preparing viscose spinning solution. 3,354,141, 11–21–67, Cl. 260—217.
- Kassinger, Rudolph: *See—*
  - Panzer, Jerome, Nixon, and Kassinger. 3,354,086.
- Katzer, Melvin F., to Dow Chemical Co. Aqueous gel of water-swellable acrylic polymer and non-ionic filler. 3,354,084, 11–21–67, Cl. 252—2.
- Katzschmann, Ewald, to Chemische Werke Witten G.m.b.H. Process for the preparation of monophenyl ethers of glycols. 3,354,227, 11–21–67, Cl. 260—613.
- Kaufman, Herbert C., to Olin Mathieson Chemical Corp. Meta-phenylphenoxy substituted siloxanes and process therefor. 3 354,194, 11–21–67, Cl. 260—448.8.
- Kawano, Reijiro: *See—*
  - Amada, Sanae, Kawano, Arakawa, and Iwano. 3,353,648.
- Kawerninski, Leopold I.: *See—*
  - Mathews, Sydney T., and Kawerninski. 3,353,512.
- Kay, Eric, to International Business Machines Corp. Cylindrical cathode sputtering apparatus including means for establishing a quadrupole magnetic field transverse of the discharge. 3,354,074, 11–21–67, Cl. 204—298.
- Kayser, James H., and W. C. Flanagan, Jr., to Minnesota Mining and Mfg. Co. Adherent fasteners. 3,353,663, 11–21–67, Cl. 206—59.
- Kean, George W.: *See—*
  - Sylvain, Gerard A., and Kean. 3,353,778.
- Keast, Russell R., to FMC Corp. Preparation of stable, free-flowing mixtures of alkali metal dichloroisocyanurates and sodium tripolyphosphate. 3,354,090, 11–21–67, Cl. 252—99.
- Keedwell, Cyril A.: *See—*
  - Pall, David B., and Keedwell. 3,353,682.
- Keegan, Jack J.: *See—*
  - Cliffgard, Arnie L., Keegan, and Randall. 3,354,355.
- Keel, Alvin M., and D. I. Saxon, to Eastman Kodak Co. Textile crimping. 3,353,222, 11–21–67, Cl. 19—66.
- Keene, Edwin E.: *See—*
  - Wheeler, Paul L. B., and Keene. 3,353,328.
- Keinanen, Henry J.: *See—*
  - Sennello, Joseph J., and Keinanen. 3,354,287.
- Kelleher, Kenneth S. Steerable antenna array. 3,354,461, 11–21–67, Cl. 343—854.
- Kelley, John J., to The Electric Storage Battery Co. Method for increasing the porosity of a predominately nickel-containing porous electrode. 3,354,001, 11–21–67, Cl. 136—120.
- Kelly, Charles A.: *See—*
  - Broderick, John W., Florenza, Kelly, and Kozar. 3,353,669.
- Kelsof, Henry R.: *See—*
  - Bradford, Rex C., Cook, and Kelsof. 3,353,261.
- Kelstrom, Donald G., to Calumet & Hecla, Inc. Apparatus for use in corrugated metal hose. 3,353,389, 11–21–67, Cl. 72—77.
- Kemp, Trent H.: *See—*
  - Kersey, Frank N., J. L. Kersey, Jr., and Kemp. 3,353,504.
- Kendall, Geoffrey F.: *See—*
  - Bunyard, Alan D., Kendall, and Lowenthal. 3,353,375.
- Kennedy, Patrick B.: *See—*
  - Bowman, Thomas E., and Kennedy. 3,353,742.
- Kentucky Electronics, Inc.: *See—*
  - Yorns, Edward E. 3,354,338.
- Kerman, Mark. Positioning hinge for doors and the like. 3,353 206, 11–21–67, Cl. 16—139.
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  - Boettcher, Alfred. 3,354,043.
- Kernforschungsanlage Julich des Landes Nordrhein-Westfalen: *See—*
  - Knacke, Ottmar, Laser, Merz, and Riedel. 3,353,929.
- Kersey, Frank N., J. L. Kersey, Jr., and T. H. Kemp, to "Automatic" Sprinkler Corp. of America. Convertible mine cars with flanged and rubber tired wheels. 3,353,504, 11–21–67, Cl. 105—215.
- Kersey, John L., Jr.: *See—*
  - Kersey, Frank N., J. L. Kersey, Jr., and Kemp. 3,353,504.
- Ketterle, Walter, H. Steuer, and R. Pataky, to Reimers Gatriebe Kommanditgesellschaft. Steel link chain. 3,353,421, 11–21–67, Cl. 74—253.
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- Kieslich, Klaus: *See—*
  - Raspe, Gerhard, Kieslich, Olivar, Muller, and Wagner. 3,354,186.

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- Kikuchi, Wahei, and M. Watanabe, to Hitachi, Ltd. Method for manufacturing a heat exchanger. 3,353,250, 11–21–67, Cl. 29—157.3.
- Kilburn, Keith D., to Brown and Williamson Tobacco Corp. Smoking tobacco including releasable flavorant. 3,353,542, 11–21–67, Cl. 131—17.
- Kiley, William R.: *See—*
  - Engel, Frederick, and Kiley. 3,354,308.
- Killick, Herbert P., and P. Hawtin, to The Dental Mfg. Co. Ltd. Fluid driven motor unit for dental apparatus. 3,353,450, 11–21–67, Cl. 91—175.
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- Kimball, W. W., Co.: *See—*
  - Habig, John B., and Schuler. 3,353,434.
- Kinelogic Corp.: *See—*
  - Burdorf, Donald L., Blakistone, and Karsh. 3,353,734.
- King, Richard G.: *See—*
  - Cloud, Charles E., and King. 3,353,329.
- King, William W., to Meyer Products, Inc. Angling and locking arrangement for vehicular mounted plow attachments. 3,353,287, 11–21–67, Cl. 37—42.
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- Kinser, Vernon. Swingable horseshoe stake with shock absorbing means. 3,353,828, 11–21–67, Cl. 273—104.
- Kirk & Blum Mfg. Co., The: *See—*
  - Carsey, Eugene A. 3,353,340.
- Kirkpatrick, Milton E., to TRW Inc. Method of bonding porous tungsten. 3,353,259, 11–21–67, Cl. 29—487.
- Kish, Frank and M. Package tie. 3,353,228, 11–21–67, Cl. 24—18.
- Kish, Maria: *See—*
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- Kiss, Zoltan J., to Radio Corp. of America. Element and apparatus for generating coherent radiation. 3,354,406, 11–21–67, Cl. 331—94.5.
- Kitchen, Alonzo G.: *See—*
  - Hogan, John P., and Kitchen. 3,354,235.
- Kitzen, Maurice R., to Selas Corp. of America. High severity pyrolysis apparatus. 3,353,920, 11–21–67, Cl. 23—277.
- Kjellberg Elektroden & Maschinen G.m.b.H.: *See—*
  - Haase, Lothar, and Pochert. 3,354,289.
- Klein, Harvey S., to Shell Oil Co. Butene production. 3,354,236, 11–21–67, Cl. 260—683.15.
- Klein Schanzlin and Becker Aktiengesellschaft: *See—*
  - Föller, Werner. 3,353,746.
- Kleiner, Eduard: *See—*
  - Hopff, Heinrich, and Kleiner. 3,354,134.
- Klimback, Kenneth K.: *See—*
  - Freed, George H. 3,353,728.
- Kline, Granville B.: *See—*
  - Cannon, William N., Kline, and Dwight. 3,353,939.
- Kline, John C., to Eclipse Sleep Products, Inc. Border stabilizers for inner spring units. 3,353,195, 11–21–67, Cl. 5—261.
- Klingelhoefer, William C., to Allied Chemical Corp. Method and apparatus for determination of water in liquid ammonia. 3 354,057, 11–21–67, Cl. 204—1.
- Klosa, Josef, to Delmar Chemicals Ltd. Pyrazolone derivatives and process for their preparation. 3,354,167, 11–21–67, Cl. 260—295.
- Klusmire, Galen J., W. H. Borough, and J. Eichhorn, to The Dow Chemical Co. Method of protecting polished metal surfaces. 3,354,015, 11–21–67, Cl. 156—306.
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- Knapsack Aktiengesellschaft: *See—*
  - Ohorodnik, Alexander, and Legutke. 3,354,137.
  - Sennewald, Kurt, and Wirtz. 3,354,054.
  - Sennewald, Kurt, Vogt, Weiden, Kaiser, and Komischke. 3,354,055.
- Knapsack-Griesheim Aktiengesellschaft: *See—*
  - Archinal, Ernst, and Wehlitz. 3,354,255.
  - Cremer, Joseph, and Rodis. 3,353,908.
- Knecht, George W., to Murray Mfg. Corp. One-half width circuit breaker mounting means. 3,354,284, 11–21–67, Cl. 200—168.
- Knight, Deral D., to Byron Jackson, Inc. Treatment of wells. 3,353,603, 11–21–67, Cl. 166—42.
- Knoedler, Fred E. Revolving base for pool table. 3,353,777, 11–21–67, Cl. 248—188.2.
- Knoth, Walter H., Jr., and R. H. Michel, to E. I. du Pont de Nemours and Co. Polymers of polyhedral boron compounds. 3,354,121, 11–21–67, Cl. 260—47.
- Knox, George W., and W. F. Crowe. Automatic multi-dosage inoculating instrument. 3,353,537, 11–21–67, Cl. 128—218.
- Ko, Yasuo, to Kokusai Denki Kabushiki Kaisha. Electromechanical filter for low frequencies. 3,354,413, 11–21–67, Cl. 333—72.
- Kober, Ehrenfried H., and H. F. Lederle, to Olin Mathieson Chemical Corp. Derivatives of chloromethylated diphenyl ethers. 3,354,226, 11–21–67, Cl. 260—613.
- Kobrehel, Peter M., to General Motors Corp. Molding retainer clip. 3 353,229, 11–21–67, Cl. 24—73.
- Koch, Bernhard R., to Grob & Co., A.G. Doup heddle carrying rod for leno and cross weaving. 3,353,569, 11–21–67, Cl. 139—51.

- Koch, Otto: *See—*
  - Stein, Werner, Koch, and Weiss. 3,354,187.
- Kohli, Ortwin: *See—*
  - Lohmar, Walther, Harnisch, Schmahl, Kohli, and Spenner. 3,353,398.
- Kokusai Denki Kaubushiki Kaisha: *See—*
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- Kolb, Ernest D., and R. A. Laudise, to Bell Telephone Laboratories, Inc. Hydrothermal growth of zinc oxide crystals with ammonium ion additives. 3,353,926, 11–21–67, Cl. 23—301.
- Kollar, Lyle T., and R. S. Stutsman, to Tru Heat Corp. Tubular, electrical, heating element with bulkhead fitting. 3,354,294, 11–21–67, Cl. 219—536.
- Kolomensky Teplovozstroitelny Zavod imeni V.V. Kuibysheva: *See—*
  - Meden, Alexander I., and Surov. 3,353,523.
- Komischke, Peter: *See—*
  - Sennewald, Kurt, Vogt, Weiden, Kaiser, and Komischke. 3,354,055.
- Kono, Seki: *See—*
  - Sato, Toshiyuki, and Kono. 3,353,731.
- Koot, Alphonsus E., to Aluminum Body Corp. Vehicle body panel construction. 3,353,863, 11–21–67, Cl. 296—28.
- Koratron Co., Inc.: *See—*
  - Englert, Robert D., Swidler, Berriman, and Wade. 3,353,904.
- Koretzky, Herman, to International Business Machines Corp. Electrodeposition of nickel-iron magnetic alloy film. 3,354,059, 11–21–67, Cl. 204—12.
- Kortkamp, Donald H., and J. M. Smith, to General Electric Co. Sandwiched construction for a tunnel diode. 3,354,361, 11–21–67, Cl. 317—234.
- Koshar, Robert J.: *See—*
  - Husted, Donald R., and Koshar. 3,354,216.
- Kosrow, Robert L.: *See—*
  - Smith, Robert E., Kosrow, and Attwood. 3,353,821.
- Kossoff, Joseph: *See—*
  - Ryan, John W., Kossoff, May, and Cowell. 3,353,296.
- Kotoucek, Waldemar R., to Ford Motor Co. Single pedal dual brake system. 3,353,635, 11–21–67, Cl. 188—106.
- Kovats, Andre. Stationary hot air building heating system using a gas turbine driven fan. 3,353,529, 11–21–67, Cl. 126—110.
- Koyak, Joseph W., to Vandercook & Sons, Inc. Inking system for printing presses. 3,353,484, 11–21–67, Cl. 101—350.
- Kozacik, John J., to Philip Carey Mfg. Co. Cement-asbestos products, and improvement in the manufacture thereof. 3.334,031, 11–21–67, Cl. 162—145.
- Kozar, Michael: *See—*
  - Broderick, John W., Florenza, Kelly, and Kozar. 3,353,669.
- Krajewski, Edward Z., to Litton Precision Products, Inc. Food package for use in microwave heating apparatus. 3,353,968, 11–21–67, Cl. 99—192.
- Kramer, Friedrich S. Method and apparatus for the separation of straw and manure. 3,353,947, 11–21–67, Cl. 71—21.
- Kranz, Joachim, and R. Polster, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of polyhalogenated copper phthalocyanines having high color strength and soft grain. 3,353,977, 11–21–67, Cl. 106—288.
- Kraus, Gerard: *See—*
  - Gruver, Jerry T., and Kraus. 3,354,116.
- Krock, Richard H.: *See—*
  - Zdanuk, Edward J., and Kroch. 3,353,931.
  - Zdanuk, Edward J., and Krock. 3,353,933.
- Krogstad, Reuben S.: *See—*
  - Vail, Victor, Krogstad, Moss, and Hagman. 3,354,311.
- Krohn, Lloyd N.: *See—*
  - Cloud, Charles E., and Krohn. 3,353,218.
- Kronsbein, Curt., to Maschinenfabrik Eugen Bellmann G.m.b.H. Device for pulling off stockings from forms and depositing them. 3,353,726, 11–21–67, Cl. 223—112.
- Kroon, James L., and R. A. Davis, to The Dow Chemical Co. Propellant comprising a perfluoroguanidine containing oxidant and a fuel. 3,354,011, 11–21–67, Cl. 149—22.
- Krupick, Walter J.: *See—*
  - Tiplitz, Charles I., and Krupick. 3,353,415.
- Krysinski, Edwin, to The R. C. Mahon Co. Cellular floor construction. 3,353,313, 11–21–67, Cl. 52—100.
- Kubera, Gerhard, to Teves-Thompson & Co., G.m.b.H. Method of producing piston rings. 3,353,247, 11–21–67, Cl. 29—156.6.
- Kucera, Clare H.: *See—*
  - Gibson, Daniel L., Eilers, West, and Kucera. 3,353,604.
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- Kuhlmann, Karlheinz, to Olympia Werke AG. Device for temperature compensation of magnetic storage cores in data processing installations. 3,354,443, 11–21–67, Cl. 340—174.
- Kuhne, Rudolf, F. Meininger, and R. Pfirrmann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Anthraquinone dyestuffs. 3,354,182, 11–21–67, Cl. 260—374.
- Kuiper, Adrianus: *See—*
  - Almer, Friedrich H. R., Schrijnemakers, Kuiper, and Van Rooy. 3,354,340.
- Kulka, Raymond, to International Business Machines Corp. Binary counter. 3,354,295, 11–21–67, Cl. 235—92.
- Kurowawa Tele-Communications Ltd.: *See—*
  - Amada, Sanae, Kawano, Arakawa, and Iwano. 3,353,648.
- Kuryla, William C., to Union Carbide Corp. Polyurethanes prepared from reaction products of polyoxyalkylene polyols and orthoesters. 3,354,100, 11–21–67, Cl. 260—2.5.

- Kurz, Otto: *See—*
  - Dangelmaier Karl, Griesinger, Kurz, Schneider, and Scholl. 3,353,822.
- Kurz, Ulrich: *See—*
  - Cremer, Lothar, Kurz, and Hubert. 3,353,626.
- Kvalheim, Andrew M. and I. S. Panel texturing device. 3,353,574, 11–21–67, Cl. 144—2.
- Kvalheim, Irwin S.: *See—*
  - Kvalheim, Andrew M. and I. S. 3,353,574.
- Kwake, John P. Inflatable structure. 3,353,309, 11–21–67, Cl. 52—2.
- Kwolek, Stephanie L.: *See—*
  - Hill, Harold W., Jr., Kwolek, and Sweeny. 3,354,127.
- Laboratoires Om Societe Anonyme: *See—*
  - Subirana, Antonio E. 3,354,201.
- Lachowicz, Stefan K., C. J. Brown, B. E. V. Bowen, and F. C. Newman, to The Distillers Co. Ltd. Production of ethyl acrylate. 3,354,199, 11–21–67, Cl. 260—486.
- La Combe, Edward M.: *See—*
  - Bailey, Frederick E., Jr., La Combe, and Raines. 3,354,087.
- La Crosse Cooler Co.: *See—*
  - Amundsen, Ralph D. 3,353,743.
- Lahaug, Henry A. Defense ring. 3,353,749, 11–21–67, Cl. 239—154.
- Lamar, Charles C., to Harper-Wyman Co. Control apparatus. 3,354,279, 11–21–67, Cl. 200—140.
- Lamb, James J., to Sperry Rand Corp. Document reading system. 3,354,432, 11–21–67, Cl. 340—146.3.
- Lambeir, Silvaan R.: *See—*
  - Vereycken, Modest C., and Lambeir. 3,354,416.
- Lambert, Douglas R. M., and J. M. Sharkey, to National Dairy Products Corp. Method of and apparatus for handling cheese curd. 3,353,269, 11–21–67, Cl. 31—5.
- Lambert, Warren G. Automotive speed zone control system. 3,353,619. 11–21–67, Cl. 180—98.
- Lamberti, Martin J. Pocket size combination toothbrush and paste dispenser. 3,353,898, 11–21–67, Cl. 401—132.
- Land, Edwin H., to Polaroid Corp. Photographic flash apparatus and method. 3,353,464, 11–21–67, Cl. 95—11.
- Landau, Raphael. Method for the preparation of light-sensitive diazotype materials and improved materials prepared by such method. 3,353,984, 11–21–67, Cl. 117—34.
- Landers, Leo A.: *See—*
  - Schmitt, Joseph M., Landers, and Terenzi. 3,354,238.
- Landis, Phillip S., and P. B. Venuto, to Mobil Oil Corp. Production of phenols. 3,354,221, 11–21–67, Cl. 260—592.
- Landsberg, Meyer I.: *See—*
  - Lastnik, Abraham L., and Landsberg. 3,353,187.
- Landy, Arney, Jr., and T. D. Lode, to Honeywell Inc. Pulse torque control apparatus. 3,354,366, 11–21–67, Cl. 318—18.
- Lane, Trent: *See—*
  - Gamble, Leon W., and Lane. 3,354,317.
- Lang, Ernest U., to National-Standard Co. Wire supply apparatus. 3,353,730, 11–21–67, Cl. 226—43.
- Lang, Karl A. Furnace heating apparatus. 3,354,257, 11–21–67, Cl. 13—24.
- Langas, Arthur: *See—*
  - Howard, Frank C., and Langas. 3,353,737.
- Langenstein & Schemann AG.: *See—*
  - Brauer, Willi. 3,353,396.
- Langewis, Cornelis: *See—*
  - Smith, Arthur D., Henrickson, and Langewis. 3,353,394.
- Langguth, Erich, and L. Belove, to Sonotone Corp. Alkaline battery cells with silver-oxide or silver electrodes. 3,353,998, 11–21–67, Cl. 136—6.
- Langren, Robert J., to Gilbert Hyde Chick Co. Retractable saddle standard. 3,353,820, 11–21–67, Cl. 269—328.
- Langridge, Arthur, W. B. Glass, H. W. Grimwood, and B. A. Hegarty, to Westinghouse Brake and Signal Co. Ltd. Semiconductor junction with a depletion layer. 3,354,003, 11–21–67, Cl. 148—33.
- Lanphere, Robert E.: *See—*
  - MacAllister, Robert V., Crosby, and Lanphere. 3,354,046.
- La Pine Scientific Co.: *See—*
  - Hursh, Ronald, and Ringhofer. 3,353,284.
- La Publicite Francaise: *See—*
  - Dangauthier, Marcel. 3,353,422.
- Lara, Eusebio R. Tool for installing assemblies to carry windshield wiper blades. 3,353,253, 11–21–67, Cl. 29—239.
- Larrison, Millard S., to Union Carbide Corp. Diphosphites. 3,354,241, 11–21–67, Cl. 260—929.
- Larsen, Raymond B., to Electric Information Co. Frequency coded digital recording system. 3,354,463, 11–21–67, Cl. 346—74.
- Larson, Leslie B. Attachment for envelope handling machine. 3,353,461, 11–21–67, Cl. 93—62.
- Larson, Robert W., O. E. Olson, W. D. Harkness, and W. E. Mair. Method of delimbing and felling trees. 3,353,575, 11–21–67, Cl. 144—309.
- Laser, Manfred: *See—*
  - Knacke, Ottmar, Laser, Merz, and Riedel. 3,353,929.
- Lastnik, Abraham L., and M. I. Landsberg, to United States of America, Army. Protective helmet. 3,353,187, 11–21–67, Cl. 2—3.
- Latham, Burton F., Jr., and R. G. James, to Continental Carbon Co. Method and apparatus for making carbon black. 3,353,915, 11–21–67, Cl. 23—209.4.
- Laudise, Robert A.: *See—*
  - Kolb, Ernest D., and Laudise. 3,353,926.
- Laureti, Remo J., to Wall Industries, Inc. Foamed synthetic polymer cordage. 3,353,346, 11–21–67, Cl. 57—140.
- Laurisio, Jeremiah, to American Flange & Mfg. Co., Inc. Plastic container closure assembly. 3,353,849, 11–21–67, Cl. 285—21.
- Lavik, Arne, to Hughes Aircraft Co. Traveling-wave tube having loss-filled, capacitively-coupled cavities coupled to the interaction cells of the slow-wave structure. 3,354,346, 11–21–67, Cl. 315—3.5.
- Lawn, Raymond J.: *See—*
  - Schroeder, Wesley D., and Lawn. 3,354,176.
- Lawrence, Frank D. Carriers made from cardboard or similar materials. 3,353,709, 11–21–67, Cl. 220—112.
- Lazear, William H., and R. F. Hrudka, to H & L Machine Corp. Bag making apparatus. 3,354,017, 11–21–67, Cl. 156—494.
- Lazear, William H., to H & L Machine Corp. Apparatus for heat sealing including a clamp and a heated wire. 3,354,018, 11–21–67, Cl. 156—515.
- Lederle, Henry F.: *See—*
  - Kober, Ehrenfried H., and Lederle. 3,354,226.
- Lee, Jon W., and J. T. Feid, to Owens-Corning Fiberglas Corp. Dropped ceiling ventilator apparatus. 3,353,472, 11–21–67, Cl. 98—40.
- Lee-Norse Co.: *See—*
  - Arentzen, Einar M. 3,353,871.
- Leece-Neville Co., The: *See—*
  - Abel, Edmund A., Jr. 3,353,425.
- Leeds, J. Venn, Jr., to Esso Production Research Co. Electrical wave shaping apparatus and conversion apparatus. 3,354,377, 11–21–67, Cl. 321—8.
- Leeds & Northrup Co.: *See—*
  - Bard, Irving G., and Rogers. 3,354,452.
  - Payne, James F., Jr. 3,354,391.
- Leeman, Jan N. J., to Stamicarbon N.V. Apparatus for the wet-screening of particles. 3,353,674, 11–21–67, Cl. 209—240.
- Legoux, Rene, to North American Philips Co., Inc. Method of manufacturing electron tubes. 3,353,889, 11–21–67, Cl. 316—17.
- Legoux, Rene, to North American Philips Co., Inc. Methods of manufacturing electron tubes having a photo-sensitive layer in a vacuum space tube manufactured by said methods and devices for carrying out said methods. 3,353,890, 11–21–67, Cl. 316—19.
- Legue, Ronald L.: *See—*
  - Gates, James T., Legue, and Dick. 3,353,347.
- Legutke, Günter: *See—*
  - Ohorodnik, Alexander, and Legutke. 3,354,137.
- Lehmann, Harold A., to J. I. Case Co. Control mechanism for power operated machinery. 3,353,423, 11–21–67, Cl. 74—526.
- Lemelson, Jerome H. Display devices. 3,353,897, 11–21–67, Cl. 350—167.
- Lenoble, Raymond. Flexible mold for molding a frame onto a pane. 3,353,220, 11–21–67, Cl. 18—36.
- Leon, Edward, E. D. Weil, and J. Linder, to Hooker Chemical Corp. Trichlorofuramides. 3,354,157, 11–21–67, Cl. 260—247.7.
- Leonard, Lawrence and R. L. Chock device for wheels. 3,353,633, 11–21–67, Cl. 188—32.
- Leonard, Richard L.: *See—*
  - Leonard, Lawrence and R. L. 3,353,633.
- Lepiane, Donald C., and H. N. Zimmerman, to Western Electric Co., Inc. Methods of applying doping compositions to base materials. 3,354,005, 11–21–67, Cl. 148—186.
- Leshe, Charles M.: *See—*
  - Fly, Gale S., and Leshe. 3,354,380.
- Leslie, Catherine M.: *See—*
  - Leslie, Ivan A. 3,353,640.
- Leslie Co.: *See—*
  - Muller, John T., Hodgson, and Bremer. 3,353,530.
- Leslie, Ivan A., deceased (by C. M. Leslie, executrix), to The Singer Co. Combination handwheels and handwheel clutches for sewing machines. 3,353,640, 11–21–67, Cl. 192—67.
- Leslie, Kenneth G., and H. C. Zeisloft, to General Motors Corp. Vehicle road speed control. 3,353,620, 11–21–67, Cl. 180—108.
- Lester, George R., to Universal Oil Products Co. Quantitative recovery of bromine by two stage catalytic oxidation of hydrogen bromide. 3,353,916, 11–21–67, Cl. 23—216.
- Letter, Eugene C., to Bausch & Lomb Inc. Method for changing the physical characteristics of an article by electron bombardment. 3,354,064, 11–21–67, Cl. 204—157.1.
- Letzel, Karl: *See—*
  - Froitzheim, Hans, and Letzel. 3,353,861.
- Levesque, Charles R., and W. M. Mitchell, to Goodyear Aerospace Corp. Explusion apparatus. 3,353,446, 11–21–67, Cl. 89—1.5.
- Levine, Irving A. Button cover. 3,353,231, 11–21–67, Cl. 24—113.
- Levy, Dale F.: *See—*
  - Draper, Homer L., and Levy. 3,353,798.
- Lewis, Clyde P. Trailer hitch. 3,353,842, 11–21–67, Cl. 280—447.
- Lewis, George E., to Hydrill Co. Underwater control system. 3,353,594, 11–21–67, Cl. 166—.6.
- Ley, Ralph G., to Blackstone & Co., Ltd. Internal combustion piston engines. 3,353,521, 11–21–67, Cl. 123—32.
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- Lichte, Albert, to Schloemann Aktiengesellschaft. Apparatus for annealing continuous metal bands in a vacuum. 3,353,806, 11–21–67, Cl. 266—3.
- Liggett, Robert D., J. M. White, Jr., and W. M. Pelino, to Servo Corp. of America. Hot-bed detector. 3,354,306, 11–21–67, Cl. 246—169.
- Lilly, Eli and Co.: *See—*
  - Cannon, William N., Kline, and Dwight. 3,353,939.
  - Gorman, Marvin. 3,354,163.
- Limpel, Lawrence E.: *See—*
  - Osgood, Edmond R., Limpel, and Annis. 3,354,179.

- Lind, Wallace E., J. F. Clearman, I. G. Dutcher, and R. E. Johnson, to Whirlpool Corp. Dishwashing apparatus. 3,353,553, 11–21–67, Cl. 137—567.
- Lindeboom, Herman, to Sealol, Inc. Fluid radial and thrust bearing. 3,353,877, 11–21–67, Cl. 308—9.
- Linder, Jerome: *See—*
  - Leon, Edward, Weil, and Linder. 3,354,157.
- Ling-Temco-Vought, Inc.: *See—*
  - Councilman, Richard R. 3,353,290.
- Link, David H., to Clark Equipment Co. Attachment for industrial truck. 3,353,698, 11–21–67, Cl. 214—730.
- Linkous, Clovis E., to General Electric Co. Apparatus for effecting conductor-placing operations on electrical coils in inductive devices. 3,353,251, 11–21–67, Cl. 29—205.
- Lions, Earl P., and J. Vom Baur, to American Radiator & Standard Sanitary Corp. Fluid treating apparatus and packing construction therefor. 3,353,799, 11–21–67, Cl. 261—3.
- Little, John C., to The Dow Chemical Co. Preparation of omega-amino acids. 3,354,203, 11–21–67, Cl. 260—534.
- Litton Precision Products, Inc.: *See—*
  - Krajewski, Edward Z. 3,353,968.
- Litton Systems, Inc.: *See—*
  - Reimann, William G., and Vavra. 3,354,353.
- Livermore, Thomas L. Apparatus for continuously embedding flexible cable in plaster ceilings. 3,353,323, 11–21–67, Cl. 52—749.
- Lloyd, Louis E. Breakwater. 3,353,361, 11–21–67, Cl. 61—3.
- Lochmann, Robert L.: *See—*
  - Whaley, John A., and Lochmann. 3,354,387.
- Lock Thread Corp.: *See—*
  - Evans, Edwin R. 3,353,581.
- Lockheed Aircraft Corp.: *See—*
  - Dalton, William L. 3,353,655.
- Lode, Tenny, to Rosemount Engineering Co. Impedance network system. 3,354,401, 11–21–67, Cl. 330—10.
- Lode, Tenny D.: *See—*
  - Landy, Arney, Jr., and Lode. 3,354,366.
- Lodge and Shipley Co.: *See—*
  - Rowekamp, Edward F. 3,353,331.
- Loewe Opta Aktiengesellschaft: *See—*
  - Rank, Wolfgang. 3,354,269.
- Loewen, Erwin G., and R. J. Meltzer, to Bausch & Lomb Inc. Optical illumination and sensing system including a plurality of optical fiber means. 3,354,319, 11–21–67, Cl. 250—227.
- Loftus Engineering Corp.: *See—*
  - Suydam, Walter. 3,353,804.
- Loh, Ernst, and W. Doll, to Wilhelm Loh K.G. Optikmaschinenfabrik. Charging device for machines for working optical lenses. 3,353,695, 11–21–67, Cl. 214—89.
- Loh, Wilhelm, K.G. Optikmaschinenfabrik: *See—*
  - Loh, Ernst, and Doll. 3,353,695.
- Lohmar, Walther, H. J. Harnisch, J. Schmahl, O. Kohll, and A. Spenner, to Farbenfabriken Bayer Aktiengesellschaft. Method and apparatus for testing the lubrication behaviour of lubricants. 3,353,398, 11–21–67, Cl. 73—10.
- Löhr, Alfred: *See—*
  - Wilhelm, Alfred, and Löhr. 3,353,477.
- Loizides, Edward: *See—*
  - Carthew, John R., Loizides, and Mitta. 3,354,437.
  - Carthew, John R., Loizides, and Mitta. 3,354,450.
- Loma Industries, Inc.: *See—*
  - Barnett, Louis H., and Haynie. 3,353,221.
- Lombard, Albert E., Jr., and J. E. Dueker, to McDonnell Aircraft Corp. Photosensitive device for indicating position and intensity with centrally located electrode. 3,354,313, 11–21–67, Cl. 250—212.
- Lommen, Alan J., and M. M. Haakenson. Resilient hitch. 3,353,843, 11–21–67, Cl. 280—486.
- Long, George R.: *See—*
  - Dodson, William C., Jr., and Long. 3,353,225.
- Long, Russell K., and J. P. Mize, to Texas Instruments Inc. Method of forming a diode by using a mask and diffusion. 3.354,006, 11–21–67, Cl. 148—187.
- Loutte, Jean, to Glaverbel. Apparatus for the manufacture of sheet glass on a molten bath. 3,353,943, 11–21–67, Cl. 65—182.
- Love, Jefferson C. Multi-use applicator. 3,353,721, 11–21–67, Cl. 222—209.
- Love, Richard R. Wheel and axle assembly. 3,353,840, 11–21–67, Cl. 280—124.
- Lovell Mfg. Co.: *See—*
  - Conlee, George D. 3,353,382.
- Lovingham, Joseph J., to Thiokol Chemical Corp. Rocket motor construction. 3,353,358, 11–21–67, Cl. 60—259.
- Lowell, Peter M., C. S. Balaz, and M. E. Anderson, to Friden, Inc. Print wheel setting control in postage meters. 3,353,480, 11–21–67, Cl. 101—91.
- Lowenthal, Hans: *See—*
  - Bunyard, Alan D., Kendall, and Lowenthal. 3,353,375.
- Lowy, Paul M., to Mesta Machine Co. Roll grinders. 3,353,302, 11–21–67, Cl. 51—49.
- Loyd, Calvin D.: *See—*
  - Oberle, Theodore L., Calton, Loyd, and White. 3,353,935.
- Lubinski, Arthur, to Pan American Petroleum Corp. Pile driving. 3,353,362, 11–21–67, Cl. 61—53.5.
- Ludkin, Basil A., ½ each to Drallim Industries Ltd., and A. W. Millard. Fluid control valves. 3,353,554, 11–21–67, Cl. 137—595.
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- Luketa, Frank J. Ballast and buoyancy attachments for trawl doors. 3,353,292, 11–21–67, Cl. 43—9.
- Luketa, Frank J. Try net trawl doors. 3,353,293, 11–21–67, Cl. 43—9.
- Lummus Co., The: *See—*
  - Guerrieri, Salvatore A. 3,353,906.
- Lund, Nean K.: *See—*
  - Heber, Emery, and Lund. 3,354,400.
- Lund, Richard B., P. W. Simon, and J. Vitrone, to Allied Chemical Corp. Process for the simultaneous preparation of epsilon-caprolactam and aromatic acids. 3,354,148, 11–21–67, Cl. 260—239.3.
- Lund, Richard B., A. C. Pierce, and E. Turi, to Allied Chemical Corp. Alpha,alpha′-diphenoxy-2,3,5,6-tetrachloro-p-xylenes. 3,354,228, 11–21–67, Cl. 260—613.
- Lutton, Edwin S., to The Procter & Gamble Co. Salad oils and method of making them. 3,353,967, 11–21–67, Cl. 99—163.
- Lutton, Edwin S.: *See—*
  - Hugenberg, Frederick R., and Lutton. 3,353,966.
- Lyle, Aaron K., to Emhart Corp. Apparatus for applying coatings to articles of glassware. 3,353,514, 11–21–67, Cl. 118—49.
- Lynch, Edward I.: *See—*
  - Swain, David L., and Lynch. 3,354,379.
- Lynn, Alexander L.: *See—*
  - Broeker, Hermann L., Dupont, and Lynn. 3,354,331.
- M & J Valve Co.: *See—*
  - Grove, Marvin H. 3,353,784.
- Maas, Russell H.: *See—*
  - Podebradsky, Everett V., and Maas. 3,353,963.
- MacAllister, Robert V., E. K. Crosby, and R. E. Lanphere, to Standard Brands Inc. Method of treating starch slurries to improve their filterability. 3,354,046, 11–21–67, Cl. 195—7.
- Mac/Bee Engineering Inc.: *See—*
  - McCulloch, Doyle W. 3,353,560.
- MacCorkell, Albert W. Beverage dispenser. 3,353,474, 11–21–67, Cl. 99—281.
- MacDonald, Norman C.: *See—*
  - Green, Louis G. 3,353,856.
- Macfall, Derek, C. E. and R. S. Butterfield, to United Kingdom Atomic Energy Authority. Nuclear reactor fuel elements. 3,354,045, 11–21–67, Cl. 176—78.
- MacFarlane, Charles E., and C. G. Hoge, to Westinghouse Air Brake Co. Method of making a fabricated valve bushing. 3,353,249, 11–21–67, Cl. 29—157.1.
- MacLean, Allister N.: *See—*
  - Hearn, William R., MacLean, and Trusler. 3,354,091.
- MacLeod, David M.: *See—*
  - Ilnyckyj, Stephan, and MacLeod. 3,354,106.
- MacMillan, Charles W., to Beer Mfg Co. Indicating attachment for wheel alinement testers. 3,353,278, 11–21–67, Cl. 33—203.14.
- MacNeil, Norman H., to Hewlett-Packard Co. Overload stop for pressure transducer. 3,353,410, 11–21–67, Cl. 73—406.
- Maco Industries, Inc.: *See—*
  - Madson, Mayne M. 3,353,245.
- Macon, Charles E., R. S. Barton, P. A. Quantz, and G. T. Shimabukuro, to Burroughs Corp. Data processor. 3,354,429, 11–21–67, Cl. 340—172.5.
- Madison, Norman L., to The Dow Chemical Co. Copolymerization of NF compound and formaldehyde. 3,354,211, 11–21–67, Cl. 260—564.
- Madson, Mayne M., to Maco Industries, Inc. Insertable elastic strip. 3,353,245, 11–21–67, Cl. 29—129.5.
- Mahon, R. C., Co., The: *See—*
  - Krysinski, Ediwin. 3,353,313.
- Mahler, Hugo: *See—*
  - Jones, Ralph E., Mahler, and Weller. 3,353,230.
- Mahoney, Kenneth J. Vehicle washing assembly. 3,353,546, 11–21–67, Cl. 134—123.
- Mair, William E.: *See—*
  - Larson, Robert W., Olson, Harkness, and Mair. 3,353,575.
- Mais Ago: *See—*
  - Miller, Eugene J., Jr., and Mais. 3,354,213.
- Maitland, Arthur, to C. A. Parson & Co., Ltd. Magnetohydrodynamic apparatus. 3,354,328, 11–21–67, Cl. 310—11.
- Maiwald, Walter G., to Auergesellschaft G.m.b.H. Breathing apparatus canister. 3,353,702, 11–21–67, Cl. 220—15.
- Mallory, P. R., & Co., Inc.: *See—*
  - Rauch, Joseph R. 3,353,395.
  - Wiser, Joseph E., and Voland. 3,353,426.
  - Zdanuk, Edward J., and Krock. 3,353,931.
  - Zdanuk, Edward J., and Krock. 3,353,933.
- Maloy, Arthur L. and R. W. Cunningham to Union Carbide Corp. Catalysts of production of 1-naphthol. 3,354,231, 11–21–67, Cl. 260—621.
- Malpica, Jose M. Sensitive recording balance and scale for weighing heavy loads. 3,353,614, 11–21–67, Cl. 177—201.
- Mamo, Anthony. Boat release means for boat trailer. 3,353,694, 11–21–67, Cl. 214—82.
- Manaka, Kazuo, and T. Tomioka, to Tokyo Shibaura Electric Co., Ltd. Process of preparing filmy adhesive. 3,353,987, 11–21–67, Cl. 117—47.
- Mandel, Gerald, deceased (by R. Mandel, administratrix), and F. F. Morehead, to International Business Machines Corp. Method of forming a fabricating semiconductor by doubly diffusion. 3,354,009, 11–21–67, Cl. 148—189.
- Mandel, Ray: *See—*
  - Mandel, Gerald, Mandel, and Morehead. 3,354,009.
- Manke, Raymond F., to J. I. Case Co. Mechanical and electrical plug-in type headlamp mounting. 3,354,303, 11–21–67, Cl. 240—41.

- Marcyan, Stanley, to W. Marcyan. Lifting device. 3,353,837, 11-21-67, Cl. 280—43.13.
- Marcyan, Walter: *See—*
  - Marcyan, Stanley. 3,353,837.
- Marien, Kenneth J.: *See—*
  - Gribble, Joseph J., Marien, and Whiting. 3,354,415.
- Marini, Albert: *See—*
  - Marini, Albert, Sr. 3,353,833.
- Marini, Albert, Sr., to A. and F. Marini, co-partners, d.b.a. Marini Tool and Die Co. Collet release. 3,353,833, 11-21-67, Cl. 279—49.
- Marini, Florence: *See—*
  - Marini, Albert, Sr. 3,353,833.
- Marini Tool and Die Co.: *See—*
  - Marini, Albert, Sr. 3,353,833.
- Marino, Salvatore M., to The Singer Co. Operator assist device for sewing machines or the like. 3,353,511, 11-21-67, Cl. 112—237.
- Markham, Junius, to Swel-Plug, Inc. Pipe end insert. 3,353,565, 11-21-67, Cl. 138—89.
- Marks, Alexander A. Snow disposal units. 3,353,286, 11-21-67, Cl. 37—12.
- Marschall Dairy Laboratory, Inc.: *See—*
  - Christensen, Verle W. 3,354,049.
- Marten, Jerome H., to Chemical Construction Corp. Urea synthesis process. 3,354,205, 11-21-67, Cl. 260—555.
- Martin, David D.: *See—*
  - Belasco, Melvin, and Martin. 3,354,365.
- Martin, Willis E., P. H. Johnson, and F. L. Reaser, to The Fleming Co., Inc. Fork-lift finger construction. 3,353,697, 11-21-67, Cl. 214—620.
- Martin, Robert E.: *See—*
  - Burzynski, Alfred J., and Martin. 3,354,095.
- Martin-Marietta Corp.: *See—*
  - Pickar, Paul B., Jr. 3,353,914.
- Martinez, John S.: *See—*
  - Friedman, Burnam I., Martinez, and Jortner. 3,353,354.
- Maschmenfabrik Burckhardt A.G.: *See—*
  - Bauer, Helmut. 3,353,456.
- Maschinenfabrik Eugen Bellman G.m.b.H.: *See—*
  - Kronsbein, Curt. 3,353,726.
- Massa Division, Dynamics Corp. of America: *See—*
  - Massa, Frank. 3,354,426.
- Massa, Frank, to Dynamics Corp. of America, Massa Division. Pressure gradient hydrophone. 3,354,426, 11-21-67, Cl. 340—10.
- Mathews, Sydney T., and L. I. Kawerninski, to Canadian Patents and Development Ltd. Marine coupling. 3,353,512, 11-21-67, Cl. 114—235.
- Mathias, Joseph S., and J. J. McGee, to Sperry Rand Corp. Electroless deposition of cobalt-iron-phosphorous magnetic material. 3,353,986, 11-21-67, Cl. 117—47.
- Matson, Charles B. Folding cot structure. 3,353,194, 11-21-67, Cl. 5—118.
- Matsuda, Shougo: *See—*
  - Kida, Tokurou, Matsuda, Saito, and Yuasa. 3,353,993.
- Matsuda, Tatsuo, and T. Yumoto, to Agency of Industrial Science and Technology. Method of producing alcohol containing chlorine. 3,354,065, 11-21-67, Cl. 204—158.
- Mattel, Inc.: *See—*
  - Ryan, John W., Kossoff, May, and Cowell. 3,353,296.
- Matthias, Rudolph H.: *See—*
  - Beesley, Robert L., and Matthias. 3,353,659.
- Maugest, Jacques: *See—*
  - Biezunski, Georges, Maugest, and Peres. 3,353,711.
- Mauz, Otto, and E. Prinz, to Hercules Inc. Stabilization of polyolefins. 3,354,118, 11-21-67, Cl. 260—45.85.
- Mauz, Otto: *See—*
  - Schmidt, Heinz, Mauz, and Schulde. 3,354,117.
- May, Richard L.: *See—*
  - Ryan, John W., Kossoff, May, and Cowell. 3,353,296.
- Maybach Motorenbau G.m.b.H.: *See—*
  - Buthenhoff, Friedrich. 3,353,374.
- Mayer, Oscar, & Co., Inc.: *See—*
  - Jensen, Hans., and Eberman. 3,353,325.
- Mayes, Nathan: *See—*
  - Fein, Marvin M., Green, and Mayes. 3,354,193.
- McAx Corp.: *See—*
  - Bacher, Leo O. 3,353,318.
- McCloud, George R., to McGraw-Edison Co. Enclosed disconnect switch. 3,354,272, 11-21-67, Cl. 200—48.
- McClure, Louis C., and V. H. Davis, 33⅓% to B. A. Couch. Expansible structnre. 3,353,311, 11-21-67, Cl. 52—66.
- McConnell, Albert L.: *See—*
  - Welsh, Robert E., and McConnell. 3,353,994.
- McCulloch, Doyle W., to Mac/Bee Engineering Inc. Pulsation damping device. 3,353,560, 11-21-67, Cl. 138—30.
- McDermaid, Bernard E. Sealed hearing aid. 3,354,271, 11-21-67, Cl. 179—107.
- McDonnell Aircraft Corp.: *See—*
  - Lombard, Albert E., Jr., and Dueker. 3,354,313.
- McDonnell, John J.: *See—*
  - Bowers, Lester T., and McDonnell. 3,353,970.
- McDowell-Wellman Engineering Co.: *See—*
  - Ludwig, Carl. 3,353,692.
- McGee, Joseph John: *See—*
  - Mathias, Joseph S., and McGee. 3,353,986.
- McGraw Edison Co.: *See—*
  - Hitzeroth, Franklin C. 3,353,573.
  - McCloud, George R. 3,354,272.
- McGregor, Arvin D., to Control Data Corp. Digital to analog computer converter. 3,354,449, 11-21-67, Cl. 340—347.
- McIntyre, Gilbert N.: *See—*
  - Sala, Frank J., and McIntyre. 3,354,258.
- McKinney, Perry F.: *See—*
  - Green, John M., and McKinney. 3,354,390.
- McLaughlin, Joseph L.: *See—*
  - Ohntrup, Frederick F., McLaughlin, and Benn. 3,354,342.
- McLay, Joseph F., to Fischer & Porter Co. Syringe, column or the like. 3,353,718, 11-21-67, Cl. 222—158.
- McMaster, Harold A., to Permaglass, Inc. Blasthead structure for tempering glass sheets. 3,353,946, 11-21-67, Cl. 65—348.
- McNash, Howard H., and W. R. Fox, to Colonial Plastics Mfg. Co. Roller for a conveyor. 3,353,644, 11-21-67, Cl. 193—37.
- Meden, Alexander I., and V. P. Surov, to Kolomensky Teplovozstroitelny Zavod imeni V. V. Kuibysheva. Four-stroke twin combustion engine. 3,353,523, 11-21-67, Cl. 123—55.
- Mehta, Maharaj K. Apparatus for measurement and feeding of powdered materials. 3,353,722, 11-21-67, Cl. 222—218.
- Meier, Henri, to Compagnie Generale d'Electro-Ceramique. Self-washing insulators. 3,354,262, 11-21-67, Cl. 174—211.
- Meininger, Fritz: *See—*
  - Kuhne, Rudolf, Meininger, and Pfirrmann. 3,354,182.
- Meissner, Konrad E., to Filper Corp. Drupe gripping device. 3,353,860, 11-21-67, Cl. 294—100.
- Melcher, George W., to Bally Case and Cooler, Inc. Insulated panel having joined connectors. 3,353,314, 11-21-67, Cl. 52—127.
- Meltzer, Henry E. Shrub former and lawn edge trimmer. 3,353,268, 11-21-67, Cl. 30—276.
- Meltzer, Robert J.: *See—*
  - Loewen, Erwin G., and Meltzer. 3,354,319.
- Membrino, Hercules. Package of plastic bags. 3,353,661, 11-21-67, Cl. 206—57.
- Mendelsohn, Dorothy C.: *See—*
  - Rogers, Howard G., Young, and Mendelsohn. 3,353,956.
- Mendoza, Salvador S. Vacuum hair cutting device. 3,353,265, 11-21-67, Cl. 30—133.
- Merck & Co., Inc.: *See—*
  - Wendler, Norman L., Hoffsommer, and Tauub. 3,354,206.
- Merck, E. Aktiengesellschaft: *See—*
  - Fruhstorfer, Wolfgang, Hotovy, and Sommer. 3,354,175.
  - Von Werder, Fritz, Bruckner, and Bork. 3,354,184.
- Merck, John W., and I. F. Barditch, to United States of America, Air Force. Automatic emergency signaling beacon. 3,354,395, 11-21-67, Cl. 325—116.
- Mero & Co., Inc.: *See—*
  - Glos, Edmond A., II. 3,353,675.
- Merritt, Charles H., and J. H. Bennett, to Consolidated Electrodynamics Corp. Constant density oscillograph trace. 3,354,465, 11-21-67, Cl. 346—109.
- Merz, Erich: *See—*
  - Knacke, Ottmar, Laser, Merz, and Riedel. 3,353,929.
- Messrs. L. Schuler A.G.: *See—*
  - Dangelmaier, Karl, Griesinger, Kurz, Schneider, and Scholl. 3,353,822.
- Mesta Machine Co.: *See—*
  - Lowy, Paul M. 3,353,302.
- Mesur-Matic Electronics Corp.: *See—*
  - Newell, Harold R. 3,354,392.
- Metallgesellschaft Aktiengesellschaft: *See—*
  - Clasen, Hermann, Müller, and Joppen. 3,353,930.
- Metzeler A.G.: *See—*
  - Jörn, Raoul. 3,353,879.
- Metzger, Hans S.: *See—*
  - Neumann, Karl J., and Metzger. 3,353,385.
- Meyer, Carl H., to Sperry Rand Corp. Matrix selection circuit with automatic discharge circuit. 3,354,321, 11-21-67, Cl. 307—88.5.
- Meyer, Geo. J., Mfg. Co.: *See—*
  - Carter, Sidney T. 3,354,016.
- Meyer Products, Inc.: *See—*
  - King, William W. 3,353,287.
- Miale, Joseph N., and P. B. Weisz, to Mobil Oil Corp. Catalytic conversion with a crystalline aluminosilicate activated with a metallic halide. 3,354,078, 11-21-67, Cl. 208—120.
- Michel, Rudolph H.: *See—*
  - Knoth, Walter H., Jr., and Michel. 3,354,121.
- Michel, Rudolph H., to E. I. du Pont de Nemours and Co. Polymer of polyacylhydrazones and process of preparation therefor. 3,354,122, 11-21-67, Cl. 260—63.
- Michelitsch, Michael, to International Business Machines Corp. Method of forming a semiconductor by diffusion by using a crystal making technique. 3,354,007, 11-21-67, Cl. 148—187.
- Micro-Mega: *See—*
  - Seigneurin, Michel. 3,353,272.
- Migliore, Robert: *See—*
  - Cairo, John, and Migliore. 3,353,883.
- Miles Laboratories, Inc.: *See—*
  - Schut, Robert N. 3,354,161.
- Millard, Angus W.: *See—*
  - Ludkin, Basil A. 3,353,554.
  - Ludkin, Basil A. 3,353,555.
- Miller, Alvin. Bumpers. 3,353,812, 11-21-67, Cl. 267—1.
- Miller, Eugene J., Jr., and A. Mais, to Armour and Co. Derivatives of fatty acids. 3,354,213, 11-21-67, Cl. 260—567.6.
- Miller, J. H.: *See—*
  - Fair, Delbert W., and Miller. 3,353,772.
- Miller, Lloyd E., Jr. Variable angle spark plug connector. 3,354,419, 11-21-67, Cl. 339—26.
- Miller, Ross J., and F. C. Sawyer, to E. I. du Pont de Nemours and Co. Bidirectional delay connector. 3,353,485, 11-21-67, Cl. 102—27.
- Mills, George A.: *See—*
  - Cornelius, Edward B., Cosgrove, and Mills. 3,353,910.
- Minc, Anatole, to Tele-Signal Corp. Pulse communication system. 3,354,433, 11-21-67, Cl. 340—167.
- Mine Safety Appliances Co.: *See—*
  - Temple, Robert and E. E. 3,353,267.
  - Temple, Robert and E. E. 3,353,445.

- Mineck, Fred, 50% to A. J. Calcler. Coaxial cable connector. 3,354,420, 11-21-67, Cl. 339—103.
- Miner Machine Co.: *See—*
  - Pierson, Edward D., and Wright. 3,353,324.
- Mineral & Chemicals Philipp Corp.: *See—*
  - Duke, James B. 3,353,668.
- Minish, William M.: *See—*
  - Ford, James M., Minish, and Willis. 3,353,937.
- Minnesota Mining and Mfg. Co.: *See—*
  - Kayser, James H., and Flanagan. 3,353,663.
  - Husted, Donald R., and Koshar. 3,354,216.
  - Will, Gerlad H. 3,353,660.
- Minns, Thomas A., and H. H. Hopkins, to W. Watson & Sons Ltd. Binocular stereoscopic microscope having substantially achromatic wedge prisms adjacent common front objective lens. 3,353,892, 11-21-67, Cl. 350—36.
- Mitacek, John, to Phillips Petroleum Co. Apparatus for preventing foaming in a fractionator. 3,354,051, 11-21-67, Cl. 202—153.
- Mitchell, Roscoe W., Jr., to Esso Production Research Co. Electrochemical memory. 3,354,439, 11-21-67, Cl. 340—173.
- Mitchell, William M.: *See—*
  - Levesque, Charles R., and Mitchell. 3,353,446.
- Mitta, Louis A.: *See—*
  - Carthew, John R., Loizides, and Mitta. 3,354,437.
- Mize, Jack P.: *See—*
  - Long, Russell K., and Mize. 3,354,006.
- Mobil Oil Corp.: *See—*
  - Landis, Phillip S., and Venuto. 3,354,221.
  - Miale, Joseph N., and Weisz. 3,354,078.
- Moede, Jerome A., to E. I. du Pont de Nemours and Co. Photographic compositions and process. 3,353,958, 11-21-67, Cl. 96—87.
- Molins Organisation Ltd., The: *See—*
  - Davies, Robert W. 3,354,019.
- Moller, Leopold, and J. L. Pegler, to Imperial Smelting Corp. (N.S.C.) Ltd. Process for removing hydrogen fluoride from a gaseous mixture containing hydrogen fluoride and hydrogen chloride. 3,353,911, 11-21-67, Cl. 23—149.
- Mongor, William E., to O. C. Eckel. Snubber apparatus for a door. 3,353,857, 11-21-67, Cl. 292—157.
- Monroe, Robert E., and J. J. Vagi, to United States of America, Atomic Energy Commission. Forming projections on tubes. 3,354,290, 11-21-67, Cl. 219—152.
- Montalto, Michael S.: *See—*
  - Ernisse, Paul J., and Montalto. 3,353,467.
- Montecatini Edison S.p.A.: *See—*
  - Scarso, Luciano, Boccato, and Rigo. 3,354,135.
- Monteleone, Frank J., Jr., to Thiokol Chemical Corp. Pass tube for gamma ray densitometers. 3,353,561, 11-21-67, Cl. 138—37.
- Monsanto Co.: *See—*
  - Aykanian, Ardasbus A., Hing, and Wohl. 3,354,025.
  - Bach, Hartwig C., and Preston. 3.354,120.
  - Bray, John R., and Price. 3 354.358.
  - Cheape, Dudley W., Jr., and Hirshfeld. 3,354,113.
  - Green, John M., and McKinney. 3,354.390.
  - Henderson, William B., and Baur. 3,354.111.
  - Hirshfield, Julian J., and Sample. 3,353,900.
  - Mylo, John. 3,353,431.
  - Paradis, Leo P., and Hall. 3,354,108.
  - Preston, James B., Carter, and Neely. 3,354,315.
  - Setzer, Carl J. 3,353,345.
  - Smith, Ralph W., Huffman, and Preston. 3,354,125.
  - Sobocinski, Eugene C., and Symes. 3,354,158.
  - Sternberg, Ernest M. 3,353,759.
  - Taylor, Ernest A., Jr. 3,353,379.
  - Taylor, Ernest A., Jr. 3,353,380.
  - Taylor, Ernest A., Jr. 3,353,381.
  - Trivette, Chester D., Jr., and Coran. 3,354,131.
- Monsanto Research Corp.: *See—*
  - Blake, Edward S., and Deebel. 3,354,222.
  - Garner, Albert Y. 3,354,166.
  - Garner, Albert Y. 3,354,215.
  - Nielsen, Morris L. 3,354,242.
- Moore, Lloyd G. Scissor sharpener. 3,353,427, 11-21-67, Cl. 76—82.2.
- Moreau, Raymond: *See—*
  - Avril, Michel, Moreau, and Pages. 3,354,446.
- Morehead, Frederick F., Jr.: *See—*
  - Mandel, Gerald, and Morehead. 3,354,009.
- Morgan Construction Co.: *See—*
  - Hill, William J. 3,353,818.
- Morgan, Paul W., to E. I. du Pont de Nemours and Co. Aromatic polyamides containing the benzophenone nucleus. 3,354.123, 11-21-67, Cl. 260—65.
- Morgenson, Donald J., to Shatter King Mfg. Co. Inc. Bottle breaker. 3,353,756, 11-21-67, Cl. 241—99.
- Morin, Louis H., to Coats & Clark, Inc. Method of producing united dual character parts and facing part. 3,354,249, 11-21-67, Cl. 264—161.
- Morin, Louis H., to Coats & Clark, Inc. Method of feeding inserts from a pre-loaded magazine into a machine molding insert travelers. 3,354,252, 11-21-67, Cl. 264—278.
- Moss, Norman, to Plessey-UK Ltd. Mass-flow determining devices. 3,353,406, 11-21-67, Cl. 73—194.
- Moss, Robert W.: *See—*
  - Vail, Victor, Krogstad, Moss, and Hagman. 3,354,311.
- Motorola, Inc.: *See—*
  - Schafft, Hugo W. 3,353,400.
  - Wolfgram, Edgar W. 3,353,753.
- Motz, Carl H.: *See—*
  - Anthony, Russell W., and Motz. 3,353,392.
- Mueller, Hans: *See—*
  - Wiechert, Rudolf, Mueller, and Neumann. 3,354,185.
- Mueller, Heinrich: *See—*
  - Honsberg, Werner, and Mueller. 3,354,071.
- Mouissie, Bob, to Paillard S.A. Means for locking and unlocking the spool of a film magazine. 3,353,768, 11-21-67, Cl. 242—55.13.
- Moyer, Robert F., to Elastic Die Engineering Co. Pre-loaded axially extensible anti-friction bearing. 3,353,876, 11-21-67, Cl. 308—6.
- Moyson, Joseph, and J. Petruzella, to General Electric Co. PNPN switch with $10<\frac{N_s}{N_s}<100$ so that conductivity modulation results during turn-off. 3,354,363, 11-21-67, Cl. 317—285.
- Mulder, Fritho R. E., to Home Oil Co. Ltd. Formation flooding by sulphur dioxide for recovering oil and gas. 3,353,597, 11-21-67, Cl. 166—9.
- Mullen, Eugene D.: *See—*
  - Dollarhide, Francis E., and Mullen. 3,353,601.
- Müller, Hans. Drying and cooling apparatus for booklets having adhesively connected backs. 3,353,279, 11-21-67, Cl. 34—150.
- Muller, Hans, F. Neumann, and R. Wiechert, to Schering, A.G. Method of preparing 1β-methyl-2,3α-methylene-steroids. 3,354,151, 11-21-67, Cl. 260—239.55.
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- Müller, Jürgen: *See—*
  - Clasen, Hermann, Müller, and Joppen. 3,353,930.
- Muller, Karl: *See—*
  - Siempelkamp, Eugen, and Muller. 3,353,216.
- Muller, Rudolf: *See—*
  - Raspe, Gerhard, Kieslich, Olivar, Muller, and Wagner. 3,354,186.
- Mundet Cork Corp.: *See—*
  - Jensen, Ole S. 3,353,666.
- Mundorff, Rewe P., and De L. A. Berry. Self-affixing fishing line float. 3,353,294, 11-21-67, Cl. 43—44.9.
- Munk, Edmund: *See—*
  - Haas, Herbert, Munk, and Weinberg. 3,354,248.
- Murdock, Thomas B., to United States of America, Atomic Energy Commission. Steam superheating nuclear reactor having steam flow equalizer. 3,354,042, 11-21-67, Cl. 176—59.
- Murib, Jawad H.: *See—*
  - Frank, Charles E., and Murib. 3,354,192.
- Murphy, Kevin P.: *See—*
  - Orfeo, Sabatino R., and Murphy. 3,353,366.
- Murray, Donald W. Backhoe attachment. 3,353,285, 11-21-67, Cl. 37—2.
- Murray Mfg. Corp.: *See—*
  - Knecht, George W. 3,354,284.
- Murtland, James B., Jr.: *See—*
  - Jackson, Harold S., and Murtland. 3,354,254.
- Musser, C. Walton, to United States of America, Army. Rifle barrel alignment mechanism. 3,353,291, 11-21-67, Cl. 42—1.
- Myerly, Richard C., and K. Weinberg, to Union Carbide Corp. Alkylation of pyridine compounds. 3,354,165, 11-21-67, Cl. 260—290.
- Myers, Elman B., to E. B. Myers, and A. R. Fuller. Dual beam electric lamp. 3,354,343, 11-21-67, Cl. 313—113.
- Fuller, Acil R.: *See—*
  - Myers, Elman B. 3,354,343.
- Mylo, John, to Monsanto Co. Staple fiber cutter. 3,353,431, 11-21-67, Cl. 83—116.
- N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman & Pharmacia: *See—*
  - Nauta, Wijbe T. 3,354,168.
- Nadeau, Herbert G., and P. H. Waszeciak, to The Upjohn Co. Apparatus for sampling gas from plastic foam. 3,353,411, 11-21-67, Cl. 73—421.5.
- Nagamine, Masaaki: *See—*
  - Tsukatani, Kenmi, Nagamine, Hamada, and Takagi. 3,354.464.
- Nagaoka, Noriyuki, to Kabushiki Kaisha Taihei Seisakusho. Board material shifting mechanism for a multiplaten hot press. 3,353,690, 11-21-67, Cl. 214—16.6.
- Nakamura, Tetsuro, to Nippon Electric Co., Ltd. Discontinuous resistance semiconductor device. 3,354,364, 11-21-67, Cl. 317—235.
- National Aeronautics and Space Administration: *See—*
  - Webb, James E. 3,353,359.
- National Broach & Machine Co.: *See—*
  - Anthony, Russel W. 3,353,391.
  - Anthony, Russell W., and Motz. 3,353,392.
- National Cine Equipment, Inc.: *See—*
  - Clemens, John A. 3,353,776.
- National Distillers and Chemical Corp.: *See—*
  - Frank, Charles E., and Murib. 3,354,192.
- National Dairy Products Corp.: *See—*
  - Lambert, Douglas R. M., and Sharkey. 3,353,269.
- National Engineering Science Co.: *See—*
  - Petroff, Michael D., and Swiadek. 3,354,314.
- National Friction Products Corp.: *See—*
  - Dodge, Howard M. 3,354,243.
- National-Standard Co.: *See—*
  - Lang, Ernest U. 3,353,730.
- National Starch and Chemical Corp.: *See—*
  - Jarowenko, Wadym. 3,354,034.
- Nassovia Werkzeugmaschinenfabrik G.m.b.H.: *See—*
  - Schlapp, Georg. 3,353,449.
- Nau, Harold H., to American Cyanamid Co. Method for preventing the segregation of mixed fertilizer. 3,353,949, 11-21-67, Cl. 71—64.
- Nauta, Wijbe T., to N. V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman & Pharmacia. Phenyl pyridyl carbinal ethers. 3,354,168, 11-21-67, Cl. 260—296.

Nautchno-Izsledovatelski I Proektno-Konstruktorski Institut Za Metalo-Obravotvashti Mashini I Instrumenti: *See—*
  Haralampiev, Ilija S., and Valev. 3,353,198.
Neal, Gary R., 33⅓% to J. E. Neal, Jr. Fifth wheel safety device to prevent jack-knifing. 3,353,841, 11–21–67, Cl. 280—432.
Neal, James E., Jr.: *See—*
  Neal, Gary R. 3,353,841.
Neary, Ralph E., L.-V. Schmidt, and C. C. Tipping, to Schlage Lock Co. Lock unit with an extendable latch bolt. 3,353,858, 11–21–67, Cl. 292—164.
Nebendorf, Heinrich, and W. Pieper, to Firma Gebr. Hilgeland. High speed double blow header. 3,353,417, 11–21–67, Cl. 74—53.
Neely, William C.: *See—*
  Preston, James B., Carter, and Neely. 3,354,315.
Nekimken, Elic, to Thomas A. Schutz Co., Inc. Drip tray and indicator device. 3,353,615, 11–21–67, Cl. 177—245.
Nelson, Alden W., and A. P. Brown, to Crompton & Knowles Corp. Temperature modifying provision for extrusion apparatus. 3,353,212, 11–21–67, Cl. 18—12.
Nelson, Bobby H., D. L. Gruller, and L. E. Williams, to Cameron Iron Works, Inc. Underwater well completions. 3,353,595, 11–21–67, Cl. 166—.6.
Nelson, Donald F.: *See—*
  Boyle, Willard S., and Nelson. 3,354,404.
Nelson, Donald M., to North American Aviation, Inc. Cable retainer. 3,353,793, 11–21–67, Cl. 254—190.
Neumann, Friedmund: *See—*
  Muller, Hans, Neumann, and Wiechert. 3,354,151.
  Wiechert, Rudolf, Mueller, and Neumann. 3,354,185.
Neumann, Karl J., and H. S. Metzger. Roll gap measuring device. 3,353,385, 11–21–67, Cl. 72—21.
Newcome, Hal R., to Allied Chemical Corp. Apparatus for detecting high-tension ends in a thread sheet. 3,353,244, 11–21–67, Cl. 28—35.
Newell, Harold R., to Mesur-Matic Electronics Corp. Cathode ray voltmeter using sweep signal for scale generation and for input signal level comparison. 3,354,392, 11–21–67, Cl. 324—121.
Newman, Frank Christopher: *See—*
  Lachowicz Stefan K., Brown, Bowen, and Newman. 3,354,199.
Newport News Shipbuilding and Dry Dock Co.: *See—*
  Sykes, James F., and Phillips. 3,353,685.
Newton, Norman B.: *See—*
  Adamson, William M., and Newton. 3,353,643.
Niebergall, Louis F., to Walker Mfg. Co. Dual element parallel flow filter assembly. 3,353,680, 11–21–67, Cl. 210—314.
Niedzielski, Edmund L., to E. I. du Pont de Nemours and Co. Antiknock compositions and motor fuels containing them. 3,353,938, 11–21–67, Cl. 44—69.
Nielsen, Albert T.: *See—*
  Horton, John P., and Nielsen. 3,353,201.
Niemeyer, Walter, to Barmer Maschinenfabrik Aktiengesellschaft. Granulating device. 3.353,213, 11–21–67, Cl. 18—12.
Nielsen, Morris L., to Monsanto Research Corp. Process of making organic phosphorus polymers. 3,354,242, 11–21–67, 260—930.
Nieuwenhuijsen, Hans: *See—*
  Bergeijk, Jan V., and Nieuwenhuijsen. 3,353,564.
Nilsson, Bengt E., to Aktiebolaget Electrolux. Suction cleaner. 3,353.338, 11–21–67, Cl. 55—276.
Nippon Electric Co., Ltd.: *See—*
  Nakamura Tetsuro. 3,354,364.
Nixon, James: *See—*
  Panzer, Jerome, Nixon, and Kassinger. 3,354,086.
Nomo Products, Inc.: *See—*
  Rapaport, Max. 3,353,372.
Norburn, Louis E. Refractory coated oxygen lance. 3,353,808, 11–21–67, Cl. 266—34.
North American Aviation, Inc.: *See—*
  Dinenno, Henry J. 3,354,266.
  Nelson, Donald M. 3,353,793.
North American Philips Co., Inc.: *See—*
  Almer, Friedrich H. R., Schrijnemakers, Kuiper, and Van Rooy. 3,354 340.
  Legoux, Rene. 3,353,889.
  Legoux, Rene. 3,353,890.
  Van Iperen, Bernardus B. 3,354,348.
Northern Electric Co. Ltd.: *See—*
  Fatovic, Peter. 3,354,373.
Norton Co.: *See—*
  Seymour, James A., and Beth. 3,353,306.
Noznick, Peter P., and R. H. Bundus, to Beatrice Foods, Co. Method of spray drying tomatoes containing seeds. 3,353,969, 11–21–67, Cl. 99—204.
Nutt, James R.: *See—*
  Brandle, Robert T., and Nutt. 3,354,115.
Nutten, Warren D., and B. C. Phillips, to The Tillotson Mfg. Co. Fuel feed system and throttle control for internal combustion engines. 3,353,525, 11–21–67, Cl. 123—119.
Oberle, Theodore L., M. R. Calton, C. D. Loyd, and C. F. White, to Caterpillar Tractor Co. Composite products. 3,353,935, 11–21–67, Cl. 29—191.
Oerlikon Engineering Co.: *See—*
  Storsand, Bjarne. 3,354,330.
Ohio Crankshaft Co., The: *See—*
  Kappenhagen, George A., and Avalon. 3,354,350.
Ohntrup, Frederick F., J. L. McLaughlin, and R. E. Benn, to Burroughs Corp. Solid state sub-miniature display apparatus. 3,354,342, 11–21–67, Cl. 313—108.
Ohorodnik, Alexander, and G. Legutke, to Knapsack Aktiengesellschaft. Process for isolating acetylene polymers from scrubbing oils. 3,354,137, 11–21–67, Cl. 260—94.1.
Okcuoglu, Selahattin A., to International Business Machines Corp. Acceleration and velocity surge control mechanism. 3,353,418, 11–21–67, Cl. 74—125.5.

Olga Co.: *See—*
  Erteszek, Olga. 3,353,540.
Olin Mathieson Chemical Corp.: *See—*
  Ford, James M., Minish, and Willis. 3,353,937.
  Kaufman, Herbert C. 3,354,194.
  Kober, Ehrenfried H., and Lederle. 3,354,226.
Olivar, Erich: *See—*
  Raspe, Gerhard, Kieslich, Olivar, Muller, and Wagner. 3,354,186.
Olson, Ole E.: *See—*
  Larson, Robert W., Olson, Harkness, and Mair. 3,353,575.
Olympia Werke AG.: *See—*
  Kuhlmann, Karlheinz. 3,354,443.
Omietanski, George M.: *See—*
  Williams, Thomas C., and Omietanski. 3,354,101.
O'Neal, George, Jr., to Weltronic Co. Control apparatus. 3,354,288, 11–21–67, Cl. 219—114.
Oneson, Thomas M., T. W. Journell, and C. D. Smith, to Owens-Corning Fiberglas Corp. Linear air diffusers. 3,353,473, 11–21–67, Cl. 98—40.
Opti-Holding AG.: *See—*
  Frohlich, Alfons. 3,353,233.
  Frohlich, Alfons, Hochlehnert, and Glaser. 3,353,256.
Orange Roller Bearing Co., Inc.: *See—*
  Farmer, Robert W. 3,353,246.
Orfeo, Sabatino R., and K. P. Murphy, to Allied Chemical Corp. Absorption refrigeration systems. 3,353,366, 11–21–67, Cl. 62—112.
Ortho Pharmaceutical Corp.: *See—*
  Karmas, George. 3,354,153.
Orwin, Olaf J. B., to Fisher & Ludow Ltd. Conveyors for conveying goods. 3,353,500, 11–21–67, Cl. 104—172.
Osborn Mfg. Co., The: *See—*
  Charvat, Vernon K. 3,353,200.
Osborn, Robert O., to E. I. du Pont de Nemours and Co. Conductive film battery. 3,353,999, 11–21–67, Cl. 136—83.
Oscar Mayer & Co., Inc.: *See—*
  Podebradsky, Everett V., and Maas. 3,353,963.
Osgood, Edmond R., L. E. Limpel, and R. L. Annis, to Diamond Alkali Co. Preparation of octachlorothiolane. 3,354,179, 11–21–67, Cl. 260—332.5.
Oshima, Shintaro. Thin film tape recorder. 3,354,447, 11–21–67, Cl. 340—174.1.
Otis Elevator Co.: *See—*
  Schroeder, Joris T., and Otto. 3,353,650.
Otto, Gerhard A. K.: *See—*
  Schroeder, Joris T., and Otto. 3,353,650.
Outwater, Eric B., to International Paper Co. Reclosable carton. 3,353,740, 11–21–67, Cl. 229—51.
Owens-Corning Fiberglas Corp.: *See—*
  Lee, Jon W., and Feld. 3,353,472.
  Oneson, Thomas M., Journell, and Smith. 3,353,473.
  Shannon, Richard F., and Armstrong. 3,353,975.
Owens-Illinois, Inc.: *See—*
  Belcher, Samuel L., and De Brock. 3,353,704.
  Burzynski, Alfred J., and Martin. 3,354,095.
Owsley, William A., to Filper Corp. Box preforming machine and method. 3,353,459, 11–21–67, Cl. 93—36.6.
P M & E Electronics, Inc.: *See—*
  Scanlon, Thomas A. 3,353,025.
Pacak, Matthew: *See—*
  Getz, Edward T., and Pacak. 3,353,869.
Package Machinery Co.: *See—*
  Bartlo, John S., and Provost. 3,353,332.
Packaging Frontiers, Inc.: *See—*
  Wheeler, Paul L. B., and Keene. 3,353,328.
Pages, Alix: *See—*
  Avril, Michel, Moreau, and Pages. 3,354,446.
Paillard S.A.: *See—*
  Mouissie, Bob. 3,353,763.
Pakistan Council of Scientific and Industrial Research: *See—*
  Siddiqui, Salimuzzaman. 3,354,142.
Pall Corp.: *See—*
  Forman, Herbert L., and Pall. 3,354,012.
  Pall, David B., and Keedwell. 3,353,682.
Pall, David B.: *See—*
  Forman, Herbert L., and Pall. 3,354,012.
Pall, David B., and C. A. Keedwell, to Pall Corp. Fluid-permeable fibrous multilayer materials and process of making the same. 3,353,682, 11–21–67, Cl. 210—505.
Palmer, George V. Ambulatory typewriter apparatus having only one driving means. 3,353,645, 11–21–67, Cl. 197—2.
Palmer, Lewis E., to Union Insulating Co. Molded-insulation electrical box having integral spacer lugs. 3,353,701, 11–21–67, Cl. 220—3.5.
Palmer, Reed A.: *See—*
  Beck, Roland D., and Palmer. 3,353,452.
Palmer, Roy L. Fish hook device. 3,353,819, 11–21–67, Cl. 269—254.
Palmiter, Donald R., and E. R. Wilkening, to Elgin Sweeper Co. Side broom position indicator. 3,353,199, 11–21–67, Cl. 15—87.
Pan American Petroleum Corp.: *See—*
  Lubinski, Arthur. 3,353,362.
  Vincent, Renic P. 3,353,851.
  Widess, Moses B., and Dyk. 3,354,427.
Panzer, Jerome, J. Nixon, and R. Kassinger, to Esso Research and Engineering Co. Grease lubricant. 3,354,086, 11–21–67, Cl. 252—40.7.
Paradis, Leo P., and W. J. Hall, to Monsanto Co. Graft blend of diene rubber polymeric compositions having improved toughness. 3,354,108, 11–21–67, Cl. 260—31.4.
Parker, Horace F.: *See—*
  Frame, Alexander G., and Parker. 3,354,040.
Parson, C. A., & Co., Ltd.: *See—*
  Maitland, Arthur. 3,354,328.

Parsons, George W., and R. G. Petts, to Eastman Kodak Co. Photographic apparatus. 3,354,300, 11–21–67, Cl. 240—1.3.
Pataki, Antal A.: *See—*
  Hossain, Shafi U., and Pataki. 3,354,027.
Pataky, Raimund: *See—*
  Ketterle, Walter, Steuer, and Pataky. 3,353,421.
Patentauswertung Vogelbusch Gesellschaft m.b.H.: *See—*
  Rungaldier, Karl, and Braun. 3,354,050.
Paterson, Ian W. F.: *See—*
  Walker, Eric H., and Paterson. 3,353,549.
Patrick, A.: *See—*
  Becker, Edward J., Robison, and Patrick. 3,354,048.
Patten, Carl W., Jr., J. R. Wenker, and K. B. Craig, to The Garrett Corp. Movable, closed-loop cryogenic system. 3,353,370, 11–21–67, Cl. 62—514.
Patterson, Bernard A. Topping composition. 3,353,965, 11–21–67, Cl. 99—139.
Patterson, John A., to Texaco, Inc. Method of preparing oxamide. 3,354,207, 11–21–67, Cl. 260—561.
Payne, James F., Jr., to Leeds & Northrup. Servo-type measuring apparatus including modulator and anti-hunt means matched to the input of the servo-amplifier. 3,354,391, 11–21–67, Cl. 324—99.
Peard, Richard A.: *See—*
  Garland, Milton W., and Peard. 3,353,367.
Pegler, John L.: *See—*
  Moller, Leopold, and Pegler. 3,353,911.
Pelino, William M.: *See—*
  Liggett, Robert D., White, Pelino. 3,354,306.
Pemberton, J. C.: *See—*
  Gelbach, Herman R. 3,353,409.
Pennsalt Chemicals Corp.: *See—*
  Soulen, John R., and Chappell. 3,354,232.
Pennsylvania Industrial Chemical Corp.: *See—*
  Sproat, Alan D. 3,354,132.
Pera, John D.: *See—*
  Buckman, Stanley J., Pera, and Raths. 3,354,033.
Percival, Worth H., to General Motors Corp. Underwater propulsion system. 3,353,349, 11–21–67, Cl. 60—37.
Peres, Robert: *See—*
  Bienzunski, Georges, Maugest, and Peres. 3,353,711.
Perhach, John M., to Houdaille Industries, Inc. Shaft vibration damper. 3,353,632, 11–21–67, Cl. 188—1.
Permaglass, Inc.: *See—*
  McMaster, Harold A. 3,353,946.
Permco Corp.: *See—*
  Sondheim, Werner. 3,353,770.
Perrin, Alan P. Apparatus for manufacturing mouldable urethane foams. 3,353,918, 11–21–67, Cl. 23—252.
Perronnet, Jacques: *See—*
  Bertin, Daniel, and Perronnet. 3,354,037.
Perry, Clifton C.: *See—*
  Valdettara, Alarico A., Warthan, and Perry. 3,353,878.
Perry, Ronald A., to The Procter & Gamble Co. Ammoniated granular cleaner. 3,354,092, 11–21–67, Cl. 252—137.
Perry, William D., to Weyerhaeuser Co. Method for measuring the moisture content of wood. 3,354,388, 11–21–67, Cl. 324—65.
Perryman, George H., to The Bendix Corp. Device for measuring flight distance of a missile. 3,353,487, 11–21–67, Cl. 102—70.2.
Peters, Clifford M.: *See—*
  Garrett, Henry U., Peters, and Dinning. 3,353,605.
Peters, Hans, to Reichhold Chemical, Inc. Catalytic reactor tube. 3,353,923, 11–21–67, Cl. 23—288.
Peterson, Dean M., and C. E. Pickering, to Eastman Kodak Co. Miniature flash attachment and photoflash lamp socket receiving portion. 3.353,465, 11–21–67, Cl. 95—11.5.
Peterson, Vincent C. J., to American Chain & Cable Co., Inc. Energy absorbing system. 3,353,768, 11–21–67, Cl. 244—110.
Peterson, Wesley R., A. N. Cook, R. R. Thompson, and A. H. Stolpen, to The Singer Co. Motor speed controllers. 3,353,424, 11–21–67, Cl. 74—560.
Petroff, Michael D., and S. F. Swiadek, to National Engineering Science Co. Image converter apparatus using fine wire electron emissive screen. 3,354,314, 11–21–67, Cl. 250—213.
Petruzella, James: *See—*
  Moyson, Joseph, and Petruzella. 3,354,363.
Pettit, Dorn L., and H. P. Stock, to Square D Co. Cartridge-type fuse mounting block and mounting therefor. 3,354,356, 11–21–67, Cl. 317—116.
Pettit, Frank P., to Big Rock Mountain Corp. Aerial tramway system. 3,353,503, 11–21–67, Cl. 105—150.
Petts, Ronald G.: *See—*
  Parsons, George W., and Petts. 3,354,300.
Peugeot et Cie Societe Anonyme.: *See—*
  Andriussi, Francois. 3,353,639.
Peytavin, Pierre: *See—*
  Babel, Louis, and Peytavin. 3,353,587.
Peyton, John F., to Federal Mogul Corp. Bellows restraining device. 3,353,846, 11–21–67, Cl. 285—16.
Pfab, Diethard G., and H. A. Schwab, to Eltro G.m.b.H. & Co. Method and device for the production of a radar echo. 3,354,457, 11–21–67, Cl. 343—17.7.
Pfaff, G. M. AG.: *See—*
  Reeber, Rudolf, Dobner, and Tretow. 3,353,510.
  Reeber, Rudolf, and Wenz. 3,353,509.
Pfender, Stephen J. and T. E. Movable door structure. 3,353,298, 11–21–67, Cl. 49—43.
Pfender, Thomas E.: *See—*
  Pfender, Stephen J. and T. E. 3,353,298.
Pfirrmann, Rolf: *See—*
  Kuhne, Rudolf, Meininger, and Pfirrmann. 3,354,182.

Pfizer, Chas., & Co., Inc.: *See—*
  Bavisotto, Vincent S. 3,353,960.
  Tretter, James R. 3,354,155.
Pharmaseal Laboratories: *See—*
  Armentrout, James L., and Vanat. 3,353,664.
Philip Carey Mfg. Co.: *See—*
  Kozacik, John J. 3,354,031.
Philips Electronics & Pharmaceutical Industries Corp.: *See—*
  Engel, Frederick, and Kiley. 3,354,308.
Philip Morris Inc.: *See—*
  Hind, John D., and Seligman. 3,353,541.
Philippi, George J., to Johnson & Johnson. Pressure-sensitive tape feeding device. 3,353,432, 11–21–67, Cl. 83—176.
Phillips, Bernard C.: *See—*
  Nutten, Warren D., and Phillips. 3,353,525.
Phillips, David E.: *See—*
  Sykes, James F., and Phillips. 3,353,685.
Phillips, James W., to Robertshaw Controls Co. Snap acting pneumatic diverting relay. 3,353,559, 11–21–67, Cl. 137—625.66.
Phillips Petroleum Co.: *See—*
  Brandle, Robert T., and Nutt. 3,354,115.
  Branscum, Tony E. 3,354,246.
  Burr, Robert H. 3,354,138.
  Draper, Homer L., and Levy. 3,353,798.
  Early, Julius E., and Benjamin. 3,354,093.
  Edmonds, James T., Jr., and Hill. 3,354,129.
  Gruver, Jerry T., and Kraus. 3,354,116.
  Hitzman, Donald O. 3.354,047.
  Hogan, John P., and Kitchen. 3,354,235.
  Hsieh, Henry L. 3,354,133.
  Johnson, Merlon L. 3,354,053.
  Johnson, Paul H. 3,353,980.
  Mitacek, John. 3,354,051.
  Rasmussen, Ole-Bendt. 3,354,253.
  Smith, Robert V. 3,353,598.
Physics International Co.: *See—*
  Benson, Glendon M. 3,354,327.
Placent, Frank T., and J. W. Huffman, to Emerson Electric Co. Stack-type thermoresponsive switch having a supplemental heater with annularly-shaped heater portion and terminals regions. 3,354,278, 11–21–67, Cl. 200—122.
Picciano, Jaes K., to International Business Machines Corp. Transmission line control of transistor selection matrix. 3,354,435, 11–21–67, Cl. 340—166.
Pickar, Paul B., Jr., to Martin-Marietta Corp. Method of seed-pulling beta silicon carbide crystals from a melt containing silver and the product thereof. 3,353,914, 11–21–67, Cl. 23—208.
Pickering, Charles E.: *See—*
  Peterson, Dean M., and Pickering. 3,353,465.
Pickin, John H., to Colgate-Palmolive Co. Plastic bags with metal foil laminated lips. 3,353,662, 11–21–67, Cl. 206—59.
Pieper, Willi: *See—*
  Nebendorf, Heinrich, and Pieper. 3,353,417.
Pierce, Arleen C.: *See—*
  Lund, Richard B., Pierce, and Turi. 3,354,228.
Pierson, Edward D., and J. C. Wright, to Miner Machine Co. Method and apparatus for separating folded wrappers and placing same under goods to be packaged. 3,353,324, 11–21–67, Cl. 53—3.
Pigeon, Dale W., and J. D. Upchurch, to General Motors Corp. Adjustable seat back mechanism. 3,353,868, 11–21–67, Cl. 297—372.
Pine, Lloyd A.: *See—*
  Cull, Neville L., and Pine. 3,354,229.
Piskator, Bengt I., to United States of America, Army. Double-sear device for a forward moving barrel machine gun mounted for differential recoil. 3,353.447, 11–21–67, Cl. 89—27.
Pistone, John C. Leveling device for automotive vehicles and the like. 3.353.839, 11–21–67, Cl. 280—104.
Pittsburgh Corning Corp.: *See—*
  D'Eustachio, Dominic, Ford, and Johnson. 3,354,024.
Pittsburgh Plate Glass Co.: *See—*
  Budke, Carl P. 3.353.870.
  Cypher, James H. 3,353,945.
Plessey-UK Ltd.: *See—*
  Moss, Norman. 3,353,406.
Pochert, Rudolf: *See—*
  Haase, Lothar, and Pochert. 3,354,289.
Pochowicz, Donald R., to Universal Oil Products Co. Reaction products of dihydroxydiphenyl compounds with phosphorus sulfide or phosphorus oxide and amine salts thereof. 3,354.240, 11–21–67, Cl. 260—924.
Podebradsky, Everett V., and R. H. Maas, to Oscar Mayer & Co., Inc. Sausage manufacture. 3,353,963, 11–21–67, Cl. 99—109.
Pohndorf, Henry L.: *See—*
  Bird, Forrest M., and Pohndorf. 3,353,536.
Polaroid Corp.: *See—*
  Emerson, Eugene S. 3,353,895.
  Land, Edwin H. 3,353.464.
  Rogers, Howard G., Young, and Mendelsohn. 3,353,956.
  Rosenoff, Alan E. 3,354,170.
Polgov, Nicholas G., to H. K. Porter Co., Inc. Electric bus element with coolant passages. 3,354,261, 11–21–67, Cl. 174—133.
Polster, Rudolf: *See—*
  Kranz, Joachim, and Polster. 3,353,977.
Ponzek, Felix J.: *See—*
  Baumann, George P., and Ponzek. 3,353,925.
Poppinger, Herbert, W. Volkmann, and R. Däubler, to Siemens-Schuckertwerke Aktiengesellschaft. Thyristor system for controlling direct current. 3,354,375, 11–21–67, Cl. 321—5.
Porath, Gordon H., to Century-Detroit Corp. Contour inspecting machine. 3,353,275, 11–21–67, Cl. 33—174.

Porter, H. K., Co., Inc.: *See—*

Polgov, Nicholas G. 3,354,261.

Poschmann, Franz: *See—*

Janson, Alfons, and Poschmann. 3,353,909.

Potter, Howard L., and N. J. Stalter, to E. I. du Pont de Nemours and Co. Preparation of cotton fabrics for dyeing. 3,353,903, 11–21–67, Cl. 8—111.

Potter Instrument Co., Inc.: *See—*

Antonucci, Carmine J. 3,353,481

Fieldgate, Ivan O. 3,353,733.

Foley, Thomas P. 3,353,483.

Potter, Robert J.: *See—*

Bebb, Herbert B., and Potter. 3,354,405.

Poucher, Michael: *See—*

Bill, Arthur, Steel, and Poucher. 3,353,351.

Preload Co., The: *See—*

Schupack, Morris. 3,353,859.

Prescott, David B., to Walker Mfg. Co. Fluid dispensing system incorporating a fluid accumulator. 3,353,712, 11–21–67, Cl. 222—56.

Preston, Jack: *See—*

Bach, Hartwig C., and Preston. 3,354,120.

Smith, Ralph W., Huffman, and Preston. 3,354,125.

Preston, James B., R. S. Carter, and W. C. Neely, to Monsanto Co. Flash photolysis spectroscopic system. 3,354,315, 11–21–67, Cl. 250—217.

Preston, Richard J., to United Aircraft Corp. Electrical power generator employing a body fluid as electrolyte and method of operation. 3,353,539, 11–21–67, Cl. 128—419.

Pressac Ltd.: *See—*

Greasley, Eric A. 3,354,302.

Price, George B.: *See—*

Bray, John R., and Price. 3,354,358.

Price, Rudolph N. Washing machine and valve therefor. 3,353,545, 11–21–67, Cl. 134—95.

Princeton Chemical Research Inc.: *See—*

Bergman, Richard I. 3,353,334.

Printed Motors Inc.: *See—*

Bonnefoy. Jean R. H. 3,354,332.

Henry-Baudot, Jacques. 3,354,333.

Prinz, Eberhard: *See—*

Mauz, Otto, and Prinz. 3,354,118.

Pritelli, Giuseppe. Article of furniture assembled from prefabricated components. 3,353,888, 11–21–67, Cl. 312—257.

Procter & Gamble Co., The: *See—*

Hugenberg, Frederick R., and Lutton. 3,353,966.

Lutton, Edwin S. 3,353,967.

Perry, Ronald A. 3,354,092.

Seiden, Paul. 3,353,964.

Prohofsky, Leroy A., and R. J. Bergman. Mated-film element with single vertical word line. 3,354,445, 11–21–67, Cl. 340—174.

Projector, Theodore H., and R. S. Rinkinen. Oscillating color filter single station range light. 3,354,428, 11–21–67, Cl. 340—29.

Prosceno, Harry A., V. H. Schrader, and S. E. Zeis, to Joseph Bancroft & Sons Co. Apparatus for making variably bulked yarn. 3,353,241, 11–21–67, Cl. 28—1.

Provost. Richard H.: *See—*

Bartlo, John S., and Provost. 3,353,332.

Pullman Inc.: *See—*

Snyder, Richard C., and Stark. 3,353,506.

Quantz, Paul A.: *See—*

Macon, Charles E., Barton, Quantz, and Shimabukuro. 3,354,429.

Queenborough, Brian: *See—*

Stuart, Duncan J. K., and Queenborough. 3,353,429.

Quinlan, Joseph B.: *See—*

Scanlon, John J., Jr., and Quinlan. 3,353,438.

Radiant Pen Corp.: *See—*

Hechtle, Emil. 3,353,899.

Radio Corp. of America: *See—*

Amick, James A. 3,354,354.

Blattner, Donald J. 3,353,896.

Bleiman. Lewis W. 3,354,273.

Donahue, Daniel J., and Hardy. 3,354,341.

Fatuzzo. Ennio. 3,354,442.

Gange, Robert A. 3,354,441.

Kiss, Zoltan J. 3,354,406.

Sariti, Anthony A. 3,353,482.

Winder, Robert O. 3,354,436.

Raines, Russell H.: *See—*

Bailey, Frederick E., Jr., La Combe, and Raines. 3,354,087.

Raine, Frank F., and G. E. Cooper, Kaiser Aluminum & Chemical Corp. Refractory and method. 3,353,976, 11–21–67, Cl. 106—65.

Ralston, Paul H., to Calgon Corp. Dissolving rock salt containing calcium sulfate in the presence of an anionic organic wetting agent. 3,353,927, 11–21–67, Cl. 23—312.

Ramsden, Hugh E., to Esso Research and Engineering Co. Magnesium and tin derivatives of fused-ring hydrocarbons and the preparation thereof. 3,354,190, 11–21–67, Cl. 260—429.7.

Ramspeck, Howard B., to Fastener Corp. Fastener driving tool. 3,353,453, 11–21–67, Cl. 91—356.

Rand Corp., The: *See—*

Shanley, Francis R. 3,353,932.

Randall, Jerrold H.: *See—*

Cliffgard, Arnie L., Keegan, and Randall. 3,354,355.

Ranhagen, Erik G.: *See—*

Ranhagen, Ernst G. and E. G. 3,353,752.

Ranhagen, Ernst G. and Erik G., to Aktiebolaget Karlstads Mekaniska Werkstad. Liquid spraying or screening device. 3,353,752, 11–21–67, Cl. 239—538.

Rank, Wolfgang, to Loewe Opta Aktiengesellschaft. Adjustable guide means for a helical scan tape recorder. 3,354,269. 11–21–67, Cl. 179—100.2.

Rapaport, Max, to Nomo Products, Inc. Piercing earring and method of manufacture thereof. 3,353,872, 11–21–67, Cl. 63—12.

Rasmussen, Ole-Bendt, to Phillips Petroleum Co. Method and apparatus for stretching thermoplastic film. 3,354,253, 11–21–67, Cl. 264—288.

Raspe, Gerhard, K. Kieslich, E. Olivar, R. Muller, and B. Wagner, to Schering A.G. 16α-methyl-1,4-pregnadiene 3,20-diones. 3,354,186, 11–21–67, Cl. 260—397.45.

Raths, Fred W.: *See—*

Buckman, Stanley J., Pera, and Raths. 3,354,033.

Ratner, Michael. Modification to a 3-2 coasting control valve. 3,353,811, 11–21–67, Cl. 267—1.

Rauch, Joseph R., to P. R. Mallory & Co., Inc. End crimping equipment for round capacitor. 3,353,895, 11–21–67, Cl. 72—402.

Ray, William A., to International Telephone and Telegraph Corp. Electro-hydraulic actuator mechanism. 3,353,353, 11–21–67, Cl. 60—52.

Raychem Corp.: *See—*

Stivers, Edward C. 3,354,191.

Raynal, Jean: *See—*

Ingold, Alain, and Raynal. 3,353,262.

Raytheon Co.: *See—*

Temple, Trevor. 3,354,381.

Reader, Trevor D., to Sperry Rand Corp. Bulk storage tape feed. 3,353,732, 11–21–67, Cl. 226—97.

Reaser, Floyd L.: *See—*

Martin, Willis E., Johnson, and Reaser. 3,353,697.

Redding, Vernon L., to Esso Production Research Co. Minimizing multiple reflections by the application of a particular seismic wave to the earth. 3,353,624, 11–21–67, Cl. 181—.5.

Redel, Joseph, and J.-B.-C. Boch, to A.E.C. Societe de Chimie Organique et Biologique. Process of preparing β-ionylidene acetaldehyde. 3,354,224, 11–21–67, Cl. 260—611.

Reeber. Rudolf, and H. Wenz, to G. M. Pfaff AG. Zig-zag sewing machine with single manually operable setting device for both overstitch width and stitch length. 3,353,509, 11–21–67, Cl. 112—158.

Reeber, Rudolf, R. Dobner, and W. Tretow, to G. M. Pfaff AG. Apparatus for simultaneous formation of work uniting seam and edge binding seam or seams. 3,353,510, 11–21–67, Cl. 112—162.

Rees, John R., and D. Wilkins, to Girling Ltd. Vehicle suspension systems and pumps for such systems. 3,353,814, 11–21–67, Cl. 267—64.

Reich, Robert W. Magnet arrangement for electric and electronic clocks. 3,354,329, 11–21–67, Cl. 310—36.

Reichart, Herman E. Rotary internal combustion engine. 3,353,519. 11–21–67, Cl. 123—12.

Reichhold Chemical, Inc.: *See—*

Peters, Hans. 3.353,923.

Reimann, William G., and M. J. Vavra, to Litton Systems, Inc. Welded wire module with standardized bus strips. 3,354,353, 11–21–67, Cl. 317—101.

Reimers Getriebe Kommanditgesellschaft: *See—*

Ketterle, Walter, Steuer, and Pataky. 3,353,421.

Reisman, Arnold, M. Berkenblit, and S. A. Alyanakyan, to International Business Machines Corp. Method for enhancing efficiency of recovery of semi-conductor material in perturbable disproportionation systems. 3,354,004, 11–21–67, Cl. 148—175.

Reiter, Thomas A.: *See—*

Dengler, Herbert P., and Reiter. 3,354,000.

Remmele Engineering, Inc.: *See—*

Zastrow, Thomas S. 3,353,782.

Rennick, John L., to Zenith Radio Corp. Ring magnetized across thickness with two dimetrically opposed and oppositely oriented groups of magnetic pole pairs. 3,354,336, 11–21–67, Cl. 313—77.

Research Institute for Medicine and Chemistry, Inc.: *See—*

Barton, Derek H. R. 3,354,150.

Rettig, John F., and U. K. Stagg, Jr., to Bell Telephone Laboratories, Inc. Synchronizing circuit for concentrator signaling system. 3,354,268, 11–21–67, Cl. 179—18.

Revere Copper and Brass Inc.: *See—*

Young, Charles W. 3,353,780.

Revukas, Anthony J., to Cities Service Oil Co. Metal (hydrocarbyl and acid hydrocarbyl pyrophosphates) and amine adducts. 3,354,189, 11–21–67. Cl. 260—429.5.

Rexall Drug and Chemical Co.: *See—*

Trecek, Louis J. 3,353,714.

Rexer, Joachim, to Union Carbide Corp. Electromagnetic flux concentrator for levitation and heating. 3,354,285, 11–21–67, Cl. 219—7.5.

Reynolds Metals Co.: *See—*

Becker, William C. 3,353,326.

Robinson, Grover C. 3,353,934.

Schay, Frank J. 3,353,739.

Rhodes, Richard P.: *See—*

Beach, Leland K., Ertelt, Guthrie, and Rhodes. 3,354,210.

Rhone-Poulenc S.A.: *See—*

Julia, Marc. 3,354,196.

Ricciardi, Ronald J. Material handling equipment. 3,353,720, 11–21–67, Cl. 222—200.

Richmond, Kenneth D., to Dayco Corp. Transmission belt. 3,353 419, 11–21–67, Cl. 74—233.

Ridenour, Jack B., to General Motors Corp. Single lever primary and secondary vehicle brake actuating arrangement. 3,353,636, 11–21–67, Cl. 188—106.

Riedel, Hans-Jurgen: *See—*

Knacke, Ottmar, Laser, Merz, and Riedel. 3,353,929.

Riedhammer, Ludwig, G.m.b.H.: *See—*

Buchkremer, Rudolf. 3,354,293.

Riegel Textile Corp.: *See—*

Crenshaw, Walter J., Hicks, and Oakes. 3,353,568.

Rigby, Francis L., to John I. Haas, Inc. Method for preparation of isohumulone concentrates. 3,354,219, 11–21–67, Cl. 260—586.

Riggs & Lombard, Inc.: *See—*

Hadley, Wilfred N. 3,353,237.

Rightmire, Robert A., G. R. Brown, and R. L. Rowland, to The Standard Oil Co. Method of deionization utilizing a low electrostatic potential. 3,354,068, 11–21–67, Cl. 204—180.

Rigo, Adelio: *See—*

Scarso, Luciano, Boccato, and Rigo. 3,354,135.

Ringhofer, Rudolf: *See—*

Hursh, Ronald, and Ringhofer. 3,353,284.

Rinke, Heinrich: *See—*

Thoma, Wilhelm, and Rinke. 3,354,251.

Rinkinen, Robert S.: *See—*

Projector, Theodore H., and Rinkinen. 3,354,428.

Riopelle, James E., to Shell Oil Co. Bed reactor with quench deck. 3 353,924, 11–21–67, Cl. 23—288.

Rivers, Charles F. Drive tightener. 3,353,420, 11–21–67, Cl. 74—242.1.

Robbins, David. Beverage brewers, coffee percolators and the like. 3,353,475, 11–21–67, Cl. 99—312.

Roberts Consolidated Industries, Inc.: *See—*

Hill, Harvey J. 3,353,204.

Roberts, Donald E. Vibratory burnishing system with metered feed. 3,353,796, 11–21–67, Cl. 259—2.

Roberts, Gordon O. Air cooled patio structure. 3,353,471, 11–21–67, Cl. 98—32.

Robertshaw Controls Co.: *See—*

Bauer, Werner R. 3,354,274.

Beck, Roland D., and Palmer. 3,353,452.

Phillips, James W. 3,353,559.

Robertson, John A. L., to Atomic Energy of Canada Ltd. Nuclear reactor fuel. 3,354,044, 11–21–67, Cl. 176—68.

Robinson, Donald E. Heater construction. 3,353,528, 11–21–67, Cl. 126—91.

Robinson, Grover C., to Reynolds Metals Co. Composite-ingot. 3,353,934, 11–21–67, Cl. 29—187.5.

Robison, Robert S.: *See—*

Becker, Edward J., Robison, and Patrick. 3,354,048.

Rodgers, Samuel H., III. Electrical connector. 3,354,421, 11–21–67, Cl. 339—198.

Rodis, Franz: *See—*

Cremer, Joseph, and Rodis. 3,353,908.

Rogers, Howard G., R. W. Young, and D. C. Mendelsohn, to Polaroid Corp. Photographic diffusion transfer processes utilizing an imidazole and an image-receiving element containing a polymeric acid layer. 3,353,956, 11–21–67, Cl. 96—29.

Rogers, Richard S.: *See—*

Bard, Irving G., and Rogers. 3,354,452.

Rohlin, John F.: *See—*

Cepkauskas, Martin D., and Rohlin. 3,353,566.

Rollins, Dallas W., and C. E. Becker, to ACF Industries, Inc. Collapsible support. 3,353,505, 11–21–67, Cl. 105—368.

Rolls-Royce Ltd.: *See—*

Bill, Arthur, Steele, and Poucher. 3,353,351.

Weeds, Alan F. 3,353,788.

Romanowski, Albert F., to Bowser, Inc. Remote control apparatus for dispensing. 3,353,710, 11–21–67, Cl. 222—19.

Ronson Corp.: *See—*

Schlamp, Hermann, and Weber. 3,353,257.

Rorden, Robert J.: *See—*

Holloway, Joseph H., and Rorden. 3,354,307.

Rosemount Engineering Co.: *See—*

Lode, Tenny. 3,354,401.

Rosenberg, Norman: *See—*

Kamins, Seymour, and Rosenberg. 3,353,741.

Rosenberger, Harold E., to Bausch & Lomb Inc. Zoom lens system having front mounted axially movable aperture stop to control numerical aperture during magnification change. 3,353,891, 11–21–67. Cl. 350—17.

Rosenberry, W. K., d.b.a. Able Research Lab.: *See—*

Tarczy-Hornoch, Zoltan. 3,353,439.

Rosenoff, Alan E., to Polaroid Corp. Arylselenazole chemical syntheses. 3,354,170, 11–21–67, Cl. 260—298.

Rostfria Tak AB: *See—*

Gronlund, Sven O. 3,353.319.

Rottmayer, Earl, to Goodyear Aerospace Corp. Wire-film space satellite. 3,354,458, 11–21–67, Cl. 343—18.

Rouge, Pierre: *See—*

Aubert, Michel, Brouard, and Rouge. 3,354,041.

Roussel-Uclaf: *See—*

Bertin, Daniel, and Perronnet. 3,354,037.

Rowekamp, Edward F., to Lodge and Shipley Co. Case loader. 3,353,331, 11–21–67, Cl. 53—166.

Rowland, Richard L.: *See—*

Rightmire, Robert A., Brown, and Rowland. 3,354,068.

Rowley, Walter A., to Whessoe Ltd. Storage tanks. 3,353,552, 11–21–67, Cl. 137—434.

Royet, Jean, to Compagnie Generale d'Electricite. Thermal insulating devices. 3,354,021, 11–21–67, Cl. 161—111.

Rudd, Milo O.: *See—*

Bamberger, Steven H., and Rudd. 3,353,893.

Rueger, Herman, to AMP Inc. One-piece signal housing. 3,354,454, 11–21–67, Cl. 340—381.

Ruegg, Rudolf: *See—*

Gloor, Urs, Ruegg, and Schwieter. 3,354,181.

Ruehlemann, Herbert E., to Elco Corp. Contact with two pin receiving members. 3,354,424, 11–21–67, Cl. 339—220.

Ruhle, Emil T. Airplane enclosure. 3,353,310, 11–21–67, Cl. 52—66.

Rungaldier, Karl, and E. Braun, to Patentauswertung Vogelbusch Gesellschaft m.b.H. Arrangement for destroying foam in fermentors. 3,354,050, 11–21–67, Cl. 195—134.

Russell, James M., III, and W. E. Fox, to United States of America, National Aeronautics and Space Administration. Event recorder. 3,354,462, 11–21–67, Cl. 346—50.

Russell, John R.: *See—*

Bechter, Kathleen, and Russell. 3,353,579.

Rutz, William D., to Donald F. Gregg. Flavorings containing cyclohexanesulfamic acids and cyclamate salts for casein-containing products. 3,353,959, 11–21–67, Cl. 99—28.

Ryan, John W., J. Kossoff, R. L. May, and R. L. Cowell, to Mattell, Inc. Eye moving apparatus combining plural output means to produce one motion. 3,353,296, 11–21–67, Cl. 46—247.

Ryffel, Kaspar: *See—*

Schnider, Albert, Ryffel, and Hurschler. 3,354,146.

Sackner Products, Inc.: *See—*

Copeland, Richard S. 3,354,020.

Sala, Frank J., and G. N. McIntyre, to Hughes Aircraft Co. Package for semiconductor devices and method of making same. 3,354,258, 11–21–67, Cl. 174—52.

Salmanov, Anatoly N., and V. F. Sovkin. Waviness tester for cylindrical surfaces of parts such as bearing fact grooves. 3,353,276, 11–21–67, Cl. 33—174.

Saito, Seiichi: *See—*

Kida, Tokurou, Matsuda, Saito, and Yuasa. 3,353,993.

Salcoa Corp.: *See—*

Ettin, Edwin D. 3,353,658.

Sample, Byron A., Jr.: *See—*

Hirshfield, Julian J., and Sample. 3,353,900.

Samuel, George A., and J. V. Bell, to Alloy Surfaces Co., Inc. Chromized ferrous article. 3,353,936, 11–21–67, Cl. 29—196.6.

Sandlin, John R., and C. S. Fuller, to United States of America, Army. Radar video data reduction system. 3,354,438, 11–21–67, Cl. 340—172.5.

Sandmann, Herbert: *See—*

Brandt, Herbert, and Sandmann. 3,353,588.

Sandoz Ltd.: *See—*

Benz, Jakob, and Uehlinger. 3,354,140.

Sangamo Electric Co.: *See—*

Ford, John R. 3,354,359.

Sariti, Anthony A., to Radio Corporation of America. Flexible type mounts in high speed printing machines. 3,353,482, 11–21–67, Cl. 101—93.

Sarkes Tarzian, Inc.: *See—*

Valdettara, Alarico A., Warthan, and Perry. 3,353,878.

Sarofeen, George M. J., to Titmus Optical Co., Inc. Lens holder for metallic blocking system. 3,353,307, 11–21–67. Cl. 51—216.

Sarto, Jorma O., to Chrysler Corp. Method of operating an automotive engine. 3,353,524, 11–21–67, Cl. 123—117.

Sarto, Jorma O., to Chrysler Corp. Hot start venting. 3,353,801, 11–21–67, Cl. 261—43.

Sato, Toshiyuki, and S. Kono, to Elmo Co., Ltd. Selective film drive for film having diverse characteristics. 3,353,731, 11–21–67, Cl. 226—54.

Savage, Albert B., and J. C. Aldrich, to The Dow Chemical Co. Ethylcellulose latex polish composition. 3,353,971, 11–21–67, Cl. 106—5.

Savoie, Hilbert J., Jr. Diving helmet. 3,353,534. 11–21–67, Cl. 128—142.3.

Sawyer, Frederick C.: *See—*

Miller, Ross J., and Sawyer. 3,353,485.

Saxon, Daniel I.: *See—*

Keel, Alvin M., and Saxon. 3,353,222.

Coffin, Arthur G., Jr., and Saxon. 3,353,223.

Scanlon, John J., Jr., and J. B. Quinlan, to United States of America, Army. Device for molding caseless ammunition. 3,353,438, 11–21–67, Cl. 86—1.

Scanlon, Thomas A., to P M & E Electronics, Inc. Acoustic manifold. 3,353,625, 11–21–67, Cl. 181—31.

Scarso, Luciano, G. Boccato. and A. Rigo, to Montecatini Edison S.p.A. Process for the stabilization of vinyl halide poylmers by treating in the presence of hydrofluoric acid. 3,354,135, 11–21–67, Cl. 260—92.8.

Schad, Robert D., to Husky Mfg. & Tool Works Ltd. Distribution system for thermoplastic molding materials. 3,353,209, 11–21–67, Cl. 18—4.

Schafft, Hugo W., to Motorola, Inc. Ultrasonic transducer and gas analyzer. 3,353,400, 11–21–67, Cl. 73—24.

Schay, Frank J., to Reynolds Metals Co. Container means having pull-off wall means. 3,353,739, 11–21–67, Cl. 229—51.

Schering, A. G.: *See—*

Muller, Hans, Neumann, and Wiechert. 3,354,151.

Raspe, Gerhard, Kieslich, Olivar, Muller, and Wagner. 3,354,186.

Schering Aktiengesellschaft: *See—*

Wiechert, Rudolf, Mueller, and Neumann. 3,354,185.

Schick, Eugene G., and A. R. Church, to Swedlow Inc. Pressure laminating process and apparatus. 3,354,014, 11–21–67, Cl. 156—189.

Schlage Lock Co.: *See—*

Neary, Ralph E., Schmidt, and Tipping. 3,353,858.

Schlamp, Hermann, and P. Weber, to Ronson Corp. Gas burning apparatus. 3,353,257, 11–21–67, Cl. 239—417.3.

Schlapp, George, to Nassovia Werkzeugmaschinenfabrik G.m.b.H. Tracing mechanism for duplicating milling machines. 3,353,449, 11–21–67, Cl. 90—62.

Schleicher, Harold E., to The Arrow-Hart & Hegeman Electric Co. Silent electric switch. 3,354,275, 11–21–67, Cl. 200—68.

Schlein, Seymour N.: *See—*

Butz, Tom E., and Schlein. 3,353,850.

Schlig, Eugene S.: *See—*

Farber, Arnold S., and Schlig. 3,354,440.

Schlinger. Warren G.: *See—*

Brodeur, Charles H., and Schlinger. 3,354,075.

Schloemann Aktiengesellschaft: *See—*

Lichte, Albert. 3,353,806.

- Schmid, Bruce K. : *See—*
  - Beuther, Harold, and Schmid. 3,354,076.
- Schmid, Leonhard. Portable holder for golf clubs. 3,353,838, 11–21–67, Cl. 280—47.19.
- Schmid, Leopold F. : *See—*
  - Erdmann, Hans, and Schmid. 3,353,813.
- Schmidt, Heinz, O. Mauz, and F. Schulde, to Hercules Inc. Stabilized polyolefins. 3,354,117, 11–21–67, Cl. 260—45.85.
- Schmidt, Lukas-Valentin : *See—*
  - Neary, Ralph E., Schmidt, and Tipping. 3,353,858.
- Schmit, Frank L. : *See—*
  - Thayer, Paul M., Schmit, and Trainor. 3,353,677.
- Schmitt, Hans, to Telefonbau und Normalzeit G.m.b.H. Envelope closing devices. 3,353,513, 11–21–67, Cl. 118—32.
- Schmitt, Joseph M., L. A. Landers, and J. F. Terenzi, to American Cyanamid Co. Blends of methyl methacrylate resinous copolymers and grafted elastomers. 3,354,238, 11–21–67, Cl. 260—876.
- Schmoyer, Arthur R., 50% to D. S. Wenger. Apparatus for teaching the operation of a keyboard-controlled machine or instrument. 3,353,435, 11–21–67, Cl. 84—478.
- Schmutz, Karl : *See—*
  - Aemmer, Peter, and Schmutz. 3,354,402.
- Schnahl, Josef : *See—*
  - Lohmar, Walther, Harnisch, Schmahl, Kohli, and Spenner. 3,353,398.
- Schneider, Franz : *See—*
  - Dangelmaier, Karl, Griesinger, Kurz, Schneider, and Scholl. 3,353,822.
- Schnider, Albert, K. Ryffel, and W. Hurschler, to Inventa A.G. fur Forschung und Patentverwertung. Process for the production of cyclopentano omega-oenantholactam. 3,354,146, 11–21–67, Cl. 260—239.3.
- Schoelm, Charles F. : *See—*
  - Garrison, Robert A., and Schoelm. 3,353,451.
- Scholl, Herbert : *See—*
  - Dangelmaier, Karl, Griesinger, Kurz, Schneider, and Scholl. 3,353,822.
- Schrader, Victor H. : *See—*
  - Prosceno, Harry A., Schrader, and Zeis. 3,353,241.
- Schrijnemakers, Gerardus S. : *See—*
  - Almer, Friedrich H. R., Schrijnemakers, Kuiper, and Van Rooy. 3,354,340.
- Schroeder, Joris T., and G. A. K. Otto, to Otis Elevator Co. Transparent balustrade for a passenger conveyor. 3,353,650, 11–21–67, Cl. 198—16.
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- Schrom, Edward C., to General Electric Co. Fluid-working spark discharge electrode assembly. 3,354,344, 11–21–67, Cl. 313—130.
- Schulde, Felix : *See—*
  - Schmidt, Heinz, Mauz, and Schulde. 3,354,117.
- Schuler, Maurice E. : *See—*
  - Habig, John B., and Schuler. 3,353,434.
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- Schulze, Herbert C. Apparatus for compacting particulate material. 3,353,214, 11–21–67, Cl. 18—16.5.
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- Schumacher, Wolfgang : *See—*
  - Dankelmeier, Wilhelm, and Schumacher. 3,353,689.
- Schupack, Morris, to The Preload Co. Open end structure having a positively engaged closure. 3,353,859, 11–21–67, Cl. 292—256.
- Schut, Robert N., to Miles Laboratories, Inc. Sa-(4-phenyl-1-piperazyl)-4a,5,6,7,8a-hexahydro - 4H - 1 - benzopyrans and process. 3,354,161, 11–21–67, Cl. 260—268.
- Schutz, Thomas A., Co., Inc. : *See—*
  - Nekimken, Elic. 3,353,615.
- Schwab, Helmut A. : *See—*
  - Pfab, Diethard G., and Schwab. 3,354,457.
- Schwartz, Edmund I., and J. Chin-Bow, to Devenco Inc. Tri-orthogonal antenna system with variable effective axis. 3,354,459, 11–21–67, Cl. 343—100.
- Schwarz, Arthur M., to Inland Steel Co. Process of purifying an arsenic containing iron ore. 3,353,953, 11–21–67, Cl. 75—6.
- Schwarz, Eckhard C. A., to E. I. du Pont de Nemours and Co. Polyesters from 3,6-bis(carboxymethyl) durene. 3,354,124, 11–21–67, Cl. 260—75.
- Schwarzkopf, Hans : *See—*
  - Lukesch, Heinz, and Bechmann. 3,354,039.
- Schweizer, Albert E. : *See—*
  - Heilweil, Jerome P., and Schweizer. 3,353,301.
  - Heilweil, Jerome P., and Schweizer. 3,353,321.
- Schwieter, Ulrich : *See—*
  - Gloor, Urs., Ruegg, and Schwieter. 3,354,181.
- Scott Chemical and Welding Products Co., Inc. : *See—*
  - Bowers, Lester T., and McDonnell. 3,353,970.
- Scott, Louis F. Safety jack for automotive vehicles and the like. 3,353,789, 11–21–67, Cl. 254—88.
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- Scott Paper Co. : *See—*
  - Welsh, Robert E., and McConnell. 3,353,994.
  - York, David E. 3,354,089.
- Sealol, Inc. : *See—*
  - Lindeboom, Herman. 3,353,877.
- Sebo, Carl J., to Atlas Electrical Fittings Co. Conduit bracket 3,353,775, 11–21–67, Cl. 248—70.
- Seeburg Corp., The : *See—*
  - Bodoh, Albinus G., and Siwy. 3,353,882.
- Seeliger, Wolfgang, to Chemische Werke Huls A.G. Process for the production of N-2-acyloxyethylphthalimides. 3,354,177, 11–21–67, Cl. 260—326.
- Selden, Paul, to The Procter & Gamble Co. Corandomized margarine oils. 3,353,964, 11–21–67, Cl. 99—118.
- Seigneurin, Michel, to Micro-Mega. Dental hand pieces. 3,353,272, 11–21–67, Cl. 32—27.
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  - Blaha, Emil. 3,353,982.
  - Dolf, Hans R. 3,353,940.
  - Kitzen, Maurice R. 3,353,920.
  - Walter, Bernard R. 3,353,339.
- Selby Myron C., to United States of America, Commerce. Coaxial transmission line T-junction having rectangular passageway dimensioned beyond cutoff for higher order modes. 3,354,411, 11–21–67, Cl. 333—6.
- Seligman, Robert B. : *See—*
  - Hind, John D., and Seligman. 3,353,541.
- Semo, Marcel S. Useful power from ocean waves. 3,353,787, 11–21–67, Cl. 253—4.
- Sen, Nirmal : *See—*
  - Faulkner, Raymond N., and Sen. 3,354,104.
- Sennello, Joseph J., and H. J. Keinanen, to Continental Can Co., Inc. Welding control circuit. 3,354,287, 11–21–67, Cl. 219—110.
- Sennewald, Kurt, and P. Wirtz, to Knapsack Aktiengesellschaft. Process for isolating and purifying 1-cyanobutadiene-(1,3) by plural stage distillation in the presence of nitrogen oxide. 3,354,054, 11–21–67, Cl. 203—8.
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- Seraphim, Donald P. : *See—*
  - Campagna, Frank J., Gregor, and Seraphim. 3,354,360.
- Serres, Carl, Jr. : *See—*
  - Zimmerschied, Wilford J., Hannemann, and Serres. 3,354,202.
- Servo Corp. of America : *See—*
  - Liggett, Robert D., White, and Pelino. 3,354,306.
- Settimi, Raymond J., to Borg-Warner Corp. Safety belt buckle. 3,353,234, 11–21–67, Cl. 24—230.
- Setzer, Carl J., to Monsanto Co. Fiber blends. 3,353,345, 11–21–67, Cl. 57—140.
- Seulen, Gerhard W. : *See—*
  - Vaughan, John T., and Seulen. 3,354,256.
- Seymour, James A., and W. F. Beth, to Norton Co. Hub mounting for grinding wheels. 3,353,306, 11–21–67, Cl. 51—168.
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- Shah, Bankim R. : *See—*
  - Harris, Thomas J., and Shah. 3,354,451.
- Shanley, Francis R., to The Rand Corp. Composite material and method for making same. 3,353,932, 11–21–67, Cl. 29—182.2.
- Shannon, Richard F., and M. C. Armstrong, to Owens-Corning Fiberglas Corp. Low density insulation bonded with colloidal inorganic materials. 3,353,975, 11–21–67, Cl. 106—65.
- Sharkey, Joseph M. : *See—*
  - Lambert, Douglas R. M., and Sharkey. 3,353,269.
- Shatter King Mfg. Co. Inc. : *See—*
  - Morgenson, Donald J. 3,353,756.
- Shaw, Fred D., to E. I. du Pont de Nemours and Co. Adhesive compositions of polymethane elastomer and oil-soluble phenolic resin. 3,354,237, 11–21–67, Cl. 260—829.
- Sheiman, Julius, to Crest Lock Co., Inc. Ring post assembly. 3,353,205, 11–21–67, Cl. 16—125.
- Shelburg, William D., and R. F. Hettler, to The Dow Chemical Co. Crystalline polypropylene coated with a vinylidene chloride copolymer. 3,353,991, 11–21–67, Cl. 117—138.8.
- Shell Oil Co. : *See—*
  - Brackman, Willem, and Volger. 3,354,220.
  - Geertsma, Jan. 3,353,602.
  - Klein, Harvey S. 3,354,236.
  - Riopelle, James E. 3,353,924.
  - Short, Glen A. 3,354,239.
- Shepherd, Joseph L., S. Witz, and E. I. Hormats, to Aerojet-General Corp. Method of preparing trialkylboron compounds. 3,354,067, 11–21–67, Cl. 204—168.
- Sherwin-Williams Co., The : *See—*
  - Hunn, James V. 3,353,979.
- Sherwood, William L. Heating and discharge apparatus for fused materials in rotary furnaces. 3,353,810, 11–21–67, Cl. 266—37.
- Shimabukuro, George T. : *See—*
  - Macon, Charles E., Barton, Quantz, and Shimabukuro. 3,354,429.
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- Shoffner, Willie M. Foot operated switch. 3,354,276, 11–21–67, Cl. 200—86.5.

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- Short, Glen A., to Shell Oil Co. Polyolefin blend. 3,354,239, 11–21–67, Cl. 260—876.
- Showalter, Edwin L. : *See—*
  - Williams, Robert C., Joyce, and Showalter. 3,354,030.
- Shrader, Victor H., to Joseph Bancroft & Sons Co. Feed control for stuffer crimper. 3,353,242, 11–21–67, Cl. 28—1.
- Shutt, George T. Method and system for protecting corrosible metallic structures. 3,354,063, 11–21–67, Cl. 204—148.
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- Siddall, John B. : *See—*
  - Edwards, John A., Fried, and Siddall. 3,354,152.
  - Edwards, John A., Fried, and Siddall. 3,354,154.
- Siddons, James K. : *See—*
  - Kidera, Edward H., Hamkins, and Siddons. 3,353,501.
- Siddiqui, Salimuzzaman, to Pakistan Council of Scientific and Industrial Research. Harmidine and derivatives thereof. 3,354,142, 11–21–67, Cl. 260—236.
- Sieloff, Christian F. Reinforced plastic coffin. 3,353,238, 11–21–67, Cl. 27—7.
- Siemens-Schuckertwerke Aktiengesellschaft : *See—*
  - Poppinger, Herbert, Volkmann, and Däubler. 3,354,375.
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- Siempelkamp, G., & Co. : *See—*
  - Siempelkamp, Eugen, and Muller. 3,353,216.
- Signode Corp. : *See—*
  - Howard, Frank C., and Langas. 3,353,737.
- Silhavy, Frank J., and R. J. Debrey, to Caloric Corp. Infra red ray generating space heater. 3,353,583, 11–21–67, Cl. 158—114.
- Silva, William C., to Borg-Warner Corp. Lint removal system. 3,353 681, 11–21–67, Cl. 210—355.
- Silver, Harold F., to American Factors Associates, Ltd. Apparatus for supporting horizontal rotating cylinders. 3,353,880, 11–21–67, Cl. 308—204.
- Simon, Clarence K., to Dominion Products, Inc. Stabilized flavoring concentrates. 3,353,961, 11–21–67, Cl. 99—78.
- Simon, Horst, to Eastman Kodak Co. Means for retaining a film to a camera take-up spool. 3,353,766, 11–21–67, Cl. 242—74.2.
- Simon, Paul W. : *See—*
  - Lund, Richard B., Simon, and Vitrone. 3,354,148.
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- Simonetti, Sergio, to Sonic Engineering Corp. Mixing system. 3,353,797, 11–21–67, Cl. 259—8.
- Simplomatic Mfg. Co. : *See—*
  - Cipolla, Peter L. 3,353,289.
- Sinclair, Gabriel J., to Interchemical Corp. Flexographic inks containing soluble dyes. 3,353,972, 11–21–67, Cl. 106—22.
- Singer, Alvin : *See—*
  - Davis, Bayard C., Singer, and Chapman. 3,353,260.
- Singer Co., The : *See—*
  - Leslie, Ivan A. 3,353,640.
  - Marino, Salvatore M. 3,353,511.
  - Peterson Wesley R., Cook, Thompson, and Stolpen. 3,353,424.
- Siwinski, George W. : *See—*
  - Flach, Donald O., and Siwinski. 3,353,913.
- Siwy, Daniel J. : *See—*
  - Bodoh, Albinus G., and Siwy. 3,353,882.
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- Smale, Charles H., to General Motors Corp. Air by-pass arrangement operated by differential air pressure. 3,353,551, 11–21–67, Cl. 137—114.
- Smidth, F. L., & Co. : *See—*
  - Hansen, Eyvind K. 3,353,952.
- Smith, Arthur D., H. G. Henrickson, and C. Langewis, to Kaiser Aluminum & Chemical Corp. Apparatus for forming cup-shaped containers. 3,353,394, 11–21–67, Cl. 72—347.
- Smith, Clifford D. : *See—*
  - Oneson, Thomas M., Journell, and Smith. 3,353,473.
- Smith, Grant M., and A. J. Trost, to Ampex Corp. Magnetic erase head current supply. 3,354,270, 11–21–67, Cl. 179—100.2.
- Smith, Horace L., Jr., to Hupp Corp. Process of making potato chips. 3,353,962, 11–21–67, Cl. 99—100.
- Smith, James M. : *See—*
  - Kortkamp, Donald H., and Smith. 3,354,361.
- Smith Norman E., to Crossly Window Corp. Lock mechanism for a sliding panel. 3,353,855, 11–21–67, Cl. 292—65.
- Smith, Ralph W., W. A. H. Huffman, and J. Preston, to Monsanto Co. Polymers from diaminobenzanilides. 3,354,125, 11–21–67, Cl. 260—78.
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- Smith, Robert V., to Phillips Petroleum Co. High-pressure steam drive oil production process. 3,353,598, 11–21–67, Cl. 166—11.
- Smith, Roger, Jr., to Bryon Jackson Inc. Traveling block. 3,353,794, 11–21–67, Cl. 254—192.
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- Snellman, Roger. Refractory pouring tube for degassing vessels. 3,353,809, 11–21–67, Cl. 266—34.
- Snyder, Richard C., and M. Stark, to Pullman Inc. Adjustable restraining means. 3,353,506, 11–21–67, Cl. 105—369.
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- Societe Anonyme Andre Citroen : *See—*
  - Henry-Biabaud, Edmond. 3,353,815.
- Societe Anonyme : Etablissements Simon : *See—*
  - Simon, Roger J. A. 3,353,270.
- Societe Civile dite ; Societe Civile d' Etudes de Centrifugation : *See—*
  - Babel, Louis, and Peytavin. 3,353,587.
- Societe d' Electro-Chimie, d Electro-metallurgie, et des Acieries Electriques d' Ugine : *See—*
  - Vuillemenot, Jacques. 3,354,102.
- Societe des Etablissements Andre Debrie : *See—*
  - Debrie, Andre V. L. C. 3,353,442.
- Sollin, Ingmar. to International Minerals & Chemical Corp. Froth flotation reagent. 3,353,672, 11–21–67, Cl. 209—166.
- Sommer, Erwin, and K. Gerlach, to Vereinigte Glanzstoff-Fabriken A.G. Production of paper of cellulose and polyamide fibers. 3,354,032, 11–21–67, Cl. 162—146.
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- Sommer, Sigemund : *See—*
  - Fruhstorfer, Wolfgang, and Hotony. 3,354,175.
- Sondheim, Werner, to Permco Corp. Universal pump box apparatus. 3,353,770, 11–21–67, Cl. 248—1.
- Sonic Engineering Corp. : *See—*
  - Simonetti, Sergio. 3,353,797.
- Sonotone Corp. : *See—*
  - Langguth, Erich, and Belove. 3,353,998.
- Soulen, John R., and W. H. Chappell, Jr., to Pennsalt Chemicals Corp. High temperature, short-contact-time-pyrolysis of chlorodifluoromethane. 3,354,232, 11–21–67, Cl. 260—653.
- Sovar, Robert H. : *See—*
  - Sicking, Robert H., and Sovar. 3,353,273.
- Sovkin, Vasily F. : *See—*
  - Salmanov, Anatoly N., and Sovkin. 3,353,276.
- Spandorfer, Lester M., to Sperry Rand Corp. Frequency doubler wherein two wires are placed in a orthogonal relationship with one wire having a magnetic film coating. 3,354,382. 11–21–67, Cl. 321—60.
- Special Metals Corp. : *See—*
  - Wentzell, Joseph M. 3,353,585.
- Speer Filler Strip Co. : *See—*
  - Speer, Paul. 3,353,747.
- Speer, Paul, to Speer Filler Strip Co. Railway crossing. 3,353,747, 11–21–67, Cl. 238—8.
- Spenner, Anton : *See—*
  - Lohmar, Walther, Harnisch, Schmahl, Kohli, and Spenner 3,353,398.
- Sperry Rand Corp. : *See—*
  - Cubert, Jack S., and Ash. 3,354,324.
  - Lamb, James J. 3,354,432.
  - Mathias, Joseph S., and McGee. 3,353,986.
  - Meyer, Carl H. 3,354,321.
  - Reader, Trevor D. 3,353,732.
  - Spandorfer, Lester M. 3,354,382.
- Spicer, Edward, and N. Cohan. Lighting fixture. 3,354,305, 11–21–67, Cl. 240—73.
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- Sproull, Reavis C., and R. M. Berger, to American Filtrona Corp. Smoke filter. 3,353,543, 11–21–67, Cl. 131—265.
- Square D Co. : *See—*
  - Gribble, Joseph J., Marien, and Whiting. 3,354,415.
  - Jorgensen, George N., Stanback, and Dunham. 3,354,357.
  - Pettit, Dorn L., and Stock. 3,354,356.
  - Stanback, Harris I., and Curtis. 3,354,277.
- Squibb, E. R., & Sons, Inc. : *See—*
  - Becker, Edward J., Robison, and Patrick. 3,354,048.
- Squires, George R. Adjustable shelving. 3,353,507, 11–21–67, Cl. 108—107.
- Sroda, George R. Method of preparing an organic soil conditioner. 3,353,948, 11–21–67, Cl. 71—21.
- Staats, Henry N. Book binding. 3,353,844, 11–21–67, Cl. 281—17.
- Stadler, Hans, and H. Gawlick, to Dynamit Nobel Aktiengesellschaft. Primer for impact fuses. 3,353,488, 11–21–67, Cl. 102—73.
- Stagg. Uberto K., Jr. : *See—*
  - Rettig, John F., and Stagg. 3,354,268.
- Staller, Karel J., to Flexigrip, Inc. Anchoring flexible sheeting. 3,353,548, 11–21–67, Cl. 135—5.
- Stalter, Neil J. : *See—*
  - Potter, Howard L., and Stalter. 3,353,903.
- Stamicarbon N.V. : *See—*
  - Leeman, Jan N. J. 3,353,674.
- Stanback, Harris I., and H. W. Curtis, to Square D Co. Fusible switch for electrical panelboard. 3,354,277, 11–21–67, Cl. 200—114.
- Stanback, Harris I. : *See—*
  - Jorgensen, George N., Stanback, and Dunham. 3,354,357.
- Standard Brands Inc. : *See—*
  - MacAllister, Robert V., Crosby, and Lanphere. 3,354,046.
- Standard Kollsman Industries, Inc. : *See—*
  - Wittig, Karl H. 3,354,397.

- Standard Oil Co. (Indiana) : *See*—
  - Carl, Ralph W. 3,354,060.
  - Horan, James E., and Van Strien. 3,354,110.
  - Zimmerschied, Wilford J., Hannemann, and Serres. 3,354,202.
- Standard Oil Co. (Ohio), The : *See*—
  - Rightmire, Robert A., Brown, and Rowland. 3,354,068.
  - Callahan, James L., Gertisser, and Szabo. 3,354,197.
- Star Metal Corp. : *See*—
  - Heilwell, Jerome P., and Schweizer. 3,353,321.
- Stark, Marvin : *See*—
  - Snyder, Richard C., and Stark. 3,353,506.
- Starline, Inc. : *See*—
  - Boppart, Loren P., and Berryhill. 3,353,691.
  - Ferris, Robert G. 3,353,654.
- Statham, Kenneth E. : *See*—
  - Brixey, John C., Jr., and Statham. 3,354,008.
- Stauffer Chemical Co. : *See*—
  - Walsh, Edward N. 3,354,195.
- Stedman, Cresswell E., deceased (by E. K. Stedman, administratrix), to U.S. Perlite Corp. Apparatus for producing acoustical tile. 3,353,236, 11–21–67, Cl. 25—2.
- Stedman, Elizabeth K. : *See*—
  - Stedman, Cresswell E. 3,353,236.
- Steele, Thomas : *See*—
  - Bill, Arthur, Steele, and Poucher. 3,353,351.
- Steere Enterprises, Inc. : *See*—
  - Bechter, Kathleen, and Russell. 3,353,579.
- Stegeman, Frederick C. Polyurethane-hydraulic cement compositions and process for manufacturing the same. 3,354,099, 11–21–67, Cl. 260—2.5.
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- Steinmueller, Ralph E. : *See*—
  - Dietert, Harry W., and Steinmueller. 3,353,407.
- Sterling Drug Inc. : *See*—
  - Bell, Malcolm R. 3,354,174.
  - Dickinson, William B. 3,354,178.
- Stern, Albert, to A.I.T. Industries, Inc. Art of edging. 3,353,303, 11–21–67, Cl. 51—105.
- Sternberg, Ernest M., to Monsanto Co. Differential traverse winding mechanism. 3,353,759, 11–21–67, Cl. 242—26.1.
- Stetson, Earl W., to General Electric Co. Lightning arrester spark gap having arc confining chamber walls of graded porosity. 3,354,345, 11–21–67, Cl. 313—153.
- Steuer, Herbert : *See*—
  - Ketterle, Walter, Steuer, and Pataky. 3,353,421.
- Stevens, Jane E. : *See*—
  - Ham, George E., and Stevens. 3,354,126.
- Stevens, Joel B. : *See*—
  - Terrell, Robert L., and Stevens. 3,354,013.
- Stiftelsen Svensk Cellulosafarskning : *See*—
  - Hartler, Nils, and Aurell. 3,354,029.
- Stivers, Edward C., to Raychem Corp. Aluminum tetrabromophthalate. 3,354,191, 11–21–67, Cl. 260—448.
- Stock, Howard P. : *See*—
  - Pettit, Dorn L., and Stock. 3,354,356.
- Stockebrand, Thomas C., to Digital Equipment Corp. Polyphase drive system including a shift register. 3,354,367, 11–21–67, Cl. 318—138.
- Stockman, Richard, to The Air Preheater Co., Inc. Apparatus for the elimination of odors from noxious gases. 3,353,919, 11–21–67, Cl. 23—277.
- Stolle Corp., The : *See*—
  - Stolle, Ralph J., and Kaminski. 3,353,515.
- Stolle, Ralph J., and E. G. Kaminski, to The Stolle Corp. Can treating apparatus. 3,353,515, 11–21–67, Cl. 118—73.
- Stolpen, Alan H. : *See*—
  - Peterson, Wesley R., Cook, Thompson, and Stolpen. 3,353,424.
- Storch, Bernard. Adjustable anchoring means for masonry walls. 3,353,312, 11–21–67, Cl. 52—713.
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- Stripp, Peter W., to Tecalemit (Engineering) Ltd. Air filters for internal combustion engines. 3,353,341, 11–21–67, Cl. 55—502.
- Stromberg-Carlson Corp. : *See*—
  - Bell, Alexander. 3,354.339.
  - Corpew. Charles R. 3,354,335.
- Striker, Michael S. : *See*—
  - Jacob, Ezekiel J. 3,353,981.
- Stuart, Duncan J. K., and B. Queenborough, to Edward Williams Holdings Ltd. Hydraulic feed systems. 3,353,429, 11–21–67, Cl. 82—21.
- Sturtevant Industries, Inc. : *See*—
  - Fellner, Phillip J., Jr. 3,353,652.
- Stutsman, Raymond S. : *See*—
  - Kollar, Lyle T., and Stutsman. 3,354,294.
- Subirana, Antonio E., to Laboratoires Om Societe Anonyme. p-Dihydroxybenzene-sulfonate of diethylamine. 3,354,201. 11–21–67, Cl. 260—501.21.
- Surmatis, Joseph D., to Hoffmann-La Roche, Inc. Process for preparing 4-(2,6,6-trimethyl-4-methoxy-1-cyclohexen-1-yl)-3-buten-2-one. 3,354,218, 11–21–67, Cl. 260—586.
- Surov, Viktor P.: *See*—
  - Meden, Alexander I., and Surov. 3,353,523.
- Sutherland. John C., to Taylor & Gaskin, Inc. Conveyor trolley. 3,353,499, 11–21–67, Cl. 104—172.
- Sutton, Robert J. : *See*—
  - Durst, Paul T., and Sutton. 3,354,281.
- Suydam, Walter, to Loftus Engineering Corp. Apertured walls for industrial furnaces. 3,353,804, 11–21–67, Cl. 263—40.
- Suzuki, Nobuo. Exposure-control system for photographic cameras and the like. 3,353,462, 11–21–67, Cl. 95—10.
- Svoboda, James, to Caterpillar Tractor Co. Support for loader lift arm. 3,353,699, 11–21–67, Cl. 214—770.
- Swain, David L., and E. I. Lynch, to General Electric Co. Rectifier circuit with voltage multiplication. 3,354,379, 11–21–67, Cl. 321—15.
- Sweat, Henry D. Harness frame connector. 3,353,570, 11–21–67, Cl. 139—88.
- Swedlow Inc. : *See*—
  - Schick, Eugene G., and Church. 3,354,014.
- Sweeney, Richard F., to Allied Chemical Corp. 1-chloro-2-methoxyoctafluorocyclohexene-1. 3,354,223, 11–21–67, Cl. 260—611.
- Sweeny, Wilfred : *See*—
  - Hill, Harold W., Jr., Kwolek, and Sweeny. 3,354,127.
- Sweetheart Plastics, Inc. : *See*—
  - Davis, Paul. 3,353,708.
- Sweger, Theodore J., to Illinois Railway Equipment Co. Dust guard. 3,353,831, 11–21–67, Cl. 277—68.
- Swel-Plug, Inc. : *See*—
  - Markham, Junius. 3,353,565.
- Swiadek, Stanley F.: *See*—
  - Petroff, Michael D., and Swiadek. 3,354,314.
- Swidler, Ronald : *See*—
  - Englert, Robert D., Swidler, Berriman, and Wade. 3,353,904.
- Swift, Gilbert, to Dresser Industries, Inc. Mobile density and moisture content sensing device for continuous logging of a terrestrial surface. 3,354,310, 11–21–67, Cl. 250—88.3.
- Swift, Gilbert, to Dresser Industries, Inc. Apparatus for testing road surfaces and method. 3,353,404, 11–21–67, Cl. 73—146.
- Swift, Virgil N., to Gulf Oil Corp. Method and apparatus for stabilizing formations. 3,353,599, 11–21–67, Cl. 166—15.
- Sykes, James F., and D. E. Phillips, to Newport News Shipbuilding and Dry Dock Co. Cargo handling apparatus. 3,353,685, 11–21–67, Cl. 212—.3.
- Sylvain, Gerard A., and G. W. Kean. Support for buckets. 3,353,778, 11–21–67, Cl. 248—211.
- Symes, William F. : *See*—
  - Sobocinski, Eugene C., and Symes. 3,354,158.
- Syntex Corp. : *See*—
  - Bowers, Albert, Crabbe, and Edwards. 3,354,183.
  - Edwards, John A. 3,354,149.
  - Edwards, John A., Fried, and Siddall. 3,354,152.
  - Edwards, John A., Fried, and Siddall. 3,354,154.
- Szabo, Joseph J. : *See*—
  - Callahan, James L., Gertisser, and Szabo. 3,354,197.
- TRW Inc. : *See*—
  - Friedman, Burnam I., Martinez, and Jortner. 3,353,354.
  - Kirkpatrick, Milton E. 3,353,259.
- Tachibana, Koichi : *See*—
  - Takubo, Minoru, Tachibana, and Watanabe. 3,354,143.
- Tackett, Edd. Valveless fuel lighter. 3,353,376, 11–21–67, Cl. 67—7.1.
- Takacs, Edward A., to American Cyanamid Co. Triaminoguanidinium 5-aminotetrazolate and its preparation. 3,354,172, 11–21–67, Cl. 260—308.
- Takubo, Minoru, K. Tachibana, and S. Watanabe, to Toyo Koatsu Industries, Inc. Process for preparing ferulates from alkali foots of vegetable oils. 3,354,143, 11–21–67, Cl. 260—236.5.
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- Tate, Jack F. : *See*—
  - Ten Brink, Karl C., and Tate. 3,354,094.
- Taub, David : *See*—
  - Wendler, Norman L., Hoffsommer, and Taub. 3,354,206.
- Taube, Carl, K. Bockmann, and K.-H. Freytag, to Farbenfabriken Bayer Aktiengesellschaft. Increasing wash fastness of dyes on cellulosic materials with N methylolated quaternary ammonium ureido and urethane compounds. 3,353,901. 11–21–67, Cl. 8—74.
- Taylor, Ernest A., Jr., to Monsanto Co. Washing apparatus. 3,353,379, 11–21–67, Cl. 68—181.
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- Taylor, Ernest A., Jr., to Monsanto Co. High velocity tow washing cascade. 3,353,381, 11–21–67, Cl. 68—184.
- Taylor & Gaskin, Inc. : *See*—
  - Sutherland, John C. 3,353,499.
- Te Bow, Clem, to C-T Automotive, Inc. Universal engine mount and method of mounting engine. 3,353,771, 11–21–67, Cl. 248—3.
- Tecalemit (Engineering) Ltd. : *See*—
  - Stripp, Peter W. 3,353 341.
  - Woor, Denis F., and Higham. 3,353,630.
- Technicon Corp. : *See*—
  - Isreeli, Jack. 3,353,567.
- Tele-Signal Corp. : *See*—
  - Minc, Anatole. 3,354,433.
- Telefonbau and Normalzeit G.m.b.H. : *See*—
  - Schmitt, Hans. 3,353,513.
- Temple, Ernest E. : *See*—
  - Temple, Robert and E. E. 3.353,267.
  - Temple, Robert and E. E. 3,353,445.
- Temple, Robert and E. E., to Mine Safety Appliances Co. Explosively actuated cable cutting tool. 3,353,267, 11–21–67, Cl. 30—180.
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- Temple, Trevor, to Raytheon Co. D.C. to A.C. inverter circuit. 3,354,381, 11–21–67, Cl. 321—45.
- Templeton, William B., to Burroughs Corp. Accounting machine record handling apparatus. 3,353,649, 11–21–67, Cl. 197—127.
- Ten Brink, Karl C., and J. F. Tate, to Texaco, Inc. Composition and method for treating scale. 3,354,094, 11–21–67, Cl. 252—180.
- Ten Bruggencate, Teunis : *See*—
  - Bartoo, Otto F., Ten Bruggencate, and Gorter. 3,353,703.
- Terenzi, Joseph F. : *See*—
  - Schmitt, Joseph M., Landers, and Terenzi. 3,354,238.
- Terrell, Robert L., and J. B. Stevens, to Eastman Kodak Co. Method and apparatus for applying particulate additives to continuous filament tow. 3,354,013, 11–21–67, Cl. 156—152.
- Teumac, Fred N., to The Dow Chemical Co. Removal of ferrous sulfide deposits. 3,353,995, 11–21–67, Cl. 134—3.
- Teves-Thompson & Co., G.m.b.H. : *See*—
  - Kubera, Gerhard. 3,353,247.
- Texaco, Inc. : *See*—
  - Brodeur, Charles H., and Schlinger. 3,354,075.
  - Ten Brink, Karl C., and Tate. 3,354,094.
  - Patterson, John A. 3,354,207.
  - Williams, Edward L. 3,354,052.
- Texas Instruments Inc. : *See*—
  - Belasco, Melvin, and Martin. 3,354,365.
  - Brixey, John C., Jr., and Statham. 3,354,008.
  - Helms, John D. 3,353,263.
  - James, William R. 3,354,394.
  - Johnston, James H. 3,353,387.
  - Long, Russell K., and Mize. 3,354,006.
- Thayer, Paul M., F. L. Schmit, and D. T. Trainor, to Water Pollution Control Corp. Circular liquid treatment plants having service platforms. 3,353,677, 11–21–67, Cl. 210—220.
- Theiring, John W., to United States of America, Atomic Energy Commission. Simultaneous charge and read quantometer. 3,353,444, 11–21–67, Cl. 88—14.
- Thelander, W. Vincent. Friction clutches. 3,353,642, 11–21–67, Cl. 192—99.
- Thiokol Chemical Corp. : *See*—
  - Fein, Marvin M., Green, and Mayes. 3,354,193.
  - Hessler, Richard O. 3,353.401.
  - Lovingham, Joseph J. 3,353,358.
  - Monteleone, Frank J., Jr. 3,353,561.
  - Williams, Charles F. 3,353,356.
  - Wright, William R., Jr. 3,353,357.
- Thoma, Wilhelm, and H. Rinke, to Farbenfabriken Bayer Aktiengesellschaft. Process for the regulation of the elasticity modulus of highly elastic fibers and films. 3,354,251, 11–21–67, Cl. 264—210.
- Thomas, Robert A., to Trefileries Leon Bekaert, P.v.b.A. Fastening devices. 3,353,774, 11–21–67, Cl. 248—68.
- Thomas, Tex C., to Collins Radio Co. Counter step-down frequency synthesizer. 3,354,403, 11–21–67, Cl. 331—18.
- Thompson, Ronald R. : *See*—
  - Peterson, Wesley R., Cook, Thompson, and Stolpen. 3,353,424.
- Thomson, John S. Cranes. 3,353,687, 11–21–67, Cl. 212—58.
- Thornhill, Fred S. : *See*—
  - Trimble, Stanley C., Hewitt, and Thornhill. 3,353,974.
- Tidemalm, Gustav H., and N. O. Johansson, to Aktiebolaget Bofors. Steering device for track laying vehicles. 3,353,616, 11–21–67, Cl. 180—6.44.
- Tillery, Hubert B. and L. D. Garment hanger. 3,353,727, 11–21–67, Cl. 223—88.
- Tillery, Hubert B., and Tillery. 3,353,727.
- Tillotson Mfg. Co., The : *See*—
  - Nutten, Warren D., and Phillips. 3,353,525.
- Tiplitz, Charles I., and W. J. Krupick, to General Precision Inc. Gyro damping control. 3,353,415, 11–21–67, Cl. 74—5.5.
- Titmus Optical Co., Inc. : *See*—
  - Sarofeen, George M. J. 3,353,307.
- Todd, William D. : *See*—
  - Evans, Robert W., Todd, and Essig. 3,354,109.
- Tokyo Shibaura Electric Co., Ltd. : *See*—
  - Manaka, Kazuo, and Tomioka. 3,353,987.
- Toledo Scale Corp. : *See*—
  - Burgy, Raymond A. 3,353,631.
- Toman, Donald J., to General Precision, Inc. Redundant runway localiser landing system. 3,354,460, 11–21–67, Cl. 343—108.
- Tomioka, Tamotsu : *See*—
  - Manaka, Kazuo, and Tomioka. 3,353.987.
- Tompkins, Edward L. Thermally insulated container. 3,353,886, 11–21–67, Cl. 312—214.
- Tope, Paul H., and B. J. Crane, to Whirlpool Corp. Automatic control circuit for regulating temperature. 3,353,589, 11–21–67, Cl. 165—26.
- Tormolen, Hans H. Trailer. 3,353,862, 11–21–67, Cl. 296—26.
- Török, Vilmos : *See*—
  - Kain, Per, and Török. 3 353,384.
- Toshin Electric Co., Ltd. : *See*—
  - Shime, Nubuo. 3,353,343.
- Tower, Raymond C., to M. B. Claff & Sons, Inc. Apparatus for applying a film of glue to box blanks and the like. 3,353,517, 11–21–67, Cl. 118—261.
- Townsend, Harold J. : *See*—
  - Grenley, Dallas G., and Townsend. 3,353,992.
- Toyo Koatsu Industries, Inc. : *See*—
  - Takubo, Minoru, Tachibana, and Watanabe. 3,354,143.
- Trageser, Edmund C. : *See*—
  - Blanding, John E., Trageser, and Harrington. 3,353,364.
- Trainor, Donald T. : *See*—
  - Thayer, Paul M., Schmit, and Trainor. 3,353,677.
- Traverse, Alfred J. Reinforced hockey stick. 3,353,826, 11–21–67, Cl. 273—67.
- Trecek, Louis J., to Rexall Drug and Chemical Co. Collapsible flexible plastic container tube. 3,353,714, 11–21–67, Cl. 222—107.
- Trefileries Leon Bekaert, P.v.b.A. : *See*—
  - Thomas, Robert A. 3,353,774.
- Tretow, Werner : *See*—
  - Reeber, Rudolf, Dobner, and Tretow. 3,353,510.
- Tretter, James R., to Chas. Pfizer & Co., Inc. Aminoalkylphosphonium compounds and process for the use thereof. 3,354,155, 11–21–67, Cl. 260—240.
- Tri-Valley Growers : *See*—
  - Witmer, Clinton C. 3,353,651.
- Trieschock, George E., to United States Steel Corp. Coal tar polyhydroxyether composition. 3,354,105, 11–21–67, Cl. 260—28.
- Trimble, Stanley C., K. D. Hewitt, and F. S. Thornhill, to Continental Carbon Co. Pigmented masterbatch compositions and a method for preparing same. 3,353,974, 11–21–67, Cl. 106—31.
- Tripoli, Joseph V. : *See*—
  - Caligiuri, John J. 3,353,402.
- Trivette, Chester D., Jr., and A. Y. Coran, to Monsanto Co. Inhibiting pre-vulcanization with polysulfides. 3,354,131. 11–21–67, Cl. 260—79.5.
- Trost, Allen J. : *See*—
  - Smith, Grant M., and Trost. 3,354,270.
- Tru Heat Corp. : *See*—
  - Kollar, Lyle T., and Stutsman. 3,354,294.
- Trusler, Frederick W. : *See*—
  - Hearn, William R., MacLean, and Trusler. 3,354,091.
- Tsentralny Nauchno-Issledovatelsky Institut Teknologii I Mashinostroenia : *See*—
  - Zak, Pavel S. 3,353,591.
- Tsukatani, Kenmi, M. Nagamine, Y. Hamada, and K. Takagi, to Fujitsu Ltd. Method of electrostatic printing of multiple copies. 3,354,464, 11–21–67, Cl. 346—74.
- Turi, Edith : *See*—
  - Lund, Richard B., Pierce, and Turi. 3,354,228.
- U.S. Perlite Corp. : *See*—
  - Stedman, Cresswell E. 3,353,236.
- U.S. Stoneware, Inc. : *See*—
  - Coffman, Alfred C. 3,353,757.
- Uehlinger, Hanspeter : *See*—
  - Benz, Jakob, and Uehlinger. 3,354,140.
- Union Carbide Corp. : *See*—
  - Bailey, Frederick E., Jr., La Combe, and Raines. 3,354,087.
  - Gingerich, Cecil R., Hinschlager, and Wandelt. 3,354,002.
  - Kuryla, William C. 3,354,100.
  - Larrison, Millard S. 3,354,241.
  - Maloy, Arthur L., and Cunningham. 3,354,231.
  - Myerly, Richard C., and Weinberg. 3,354,165.
  - Rexer, Joachim. 3,354,285.
  - Williams, Thomas C., and Omietanski. 3,354,101.
- Union Insulating Co. : *See*—
  - Palmer, Lewis E. 3,353,701.
- Union Oil Co. of California : *See*—
  - Dvoracek, Louis M. 3,354,062.
  - Hansford, Rowland C. 3,354,077.
  - Young, Dean A. 3,354,096.
- Union Special Machine Co. : *See*—
  - Smith, Robert E., Kosrow, and Attwood. 3,353,821.
- United Aircraft Corp. : *See*—
  - Adamson, William M., and Newton. 3,353,643.
  - Daigle, Louis J., and Cohen. 3,354,386.
  - Jordan, Donald J. 3,353,355.
  - Preston, Richard J. 3,353,539.
- United-Carr Inc. : *See*—
  - Garcia, Armando J. 3,354,423.
- United Kingdom Atomic Energy Authority : *See*—
  - Frame, Alexander G., and Parker. 3,354,040.
  - Macfall, Derek, and C. E. and R. S. Butterfield. 3,354,045.
  - Chubb, John N. 3,353,365.
- United States of America
  - Agriculture : *See*—
    - Faulkner, Raymond N., and Sen. 3,354,104.
  - Air Force : *See*—
    - Grove, Robert K., Collins, and De Brock. 3,353,350.
    - Merck, John W., and Barditch. 3,354,395.
    - Tamborski, Christ. 3,354,214.
  - Army : *See*—
    - Kifor, Harry T., and Bourland. 3,353,769.
    - De Marco, Carlo G. 3,353,989.
    - Donovan, William F. 3,353,454.
    - Haiken, Robert M. 3,353,486.
    - Hopper, John D., and Wells. 3,354,010.
    - Lastnik, Abraham L., and Landsberg. 3,353,187.
    - Piskator, Bengt I. 3,353,447.
    - Scanlon, John J., Jr., and Quinlan. 3,353,438.
    - Musser, C. Walton. 3,353,291.
    - Sandlin, John R., and Fuller. 3,354,438.
    - Weismann, Walter T. 3,354,383.
  - Atomic Energy Commission : *See*—
    - Bowman, Thomas E., and Kennedy. 3,353,742.
    - Cepkauskas, Martin D., and Rohlin. 3,353,566.
    - Monroe, Robert E., and Vagi. 3,354,290.
    - Murdock, Thomas B. 3,354,042.
    - Theiring, John W. 3,353,444.
  - Commerce : *See*—
    - Selby, Myron C. 3,354,411.
  - National Aeronautics and Space Administration : *See*—
    - Byrd, James D. 3,354,098.
    - Russell, James M., III, and Fox. 3,354,462.

- United States Scientific Instruments, Inc.: *See—*
  - Ward, William A. 3,354,351.
- United States Steel Corp.: *See—*
  - Carter, Daniel T. 3,354,070.
  - Davie, William R. 3,353,978.
  - Schroeder, Wesley D., and Lawn. 3,354,176.
  - Trieschock, George E. 3,354,105.
- United Steel and Wire Co.: *See—*
  - Davis, Lynn N. 3,353,836.
- University of California, The Regents of the: *See—*
  - Hill, Frederick L., and Gates. 3,353,342.
- Universal Oil Products Co.: *See—*
  - Lester, George R. 3,353,916.
  - Pochowicz, Donald R. 3,354,240.
  - Scott, Norman H., and Vesely. 3,353,713.
- Upchurch, Joseph D.: *See—*
  - Pigeon, Dale W., and Upchurch. 3,353,868.
- Upjohn Co., The: *See—*
  - Anthony, William C. 3,354,159.
  - Nadeau, Herbert G., and Waszeciak. 3,353,411.
- Vagi, Julius J.: *See—*
  - Monroe, Robert E., and Vagi. 3,354,290.
- Valdettara, Alarico A., J. E. Warthan, and C. C. Perry, to Sarkes Tarzian, Inc. Tuner shaft mounting arrangement. 3,353,878, 11–21–67, Cl. 308—24.
- Valev, Assen A.: *See—*
  - Haralampiev, Ilija S., and Valev. 3,353,198.
- Vali, Victor, R. S. Krogstad, R. W. Moss, and R. L. Hagman, to The Boeing Co. Fringe movement detector including dual photocells. 3,354,311, 11–21–67, Cl. 250—204.
- Vanat, Pierre: *See—*
  - Armentrout, James L., and Vanat. 3,353,664.
- Vandenberg, Edwin J., to Hercules Inc. Unsupported film of poly (isobutylene oxide). 3,354,097, 11–21–67, Cl. 260—2.
- Vandenberg, Edwin J., to Hercules Inc. Process for polymerizing olefins. 3,354,139, 11–21–67, Cl. 260—94.9.
- Vandercook & Sons, Inc.: *See—*
  - Koyak, Joseph W. 3,353,484.
- Van Der Eycken, Cyriel A. M.: *See—*
  - Godefroi, Erik F., and Van Der Eycken. 3,354,173.
- Vanderplaats, Marvin P.: *See—*
  - Briggs, James B., and Vanderplaats. 3,354,455.
- Van Driesen, Roger P., to Cities Service Research and Development Co. Apparatus and process for treating a liquid with a gas. 3,354,079, 11–21–67, Cl. 208—143.
- Van Ipersen, Bernardus B., to North American Philips Co., Inc. Harmonic producing velocity modulation tube having particular output cavity structures. 3,354,348, 11–21–67, Cl. 315—5.43.
- Van Rooy, Alphonsus P.: *See—*
  - Almer, Friedrich H. R., Schrijnemakers, Kuiper, and Van Rooy. 3,354,340.
- Van Strien, Richard E.: *See—*
  - Horan, James E., and Van Strien. 3,354,110.
- Van Voorhis, William E.: *See—*
  - Blackburn, Robert K., Van Voorhis, Nadeau, and Schmitt. 3,353,516.
- Vapor Corp.: *See—*
  - Fluder, Chester H., and Heeney. 3,354,414.
- Varner, Dennis D.: *See—*
  - Brandt, Edmund D., and Varner. 3,354,260.
- Vaughan, John T., and G. W. Seulen, to Alco Standard Corp. Apparatus for heating molten metals. 3,354,256, 11–21–67, Cl. 13—23.
- Vavra, Marvin J.: *See—*
  - Reimann, William G., and Vavra. 3,354,353.
- Venuto, Paul B.: *See—*
  - Landis, Phillip S., and Venuto. 3,354,221.
- Vereeninging Voor Zuivelindustrie En Melkhygiene: *See—*
  - Bartoo, Otto F., Ten Bruggencate, and Gorter. 3,353,703.
- Vereinigte Glanzstoff-Fabriken A.G.: *See—*
  - Sommer, Erwin, and Gerlach. 3,354,032.
- Vereycken, Modest C., and S. R. Lambeir, to Gevaert Photo-Producten N.V. Device for the magnetic alignment for magnetic tape. 3,354,416, 11–21–67, Cl. 335—284.
- Vesely, Kenneth D.: *See—*
  - Scott, Norman H., and Vesely. 3,353,713.
- Vidal, Steven P. Liquid film maintaining apparatus. 3,353,610, 11–21–67, Cl. 170—8.
- Vieth, Richard D., J. A. Dooley, E. J. Aronoff, and R. Bolstad, to Interchemical Corp. Novel coated polystyrene articles and method for producing the same. 3,353,990, 11–21–67, Cl. 117—138.8.
- Vincent, Renic P., to Pan American Petroleum Corp. Pneumatic cylinder for applying tension to riser pipe. 3,353,851, 11–21–67, Cl. 285—302.
- Visman, Jan, to Canadian Patents and Development Ltd. Apparatus for specific gravity separation of solid particles. 3,353,673, 11–21–67, Cl. 209—211.
- Vitrone, John: *See—*
  - Lund, Richard B., Simon, and Vitrone. 3,354,148.
- Vogele, Robert E.: *See—*
  - Chaffee, William H., and Vogele. 3,353,884.
- Vogt, Alfred, to Gustav Ospett. Connecting arrangement for cover, especially furnace covers. 3,353,582, 11–21–67, Cl. 158—2.
- Vogt, Wilhelm: *See—*
  - Sennewald, Kurt, Vogt, Weiden, Kaiser, and Komischke. 3,354,055.
- Voland, Elmo W.: *See—*
  - Wiser, Joseph E., and Voland. 3,353,426.
- Volger, Hendrik C.: *See—*
  - Brackman, Willem, and Volger. 3,354,220.
- Volkmann, Werner: *See—*
  - Poppinger, Herbert, Volkmann, and Däubler. 3,354,375.
- Volkovisky, Victor, to Compagnie des Compteurs. Infrared detecting device of the thermopile type. 3,354,309, 11–21–67, Cl. 250—83.
- Vom Baur, Jan: *See—*
  - Lions, Earl P., and Vom Baur. 3,353,799.
- Von Benge, Jerome C. Color television receiver. 3,354,203, 11–21–67, Cl. 178—5.4.
- Von Werder, Fritz, K. Bruckner, and K.-H. Bork, to E. Merck Aktiengesellschaft. Process of manufacturing 16-methylene reichstein's compound S and intermediates obtained therein. 3,354,184, 11–21–67, Cl. 260—397.4.
- Vossieck, Paul: *See—*
  - Schumacher, Rolf, and Vossieck. 3,353,373.
- Vrolikjk, Aart C.: *See—*
  - Heijnis, James W. I., and Vrolikjk. 3,353,754.
- Vuillemenot, Jacques, to Societe d'Electro-Chimie, d'Electro-Metallurgie, et des Acieries Electriques d'Ugine. Flame-resistant resinous compositions based upon epoxy resins and halogenated polyacids and process for preparation of same. 3,354,102, 11–21–67, Cl. 260—18.
- Wade, Robert H.: *See—*
  - Englert, Robert D., Swidler, Berriman, and Wade. 3,353,904.
- Wagner, Brigitte: *See—*
  - Raspe, Gerhard, Kieslich, Olivar, Muller, and Wagner. 3,354,186.
- Wahl, Frank: *See—*
  - Durr, Helmut E., and Wahl. 3,353,571.
- Wahlstrom, Sven E., to Ampex Corp. Loop sensing system for magnetic tape transports wherein loop intercepts light beam. 3,354,318, 11–21–67, Cl. 250—219.
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  - Corey, Philip D., Walker, and Wellford. 3,354,376.
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  - Gilbert, James R. 3,353,628.
  - Heath, Robert A. 3,353,627.
  - Kidera, Edward H., Hamkins, and Siddons. 3,353,501.
  - Niebergall, Louis F. 3,353,680.
  - Prescott, David B. 3,353,712.
  - Whittingham, David J., Hopkins, and Cowles. 3,353,457.
  - Worden, Donald P., and Abbott. 3,354,286.
- Walker, Richard L., to General Electric Co. Low tape sensing apparatus. 3,353,764, 11–21–67, Cl. 242—57.
- Walker, Robert F., and J. L. Archambault, to Edukit, Inc. Educational game. 3,353,283, 11–21–67, Cl. 35—31.
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  - Laureti, Remo J. 3,353,346.
- Wallace, John H., to Emerson Electric Co. System for controlling the speed or torque of one or more induction motors. 3,354,369, 11–21–67, Cl. 318—197.
- Walsh, Edward N., to Stauffer Chemical Co. Phosphoro (mono or di) thioate thiocarbonates. 3,354,195, 11–21–67, Cl. 260—455.
- Walter, Bernard R., to Selas Corp. of America. Gas cleaner. 3,353,339, 11–21–67, Cl. 55—316.
- Walters, William L., Jr. Apparatus for preparing candy apples. 3,353,735, 11–21–67, Cl. 227—2.
- Walters, William T.: *See—*
  - Wood, Fenton M., and Walters. 3,354,385.
- Wandelt, Allan R.: *See—*
  - Gingerich, Cecil R., Hinschlager, and Wandelt. 3,354,002.
- Ward, William A., to United States Scientific Instruments, Inc. Flash-producing apparatus employing circuits independent of recovery time of flash device. 3,354,351, 11–21–67, Cl. 315—240.
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  - Cutler, Duncan B., Warner, and Hadden. 3,353,327.
- Warshawsky, Jerome. Electric wire threading apparatus for lamp arms and like conduits. 3,353,791, 11–21–67, Cl. 254—134.3.
- Warthan, Jimmie E.: *See—*
  - Valdettara, Alarico A., Warthan, and Perry. 3,353,878.
- Waszeciak, Paul H.: *See—*
  - Nadeau, Herbert G., and Waszeciak. 33,353,411.
- Watanabe, Masatoshi: *See—*
  - Kikuchi, Wahei, and Watanabe. 3,353,250.
- Watanabe, Shuji: *See—*
  - Takubo, Minoru, Tachibana, and Watanabe. 3,354,143.
- Water Pollution Control Corp.: *See—*
  - Thayer, Paul M., Schmit, and Trainor. 3,353,677.
- Waterson, Arthur P. Land leveler. 3,353,288, 11–21–67, Cl. 37—180.
- Watson, W., & Sons Ltd.: *See—*
  - Minns, Thomas A., and Hopkins. 3,353,892.
- Webb, James E., administrator of the National Aeronautics and Space Administration with respect to an invention of C. D. Coulbert, and J. G. Campbell. Multislot film cooled pyrolytic graphite rocket nozzle. 3,353,359, 11–21–67, Cl. 60—265.
- Weber, Peter: *See—*
  - Schlamp, Hermann, and Weber. 3,353,257.
- Webster, James D., to The Fred Gretsch Mfg. Co. Floating bridge for musical instruments. 3,353,433, 11–21–67, Cl. 84—294.
- Wechselblatt, Peter M., and J. G. Boresta, to Chemical Construction Corp. Gas quencher. 3,353,803, 11–21–67, Cl. 261—116.
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- Wehlitz, Georg: *See—*
  - Archinal, Ernst, and Wehlitz. 3,354,255.
- Wehrmeister, Herbert L., to Commercial Solvents Corp. Nitroazoline compounds and process therefor. 3,354,171, 11–21–67, Cl. 260—307.
- Welden, Hans: *See—*
  - Sennewald, Kurt, Vogt, Welden, Kaiser, and Komischke. 3,354,055.
- Weil, Edward D.: *See—*
  - Leon, Edward, Weil, and Linder. 3,354,157.
- Weinberg, Gert: *See—*
  - Haas, Herbert, Munk, and Weinberg. 3,354,248.
- Weinberg, Kurt: *See—*
  - Myerly, Richard C., and Weinberg. 3,354,165.
- Weinberger, Harold. Shrimp sheller and deveiner. 3,353,207, 11–21–67, Cl. 17—7.
- Weisgerber, George A.: *See—*
  - Ekiss, Marilyn J., Weisgerber, and Hand. 3,354,180.
- Weismann, Walter T., to United States of America, Army. Spring powered and regulated generator. 3,354,383, 11–21–67, Cl. 322—29.
- Weiss, Herbert: *See—*
  - Stein, Werner, Koch, and Weiss. 3,354,187.
- Weisz, Paul B.: *See—*
  - Miale, Joseph N., and Weisz. 3,354,078.
- Weizebaum, Joseph: *See—*
  - Herold, Henry L., and Weizebaum. 3,354,466.
- Welcher, Richard P., to American Cyanamid Co. Preparation of acrylamide. 3,354,208, 11–21–67, Cl. 260—561.
- Weller, Charles E.: *See—*
  - Jones, Ralph E., Mahler, and Weller. 3,353,230.
- Wellford, Armistead L.: *See—*
  - Corey, Philip D., Walker, and Wellford. 3,354,376.
- Wells, Franklin B.: *See—*
  - Hopper, John D., and Wells. 3,354,010.
- Welsh, Robert E., and A. L. McConnell, to Scott Paper Co. Novel reticulated products. 3,353,994, 11–21–67, Cl. 117—221.
- Weltronic Co.: *See—*
  - O'Neal, George, Jr. 3,354,288.
- Welwyn Plastics (1955) Ltd.: *See—*
  - Harrison, Alan Morley. 3,353,985.
- Wendler, Norman L., R. D. Hoffsommer, Jr., and D. Taub, to Merck & Co., Inc 10,11-dihydro-5-hydroxy-5-vinyl-5H-dibenzo[a,d]cycloheptenes. 3,354,206, 11–21–67, Cl. 260—556.
- Wendt, Gerhard R., and E. Hertz, to American Home Products Corp. N,N'-disubstituted dithiooxamides and process for their preparation. 3,354,156, 11–21–67, Cl. 260—246.
- Wenger, Don S.: *See—*
  - Schmoyer, Arthur R. 3,353,435.
- Wenker, John R.: *See—*
  - Patten, Carl W., Jr., Wenker, and Craig. 3,353,370.
- Wentzell, Joseph M., to Special Metals Corp. Method for controlling the cooling of cast metal. 3,353,585, 11–21–67, Cl. 164—124.
- Wenz, Herbert: *See—*
  - Reeber, Rudolf, and Wenz. 3,353,509.
- Werkzeugmaschinenbrik Gildemeister and Comp., Akt. Ges.: *See—*
  - Kuckelsberg, Karl W. 3,353,688.
- Werner, Lincoln H., to Ciba Corp. Sulfamyl-morphanthridine-6,11-diones. 3,354,147, 11–21–67, Cl. 260—239.3.
- West, Samuel R: *See—*
  - Gibson, Daniel L., Eilers, West, and Kucera. 3,353,604.
- Western Electric Co., Inc.: *See—*
  - Brandt, Edmund D., and Varner. 3,354,260.
  - Durr, Helmut E., and Wahl. 3,353,571.
  - Hordosi, Theodore L. 3,354,389.
  - Lepiane, Donald C., and Zimmerman. 3,354,005.
- Westinghouse Air Brake Co.: *See—*
  - Berry, Frank. 3,353,455.
  - MacFarlane, Charles E., and Hoge. 3,353,249.
- Westinghouse Brake and Signal Co., Ltd.: *See—*
  - Eastop, Robert H. 3,354,322.
  - Langridge, Arthur, Glass, Grimwood, and Hegarty. 3,354,003.
- Weyerhaeuser Co.: *See—*
  - Perry, William D. 3,354,388.
- Whaley, Henry P., and G. F. Johnson, to Erie Mining Co. Gyratory crusher liner. 3,353,758, 11–21–67, Cl. 241—300.
- Whaley, John A., and R. L. Lochmann, to General Motors Corp. Portable ignition coil tester having a transistor oscillator power supply. 3,354,387, 11–21–67, Cl. 324—55.
- Wheeler, Laverne C.: *See—*
  - Shafer, Harvey H., and Wheeler. 3,354,169.
- Wheeler, Paul L. B., and E. E. Keene, to Packaging Frontiers, Inc. Method and apparatus for forming and filling receptacles. 3,353,328, 11–21–67, Cl. 53—29.
- Whessoe Ltd.: *See—*
  - Rowley, Walter A. 3,353,552.
  - Walker, Eric H., and Paterson. 3,353,549.
- Whirlpool Corp.: *See—*
  - Lind, Wallace E., Clearman, Dutcher, and Johnson. 3,353,553.
  - Tope, Paul H., and Crane. 3,353,589.
  - Whitlow, Eugene P. 3,353,369.
- White, Claude F.: *See—*
  - Oberle, Theodore L., Carlton, Loyd, and White. 3,353,935.
- White, James M., Jr.: *See—*
  - Liggett, Robert D., White, and Pelino. 3,354,306.
- White, Le Roy A. Sequestering ion exchange resins which are polyimine reaction products. 3,354,103, 11–21–67, Cl. 260—2.2.
- Whitehurst, Joe R., to Ideal Industries, Inc. Apparatus and method of removing foreign matter from textile fibers. 3,353,226, 11–21–67, Cl. 19—200.
- Whiting, Harold E.: *See—*
  - Gribble, Joseph J., Marien, and Whiting. 3,354,415.
- Whitlow, Eugene P., to Whirlpool Corp. Absorption refrigeration system. 3,353,369, 11–21–67, Cl. 62—494.
- Whittaker, John N., and P. W. Carney, to Elliott Brothers (*London*) Ltd. Device for generating an electric signal composed of at least two interlaced signals of different but relating frequencies. 3,354,396, 11–21–67, Cl. 325—153.
- Whittaker, Vernon: *See—*
  - Houpt, Grover K., and Whittaker. 3,354,399.
- Whittingham, David J., J. D. Hopkins, and C. H. Cowles, to Walker Mfg. Co. Method of making a tubular element. 3,353,457, 11–21–67, Cl. 93—1.1.
- Wicker, Thomas H., to Eastman Kodak Co. Alpha-cyano-acrylate/phthalic acid ester adhesive compositions. 3,354,128, 11–21–67, Cl. 260—47.
- Widess, Moses B., and K. Dyk, to Pan American Petroleum Corp. Displaying seismic data as narrow traces, without compositing. 3,354,427, 11–21–67, Cl. 340—15.5.
- Wiechert, Rudolf: *See—*
  - Muller, Hans, Neumann, and Wiechert. 3,354,151.
- Wiechert, Rudolf, H. Mueller, and F. Neumann., to Schering Aktiengesellschaft. 1,2 methylene androstane derivatives. 3,354,185, 11–21–67, Cl. 260—397.5.
- Wieleba, Karl-Heinz, to Escher Wyss G.m.b.H. Rotary valve. 3,353,723, 11–21–67, Cl. 222—368.
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- Wilhelm Loh K. G. Optikmaschinenfabrik: *See—*
  - Loh, Ernst, and Doll. 3,353,695.
- Wilkening, Eugene R.: *See—*
  - Palmiter, Donald R., and Wilkening. 3,353,199.
- Wilkins, Douglas: *See—*
  - Rees, John R., and Wilkins. 3,353,814.
- Will, Gerlad H., to Minnesota Mining and Mfg. Co. Shipping container. 3,353,660, 11–21–67, Cl. 206—52.
- Williams, Alfred J., Jr., and D. J. Johns, to General Motors Corp. Electrical stock removal apparatus. 3,354,073, 11–21–67, Cl. 204—224.
- Williams, Charles F., to Thiokol Chemical Corp. Vector control system, which includes means for introducing an auxiliary exhaust stream into the primary stream of a rocket motor. 3,353,356, 11–21–67, Cl. 60—231.
- Williams, Edward L., to Texaco Inc. Apparatus for distilling and controlling proportion of components of a mixture. 3,354,052, 11–21–67, Cl. 202—160.
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- Williams, Robert C.: *See—*
  - Gottwald, Bruce C., Halsey, Williams, and Haigh. 3,354,035.
- Williams, Robert C., D. L. Joyce, and E. L. Showalter, to Albermarle Paper Co. Alkaline sulfite digestion followed by acid digestion with bisulfite. 3,354,030, 11–21–67, Cl. 162—86.
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- Williamson, Hilding V., and E. J. Job, to Chemstron Corp. System for controlling flow and proportioning liquids. 3,353,550, 11–21–67, Cl. 137—114.
- Willis, Philip J.: *See—*
  - Ford, James M., Minish, and Willis. 3,353,937.
- Winder, Robert O., to Radio Corp. of America. Associative memory with sequential multiple match resolution. 3,354,436, 11–21–67, Cl. 340—172.5.
- Winstead, Thomas W., and J. H. Beyer, to E. I. du Pont de Nemours and Co. Mop head attaching assembly. 3,353,202, 11–21–67, Cl. 15—229.
- Wirtz, Peter: *See—*
  - Sennewald, Kurt, and Wirtz. 3,354,054.
- Wiser, Joseph E., and E. W. Voland, to P. R. Mallory & Co., Inc. Speed reduction system for a timer. 3,353,426, 11–21–67, Cl. 74—800.
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- Witz, Samuel: *See—*
  - Shepherd, Joseph L., Witz, and Hormats. 3,354,067.
- Wohl, Martin H.: *See—*
  - Aykanian, Ardashus A., Hing, and Wohl. 3,354,025.
- Wolf, Siegfried, and C. R. Young, to E. W. Bliss Co. Tilted spindle grinder. 3,353,305, 11–21–67, Cl. 51—165.
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- Wood, Fenton M., and W. T. Walters, to American Machine and Foundry Co. Electromagnetic inspection system utilizing search coils nested within one another. 3,354,385, 11–21–67, Cl. 324—37.
- Woodman Co., Inc.: *See—*
  - Cutler, Duncan B., Warner, and Hadden. 3,353,327.
- Woods, John G.: *See—*
  - Casey, Haeey B., and Woods. 3,354,418.

Woolf, Cyril: *See*—
Anello, Louis G., and Woolf. 3,354,233.

Woor, Denis F., and C. E. Higham, to Tecalemit (Engineering) Ltd. Automatic lubricating apparatus. 3,353,630, 11–21–67, Cl. 184—2.

Worden, Donald P., and E. F. Abbott, to Walker Mfg. Co. Exhaust system conduit. 3,354,286, 11–21–67, Cl. 219—8.5.

Worst, Joseph C., to General Electric Co. Washing machine with improved power control means. 3,353,377, 11–21–67, Cl. 68—12.

Worthington Corp.: *See*—
Wright, Elliott F. 3,353,490.

Wossner, Felix: *See*—
Axthammer, Ludwig, and Wossner. 3,353,816.

Woyski, Mark M., J. L. Bradford, and H. H. Elliott, to American Potash & Chemical Corp. Process for treating rare earth-fluorine materials. 3,353,928, 11–21–67, Cl. 23—318.

Wray, Jimmy B. Gate latching mechanism. 3,353,300, 11–21–67, Cl. 49—386.

Wright, Edward L.: *See*—
Berman, Sanford, and Wright. 3,353,715.

Wright, Elliott F., to Worthington Corp. Positive displacement pump. 3,353,490, 11–21–67, Cl. 103—49.

Wright, James C.: *See*—
Pierson, Edward D., and Wright. 3,353,324.

Wright, William R., Jr., to Thiokol Chemical Corp. Rocket powerplant. 3,353,357, 11–21–67, Cl. 60—257.

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Young, Brian: *See*—
Daem, Richard C., Gray, and Young. 3,353,526.

Young, Charles W., to Revere Copper and Bass Inc. Contoured tie-down insert for upstanding T-beam elements of a cargo-supporting floor. 3,353,780, 11–21–67, Cl. 248—361.

Young, Clayton R.: *See*—
Wolf, Siegfried, and Young. 3,353,305.

Young, Dean A., to Union Oil Co. of California. Pelleted zeolite compositions possessing improved crushing strength. 3,354,096, 11–21–67, Cl. 252—435.

Young, Lewis D., to Douglas Young, Inc. Display box. 3,353,657, 11–21–67, Cl. 206—45.13.

Young, Richard J., to International Business Machines Corp. Typewriter having means to store characters selected during carriage movements. 3,353,646, 11–21–67, Cl. 197—16.

Young, Richard W.: *See*—
Rogers, Howard G., Young, and Mendelsohn. 3,353,956.

Young, Stephen A.: *See*—
Christiansen, Gerald E. 3,353,192.

Yuasa, Masaharu: *See*—
Kida, Tokurou, Matsuda, Saito, and Yuasa. 3,353,993.

Yumoto, Takaari: *See*—
Matsuda, Tatsuo, and Yumoto. 3,354,065.

Yurasko, George, Jr.: *See*—
Shafer, William M., and Yurasko. 3,353,951.

Zak, Pavel S., to Tsentralny Nauchno-Issledovatelsky Institut Teknologii i Mashinostroenia. Apparatus for cooling gear reduction units. 3,353,591, 11–21–67, Cl. 165—47.

Zane, Riccardo. Flexible abrasive disc. 3,353,308, 11–21–67, Cl. 51—397.

Zane, Ronald S. O. Automatic conveying device. 3,353,470, 11–21–67, Cl. 95—94.

Zastrow, Thomas S., to Remmele Engineering, Inc. Foam insulation forming device. 3,353,782, 11–21–67, Cl. 249—152.

Zdanuk, Edward J., and R. H. Krock, to P. R. Mallory & Co., Inc. Tungsten-indium powder bodies infiltrated with copper. 3,353,931, 11–21–67, Cl. 29—182.1.

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Zehender, Ernst, and S. Ziegler, to Robert Bosch G.m.b.H. Method of producing porous separators. 3,354,247, 11–21–67, Cl. 264—119.

Zeis, Steve E.: *See*—
Hodges, James R., and Zeis. 3,353,240.
Hodges, James R., and Zeis. 3,353,767.
Prosceno, Harry A., Schrader, and Zeis. 3,353,241.

Zeisloft, Harry C.: *See*—
Leslie, Kenneth G., and Zeisloft. 3,353,620.

Zeitler, Carl, Jr., and L. J. Boland, to International Business Machines Corp. Memory control matrix. 3,354,430, 11–21–67, Cl. 340—172.5.

Zenith Radio Corp.: *See*—
DeBoth, Raymond F. 3,354,337.
Rennick, John L. 3,354,336.

Ziegler, Siegfried: *See*—
Zehender, Ernst, and Ziegler. 3,354,247.

Zietler, Carl, Jr., and L. J. Boland, to International Business Machines Corp. Memory control matrix. 3,354,430, 11–21–67, Cl. 340—172.5.

Zimmerman, Henry N.: *See*—
Leplane, Donald C., and Zimmerman. 3,354,005.

Zimmerman, Markus: *See*—
Baumann, Peter, and Zimmerman. 3,354,145.

Zimmermann, Walter, to Alpine Aktiengesellschaft. Cutting mill. 3,353,755, 11–21–67, Cl. 241—73.

Zimmerschied, Wilford J., D. E. Hannemann, and C. Serres, Jr., to Standard Oil Co. Oxidation of polymethylbenzenes to benzene polycarboxylic acids. 3,354,202, 11–21–67, Cl. 260—524.

Zimmon, Harold. Disposable gown with one-piece body and sleeves having elastic sleeve closure. 3,353,189, 11–21–67, Cl. 2—114.

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CLASSIFICATION OF PATENTS

ISSUED NOVEMBER 21, 1967

NOTE.—First number, class; second number, subclass; third number, patent number

2– 3	3,353,187
	3,353,188
114	3,353,189
153	3,353,190
171.3	3,353,191
4–203	3,353,192
5– 66	3,353,193
118	3,353,194
261	3,353,195
327	3,353,196
8– 55	3,353,900
74	3,353,901
110	3,353,902
111	3,353,903
120	3,353,904
9–311	3,353,197
10–133	3,353,198
13– 9	3,354,254
16	3,354,255
23	3,354,256
24	3,354,257
15– 87	3,353,199
179	3,353,200
180	3,353,201
229	3,353,202
244	3,353,203
16– 16	3,353,204
125	3,353,205
139	3,353,206
17– 7	3,353,207
18– 1	3,353,208
4	3,353,209
8	3,353,210
	3,353,211
12	3,353,212
	3,353,213
16.5	3,353,214
16.7	3,353,215
17	3,353,216
19	3,353,217
35	3,353,218
	3,353,219
36	3,353,220
43	3,353,221
19– 66	3,353,222
	3,353,223
159	3,353,224
161	3,353,225
200	3,353,226
21–102	3,353,905
23– 48	3,353,906
50	3,353,907
109	3,353,908
116	3,353,909
141	3,353,910
149	3,353,911
204	3,353,912
207	3,353,913
208	3,353,914
209.4	3,353,915
216	3,353,916
223	3,353,917
252	3,353,918
277	3,353,919
	3,353,920
281	3,353,921
	3,353,922
288	3,353,923
	3,353,924
	3,353,925
301	3,353,926
312	3,353,927
318	3,353,928
326	3,353,929
365	3,353,930
24– 16	3,353,227
18	3,353,228
73	3,353,229
77	3,353,230
113	3,353,231
129	3,353,232
205.11	3,353,233
230	3,353,234
263	3,353,235
25– 2	3,353,236
26– 15	3,353,237
27– 7	3,353,238
28– 1	3,353,239
	3,353,240
	3,353,241
28– 1	3,353,242
4	3,353,243
35	3,353,244
29–129.5	3,353,245
148.4	3,353,246
156.6	3,353,247
157	3,353,248
157.1	3,353,249
157.3	3,353,250
182.1	3,353,931
182.2	3,353,932
	3,353,933
187.5	3,353,934
191	3,353,935
196.6	3,353,936
205	3,353,251
236	3,353,252
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240	3,353,254
401	3,353,255
408	3,353,256
463	3,353,258
487	3,353,259
573	3,353,260
603	3,353,261
623	3,353,262
626	3,353,263
30– 41	3,353,264
53	3,353,289
133	3,353,265
167	3,353,266
180	3,353,267
276	3,353,268
31– 5	3,353,269
33	3,353,270
32– 14	3,353,271
27	3,353,272
33– 18	3,353,273
107	3,353,274
174	3,353,275
	3,353,276
199	3,353,277
203.14	3,353,278
34–150	3,353,279
35– 9	3,353,280
28	3,353,281
29	3,353,282
31	3,353,283
	3,353,284
37– 2	3,353,285
12	3,353,286
42	3,353,287
180	3,353,288
40– 79	3,353,290
42– 1	3,353,291
43– 9	3,353,292
	3,353,293
44.91	3,353,294
44– 3	3,353,937
69	3,353,938
75	3,353,939
46– 74	3,353,295
247	3,353,296
47– 1	3,353,297
49– 43	3,353,298
104	3,353,299
386	3,353,300
489	3,353,301
51– 49	3,353,302
105	3,353,303
119	3,353,304
165	3,353,305
168	3,353,306
216	3,353,307
397	3,353,308
52– 2	3,353,309
66	3,353,310
	3,353,311
100	3,353,313
127	3,353,314
275	3,353,315
302	3,353,316
309	3,353,317
403	3,353,318
520	3,353,319
693	3,353,320
713	3,353,312
716	3,353,321
744	3,353,322
749	3,353,323
53– 3	3,353,324
22	3,353,325
24	3,353,326
28	3,353,327
29	3,353,328
30	3,353,329
59	3,353,330
166	3,353,331
379	3,353,332
	3,353,333
55– 94	3,353,334
	3,353,335
228	3,353,336
232	3,353,337
276	3,353,338
316	3,353,339
324	3,353,340
502	3,353,341
56–327	3,353,342
57– 10	3,353,343
34	3,353,344
140	3,353,345
	3,353,346
58– 6	3,353,347
58	3,353,348
60– 37	3,353,349
39.18	3,353,360
39.48	3,353,350
39.65	3,353,351
51	3,353,352
52	3,353,353
203	3,353,354
226	3,353,355
231	3,353,356
257	3,353,357
259	3,353,358
265	3,353,359
61– 3	3,353,361
53.5	3,353,362
67	3,353,363
69	3,353,364
62– 55.5	3,353,365
112	3,353,366
115	3,353,367
276	3,353,368
494	3,353,369
514	3,353,370
	3,353,371
63– 12	3,353,372
64– 11	3,353,373
17	3,353,374
65– 21	3,353,940
32	3,353,941
68	3,353,942
182	3,353,943
203	3,353,944
273	3,353,945
348	3,353,946
67– 7.1	3,353,375
	3,353,376
68– 12	3,353,377
18	3,353,378
181	3,353,379
	3,353,380
184	3,353,381
257	3,353,382
70–151	3,353,383
71– 21	3,353,947
	3,353,948
64	3,353,949
72– 19	3,353,384
21	3,353,385
32	3,353,386
46	3,353,387
63	3,353,388
77	3,353,389
104	3,353,390
110	3,353,391
	3,353,392
297	3,353,393
347	3,353,394
402	3,353,395
453	3,353,396
455	3,353,397
73– 10	3,353,398
12	3,353,399
24	3,353,400
37	3,353,401
37.5	3,353,402
55	3,353,403
73–101	3,353,407
141	Re.26,302
146	3,353,404
147	3,353,405
194	3,353,406
387	3,353,408
398	3,353,409
406	3,353,410
421.5	3,353,411
74– 3.52	3,353,412
5	3,353,413
5.4	3,353,414
5.5	3,353,415
10.6	3,353,416
53	3,353,417
125.5	3,353,418
233	3,353,419
242.1	3,353,420
253	3,353,421
375	3,353,422
526	3,353,423
560	3,353,424
600	3,353,425
800	3,353,426
75– .5	3,353,950
	3,353,951
3	3,353,952
6	3,353,953
201	3,353,954
76– 82.2	3,353,427
81– 71	3,353,428
82– 21	3,353,429
83– 13	3,353,430
116	3,353,431
176	3,353,432
84–294	3,353,433
454	3,353,434
478	3,353,435
85– 32	3,353,436
68	3,353,437
86– 1	3,353,438
88– 1	3,353,439
2.3	3,353,440
14	3,353,444
24	3,353,441
	3,353,442
28	3,353,443
89– 1	3,353,445
1.5	3,353,446
27	3,353,447
90– 12	3,353,448
62	3,353,449
91– 6	3,353,451
36	3,353,452
175	3,353,450
356	3,353,453
92– 5	3,353,454
24	3,353,455
258	3,353,456
93– 1.1	3,353,457
36	3,353,458
36.6	3,353,459
58.2	3,353,460
62	3,353,461
95– 10	3,353,462
11	Re.26,300
	3,353,463
	3,353,464
11.5	3,353,465
	3,353,466
	3,353,467
	3,353,468
73	3,353,469
94	3,353,470
96– 28	3,353,955
29	3,353,956
	3,353,957
87	3,353,958
98– 32	3,353,471
40	3,353,472
	3,353,473
99– 28	3,353,959
52	3,353,960
78	3,353,961
100	3,353,962
109	3,353,963
118	3,353,964
139	3,353,965
163	3,353,966
	3,353,967
99–192	3,353,968
204	3,353,969
281	3,353,474
312	3,353,475
328	3,353,476
360	3,353,477
100– 4	Re.26,307
52	3,353,478
86	3,353,479
101– 91	3,353,480
93	3,353,481
	3,353,482
	3,353,483
350	3,353,484
102– 27	3,353,485
70.2	3,353,486
	3,353,487
73	3,353,488
79	3,353,489
103– 49	3,353,490
87	Re.26,306
149	3,353,491
157	3,353,492
161	3,353,493
203	3,353,494
223	3,353,495
	3,353,496
262	3,353,497
104– 89	3,353,498
172	3,353,499
	3,353,500
247	3,353,501
254	3,353,502
105–150	3,353,503
215	3,353,504
368	3,353,505
369	3,353,506
106– 2	3,353,970
5	3,353,971
22	3,353,972
31	3,353,974
65	3,353,975
	3,353,976
275	3,353,978
288	3,353,977
292	3,353,979
307	3,353,980
308	3,353,973
108–107	3,353,507
110– 8	3,353,508
112–158	3,353,509
162	3,353,510
237	3,353,511
114–235	3,353,512
117– 8	3,353,981
	3,353,982
33.5	3,353,983
34	3,353,984
37	3,353,985
47	3,353,986
	3,353,987
	3,353,988
62.1	3,353,989
138.8	3,353,990
	3,353,991
	3,353,992
139.5	3,353,993
221	3,353,994
118– 32	3,353,513
49	3,353,514
73	3,353,515
249	3,353,516
261	3,353,517
119– 75	3,353,518
123– 12	3,353,519
27	3,353,520
32	3,353,521
41.31	3,353,522
55	3,353,523
117	3,353,524
119	3,353,525
125– 15	3,353,526
126– 25	3,353,527
91	3,353,528
110	3,353,529
362	3,353,530
128– 2	3,353,531
75	3,353,532
130	3,353,533
142.3	3,353,534
128–188	3,353,535
194	3,353,536
218	3,353,537
295	3,353,538
419	3,353,539
489	3,353,540
131– 17	3,353,541
	3,353,542
265	3,353,543
267	3,353,544
134– 3	3,353,995
21	3,353,996
22	3,353,997
95	3,353,545
123	3,353,546
135– 1	3,353,547
5	3,353,548
136– 6	3,353,998
83	3,353,999
86	3,354,000
120	3,354,001
137–101.25	3,353,549
114	3,353,550
	3,353,551
434	3,353,552
567	3,353,553
595	3,353,554
596.12	3,353,556
596.2	3,353,555
625.48	3,353,557
	3,353,558
625.66	3,353,559
138– 30	3,353,560
37	3,353,561
39	3,353,562
	3,353,563
41	3,353,564
89	3,353,565
	3,353,566
106	3,353,567
139– 21	3,353,568
51	3,353,569
88	3,353,570
140– 1	3,353,571
141– 72	3,353,572
143– 68	3,353,573
144– 2	3,353,574
309	3,353,575
146– 78	3,353,576
81	3,353,577
218	3,353,578
148– 9.5	3,354,002
33	3,354,003
175	3,354,004
186	3,354,005
187	3,354,006
	3,354,007
	3,354,008
189	3,354,009
149– 18	3,354,010
22	3,354,011
150– 40	3,353,579
151– 7	3,353,580
22	3,353,581
156– 69	3,354,012
152	3,354,013
189	3,354,014
306	3,354,015
363	3,354,016
494	3,354,017
515	3,354,018
519	3,354,019
158– 2	3,353,582
114	3,353,583
161– 53	3,354,020
111	3,354,021
123	3,354,022
165	3,354,023
168	3,354,024
199	3,354,025
162– 5	3,354,026
	3,354,027
	3,354,028
41	3,354,029
86	3,354,030
145	3,354,031
146	3,354,032
161	3,354,033
175	3,354,034
206	3,354,035

164– 89 : 3,353,584
124 : 3,353,585
156 : 3,353,586
281 : 3,353,587
165– 4 : 3,353,588
26 : 3,353,589
35 : 3,353,590
47 : 3,353,591
50 : 3,353,592
166– .6 : 3,353,594
3,353,595
3,353,596
4 : 3,353,593
9 : 3,353,597
11 : 3,353,598
15 : 3,353,599
22 : 3,353,600
33 : 3,353,601
40 : 3,353,602
42 : 3,353,603
3,353,604
53 : 3,353,605
84 : 3,353,606
117.5 : 3,353,607
3,353,608
149 : 3,353,609
167– 65 : 3,354,036
3,354,037
78 : 3,354,038
87.1 : 3,354,039
170– 8 : 3,353,610
172–240 : 3,353,611
174– 52 : 3,354,258
53 : 3,354,259
68.5 : 3,354,260
133 : 3,354,261
211 : 3,354,262
175– 6 : 3,353,612
293 : 3,353,613
176– 19 : 3,354,040
30 : 3,354,041
59 : 3,354,042
68 : 3,354,044
72 : 3,354,043
78 : 3,354,045
177–201 : 3,353,614
245 : 3,353,615
178– 5.4 : 3,354,263
3,354,264
3,354,265
6.8 : 3,354,266
179– 15 : 3,354,267
18 : 3,354,268
100.2 : 3,354,269
3,354,270
107 : 3,354,271
180– 6.44: 3,353,616
14 : 3,353,618
98 : 3,353,619
108 : 3,353,620
124 : 3,353,621
181– .5 : 3,353,622
3,353,623
3,353,624
31 : 3,353,625
42 : 3,353,626
48 : 3,353,627
53 : 3,353,628
182– 20 : 3,353,629
184– 2 : 3,353,630
187– 29 : 3,353,631
188– 1 : 3,353,632
32 : 3,353,633
106 : 3,353,634
3,353,635
3,353,636
152 : 3,353,637
192– 3.5 : 3,353,638
41 : 3,353,639
67 : 3,353,640
85 : 3,353,641
99 : 3,353,642
141 : 3,353,643
193– 37 : 3,353,644
195– 7 : 3,354,046
28 : 3,354,047
51 : 3,354,048
100 : 3,354,049
134 : 3,354,050
197– 2 : 3,353,645
16 : 3,353,646
18 : 3,353,647
55 : 3,353,648
127 : 3,353,649
198– 16 : 3,353,650
32 : 3,353,651
34 : 3,353,652
39 : 3,353,653
92 : Re.26,298
213 : 3,353,654
200– 48 : 3,354,272

200– 61.41: 3,354,273
67 : 3,354,274
68 : 3,354,275
86.5 : 3,354,276
114 : 3,354,277
122 : 3,354,278
140 : 3,354,279
3,354,280
3,354,281
142 : 3,354,282
152 : 3,354,283
168 : 3,354,284
202–153 : 3,354,051
160 : 3,354,052
203– 1 : 3,354,053
8 : 3,354,054
3,354,055
48 : 3,354,056
204– 1 : 3,354,057
2 : 3,354,058
12 : 3,354,059
35 : 3,354,060
147 : 3,354,061
3,354,062
148 : 3,354,063
157.1 : 3,354,064
158 : 3,354,065
3,354,066
168 : 3,354,067
180 : 3,354,068
195 : 3,354,069
206 : 3,354,070
219 : 3,354,071
3,354,072
224 : 3,354,073
298 : 3,354,074
206– 1 : 3,353,655
3,353,656
45.13: 3,353,657
45.25: 3,353,658
45.31: 3,353,659
52 : 3,353,660
57 : 3,353,661
59 : 3,353,662
3,353,663
63.2 : 3,353,664
65 : 3,353,665
3,353,666
73 : 3,353,667
208– 58 : 3,354,075
111 : 3,354,076
3,354,077
120 : 3,354,078
143 : 3,354,079
231 : 3,354,080
235 : 3,354,081
209– 10 : 3,353,668
73 : 3,353,669
84 : 3,353,670
166 : 3,353,671
3,353,672
211 : 3,353,673
240 : 3,353,674
210– 15 : 3,354,082
59 : 3,354,083
197 : 3,353,676
220 : 3,353,677
236 : 3,353,678
238 : 3,353,675
259 : 3,353,679
314 : 3,353,680
355 : 3,353,681
505 : 3,353,682
527 : 3,353,683
211–176 : 3,353,684
212– 3 : 3,353,685
55 : 3,353,686
58 : 3,353,687
214– 1.3 : 3,353,688
6 : 3,353,689
16.6 : 3,353,690
17 : 3,353,691
55 : 3,353,692
78 : 3,353,693
82 : 3,353,694
89 : 3,353,695
501 : 3,353,696
620 : 3,353,697
730 : 3,353,698
776 : 3,353,699
219– 7.5 : 3,354,285
8.5 : 3,354,286
110 : 3,354,287
114 : 3,354,288
131 : 3,354,289
152 : 3,354,290
263 : 3,354,291
301 : 3,354,292
388 : 3,354,293
536 : 3,354,294
220– 1 : 3,353,700

220– 3.5 : 3,353,701
15 : 3,353,702
21 : 3,353,703
3,353,704
67 : 3,353,705
73 : 3,353,706
97 : 3,353,707
3,353,708
112 : 3,353,709
222– 19 : 3,353,710
28 : 3,353,711
56 : 3,353,712
57 : 3,353,713
107 : 3,353,714
129.4 : 3,353,715
132 : 3,353,716
3,353,717
156 : Re.26,304
158 : 3,353,718
178 : 3,353,719
200 : 3,353,720
209 : 3,353,721
218 : 3,353,722
368 : 3,353,723
400.7 : 3,353,724
456 : 3,353,725
223– 88 : 3,353,727
112 : 3,353,726
224– 1 : 3,353,728
42.42: Re.26,299
45 : 3,353,729
226– 43 : 3,353,730
54 : 3,353,731
94 : 3,353,734
97 : 3,353,732
176 : 3,353,733
227– 2 : 3,353,735
107 : 3,353,736
136 : 3,353,737
229– 7 : 3,353,738
17 : Re.26,305
51 : 3,353,739
3,353,740
54 : 3,353,741
230–101 : 3,353,742
232– 15 : 3,353,743
234– 54 : 3,353,744
235– 92 : 3,354,295
154 : 3,354,296
181 : 3,354,297
197 : 3,354,298
3,354,299
236– 34 : 3,353,745
59 : 3,353,746
238– 8 : 3,353,747
239–102 : 3,353,748
154 : 3,353,749
177 : 3,353,750
3,353,751
417.3 : 3,353,257
538 : 3,353,752
240– 1.3 : 3,354,300
2 : 3,354,301
8.16: 3,354,302
41 : 3,354,303
41.35: 3,354,304
73 : 3,354,305
241– 15 : 3,353,753
30 : 3,353,754
73 : 3,353,755
99 : 3,353,756
176 : 3,353,757
300 : 3,353,758
242– 26.1 : 3,353,759
43 : 3,353,760
3,353,761
45 : 3,353,762
55.13: 3,353,763
57 : 3,353,764
58.3 : 3,353,765
74.2 : 3,353,766
159 : 3,353,767
244–110 : 3,353,768
136 : 3,353,769
246–169 : 3,354,306
248– 1 : 3,353,770
3 : 3,353,771
20 : 3,353,772
44 : 3,353,773
68 : 3,353,774
70 : 3,353,775
183 : 3,353,776
188.2 : 3,353,777
211 : 3,353,778
251 : 3,353,779
361 : 3,353,780
476 : 3,353,781
249–152 : 3,353,782
250– 41.3 : 3,354,307
51.5 : 3,354,308
83 : 3,354,309

250– 83.3 : 3,354,310
204 : 3,354,311
206 : 3,354,312
212 : 3,354,313
213 : 3,354,314
217 : 3,354,315
3,354,316
218 : 3,354,317
219 : 3,354,318
227 : 3,354,319
232 : 3,354,320
251–172 : 3,353,783
174 : 3,353,784
175 : 3,353,785
329 : 3,353,786
252– 2 : 3,354,084
33.6 : 3,354,085
40.7 : 3,354,086
48.6 : 3,354,087
90 : 3,354,088
91 : 3,354,089
99 : 3,354,090
137 : 3,354,091
3,354,092
170 : 3,354,093
180 : 3,354,094
316 : 3,354,095
435 : 3,354,096
253– 4 : 3,353,787
77 : 3,353,788
254– 88 : 3,353,789
126 : 3,353,790
134.3 : 3,353,791
150 : 3,353,792
190 : 3,353,793
192 : 3,353,794
256– 13.1 : 3,353,795
259– 2 : 3,353,796
8 : 3,353,797
149 : 3,353,798
260– 2 : 3,354,097
3,354,098
2.2 : 3,354,103
2.5 : 3,354,099
3,354,100
9 : 3,354,101
18 : 3,354,102
22 : 3,354,104
28 : 3,354,105
28.5 : 3,354,106
29.7 : 3,354,169
31.2 : 3,354,107
31.4 : 3,354,108
31.8 : 3,354,109
3,354,110
3,354,176
32.6 : 3,354,111
3,354,113
32.8 : 3,354,112
40 : 3,354,114
41 : 3,354,115
41.5 : 3,354,116
45.85: 3,354,117
3,354,118
46.5 : 3,354,119
47 : 3,354,120
3,354,121
63 : 3,354,122
65 : 3,354,123
75 : 3,354,124
78 : 3,354,125
3,354,126
3,354,127
78.5 : 3,354,128
79 : 3,354,129
79.5 : 3,354,130
3,354,131
88.2 : 3,354,132
88.3 : 3,354,133
89.5 : 3,354,134
92.8 : 3,354,135
93.5 : 3,354,136
94.1 : 3,354,137
94.9 : 3,354,138
3,354,139
146 : 3,354,140
217 : 3,354,141
236 : 3,354,142
236.5 : 3,354,143
239 : 3,354,144
239.1 : 3,354,145
239.3 : 3,354,146
3,354,147
3,354,148
239.55: 3,354,149
3,354,150
3,354,151
3,354,152
3,354,153
3,354,154
240 : 3,354,155

260–246 : 3,354,156
247.7 : 3,354,157
248 : 3,354,158
249.6 : 3,354,159
251 : 3,354,160
268 : 3,354,161
286 : 3,354,162
287 : 3,354,163
288 : 3,354,164
290 : 3,354,165
293 : 3,354,166
295 : 3,354,167
296 : 3,354,168
298 : 3,354,170
307 : 3,354,171
308 : 3,354,172
309 : 3,354,173
309.2 : 3,354,174
309.6 : 3,354,175
326 : 3,354,177
326.3 : 3,354,178
332.5 : 3,354,179
345.5 : 3,354,181
374 : 3,354,182
397.3 : 3,354,183
397.4 : 3,354,184
397.45: 3,354,186
397.5 : 3,354,185
400 : 3,354,187
424 : 3,354,188
429.5 : 3,354,189
429.7 : 3,354,190
448 : 3,354,191
3,354,192
448.2 : 3,354,193
448.8 : 3,354,194
455 : 3,354,195
465 : 3,354,196
465.3 : 3,354,197
468 : 3,354,198
486 : 3,354,199
501.11: 3,354,200
501.21: 3,354,201
524 : 3,354,202
534 : 3,354,203
551 : 3,354,204
555 : 3,354,205
556 : 3,354,206
561 : 3,354,207
3,354,208
563 : 3,354,209
3,354,210
564 : 3,354,211
566 : 3,354,212
567.6 : 3,354,213
576 : 3,354,214
579 : 3,354,215
583 : 3,354,216
3,354,217
586 : 3,354,218
3,354,219
3,354,220
592 : 3,354,221
3,354,222
611 : 3,354,223
3,354,224
3,354,225
613 : 3,354,226
3,354,227
3,354,228
617 : 3,354,229
618 : 3,354,230
621 : 3,354,231
653 : 3,354,232
653.5 : 3,354,233
656 : 3,354,234
683.15: 3,354,235
3,354,236
829 : 3,354,237
876 : 3,354,238
3,354,239
924 : 3,354,240
929 : 3,354,241
930 : 3,354,242
261– 3 : 3,353,799
3,353,800
43 : 3,353,801
110 : 3,353,802
116 : 3,353,803
263– 40 : 3,353,804
3,353,805
264– 25 : 3,354,243
30 : Re.26,301
51 : 3,354,244
60 : 3,354,245
98 : 3,354,246
119 : 3,354,247
3,354,248
161 : 3,354,249
176 : 3,354,250
210 : 3,354,251

264–278 : 3,354,252
288 : 3,354,253
338 : 3,354,180
266– 3 : 3,353,806
11 : 3,353,807
34 : 3,353,808
3,353,809
37 : 3,353,810
267– 1 : 3,353,811
3,353,812
8 : 3,353,813
64 : 3,353,814
3,353,815
3,353,816
69 : 3,353,817
269–153 : 3,353,818
254 : 3,353,819
328 : 3,353,820
271– 16 : 3,353,821
18 : 3,353,822
272– 8 : 3,353,823
273– 26 : 3,353,824
63 : 3,353,825
67 : 3,353,826
102.1 : 3,353,827
104 : 3,353,828
131 : 3,353,829
277– 9.5 : 3,353,830
68 : 3,353,831
171 : 3,353,832
279– 49 : 3,353,833
82 : 3,353,834
280– 11.35: 3,353,835
33.99: 3,353,836
43.13: 3,353,837
47.19: 3,353,838
104 : 3,353,839
124 : 3,353,840
415 : Re 26,303
432 : 3,353,841
447 : 3,353,842
486 : 3,353,843
281– 17 : 3,353,844
282– 23 : 3,353,845
285– 16 : 3,353,846
18 : 3,353,847
19 : 3,353,848
21 : 3,353,849
284 : 3,353,850
302 : 3,353,851
287– 20 : 3,353,852
54 : 3,353,853
189.36: 3,353,854
292– 65 : 3,353,855
66 : 3,353,856
157 : 3,353,857
164 : 3,353,858
256 : 3,353,859
294–100 : 3,353,860
296– 24 : 3,353,861
26 : 3,353,862
28 : 3,353,863
121 : 3,353,864
297–143 : 3,353,865
162 : 3,353,866
219 : 3,353,867
372 : 3,353,868
452 : 3,353,869
299– 5 : 3,353,870
71 : 3,353,871
301– 37 : 3,353,872
302– 53 : 3,353,873
307– 88.5 : 3,354,321
3,354,322
3,354,323
3,354,324
3,354,325
3,354,326
308– 3.8 : 3,353,874
6 : 3,353,875
3,353,876
9 : 3,353,877
24 : 3,353,878
26 : 3,353,879
204 : 3,353,880
217 : 3,353,881
310– 8.7 : 3,354,327
11 : 3,354,328
36 : 3,354,329
68 : 3,354,330
196 : 3,354,331
268 : 3,354,332
3,354,333
312– 10 : 3,353,882
35 : 3,353,883
199 : 3,353,884
205 : 3,353,885
214 : 3,353,886
227 : 3,353,887
257 : 3,353,888
313– 68 : 3,354,334

313– 77 : 3,354,335
3,354,336
3,354,337
3,354,338
82 : 3,354,339
3,354,340
92 : 3,354,341
108 : 3,354,342
113 : 3,354,343
130 : 3,354,344
153 : 3,354,345
315– 3.5 : 3,354,346
3,354,347
5.43: 3,354,348
39 : 3,354,349
205 : 3,354,350
240 : 3,354,351
316– 17 : 3,353,889
19 : 3,353,890
317–100 : 3,354,352
101 : 3,354,353
3,354,354
3,354,355
116 : 3,354,356

317–119 : 3,354,357
148.5 : 3,354,358
230 : 3,354,359
234 : 3,354,360
3,354,361
235 : 3,354,362
3,354,363
3,354,364
237 : 3,354,365
318– 18 : 3,354,366
138 : 3,354,367
176 : 3,354,368
197 : 3,354,369
227 : 3,354,370
341 : 3,354,371
460 : 3,354,372
320– 1 : 3,354,373
23 : 3,354,374
321– 5 : 3,354,375
3,354,376
8 : 3,354,377
14 : 3,354,378
15 : 3,354,379
18 : 3,354,380

321– 45 : 3,354,381
60 : 3,354,382
322– 29 : 3,354,383
323– 89 : 3,354,384
324– 37 : 3,354,385
51 : 3,354,386
55 : 3,354,387
65 : 3,354,388
73 : 3,354,389
79 : 3,354,390
99 : 3,354,391
121 : 3,354,392
158 : 3,354,393
3,354,394
325–116 : 3,354,395
153 : 3,354,396
459 : 3,354,397
328–133 : 3,354,398
147 : 3,354,399
150 : 3,354,400
330– 10 : 3,354,401
24 : 3,354,402
331– 18 : 3,354,403
94.5 : 3,354,404

331– 94.5 : 3,354,405
3,354,406
3,354,407
107 : 3,354,408
113 : 3,354,409
332– 18 : 3,354,410
333– 6 : 3,354,411
22 : 3,354,412
72 : 3,354,413
335–124 : 3,354,414
131 : 3,354,415
284 : 3,354,416
336–198 : 3,354,417
338–174 : 3,354,418
339– 26 : 3,354,419
103 : 3,354,420
128 : 3,354,422
3,354,423
198 : 3,354,421
220 : 3,354,424
340– 10 : 3,354,425
3,354,426
15.5 : 3,354,427
29 : 3,354,428

340–146.1 : 3,354,431
146.3 : 3,354,432
147 : 3,354,434
166 : 3,354,435
167 : 3,354,433
172.5 : 3,354,429
3,354,430
3,354,436
3,354,437
3,354,438
3,354,467
173 : 3,354,439
3,354,440
173.1 : 3,354,441
173.2 : 3,354,442
174 : 3,354,443
3,354,444
3,354,445
174.1 : 3,354,446
3,354,447
248 : 3,354,448
347 : 3,354,449
3,354,450
3,354,451

340–347 : 3,354,452
3,354,453
381 : 3,354,454
343– 7.3 : 3,354,455
17.2 : 3,354,456
17.7 : 3,354,457
18 : 3,354,458
100 : 3,354,459
108 : 3,354,460
854 : 3,354,461
346– 50 : 3,354,462
74 : 3,354,463
3,354,464
109 : 3,354,465
350– 17 : 3,353,891
36 : 3,353,892
55 : 3,353,893
150 : 3,353,894
155 : 3,353,895
160 : 3,353,896
167 : 3,353,897
401–132 : 3,353,898
198 : 3,353,899

CLASSIFICATION OF DESIGNS

D 2– 24 : 209,269
442 : 209,270
D 4– 3 : 209,271
5 : 209,272
D 5– 2 : 209,273
D 9– 2 : 209,274
209,275
D10– 7 : 209,276
8 : 209,277
D13– 1 : 209,278
D14– 3 : 209,279
209,280
D15– 8 : 209,281
209,282
D22– 12 : 209,283
D26– 1 : 209,284
14 : 209,285
209,286
209,287

D26– 14 : 209,288
209,289
209,290
209,291
D33– 19 : 209,292
D34– 4 : 209,293
5 : 209,294
209,295
209,296
209,297
209,298
209,299
209,300
209,301
15 : 209,302
209,303
D35– 2 : 209,304
209,305
D36– 8 : 209,306

D36– 8 : 209,307
209,308
D44– 5 : 209,309
6 : 209,310
9 : 209,311
209,312
10 : 209,313
24 : 209,314
29 : 209,315
D48– 2 : 209,316
20 : 209,317
24 : 209,318
27 : 209,319
209,320
209,321
D50– 7 : 209,322
209,323
D52– 2 : 209,324
209,325

D52– 7 : 209,326
10 : 209,327
D54– 1 : 209,328
11 : 209,329
209,330
12 : 209,331
209,332
D56– 1 : 209,333
4 : 209,334
D58– 2 : 209,335
209,336
209,337
5 : 209,338
209,339
17 : 209,340
209,341
25 : 209,342
26 : 209,343
209,344

D58– 26 : 209,345
209,346
209,347
D61– 1 : 209,348
D62– 2 : 209,349
D64– 10 : 209,350
11 : 209,351
209,352
D71– 1 : 209,353
209,354
209,355
D74– 1 : 209,356
D80– 9 : 209,357
209,358
209,359
D81– 3 : 209,360
10 : 209,361
209,362
D83– 1 : 209,363

D83– 1 : 209,364
D86– 10 : 209,365
D87– 2 : 209,366
209,367
209,368
209,369
209,370
3 : 209,371
5 : 209,372
209,373
D90– 3 : 209,374
209,375
20 : 209,376
D91– 3 : 209,377
209,378
209,379
209,380
D93– 4 : 209,381
D94– 3 : 209,382

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1
Alaska	2
American Samoa	3
Arizona	4
Arkansas	5
California	6
Canal Zone	7
Colorado	8
Connecticut	9
Delaware	10
District of Columbia	11
Florida	12
Georgia	13
Guam	14
Hawaii	15
Idaho	16
Illinois	17
Indiana	18
Iowa	19
Kansas	20
Kentucky	21
Louisiana	22
Maine	23
Maryland	24
Massachusetts	25
Michigan	26
Minnesota	27
Mississippi	28
Missouri	29
Montana	30
Nebraska	31
Nevada	32
New Hampshire	33
New Jersey	34
New Mexico	35
New York	36
North Carolina	37
North Dakota	38
Ohio	39
Oklahoma	40
Oregon	41
Pennsylvania	42
Puerto Rico	43
Rhode Island	44
South Carolina	45
South Dakota	46
Tennessee	47
Texas	48
Utah	49
Vermont	50
Virginia	51
Virgin Islands	52
Washington	53
West Virginia	54
Wisconsin	55
Wyoming	56
U.S. Air Force	57
U.S. Army	58
U.S. Navy	59

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3.353.356
3.353.379
3.353.380
3.353.381
3.353.401
3.353.431
3.353.497
3.353.561
3.353.900
3.354.098
3.354.111
3.354.113
2 : 3.353.285
3.353.322
4 : 3.353.474
3.353.642
3.353.764
3.354.432
6 : 3.353.189
3.353.203
3.353.204
3.353.214
3.353.230
3.353.232
3.353.248
3.353.252
3.353.259
3.353.265
3.353.291
3.353.296
3.353.309
3.353.311
3.353.316
3.353.330
3.353.335
3.353.336
3.353.342
3.353.350
3.353.353
3.353.354
3.353.370
3.353.371
3.353.394
3.353.427
3.353.439
3.353.451
3.353.452
3.353.459
3.353.469
3.353.470

6 : 3.353.472
3.353.480
3.353.494
3.353.496
3.353.499
3.353.518
3.353.536
3.353.538
3.353.540
3.353.563
3.353.574
3.353.594
3.353.608
3.353.634
3.353.645
3.353.651
3.353.655
3.353.664
3.353.678
3.353.717
3.353.724
3.353.734
3.353.742
3.353.771
3.353.779
3.353.784
3.353.786
3.353.793
3.353.820
3.353.824
3.353.839
3.353.846
3.353.858
3.353.860
3.353.863
3.353.865
3.353.867
3.353.870
3.353.885
3.353.886
3.353.904
3.353.921
3.353.928
3.353.932
3.354.006
3.354.014
3.354.042
3.354.062
3.354.067
3.354.069

6 : 3.354.074
3.354.077
3.354.084
3.354.085
3.354.096
3.354.149
3.354.152
3.354.154
3.354.183
3.354.191
3.354.236
3.354.257
3.354.258
3.354.266
3.354.270
3.354.273
3.354.297
3.354.301
3.354.304
3.354.305
3.354.314
3.354.318
3.354.325
3.354.327
3.354.335
3.354.339
3.354.346
3.354.347
3.354.349
3.354.353
3.354.355
3.354.362
3.354.370
3.354.371
3.354.379
3.354.384
3.354.397
3.354.420
3.354.429
3.354.431
3.354.453
3.354.455
3.354.465
8 : 3.353.324
3.353.503
3.353.725
3.353.880
3.354.411
3.354.463
9 : Re.26.304

9 : 3.353.212
3.353.258
3.353.277
3.353.355
3.353.364
3.353.411
3.353.514
3.353.566
3.353.584
3.353.643
3.353.778
3.353.785
3.353.797
3.353.859
3.353.906
3.353.941
3.354.103
3.354.136
3.354.155
3.354.172
3.354.194
3.354.208
3.354.226
3.354.230
3.354.238
3.354.264
3.354.275
3.354.292
3.354.308
3.354.352
3.354.369
3.354.386
3.354.422
3.354.467
10 : 3.353.225
3.353.240
3.353.241
3.353.242
3.353.255
3.353.344
3.353.537
3.353.767
3.353.903
3.353.938
3.353.994
3.354.022
3.354.023
3.354.036
3.354.097
3.354.139

10 : 3.354.209
3.354.237
11 : 3.353.359
3.353.441
3.353.478
3.354.320
12 : 3.353.253
3.353.283
3.353.361
3.353.414
3.353.471
3.353.482
3.353.694
3.353.855
3.353.914
3.354.225
3.354.256
3.354.306
3.354.358
3.354.390
3.354.419
3.354.438
13 : 3.353.327
3.353.508
3.353.570
3.353.812
16 : 3.353.840
17 : Re.26.298
3.353.190
3.353.191
3.353.199
3.353.206
3.353.218
3.353.234
3.353.236
3.353.245
3.353.260
3.353.278
3.353.281
3.353.284
3.353.303
3.353.329
3.353.333
3.353.352
3.353.389
3.353.400
3.353.443
3.353.453
3.353.461
3.353.484

17 : 3.353.491
3.353.495
3.353.501
3.353.550
3.353.573
3.353.576
3.353.583
3.353.586
3.353.615
3.353.653
3.353.654
3.353.665
3.353.667
3.353.672
3.353.675
3.353.681
3.353.686
3.353.691
3.353.699
3.353.706
3.353.713
3.353.737
3.353.753
3.353.777
3.353.781
3.353.796
3.353.805
3.353.821
3.353.831
3.353.832
3.353.844
3.353.845
3.353.866
3.353.882
3.353.884
3.353.887
3.353.916
3.353.935
3.353.965
3.353.969
3.354.017
3.354.018
3.354.038
3.354.110
3.354.195
3.354.198
3.354.213
3.354.240
3.354.260
3.354.261

17 : 3,354,265
3,354,279
3,354,280
3,354,281
3,354,287
3,354,291
3,354,336
3,354,337
3,354,414
3,354,417
18 : 3,353,192
3,353,251
3,353,298
3,353,395
3,353,426
3,353,434
3,353,502
3,353,506
3,353,551
3,353,559
3,353,830
3,353,878
3,353,939
3,353,951
3,353,953
3,354,060
3,354,163
3,354,171
3,354,202
19 : 3,353,382
3,353,660
3,353,773
3,354,046
3,354,357
3,354,398
20 : 3,353,288
3,353,363
3,353,479
3,353,638
3,353,697
3,354,066
21 : 3,353,368
3,353,377
3,353,418
3,353,621
3,353,646
3,354,277
3,354,338
22 : 3,353,599
3,353,676
3,353,679
3,354,081
3,354,229
3,354,317
23 : 3,353,516
24 : Re.26,305
3,353,202
3,353,446
3,353,454
3,353,476
3,353,780
3,353,829
3,353,841
3,354,112
3,354,114
3,354,395
3,354,428
25 : 3,353,187
3,353,306
3,353,332
3,353,387
3,353,399
3,353,410
3,353,416
3,353,447
3,353,464
3,353,517
3,353,539
3,353,633
3,353,707
3,353,708
3,353,787
3,353,818
3,353,825
3,353,895
3,353,931
3,353,933
3,353,956
3,353,989
3,354,016
3,354,025
3,354,058
3,354,099
3,354,108
3,354,170
3,354,307
3,354,345
3,354,351
3,354,367
3,354,407
3,354,423

25 : 3,354,426
26 : 3,353,215
3,353,219
3,353,229
3,353,238
3,353,254
3,353,275
3,353,299
3,353,313
3,353,328
3,353,349
3,353,369
3,353,386
3,353,388
3,353,390
3,353,391
3,353,392
3,353,420
3,353,519
3,353,524
3,353,525
3,353,527
3,353,528
3,353,546
3,353,558
3,353,578
3,353,580
3,353,581
3,353,589
3,353,620
3,353,627
3,353,628
3,353,635
3,353,636
3,353,637
3,353,641
3,353,649
3,353,659
3,353,684
3,353,698
3,353,730
3,353,744
3,353,801
3,353,809
3,353,828
3,353,836
3,353,837
3,353,864
3,353,868
3,353,872
3,353,971
3,353,991
3,353,992
3,354,002
3,354,011
3,354,015
3,354,020
3,354,073
3,354,109
3,354,159
3,354,161
3,354,169
3,354,203
3,354,211
3,354,217
3,354,288
3,354,294
3,354,372
3,354,387
3,354,449
27 : 3,353,553
3,353,572
3,353,629
3,353,663
3,353,758
3,353,782
3,353,968
3,354,088
3,354,216
3,354,271
3,354,366
3,354,401
3,354,445
28 : 3,353,266
3,353,455
3,353,534
29 : 3,353,273
3,353,282
3,353,320
3,353,419
3,353,498
3,353,505
3,353,727
3,353,789
3,353,976
3,354,063
3,354,158
3,354,313
31 : 3,353,750
3,353,751
3,354,174

33 : 3,353,826
3,354,381
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Design Patents

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 21, 1967 Volume 844 Number 3

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 197,771. (See Reg. No. 197,772.)

Reg. No. 197,772 (YOUNG AMERICA), United Drug Company, Rubber nursing nipples; **Reg. No. 197,771** (DESIGN), Asbestos Limited, Inc., Plaster; **Reg. No. 197,767** (PURITAN MAID AND DESIGN), S. L. Hoffman, doing business as S. L. Hoffman & Co., Dresses, **filed** Aug. 24, 1967, D.C., N.D. Tex. (Dallas), Doc. CA-3-2207, *The Spa, Inc. and President's Health Club, Inc.* v. *Grecian Health & Beauty Spa, Inc., and Thomas Wynn and Marty Wright.*

Reg. No. 197,767. (See Reg. No. 197,772.)

Reg. No. 207,915 (LACRITE), The Patterson-Sargent Company, Dry and ready mixed paints, paint and varnish driers, paint enamels, wood stains, varnish stains, wall paint, prepared lacs, fillers for painters' use, varnishes, automobile enamels, baking enamels, and engine enamels, **filed** Sept. 5, 1967, D.C.N.J. (Camden), Doc. C-922-67, *Jay V. Zimmerman Company* v. *Spencer Gifts, Inc.*

Reg. No. 208,285 (A STAR ETC. IN A CIRCULAR DESIGN), The Columbus Vending Company, Vending machines, **filed** Sept. 1, 1967, D.C., S.D.N.Y., Doc. 67-C-3393, *Bercy Industries, Inc.* v. *Mechanical Mirror Works, Inc. and Artistic Factory Products, Inc.*

Reg. No. 763,977 (TAREYTON AND DESIGN), Blue Gem Mfg. Co., Misses' and girls' sportswear—namely, blouses, capri pants and shorts, **filed** Sept. 13, 1967, D.C., S.D.N.Y., Doc. 67-C-3517, *Blue Gem Manufacturing Company* v. *Tarryton Fashions, Inc.*

Reg. No. 774,288 (THRIFTY RENT-A-CAR SYSTEM AND DESIGN), Stemmons, Inc., Automobile rental, **filed** Aug. 23, 1967, D.C., S.D. Fla. (Miami), Doc. 67-864-C-TC, *Thrifty Rent-A-Car, Inc.* v. *William Hudson.*

Reg. No. 826,420 (TRAVELLER'S COMPANION SERIES AND DESIGN), The Olympia Press, Books, **filed** Sept. 7, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67-1318-CC, *The Olympia Press* v. *Collectors Publications, Inc., and Marvin Miller.*

CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17, 337
Date of oldest new application	Oct. 7, 1966
Date of oldest amended application (filing date)	Oct. 30, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	10-7-66	10-5-65
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	12-14-66	9-29-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	11-22-66	10-18-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	12-6-66	10-30-64
Renewals (All Classes)	9-1-67	....
Sec. 12(c) Publications (All Classes)	9-5-67	....

Applications filed during the month of September 1967—2,140

Registrations Issued	384—No. 838,982 to No. 839,365
Renewals Issued	70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

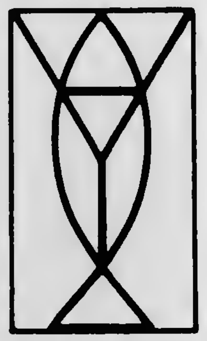
SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 215,372. AB Smorgasbord, Stockholm, Sweden. Filed Mar. 31, 1965.



Priority claimed under Sec. 44(d) on Swedish application filed Oct. 6, 1964; Reg. No. 112,362, dated Mar. 5, 1965.

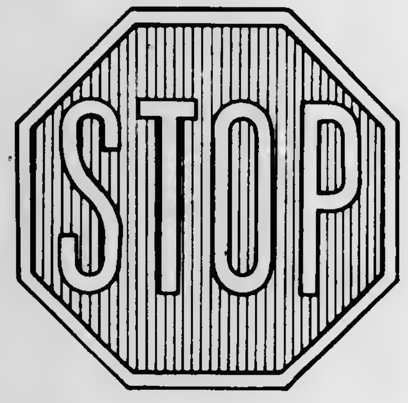
Class 30—Crockery, Earthenware, and Porcelain

For China, Crockery, Pottery, and Dishes.

Class 100—Miscellaneous

For Restaurant Services—Namely, Preparation and Serving of Foodstuffs and Beverages, Especially Swedish Foodstuffs and Beverages.

SN 223,935. Ermey Vineyards, Inc., Wapato, Wash. Filed July 22, 1965.



The drawing is lined for red, but no claim is made to color.

Class 45—Soft Drinks and Carbonated Waters

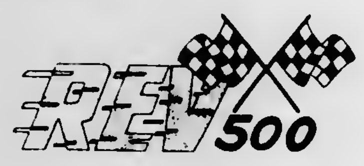
For Soft Drinks.

Class 46—Foods and Ingredients of Foods

For Fruit Juices and Fruit Pulps and Concentrates Thereof Used in Making Soft Drinks, Jellies, Jams, and Preserves.

First use Mar. 1, 1965.

SN 235,380. Dealers Service Specialty Corp., Philadelphia, Pa. Filed Dec. 28, 1965.



Class 6—Chemicals and Chemical Compositions

For Radiator Sealer.

Class 15—Oils and Greases

For Automatic Transmission Sealer, Power Steering Sealer, Gas Line Anti-Freeze, Carburetor and Valve Conditioner, Motor Sealer, Crankcase Motor Oil Viscosity Additive, and Top Oil and Valve Lubricant.

First use Nov. 11, 1965.

SN 239,091. U.S. Plywood-Champion Papers Inc., New York, N.Y., by merger and change of name from United States Plywood Corp., New York, N.Y. Filed Feb. 17, 1966.

WELDWOOD

Owner of Reg. Nos. 203,931, 667,925, and others.

Class 5—Adhesives

For Cement, Glue and Adhesive Exterior and Interior Bonding Agents, i.e., Contact Cements; Urea, Phenolic, Resorcinol and Epoxy Resinous Glues; White Polyvinyl Glue; and General Purpose Adhesives.

First use on or about May 4, 1933.

Class 6—Chemicals and Chemical Compositions

For Pigmented and Colorless Liquid Compositions for Treating, Preserving, Waterproofing, and/or Impregnating Wood, Lumber, Plywood, Leather, Canvas, Cloth, Fabric, Fiberglass, Masonry, and Metal in Order To Repel Moisture, Water, and Other Liquids, and To Inhibit Swelling, Shrinking, Warping, and Checking, and To Prevent Damage by Termites, Decay, Rot, Fungi, Rust, and Stain; and Solvents.

First use on or about Jan. 1, 1964.

Class 12—Construction Materials

For Building and Construction Materials, i.e., Plywood, Lumber, Wood and/or Metal Doors, Hardboard, Particle Board, and Wood and/or Metal Moldings (All the Foregoing Products Sold Plain or Faced With Plastic or Metal); Partitions, and Partition Systems; Fiberglass Reinforced Resin Panels, and Installation Accessories; Enameled Cement-Asbestos Panels for Curtain Walls, Spandrel Panels, Partitions, Bathroom Walls, Ceilings, and the Like; Unlaminated Veneer; and Cloth, Plastic, and Paper Backed Veneer (Primarily for Wall Covering, Furniture Surfacing, and Edge Banding); All the Foregoing Goods for Residential and/or Industrial Construction, and/or for Use in the Furniture, Kitchen Cabinet, and Allied Fields; Plywood and Hardboard for Pallets and Component Parts Thereof, Tackboards, Chalkboards, Basketball Backboards, and Table Tennis Tables; and Pigmented Compositions of Wood Putty, and of Paste, of Various Colors To Blend With and Match Prefinished Plywood and Other Wood and Allied Products, and To Fill Nail Holes, Cracks, Gouges, Holes and Other Imperfections, and To Hide Scratches.

First use on or about Jan. 1, 1925.

Class 16—Protective and Decorative Coatings

For Decorative and Preserving Coatings Such as Penetrating Sealers and Pigmented Sealers, Natural Wood Finishing Lacquers, Wood Finishes With a Base Coat, and Assorted Colorants To Add to Color Bases for Color Matching in Decorating.

First use on or about May 14, 1958.

Class 22—Games, Toys, and Sporting Goods

For Table Tennis Tables and Supports Therefor, and Basketball Backboards, Baskets, Brackets, Supports, and Fasteners Therefor.

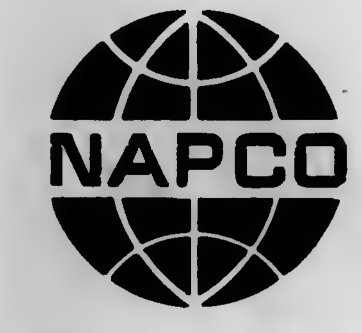
First use on or about Apr. 23, 1953.

Class 32—Furniture and Upholstery

For Furniture, i.e., Desks, Tables, Table Tops, Shelves, Bookcases, File Bins, File Cabinets, and Components for Furniture; Pew Seats, Work Benches, and Mirrors; Also Plywood, Lumber, Veneer and Particle Board for Furniture, Such as, Tables, Buffets, Commodes, Cabinets, Kitchen Cabinets, Desks, Sofas, Divans, Beds, and Dressers, and the Like.

First use on or about Apr. 23, 1953.

SN 240,321. Napco Industries, Inc., Hopkins, Minn. Filed Mar. 7, 1966.



Owner of Reg. Nos. 592,955, 606,989, and 661,584.

Class 19—Vehicles

For Dual Vehicle Wheel Adapters for Attaching Additional Driving Wheels to Regular Driving Wheels, Front Non-Driving Axles and Axle Parts, Sanders, and Radiators.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Industrial Tractors, Vehicle Engines, Cylinder Heads, Pistons and Poppet Valves Therefor, Vehicle Power Transmissions, Vehicle Driving Axle Shafts, Snow Plows, Vehicle Engine Cylinder Head Water Outlets, Winches, Four-Wheel-Drive Attachments for Converting a Two-Wheel-Drive Truck Into a Four-Wheel Drive Truck, Vehicle-Supported Combination Plow and Dozer, Vehicle-Supported Combination Plow, Dozer and Shovel, Vehicle-Supported Oil Pump, Automotive and Industrial Gears and Transmissions, Rear and Driving Axles and Axle Parts, and Drive Line and Universal Joint Parts.

First use Jan. 28, 1966.

SN 242,702. Afco Electronics, Inc., Oakland, Calif. Filed Apr. 5, 1966.

AFCO

Class 21—Electrical Apparatus, Machines, and Supplies

For Radios, Transistor Radios, Transceivers, Closed System Circuit Television Systems, and Batteries; Parts and Accessories for Said Products—Namely, Loud Speakers, Earphones, Antennas, Transistors, Micro Motors, Microphones, Adapters for A.C. Lines and Auto Cigarette Lighters, On-and-Off and Remote Control Switches, and Cabinets, Carrying Cases, and Straps Sold as Units With Said Products.

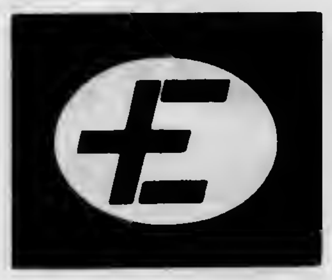
First use in or about September 1958.

Class 36—Musical Instruments and Supplies

For Transistor Tape Recorders; and Parts and Accessories for Said Products—Namely, Tapes and Reels, and Microphones, Batteries, Earphones, Adapters for A.C. Lines and Auto Cigarette Lighters, On-and-Off and Remote Control Switches, Cabinets, and Carrying Cases Sold as Units With Said Products.

First use in or about April 1960.

SN 243,106. Electro Products Laboratories, Inc., Chicago, Ill. Filed Apr. 11, 1966.



Class 21—Electrical Apparatus, Machines, and Supplies

For AC to DC Rectifier Type Power Supplies.

First use May 5, 1965.

Class 26—Measuring and Scientific Appliances

For Proximity Sensing and Control Systems and Parts Thereof, Including Control Units, Proximity Pickups and Cables, and Amplifiers Therefor, and Speed Sensing and Control Apparatus.

First use Feb. 22, 1965.

SN 243,303. Avon Sole Company, Avon, Mass. Filed Apr. 13, 1966.

CROSS CHECKS

Class 1—Raw or Partly Prepared Materials

For Shoe Soling Material, Sold in Sheet Form.

Class 39—Clothing

For Shoe Soles.

First use Jan. 28, 1966.

SN 244,580. Gladen Enterprises, Inc., Bay City, Mich. Filed Apr. 29, 1966.

METLCONE

Class 1—Raw or Partly Prepared Materials

For Silicone Rubber.

Class 50—Merchandise Not Otherwise Classified

For Rubber Dies and Pads for the Hot Stamping of Plastic Parts.

First use Mar. 8, 1966.

SN 244,581. Gladen Enterprises, Inc., Bay City Mich. Filed Apr. 29, 1966.

COPPERCONE

Class 1—Raw or Partly Prepared Materials

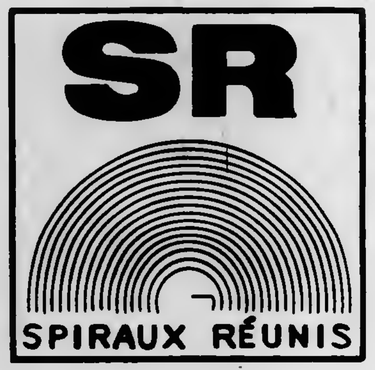
For Silicone Rubber.

Class 50—Merchandise Not Otherwise Classified

For Rubber Dies and Pads for the Hot Stamping of Plastic Parts.

First use Mar. 8, 1966.

SN 244,852. Société des Fabriques de Spiraux Réunies, Geneva, Switzerland. Filed May 3, 1966.



The French words "Spiraux Réunis" translated mean "united springs." Owner of Swiss Reg. No. 202,567, dated Jan. 27, 1964.

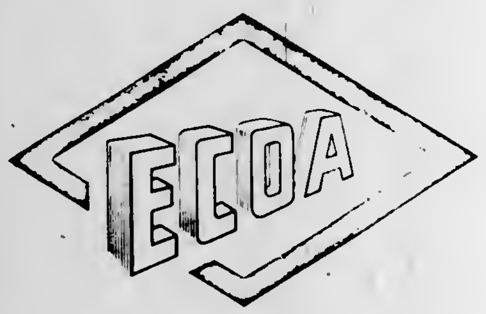
Class 14—Metals and Metal Castings and Forgings

For Alloys for Springs and Hairsprings.

Class 27—Horological Instruments

For Springs, Hairsprings, Watches, Clocks, and Parts Thereof.

SN 246,297. Equipment Company of America, Hialeah, Fla. Filed May 23, 1966.



Class 19—Vehicles

For Hand Trucks, Platform Trucks, Pallet Dollies, Airline and Hotel Baggage Carts.

Class 50—Merchandise Not Otherwise Classified

For Dockboards and Dockplates, Yardramps, Crossover Bridges, and Delivery Truck Ramps.

First use Jan. 27, 1960.

SN 250,524. Simonsen Radio A/S, Oslo, Norway. Filed July 18, 1966.

SIMRAD

Owner of Norwegian Reg. No. 44,537, dated June 30, 1954.

Class 21—Electrical Apparatus, Machines, and Supplies

For Marine Communications Equipment—Namely, Radio Receivers, Radio Transmitters, and Radio Telephones.

Class 26—Measuring and Scientific Appliances

For Marine Electric and Electronic Equipment—Namely, Echo Sounders, Depth Finders, Fish Finders, and Sonars.

SN 252,048. Connor Forest Industries, Wausau, Wis., by change of name from The Connor Lumber and Land Company, Wausau, Wis. Filed Aug. 10, 1966.

CONNOR

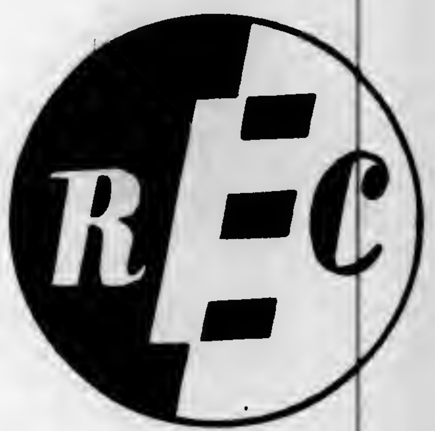
Class 12—Construction Materials

For Maple and Other Wooden Flooring and Lumber.
First use 1900.

Class 32—Furniture and Upholstery

For Juvenile Furniture.
First use on or about June 12, 1940.

SN 252,615. Rosemount Engineering Company, Minneapolis, Minn. Filed Aug. 18, 1966.



Owner of Reg. No. 686,867.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Resistance Heating Elements for Aerospace and Industrial Applications and Electric Power Supplies for Electronic Instruments.
First use May 8, 1961.

Class 22—Games, Toys, and Sporting Goods

For Ski Boots.
First use Nov. 24, 1965.

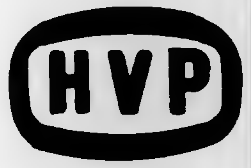
Class 26—Measuring and Scientific Appliances

For Aircraft Instruments Including Flight Angle Sensors, Stall Warning Systems, and Ice Detectors; Standard Thermometers; Mass Flow Sensors; Resistance Bridges and Components Therefor for Use With Measuring Devices; Calibration Equipment for Pressure and Temperature Sensors; and Vibration Isolation Tables.
First use at least as early as Jan. 1, 1960.

Class 39—Clothing

For Insoles for Shoes and Boots.
First use June 30, 1965.

SN 254,053. Hudson National, Inc., d.b.a. Hudson Vitamin Products, New York, N.Y. Filed Sept. 8, 1966.



Owner of Reg. No. 734,452 and others.

Class 18—Medicines and Pharmaceutical Preparations

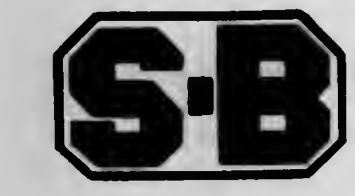
For Spirits of Ammonia Inhalent, Burn Antiseptic Ointment, and Antiseptic Preparation.

Class 44—Dental, Medical, and Surgical Appliances

For First Aid Products—Namely, Adhesive Bandage Strips, Cotton Balls, Cosmetic Balls, Gauze Pads, Gauze Bandages, Cotton Tipped Applicators, Absorbent Cotton, Adhesive Tape, and First Aid Kits.

First use June 6, 1966.

SN 257,002. S-B Manufacturing Company, Milwaukee, Wis. Filed Oct. 24, 1966.



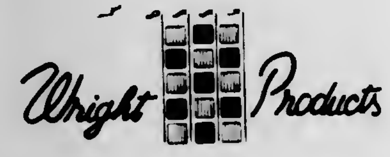
Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Door Closers.
First use during June 1966.

Class 50—Merchandise Not Otherwise Classified

For Christmas Tree Stands.
First use Aug. 4, 1966.

SN 257,905. Hartzell Manufacturing, Inc., d.b.a. Wright Products, St. Paul, Minn. Filed Nov. 4, 1966.



Applicant disclaims the word "Products" apart from its usage in the mark. The drawing is lined for red and the remaining background achieves the checkerboard design. Owner of Reg. Nos. 616,165 and 622,533.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Door Closers, Strike Plates, Adapter Plates, Combination Hinges, Hardware Sets, Brackets and Handles, Snap Fasteners, Friction Stays, Friction Stays and Adjusters, Rotary Fasteners, Brackets, Hinges, Springs for Screens, Doors, Storm or Combination Doors, Casements, Hinged Windows, Storm Windows, Combination Door Panels, Light Interior Doors, Basement Storm Sash and Screens, Combination Storm Sash and Screens; Storm Spring and Chain Door Stops, Storm Windows Adjusters, Basement Window Hardware Sets, Reversible Basement Window Hardware Sets, Friction Hinges and Locks for Basement Windows, Screen and Storm Door Catches, Screen and Storm Sash Hangers, Adjustable Door Springs, Basement or Transom Window Operators, Wood Joint Fasteners, Awning Type Window Hardware, and Casement Window Adjusters.

Class 25—Locks and Safes

For Tubular Latches for Screen, Storm, or Combination Doors; Push-Pull Latches for Screen, Storm, or Combination Doors; Bore-In Latches for Screen, Storm, or Combination Doors; Window Locking Latches; Locking Lever and Lock Plate for Windows and Key Locking Latch for Knobs.

First use Feb. 23, 1966; June 1932 as to the word "Wright."

SN 258,252. The S-P Manufacturing Corporation, Cleveland, Ohio. Filed Nov. 8, 1966.

POWER-CISION

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Valves.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Fluid Cylinders, Air-Oil Boosters and Tanks, Chuck Jaws and Chucks, and Parts and Accessories Therefor.

First use on or about Sept. 29, 1966.

SN 264,116. Union Steel Chest Corporation, Leroy, N.Y. Filed Feb. 6, 1967.

UNION

Owner of Reg. Nos. 151,267 and 439,381.

Class 2—Receptacles

For Personal File Chests, Tool Chests, Tool Boxes and Containers.

Class 22—Games, Toys, and Sporting Goods

For Fishing Tackle Boxes.

Class 25—Locks and Safes

For Cash Boxes and Bond Boxes.

First use Dec. 28, 1966; 1908 in a different form.

SN 265,377. Swingline Inc., Long Island City, N.Y. Filed Feb. 24, 1967.

SWINGLINE

Owner of Reg. Nos. 665,038, 668,579, and others.

Class 5—Adhesives

For Adhesive Cements for Binding Materials Together and Adhesive Rubber Cements for the Repair of Rubber Articles.

Class 12—Construction Materials

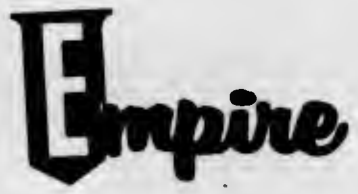
For Adhesive Filler Materials and Adhesive Sealing Materials.

Class 14—Metals and Metal Castings and Forgings

For Adhesive Metal Filler for the Repair of Metal Articles.

First use Sept. 7, 1966.

SN 270,366. Empire Furniture and Rug Company, Chicago, Ill. Filed May 1, 1967.



Class 32—Furniture and Upholstery

For Household Furniture of All Kinds as Separate Components or as Living Room, Dining Room, Bedroom, Kitchen, and Dinette Sets.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Upholstery Febrics and Textile Rugs.

First use July 1961; April 1935 as to "Empire."
Subj. to Intf. with SN 261,207.

SN 273,713. D.M.R., Inc., Lakewood, Colo. Filed June 13, 1967.

MEDILEASE

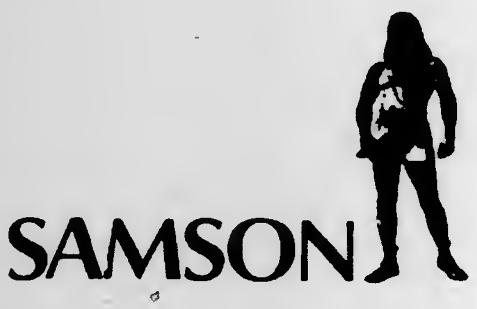
Class 44—Dental, Medical, and Surgical Appliances

For Hospital Patient Handling and Treating Equipment—Namely, Floatation Pads, Heel Pads, Tapes, Lubricated Pads, Cervical Collars, Electric Beds, Wedge Turning Frames, Hydraulic Stretchers, and Vented Levelling Mattresses.
First use at least as early as Apr. 12, 1967.

Class 100—Miscellaneous

For Leasing of Medical and Hospital Equipment.
First use Feb. 27, 1967.

SN 277,589. Samson Plastics, Inc., Cherry Hill, N.J. Filed Aug. 7, 1967.



The portrait is a fanciful representation of Samson.

Class 2—Receptacles

For Plastic Products—Namely, Serving Trays, Carafes, Thermometer Holders, Pots for Commodes, Wash Basins, Soap Dishes, Pitchers, Potties for Children's Pottie Chairs, Wastebaskets, Buckets, Garbage Holders for Use in Sinks, Diaper Pails, Garbage Pails, Trash Containers, Liners for Soap Dishes, Platter Covers, Dessert Dishes, Bread and Butter Dishes, Dinner Plates, Tumblers, Soup Bowls, Drinking Cups, Saucers, Creamers and Sugar Bowls, All for Use in Hospitals, Old Age Institutions, Rest Homes, Nursing Homes, and Other Institutions for the Care and Treatment of the Sick, Aged and Infirm.

Class 32—Furniture and Upholstery

For Commodes and Children's Pottie Chairs for Use in Hospitals, Old Age Institutions, Rest Homes, Nursing Homes, and Other Institutions for the Care and Treatment of the Sick, Aged and Infirm.

Class 44—Dental, Medical, and Surgical Appliances

For Bedpans, Instrument Trays, Sponge Bowls, Fracture Pans, Emesis Basins and Urinals for Use in Hospitals, Old Age Institutions, Rest Homes, Nursing Homes, and Other Institutions for the Care and Treatment of the Sick, Aged and Infirm.

First use Aug. 2, 1967.

SN 277,590. Samson Plastics, Inc., Cherry Hill, N.J. Filed Aug. 7, 1967.

SAMSON

Class 2—Receptacles

For Plastic Products—Namely, Serving Trays, Carafes, Thermometer Holders, Pots for Commodes, Wash Basins, Soap Dishes, Pitchers, Potties for Children's Pottie Chairs, Wastebaskets, Buckets, Garbage Holders for Use in Sinks, Diaper Pails, Garbage Pails, Trash Containers, Liners for Soap Dishes, Platter Covers, Dessert Dishes, Bread and Butter Dishes, Dinner Plates, Tumblers, Soup Bowls, Drinking Cups, Saucers, Creamers and Sugar Bowls, All for Use in Hospitals, Old Age Institutions, Rest Homes, Nursing Homes, and Other Institutions for the Care and Treatment of the Sick, Aged and Infirm.

Class 32—Furniture and Upholstery

For Commodes and Children's Pottie Chairs for Use in Hospitals, Old Age Institutions, Rest Homes, Nursing Homes, and Other Institutions for the Care and Treatment of the Sick, Aged and Infirm.

Class 44—Dental, Medical, and Surgical Appliances

For Bedpans, Instrument Trays, Sponge Bowls, Fracture Pans, Emesis Basins and Urinals for Use in Hospitals, Old Age Institutions, Rest Homes, Nursing Homes, and Other Institutions for the Care and Treatment of the Sick, Aged and Infirm.

First use Aug. 2, 1967.

SN 278,053. Movenpick A.G., Zurich, Switzerland. Filed Aug. 11, 1967.

MövenPick

Owner of Swiss Reg. No. 168,344, dated Nov. 2, 1957.

Class 46—Foods and Ingredients of Foods

For Coffee; Pies, Cake and Pastry; Iced Pies, Cake and Pastry; and Ice Cream.

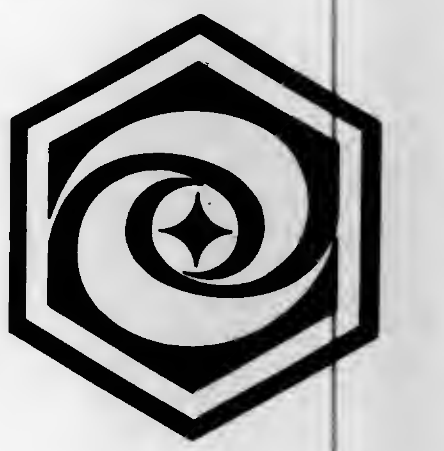
Class 47—Wines

For Wine.

Class 49—Distilled Alcoholic Liquors

For Brandy.

SN 279,888. Wisconsin Wire Works, Appleton, Wis. Filed Sept. 8, 1967.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Fourdrinier Wire Cloth.

Class 14—Metals and Metal Castings and Forgings

For Strand Wire.

First use June 5, 1967.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.**]**

Class 1—Raw or Partly Prepared Materials

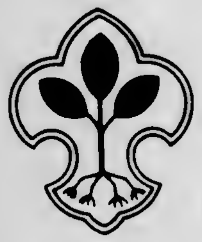
SN 250,441. American Cyanamid Company, Wayne, N.J. Filed July 18, 1966.

XPI

For Synthetic Resin.
First use June 24, 1966.

SN 252,948. DeWine & Hamma Seed Company, Inc., Yellow Springs, Ohio. Filed Aug. 23, 1966.

CRECY



For Alfalfa Seed.
First use on or about Nov. 19, 1965.

SN 254,003. Wight Nurseries, Inc., Cairo, Ga. Filed Sept. 7, 1966.

JUNIOR SPECIMEN

No registration rights are claimed for the word "Specimen" apart from the mark as shown.
For Evergreens and Trees, and Other Ornamental Nursery Stock.
First use Aug. 24, 1966.

SN 254,777. Copolymer Rubber & Chemical Corporation, Baton Rouge, La. Filed Sept. 20, 1966.

EPSYN

For Synthetic Polymer—Namely, Synthetic Rubbers.
First use July 28, 1966.

SN 258,680. FMC Corporation, New York, N.Y. Filed Nov. 15, 1966.

VITASIZED

For Vegetable Seeds.
First use Sept. 9, 1966.

SN 259,725. The Glidden Company, Cleveland, Ohio. Filed Nov. 30, 1966.

PEMCO

Owner of Reg. Nos. 329,748, 704,447, and others.
For Porcelain Enamel Frits, Ceramic Frits, Clay, Gums, and Opacifiers for Ceramic Materials.
First use April 1917.

SN 261,058. Fiber Industries, Inc., Charlotte, N.C. Filed Dec. 19, 1966.

FORTELON

Owner of Reg. No. 702,045.
For Man-Made Fibers.
First use Jan. 15, 1960.

SN 261,059. Fiber Industries, Inc., Charlotte, N.C. Filed Dec. 19, 1966.

FORTYL

Owner of Reg. No. 702,047.
For Man-Made Fibers.
First use Feb. 2, 1960.

SN 261,498. Ionics, Incorporated, Watertown, Mass. Filed Dec. 27, 1966.

PICOPORE

For Synthetic Ion-Permeable Materials, Comprised of Polymeric Resinous Material, in the Form of Membranes, Sheets, Rods, and Tubes.
First use Nov. 26, 1965.

SN 261,652. Rexall Drug and Chemical Company, Los Angeles, Calif., assignee of Fiberfil, Inc., Evansville, Ind. Filed Dec. 29, 1966.

NYLACON

For Plastics, Specifically Synthetic Injection Molding Materials in Pellet or Granular Form.
First use Dec. 8, 1966.

SN 262,444. San Lorenzo Nursery Company, Los Angeles, Calif. Filed Jan. 12, 1967.

SAN LORENZO

For Cut Flowers.
First use Aug. 8, 1913.

SN 262,587. Interplex, Arcadia, Calif. Filed Jan. 16, 1967.

INTERPLEX

For Extruded Plastic Filaments for Brushes Used in Treating and Cleaning Various Types of Surfaces and Articles.
First use Dec. 14, 1966.

SN 263,212. Stull Brothers, Incorporated, Sebree, Ky. Filed Jan. 24, 1967.

800WSX

For Hybrid Seed Corn.
First use Mar. 1, 1965.

SN 263,213. Stull Brothers, Incorporated, Sebree, Ky. Filed Jan. 24, 1967.

807

For Hybrid Seed Corn.
First use Mar. 1, 1963.

SN 263,214. Stull Brothers, Incorporated, Sebree, Ky. Filed Jan. 24, 1967.

607SX

For Hybrid Seed Corn.
First use Mar. 1, 1966.

SN 263,215. Stull Brothers, Incorporated, Sebree, Ky. Filed Jan. 24, 1967.

807SX

For Hybrid Seed Corn.
First use Mar. 1, 1963.

SN 263,412. Stull Brothers, Incorporated, Sebree, Ky. Filed Jan. 24, 1967.

807 Y

For Hybrid Seed Corn.
First use Mar. 1, 1963.

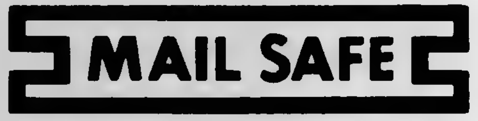
Class 2 — Receptacles

SN 239,357. Westab Inc. (Ohio corporation), Dayton, Ohio, by merger and assignment from Westab Inc. (Delaware corporation), Dayton, Ohio. Filed Feb. 21, 1966.

ACTION-PAK

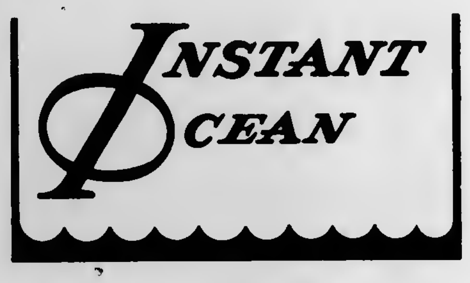
Owner of Reg. Nos. 705,245 and 707,215.
For Shipping Cartons for Merchandise, Adapted To Be Used as Display Stands.
First use Jan. 19, 1966.
Subj. to Intf. with SN 251,987.

SN 240,371. Waldorf Paper Products Company, St. Paul, Minn. Filed Mar. 7, 1966.



For Corrugated Paperboard Shipping Container for Books.
First use Jan. 28, 1966.

SN 243,075. Aquarium Systems, Inc., Wickliffe, Ohio. Filed Apr. 11, 1966.



Owner of Reg. Nos. 792,796 and 814,656.
For Vessels for Mixing and Storage of Synthetic Sea Salt Solutions.
First use Aug. 15, 1965.

SN 250,829. Developak Inc., New York, N.Y. Filed July 22, 1966.

ACTION PAK

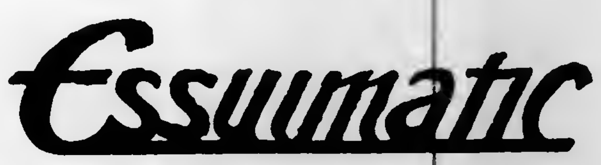
For Cartons for Supporting and Displaying Articles of Merchandise.
First use July 13, 1966.
Subj. to Intf. with SN 251,987.

SN 251,987. Action Bag & Envelope Co., Inc., Brooklyn, N.Y. Filed Aug. 9, 1966.

ACTION

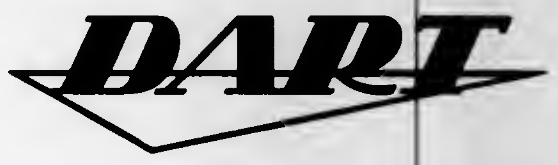
For Plastic Bags.
First use January 1950.
Subj. to Intf. with SN 239,357 and SN 250,829.

SN 258,161. Sebran, Paris, France. Filed Nov. 7, 1966.



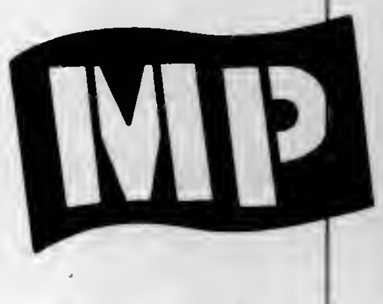
Owner of French Reg. No. 478,808, dated Mar. 6, 1959 (Seine); Natl. Inst. No. 122,032.
For Cabinets for Dispensing Hand Towels.

SN 259,815. Dart Container Corporation, Mason, Mich. Filed Dec. 1, 1966.



For Plastic Containers and Covers and Lids Therefor.
First use Jan. 15, 1960.

SN 265,752. Union Carbide Corporation, New York, N.Y. Filed Mar. 1, 1967.



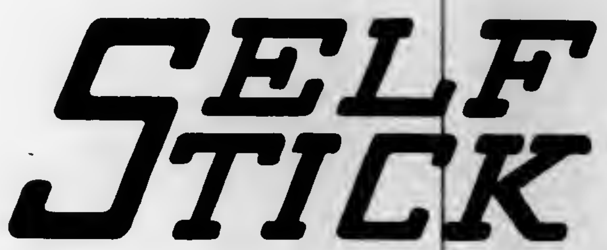
For Casings for Meat, Poultry, and Fish Products.
First use on or about Feb. 9, 1955.

SN 266,852. Geo. J. Ball, Inc., West Chicago, Ill. Filed Mar. 16, 1967.

HANDI-FLATS

For Plastic Trays for Growing Plants.
First use on or before Sept. 8, 1966.

SN 280,677. Phoenix Products Company, Inc., Milwaukee, Wis. Filed Sept. 19, 1967.



Owner of Reg. No. 512,489.
For Bags and Pouches.
First use January 1947.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 249,693. Weight Watchers International, Inc., Forest Hills, N.Y. Filed July 6, 1966.

WEIGHT WATCHERS

For Pocket Portfolios.
First use May 3, 1966.

Class 4 — Abrasives and Polishing Materials

SN 252,925. W. R. Grace & Co., New York, N.Y. Filed Aug. 23, 1966.

VESCO-LITE

For Combined Anti-Bacterial Cleaning and Polishing Composition for Use on Wood Floors and on Waxed Asphalt, Linoleum, Rubber, and Terrazzo Floors.
First use Oct. 10, 1942.

SN 257,175. Dynasurf Chemical Corporation, Baltimore, Md. Filed Oct. 25, 1966.

TOP SHINE

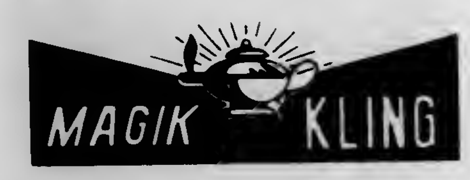
For Non-Buff Aqueous Floor Wax Finish.
First use Aug. 10, 1966.

SN 258,258. Staff Supermarket Associates, Inc., Jericho, N.Y. Filed Nov. 8, 1966.

STAFF

For Furniture Polish and Floor Wax.
First use January 1959.

SN 259,414. Family Life Products, Inc., Cleveland, Ohio. Filed Nov. 25, 1966.



For Cleaning and Polishing Compound for Chrome, Aluminum, Metal, and Tile.
First use Nov. 4, 1966.

SN 265,484. B & L Sales Associates, Boston, Mass. Filed Feb. 27, 1967.

COME ON STRONG

For Floor Wax.
First use at least as early as April 1965.

Class 5 — Adhesives

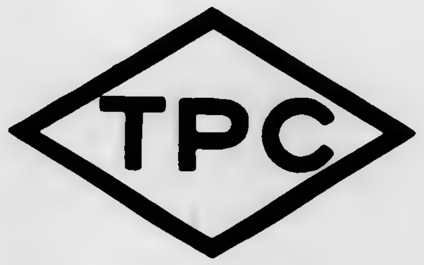
SN 274,389. United States Steel Corporation, Pittsburgh, Pa. Filed June 21, 1967.

NEXUS

For Synthetic Resin Based Adhesives—Namely, Polymeric Compounds in Two-Component Form, for Use in Bonding Other Materials.
First use Mar. 30, 1967.

Class 6 — Chemicals and Chemical Compositions

SN 244,858. Takasago Koryo Kogyo Kabushiki Kaisha, Chuo-ku, Tokyo, Japan. Filed May 3, 1966.



Owner of Japanese Reg. No. 397,529, dated Mar. 14, 1951.
For Essential Oils and Synthetic Aromas.

SN 248,427. Compagnie Metallurgique de la Campine, Brussels, Belgium. Filed June 20, 1966.

ANTIOX

Owner of Belgian Reg. No. 108,195, dated May 11, 1966.
For Antimony Trioxide.

SN 249,230. Geigy Chemical Corporation (New York corporation), Ardsley, N.Y., by merger from Geigy Chemical Corporation (Delaware corporation), Ardsley, N.Y. Filed June 29, 1966.

SUN SENT

For Room Deodorant.
First use May 17, 1966.

SN 249,524. Geigy Chemical Corporation (New York corporation), Ardsley, N.Y., assignee of Geigy Chemical Corporation (Delaware corporation), Ardsley, N.Y. Filed July 5, 1966.

AFTER A RAIN

For Room Deodorant.
First use June 3, 1966.

SN 251,906. Hodgson and Fraser Ltd., North Vancouver, British Columbia, Canada, assignee of Hugh Malcolm Fraser, North Vancouver, British Columbia, Canada. Filed Aug. 8, 1966.

DU-DU

Owner of Canadian Reg. No. 143,963, dated Feb. 11, 1966.
For Insect Repellents and Insecticides.

SN 256,782. Miguel Viejo, d.b.a. Piefer Co., New York, N.Y. Filed Oct. 19, 1966.

PIEFER

For Household Insecticide.
First use Oct. 1, 1964.

SN 257,933. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Nov. 4, 1966.

BRAND X

Owner of Reg. No. 734,210.
For Aerosol-Dispensed Preparation for Preventing Runs in Hosiery.
First use July 26, 1966.

SN 258,011. Wickhen Products, Inc., Port Jervis, N.Y. Filed Nov. 4, 1966.

WICKENOL

For Chemical Compounds Sold in Bulk Form for Use in Cosmetic, Pharmaceutical, and Proprietary Drug Products.
First use Feb. 14, 1966.

SN 259,726. The Glidden Company, Cleveland, Ohio. Filed Nov. 30, 1966.

PEMCO

Owner of Reg. Nos. 407,058, 704,478, and others.
For Pigment Colors and Dyes, Pigments and Oxides for Ceramic Applications, Glass Colors, Suspending Media for Screening Pastes, Solvents; and Minerals and Chemicals—Namely, Alumina, Titanium Dioxide, Barium Salts, Borax, Boric Acid, Cadmium Salts, Calcium Salts, Copper Salts, Zinc Salts, Magnesium Salts, Manganese Salts, Potassium Salts, Sodium Salts, Feldspar, Fluorspar, Silica, Talc, Urea, and Nepheline Syenite.
First use 1919.

SN 265,408. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories, Stamford, Conn. Filed Feb. 24, 1967.

HOFF-BAUER

For Laboratory Test for the Diagnosis of Infectious Mononucleosis.
First use Feb. 10, 1967.

SN 265,622. Foremost Chemicals, Inc., St. Petersburg, Fla. Filed Feb. 28, 1967.

PER-SOLV

For Ingredient Which Dissolves Body Oils, Salt, and Acids and Eliminates Perspiration Odors, Used in a Cold Water Wash for Garments.
First use May 12, 1965.

SN 266,034. Graniteville Company, Aiken, S.C. Filed Mar. 6, 1967.

"X-it'

For Chemical Solution Applied to Fabrics for the Purpose of Aiding in the Removal of Soil in Laundering or Dry Cleaning.
First use Jan. 18, 1967.

SN 266,760. Hillyard Enterprises, Inc., St. Joseph, Mo. Filed Mar. 15, 1967.

Hil-phēne

For Disinfectant-Fungicide-Deodorant for Multipurpose Hospital Asepsis.
First use Feb. 3, 1967.

SN 268,183. Hartz Mountain Products Corp., New York, N.Y. Filed Apr. 3, 1967.

HARTZ MOUNTAIN

For Pet Repellent.
First use Nov. 28, 1966.

SN 268,347. Triangle Chemical Company, Macon, Ga. Filed Apr. 4, 1967.

DIE-WEED

Owner of Reg. Nos. 703,754, 736,233, and others.
For Cotton Herbicides.
First use on or about May 11, 1964.

SN 268,461. American Cholesterol Products, Inc., Edison, N.J. Filed Apr. 6, 1967.

AMERCHOL L-101

Owner of Reg. No. 530,644.
For Secondary Emulsifier, Stabilizer and Emollient for Oil-in-Water Emulsions and Primary Emulsifier for Water-in-Oil Emulsions.
First use during October 1945.

SN 268,672. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

AMADULL

Owner of Reg. Nos. 334,940, 782,644, and others.
For Duller for Textile Fabrics.
First use Aug. 17, 1966.

SN 268,674. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

ANYLON

Owner of Reg. Nos. 334,940, 782,644, and others.
For Dyestuffs for Nylon Fabrics.
First use June 2, 1965.

SN 268,675. American Aniline Products, Inc.; Paterson, N.J. Filed Apr. 10, 1967.

ANYLOK

For Textile Dyeing Assistant—Namely, a Fixative for Dyes.
First use May 18, 1965.

SN 268,676. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

AMAWET

Owner of Reg. Nos. 334,940, 782,644, and others.
For Wetting Agent for Package Dyeing.
First use Oct. 1, 1965.

SN 268,678. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

AMAFOAM

Owner of Reg. Nos. 334,940, 782,644, and others.
For Anti-Foam Agent.
First use Feb. 22, 1965.

SN 268,679. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

AMASLIP

Owner of Reg. Nos. 334,940, 782,644, and others.
For Non-Slip Finish for Textiles.
First use July 7, 1966.

SN 268,680. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

AMATERG

Owner of Reg. Nos. 334,940, 782,644, and others.
For All-Purpose Wetting Agent for Textile Dyeing.
First use Jan. 25, 1965.

SN 268,681. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

AMAPEL

Owner of Reg. Nos. 334,940, 782,644, and others.
For Water Repellent for Use in Textile Dyeing.
First use Oct. 29, 1964.

SN 268,683. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

AMAFUME

Owner of Reg. Nos. 334,940, 782,644, and others.
For Dyestuff Additive—Namely, a Non-Durable Gas Fading Inhibitor.
First use Sept. 20, 1965.

SN 270,697. Ortho Pharmaceutical Corporation, d.b.a. Ortho Diagnostics, Raritan, N.J. Filed May 4, 1967.

MONINDEX

For Diagnostic Reagents for Laboratory Use.
First use Feb. 28, 1967.

SN 272,669. Uni-Tech Chemical Manufacturing Company, Sun Valley, Calif. Filed May 31, 1967.

HEMA-CYAN

For Medical Laboratory Reagent Used in Diagnostic Testing To Convert Hemoglobin in Samples of Human or Animal Blood Into Photometrically Measurable Stable Cyanmethemoglobin.
First use on or before Apr. 29, 1967.

SN 272,670. Uni-Tech Chemical Manufacturing Company, Sun Valley, Calif. Filed May 31, 1967.

HEMA-CYN

For Medical Laboratory Reagent Used in Diagnostic Testing To Convert Hemoglobin in Samples of Human or Animal Blood Into Photometrically Measurable Stable Cyanmethemoglobin.
First use on or before Apr. 29, 1967.

SN 273,833. Diamond Alkali Company, Cleveland, Ohio. Filed June 14, 1967.

EXCHLOR

For Chlorinated Hydrocarbons Used as Additives in Extreme Pressure Lubricants.
First use Apr. 17, 1967.

Class 7 — Cordage

SN 251,056. Germain's, Inc., Los Angeles, Calif. Filed July 26, 1966.

TIGER-TIES

For Wire Core Ribbon for Use in Conjunction With Automatic Closing Machines.
First use July 7, 1966.

Class 10 — Fertilizers

SN 255,763. Armour Agricultural Chemical Company, Chicago, Ill. Filed Oct. 5, 1966.

HI·VAL

For Fertilizer.
First use on or prior to Oct. 15, 1965.

SN 255,766. Armour Agricultural Chemical Company, Chicago, Ill. Filed Oct. 5, 1966.

ASTRO·GRO

For Fertilizer.
First use on or prior to Oct. 15, 1965.

SN 255,767. Armour Agricultural Chemical Company, Chicago, Ill. Filed Oct. 5, 1966.

FEEDRITE

For Fertilizer.
First use on or prior to Oct. 15, 1965.

SN 257,346. American Plant Food Corporation, Galena Park, Tex. Filed Oct. 27, 1966.

HEAD START

For Fertilizers.
First use Mar. 4, 1966.

SN 257,347. American Plant Food Corporation, Galena Park, Tex. Filed Oct. 27, 1966.

MULTI-PELS

For Fertilizers.
First use Mar. 4, 1966.

SN 257,350. American Plant Food Corporation, Galena Park, Tex. Filed Oct. 27, 1966.

RICE ROUSER

The term "Rice" is disclaimed apart from its use in the mark as a whole.
For Fertilizers.
First use Feb. 24, 1966.

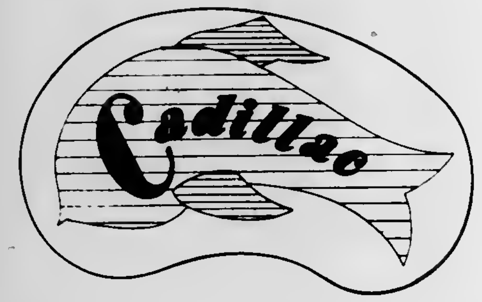
Class 12 — Construction Materials

SN 248,847. Reynolds Metals Company, Richmond, Va. Filed June 23, 1966.

RAINLOCK

For Ribbed Metal Roofing.
First use at least as early as October 1959.

SN 256,543. General Pools Corporation, Addison, Ill., assignee of General Pool Corporation, Addison, Ill. Filed Oct. 17, 1966.



The drawing is lined for the color blue. Owner of Reg. No. 728,421.
For Swimming Pools.
First use Nov. 9, 1964.

SN 259,109. A. P. Green Refractories Co., Mexico, Mo. Filed Nov. 21, 1966.

GREENCARB

Owner of Reg. Nos. 600,884, 770,595, and others.
For Tar Impregnated Refractory Bricks.
First use Feb. 23, 1966.

SN 261,553. Wood Conversion Company, St. Paul, Minn. Filed Dec. 27, 1966.

CONWED

Owner of Reg. Nos. 820,946, 832,362, and others.
For Blanket-Type Acoustical Insulation.
First use about Oct. 10, 1966.

SN 263,064. Hendon Construction Company, Little Ferry, N.J. Filed Jan. 23, 1967.

HENDON

For Swimming Pools.
First use Nov. 23, 1966.

SN 265,142. Tangent Products Corporation, Poughkeepsie, N.Y. Filed Feb. 21, 1967.

TANGENT

For Seals for Interior Wood or Concrete—Namely, Moisture Cured Urethane, Polymer Acrylic Emulsion, Water Emulsion of Acrylic Resins, and Vinyl-Epoxy Copolymer.
First use June 1966.

SN 270,432. Synterra Corporation, Sacramento, Calif. Filed May 1, 1967.

For Resinous-Matrix, Mineral-Filled Toppings and Coatings for Floors and Other Structural Surfaces.
First use Apr. 1, 1966.

SN 272,446. Rain-Flow Systems, Inc., Indianapolis, Ind. Filed May 26, 1967.

The words "Continuous Guttering" and the representation of the goods are disclaimed apart from the mark as shown.
For Guttering and Flashing Formed of Aluminum, of Copper, or of a Galvanized Material.
First use Apr. 13, 1967.

SN 277,964. Arrow Metal Products Corp., Haskell, N.J. Filed Aug. 10, 1967.

For Metallic Plastic Protective Coating Applied to and Sold as a Part of Metals Used in Fabricating Storage Houses, Sheds, Shelving, and the Like.
First use Jan. 16, 1967.

SN 278,232. Monsanto Company, St. Louis, Mo. Filed Aug. 14, 1967.

NYTRON

Owner of Reg. No. 382,672.
For Rigid Surfacing Material for Use as a Floor or Wall Covering or Similar Applications Such as a Counter Covering.
First use June 13, 1967.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 258,386. Kenlin Enterprises, Inc., Highland Park, Ill. Filed Nov. 10, 1966.

FUNNEL ENTRY

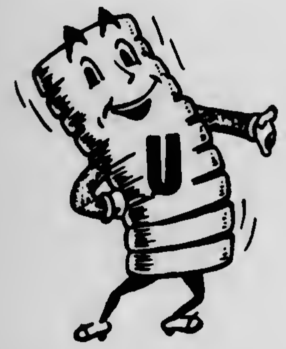
For Drawer Slide Fitting.
First use Sept. 30, 1966.

SN 259,033. Sileps, Inc., Charlotte, N.C. Filed Nov. 18, 1966.

GEMOFIX-STUDS

For Threaded and Nail Type Studs.
First use Oct. 8, 1953.

SN 259,866. Universal Metal Hose Company, Chicago, Ill. Filed Dec. 1, 1966.



The letter "U" is disclaimed apart from the mark as shown.
For Flexible Hose and Tubing, Fittings for Flexible Hose and Tubing, and Assemblies of Fittings and Flexible Hose or Tubing.
First use June 30, 1956.

SN 260,539. Durex Products, Inc., Luck, Wis. Filed Dec. 12, 1966.

DUR-X-CEL

For Wire Screen Cloth and Screen Assemblies for Bolting Solids.
First use Aug. 5, 1966.

SN 260,840. Goerlich's, Inc., Toledo, Ohio. Filed Dec. 15, 1966.

LEAK-TITE

For Clamps for Exhaust and Tail Pipes and the Like.
First use Nov. 5, 1965.

SN 261,658. Independent Nail, Inc., Bridgewater, Mass., by change of name and assignment from The Independent Nail Corporation, Bridgewater, Mass. Filed Dec. 29, 1966.

Applicant disclaims the representation of the goods shown in the drawing except the specific association and specific relationship of these goods as shown.
For Nails.
First use June 1964.

SN 261,690. Tulsa Fittings Corporation, Tulsa, Okla. Filed Dec. 29, 1966.

TUF-O-COR

Owner of Reg. No. 817,568.
For U-Return Bends, Mule Ear, Horseshoe Top, Interior and Exterior Bull-Nut Design Headers, Both Rolled Joint and Weld End Type.
First use Aug. 3, 1965.

SN 265,276. Colonial Plastics Manufacturing Co., Cleveland, Ohio. Filed Feb. 23, 1967.

FAS-FIT

For Faucet Handles.
First use Jan. 30, 1967.

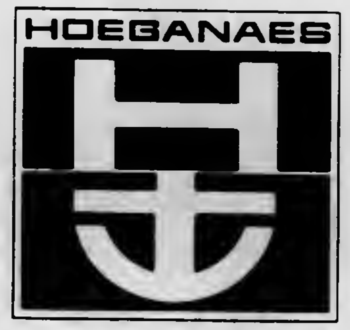
SN 266,008. Crawford Fitting Company, Solon, Ohio. Filed Mar. 6, 1967.

Swagelok

Owner of Reg. Nos. 595,412, 818,537, and others.
For Valves and Quick Disconnect Couplings for Fluid Lines.
First use 1953.

Class 14 — Metals and Metal Castings and Forgings

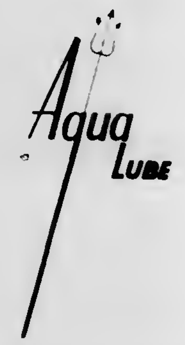
SN 265,068. Hoeganaes Corporation, New York, N.Y. Filed Feb. 20, 1967.



Owner of Reg. Nos. 586,018 and 799,732.
For Iron Powder and Ferrous Based Alloy Powder.
First use Nov. 15, 1966.

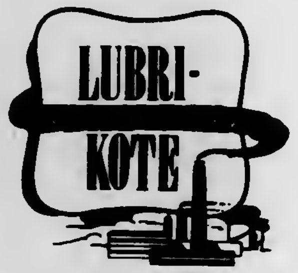
Class 15 — Oils and Greases

SN 259,453. Mitann Inc., d.b.a. Zip Aerosol Products, North Hollywood, Calif. Filed Nov. 25, 1966.



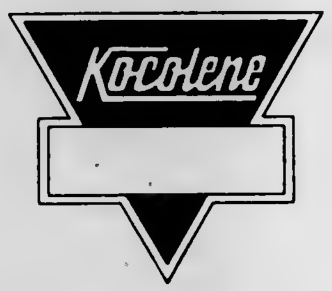
No claim is made to the exclusive right to use "Lube," but applicant waives none of its common law rights in the mark as shown in the drawing or any feature thereof.
For Lubricant for Diving Equipment.
First use Nov. 1, 1965.

SN 262,517. John N. Stone, d.b.a. Lubri-Kote Company, Houston, Tex. Filed Jan. 13, 1967.



Without Relinquishing any common law rights, applicant disclaims the words "Lubricants for Industry" apart from the mark as shown.
For Oils and Greases for Motor Tune-Up, Penetrating, Household, Transmission, Torque Converter, Engine and Machinery Uses Including Anti-Seize and Anti-Galling and Friction Lessening Uses in Bearings, Threads, Gears, Hinges and Locks, But Expressly Excepting and Excluding Oils for Use as Lubricants in the Metal-Working Industry for All Metal-Machining Operations.
First use at least as early as Oct. 23, 1956.

SN 267,104. Kocolene Company, Inc., Seymour, Ind. Filed Mar. 20, 1967.



For Lubricating Oils and Gasolene.
First use Mar. 7, 1967.

SN 267,228. Alvin Products, Inc., Worcester, Mass. Filed Mar. 21, 1967.

TELCON

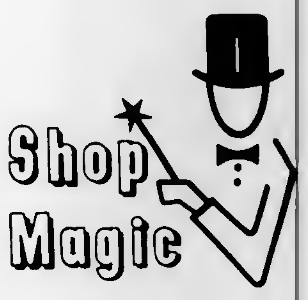
For Dry Lubricant and Anti-Stick Agent.
First use Apr. 25, 1962.

SN 269,075. Howard Fuel Corporation, Brooklyn, N.Y. Filed Apr. 13, 1967.

SUPERSOLV

For Fuel Oil Sludge Solvent.
First use in or about April 1963.

SN 270,357. Cruit's Replacement Parts, Inc., Sacramento, Calif. Filed May 1, 1967.



For Gearing and Mechanical Lubricant.
First use Mar. 15, 1967.

SN 271,333. The American Oil Company, Chicago, Ill. Filed May 12, 1967.

SUPERMIL

For Lubricating Oils and Greases.
First use Apr. 9, 1953.

SN 271,334. The American Oil Company, Chicago, Ill. Filed May 12, 1967.

AMOQUENCH

For Industrial Oils.
First use Nov. 4, 1966.

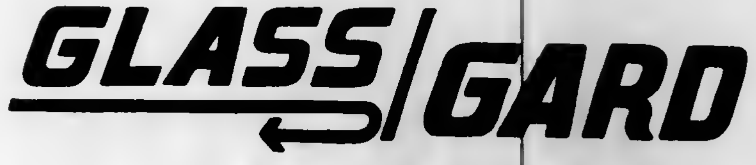
Class 16 — Protective and Decorative Coatings

SN 258,283. Continental Coatings Corporation, New York, N.Y. Filed Nov. 9, 1966.

CONCOAT

For Paint-Like Protective Coatings Having a Vinyl, Epoxy, Zinc Powder, or Coal Tar Base, for Industrial and Marine Use.
First use Aug. 1, 1950.

SN 259,390. Armstrong Paint & Varnish Works, Inc., Chicago, Ill. Filed Nov. 25, 1966.



For Glass Flake Coatings, Containing Flakes of Glass in Various Types of Synthetic or Natural Vehicles—Namely, Paints, Enamels, Lacquers, and Varnishes.
First use Nov. 15, 1966.

SN 259,723. The Glidden Company, Cleveland, Ohio. Filed Nov. 30, 1966.

GLIDFLAKE

Owner of Reg. No. 643,825.
For Coating Compositions Comprising a Paint-Like Synthetic Resinous Vehicle Containing Flaked Glass.
First use Mar. 10, 1964.

SN 261,982. Evr-Gard Coatings Corporation, Los Angeles, Calif. Filed Jan. 5, 1967.

BOND-AID

Owner of Reg. No. 730,957.
For Paint Additive Surface Conditioner for Bonding Paints to Chalky, Dusty Surfaces.
First use Dec. 12, 1960.

SN 263,378. Kyanize Paints, Inc., Everett, Mass. Filed Jan. 26, 1967.

DRI-DUST AIRLESS SPRAY

Applicant claims no exclusive rights to the term "Airless Spray," apart from the mark as shown.
For Alkyd-Based Interior Paint.
First use Dec. 29, 1964.

SN 263,381. Kyanize Paints, Inc., Everett, Mass. Filed Jan. 26, 1967.

MOISTURPEL

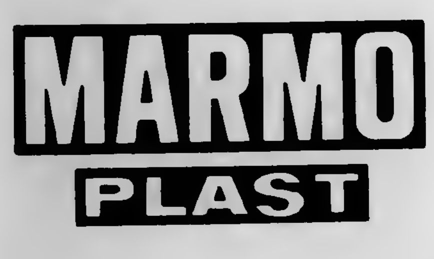
For Liquid Moisture Repellent Protective Coating for Masonry and the Like.
First use September 1960.

SN 263,382. Kyanize Paints, Inc., Everett, Mass. Filed Jan. 26, 1967.

SHEL-TEX

For Paint Treated To Produce a Rough or Textured Finish.
First use Oct. 15, 1956.

SN 264,594. The Sargent Paint Mfg. Co., Indianapolis, Ind. Filed Feb. 13, 1967.



For Non-Flammable, Unsaponifiable Paint for Walls and Floors of Concrete, Cement Block, Plaster, Plaster Board, Wood, Asbestos, Brick, Asphalt, and Vinyl Tile.
First use Feb. 6, 1967.

Class 17 — Tobacco Products

SN 251,928. Samuel B. Jacobs, Hoboken, N.J. Filed Aug. 8, 1966.

JAMAICA CLUB

Applicant disclaims any right to the word "Jamaica."
For Cigars.
First use on or about May 6, 1966.

SN 259,318. Havatampa Cigar Corporation, Tampa, Fla. Filed Nov. 23, 1966.

DEBONAIR

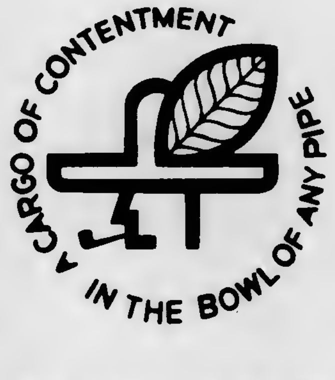
For Cigars.
First use Jan. 15, 1963.

SN 259,420. Glaser Bros., San Francisco, Calif. Filed Nov. 25, 1966.

TRES LANCEROS

For Cigars.
First use June 20, 1966.

SN 259,894. The American Tobacco Company, New York, N.Y. Filed Dec. 2, 1966.


A CARGO OF CONTENTMENT IN THE BOWL OF ANY PIPE

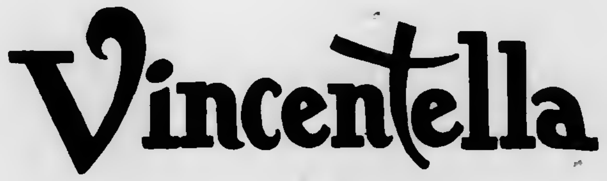
Owner of Reg. Nos. 734,806, 785,860, and others.
For Smoking Tobacco.
First use Oct. 11, 1966.

SN 259,944. Lane Limited, New York, N.Y. Filed Dec. 2, 1966.

MONTE CATINI

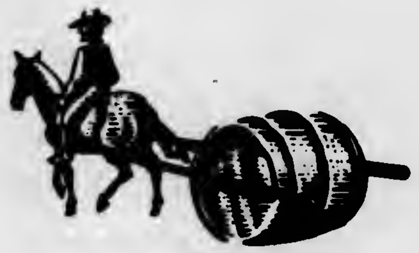
For Smoking Tobacco.
First use September 1966.

SN 260,409. Corral, Wodiska y Ca., Tampa, Fla. Filed Dec. 9, 1966.



For Cigars.
First use Sept. 30, 1966.

SN 260,640. The American Tobacco Company, New York, N.Y. Filed Dec. 13, 1966.



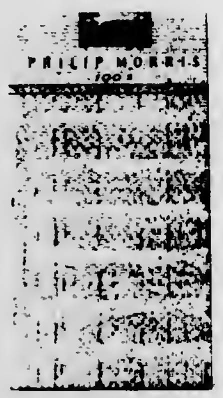
For Cigarettes.
First use May 17, 1966.

SN 260,667. Lane Limited, New York, N.Y. Filed Dec. 13, 1966.

CUM LAUDE

For Smoking Tobacco.
First use October 1966.

SN 272,559. Philip Morris Incorporated, New York, N.Y. Filed May 29, 1967.



The drawing is lined to represent the colors brown, gold, and blue. Applicant disclaims the wording "Filter Cigarettes"; "Park Avenue, New York"; "20 Class A Cigarettes"; the numeral "100's"; and the representation of a package, apart from the mark as shown and without waiver of common law rights. Owner of Reg. Nos. 318,479, 741,831, and others.
For Cigarettes.
First use May 16, 1967; 1883 in another form.

Class 18—Medicines and Pharmaceutical Preparations

SN 256,018. Thunderhead Laboratories, Inc., DeWitt, N.Y. Filed Oct. 7, 1966.

THUNDERHEAD

For Vitamin Supplements, for Use in the Treatment and Care of Animals.
First use Aug. 2, 1966.

SN 258,632. The Wellcome Foundation Limited, London, England. Filed Nov. 14, 1966.

SCOLABAN

Owner of British Reg. No. 873,949, dated Jan. 7, 1965.
For Pharmaceutical, Medical, and Veterinary Preparations.

SN 258,921. Norden Laboratories, Inc., Lincoln, Nebr. Filed Nov. 17, 1966.

ENDURALL-R

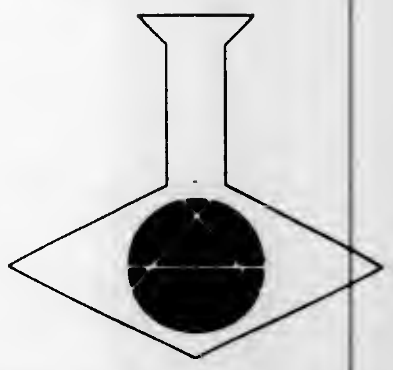
Owner of Reg. No. 762,639.
For Rabies Vaccine Used in Veterinary Medicine.
First use Sept. 1, 1966.

SN 262,169. Hubbard Milling Company, Mankato, Minn. Filed Jan. 9, 1967.

LEAN-CUT

For Vitamin, Mineral, and Protein Concentrate Feed Supplement for Livestock Animals.
First use Mar. 29, 1965.

SN 262,386. Allergan Pharmaceuticals, Santa Ana, Calif. Filed Jan. 12, 1967.



For Pharmaceutical Preparations—Namely, Ophthalmic, Nasal, Dermatological, and Diuretic Preparations.
First use Feb. 17, 1958.

SN 262,793. Invenex Pharmaceuticals, San Francisco, Calif. Filed Jan. 18, 1967.

Linigesic

For Liniment.
First use Nov. 23, 1966.

SN 263,242. American Cyanamid Company, Wayne, N.J. Filed Jan. 25, 1967.

FOLVRON

Owner of Reg. No. 430,268.
For Folic Acid With Iron for an Antianemia Preparation.
First use May 2, 1946.

SN 263,482. The Purdue Frederick Company, Yonkers, N.Y. Filed Jan. 27, 1967.

BETADERM

For Antiseptic Germicidal Preparation.
First use Jan. 17, 1967.

SN 263,597. McKesson & Robbins, Incorporated, d.b.a. McKesson Laboratories, New York, N.Y. Filed Jan. 30, 1967.

KESSO-PEN

For Penicillin.
First use at least as early as Jan. 11, 1967.

SN 263,607. The Purdue Frederick Company, Yonkers, N.Y. Filed Jan. 30, 1967.

LAXITOL

For Laxative Preparation.
First use Jan. 17, 1967.

SN 263,719. Warren-Teed Pharmaceuticals Inc., Columbus, Ohio. Filed Jan. 31, 1967.

POLARON

For Iron Compound for the Prevention or Treatment of Iron Deficiency.
First use on or about Dec. 28, 1966.

SN 263,859. Warren-Teed Pharmaceuticals Inc., Columbus, Ohio. Filed Feb. 2, 1967.

SIDEROX

For Iron Compound for the Prevention or Treatment of Iron Deficiency.
First use on or about Dec. 28, 1966.

SN 265,117. Societe Belge de l'azote et des Produits Chimiques du Marly, Liege, Belgium. Filed Feb. 20, 1967.

FRAGIVIX

Owner of Belgian Reg. No. 8,397, dated Oct. 4, 1962.
For Pharmaceutical Preparations for Use in Proctology and Phlebology.

SN 265,231. Vita Elixir Company, Inc., Atlanta, Ga. Filed Feb. 21, 1967.

SOXA

For Sulfa Drug Used in the Treatment of Infections.
First use Jan. 5, 1965.

SN 265,755. Henry K. Wampole & Company Limited, Perth, Ontario Canada. Filed Mar. 1, 1967.

MAGNOLAX

Owner of Canadian Reg. No. 129/29,643, dated Oct. 21, 1921.
For Medicinal Laxative Preparations.

SN 265,756. Henry K. Wampole & Company Limited, Perth, Ontario, Canada. Filed Mar. 1, 1967.

C-2

Owner of Canadian Reg. No. 101,655, dated Oct. 14, 1955.
For Analgesic and Antipyretic Tablets.

SN 266,310. Denison Laboratories, Inc., Providence, R.I. Filed Mar. 9, 1967.

SoftDEN

For Skin Lotion for Use as a Replacement for Rubbing Alcohol.
First use Jan. 23, 1967.

SN 266,905. Murphy Products Company, Inc., Burlington, Wis. Filed Mar. 16, 1967.

FORTIFIVER

For Medicated Supplements for Swine Feed.
First use Dec. 13, 1966.

SN 268,186. Hudson National, Inc., New York, N.Y. Filed Apr. 3, 1967.

BETAREST

For Non-Narcotic Sleeping Aid.
First use Oct. 7, 1966.

SN 268,616. Rexall Drug and Chemical Company, d.b.a. Riker Laboratories, Los Angeles, Calif. Filed Apr. 7, 1967.

ORPHAC

For Analgesic.
First use Mar. 16, 1967.

SN 272,781. Parke, Davis & Company, Detroit, Mich. Filed June 1, 1967.

THEELIN R-P

For Pharmaceutical Preparations of Estrone.
First use on or before Mar. 22, 1955.

SN 279,021. American Home Products Corporation, New York, N.Y. Filed Aug. 25, 1967.

LET GO

For Iron Tonic.
First use Aug. 10, 1967.

SN 279,789. Mead Johnson & Company, Evansville, Ind. Filed Sept. 7, 1967.

DYNAPREL

For Bronchodilating Agent for Use in Treatment of Asthma, Bronchitis, and Disorders Characterized by Broncho Constriction.
First use on or prior to Aug. 12, 1967.

Class 19—Vehicles

SN 239,501. Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany. Filed Feb. 24, 1966.

250 S

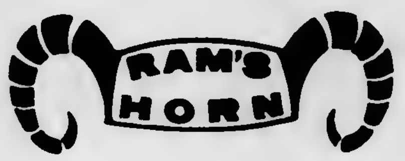
For the purpose of this application only, and without waiving any of its common law rights, applicant disclaims the numeral "250" apart from the mark shown.
For Automobiles and Parts Thereof.
First use Aug. 6, 1965; in commerce September 1965.

SN 244,073. Bertin et Compagnie, Paris, France. Filed Apr. 21, 1966.

NAVIPLANE

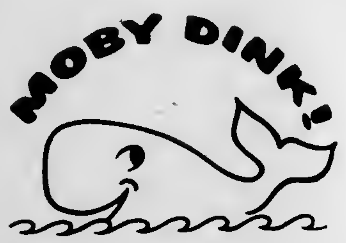
Priority claimed under Sec. 44(d) on French Reg. No. 702,343, Dated Oct. 22, 1965.
For Vehicles, Borne on a Pressure Fluid Layer or Like Cushion, for Use on Land, Sea, and Air.

SN 255,769. Schwinn Bicycle Company, Chicago, Ill., by change of name from Arnold, Schwinn & Co., Chicago, Ill. Filed Oct. 5, 1966.



For Bicycles and Bicycle Handlebars.
First use Sept. 15, 1966.

SN 264,110. Snark Products, Inc., Fort Lee, N.J. Filed Feb. 6, 1967.



For Boats.
First use Dec. 14, 1966.

SN 266,125. Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany. Filed Mar. 7, 1967.

230SL

For the purpose of this application only, and without waiving any of its common law rights, applicant disclaims the numeral "230" apart from the mark shown in the drawing.
For Automobiles and Parts Thereof.
First use March 1963; in commerce 1963.

SN 273,451. Toyota Motor Company, Ltd., Toyoda-shi, Aichi-ken, Japan. Filed June 9, 1967.

CROWN

For Automobiles and Motor Trucks.
First use June 26, 1964; in commerce June 26, 1964.

SN 274,968. Graham Products Limited, Inglewood, Ontario, Canada. Filed June 28, 1967.

Hobo

For Water Craft.
First use Sept. 21, 1966; in commerce Sept. 21, 1966.

Class 20 — Linoleum and Oiled Cloth

SN 264,393. De Soto Chemical Coatings, Inc., Des Plaines, Ill. Filed Feb. 10, 1967.

BEAUTICALE

For Fabric Backed Plastic Wallcovering.
First use on or about Nov. 1, 1966.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 228,243. Dazey Products Company, Kansas City, Mo. Filed Sept. 21, 1965.

WOODENEER

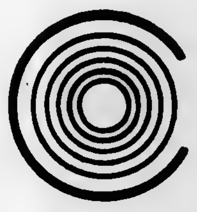
For Electric Can Openers and Electric Ice Crushers.
First use Aug. 2, 1965.

SN 244,708. W. P. Hemenway Co., Portland, Oreg. Filed May 2, 1966.

TONEX

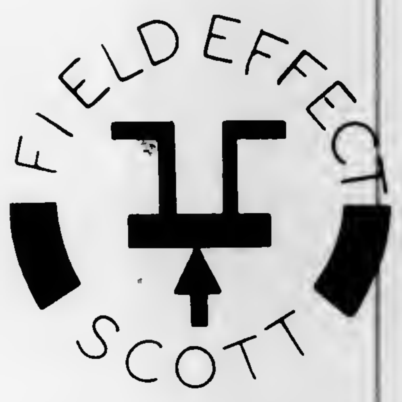
For Walkie-Talkies, Radios, and Transceivers.
First use at least as early as 1964.

SN 244,971. Chronetics, Inc., Mount Vernon, N.Y. Filed May 5, 1966.



The mark consists of the letter "C" in which is contained a plurality of concentric circles.
For Multicircuit Electronic Equipment, Including Computers and Amplifiers.
First use August 1962.

SN 245,244. H. H. Scott, Inc., Maynard, Mass. Filed May 9, 1966.



The words "Field Effect" are disclaimed apart from the mark as a whole without, however, waiving any common law trademark rights therein.
For Radio Receiving Apparatus, Tuners, and Transistorized Oscillators and Amplifying Apparatus.
First use Nov. 26, 1965.

SN 247,335. Compagnie Francaise Thomson Houston-Hotchkiss Brandt, by change of name from Compagnie Francaise Thomson-Houston, Paris, France. Filed June 6, 1966.

CRYO GAUSS

Priority claimed under Sec. 44(d) on French Reg. Nos. 705,301, dated Feb. 11, 1966, and 706,804, dated Mar. 23, 1966.
For Coils, Wires, and Other Electrically Conductive Components Made of Super-Conductive Materials.

SN 248,516. The New York Air Brake Company, New York, N.Y. Filed June 20, 1966.

SPEEDYNE

For Solid State Adjustable Speed Controllers for Electric Motors.
First use Apr. 13, 1966.

SN 248,957. Atlantic Research Corporation, Alexandria, Va. Filed June 27, 1966.

PLASTILET

For Electrical Conduit Fixtures—Namely, Junction Boxes.
First use July 15, 1959.

SN 252,887. Pennsylvania Electronics Technology, Inc., Pittsburgh, Pa. Filed Aug. 22, 1966.

POSITEMP

For Thermistors for Temperature Control.
First use Aug. 3, 1966.

SN 254,273. General Radio Company, West Concord, Mass. Filed Sept. 12, 1966.

GR 874

Owner of Reg. Nos. 192,285, 830,962, and others.
For Coaxial Electrical Connectors, Power Dividers, and Impedance Terminations.
First use in or about September 1952.

SN 258,179. Vectron Laboratories, Inc., Stamford, Conn. Filed Nov. 7, 1966.

For Devices Which Generate, Test and Distribute Precision Frequency and Time—Namely, Crystal Oscillators, Frequency Standards, Frequency Comparators, and Frequency Distribution Amplifiers Distributing High Stability Signals From a Frequency Standard.
First use Oct. 24, 1966.

SN 259,214. Arc-Co Incorporated, Bridgeport, Conn. Filed Nov. 22, 1966.

For Electrical Conduit Boxes.
First use Nov. 2, 1966.

SN 260,421. General Motors Corporation, Detroit, Mich. Filed Dec. 9, 1966.

SEELITE

For Light Conducting Wire.
First use Oct. 6, 1966.

SN 261,910. AMP Incorporated, Harrisburg, Pa. Filed Jan. 4, 1967.

WJH

For Electrical Connectors.
First use Dec. 9, 1966.

SN 262,054. Nicholl Brothers, Inc., Kansas City, Mo. Filed Jan. 6, 1967.

THE STOPPER

For Battery Operated Lanterns.
First use Sept. 24, 1966.

SN 262,130. Components, Inc., Biddeford, Maine. Filed Jan. 9, 1967.

DIPATAN

For Electrical Capacitors.
First use Dec. 14, 1966.

SN 264,486. AMP Incorporated, Harrisburg, Pa. Filed Feb. 13, 1967.

TERMI-GRID

For Electical Connectors.
First use Feb. 1, 1967.

SN 264,724. Colab Laboratories, Inc., Chicago, Heights, Ill. Filed Feb. 15, 1967.

VOKAM

For Constant Voltage/Constant Current D.C. Power Supply.
First use Aug. 17, 1960.

SN 264,978. Solitron Devices, Inc., Tappan, N.Y. Feb. 17, 1967.

ISOLTAXIAL

For Silicon Power Transistors.
First use January 1967.

Class 22 — Games, Toys, and Sporting Goods

SN 227,539. Hickory & Tweed, Inc., Armonk, N.Y. Filed Sept. 10, 1965.

HICKORY & TWEED

For Skis, Ski Poles, Ski Boots, Ice Skates and Snow Shoes.
First use at least as early as 1961.

SN 243,903. Scientific Anglers Incorporated, Midland, Mich. Filed Apr. 20, 1966.

DRYCEL

For Fly Fishing Line.
First use Mar. 21, 1966.

SN 251,775. The Addison Terry Company, Inc., Covington, Ga. Filed Aug. 5, 1966.

"RED HORSE DERBY"

For Printed Contest Cards for Playing an Audience Participation, Television Game, Involving the Use of Televised Horse Races, the Purpose of Which is To Stimulate and Increase the Sale of Products and Services of Its Sponsors.
First use Feb. 14, 1966.

SN 253,792. Alden H. Simpson, d.b.a. Simcoe, Springfield, Mass. Filed Sept. 2, 1966.

FLEX-COIL

For Tent Stakes.
First use Aug. 6, 1966.

SN 255,517. Charles F. Clark, Inc., Menominee, Mich. Filed Sept. 30, 1966.

HED·MITS

Owner of Reg. No. 627,706.
For Golf Club Head Covers.
First use Dec. 6, 1943.

SN 259,777. Santo Tessaro, d.b.a. Calzaturificio di Santo Tessaro, and Calzaturificio di Sante Tessaro, Treviso, Italy. Filed Nov. 30, 1966.

ROLL

For Ski Boots.
First use Mar. 20, 1964; in commerce Mar. 20, 1964.

SN 261,248. Layman E. Allen, d.b.a. Wff 'N Proof, New Haven, Conn. Filed Dec. 21, 1966.

TAC-TICKLE

For Equipment Sold as a Unit for Playing an Educational Type Board Game.
First use June 1, 1966.

SN 261,249. Layman E. Allen, d.b.a. Wff 'N Proof, New Haven, Conn. Filed Dec. 21, 1966.

ON-SETS

For Equipment Sold as a Unit for Playing an Educational Type Board Game.
First use Sept. 1, 1966.

SN 261,765. Toneall Corporation, Ltd., Paris, Ontario, Canada. Filed Dec. 30, 1966.

TONEALL

For Electrically Operated Vibratory, Mechanical or Manually Operated Exercising Device for Use in the Field of Physical Exercise.
First use May 30, 1966; in commerce Sept. 30, 1966.

SN 262,422. The Grand Union Company, d.b.a. Stake Your Claim Co., East Paterson, N.J. Filed Jan. 12, 1967.

STAKE YOUR CLAIM

For Promotional Printed Game Materials of the Public Participation Type for Distribution by Retail Outlets for Playing a Promotional Game To Stimulate the Sale of Their Goods and Services.
First use on or about Sept. 14, 1966.

SN 262,851. Brookfield Athletic Shoe Company, Inc., East Brookfield, Mass. Filed Jan. 19, 1967.

CANADIAN COMET

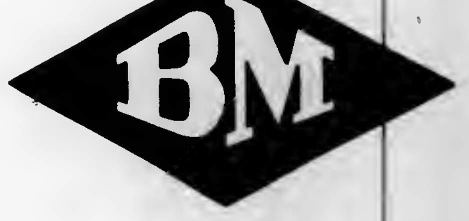
Applicant disclaims the word "Canadian" apart from the mark. Owner of Reg. No. 683,611.
For Ice Skating Shoes.
First use Sept. 27, 1957.

SN 262,897. True Temper Corporation, Cleveland, Ohio. Filed Jan. 19, 1967.

BI-CONIC

For Ski Poles.
First use Dec. 12, 1966.

SN 264,645. Babolat-Maillot-Witt, La Courneuve, France. Filed Feb. 14, 1967.



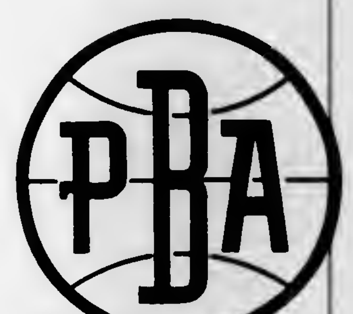
For Tennis Racket Strings.
First use June 26, 1925; in commerce May 1958.

SN 265,038. Look Company, Nevers (Nievre), France, assignee of Beconta Inc., New York, N.Y. Filed Feb. 20, 1967.

GRAND PRIX

For Ski Bindings and Parts Therefor.
First use at early as 1964; in commerce as early as 1964.
Subj. to Intf. with SN 260,111.

SN 267,181. Professional Basketball Association Corp., Worthington, Ohio. Filed Mar. 20, 1967.



For Basketballs.
First use Oct. 1, 1966.

SN 268,561. A & H Doll Manufacturing Corporation, Woodside, N.Y. Filed Apr. 7, 1967.

TEENSIE WEENSIES

For Dolls.
First use Mar. 20, 1967.

SN 268,693. Brunswick Corporation, Chicago, Ill. Filed Apr. 10, 1967.

SWEEP FLARE

For Golf Bags.
First use January 1958.

SN 269,553. Mondotoy Establishment, Vaduz, Liechtenstein, Filed Apr. 19, 1967.

COUNT DOWN

For Equipment (or Apparatus), Sold as a Unit for Playing a Board or Similar Type Parlor Game.
First use September, 1966; in commerce Mar. 1, 1967.

SN 276,500. Professional Golf Company, Chattanooga, Tenn. Filed July 21, 1967.

First Flight

Owner of Reg. Nos. 693,132 and 762,047.
For Golf Clubs, Golf Balls, Golf Gloves, Golf Club Head Covers, and Golf Bags.
First use 1933 on golf clubs.

SN 276,501. Master Industries, Inc., Santa Ana, Calif. Filed July 21, 1967.

PALM MASTER

No registration rights are claimed for the word "Palm" apart from the mark shown, but the applicant waives none of its common law rights in the mark shown and all features thereof.
For Pads for Use in Bowling To Occupy the Space Between the Palm of the Hand and the Ball.
First use on or about May 12, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 228,362. Gladwin Corporation, Southgate, Mich. Filed Sept. 22, 1965.

GLADCO

For Industrial Equipment, Machinery, and Tools, and Parts Thereof—Namely, Machine Scrap Buckets, Machine Stools, Automation Conveyors, Machine Hoppers, Machine Chutes, Machine Scrap Boxes, Clam Shell Buckets, Orange Peel Buckets, Index Conveyors, Machine Undercarriages, Flexible Tuyeres, Sheet Metal Dip Tanks, Buffing Machines, Lifting Drums, Sprue Mill Screens, Machine Bases, Glass Cullet Crushers, Tumbling Barrels, Skip Hoist Carriages, Elevators (Non-Passenger), Machine Torsion Bars, Continuous Casting Molds, Rolling Mill Equipment, Machine Blade Supports, Machine wear Plates, Rollers and Rolls, Spoon Handles, Machine Guide Blocks, Machine Guards, Machine Splash Pans, Sand Shields, Tail Shafts, Head Shafts, Tool Load Bars, Conveyor Pans, Tongs, Machine Load Bar Attachments, Machine Side Plates and Machine Bolster Plates, Slatted Pulleys, C-Clamps, Levers, Shaft-Couplings, Machine Cover Plates, Vibrating Screens, Machine Slats, Conveyor Guards, Ladles, and Gear Boxes.
First use on or about Oct. 13, 1960.

SN 241,578. The Bendix Corporation, Detroit, Mich. Filed Mar. 22, 1966.

DYNAVECTOR

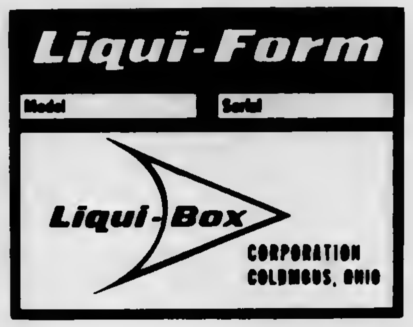
For Power Conversion Devices for Converting Hydraulic and/or Pneumatic Pressure Into Rotary Motion, and Components Thereto.
First use Feb. 28, 1966.

SN 248,585. The Bates Manufacturing Company, Orange, N.J. Filed June 21, 1966.

HAND-GRIP

For Plier-Type Staplers.
First use Apr. 30, 1959.

SN 249,655. Liqui-Box Corporation, Columbus, Ohio. Filed July 6, 1966.



No registration rights are claimed for the words "Model," "Serial," "Liqui-Box," "Corporation," and "Columbus Ohio" apart from the mark shown in the drawing, but the applicant waives none of its common law rights in the mark shown in the drawing or any feature thereof.
For Box Forming Machine.
First use Dec. 12, 1965.

SN 254,074. Toussaint Sinibaldi, Paris, France. Filed Sept. 8, 1966.

ANTIPOLL

Owner of French Reg. No. 517,420, dated Nov. 21, 1963 (Seine); Natl. Inst. No. 215,065.
For Automotive Crankcase Emission Control Systems for Reducing Smog Forming Air Pollutants.

SN 254,724. Rose Patch & Label Company, Grand Rapids, Mich. Filed Sept. 19, 1966.

RODIS

For Devices for Removing Individual Items From a Stack of Items.
First use on or about Aug. 16, 1966.

SN 257,207. A. Stephan u. Söhne, Hameln/Weser, Germany. Filed Oct. 25, 1966.

MICROCUT

Owner of German Reg. No. 815,079, dated Jan. 24, 1966.
For Food Comminuting Machines and Parts Therefor.

SN 259,820. Electro Engineering Products Co., Inc., Chicago, Ill. Filed Dec. 1, 1966.

ASHLAND

Owner of Reg. No. 768,150.
For Portable Electric Power Tools—Namely, Saws and Bench Grinders.
First use Nov. 2, 1966.

SN 260,246. Loyd R. Fulton, Seattle, Wash. Filed Dec. 7, 1966.

ADD-A-DUMP

For Portable Dump Structure Accessory for Trucks and Trailers.
First use on or about Nov. 1, 1966.

SN 260,557. Maschinenbau "Wam" M. Osterhof, Berlin, Germany. Filed Dec. 12, 1966.

WAM

For Office Printing Machines and Parts Therefor, Label Printing and Stamping Machines, Merchandise Marking Machines for Individual Labels and for Labels Supplied in Rolls.
First use 1926; in commerce Nov. 1, 1956.

SN 260,687. The Union Fork and Hoe Company, Columbus, Ohio. Filed Dec. 13, 1966.

PLY-WELD

Owner of Reg. No. 428,016.
For Hand-Operated Lawn and Garden Tools—Namely, Trowels, Spades, Shovels, Weed Cutters, Cultivators, Forks, Hoes, Axes, Rakes, Scrapers, and Tool Handles.
First use Jan. 24, 1944.

SN 261,172. Union Carbide Corporation, New York, N.Y. Filed Dec. 20, 1966.

HASTELLOY

For Centrifugal Pumps and Parts Thereof.
First use on or about Nov. 30, 1966.

SN 261,414. Wisconsin Drill Head Co., Butler, Wis. Filed Dec. 23, 1966.

WIS-MATIC

For Drilling, Tapping, Boring, and Reaming Machines, and Parts Thereof.
First use on or about June 1, 1960.

SN 261,729. Gorham Corporation, Providence, R.I. Filed Dec. 30, 1966.

TANGLEWOOD

For Stainless Steel Flatware.
First use Nov. 22, 1966.

SN 261,896. Van Gorp Manufacturing, Inc., Pella, Iowa. Filed Jan. 3, 1967.

SNAP-BACK

For Pulley for Use With Conveyor Belts and the Like.
First use Nov. 17, 1966.

SN 262,117. Barber-Greene Company, Aurora, Ill. Filed Jan. 9, 1967.

QUIKLOK

For Tension Fasteners for Vibratory Screens.
First use on or about Dec. 16, 1966.

SN 262,359. Vaughan & Bushnell Mfg. Co., Chicago, Ill. Filed Jan. 11, 1967.

SAFE T DRIVE

For Ball Peen Hammers and Similar Striking Tools.
First use Dec. 12, 1966.

SN 262,428. Link-Belt Company, Chicago, Ill. Filed Jan. 12, 1967.

LINK-BELT

Owner of Reg. No. 63,503 and others.
For Machinery and Parts Thereof for Handling Bulk Materials, Objects and Packages—Namely, Loaders, Unloaders, Elevators, Conveyors, Chain Conveyors, Feeders and Receivers; Machinery and Parts Thereof for Processing and Treating Materials—Namely, Sizers, Classifiers, Sorters, Separators, Crushers, Grinders, Pulverizers, Apparatus for Heating, Cooling or Drying Including Agitation and Conveying, Aerators, Washers, Vibratory and/or Continuously Moving Screens, Stackers and Reclaimers; Machinery for Processing and Treating Water, Sewage, and Industrial Waste—Namely, Water Intake Screens, Sludge Collectors, Grit Collectors, Grit Washers, Flocculators and Settling Tanks Including Apparatus for Removing and Collecting Floating or Settled Materials; Machinery and Parts Thereof for Use in a Foundry—Namely, Sand Revivifiers, Mold Closing Machinery, Shell Mold Ejectors and Mold Shake-Out Machinery; Machinery and Parts Thereof for Imparting Movement to a Container—Namely, Car Hauls and Winches; Power Transmission Machinery and Parts Thereof—Namely, Shafting, Bearings, Bearing Blocks, Drive Chain, Drive Chain Accessories, Sprockets, Sheaves, Pulleys, Gears, Gear Drives, Speed Reducers, Variable Speed Drives, Fluid Drives, Eccentric Drives, Clutches, and Shaft Couplings; and Valve Operating Apparatus and Parts Thereof.
First use 1880.

SN 262,841. American Can Company, New York, N.Y. Filed Jan. 19, 1967.

SHEATH PAK

For Bread Packaging Machinery.
First use Sept. 30, 1966.

SN 262,845. Barber-Colman Company, Rockford, Ill. Filed Jan. 19, 1967.

EQUA-CHIP

For Gear Cutters.
First use Nov. 1, 1966.

SN 263,619. Smith-Berger Manufacturing Corporation, d.b.a. Smith Berger Mfg. Corp., Seattle, Wash. Filed Jan. 30, 1967.

MARC II TELETOWER

For Logging Equipment—Namely, Portable Spar Trees.
First use Apr. 9, 1964.

SN 263,620. Smith-Berger Manufacturing Corporation, d.b.a. Smith-Berger Mfg. Corp, Seattle, Wash. Filed Jan. 30, 1967.

M-2 YARDER

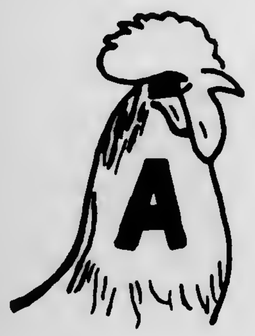
"Yarder" is disclaimed apart from the mark as shown.
For Logging Equipment—Namely, a Yarder Comprising an Engine and Cable Winding Drums.
First use Apr. 9, 1964.

SN 264,008. Arthur W. Alexander and Elsie M. Alexander (joint owners), d.b.a. Crank Shaft Co., Los Angeles, Calif. Filed Feb. 6, 1967.

DYNA-REV

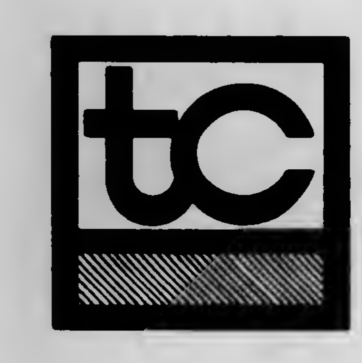
For Crankshafts.
First use Aug. 4, 1966.

SN 264,194. Arne Broadhurst, d.b.a. Aycock Knives, Salem, Oreg. Filed Feb. 8, 1967.



For Cutlery and Kitchen Aids—Namely, Knives, Forks, Spoons, Spatulas, Ladles, Whips, Beaters, Strainers, Graters, Cutters of Other Than Precious Metal.
First use Oct. 1, 1965.

SN 279,604. Tronic Corporation, Belmont, Calif. Filed Sept. 5, 1967.



The drawing is lined for the color green, but no claim is made as to any particular color.
For Cleaning and Degreasing Apparatus for Metal Parts.
First use as early as Nov. 1, 1964.

SN 279,605. Tronic Corporation, Belmont, Calif. Filed Sept. 5, 1967.

TRONIC

For Cleaning and Degreasing Apparatus for Metal Parts.
First use May 5, 1955.

SN 280,196. Western Technology, Inc., Santa Ana, Calif. Filed Sept. 13, 1967.

DYNAMIL

For Chemical Etching Machines.
First use January 1963.

Class 24 — Laundry Appliances and Machines

SN 263,539. Colmac Industries, Inc., Colville, Wash. Filed Jan. 30, 1967.

BIG "D"

For Commercial Garment Pressing Machines.
First use Jan. 6, 1965.

Class 25 — Locks and Safes

SN 239,947. Viro Innocenti S.p.A., Zola Predosa, Bologna, Italy. Filed Mar. 1, 1966.

VIRO

Priority claimed under Sec. 44(d) on Italian application filed Sept. 13, 1965; Reg. No. 196,765, dated Feb. 4, 1967.
For Padlocks, Bolts, Keys, Electrically Operated Locks and Handles.

Class 26 — Measuring and Scientific Appliances

SN 241,669. Laboratory for Electronics, Inc., Waltham, Mass. Filed Mar. 23, 1966.

DTPL

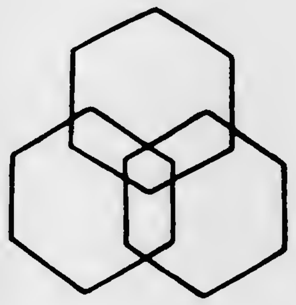
For Thin Magnetic Film Logic and Memory Devices—Namely, Shift Registers.
First use Feb. 10, 1966.

SN 243,351. Raytheon Company, Lexington, Mass. Filed Apr. 13, 1966.

DATASTROBE

For Electro-Optical Alpha-Numeric Indicators.
First use Mar. 11, 1966.

SN 243,485. Sama & Etani, Inc., Groton, Mass. Filed Apr. 14, 1966.



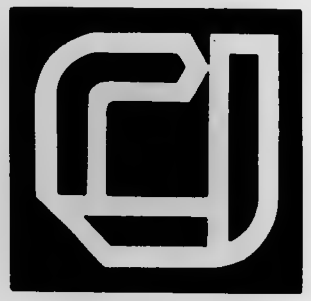
For Slide Rules.
First use Dec. 18, 1965.

SN 243,999. Leeds & Northrup Company, Philadelphia, Pa. Filed Apr. 21, 1966.

DROPTIP

For Throw-In Expendable Thermocouple Unit Designed To Be Discarded After Use for a Single Temperature Measurement.
First use Jan. 31, 1966.

SN 245,357. United Control Corporation (Delaware corporation), Redmond, Wash., assignee of United Control Corporation (Washington corporation), Redmond, Wash. Filed May 10, 1966.



For Avionics Systems and Components—Namely, All-Weather Landing Systems, Computers, Programmers, Controllers, Indicators, Amplifiers, Motor Generator Assemblies and Auto Throttle Systems; Transducers—Namely, Accelerometers; Temperature Controls—Namely, Anti-Ice System Pulse Counters; and Data Recording Systems—Namely, Cockpit Voice Recorders and Flight Data Recorders.

First use Mar. 8, 1966, on avionics systems computers.

SN 245,358. United Control Corporation (Delaware corporation), Redmond, Wash., assignee of United Control Corporation (Washington corporation), Redmond, Wash. Filed May 10, 1966.

For Avionics Systems and Components—Namely, All-Weather Landing Systems, Computers, Programmers, Controllers, Indicators, Amplifiers, Motor Generator Assemblies and Auto Throttle Systems; Transducers—Namely, Accelerometers; Temperature Controls—Namely, Anti-Ice System Pulse Counters; and Data Recording Systems—Namely, Cockpit Voice Recorders and Flight Data Recorders.

First use Mar. 8, 1966, on avionics systems computers.

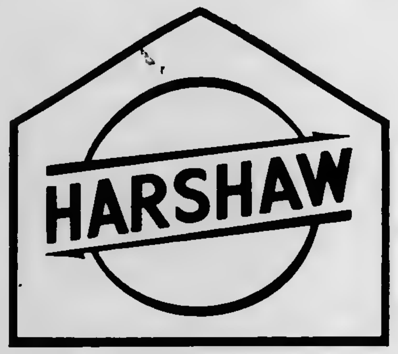
SN 247,622. Republic Steel Corporation, Cleveland, Ohio. Filed June 8, 1966.

MOISTURAY

For Nuclear Gage for Continuous, Non-Contact Measurement and Automatic Control of Moisture in Conveyor Fed Materials.

First use June 24, 1965.

SN 252,257. Kewanee Oil Company, d.b.a. The Harshaw Chemical Company (Delaware corporation), Cleveland, Ohio, assignee of The Harshaw Chemical Company (Ohio corporation), Cleveland, Ohio. Filed Aug. 12, 1966.

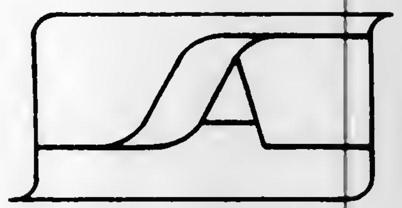


Owner of Reg. No. 565,020.

For Radiation Detectors; Spectrometers; Thermoluminescent Dosimeters; Scintillation Phosphors; Synthetic Optical Crystal Lenses; Windows and Prisms for Use in Scientific Appliances; Photo-Conductors; Photo-Voltaic Solar Cells; and Electro-Optic Crystals.

First use June 27, 1966.

SN 254,768. Ault Incorporated, Minneapolis, Minn. Filed Sept. 19, 1966.



Owner of Reg. No. 774,962.

For Components for Electronic Data Processing Systems—Namely, Custom Designed and Built Power Supplies for Memory Systems, Logic Systems, High Speed Printers, Peripheral Computer Equipment, Display Systems, and Inverters and Converters; Power Transformers and Chokes; Pulse Transformers; Magnetic Amplifiers; and Solid State Automatic Machine and Process Controls Available as Standard Logic Modules, as Custom Designed and Built Logic Modules, as Time Sequence Controls, and as Motor Speed Controls.

First use January 1966.

SN 255,584. Allen Electric and Equipment Company, Kalamazoo, Mich. Filed Oct. 3, 1966.

Owner of Reg. Nos. 530,894, 730,397, and others.

For Engine Testing Equipment—Namely, Electronic Testing Equipment for Internal Combustion Engines Such as Compression Testers, Ignition Testers, Tachometers, Intake Vacuum Testers, Ammeters and Voltmeters, Oscilloscopes and Consoles Embodying an Assembly of the Foregoing Named Instruments.

First use October 1961.

SN 258,915. The Lufkin Rule Company, Saginaw, Mich. Filed Nov. 17, 1966.

LUFKOTE

For Finishes Sold as Part of Folding Rules.

First use September 1963.

SN 263,360. Cybetronics, Inc., Waltham, Mass. Filed Jan. 26, 1967.

Owner of Reg. No. 741,403.

For Recorders, Control Units, Timers and Telemetering Equipment for Recording the Performance of Computers and Industrial Machinery.

First use January 1964.

SN 263,461. Gammon Technical Products, Inc., Newark, N.J. Filed Jan. 27, 1967.

AQUA-GLO

For Battery Powered Ultra-Violet Water Detector.

First use Oct. 5, 1966.

SN 264,109. Simmon Omega, Inc., Woodside, N.Y. Filed Feb. 6, 1967.

PRO-LAB

For Photographic Enlargers Comprising Lamphouses and Time Computing Equipment Therefor.

First use on or about Apr. 1, 1966.

SN 265,305. Huntec Limited, Toronto, Ontario, Canada. Filed Feb. 23, 1967.

HYDROSONDE

For Geophysical Surveying Equipment Used for Producing Continuous Seismic Profiles of Submerged Strata.

First use March 1965.

SN 265,348. Sport-Obermeyer, Ltd., Aspen, Colo. Filed Feb. 23, 1967.

CARRERA

For Sunglasses and Goggles.

First use Oct. 1, 1964.

SN 265,709. Eldorado Tool & Mfg. Corp., Milford, Conn. Filed Mar. 1, 1967.

FLO-MINDER

For Hydraulic Flow-Monitoring Devices.

First use Mar. 10, 1966.

SN 267,311. David P. Bushnell, Altadena, Calif. Filed Mar. 22, 1967.

SKY ROVER

For Telescopes.

First use May 8, 1958.

SN 269,645. The Dow Chemical Company, Midland, Mich. Filed Apr. 20, 1967.

SCUFA

Owner of Reg. No. 231,896.

For Metering Pumps for Controlling the Flow of Liquid Polymers.

First use Aug. 13, 1965.

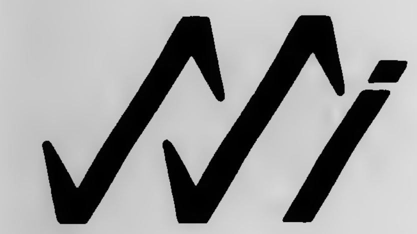
SN 273,353. Harold Reuter & Co., Inc., New York, N.Y. Filed June 8, 1967.

MONEY MATE

For Slide Calculators.

First use May 15, 1967.

SN 277,249. Sweep Systems Inc., Indianapolis, Ind. Filed Aug. 1, 1967.



For Electronic Test Equipment—Namely, Sweep Generators and Oscilloscopes.

First use Aug. 20, 1964.

Class 28 — Jewelry and Precious-Metal Ware

SN 263,793. Diamond-Ite International Inc., New York, N.Y. Filed Feb. 2, 1967.

DIAMOND-ITE

For Imitation Gems Sold as Finished Articles of Jewelry—Namely, Finger Rings, Necklaces, Bracelets, Pins and Earrings.

First use July 1, 1959.

SN 273,718. Ernst, Inc., San Francisco, Calif. Filed June 13, 1967.

ERNST

For Tie Tacs and Tie Clips.

First use on or about Sept. 3, 1957.

Class 29 — Brooms, Brushes, and Dusters

SN 259,038. Wunda-Brush, Inc., Roosevelt, N.Y. Filed Nov. 18, 1966.

Wunda-Brush

For Toothpaste Filled Toothbrushes.

First use June 15, 1966.

SN 263,547. Dinalyce, Inc., Ridgefield, N.J. Filed Jan. 30, 1967.

DINALYCE

For Powder Puffs.

First use Jan. 1, 1967.

Class 30 — Crockery, Earthenware, and Porcelain

SN 241,762. Coors Porcelain Company, Golden, Colo. Filed Mar. 24, 1966.

VISTAL

For High Temperature Resistant Translucent Industrial Ceramics.

First use Feb. 21, 1966.

Class 31 — Filters and Refrigerators

SN 238,176. Culligan, Inc., Northbrook, Ill. Filed Feb. 7, 1966.

AQUA-CLEER

For Home Drinking Water Purification Units for Reducing Total Dissolved Solids by Employing a Membrane Separating Process.

First use Jan. 7, 1966.

SN 250,815. Anthony Pools, Inc., South Gate, Calif. Filed July 22, 1966.

ANTHONY

For Swimming Pool Filters.

First use in 1947.

SN 255,857. American Felt Company, Glenville, Conn. Filed Oct. 6, 1966.

OMR

For Industrial Filters for Liquids and Gases.
First use Sept. 23, 1966.

Class 32 — Furniture and Upholstery

SN 240,417. U.S. Plywood-Champion Papers Inc., New York, N.Y., by assignment, merger and change of name from Del-Mar Industries, Inc., Fulton, Ga. Filed Mar. 8, 1966.

TOWN CLASSICAL

Owner of Reg. No. 803,710.
For Kitchen Cabinets.
First use Dec. 20, 1965.

SN 250,040. Selfix, Inc., Chicago, Ill. Filed July 11, 1966. Owner of Reg. No. 817,656.

SELFIX

For Self-Adhering Plastic Board for Pegs.
First use on or about July 12, 1965.

SN 250,580. Hull Traders Limited, London, England. Filed July 19, 1966.

TOMOTOM

Owner of British Reg. No. 889,925, dated Jan. 28, 1966.
For Dining Chairs, Children's Chairs, Easy Chairs, Reading Chairs, Baby High Chairs, Footstools, Dining Tables, Coffee Tables, Nursery Tables, and Desks.

SN 258,333. United Cabinet Corporation, Jasper, Ind. Filed Nov. 9, 1966.

CHARACTER PECAN

Applicant disclaims "Pecan" apart from the mark as shown.
For Kitchen Cabinets.
First use Sept. 7, 1966.

SN 261,207. Empire Furniture Corporation, Johnson City, Tenn. Filed Dec. 21, 1966.

Empire FURNITURE

No exclusive right to the word "Furniture" is claimed apart from the mark.
For Living Room, Dining Room, and Bedroom Furniture.
First use in 1949; 1920 as to the mark "Empire" in different forms.
Subj. to Intf. with SN 270,366.

SN 265,482. B & L Sales Associates, Boston, Mass. Filed Feb. 27, 1967.

COME ON STRONG

For Bedroom Sets and Living Room Sets.
First use at least as early as about 1962.

SN 265,723. Lyon Metal Products, Incorporated, Aurora, Ill. Filed Mar. 1, 1967.

LYON

Owner of Reg. Nos. 99,326, 749,664, and others.
For Shelving Units; Office Desks; Parts of and Accessories for Office Desks—Namely, Recessed Back Panels, Book Shelf Units, Center Drawers, End Filler Panels, Box and Tray Drawer Partitions, Cross Trays for Cards and Letters, Stationery Trays, Convenience Trays, Hanging Folder Adapters, Letter Trays, Sliding Reference Shelves and Telephone Wiring Panels; Office Tables; Credenzas; Desk Returns; Modulars; Parts of and Accessories for Modulars—Namely, Tops, Legs, Bases, End Supports, End Filler Panels, Back Panels, Connectors, Drawer Pedestals, Cabinets, Bookcases, Pull Out Machine Shelves and Stationery Pedestals; Filing Cabinets and Parts Thereof, Full Height Drawers and Half Height Drawers; and Office Chairs.
First use Dec. 1, 1913, on Shelving Units.

SN 267,989. Sleepmaster Products Company, Inc., Newark, N.J. Filed Mar. 30, 1967.

POLYMASTER

For Mattresses, Bed Springs, Box Springs, Box Spring Assemblies, Furniture Springs, Pillows, Pads, Studio Couches, Beds, Sofas, Cushions, Folding Cots, Gliders, Headboards for Beds, Chairs, Tables, and Pre-Cut Foam Rubber and Synthetic Foam Rubber Used as Fillers for the Finished Products Aforesaid.
First use June 1951.

SN 270,602. Office Equipment Manufacturing Co., Inc., Dallas, Tex. Filed May 3, 1967.

PERMA

Owner of Reg. Nos. 614,634, 710,462, and 802,898.
For Corrugated Paper File Drawers Used for the Storage of Various Files, Papers and the Like.
First use at least as early as Apr. 11, 1967.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 250,424. Tescom Corporation, Minneapolis, Minn. Filed July 18, 1966.

LANCER

For Torch Outfits for Heating, Brazing, Cutting, Welding and Soldering, Each Outfit Including a Torch Body, Cutting Tips, Gas Pressure Regulators, Goggles, and Torch Lighter, Sold as a Unit.
First use on or about Feb. 7, 1966.

SN 250,425. Tescom Corporation, Minneapolis, Minn. Filed July 18, 1966.

STAR CUTTER

No claim is made to the word "Cutter" apart from the mark as shown. Owner of Reg. No. 667,433.
For Torch Outfits for Heating, Brazing, Cutting, Welding, and Soldering, Each Outfit Including a Torch Body, Cutting Tips, Gas Pressure Regulators, Goggles, and Torch Lighter, Sold as a Unit.
First use on or about Feb. 7, 1966.

SN 261,035. Barry-Wehmiller Company, St. Louis, Mo. Filed Dec. 19, 1966.

For Food Processing Machinery and Equipment—Namely, Exhaust Boxes, Sterilizers and Pasteurizers, and Components and Parts Thereof.
First use on or about Nov. 17, 1966.

SN 276,034. H. K. Porter Company, Inc., Pittsburgh, Pa. Filed July 14, 1967.

MARLO

For Units for Cooling, Humidifying, and/or Conditioning Air or Gas With or Without Filtering and Parts and Components Thereof, Fans and Parts and Coils and Coil Assemblies for Heating and Cooling.
First use 1925.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 263,057. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Jan. 23, 1967.

FAT CAT

For Tires.
First use Dec. 7, 1966.

SN 263,553. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Jan. 30, 1967.

PRIMERO

For Resilient Vehicle Tires.
First use Dec. 22, 1966.

SN 263,830. The Haynes Manufacturing Co., Cleveland, Ohio. Filed Feb. 2, 1967.

SNAP-TITE

Owner of Reg. No. 427,376.
For Rubber and Composition Gaskets and Washers.
First use Sept. 22, 1944.

Class 36 — Musical Instruments and Supplies

SN 247,289. H. & A. Selmer, Inc., Elkhart, Ind. Filed June 6, 1966.

Varitone

For Wind Instrument Assembly Consisting of a Wind Instrument, Specifically, a Saxophone, Clarinet or Trumpet, and Related Accessories—Namely, a Microphone, Sound Attenuator, Amplifier and Speaker System.
First use Apr. 12, 1966.

SN 259,239. Fujiya Electric Co. Ltd., Tokyo, Japan. Filed Nov. 22, 1966.

FENCO

For Tape Recorders, Radio-Phonograph Combinations, Tape Players, Dictating Machines, Record Players, and Components Thereof Including Small Motors.
First use Jan. 1, 1966; in commerce Jan. 1, 1966.

Class 37 — Paper and Stationery

SN 239,895. General Aniline & Film Corporation, New York, N.Y. Filed Mar. 1, 1966.

TRANSALID

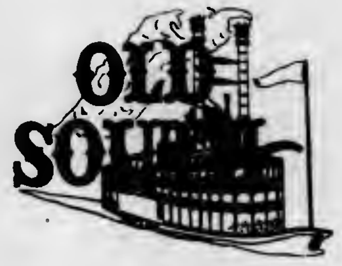
For Master Sets of Sheets of Translucent Paper Backed With Reversed Carbon Paper.
First use December 1956.

SN 241,211. Emil S. Wieszeck, Salem, N.H. Filed Mar. 16, 1966.

WEATHER-VUE

For Climate-Indicating Pens.
First use at least as early as July 1964.

SN 246,476. Louisiana Paper Company, Ltd., Shreveport, La. Filed May 24, 1966.



For Stationery—Namely, Envelopes, Invitations, Blank and Partially Printed Announcement Cards, Cut Cards and Typewriter Paper.
First use Mar. 19, 1965.

SN 260,174. Norcross, Inc., New York, N.Y. Filed Dec. 6, 1966.

MISS INFORMAL

Owner of Reg. Nos. 795,973 and 820,775.

For Wrapping Paper, Writing Paper and Envelopes, Tallies, Place Cards, Tags, Seals and Labels.

First use July 8, 1966.

SN 271,716. Marcal Paper Mills, Inc., East Paterson, N.J. Filed May 17, 1967.

FLORENTINE

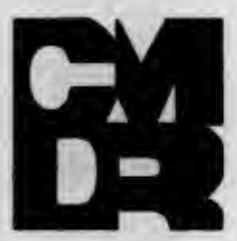
Owner of Reg. No. 722,710.

For Household Paper Products—Namely, Facial Tissues.

First use May 11, 1967.

Class 38 — Prints and Publications

SN 256,430. Commander Publishing, Inc., Hartford, Conn. Filed Oct. 14, 1966.



For Microfiche Publications.

First use Sept. 19, 1966.

SN 261,287. Farrar, Straus and Giroux, Inc., New York, N.Y. Filed Dec. 22, 1966.

NOONDAY

For Books.

First use December 1956.

SN 261,479. Farrar, Straus and Giroux, Inc., New York, N.Y. Filed Dec. 27, 1966.

BELL

For Books.

First use March 1962.

SN 278,168. National TV Log, Inc., Los Angeles, Calif. Filed Aug. 14, 1967.

STATISCOPE

For Information Folder and Insertable Cards Distributed From Time to Time Containing Statistical Information.

First use June 28, 1967.

SN 279,254. Morkap Publishing Company, Rockville, Md. Filed Aug. 29, 1967.

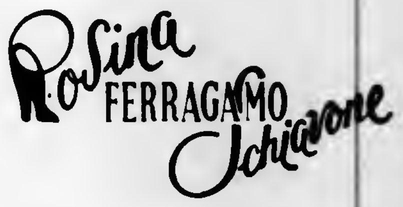
MONTGOMERY COUNTY SENTINEL

For Newspaper.

First use 1855.

Class 39 — Clothing

SN 245,271. Rosina Ferragamo Schiavone, Florence, Italy. Filed May 9, 1966.



Applicant disclaims the representation of the shoe apart from the mark as shown.

For Ladies' Footwear.

First use in or about April 1947; in commerce in or about April 1947.

SN 249,066. David Peyser Sportswear, Inc., New York, N.Y. Filed June 27, 1966.

MATE BAIT

For Men's and Boys' Golfing Jackets and Ski Jackets.

First use Apr. 1, 1966.

SN 251,224. Panzier Associates, Inc., New York, N.Y. Filed July 28, 1966.

KING SLACKS

The word "Slacks" is disclaimed apart from the mark as shown.

For Men's Slacks and Walking Shorts.

First use Apr. 4, 1965.

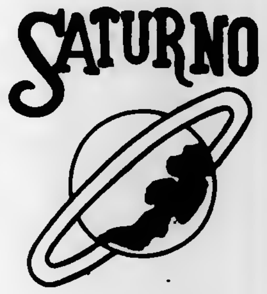
SN 251,847. J. P. Stevens & Co., Inc., New York, N.Y. Filed Aug. 5, 1966.

IMPACT

For Hosiery.

First use June 27, 1966.

SN 253,445. London City Clothing Corp., Miami, Fla. Filed Aug. 30, 1966.



For Men's Underwear.

First use November 1964.

SN 256,216. International Playtex Corporation, Dover, Del., by change of name from International Latex Corporation, Dover, Del. Filed Oct. 11, 1966.

18 HOUR GIRDLE

Applicant disclaims the word "Girdle" apart from the mark as shown.

For Girdles.

First use Aug. 25, 1966.

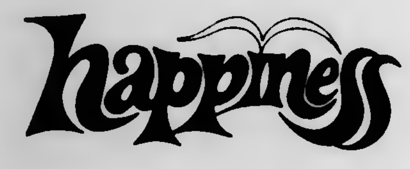
SN 256,728. Dunham Brothers Company, Brattleboro, Vt. Filed Oct. 19, 1966.

DURAFLEX

For Hunting and Industrial Boots.

First use June 24, 1958.

SN 257,403. Pantsmaker, Inc., New York, N.Y. Filed Oct. 27, 1966.



For Women's Clothing—Namely, Pants, Skirts, Blouses, Jackets, Dresses, Shirts, Halters, Coats, and Sweaters.

First use August 1965.

SN 258,801. Joe Frank, Inc., Houston, Tex. Filed Nov. 16, 1966.

JOE FRANK

For Ladies' Dresses, Suits, Blouses, Slacks, Skirts, and Jackets.

First use March 1947.

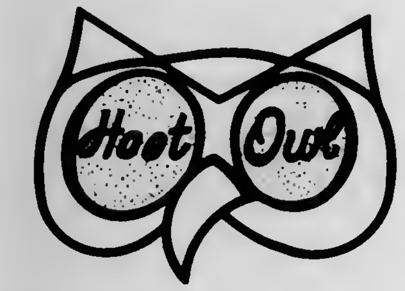
SN 259,360. Westbury Fashions, Inc., New York, N.Y. Filed Nov. 23, 1966.

HOOT OWL

For Women's and Girls' Dresses.

First use Sept. 15, 1966.

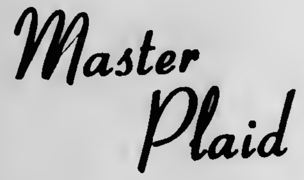
SN 259,361. Westbury Fashions, Inc., New York, N.Y. Filed Nov. 23, 1966.



For Women's and Girls' Dresses.

First use Sept. 15, 1966.

SN 259,541. Farah Manufacturing Company, Inc., El Paso, Tex. Filed Nov. 28, 1966.

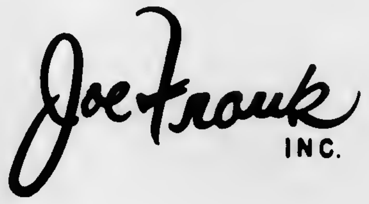


The word "Plaid" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 797,272 and 829,827.

For Men's Slacks and Fabrics Sold Exclusively in the Form of Such Garments.

First use Nov. 10, 1966.

SN 261,727. Joe Frank, Inc., Houston, Tex. Filed Dec. 30, 1966.



For Ladies' Dresses, Suits, Blouses, Slacks, Skirts, and Jackets.

First use September 1951.

SN 262,016. Banberry Cross Inc., New York, N.Y. Filed Jan. 6, 1967.

STANDING ROOM ONLY

For Blouses, Skirts, Slacks, Culottes, Dresses, Jumpers, Shirts, Short Shorts, Bermudas, Clam Diggers, Sweaters, Bell Bottom Trousers, Vests, Shifts, Jamaicas, Jump Suits, Pant Suits, Swimwear; and Jackets, Lined and Unlined.

First use Oct. 17, 1966.

SN 262,323. Exquisite Form Industries, Inc., New York, N.Y. Filed Jan. 11, 1967.

ANY WEAR

For Loungewear—Namely, Gowns, Pajamas and Sleepwear.

First use Jan. 3, 1967.

SN 263,372. Charles Glanzrock & Co. Inc., New York, N.Y. Filed Jan. 26, 1967.

BALINCOURT

Owner of Reg. No. 328,617.

For Men's Suits, Overcoats, Sport Coats, and Slacks.

First use Jan. 5, 1935.

SN 264,388. Blairmoor Knitwear Corp., Brooklyn, N.Y. Filed Feb. 10, 1967.

LANARA

For Knitwear—Namely, Sweaters for Ladies, Misses, and Girls.

First use Jan. 23, 1967.

SN 264,512. The Calico Printers' Association, Limited, Manchester, England. Filed Feb. 13, 1967.

GRAFTON

Owner of British Reg. Nos. 704,187 and 704,189, dated Jan. 19, 1952.

For Handkerchiefs; and Dresses, Blouses, Underwear, Lingerie and Sleepwear, all for Women and Girls, and Pyjamas and Neckties; All the Aforesaid Goods Being Composed Wholly or Mainly of Cotton or Artificial Silk and None Being Waterproofed or Rainproofed.

SN 267,125. Camp and McInnes Inc., Reading, Pa. Filed Mar. 20, 1967.

OFF-THE-CUFF

For Men's Hosiery.

First use Mar. 13, 1967.

SN 267,126. Camp and McInnes, Inc., Reading, Pa. Filed Mar. 20, 1967.

ON-THE-CUFF

For Men's Hosiery.
First use Mar. 13, 1967.

SN 278,353. Melville Shoe Corporation, New York, N.Y. Filed Aug. 16, 1967.

THOM MC AN RAGA BOOTS

"Thom McAn" is a fanciful name. The word "Boots" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 170,095, 268,176, and others.
For Shoes.
First use Aug. 11, 1967.

SN 279,438. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Aug. 31, 1967.

YVES SAINT LAURENT RIVE GAUCHE

The English translation of the French words "Rive Gauche" is "left bank." The mark consists in part of the name of Yves Saint Laurent, a particular living individual whose consent is of record. Owner of Reg. No. 767,211.
For Gloves.
First use Aug. 18, 1967.

SN 280,104. Stacy Ames, Inc., New York, N.Y. Filed Sept. 11, 1967.

NAN LESLIE

The name "Nan Leslie" is fanciful.
For Women's Dresses.
First use Apr. 10, 1958.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 257,203. Sondra Manufacturing Co., Inc., New York, N.Y. Filed Oct. 25, 1966.

FLUFFKNIT

Owner of Reg. No. 359,831.
For Knitted Textile Fabrics in the Piece of Cotton, Wool, Silk, and Artificial Silk.
First use Mar. 1, 1938.

SN 267,612. Chatham Manufacturing Company, Elkin, N.C. Filed Mar. 27, 1967.

FASCINATION

For Blankets.
First use Feb. 28, 1967.

SN 267,641. J. B. Martin Company, Norwich, Conn. Filed Mar. 27, 1967.

ANTINEA

Owner of Reg. No. 220,986.
For Pile-Fabric Piece Goods.
First use Mar. 22, 1926.

SN 267,812. Canton Textile Mills, Inc., Canton, Ga. Filed Mar. 29, 1967.

INDIDENIM

For Fabrics of Cotton, Wool, and Synthetic Materials and Combinations Thereof.
First use Mar. 10, 1967.

SN 280,366. Deering Milliken, Inc., New York, N.Y. Filed Sept. 15, 1967.

MILPINE

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers and Combinations Thereof.
First use Aug. 18, 1967.

Class 43 — Thread and Yarn

SN 267,689. Textiles Phenix Ltee.—Phenix Textiles Ltd., St. Hyacinthe, Quebec, Canada. Filed Mar. 27, 1967.

PHENTEX

For Yarns of Synthetic Fibers for Knitting.
First use Jan. 31, 1967; in commerce Jan. 31, 1967.

SN 267,690. Textiles Phenix Ltee.—Phenix Textiles Ltd., St. Hyacinthe, Quebec, Canada. Filed Mar. 27, 1967.

PHENTEX

For Yarns of Synthetic Fibers for Knitting.
First use Jan. 31, 1967; in commerce Jan. 31, 1967.

Class 44 — Dental, Medical, and Surgical Appliances

SN 256,740. Interstate Dental Co., Inc., New York, N.Y. Filed Oct. 19, 1966.

tenrex

For Cement for Use by Dentists in Fixing Teeth.
First use Jan. 2, 1960.

SN 258,479. Bird Space Technology, Inc., Palm Springs, Calif., assignee of Bird Corporation, Richmond, Calif. Filed Nov. 14, 1966.

PNEUMOBAG

For Devices for Administering Anesthetic Agents and for Ventilating Mammals—Namely, for Use With Medical Positive Phase Respirators, Medical Positive Negative Phase Respirators, Medical Automatic Leak-Compensating Respirators, Physiological Volume Limiting Respirators for Intensive Care, Complete Volume Limiting Ventilators for Intensive Care, Anesthesia Ventilators, Portable Respirators, Automatic Resuscitators and Emergency Hand Resuscitators.
First use Sept. 29, 1966.

SN 260,572. Nuclear Research Associates, Inc., Long Island City, N.Y. Filed Dec. 12, 1966.

CYTEC

For Medical Kit for Detection of Lung Cancer.
First use Mar. 25, 1966.

SN 260,642. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Dec. 13, 1966.

BURETROL

For Controlled Volume Unit Serving as a Component of Parenteral Solution, Administration Equipment.
First use July 27, 1966.

SN 260,685. Textron, Inc., Providence, R.I. Filed Dec. 13, 1966.

DIRECTIONEAR

For Electronic Hearing Aids.
First use November 1966.

SN 260,718. Becton, Dickinson and Company, East Rutherford, N.J. Filed Dec. 14, 1966.

UNICATH

For Catheter Needles.
First use on or about Jan. 25, 1965.

SN 273,721. Vernitron Corporation, d.b.a. Medical Products Division, Farmingdale, N.Y. Filed June 13, 1967.

STERI-SONIC

Owner of Reg. No. 815,957.
For Laboratory Equipment and Surgical Instrument Cleaner and Sterilizer.
First use Nov. 18, 1965.

Class 45 — Soft Drinks and Carbonated Waters

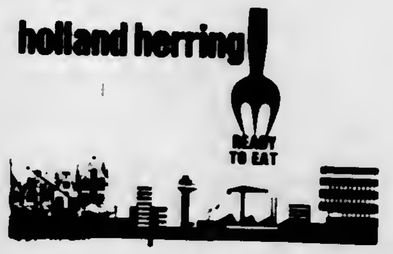
SN 251,198. Florasynth, Inc., Bronx, N.Y. Filed July 28, 1966.

PLANTAROME

Owner of Reg. No. 412,027.
For Non-Alcoholic Preparation for Producing a Foam in Soft Drinks and a Flavoring Agent Used in the Preparation of Root Beer.
First use on or about Nov. 24, 1943.

Class 46 — Foods and Ingredients of Foods

SN 234,281. Holland Herring Fisheries Association, Vlaardingen, Holland. Filed Dec. 9, 1965.



Applicant disclaims any exclusive rights in the words "Holland," "Herring," and "Ready-To-Eat" apart from the mark as shown in the drawing.
For Canned and Frozen Herring.
First use Aug. 6, 1964; in commerce Aug. 6, 1965.

SN 235,968. 40-Fathom Seafoods, Inc., Chestnut Hill, Mass. Filed Jan. 7, 1966.

BATTERCRISP

For Frozen Haddock Fillets.
First use Nov. 30, 1965.

SN 247,411. Raymond Robaire, d.b.a. Robaire's French Restaurant, Sherman Oaks, Calif. Filed June 6, 1966.

Raymond Robaire's

For Frozen French Food—Namely, Escargots and French Salad Dressing.
First use in or about 1962.

SN 254,742. Superior Foods, Inc., Dallas, Tex. Filed Sept. 19, 1966.

HARVEST MAID

For Refrigerated Ready-To-Bake Biscuits.
First use Aug. 15, 1966.

SN 260,925. Critchley's Candies, Tenafly, N.J. Filed Dec. 16, 1966.

Critchley's

For Chocolate Candy.
First use During 1929.

SN 261,747. The Nestlé Company, Inc., White Plains, N.Y. Filed Dec. 30, 1966.

EASTCHESTER

Owner of Reg. No. 834,079.
For Chocolate Coating for Use in the Manufacture of Candy.
First use July 1966.

SN 261,835. Joseph V. Giolitti, d.b.a. Giolitti Ranches, Reedley, Calif. Filed Jan. 3, 1967.

MOONLIGHT

For Fresh Grapes.
First use Sept. 1, 1925.

SN 261,999. The Pillsbury Company, Minneapolis, Minn. Filed Jan. 5, 1967.

Sweet*10

Owner of Reg. Nos. 563,259 and 639,077.
For Non-Caloric Sweetener in Liquid, Granular and Tablet Form for Use as a Substitute for Sugar in Sweetening Foods.
First use Feb. 17, 1964.

SN 262,176. L. H. Moore Canning Co., McAllen, Tex. Filed Jan. 9, 1967.

EMMY LOU

For Canned Vegetables and Tomato Juice.
First use Dec. 1938.

SN 262,190. Peerless Confection Company, Chicago, Ill. Filed Jan. 9, 1967.

P. M. MIX

The word "Mix" is disclaimed apart from the mark as shown.
For Candies.
First use on or about Oct. 1, 1945.

SN 262,343. Louis Sherry, Inc., Long Island City, N.Y. Filed Jan. 11, 1967.

IRISH HEARTH RECIPE

Applicant disclaims the words "Irish" and "Recipe" apart from the mark as shown.
For Orange Marmalade.
First use May 18, 1966.

SN 264,056. Henri's Food Products Company, Inc., Milwaukee, Wis. Filed Feb. 6, 1967.

HENRI'S

Owner of Reg. Nos. 719,370, 755,632, and 793,736.
For Salad Dressing.
First use Sept. 1, 1935.

SN 264,719. Amurol Products Company, Naperville, Ill. Filed Feb. 13, 1967.

WOODEN SPOON

For Candy.
First use June 30, 1965.

SN 266,218. Flavor Corporation of America, Northbrook, Ill. Filed Mar. 8, 1967.

AGRIAID

For Flavoring Materials Used in Animal Feeds.
First use July 23, 1963.

SN 273,926. Morton Foods, Inc., Dallas, Tex. Filed June 15, 1967.

PO-CO CHIPS

The word "Chips" is disclaimed apart from the mark as shown.
For Corn and Potato Derived Ready To Eat Snack Products in the Form of a Chip.
First use Apr. 27, 1967.

SN 275,730. Castle & Cooke, Inc., Honolulu, Hawaii. Filed July 11, 1967.

ROYAL HONDURAN

No claim is made to the word "Honduran" apart from the mark as shown. Owner of Reg. Nos. 536,133, 818,216, and others.
For Fresh Fruits.
First use June 15, 1967.

SN 276,997. Klein Chocolate Company, Elizabethtown, Pa. Filed July 28, 1967.

LUNCH BAR

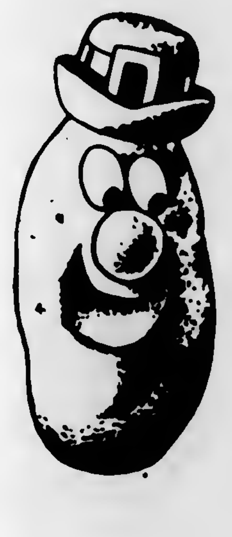
Applicant disclaims "Bar" apart from the trademark as a whole, but without waiving any of its common law rights therein. Owner of Reg. No. 650,619.
For Candy.
First use Jan. 15, 1914.

SN 278,072. Mead Johnson & Company, Evansville, Ind. Filed Aug. 11, 1967.

SKIMMERS

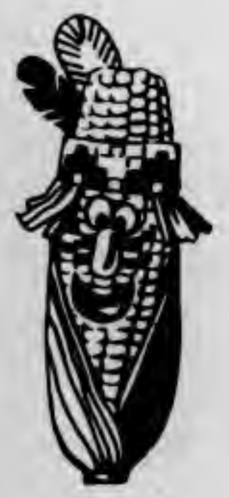
For Low Calorie Snack Chips of a Cereal Nature.
First use on or prior to Aug. 3, 1967.

SN 280,515. Kellogg Company, Battle Creek, Mich. Filed Sept. 18, 1967.



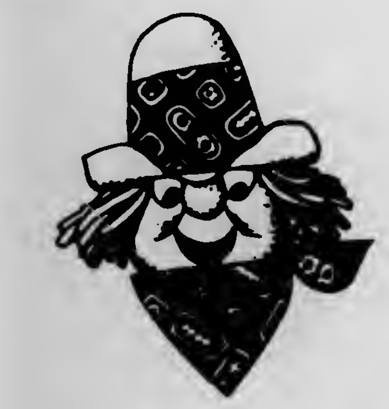
Owner of Reg. No. 832,285.
For Cereal Derived Snack Food Products and Fried Snack Food Products of a Vegetable Base.
First use Dec. 22, 1966.

SN 280,516. Kellogg Company, Battle Creek, Mich. Filed Sept. 18, 1967.



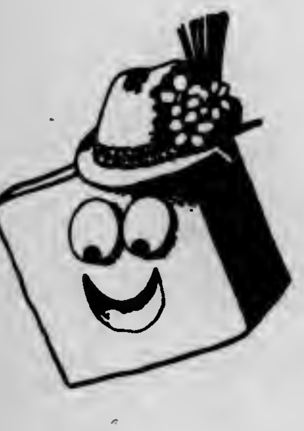
Owner of Reg. No. 832,285.
For Cereal Derived Snack Food Products and Fried Snack Food Products of a Vegetable Base.
First use Dec. 22, 1966.

SN 280,517. Kellogg Company, Battle Creek, Mich. Filed Sept. 18, 1967.



Owner of Reg. No. 832,285.
For Cereal Derived Snack Food Products and Fried Snack Food Products of a Vegetable Base.
First use Dec. 22, 1966.

SN 280,518. Kellogg Company, Battle Creek, Mich. Filed Sept. 18, 1967.



Owner of Reg. No. 832,285.
For Cereal Derived Snack Food Products and Fried Snack Food Products of a Vegetable Base.
First use Dec. 22, 1966.

Class 47 — Wines

SN 266,169. Peter Frederik Suhm Heering, d.b.a. Peter F. Heering, Copenhagen, Denmark. Filed Mar. 7, 1967.

CHERRY SAXO

The word "Cherry" is disclaimed apart from the mark as shown.
For Cherry Wine.
First use at the end of November 1966; in commerce at the beginning of December 1966.

Class 50 — Merchandise Not Otherwise Classified

SN 255,361. Robert L. Sisler, d.b.a. Sisler Enterprises, Bothell, Wash. Filed Sept. 28, 1966.

POLISHU

For Wall Mounted Support for Use in Shining Shoes.
First use on or about July 22, 1966.

SN 274,029. H. Frank Jones, d.b.a. Feisty Bloomers By Camille, North Hollywood, Calif. Filed June 16, 1967.

FEISTY BLOOMERS

For Decorative Imitation Flowers in and on Holders.
First use May 19, 1967.

SN 275,497. Pest-Guard Products, Inc., d.b.a. Danbar Products, Dallas, Tex. Filed July 7, 1967.

RAVE

For Plastic Adhesive Coated Linings for Shelves and Drawers and Other Decorative Purposes.
First use on or about Mar. 25, 1966.

SN 279,786. General Felt Industries, Inc., Chicago, Ill. Filed Sept. 7, 1967.

FOUR SEASONS

Owner of Reg. No. 819,587.
For Plastic Carpet Runners.
First use in or about July 1967.

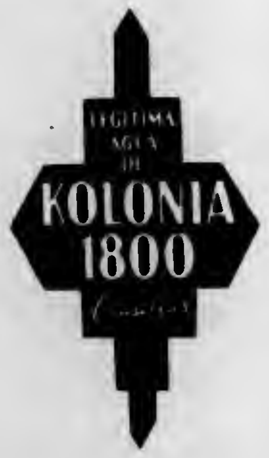
Class 51 — Cosmetics and Toilet Preparations

SN 241,930. The Realistic Company, Cincinnati, Ohio. Filed Mar. 25, 1966.

EXCELLIUM

For Permanent Wave Curling Solutions.
First use on or about Mar. 3, 1966.

SN 245,329. Jose Sendra Marti, d.b.a. Crusellas, Miami, Fla. Filed May 10, 1966.



Applicant disclaims the words "Legitima Agua de Kolonia" apart from the mark as shown.
For Cologne.
First use July 1906.

SN 246,010. Margarete Astor AG., Mainz, West Germany. Filed May 11, 1966.

MARGRET ASTOR

The name "Margret Astor" is that of a deceased person. Owner of German Reg. Nos. 700,190, dated Feb. 19, 1957 and 701,344, dated Mar. 26, 1957.
For Cosmetic Preparations—Namely, Lipstick, Nail Polish Remover, Cuticle Remover, Eye Make-Up, Face Powder, Rouge, Hand Lotion, Face Lotion, Skin Cleanser, Vitamin Cream.

SN 247,122. Fannie Roberts Heyman, New York, N.Y. Filed June 2, 1966.

TULIPSY

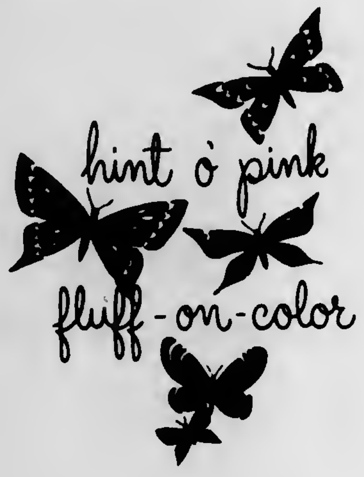
For Cosmetic Liquid for Overcoating of Lipstick.
First use April 1966.

SN 248,125. Fermodyl Laboratories, Inc., Los Angeles, Calif. Filed June 15, 1966.

FERMODYL

For All Purpose Hair Conditioner.
First use Feb. 16, 1966.

SN 249,319. The Fuller Brush Company, East Hartford, Conn. Filed June 30, 1966.



"Hint O' Pink Fluff-On-Color" is disclaimed apart from the mark as shown.
For Compact Containing Powder Sold With Brush Applicator.
First use on or about Apr. 25, 1966.

SN 256,306. Pharmaco, Inc., Kenilworth, N.J. Filed Oct. 12, 1966.

GLORY-8

For Hair and Scalp Conditioner.
First use July 20, 1966.

SN 260,859. Humphreys Medicine Company, Incorporated, Rutherford, N.J. Filed Dec. 15, 1966.

LYMEBURRY

For Cologne, Toilet Water, Perfume and Facial Lotions.
First use Nov. 29, 1966.

SN 260,860. Humphreys Medicine Company, Incorporated, Rutherford, N.J. Filed Dec. 15, 1966.

LIMAMELIS

For Cologne, Toilet Water, Perfume and Facial Lotions.
First use Nov. 29, 1966.

SN 261,143. Clairol Incorporated, New York, N.Y. Filed Dec. 20, 1966.

INNOCENT BLONDE

Applicant disclaims "Blonde" apart from the mark as shown. Owner of Reg. No. 789,228.
For Hair Tinting, Dyeing and Coloring Preparation.
First use Nov. 21, 1966.

SN 261,450. Beauty Counselors, Inc., Grosse Pointe, Mich. Filed Dec. 27, 1966.

PRIVATE BRAND

The word "Brand" is disclaimed apart from the complete mark.
For After Shave Lotion for Men.
First use Aug. 17, 1966.

SN 261,740. The Mennen Company, Morristown, N.J. Filed Dec. 30, 1966.

PROTEIN-29

Owner of Reg. Nos. 814,679 and 815,131.
For Hair Dressing.
First use Nov. 22, 1966.

SN 261,807. Chesebrough-Pond's Inc., d.b.a. Erno Laszlo Institute, New York, N.Y. Filed Jan. 3, 1967.

ERNO LASZLO

"Erno Laszlo" identifies a living individual whose consent is of record.
For Creams and Lotions for the Care of the Skin and Skin Moisturizing Oil.
First use 1941.

SN 263,136. Warner Electric Company, Inc., Chicago, Ill. Filed Jan. 23, 1967.

JEANNINE

For Perfumes, Colognes, Sachet, Bath Oil Essences, Bubble Bath, Skin Fresheners, Hand Lotions, Skin Softening Creams, and Personal Deodorants.
First use August 1965.

SN 263,138. Warner Electric Company, Inc., Chicago, Ill. Filed Jan. 23, 1967.

SKY SONG

For Perfumes, Colognes, Sachet, Bath Oil Essences, Bubble Bath, Skin Fresheners, Hand Lotions, Skin Softening Creams, and Personal Deodorants.
First use August 1965.

SN 263,460. G. B. Importing Co., Boston, Mass. Filed Jan. 27, 1967.

J-OVIN

For Personal Deodorant.
First use November 1962.

SN 264,039. Demert & Dougherty, Inc., Chicago, Ill. Filed Feb. 6, 1967.

BLAND

For Hair Spray.
First use on or about Aug. 5, 1964.

SN 264,408. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed Feb. 10, 1967.

BIG A

For Hair Spray.
First use Jan. 6, 1967.

SN 265,697. Clairol Incorporated, New York, N.Y. Filed Mar. 1, 1967.

GOLDEN ONE

Applicant disclaims "Golden" apart from the mark as shown.
For Suntan Lotion.
First use Oct. 24, 1966.

SN 271,573. The Andrew Jergens Company, Cincinnati, Ohio. Filed May 16, 1967.

VIVE LA TAN

The French word "Vive" means "live," "long live," or "hurrah for." The French word "la" means "the." Without waiver of common law rights in any feature of the mark, applicant disclaims exclusive right to use of the word "Tan" on suntan lotion apart from the mark as shown.
For Suntan Lotion.
First use May 3, 1967.

SN 276,412. Chesebrough-Pond's Inc., New York, N.Y. Filed July 20, 1967.

NATURAL HOLD

The word "Hold" is disclaimed apart from the mark as shown.
For Hair Dressing.
First use July 11, 1967.

SN 276,413. Chesebrough-Pond's Inc., New York, N.Y. Filed July 20, 1967.

SURE CONTROL

The word "Control" is disclaimed apart from the mark as shown.
For Hair Setting Preparation.
First use June 29, 1967.

SN 276,490. Chesebrough-Pond's Inc., New York, N.Y. Filed July 20, 1967.

NATURAL CONTROL

The word "Control" is disclaimed apart from the mark as shown.
For Hair Dressing.
First use July 11, 1967.

SN 276,816. Chesebrough-Pond's Inc., d.b.a. Prince Matchabelli, New York, N.Y. Filed July 26, 1967.

BATH ROYALE

For Cologne.
First use July 11, 1967.

SN 278,171. Redken Laboratories, Inc., Van Nuys, Calif. Filed Aug. 14, 1967.

PHinal PHase

For Hair Rinsing and Dressing Cream.
First use December 1963.

SN 279,020. American Home Products Corporation, New York, N.Y. Filed Aug. 25, 1967.

JUG A LUV

Applicant disclaims the word "Jug" apart from the mark as shown.
For Perfume and Cologne.
First use Aug. 10, 1967.

SN 280,369. Clynol Limited, London, England. Filed Sept. 15, 1967.

CLYNOLA

Owner of British Reg. No. 806,357, dated May 25, 1960 and U.S. Reg. Nos. 610,055 and 807,884.
For Hair Dyes and Hair Waving, Setting and Conditioning Lotions.

SN 280,519. Lever Brothers Company, New York, N.Y. Filed Sept. 18, 1967.

DECISION

Owner of Reg. No. 439,298.
For Shaving Cream.
First use Oct. 30, 1962.

Class 52 — Detergents and Soaps

SN 251,732. Walter G. Legge Company, Inc., New York, N.Y. Filed Aug. 4, 1966.

LEGSOLVE

Owner of Reg. No. 642,424.
For Cleaning Agent for Removing Grease and Oil.
First use July 13, 1966.

SN 257,190. Marine and Ship Supply, Inc., San Francisco, Calif. Filed Oct. 25, 1966.

NYSTOL

For Heavy Duty Detergents for General Marine, Industrial, and Aviation Use; Dishwashing Detergents in Liquid and Powder Form; Tank Cleaning Solvent-Emulsifiers; Rust Removers; Degreasing Compounds; Descaling Compounds; and Cleaners for Electrical Equipment and Parts Thereof.
First use Aug. 23, 1966.

SN 259,006. Kurts & Wolfe Chemical Co., Inc., Bronx, N.Y. Filed Nov. 18, 1966.

ELECTROSMOOTHE

For Pickling and Cleaning Solution in Which Steel Materials Are Dipped and by Chemical Process Such Solution Has the Effect of Taking Off the Scale and Some of the Metal From Such Materials, Thereby Cleaning the Same.
First use Sept. 6, 1966.

SN 261,741. The Mennen Company, Morristown, N.J. Filed Dec. 30, 1966.

PROTEIN-29

Owner of Reg. Nos. 814,679 and 815,131.
For Hair Shampoo.
First use Nov. 22, 1966.

SN 262,285. Prentiss Drug & Chemical Co., Inc., New York, N.Y. Filed Jan. 10, 1967.

May Day

For Laundry Detergents in Powder and Tablet Form.
First use Dec. 1, 1966.

SN 262,308. Armour and Company, Chicago, Ill. Filed Jan. 11, 1967.

SANCTUARY

For All Purpose Cleaner for Household Use.
First use on or prior to Dec. 6, 1966.

SN 263,385. Kyanize Paints, Inc., Everett, Mass. Filed Jan. 26, 1967.

KYANIZE

Owner of Reg. Nos. 60,252 and 129,333.
For Paint Cleaner and General Household Detergent.
First use May 1937.

SN 264,989. Texas Refinery Corporation, Fort Worth, Tex. Filed Feb. 17, 1967.

BIG RED

For Industrial Cleaner for Use on Machinery, Floors, Walls, Washable Hard Surfaces, Cars, and Hands.
First use Jan. 11, 1961.

SN 274,161. Babson Bros. Co., Oak Brook, Ill. Filed June 19, 1967.

MIRACLEAN

For Detergent for Brush Washing Dairy Farm Equipment.
First use June 7, 1967.

SN 278,772. Purex Corporation, Ltd., Lakewood, Calif. Filed Aug. 22, 1967.

BO-PEEP

Owner of Reg. Nos. 194,880 and 680,174.
For Spray and Wipe Household Cleaner.
First use June 27, 1967.

SN 279,145. London Chemical Company, Inc., Melrose Park, Ill. Filed Aug. 28, 1967.

LONCOSOLVE

Owner of Reg. No. 716,611.
For Organic Solvents for Cleaning and Degreasing.
First use 1955.

SN 279,149. London Chemical Company, Inc., Melrose Park, Ill. Filed Aug. 28, 1967.

SONIC-SOLVE

For Organic Solvent for Cleaning.
First use 1957.

SN 281,010. Lever Brothers Company, New York, N.Y. Filed Sept. 21, 1967.

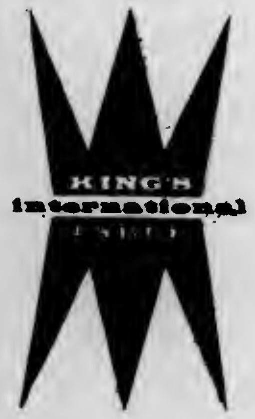
HARMONY

Owner of Reg. Nos. 68,117 and 309,006.
For Hair Shampoo.
First use Oct. 19, 1965.

SERVICE MARKS

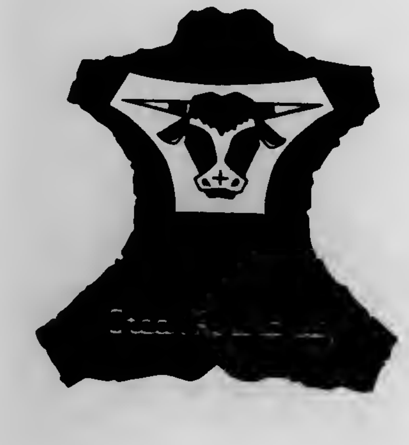
Class 100 — Miscellaneous

SN 228,288. Partake, Inc., Oak Brook, Ill. Filed Sept. 20, 1965.



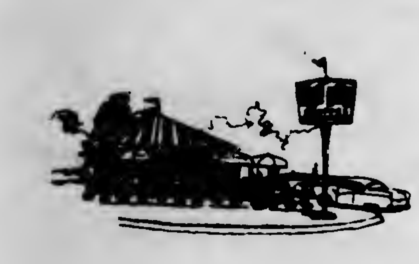
Applicant disclaims the words "International Table" apart from the mark as shown.
For Restaurant Services.
First use Oct. 8, 1963.

SN 245,415. Nino's Steak Round-Up, Inc., Milwaukee, Wis. Filed May 11, 1966.



Applicant disclaims the word "Steak" apart from the mark as shown.
For Bar and Restaurant Services.
First use Jan. 18, 1955.
Subj. to Intf. with SN 238,974.

SN 248,608. B.T.S. Franchising Systems, Inc., Westport, Conn. Filed June 21, 1966.



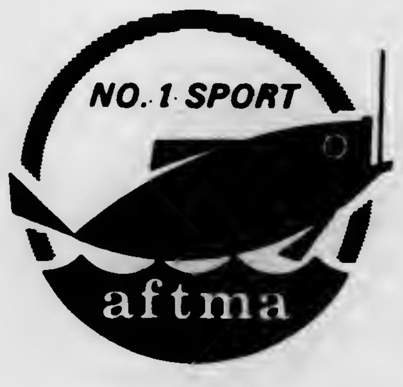
The words "Open Hearth Cooking" are disclaimed apart from the mark as shown.
For Restaurant Services.
First use May 1961.

SN 248,610. B.T.S. Franchising Systems, Inc., Westport, Conn. Filed June 21, 1966.

BIG TOP SHOPPES

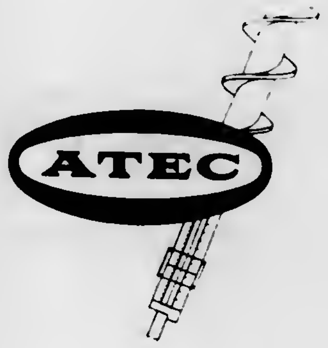
For Restaurant Services.
First use January 1966.

SN 250,726. American Fishing Tackle Manufacturers Association, Chicago, Ill. Filed July 21, 1966.



The drawing is lined for the color red.
For Association Services Rendered to Fishing Tackle Manufacturers by Such Means as Offering Information and Advice to Members, by Staging Trade Shows, by Operating Collection Agencies, and by Providing Public Relation Services.
First use May 9, 1966.

SN 262,913. American Testing and Engineering Corporation, Indianapolis, Ind. Filed Jan. 20, 1967.



For Soil Testing Services, Including Soil and Foundation Engineering, Construction Inspection, and Drilling.
First use Dec. 15, 1966.

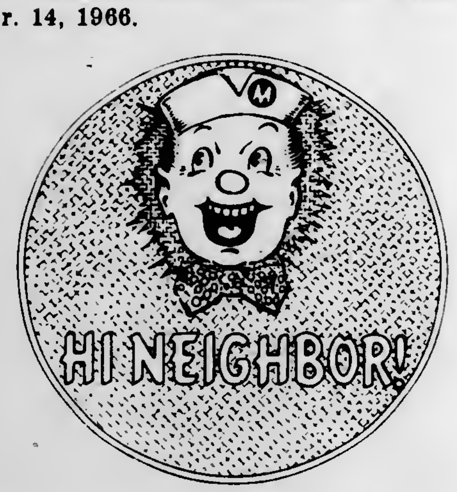
Class 101 — Advertising and Business

SN 228,343. Design Built Exhibits, Inc., Long Island City, N.Y. Filed Sept. 22, 1965.

OCTORAMA

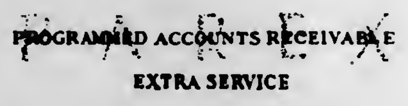
For Designing Audio Visual Exhibits for Others.
First use June 2, 1965.

SN 242,169. Milgram Food Stores, Inc., Kansas City, Mo. Filed Mar. 14, 1966.



The drawing is lined for the colors Orange and Yellow.
Owner of Reg. No. 580,664.
For Retail Food Supermarket Services.
First use during 1946; during 1939 in another form.

SN 253,843. Brunswig Drug Company, Vernon, Calif. Filed Sept. 6, 1966.



Applicant disclaims the words "Programmed Accounts Receivable" and "Extra Service."
For Accounting Services Rendered to Drugstores, and Other Retail Accounts.
First use Apr. 1, 1965.

SN 253,863. The Echlin Manufacturing Company, Branford, Conn. Filed Sept. 6, 1966.

VISUMATIC

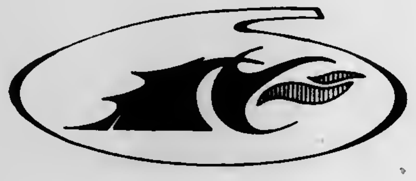
For Stocking Vehicle Service Centers of Others With Ignition Parts.
First use in or about June 1950.

SN 255,192. Ella Gale Doughton, d.b.a. Ella Gale, Troy, Mich. Filed Sept. 27, 1966.

$$$ and SENSE

For Counseling Consumers in Making Product Selection on the Basis of Price and Quality.
First use January 1962.

SN 255,786. Draco, Inc., Greenville, Del. Filed Oct. 5, 1966.



The mark consists of a stylized black dragon's head facing right and issuing red flames, enclosed by a stylized black oval chemical flask.
For Manufacturer's Representative Services in the Field of Chemistry.
First use Aug. 1, 1966.

SN 256,998. D. H. Overmyer Co., Inc., New York, N.Y. Filed Oct. 24, 1966.

OASIS

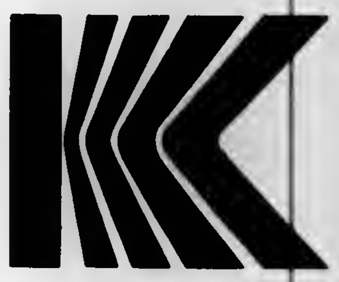
For an Automated System of Inventory Service for Clients and Customers of Applicant, in Which Telecommunication Devices Are utilized To Provide a Record of Inventory Movement to Customer/Lessees of Warehouse Facilities Operated by Companies Affiliated With Applicant.
First use Jan. 12, 1966.

SN 257,026. Accountax, Inc., Milwaukee, Wis. Filed Oct. 24, 1966.

ACCOUNTAX

For Income Tax Preparation and Accounting Services.
First use Oct. 1, 1965.

SN 257,866. Keystone Computer Associates, Inc., Willow Grove, Pa. Filed Nov. 3, 1966.



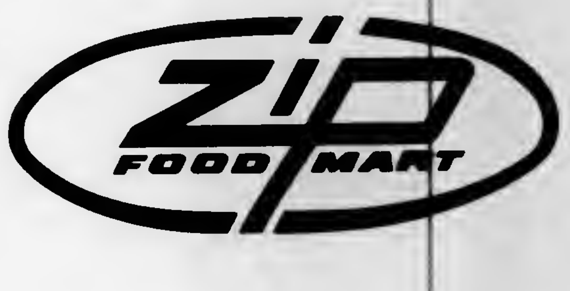
The mark consists of a fanciful representation of the letter "K."
For Services in Computer Programming, Systems Design, Management Consulting, and Data Processing.
First use at least by May 1, 1966.

SN 259,115. Creative Merchandising, Inc., Denver, Colo., assignee of John D. Heikes, d.b.a. John Heikes & Associates, Inc., Corona Del Mar, Calif. Filed Nov. 21, 1966.

BLACK-OUT BINGO

The word "Bingo" is disclaimed apart from the mark as shown.
For Promoting the Sale of Goods of Retailers and Producers to Consumers Through the Organization and Offering of a Bingo Contest.
First use Apr. 5, 1966.

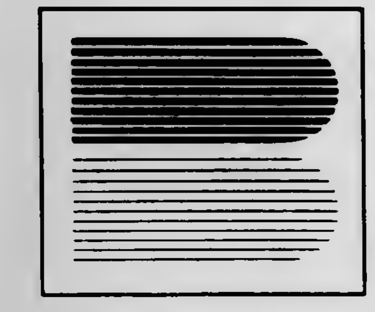
SN 261,269. Acme Markets, Inc., Philadelphia, Pa. Filed Dec. 22, 1966.



The words "Food Mart" are disclaimed apart from the mark as shown.
For Retail Grocery Store Services.
First use Dec. 12, 1966.

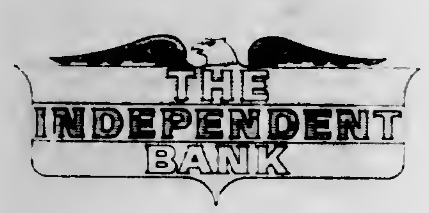
Class 102 — Insurance and Financial

SN 257,816. Bache & Co. Incorporated, New York, N.Y. Filed Nov. 3, 1966.



The lining appearing on the drawing is a part of the mark and does not signify color. The mark consists of the letter "B" design.
For Broker-Dealer Services in Securities and Commodities.
First use Oct. 22, 1966.

SN 258,542. The Independent Bank, Anaheim, Calif. Filed Nov. 14, 1966.



The drawing is lined for the colors red, blue and gold, but no claim is made to such colors.
For Banking Services.
First use Nov. 16, 1964.

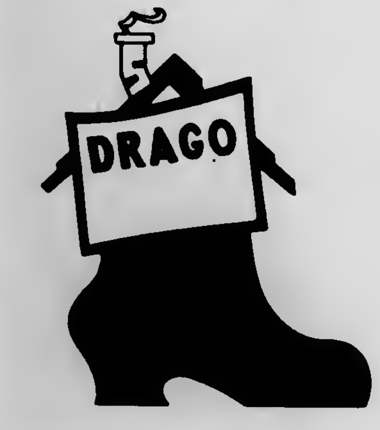
SN 260,238. Cemetery Care Investment Fund, Inc., Chicago, Ill. Filed Dec. 7, 1966.

"CEMITRUST"

For Operating a Mutual Investment Fund Exclusively for Cemetery Care Trusts.
First use Oct. 5, 1966.

Class 103 — Construction and Repair

SN 246,667. Drago Operating Corp., New York, N.Y. Filed May 26, 1966.



The representation of the shoe is disclaimed apart from the mark as shown.
For Shoe Repairing Services.
First use Apr. 21, 1961.

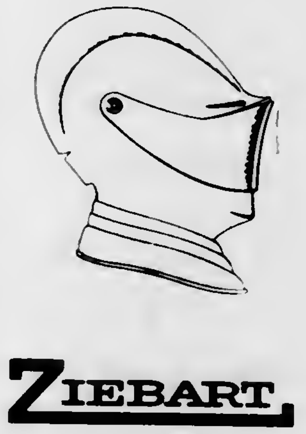
SN 260,766. Daniel Rachefsky, d.b.a. Custom Drapery Cleaners Division of Fresh Cleaners, Washington, D.C. Filed Dec. 14, 1966.

DRAPE RITE

Without relinquishing any of his common law rights, applicant disclaims exclusive right to use of the word "Drape" except in the combination shown.
For Removal, Cleaning, Repairing, and Hanging of Draperies.
First use June 28, 1965.

Class 106 — Material Treatment

SN 237,776. Ziebart Process Corp., Detroit, Mich. Filed Feb. 1, 1966.



For Rustproofing Services for Vehicles.
First use on or before Nov. 1, 1963.

SN 252,077. Howard Dearborn Incorporated, Berea, Ohio. Filed Aug. 10, 1966.

BORECENTRIC

For Precision Machining—Namely, Drilling, Boring, and Honing to the Specification of Others.
First use June 1961.

Class 107 — Education and Entertainment

SN 246,909. The Monarchs, Tucker, Ga. Filed May 31, 1966.

THE MONARCHS

For Musical Entertainment Services.
First use May 16, 1965.

SN 249,928. Action Productions Inc., Atlanta, Ga. Filed July 11, 1966.

ACTION

For Managing and Booking Entertainers.
First use June 30, 1964.

SN 261,408. Storz Broadcasting Co., Omaha, Nebr. Filed Dec. 23, 1966.

BIG KAHUNA

For Title of a Radio Entertainment Program.
First use Feb. 1, 1965.

SN 261,768. Eugene Hughes, Cincinnati, Ohio. Filed Dec. 19, 1966.

THE CASINOS

For Entertainment Services in the Form of Orchestral and Vocal Renditions.
First use January 1962.

SN 276,206. Frank Cariola, Brooklyn, N.Y. Filed July 19, 1967.

THE IN-SEX

For Entertainment Services in the Form of Popular Music Rendered by a Vocal Group.
First use June 28, 1967.

COLLECTIVE MEMBERSHIP MARKS

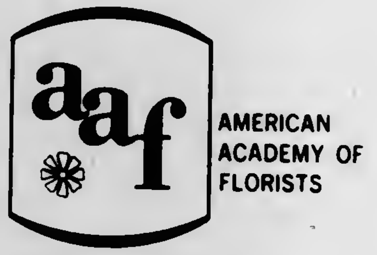
Class 200

SN 235,221. Outward Bound, Inc., Andover, Mass. Filed Dec. 23, 1965.

OUTWARD BOUND

For Indicating Membership.
First use on or about June 16, 1961.

SN 242,853. Society of American Florists and Ornamental Horticulturists, Washington, D.C. Filed Apr. 6, 1966.



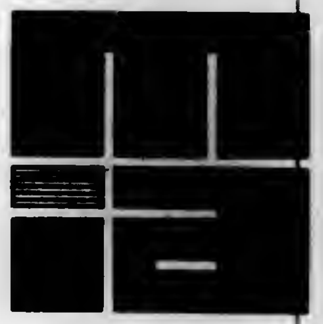
For Indicating Membership in a Selected Group Drawn From the Membership of the Applicant.
First use Nov. 18, 1965.

SN 252,488. Omega Phi Alpha—Voluntary Association, Bowling Green, Ohio. Filed Aug. 16, 1966.

OMEGA PHI ALPHA

For Indicating Membership in the Applicant.
First use 1953.

SN 258,237. Marble Institute of America, Inc., Washington, D.C. Filed Nov. 8, 1966.



The drawing is lined for the color blue.
For Indicating Membership in Applicant.
First use Aug. 3, 1966.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

838,982. PRENYL. Otho Shoes, Inc. MULTIPLE CLASS (Classes 1 and 44). SN 250,417. Pub. 9–5–67. Filed 7–29–66.

838,983. CYCOLLOY. Borg-Warner Corporation. SN 251,183. Pub. 9–5–67. Filed 7–28–66.

838,984. ABSAGLAS. Rexall Drug and Chemical Company, assignee of Fiberfil, Inc. SN 251,412. Pub. 9–5–67. Filed 8–1–66.

838,985. CYCOLOY. Borg-Warner Corporation. SN 258,484. Pub. 9–5–67. Filed 11–14–66.

838,986. TETRALOY. Whitford Chemical Corporation. SN 258,636. Pub. 9–5–67. Filed 11–14–66.

838,987. HERCLOR. Hercules Incorporated. SN 258,811. Pub. 9–5–67. Filed 11–16–66.

838,988. SOMMERSOC. Sommers of Puerto Rico, Inc. SN 259,678. Pub. 9–5–67. Filed 11–29–66.

Class 2—Receptacles

838,989. PREVAL. Precision Valve Corporation. MULTIPLE CLASS (Classes 2 and 13). SN 242,171. Pub. 9–5–67. Filed 3–29–66.

838,990. HI-HEAT AND DESIGN. Plastics, Inc. SN 252,413. Pub. 9–5–67. Filed 8–15–66.

838,991. SPIN-A-BIN. Rubbermaid Incorporated. SN 252,421. Pub. 9–5–67. Filed 8–15–66.

838,992. BOOK BANK. National Metal Specialties, Inc. SN 252,881. Pub. 9–5–67. Filed 8–22–66.

838,993. BELLAMURA. Rexall Drug and Chemical Company, d.b.a. Syroco. MULTIPLE CLASS (Classes 2, 27, and 32). SN 254,420. Pub. 9–5–67. Filed 9–14–66.

838,994. TRIM TOTE. Longview Fibre Company. SN 256,848. Pub. 9–5–67. Filed 10–20–66.

838,995. DURALENE. Gould Products, Inc. SN 258,377. Pub. 9–5–67. Filed 11–10–66.

838,996. GATEWAY. International Paper Company. SN 258,544. Pub. 9–5–67. Filed 11–14–66.

Class 5—Adhesives

838,997. SURE-LAG. Birma Products Corporation. SN 247,883. Pub. 9–5–67. Filed 6–13–66.

Class 6—Chemicals and Chemical Compositions

838,998. VYAC. American Cyanamid Company. SN 244,067. Pub. 6–27–67. Filed 4–22–66.

838,999. GOOD DAY. S and W Fine Foods, Inc., d.b.a. Equitable Cash Grocery Co. SN 244,528. Pub. 9–5–67. Filed 4–28–66.

839,000. FIBERCHEM AND DESIGN. Fiberchem, Inc. SN 253,297. Pub. 9–5–67. Filed 8–29–66.

839,001. MISCELLANEOUS DESIGN. De Laire, Inc. SN 257,040. Pub. 9–5–67. Filed 10–24–66.

839,002. AQUAFLUOR. Pilot Chemicals, Inc., by assignment and change of name from Pilot Chemicals, Inc. SN 259,465. Pub. 9–5–67. Filed 11–25–66.

839,003. AIR-TAME. Glor Associates, Incorporated. SN 261,836. Pub. 9–5–67. Filed 1–3–67.

839,004. MMF AND DESIGN. Micro-Metals Compounds Ltd. SN 261,862. Pub. 9–5–67. Filed 1–3–67.

839,005. MMC AND DESIGN. Micro-Metals Compounds Ltd. SN 261,863. Pub. 9–5–67. Filed 1–3–67.

839,006. HI-SPEC. Diversified Chemical Products Corporation, d.b.a. Diversified Chemical Products Co. SN 262,480. Pub. 9–5–67. Filed 1–13–67.

839,007. ALPEROX. Wallace & Tiernan Inc. SN 262,526. Pub. 9–5–67. Filed 1–13–67.

839,008. LUPERCO. Wallace & Tiernan Inc. SN 262,527. Pub. 9–5–67. Filed 1–13–67.

839,009. LUPEROX. Wallace & Tiernan Inc. SN 262,528. Pub. 9–5–67. Filed 1–13–67.

839,010. HERB-A-TURF. Emhart Corporation. SN 264,925. Pub. 9–5–67. Filed 2–17–67.

839,011. ATREX. Geigy Chemical Corporation. SN 266,975. Pub. 6–13–67. Filed 3–17–67.

839,012. QUATICIDE NO. 34. Allied Mills, Inc. SN 269,154. Pub. 9–5–67. Filed 4–14–67.

839,013. TERMIL. Diamond Alkali Company. SN 273,575. Pub. 9–5–67. Filed 6–12–67.

Class 10—Fertilizers

839,014. FREE FLOW. Agway, Inc. SN 263,434. Pub. 7–25–67. Filed 1–27–67.

839,015. REGIM-8. International Minerals & Chemical Corporation. SN 272,890. Pub. 9–5–67. Filed 6–2–67.

Class 11—Inks and Inking Materials

839,016. MISCELLANEOUS DESIGN. Montblanc-Simplo GmbH. MULTIPLE CLASS (Classes 11 and 37). SN 268,268. Pub. 9–5–67. Filed 4–4–67.

Class 12—Construction Materials

839,017. BOYD ALUMINUM AND DESIGN. Boyd Aluminum Manufacturing Co. SN 246,439. Pub. 9–5–67. Filed 5–24–66.

839,018. AGGREFORM. Macnaughton-Brooks Limited. SN 246,701. Pub. 9–5–67. Filed 5–26–66.

839,019. "SPECTO-TONE." Rite-Way Coatings Co. SN 250,689. Pub. 9–5–67. Filed 7–20–66.

839,020. ROYALTY HOMES. Capital Industries, Inc. SN 253,207. Pub. 9–5–67. Filed 8–26–66.

839,021. TERRASEAL. Dow Corning Corporation. SN 253,287. Pub. 7–11–67. Filed 8–29–66.

839,022. ATTENU-LITE. Johns-Manville Corporation. SN 255,212. Pub. 9–5–67. Filed 9–27–66.

839,023. RAILGLASS. Blumcraft of Pittsburgh. SN 255,690. Pub. 9–5–67. Filed 10–4–66.

839,024. ORONITE. Chevron Chemical Company. SN 256,824. Pub. 9–5–67. Filed 10–20–66.

839,025. VINYLCRAFT. Johns-Manville Corporation. SN 256,845. Pub. 9-5-67. Filed 10-20-66.

839,026. APEX AND DESIGN. Apex Pool Equipment Corporation. SN 257,686. Pub. 9-5-67. Filed 11-1-66.

839,027. BLACK DEVIL. George Lewy, d.b.a. Cy-Lou Chemical Co. SN 257,716. Pub. 9-5-67. Filed 11-1-66.

839,028. ECONOSPAN. Automated Building Components, Inc. SN 273,356. Pub. 9-5-67. Filed 6-9-67.

839,029. 3M. Minnesota Mining and Manufacturing Company. SN 273,447. Pub. 9-5-67. Filed 6-9-67.

839,030. C200′. Caradco Incorporated. SN 274,383. Pub. 9-5-67. Filed 6-21-67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

838,989. (See Class 2 for this trademark.)

Class 14 — Metals and Metal Castings and Forgings

839,031. ZINCROMETAL. Diamond Alkali Company. SN 273,574. Pub. 9-5-67. Filed 6-12-67.

Class 16 — Protective and Decorative Coatings

839,032. INJECT-ALUM. Alco-Flex Corporation. SN 256,414. Pub. 9-5-67. Filed 10-14-66.

839,033. PLI-O-CROME. Hydralum Industries, Inc. SN 256,447. Pub. 9-5-67. Filed 10-14-66.

839,034. CRETAIN. Spramor Corporation of America. SN 256,774. Pub. 9-5-67. Filed 10-19-66.

839,035. PROTECTOLAC. Geo. B. Bent Co., Inc. SN 263,978. Pub. 9-5-67. Filed 2-3-67.

Class 18 — Medicines and Pharmaceutical Preparations

839,036. LABORATORIOS A. VOELKL AND DESIGN. Alfredo Voelkl. MULTIPLE CLASS (Classes 18, 45, and 46). SN 232,436. Pub. 9-5-67. Filed 11-9-65.

839,037. MONOCINE. Canadian Hoechst Limited, assignee of The National Laboratories Corporation. SN 248,511. Pub. 8-22-67. Filed 6-20-66.

839,038. STERI-AIDS. The Purdue Frederick Company. SN 255,125. Pub. 9-5-67. Filed 9-26-66.

839,039. SYTOBEX-H. Parke, Davis & Company. SN 256,231. Pub. 9-5-67. Filed 10-11-66.

839,040. SPACECAPS. Sandoz, Inc. SN 256,599. Pub. 9-5-67. Filed 10-17-66.

839,041. MICROPAQUETTE. Damancy & Company Limited, d.b.a. Damancy & Co. SN 256,653. Pub. 9-5-67. Filed 10-18-66.

839,042. TOPI-FREEZE. Southwestern Drug Corporation, d.b.a. Truett Laboratories. SN 257,416. Pub. 8-22-67. Filed 10-27-66.

839,043. MED-AIR. Southwestern Drug Corporation, d.b.a. Truett Laboratories. SN 257,420. Pub. 8-29-67. Filed 10-27-66.

839,044. MEDI-SORB. Veterinary Supply Depot Incorporated. SN 257,806. Pub. 9-5-67. Filed 11-2-66.

839,045. PREGOVA. Ortho Pharmaceutical Corporation. SN 258,568. Pub. 9-5-67. Filed 11-14-66.

839,046. P_3E_1. Person & Covey, Inc. SN 258,573. Pub. 9-5-67. Filed 11-14-66.

839,047. P_6E_1. Person & Covey, Inc. SN 258,574. Pub. 9-5-67. Filed 11-14-66.

839,048. MISCELLANEOUS DESIGN. Sterling Drug Inc. SN 258,727. Pub. 9-5-67. Filed 11-15-66.

839,049. NECROSUL. Merck & Co., Inc. SN 258,829. Pub. 9-5-67. Filed 11-16-66.

839,050. DURMASEPTIC. Durma Products Company. SN 259,094. Pub. 9-5-67. Filed 11-21-66.

839,051. ALBUSPAN. Parke, Davis & Company. SN 259,759. Pub. 9-5-67. Filed 11-30-66.

839,052. PABIZOL. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company. SN 260,080. Pub. 9-5-67. Filed 12-5-66.

839,053. CYSTOGRAFIN. E. R. Squibb & Sons, Inc. SN 272,681. Pub. 9-5-67. Filed 5-31-67.

Class 19 — Vehicles

839,054. TORCH (DESIGN). Champion Home Builders Co. SN 247,772. Pub. 9-5-67. Filed 6-10-66.

839,055. BLACK JACK MOONS. California Custom Accessories Mfg. Company. SN 250,635. Pub. 9-5-67. Filed 7-20-66.

839,056. PARAQUICK. Ste. E.F.A. Etudes et Fabrications Aeronautiques. SN 251,566. Pub. 9-5-67. Filed 8-2-66.

Class 20 — Linoleum and Oiled Cloth

839,057. DEBONAIR. Kentile Floors Inc. SN 267,950. Pub. 9-5-67. Filed 3-30-67.

839,058. ACCLAMATION. Congoleum-Nairn Inc. SN 268,867. Pub. 9-5-67. Filed 4-11-67.

839,059. LATINA TRAVERTINE. Congoleum-Nairn Inc. SN 270,898. Pub. 9-5-67. Filed 5-8-67.

Class 21 — Electrical Apparatus, Machines, and Supplies

839,060. ALCOSWITCH. Alco Electronic Products Inc. SN 239,574. Pub. 9-5-67. Filed 2-25-66.

839,061. GAMMA AND DESIGN. Dalamal & Sons, Inc. MULTIPLE CLASS (Classes 21 and 23). SN 241,319. Pub. 9-5-67. Filed 3-18-66.

839,062. DIALPATH. C.R.O. Engineering Co. Inc., assignee of Servodyne, Inc. MULTIPLE CLASS (Classes 21, 23, and 26). SN 248,279. Pub. 9-5-67. Filed 6-17-66.

839,063. STARTAC. Associated Electrical Industries Limited. SN 250,338. Pub. 9-5-67. Filed 7-15-66.

839,064. SWINGER. Universal Lamp Co., Inc. SN 252,698. Pub. 9-5-67. Filed 8-18-66.

839,065. TOWN AND COUNTRY AND DESIGN. Lighting Corporation of America, assignee of Lighting Corporation of America, d.b.a. Progress Lighting. SN 260,130. Pub. 8-15-67. Filed 12-6-66.

Class 22 — Games, Toys, and Sporting Goods

839,066. SKI-XER. Gordon Enterprises, Inc. SN 252,377. Pub. 9-5-67. Filed 8-15-66.

839,067. KAMAR. Kamar, Incorporated. SN 255,098. Pub. 7-25-67. Filed 9-26-66.

839,068. WELDUN. Weldun Engineering Corporation. SN 258,009. Pub. 9-5-67. Filed 11-4-66.

839,069. STRATA-BLOC. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 258,268. Pub. 9-5-67. Filed 11-8-66.

839,070. MOONBEAMS. American Character, Inc. SN 258,467. Pub. 9-5-67. Filed 11-14-66.

839,071. FINALIST. South Bend Tackle Company Inc. SN 259,861. Pub. 9-5-67. Filed 12-1-66.

839,072. COUGAR. Aimcee Wholesale Corporation, assignee of Poly Golf Inc. SN 259,960. Pub. 9-5-67. Filed 12-5-66.

839,073. BIG SCOOP. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 260,121. Pub. 9-5-67. Filed 12-2-66.

839,074. MEATGETTER. Albert B. Gross, d.b.a. Parrish Bass Lures. SN 260,427. Pub. 9-5-67. Filed 12-9-66.

839,075. FUTURE. Kaiser Aluminum & Chemical Corporation. SN 260,750. Pub. 9-5-67. Filed 12-14-66.

839,076. SD. Zippo Manufacturing Company. SN 260,902. Pub. 9-5-67. Filed 12-15-66.

839,077. GREENBRIAR. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 261,549. Pub. 9-5-67. Filed 12-27-66.

839,078. BLACK HEATHER. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 261,550. Pub. 9-5-67. Filed 12-27-66.

839,079. GOOD GUYS. Festival Products Incorporated. SN 261,830. Pub. 9-5-67. Filed 1-3-67.

839,080. THUMBSY. The Fuller Brush Company. SN 262,036. Pub. 9-5-67. Filed 1-6-67.

839,081. SUPER 100. Eldon Industries, Inc. SN 270,851. Pub. 9-5-67. Filed 5-8-67.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

839,061. (See Class 21 for this trademark.)

839,062. (See Class 21 for this trademark.)

839,082. INSTA-MATIC. Dakoma International Corporation. SN 240,264. Pub. 9-5-67. Filed 3-7-66.

839,083. HAND (DESIGN). Fiber Controls Corporation. SN 241,775. Pub. 6-20-67. Filed 3-24-66.

839,084. CHEM-MIX. Chematic Equipment Corp. SN 242,713. Pub. 9-5-67. Filed 4-5-66.

839,085. TREE MONKEY. Fichtel & Sachs Aktiengesellschaft. SN 246,767. Pub. 9-5-67. Filed 5-27-66.

839,086. EASY-SEAL. Hoerner-Waldorf Corporation, by change of name from Hoerner Boxes, Inc. SN 248,039. Pub. 9-5-67. Filed 6-14-66.

839,087. FERT-I-LOAD. The Hamby Company. SN 250,156. Pub. 9-5-67. Filed 7-13-66.

839,088. THREAD MOLDING TOOL (DESIGN). Republic Industrial Corporation. SN 257,653. Pub. 9-5-67. Filed 10-31-66.

839,089. LIQUI-FLATE. Chicago Pneumatic Tool Company. SN 257,692. Pub. 9-5-67. Filed 11-1-66.

839,090. SPARTAN. General Fire Extinguisher Corp. SN 257,778. Pub. 9-5-67. Filed 11-2-66.

839,091. STYLIZED GS. Universal Controls, Inc. SN 257,901. Pub. 9-5-67. Filed 11-3-66.

839,092. C-B-TEX. Textile Machine Works. SN 258,002. Pub. 9-5-67. Filed 11-4-66.

839,093. NEST PAK. Anchor Steel & Conveyor Company. SN 258,031. Pub. 9-5-67. Filed 11-7-66.

839,094. RAP/ROUND. International Paper Company. SN 258,233. Pub. 9-5-67. Filed 11-8-66.

839,095. CHIEF. Jacobsen Manufacturing Company. SN 258,381. Pub. 9-5-67. Filed 11-10-66.

839,096. JACOBSEN. Jacobsen Manufacturing Company. SN 258,384. Pub. 9-5-67. Filed 11-10-66.

839,097. WELDON AND DESIGN. The Weldon Tool Company. SN 258,432. Pub. 9-5-67. Filed 11-10-66.

839,098. MAVERICK. Gidon Industries Limited. SN 258,806. Pub. 9-5-67. Filed 11-16-66.

839,099. THRUSH. Gidon Industries Limited. SN 258,807. Pub. 9-5-67. Filed 11-16-66.

839,100. ROTO-GRIP. Product Development Laboratories, Inc. SN 259,019. Pub. 9-5-67. Filed 11-18-66.

839,101. A AND DESIGN. Albritton Engineering Corporation. SN 259,065. Pub. 9-5-67. Filed 11-21-66.

839,102. ALENCO. Albritton Engineering Corporation. SN 259,066. Pub. 9-5-67. Filed 11-21-66.

839,103. PLATE-O-MATIC. Wood Newspaper Machinery Corporation. SN 269,136. Pub. 9-5-67. Filed 4-18-67.

Class 26 — Measuring and Scientific Appliances

839,062. (See Class 21 for this trademark.)

839,104. NIKONOS. Nikon, Inc., assignee, by mesne assignment, of Nippon Kogaku Kabushiki Kaisha. SN 174,602. Pub. 9-5-67. Filed 8-7-63.

839,105. SPEED-X-CASSETTE. General Aniline & Film Corporation. SN 224,412. Pub. 9-5-67. Filed 7-28-65.

839,106. NIKKORMAT. Nikon, Inc., assignee, by mesne assignment, of Nippon Kogaku Kabushiki Kaisha. SN 233,380. Pub. 9-5-67. Filed 11-26-65.

839,107. SERVOMETRIC. Honeywell Inc. SN 239,626. Pub. 9-5-67. Filed 2-25-66.

839,108. STAEDTLER. J. S. Staedtler. MULTIPLE CLASS (Classes 26, 29, and 37). SN 241,195. Pub. 9-5-67. Filed 3-16-66.

839,109. ACTO. Systron-Donner Corporation. SN 242,067. Pub. 9-5-67. Filed 3-28-66.

839,110. SERVI SIGNAL AND DESIGN. Donaldson Company, Inc. SN 246,458. Pub. 9-5-67. Filed 5-24-66.

839,111. MINITROL. E. W. Bliss Company. SN 247,478. Pub. 9-5-67. Filed 6-7-66.

839,112. LEAKATOR. Bacharach Industrial Instrument Company. SN 252,717. Pub. 9-5-67. Filed 8-19-66.

839,113. SUNGLASSES OF THE STARS. Foster Grant Co., Inc. SN 253,303. Pub. 9-5-67. Filed 8-29-66.

839,114. GIRL AND DOG (DESIGN). Plough, Inc. SN 255,918. Pub. 9-5-67. Filed 10-6-66.

839,115. FISH (DESIGN). Sternco Industries, Inc. SN 257,530. Pub. 9-5-67. Filed 10-28-66.

839,116. KOR/VAL. Spartans Industries, Inc. SN 260,282. Pub. 8-15-67. Filed 12-7-66.

Class 27 — Horological Instruments

838,993. (See Class 2 for this trademark.)

839,117. ROAMER SPOTLIGHT. Roamer Watch Co. S.A. SN 250,030. Pub. 9-5-67. Filed 7-11-66.

839,118. ROAMER STINGRAY. Roamer Watch Co. S.A. SN 250,031. Pub. 9-5-67. Filed 7-11-66.

839,119. STINGRAY. Roamer Watch Co. S.A. SN 250,032. Pub. 9-5-67. Filed 7-11-66.

839,120. SPOTLIGHT. Roamer Watch Co. S.A. SN 250,033. Pub. 9-5-67. Filed 7-11-66.

839,121. ROAMER RED SEA. Roamer Watch Co. S.A. SN 250,034. Pub. 9-5-67. Filed 7-11-66.

839,122. RED SEA. Roamer Watch Co. S.A. SN 250,174. Pub. 9-5-67. Filed 7-13-66.

839,123. MISCELLANEOUS DESIGN. Roamer Watch Co. S.A. SN 250,175. Pub. 9-5-67. Filed 7-13-66.

Class 29 — Brooms, Brushes, and Dusters

839,108. (See Class 26 for this trademark.)

Class 31 — Filters and Refrigerators

839,124. TRAVEL ICE. Linco Products Company, Inc., assignee of Linco Products Co. SN 232,325. Pub. 9–5–67. Filed 11–8–65.

Class 32 — Furniture and Upholstery

838,993. (See Class 2 for this trademark.)

839,125. THE STORE ON THE FLOOR. The Puritan Sportswear Corp. SN 215,005. Pub. 9–5–67. Filed 3–25–65.

839,126. SCOTSMAN. Slick Industrial Company, d.b.a. Illinois Shade Division of Slick Industrial Company. SN 240,211. Pub. 7–4–67. Filed 3–4–66.

839,127. FOLDABED. Lear Siegler, Inc., assignee of American Metal Products Company. SN 256,810. Pub. 9–5–67. Filed 10–20–66.

Class 33 — Glassware

839,128. AMERICANA DELFT. Gemco-Ware, Inc. SN 233,336. Pub. 6–20–67. Filed 11–26–65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

839,129. BARTSEAL. Barton Corporation. SN 242,546. Pub. 9–5–67. Filed 4–4–66.

839,130. P & H WIREMATIC. Harnischfeger Corporation. SN 256,939. Pub. 9–5–67. Filed 10–21–66.

839,131. FISH (DESIGN). Sternco Industries, Inc. SN 257,532. Pub. 9–5–67. Filed 10–28–66.

839,132. HEARTH-SHOPPE-PRODUCTS-CO. SAF-T GRATE. Robert H. Taylor, d.b.a. Hearth Shoppe Products Co. SN 267,201. Pub. 9–5–67. Filed 3–20–67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

839,133. JET COMMERCIAL. The General Tire & Rubber Company. SN 237,108. Pub. 9–5–67. Filed 1–24–66.

839,134. POWER-SET. The General Tire & Rubber Company. SN 262,161. Pub. 9–5–67. Filed 1–9–67.

839,135. SPIROIL. Federal-Mogul Corporation. SN 262,824. Pub. 9–5–67. Filed 1–11–67.

Class 36 — Musical Instruments and Supplies

839,136. MAJESTIC MIGHTY MONARCH OF THE AIR AND DESIGN. Hudson Ross, Inc. SN 219,994. Pub. 9–5–67. Filed 5–28–65.

839,137. RECORDIO. Hudson Ross, Inc. SN 219,995. Pub. 9–5–67. Filed 5–28–65.

839,138. WILKOX-GAY. Hudson Ross, Inc. SN 219,996. Pub. 9–5–67. Filed 5–28–65.

839,139. AUTIO-GUIDE. James F. Power, d.b.a. Autio Guide. SN 239,314. Pub. 9–5–67. Filed 2–21–66.

839,140. QUINT-O-FONE. Rodale Press, Inc. SN 248,586. Pub. 9–5–67. Filed 4–15–66.

839,141. RB AND DESIGN. Robert Brilhart, d.b.a. Robert Brilhart Co. SN 252,637. Pub. 9–5–67. Filed 8–18–66.

839,142. DUKE AND DESIGN. Lo Duca Bros. Musical Instruments Inc. SN 252,740. Pub. 9–5–67. Filed 8–19–66.

839,143. PLAYTAPE. Playtape, Inc. SN 253,983. Pub. 9–5–67. Filed 9–7–66.

839,144. PT. Playtape, Inc. SN 253,984. Pub. 9–5–67. Filed 9–7–66.

839,145. MONTILLA AND DESIGN. Spanish World Records, Inc. SN 255,651. Pub. 9–5–67. Filed 10–3–66.

839,146. RCA CAMDEN. Radio Corporation of America. SN 255,722. Pub. 9–5–67. Filed 10–4–66.

Class 37 — Paper and Stationery

839,016. (See Class 11 for this trademark.)

839,108. (See Class 26 for this trademark.)

839,147. IDENTA-DRINK. Joseph Mack Associates, Incorporated. SN 256,561. Pub. 9–5–67. Filed 10–17–66.

839,148. TRADE MARKER. Micropoint, Inc. SN 256,576. Pub. 9–5–67. Filed 10–17–66.

839,149. JOREDCO. Joseph Redegeld & Co., Inc. SN 258,245. Pub. 9–5–67. Filed 11–8–66.

839,150. 3 IN 1. Dental Printing Co., Inc. SN 259,647. Pub. 9–5–67. Filed 11–29–66.

839,151. HOLIDAY TIME. Straubel Paper Company. SN 259,863. Pub. 9–5–67. Filed 12–1–66.

839,152. VITAWRAP. The Goodyear Tire & Rubber Company. SN 260,546. Pub. 9–5–67. Filed 12–12–66.

839,153. VITAPAK. The Goodyear Tire & Rubber Company. SN 260,547. Pub. 9–5–67. Filed 12–12–66.

839,154. TELEMARK. Simpson Lee Paper Company. SN 260,890. Pub. 9–5–67. Filed 12–15–66.

839,155. TWIN WIRE. Westab Inc. SN 260,979. Pub. 9–5–67. Filed 12–16–66.

839,156. 3M. Minnesota Mining and Manufacturing Company. SN 265,953. Pub. 9–5–67. Filed 3–6–67.

839,157. SURF-LITE. St. Joe Paper Company. SN 268,654. Pub. 9–5–67. Filed 4–10–67.

839,158. SHADO-BRITE. St. Joe Paper Company. SN 268,655. Pub. 9–5–67. Filed 4–10–67.

839,159. THRIFTLINE. Binney & Smith Inc. SN 272,557. Pub. 9–5–67. Filed 5–29–67.

839,160. BINNEY & SMITH THRIFTLINE. Binney & Smith Inc. SN 272,558. Pub. 9–5–67. Filed 5–29–67.

Class 38 — Prints and Publications

839,161. ARKHAM HOUSE: PUBLISHERS AH AND DESIGN. August Derleth, d.b.a. Arkham House: Publishers. SN 245,572. Pub. 9–5–67. Filed 5–13–66.

839,162. MARCONI'S INTERNATIONAL REGISTER. Telegraphic Cable and Radio Registrations, Inc. SN 246,402. Pub. 9–5–67. Filed 5–23–66.

839,163. THE FAMILY BANKER. Continental Illinois National Bank and Trust Company of Chicago. SN 247,581. Pub. 9–5–67. Filed 6–8–66.

839,164. DIAL-A-ISLE. Dial-A-Isle Corporation. SN 248,601. Pub. 9–5–67. Filed 6–21–66.

839,165. MAI-KAI. Mai-Kai, Inc., d.b.a. Mai-Kai Restaurant. SN 249,545. Pub. 9–5–67. Filed 7–5–66.

839,166. TRADE ASSOCIATION LAW DIGEST. George P. Lamb and Carrington Shields. SN 250,584. Pub. 9–5–67. Filed 7–19–66.

839,167. GREAT SEAL UNIVERSITY OF MIAMI ETC. AND SEAL DESIGN. University of Miami, d.b.a. The University of Miami. SN 250,611. Pub. 9–5–67. Filed 7–19–66.

839,168. AUTOMOBILE INTERNATIONAL/FLEET INTERNATIONAL AUTOGRAM. McGraw-Hill, Inc. SN 252,674. Pub. 9–5–67. Filed 8–18–66.

839,169. HISTORAMA. Yankee Colour Corporation. SN 254,642. Pub. 9–5–67. Filed 9–16–66.

839,170. PICTURES & POINTERS AND DESIGN. The Purse Company. SN 255,019. Pub. 9–5–67. Filed 9–23–66.

839,171. SEA SECRETS. The International Oceanographic Foundation. SN 256,097. Pub. 9–5–67. Filed 10–10–66.

839,172. SEA FRONTIERS. The International Oceanographic Foundation. SN 256,098. Pub. 9–5–67. Filed 10–10–66.

839,173. FDLI ETC. AND DESIGN. The Food and Drug Law Institute, Inc. SN 256,936. P[illegible] 9–5–67. Filed 10–21–66.

839,174. FUNSTERS. Norcross, Inc. SN 257,505. Pub. 9–5–67. Filed 10–28–66.

839,175. A YOUNG PIONEER BOOK. McGraw-Hill, Inc. SN 257,974. Pub. 9–5–67. Filed 11–4–66.

839,176. GROCERY MFR. The Butterick Company, Inc. SN 262,659. Pub. 9–5–67. Filed 1–17–67.

Class 39 — Clothing

839,177. MERRY-WEATHER. Elaine Brodsky. SN 219,819. Pub. 8–22–67. Filed 5–20–65.

839,178. HIGHLIGHTS OF PARIS. Chadbourn Gotham, Inc. SN 231,051. Pub. 9–5–67. Filed 10–22–65.

839,179. JUNIOR POLICE PATROL. Spatz Bros. Inc. SN 247,533. Pub. 9–5–67. Filed 6–7–66.

839,180. COUNTRY SCENE. Lane Bryant, Inc. SN 250,931. Pub. 9–5–67. Filed 7–25–66.

839,181. CHANCELLOR ROW. Glen Oaks Sales Co., Inc. SN 253,522. Pub. 9–5–67. Filed 8–31–66.

839,182. DORSEY LIFE GUARD. John E. Dorsey, d.b.a. John E. Dorsey Co. SN 254,262. Pub. 9–5–67. Filed 9–12–66.

839,183. STERN BROTHERS. Allied Stores Corporation. SN 254,656. Pub. 9–5–67. Filed 9–19–66.

839,184. CADBURY. Arthur Winer, Incorporated. SN 254,752. Pub. 5–23–67. Filed 9–19–66.

839,185. MAN IN SPORT. Baker Clothes, Inc. SN 255,183. Pub. 9–5–67. Filed 9–27–66.

839,186. MARCY GALE. Spartans Industries, Inc. SN 255,471. Pub. 9–5–67. Filed 9–29–66.

839,187. NOLDE. Kayser-Roth Corporation. SN 257,281. Pub. 9–5–67. Filed 10–26–66.

839,188. BEEKMAN SHIRTMAKERS. J. Freezer & Son, Inc. SN 257,953. Pub. 9–5–67. Filed 11–4–66.

839,189. ZIP SUIT AND DESIGN. Lion Uniform, Inc. SN 258,821. Pub. 9–5–67. Filed 11–16–66.

839,190. L'MISTY MISS. Rudin & Roth, Inc. SN 262,657. Pub. 7–11–67. Filed 1–17–67.

Class 40 — Fancy Goods, Furnishings, and Notions

839,191. CONTINENTAL. Fashion Tress, Inc. SN 223,298. Pub. 3–21–67. Filed 7–14–65.

839,192. THE BUMP'S GONE! Lady Kathy Corporation. SN 255,988. Pub. 9–5–67. Filed 10–7–66.

839,193. KNEE·O·GEO. Marketing/70. SN 256,673. Pub. 9–5–67. Filed 10–18–66.

839,194. PANIC BUTTON. Henry G. Anderson, d.b.a. Panic Button Company. SN 263,156. Pub. 9–5–67. Filed 1–24–67.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

839,195. BESMER AND DESIGN. Besmer Teppichfabrik Mertens K.G. SN 248,961. Pub. 9–5–67. Filed 6–27–66.

839,196. KNIT-PAK. Southern Mills, Inc. SN 250,044. Pub. 9–5–67. Filed 7–11–66.

839,197. FIBERCHEM AND DESIGN. Fiberchem, Inc. SN 253,296. Pub. 9–5–67. Filed 8–29–66.

839,198. DEBRON. Debron Carpets Limited. SN 256,530. Pub. 9–5–67. Filed 10–17–66.

839,199. SELVYT. English Sewing Limited. SN 256,730. Pub. 9–5–67. Filed 10–19–66.

839,200. STAGECOACH. Concord Fabrics Inc. SN 257,941. Pub. 9–5–67. Filed 11–4–66.

Class 43 — Thread and Yarn

839,201. BIM BAM. William Unger & Co. SN 269,487. Pub. 9–5–67. Filed 4–10–67.

Class 44 — Dental, Medical, and Surgical Appliances

838,982. (See Class 1 for this trademark.)

839,202. SURGILENE. American Cyanamid Company. SN 257,244. Pub. 7–25–67. Filed 10–26–66.

839,203. KOR/VAL. Spartans Industries, Inc. SN 260,463. Pub. 8–8–67. Filed 12–9–66.

839,204. DU PONT AND DESIGN. E. I du Pont de Nemours and Company. SN 272,783. Pub. 9–5–67. Filed 6–1–67.

839,205. ZIP-LOAD. Bio-Neering, Inc. SN 272,787. Pub. 9–5–67. Filed 6–1–67.

Class 45 — Soft Drinks and Carbonated Waters

839,036. (See Class 18 for this trademark.)

Class 46 — Foods and Ingredients of Foods

839,036. (See Class 18 for this trademark.)

839,206. MILKMAN. Foremost Dairies, Inc. SN 181,224. Pub. 9–1–64. Filed 11–15–63.

839,207. BEAVER. Jos. Schmid, d.b.a. Jos. Schmid Co. SN 196,724. Pub. 9–5–67. Filed 6–29–64.

839,208. CIRCLES WITHIN RECTANGLE (DESIGN). Nibb-It Corporation of America, assignee of Bell Brand Foods, Ltd. SN 197,658. Pub. 9–5–67. Filed 7–13–64.

839,209. UNICO BRAND AND DESIGN. United Coconut Corporation. SN 217,681. Pub. 9–5–67. Filed 4–29–65.

839,210. HILLS BROS AND DESIGN. Hills Bros. Coffee, Inc. SN 237,117. Pub. 9–5–67. Filed 1–24–66.

839,211. PACKAGE WITH HILLS BROS AND ARAB FIGURE WITH OVAL DESIGN. Hills Bros. Coffee, Inc. SN 237,121. Pub. 9–5–67. Filed 1–24–66.

839,212. PACKAGE AND CROWN DESIGN. Hills Bros. Coffee, Inc. SN 237,122. Pub. 9–5–67. Filed 1–24–66.

839,213. W AND DESIGN. Wells Dairies Cooperative. SN 240,397. Pub. 9–5–67. Filed 3–7–66.

839,214. ALPHY ACME ALPHA BETA AND DESIGN. Acme Markets, Inc. SN 241,616. Pub. 9–5–67. Filed 3–23–66.

839,215. KITCHEN BEST. Hayden Flour Mills. SN 251,059. Pub. 9–5–67. Filed 7–26–66.

839,216. RUXCOTONE. Ruxford Laboratories, Inc. SN 251,154. Pub. 9–5–67. Filed 7–27–66.

839,217. RUXCOCHOC. Ruxford Laboratories, Inc. SN 251,156. Pub. 9–5–67. Filed 7–27–66.

839,218. RUXCAFE. Ruxford Laboratories, Inc. SN 251,158. Pub. 9–5–67. Filed 7–27–66.

839,219. CHEF TOP. Milk Proteins, Inc. SN 251,645. Pub. 9–5–67. Filed 8–3–66.

839,220. CHE-SEN. Arnold Bakers, Inc. SN 251,780. Pub. 9–5–67. Filed 8–5–66.

839,221. FIESTA. Standard Fruit and Steamship Company. SN 252,289. Pub. 9–5–67. Filed 8–12–66.

839,222. FIRST PICK AND DESIGN. The Fleming Co. Incorporated. SN 252,372. Pub. 9–5–67. Filed 8–15–66.

839,223. ROASTERETTE. Hales & Hunter Co. SN 252,573. Pub. 9–5–67. Filed 8–17–66.

839,224. JEL-CREME ROLLS. McKee Baking Company. SN 253,900. Pub. 9–5–67. Filed 9–6–66.

839,225. LE DELICE DE VITTEL. The Schratter Import Co. Inc. SN 254,194. Pub. 9–5–67. Filed 9–9–66.

839,226. BOUNTY. Mars Limited. SN 254,418. Pub. 5–16–67. Filed 9–6–66.

839,227. COLO-RONI. Capri Macaroni Corporation. SN 255,060. Pub. 9–5–67. Filed 9–26–66.

839,228. AFTER DINNER. Beatrice Foods Co. SN 259,296. Pub. 9–5–67. Filed 11–23–66.

839,229. ALPHABET. National Biscuit Company. SN 259,333. Pub. 9–5–67. Filed 11–23–66.

839,230. MOTHER'S. Mother's Cake & Cookie Co. SN 259,562. Pub. 9–5–67. Filed 11–28–66.

839,231. LORD MOTT'S AND DESIGN. Duffy-Mott Company, Inc. SN 259,648. Pub. 9–5–67. Filed 11–29–66.

839,232. "FLAV'R-BROWN." Evelyn M. Johnson, d.b.a. Morris Enterprises. SN 259,736. Pub. 9–5–67. Filed 11–30–66.

839,233. PET-A-BONE. Hudson National, Inc. SN 259,828. Pub. 9–5–67. Filed 12–1–66.

839,234. REDICEL. A. Duda & Sons Cooperative Association. SN 259,908. Pub. 9–5–67. Filed 12–2–66.

839,235. PERFIC-PAX. General Foods Corporation. SN 260,042. Pub. 9–5–67. Filed 12–5–66.

839,236. MEASU-RINGS. General Foods Corporation. SN 260,043. Pub. 9–5–67. Filed 12–5–66.

839,237. POT SHOTS. General Foods Corporation. SN 260,044. Pub. 9–5–67. Filed 12–5–66.

839,238. COFFEE-COUNTS. General Foods Corporation. SN 260,045. Pub. 9–5–67. Filed 12–5–66.

839,239. LAKE SIDE. Mildred F. Williams, d.b.a. Lake Side Aquarium. SN 260,114. Pub. 9–5–67. Filed 12–5–66.

839,240. APPLENOCKER. The Cheese Shop of West Hartford, Inc. SN 260,526. Pub. 9–5–67. Filed 12–12–66.

839,241. MONK (DESIGN). Abbey of the Genesee. SN 260,635. Pub. 9–5–67. Filed 12–13–66.

839,242. SKIPPY. Corn Products Company. SN 260,654. Pub. 9–5–67. Filed 12–13–66.

839,243. CORNADOS. General Mills, Inc. SN 260,658. Pub. 9–5–67. Filed 12–13–66.

839,244. NAMOLCO. National Molassea Company. SN 260,674. Pub. 9–5–67. Filed 12–13–66.

839,245. TWO PLUS TWO. Mother's Cake & Cookie Co. SN 260,758. Pub. 9–5–67. Filed 12–14–66.

839,246. KEN L RATION BIG DOG AND DESIGN. The Quaker Oats Company. SN 265,870. Pub. 9–5–67. Filed 3–3–67.

839,247. KEN L RATION TRAINING TABLE AND DESIGN. The Quaker Oats Company. SN 265,871. Pub. 9–5–67. 3–3–67.

839,248. AFFAIR AND DESIGN. R.G.B. Laboratories, Inc. SN 267,589. Pub. 9–5–67. Filed 3–27–67.

839,249. ENFAMIL NURSETTE. Mead Johnson & Company. SN 267,710. Pub. 9–5–67. Filed 3–28–67.

839,250. PANTRY SHELF. Faultless Starch Company. SN 267,935. Pub. 9–5–67. Filed 3–30–67.

839,251. APPLES OF THE EARTH. Vasek and Kovar Potato Company, by change of name from Vasek-Kovar Potato Co. SN 268,925. Pub. 9–5–67. Filed 4–12–67.

839,252. TASTEMASTER. William H. Hall & Co., Inc. SN 274,142. Pub. 9–5–67. Filed 6–19–67.

839,253. HONEY - LOPE. Heggblade - Marguleas Co. SN 274,566. Pub. 9–5–67. Filed 6–23–67.

Class 47 — Wines

839,254. EL-AL. Distillerie Stock U.S.A. Ltd. MULTIPLE CLASS (Classes 47 and 49). SN 269,599. Pub. 9–5–67. Filed 4–20–67.

Class 48 — Malt Beverages and Liquors

839,255. PRIPPS. Pripp-Bryggerierna AB. SN 259,155. Pub. 9–5–67. Filed 11–21–66.

Class 49 — Distilled Alcoholic Liquors

839,254. (See Class 47 for this trademark.)

839,256. LIMITED RESERVE. J. T. S. Brown's Son Company, d.b.a. Executive Club Distilling Co. SN 243,835. Pub. 9–5–67. Filed 4–20–66.

839,257. ST. ELMO. Safeway Stores, Incorporated, assignee of Bohemian Distributing Company, d.b.a. International Distilleries Co. SN 255,058. Pub. 9–5–67. Filed 9–26–66.

839,258. CARNABY'S INNE. Star Industries, Inc. SN 255,474. Pub. 9–5–67. Filed 9–29–66.

839,259. JOHN HANDY ESQUIRE. Sazerac Company, Inc., d.b.a. John Handy Co. SN 259,170. Pub. 9–5–67. Filed 11–21–66.

839,260. TUXEDO. Tuxedo Ltd. SN 259,356. Pub. 9–5–67. Filed 11–23–66.

Class 50 — Merchandise Not Otherwise Classified

839,261. FISH (DESIGN). Sternco Industries, Inc. SN 257,524. Pub. 9–5–67. Filed 10–28–66.

839,262. EXTENSO. American Garment Hanger Company, Incorporated. SN 257,812. Pub. 9–5–67. Filed 11–3–66.

839,263. SCULPT-ART. Eldon Industries, Inc. SN 270,852. Pub. 9–5–67. Filed 5–8–67.

Class 51 — Cosmetics and Toilet Preparations

839,264. FADO. Jack Fraley Bermond. SN 244,183. Pub. 9–5–67. Filed 4–25–66.

839,265. TAN-IN-A-MINUTE. Helena Rubinstein, Inc. SN 250,299. Pub. 9–5–67. Filed 7–14–66.

839,266. WAVE SHEEN CREAM. Helena Rubinstein, Inc. SN 250,303. Pub. 9–5–67. Filed 7–14–66.

839,267. SHINING LADY. John H. Breck, Inc. SN 252,343. Pub. 9–5–67. Filed 8–15–66.

839,268. I FEEL PRETTY. John H. Breck, Inc. SN 252,345. Pub. 9–5–67. Filed 8–15–66.

839,269. WILD FLOWERS OF MERRIE ENGLAND. Manufacturers Marketing Co., U.S.A. Inc. SN 253,225. Pub. 9–5–67. Filed 8–26–66.

839,270. LAURA PRESTON. Duvidell Sales Corporation. SN 253,506. Pub. 9–5–67. Filed 8–31–66.

839,271. ROBERTA DEAN. Duvidell Sales Corporation. SN 253,508. Pub. 9–5–67. Filed 8–31–66.

839,272. PRAETORIUS. Humphreys Medicine Company, Incorporated. SN 255,439. Pub. 9–5–67. Filed 9–29–66.

839,273. MISCELLANEOUS DESIGN. De Laire, Inc. SN 257,041. Pub. 9–5–67. Filed 10–24–66.

839,274. SULKA. A. Sulka & Company. SN 259,512. Pub. 9–5–67. Filed 11–28–66.

839,275. HURRICANE. Clairol Incorporated. SN 261,635. Pub. 9–5–67. Filed 12–29–66.

839,276. MISCELLANEOUS DESIGN. Sales Affiliates, Inc. SN 261,682. Pub. 9–5–67. Filed 12–29–66.

839,277. TOUCH-BACK. Clairol Incorporated. SN 262,317. Pub. 9–5–67. Filed 1–11–67.

839,278. CHARISMA. Avon Products, Inc. SN 263,007. Pub. 9–5–67. Filed 1–23–67.

839,279. CONQUOR. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 266,095. Pub. 9–5–67. Filed 3–6–67.

Class 52 — Detergents and Soaps

839,280. GOOD DAY. S and W Fine Foods, Inc., d.b.a. Equitable Cash Grocery Co. SN 244,527. Pub. 9–5–67. Filed 4–28–66.

839,281. DIAPER MAGIC. A. E. Staley Manufacturing Company. SN 246,818. Pub. 9–5–67. Filed 5–27–66.

839,282. LAURA PRESTON. Duvidell Sales Corporation. SN 253,507. Pub. 9–5–67. Filed 8–31–66.

839,283. ROBERTA DEAN. Duvidell Sales Corporation. SN 253,509. Pub. 9–5–67. Filed 8–31–66.

839,284. GOOF PROOF. Gojer, Inc. SN 254,872. Pub. 9–5–67. Filed 9–21–66.

839,285. WINDSOR SUPER DRI FOAM. Windsor Wax Co., Inc. SN 256,327. Pub. 9–5–67. Filed 10–12–66.

839,286. AERO. American Home Products Corporation. SN 258,468. Pub. 9–5–67. Filed 11–14–66.

839,287. TANK-GLO. Sea-Air Chemical Corporation. SN 259,767. Pub. 9–5–67. Filed 11–30–66.

839,288. ELECTROLOID. Madison Chemical Corporation. SN 260,260. Pub. 9–5–67. Filed 12–7–66.

839,289. CHARISMA. Avon Products, Inc. SN 263,008. Pub. 9–5–67. Filed 1–23–67.

839,290. DEPEND. American Home Products Corporation. SN 269,030. Pub. 9–5–67. Filed 4–13–67.

839,291. "OUTA SIGHT" AND DESIGN. The Goodwin Ammonia Company, d.b.a. The Goodwin Co. SN 274,140. Pub. 9–5–67. Filed 6–19–67.

Service Marks

Class 100 — Miscellaneous

839.292. SWEPCO. Southwestern Petroleum Corporation. SN 240,034. Pub. 9–5–67. Filed 3–2–66.

839,293. STOP LOSS. Texaco Inc. SN 240,679. Pub. 9–5–67. Filed 3–10–66.

839,294. RAMADA INN-STANT. Ramada Inns, Inc. SN 252,278. Pub. 9–5–67. Filed 8–12–66.

839,295. SPATS. The H. K. Ferguson Company. SN 255,499. Pub. 9–5–67. Filed 9–30–66.

839,296. EMBERS AND DESIGN. Embers of Washington, Inc. SN 256,933. Pub. 9–5–67. Filed 10–21–66.

839,297. LITTLE PIG (DESIGN). Arbaugh's Restaurant, Inc., d.b.a. Arbaugh's. SN 261,264. Pub. 9–5–67. Filed 12–22–66.

839,298. WESTWARD HO! Westward Ho! Restaurants, Inc. SN 272,449. Pub. 9–5–67. Filed 5–26–67.

Class 101 — Advertising and Business

839,299. MCA AND DESIGN. Motor Club of America. CONSOLIDATED CERTIFICATE. SN 158,089, pub. 8–25–64, filed 11–28–62, Cl. 101; SN 158,090, pub. 2–25–64, filed 11–28–62, Cl. 102; SN 158,091, pub. 2–25–64, filed 11–28–62, Cl. 105.

839,300. Z CRETE SPLAT AND DESIGN. Concrete Thermal Casings, Inc. MULTIPLE CLASS (Classes 101 and 103). SN 176,888. Pub. 9–5–67. Filed 9–13–63.

839,301. MAGIC BINGO. Bradfute Corporation. SN 238,832. Pub. 12–13–66. Filed 2–15–66.

839,302. MISS DIXIE BELLE AND DESIGN. Acme Premium & Supply Corp. SN 244,866. Pub. 9–5–67. Filed 5–4–66.

839,303. A–A. G. C. Murphy Company. SN 251,830. Pub. 9–5–67. Filed 8–5–66.

839,304. PRESTOLITH. Eastman Kodak Company. SN 258,077. Pub. 9–5–67. Filed 11–7–66.

839,305. PPP AND DESIGN. George Dary Philbrick, d.b.a. Philbrick Patent Personnel. SN 258,143. Pub. 9–5–67. Filed 11–7–66.

389,306. GEOCOM. Geophysics & Computer Services, Inc. SN 258,535. Pub. 9–5–67. Filed 11–14–66.

839,307. STORK CLUB AND DESIGN. The Stork Club, Inc. SN 267,763. Pub. 9–5–67. Filed 3–21–67.

Class 102 — Insurance and Financial

839,299. CONSOLIDATED CERTIFICATE. See Class 101.

839,308. CONGRESS. The Congress Company. SN 245,568. Pub. 9–5–67. Filed 5–13–66.

839,309. BEEHIVE (DESIGN). The New York Bank for Savings. SN 249,868. Pub. 9–5–67. Filed 7–8–66.

839,310. B AND DESIGN. Provident Life and Accident Insurance Company. SN 255,016. Pub. 9–5–67. Filed 9–23–66.

839,311. IDS AND DESIGN. Investors Syndicate Life Insurance and Annuity Company. SN 267,335. Pub. 9–5–67. Filed 3–22–67.

Class 103 — Construction and Repair

839,300. (See Class 101 for this trademark.)

839,312. FLAME AND SHIELD (DESIGN). Akron Sand Blast & Metallizing Co. SN 241,569. Pub. 9–5–67. Filed 3–22–66.

839,313. WATKINS SYSTEM. Watkins Motors. SN 250,707. Pub. 9–5–67. Filed 7–20–66.

839,314. MISCELLANEOUS DESIGN. Eastern Railroad Builders, Inc. SN 251,617. Pub. 9–5–67. Filed 8–3–66.

839,315. DIVERTAFRAC. The Dow Chemical Company. SN 253,859. Pub. 9–5–67. Filed 9–6–66.

839,316. GARVEY. Garvey Products Corporation. SN 265,867. Pub. 9–5–67. Filed 3–3–67.

Class 104 — Communication

839,317. THE TALK OF HOUSTON, KTRH. Rusk Corporation. SN 251,836. Pub. 9-5-67. Filed 8-5-66.

Class 105 — Transportation and Storage

839,299. CONSOLIDATED CERTIFICATE. See Class 101.

839,318. FIESTA RICO. Empress Travel Service Inc. SN 255,886. Pub. 9-5-67. Filed 10-6-66.

839,319. SANMAR. San Marino Travel Service, d.b.a. Sanmar Tours. SN 257,515. Pub. 9-5-67. Filed 10-28-66.

Class 106 — Material Treatment

839,320. TTE XTRA LIFE AND DESIGN. Texas Technical Enterprises, Inc. SN 244,039. Pub. 9-5-67. Filed 4-21-66.

Class 107 — Education and Entertainment

839,321. GREAT SEAL UNIVERSITY OF MIAMI ETC. AND DESIGN. University of Miami, d.b.a. The University of Miami. SN 250,610. Pub. 9-5-67. Filed 7-19-66.

839,322. KING LOUIE AND DESIGN. King Louie Bowling Corporation of Missouri. SN 252,580. Pub. 9-5-67. Filed 8-17-66.

839,323. DODGERS. Los Angeles Dodgers, Inc. SN 252,670. Pub. 9-5-67. Filed 8-18-66.

839,324. DODGERS (SCRIPT FORM). Los Angeles Dodgers, Inc. SN 252,671. Pub. 9-5-67. Filed 8-18-66.

839,325. PHILLIES. The Philadelphia National League Club. SN 255,349. Pub. 9-5-67. Filed 9-28-66.

839,326. P. The Philadelphia National League Club. SN 255,350. Pub. 9-5-67. Filed 9-28-66.

839,327. MUSIC CITY U.S.A. Show Biz, Inc. SN 258,257. Pub. 9-5-67. Filed 11-8-66.

Collective Membership Marks

Class 200

839,328. MCRA INTERNATIONAL AND DESIGN. J. Warren Hull and Associates. SN 223,555. Pub. 9-5-67. Filed 7-16-65.

839,329. R AND DESIGN. The Rinkeydinks, Inc. SN 253,559. Pub. 9-5-67. Filed 8-31-66.

839,330. NATIONAL ASSOCIATION FROZEN FOOD PACKERS AND DESIGN. National Association of Frozen Food Packers. SN 254,060. Pub. 9-5-67. Filed 9-8-66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptacles

839,331. Union Camp Corporation, New York, N.Y. SN 250,540. Filed P.R. 7-18-66; Am. S.R. 9-25-67.

SEW STRONG

For Paper Bags.
First use Nov. 7, 1958.

Class 6 — Chemicals and Chemical Compositions

839,332. McConnell Equipment Corporation, Pampa, Tex. SN 271,988. Filed P.R. 5-22-67; Am. S.R. 9-22-67.

"TEXAS-T"

For Dairy Oil Containing an Insecticide for the Control of Horn Flies and Face Flies on Lactating Dairy and Beef Cattle.
First use May 1, 1965.

839,333. Lever Brothers Company, New York, N.Y. SN 274,693. Filed 6-26-67.

DISINFEX

For Combination of Sanitizing Agents Incorporated as an Ingredient in a Disinfectant for Use in Household and Industry.
First use June 20, 1966.

Class 12 — Construction Materials

839,334. Coronis Framing Systems Incorporated, Yardville, N.J. SN 264,302. Filed P.R. 2-9-67; Am. S.R. 9-22-67.

TRUSSFRAME

For Structural Steel Columns and Posts.
First use on or about Oct. 3, 1962.

Class 18 — Medicines and Pharmaceutical Preparations

839,335. Arlan's Dept. Stores, Inc., New York, N.Y. SN 231,005. Filed P.R. 10-22-65; Am. S.R. 2-1-67.

Arlan's

For Saccharine Used for Medicinal Purposes, Infants' Suppositories, Adult Suppositories, Vitamins, Rubbing Alcohol, and Epsom Salt.
First use January 1962.

839,336. Haver-Lockhart Laboratories, Incorporated, Shawnee, Kans. SN 244,105. Filed P.R. 4-22-66; Am. S.R. 8-30-67.

PET KALORIE

For Food Supplement for Animals.
First use Oct. 12, 1965.

839,337. Masti-Kure Products Co., Norwich, Conn. SN 248,351. Filed P.R. 6-17-66; Am. S.R. 9-18-67.

LIQUID-BOL

For Base for Bolus for Animals.
First use as early as May 10, 1966.

Class 21 — Electrical Apparatus, Machines, and Supplies

839,338. Quartz Radiation Corp., Fairfield, N.J. SN 261,679. Filed P.R. 12-29-66; Am. S.R. 9-19-67.

SPECTRAL CONTROL LAMP

For Control Lamps.
First use June 15, 1966.

Class 22 — Games, Toys, and Sporting Goods

839,339. Chartered Enterprises, d.b.a. Superior Sports Specialties, San Fernando, Calif. SN 225,730. Filed P.R. 8-16-65; Am. S.R. 7-3-67.

RŌP-LOK

For Ski Tow Rope Connector or Hitch.
First use Mar. 22, 1965.

839,340. Meredith Publishing Company, Des Moines, Iowa. SN 251,829. Filed P.R. 8-5-66; Am. S.R. 9-15-67.

LANGUAGE LOTTO

For Educational Devices Comprising Boards and Printed Cards Sold as a Unit for Instruction in the English Language.
First use Jan. 25, 1966.

Class 37 — Paper and Stationery

839,341. Frank Muhly, d.b.a. Vacations Unlimited, Philadelphia, Pa. SN 244,842. Filed P.R. 5-3-66; Am. S.R. 9-19-67.

TravLog

For Travel Diary/Log Book.
First use Nov. 1, 1955.

Class 38 — Prints and Publications

839,342. Weldon, Williams and Lick, Inc., Fort Smith, Ark. SN 257,117. Filed P.R. 10-24-66; Am. S.R. 9-20-67.

Dry Seal

For Printed Stickers Used on Automobile Windshield and Other Transparent Surfaces.
First use September 1966.

839,343. Broadcasting Publications, Inc., Washington, D.C. SN 261,803. Filed 1-3-67.

BROADCAST ADVERTISING

For Section of a Periodical Publication.
First use Apr. 1, 1929.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

839,344. Rayflex Fabrics, Inc., New York, N.Y. SN 262,889. Filed 1-19-67.

TWIN-LUSTRE

For Woven Elastic Fabrics in the Piece, and Textile Fabrics in the Piece of Cotton, Rayon, Synthetic Fibres and Mixtures Thereof.
First use June 22, 1945.

Class 46 — Foods and Ingredients of Foods

839,345. Mary E. Stanley, Rockingham, N.C. SN 280,580. Filed P.R. 10-19-65; Am. S.R. 9-18-67.

CONE BURGER

For Edible Pastry Container for Food Products.
First use Sept. 21, 1963.

839,346. Marsh Supermarkets, Inc., Yorktown, Ind. SN 240,632. Filed P.R. 3-10-66; Am. S.R. 7-28-67.

TOP-TEND'R

For Fresh and Frozen Beef.
First use Dec. 18, 1965.

839,347. The Tilghman Packing Company, Tilghman, Md. SN 244,540. Filed P.R. 4-28-66; Am. S.R. 9-1-67.

COCKTAILS FOR 2

For Packaged Frozen Crabmeat, Oysters, Clams, and Shrimp in Cocktail Sauce.
First use Aug. 2, 1965.

839,348. Escalon Packers, Inc., Escalon, Calif. SN 245,800. Filed P.R. 5-10-66; Am. S.R. 9-14-67.

Tender-n-Ripe

For Canned Peaches.
First use 1949.

839,349. Doughboy Industries, Inc., New Richmond, Wis. SN 245,573. Filed P.R. 5-13-66; Am. S.R. 9-22-67.

Hi-Prime
Veal
FORMULA #325

For Milk Replacer Composition To Be Mixed With Water for Feeding Veal Calves.
First use on or about Apr. 13, 1966.

839,350. Anderson, Clayton & Co., Dallas, Tex. SN 246,246. Filed P.R. 5-23-66; Am. S.R. 8-28-67.

American

For Salad Dressing.
First use Mar. 3, 1966.

839,351. Pluz Products, d.b.a. Nutritional Foods Co., Los Angeles, Calif. SN 247,953. Filed P.R. 6-13-66; Am. S.R. 9-11-67.

DIET BREAKFAST

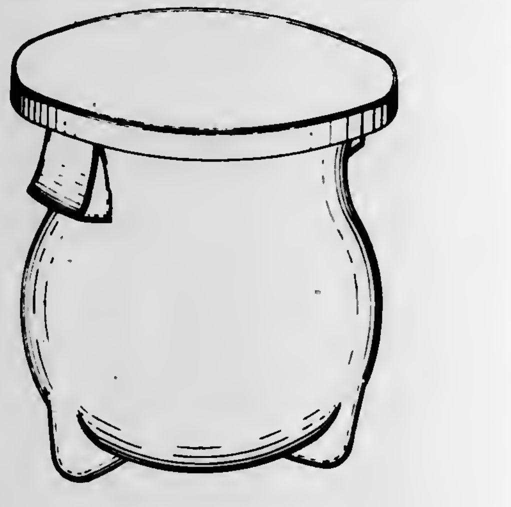
For Dehydrated Food in Powder Form To Be Mixed With Milk.
First use May 31, 1966.

839,352. The Quaker Oats Company, Chicago, Ill. SN 248,844. Filed P.R. 6-23-66; Am. S.R. 9-18-67.

SUPER CHIP

For Snack Crackers.
First use May 28, 1966.

839,353. Purity Cheese Company, Mayville, Wis. SN 250,999. Filed P.R. 7-25-66; Am. S.R. 9-20-67.



For Cheese.
First use July 6, 1964.

839,354. V-P Corn Products, Inc., North Hollywood, Calif. SN 251,519. Filed P.R. 8-2-66; Am. S.R. 9-26-67.

MASA MIXTA

The English equivalent of the words "Masa Mixta" is "mixed dough."
For Corn Flour, Corn Tortilla Flour, and Corn Chip Flour.
First use Jan. 1, 1965.

839,355. The Great Atlantic & Pacific Tea Company, Inc., New York, N.Y. SN 253,971. Filed P.R. 9-7-66; Am. S.R. 9-7-67.

Smooth
whip

For Dessert Topping Mix.
First use Sept. 27, 1965.

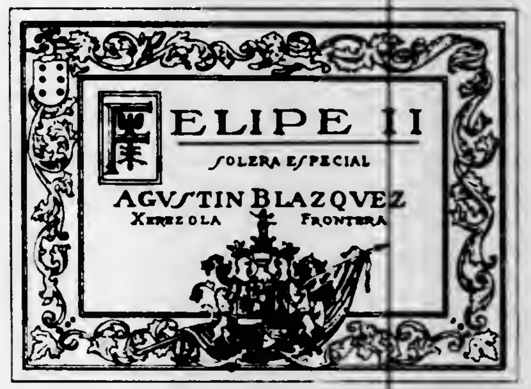
839,356. The Gorton Corporation, d.b.a. 4-Fishermen Seafoods, Gloucester, Mass. SN 266,533. Filed P.R. 3-13-67; Am. S.R. 7-27-67.

FISH KRISPS

For Frozen Fishcakes.
First use Sept. 14, 1965.

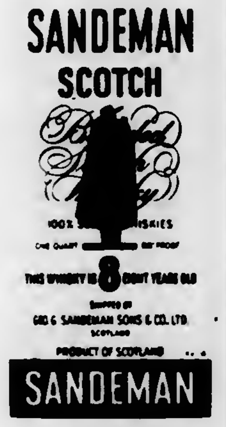
Class 49 — Distilled Alcoholic Liquors

839,357. Hijos de Agustin Blazquez, Cadiz, Spain. SN 218,867. Filed P.R. 5-14-65; Am. S.R. 1-9-67.



"Agustin Blazquez" was the founder of the firm, now deceased. Owner of Spanish Reg. No. 104,925, dated Dec. 3, 1955.
For Brandy.

839,358. Geo. G. Sandeman Sons & Co. Limited, London, England. SN 254,191. Filed 9-9-66.


SANDEMAN
SCOTCH
8
THIS WHISKY IS EIGHT YEARS OLD
GEO G. SANDEMAN SONS & CO. LTD
PRODUCT OF SCOTLAND
SANDEMAN

Owner of U.S. Reg. Nos. 64,221, 388,5[illegible]4, and others.
For Scotch Whisky.
First use June 30, 1965; in commerce June 30, 1965.

Class 51 — Cosmetics and Toilet Preparations

839,359. Invincible Products Corporation, Chicago, Ill. SN 244,328. Filed P.R. 4-26-66; Am. S.R. 9-22-67.

L'ORIGINALE

For Hand Cream and Hand and Body Lotion.
First use at least as early as September 1965.

839,360. Elizabeth Arden Sales Corporation, New York, N.Y. SN 244,454. Filed P.R. 4-28-66; Am. S.R. 9-29-67.

SEA ORCHID

For Lipsticks, Rouge and Nail Polish.
First use Jan. 28, 1966.

839,361. One Time Package Products, Inc., Stamford, Conn. SN 246,934. Filed P.R. 5-31-66; Am. S.R. 9-11-67.

ONE
T1ME

For Nail Polish Remover and Individually Packaged Premoistened Towelettes.
First use Apr. 18, 1966.

839,362. Revlon, Inc., New York, N.Y. SN 248,536. Filed P.R. 6-20-66; Am. S.R. 9-11-67.

WILD WILLOW

For Hair Coloring Preparations.
First use Apr. 20, 1966.

839,363. Eversharp, Inc., Milford, Conn. SN 256,798. Filed P.R. 10-20-66; Am. S.R. 9-19-67.

SAFE & DRY

For Anti-Perspirant Deodorants.
First use Sept. 8, 1966.

839,364. Bristol-Myers Company, New York, N.Y. SN 256,821. Filed P.R. 10-20-66; Am. S.R. 9-26-67.

AS RIGHT FOR ADULTS AS FLUORIDES ARE FOR KIDS

For Dentifrice.
First use Sept. 20, 1966.

Service Mark

Class 105 — Transportation and Storage

839,365. Israel Carmona, d.b.a. Unusual Tours, Buena Park, Calif. SN 239,224. Filed P.R. 2-21-66; Am. S.R. 8-24-67.

UNUSUAL TOURS . . .

For Providing Travel Tours.
First use June 1, 1964.

TRADEMARK REGISTRATIONS RENEWED

30,942. ODOL. Cl. 51. 12-7-1897.
65,207. CYCLONE. Cl. 23. 9-10-07.
65,425. PRINCESS. Cl. 44. 9-24-07.
65,691. INSULECTRIC. Cl. 16. 10-15-07.
67,002. THERMOS. Cl. 2. 1-7-08.
68,024. VICTOR. Cl. 46. 3-3-08.
68,037. CHARIOT (DESIGN). Cl. 46. 3-3-08.
134,317. GILLETTE. Cl. 23. 8-24-20.
223,040. HUDSON. Cl. 23. 6-11-27.
230,365. DANDRIX. Cl. 51. 7-19-27.
232,061. VI-JON. Cl. 51. 8-30-27.
232,959. MARCHIONESS. Cl. 39. 9-20-27.
233,017. CELANESE-LOCKNIT. Cl. 39. 9-20-27.
233,519. ESKIMO. Cl. 21. 10-4-27.
233,751. SILVERSTITCH. Cl. 14. 10-11-27.
233,846. CHAMPION BRAND AND DESIGN. Cl. 6. 10-11-27.
234,182. VULCALOK. Cl. 5. 10-18-27.
234,524. REPRESENTATION OF LIGHTHOUSE. Cl. 38. 11-1-27.
234,586. RUGBY RUGGED WEAR. Cl. 39. 11-1-27.
234,653. NOMA. Cl. 21. 11-1-27.
235,169. "FRO-JOY." Cl. 46. 11-15-27.
235,734. HOBBY. Cl. 46. 11-22-27.
236,018. HOOD AND DESIGN. Cl. 35. 11-29-27.
236,080. S SINGER SEWING MACHINES AND DESIGN. Cl. 23. 12-6-27.
236,245. "BLURING" AND DESIGN. Cl. 7. 12-6-27.
237,118. "MENNEN" AND PORTRAIT OF GERHARD MENNEN. Cl. 51. 1-3-28.
237,898. "MENNEN" AND PORTRAIT OF GERHARD MENNEN. Cl. 51. 1-17-28.
238,535. RICHARDSON'S. Cl. 46. 2-7-28.
239,871. PETER PIPER. Cl. 46. 3-13-28.
240,300. "HAPPY JACK" AND REPRESENTATION OF A BOY EATING PIE. Cl. 46. 3-20-28.
430,902. WITCHERY. Cl. 51. 7-1-47.
431,163. PENETRAL. Cl. 23. 7-15-47.
432,442. VICE VERSA. Cl. 51. 9-2-47.
433,000. NORTHERN KING. Cl. 46. 9-23-47.
433,014. WL AND DESIGN. Cl. 21. 9-23-47.
433,084. THE LAMP. Cl. 38. 9-23-47.
433,219. CROWN PRINCE. Cl. 51. 9-30-47.
433,220. CROWN PRINCESS. Cl. 51. 9-30-47.
433,324. CARAN-D'ACHE. Cl. 37. 10-7-47.
433,544. CONTRO. Cl. 42. 10-21-47.
433,673. S.O. AND DESIGN. Cl. 15. 10-28-47.
433,789. MIRANDA. Cl. 28. 10-28-47.
433,790. CANDIDA. Cl. 28. 10-28-47.
434,338. ASTROGRAPH. Cl. 27. 11-18-47.
434,440. PILARE. Cl. 18. 11-18-47.
434,578. GAYFIELDS. Cl. 46. 11-25-47.
434,789. PRESTONE. Cl. 15. 12-9-47.
434,826. ARMOWAX. Cl. 6. 12-9-47.
434,953. PANORAMIC. Cl. 19. 12-9-47.
435,236. CORDELIA. Cl. 39. 12-16-47.
435,327. JUDGES CAVE. Cl. 17. 12-16-47.
435,328. MUNIEMAKER. Cl. 17. 12-16-47.
435,722. REGISTRON. Cl. 21. 1-6-48.
435,746. CONVECTRON. Cl. 21. 1-6-48.
435,855. W-13. Cl. 46. 1-13-48.
436,189. TINOPAL. Cl. 6. 1-27-48.
436,274. HAPPINESS. Cl. 28. 1-27-48.
436,275. HARMONY. Cl. 28. 1-27-48.

436,276. HEIRESS. Cl. 28. 1–27–48.
436,277. JANET. Cl. 28. 1–27–48.
436,278. LARONNIE. Cl. 28. 1–27–48.
436,279. MALIBU. Cl. 28. 1–27–48.
436,280. MEADOWBROOK. Cl. 28. 1–27–48.
436,342. MCGOWAN. Cl. 23. 2–3–48.
436,373. CECO-DROP. Cl. 23. 2–3–48.
436,586. ACADEMY. Cl. 42. 2–10–48.
437,135. LOCKWOOD. Cl. 25. 3–9–48.
437,199. FLOTTA. Cl. 46. 3–9–48.
437,263. HYGROTON. Cl. 18. 3–9–48.
437,270. UNI-HARD. Cl. 6. 3–9–48.

TRADEMARK REGISTRATIONS CANCELED

Section 8

324,110. BEACHURST. Cl. 39. 5–14–35.
367,648. MENOPAX. Cl. 18. 5–23–39.
383,352. ADEL. Cl. 13. 12–3–40.
383,607. ADEL AND DESIGN. Cl. 13. 12–17–40.
388,301. GRIPZIP. Cl. 40. 6–17–41.
388,934. AMERICAN. Cl. 16. 7–15–41.
390,597. TOY MFRS. U.S.A. ETC. AND DESIGN. Cl. 38. 9–30–41.
391,040. STEELE'S CER AM-A-PAK AND DESIGN. Cl. 44. 10–21–41.
392,167. VEIN-X. Cl. 46. 12–16–41.
402,318. ISODRAULIC AND DESIGN. Cl. 13. 7–13–43.
434,499. MENOVO. Cl. 18. 11–18–47.

The following registrations issued Oct. 3, 1961

722,098. CUSH-N-FOAM. Cl. 1.
722,100. HERMITAGE. Cl. 1.
722,101. MARBON B-W CHEMICAL AND DESIGN. Cl. 1.
722,104. DURLAN. Cl. 2.
722,110. DREAM STARS. Cl. 3.
722,114. HOMART. Cl. 6.
722,120. JAL-A-SHADE. Cl. 12.
722,121. GROTESQUE FIGURE. Cl. 12.
722,125. TC. Cl. 13.
722,128. POTTY TUNE. Cl. 13.
722,130. DUTCH TULIP. Cl. 13.
722,132. GEOMETRICAL. Cl. 13.
722,133. PREST-MOUNT. Cl. 13.
722,134. PRESTAKE. Cl. 13.
722,137. PORTER-HAYDEN AND DESIGN. Cl. 13.
722,141. POLY CHEM AND DESIGN. Cl. 15.
722,150. DENTACEUTICAL. Cl. 18.
722,152. PROSERT. Cl. 18.
722,154. MUSARIL. Cl. 18.
722,157. PEN-VETSTREP 667. Cl. 18.
722,162. ISOPROMID. Cl. 18.
722,163. WYETH-PASTEUR AND DESIGN. Cl. 18.
722,167. DISULPHINE. Cl. 18.
722,169. CONOVID. Cl. 18.
722,170. W AND DESIGN. Cl. 19.
722,172. CONVERTA-FLAT. Cl. 19.
722,177. MERIDIAN. Cl. 19.
722,178. LOAD KING. Cl. 19.
722,181. BLU-CAP. Cl. 21.
722,183. ALPHOLITE. Cl. 21.
722,184. TELECTROVISION. Cl. 21.
722,188. NINES-OUT. Cl. 22.
722,192. REEL-A-LURE AND DESIGN. Cl. 22.
722,193. JUMPTY DUMPTY. Cl. 22.
722,196. RECARBER. Cl. 23.
722,198. MERIT. Cl. 23.
722,199. ROCKET SYSTEMS AND DESIGN. Cl. 23.
722,203. DRAG FAST. Cl. 23.
722,204. WHA-LITER COMBO AND DESIGN. Cl. 23.
722,206. IMPERIAL. Cl. 23.
722,207. PMS. Cl. 23.
722,208. GLYD-O. Cl. 23.
722,209. B-W BORG-WARNER, INGERSOLL PRODUCTS AND DESIGN. Cl. 23.
722,211. HYDRO-FRAM. Cl. 23.
722,220. DIAC. Cl. 27.
722,221. MR. DIAMOND AND DESIGN. Cl. 28.
722,224. S-P-A-C-E-MAKER BY ENGLANDER AND DESIGN. Cl. 32.
722,225. CUSH-N-FOAM. Cl. 32.
722,226. JENFRED-WAKE. Cl. 32.
722,228. REGATTA. Cl. 33.
722,229. GALAXY. Cl. 33.
722,232. SPOTNET. Cl. 33.
722,237. SAN. Cl. 36.
722 252. KONTUR NEWS DIGEST. Cl. 38.
722,255. CENTURY 21 EXPOSITION AND DESIGN. Cl. 38.
722,260. ORANGE S'PEEL. Cl. 38.
722,262. ANALOG SCIENCE FACT FICTION AND DESIGN. Cl. 38.
722,266. THE PAINTED DESERT BRAND AND DESIGN. Cl. 39.
722,267. BRAVO LINGERIE SILK-N-TOUCH AND DESIGN. Cl. 39.
722,268. POLAR PLUS. Cl. 39.
722,271. SPIN-FLI. Cl. 39.
722,277. JALS AND DESIGN. Cl. 39.
722,280. SAVELVA. Cl. 39.
722,283. GROWEX. Cl. 39.
722,284. VIOLETA AND DESIGN. Cl. 39.
722,286. WINGEES. Cl. 40.
722,287. MAGNA-TOMIC. Cl. 40.
722,289. OUCH POUCH AND DESIGN. Cl. 44.
722,291. BOTTLED SUNSHINE. Cl. 45.
722 292. JFG MELLO-MADE. Cl. 46.
722,293. HI-LIFE AND DESIGN. Cl. 46.
722,294. DISK WITH DOUBLE F SYMBOL. Cl. 46.
722,321. COUNTRY BEST. Cl. 46.
722,327. BACKGAMMON. Cl. 46.
722,338. KING KULLEN'S. Cl. 46.
722,350. PRINCESS LOUISE SOF-PETL ROSES AND DESIGN. Cl. 50.
722,354. PERMA KOTE. Cl. 51.
722,355. THE FRESHNESS OF A BREEZE ETC. Cl. 51.
722,356. DARLING. Cl. 51.
722,357. DAW-SONATA. Cl. 51.
722,360. TOMBOY. Cl. 51.
722,361. COLORGROOM. Cl. 51.
722,366. SKACETROL ETC. AND DESIGN. Cl. 52.
722,370. WHITE GLOVE. Cl. 52.
722,371. COLDET. Cl. 52.
722,376. BERROLS. Cl. 100.
722,381. MINUTEMAN RESEARCH. Cl. 100.
722,386. AEROSPACE PANORAMA. Cl. 101.
722,387. AMERICAN R-EX CREDIT CLUB INC. AND DESIGN. Cl. 101.
722,388. "LITAB" AND DESIGN. Cl. 101.
722,390. TEEN-O-RAMA. Cl. 101.
722,394. PR ETC. AND DESIGN. Cl. 102.
722,395. A & A AND DESIGN. Cl. 102.
722,403. ANN ARBOR RAILROAD AND DESIGN. Cl. 105.
722,405. ALCHRONIZING. Cl. 106.
722,412. OUTSIDE IN. Cl. 107.
722,419. REDDY FAB HOMES. Cl. 12.
722,424. FILTERFIRM. Cl. 17.
722,426. FLEXLEAD. Cl. 21.

Section 18

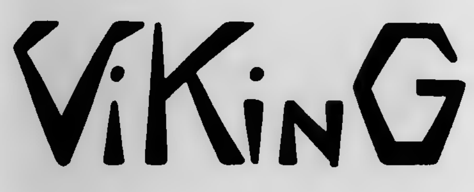
550,983. STYLEWISE. Cl. 39. 11–20–51.
767,261. DIXIE. Cl. 46. 3–24–64.
778,655. CATALINA. Cl. 3. 10–20–64.
787,725. HOMEMAKER. Cl. 13. 4–6–65.
800,160. CAPELLA. Cl. 12. 12–14–65.
801,574. ITALIAN MAID AND DESIGN. Cl. 46. 1–4–66.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

229,678. LUSTRINE. Cl. 52. 7–5–27. A. H. Cathcart & James S. Thompson Company. Colgate-Palmolive Company, New York, N.Y. Amended: In the statement, column 2, line 10 through line 12, "All wording except 'Lustrine' and 'Lustrine Laboratories' is disclaimed apart from the mark as shown on the drawing." is deleted, and the drawing is amended to appear:

LUSTRINE

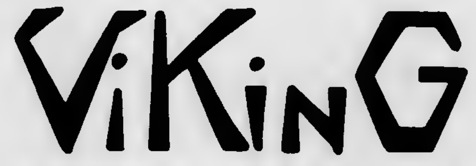
243,133. VIKING. Cl. 32. 6–12–28. The Skandia Furniture Company of Rockford Illinois. The American Furniture Company, Batesville, Ind. Amended to appear:



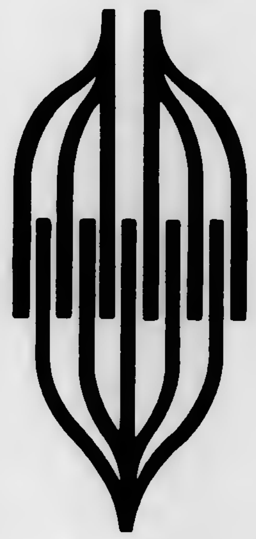
428,472. SEACREST. Cl. 46. 3–25–47. H. B. Kennerly & Son, doing business as Roaring Point Oyster Co. H. B. Kennerly & Son, Incorporated, Nanticoke, Md. Amended to appear:

SEACREST

538,481. VIKING. Cl. 32. 2–27–51. Superior Sleeprite Corporation. American Furniture Company, Batesville, Ind. Amended to appear:



829,854. MISCELLANEOUS DESIGN. Cl. 44. 6–6–67. Jobst Institute, Inc., Toledo, Ohio. Corrected to appear:



835,116. ORIEL. Cl. 36. 9–12–67. Petrucci and Atwell, Inc., Newton Highlands, Mass. Corrected: In the statement, column 2, line 1, after "For:" *phonograph records and* should be inserted.

INDEX OF REGISTRANTS

NOVEMBER 21, 1967

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

Abbey of the Genesee, Piffard, N.Y. 839,241, pub. 9-5-67. Cl. 46.
Acme Markets, Inc., Philadelphia, Pa. 839,214, pub. 9-5-67. Cl. 46.
Acme Premium & Supply Corp., St. Louis, Mo. 839,302, pub. 9-5-67. Cl. 101.
Acme Steel Co., to Interlake Steel Corp., Chicago, Ill. 233,751, ren. 11-21-67. Cl. 14.
Adel Precision Products Corp., Burbank, from General Metals Corp., Oakland, Calif. 383,352, canc. Cl. 13.
Adel Precision Products Corp., Burbank, from General Metals Corp., Oakland, Calif. 383,607, canc. Cl. 13.
Adel Precision Products Corp., Burbank, from General Metals Corp., San Francisco, Calif. 402,318, canc. Cl. 13.
Aetna Leather Novelty Co. Inc., West New York, N.J. 778,655, canc. Cl. 3.
Agway, Inc., Dewitt, N.Y. 839,014, pub. 7-25-67. Cl. 10.
Aimcee Wholesale Corp., New York, N.Y., from Poly Golf, Inc., Roseville, Mich. 839,072, pub. 9-5-67. Cl. 22.
Air Force Association, Washington, D.C. 722,386, canc. Cl. 101.
Akron Sand Blast & Metallizing Co., Barberton, Ohio. 839,312, pub. 9-5-67. Cl. 103.
Albritton Engineering Corp., Bryan, Tex. 839,101-2, pub. 9-5-67. Cl. 23.
Alchro Corp., Harrison, N.J. 722,405, canc. Cl. 106.
Alco Electronic Products, Inc., Lawrence, Mass. 839,060, pub. 9-5-67. Cl. 21.
Alco-Flex Corp., Chicago, Ill. 839,032, pub. 9-5-67. Cl. 16.
Alexander & Alexander, Inc., Baltimore, Md. 722,395, canc. Cl. 102.
Allied Mills, Inc., Chicago, Ill. 839,012, pub. 9-5-67. Cl. 6.
Allied Stores Corp., New York, N.Y. 839,183, pub. 9-5-67. Cl. 39.
American Cellulose & Chemical Mfg. Co., Ltd., now by change of name Celanese Corp. of America, to Celanese Corp., New York, N.Y. 233,017, ren. 11-21-67. Cl. 39.
American Character, Inc., New York, N.Y. 839,070, pub. 9-5-67. Cl. 22.
American Cyanamid Co., Wayne, N.J. 838,998, pub. 6-27-67. Cl. 6.
American Cyanamid Co., Wayne, N.J. 839,202, pub. 7-25-67. Cl. 44.
American Garment Hanger Co., Inc., Silver Spring, Md. 839,262, pub. 9-5-67. Cl. 50.
American Home Products Corp., d.b.a. Wyeth Laboratories, New York, N.Y. 722,163, canc. Cl. 18.
American Home Products Corp., New York, N.Y. 839,286, pub. 9-5-67. Cl. 52.
American Home Products Corp., New York, N.Y. 839,290, pub. 9-5-67. Cl. 52.
American Maize Products Co., New York, N.Y. 435,855, ren. 11-21-67. Cl. 46.
American Metal Products Co. : *See—*
  Siegler, Lear, Inc.
American R-ex Credit Club, Inc., New York, N.Y. 722,387, canc. Cl. 101.
American-Marietta Co. : *See—*
  Metals Disintegrating Co., Inc.
Anchor Steel & Conveyor Co., Dearborn, Mich. 839,093, pub. 9-5-67. Cl. 23.
Anderson, Clayton & Co., Dallas, Tex. 839,350. Cl. 46.
Anderson, Henry G., d.b.a. Panic Button Co., Falls Church, Va. 839,194, pub. 9-5-67. Cl. 40.
Anglo-Chilean Consolidated Nitrate Corp., New York, N.Y., to Compania Salitrera Anglo-Lautaro, Santiago, Chile. 233,846, ren. 11-21-67. Cl. 6.
Ann Arbor Railroad Co., The, St. Louis, Mo. 722,403, canc. Cl. 105.
Apex Pool Equipment Corp., White Plains, N.Y. 839,026, pub. 9-5-67. Cl. 12.
Arbaugh's : *See—*
  Arbaugh's Restaurant, Inc.
Arbaugh's Restaurant, Inc., d.b.a. Arbaugh's, Washington, D.C. 839,297, pub. 9-5-67. Cl. 100.
Arden, Elizabeth, Sales Corp., New York, N.Y. 839,360. Cl. 51.
Arkham House Publishers : *See—*
  Derleth, August.
Arlan's Dept. Stores, Inc., New York, N.Y. 839,335. Cl. 18.
Armour and Co., to Armour & Co., Chicago, Ill. 434,826, ren. 11-21-67. Cl. 6.
Armour and Co., Chicago, Ill. 722,100, canc. Cl. 1.
Arnold Bakers, Inc., Greenwich, Conn. 839,220, pub. 9-5-67. Cl. 46.
Associated Electrical Industries, Ltd., London, England. 839,063, pub. 9-5-67. Cl. 21.
Atmore & Son, Inc., Philadelphia, Pa. 240,300, ren. 11-21-67. Cl. 46.
Autio Guide : *See—*
  Power, James F.
Automated Building Components, Inc., Miami, Fla. 839,028, pub. 9-5-67. Cl. 12.
Avon Products, Inc., New York, N.Y. 839,278, pub. 9-5-67. Cl. 51.
Avon Products, Inc., New York, N.Y. 839,289, pub. 9-5-67. Cl. 52.
Bacharach Industrial Instrument Co., Pittsburgh, Pa. 839,112, pub. 9-5-67. Cl. 26.
Baker Clothes, Inc., Philadelphia, Pa. 839,185, pub. 9-5-67. Cl. 39.
Barth, George F., d.b.a. Marketing Sales Plans Co., New York, N.Y. 722,289, canc. Cl. 44.
Barton Corp., Towanda, Ill. 839,129, pub. 9-5-67. Cl. 34.
Baughman, Wilbur N., Olney, Md. 434,578, ren. 11-21-67. Cl. 46.
Beatrice Foods Co. : *See—*
  Richardson, Thos D., Co.
Beatrice Foods Co., Chicago, Ill. 839,228, pub. 9-5-67. Cl. 46.
Beggs, C. W., Sons & Co., Chicago, Ill., to The Borden Co., New York, N.Y. 230,365, ren. 11-21-67. Cl. 51.
Bell Brand Foods, Ltd.: *See—*
  Nibb-It Corp. of America.
Bendix Aviation Corp., d.b.a. Eclipse-Pioneer Division, Teterboro, to Signalite Inc., Neptune, N.J. 435,746, ren. 11-21-67. Cl. 21.
Bent, Geo. B., Co., Inc., Gardner, Mass. 839,035, pub. 9-5-67. Cl. 16.
Bermond, Jack F., London, England. 839,264, pub. 9-5-67. Cl. 51.
Besmer Teppichfabrik Mertens K.G., Hameln, Germany. 839,195, pub. 9-5-67. Cl. 42.
Binney & Smith Inc., New York, N.Y. 839,159-60, pub. 9-5-67. Cl. 37.
Bio-Neering, Inc., Carmel, Ind. 839,205, pub. 9-5-67. Cl. 44.
Birma Products Corp., Sayreville, N.J. 838,997, pub. 9-5-67. Cl. 5.
Bliss, E. W., Co., Davenport, Iowa. 839,111, pub. 9-5-67. Cl. 26.
Blumcraft of Pittsburgh, Pittsburgh, Pa. 839,023, pub. 9-5-67. Cl. 12.
Bobst Champlain, Inc.: *See—*
  Champlain Co., Inc.
Bohemian Distributing Co.: *See—*
  Safeway Stores, Inc.
Bookers Mfg. Drug Co., Ltd., La Penitence, British Guiana. 722,355, canc. Cl. 51.
Borden Co., The: *See—*
  Beggs, C. W., Sons & Co.
  Victoria, Ltd.
Borg-Warner Corp., Chicago, Ill. 722,101, canc. Cl. 1.
Borg-Warner Corp., Chicago, Ill. 722,209, canc. Cl. 23.
Borg-Warner Corp., Chicago, Ill. 838,983, pub. 9-5-67. Cl. 1.
Borg-Warner Corp., Chicago, Ill. 838,985, pub. 9-5-67. Cl. 1.
Boyd Aluminum Mfg. Co., Springfield, Mo. 839,017, pub. 9-5-67. Cl. 12.
Bradfute Corp., Eastchester, N.Y. 839,301, pub. 12-13-66. Cl. 101.
Breck, John H., Inc., Springfield, Mass. 839,267-8, pub. 9-5-67. Cl. 51.
Brian-Lloyd Co., Inc., New York, N.Y. 722,361, canc. Cl. 51.
Brilhart, Robert, d.b.a. Robert Brilhart Co., Carlsbad, Calif. 839,141, pub. 9-5-67. Cl. 36.
Brilhart, Robert, Co.: *See—*
  Brilhart, Robert.
Bristol-Myers Co., New York, N.Y. 839,364. Cl. 51.
Broadcasting Publications, Inc., Washington, D.C. 839,343. Cl. 38.
Brodsky, Elaine, New York, N.Y. 839,177, pub. 9-5-67. Cl. 39.
Brown, L. S., Co., Atlanta, Ga. 722,193, canc. Cl. 22.
Brown's, J. T. S., Son Co., d.b.a. Executive Club Distilling Co., Cincinnati, Ohio. 839,256, pub. 9-5-67. Cl. 49.
Bryant, Lane, Inc., New York, N.Y. 839,180, pub. 9-5-67. Cl. 39.
Bushman Bros., Galloway, Wis. 767,261, canc. Cl. 46.
Butterick Co., Inc., The, New York, N.Y. 839,176, pub. 9-5-67. Cl. 38.
C.R.O. Engineering Co., Inc., from Servodyne, Inc., Brookfield, Wis. 839,062, pub. 9-5-67. Multiple Class (Classes 21, 23, and 26).
California Custom Accessories Mfg. Co., Gardena, Calif. 839,055, pub. 9-5-67. Cl. 19.
California Equipment Co., Seattle, Wash. 722,203, canc. Cl. 23.
Canadian Hoechst, Ltd., Montreal, Quebec, Canada, from The National Laboratories Corp., Kansas City, Mo. 839,037, pub. 8-22-67. Cl. 18.
Capella Corp., Eugene, Oreg. 800,160, canc. Cl. 12.
Capital Industries, Inc., Avis, Pa. 839,020, pub. 9-5-67. Cl. 12.
Capri Macaroni Corp., Newtown, Conn. 839,227, pub. 9-5-67. Cl. 46.
Caradco, Inc., Dubuque, Iowa. 839,030, pub. 9-5-67. Cl. 12.
Cathcart, A. H., & James S. Thompson Co. Colgate-Palmolive Co., New York, N.Y. 229,678. Am. 7(d). Cl. 52.
Celanese Corp.: *See—*
  American Cellulose & Chemical Mfg. Co., Ltd.
Celanese Corp. of America: *See—*
  American Cellulose & Chemical Mfg. Co., Ltd.
Century 21 Exposition, Inc., Seattle, Wash. 722,255, canc. Cl. 38.
Chadbourn Gotham, Inc., Charlotte, N.C. 839,178, pub. 9-5-67. Cl. 39.
Chambersburg Engineering Co., Chambersburg, Pa. 436,373, ren. 11-21-67. Cl. 23.

INDEX OF REGISTRANTS

Champion Home Builders Co., Dryden, Mich. 839,054, pub. 9-5-67. Cl. 19.

Champlain Co., Inc., Bloomfield, to Bobst Champlain, Inc., Roseland, N.J. 435,722, ren. 11-21-67. Cl. 21.

Chartered Enterprises, d.b.a. Superior Sports Specialties, San Fernando, Calif. 839,339. Cl. 22.

Cheese Shop of West Hartford, Inc., The, West Hartford, Conn. 839,240, pub. 9-5-67. Cl. 46.

Chematic Equipment Corp., Brooklyn, N.Y. 839,084, pub. 9-5-67. Cl. 23.

Chesebrough-Ponds, Inc.: *See*—

Prince Matchabelli, Inc.

Chevron Chemical Co., San Francisco, Calif. 839,024, pub. 9-5-67. Cl. 12.

Chicago Pneumatic Tool Co., New York, N.Y. 839,089, pub. 9-5-67. Cl. 23.

Chisholm & Moore Mfg. Co., The, Cleveland, Ohio, to Columbus McKinnon Corp., Tonawanda, N.Y. 65,207, ren. 11-21-67. Cl. 23.

Clairol Inc., New York, N.Y. 839,275, pub. 9-5-67. Cl. 51.

Clairol Inc., New York, N.Y. 839,277, pub. 9-5-67. Cl. 51.

Clinical Products Ltd., London, England, from Nicholas International Ltd., Toronto, Ontario, Canada. 367,648, canc. Cl. 18.

Clinical Products Ltd., London, England, from Nicholas International Ltd., Toronto, Ontario, Canada. 434,499, canc. Cl. 18.

Coca-Cola Co., The: *See*—

Maxcy, L., Inc.

Cole, Jack, Co., Birmingham, Ala. 722,172, canc. Cl. 19.

Columbus Dental Mfg. Co., The, Columbus, Ohio. 391,040, canc. Cl. 44.

Columbus McKinnon Corp.: *See*—

Chisholm & Moore Mfg. Co., The.

Compania Salitrera Anglo-Lautaro: *See*—

Anglo-Chilean Consolidated Nitrate Corp.

Concord Fabrics, Inc., New York, N.Y. 839,200, pub. 9-5-67. Cl. 42.

Concrete Thermal Casings, Inc., Seattle, Wash. 839,300, pub. 9-5-67. Multiple Class (Classes 101 and 103).

Congoleum-Nairn, Inc., Kearny, N.J. 839,058-9, pub. 9-5-67. Cl. 20.

Congress Co., The, Phoenix, Ariz. 839,308, pub. 9-5-67. Cl. 102.

Continental Drill Corp., Inc., Chicago, Ill. 722,198, canc. Cl. 23.

Continental Illinois National Bank and Trust of Chicago, Chicago, Ill. 839,163, pub. 9-5-67. Cl. 38.

Convertible Clip Corp.: *See*—

Reynolds Aluminum Supply Co.

Cordella-Hollywood, Inc.: *See*—

De La Vallade, Mathew K.

Corn Products Co., New York, N.Y. 839,242, pub. 9-5-67. Cl. 46.

Cornet, Roland, Quebec, Canada. 722,376, canc. Cl. 100.

Coronis Framing Systems, Inc., Yardville, N.J. 839,334. Cl. 12.

Cy-Lon Chemical Co.: *See*—

Lewy, George.

Dakoma International Corp., New York, N.Y. 839,082, pub. 9-5-67. Cl. 23.

Dalamal & Sons, Inc., New York, N.Y. 839,061, pub. 9-5-67. Multiple Class (Classes 21 and 23).

Damancy & Co.: *See*—

Damancy & Co., Ltd.

Damancy & Co., Ltd., d.b.a. Damancy & Co., Slough, England. 839,041, pub. 9-5-67. Cl. 18.

Daw-Sonata, Ltd., New York, N.Y. 722,357, canc. Cl. 51.

Debron Carpets, Ltd., Kidderminster, England. 839,198, pub. 9-5-67. Cl. 42.

De Laire, Inc., New York, N.Y. 839.001, pub. 9-5-67. Cl. 6.

De Laire, Inc., New York, N.Y. 839,273, pub. 9-5-67. Cl. 51.

De La Vallade, Mathew K., Los Angeles, Calif., to Cordella-Hollywood, Inc., Jackson, Mich. 435,236, ren. 11-21-67. Cl. 39.

Dental Printing Co., Inc., Bellmore, N.Y. 839,150, pub. 9-5-67. Cl. 37.

Derleth, August, d.b.a. Arkham House Publishers, Sauk City, Wis. 839,161, pub. 9-5-67. Cl. 38.

Dial-A-Isle Corp., Jackson, Miss. 839,164, pub. 9-5-67. Cl. 38.

Diamond Alkali Co., Cleveland, Ohio. 839,013, pub. 9-5-67. Cl. 6.

Diamond Alkali Co., Cleveland, Ohio. 839,031, pub. 9-5-67. Cl. 14.

Diamond, H., Co.: *See*—

Diamond, Herman.

Diamond, Herman, d.b.a. H. Diamond Co., New York, N.Y. 722,221, canc. Cl. 28.

DiPuppo, Michael C., d.b.a. Emil Laboratories, Philadelphia, Pa. 722,287, canc. Cl. 40.

Distillerie Stock U.S.A., Ltd., Woodside, N.Y. 839,254, pub. 9-5-67. Multiple Class (Classes 47 and 49).

Dixie Laboratories, Inc., Martinsville, Va. 434,440, ren. 11-21-67. Cl. 18.

Diversified Chemical Products Co.: *See*—

Diversified Chemical Products Corp.

Diversified Chemical Products Corp., d.b.a. Diversified Chemical Products Co., Lynwood, Wash. 839,006, pub. 9-5-67. Cl. 6.

Donaldson Co., Inc., Minneapolis, Minn. 839,110, pub. 9-5-67. Cl. 26.

Dorsey, John E., d.b.a. John E. Dorsey Co., Boston, Mass. 839,182, pub. 9-5-67. Cl. 39.

Dorsey, John E., Co.: *See*—

Dorsey, John E.

Doughboy Industries, Inc., New Richmond, Wis. 839,349. Cl. 46.

Dow Chemical Co., The, Midland, Mich. 839,315, pub. 9-5-67. Cl. 103.

Dow Corning Corp., Midland, Mich. 839,021, pub. 7-11-67. Cl. 12.

Dresdener Chemisches Laboratorium Lingner, Dresden, Germany, to Odol Chemical Corp., Plainfield, N.J. 30,942, ren. 11-21-67. Cl. 51.

Duda, A., & Sons Cooperative Assn., Slavia, Oviedo, Fla. 839,234, pub. 9-5-67. Cl. 46.

Duffy-Mott Co., Inc., New York, N.Y. 839,231, pub. 9-5-67. Cl. 46.

Du Pont de Nemours, E. I., & Co., Wilmington, Del. 839,204, pub. 9-5-67. Cl. 44.

Durlan, Inc., Blooming Glen, Pa. 722,104, canc. Cl. 2.

Durma Products Co., Minneapolis, Minn. 839,050, pub. 9-5-67. Cl. 18.

Duvidell Sales Corp., New York, N.Y. 839,270-1, pub. 9-5-67. Cl. 51.

Duvidell Sales Corp., New York, N.Y. 839,282-3, pub. 9-5-67. Cl. 52.

Dzulbek, Alfred, d.b.a. U.S. & South American Trading Co., New York, N.Y. 722,284, canc. Cl. 39.

Eastern Railroad Builders, Inc., South Plainfield, N.J. 839,314, pub. 9-5-67. Cl. 103.

Eastern States Farmers' Exchange, Inc., West Springfield, Mass. 722,321, canc. Cl. 46.

Eastman Kodak Co., Rochester, N.Y. 839,304, pub. 9-5-67. Cl. 101.

Eclipse-Pioneer Division: *See*—

Bendix Aviation Corp.

Eldon Industries, Inc., Hawthorne, Calif. 839,081, pub. 9-5-67. Cl. 22.

Eldon Industries, Inc., Hawthorne, Calif. 839,263, pub. 9-5-67. Cl. 50.

Embers of Washington, Inc., Washington, D.C. 839,296, pub. 9-5-67. Cl. 100.

Emhart Corp., Hartford, Conn. 839,010, pub. 9-5-67. Cl. 6.

Emil Laboratories: *See*—

DiPuppo, Michael C.

Empress Travel Service, Inc., New York, N.Y. 839,318, pub. 9-5-67. Cl. 105.

Englander Co., Inc., The, Chicago, Ill. 722,224, canc. Cl. 32.

English Sewing, Ltd., Manchester, England. 839,199, pub. 9-5-67. Cl. 42.

Equitable Cash Grocery Co.: *See*—

S & W Fine Foods, Inc.

Escalon Packers, Inc., Escalon, Calif. 839,348. Cl. 46.

Etablissements Clin-Byla, Societe Anonyme, Paris, France. 722,154, canc. Cl. 18.

Eversharp, Inc., Milford, Conn. 839,363. Cl. 51.

Executive Club Distilling Co.: *See*—

Brown's, J. T. S., Son Co.

Fabrique Suisse de Crayons Caran d'Ache Societe Anonyme, Geneva, Switzerland. 433,324, ren. 11-21-67. Cl. 37.

Fall, Herbert S., Indianapolis, Ind. 722,141, canc. Cl. 15.

Fansteel Metallurgical Corp., North Chicago, Ill. 722,181, canc. Cl. 21.

Farm Journal, Inc., Philadelphia, Pa. 722,381, canc. Cl. 100.

Fashion Tress, Inc., Miami Beach, Fla. 839,191, pub. 3-21-67. Cl. 40.

Faultless Starch Co., Kansas City, Mo. 839,250, pub. 9-5-67. Cl. 46.

Federal-Mogul Corp., Southfield, Mich. 839,135, pub. 9-5-67. Cl. 35.

Feldt-Swanson, Ltd., Gardena, Calif. 722,128, canc. Cl. 13.

Ferguson, H. K., Co., The, Cleveland, Ohio. 839,295, pub. 9-5-67. Cl. 100.

Ferguson, Stanley W.: *See*—

Shapleigh Coffee Co.

Festival Products, Inc., Skokie, Ill. 839,079, pub. 9-5-67. Cl. 22.

Fiber Controls Corp., Gastonia, N.C. 839,083, pub. 6-20-67. Cl. 23.

Fiberchem, Inc., Seattle, Wash. 839,000, pub. 9-5-67. Cl. 6.

Fiberchem, Inc., Seattle, Wash. 839,197, pub. 9-5-67. Cl. 42.

Fiberfil, Inc.: *See*—

Rexall Drug & Chemical Co.

Fichtel & Sachs Aktiengesellschaft, Postfach, Germany. 839,085, pub. 9-5-67. Cl. 23.

Firestone Tire & Rubber Co., The, Akron, Ohio. 433,544, ren. 11-21-67. Cl. 42.

Fleming Co., Inc., The, Topeka, Kans. 839,222, pub. 9-5-67. Cl. 46.

Flotill Products, Inc., to Tillie Lewis Foods, Inc., Stockton, Calif. 437,199, ren. 11-21-67. Cl. 46.

Flxible Co., The, Loudonville, Ohio. 434,953, ren. 11-21-67. Cl. 19.

Follsain Metals, Ltd., to Follsain Wycliffe Foundries, Ltd., Lutterworth, near Rugby, England. 431,163, ren. 11-21-67. Cl. 23.

Follsain Wycliffe Foundries, Ltd.: *See*—

Follsain Metals, Ltd.

Fonville Products Co., Orlando, Fla. 722,152, canc. Cl. 18.

Food and Drug Law Institute, Inc., The, New York, N.Y. 839,173, pub. 9-5-67. Cl. 38.

Foremost Dairies, Inc., San Francisco, Calif. 839,206, pub. 9-1-64. Cl. 46.

Fortified Forage Corp., Manhasset, N.Y. 722,294, canc. Cl. 46.

Foster Grant Co., Inc., Leominster, Mass. 839,113, pub. 9-5-67. Cl. 26.

Foti, Leonard, d.b.a. Italian Maid Food, Philadelphia, Pa. 801,574, canc. Cl. 46.

4-Fishermen Seafoods: *See*—

Gorton Corp., The.

Fox, Fay, Massapequa Park, from Joanell Cosmetic Co., Bayside, N.Y. 722,354, canc. Cl. 51.

Frederick, Purdue, Co., The, Yonkers, N.Y. 839,038, pub. 9-5-67. Cl. 18.

Freezer, J., & Son, Inc., New York, N.Y. 839,188, pub. 9–5–67. Cl. 39.
Fuller Brush Co., The, East Hartford, Conn. 839,080, pub. 9–5–67. Cl. 22.
Fuller, D. B., & Co., Inc., to J. P. Stevens & Co., Inc., New York, N.Y. 436,586, ren. 11–21–67. Cl. 42.
Garvey Products Corp., Hammonton, N.J. 839,316, pub. 9–5–67. Cl. 103.
Gay Sprites, Inc., New York, N.Y. 722,283, canc. Cl. 39.
Geigy Chemical Corp.: *See*—
  Geigy Co., Inc.
Geigy Chemical Corp., Ardsley, N.Y. 839,011, pub. 6–13–67. Cl. 6.
Geigy Co., Inc., New York, to Geigy Chemical Corp., Ardsley, N.Y. 436,189, ren. 11–21–67. Cl. 6.
Geigy Co., Inc., New York, to Geigy Chemical Corp., Ardsley, N.Y. 437,263, ren. 11–21–67. Cl. 18.
Gemco-Ware, Inc., Jamaica, N.Y. 839,128, pub. 6–20–67. Cl. 33.
General Aniline & Film Corp., New York, N.Y. 839,105, pub. 9–5–67. Cl. 26.
General Electric Co., Pittsfield, Mass. 722,183, canc. Cl. 21.
General Fire Extinguisher Corp., Northbrook, Ill. 839,090, pub. 9–5–67. Cl. 23.
General Foods Corp., White Plains, N.Y. 839,235–8, pub. 9–5–67. Cl. 46.
General Ice Cream Corp., Schenectady, to National Dairy Products Corp., New York, N.Y. 235,169, ren. 11–21–67. Cl. 46.
General Metals Corp.: *See*—
  Adel Precision Products Corp.
General Mills, Inc., Minneapolis, Minn. 839,243, pub. 9–5–67. Cl. 46.
General Tire & Rubber Co., The, Akron, Ohio. 839,133–4, pub. 9–5–67. Cl. 35.
Geophysics & Computer Services, Inc., New Orleans, La. 839,306, pub. 9–5–67. Cl. 101.
Gidon Industries, Ltd., Rexdale, Ontario, Canada. 839,098–9, pub. 9–5–67. Cl. 23.
Gillette Co., The: *See*—
  Gillette Safety Razor Co.
Gillette Safety Razor Co., to The Gillette Co., Boston, Mass. 134,317. ren. 11–21–67. Cl. 23.
Glasspar Co., Santa Ana, Calif. 722,177, canc. Cl. 19.
Glen Oaks Sales Co., Inc., New York, N.Y. 839,181, pub. 9–5–67. Cl. 39.
Glor Associates, Inc., Holland, N.Y. 839,003, pub. 9–5–67. Cl. 6.
Goerlich's, Inc., Toledo, Ohio. 722,178, canc. Cl. 19.
Gojer, Inc., Akron, Ohio. 839 284, pub. 9–5–67. Cl. 52.
Goldberge, Ralph, Linden, N.J. 722,121, canc. Cl. 12.
Goodrich, B. F., Co., The, to The B. F. Goodrich Co., Akron, Ohio. 65,425, ren. 11–21–67. Cl. 44.
Goodrich, B. F., Co., The, Akron, Ohio. 234,182, ren. 11–21–67. Cl. 5.
Goodrich, B. F., Co., The: *See*—
  Hood Rubber Co.
Goodwin Ammonia Co., The, d.b.a. The Goodwin Co., Los Angeles, Calif. 839,291, pub. 9–5–67. Cl. 52.
Goodwin Co., The: *See*—
  Goodwin Ammonia Co., The.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 839,152–3, pub. 9–5–67. Cl. 37.
Gordon Enterprises, Inc., Seattle, Wash. 839,066, pub. 9–5–67. Cl. 22.
Gorton Corp., The, d.b.a. 4-Fishermen Seafoods, Gloucester, Mass. 839,356. Cl. 46.
Gould Products. Inc., Elmont, N.Y. 838,995, pub. 9–5–67. Cl. 2.
Grady-Travers Co., Inc., The, New York, N.Y. 236,245, ren. 11–21–67. Cl. 7.
Grave, F. D., & Son, Inc.: *See*—
  Grave. Frederick D.
Grave, Frederick D., d.b.a. F. D. Grave & Son, to F. D. Grave & Son Inc., New Haven, Conn. 435,327–8, ren. 11–21–67. Cl. 17.
Great Atlantic & Pacific Tea Co., Inc., The, New York, N.Y. 839,355. Cl. 46.
Gross, Albert B., d.b.a. Parrish Bass Lures, Greensboro, N.C. 839,074. pub. 9–5–67. Cl. 22.
Hales & Hunter Co., Chicago, Ill. 839,223, pub. 9–5–67. Cl. 46.
Hall. William H., & Co., Inc., Lutherville, Md. 839,252, pub. 9–5–67. Cl. 46.
Hamby Co., The, Plainview, Tex. 839,087, pub. 9–5–67. Cl. 23.
Handy, John, Co.: *See*—
  Sazerac Co., Inc.
Harnischfeger Corp., West Milwaukee, Wis. 839,130, pub. 9–5–67. Cl. 34.
Haver-Lockhart Laboratories, Inc., Shawnee, Kans. 839,336. Cl. 18.
Hayden Flour Mills, Tempe, Ariz. 839,215, pub. 9–5–67. Cl. 46.
Hearth Shoppe Products Co.: *See*—
  Taylor, Robert H.
Heatbath Corp., Indian Orchard, Mass. 437,270, ren. 11–21–67. Cl. 6.
Heggblade-Marguleas Co., San Francisco, Calif. 839,253, pub. 9–5–67. Cl. 46.
Hercules, Inc., Wilmington, Del. 838,987, pub. 9–5–67. Cl. 1.
Hijos De Agustin Blazquez. Cadiz, Spain. 839,357. Cl. 49.
Hills Bros. Coffee, Inc., San Francisco, Calif. 839,210–12, pub. 9–5–67. Cl. 46.
Hoerner Boxes, Inc.: *See*—
  Hoerner-Waldorf Corp.
Hoerner-Waldorf Corp., from Hoerner Boxes, Inc., Keokuk, Iowa. 839,086, pub. 9–5–67. Cl. 23.
Honeywell, Inc., Minneapolis, Minn. 839,107, pub. 9–5–67. Cl. 26.
Hood Rubber Co., Watertown, Mass., to The B. F. Goodrich Co., Akron, Ohio. 236,018, ren. 11–21–67. Cl. 35.
Hudson Foam Latex Products, Inc., Edgewater, N.J. 722,098, canc. Cl. 1.
Hudson Foam Latex Products, Inc., Edgewater, N.J. 722,225, canc. Cl. 32.
Hudson, H. D., Mfg. Co.: *See*—
  Hudson Mfg. Co.
Hudson Mfg. Co., Minneapolis, Minn., to H. D. Hudson Mfg. Co., Chicago, Ill. 223,040, ren. 11–21–67. Cl. 23.
Hudson National, Inc., New York, N.Y. 839,233, pub. 9–5–67. Cl. 46.
Hudson Ross, Inc., New York, N.Y. 839,136–8, pub. 9–5–67. Cl. 36.
Hull, J. Warren, & Associates, Anaheim, Calif. 839,328, pub. 9–5–67. Cl. 200.
Humphreys Medicine Co., Inc., Rutherford, N.J. 839,272, pub. 9–5–67. Cl. 51.
Hydralum Industries, Inc., Chicago, Ill. 839,033, pub. 9–5–67. Cl. 16.
Illinois Shade Division of Slick Industrial Co.: *See*—
  Slick Industrial Co.
Imperial Chemical Industries, Ltd., London, England. 722,167, canc. Cl. 18.
Imperial Spark Plug Tire Pump Co.: *See*—
  Meiser, Ida K.
Independent Lock Co.: *See*—
  Lockwood Hardware Mfg. Co.
Interlake Steel Corp.: *See*—
  Acme Steel Co.
International Distilleries Co.: *See*—
  Safeway Stores, Inc.
International Minerals & Chemical Corp., Skokie, Ill. 839,015, pub. 9–5–67. Cl. 10.
International Oceanographic Foundation, The, Miami, Fla. 839,171–2, pub. 9–5–67. Cl. 38.
International Paper Co., New York, N.Y. 838,996, pub. 9–5–67. Cl. 2.
International Paper Co., New York, N.Y. 839,094, pub. 9–5–67. Cl. 23.
Investors Syndicate Life Insurance & Annuity Co., Minneapolis, Minn. 839,311, pub. 9–5–67. Cl. 102.
Invincible Products Corp., Chicago, Ill. 839,359. Cl. 51.
Israel Carmona, d.b.a. Unusual Tours, Buena Park, Calif. 839,365. Cl. 105.
J.F.G. Coffee Co., Knoxville, Tenn. 722.292, canc. Cl. 46.
Jacobsen Mfg. Co., Racine, Wis. 839,095–6, pub. 9–5–67. Cl. 23.
Jals Corp., Philadelphia, Pa. 722,277, canc. Cl. 39.
Joanell Cosmetic Co.: *See*—
  Fox. Fay.
Jobst Institute. Inc., Toledo. Ohio. 829.854, cor. Cl. 44.
Johns-Manville Corp., New York, N.Y. 839,022, pub. 9–5–67. Cl. 12.
Johns-Manville Corp., New York, N.Y. 839,025, pub. 9–5–67. Cl. 12.
Johnson. Evelyn M., d.b.a. Morris Enterprises, New York, N.Y. 839 232. pub. 9–5–67. Cl. 46.
Junior League of St. Louis, Inc., The, St. Louis, Mo. 722,412, canc. Cl. 107.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 839,075, pub. 9–5–67. Cl. 22.
Kamar, Inc., Inglewood, Calif. 839,067, pub. 7–25–67. Cl. 22.
Kathy Products: *See*—
  Lundin. William H.
Kayser-Roth Corp., New York, N.Y. 839,187, pub. 9–5–67. Cl. 39.
Kelley. Eden, New York, N.Y. 722,286, canc. Cl. 40.
Kennerly, H. B., & Son, Inc., d.b.a. Roaring Point Oyster Co. H. B. Kennerly & Son, Inc., Nanticoke, Md. 428,472. Am. 7(d). Cl. 46.
Kentile Floors, Inc., Brooklyn, N.Y. 839,057, pub. 9–5–67. Cl. 20.
King Louie Bowling Corp. of Missouri, Kansas City, Mo. 839,322, pub. 9–5–67. Cl. 107.
King-Seeley Thermos Co.: *See*—
  Thermos-Gesellschaft m.b.H.
Klein, William, & Son, Arverne, N.Y. 722.150. canc. Cl. 18.
Kontur Kontact Lens Co., Inc., Richmond, Calif. 722,252. canc. Cl. 38.
Kroger Co., The: *See*—
  Kroger Grocery & Baking Co., The.
Kroger Grocery & Baking Co., The, from The Kroger Co., Cincinnati, Ohio. 392 167, canc. Cl. 46.
Kullen. King, Grocery Co., Inc., Jamaica, N.Y. 722,338, canc. Cl. 46.
Lady Kathy Corp., Holland. Mich. 839,192, pub. 9–5–67. Cl. 40.
Lake Side Aquarium: *See*—
  Williams, Mildred F.
Lakeside Packing Co., Manitowoc, Wis. 235,734, ren. 11–21–67. Cl. 46.
Lamb. George P., and Carrington Shields, Washington, D.C. 839 166. pub. 9–5–67. Cl. 38.
Lansdale Forest Products Corp., Lansdale, Pa. 722,419, canc. Cl. 12.
Lee. Simpson, Paper Co., Vicksburg, Mich. 839,154, pub. 9–5–67. Cl. 37.
Legettes. Inc., Boise. Idaho. 722,271, canc. Cl. 39.
Leisure Products of America, Inc., Trenton, N.J. 722,192, canc. Cl. 22.
Leonard, Ward, Electric Co., Mount Vernon, N.Y. 433,014, ren. 11–21–67. Cl. 21.
Levco Metal Finishers, Inc., Long Island City, N.Y. 722,226, canc. Cl. 32.
Lever Bros. Co., New York, N.Y. 839,333. Cl. 6.

INDEX OF REGISTRANTS

Lewis, Tillie, Foods, Inc.: *See*—
  Flotill Products, Inc.
Lewy, George, d.b.a. Cy-Lou Chemical Co., San Jose, Calif. 839,027, pub. 9–5–67. Cl. 12.
Leyman Mfg. Corp., Cincinnati, Ohio. 436,342, ren. 11–21–67. Cl. 23.
Libbey-Owens-Ford Glass Co., Toledo, Ohio. 722,228–9, canc. Cl. 33.
Libbey-Owens-Ford Glass Co., Toledo, Ohio. 722,232, canc. Cl. 33.
Lighting Corp. of America, from Lighting Corp. of America, d.b.a. Progress Lighting, Philadelphia, Pa. 839,065, pub. 8–15–67. Cl. 21.
Linco Products Co.: *See*—
  Linco Products Co., Inc.
Linco Products Co., Inc., Lynwood, from Linco Products Co., Costa Mesa, Calif. 839,124, pub. 9–5–67. Cl. 31.
Lion Uniform, Inc., Dayton, Ohio. 839,189, pub. 9–5–67. Cl. 39.
Lo Duca Bros. Musical Instruments Inc., Milwaukee, Wis. 839,142, pub. 9–5–67. Cl. 26.
Locke, Mina, Midland, Mich. 722,188, canc. Cl. 22.
Lockwood Hardware Mfg. Co., to Independent Lock Co., Fitchburg, Mass. 437,135, ren. 11–21–67. Cl. 25.
Long Island Tabulating Corp., Hempstead, N.Y. 722,388, canc. Cl. 101.
Longview Fibre Co., San Francisco, Calif. 838,994, pub. 9–5–67. Cl. 2.
Los Angeles Dodgers, Inc., Los Angeles, Calif. 839,323–4, pub. 9–5–67. Cl. 107.
Lundin, William H., d.b.a. Kathy Products, Chicago, Ill. 722,360, canc. Cl. 51.
Mack, Joseph, Associates, Inc., New York, N.Y. 839,147, pub. 9–5–67. Cl. 37.
MacNaughton-Brooks, Ltd., Weston, Toronto, Ontario, Canada. 839,018, pub. 9–5–67. Cl. 12.
Macy, R. H., & Co., Inc., New York, N.Y. 232,959, ren. 11–21–67. Cl. 39.
Madison Chemical Corp., Maywood, Ill. 839,288, pub. 9–5–67. Cl. 52.
Mai-Kai, Inc., d.b.a. Mai-Kai Restaurant, Fort Lauderdale, Fla. 839,165, pub. 9–5–67. Cl. 38.
Mai-Kai Restaurant: *See*—
  Mai-Kai, Inc.
Markel, Frank L., & Sons, Norristown, Pa. 722,426, canc. Cl. 21.
Manufacturers Marketing Co., New York, N.Y. 839,269, pub. 9–5–67. Cl. 51.
Marketing Sales Plans Co.: *See*—
  Barth, George F.
Marketing/70, Marina Del Rey, Calif. 839,193, pub. 9–5–67. Cl. 40.
Mars, Ltd., Slough, Bucks, England. 839,226, pub. 5–16–67. Cl. 46.
Marsh Supermarkets, Inc., Yorktown, Ind. 839.346. Cl. 46.
Masti-Kure Products Co., Norwich, Conn. 839,337. Cl. 18.
Matlen, Edward A.: *See*—
  New Era Hats, Inc.
Maxcy, L., Inc., Frostproof, Fla., to The Coca-Cola Co., Atlanta, Ga. 239,871, ren. 11–21–67. Cl. 46.
Mayo, James P., Inc., Dublin, N.H. 722,394, canc. Cl. 102.
McConnell Equipment Corp., Pampa, Tex. 839,332. Cl. 6.
McGraw-Edison Co.: *See*—
  United Electrical Mfg. Co.
McGraw-Hill, Inc., New York, N.Y. 839,168, pub. 9–5–67. Cl. 38.
McGraw-Hill, Inc., New York, N.Y. 839,175, pub. 9–5–67. Cl. 38.
McGregor-Doniger, Inc., New York, N.Y. 722.268, canc. Cl. 39.
McKee Baking Co., Collegedale, Tenn. 839,224, pub. 9–5–67. Cl. 46.
Mead Johnson & Co., Evansville, Ind. 839,249, pub. 9–5–67. Cl. 46.
Meiser, Ida K., d.b.a. Imperial Spark Plug Tire Pump Co., Blue Island, Ill. 722,206, canc. Cl. 23.
Melnor Industries, Inc., Moonachie, N.J. 722,132, canc. Cl. 13.
Mennen Co., The, Morristownship, N.J. 237,118, ren. 11–21–67. Cl. 51.
Mennen Co., The, Morristownship, N.J. 237,898, ren. 11–21–67. Cl. 51.
Merck & Co., Inc., Rahway, N.J. 722,157, canc. Cl. 18.
Merck & Co., Inc., Rahway, N.J. 839,049, pub. 9–5–67. Cl. 18.
Meredith Publishing Co., Des Moines, Iowa. 839,340. Cl. 22.
Metals Disintegrating Co., Inc., Union, N.J., from American-Marietta Co., Chicago, Ill. 388,934, canc. Cl. 16.
Micro-Metals Compounds, Ltd., Cloverdale, Canada. 839,004–5, pub. 9–5–67. Cl. 6.
Micropoint, Inc., Sunnyvale, Calif. 839,148, pub. 9–5–67. Cl. 37.
Milk Proteins, Inc., Detroit, Mich. 839,219, pub. 9–5–67. Cl. 46.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 839,029, pub. 9–5–67. Cl. 12.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 839,156, pub. 9–5–67. Cl. 37.
Mmar Corp., Chicago, Ill. 722,370, canc. Cl. 52.
Montblanc-Simplo G.m.b.H., Hamburg, Germany. 839,016, pub. 9–5–67. Multiple Class (Classes 11 and 37).
Morris Enterprises: *See*—
  Johnson, Evelyn M.
Mother's Cake & Cookie Co., Oakland, Calif. 839,230, pub. 9–5–67. Cl. 46.
Mother's Cake & Cookie Co., Oakland, Calif. 839,245, pub. 9–5–67. Cl. 46.
Motor Club of America, Newark, N.J. 839,299, pub. 9–5–67. Multiple Class (Classes 101, 102, and 105).
Movado Watch Agency, Inc., New York, N.Y. 434,338, ren. 11–21–67. Cl. 27.
Muhly, Frank, d.b.a. Vacations Unlimited, Philadelphia, Pa. 839,341. Cl. 37.
Murphy, G. C., Co., McKeesport, Pa. 839,303, pub. 9–5–67. Cl. 101.
Nalbandian, Eugene, Bakersfield, Calif. 722,293, canc. Cl. 46.
National Assn. of Frozen Food Packers, Washington, D.C. 839,330, pub. 9–5–67. Cl. 200.
National Biscuit Co., New York, N.Y. 839,229, pub. 9–5–67. Cl. 46.
National Dairy Products Corp.: *See*—
  General Ice Cream Corp.
National Carbon Co., Inc., to Union Carbide Corp., New York, N.Y. 434,789, ren. 11–21–67. Cl. 15.
National Laboratories Corp., The: *See*—
  Canadian Hoechst, Ltd.
National Metal Specialties, Inc., Bronx, N.Y. 838,992, pub. 9–5–67. Cl. 2.
National Molasses Co., Willow Grove, Pa. 839,244, pub. 9–5–67. Cl. 46.
Nelson, L. R., Mfg. Co., Inc., Peoria, Ill. 722,211, canc. Cl. 23.
Nesbitt Fruit Products, Inc., Los Angeles, Calif. 722,260, canc. Cl. 38.
New Era Hats, Inc., from Edward A. Matlen, New York, N.Y. 324,110, canc. Cl. 39.
New York Bank for Savings, The, New York, N.Y. 839,309, pub. 9–5–67. Cl. 102.
New York Telegram Corp., The, New York, N.Y., to The E. W. Scripps Co., Cleveland, Ohio. 234,524, ren. 11–21–67. Cl. 38.
Nibb-Lt Corp. of America, Studio City, from Bell Brand Foods, Ltd., Los Angeles, Calif. 839,208, pub. 9–5–67. Cl. 46.
Nicholas International, Ltd.: *See*—
  Clinical Products Ltd.
Nikon, Inc., Garden City, N.Y., from Nippon Kogaku Kabushiki Kaisha, Tokyo, Japan. 839,104, pub. 9–5–67. Cl. 26.
Nikon, Inc., Garden City, N.Y., from Nippon Kogaku Kabushiki Kaisha, Tokyo, Japan. 839,106, pub. 9–5–67. Cl. 26.
Nippon Kogaku Kabushiki Kaisha: *See*—
  Nikon, Inc.
Noma Electric Corp., New York, N.Y., to Noma Lites Corp., St. Joseph, Mo. 234,653, ren. 11–21–67. Cl. 21.
Noma Lites Corp.: *See*—
  Noma Electric Corp.
Norcross, Inc., New York, N.Y. 839,174, pub. 9–5–67. Cl. 38.
Novochoc S.A., Neuchatel, Switzerland. 722,220, canc. Cl. 27.
Nutritional Foods Co.: *See*—
  Pluz Products.
Odol Chemical Corp.: *See*—
  Dresdener Chemisches Laboratorium Lingner.
One Time Package Products, Inc., Stamford, Conn. 839,361. Cl. 51.
Oneida Ltd., Oneida, N.Y. 436,274–80, ren. 11–21–67. Cl. 28.
Ortho Pharmaceutical Corp., Raritan, N.J. 839,045, pub. 9–5–67. Cl. 18.
Otho Shoes, Inc., New Rochelle, N.Y. 838,982, pub. 9–5–67. Multiple Class (Classes 1 and 44).
Panic Button Co.: *See*—
  Anderson, Henry G.
Parke, Davis & Co., Detroit, Mich. 839,039, pub. 9–5–67. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 839,051, pub. 9–5–67. Cl. 18.
Parrish Brass Lures: *See*—
  Gross, Albert.
Peroxide Chemical Co., The, to Vi-Jon Laboratories, Inc., St. Louis, Mo. 232,061, ren. 11–21–67. Cl. 51.
Person & Covey, Inc., Glendale, Calif. 839,046–7, pub. 9–5–67. Cl. 18.
Petri, Albert L., Redwood City, Calif. 722.424, canc. Cl. 17.
Petrucci and Atwell, Inc., Newton Highlands, Mass. 835,116, cor. Cl. 36.
Pfizer, Chas., & Co., Inc.: *See*—
  Primrose House, Inc.
Philadelphia National League Club, The, Philadelphia, Pa. 839.325–6, pub. 9–5–67. Cl. 107.
Philbrick, George D., d.b.a. Philbrick Patent Personnel, Middletown, N.Y. 839,305, pub. 9–5–67. Cl. 101.
Philbrick Patent Personnel: *See*—
  Philbrick, George D.
Pillsbury Co., The: *See*—
  Pillsbury Mills, Inc.
Pillsbury Mills, Inc., to The Pillsbury Co., Minneapolis, Minn. 433.000, ren. 11–21–67. Cl. 46.
Pilot Chemicals, Inc., from Pilot Chemicals, Inc., Watertown, Mass. 839,002, pub. 9–5–67. Cl. 6.
Plastics, Inc., St. Paul, Minn. 838,990, pub. 9–5–67. Cl. 2.
Playtape, Inc., New York, N.Y. 839,143–4, pub. 9–5–67. Cl. 36.
Plough, Inc., Memphis, Tenn. 839,114, pub. 9–5–67. Cl. 26.
Pluz Products, d.b.a. Nutritional Foods Co., Los Angeles, Calif. 839,351. Cl. 46.
Poly Golf, Inc.: *See*—
  Aimcee Wholesale Corp.
Poppycock Candies: *See*—
  Wander Co., The.
Popular Motor Specialties, Inc., Chicago, Ill. 722,207, canc. Cl. 23.
Porter-Hayden Conduit Co., Baltimore, Md. 722,137, canc. Cl. 13.
Power, James F., d.b.a. Autio Guide, Chenoa, Ill. 839,139, pub. 9–5–67. Cl. 36.
Precision Valve Corp., Yonkers, N.Y. 838,989, pub. 9–5–67. Multiple Class (Classes 2 and 13).
Prestole Corp., Toledo, Ohio. 722,133–4, canc. Cl. 13.

Primrose House, Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 430,902, ren. 11–21–67. Cl. 51.
Prince Matchabelli, Inc., to Chesebrough-Ponds, Inc., New York, N.Y. 433,219–20, ren. 11–21–67. Cl. 51.
Pripp-Bryggerierna AB, Goteborg, Sweden. 839,255, pub. 9–5–67. Cl. 48.
Product Development Laboratories, Inc., West Hartford, Conn. 839,100, pub. 9–5–67. Cl. 23.
Progress Lighting: *See*—
Lighting Corp. of America.
Provident Life & Accident Insurance Co., Chattanooga, Tenn. 839,310, pub. 9–5–67. Cl. 102.
Puritan Sportswear Corp., The, Altoona, Pa. 839,125, pub. 9–5–67. Cl. 32.
Purity Cheese Co., Mayville, Wis. 839,353. Cl. 46.
Purse Co., The, Chattanooga, Tenn. 839,170, pub. 9–5–67. Cl. 38.
Quaker Oats Co., The, Chicago, Ill. 839,246–7, pub. 9–5–67. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 839,352. Cl. 46.
Quartz Radiation Corp., Fairfield, N.J. 839,338. Cl. 21.
R.G.B. Laboratories, Inc., Kansas City, Mo. 839,248, pub. 9–5–67. Cl. 46.
Radio Corp. of America, New York, N.Y. 839,146, pub. 9–5–67. Cl. 36.
Ramada Inns, Inc., Phoenix, Ariz. 839,294, pub. 9–5–67. Cl. 100.
Rand, William, New York, N.Y. 433,789–90, ren. 11–21–67. Cl. 28.
Rau Fastener Co., Providence, R.I. 388,301, canc. Cl. 40.
Rayflex Fabrics, Inc., New York, N.Y. 839,344. Cl. 42.
Redegeld, Joseph, & Co., Inc., Elizabeth, N.J. 839,149, pub. 9–5–67. Cl. 37.
Republic Industrial Corp., New York, N.Y. 839,088, pub. 9–5–67. Cl. 23.
Revlon, Inc., New York, N.Y. 839,362. Cl. 51.
Rexall Drug & Chemical Co., Los Angeles, Calif., from Fiberfil, Inc., Evansville, Ind. 838,984, pub. 9–5–67. Cl. 1.
Rexall Drug & Chemical Co., d.b.a. Syroco, Los Angeles, Calif. 838,993, pub. 9–5–67. Multiple Class (Classes 2, 27, and 32).
Rexall Drug & Chemical Co., d.b.a. Rexall Drug Co., Los Angeles, Calif. 839,052, pub. 9–5–67. Cl. 18.
Rexall Drug and Chemical Co., d.b.a. Vanda Cosmetics Co., Los Angeles, Calif. 839,279, pub. 9–5–67. Cl. 51.
Rexall Drug Co.: *See*—
Rexall Drug & Chemical Co.
Reynolds Aluminum Supply Co., Atlanta, Ga., from Convertible Clip Corp., Vienna, Va. 722,120, canc. Cl. 12.
Richardson, Thos. D., Co., Philadelphia, Pa., to Beatrice Foods Co., Chicago, Ill. 238,535, ren. 11–21–67. Cl. 46.
Rinkeydinks, Inc., The, New York, N.Y. 839,329, pub. 9–5–67. Cl. 200.
Rite-Way Coatings Co., Addison, Ill. 839,019, pub. 9–5–67. Cl. 12.
Roamer Watch Co. S.A., Soleure, Switzerland. 839,117–23, pub. 9–5–67. Cl. 27.
Rodale Press, Inc., Emmaus, Pa. 839,140, pub. 9–5–67. Cl. 36.
Rubbermaid, Inc., Wooster, Ohio. 838,991, pub. 9–5–67. Cl. 2.
Rubinstein, Helena, Inc., New York, N.Y. 839,265–6, pub. 9–5–67. Cl. 51.
Rudin & Roth, Inc., New York, N.Y. 839,190, pub. 7–11–67. Cl. 39.
Rugby Knitting Mills, Inc., Buffalo, N.Y. 234,586, ren. 11–21–67. Cl. 39.
Rusk Corp., Houston, Tex. 839.317, pub. 9–5–67. Cl. 104.
Ruxford Laboratories, Inc., Newark, N.J. 839,216–18, pub. 9–5–67. Cl. 46.
S & W Fine Foods, Inc., d.b.a. Equitable Cash Grocery Co., San Francisco, Calif. 838,999, pub. 9–5–67. Cl. 6.
S and W Fine Foods, Inc., d.b.a. Equitable Cash Grocery Co., San Francisco, Calif. 839,280, pub. 9–5–67. Cl. 52.
Safeway Stories, Inc., Oakland, from Bohemian Distributing Co., d.b.a. International Distilleries Co., Los Angeles, Calif. 839,257, pub. 9–5–67. Cl. 49.
St. Joe Paper Co., Jacksonville, Fla. 839,157–8, pub. 9–5–67. Cl. 37.
Sales Affiliates, Inc., New York, N.Y. 839,276, pub. 9–5–67. Cl. 51.
Samuels, Charlotte, Associates, New York, N.Y. 722,390, canc. Cl. 101.
San, Inc., Chicago, Ill. 722,237, canc. Cl. 36.
San Marino Travel Service, d.b.a. Sanmar Tours, San Marino, Calif. 839.319, pub. 9–5–67. Cl. 105.
Sandeman, Geo. G., Sons & Co., London, England. 839,358. Cl. 49.
Sandoz, Inc., Hanover, N.J. 839,040, pub. 9–5–67. Cl. 18.
Sanmar Tours: *See*—
San Marino Travel Service.
Santen Pharmaceutical Mfg. Co., Ltd., Osaka, Japan. 722,356, canc. Cl. 51.
Sayour, Elias, Co., Inc., New York, N.Y. 722.280, canc. Cl. 39.
Sazerac Co., Inc., d.b.a. John Handy Co., New Orleans, La. 839,259, pub. 9–5–67. Cl. 49.
Schmid, Jos., d.b.a. Jos. Schmid Co., Beaver Dam, Wis. 839,207, pub. 9–5–67. Cl. 46.
Schmid, Jos., Co.: *See*—
Schmid, Jos.
Schratter Import Co., Inc., The, New York, N.Y. 839,225, pub. 9–5–67. Cl. 46.
Scripps, E. W., Co., The: *See*—
New York Telegram Corp., The.
Sea-Air Chemical Corp., Long Island City, N.Y. 839,287, pub. 9–5–67. Cl. 52.
Searle, G. D., & Co., Skokie, Ill. 722,169, canc. Cl. 18.
Sears, Roebuck and Co., Chicago, Ill. 722,114, canc. Cl. 6.
Service Metal Fabricators, Inc., Chicago, Ill. 722,199, canc. Cl. 23.
Servodyne, Inc.: *See*—
C.R.O. Engineering Co., Inc.
Shapleigh Coffee Co., to Stanley W. Ferguson, Inc., d.b.a. Victor Coffee Co., Boston, Mass. 68,024, ren. 11–21–67. Cl. 46.
Shapleigh Coffee Co., to Stanley W. Ferguson, Inc., d.b.a. Victor Coffee Co., Boston, Mass. 68,037, ren. 11–21–67. Cl. 46.
Show Biz, Inc., Nashville, Tenn. 839,327, pub. 9–5–67. Cl. 107.
Siegler, Lear, Inc., Santa Monica, Calif., from American Metal Products Co., Detroit, Mich. 839,127, pub. 9–5–67. Cl. 32.
Signalite Inc.: *See*—
Bendix Aviation Corp.
Singer Co., The: *See*—
Singer Mfg. Co., The.
Singer Mfg. Co., The, Elizabeth, N.J., and New York, N.Y., to The Singer Co., New York, N.Y. 236,080, ren. 11–21–67. Cl. 23.
Siris, A. J., Products Corp., New York, N.Y. 722,110, canc. Cl. 3.
Skandia Furniture Co. of Rockford, Illinois, The. The American Furniture Co., Batesville, Ind. 243,133. Am. 7(d). Cl. 32.
Skasol Inc., San Francisco, Calif. 722,366, canc. Cl. 52.
Skinner Irrigation Co., The, Troy, Ohio. 804,137. Am. 7(d). Cl. 13.
Skinner Irrigation Co., The, Troy, Ohio. 821,873. Am. 7(d). Cl. 13.
Slick Industrial Co., d.b.a. Illinois Shade Division of Slick Industrial Co., Chicago Heights, Ill. 839,126, pub. 7–4–67. Cl. 32.
Smith & Loveless, Inc.: *See*—
Union Tank Car Co.
Sommers of Puerto Rico, Inc., East Rutherford, N.J. 838,988, pub. 9–5–67. Cl. 1.
South Bend Tackle Co., Inc., South Otselic, N.Y. 839,071, pub. 9–5–67. Cl. 22.
Southern Mills, Inc., Atlanta, Ga. 839,196, pub. 9–5–67. Cl. 42.
Southwestern Drug Corp., d.b.a. Truett Laboratories, Dallas, Tex. 839.042–3. pub. 8–22–67. Cl. 18.
Southwestern Petroleum Corp., Fort Worth, Tex. 839,292, pub. 9–5–67. Cl. 100.
Spanish World Records, Inc., New York, N.Y. 839,145, pub. 9–5–67. Cl. 36.
Spartans Industries, Inc., New York, N.Y. 839,116, pub. 8–15–67. Cl. 26.
Spartans Industries, Inc., New York, N.Y. 839,186, pub. 9–5–67. Cl. 39.
Spartans Industries, Inc., New York, N.Y. 839,203, pub. 8–8–67. Cl. 44.
Spatz Bros., Inc., New York, N.Y. 839,179, pub. 9–5–67. Cl. 39.
Spramor Corp. of America, Chicago, Ill. 839,034, pub. 9–5–67. Cl. 16.
Squibb, E. R., & Sons, Inc., New York, N.Y. 839,053, pub. 9–5–67. Cl. 18.
Staedtler, J. S., Nuernberg, Germany. 839,108, pub. 9–5–67. Multiple Class (Classes 26, 29, and 37).
Staley, A. E., Mfg. Co., Decatur, Ill. 839,281, pub. 9–5–67. Cl. 52.
Standard Fruit & Steamship Co., New Orleans, La. 839,221, pub. 9–5–67. Cl. 46.
Standard Oil Co., New York, N.Y. 433,084, ren. 11–21–67. Cl. 38.
Standard Oil Co.: *See*—
Star Oil Co., The.
Standard T Chemical Co., Inc.: *See*—
Toch Bros.
Stanley, Mary E., Rockingham, N.C. 839,345. Cl. 46.
Star Industries, Inc., Long Island City, N.Y. 839,258, pub. 9–5–67. Cl. 49.
Star Oil Co., The, to Standard Oil Co., Chicago, Ill. 433,673, ren. 11–21–67. Cl. 15.
Ste. E.F.A. Etudes et Fabrications Aeronautiques, Paris, France. 839.056, pub. 9–5–67. Cl. 19.
Sterling Drug, Inc., New York, N.Y. 722.162, canc. Cl. 18.
Sterling Drug, Inc., New York, N.Y. 839,048, pub. 9–5–67. Cl. 18.
Sternco Industries, Inc., Allendale, N.J. 839,115, pub. 9–5–67. Cl. 26.
Sternco Industries, Inc., Allendale, N.J. 839,131, pub. 9–5–67. Cl. 34.
Sternco Industries, Inc., Allendale, N.J. 839,261, pub. 9–5–67. Cl. 50.
Stevens, J. P., & Co., Inc.: *See*—
Fuller, D. B., & Co., Inc.
Stork Club, Inc., The, New York, N.Y. 839,307, pub. 9–5–67. Cl. 101.
Straubel Paper Co., Green Bay, Wis. 839,151, pub. 9–5–67. Cl. 37.
Street & Smith Publications, Inc., New York, N.Y. 722,262, canc. Cl. 38.
Stylewise Hosiery Sales, Inc., New York, N.Y. 550,983, canc. Cl. 39.
Sulka, A., & Co., New York, N.Y. 839,274, pub. 9–5–67. Cl. 51.
Sun Spot Co. of America, Inc., Baltimore, Md. 722,291, canc. Cl. 45.
Superior Sleeprite Corp. American Furniture Co., Batesville, Ind. 538,481. Am. 7(d). Cl. 32.
Superior Sports Specialties: *See*—
Chartered Enterprises.
Syroco: *See*—
Rexall Drug & Chemical Co.
Systron-Donner Corp., Concord, Calif. 839,109, pub. 9–5–67. Cl. 26.

INDEX OF REGISTRANTS

Taylor, Robert H., d.b.a. Hearth Shoppe Products Co., Oreland, Pa. 839,132, pub. 9–5–67. Cl. 34.
Telecomputing Corp., Los Angeles, Calif. 722,125, canc. Cl. 13.
Telectro Industries Corp., Long Island City, N.Y. 722,184, canc. Cl. 21.
Telegraphic Cable and Radio Registrations Inc., New York, N.Y. 839,162, pub. 9–5–67. Cl. 38.
Texaco Inc., New York, N.Y. 839,293, pub. 9–5–67. Cl. 100.
Texas Technical Enterprises, Inc., Houston, Tex. 839,320, pub. 9–5–67. Cl. 106.
Textile Machine Works, Reading, Pa. 839,092, pub. 9–5–67. Cl. 23.
Textile Machine Works, Wyomissing, Pa. 722,130, canc. Cl. 13.
Thermos-Gesellschaft m.b.H., Berlin, Germany, to King-Seeley Thermos Co., Ann Arbor, Mich. 67,002, ren. 11–21–67. Cl. 2.
Thunderbird Mfg., Inc., Prescott, Ariz. 722,266, canc. Cl. 39.
Tilghman Packing Co., The, Tilghman, Md. 839,347. Cl. 46.
Titan National Corp., Pasadena, Calif. 722,350, canc. Cl. 50.
Toch Bros., New York, N.Y., to Standard T Chemical Co., Inc., Chicago, Ill. 65,691, ren. 11–21–67. Cl. 16.
Top Form Mills, Inc., New York, N.Y. 722,267, canc. Cl. 39.
Toy Mfg. of The U.S.A., Inc., New York, N.Y. 390,597, canc. Cl. 38.
Truett Laboratories: *See*—
  Southwestern Drug Corp.
Turner Uni-Drive Co., Kansas City, Mo. 722,208, canc. Cl. 23.
Tuxedo, Ltd., Glasgow, Scotland. 839,260, pub. 9–5–67. Cl. 49.
Unger, William, & Co., New York, N.Y. 839,201, pub. 9–5–67. Cl. 43.
Union Camp Corp., New York, N.Y. 839,331. Cl. 2.
Union Carbide Corp.: *See*—
  National Carbon Co., Inc.
Union Tank Car Co., Chicago, Ill., from Smith & Loveless, Inc., Lenexa, Kans. 722,196, canc. Cl. 23.
United Coconut Corp., New York, N.Y. 839,209, pub. 9–5–67. Cl. 46.
United Electrical Mfg. Co., Adrian, Mich., to McGraw-Edison Co., Elgin, Ill. 233,519, ren. 11–21–67. Cl. 21.
U.S. & South American Trading Co.: *See*—
  Dzuibek, Alfred.
Universal Controls, Inc., Cockeysville, Md. 839,091, pub. 9–5–67. Cl. 23.
Universal Lamp Co., Inc., Chicago, Ill. 839,064, pub. 9–5–67. Cl. 21.
University of Miami, d.b.a. The University of Miami, Coral Gables, Fla. 839,167, pub. 9–5–67. Cl. 38.
University of Miami, d.b.a. The University of Miami, Coral Gables, Fla. 839,321, pub. 9–5–67. Cl. 107.
Unusual Tours: *See*—
  Carmona, Israel.
V-P Corn Products, Inc., North Hollywood, Calif. 839,354. Cl. 46.
Vacations Unlimited: *See*—
  Muhly, Frank.
Vanda Cosmetics Co.: *See*—
  Rexall Drug and Chemical Co.
Vasek & Kovar Potato Co., from Vasek-Kovar Potato Co., East Grand Forks, Minn. 839,251, pub. 9–5–67. Cl. 46.
Veterinary Supply Depot, Inc., Dallas, Tex. 839,044, pub. 9–5–67. Cl. 18.
Victor Coffee Co.: *See*—
  Shapleigh Coffee Co.
Victoria, Ltd., to The Borden Co., New York, N.Y. 432,442, ren. 11–21–67. Cl. 51.
Vi-Jon Laboratories, Inc.: *See*—
  Peroxide Chemical Co., The.
Voelkl, Alfredo, Bogota, Colombia. 839,036, pub. 9–5–67. Multiple Class (Classes 18, 45, and 46).
Wallace & Tiernan, Inc., East Orange, N.J. 839,007–9, pub. 9–5–67. Cl. 6.
Wander Co., The, d.b.a. Poppycock Candies, Chicago, Ill. 722,327, canc. Cl. 46.
Water Treatment Corp., Rockford, Ill. 787,725, canc. Cl. 13.
Watkins Motors, Chester, Pa. 839,313, pub. 9–5–67. Cl. 103.
Weldon Tool Co., The, Cleveland, Ohio. 839,097, pub. 9–5–67. Cl. 23.
Weldon, Williams & Lick, Inc., Fort Smith, Ark. 839,342. Cl. 38.
Weldun Engineering Corp., Santa Fe Springs, Calif. 839,068, pub. 9–5–67. Cl. 22.
Wells Dairies Cooperative, Columbus, Ga. 839,213, pub. 9–5–67. Cl. 46.
Westab Inc., Dayton, Ohio. 839,155, pub. 9–5–67. Cl. 37.
Westward Ho! Restaurants, Inc., Miami, Fla. 839,298, pub. 9–5–67. Cl. 100.
What-Lite Products, Chicago, Ill. 722,204, canc. Cl. 23.
Whirlpool Corp., St. Joseph, Mich. 722,371, canc. Cl. 52.
Whitford Chemical Corp., West Chester, Pa. 838,986, pub. 9–5–67. Cl. 1.
Williams, Mildred F., d.b.a. Lake Side Aquarium, Monticello, Ind. 839,239, pub. 9–5–67. Cl. 46.
Wilson Sporting Goods Co., from Wilson Sporting Goods Co., River Grove, Ill. 839,069, pub. 9–5–67. Cl. 22.
Wilson Sporting Goods Co., from Wilson Sporting Goods Co., River Grove, Ill. 839,073, pub. 9–5–67. Cl. 22.
Wilson Sporting Goods Co., from Wilson Sporting Goods Co., River Grove, Ill. 839,077–8, pub. 9–5–67. Cl. 22.
Windsor Wax Co., Inc., Hoboken, N.J. 839,285, pub. 9–5–67. Cl. 52.
Winer, Arthur, Inc., Gary, Ind. 839,184, pub. 5–23–67. Cl. 39.
Wizard Boats, Inc., Costa Mesa, Calif. 722,170, canc. Cl. 19.
Wood Newspaper Machinery Corp., Plainfield, N.J. 839,103, pub. 9–5–67. Cl. 23.
Wyeth Laboratories: *See*—
  American Home Products Corp.
Yankee Colour Corp., Southboro, Mass. 839,169, pub. 9–5–67. Cl. 38.
Zippo Mfg. Co., Bradford, Pa. 839,076, pub. 9–5–67. Cl. 22.

U.S. GOVERNMENT PRINTING OFFICE: O—1967

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 28, 1967 Volume 844 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1967

Examiner affirmed	201
Examiner affirmed in part	31
Examiner reversed	74
Total	306

Guidelines for Disclosures of Utility in Patent Applications for Drugs

The following are guidelines which the Patent Office proposes to adopt in the examination of applications for patents for drugs. Comments as to these guidelines will be considered if received on or before January 16, 1968, on which date a public hearing on the matter will be held at 10:00 a.m. in Building 34 (3rd floor) at Crystal Plaza. All persons wishing to be heard orally at that time are requested to notify the Commissioner of their intended appearance.

EDWARD J. BRENNER,
Commissioner of Patents.

Oct. 24, 1967.

GUIDELINES FOR DISCLOSURES OF UTILITY IN DRUG CASES

Introduction

It is felt that special consideration be accorded utility disclosures in drug cases in view of the public interest, particularly as expressed in Public Law 87-781.

> SEC. 702(a) * * *
>
> (d) The Secretary is authorized and directed, upon request from the Commissioner of Patents, to furnish full and complete information with respect to such questions relating to drugs as the Commissioner may submit concerning any patent applications. The Secretary is further authorized, upon receipt of any such request, to conduct or cause to be conducted, such research as may be required.
>
> The Food, Drug and Cosmetic Act defines a drug—
>
> The term "drug" means (A) articles recognized in the official United States Pharmacopeia, Official Homeopathic Pharmacopeia of the United States, or official National Formulary, or any supplement to any of them; and (B) articles intended for use in the diagnosis, cure mitigation, treatment, or prevention of disease in man or other animals; and (C) articles (other than food) intended to affect the structure or any function of the body of man or other animals; and (D) articles intended for use as a component of any articles specified in clause (A), (B), or (C); but does not include devices or their components, parts, or accessories.

SEC. 201(g)(1) Federal Food, Drug, and Cosmetic Act as amended.

In addition, compositions adapted to be applied to or used by human beings e.g., cosmetics, dentifrices, mouthwashes, etc. may be treated in the same manner as drugs if there is a question that their use may affect the health or well being of the person.

35 U.S.C. 101

Since predictability in this field is limited, a question should be raised as to the adequacy of the disclosure that a claimed genus possesses the asserted utility or operativeness under Section 101. That it does is reasonably inferable from a disclosure or showing of a sufficient number of representative examples together with a statement applicable to the genus as a whole.

Utility must be definite and in currently available form; not merely for further investigation or research. Thus generalized and vague assertions such as "therapeutic agents," "for pharmaceutical purposes," "biological activity," "intermediates," and for making further unspecified preparations are regarded as too nebulous and insufficient.

If the asserted utility is believable on its face and not unreasonable the burden is on the examiner to give adequate reasons for disbelief. On the other hand, incredible statements such as the cure or remission of malignant tumors, cure of tuberculosis or diabetes or of any disease condition or symptom known to be intractable to treatment will require adequate proof on the part of applicants for patents. It is presumed that applicants for patents are in the best position to supply evidence to support the assertions.

A spectrum of credibility exists between the noted limits. Criteria for testing the compliance of the assertion of the utility with Section 101 and the credibility of these assertions depends, inter alia, upon the nature of the disease, the seriousness of the use contemplated, the scope of the results claimed, the similarity to known successful drugs, the specificity with which the use is identified, the pattern of the biological response and the art knowledge concerning such response, and the safety of the drug, where necessary.

In instances where a question of proof to satisfy Section 101 is involved, the evidence offered is to be tested by the same criteria. If the specified or implied utility involves humans, clinical evidence is necessary; however, there is authority that animal tests are acceptable if the tests are of a kind that the results are known to be closely correlated with human utility. In accordance with the present case law, if there is no assertion of human utility, operativeness for use on standard test animals is adequate for patent purposes. Further, if the evidence shows that the drug is not safe in the dosage or mode of use for which it is effective, the disclosure will not satisfy the utility requirement of Section 101. Absolute safety is not necessarily required.

35 U.S.C. 112

The standards of disclosure for compliance with Section 112 in respect to the statutory language of "written description of * * * using" the invention "as to enable any person skilled in the art to which it pertains * * * to use the same" are to be strictly construed in view of the special public

New Applications Received During October 1967

Patents	7650
Designs	428
Plant Patents	13
Reissues	14
Total	8105

Issue—November 28, 1967

Patents	1276	—No. 3,354,468 to No. 3,355,743, incl.
Designs	61	—No. 209,383 to No. 209,443, incl.
Plant Patents	2	—No. 2,779 to No. 2,780, incl.
Reissues	7	—No. 26,308 to No. 26,314, incl.
Total	1346	

interest involved. Thus the extension of specific utilities to classes of compounds must be adequately supported by sufficient and typical exemplification and by a representation that the class as a whole possesses the asserted utility.

A mere statement of pharmacological and chemotherapeutic use for a new compound will raise a question of compliance with Section 112. If however the statement of utility contains within it a connotation of how to use and the art recognizes that standard modes of administration, including parameters, are contemplated Section 112 is satisfied. If on the other hand, the use disclosed is of such nature that the art is unaware of successful treatments with chemically analagous compounds a more complete statement of the parameters of utility and mode of administration should be set forth.

In the case of mixtures formulated including a drug as an ingredient or mixtures which are drugs or methods of treating a specific condition with a drug, whether old or new, a specific example of how to use must be set forth, which will include the organism treated and mode and parameters of administration.

General Principles

In those instances where several distinct utilities are disclosed, each should be investigated for compliance with Sections 101 and 112 as though it existed alone and such utility as fails to satisfy these guidelines should be required to be deleted.

The standard for statements and showings in this field is that which is the practice in the United States rather than the country of origin.

Inquiries Re Status of Pending Applications

The Office has lately received a large number of status inquiries relative to the expected action date on pending applications. These require substantial time on the part of the clerical and examiner forces to answer. In many instances it seems that these inquiries are unnecessary since the OFFICIAL GAZETTE notes by Group the filing date of the oldest new and amended case awaiting action.

It appears that many attorneys are routinely sending in status letters because of a misunderstanding of the 826 O.G. 372 notice "Duty of Inquiry as to Status of Pending Applications." Under that notice the question as to applicant's diligence in checking the status of an application arises in connection with petitions to revive applications which become abandoned through failure to respond to an Office action which had been mailed but not received.

That notice seeks to cut down the number of status letters for both new and amended applications. For new applications, no lack of diligence will be attributed if inquiry is made within a reasonable time *after* the OFFICIAL GAZETTE indicates that the date for the Group in which the application is assigned for examination is more recent than applicant's filing date. For amended applications, lack of diligence will not be attributed if inquiry is made within six months after filing the response; obviously an inquiry after only about two months would be premature.

Thus, no status letter or inquiry is needed for new applications until *after* the application date becomes *older* than the reported Group date in the OFFICIAL GAZETTE, and none is needed in an amended case until at least three months after date of filing the amendment or response.

If an inquiry as to the expected time an application will receive an action is found necessary, such inquiry should be accompanied by a stamped return-addressed envelope.

RICHARD A. WAHL,
Assistant Commissioner.

Oct. 17, 1967.

Examination

Pursuant to the provisions of Rule 341(c), an examination for persons seeking registration before the United States Patent Office as patent attorneys or agents will be held on Tuesday, February 13, 1968.

This examination will be given under the supervision of the Civil Service Commission, and may be taken in any of the cities in which the Civil Service Commission regularly conducts examinations. Applications to take the examination must be filed in the Patent Office together with a $15 fee not later than January 12, 1968.

Application blanks may be obtained from the Clerk of the Patent Office Committee on Enrollment, Bldg. 3, 11th Floor, Room C16, Crystal Plaza or by mail directed to the attention of the Clerk of the Committee on Enrollment, U.S. Patent Office, Washington, D.C., 20231.

EDWIN L. REYNOLDS,
Chairman, Committee on Enrollment.

Oct. 31, 1967.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 25, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	3-16-64	5-31-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	4-15-64	3- 5-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Manager Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	1-25-65	5-14-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	8- 3-64	6-12-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	4-27-64	7-23-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	6-23-64	7- 5-63
SECURITY, GROUP 220—S. BOYD, Manager Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3- 7-66	2-17-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1- 8-64	2- 5-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-10-64	1- 8-62
PHYSICS, GROUP 280—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-18-65	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager Industrial Arts; Household, Personal and Fine Arts.	1-14-66	9- 3-65

Total number of pending applications (excluding Designs)	182, 075
Total number of Design applications pending	4, 205
Total number of applications awaiting action (excluding Designs)	131, 517
Total number of Design applications awaiting action	2, 251
Date of oldest new application awaiting action	Jan. 8, 1964
Date of oldest amended application awaiting action	Jan. 8, 1962

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during November 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the ***Annual Index of Patents—1965***.

Patents	Numbers 2,528,483 to 2,532,275, inclusive
Plant Patents	**Numbers 986 to 995, inclusive**

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	1-21-66	10-16-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	7- 7-65	3-18-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	5-16-65	4-22-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	3- 1-66	12-21-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports: Cabinet Structures.	8- 9-65	4-30-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	9- 9-65	10-18-62

DECISIONS IN PATENT AND TRADEMARK CASES

In the United States Patent Office
Before the Board of Appeals

Ex parte Alex Robbins

Appeal No. 271—71. Decided November 9, 1964

1. Design—Drawing—New Matter.

"Turning to the sketch, it shows the perforated disc in cross-section having a concavity of substantial depth, not shown in the original or the substitute drawings. Physical entry of the sketch as a part of the design would be entry of new matter, and should not be entered."

2. Same—Patentability—Dotted Line—Combining References—Non-Analogous Art.

"While it is the appearance of the diffuser disc assembly, which is shown in full lines in the drawings, that constitutes the essence of the subject design, said assembly is limited both by its dotted line association in the drawings and also by the claim itself to a sound trumpet, albeit not necessarily to the trumpet shape outlined in the drawings. The fruit juicer of Scott relates to a wholly unrelated art. We do not believe that the average designer of sound trumpets [as shown by the Allied Radio catalog publication] would be likely to go to the fruit juicer or squeezer art for suggestions on how he might improve the appearance of sound trumpets. *In re Glavas*, 43 CCPA 797, 1956 C.D. 177, 705 O.G. 441, 230 Fed. (2d) 447, 109 USPQ 50. Accordingly, the proposed combination of the two references is not sustainable."

3. Same—Same—Anticipation—Non-Analogous Art.

"However, as pointed out by the court in *In re Glavas*, supra, at 1956 C.D. 181, 'the use to which an article is to be put has no bearing on its patentability as a design,' and 'Accordingly, so far as anticipation by a single prior art disclosure is concerned, there can be no question as to non-analogous art in design cases,' we still must compare the overall appearance of the subject design [for a sound radiator trumpet] with that of the juicer device of Scott, *per se* * * *. A comparison thereof does not convince us that the two devices have substantially the same overall appearance, or that the average observer will consider the two designs as manifestations of the same basic design."

Appeal from the Examiner (E. H. Hunter) of Group 490. Serial No. D. 69,874.

REVERSED.

Leo Stanger for appellant.

Before Dracopoulos, Bailey and Brewrink, *Examiners-in-Chief*

Dracopoulos, *Examiner-in-Chief*.

This is an appeal from the final rejection of the following claim:

The ornamental design for a sound radiator trumpet as shown and described.

The references of record relied upon are:

Scott, 2,088,815, Aug. 3, 1937.

Allied Radio catalog 200, 1961, page 335, bottom right corner, speaker University 1BA-8 item.

The subject design, as described on page 1 of the Examiner's answer,

". . . consists of a sound radiator trumpet having a central projection protruding from the bell, all shown in broken lines, with a solid line showing of a perforated concave round disc mounted at the exterior end of the protruding central projection and a smaller diameter flat unperforated round disc concentrically mounted in front of and in contact with the perforated disc. The dominant features are claimed to reside in the solid line showing of the perforated and unperforated discs."

The pertinencies of the references are set forth on page 2 of the Examiner's answer, Scott as showing a flat, round, perforated plate

12 in FIG. 5 forming a part of a fruit juicer, and Allied Radio catalog as showing a round radiator trumpet having a central projection protruding from the bell thereof.

The Examiner has rejected the claim as lacking anything ornamentally patentable over the perforated flat disc 12 shown in FIG. 5 of Scott, taking the position that dishing said disc to make it concave would not amount to a patentable modification thereof. He has also rejected the claim as unpatentable over Scott in view of Allied Radio catalog trumpet on the basis that the mere application of the Scott perforated plate to the outer end of the central projecting member of the Allied Radio trumpet is nothing more than applying an old design to a new use and thus unpatentable. He considers the small unperforate disc at the center of the perforated disc, which is not shown in the references, to be but a minute detail not patentably distinguishing the design.

In the last paragraph on page 1 of the answer, the Examiner refers to a sketch accompanying Paper No. 8, as to which he states that "in the event that this application is found allowable, a letter requesting entry of a figure in accordance with this sketch will be required."

A review of the application file and drawings in the case to determine the real appearance of the subject design, reveals an original informal print and a subsequent acceptable drawing. The latter differs from the former as to the solid line discs by the addition of shade lines, which accentuate the presence of some degree of concavity in the perforated disc, which was evidenced in the original print by the fore-shortening appearance of the disc in perspective as shown in FIG. 1. Thus, the two drawings appear to be consistent with each other, i.e., that some degree of concavity in the perforated disc is present.

The record further reveals that said sketch was filed pursuant to the Examiner's criticism that the depth relationship of the perforate and unperforate plates and the degree of concavity may not be ascertained from either of the views in the drawing and to his requirement of a clear disclosure in the event of allowance or appeal.

[1] Turning to the sketch, it shows the perforated disc in cross-section having a concavity of substantial depth, not shown in the original or the substitute drawings. Physical entry of the sketch as a part of the design would be entry of new matter, and should not be entered. Therefore, we will restrict our consideration of the design to the two figures shown in the accepted substitute drawings and to the claim at bar.

We do not subscribe to either ground of rejection. [2] While it is the appearance of the diffuser disc assembly, which is shown in full lines in the drawings, that constitutes the essence of the subject design, said assembly is limited both by its dotted line association in the drawings and also by the claim itself to a sound trumpet, albeit not necessarily to the trumpet shape outlined in the drawings. The fruit juicer of Scott relates to a wholly unrelated art. We do not believe that the average designer of sound trumpets would be likely to go to the fruit juicer or squeezer art for suggestions on how he might improve the appearance of sound trumpets. *In re Glavas*, 43 CCPA 797, 1956 C.D. 177, 705 O.G. 441, 230 Fed. (2d) 447, 109 USPQ 50. Accordingly, the proposed combination of the two references is not sustainable.

[3] However, as pointed out by the court in *In re Glavas*, supra, at 1956 C.D. 181, "the use to which an article is to be put has no bearing on its patentability as a design," and "Accordingly, so far as anticipation by a single prior art disclosure is concerned, there can be no question as to non-analogous art in design cases," we still must compare the overall appearance of the subject design with that of the juicer device of Scott, *per se*, i.e., the assembly composed of parts 9, 12 and 14 of Scott, or of member 9 and 12 in assembled position in bowl 14. A comparison thereof does not convince us that the two devices have substantially the same overall appearance, or that the average observer will consider the two designs as manifestations of the same basic design. In our opinion, the dished perforated disc with the flat washer or disc at its center provides a distinctly different overall appearance than the flat perforated disc 15 with the materially protruding conical member 9. Therefore, the rejection of the claim on Scott alone is also not sustainable.

The decision of the Examiner is reversed.

REVERSED.

In the United States Patent Office
Before the Board of Appeals

Ex parte Horst Lange

Appeal No. 621—13. Decided June 30, 1966

1. Patentability—Composition—Obviousness—35 U.S.C. 103.

Upon considering the rejection of claims to an "artificial luminescent material consisting essentially of strontium aluminate activated with europium (II) oxide" over a reference publication disclosing over 100 host materials or compounds capable of being activated by divalent manganese and 19 that are activated by divalent europium, 11 of the host materials being activated by either, *Held* that "We will not sustain the Examiner's rejection" because "There is nothing in the reference pages presented to us which deals directly with the interchangeability of activators for host materials, or which describes the manner in which activators work or gives any other guides that would show that the prior art is aware of those things that would make the substitution of one activator for another obvious under 35 U.S.C. 103."

2. Same—Same—Same—Same.

"The most we can say from the reference as the Examiner presents it, is that the worker of ordinary skill in the art would see some similarity between the action of the divalent forms of europium and manganese as activators. The Examiner, in effect, asks us to conclude that such worker would carry this similarity to the point of the obviousness demanded by the statute, as to each and every host material listed by the reference. This we cannot do, anymore than we can conclude from this type of evidence that the prior art recognizes that any known activator will activate any known host material, or that any catalyst will catalyze any chemical reaction."

3. Same—Particular Subject Matter—"Artificial Luminescent Material."

The rejection of certain claims in an application entitled "Artificial Luminescent Material," as unpatentable over the prior art, is reversed.

Appeal from the Examiner (Tobias E. Levow) of Group 110. Serial No. 254,969.

REVERSED.

Ernest W. Legree and Frank L. Neuhauser for appellant.

Before Lidoff and Mangan, *Examiners-in-Chief*, and Campbell, *Acting Examiner-in-Chief*

Mangan, *Examiner-in-Chief*.

This appeal is from the final rejection of claims 1 through 6, all of the claims in the case.

Claim 1 is illustrative:

1. An artificial luminescent material consisting essentially of strontium aluminate activated with europium (II) oxide.

The reference relied upon is:

Kroger, Some Aspects of the Luminescence of Solids, Elsevier Pub. Company, New York, 1948, pages 60, 61, 270–272 and 292.

The Examiner has rejected the claims as unpatentable over Kroger. The only disclosure in the reference as to the activator is found in the symbol "Mn" at the top of page 270; the symbol "Eu^{2+}" in bold type on page 292, line 5; the title "Manganese as an Activator" at the top of page 60; and the text material on page 61, which relates to the effect of the valency of manganese on its activating properties. Otherwise, the reference lists, under these activator headings, over 100 host materials, or compounds which are activated to luminesce by divalent manganese and 19 that are activated by divalent europium. Eleven of these materials are activated by either of these activators and on this basis the Examiner has concluded that there is a coincidence in the materials activated that would have made it obvious to the worker of ordinary skill in the art to substitute divalent europium for the manganese as the activator for strontium aluminate on page 60 of the reference.

[1] We will not sustain the Examiner's rejection. There is nothing in the reference pages presented to us which deals directly with the interchangeability of activators for host materials, or which describes the manner in which activators work or gives any other guides that would show that the prior art is aware of those things that would make the substitution of one activator for another obvious under 35 U.S.C. 103.

[2] The most we can say from the reference as the Examiner presents it, is that the worker of ordinary skill in the art would see some similarity between the action of the divalent forms of europium and manganese as activators. The Examiner, in effect, asks us to conclude that such worker would carry this similarity to the point of the obviousness demanded by the statute, as to each and every host material listed by the reference. This we cannot do, anymore than we can conclude from this type of evidence that the prior art recognizes that any known activator will activate any known host material, or that any catalyst will catalyze any chemical reaction.

[3] The decision of the Examiner is reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

IN RE WILLIAM O. WESSELER

No. 7614. Decided October 20, 1966

[54 CCPA —; 368 F.2d 838; 151 USPQ 339]

1. REISSUE—BROADENED CLAIMS—35 U.S.C. 251.

"The reissue statute, section 251, authorizes the Commissioner, upon the surrender of the patent and the payment of the fee required by law, to 'reissue the patent for the *invention disclosed* in the original patent.' [Emphasis added.] It further provides that 'No reissued patent shall be granted enlarging the scope of the claims of the original patent unless applied for within two years from the grant of the original patent.' The Board concedes the invention as claimed here was disclosed in the original patent and that the reissue application was timely filed to permit appellant to seek broader claims. Appellant thus had the right by reissue to enlarge the *scope* of the patent claims in accordance with the *invention disclosed* in the original patent subject to compliance with the remaining provisions of section 251, e.g., the appealed claims must define patentable subject matter, conceded here."

2. SAME—SAME—ERROR—35 U.S.C. 251.

"* * * we find appellant claimed in his patent 'less than he had a right to claim,' and as such is entitled to utilize the remedial provisions of section 251 to claim his invention in a reissue of his patent by omitting limitations in the patent claims if he can show that the limitations which resulted in his claiming less than he had a right to claim were included 'through error.' If such error can be shown and subject to the other qualifications in section 251, such a limitation in the patent claims may be omitted in the reissue claims."

3. SAME—DISCLOSURE—PATENT DISCLOSURE DETERMINES ISSUE.

"The fundamental error * * * is the failure to approach the issue by considering the *facts* of record *in light of the applicable reissue provisions*. First, we find that the invention disclosed in the patent is a hanger assembly. It is this disclosure and not the claims of the patent which determines the issue."

4. SAME—ERROR—*In re Willingham* CONSTRUED—35 U.S.C. 251.

"We recently reviewed, in *In re Willingham*, 48 CCPA 727, 282 F.2d 353, 127 USPQ 211, the requirement of the reissue provisions that error be shown. In that case the applicant submitted a new claim for an unrejected claim. Therein the argument was advanced that the applicant had acted 'deliberately' and 'intentionally' during the prosecution of the patent application as justification for refusing a broadened claim in a reissue application. In rejecting this argument, we relied on the fact that the reissue provisions are 'remedial in nature.' They are 'based on fundamental principles of equity and fairness and should be so applied to the facts in any given case that justice will be done both to the patentee and to the public.'"

5. APPLICATION—MISJOINDER OF INVENTORS—ERROR—*In re Schmidt* CONSTRUED—35 U.S.C. 116 AND 251.

"More recently, in *In re Schmidt*, 48 CCPA 1140, 293 F.2d 274, 130 USPQ 404, we considered the meaning of the term 'error' in 35 U.S.C. 116, providing remedies for the misjoinder of inventors. Therein we held that a mistake in belief, absent evidence of a deceptive intention, was an 'error' which could be corrected by the remedial provisions of section 116. The argument was advanced in *Schmidt* that the phrase 'error without any deceptive intention,' appearing in near identical terms in both sections 116 and 251, must mean 'error through inadvertence, accident or mistake' as it appears in the old reissue statute, 35 U.S.C. 64, sec. 4916 R.S. as certain dictum to this effect appears in *In re Byers*, supra. The argument was rejected in view of the fact that Congress had not defined 'error' in that manner in section 116.

6. REISSUE—BROADENED CLAIMS—RECAPTURE—*In re Byers* DISTINGUISHED.

"The Board relied on the decision in *Byers* as being applicable to the facts here [involving a broadened reissue application]. The opinion in *Byers* states that it did *not* have the facts of the prosecution of the patent application before it but that it accepted the unchallenged statement of the Board that the claim had been 'deliberately' amended 'to secure the patent.' Here we have the facts of record and we do not have the situation referred to in *Byers* other than in the literal sense that every paper formally submitted is generally done 'deliberately' and with the design of advancing the prosecution so as to secure a patent. * * * that is not what is meant by the term 'deliberate.'"

7. SAME—ERROR—35 U.S.C. 251.

"* * * the new reissue statute broadened the term 'error' by not limiting it to 'error' that had arisen through 'inadvertence, accident or mistake.' We think the term 'error,' arising as it does in a remedial provision designed to advance both the rights of the public and the inventor, is to be interpreted as Congress has stated it, 'error without any deceptive intention,' and in light of Supreme Court decisions favoring the liberal construction of reissue statutes in order to secure to inventors protection for what they have actually invented."

8. SAME—BROADENED CLAIMS—RECAPTURE—*Shepard* v. *Carrigan* CONSTRUED.

"*Shepard* [v. *Carrigan*] may be support for the rule that one who deliberately adds a limitation to avoid the prior art cannot omit that limitation in reissue claims so as to encroach upon the prior art * * *."

9. SAME—BROADENED CLAIMS—ERROR—35 U.S.C. 251.

"We find as a factual matter that a mistake occurred in the prosecution of the patent application. That mistake was in not then presenting the appealed claims with the result that appellant's patent claimed less than he had the right to claim. The record establishes that appellant erroneously considered he was securing protection commensurate with the invention disclosed in the original application. There is no evidence that appellant intentionally omitted or abandoned the claimed subject matter. We find that while appellant *acted* 'deliberately' he did so in error. This error, in view of the facts of record, was an 'error without any deceptive intention' which entitles appellant to secure a reissue of his patent under the provisions of section 251."

10. CLAIM—CONSTRUCTION OF CLAIMS—WORDS AND PHRASES—"CHANNEL" AND "TUBULAR MEMBER."

"We think the breadth of the term channel does not disclose the specific meaning attributable to the term tubular. We agree with the Solicitor that in ordinary usage a 'tubular' member is closed in cross-section. Accordingly, we do not find the disclosure in the specification of the member as a 'channel' as support for claiming a 'tubular member.'"

APPEAL from the Patent Office. Serial No. 155,891.

MODIFIED.

Robert W. Beach (*George R. Jones*, of counsel) for appellant.

Joseph Schimmel (*S. Wm. Cochran*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

This appeal presents two issues: first, whether appellant-patentee, in claiming less than he had a right to claim in his patent,[2] is entitled under 35 U.S.C. 251 to a reissue of that patent containing appealed claims 6, 7, 13, 14 and 15 which are asserted to be properly commensurate with the scope of his invention; second, whether he has inserted new matter in appealed claims 4 and 5 in his application for reissue [3] contrary to section 251.

Claims 6, 7, 13, 14 and 15 stand rejected on the ground that they are improperly presented in a reissue application in that appellant did not show that the failure to include such claims in his patent constitutes "error" under section 251 which entitles him to secure the claims in a reissue patent. Appellant and the Solicitor agree, and the Board of Appeals so found, that the subject matter defined in these claims is useful, novel and unobvious. Claims 4 and 5 stand rejected on the ground that they contain new matter. The two rejections are independent and will be treated separately.

The Invention

The invention, a cable hanger, is for supporting cables, pipes, conductors, ducts and the like. The specification states the objects of the invention as follows:

> Accordingly, a principal object of this invention is to provide a hanger capable of withstanding heavy shock loading, and which is sufficiently rigid but yieldable to distribute the shock throughout the hanger.
>
> Another object is to provide a hanger which has greater versatility in accommodating different sizes and arrangements of cables and the like and which will eliminate the need for large and costly inventories.
>
> Still other objects are to provide a hanger which will effect a reduction in weight without a sacrifice of strength; to provide a hanger capable of expedit-

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[1] United States Senior District Judge for the Eastern District of Pennsylvania, designated to participate in place of Chief Judge Worley, pursuant to provisions of section 294(d), Title 28, United States Code.

[2] No. 2,939,664, issued June 7, 1960.

[3] Serial No. 155,891, filed Nov. 27, 1961, entitled "Cable Hanger."

ing and reducing installation costs by permitting use of commercially available banding tools; and to provide a hanger which is less expensive to construct, install and maintain.

The specification discloses three hanger assemblies suitable for supporting a single cable, a single row of cables, or multiple rows of cables respectively. The embodiment referred to as the hanger assembly for a single row of cables provides the most suitable base for explaining appellant's invention. We will refer to FIGS. 3, 4 and 7 of the reissue specification, concerning which there is no objection.

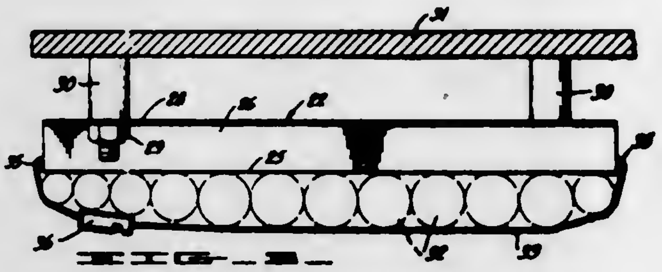

FIG-3-

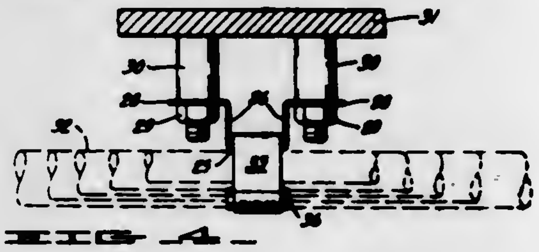

FIG-4-

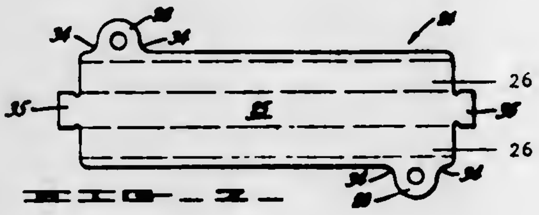

FIG-7-

In FIG. 7, there is shown a flat sheet metal blank 24 having a base portion 25, flange portions 26, lips 35, and legs 28. The blank 24, after forming, constitutes the saddle 22 shown in FIGS. 3 and 4. In these latter figures, pipes 32 are shown abutting base portion 25 and constrained by a band 33 which loops about the base portion and the pipes with fastening means shown at 36. The hanger assembly is fastened to the structure 31 by standards 30. According to the specification, "Normally, two lugs are needed for wide cable groupings."

In the embodiment showing multiple rows of cable, multiple hanger assemblies are deployed in stacked vertical arrangement with different forms of standards. In the single cable embodiment, only one lug and flange portion is shown.

The specification points out that the objects of the invention are generally achieved

> *** * * by the provision of a hanger that employs a flexible clamping member, preferably of band material, capable of being looped completely around both the object to be supported, such as a single cable or group of cables, and the support. The looped band can be simply and expeditiously tensioned by a commercially available banding tool and the ends of the band secured in such condition by a suitable buckle.**

It is clear that important objects of the invention are the elimination of a large inventory of parts and the provision of a hanger which will reduce vibrations due to shocks.

Prosecution History

The original application as filed contained ten claims. Eventually amended claims 25, 26 and 27 were allowed and became claims 1, 2 and 3 of the issued patent. This application was prosecuted by attorneys for the Department of the Navy, since appellant, for reasons not of record, appears to have licensed the invention set forth in the application to the U.S. Government and had given these attorneys the "irrevocable right to prosecute this application."

According to appellant, shortly after he received his patent "he had misgivings about the scope of protection afforded by it and consulted outside counsel." After consulting with present counsel, appellant decided to file the reissue application. This application was filed within two years from the date of the issuance of the patent. The accompanying oath states, in part, as follows:

> * * * reissue of Patent 2,939,664 on the basis of this application should be granted because I consider said patent to be defective through error without any deceptive intention on my part by claiming less than I had a right to claim in the patent, the said subject matter being embodied in claims 4 to 9, inclusive, of the present application.
>
> Said defect I believe occurred because I am not admitted to practice before the United States Patent Office and am not familiar with patent matters and relied on my attorneys for the preparation and prosecution of patent application Serial No. 531,208. While I was kept reasonably informed of the progress in the prosecution of said patent application I was unable to evaluate whether the claims, as presented during the prosecution of the patent application and as finally allowed, afforded adequate and proper protection for my invention.

The reissue application was filed with 9 claims. By amendment other claims were added until it eventually contained a total of 18 claims all of which were finally rejected by the Examiner. Several of the claims were rejected on multiple grounds. On appeal, the Board rendered a decision and thereafter took action on two petitions for rehearing. The ultimate disposition of the appeal by the Board was to reverse certain rejections, sustain others and enter a new ground of rejection. We will set forth briefly the grounds of rejection and the Board's disposition of the appealed claims in its first opinion.[4]

Claims 4 and 5

These claims were copied from a patent to Richardson et al.[5] for purposes of provoking an interference. The Examiner rejected these claims on the grounds of "new matter" and "as not supported by applicant's disclosure." The Board sustained the Examiner's rejection.

Claims 6 and 7

These claims are asserted to be similar to claims in Richardson. They were rejected by the Examiner as containing new matter. As a new ground of rejection, the Examiner's answer stated that the claimed subject matter was obvious under section 103. These grounds of rejection were reversed by the Board. However, the Board, pursuant to Rule 196(b), made a new ground of rejection under section 251, stating no "error" had been shown as justification for presenting these claims in the reissue application.

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[4] Claims 1–3, 8–10, and 16–18 were also considered by the Board. Appellant argues here only as to claims 4–7, and 13–15. No further mention need be made as to the claims concerning which no argument has been presented except as necessary to explain the proceedings below.

[5] U.S. Patent No. 2,964,274, filed Dec. 30, 1958, issued Dec. 13, 1960.

Claims 13, 14 and 15

These claims were rejected by the Examiner on the grounds that the supporting oath was defective; that they incorporated new matter; and, as a new ground of rejection stated in the Examiner's answer, that the claimed subject matter was obvious under section 103. The Examiner withdrew the first two grounds of rejection and the Board reversed the Examiner's rejection based on obviousness. The Board, however, entered a new ground of rejection under section 251, stating no "error" had been shown.

The Board, in acting on appellant's first petition for rehearing, set forth further reasoning in support of its action and adhered to the above disposition of the appealed claims. However, certain other non-appealed claims were found to lack novelty over a prior art reference. As the Board in its first decision had reversed the Examiner's rejection of these claims[6] under section 103, it was of the opinion that a new decision had been rendered.

Appellant, proceeding under Rule 197(b), submitted a second petition for rehearing. The Board set forth further reasons in support of its position and affirmed its previous disposition of the appealed claims. Within 30 days after the Board took action on the second petition, appellant filed a timely appeal to this court.

Thus, in summary, claims 6, 7, 13, 14 and 15 were rejected by the Board under section 251 in its first opinion and the reasoning in support thereof is set forth and elaborated on in all three of its opinions. Claims 4 and 5 were rejected by the Examiner as containing new matter and this rejection was affirmed by the Board for the reasons set forth in its first opinion. We shall now consider these two rejections and the Board's reasoning with respect thereto.

Opinion

We shall first consider the issue presented as to claims 6, 7, 13, 14 and 15. The only rejection remaining as to these claims is that made by the Board as a new ground of rejection. The question here is whether appellant is claiming subject matter omitted from his patent claims through "error" within the meaning of section 251.

The Board, in reaching its conclusion that appellant was not entitled to relief under section 251, employed several lines of reasoning in succession. In its first opinion, the Board was of the view that appellant had introduced specific limitations "for the purpose of getting a patent" and was "not entitled to a reissue to obtain any claim which omits the specific limitations introduced as a *matter of judgment* in order to obtain a patent." [Emphasis added.] The Board relied on *In re Byers*, 43 CCPA 803, 230 F.2d 451, 109 USPQ 53, and *Shepard* v. *Carrigan*, 116 U.S. 593 (1886), quoting from the latter, 116 U.S. at 597, the following:

> * * * Where an applicant for a patent to cover a new combination is compelled by the rejection of his application by the Patent Office to narrow his claim by the introduction of a new element, he cannot after the issue of the patent broaden his claim by dropping the element which he was compelled to include in order to secure his patent. * * *

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[6] Claims 1 and 2 of the reissue application are identical to claims 1 and 2 of appellant's patent. Appellant takes no issue here with the Board's action respecting these claims stating "the Board is to be commended in reconsidering the patentability of * * * [these claims] on its own motion" and "even though these claims were not in issue on appellant's request for reconsideration."

The Board also stated:

> * * * appellant through his counsel, and as a *deliberate matter of judgment* for the purpose of getting a patent, *abandoned* claiming his invention except insofar as it included the specific mounting means identified and set out in each patent claim. [Emphasis added.]

We shall set forth at this point briefly what was defined in the claims presented in the patent application. All of the claims defined in various terminology a hanger assembly having two elements, a channel or saddle and a band. Some claims emphasized the structure of the channel which reduced vibrations while other claims emphasized other aspects of the channel structure and the band which reduced the required inventory of parts. The finally allowed claims defined the hanger assembly in various terminology. Claim 25, for example, defines a combination comprising a flexible band and channel having base and flange portions and an offset ear.

The Board in its first opinion was of the view that any reissue claim must include a limitation as to the specific mounting means identified as an "offset ear." It also stated appellant had "abandoned" claiming his invention except insofar as each claim contained the above limitation.

The Board's second opinion, rendered on the first petition for rehearing, added that all of the appealed claims contained added limitations not present in the cancelled claims and that its rejection was not based on interpreting the claims as being of the "same scope." The Board stated:

> * * * Nowhere have we held that any of the claims that we have rejected on the ground of lack of error are of the same scope as claims cancelled during prosecution in the original application. This was not our ground of rejection, and we recognize that all of the claims before us contain terms of recitation that are added limitations not present in the cancelled claims. If this had been our ground of rejection, the decisions to which appellant refers as pointing out the law would be of pertinence. Such, however, was not our ground of rejection.

It then restated the issue in the following terms:

> Where an application discloses two distinct subjects, each possibly patentable, and because (1) of the Examiner's *rejection of one* thereof and (2) the fact that he indicates that he will *allow the second*, an applicant cancels all claims defining the first in order to obtain a patent covering the second, may he by reissue *recapture that which he abandoned* by cancellation and patent issue for the second distinct subject only?

The "distinct subjects" referred to by the Board were derived from the objects of the invention, quoted supra, and were identified in its opinion as the portion of structure reducing vibrations and the portion of structure eliminating inventories of parts. The Board thus switched from its theory that any reissue claims had to recite the portion of the structure for reducing vibrations to a theory of "abandonment of distinct subject." It cited, as additional authority, *Riley* v. *Broadway-Hale Stores, Inc.*, 114 F. Supp. 884, 98 USPQ 433 (S.D. Calif. 1953).

In its third opinion, in acting on the second petition for rehearing, the Board explained that appellant had made a "mistake in judgment" by "*acquiescence* in a rejection made by the Examiner and thus *abandoning* subject matter of canceled claims." [Emphasis added.] The Board also stated:

> * * * In our opinion the law is clear, namely once an applicant has abandoned subject matter and has taken out a patent on a different subject matter, he may not by reissue recapture that which he has abandoned, whether he attempts

> to recapture cancelled and thus abandoned broad claims to the *same invention* for which the patent issued, or *as here* attempts to recapture *a second invention* abandoned by cancelling *all* claims thereto. [Emphasis added.]

The Board relied on the *Byers*, *Shepard* and *Riley* cases and added *Miller* v. *Brass Co.*, 104 U.S. 350 (1881) in its third opinion.[7] Whether the Board considered "distinct subject" to mean a second invention in its second opinion or whether the Board switched to a "two invention" theory in its third opinion is not clear from the record.

We find the Board's reliance on the above decisions unwarranted and its reasoning unsupported by the *facts* of record. Before considering whether appellant is entitled to relief under section 251, we shall set forth the facts of record concerning the prosecution of the patent application.

The cancellation of claims referred to by the Board occurred after the rejection of all then pending claims had been made final. All claims at that time stood rejected as being "vague and indefinite" and claims 11, 12, 20 and 21 were also rejected as "unpatentable over" a patent to Simmonds. The Simmonds patent is not of record in the present appeal. There is of record here a letter by the Examiner, dated July 30, 1959, discussing claims 5, 11, 20 and 21 relative to Simmonds wherein it is stated that Simmonds "discloses a fully equivalent hanger." The letter concludes that the "rejection is made FINAL."

It is the subsequent cancellation of these claims that the Board here relies on as establishing that appellant either made a "mistake in judgment" or "abandoned" a portion of his invention, neither of which the Board considers to be "error" under section 251. Appellant's attorney[8] had a personal interview with the Primary Examiner concerning the above rejections. The application was then amended in several particulars which included adding claims 25, 26 and 27 (which became patent claims 1, 2 and 3) and cancelling "all claims presently active." In the remarks accompanying the amendment, gratitude is expressed to the Primary Examiner, in the absence of the Examiner, for granting an interview and for his "constructive criticisms" and "suggestions." The statement proceeds:

> In an effort to expedite prosecution of this case and bring it to a close, this amendment after final rejection is presented for the Examiner's further consideration. *Applicant has herein attempted to follow completely the procedures and suggestions presented by the Primary Examiner insofar as they were understood.* Accordingly, three new claims have been herein presented. Claim 25 is believed to be generic, and claims 26 and 27 are believed to be species contemplated by said generic claim. [Emphasis added.]

According to the Board, the italicized portion of the above statement

> * * * points out specifically that the Examiner would consider allowance only with such specific limitations [the channel with the laterally offset ear] pertaining to mounting. * * *

The remarks filed with the amendment entered after final rejection also state:

> When combined with their respective interacting elements, the aforementioned claimed structures ostensively effect new combinations which produce the new and highly useful result of *simplifying the mounting of pipes*, cables, etc. on appropriate support structures *and, in addition, reduces the number of types of*

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[7] Appellant argues the Board's position is inconsistent with the following decisions: *Ex parte Lumbard*, 47 USPQ 523 (Bd. App. 1940); *Ex parte Sullivan*, 57 USPQ 151 (Bd. App. 1943); *Ex parte Allwein*, 99 USPQ 177 (Bd. App. 1953); and *Ex parte Feissel*, 131 USPQ 252 (Bd. App. 1958).

[8] The interview was conducted by an attorney other than the one whose signature appears on all papers of record in the prosecution of the patent application. Appellant argues that as a practical matter the parties best qualified to evaluate the claimed subject matter did not interview the case. The interviewing attorney then reported back to the attorney prosecuting the case who then prepared the amendment.

> *parts required to be carried in the storage inventory* which, in turn, results in economies not occurring when using the devices of the cited prior art. [Emphasis added.]

The facts concerning the prosecution of the application on which appellant's patent issued may be summarized. The claims presented in the patent application, as here, defined the cable hanger assembly in various terminology. There, as here, the emphasized objects of the invention were to reduce vibrations and eliminate a large inventory of parts. On final rejection the then pending claims were rejected on two grounds, i.e., the claims were "vague and indefinite" and a prior art patent defined a "fully equivalent" hanger. In terms of the 1952 Patent Act, we assume that the Examiner's position was that the claims failed to point out and distinctly claim the invention, 35 U.S.C. 112, and that the subject matter claimed was obvious in view of the prior art, 35 U.S.C. 103. After the above referred to interview with the Primary Examiner, the rejected claims were cancelled and three new claims were presented. These new claims were subsequently allowed. From the remarks accompanying the claims it appears that they embody certain suggestions of the Primary Examiner made during the interview "insofar as they were understood" and which are not of record. The attorney stated that these claims represented a generic and two species claims and that they embodied two "new and highly useful" results, including the "distinct subject" referred to by the Board, the elimination of parts.

On the above facts we do not agree with the conclusion of the Board that the remarks accompanying the three claims show "specifically that the Examiner would consider allowance only with such specific limitations pertaining to mounting."[9] Insofar as the inclusion of a specific limitation is concerned, the remarks establish that the attorney considered he was obtaining protection for the two "highly useful results" in presenting a generic and two species claims. Insofar as the *act* of cancelling claims is concerned the record does not show whether this was an admission that those claims were unpatentable over the prior art or whether they were cancelled and the amended claims were submitted to cure the "vague and indefinite" rejection.[10]

Before examining the Board's reasoning as to why appellant had failed to show "error" under section 251, the situation as to *appealed claims* may be summarized. The cancelled claims, in the application which resulted in appellant's patent, claimed subject matter which the Examiner asserted was obvious in view of the prior art but they also had been rejected as being vague and indefinite. No appeal was taken and the new claims were allowed. According to the Board, the claims presented here define patentable subject matter and are narrower in scope than the cancelled claims in the application which resulted in appellant's patent but are broader than the patent claims.

We will now consider whether appellant has shown "error" within the meaning of section 251. The first line of reasoning employed by the Board is that the inclusion of the specific limitation in the patent claims prohibits appellant from obtaining any reissue claim omitting that limitation. [1] The reissue statute, section 251, authorizes the Commissioner, upon the surrender of the patent and the payment of the fee required by law, to "reissue the patent for the *invention disclosed* in the original patent." [Emphasis added.] It further provides that "No reissued patent shall be granted enlarging the scope of the claims of the original patent unless applied for within two years from the grant of the original patent." The Board concedes the invention as claimed here was disclosed in the original patent and that the reissue application was timely filed to permit appellant to seek broader claims. Appellant thus had the right by reissue to enlarge the *scope* of the patent claims in accordance with the *invention disclosed* in the original patent subject to compliance with the remaining provisions of section 251, e.g., the appealed claims must define patentable subject matter, conceded here.

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[9] We do not think that the statement by the Examiner that Simmonds discloses a "fully equivalent" hanger together with appellant's statement that he "attempted to follow completely the procedures and suggestions presented by the Primary Examiner insofar as they were understood" establishes the factual conclusion found by the Board. We will take judicial notice that patent attorneys are prone to thank primary examiners for their suggestions and criticisms but we fail to find in such statements *proof of the fact urged by the Board.*

[10] In either case, the unappealed final rejection of the Examiner would not be considered binding. *In re Hitchings,* 52 CCPA 1141, 342 F.2d 80, 144 USPQ 637; MPEP, section 706.03(w).

[2] Under the circumstances, we find appellant claimed in his patent "less than he had a right to claim," and as such is entitled to utilize the remedial provisions of section 251 to claim his invention in a reissue of his patent by omitting limitations in the patent claims if he can show that the limitations which resulted in his claiming less than he had a right to claim were included "through error." If such error can be shown and subject to the other qualifications in section 251, such a limitation in the patent claims may be omitted in the reissue claims.

Next, we will consider the Board's line of reasoning based on abandonment. The Board found that appellant, as a matter of "judgment," decided to "abandon" protection to the subject matter here claimed. Whatever the genesis of the abandonment theory advanced by the Board, it is clear from the *facts* of record that appellant fully intended to gain patent protection commensurate in scope with the *invention disclosed* in his application. The remarks accompanying the finally allowed claims show that appellant did not intend to abandon that portion of his invention dealing with the elimination of a large inventory of parts. In each of the patent claims the following statement appears:

> a flexible band looped completely around both the base portion of said channel between the flange portions thereof and the aforesaid elongated pipes and cables being supported * * *

We think the record supports the conclusion that appellant intended and attempted to gain protection for what the Board termed the "distinct subject," derived from the objects of the invention.

[3] The fundamental error in the reasoning in the Board's opinion is the failure to approach the issue by considering the *facts* of record *in light of the applicable reissue provisions.* First, we find that the invention disclosed in the patent is a hanger assembly. It is this disclosure and not the claims of the patent which determines the issue. *In re Handel*, 50 CCPA 918, 312 F.2d 943, 136 USPQ 460. In this regard, the *Handel* case contains much of value. There it is stated, 50 CCPA at 924, 136 USPQ at 464:

> We are constrained to agree with appellant that if the Board's view were to prevail, the reissue statute would be of very little practical effect, for, by elementary principles of claim interpretation, whenever an element or other limitation is added to or taken from a claim it becomes a claim to a different invention. *Yet the whole purpose of the statute, so far as claims are concerned, is to permit limitations to be added to claims that are too broad or to be taken from*

> *claims that are too narrow.* That is what the statute means in referring to "claiming more or less than he had a right to claim." [Emphasis added.]

In *Handel* the argument was made by the Solicitor that the applicant had "showed a clear intent not to secure the invention directed to the claimed combination by canceling claims directed thereto in the patented application." The Board found "no clear evidence of appellant's intention to therein claim the subject matter of the herein appealed claims." The opinion in *Handel* states, 50 CCPA at 925, 136 USPQ at 465:

> As for the Board's holding on intent, we find it to be contrary to the clear indication of the specification of the original patent, which the Board failed to take into consideration, particularly the statement of objects quoted early in this opinion. They clearly point to the subject matter of the appealed claims as part of appellant's invention, especially when read with the detailed description of the machine and its mode of operation. * * *

Here, as in *Handel*, the facts show that appellant fully intended and attempted to claim the invention disclosed in the original patent.

Second, it is conceded that the patent is "partly inoperative" by reason of appellant "claiming * * * less than he had a right to claim in the patent" and that the reissue application is timely.

[4] Third, did this occur "through error without any deceptive intention?" We recently reviewed, in *In re Willingham*, 48 CCPA 727, 282 F.2d 353, 127 USPQ 211, the requirement of the reissue provisions that error be shown. In that case the applicant submitted a new claim for an unrejected claim. Therein the argument was advanced that the applicant had acted "deliberately" and "intentionally" during the prosecution of the patent application as justification for refusing a broadened claim in a reissue application. In rejecting this argument, we relied on the fact that the reissue provisions are "remedial in nature." They are "based on fundamental principles of equity and fairness and should be so applied to the facts in any given case that justice will be done both to the patentee and to the public." 48 CCPA at 730, 127 USPQ at 214. See *Grant* v. *E. & H. Raymond*, 6 Peters 217 (1832); *Topliff* v. *Topliff*, 145 U.S. 156 (1891); cited and quoted in *Willingham*, the quoted portions being fully applicable here.

[5] More recently, in *In re Schmidt*, 48 CCPA 1140, 293 F.2d 274, 130 USPQ 404, we considered the meaning of the term "error" in 35 U.S.C. 116, providing remedies for the misjoinder of inventors. Therein we held that a mistake in belief, absent evidence of a deceptive intention, was an "error" which could be corrected by the remedial provisions of section 116. The argument was advanced in *Schmidt* that the phrase "error without any deceptive intention," appearing in near identical terms in both sections 116 and 251, must mean "error through inadvertence, accident or mistake" as it appears in the old reissue statute, 35 U.S.C. 64, sec. 4916 R.S. as certain dictum to this effect appears in *In re Byers*, supra. The argument was rejected in view of the fact that Congress had not defined "error" in that manner in section 116.

[6] The Board relied on the decision in *Byers* as being applicable to the facts here. The opinion in *Byers* states that it did *not* have the facts of the prosecution of the patent application before it but that it accepted the unchallenged statement of the Board that the claim had been "deliberately" amended "to secure the patent." Here we have the facts of record and we do not have the situation referred to in *Byers* other than in the literal sense that every paper formally

submitted is generally done "deliberately" and with the design of advancing the prosecution so as to secure a patent. As discussed infra, that is not what is meant by the term "deliberate."

The result in *Byers* was reached by resorting to decisions decided under previous reissue statutes. The court reasoned, 43 CCPA at 805, 109 USPQ at 55, that:

> The issue to be determined here is whether the failure to obtain, in the patent sought to be reissued, claims corresponding to those involved in the present appeal was due to "error" within the meaning of the sentence just quoted. The use of the word "error" in that sentence instead of the words "inadvertence, accident or mistake," which appeared in the corresponding section (35 U.S.C. 64, sec. 4916 R.S.) of the patent statutes prior to the recodification of 1952, does not involve a substantive change, and the same type of error is necessary to justify a reissue after the enactment of the Patent Act of 1952 as before * * *

The court did not cite any authority for the above proposition. [7] It ignored the *fact* that the new reissue statute broadened the term "error" by not limiting it to "error" that had arisen through "inadvertence, accident or mistake." We think the term "error," arising as it does in a remedial provision designed to advance both the rights of the public and the inventor, is to be interpreted as Congress has stated it, "error without any deceptive intention," and in light of Supreme Court decisions favoring the liberal construction of reissue statutes in order to secure to inventors protection for what they have actually invented.

The Board also relied on *Shepard* v. *Carrigan*, supra, a suit for patent infringement, and the statement quoted therefrom. Apparently the Board felt it would be contrary to the quoted statement, supra, to allow appellant to obtain reissue claims emphasizing structure concerning the elimination of inventories of parts. An examination of the opinion in *Shepard* discloses that the element therein referred to was added to the claims to avoid the prior art. Without the inclusion of that element there was no right to a patent. The opinion states, immediately preceding the statement relied on by the Board, as follows, 116 U.S. at 597:

> This fact [cloth without fluting was old in the art], and the file-wrapper and contents of which we have stated the substance, make it clear that the claim and specification of the Macdonald patent must be construed to include, as their language requires, a fluted or plaited band or border as one of the essential elements of the invention. Without this element the patent would not have been issued. The Patent Office decided that without it the invention had been anticipated. * * *

Here, however, there is no objection to the appealed claims based on the prior art. We do not think the statement in *Shepard*, arising from the facts therein stated, is applicable here. [8] *Shepard* may be support for the rule that one who deliberately adds a limitation to avoid the prior art cannot omit that limitation in reissue claims so as to encroach upon the prior art, but that is not the situation here as the Board's opinions clearly point out.

The Board also relied on *Miller* v. *Brass*, supra, a suit for infringement of a reissued patent. The inapplicability of that case is clear. There the inventor had claimed in reissue an invention not *disclosed* in the original patent. The court stated, 104 U.S. at 351:

> * * * the invention specified in the second claim of the reissued patent (which is the one in question here) is not the same invention which was described and claimed in the original patent. The latter was for a double dome without a chimney, the peculiarity of the supposed invention being the use of the double dome as a means of dispensing with the chimney. The reissue is for a single

dome with a chimney. It is not only obviously a different thing, but it is the very thing which the patentee professed to avoid and dispense with.

Concerning the inadvertence and mistake alleged as grounds for reissue, the court stated, 104 U.S. at 351–52:

> But there is another grave objection to the validity of the reissued patent in this case. It is manifest on the face of the patent, when compared with the original, that the suggestion of inadvertence and mistake in the specification was a mere pretence; or if not a pretence, the mistake was so obvious as to be instantly discernible on opening the letters-patent, and the right to have it corrected was abandoned and lost by unreasonable delay. The only mistake suggested is, that the claim was not as broad as it might have been. This mistake, if it was a mistake, was apparent upon the first inspection of the patent, and if any correction was desired, it should have been applied for immediately.
>
> These afterthoughts, developed by the subsequent course of improvement, and intended, by an expansion of claims, to sweep into one net all the appliances necessary to monopolize a profitable manufacture, are obnoxious to grave animadversion. The pretence in this case that there was an inadvertence and oversight which had escaped the notice of the patentee for fifteen years is too bald for human credence.

There does not appear to be one point of meaningful similarity between the appellant's actions here and the situation presented in *Miller*. See *Ex parte Lumbard*, supra, fn. 6.

The Board also cited *Riley* v. *Broadway-Hale Stores, Inc.*, supra,[11] a suit for patent infringement. The inapplicability of this case is demonstrated by the following statement from the court's opinion, 98 USPQ at 437:

> * * * the reissue patent in fact covers an invention not disclosed in the original patent * * *

[9] We find as a factual matter that a mistake occurred in the prosecution of the patent application. That mistake was in not then presenting the appealed claims with the result that appellant's patent claimed less than he had the right to claim. The record establishes that appellant erroneously considered he was securing protection commensurate with the invention disclosed in the original application. There is no evidence that appellant intentionally omitted or abandoned the claimed subject matter. We find that while appellant *acted* "deliberately" he did so in error. This error, in view of the facts of record, was an "error without any deceptive intention" which entitles appellant to secure a reissue of his patent under the provisions of section 251. The Board's decision as to claims 6, 7, 13, 14 and 15 is therefore reversed.[12]

Claims 4 and 5

Claims 4 and 5 are the same as claim 6 except that the channel designated as a "hollow member" in claim 6 is designated as a "tubular member" in claims 4 and 5. According to appellant's brief:

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[11] The Solicitor states the issue is "the propriety of the Board's applying, under the circumstances of the case, the doctrine which was well summarized by United States Court of Appeals for the Ninth Circuit in *Riley* v. *Broadway-Hale Stores, Inc.*, 217 F.2d 530 [affirming the above decision] as follows:

> The courts have uniformly held that a reissue patent is void if the matter claimed in the reissue was *intentionally* omitted or abandoned by the patentee during the course of his application for the original patent, that is to say, in such situation no error through inadvertence, accident, or mistakes can be said to exist. [Emphasis added.]

The facts here do not support the Solicitor's position that the subject matter claimed in the appealed claims was "intentionally omitted or abandoned."

[12] For completeness, we would add that we do not consider an issue to be here raised by the Board's remarks in its third opinion as to "acquiescence" and "two inventions." We find appellant seeks protection for the invention *disclosed in the original patent*. *In re Handel*, supra. We also find inapplicable here the decisions involving reissue claims to nonelected subject matter after requirement for restriction. See, e.g., *In re Cornell*, 32 CCPA 1251, 150 F.2d 702, 66 USPQ 320; *In re Smyser*, 30 CCPA 1093, 135 F.2d 747, 57 USPQ 402.

Insofar as the Board expressed in its second opinion that appellant claimed a "distinct subject," if the remedial provisions of the reissue statute had been applied at this point to do equity, it is stated therein that "several reissued patents for *distinct and separate parts* of the thing patented" may issue. The Solicitor's brief, in urging that appellant cannot claim in reissue proceedings that which is "separate and distinct," states a position which is contrary, to section 251.

> * * * We are here concerned solely with the meaning of the word "tubular." The issue is, if the word "tubular" is sufficiently broad to embrace within its ambit a member of U-shaped cross section and a member of square cross section, the decision of the Patent Office Board of Appeals must be reversed. * * *

Appellant cites the following definition for "channel" from Webster's Third International Dictionary, "tubular closed passage: conduit, pipe, duct." Appellant argues the use of the term "channel" in the original specification is a disclosure of "tubular." The Solicitor argues as follows:

> The word "tubular" is defined in Webster's Third New International Dictionary, Unabridged, G. & C. Merriam Company, Springfield, Massachusetts, 1965, as "having the form of a tube." The first and broadest of the many definitions of "tube" in that dictionary is "a hollow elongated usu. cylindrical body that is used esp. to convey fluids and is mechanically nearly or precisely the same as a pipe but in use is arbitrarily associated with particular items or devices." By definition, therefore, and also in ordinary usage a "tubular" member is closed in cross-section, and open structures, such as those which are U-shaped in cross-section, are excluded.

[10] We think the breadth of the term channel does not disclose the specific meaning attributable to the term tubular. We agree with the Solictor that in ordinary usage a "tubular" member is closed in cross-section. Accordingly, we do not find the disclosure in the specification of the member as a "channel" as support for claiming a "tubular member." The decision of the Board is affirmed as to claims 4 and 5.

The decision of the Board is therefore modified.

MODIFIED.

U.S. Court of Customs and Patent Appeals

In re Chi K. Dien

No. 7686. Decided February 9, 1967

[54 CCPA —; 371 F.2d 886; 152 USPQ 550]

1. Patentability—Particular Subject Matter—"Preparation of Quinacridones."

The refusal of certain claims in an application entitled "Preparation of Quinacridones," as unpatentable over the prior art, is reversed.

Appeal from the Patent Office. Serial No. 64,307.

REVERSED.

I. Harry Rosenberg for appellant.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, and Rich, Smith, and Almond, *Associate Judges*, and Judge William H. Kirkpatrick[1]

Rich, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals,[2] adhered to on reconsideration, affirming the rejection of claims 1–19 of application Serial No. 64,307, filed October 24, 1960, entitled "Preparation of Quinacridones." No claim has been allowed.

The invention is an improvement in the process of preparing quinacridones. These compounds are prepared from 2,5-diarylamino-terephthalic acids in a condensation reaction in which two molecules of water are eliminated and two interior rings are formed. The process is known as a double ring-closure. "Ring-closing agents" may be employed. Appellant has discovered that improved ring-closure is effected by the use of polyphosphoric acid (PPA) as a ring-closing agent. The improved process is marked by very high yields (e.g., 98%), product purity and other technological conveniences.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Consisting of Duncombe, Examiner-in-Chief, author of the opinion, and Behrens and Wyman, Acting Examiners-in-Chief.

Claim 1 is typical:

> 1. The improvement in the process of preparing a quinacridone by ring-closure of a 2,5-diarylamino-terephthalic compound, which comprises carrying out ring-closure of the 2,5-diarylamino-terephthalic compound with the aid of a polyphosphoric acid as a ring-closing agent.

The other claims are drawn to various modifications of the process of claim 1. Claims 11–15 include a dilution of the reaction mixture with water. Claims 5–15 and 16–19 limit the 2,5-diarylamino-terephthalic compounds to acids and esters repectively.

The Examiner relied on the following references:

Struve, 2,821,530, Jan. 28, 1958.
Du Pont (British), 805,247, Dec. 3, 1958.
Liebermann, 18, Liebig's Annalen der Chemie 245–50 (1935).
Uhlig, 66, Angewandte Chemie 435–36 (1954).
Brockmann et al., 89, Berichte Deut. Chem. 1379–97 (1956).

Liebermann discloses the basic reaction. The yields are described as less than satisfactory and the purification of the products as difficult. Ring-closing agents employed include zinc chloride, phosphorous pentachloride, aluminum chloride, aqueous hydrobromic acid, hydrogen bromide in glacial acetic acid, and phosphorous pentoxide in tetralin or cymene. With the latter, a yield of 44% is reported.

Uhlig discloses the use of PPA as a "new cyclization agent in preparative organic chemistry" and reports "surprisingly high cyclic compound yields." Uhlig teaches that all cyclization reagents, previously used, including phosphorus pentoxide, are "surpassed by PPA in many respects."

Brockmann et al. disclose the use of PPA in the preparation of acridones.

The Du Pont patent discloses a preparation of a quinacridone in which the reagents are diluted with water. The Struve patent teaches a process for the preparation of quinacridones from esters. Our resolution of this case renders consideration of the latter two references unnecessary.

The only issue is whether the improved process as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made by appellant.

The Examiner summarized his rejection of appellant's claims as follows:

> All the claims stand rejected as unpatentable over Liebermann and Struve, of record, in view of Uhlig and the British Du Pont patent. The basis of the rejection is 35 U.S.C. 103. It is considered that *a chemist of ordinary skill would be led* by the Uhlig reference *to try polyphosphoric acid* in the cyclization process of Liebermann, since the cyclization reagents used by Liebermann, though operative, leave much to be desired, and since Uhlig states that PPA has been found to offer many advantages over other previously used reagents. The mere fact that the results to be obtained are not absolutely predictable does not make its successful use unobvious. *In re Wietzel et al.*, 400 O.G. 463; *In re Moreton*, 129 USPQ 288.
>
> It being considered *obvious to try* PPA in the cyclization step, it is further considered obvious to treat the resulting acid reaction mixture in the conven-

> tional manner, i.e. by dilution with water, to obtain the product in pigmentary form. The British Du Pont patent is cited to show that the step is in fact obvious to the chemist of ordinary skill. [Emphasis ours.]

The Board agreed with the Examiner:

> The stated position of the Examiner is that a chemist would be led by the Uhlig reference to utilize polyphosphoric acid in the cyclization process of Lieberman[n], in place of the cyclizing reagents disclosed by Lieberman[n] since the reagents of Lieberman[n], although operative, leave much to be desired and Uhlig states that polyphosphoric acid has been found to offer many advantages over previously utilized reagents. * * *
>
> We are in full agreement with the Examiner's view that the fact that Lieberman[n]'s cyclizing reagents were not entirely satisfactory would be an incentive to one skilled in the art to use other cyclizing reagents in Lieberman[n]'s process as they become available, and in view of the Uhlig disclosure we are of the opinion that it would be obvious to a chemist to use polyphosphoric acid in that reaction, since Uhlig specifically teaches that polyphosphoric acid is a cyclizing reagent in organic chemical reactions.

It is seen that the Board's conclusion is built on the unsatisfactory nature of the Liebermann process and the enthusiastic tenor of Uhlig's report. But the mere existence of an unsatisfactory process and the attendant incentive to seek improvement do not negative patentability. We think that one cannot fairly infer obviousness from the inadequacies of the prior art. The issue here is whether the elimination of those inadequacies by the means disclosed by appellant would have been obvious to one of ordinary skill—whether the Uhlig disclosure would have made it *obvious* that the substitution of PPA for phosphorous pentoxide would change a generally unsatisfactory process into an excellent one.

We do have, on the one hand, Uhlig's comments: "[C]yclization experiments with polyphosphoric acid * * * [result] in surprisingly high cyclic compound yields. All reagents used hitherto for * * * [cyclization reactions] such as $AlCl_3$, $FeCl_3$, BF_3, $SnCl_4$, H_2SO_4, H_2F_2, P_2O_5, $HCOOH—H_3PO_4$, and $H_2SO_4—H_3PO_4$, are surpassed by 'PPA' in many respects." On the other hand we have the countervailing considerations which would influence one of ordinary skill in the art in his evaluation of this intelligence. The generality of Uhlig's disclosure indicates the inappropriateness of literalism in its reading—the quotations relied on are but parts of the first two sentences of an article which later discusses the merits of PPA in detail, never referring to processes analogous to appellant's invention. Furthermore, the "surprisingly high" yields reported in the body of the article seem to be increases on the order of 15–25%, considerably less than appellant's increase of more than 100%. A skilled worker in the art would also be aware of the chemical similarity of PPA and phosphorous pentoxide and might well infer that the special problems in the Liebermann process would recur when PPA was used. He certainly would be cognizant of the extra difficulty associated with closure of the second ring in double-ring closure reactions and would not assume that the Uhlig catalogue of successful *single*-ring closures presaged success in *double*-ring closure. He would note that the only reactions involving five-ring compounds reported by Uhlig were not dehydration reactions, as are those of the invention. Nor from them would he derive an expectation of such increased yields since the yields reported in the preparation of five-ring compounds average *less than* those of the old Liebermann process.[3]

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[3] The Solicitor points to the reported preparation of 3',4-diketo-1,2,3,4-tetrahydro-1,2-cyclopentenophenanthrene and 3',4-diketo-7-methoxy-1,2,3,4-tetrahydro-1,2-cyclopentenophenanthrene. Yields are reported as about 60% and 20% respectively.

In the face of these considerations we conclude that only illusory support for the Board's position can be derived from the Uhlig article.

The Board felt "strengthened" in its view by the disclosure of Brockmann et al. that acridones had been successfully synthesized with PPA. That synthesis too involves single-ring closure. Appellant protests again that the problem is in the second ring closure and points out that several reagents effective for single-ring closure are ineffective for double-ring closure. This rebuttal seems convincing to us. The Solicitor does not rely heavily on Brockmann et al.

We therefore reverse the rejection of claims 1–10. The Solicitor concedes that such a reversal is dispositive of the appeal as to all claims. [1] Accordingly the rejection of claims 1–19 is reversed.

REVERSED.

SMITH, *J.*, concurring.

The Examiner, in applying section 103, cast his inquiry in terms of "obvious to try." The Board while not using this terminology has employed the rationale of the Examiner's statement in analyzing the issue presented under section 103. The Solicitor abjures it here.

There is, of course, nothing in the statute which permits application of such a test. *In re Tomlinson*, 53 CCPA 1421, 363 F.2d 928, 150 USPQ 623 (1966); *In re Henderson*, 52 CCPA 1656, 348 F.2d 550, 146 USPQ 372 (1965); *In re Huellmantel*, 51 CCPA 845, 324 F.2d 998, 139 USPQ 496 (1963); see *In re Fay*, 52 CCPA 1483, 347 F.2d 597, 146 USPQ 47 (1965). It not only involves an analysis for which there is no authorization but it precludes a consideration of the invention as a whole for which there is an explicit statutory directive.

Considering the subject matter as a whole in view of the prior art of record, I agree with the majority that the claimed invention is unobvious.

WORLEY, *Chief Judge*, dissenting.

Viewing the references relied upon, particularly the Uhlig disclosure that yields of 90–99% may be obtained and "no undesired secondary reactions need be feared" when polyphosphoric acid is employed in place of, e.g. phosphorus pentoxide, as a ring closing agent in analogous reactions, I am satisfied the Board has considered the subject matter as a whole and committed no reversible error in rejecting the claims. I would affirm.

U.S. Court of Customs and Patent Appeals

IN RE ROBERT H. RENO

No. 7740. Decided February 9, 1967

[54 CCPA—; 371 F.2d 874; 152 USPQ 568]

1. PATENTABILITY—CLAIMS—BROAD LANGUAGE INCLUDES OBVIOUS EXPEDIENTS.

"Claim 4 defines the aircraft and pod in nesting arrangement fastened by 'a plurality of structurally independent, dettachable driven-screw means mounted in said fuselage.' Lickley suspends his platform by cables which allows the platform to be raised and lowered. Frost also discloses the use of cables to bring the pod in abutting relationship with the fuselage. The Solicitor argues, and we agree, that 'simple bolts would suffice here.' Appellant argues that the securing means 'are (1) structurally independent and (2) secure the pod to the fuselage in compressed abutment.' We think the feature of fastening the pod to the fuselage by 'independent, detachable driven-screw means' would be well within the skill of the art as the claim is so broad that it defines ordinary nuts and bolts. Considering the combination defined in claim 4, we find no error in the Board's conclusion that the claimed combination would be obvious."

2. Same—Same—Same.

"Claim 21 defines the combination of a fuselage, pod and a fairing. The fairing is located below the fuselage and aft of the pod to present a smooth and streamline shape to the over-all structure. In claim 21 the fairing is secured to the pod by 'interlocking elements * * * in wedged engagement' and the fairing is secured to the fuselage by 'upward-pull means.' Knerr discloses threaded elements and wing nuts to combine the above three elements. The Board found that 'The clamping action applied by a threaded element and wing nut can be fairly said to result in a wedged engagement of the parts.' Here, as in claim 4, the very breadth of the language employed defines a combination which would be obvious to one of ordinary skill in the art."

3. Same—Particular Subject Matter—"Airplane Having a Detachable Pod and Means for Adjusting Angle of Attack for Take-Off.

The refusal of four claims in an application entitled "Airplane Having a Detachable Pod and Means for Adjusting Angle of Attack for Take-Off," as unpatentable over the prior art, is affirmed as to three claims and reversed as to one.

Appeal from the Patent Office. Serial No. 129,197.

MODIFIED.

Joseph C. Sullivan for appellant.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, and Rich, Smith, and Almond, *Associate Judges*, and Judge William H. Kirkpatrick [1]

Smith, *J.*, delivered the opinion of the court.

Appellant appeals from a decision of the Board of Appeals affirming the Examiner's rejection of claims [2] 2, 4, 21 and 25 based on 35 U.S.C. 103. The following prior art was relied on:

Frost, 2,683,005, July 6, 1954.
Knerr, 2,075,042, Mar. 30, 1937.
Lickley (British), 755,965, Aug. 29, 1956.

Appellant's brief describes his invention as follows:

> The invention is of an aircraft having a detachable cargo-carrying device and has as its principal object the provision of such a device which can be used without substantial change as a pod on an aircraft and alternatively as the body of a ground conveyance such as a truck. It is also an object of the invention to provide the top of the cargo-carrying device and the bottom of the aircraft fuselage with means adapted to nest the two when the device is raised into contact with the fuselage and to provide means for raising the cargo-carrying device into position at the bottom of the fuselage and also to provide means for releasably locking the two together.

Appellant's brief also sets forth a convenient explanation of the appealed claims and the applicable prior art:

> Claim 2 * * * emphasizes the nesting feature and was rejected as unpatentable over Lickley * * *.
>
> Claim 4 * * * emphasizes the securing together of pod and fuselage and was rejected as unpatentable over Lickley in view of Frost * * *.
>
> Claim 21 * * * emphasizes the securing of fuselage, pod and fairing and was rejected as unpatentable over Knerr * * *.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Application Serial No. 129,197, filed May 22, 1961, entitled "Airplane Having a Detachable Pod and Means for Adjusting Angle of Attack for Take-Off." Fourteen claims have been allowed.

> Claim 25 * * * emphasizes the securing of the fairing and pod and was rejected as unpatentable over Frost and further rejected as unpatentable over Knerr * * *.

We shall consider the claims separately.

Claim 2

The gist of appellant's argument is that:

> Lickley does not disclose a nesting feature of his "pod." This feature, which according to proper definition, means the settling as in a nest. Oppositely disposed sides of the "pod" in Lickley do not abut respective oppositely disposed sides of the fuselage of his aircraft *in a manner such that the abutting surfaces give both horizontal and vertical support as in a nest.*
>
> * * * * * * *
>
> Lickley's "pod" does not nest but merely abuts the underside of the fuselage as he describes.

Lickley discloses a hovering aircraft having an "opening in the bottom of its fuselage normally covered by a platform." The specification states:

> Preferably the platform, when retracted, fits into the opening in the fuselage and is substantially flush with the adjacent surface of the fuselage, so that when the aircraft is in flight its streamline shape will not be impaired.
>
> * * * * * * *
>
> The platform has bevelled edges, and the sides of the opening in the fuselage are of corresponding shape so that when the platform is raised it will be guided into its correct location.

We think appellant's view fails to accord a fair construction to the teachings in Lickley. The mating bevel surfaces in Lickley serve as guides as well as locating means to present a flush surface over-all when assembled. While Lickley discloses a platform and appellant discloses a pod having vertical side surfaces we think it would be obvious to add sides to the platform and utilize the mating bevel surfaces if more cargo space was desired. Lickley expressly contemplated the use of the platform in connection with transporting cargo. We find no error in the Board's decision as to claim 2.

Claim 4

[1] Claim 4 defines the aircraft and pod in nesting arrangement fastened by "a plurality of structurally independent, detachable driven-screw means mounted in said fuselage." Lickley suspends his platform by cables which allows the platform to be raised and lowered. Frost also discloses the use of cables to bring the pod in abutting relationship with the fuselage. The Solicitor argues, and we agree, that "simple bolts would suffice here." Appellant argues that the securing means "are (1) structurally independent and (2) secure the pod to the fuselage in compressed abutment." We think the feature of fastening the pod to the fuselage by "independent, detachable driven-screw means" would be well within the skill of the art as the claim is so broad that it defines ordinary nuts and bolts. Considering the combination defined in claim 4, we find no error in the Board's conclusion that the claimed combination would be obvious.

Claim 21

[2] Claim 21 defines the combination of a fuselage, pod and a fairing. The fairing is located below the fuselage and aft of the pod to present a smooth and streamline shape to the over-all structure. In claim 21 the fairing is secured to the pod by "interlocking elements

* * * in wedged engagement" and the fairing is secured to the fuselage by "upward-pull means." Knerr discloses threaded elements and wing nuts to combine the above three elements. The Board found that "The clamping action applied by a threaded element and wing nut can be fairly said to result in a wedged engagement of the parts." Here, as in claim 4, the very breadth of the language employed defines a combination which would be obvious to one of ordinary skill in the art.

Appellant argues in his brief as follows:

> * * * the term "wedged" as clearly used in the specification and claims implies compressed abutment of inclined planes which is not found in the reference. The threaded element and wing nut provide a form of attachment but do not provide "interlocking elements, on said pod and said fairing in wedged engagement." * * *

Wing nuts and threaded elements act as upward-pull means and interlocking elements in wedged engagement. The principles of threads as fastening means include inclined surfaces subject to compressed abutment and a wedging action. There is no need to resort to the specification to ascertain what invention is defined by the *claim*. Nor is the obviousness of the disclosed *embodiments* of appellant's invention at issue here. We therefore find no error in the Board's conclusion as to the combination defined in claim 21.

Claim 25

Claim 25 defines a combination of a fuselage, pod and fairing. The claim details the locking means between the pod and the fairing as follows:

> 25. In an aircraft having a fuselage and a cargo-carrying pod detachably secured together, and a fairing; locking means provided on the rear of said pod; and corresponding locking means provided on said fairing; both of said locking means being adapted to cooperate in readily wedged engagement for securing said fairing in self-locking engagement with said pod by insertion and lateral pull to restraint.

Here appellant has used functional language to define the locking means. The locking means must cooperate in "readily wedged engagement * * * by insertion and lateral pull." We do not think the operation of a threaded element and a wing nut suggests the above defined locking means. As the Patent Office offered no facts demonstrating the obviousness of the claimed locking means other than the wing nuts disclosed in Knerr and "the conventional hinge" in Frost we think the Board erred in its conclusions as to claim 25.

The rejection of claims 2, 4 and 21 is affirmed. The rejection of claim 25 is reversed. [3] The Board's decision is therefore modified.

MODIFIED.

WORLEY, *Chief Judge*, dissenting-in-part.

I find no reversible error in the decision of the Board that claim 25 is "so broadly drawn as to be fairly rejected" on the wing nut locking means of Knerr. While the majority correctly states with respect to claim 21 that "there is no need to resort to the specification to ascertain what invention is defined by the *claim*," yet the majority appears, inexplicably, to do just that with respect to claim 25, the language of which is markedly similar to that employed in claim 21. It is, of course, well settled that limitations in the specification not appearing in the claims may not be relied upon to impart patentability to those claims. See *In re Margaroli*, 50 CCPA 1400, 318 F.2d 348, 138 USPQ 158; *In re Edwards*, 48 CCPA 808, 285 F.2d 811, 128 USPQ 387;

In re Lundberg, 44 CCPA 909, 244 F.2d 543, 113 USPQ 530. Although Knerr may not show appellant's *disclosed* locking means, there can be no doubt that he shows the *claimed* locking means.[3] I would affirm the Board's decision in its entirety.

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[3] I agree with the Solicitor that: As shown in * * * Knerr * * *, the wing nuts * * * appear to have lopsided wings or handles rotatable * * * [in a plane] parallel to the longitudinal axis of the airplane. This means that the associated studs or bolts are transverse to that axis. Hence, when the bolts are inserted in [the] nuts * * * and the latter threaded up, there will be mutual pull to restraint laterally of the airplane. * * *

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,604,359, F. L. Zybach, SELF-PROPELLED SPRINKLING IRRIGATING APPARATUS, **filed** Aug. 17, 1967, D.C. Kans. (Wichita), Doc. W–3878, *Albert E. Trowbridge* v. *B/J Manufacturing Company, Inc.*

2,674,957, C. A. Miler, AMUSEMENT DEVICE RUNNING ON TRACKS, **filed** Aug. 10, 1967, D.C., E.D. Wis. (Milwaukee), Doc. 67–C–259, *W. G. Boutell* v. *Carl Anthony Miler.*

2,727,977, L. E. Fenn, CIGAR LIGHTER, **filed** Dec. 12, 1964, D.C. Conn. (New Haven), Doc. 10781, *The Casco Products Corporation* v. *Cuno Engineering Corporation.* Consent judgment except as licensed by plaintiff, defendant is enjoined from making, using or selling automobile lighters covered by the claims of the patent, Aug. 4, 1967.

2,767,113, G. C. Bower, PLANT-TIES AND METHOD OF MANUFACTURE, **filed** July 6, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–946–FW, *Royal Industries* v. *St. Regis Paper Company.*

2,982,819, Meinema and Canfield, ARTIFICIAL REVERBERATION APPARATUS; **3,037,414,** H. E. Meinema, ARTIFICIAL REVERBERATION CONTROL APPARATUS; **3,106,610,** A. C. Young, ARTIFICIAL REVERBERATION UNIT, **filed** Aug. 15, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1426, *Hammond Corporation* v. *Kinematix Inc. and Leonard A. Fish.*

2,989,609, R. Ward, FUSED ELECTRICAL CONNECTOR, **filed** Feb. 17, 1966, D.C., S.D. W. Va. (Huntington), Doc. 2178, *Russell Ward* v. *National Cable Repair Inc.* Action dismissed without prejudice, Aug. 18, 1967.

3,007,189, S. P. Crane, CUSHIONED POLISHING DISK; **3,007,289,** Kent and Crane, DISHED POLISHING BUFF, **filed** July 20, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1032–FW, *Samuel P. Crane et al.* v. *Pit-Bar Manufacturing Company.*

3,007,289. (See 3,007,189.)

3,037,414. (See 2,982,819.)

3,069,695, R. C. Hegerfeld, SWIMMING POOLS, **filed** July 17, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1234, *General Pools Corporation* v. *Sterling Industries, Inc.*

3,074,653, J. V. Schorsch, METHOD OF SEPARATING WIRE AND ITS CASING, **filed** Aug. 11, 1967, D.C., E.D. Pa. (Philadelphia), Doc. 43324, *The Metal Bank of America, Inc.* v. *Eastern Diversified Metals Corp.*

3,101,974, Robertson and Ingle, DUMP TRUCK, **filed** May 28, 1965, D.C., E.D. Ill. (Chicago), Doc. C65–75, *Maxon Construction Co., Inc.* v. *Friederich Construction and Trucking Co., Inc.* Consent judgment, dismissing with prejudice, costs to be borne by defendant, Aug. 7, 1967.

3,106,610. (See 2,982,819.)

3,124,462, Vogel and Vogel, PROCESS OF PREPARING AND PACKAGING FRESH PORK SAUSAGE, **filed** July 20, 1967, D.C., N.D. Tex. (Dallas), Doc. CA–3–2140, *Bird Provision Co.* v. *Owens Country Sausage, Inc.*

3,178,788, M. F. Johns, SLIDE FASTENER ELEMENTS, **filed** Dec. 23, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–1284, *General Zipper Corporation* v. *Serval Slide Fasteners Inc.* Stipulation of dismissal, July 7, 1967.

3,192,698, A. W. Vibber, TWISTING SPINDLE BALLOON CONTROL, **filed** July 16, 1967, D.C.N.J. (Newark), Doc. 710–67, *Alfred W. Vibber* v. *United States Rubber Co.*

3,197,576, R. T. Martin, IN-THE-EAR HEARING AID, **filed** Dec. 27, 1956, D.C., N.D. Ill. (Chicago), Doc. 65c2204, *Dahlberg Electronics, Inc.* v. *Dictograph Products, Inc.* By agreement order cause dismissed with prejudice, June 5, 1967.

3,216,038. (See 3,330,721.)

3,225,860, C. R. Fox, SPEAKER ASSEMBLY, **filed** Aug. 17, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1209–CC, *Metra Electronics Corporation* v. *SJB Inc.*

3,251,418, E. L. Condra, OIL WELL SCRAPERS, **filed** Aug. 15, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1197–CC, *Elmo L. Condra* v. *Jack D. Wight and I. D. Osborn.*

3,251,484, V. D. P. Hagan, PORTABLE CONCRETE PATCHING PLANT, **filed** Aug. 17, 1967, D.C., W.D. Tex. (San Antonio), Doc. C67–79–SA, *Vincent de P. Hagan* v. *Aggregate Plant Products Co.*

3,258,072. (See 3,267,347.)

3,267,347, Godshalk and Medlar, BATTERY CHARGERS; **3,258,672,** Godshalk, Medlar, and Purnell, same, **filed** Aug. 14, 1967, D.C. Colo. (Denver), Doc. 67–C–408, *Fox Products Co.* v. *Forency Industries, Inc.*

3,283,915, L. Maslow, TRAY OR RACK ASSEMBLY, **filed** July 20, 1967, D.C., S.D.N.Y., Doc. 67–C–2802, *Metropolitan Wire Goods Corporation* v. *William Hodges and Co., Inc.*

3,292,615, Bascomb and Mayer, DEVICE FOR AGITATING, SWIRLING AND AERATING THE WATER IN A VESSEL, SUCH AS A BATH TUB OR THE LIKE, **filed** July 7, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1170, *Boulevard Electronics, Inc.* v. *Marshall Field and Co. et al.*

3,303,825, Shuman and Meinhardt, BALL POINT WRITING INSTRUMENTS, **filed** June 28, 1967, D.C. Mass. (Boston), Doc. 67–506–G, *General Electric Co.* v. *Parker Pen Co.*

3,310,712, A. F. Paddock, COMMUNICATIONS CIRCUIT PROTECTOR, **filed** June 16, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1037, *Cook Electric Co.* v. *Reliable Electric Co.*

3,328,437, J. V. Knab, FILTER SYSTEM, **filed** July 6, 1967, D.C., W.D. Mich. (Grand Rapids), Doc. 5676, *Walter Kidde and Co., Inc.* v. *Westinghouse Electric Corporation.*

3,330,721, Gould and Gould, SYNTHETIC FILAMENTS AND METHOD OF MAKING THE SAME; **3,216,038,** same, SYNTHETIC PLASTIC BROOM BRISTLES, **filed** July 19, 1967, D.C.N.J. (Newark), Doc. 762–67, *Keystone Plastics Inc.* v. *Carey Plastics Company, Inc. and Gilbert Carey.*

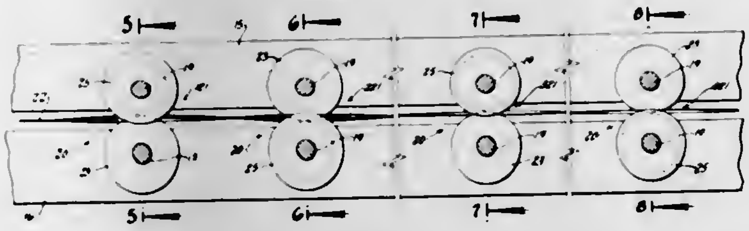
REISSUES

NOVEMBER 28, 1967

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification ; matter printed in italics indicates additions made by reissue.

26,308
COLD WORKING PROCESS FOR STRESS RELIEVING METAL STOCK

Charles E. Cleland, Minneapolis, and Robert L. Crane, Hopkins, Minn., assignors to Continental Machines, Inc., Savage, Minn., a corporation of Minnesota
Original No. 3,117,036, dated Jan. 7, 1964, Ser. No. 857,208, Dec. 3, 1959. Application for reissue Feb. 21, 1966, Ser. No. 534,278
5 Claims. (Cl. 72—181)

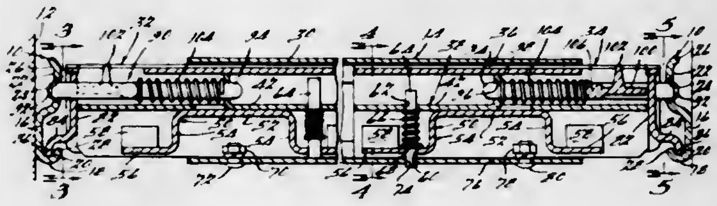


1. The method of cold working a piece of metal having a pair of opposite spaced apart surfaces and having substantially a desired curvature along one dimension of said surfaces, to substantially eliminate from the metal residual stresses that tend to deform the piece out of said desired curvature which method comprises: bending the metal piece along said entire dimension to a severe curvature in one direction by which all of the metal between one of said surfaces and a narrow zone along the neutral axis is compressively stressed beyond its yield point and all of the metal between the other of said surfaces and said zone is tensioned beyond its yield point; bending the metal piece along said entire dimension to an opposite curvature differing from the desired curvature all along said dimension by amounts such as to create, in zones outwardly adjacent to said zone along the neutral axis, residual stresses which decrease to an ascertainable magnitude below the yield level when the piece is subsequently returned to the desired curvature; and thereafter repeatedly bending the piece, imparting to the piece with each bending a curvature along said dimension which departs from the desired curvature in the opposite direction from, and to a lesser extent than, the curvature imparted by the immediately preceding bending, to thus create with each bending residual stresses which, when the piece is restored to its desired curvature, are in zones spaced to opposite sides of the neutral axis, with the residual stresses created by each bending disposed in zones outwardly adjacent to those containing the residual stresses created by the immediately preceding bending, opposite in direction to them, and of such magnitude that the residual stresses in the metal at the conclusion of the several bendings substantially balance one another when the piece conforms to the desired curvature and therefore have no tendency to deform the piece out of the desired curvature.

26,309
FREIGHT BRACING APPARATUS

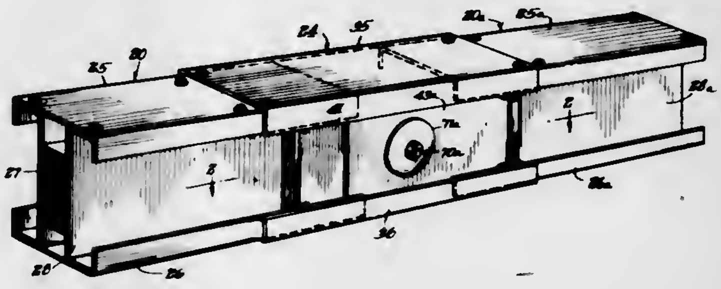
Robert E. Heard, Plymouth, Mich., assignor to Evans Products Company, Plymouth, Mich., a corporation of Delaware
Original No. 3,151,571, dated Oct. 6, 1964, Ser. No. 266,663, Mar. 20, 1963. Application for reissue Aug. 25, 1965, Ser. No. 485,146
17 Claims. (Cl. 105—369)

1. In a freight bracing apparatus including a crossbar body adapted to brace freight in a truck, railway boxcar or the like having a pair of opposed side walls, the combination of a belt rail adapted to be mounted on and extend along a said side wall and having a lower portion including a longitudinally and upwardly extending flange and an upper portion having a plurality of horizontally opening apertures spaced therealong, an end fitting for connecting one end of said crossbar to said belt rail and comprising an end fitting body adapted to be connected to one end of said crossbar body and having a foot portion extending transversely thereof and outwardly and downwardly therefrom, said foot portion being adapted to hook over said flange and co-operate therewith to support said end fitting on said belt rail for sliding movement therealong when said end fitting extends downwardly from said belt rail at an acute angle to said side wall, and pin means mounted on said end fitting body for movement to and from an extended position and disposed to be alignable with said apertures in said belt rail when said foot portion is hooked over said flange and said end fitting body extends generally at right angles to the side wall, said pin means when so aligned and moved to said extended position, extending into certain of said apertures.



26,310
BUS DUCT WITH PARTICULAR HOUSING, INSULATION, AND BUS BARS

Ernest W. Moodie, Downsview, Ontario, and Merle R. Holman, Rexdale, Ontario, Canada, and Harris I. Stanback, Lexington, Ky., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Original No. 3,187,086, dated June 1, 1965, Ser. No. 135,852, Sept. 5, 1961. Application for reissue May 29, 1967, Ser. No. 646,754
30 Claims. (Cl. 174—68)



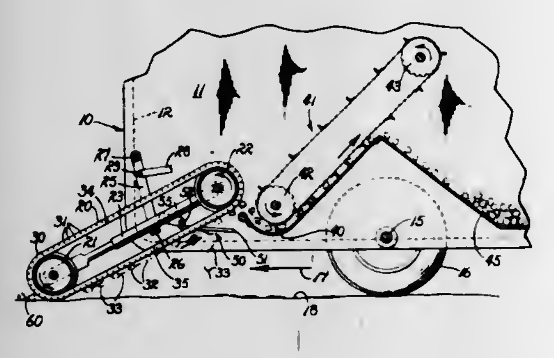
30. A bus duct comprising a housing and an assembly of bus bars contained therein, said housing including a first pair of spaced parallel channels and a second pair of spaced parallel channels at right angles to said first pair, each channel of said first pair having a bottom portion and a pair of side wall portions extending from the bottom portion, each channel of said second pair having *a bottom portion and a pair of side wall portions extending from the bottom portion, the side wall portions of said second pair of channels being respectively secured to the bottom portions of said first pair of channels, and the bottom portions of said second pair of channels being spaced closer together than the bottom portions of said first pair, said assembly of bus bars forming a substantially solid connection between the bottom portions of said second pair of channels and along the length thereof for a major portion of the length thereof between opposite end portions of said bus bar.*

26,311
STALK REMOVER FOR COTTON GLEANER

William J. Warmerdam, 16013 Grangeville Blvd., Hanford, Calif. 93230

Original No. 3,148,491, dated Sept. 15, 1964, Ser. No. 273,159, Apr. 15, 1963. Application for reissue Mar. 14, 1966, Ser. No. 539,244

6 Claims. (Cl. 56—28)



1. In a cotton scrapping machine having a plurality of individually substantially identical continuous harvesting belts each affording peripheral means adapted to engage discrete particles of cotton [resting on a surface of support] *at a predetermined reception area* and to transport said particles to a discharge area remote from said [support surface] *reception area,* the cotton particles having a plurality of elongated particles of foreign material randomly intermixed therewith and being of a semi-rigid nature; means to support the belts in parallel closely spaced relationship for movement in respective, closed circuitous paths having a common downstream direction, each of said paths having a substantially rectilinear cotton transporting portion; a plurality of rigid elongated rods individually disposed between adjacent belts at a position transversely adjacent thereto and longitudinally coincident with the respective cotton transporting portions of said belts; and means mounting the rods in the machine obliquely angularly related to said path and divergently oriented with respect to said downstream direction of movement of the belt therealong, so that foreign particles carried by the individual belts and encountered by the rods are effectively disengaged from the peripheral engaging means of the individual belts.

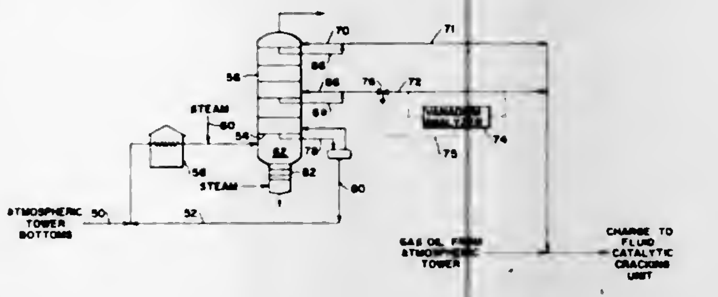
26,312
DETERMINATION OF VANADIUM CONTENT OF HYDROCARBON OILS BY ELECTRON PARAMAGNETIC RESONANCE SPECTROMETRY

Anthony J. Saraceno, Devon, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Original No. 3,087,888, dated Apr. 30, 1963, Ser. No. 36,381, June 15, 1960. Application for reissue Apr. 2, 1965, Ser. No. 457,238

21 Claims. (Cl. 208—251)

1. A method for controlling a petroleum refining process in response to changes in the vanadium content of an oil stream of said process, comprising sampling at intervals a hydrocarbon oil stream of said process that has a viscosity at the temperature at which it is to be subjected to electron paramagnetic resonance spectrometry sufficient that the minimum vanadium content to be determined will provide a detectable electrical output, subjecting each oil sample to be tested to electron paramagnetic resonance spectrometry to obtain an electrical output whose intensity is related to the amount of paramagnetic vanadium in the sample, and controlling a variable in a portion of said refinery process in response to said output so as to maintain the vanadium content in a selected zone of said refining process within a predetermined range.


70
71
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86
76
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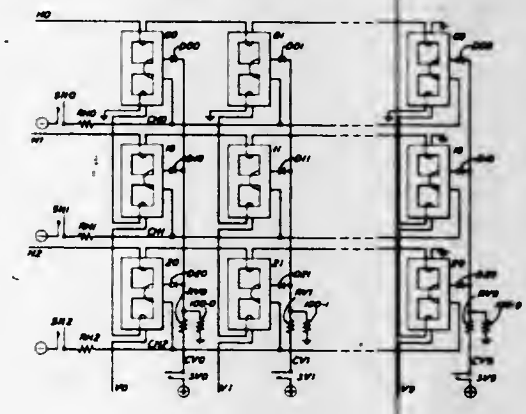
STEAM
60
54
78
74
75
58
82
STEAM
80
ATMOSPHERIC TOWER BOTTOMS
50
52
GAS OIL FROM ATMOSPHERIC TOWER
CHARGE TO FLUID CATALYTIC CRACKING UNIT

26,313
MATRIX SWITCH UTILIZING MAGNETIC STRUCTURES AS CROSSPOINTS

Edward E. Schwenzfeger, Atlantic Highlands, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Original No. 3,099,752, dated July 30, 1963, Ser. No. 771,924, Nov. 4, 1958. Application for reissue Sept. 18, 1964, Ser. No. 410,339

11 Claims. (Cl. 307—88)



1. A matrix switch having a plurality of crosspoints arranged into columns and rows, each of said crosspoints comprising a magnetic element having a first and a second signal winding which are normally not flux connected, a clamping winding on each crosspoint effective when current flows therethrough to link the two signal windings of its crosspoint fluxwise, means for connecting the first signal windings of all crosspoints common to a row in series between ground and a signal lead individual to each row, means for connecting the second signal windings of all crosspoints common to a column in series between ground and a signal lead individual to each column, means for effecting a current in only the clamping winding of a selected crosspoint whereby the signal lead for the row in which said selected crosspoint is located is connected signalwise with the signal lead of the column in which said selected crosspoint is located.

26,314

[BOWLING PIN WITH WOUND FILAMENT REINFORCEMENT] *WOUND FILAMENT REINFORCEMENT FOR SOLID CORED STRUCTURE*

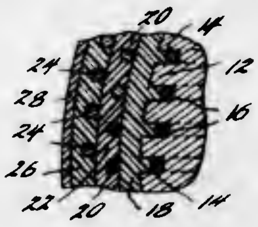
Nick Costopoulos, Box 192, Sunrise, Wyo. 82231

Original No. 3,152,804, dated Oct. 13, 1964, Ser. No. 155,958, Nov. 30, 1961. Application for reissue Oct. 22, 1965, Ser. No. 505,225

10 Claims. (Cl. 273—82)

12. In an elongated structure having a substantially solid wooden core along an axis thereof, the combination comprising:

- *a plurality of annular surface grooves on said core;*
- *a first continuous length of plastic filament received successively in said grooves in a state of tension;*
- *a first plastic matrix filling said grooves in enveloping relation to said first filament, said first matrix having an outer surface outwardly of said core;*
- *a second plastic filament wound on the surface of said first matrix at a different angle to the axis of said pin than the first filament, and a second plastic matrix enveloping the second filament winding and having the general form of the core.*



PLANT PATENTS

GRANTED NOVEMBER 28, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,779

ROSE PLANT

Eugene S. Boerner, Newark, N.Y., assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Sept. 12, 1966, Ser. No. 578,896

1 Claim. (Cl. Plt.—11)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a leathery foliage texture, a free flowering habit, a high-centered flower form which is retained to the end, a distinctive and attractive general color tonality of the flowers corresponding to Shrimp Pink, very lightly overcast with Eosine Pink, and with the lower half of the petals being overcast with Lemon Chrome, and a fruity flower fragrance.

2,780

DIANTHUS PLANT

William Zombory and Sophia B. Zombory, Detroit, Mich., assignors to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Sept. 15, 1966, Ser. No. 579,793

1 Claim. (Cl. Plt.—70)

A new and distinct variety of Dianthus plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a compact habit of growth, attractive Dark Green foliage, an everblooming habit, frilled and lacy flower petals, a distinctive and attractive flower color corresponding to La France Pink, with the petals edged with Rose Red, and with a blotch of Carmine in the lower half of the petals, and a spicy sweet flower fragrance.

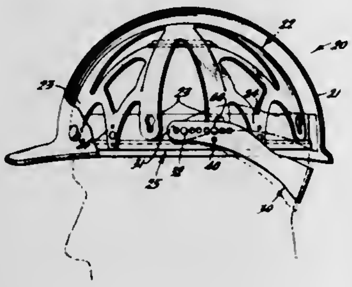
PATENTS

GRANTED NOVEMBER 28, 1967

GENERAL AND MECHANICAL

3,354,468
NAPE STRAP

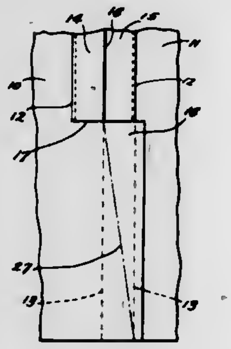
Charles E. Bowers, Jr., Newtown Square, Pa., assignor to The Fibre-Metal Products Company, Chester, Pa., a corporation of Pennsylvania
Filed June 29, 1965, Ser. No. 467,868
5 Claims. (Cl. 2—3)



1. In a hat or cap, the combination comprising an outer shell, a headband supported in spaced relation within said shell, a resiliently deflectable strap extending externally along the back of said headband within said shell, pivot means connecting opposite ends of said strap to opposite sides of said headband for swinging movement of said strap between a retracted position within said shell and an extended position externally of said shell for retaining engagement with the lower back of a wearer's head, and holding means for releasably holding the strap in its retracted position.

3,354,469
COAT VENT CONSTRUCTION

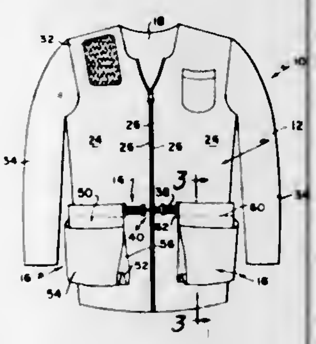
Vincent Muccillo, 7058 Bridgetown Road, Cincinnati, Ohio 45211
Filed Feb. 16, 1965, Ser. No. 433,102
3 Claims. (Cl. 2—93)



1. A coat vent construction comprising two coat pieces, each provided with a bottom hem and a side edge portion, a lateral cut formed in the adjacent side edge portion of one back piece in spaced relation to said bottom hem, a vertical seam joining together adjacent side edge portions of the two pieces down to the lateral cut and providing a book seam on the one piece terminating at the lateral cut and a book seam on the other piece extending into the bottom hem of said other piece, a flap formed on the one said piece below the lateral cut and underlying the book seam on the other said piece, said flap having an oblique fold line extending downwardly and outwardly across the flap from a point near the inside end of the lateral cut to a point adjacent its lower outer edge, a rectangularly-shaped vent lining on the inside of the flap, said vent lining having an oblique fold line extending from a point centrally of the top edge angularly downwardly to the bottom hem adjacent a side edge thereof, means securing together the oblique fold lines of the flap and vent lining, means securing the top end portion of the vent lining to the interior faces of the book seams, and means securing the bottom of the vent lining to the bottom hem of the one said piece.

3,354,470
SHOOTING GARMENT WITH FREELY SUSPENDED BELT AND POCKETS

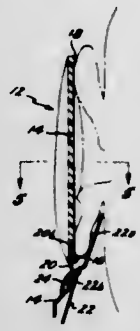
Robert E. Allen, 214 SW. Jackson St., Des Moines, Iowa 50315
Filed Mar. 25, 1966, Ser. No. 537,568
9 Claims. (Cl. 2—94)



1. A shooting garment comprising:
a body portion having aperture means at each side thereof substantially at the wearer's waist level;
said body portion further including a pad positioned on the upper forward portion thereof at the wearer's shoulder level to permit the butt of a rifle to abut thereagainst;
belt means formed as an elongated band having a central section and a pair of end sections;
said central section being freely disposed interiorly of said body portion;
one of said end sections passing through each of said aperture means and thereby being freely disposed exteriorly of said body portion;
an enlarged game pocket slidably mounted upon each of said end sections; and,
means for releasably coupling said end sections with one another to thereby form a continuous belt extending about the wearer's waist, the back portion of said belt extending freely across the inside of the back of said body portion and the front portion of said belt extending freely across the outside of the front of said body portion;
each of said game pockets including a rearward wall having slot means formed therein with one of said end sections extending through said slot means so that said pocket is freely supported upon and slidably mounted along said belt front portion;
each of said game pockets further including a front wall spaced from said rearward wall to define an open-topped chamber into which game can readily be inserted.

3,354,471
EAR GUARDS

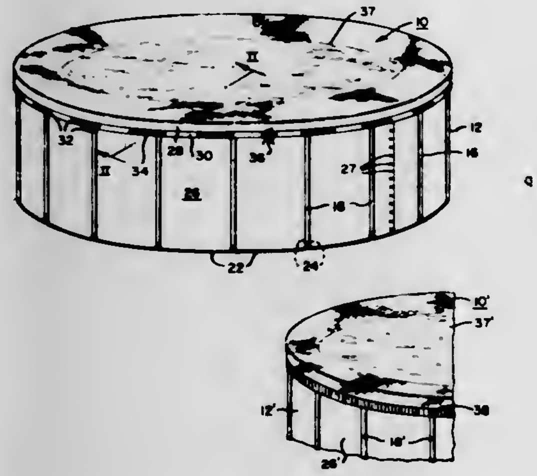
Margaret E. Longo, 13931 Newland St., Apt. 7, Westminster, Calif. 92683
Filed May 10, 1965, Ser. No. 454,408
1 Claim. (Cl. 2—174)



An ear guard to prevent ingress of hair spray to a person's ear comprising in combination: a plastic flat oval-shaped thin disk having inner and outer surfaces and having a size and shape to cover only the outwardly exposed area of a normal sized ear of a wearer, a bead extending about the entire edge of said inner surface and having a generally semi-circular cross section, clasp means on one of the ends containing the major diameter of said oval-shaped disk comprising a pair of spring biased relatively movable operating members extending outwardly beyond said one end and including a dished end portion secured to one of said operating members, said dished end portion extending along said inner surface inwardly from said one end, said dished end portion and said one end releasably engaging the lower portion of a wearer's ear to firmly maintain said bead against the outwardly exposed area of the ear and to permit removal of said disk without interfering with the coiffure.

3,354,472
SWIMMING POOL COVERS

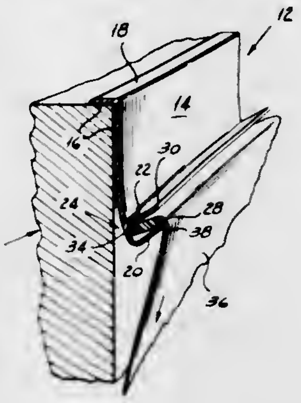
Wayne H. W. Steinbeck, 303 Sandy Drive, Glenshaw, Pa. 15116
Filed Nov. 23, 1966, Ser. No. 596,603
9 Claims. (Cl. 4—172)



8. A cover for a swimming pool comprising a lightweight mesh material shaped to overlie the top opening of said swimming pool and at least part of the outer surface of the upper edge portion, said mesh material having a reinforcing band secured adjacent the peripheral edge thereof, peripheral anchor means secured to said reinforcing band for securing said cover to the side walls of said swimming pool, said mesh material being sufficiently open to permit the flow of rain water and melted snow therethrough but to prevent the entry of insects and the like into said pool, said anchor means being secured to said swimming pool so that the major proportion of said cover lies in the water of said swimming pool adjacent the surface thereof, said swimming pool provided with a peripherally extending barrier over which said cover is lightly stretched to further prevent the entry of insects and the like into the pool.

3,354,473
LOCKING STRIP FOR A LINER OF A SWIMMING POOL

Julius Donald Schwarz, Teaneck, and George E. Dokes, Hillsdale, N.J., assignors to Hendon Construction Company, Little Ferry, N.J.
Filed Feb. 13, 1967, Ser. No. 615,750
6 Claims. (Cl. 4—172)

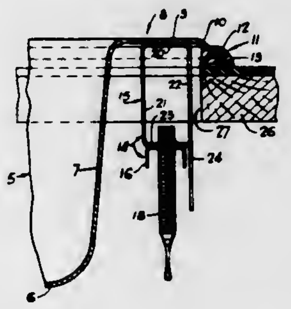


1. A locking strip for anchoring to a wall of a swimming pool a flexible liner having a bead at an edge portion thereof,

(a) said locking strip comprising a vertically extending main portion,
(b) means to secure the main portion to an upper portion of the wall of said swimming pool,
(c) a pair of flanges opposite said securing means and extending forwardly in spaced relation from the main portion and at an acute angular relation to the main portion,
(d) said pair of flanges providing therebetween a groove,
(e) and one of said pair of flanges having an inwardly extending projection to engage the bead of the flexible liner in a locking relation in the groove between said pair of flanges.

3,354,474
SELF-RIMMING PLUMBING FIXTURE

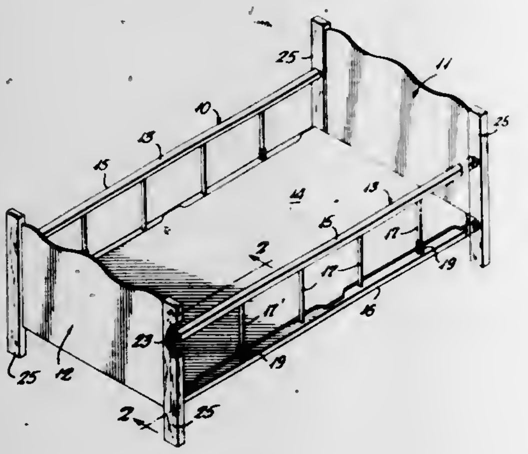
Charles G. Cairns, Chateauguay, Quebec, and Walter Rokitenetz, La Fleche, Quebec, Canada, assignors, by mesne assignments, to Crane Co., New York, N.Y.
Filed July 17, 1964, Ser. No. 383,422
7 Claims. (Cl. 4—187)



1. A plumbing fixture of the self-rimming sink or bowl type comprising an open top body portion adapted to be installed in an opening provided in a supporting structure, said body portion including a bottom wall, a continuous marginal wall extending upwardly from said bottom wall and a continuous rim extending outwardly from the upper

edge of said marginal wall and adapted for supporting engagement with an upper surface portion of the supporting structure bounding the opening, in which the body portion of the fixture is fitted and a continuous, non-metallic, resiliently compressible, sealing strip carried by and underlying said rim and adapted for sealing engagement with the portion of the supporting structure underlying said rim, said sealing strip presenting a bottom surface concavely curved in the transverse direction thereof, the concavely curved surface extending continuously from edge to edge of the strip.

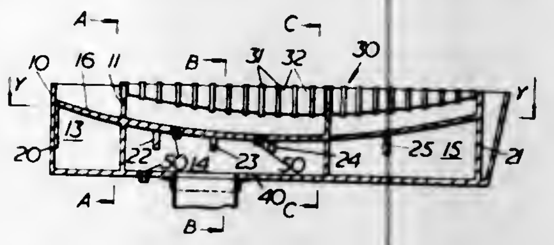
3,354,475
STRUCTURAL CONNECTION FOR BEDS AND THE LIKE
Chester T. Martin, Box 33, McColl, S.C. 29570
Filed Nov. 30, 1966, Ser. No. 597,987
4 Claims. (Cl. 5—93)



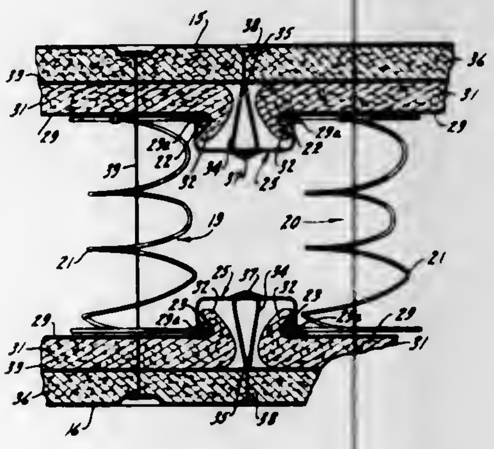
1. A quick releasable connection for a pair of substantially right angular members, a portion of one member having a pair of spaced oppositely facing keyhole slots in one surface thereof and an internal locking cavity behind each keyhole slot in communication therewith, said keyhole slots having relatively wide entrance portions and relatively narrow locking portions, a pair of spaced bars constituting parts of the other member and being normally parallel and susbtantially alignable with said slots and including end portions adapted to be flexed laterally, said end portions returning to normal parallel relation when released, and headed pin-like elements anchored to the ends of said bar end portions with the heads thereof spaced from the ends of the bar end portions, said heads adapted to pass through the relatively wide entrance portions of the slots when the bar end portions are flexed laterally and adapted to engage behind the relatively narrow locking portions of the slots when the bar end portions are released, said heads being only slightly smaller than the relatively wide entrance portions of the slots and substantially wider than the narrow locking portions of the slots.

3,354,476
APPARATUS FOR SUPPORTING BODIES
John Tracey Scales, Stanmore, England, and John Kerr, East Kilbride, near Glasgow, Scotland, assignors to National Research Development Corporation, London, England, a British corporation
Filed June 15, 1965, Ser. No. 464,069
Claims priority, application Great Britain, June 27, 1964, 25,759/64; Apr. 12, 1965, 15,536/65
13 Claims. (5—348)

1. Apparatus for supporting a body on a cushion of pressurized gas comprising a hollow structure defining at least part of the gas cushion space, a plurality of slats individually mounted for radial movement on the upper side of the structure, the innermost edges of said slats defining an aperture for exposing at least part of the body to the said cushion space, the shape and size of the aperture being variable by movement of said slats, and means for supplying gas to the structure to issue from at least part of the periphery of the aperture and form at least one curtain of moving gas between the periphery of the aperture and the body, whereby at least one cushion of pressurized gas is formed and maintained beneath the body, and within the structure, to support at least part thereof out of contact with the structure.



3,354,477
MATTRESS CONSTRUCTION
Fred H. Bartz, 9380 W. Loomis Road, Franklin, Wis. 53132
Filed Aug. 25, 1966, Ser. No. 582,782
13 Claims. (Cl. 5—352)



1. A foldable mattress construction including a pair of coil spring sections and upper and lower layers of upholstery overlying and underlying said sections and fixed thereto, said spring sections having inner ends in spaced and opposed relation, upper and lower clips connecting said opposed ends while holding them in spaced relation, said upper and lower clips being pivotally connected to each of the oppositely facing end wires of said spring sections at the upper sides thereof and the lower sides thereof, said clip means having intermediate portions bowed inwardly toward one another and tie means connecting said upholstery to said intermediate portions of said clips whereby upon folding movement of said sections upholstery is precluded from moving outwardly from the fold line to thereby create a neat fold line between said sections.

3,354,478
WIRE CUTTING AND CONNECTING TOOL
Edward L. Allen, Athens, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 22, 1965, Ser. No. 501,939
4 Claims. (Cl. 7—5.5)

1. A wire cutting and connecting tool, comprising:

a housing;

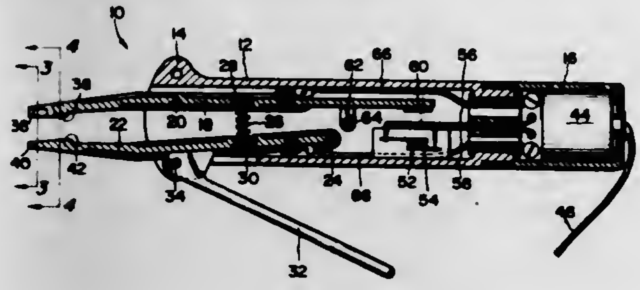
a first arm member pivotably carried by said housing and extending longitudinally therefrom;

a second arm member pivotably carried by said housing and extending longitudinally therefrom adjacent said first arm member;

resilient means extending between said first and second arm members for urging said first and second arm members from one another;

actuating means operatively connected to said second arm member for urging said second arm member towards said first arm member;

cutting jaw means carried by said first and second arm members cooperating upon movement of said second arm member towards said first arm member to cut a wire disposed therebetween;



gripping jaw means carried by said first and second arm members cooperating upon movement of said second arm member towards said first arm member to hold a wire and a member disposed therebetween;

switch means operatively connected to a source of electrical current and actuatable in response to pivotable movement of said first arm member to transmit electrical soldering current to said gripping jaw means; and

locking means operable for preventing pivotable movement of said first arm member when said cutting jaw means is cutting a wire.

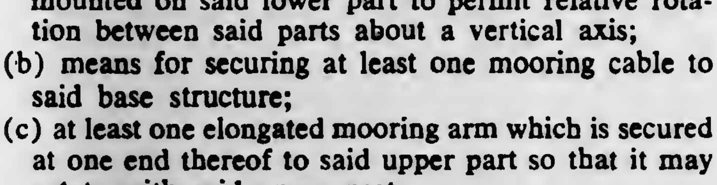
3,354,479
LOADING BUOY HAVING LOADING ARMS

Pieter Koppenol, The Hague, Netherlands, Alexander F. Dickson, Wallington, Surrey, England, and Hendrikus S. Rutten, Zoetermeer, and Gerard Kruisman, Reeuwijk, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 15, 1965, Ser. No. 513,986

Claims priority, application Netherlands, Dec. 18, 1964, 64—14,787

10 Claims. (Cl. 9—8)



1. A buoy for mooring vessels and transferring fluid between the buoy and the vessel comprising:

(a) a base structure including a lower part secured to the floor of a waterway and an upper part rotatably mounted on said lower part to permit relative rotation between said parts about a vertical axis;

(b) means for securing at least one mooring cable to said base structure;

(c) at least one elongated mooring arm which is secured at one end thereof to said upper part so that it may rotate with said upper part;

(d) said arm including at least two interconnected, mutually articulated, terminally juxtapositioned parts adapted to permit a part of the side of said vessel to contact a part of said arm;

(e) float means supportingly associated with said arm to support said arm on said waterway;

(f) connecting means on said arm for securing at least one mooring cable from said vessel to said arm when the side of the vessel contacts said arm;

(g) at least one flowline connected at one end to said buoy; and,

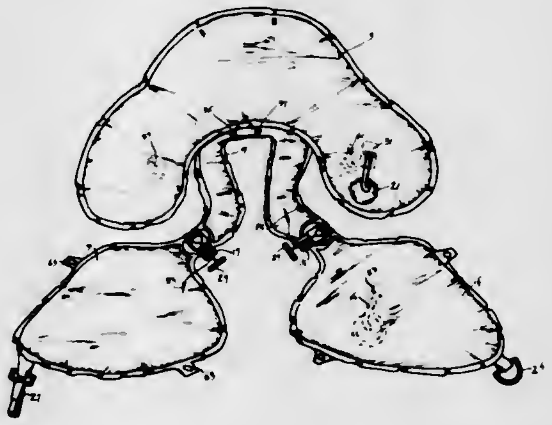
(h) coupling means on the other end of said flowline for connecting it to a vessel.

3,354,480
FLOTATION ATTACHMENT (MARK 5 LIFE PRESERVER)

Jonathan Harding, Camden, John J. Mellon, Jr., Woodbury Heights, and William T. Schrandt, Verga, N.J., assignors to the United States of America as represented by the Secretary of the Navy

Filed July 7, 1966, Ser. No. 564,508

6 Claims. (Cl. 9—316)



1. An inflatable life preserver integrated in a survival garment, said preserver comprising:

(a) a first fluid compartment that includes a collar lobe;

(b) means for inflating the collar lobe;

(c) a second fluid compartment that includes a pair of body lobes;

(d) means for inflating the pair of body lobes;

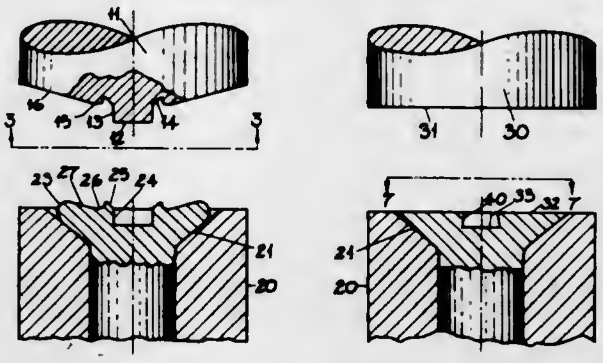
(e) and a back section which includes a first fluid channel that interconnects the body lobes of the preserver and which includes a second fluid channel that interconnects the collar lobe of the preserver with its inflating means.

3,354,481
SCREW SLOT

Emric W. Bergere, 2324 Nottingham Ave., Los Angeles, Calif. 90027

Filed Dec. 22, 1965, Ser. No. 516,217

3 Claims. (Cl. 10—10)

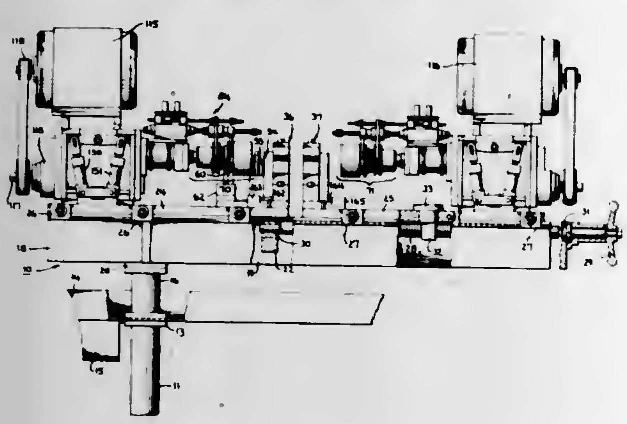


1. The method of forming a screw head which consists in supporting a blank in a die, striking the head portion with a combined heading and slot forming punch containing cavities to provide raised protrusions along the

peripheral portions of the diverging slot faces and by striking the raised portions to cause the side walls of the slot to converge inwardly at the outer edges, retaining a vertical wall at the central portion of the slot.

3,354,482
METHOD AND APPARATUS FOR SIMULTANEOUSLY PERFORMING MULTIPLE FORMING OPERATIONS

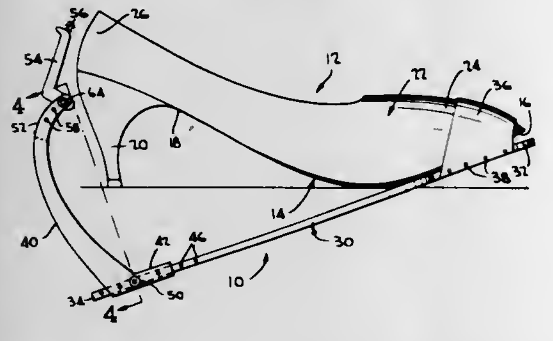
Evert V. Anderson, Chicago, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 8, 1965, Ser. No. 462,323
8 Claims. (Cl. 10—92)



1. Apparatus for simultaneously forming the ends of a workpiece, said apparatus including, in combination,
means for holding a workpiece in a fixed position during the forming operation,
a pair of forming tools, one for each end of the workpiece,
means for advancing the forming tools into forming engagement with the workpiece,
means for disengaging the forming tools from the workpiece, and
means for maintaining the forming tools in advancing relationship to the workpiece until the forming tools are disengaged from the workpiece.

3,354,483
SHOE STRAIGHTENING DEVICE

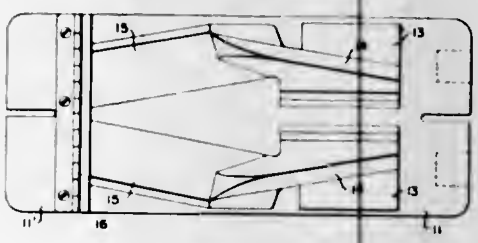
Donald C. Patterson, 201 W. Brandon Road, Columbia, Mo. 65201
Filed Dec. 22, 1966, Ser. No. 603,945
5 Claims. (Cl. 12—120.5)



1. A shoe straightening device for use with a shoe having a sole with a toe end and a heel end, a heel secured to the heel end of the sole, and an upper secured to the sole having a toe portion and a heel portion, the inside of the shoe having an inner heel portion overlying the heel, said device comprising a one-piece sole plate extending the full length of the shoe and having a toe end and a heel end, a toe strap carried by said toe end of said sole plate for engaging the toe portion of the upper of the shoe and pressing the toe end of the sole of the shoe into close contact with said toe end of said sole plate, an upstanding support element having a lower end carried by said heel end of said sole plate and an arcuate upper end for extending over the heel portion of the upper of the shoe, said lower end of said support element defining guide means slidably engaging said heel end of said sole plate, and locking means for fixedly securing said lower end of said support element to said heel end of said sole plate in a selected adjusted relationship, and a heel-securing element, pivot means interconnecting one end of said heel-securing element with said arcuate upper end of said support element, and said heel-securing element including a free end for frictionally engaging the inner heel portion of the shoe and pressing the heel of the shoe into close contact with said heel end of said sole plate.

3,354,484
SHOE CRADLE

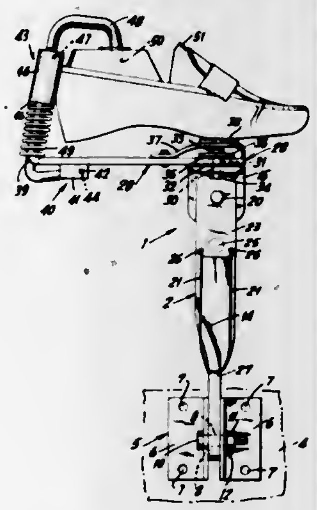
Charles F. Batchelder, Milton, and Jerome A. Rubico, Boston, Mass., assignors to Batchelder Rubico, Inc., Boston, Mass., a corporation of Massachusetts
Filed July 5, 1966, Ser. No. 562,584
6 Claims. (Cl. 12—123)



1. A cradle for supporting an upper-carrying last in bottom-up position, comprising a pair of forwardly converging side vanes which flare outwardly and transversely in position to underlie the forepart of the last, and a supplemental pair of rearwardly converging side vanes which flare outwardly and transversely at an acute angle for engagement with the rear end portion of the last and merging with the said forwardly converging side vanes thus providing a continuous supporting surface on each side of the last cooperating to prevent by wedging action movement of the last in either direction.

3,354,485
SHOE JACK DEVICE

Ernest Hardy, 25 Knapp St., Wilton, Maine 04294
Filed July 27, 1966, Ser. No. 568,275
5 Claims. (Cl. 12—123)



1. A shoe jack for holding a shoe last used in the hand sewing of shoes comprising bench mounting means, a first member of said shoe jack, adapted to be rotatably

mounted in said bench mounting means at one end, said member including a 90° flexural twist, an angle bracket, mounting means adapted to rotatably mount said angle bracket to the other end of said first member, a last holding bar, means adapted to rotatably mount said last holding bar to a free end of said angle bracket, a toe rest on one end of said last holding bar, said toe rest including means forming a flush surface with the end of said bar, and last holding means, said last holding means mounted on the other end of said last holding bar, said last holding means being hinged beneath said last holding bar and including a spring biased against the upper portion of said last holding bar and a flange on said last holding means and a rotatable U shaped bar adpted to fit into the opening of a shoe last.

3,354,486
MULLING PROCESS

Arthur Bradshaw, Kenneth Lee, Norman Swales, and Peter Wilfred Voyle, Leicester, England, assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey

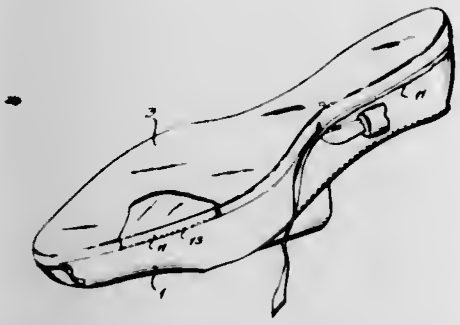
No Drawing. Filed Sept. 23, 1964, Ser. No. 398,751
Claims priority, application Great Britain, Oct. 26, 1963, 42,301/63
4 Claims. (Cl. 12—142)

1. A method of conditioning leather comprising subjecting a leather article to a high temperature moist atmosphere and directing relatively cold water onto the article during the period of exposure of the leather article to said atmosphere, thereby to lower the temperature of said article below the dew point of said atmosphere, whereby to effect continued disposition of condensation on said article.

3,354,487
WRAPPED SOLE SHOE

Joel Glassman, Gilbert F. Jonas, and Andrew L. Bass, Jr., Nashville, and Stephen H. Pate, Hendersonville, Tenn., assignors to Genesco, Inc., Nashville, Tenn., a corporation of Tennessee

Filed Sept. 4, 1962, Ser. No. 221,014
3 Claims. (Cl. 12—142)

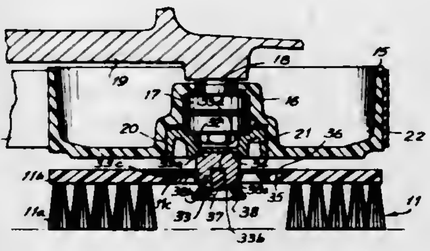


1. In the process of making a shoe having a sole whose margin is wrapped over the lower margin of the upper, the improvement that comprises attaching an overlay to the lower margin of the upper along a line corresponding to the desired top line of the sole while leaving a portion of the overlay projecting free of the upper above said line of attachment, cementing the margin of the sole to said overlay over an area that extends above the aforesaid line of attachment to the upper but which terminates short of the free margin of the overlay, and thereafter simultaneously trimming the overlay and sole along a line adjacent the aforesaid line of attachment between overlay and upper, thereby to produce a shoe wherein the edge of the sole is fully secured to the upper through the connection of the sole to the overlay and the connection of the overlay to the upper along substantially coextensive lines.

3,354,488
SURFACE TREATING APPARATUS

Tord Erik Daniel Bilde, Halsingborg, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a Swedish corporation

Filed Mar. 31, 1966, Ser. No. 538,997
17 Claims. (Cl. 15—49)



1. The combination with a domestic appliance of the class described, of

structure including rotatable means adapted to be positioned over a surface for rotation about a vertical axis and be moved over the surface,

a brush having a back and tufts projecting therefrom,

means for connecting said brush to said rotatable means whereby the latter imparts rotating movement to said brush, said connecting means including a magnet element and an armature element,

one of said elements being fixed to said rotatable means and radially immovable thereon and the other of said elements being fixed to said brush back and radially immovable thereon,

said magnet element and said armature element functioning to connect said brush to said rotatable means under the influence of the magnetic field in said magnet element, whereby said rotatable means imparts rotating movement to said brush,

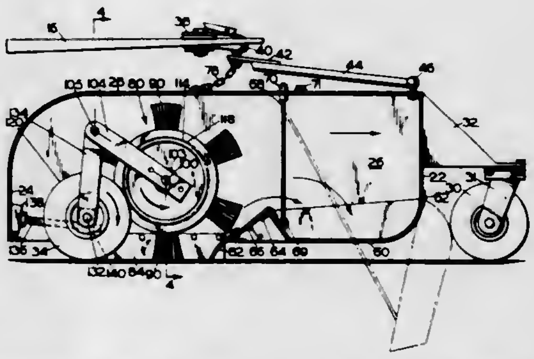
said magnet element and armature element having surfaces in contact with one another when said brush is connected to said rotatable means, the last-mentioned contact surface of said magnet element being curved,

and the surfaces of said magnet element and said armature element in contact with one another being shaped and formed to enable said brush to move angularly with respect to said rotatable means.

3,354,489
SWEEPER ATTACHMENT FOR LIFT TRUCKS

Stanley V. Ehrlich, Portland, Oreg., assignor to Stanley-Western Corporation, Portland, Oreg., a corporation of Oregon

Filed Mar. 16, 1966, Ser. No. 534,764
10 Claims. (Cl. 15—83)



1. A sweeper attachment for a lift truck comprising:

means defining a housing having an open bottom,

bin means partially closing said bottom,

steerable ground wheel means supporting one end of said housing, ground-engaging drive wheel means supporting the opposite end of said housing,

rotatable brush means mounted within and extending between the opposite sides of said housing adjacent said bin in a position so that said brush means can engage the ground surface,

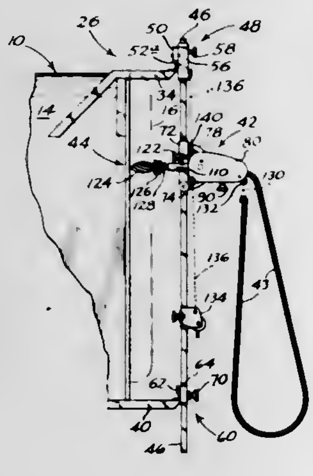
transmission means interconnecting said drive wheel means and said brush means for rotating said brush means in a direction for sweeping dirt from said ground surface into said bin upon movement of said housing in a predetermined direction,

and steerable connecting and suspension means on said housing for connecting said housig to the load carriage of said lift truck,

said connecting and suspension means including means for transmitting pushing and pulling forces from said lift truck to said housing but permitting independent relative vertical movement between said lift truck and said housing so that the brush means will remain in sweeping engagement with the ground surface when said sweeper is moved over uneven surfaces.

3,354,490
BOILER TUBE CLEANING APPARATUS

Don G. Masters and Wayne C. Worstell, Portland, Oreg., assignors to Power Tube, Inc., Portland, Oreg., a corporation of Oregon
Filed June 15, 1964, Ser. No. 374,976
8 Claims. (Cl. 15—104.1)



8. Apparatus for cleaning tubes in a boiler comprising upper and lower substantially horizontal tracks mounted in a stationary position adjacent the top and bottom of the boiler, respectively, and extending transversely of the tubes;

an upright standard substantially spanning the space between said tracks;

a traveling anchoring device movably supported by and rideable on said upper track, and attaching means securing the upper end of said standard to the device with the standard depending from the device and movably with the device along said track while secured to the device;

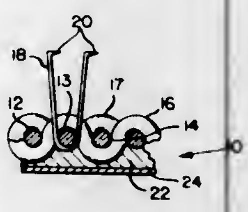
a traveling anchor device supported by and riding on said lower track, and means mounting the lower end of said standard on said second-mentioned device movable along said lower track while having the standard mounted on it;

an ejector unit including power-operated means for thrusting a boiler tube cleaning instrument into and along the length of a boiler tube; and

means mounting said ejector unit on said standard, with the unit entirely supported by the standard, accommodating positioning of the unit at various positions on the standard with said unit held stationary in said positions.

3,354,491
TOOTHBRUSH

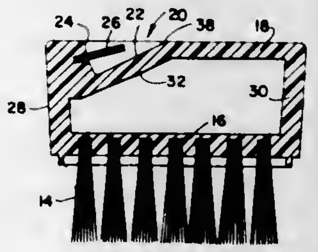
Karl F. Schlegel, Jr., Penfield, N.Y., assignor to Kay-El Sales Corporation, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 21, 1966, Ser. No. 536,056
3 Claims. (Cl. 15—167)



1. A toothbrush comprising a flexible strip of woven fabric and bristles woven into said fabric defining a brush on one surface including pressure sensitive adhesive directly on at least a portion of one surface of said fabric and adapted to overlie and adhere to a corresponding portion of the other surface of said fabric.

3,354,492
SURGEON'S FINGERNAIL AND HAND CLEANING BRUSH

John G. Baumgartner, Rte. 1, Box 163–A, Plano, Ill. 60545
Filed Oct. 26, 1966, Ser. No. 589,755
1 Claim. (Cl. 15—167)



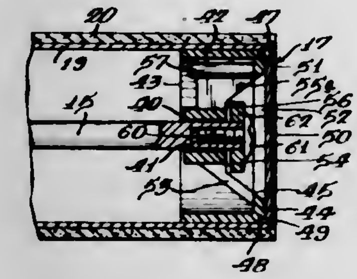
A hand cleansing brush for cleaning hands and fingernails, including in combination, a one-piece molded plastic back member which is substantially oblong in configuration and comprises an upper wall portion, a lower wall portion and first and second side wall portions integrally joined with opposite walls thereof spaced apart from one another to provide therebetween a hollow passage open at each end and extending longitudinally of the longer dimension of said back member, a filler portion integral with said upper wall portion and extending into the hollow passage, said upper wall portion and said filler portion having a groove therein bounded by first and second inwardly angled and opposing surface portions extending longitudinally thereof, said second surface portion making an angle with said upper wall portion greater than said first surface portion, a first plurality of short bristles being mounted in a single row on said second surface portion and extending into and being disposed within the groove in a spaced relation from said first surface portion so that the oblong outline of said back member is not substantially altered thereby, and a second plurality of bristles longer than said short bristles mounted to said lower wall portion and extending outwardly therefrom.

3,354,493
PAINT ROLLER END CAP

John A. Pharris, Milwaukee, Wis., assignor to EZ Paintr Corporation, a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,494
8 Claims. (Cl. 15—230.11)

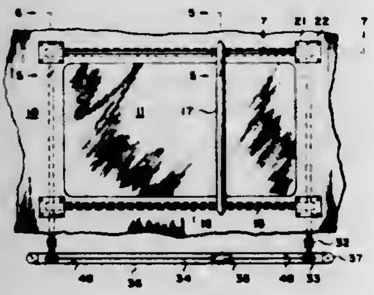
1. In a paint roller having a handle and an axle disposed at generally right angles with respect thereto; a first paint applying sleeve supporting member rotatably

mounted at one end of said axle; a second paint applying sleeve supporting member at the other end of said axle and including, a hollow cylindrical outer wall having first and second ends, a hollow cylindrical hub rotatably receiving said axle therein and spaced axially from the first end of said outer wall to define a chamber therebetween, web means joining said hub and said outer wall, a closure member removably mounted on the first end of said outer wall outwardly of an end of said axle and closing one end of said chamber, passage means in the other end of said chamber for allowing fluid to flow outwardly therefrom; and a paint applying sleeve telescopically received on said first and second supporting members.



3,354,494
WINDOW WIPER MECHANISM

Robert L. Rischman, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed June 25, 1965, Ser. No. 466,992
11 Claims. (Cl. 15—250.24)

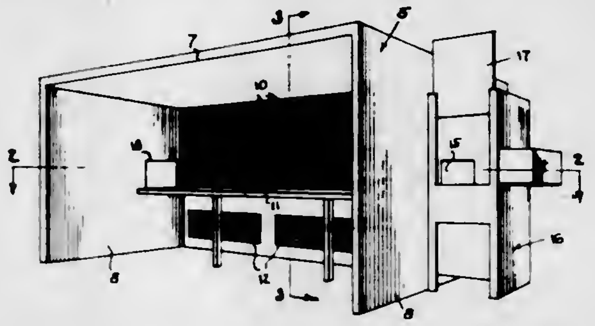


1. A window wiper mechanism comprising:
- a pair of shafts, one mounted adjacent each end of a window;
- a band disposed along each side of said window substantially at right angles to said shafts and connected at each of its ends to one of said shafts;
- a wiper element secured at opposite ends to said bands;
- a blade carried by said wiper element and projecting therefrom to contact the window; and
- a drive common to both of said shafts for the rotation thereof in unison periodically in alternate directions whereby the blade is moved back and forth across the window.

3,354,495
PASS-THROUGH CLEANING APPARATUS

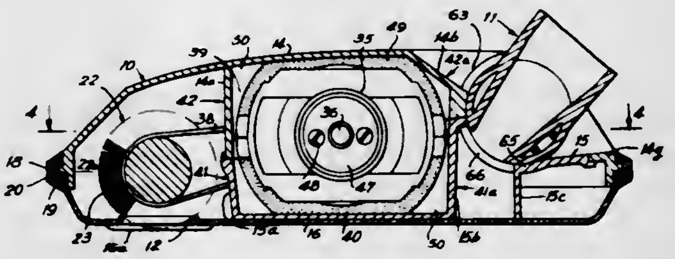
Robert Lawrence III, Hollywood, Fla., assignor to Heinicke Instruments Co., Hollywood, Fla., a corporation of Florida
Filed Feb. 6, 1964, Ser. No. 343,032
2 Claims. (Cl. 15—302)

1. A pass-through cleaning system comprising a booth open at one side, said booth having two spaced end walls, a top wall, and a rear wall opposite the open side; a partition within the booth connected to the top wall and end walls having dimensions congruent with the rear wall and being spaced forwardly thereof but rearwardly of the open side; a work bench within the booth having a substantially horizontal table member in elevated position engaging each of said partition and end walls and extending forwardly of the partition a distance short of the open side, the rearward edge portion of the table member engaging the entire length of the partition and the side edge portions of the table member engaging the end walls from the juncture of the end walls with the partition along a length of the end walls in the direction of forward extension of the table member; the area of the partition above the table member being substantially entirely composed of an air filtering surface and constituting an air outlet from the space between the rear wall and the partition and the area of the partition below the table member having an air filtering surface constituting an air inlet to the space between the rear wall and the partition; an air blower in the space between the rear wall and the partition for moving air in through the air inlet and forcing the air out through the air outlet and over the table member; an opening in each of said end walls disposed directly above the side edge portions of the table member; a liquid spray apparatus exterior to the booth and connected to one of said openings for cleaning an article to be packaged; a door member over said one of said openings openable from within the booth through which the article is transferred from the cleaning apparatus to the booth for packaging on the table member in the presence of filtered air blowing thereover; the other of said openings providing an egress opening through which the article is transferred after packaging under impingement of the filtered air.



3,354,496
SUCTION CLEANER NOZZLE OF THE AGITATOR TYPE

Kurt Alvar Jonsson, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed May 27, 1965, Ser. No. 459,178
Claims priority, application Sweden, May 28, 1964, 6,523/64
8 Claims. (Cl. 15—377)

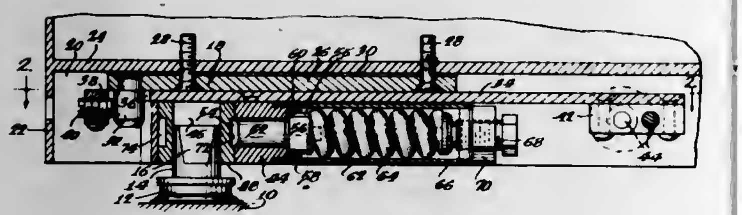


1. A suction nozzle comprising a hollow body having a suction inlet and an air outlet socket adapted to be connected to a source of supply of air at a partial vacuum and means providing a path of flow for air therebetween, an agitator mounted for rotation at the vicinity of the suction inlet, means including an electric motor for driving the agitator, the body comprising top and bottom body sections, means for detachably connecting the body sections, and structure including the body sections for mounting the motor in the hollow body and for pivotally mounting the outlet socket for angular movement on

the body when the body sections are detachably connected together, the air outlet socket comprising a first part normal to the axis about which it is angularly movable and a second part perpendicular to the first part, the axis of the second part coinciding with the axis about which the outlet socket is angularly movable, the top and bottom body sections having complementary parts receiving and holding the ends of the second part of the outlet socket and the part of the bottom body section providing a seat for the second part of the air outlet socket, the seat and the second part of the outlet socket having openings which are in alignment and enable air to flow in the path of flow from the interior of the body to the air outlet socket, the air outlet socket being formed with passage means in the first and seconds parts thereof, and means including electrical conductors for connecting the motor to the source of electrical supply, the electrical conductors extending through the passage means and projecting from the second part of the air outlet socket substantially parallel to the axis about which the air outlet socket is angularly movable.

3,354,497
PANIC RELEASE DOOR ARM

Fred Armento, Alpine, N.J., assignor to Republic Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 19, 1966, Ser. No. 543,672
6 Claims. (Cl. 16—55)

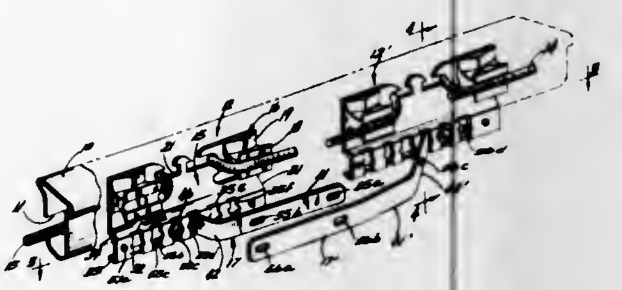


1. A door arm for connecting a door operator having a vertical spindle to a door having a recess in the edge thereof, said door arm being adapted to be housed within said recess and having a first element for connection with said door and a second element having an internal surface adapted for connection to said spindle, said second element having an external surface fitted to rotate in said first element substantially coaxially with respect to said spindle, a spring loaded bolt mounted to slide in said first element in a direction substantially normal to the axis of rotation of said second element, said bolt having a tapered nose engaging the external surface of said second element under the spring loading, said external surface being formed to provide a notch to fit said nose when the door and spindle are in door closed position, said external surface being formed to provide a peripheral groove extending through an arc of the order of 300 degrees, the ends of said groove being substantially equally spaced on either side of said notch, said groove being in vertical alignment with said nose, and means providing a limit stop to prevent the nose of said bolt from applying substantial pressure against said second element when said nose is within said groove.

3,354,498
TRAVERSE ROD MASTER CARRIER

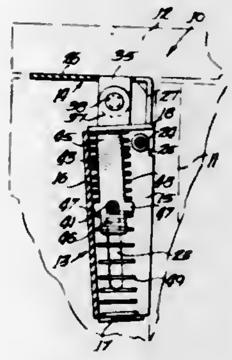
Ferdinand F. Salzmann, Madison, Wis., assignor to Graber Manufacturing Company, Inc., Middleton, Wis., a corporation of Wisconsin
Filed Apr. 29, 1966, Ser. No. 546,348
12 Claims. (Cl. 16—87.4)

1. In a master carrier for a drapery traverse rod including a master carrier body, means for guidably mounting the carrier body on a traverse rod, and a drapery support arm, means for adjustably and reversibly mounting the drapery support arm on the carrier body comprising: an elongate arm mounting portion on the carrier body extending generally lengthwise of its direction of movement and having a plurality of slots extending crosswise of said mounting portion and arranged in a row along the length of the mounting portion, said drapery support arm including a first elongate portion disposed at one side of said arm mounting portion for supporting a drapery; an intermediate portion extending laterally from said first elongate portion through any selected one of said slots; and a second end portion overlapping the other side of said arm mounting portion, each of said crosswise slots defining openings at least as large as the cross section of said second end portion of said arm to enable insertion of the same through any of said slots for adjustable positioning of the arm at a plurality of different positions along the carrier body, and fastener means detachably securing said second end portion of said arm to said arm mounting portion of the body.



3,354,499
COUNTERBALANCING HINGE SUPPORT

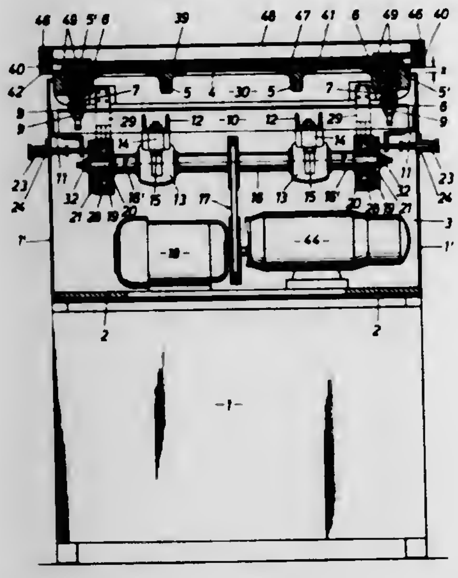
Ralph F. Anderson, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,716
10 Claims. (Cl. 16—180)



1. A counterbalancing hinge support for the lid of a cabinet comprising a housing secured to a rear wall of a cabinet and a lid support pivotally mounted on the housing and secured to the lid of the cabinet, said housing having spaced side walls, a rear wall and upper and lower ends providing upper and lower abutments, said side walls having aligned elongated slots therein, a pair of support arms each pivotally mounted at one end to the lid support, a rivet extending through said housing and having ends extending through said aligned slots, the opposite ends of said arms being connected to the ends of said rivet, first resilient means in said housing between said rivet and said upper abutment, and second resilient means located in the housing between said rivet and the lower abutment.

3,354,500
APPARATUS FOR THE PRODUCTION OF NEGATIVES BY MECHANICAL MEANS

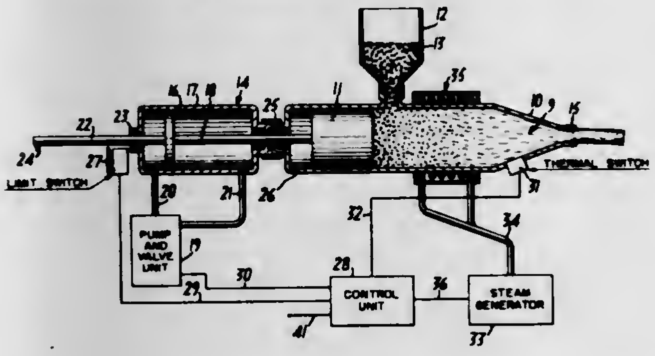
Werner Moll, Solingen-Wald, Germany, assignor to Firma Werner Moll, Solingen-Wald, Germany, a corporation of Germany
Filed Feb. 2, 1966, Ser. No. 524,525
Claims priority, application Germany, Feb. 5, 1965, M 64,078
3 Claims. (Cl. 18—1)



1. An apparatus for the production of negatives by mechanical means, comprising
  a housing,
  a base plate,
  a cut supported by said base plate,
  said cut being adapted to support a film on its top,
  means for subjecting said base plate to a swinging movement,
  a plurality of balls disposed above said cut and sensing said base plate by said swinging movement,
  said means comprising a drive shaft rotatably mounted within said housing and including eccentric shaft ends at both ends of said shaft,
  eccentric bushings receiving said shaft ends and releasably securable against rotation,
  means for securing both said eccentric bushings in any one of a plurality of adjusting positions, and
  a bearing supporting said bushings and suspended by a buttstrap means operatively connected with said base plate.

3,354,501
PLASTICIZING APPARATUS WITH AUTOMATIC TEMPERATURE CONTROLLING MEANS

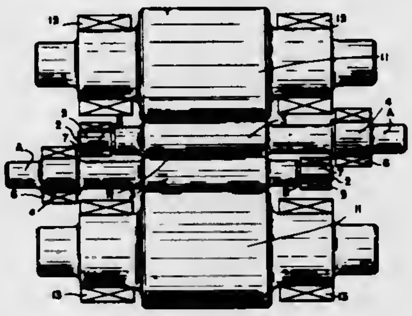
William S. Bachman, Southport, Leo K. Kosowsky, Bridgeport, and Jeremiah W. Deaso, Trumbull, Conn., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Dec. 31, 1963, Ser. No. 334,797
16 Claims. (Cl. 18—2)



1. Apparatus for plasticizing molding material comprising:
  means forming a chamber for receiving material to be plasticized,
  means for controlling the temperature of the chamber,
  means for sensing the viscosity of the material in the chamber, and
  means responsive to the viscosity sensing means for adjusting the temperature controlling means.

3,354,502
METAL ROLLING SYSTEM

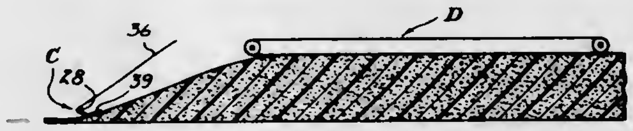
Fred Harding Powell, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Mar. 15, 1966, Ser. No. 534,469
15 Claims. (Cl. 18—2)



1. A rolling mill comprising parallel rolls having cooperating working faces, each roll having at one end a first neck portion of relatively great diameter relatively remote from the working face of the roll and at the opposite end a second neck portion of relatively small diameter relatively close to the working face of the roll, the first mentioned ends of the respective rolls extending in opposite directions from the working faces of the rolls, the rolls being driven through the first mentioned ends thereof, and bearings for the rolls in which the first and second neck portions are journaled.

3,354,503
URETHANE FOAMING APPARATUS

Richard D. Joseph, Marion, and Robert W. Mitten, Wabash, Ind., assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Apr. 2, 1964, Ser. No. 356,707
2 Claims. (Cl. 18—4)



1. An apparatus useful in making polyurethane foams which comprises an elongated foaming mold support with a substantially horizontal bottom and with vertical sidewalls and which is elevated at one end to form an appreciable downward slope,
  a moveable web lining the inside, bottom and side surfaces of the said mold support, said side surfaces of said web being essentially perpendicular to the bottom surface of said web so that a substantially U-shaped elongated moveable mold is formed,
  means for discharging a foamable polyurethane liquid stream onto the bottom surface of said moveable elongated mold at said elevated end of said mold support so that said stream will have a propensity to flow toward the opposite end of the mold,
  narrow floating essentially horizontal adjustable means positioned from said liquid stream discharge means

and adjacent said stream where it is still substantially a liquid foam stream and extending across the surface of said liquid foam stream and across essentially the width of said bottom surface of said mold,

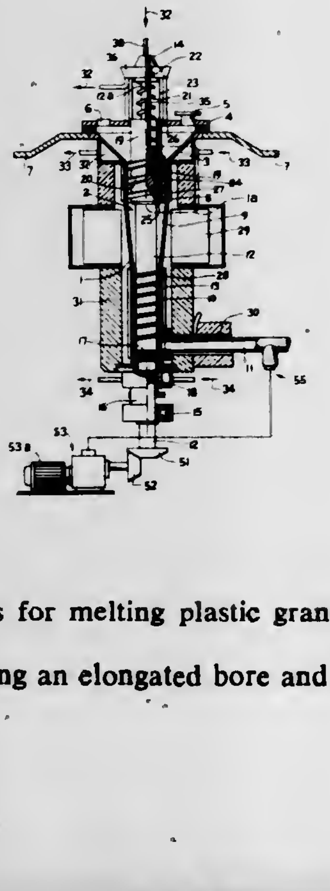
a porous top covering material for the foam, said top covering material being guided into contact with the substantially liquid foam stream by said floating adjustable means and forming the top surface of a foaming tunnel, said top covering material being essentially the same width as the bottom of said U-shaped mold and being a medium through which light pressure may be transferred from said floating adjustable means to the surface of the substantially liquid foam stream and adapted to apply even pressure to said liquid foam stream and to orient the liquid foam stream to aid in obtaining uniform density, said top covering being inclined upward to conform to the top surface of the rising foam and being coextensive with the top surface of the rising foam,

a vertically and horizontally adjustable conveyor having an endless porous belt and being positioned above the top covering material and parallel to the direction of movement of the moveable U-shaped mold, said conveyor also being positioned from said liquid stream discharging means and from said floating adjustable means, the lower surface of said belt of said conveyor being in contact with the top surface of said top covering, said conveyor adapted to press against the top surface of said top covering material where the foam reaches at least substantially maximum height and thereby also against the foam to orientate said foam before it is cured, and

means for moving said U-shaped mold along said support away from said discharge means, means for moving said top covering with the rising foam and with said U-shaped mold in the same direction as said U-shaped mold, and means for operating said conveyor in the same direction of movement as said top covering.

3,354,504
APPARATUS FOR MELTING PLASTIC GRANULES

Karl Lehner, Frankfurt am Main-Bonames, Germany, assignor to Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen
Filed Oct. 4, 1965, Ser. No. 492,371
Claims priority, application Germany, Oct. 8, 1964, Z 11,115
7 Claims. (Cl. 18—8)



1. An apparatus for melting plastic granules comprising:

a housing defining an elongated bore and comprising a filling hopper, a heated cylindrical entry zone, a tapered melting zone, and a heated cylindrical measuring zone serially disposed adjacent each other,

a heated tube defining an outlet passage attached at an angle to the axis of said housing at one end thereof,

a first screw mounted coaxially within the bore of said housing having worm courses for conveying plastic feed material from said hopper through said cylindrical entry zone to said tapered melting zone, said screw terminating at the boundary between said entry and melting zones,

a second screw coaxially mounted within said housing, a first portion of said second screw having worm courses in the portion of the bore of said housing delineated by said measuring zone, for conveying melted plastic through said measuring zone to said outlet tube, and a second cylindrical portion of said second screw having no worm courses thereon disposed in said tapered melting zone, said second screw having a portion extending beyond an end of said housing,

means for rotating said second screw in contact with said portion of said second screw extending beyond said housing,

means for sensing the pressure of plastic material in said outlet passage,

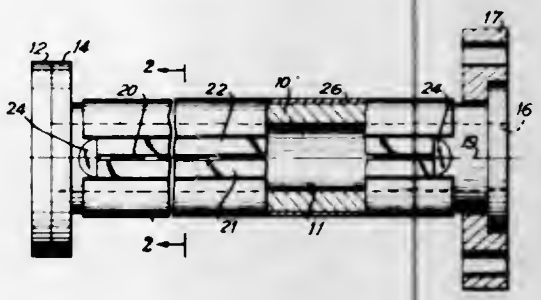
means linking said means for rotating said second screw with said sensing means for controlling the rate of rotation of said second screw,

means for continuously controlling said first screw's rate of conveying of said plastic feed in said hopper through said entry zone to said melting zone responsive to pressure in said melting zone,

whereby a continuous stream of liquid plastic under substantially constant predetermined pressure is extruded at said outlet passage.

3,354,505
EXTRUSION DIE

Wilhelm Simon, Seeheim, Bergstrasse, Germany, assignor to Rohm & Haas G.m.b.H., Darmstadt, Germany
Filed May 14, 1965, Ser. No. 455,697
Claims priority, application Germany, May 14, 1964, R 37,897
4 Claims. (Cl. 18—12)



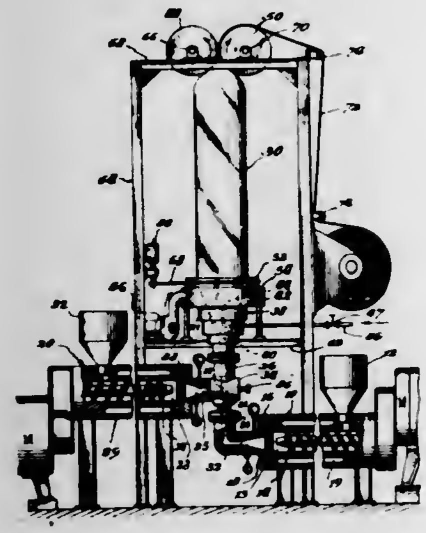
1. Extrusion die for thermoplastic material delivered under pressure from a feed mechanism, said die consisting of a walled tubular member of uniform thickness, concentric and circular in cross-section adapted to be heated externally and having a longitudinal axis, an open end adapted to be secured to the feed mechanism for receiving material delivered therefrom, a tubular chamber having a clear unobstructed passage for distributing said material along the length thereof, a longitudinal slot in the wall of the tubular member providing an elongated passageway from the chamber to the exterior of the die, and a closed end for directing the thermoplastic material through the slot in a direction substantially perpendicular to said longitudinal axis to extrude said material.

3,354,506
APPARATUS FOR MELT EXTRUSION OF MULTI-WALL PLASTIC TUBING

Garland E. Raley, Morris Plains, N.J., assignor to Union Carbide Corporation, a corporation of New York

Original application Apr. 30, 1962, Ser. No. 191,230, now Patent No. 3,223,761, dated Dec. 14, 1965. Divided and this application Nov 16, 1965, Ser. No. 508,065

2 Claims. (Cl. 18—14)



1. Apparatus for melt-extruding multi-wall thermoplastic tubing comprising a single cavity annular die assembly, a body having a cylindrical chamber therein with one end of said chamber terminating at the entrant portion of said die assembly, a plurality of extruders, a passage means between each extruder and said cylindrical chamber for passage of melted plastic material from the extruder to the chamber, each passage means discharging plastic material into the chamber at a point spaced from the chamber's die terminating end, means in said chamber for forming therein from all the melted plastic materials supplied thereto a central cylindrical core of one plastic material about which are coaxially formed cylinders of other plastic materials to form a solid laminate stream of said plastic materials and means associated with said die assembly for axially piercing and radially distributing the core containing solid stream into a tubular stream.

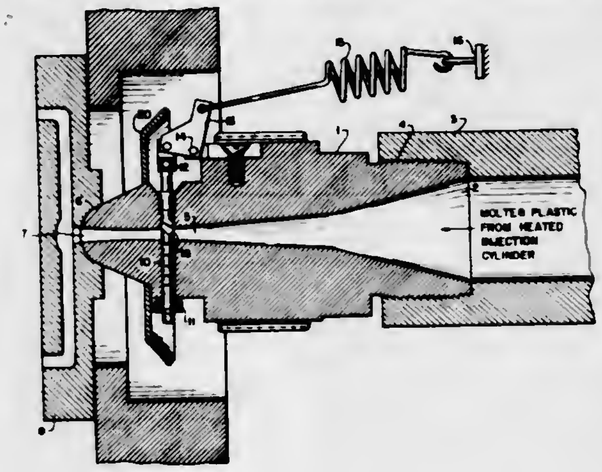
3,354,507
INJECTION MOULDING NOZZLES FOR PLASTICS

Eric Osten Orrevad, Ringarstigen 3, Bromma, Sweden

Filed May 26, 1965, Ser. No. 459,061

4 Claims. (Cl. 18—30)

1. A plastics injection nozzle for use between an injection cylinder and a normally interchangeable tool comprising an elongated body having one end joined to the injection cylinder and a nose portion at the opposite end for engagement with said interchangeable tool, a plastic flow channel extending from a first comparatively large aperture at the injection cylinder end and a second smaller aperture at the nose portion, said channel having walls which taper gradually from said comparatively large aperture to said comparatively smaller aperture; a valve member mounted in said body for sliding movement in a plane perpendicular to the direction of plastic flow through said cavity, said valve member having a generally cylindrical shape and being of a size sufficient to completely close said cavity at a location intermediate said two apertures and being formed with an opening which communicates with said channel when the valve is in its open position, said valve member opening containing a valve closure surface disposed at approximately 45° relative to both the direction of movement of the valve member and the direction of flow of said plastic through the channel at the position where said valve member is located, said valve closure surface providing a force to move said valve member to its open position when pressure in said injection cylinder is above a predetermined value; and means located externally of said plastic flow channel and connected to said valve member for providing a force in opposition to the force provided by the pressure acting on said valve closure surface for normally biasing said valve closure surface to its closing position comprising a spring member having one end fixed, and an intermediate member mounted for movement relative to said nozzle body and having one portion connected to said spring member and a second portion connected to said valve member.

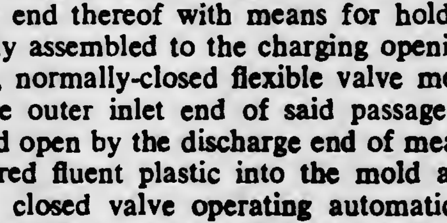


3,354,508
CHARGING FITTING FOR PLASTIC MOLDING APPARATUS

Elmer E. Draben, Glendora, Calif., assignor to Hoedra, Inc., Monrovia, Calif., a corporation of California

Filed July 9, 1965, Ser. No. 470,790

5 Claims. (Cl. 18—30)



1. A charging fitting for use with plastic molding equipment to retain the mold charge captive until the same takes a set, said charging fitting comprising a main body having a long flaring passage and formed at the larger discharge end thereof with means for holding the same detachably assembled to the charging opening of a mold assembly, normally-closed flexible valve means mounted across the outer inlet end of said passage and adapted to be held open by the discharge end of means for charging uncured fluent plastic into the mold assembly, said normally closed valve operating automatically to close as said charging means is withdrawn and being effective to hold the charge captive while taking a set.

3,354,509
BARBELL MOLD

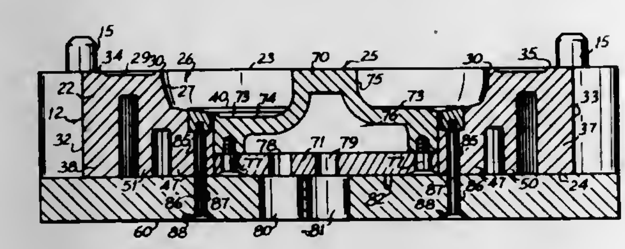
Clayton J. Ammondson, Reidsville, N.C., assignor to Diversified Products Corporation, Opelika, Ala., a corporation of Alabama

Filed June 1, 1965, Ser. No. 460,440

6 Claims. (Cl. 18—35)

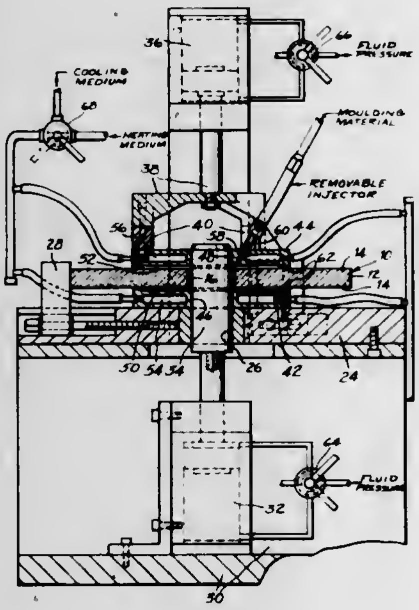
1. In a mold for hollow plastic discs of the type suitable as shells for weights of a barbell set, the combination of a pair of main die blocks each defining a portion of a

mold cavity and a centrally positioned aperture, a removable interlock insert positioned in said aperture and having a central post for forming the central hole of said shells, the insert having raised areas separated by lower areas radiating from the central post, an annular engraving means removably carried by each of said blocks, said engraving means each being disposed outwardly of their said interlock insert, and means for fixing the position of said annular engraving means with respect to said die block and with respect to said insert for positioning indicia on said engraving means properly with respect to both said die block and said insert.



3,354,510
APPARATUS FOR MOLDING A BEARING SURFACE ON A GRINDING WHEEL

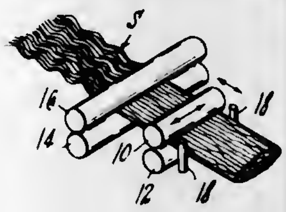
Arnold M. Cook, Holden, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed Mar. 8, 1965, Ser. No. 437,919
6 Claims. (Cl. 18—36)



1. Apparatus for treating an annular portion of a grinding wheel concentric with the center hole therein, comprising an arbor of smaller diameter than the center hole on which the wheel is adapted to be mounted, a pair of mold plates containing center holes mountable on the arbor for engagement with the opposite side faces of the wheel, said plates having annular recesses concentric with their center holes, said plates and arbor collectively forming with the wheel a mold having a cavity within which the interior surface of the center hole and annular portions of the side faces coextensive with said recesses are confined, one of said plates containing an injection opening through which liquid resin may be injected to fill said mold cavity, and means for holding the plates pressed against the side faces of the wheel during injection and setting of the resin.

3,354,511
TEXTILE CRIMPING

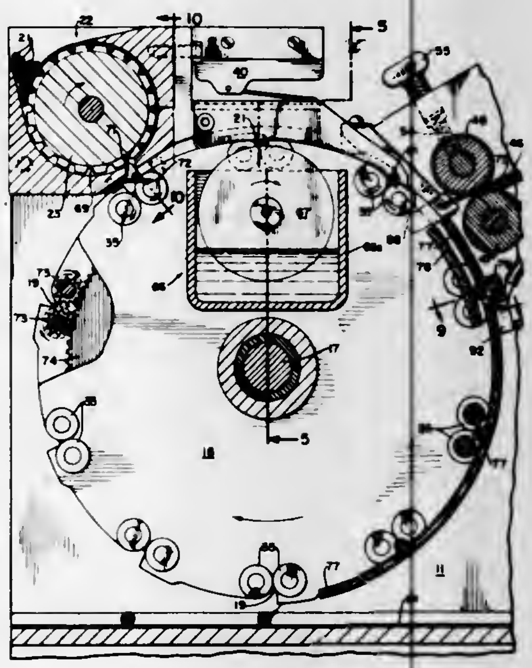
Donald Alexander Ross, Sudbury, Mass., assignor to International Wool Development Company, Melbourne, Victoria, Australia, a proprietary limited
Filed Jan. 21, 1965, Ser. No. 426,756
11 Claims. (Cl. 19—66)



1. The method of imparting artificial crimp to fibrous and filamentary textile strand material which comprises advancing said strand material while confining the strand as it advances against free lateral motion at two closely spaced lines of advance of the advancing strand, with the strand freely suspended between said lines, continuously moving the strand as it advances through at least one of said lines of advance back and forth transversely with respect to its general direction of advance to cause the lateral location of the strand as it reaches the second line of advance to move back and forth along the transverse projection of the angularly advancing increment of strand running between said two lines to continuously reversely flex the strand laterally at such a frequency as to produce closely connected crimps lengthwise along said strand material and carrying the crimped strand in crimped configuration along a constant path beyond said second line of advance.

3,354,512
SWAB MAKING MACHINE

Robert J. Fleming and Alfred R. Cozzolino, Wayne, N.J., assignors to Swabettes, Inc., Wayne, N.J., a corporation of New Jersey
Filed Aug. 14, 1964, Ser. No. 389,663
10 Claims. (Cl. 19—145.3)

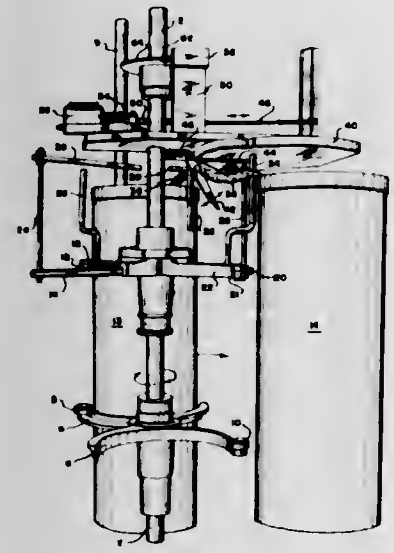


1. A swab making machine comprising: a rotary member provided with stick receivers for receiving swab sticks; means below the mouth of each of said receivers supporting each of said sticks in one of said receivers, respectively, and each said means rotating about an axis common with said rotary member to rotate each of said sticks independently about its longitudinal axis; means for moving said rotary member; means for applying an adhesive to one end of each of said rotating sticks for the attachment thereto of a strand of relatively loose fibrous

tuft material; means for applying a fiber tuft of said material to the adhesive-coated ends of the sticks; and means for forming the tufts into swabs.

3,354,513
DOFFING APPARATUS

Gaston G. Fornes, Charlottesville, Va., assignor to Institute of Textile Technology
Filed Jan. 23, 1964, Ser. No. 339,771
10 Claims. (Cl. 19—159)



1. In a sliver packaging apparatus wherein each of a succession of cans is positioned below a coiler head to be filled with sliver from the coiler head, the improvement of a sliver-can doffing mechanism which comprises:

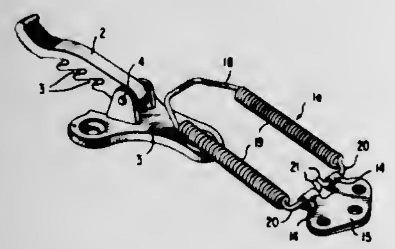
(a) a support plate.

(b) a rotatable shaft extending through said plate,

(c) a can positioning means carried by said shaft for moving a filled can away from the coiler head and for moving an unfilled can toward the coiler head thereby extending the sliver between the filled can and the coiler head.

3,354,514
FASTENING FOR SKI SHOES HAVING STEPS ADJUSTING MEANS FOR A RESILIENT LINK MEANS

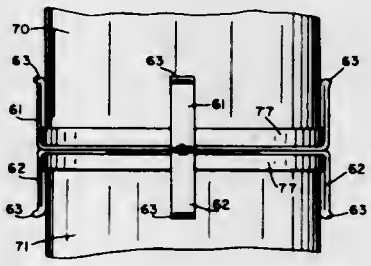
Giovanni Battista Munari, Montebelluna, Treviso, Italy
Filed Mar. 14, 1966, Ser. No. 534,069
Claims priority, application Italy, Aug. 7, 1965, 4,898/65; Nov. 12, 1965, 6,791/65
1 Claim. (Cl. 24—70)



A ski boot fastener of the type including a lever formed with notches, the lever pivoted from a strap secured to a ski boot, and a link pivotally secured to another portion of the ski boot and engaging in a selected one of the notches to provide a fastening for the ski boot, the improvement comprising said link being formed as an elongated generally annular body, said link being formed from one piece of spring metal wire and having two opposite rigid head portions where the link is pivoted from the ski boot, a forward head portion to be engaged by a notch in the lever and two resiliently extensible longitudinal members in the form of helical springs formed from the spring metal wire.

3,354,515
ICE CREAM CONTAINER STABILIZING CLAMP

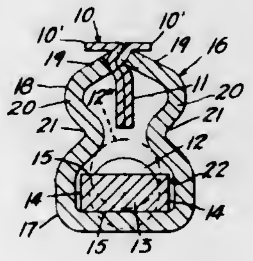
William R. Robinson, 31 Franklin Ave., Pompton Plains, N.J. 07444
Filed July 26, 1965, Ser. No. 475,020
1 Claim. (Cl. 24—81)



A clamping device for holding two ice cream containers together in a vertically stacked condition to normally prevent relative movement of the upper container when the stacked containers are received within an ice cream cabinet, said device comprising at least one pair of elongated substantially flat arm members interconnected at their mid points so as to lie in substantially a common plane, each of said arm members having a pair of opposed resiliently flexible fingers extending above and below the said plane and having a means thereon adapted to snappingly engage the peripheral edge of a strengthening rim on an adjacent container to normally maintain the said containers in the said stacked condition, said means comprising each of the end portions of the said fingers being reversibly bent inwardly toward an associated container and upon each other so as to space the free end thereof a distance above the said plane slightly greater than that of an associated edge of said rim.

3,354,516
UMBRELLA RIB CLIP

Samuel N. Small, Valley Stream, N.Y., assignor to Alfred G. Cohen and Paul Weiss, both of Flushing, N.Y.
Filed Oct. 21, 1965, Ser. No. 499,446
3 Claims. (Cl. 24—81)

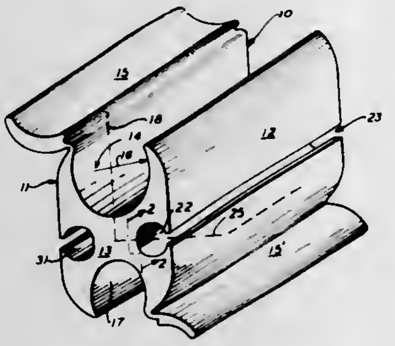


1. A clip device for attachment of an umbrella top including a seam to a rib of the umbrella, wherein the rib has a flattened end defining flat upper and lower surfaces, said device comprising a lower rib end engaging portion, an upper portion having a pair of grippers, inwardly pressed sides substantially midway between ends of said upper and lower portions, said grippers being adapted

to engage the seam of the umbrella top, and said lower rib end engaging portion snugly engaging sides and upper and lower surfaces of said flattened end of the rib.

3,354,517
COMPRESSIBLE CONNECTOR

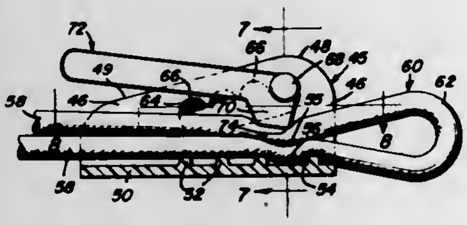
Paul F. Levinsky, Verona, N.J., assignor to The Thomas and Betts Co. Inc., Elizabeth, N.J., a corporation of New Jersey
Filed May 17, 1966, Ser. No. 550,747
4 Claims. (Cl. 24—123)



1. A connector comprising a body of compressible material having side faces, a pair of parallel side walls and an intermediate connecting web portion defining, with the side walls, an outwardly opening major recess in each of the side faces of the connector for the reception of the lines to be secured to the connector, an elongated reentrant recess formed in one of the side walls of the connector at the web portion thereof, spaced from the axial plane longitudinally of the major recesses, said plane being parallel with the side walls, said re-entrant recess having the general cross section of a C extending inwardly of the side wall and provided with a constricted slot opening at the plane of said side wall at right angles to the plane of the opening of the major recess, said re-entrant recess having an internal area substantially less than that of the major recess, said constricted opening providing for the reception of a wire positioned at the side of said body member parallel to the constricted slot opening of said re-entrant recess, and laterally into said re-entrant recess, to then be positioned below the slot in offset relation thereto.

3,354,518
ADJUSTABLE CABLE CLAMP

D. Eugene Hoover, Harlan, Iowa, assignor of one-half to George E. Mickel, Jr., Harlan, Iowa
Filed Oct. 7, 1965, Ser. No. 493,720
4 Claims. (Cl. 24—134)



1. A clamp for flexible and resilient cables or the like comprising an open-ended sheath channel-shaped in cross-section and embodying spaced parallel side flanges having lengthwise edge portions joined by a connecting web and defining a cable seating and securing channel in which component portions of a cable are saddled for retention, said side flanges being provided on interior surfaces with opposed correspondingly inclined recesses, said recesses inclining from one end of the sheath to the other end and approaching and sloping toward said web, the upper edges of said recesses having a plurality of longitudinally spaced selectively usable paired and alignable notches constituting keeper seats and also bearings, a lever having a headed end portion arranged in a channel between said flanges, said headed end portion having a cam edge cooperable with said web, said head being provided on opposite sides with outstanding integral assembling adjusting and retaining lugs and said lugs being pivotally and adjustably seatable in selectively usable keeper seats.

3,354,519
METHOD FOR MANUFACTURING A SCREEN CYLINDER

Lodewijk Jansen, St. Anthonis, Netherlands, assignor to Gebroeders Stork & Co's Apparatenfabriek N.V., Amsterdam, Netherlands, a limited-liability company
No Drawing. Filed Oct. 12, 1965, Ser. No. 502,813
Claims priority, application Netherlands, Oct. 15, 1964, 64—11,984
2 Claims. (Cl. 29—148.4)

1. A method for manufacturing a screen cylinder as basic element for making thereof a cylindrical stencil for a screen printing machine said method comprising the following steps:

(a) electrolytical precipitating of nickel on a cylinder of a copper alloy such that there is a perceivable difference in the coefficient of thermal expansion between the deposited nickel layer and the cylinder;

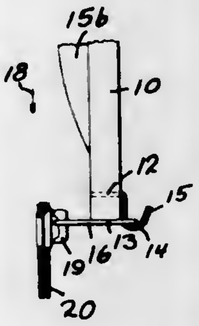
(b) modifying the temperature of the cylinder with the nickel layer in such a way that the nickel layer loosens like a cuff from the cylinder and is thereupon slid therefrom;

(c) mounting of the nickel cuff on a cylinder of heat resistant, resilient, material like nylon;

(d) perforating according to a helical pattern of the material of the nickel cuff, the perforation being carried out by means of a heated needle.

3,354,520
DEVICE FOR CLOSING AND OPENING ZIPPERS

Herman J. Morgen, Wagner, S. Dak. 57380
Filed Oct. 21, 1965, Ser. No. 499,997
1 Claim. (Cl. 24—205.15)



For use in opening or closing a zipper, said zipper having a tab for its operation, a device comprising an elongated rigid strip formed to provide a handle at one end and a flat abutment surface at the terminal end opposite said handle and substantially normal to the longitudinal axis of said strip, a hook having a shank extending along one side of said strip, a curved hook portion extending from said shank slightly beyond said flat abutment surface and having its end spaced from said shank for receiving said tab, the inner surface of said curved hook portion being substantially in line with said abutment surface so that said tab may be supported by said surfaces normal to the longitudinal axis of said strip, and convex means on the side of said handle opposite to the hook shank for clearing obstructions.

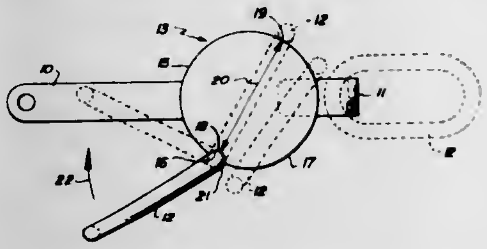
3,354,521

ATTACHMENT HOOK FOR CHAINS

Abraham D. Plett, Rosenort, Manitoba, Canada, assignor to A. D. Plett Enterprises Ltd., Rosenort, Manitoba, Canada

Filed Oct. 23, 1965, Ser. No. 503,710

2 Claims. (Cl. 24—230.5)



1. An attachment hook for chains of harrow draw bars and the like comprising in combination an attaching shank, a curved hook engaging stem on one end of said shank, and chain retaining means on the distal end of said stem, said chain retaining means including a chain link engaging notch formed therein, said chain retaining means comprising a substantially disc shaped plate, said notch being formed in the periphery thereof, the distance between the base of said notch and the periphery of said plate at a point diametrically opposite to said notch being less than the internal dimension of the major axis of the chain link engaging thereover.

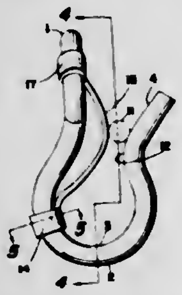
3,354,522

MEANS FOR PREVENTING DROPPING OF SAXOPHONES AND LIKE MUSICAL INSTRUMENTS

Maurice E. Amon, 45 Hume Hill Drive, Amherst, Ohio. 44001

Filed July 13, 1966, Ser. No. 564,770

1 Claim. (Cl. 24—236)



A generally J-shaped snap hook for detachably supporting the ring of a saxophone or like musical instrument, said hook comprising a loop, adapted to be suspended from a strap supported by the neck of a musician, a ring engaging bight having an outwardly flared free end portion, a shank interconnecting said loop and said bight, and a resilient generally T-shaped longitudinally bowed spring having means on the ends thereof for removably securing the spring to said loop and said shank to form with said flared free end a throat for snappingly guiding the ring into the bight, said shank engaging spring securing means being slidably mounted thereon so as to allow the bowed portion of the spring to flex so as to allow the ring to be snappingly received in the bight.

3,354,523

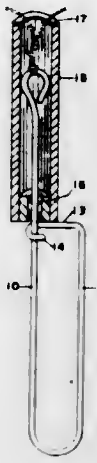
DETACHABLE FASTENER

Thomas J. Roche, 4336 Market St. 44512, and Ralph J. Mentzer, 3620 Southern Blvd. 44507, both of Youngstown, Ohio

Filed Feb. 19, 1965, Ser. No. 433,885

4 Claims. (Cl. 24—238)

1. A detachable fastener comprising an elongated resilient body member having a portion provided with an eyelet at the upper end thereof, a secondary portion of said body member being joined to the opposite, lower end of said elongated body member and positioned in spaced parallel relation to said first-named portion, the free end of said secondary portion being disposed at right angles thereto and having a hook thereon engageable with said elongated body member, and a tubular member slidably disposed on said elongated body member and disposed above said hook, and having means therein engageable with said eyelet to prevent said tubular member from being removed from said elongated body member, said tubular member being of a length extending from said hook beyond said eyelet when said hook is engaged with said elongated body member.



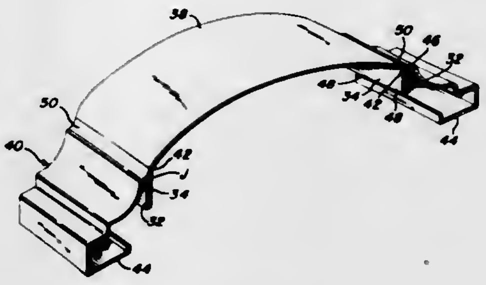
3,354,524

CASKET TOP AND METHOD OF MANUFACTURE

William L. Slaughter, Cincinnati, Ohio, assignor to The Crane & Breed Casket Company, Cincinnati, Ohio, a corporation of Ohio

Filed Sept. 3, 1964, Ser. No. 394,207

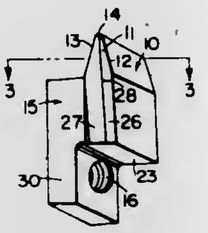
4 Claims. (Cl. 27—17)



1. A simulated one-piece casket top comprising in combination: a base member and a separate cap independently formed; said base member comprising an open frame having a lower sealer area to overlie a casket body rim, and an upper portion defining the frame opening; a mounting flange depending from said upper portion inside the frame opening and extended downwardly at substantial right angles to the mean plane of the base member; a ledge disposed exteriorly of the base member marginally of the mounting flange; a depending flange on the cap extended substantially at right angles to the mean plane of the cap, said cap flange being disposed in flatwise abutment against the mounting flange of the base member, with the cap flange extending above the level of the ledge to form therewith a pair of angularly related wall surfaces a plastic joint filler applied along the ledge and against the portion of the cap flange extending above the ledge; and means securing the cap flange to the base member flange in flatwise abutting relationship.

3,354,525
GEAR CUTTING TOOLS AND METHOD OF SHARPENING SAME

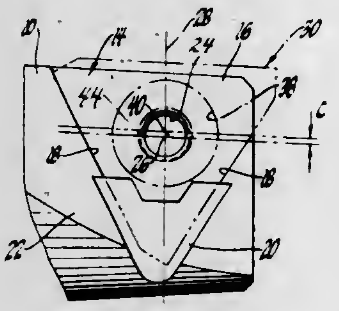
Arthur B. Ryan, Victor, N.Y., assignor to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed June 28, 1965, Ser. No. 470,326
19 Claims. (Cl. 29—95)



17. A gear cutting tool of generally prismatic form having a cutting portion of which one end constitutes the sharpening face of the tool, said sharpening face having a tip cutting edge and relatively inclined opposite side edges at least one of which is a tooth side cutting edge, and an integral shank portion for securement to a tool holder, said shank portion being offset from the cutting portion to permit sharpening of said cutting face by relative motion of a a sharpening tool approximately in a plane which bisects the angle between the prism faces containing said side edges, without cutting away said shank portion, said shank portion having, for seating on the tool holder, a first prism face which is substantially parallel to the prism face containing said tip cutting edge and a second prism face inclined to the first at an acute angle, and said tool having a prism face substantially parallel to said second face and adjacent to the prism face containing one of said side edges.

3,354,526
MILLING TOOL

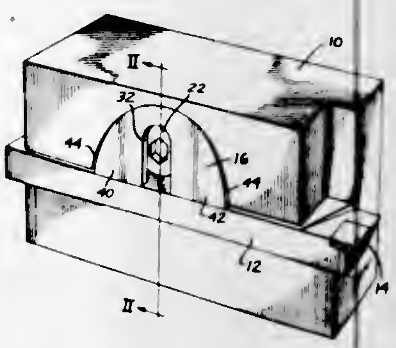
Donald S. Erkfritz, Clarkston, Mich., assignor to Futurmill, Inc., Southfield, Mich., a corporation of Michigan
Filed May 25, 1964, Ser. No. 369,838
15 Claims. (Cl. 29—96)



1. A metal cutting tool comprising a body, means defining a blade-receiving pocket on said body including a mounting platform and a pair of angularly related locating surfaces, an opening in said platform having its axis substantially intersecting the bisector of the angle defined by said locating surfaces, a cutter blade including an aperture extending therethrough, the axis of said aperture being substantially parallel to the axis of said opening and substantially intersecting the bisector of the angle defined by said locating surfaces in a location more remote from the apex of said angle than is the location of the axis of said opening, and a single fastener member extending commonly through said aperture and into said opening and secured to said body, said fastener member drawing said cutter blade substantially equally into engagement with said respective locating surfaces.

3,354,527
CLAMP MEMBER

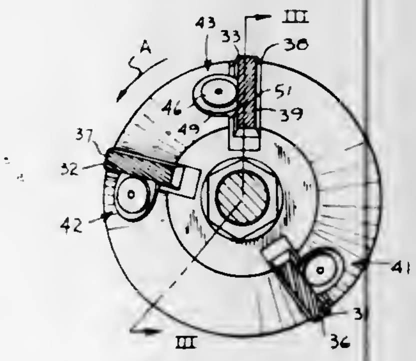
Ragnar L. Carlstedt, Ligonier, and James F. McCreery, Latrobe, Pa., assignors to Kennametal, Inc., Latrobe, Pa., a corporation of Pennsylvania
Filed Nov. 1, 1965, Ser. No. 505,896
10 Claims. (Cl. 29—96)



1. A clamping arrangement which includes a support member having a slot to receive a work member and a recess opening into the slot at one side and a clamp member comprising; a plug-like element having a peripheral portion with one side adapted for engaging a work member to be clamped by the clamp member and disposed in the slot in said support member, the remainder of the periphery of the element being adapted to be received in said recess in the support member, said remainder of said periphery comprising wall means parallel to an axis which is inclined to said one side, an axial notch extending into said clamp member from said one side about perpendicular to said one side and extending the full length of said clamp member, and an undercut in the notch between the axial ends thereof to receive the head of a clamp screw which is threaded into said support member so the screw head abuts one end wall of the undercut in either direction of movement of the screw for positive movement of the clamp member on the support member in both directions.

3,354,528
VALVE SEAT CUTTER

Henry H. Appleby, Corunna, Mich., assignor to Neway Sales, Inc., Corunna, Mich., a corporation of Michigan
Filed Feb. 21, 1966, Ser. No. 529,047
2 Claims. (Cl. 29—105)



1. A cutting head for renewing a valve seat for a poppet valve, comprising the combination:

a body member and means centrally located thereon for rotataby driving same;

three cutter members fixed to said body and radiating outwardly thereon, said centers being sloped on said body in a manner corresponding to the slope of the valve seat to be refinished, the angles between said cutter members being 5 degrees of arc or less away from the respective angles 140, 75 and 145 degrees.

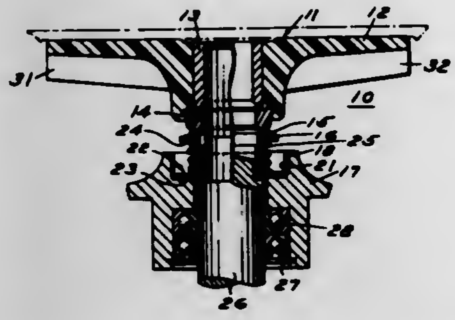
3,354,529

IMPELLER MAKING

David W. James, Allen Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Original application July 29, 1963, Ser. No. 298,158, now Patent No. 3,246,607. Divided and this application Oct. 19, 1964, Ser. No. 404,841

3 Claims. (Cl. 29—156.8)



1. The method of making a molded pump impeller comprising the steps of placing an annular ceramic insert in a mold, placing a cylindrical metallic hub having an annular frangible edge in the mold with the annular frangible edge in contact with said annular ceramic insert, applying an axial force to said annular ceramic insert and said cylindrical hub to crush said annular frangible edge into sealing contact with said annular ceramic insert, and molding a plastic impeller body around said cylindrical hub and said annular ceramic insert, said annular ceramic insert and said metallic hub having means for cooperation with the molded plastic impeller body to prevent relative motion therebetween.

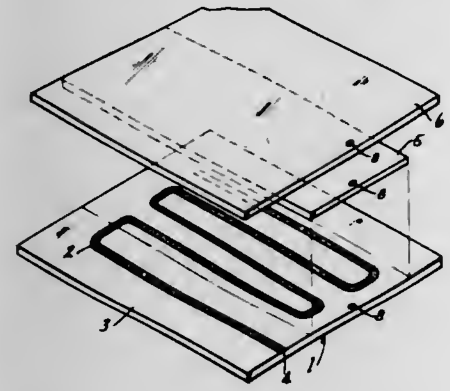
3,354,530

METHOD FOR PREPARING EXPANDED PRESSURE PASSAGEWAY PRODUCTS

Verne L. Middleton, East Alton, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed June 25, 1964, Ser. No. 377,815

4 Claims. (Cl. 29—157.3)



1. The method of preparing an expanded pressure welded passageway panel having one side thereof expanded to a greater degree than at least a portion of the opposing side, which comprises: placing on a first sheet of metal a weld-inhibiting material in a pattern corresponding to a predetermined configuration of fluid passageways; superposing a second sheet of metal in intimate, contacting relationship with at least a portion of said weld-inhibiting material; forming an assembly by superposing a third sheet of metal over said first and second sheets of metal; pressure welding said assembly in the areas thereof not separated by weld-inhibiting material; and introducing an expansion pressure into the areas separated by weld-inhibiting material to expand said areas outwardly, whereby said first sheet of metal is expanded to a greater degree than that portion of the opposing side covered with said second sheet of metal.

3,354,531

PROCESS FOR MAKING HOLLOW ARTICLES BY DIFFERENTIAL HEAT TREATMENT

Michael J. Pryor, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Original application Nov. 13, 1963, Ser. No. 323,216, now Patent No. 3,290,125, dated Dec. 6, 1966. Divided and this application May 18, 1965, Ser. No. 510,993

5 Claims. (Cl. 29—157.3)

1. A process of fabricating an aluminum sheet metal panel having a relatively smooth hard component layer and having distensions raised from an opposite integrally unified softer component layer, both said layers being formed of substantially the same composition, said process comprising the steps of:

(A) providing a pair of aluminum alloy ingots having substantially identical composition,

(B) subjecting one of said ingots to a homogenization treatment to form a coarse particle size dispersion of insoluble constituents therein, said treatment consisting of a soak of the ingot at a temperature within the range of 900° to 1150° F. for a period of from 4 to 72 hours,

(C) rolling said ingots to sheets within the temperature range of from 800° to 1000° F. in which said coarse particle size dispersion is unaffected and in which a fine particle size dispersion of insoluble constituents is formed in the sheet from the other of said ingots,

(D) forming a panel blank by positioning said sheets adjacent one another, one of said sheets having applied to a confronting surface thereof a pattern of stop weld material,

(E) hot rolling said blank to integrally unify said sheets together as a composite panel in the areas not covered by said stop weld material,

(F) cold rolling said composite panel to develop maximum strength in said sheets by work hardening,

(G) partially annealing said panel within the critical temperature range of from 500° to 655° F. for a period of from 5 minutes to 10 hours in which said sheet having said coarse particle size dispersion undergoes considerable loss of strength by recovery but in which said sheet having said fine particle size dispersion undergoes only slight loss of strength by recovery thereby developing a differential in yield strength between said sheets, and

(H) inflating said composite panel in said unjoined portions by the application therein of a fluid under pressure.

3,354,532

METHOD OF FABRICATING HEAT EXCHANGERS

Theron F. Pauls, Godfrey, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed May 27, 1965, Ser. No. 459,221

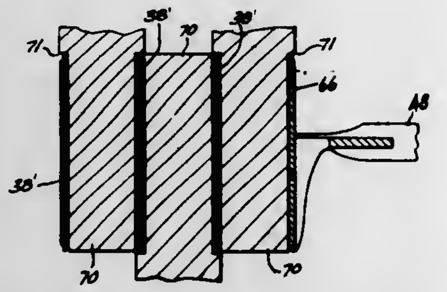
2 Claims. (Cl. 29—157.3)

1. A method of fabricating a heat exchange device from a composite sheet formed of two superposed planar sheets having a pattern of weld-preventing material interposed between said sheets, said pattern including a pair of parallel spaced-apart bands located adjacent opposite edges of said composite sheet and extending to a transverse edge of said sheet and a plurality of closely spaced-apart bands lying parallel to said transverse edge and joined at opposite ends with said pair of bands, said pair of bands and plurality of bands thereby defining islands

free of said weld-preventing material, said method comprising the steps of

(A) slitting said composite sheet in said weld-preventing material free islands over a major portion of the length thereof to provide a plurality of individual strips of said composite sheet,

(B) bending said strips adjacent the opposite end portions thereof in a rotary direction relative to the longitudinal axis of said strips by approximately 90° to displace the elongate portion of said strips between said end portions out of the normal plane of said composite sheet, thereby forming elongate apertures between adjacent confronting surfaces of said strips,



(C) swaging said strips to increase the major cross-sectional dimensions thereof while decreasing the minor cross-sectional dimensions thereof, and

(D) expanding said pattern of weld-preventing material by applying thereto a fluid under pressure to completely expand the areas of said composite sheet covered with said weld-preventing material.

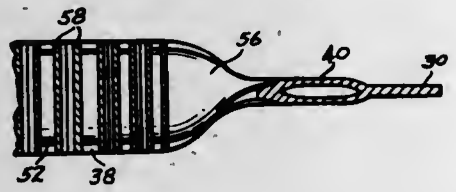
3,354,533

METHOD OF FABRICATING A HEAT EXCHANGE DEVICE

Theron F. Pauls, Godfrey, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed June 7, 1965, Ser. No. 461,882

3 Claims. (Cl. 29—157.3)



1. A method of fabricating a heat exchange device from a composite sheet formed of two superposed planar sheets having a pattern of weld inhibiting material interposed between said sheets, said pattern including a pair of parallel spaced-apart bands located adjacent opposite edges of said composite sheet and extending to a transverse edge of said sheet and a plurality of closely spaced-apart bands lying parallel to said transverse edge and joined at opposite ends with said pair of bands, said pair of bands and plurality of bands thereby defining islands free of said weld inhibiting material, said method comprising the steps of

(A) slitting said composite sheet in said weld inhibiting material free islands over a major portion of the length thereof to provide a plurality of individual strips of said composite sheet,

(B) bending said strips adjacent the opposite end portions thereof in a rotary direction relative to the longitudinal axis of said strips by approximately 90° to displace the elongate portion of said strips between said end portions out of the normal plane of said composite sheet, thereby forming elongate apertures between adjacent confronting surfaces of said strips,

(C) partially expanding said pattern of weld inhibiting material by applying thereto a fluid at a first pressure to partially expand the areas of said composite sheet covered with said weld inhibiting material,

(D) inserting fin stock into said apertures between said confronting surfaces, and

(E) completely expanding said pattern of weld inhibiting material by applying thereto a fluid at a second pressure to completely expand the areas of said composite sheet covered with said weld inhibiting material, thereby securing said fin stock in said apertures.

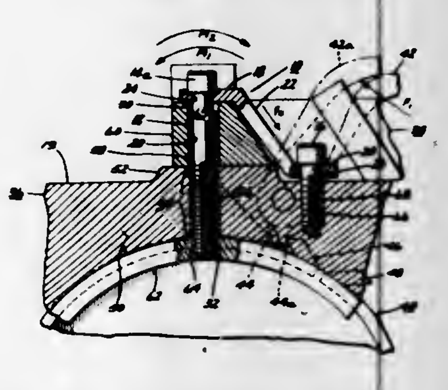
3,354,534

METHOD AND APPARATUS FOR AUTOMATIC TRANSMISSION REPAIR

Jess A. Lewis, 1230 Dell Cove Drive,
Fort Wayne, Ind. 46804

Filed Dec. 21, 1964, Ser. No. 419,919

9 Claims. (Cl. 29—402)



5. The method of repairing an automatic transmission case having at least one crack in a web thereof comprising the steps of removing a first bolt securing the rear servomotor to said web from an opening in said servomotor and uncovering a first threaded bolt hole in said web bottomed by a bearing ring and a second unthreaded bolt hole in said bearing ring, tapping said second hole in said beariing ring from within said first bolt hole, said second hole being coaxial with and having a diameter smaller than said first hole, providing a cylindrical spacer having an exterior diameter equal to said first bolt and an interior passage extending therethrough having a diameter intermediate said diameter of said first bolt and said second hole, threadedly inserting said spacer into said first bolt hole and securing the same therein coaxially of said first bolt hole, said spacer having a portion extending beyond said web, placing said rear servomotor in its original position with said spacer portion extending into said opening in said servomotor, providing a repair bracket having opposite end portions and an intermediate portion therebetween, each of said end portions having an aperture therein, one of said apertures having a diameter equal to said diameter of said passage, positioning said bracket with one of said end portions over said servomotor with the respective one of said bracket apertures in registry with said spacer passage and with the other of said bracket end portions and said intermediate portion being spaced apart from said web and servomotor, said other bracket end portion being over a portion of said web which is spaced apart from said crack, inserting a first bolt in said one bracket aperture and said passage, threadedly sceuring said first bolt in said second hole thereby securing said bracket to said bearing ring with said web and servomotor therebetween, drilling and tapping a third bolt hole in said web in registry with the aperture in said other bracket end portion, inserting a second bolt in said other bracket aperture, threadedly securing said second bolt in said third bolt hole, and tightening said second bolt whereby said bracket is placed in tension longitudinally thereof to close said crack.

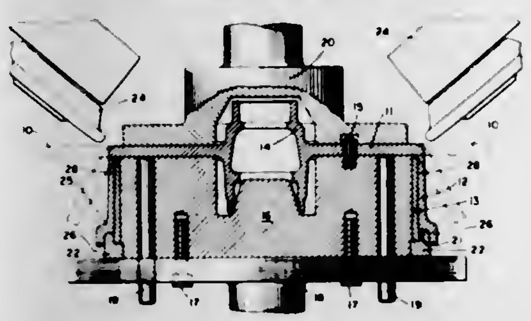
3,354,535

COMPOSITE CYLINDRICAL STRUCTURE AND METHOD OF MAKING IT

Henry F. Winnai, Huntingdon Valley, and Jay F. Whitsel, Southampton, Pa., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Sept. 14, 1965, Ser. No. 487,161

5 Claims. (Cl. 29—447)



1. The method of forming a composite cylindrical metal structure which comprises, securing a metal liner on a hard rotary mandrel, securing a metal disk on the mandrel beyond one end of the liner, and roll-forming an annular edge of the disk under high pressure down on the liner with sufficient heat differential to heat-shrink the shell formed from the disk down on the liner.

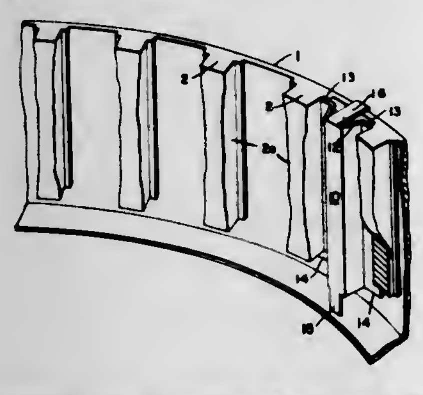
3,354,536

METHOD OF REPAIRING SPLINED COUPLINGS

Gil W. Younger, 2626 Del Vista Place,
Hacienda Heights, Calif. 91745

Filed July 8, 1965, Ser. No. 470,503

6 Claims. (Cl. 29—401)



1. The method of repairing a worn splined coupling made up of a base member having integral internal, radially projecting splines, and a mating externally toothed member, the teeth of which fit between and engage the sides of said splines, thus causing wear of such sides, but which teeth are shorter than the radial dimension of said splines and hence do not engage the full depth of said splines, whereby there is a zone on the sides of each spline adjacent said base member and beyond the ends of said teeth which does not become worn, which method comprises independently fabricating a plurality of separate, insertable splines, and mounting such insertable splines in the spaces between the side faces of adjacent original splines, said insertable splines having straight side edges constructed to bear against the unworn zones of said original splines adjacent said base member.

3,354,537

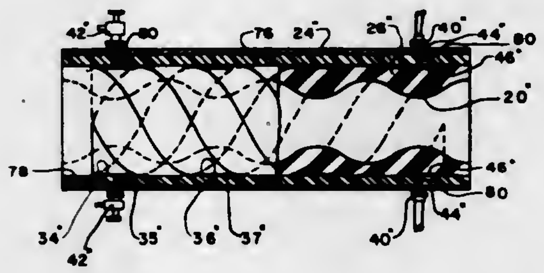
RENEWABLE MOINEAU-TYPE PUMPING MECHANISM

Walter J. O'Connor, 412 W. Washington Blvd.,
Grove City, Pa. 16127

Filed Dec. 1, 1965, Ser. No. 510,909

15 Claims. (Cl. 29—401)

1. A method for resizing a resilient stator structure of the helical variety having inflatable passages extending therethrough and juxtaposed to the helical crests thereof, the steps of inserting a mold member through the cavity of said stator structure, positioning said mold member to determine the desired height of said helical crests, inflating said passages with a pressurized mold lubricant, releasing excess mold lubricant from said passages and filling said passages with a liquid settable material to inflate permanently said passages and to extend said resilient material into engagement of its crests with said mold member.



3,354,538

BERYLLIUM FOIL FABRICATION

Jerry L. Cadden and Dan H. Friar, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Nov. 23, 1965, Ser. No. 510,153

5 Claims. (Cl. 29—423)

1. A method of preparing beryllium foil of a thickness of about 0.005 of an inch or less, comprising the steps of enclosing a beryllium sheet in an envelope of a material having a reduction ratio similar to that of beryllium, sealing the envelope to provide an air-tight assembly, rolling the envelope assembly at a temperature within the range of about 600° C. to about 800° C. to reduce the beryllium sheet to foil, heating the rolled envelope assembly to a temperature within the range of about 600° C. to about 800° C., and thereafter rapidly cooling the assembly to effect release of the beryllium foil from the envelope.

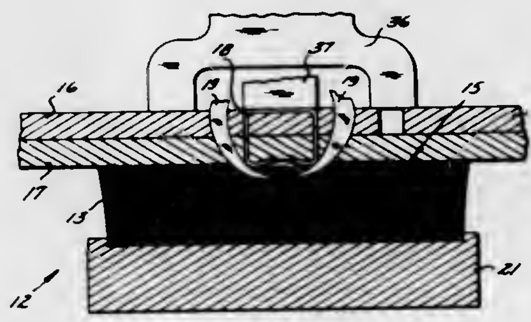
3,354,539

METHOD AND APPARATUS FOR BLIND-SIDE SUPPORTED STAPLING

Orlo K. Hibbard, 11320 Britton Road,
Byron, Mich. 48418

Filed Jan. 6, 1965, Ser. No. 423,744

7 Claims. (Cl. 29—432.1)



1. In combination with blind staplers of the type having staple clinching jaws which penetrate from one side of plural material layers through to the opposite side thereof, there to clinch a pair of staple legs inwardly and then be withdrawn from said plural layers to leave them in a stapled attachment to one another,

a resilient support cushion of sufficient stiffness to support the plural layers and of sufficient resiliency to allow said clinching jaws and staple arms to deflect and penetrate said cushion without mutilating said cushion or substantially diminishing its said supporting stiffness.

6. The method of back-up blind stapling which comprises:

(a) assembling plural layers of material on a resilient support surface; and

(b) blind stapling the plural layers by driving a staple and clinching jaws through said layers, the clinching jaws acting on the blind side of the plural layers and penetrating the resilient support cushion, said support cushion being of sufficient stiffness to support the plural layers and of sufficient resiliency to deflect before the movement of said clinching jaws and the staple arms being clinched.

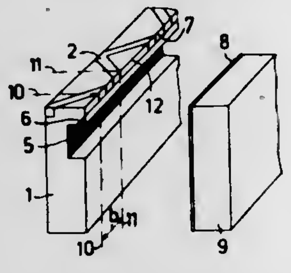
3,354,540
METHOD OF MANUFACTURING RELIABLE MAGNETIC HEADS HAVING ACCURATELY PREDETERMINED DIMENSIONS

Simon Duinker, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Continuation of abandoned application Ser. No. 177,654, Mar. 5, 1962. This application Mar. 7, 1966, Ser. No. 533,134

Claims priority, application Netherlands, Apr. 7, 1961, 263,324

8 Claims. (Cl. 29—603)



1. A method of manufacturing portions of magnetic heads for video-frequency signals, comprising: forming at least one set of two relatively shallow grooves in the top face of a first ferrite plate, each pair of grooves of a set meeting at one of the edges of said top face, filling said grooves with a nonmagnetic strengthening material at a first temperature at which said material fuses and is bonded to said ferrite, cutting a V-shaped groove in the side face of said plate abutting said edge, said V-shaped groove extending parallel to said edge, the upper edge of said V-shaped groove being at a distance from said edge which exceeds the desired gap height of the head, filling said V-shaped groove with a nonmagnetic material at a second temperature at which said material fuses and is bonded to said ferrite, said second temperature being lower than said first temperature, and removing so much of said side face that the portions of the ferrite plate which appear between every two portions of strengthening material located in the relatively shallow grooves of one set have a width which is equal to the desired width of the track to be transduced by the head.

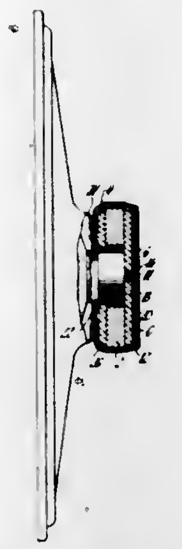
3,354,541
LOUDSPEAKER MAGNET STRUCTURE AND METHOD OF ASSEMBLING SAME

John W. Gosma, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 4, 1965, Ser. No. 461,285

2 Claims. (Cl. 29—607)

1. A method of making a permanent magnet assembly including the steps of taking a hollow deformable casing, filling it partly with an uncured insulating plastic, placing the parts forming the magnet and poles in sequence in the casing, pressing the parts down to displace the insulating plastic causing it to flow up around and slightly over the peripheral edge of the top of the same, applying heat to the assembly to cure the plastic material allowing the same to cool, applying an intense magnetic field to distort the case and fold it in on the magnet subassembly, the cured plastic protecting the magnet in the process.

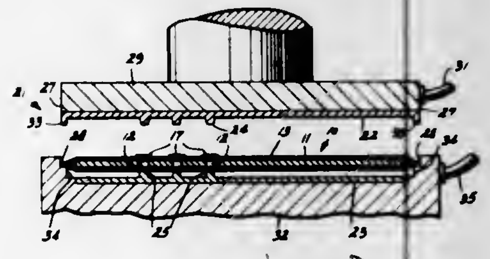


3,354,542
ENCLOSING A METAL SUPPORT WITH A PRINTED CIRCUIT CONTAINING ENVELOPE

Joseph C. Mallia, Colonia, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 10, 1965, Ser. No. 454,574

2 Claims. (Cl. 29—625)



1. The method of making a printed circuit board comprising:

providing a metal substrate having a plurality of holes extending therethrough,

inserting the metal substrate into a dielectric envelope supporting an electrical circuit on at least one side thereof so that the positions of the land areas of the electrical circuit correspond with the positions of the holes in the substrate,

bonding the dielectric material to the metal substrate, forming the dielectric material about the walls of the holes, and permanently deforming and forcing portions of the land areas to extend into the holes,

sealing the open end of the envelope to completely enclose the substrate within the envelope, and

trimming the ends of the envelope to eliminate excess dielectric material.

3,354,543
METHOD OF FORMING HOLES THROUGH CIRCUIT BOARDS

Robert Lawrence, Encino, and John N. Leonard, Northridge, Los Angeles, and Robert C. Williams, Santa Susana, Calif., assignors to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed June 9, 1965, Ser. No. 462,553

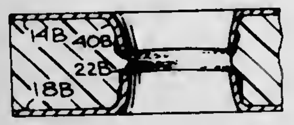
13 Claims. (Cl. 29—625)

13. A method of forming an aperture through a sheet of filled material where at least one surface of said sheet

has a layer of material adhered thereto which is chemically different from said sheet, comprising the steps of:

forming a hole in said layer to expose said sheet and then alternating between the steps of;

first, applying a solution to said sheet through said hole, said solution being of a character which chemically attacks said sheet material to at least soften the same while having relatively no effect on said layer of material adhered to said sheet;



second, directing a vapor blast through said hole to remove said softened material; and

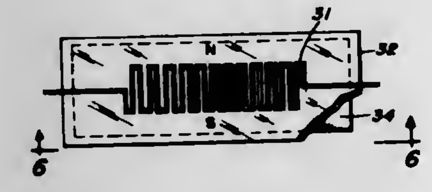
continuing the alternation between the last two mentioned steps until an aperture is formed through said sheet.

3,354,544
METHOD AND APPARATUS FOR MAKING ELECTRICAL ELEMENTS

Frank E. Jones, Bethesda, Md., and Alfred B. Castle, Sr., Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy

Filed July 31, 1964, Ser. No. 386,799

1 Claim. (Cl. 29—620)



A method for making a resistor comprising the steps of:

machining an edge of a strip of magnetic material so as to make it flat,

forming the strip into a mask having a series of interconnecting 180° loops whereby the width of the mask is defined by a line of loops on one side which are connected to a line of loops on the other side and one face of the mask is defined by the machined edge of the strip,

completely plating the face of a substrate plate with a humidity-sensitive resistor film,

placing the machined edge of the mask against the resistor film so as to isolate that part of the substrate plate on one side, of the strip forming the mask, from that part of the substrate plate on the other side, of the strip forming the mask, the ends of the strip extending beyond the opposite end of substrate plate,

placing a permanent magnet on the opposite side of the substrate plate to the side having the surface of the resistor film with the north pole thereof evenly disposed opposite all of the loops on one side of the mask and its south pole evenly disposed opposite all of the loops on the opposite side of the mask to prevent adjacent loops of the mask from attracting each other and distorting the mask.

disposing the thus assembled mask-substrate-magnet combination in a vacuum chamber where, by a selected one of the processes of evaporation and sublimation, a conductive film is caused to be deposited on the resistor film adjacent the mask to form electrodes on alternate sides of the strip forming the mask,

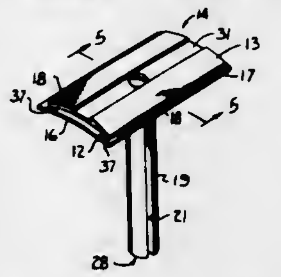
displacing the mask from the plated substrate whereby the resistance film, only, occupies the space left by the mask after displacement.

3,354,545
SAFETY RAZOR DISASSEMBLABLE INTO A COMPACT UNIT

Charles D. Shrader, 427 E. Lewelling Blvd., San Lorenzo, Calif. 94580

Filed Oct. 14, 1965, Ser. No. 496,012

3 Claims. (Cl. 30—47)



1. A safety razor capable of being disassembled and arranged in a compact unit for storage adapted for use with a double edge razor blade having a slotted guide aperture, the combination comprising; a shaving head including a platform adapted to support thereon in shaving relation to an edge thereof a razor blade having at least one cutting edge; a cap member disposed in nested relation to said platform to clamp said blade in shaving relation against said platform; and a slotted handle having a first end thereof adapted to be detachably secured to said platform, said slot adapted to receive and hold said shaving head therein when detached from said handle, said platform defining an arcuate cylindrical segment with a centrally located circular aperture, said cap member defining an arcuate cylindrical segment with a centrally located threaded circular aperture, said platform aperture being aligned with said cap member aperture when said safety razor is assembled for shaving, said handle being cylindrical and defining a rectangular slot extending from a second end thereof, said first end of said handle having a mating male threaded section of a length selected to render said blade in shaving relation against said platform when threadably engaged with said threaded aperture of said cap member, and said cap member having a top surface defining a flat bottom recess of a width at least as large as the width of said slot of said handle centrically located to extend across said cap member parallel to the cutting edges of said blade.

3,354,546
MACHINE FOR CUTTING CHEESE INTO SMALL WEDGE-SHAPED SLICES

Frederick E. Pagliuca, 93 Mystic Ave., Rear, Medford, Mass. 02155

Filed June 14, 1965, Ser. No. 463,658

2 Claims. (Cl. 31—23)

1. In a machine adapted to cut a pair of sized rectangular slabs of cheese simultaneously into a plurality of individual identical self-sustaining wedge-shaped chunks which comprises a press having a fixed bed, a pair of vertically-extending and vertically-reciprocating parallel rods extending through said bed, fluid means for actuating both said rods for vertical movement simultaneously and control means for actuating said fluid means,

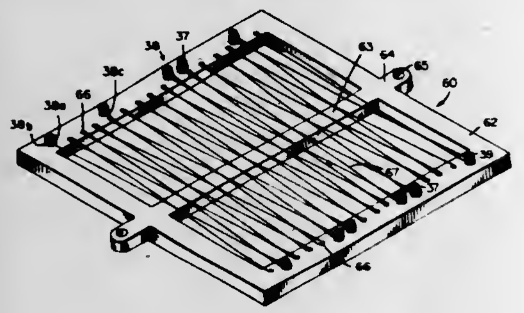
a cutting head comprising a rectangular metal frame member, said member being provided with an elongated longitudinally extending cross-bar member, the cross-bar member dividing said frame member into two equal parts and forming two identical rectangular openings in said frame member, said cross-bar member extending beyond both ends of said frame member and terminating in each end with means for attaching said frame member to the free end of each said rod,

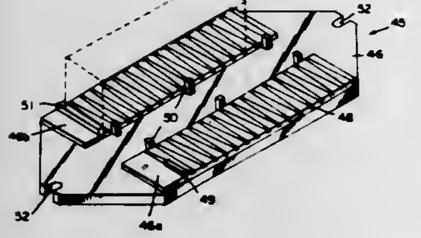
the side members of said frame member each being provided with a row of opposed equally spaced downwardly extending cylindrical wire-receiving members, a pair of cheese cutting wires each extending diagonally back and forth between alternate wire-receiving members of said side members across said openings in such manner that such wires cross each other in the vicinity of the middle of the said cross bar,

said wires additionally passing around each of said wire-receiving members with which each particular wire comes into contact in such manner that the said wire crosses itself in the vicinity of the said wire-receiving member, thereby creating three lines of wire crossings, one at the middle of the cross-bar and the other two adjacent the respective side members of said frame member within the respective openings therein,

and a base die mounted on said bed, said base die having two spaced rectangular elevated panels each adapted to receive a slab of cheese,

said panels being located respectively in register with the respective openings in said frame,





the sides of each said panel so located that the inner side in each case is spaced from the cross-bar of said cutter frame and the outer side in each case is spaced from the respective side member of said cutter frame a sufficient distance that the wire crossing adjacent each said side member lies beyond the outer side of each said panel,

each said base die having alternately tapering transverse grooves formed therein in position to receive said wires in each pass of said wires between the side members of said frame member,

each said panel having at at least one end thereof an upstanding guide bar immediately adjacent said end and adapted to rest against the end of a slab of cheese to permit the proper positioning of such slab on said panel,

and a plurality of upstanding guide posts spaced immediately adjacent each said panel along the inner edge thereof, said guide posts cooperating with said cross-bar as said frame member approaches said die to properly position the cutter frame relative to said base die.

3,354,547
DENTURE RETAINER

Arthur J. Krol, San Francisco, Calif., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

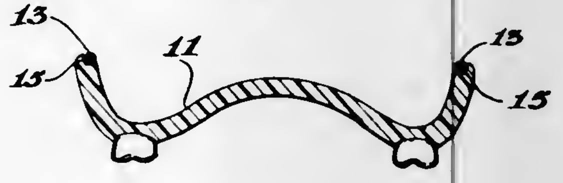
Filed Feb. 10, 1965, Ser. No. 431,610

8 Claims. (Cl. 32—3)

1. A denture including a retaining device comprising:

a denture base, a groove cut in the peripheral area of said denture base,

a silicone rubber tube secured in said groove and extending therefrom, and



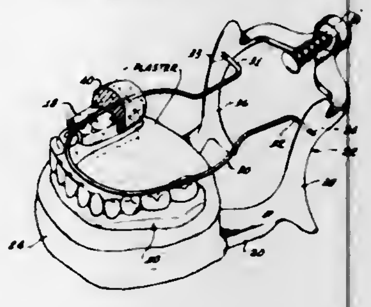
a silicone fluid within said tube.

3,354,548
APPARATUS FOR MAKING DENTAL CROWNS AND BRIDGES

Errol H. Segal, 1772 S. Corning St.,
Los Angeles, Calif. 90035

Filed Mar. 21, 1967, Ser. No. 624,851

6 Claims. (Cl. 32—32)



1. Articulator apparatus comprising:

lower and upper support members for supporting models of the respective lower and upper arches of the teeth of a patient, said lower support member being adapted to support the lower arch so that it is substantially horizontal, said lower support member having spaced uprights, the upper support member being supported on the upper ends of said uprights for pivotal movement on a horizontal axis;

a generally U-shaped wire element having leg portions spaced apart substantially the distance between the posterior teeth of models of arches to be supported on a support member;

and means removably attaching the ends of said leg portions to opposed portions of said uprights for pivotal movement on an axis parallel to and below the axis of movement of said upper support member, said wire element being adapted to support a matrix for forming a wax pattern on a model on either support member, and removable to permit the upper support member to be articulated to bring upper and lower models on the support members together.

3,354,549
APPARATUS FOR TRANSFERRING A MARK FROM ONE HORIZONTAL PLANE TO ANOTHER

William Jennings Fisher, Du Page, Ill., assignor of one-half to Gerson Electric Construction Company, Chicago, Ill., a corporation of Illinois

Filed Mar. 29, 1965, Ser. No. 443,235

4 Claims. (Cl. 33—74)

1. An apparatus for marking an elevated surface above the apparatus at a location substantially directly above a mark on a floor comprising:

(a) a tripod;

(b) a base having an opening, mounted on said tripod, said base having parallel spaced first guide means;

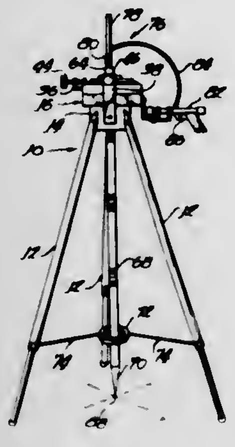
(c) a first plate having an opening positioned above said base opening and supported by said base, said first plate being slidable between said first guide means and having parallel spaced second guide means positioned 90° with respect to said first guide means;

(d) a second plate having an opening positioned above

said base opening and supported by said base, said second plate being slidable between said second guide means;

(e) gimbal means suported by said second slidable plate and positioned above said base opening;

(f) a pendulum supported by said gimbal means at one end and depending downwardly through said openings, the free end of said pendulum being in close proximity to the floor;



(g) a barrel for expelling a marking pellet coaxially connected to the upper end of said pendulum, said barrel having means for loading the marking pellet;

(h) a high pressure gas source connected to said barrel; and

(i) a triggering device for releasing high pressure gas into said barrel whereby the marking pellet is expelled from said barrel and deposits marking substance on the ceiling upon contact, directly above the floor mark, when the lower end of said pendulum is directly above the floor mark.

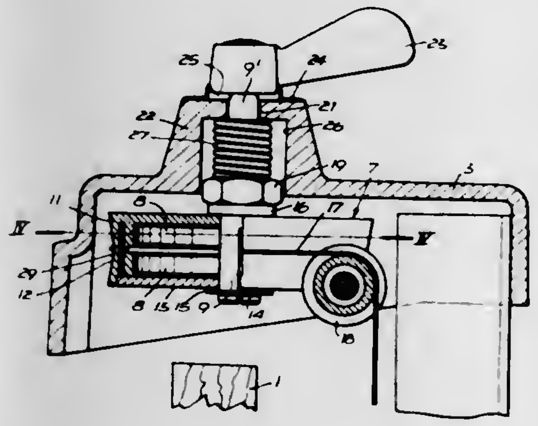
3,354,550
DRAWING APPARATUS INCLUDING A RUNNING CARRIAGE

Franz Leschinger and Kurt Gornowitz, Lahr, Black Forest, Germany, assignors to Albert Nestler A.G., Lahr, Black Forest, Germany

Filed Jan. 27, 1966, Ser. No. 537,250

Claims priority, application Germany, Feb. 4, 1965, N 26,159, N 17,130

9 Claims. (Cl. 33—79)



1. A drawing apparatus comprising

a first rail disposed parallel and adapted to be connected to a drawing board,

a first running member comprising a first running carriage movable and guided along said first rail, and

a second rail carried by said first running carriage and extending perpendicularly to said first rail and disposed parallel to said drawing board,

a second running carriage movable and guided along said second rail,

a drawing head carried by said second running carriage,

weight balancing means for balancing the weight of said second running carriage and of said drawing head, to be operative upon swinging said second rail into a plane inclined relative to a horizontal plane,

said weight balancing means comprising at least one spiral spring,

a bearing bolt connected with said second rail,

a spring housing rotatably mounted on said bearing bolt,

said spiral spring being secured at one end to said bolt and at the other end to said spring housing,

said spring housing constituting a winding roller, and

a cable wound on the outer periphery of said spring housing and having a free end secured to said second running carriage,

said bearing bolt being rotatably mounted in said first running member, in order to permit a selective presetting of said spiral spring,

a rotary bearing disposed on said first running member and rotatably supporting said bearing bolt,

the latter projecting with its free end from said rotary bearing,

a resting member provided at the free end of said bearing bolt,

said bearing bolt having an outer thread,

a nut screwed on said outer thread of said bearing bolt,

said nut being axially movable, but non-rotatably connected with said first running member,

a helically wound compression spring disposed between said rotary bearing and said nut, in order to hold said resting member in any one of a plurality of resting positions, and

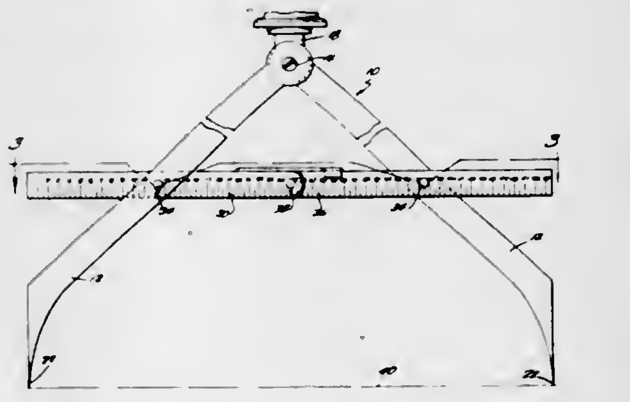
said nut spring being spaced apart from said spring housing such, that upon rotation of said bearing bolt for a minimum tension of said spiral spring, said nut abutting said spring housing and thereby limiting the adjustment for said minimum tension.

3,354,551
LAND MEASURING DEVICE

Theodore A. Overby, 411 11th Ave. SE.,
Aberdeen, S. Dak. 57401

Filed Oct. 23, 1965, Ser. No. 503,195

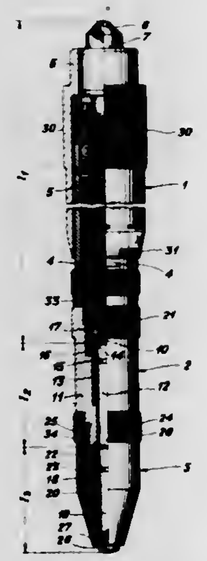
1 Claim. (Cl. 33—148)



A land measuring device comprising a pair of arcuate legs connected at pivot means, a counter and counter-actuated arm mounted distally from said pivot means, a rotatable cap and case member for said counter and counter arm and mounted on the free end of said counter arm, said case having indicia disposed on an end thereof, said case member connected to actuate the counter so that as the case is held in the hand, the counter is turned as the legs are caused to step off measured distances, and the counter records the distances the legs have stepped off, a pivotally mounted ruler being supported at intermediate points of said legs and being mounted parallel to a line constructed between the free ends of said legs, said rule being divided into two portions which are pivotally connected, said pivoted ruler being adapted to indicate the measure between the end points of the legs, and said indicia comprising an arrow adapted to point in the direction in which the distance is to be measured as the legs are rotated about each other in stepping the distances being measured.

3,354,552
INSIDE MICROMETER

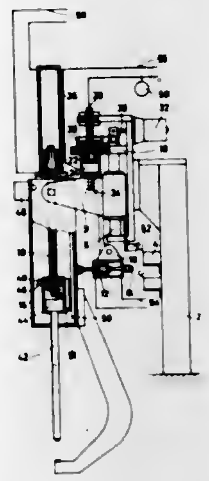
Josef Frei, Wiesendangen, Zurich, Switzerland, assignor, by mesne assignments, to Tesa S.A., Vaud, Switzerland, a corporation of Switzerland
Filed May 10, 1965, Ser. No. 454,264
1 Claim. (Cl. 33—164)



An inside micrometer comprising a measuring head member, at least one intermediate extension member, and an end extension member, the head member including two elements controllably movable relatively to each other, at least one of said elements having a gauging surface thereon, each of said extension members including a rod, a protective sheath surrounding and longer than the rod, and resilient means coupling the rod and sheath together to stress the rod and sheath toward a relative position in which both ends of the rod are intermediate the ends of the sheath, said micrometer further comprising first two-part coupling means having one part on said one element and the other part on the sheath of the intermediate member to couple one end of the sheath of the intermediate member to said one element with the rod of the intermediate member engaging said gauging surface and with the other end of the sheath of the intermediate member projecting beyond the rod of that intermediate member in all positions of said micrometer in which said intermediate member is assembled to said head member, and second two-part coupling means having one part on the sheath of the intermediate member and the other part on the sheath of the end member to couple one end of the sheath of the end member to the other end of the sheath of the intermediate member with the rod of the end member engaging the rod of the intermediate member and with the rod of the end member projecting beyond the other end of the sheath of the end member, the other part of said second two-part coupling means being also engageable with said one part of said first two-part coupling means to couple said one end of the sheath of the end member to said one element with the rod of the end member engaging said gauging surface and with the rod of the end member projecting beyond the sheath thereof.

3,354,553
MEASURING APPARATUS FOR MACHINE TOOLS

Wolfgang Heldmaier, Esslingen, Zollberg, Germany, assignor to Fortuna-Werke Spezialmaschinenfabrik, Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany
Filed Aug. 11, 1966, Ser. No. 571,898
Claims priority, application Germany, Aug. 13, 1965
F 46,884
17 Claims. (Cl. 33—178)

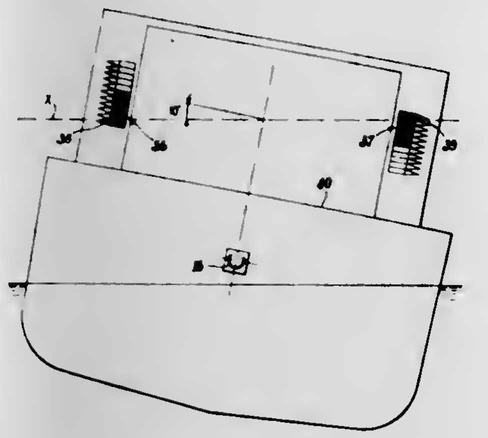


1. Measuring apparatus for successively measuring different portions of a workpiece, comprising, in combination, first and second operating means movable between two end positions; first and second feeler means; first and second resilient means for mounting said first and second feeler means on said first and second operating means, respectively, for movement by said first and second operating means moving between said end positions, respectively, between retracted positions, and sensing positions resiliently abutting a portion of the workpiece while the same is being reduced by a machine tool; and first and second control means respectively connected with said first and second feeler means for movement with the same relative to each other, and being presettable to measurements selected for different portions of the workpiece, and including means for actuating said first and second operating means to return said first and second feeler means to said retracted positions when the respective portion of the workpiece has been reduced to the respective selected masurement.

3,354,554
ELECTROLUMINESCENCE DEVICE SUITABLE FOR CONTINUOUSLY INDICATING THE TILT OF A ROCKING OR SLANTING PLANE IN RELATION TO HORIZONTAL REFERENCE PLANE

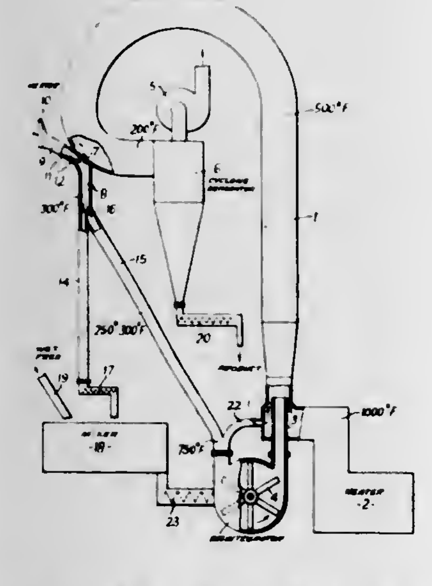
Maria Panerai and Giuseppe Panerai, both of 2 Piazza Galileo Ferraris, Florence, Italy
Filed June 16, 1965, Ser. No. 464,436
Claims priority, application Italy, June 22, 1964, 13,462/64
1 Claim. (Cl. 33—206)

An inclination and reference plane indicating means for providing a visual indication of the degree of inclination of a plane in fixed relation to a movable support which is tiltable about a substantially horizontal axis and upon which said means is mounted, said means comprising a pair of horizontally spaced sets of indicator panels each comprising a normally vertical row of rectangular electroluminescent panels and an adjacent row of pointed triangular panels each triangular panel having two sides of equal length and a shorter side aligned with and abutting against an adjacent rectangular panel with the respective triangular panels of the two indicator panels pointing outwardly away from each other, a first mercury switch in an electrical circuit including said rectangular panels and an electrical source, said switch comprising a circular hollow tube mounted in a plane substantially perpendicular to said axis and having mercury within its interior and plural first contacts extending into said interior, each one of said first contacts being electrically connected to one of said rectangular panels, said first contacts being spaced within said tube so that when said plane is level one rectangular panel in each of said sets is illuminated and as said plane tilts the rectangular panels adjacent said one rectangular panel in each set are progressively lighted to provide an indication of the degree of inclination and in an order such that the last-lighted rectangular panel of one set is always horizontally aligned withthe last-lighted rectangular panel of the other set, and a second mercury switch in an electrical circuit including said triangular panels and said electrical source, said second switch comprising a circular hollow tube mounted in a plane substantially perpendicular to said axis and having mercury within its interior and plural second contacts extending into said interior, each one of sad second contacts being electrically connected to one of said triangular panels, said second contacts being spaced within said tube so that only the triangular panels adjacent said last-lighted rectangular panels are illuminated.



3,354,555
APPARATUS FOR DRYING FINELY DIVIDED PARTICLES

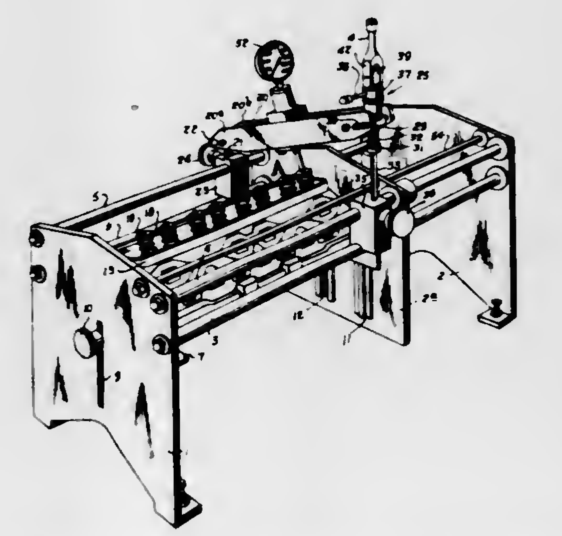
Peter Joachim Barr, 2 Dorset Square, London, England
Filed Jan. 3, 1966, Ser. No. 518,461
6 Claims. (Cl. 34—57)



1. Apparatus for flash drying finely divided material whilst conveyed in a stream of hot gas comprising means for mixing wet finely divided particles with relatively dry finely divided particles and for disintegrating the aggregates so formed in the presence of a current of warm gas, a main drying duct, means for passing a stream of gas through said main drying duct, means for heating the gas entering said duct, means for introducing particles resulting from the disintegration of said aggregates into said main drying duct at a point downstream from said heating means, a separator means arranged on the outside wall of a bend of the main drying duct comprising an opening with an adjustable deflector, duct means for recycling a stream of particle-laden gas from said opening back to the mixer and disintegrator means and means for separating product particles proximate the outlet end of the main drying duct.

3,354,556
DEVICE FOR CHECKING SEAT LOADING SPRING PRESSURE OF VALVES IN INTERNAL COMBUSTION ENGINES

James H. Lambert, Dallas, Tex., assignor, by direct and mesne assignments, to Peterson Machine Tool, Inc., Merriam, Kans., a corporation of Missouri
Filed June 24, 1965, Ser. No. 466,571
2 Claims. (Cl. 73—118)

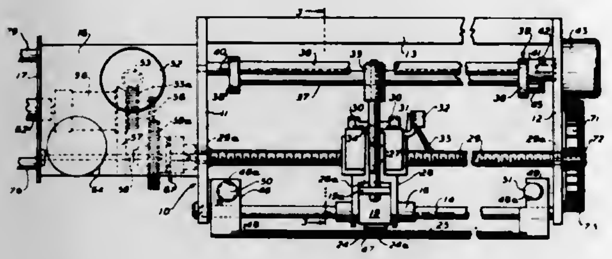


1. In a device for testing the spring loading of valves while installed in an engine head; a general frame; means for supporting an engine head in the frame, said engine head having a plurality of spring loaded valves slidably disposed through the wall thereof; a test frame pivotally attached at one side of the frame; a hydraulically actuated pressure gauge supported by the test frame and including a chamber therein, a piston slidable in the chamber, hydraulic fluid above the piston, and a rod movable outwardly of the chamber by the fluid presure against the piston, said rod being engageable with the selected valve to move it downwardly against the spring loading thereof; means to move the test frame downwardly to bring the rod into contact with the upper end of a selected valve; and additional means to apply downward force to the rod against the valve to overcome the spring loading and apply pressure to the hydraulic fluid through the piston to register the pressure on the guage, said force applying means comprising a vertically extending rod carried by said general frame and extending upwardly adjacent the outer end of said test frame, a cam body slidable on said rod and pivotally connected to the outer end of said test frame, whereby movement of said cam body on said rod is transmitted to said test frame, spring means carried by the rod to urge said cam body upwardly thereon, and a camming member rotatable about the rod to move the cam body downwardly on the rod.

3,354,557
ENCODE AND AUDIO RECORD-REPRODUCE EQUIPMENT

Bruce N. Whitlock, Morris, Plains, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Jan. 21, 1965, Ser. No. 426,989
9 Claims. (Cl. 35—6)

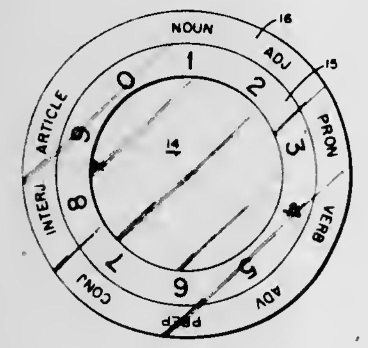


1. A drive mechanism for the record-reproduce head-carriage of a teaching machine comprising means mounting said head carriage for movement along a track on a record medium, a feed screw extending along the path of said head carriage, a feed nut fixedly mounted on said head carriage in continuous engagement with said feed screw, a drive system including a drive motor for rotating said feed screw to advance said head carriage, a torsion spring connected to said feed screw and wound up by the feed screw during the advance movement of the head carriage, an electrically energizable brake clutch in said drive system for holding the feed screw against a reverse rotation by said spring when the brake clutch is deenergized, a normally engaged drive clutch in said drive system between said feed screw and brake clutch, means for selectively energizing said brake clutch to cause said carriage to be advanced by said drive motor by predetermined step distances, and means operated by said carriage when the same is advanced to a predetermined end point in its travel for disengaging said drive clutch to free the feed screw and allow the same to be driven in a reverse direction by said spring whereby to return the head carriage to home position.

3,354,558
TEACHING AND SELF-TEACHING DEVICE

Walter G. Peterson and Bernice E. Peterson, Eugene, Oreg., assignors to Polarknown, Incorporated, Eugene, Oreg.

Filed Jan. 25, 1965, Ser. No. 427,747
5 Claims. (Cl. 35—9)

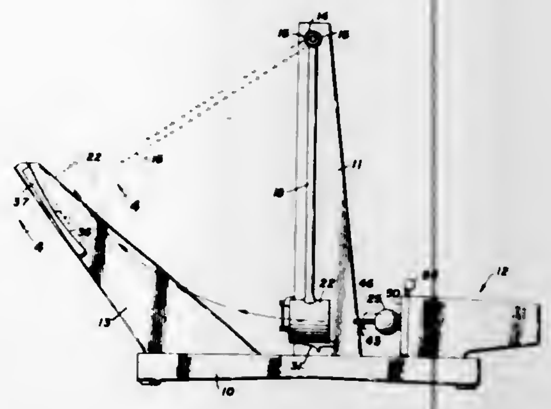


2. The combination of two discs, each containing a series of numerals and a polarizing lens oriented so its polarity will be always in the same setting in regard to the numerals, one disc being fastened underneath a printed page, the other disc being used on top of the printed page and rotatable at will by a pupil, the lenses when correctly positioned being indicative of a correct answer.

3,354,559
BALLISTIC PENDULUM

Bernard O. Beck, P.O. Box 272, Arlington, Tex. 76010

Filed Aug. 19, 1965, Ser. No. 481,041
2 Claims. (Cl. 35—19)

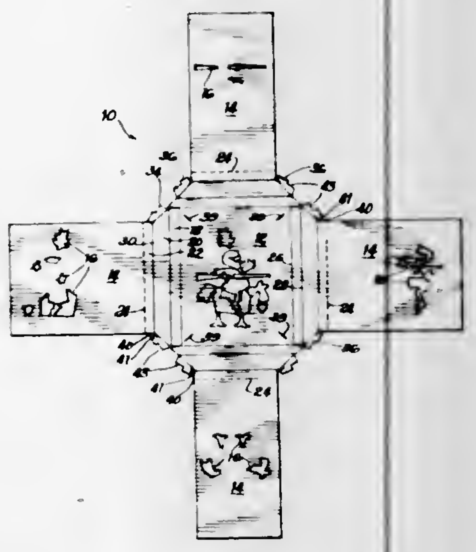


1. In a ballistic pendulum including a cylindrical bob, an open end of which faces a firing mechanism which propels a ball projectile, radially disposed plates within said cylindrical bob, said plates being pivotally mounted in said open end of said bob, arcs in the inner edges of said plates for receiving said ball projectile, and spring means urging said plates toward the axial center of said bob.

3,354,560
CARD CONSTRUCTION

Robert L. Kuenzel, 2601 Kenilworth, Wilmette, Ill. 60091

Filed Sept. 22, 1966, Ser. No. 581,358
12 Claims. (Cl. 35—26)

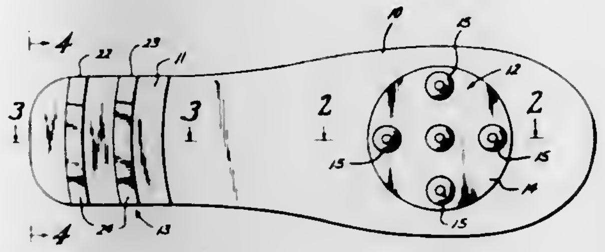


1. A card construction consisting of a plurality of interconnected sections which are adapted to be disposed in a single plane while in said interconnected relationship, said sections comprising a main body portion, a plurality of flap portions connected with said main body portion along the edges thereof, means indicating fold lines adjacent said edges whereby said flap portions are adapted to be successively folded into position in overlying relationship with respect to said main body portion, and stencil openings in a plurality of said flap portions whereby figures can be successively drawn on said main body portion as said flap portions are successively located in said overlying relationship, the completed figures comprising a composite of the figures defined by the respective stencil openings, and wherein said flap portions are adapted to be removed from their connection with said main body portion.

3,354,561
ATHLETIC SHOE HAVING ROTATABLE CLEAT MEANS

Bruce M. Cameron, 5220 Travis, Houston, Tex. 77002

Filed Jan. 28, 1965, Ser. No. 428,640
8 Claims. (Cl. 36—2.5)

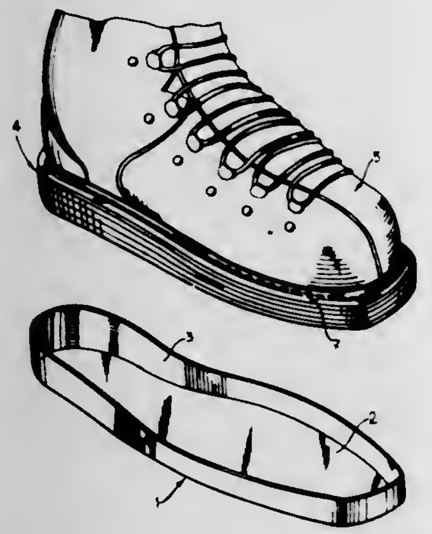


1. An athletic shoe, comprising
an upper,
a sole secured to said upper,
a plate having cleat means, and
means rotatively mounting said plate to said sole whereby traction is provided by said cleat means without restricting the pivotal movement of said plate.

3,354,562
RUBBER OUTSOLE FOR SHOES

Giovanni Battista Munari, Montebelluna, Treviso, Italy

Filed Jan. 24, 1966, Ser. No. 522,555
1 Claim. (Cl. 36—2.5)



The combination with a shoe having a multilayer sole of vulcanized rubber outsole, said outsole having a flat tread portion and a raised edge portion forming an open topped box-shaped body with its cavity matching the contour of said multilayer sole, said raised edge portion having a height equal to the thickness of said multilayer sole so that said outsole raised edge portion completely covers the side face of said multilayer sole while leaving the top face of said multilayer sole exposed, and adhesive means attaching said outsole to said multilayer sole.

3,354,563
HYDRAULIC BLADE CONTROL

Marvin E. Beyers, Peoria, Mackenzie P. Brown, New Lenox, John W. Carter, Peoria, and John A. Junck, Joliet, Ill., Jerre F. Lauterbach, Glastonbury, Conn., and Frank H. Winters, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

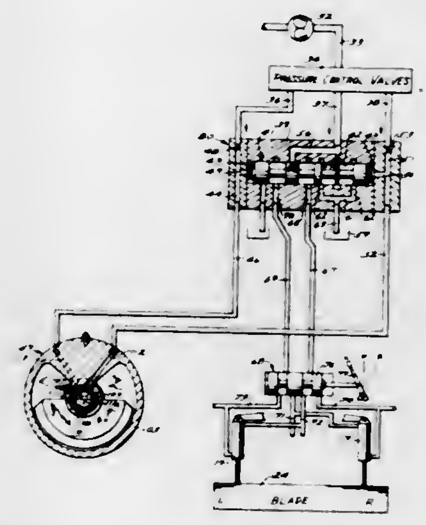
Filed Aug. 4, 1964, Ser. No. 387,307
6 Claims. (Cl. 37—156)

1. An hydraulically actuated automatic blade control system for an earthmoving vehicle having a working blade mounted for movement about at least two axes transverse to each other and a blade slope simulator which accurately reflects the actual slope of the blade, comprising in combination;

a source of hydraulic pressure fluid;

hydraulically actuated means for changing the slope of the blade;

a valve hydraulically disposed between said source and said first named means, said valve operative in one of its states to communicate said source with said first named means for movement of the blade, and

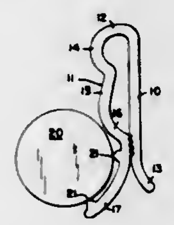


sensing valve means operatively associated with said valve, and connected to the simulator in a manner whereby movement of the simulator reflecting blade slope changes results in said valve means being conditioned to a different operating position, said valve means having only one operative position corresponding to the preselected slope, said valve means operative in any position other than that corresponding to the preselected slope to place said valve in the state wherein it communicates said source with said first named means whereby said blade is caused to move resulting in movement of the simulator which continues until said sensing valve means is urged to its operative position corresponding to the preselected slope.

3,354,564
MARKER DEVICE

Joseph R. Falcone, 217 Cooper Lane, De Witt, N.Y. 13214, and Anthony Falcone, Jr., 207 Oakridge Drive, Camillus, N.Y. 13031

Filed July 21, 1965, Ser. No. 473,741
1 Claim. (Cl. 40—11)



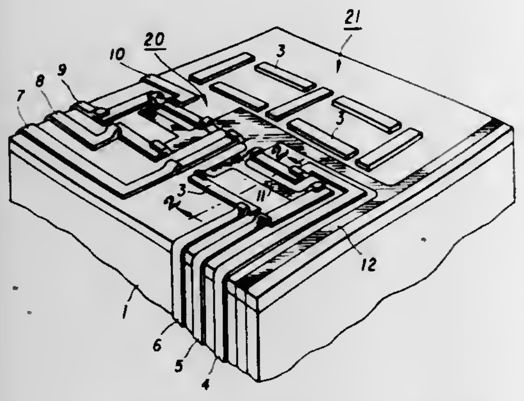
A marker device comprising a bifurcated pin member formed of hard, resilient, plastic material and adapted to be positioned over the edge of an article, one leg of said pin member extending substantially straight downwardly from the bight of said pin member, the lower end portion of said leg flaring outwardly, the upper portion of said other leg contiguous to said bight curving inwardly and merging with an outwardly inclined portion merging with an inwardly curved portion and terminating in an outwardly flaring lower end portion, the junction of said inwardly curved portion with said outwardly flaring end portion being located contiguous to the lower end of the straight portion of said one leg, a plate formed integrally with said pin member and being connected to the outwardly flaring lower end portion of said other leg by a frangible connection.

3,354,565
PASSIVE INFORMATION DISPLAYS

Stephen P. Emmons, Walter T. Matzen, Jr., and Hilton W. Spence, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Feb. 1, 1966, Ser. No. 524,183

5 Claims. (Cl. 40—28)



1. In an information display of the type utilizing a thermal drive in cooperative relationship with display material responsive to changes in temperature,

(a) an array of heating elements upon one surface of a substrate, select ones of said elements defining a form of information representation,

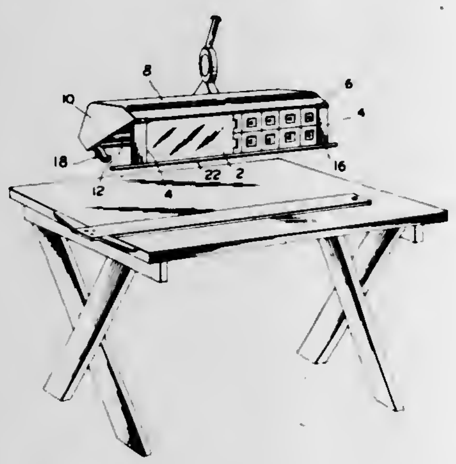
(b) said heating elements being formed of a material which exhibits a positive temperature coefficient of resistance, thereby to limit the temperature rise of said heating elements.

3,354,566
SLIDE AND TRANSPARENCY VIEWER ATTACHMENT FOR LAMP FIXTURES

Paul T. Steucke, 347 Arlington St., Waukesha, Wis. 53186

Filed Oct. 14, 1965, Ser. No. 496,206

6 Claims. (Cl. 40—106.1)



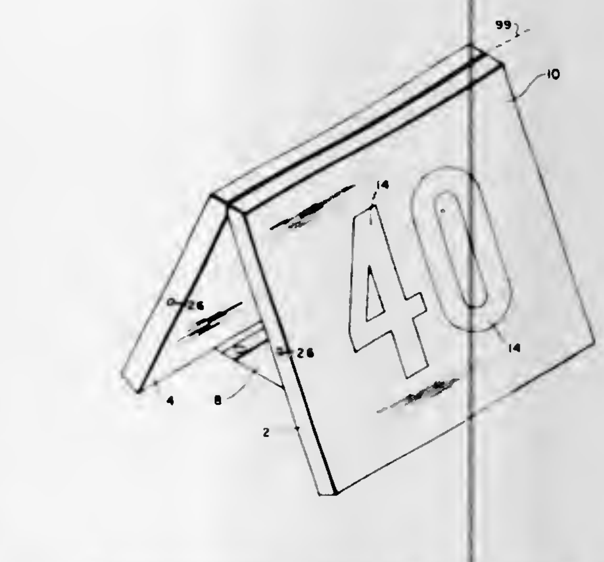
1. A slide and transparency viewer for attachment to a suspended lamp having a rectangular-shaped light face bound by two sides and two ends, said sides having greater length than said ends, comprising a rectangular-shaped light-transmitting panel with sides and ends substantially coextensive with those of the light face, means for pivotally attaching said panel adjacent said light face comprising hinge means along one side of said light face and holding means along the opposite side of said light face so that when said holding means are disengaged the panel is suspended from said hinge means, supporting means on said panel for mounting slides and transparencies for viewing, and resilient means engaging both the panel and a side of the light face for holding the suspended, disengaged panel in a plane beyond vertical from the attached position, whereby said slides and transparencies will rest on a face of said panel.

3,354,567
INDICIA-BEARING DEVICE

John J. Philbin, Fullerton, and John Rallis, Los Angeles, Calif., assignors to The General Tire & Rubber Company, a corporation of Ohio

Filed Dec. 2, 1964, Ser. No. 415,407

2 Claims. (Cl. 40—125)



1. A self-supporting indicia-bearing device which is readily collapsible and deformable upon bodily impact comprising first and second parallelepiped unitary sections of resilient foam material selected from the class consisting of foam rubber and polyurethane foam having approximately equal dimensions,

(a) each of said sections having a thickness considerably less than the length or width thereof

(b) each of said parallelepiped sections being entirely sealed, except for vent holes which permit the escape of air when said foam is compressed and permit the re-entry thereof when said foam recovers from said compression, within first and second tough plastic covers to provide first and second indicia-bearing elements

(c) said first and second indicia-bearing elements being permanently joined at a common border so as to provide an axis of rotation to permit rotation of at least 350° of said first and second elements around said axis of rotation

(d) means integral to and coactive with said first and second indicia-bearing elements for restricting the relative rotation between said indicia-bearing elements to an angle of less than 90°, and in which said indicia-bearing elements in operative position form a generally V-shaped structure which will be self-supporting when placed on a relatively flat surface in a position such that the apex of said structure is disposed opposite of said surface.

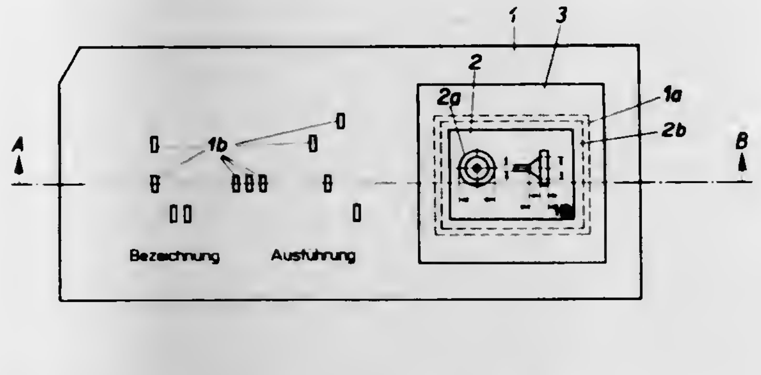
3,354,568
RECORD CARD WITH FILM INSERT

Willi Koschier, 11 Johnstrasse, 6201 Massenheim, Germany

Filed Jan. 6, 1965, Ser. No. 423,880

9 Claims. (Cl. 40—158)

1. In combination, a record card for mechanically scannable information and provided with an aperture, two foils secured to the respective opposite faces of the card, a photographic film bearing photographic information within the aperture and between the foils, one of the foils being frame-like and covering the film at edge portions substantially devoid of photographic information, the second of the foils covering edge portions of the film and covering completely the contiguous face of the card, and a third foil interfitting flush with the frame-like foil and covering the remainder of the face of the card carrying the second of the foils.

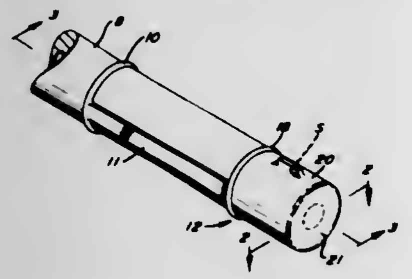


3,354,569
GUN BORE PROTECTOR

William T. Kassabian, 5616 Ridgewood St., Philadelphia, Pa. 19143

Filed Sept. 28, 1965, Ser. No. 490,968

2 Claims. (Cl. 42—1)



1. A universal gun bore protector for mounting on the muzzle end of the barrel of a firearm comprising, in a one piece construction,

a rear annular elastic retaining band portion for gripping engagement with the barrel,

a front closed cap portion for preventing access of foreign material to the gun bore and for disposition in covering relation to the front sight, and

at least one elastic longitudinally extensible strip portion betwen said rear retaining band portion and said cap portion, said strip portion including two diametrically oppositely spaced strips, permitting displacement of said cap portion with respect to said rear retaining band portion with said band portion in engagement with the barrel.

3,354,570
CONCEALED WEAPON

Angelo J. Rizzo, Jr., 822 Koman Drive, Paramus, N.J. 07652

Substituted for abandoned application Ser. No. 381,333, July 9, 1964. This application Mar. 3, 1966, Ser. No. 541,877

6 Claims. (Cl. 42—1)

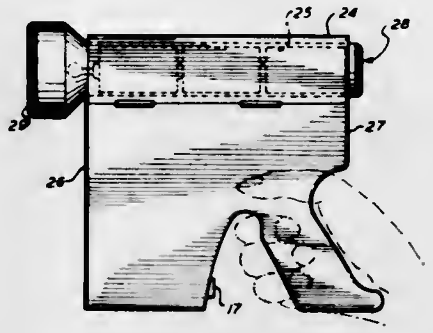
1. A concealed weapon comprising,

(a) a housing having an internal cavity at least one portion of such cavity communicating with the exterior of the housing to define an opening, the cavity being adapted to receive, tightly seat and completely conceal an ordinary separate pistol having a barrel, a receiver, a firing pin, trigger mechanism and a handle grip, the barrel of the pistol being generally aligned with the said opening,

(b) a closure over the opening easily penetrable by a bullet fired from the pistol,

(c) a light source, which projects a beam of light in the direction of the barrel of the pistol, seated on the housing, and

(d) means for permitting operation of the trigger of the pistol from without the housing.

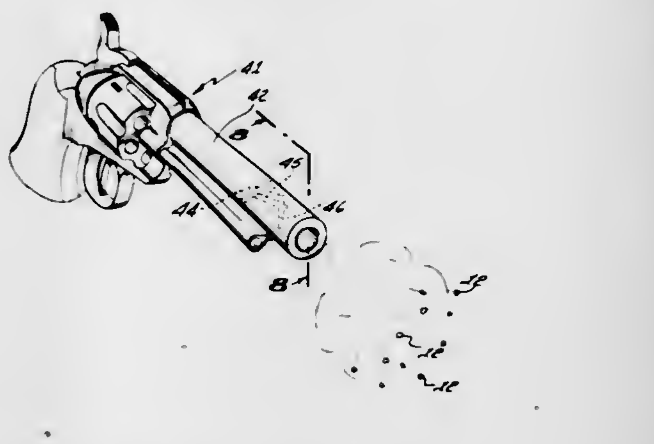


3,354,571
BLANK CARTRIDGE GUN AND CARTRIDGE THEREFOR

Robert W. Parker, 668 N. Hart, Orange, Calif. 92667

Continuation of application Ser. No. 492,958, Aug. 27, 1965, which is a continuation of application Ser. No. 325,403, Nov. 21, 1963. This application May 19, 1966, Ser. No. 551,471

10 Claims. (Cl. 42—1)



10. A blank-cartridge gun, which comprises:

a gun having a barrel portion, and safety means disposed across said barrel portion to aid in breaking up the wad ejected in response to firing of a blank cartridge in said gun,

said safety means comprising obstruction members extending transversely of said barrel and serving to provide obstructions for said wad while permitting escape of gas from said gun,

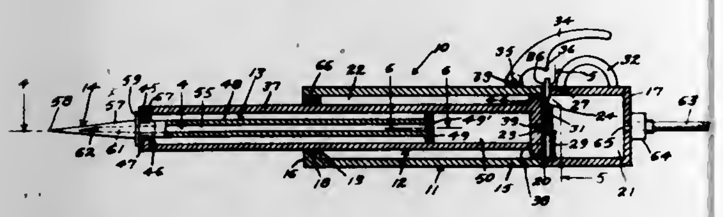
said obstruction members comprising a plurality of pins disposed diametrically across said barrel at spaced points therealong and oriented at substantially different angular positions relative to a plane containing the axis of said barrel,

said gun being combined with a blank cartridge having a wad adapted to separate into a substantial number of components in response to firing of the cartridge,

said wad being formed of multi-cellular expanded plastic.

3,354,572
FLUID PRESSURE ACTUATED EXTENSIBLE SPEAR GUN

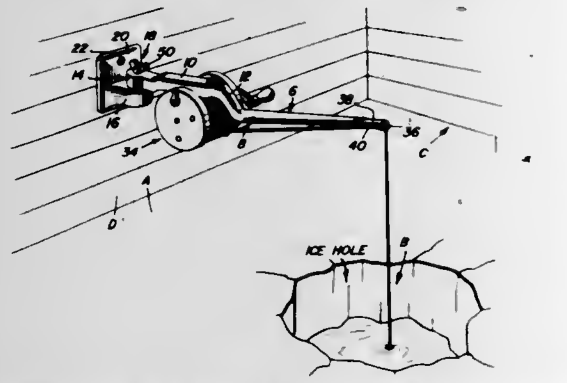
Hollie T. Dean, 107 N. Artizan St.,
Williamsport, Md. 21795
Filed Sept. 24, 1965, Ser. No. 489,986
6 Claims. (Cl. 43—6)



1. A fluid pressure actuated extensible spear gun comprising a spear shaft formed of telescopically connected tubular sections, a spear point connected to the inner one of the sections at a forward end of the shaft, means supplying a gas under pressure to the outer one of the sections adjacent to a rear end of the shaft, and apertured piston heads constituting rear ends of all but the outer shaft section and against which the compressed gas impinges and through which the gas passes when the spear shaft is pressurized thereby for extending the shaft to propel the spear point away from said outer section.

3,354,573
ICE FISHING TACKLE FOR SHELTER USE

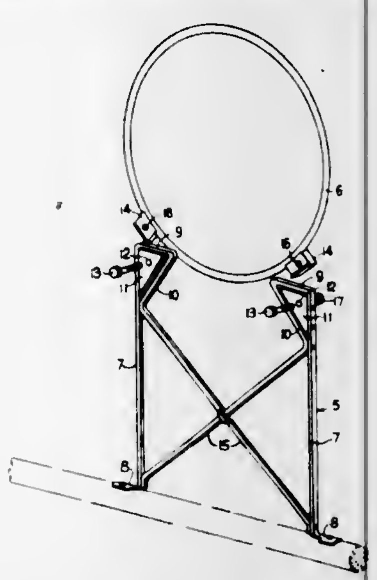
Kjell Otto Johansson, 712 4th Ave. E.,
Alexandria, Minn. 56308
Filed Mar. 25, 1965, Ser. No. 442,672
3 Claims. (Cl. 43—21.2)



2. For use in an ice fishing shanty, fishing tackle comprising, in combination, a fishing rod adapted to assume and maintain a generally horizontal position, said rod being short compared to a conventional casting rod, being formed from one piece of extruded aluminum, having an outer end portion provided with a lateral depending line guide adapted to accommodate and support a slidingly mounted line, the inner end portion of said rod embodying a straight terminal lug having a bolt hole extending therethrough and constituting a bearing, that portion of the rod immediately adjacent said lug being offset and providing a downwardly opening recess constituting a reel seat, said seat provided at the respective end portions thereof with reel attaching and supporting means, a bracket adapted to be fixed on a vertical support wall in said shanty, and a bolt having a journal portion operatively alined with and mounted in said bearing, said bolt being detachably and adjustably joined to said bracket.

3,354,574
FISHING ROD GUIDE

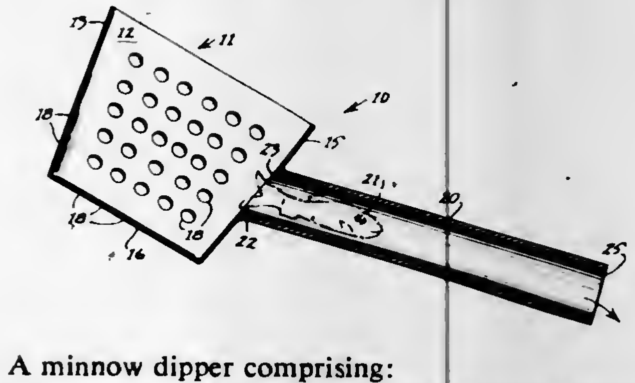
Louis F. Bartoletti, 343 101st St.,
Brooklyn, N.Y. 11209
Filed Apr. 19, 1965, Ser. No. 449,014
2 Claims. (Cl. 43—24)



1. A fishing rod guide of the character described, comprising a ring that is round in cross-section; a ring supporting structure made of bar stock or the like and embodying a pair of vertically disposed and spaced parallel members, the lower end of each one of which terminates in a horizontally disposed foot secured to a fishing rod, and the upper end of each one of the said parallel members being provided with a horizontal member inwardly turned toward each other as well as an angularly disposed member extending from the end of the horizontal member at an angle back to its associated parallel member, thereby providing a pair of triangular frames in each of which is secured a gusset plate having an opening in the center thereof, a pair of fittings each comprising a pair of rectangular plates secured to the said ring at points spacing the said fittings to coincide with the spacing of the gusset plates from each other, aligned openings extending through both plates of each fitting, the said plates of each fitting being adapted to engage its associated gusset plate with one rectangular plate on each side thereof and with the openings in the fitting plates aligned with the opening in the gusset plate, and a pair of screws, each passing through a fitting and gusset plate to secure the said ring to said ring supporting structure.

3,354,575
MINNOW DIPPER

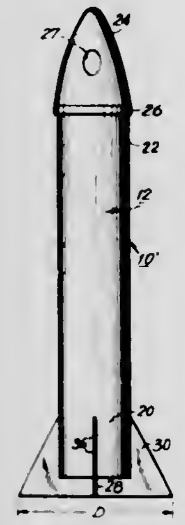
Turner H. Darrow, 408 Rosehill Drive,
Goodlettsville, Tenn. 37072
Filed Apr. 6, 1966, Ser. No. 540,751
5 Claims. (Cl. 43—56)



1. A minnow dipper comprising:
(a) a minnow receptacle having a perforated bottom wall, a continuous side member and an open top,
(b) one portion of said side member comprising a side wall projecting upwardly at an angle from said bottom wall having a single opening provided therein spaced above said bottom wall, said opening being substantially elliptical in shape with a greater height than width for the passage of a minnow therethrough,
(c) portions of said side member, other than said side wall, having perforations therethrough, smaller than a minnow, but large enough to permit the passage of water,
(d) an elongated tubular handle having an open inner end of substantially elliptical shape and an open outer end,
(e) the cross-section of said tubular handle being uniform and great enough for the passage of a minnow through said handle,
(f) said inner end of the handle being fixed to said side wall in alignment with said single opening so that said handle is in open communication with the interior of said receptacle, and projects at an angle from said side wall and upwardly away from said bottom wall.

3,354,576
TOY ROCKET FOR PACKAGING AND STORING OF NIGHT CLOTHES

Edna Gralnick, 120 E. 81st St.,
New York, N.Y. 10028
Filed July 28, 1965, Ser. No. 475,353
7 Claims. (Cl. 46—11)

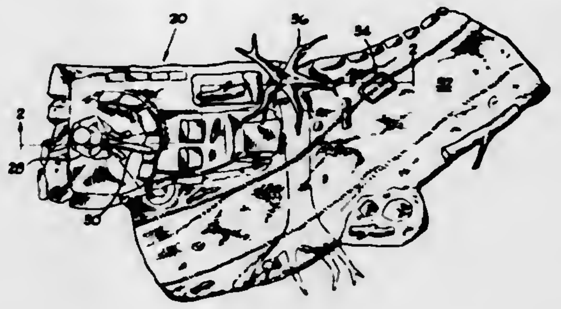


2. A toy rocket for packaging and storing night clothes, said toy rocket comprising a hollow elongated cylindrical storage tube having an external configuration simulative of a rocket casing, a cap closing one end of the tube and being manually detachable therefrom so as to allow access to the interior of the tube, said cap having an external configuration simulative of a rocket nose cone, planar support members initially stowed within the tube and removable therefrom, manually operable mechanical fastening means engaging the planar members to the other end of the tube, the latter end being open and being left perforate by the engaged planar members, said planar members when engaged to the open end of the tube having an external configuration simulative of rocket vanes, said fastening means locking the planar members with the open end of the tube so that the members form a base upon which the tube can rest upright in stable launching simulative condition on a flat surface with said one open end held distant from the surface thereby to permit ventilation of the night clothes, and night clothes lightly compressed within the tube.

3,354,577
MOTOR OPERATED SIMULATED SOLDIER AND GUN TOY

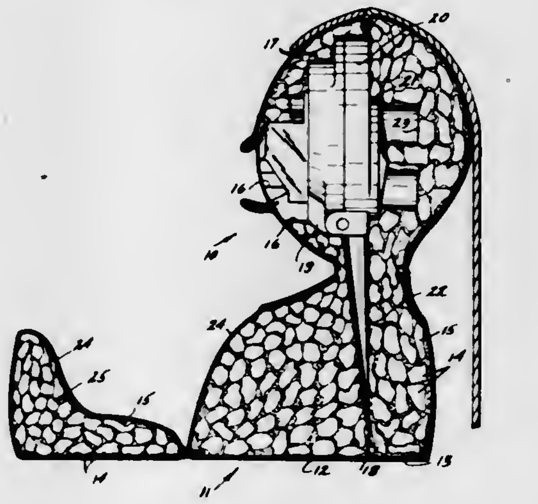
Marvin I. Glass and Burton C. Meyer, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Apr. 16, 1965, Ser. No. 448,651
3 Claims. (Cl. 46—118)

1. A motor operated toy comprising a base structure having a hollow interior and simulating landscape, a simulated soldier and simulated gun mounted on said base for oscillating swinging movement together relative to said base through means including a rotatable shaft and cam means fixed to said shaft, a drive means within the interior of said base for rotation of said shaft, a sound making device within said base including a diaphragm and a flexible member having a portion in position to strike said diaphragm and said drive means including gear means in position to strike the free end of said flexible member to tension said member and release it to strike said diaphragm, a simulated tree member positioned on said base, releasable means for supporting said tree in an upright position, a movable section in said base connected to said tree support means whereby movement of said section will cause the tree support means to be released and the tree to fall.



3,354,578
FIGURE TOY HAVING COMPRESSED ELASTOMERIC STUFFING AND BONDED COVER

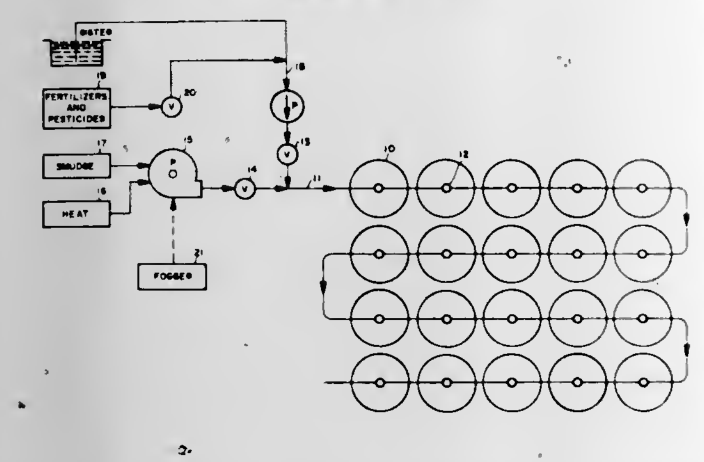
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed July 24, 1964, Ser. No. 384,940
1 Claim. (Cl. 46—158)



A stuffed figure toy adapted to maintain its shape over a long period of use and to prevent the loosening of its cover comprising:
a resilient structurally self-sustained model formed out of small pieces of elastomeric material bonded together by a first adhesive material;
a cover conforming in shape to the shape of said model and enclosing said model; and
a second adhesive material forming a permanent bond between the inner surface of said cover and the outer surface of said model, said cover fitting said model tightly, whereby said model is maintained under compression while said cover is maintained under tension, said first and second adhesive materials forming connections between said small pieces of elastomeric material and between said cover and said model, respectively, and thereby comprising means minimizing separation of said pieces, said cover and said model during ordinary play with said figure toy.

3,354,579
SYSTEM FOR THE PREVENTION OF FROST DAMAGE

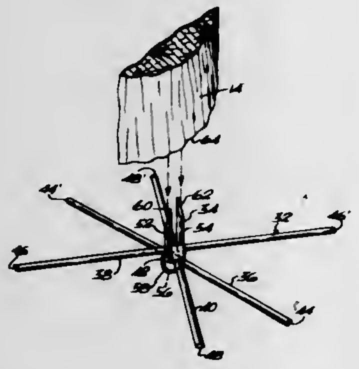
William L. C. Gross, 424 W. Minnehaha Ave., Clermont, Fla. 32711, and Oscar Herbert Stone, Rte. 1, Box 1182, Tavares, Fla. 32778
Filed May 18, 1966, Ser. No. 558,158
4 Claims. (Cl. 47—2)



1. A method for preventing freeze damage to trees or the like utilizing an underground conduit system comprising the steps of: generating smudge; generating heated air; mixing said smudge and said heated air and conveying said mixture through said conduit system to openings therein, each said opening being located adjacent to a tree in a grove.

3,354,580
PLANT STAKE AND CENTERING MEANS THEREFOR

Carlos Amortegui, 1116 Wilmington St., Opa Locka, Fla. 33054
Filed May 1, 1967, Ser. No. 635,121
6 Claims. (Cl. 47—47)



1. For use in centering and supporting a plant to grow in soil material surrounding and embracing a root system in a pot having a mouth, a foreshortened base with a hole, and uniformly tapered interior side walls of friable material connecting the mouth and base,

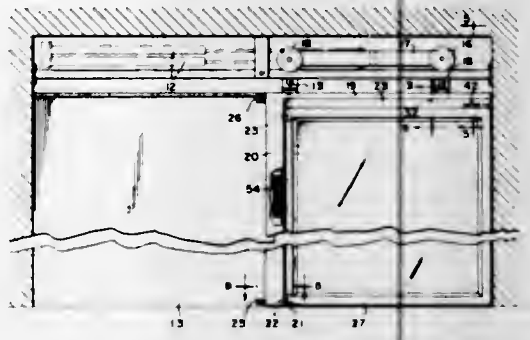
an improved plant support for pots, comprising in combination;

a plant stake of fibrous material, an open floorwork in the pot, and means connecting the stake to the floorwork in upstanding relation;

said floorwork comprising a plurality of interconnected members extending radially from a central zone as seen in plan to terminal ends defining an area slightly enlarged with respect to the area of the pot base, said floorwork being nestable as a transverse open floor at just above the plane of said base, said terminal ends being sharp to scrape the interior wall on pressure applied to the floorwork to move it toward the base to scrape the interior wall from a plane just above the plane of nesting and to bite into the interior wall to resist removal of the combination from the pot.

3,354,581
AUTOMATIC ENTRANCE HAVING SLIDING DOOR

Robert E. Dimmitt and Charles Kessner, Seattle, Wash., assignors to Dor-West, Inc., Seattle, Wash., a corporation of Washington
Continuation of application Ser. No. 505,110, Oct. 15, 1965. This application Jan. 9, 1967, Ser. No. 617,746
15 Claims. (Cl. 49—141)

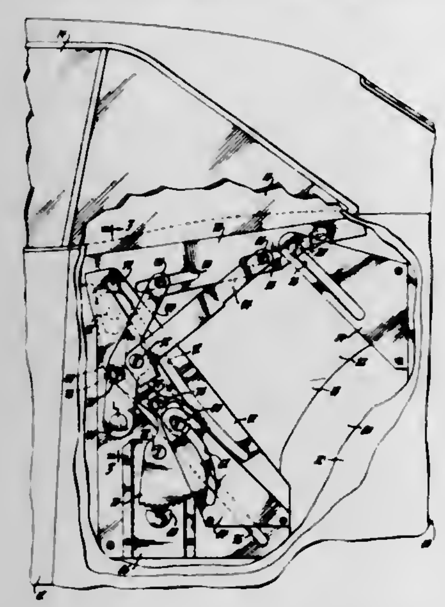


1. In an automatic entrance, an overhead horizontal track extending transversely of the entrance opening, a transverse frame formed generally to an inverted-L configuration to provide a horizontal bar at the top and a vertical bar rigidly fixed to the horizontal bar and depending from one end of the latter, a carriage riding on the track and having the horizontal bar of the frame suspended therefrom so that said horizontal bar underlies the track and the frame slides into and out of the entrance opening as the carriage moves reciprocally along the track between two prescribed limits of travel, a door for the entrance opening hinged at its upper and lower ends to the frame for swing movement about an axis which is fixedly related to the frame adjacent to and approximately parallel with the vertical bar of the frame into and out of a normal position coplanar with the frame between said normal position and open positions placing the door at approximate right angles thereto extending either outwardly or inwardly, selectively, from the hinge axis, the act of a person pressing outwardly against the door in a circumstance such as a panic condition and performed when the door occupies the entrance opening supplying such force as is necessary to swing the door into said outwardly extending open position, power means having operative interconnection with the frame operated automatically by the act of a person entering and leaving an established traffic zone including said entrance opening for respectively sliding the frame and door out of and into a position closing said opening, a stop means for the door, and manually controlled means for making said stop means active or inactive at will, said stop means being characterized in that, when made active and the door is occupying the entrance opening, the door is free to be swung by said panic-conditioned manual force into its outwardly extending open position but is precluded from being swung into the inwardly extending open position and, when made inactive and the door is occupying the entrance opening, the door can then be swung into the inwardly extending open position.

3,354,582
WINDOW REGULATOR MECHANISM

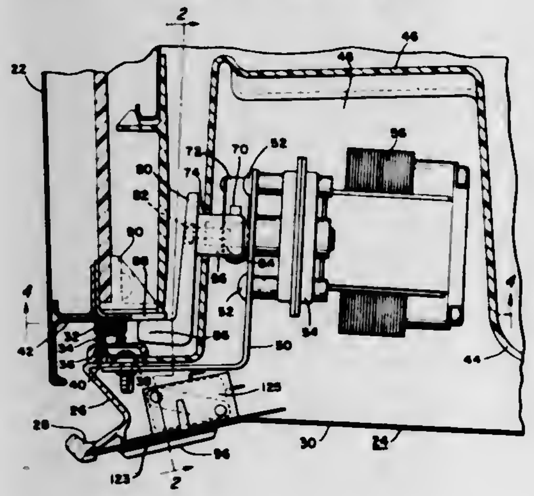
Leonard A. Lystad, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 11, 1966, Ser. No. 519,858
5 Claims. (Cl. 49—227)

1. In combination with a vehicle body having a window opening therein and a window movable between open and closed positions with respect to the opening, a window regulator mechanism for moving said window comprising, in combination, a pair of bellcrank levers arranged in sequential relationship and pivotally interconnected at the joint thereof, one of said levers having one leg thereof mounted on said body and the other leg thereof operatively connected to said window, the other of said levers having a respective other leg thereof operatively connected to said window, and means operatively connected to the respective one leg of said other lever for swinging said other lever relative to said one lever upon movement of said one lever relative to said body, said respective legs of said levers being arranged in sequential pairs and angular divergent relationship with respect to each other, the legs of one of said pairs being located in the same sequential relation in each position of said window and the legs of said other of said pairs being located in reverse relationship in the open and closed positions of said window.



3,354,583
REFRIGERATOR DOOR OPENER

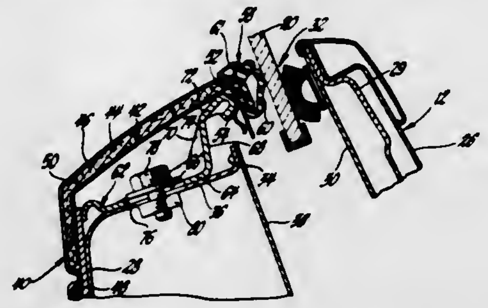
Earl J. Moorman and Floyd O. Moody, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,194
4 Claims. (Cl. 49—276)



1. In combination, a door jamb means, a door means cooperating to close upon said door jamb means, one of said means being provided with a strike surface, the other of said means being provided with an electric motor provided with a brake means and means for rendering effective said brake means when said motor is deenergized, means for starting said motor, and means operated by said motor for engaging said strike surface for opening said door, said means operated by said motor including a rotatable arm having a projection extending into overlapping relation with said strike surface and operable connecting means between said motor and said arm, said arm having its center of rotation located to provide an arc of movement intersecting said strike surface at a small angle to provide a large initial mechanical advantage to increase the initial force to open the door.

3,354,584
VEHICLE BODY TRIM ATTACHMENT

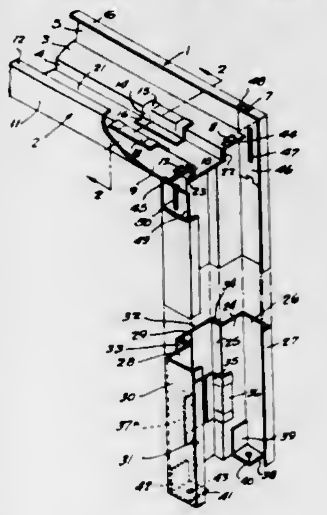
Peter P. Parsons, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 23, 1966, Ser. No. 536,772
6 Claims. (Cl. 49—377)



1. The combination comprising, a vehicle body closure including a wall defining an edge portion of an opening in said closure, a closure panel movable through said opening, a trim panel extending over said wall to adjacent said opening, a support member located between said trim panel and said wall, means adjustably mounting said member on said wall in predetermined spaced relationship to said closure panel, cooperating means on said support member and said trim panel engageable with each other to adjustably locate the edge portion of said trim panel with respect to said closure panel, and a weatherstrip mounted on said trim panel edge portion and located thereby for engagement with said closure panel.

3,354,585
DOOR OR WINDOW FRAME

Lewis A. Jerchower, Bergenfield, N.J., assignor to Pioneer Industries, Inc., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,218
7 Claims. (Cl. 49—504)

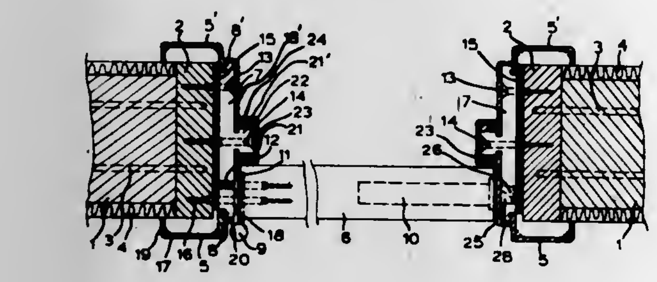


1. A frame section for door and window frames comprising a pair of trim elements each having a flat medial portion, a flat upright portion, a marginal portion extending laterally of said upright portion over said medial portion and a second marginal portion extending laterally of said medial portion, one of said trim elements having its second marginal portion extending in the same direction as its upright portion, the other of said trim elements having its second marginal portion extending in an opposite direction to its upright portion, at least one clip having a flat medial portion and a pair of flat oppositely directed marginal portions extending laterally of said clip medial portion with one clip marginal portion fixedly

connected to the medial portion of one of said trim elements and the other of said trim elements having its second marginal portion positioned between said clip medial portion and the second marginal portion of said one of said trim elements.

3,354,586
DOOR OR WINDOW FRAME

Henrikus den Besten, Kapelle an der Ijssel, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
Filed Oct. 25, 1965, Ser. No. 505,157
Claims priority, application Netherlands, Oct. 23, 1964, 64—12,331
2 Claims. (Cl. 49—504)



1. An improved frame assembly for doors and windows in a wall opening having a frame support provided thereon, comprising:

two vertical post members and a top header member, all of which are divided into two halves in a plane parallel to the wall, with each half being in the form of an angular frame section made from a resilient thermoplastic material, said frame sections further being adapted to be disposed at and around the wall opening in spaced attachment relationship to the wall and the frame support thereon said frame sections being provided with raised edges at the reveal of the frame for receiving a trough-shaped fillet which is clamped onto the frame sections at said raised edges by a snap-fastenable engagement with the raised edges, and including recesses in the frame sections of said two vertical post members for receiving hinge plates and keeper plates which are secured to respective backing members for each of said vertical post members,

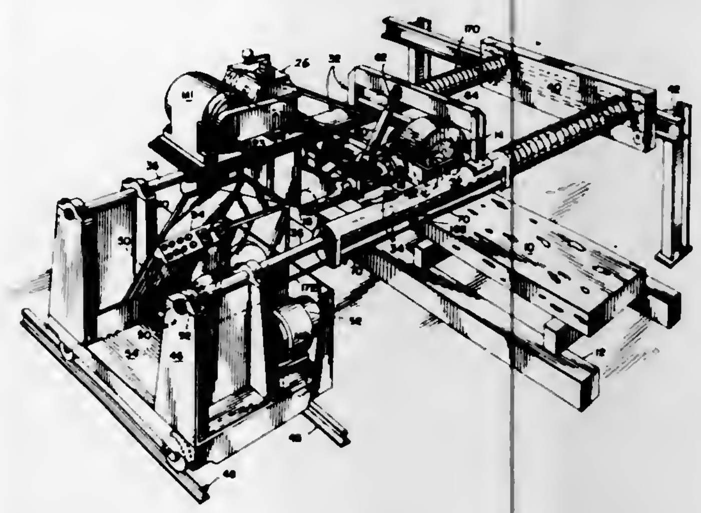
a trough-shaped fillet made of a thermoplastic material for clamping engagement with the raised edges of said frame sections, and

a separate common backing member for backing up the halves of each vertical post member, said common backing member being interposed between said frame supports and said frame sections to space said sections from the frame supports, each said common backing member having a central ridge projecting along a longitudinal axis of the backing member for insertion between the separate half sections which make up each vertical post member and including in said central ridge a retaining means for contacting and retaining edge portions of said half sections.

3,354,587
GRINDING MACHINE CONTROL SYSTEM

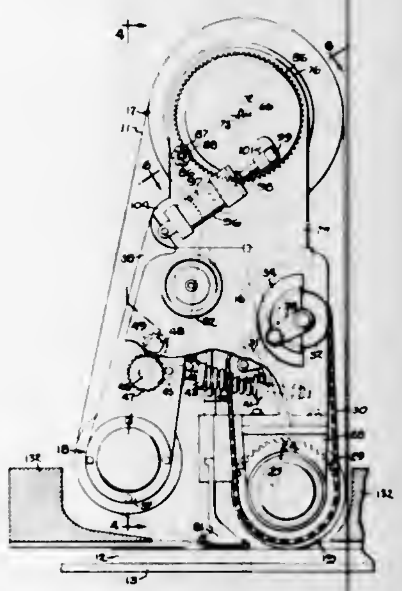
Vincent Janis, Jr., and Gul P. Bhatia, Park Ridge, Ill., assignors to Pettibone Mulliken Corporation, Chicago, Ill., a corporation of Delaware
Filed June 2, 1964, Ser. No. 372,032
10 Claims. (Cl. 51—35)

1. A system for controllling a grinding machine of the type having a movable carriage adapted to be tranversed across a billet whose surface is adapted to be ground by a grinding wheel pivotally suspended above said billet by said carriage and wherein fluid responsive means are provided for either lowering said wheel into engagement with said billet or raising said wheel from said billet with said wheel adapted to be rotatably driven for grinding said billet surface, the improvement comprising optionally operable means for automatically controlling said fluid responsive means for lowering said wheel into engagement with said billet under a predetermined pressure, means operable responsive to said wheel, being both driven and engaged with said billet surface under said pressure for thereafter automatically increasing the pressure engaging said wheel against said billet surface, and means controlled by said pressure increasing means for thereafter automatically raising said wheel above said billet in the event said wheel is disengaged from said billet.



3,354,588
WIDE BELT ABRASIVE MACHINE

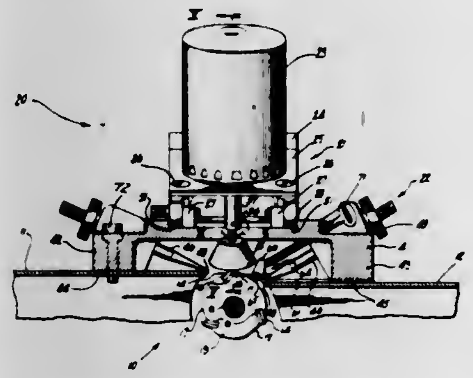
Phillip J. Roehrig, Rockford, Ill., assignor to Solem Machine Company, Rockford, Ill., a corporation of Illinois
Filed Nov. 25, 1964, Ser. No. 413,793
12 Claims. (Cl. 51—141)



1. In a wide belt abrading machine having, in combination, an endless belt, a roll disposed within said belt for pressing a transverse area of the belt against a passing workpiece, a roll within the belt paralleling the pressure roll and adapted to drive the belt, a roll within the belt paralleling said pressure and drive rolls and adapted for bodily transaxial adjustment to tension the belt around the rolls, a self-alining bearing supporting one end of said drive roll for tilting of the roll about a transverse axis perpendicular to the roll axis and disposed substantially in the plane of said bearing, a power driven shaft mounted outwardly beyond said transverse axis for rotation about a fixed axis approximately alined with the drive roll axis, and a universal coupling connecting said shaft and the end of said drive roll for transmitting rotary power to the roll while permitting tilting of the roll about said transverse axis during such rotation.

3,354,589
PORTABLE JOINTER SHARPENER

Louis J. Postula, Victor A. Postula, both of R.F.D. 3, Marshall, Mich. 49068
Filed June 29, 1965, Ser. No. 467,993
12 Claims. (Cl. 51—249)



1. A sharpening member assembly for use on a jointer machine bed with two table portions separated by an opening exposing a jointer head having one or more cutting blades comprising in combination,

(a) a sharpener adapted member having guide means, and supported by said table portions,
(b) a grinding wheel and grinding wheel unit supported by said sharpener adapted member and guided by said guide means,
(c) a locating means to locate said sharpener adapted assembly on said jointer machine bed,
(d) adjustable means to secure said sharpener adapted member to said jointer machine bed,
(e) said sharpener adapter member positioning said grinding wheel over said jointer head,
(f) means on said sharpener adapter member to secure said jointer head in a sharpening position,
(g) said guide means to guide said grinding wheel along said cutting blade when said jointer head is in said sharpening position,
(h) said grinding wheel unit having a guide frame positioned in said guide means,
(i) a mount frame as part of said grinding wheel unit supporting said grinding wheel and pivotally connected at one end to said guide frame by bolts, and
(j) means connected to the other end of said mount frame to adjustably position said mount frame in a fixed angular position with respect to said guide frame during said sharpening operation.

3,354,590
BUILDING FRAME STRUCTURE

Norman T. Gilroy, 5 Taylor Lane, Larkspur, Calif. 94939
Filed May 3, 1965, Ser. No. 452,716
13 Claims. (Cl. 52—73)

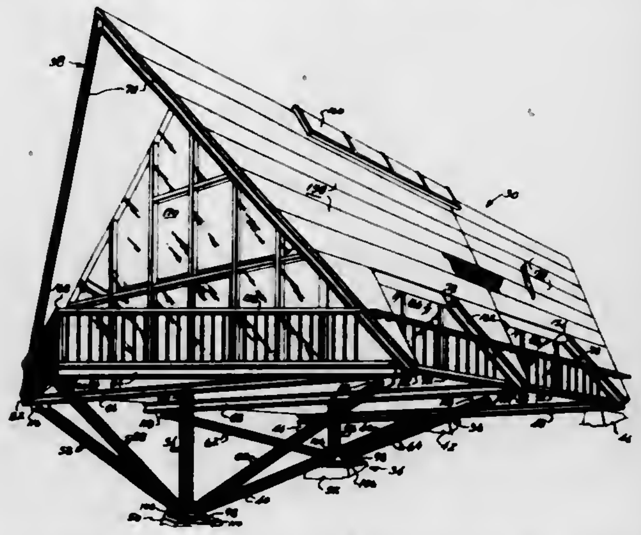
3. An integrated frame structure for a building adapted for installation on a sloped lot comprising:

a first series of horizontal frame members forming the main floor frame of the building including first and second cross frame members interconnected by intermediate frame members, said first said cross frame member located at the end of the main floor nearest the ground level and supported on foundation means located beneath its opposite ends;

a second series of sub-floor frame members beneath said main floor members including a slope beam extending downwardly from said first cross frame member on a line that lies in a vertical plane containing a main floor center line that is centrally disposed between said intermediate frame members, said slope beam terminating at and being connected to a second foundation means, a first pair of angular support beams extending upwardly and outwardly from the end of said slope beam and from said second foundation means, each being connected with a second cross frame member near its opposite ends;

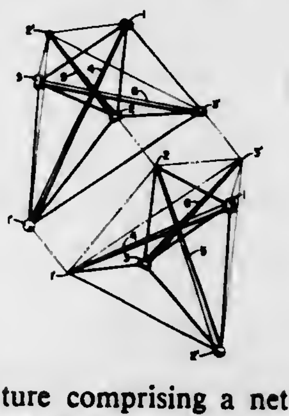
a third series of rafter frame members extending above said main floor and forming the superstructure frame for the building, said rafter frame members being arranged in pairs, each said pair of rafter members being connected to one end of a said cross frame member and diverging upwardly while slanting at an angle towards a similar pair of diverging rafter members extending upwardly and at an angle from the opposite end of the same cross frame member;

and means for connecting together the rafter beams from opposite ends of said cross beams along a line that lies in the same vertical plane as said main floor center line and said slope beam.



3,354,591
OCTAHEDRAL BUILDING TRUSS

Richard Buckminster Fuller, 407 S. Forest St., Carbondale, Ill. 62901
Filed Dec. 7, 1964, Ser. No. 416,228
12 Claims. (Cl. 52—81)

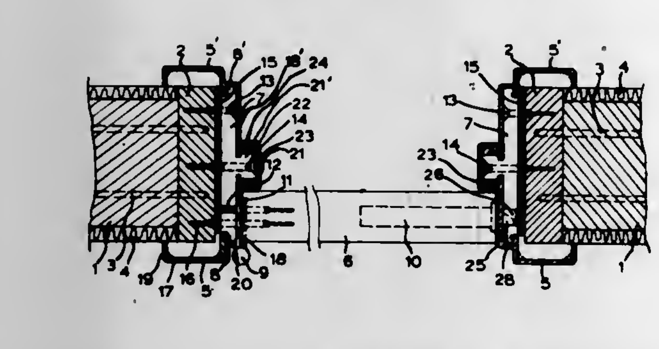


1. A truss structure comprising a network of tension members and compression members; the tension members being joined in three opposed pairs of junctions, the junctions of the tension members forming vertices lying in planes defining an octahedron, said tension members of adjacent octahedra being connected, with the connections therebetween defining a common plane of said adjacent octahedra, and said compression members extending between each of said three opposed pairs of junctions of said tension members of each octahedron.

connected to the medial portion of one of said trim elements and the other of said trim elements having its second marginal portion positioned between said clip medial portion and the second marginal portion of said one of said trim elements.

3,354,586
DOOR OR WINDOW FRAME

Henrikus den Besten, Kapelle an der Ijssel, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
Filed Oct. 25, 1965, Ser. No. 505,157
Claims priority, application Netherlands, Oct. 23, 1964, 64—12,331
2 Claims. (Cl. 49—504)



1. An improved frame assembly for doors and windows in a wall opening having a frame support provided thereon, comprising:

two vertical post members and a top header member, all of which are divided into two halves in a plane parallel to the wall, with each half being in the form of an angular frame section made from a resilient thermoplastic material, said frame sections further being adapted to be disposed at and around the wall opening in spaced attachment relationship to the wall and the frame support thereon said frame sections being provided with raised edges at the reveal of the frame for receiving a trough-shaped fillet which is clamped onto the frame sections at said raised edges by a snap-fastenable engagement with the raised edges, and including recesses in the frame sections of said two vertical post members for receiving hinge plates and keeper plates which are secured to respective backing members for each of said vertical post members,

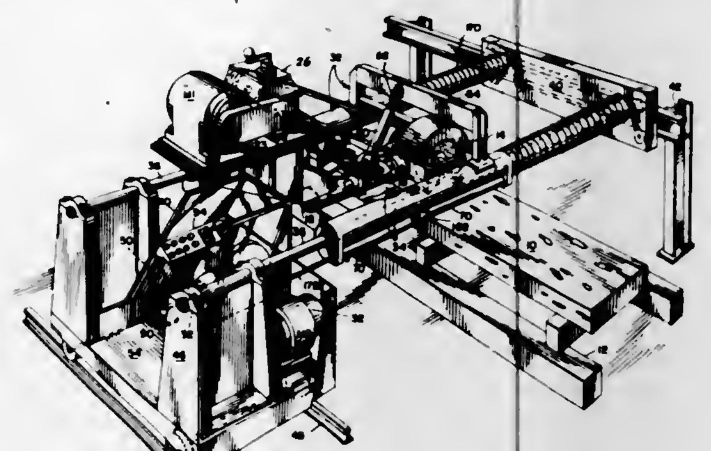
a trough-shaped fillet made of a thermoplastic material for clamping engagement with the raised edges of said frame sections, and

a separate common backing member for backing up the halves of each vertical post member, said common backing member being interposed between said frame supports and said frame sections to space said sections from the frame supports, each said common backing member having a central ridge projecting along a longitudinal axis of the backing member for insertion between the separate half sections which make up each vertical post member and including in said central ridge a retaining means for contacting and retaining edge portions of said half sections.

3,354,587
GRINDING MACHINE CONTROL SYSTEM

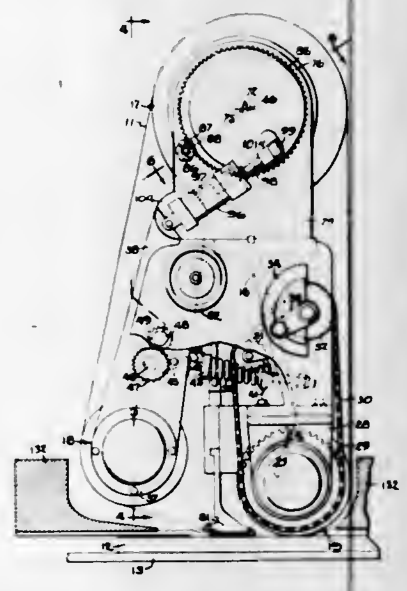
Vincent Janis, Jr., and Gul P. Bhatia, Park Ridge, Ill., assignors to Pettibone Mulliken Corporation, Chicago, Ill., a corporation of Delaware
Filed June 2, 1964, Ser. No. 372,032
10 Claims. (Cl. 51—35)

1. A system for controllling a grinding machine of the type having a movable carriage adapted to be tranversed across a billet whose surface is adapted to be ground by a grinding wheel pivotally suspended above said billet by said carriage and wherein fluid responsive means are provided for either lowering said wheel into engagement with said billet or raising said wheel from said billet with said wheel adapted to be rotatably driven for grinding said billet surface, the improvement comprising optionally operable means for automatically controlling said fluid responsive means for lowering said wheel into engagement with said billet under a predetermined pressure, means operable responsive to said wheel, being both driven and engaged with said billet surface under said pressure for thereafter automatically increasing the pressure engaging said wheel against said billet surface, and means controlled by said pressure increasing means for thereafter automatically raising said wheel above said billet in the event said wheel is disengaged from said billet.



3,354,588
WIDE BELT ABRASIVE MACHINE

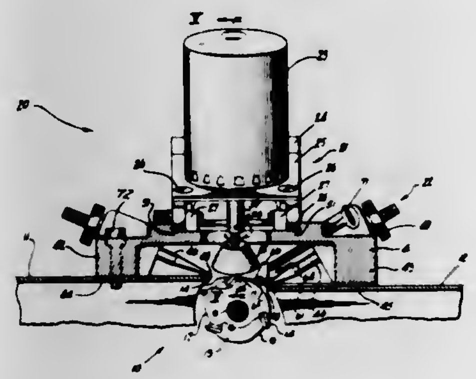
Phillip J. Roebrig, Rockford, Ill., assignor to Solem Machine Company, Rockford, Ill., a corporation of Illinois
Filed Nov. 25, 1964, Ser. No. 413,793
12 Claims. (Cl. 51—141)



1. In a wide belt abrading machine having, in combination, an endless belt, a roll disposed within said belt for pressing a transverse area of the belt against a passing workpiece, a roll within the belt paralleling the pressure roll and adapted to drive the belt, a roll within the belt paralleling said pressure and drive rolls and adapted for bodily transaxial adjustment to tension the belt around the rolls, a self-alining bearing supporting one end of said drive roll for tilting of the roll about a transverse axis perpendicular to the roll axis and disposed substantially in the plane of said bearing, a power driven shaft mounted outwardly beyond said transverse axis for rotation about a fixed axis approximately alined with the drive roll axis, and a universal coupling connecting said shaft and the end of said drive roll for transmitting rotary power to the roll while permitting tilting of the roll about said transverse axis during such rotation.

3,354,589
PORTABLE JOINTER SHARPENER

Louis J. Postula, Victor A. Postula, both of R.F.D. 3, Marshall, Mich. 49068
Filed June 29, 1965, Ser. No. 467,993
12 Claims. (Cl. 51—249)



1. A sharpening member assembly for use on a jointer machine bed with two table portions separated by an opening exposing a jointer head having one or more cutting blades comprising in combination,

(a) a sharpener adapted member having guide means, and supported by said table portions,
(b) a grinding wheel and grinding wheel unit supported by said sharpener adapted member and guided by said guide means,
(c) a locating means to locate said sharpener adapted asembly on said jointer machine bed,
(d) adjustable means to secure said sharpener adapted member to said jointer machine bed,
(e) said sharpener adapter member positioning said grinding wheel over said jointer head,
(f) means on said sharpener adapter member to secure said jointer head in a sharpening position,
(g) said guide means to guide said grinding wheel along said cutting blade when said jointer head is in said sharpening position,
(h) said grinding wheel unit having a guide frame positioned in said guide means,
(i) a mount frame as part of said grinding wheel unit supporting said grinding wheel and pivotally connected at one end to said guide frame by bolts, and
(j) means connected to the other end of said mount frame to adjustably position said mount frame in a fixed angular position with respect to said guide frame during said sharpening operation.

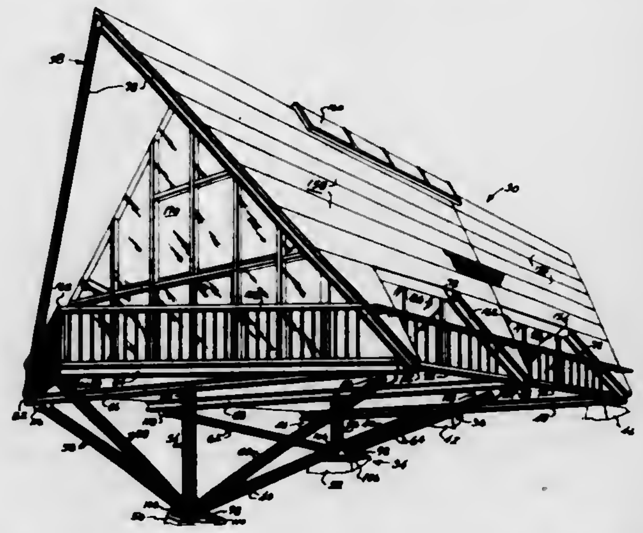
3,354,590
BUILDING FRAME STRUCTURE

Norman T. Gilroy, 5 Taylor Lane, Larkspur, Calif. 94939
Filed May 3, 1965, Ser. No. 452,716
13 Claims. (Cl. 52—73)

3. An integrated frame structure for a building adapted for installation on a sloped lot comprising:

a first series of horizontal frame members forming the main floor frame of the building including first and second cross frame members interconnected by intermediate frame members, said first said cross frame member located at the end of the main floor nearest the ground level and supported on foundation means located beneath its opposite ends;

a second series of sub-floor frame members beneath said main floor members including a slope beam extending downwardly from said first cross frame member on a line that lies in a vertical plane containing a main floor center line that is centrally disposed between said intermediate frame members, said slope beam terminating at and being connected to a second foundation means, a first pair of angular support beams extending upwardly and outwardly from the end of said slope beam and from said second foundation means, each being connected with a second cross frame member near its opposite ends;

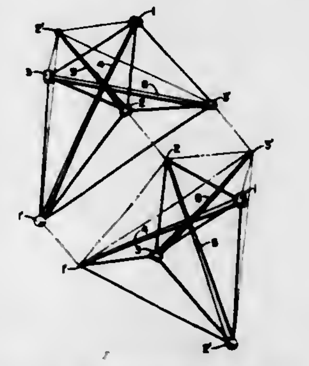


a third series of rafter frame members extending above said main floor and forming the superstructure frame for the building, said rafter frame members being arranged in pairs, each said pair of rafter members being connected to one end of a said cross frame member and diverging upwardly while slanting at an angle towards a similar pair of diverging rafter members extending upwardly and at an angle from the opposite end of the same cross frame member;

and means for connecting together the rafter beams from opposite ends of said cross beams along a line that lies in the same vertical plane as said main floor center line and said slope beam.

3,354,591
OCTAHEDRAL BUILDING TRUSS

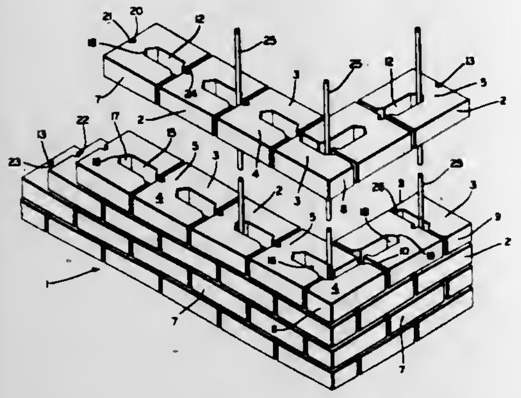
Richard Buckminster Fuller, 407 S. Forest St., Carbondale, Ill. 62901
Filed Dec. 7, 1964, Ser. No. 416,228
12 Claims. (Cl. 52—81)



1. A truss structure comprising a network of tension members and compression members; the tension members being joined in three opposed pairs of junctions, the junctions of the tension members forming vertices lying in planes defining an octahedron, said tension members of adjacent octahedra being connected, with the connections therebetween defining a common plane of said adjacent octahedra, and said compression members extending between each of said three opposed pairs of junctions of said tension members of each octahedron.

3,354,592
FRANGIBLE MASONRY UNIT

William A. Curci, 1829 Woodland Ave.,
Canton, Ohio 44709
Filed June 8, 1965, Ser. No. 462,344
4 Claims. (Cl. 52—98)

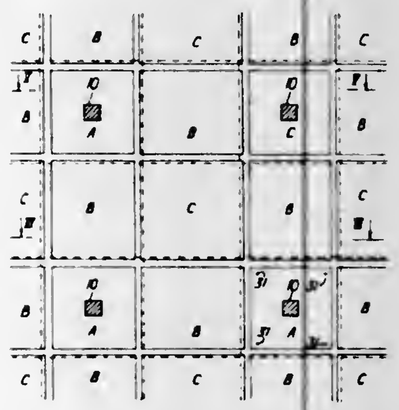


1. A full wall width masonry block adapted to enclose vertical reinforcements, electrical conduits, pipes and constructional members without cutting the block during installation and adapted to be separated by a sharp blow into half portions of conventional brick size; the block comprising a masonry body generally U-shaped in horizontal section having top and bottom surfaces and rectangularly arranged opposite side and end surfaces; the U-shape being defined by a recess, having an open end and an inner end, formed in the body extending from one end surface toward the other end surface along an axis midway between and parallel with the block side surfaces; the open end of the recess dividing said one end surface into first and second end portions spaced apart by said open recess end; the recess having opposed surfaces located on either side of said axis and parallel with each other and with said axis; the body having a flange extending between the top and bottom body surfaces and defining part of said first end portion, thereby providing a reduced opening for the open recess end between said spaced first and second end portions; the inner end of said recess having surface portions tapering from said opposed parallel surfaces toward each other and toward the other end surface; there being a shallow groove formed inward in the body from said other end surface extending between the top and bottom body surfaces along said axis and toward said recess; said shallow groove dividing said other end surface into third and fourth end portions respectively opposite said first and second end portions; said first end portion defined in part by said flange having a width equal to that of the third end portion; and the recess having a width between said opposed parallel surfaces greater than the width of the shallow groove; whereby when the body is severed into half portions by fracture between the top and bottom surfaces and between the groove and recess, one of the half portions is defined by a side surface and said first and third end portions simulating the side and two ends of a conventional brick.

3,354,593
CONCRETE BEAMLESS BUILDING CONSTRUCTION

Simon Ber Zukas, Drayton House, Gordon St.,
London, England
Filed Jan. 7, 1964, Ser. No. 336,175
Claims priority, application Great Britain, Jan. 10, 1963,
1,191/63
2 Claims. (Cl. 52—251)

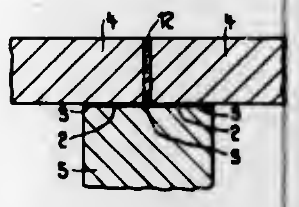
1. A beamless building floor supported on
(a) columns,
  (1) each column consisting of precast sections having an upper and a lower end, the upper end of each column section being joined to the lower end of a succeeding one of the column sections, and
  (2) each column section being of uniform cross-section throughout the length thereof but being rebated at the upper end;
(b) rectangular cantilever slabs supported directly by the columns and mutually spaced from each other to define gaps therebetween,
  (3) each cantilever slab being precast with a central hole of smaller cross-section than the cross-section of the column sections,
  (4) the cantilever slab holes being aligned with the upper ends of the column sections and the rebated upper ends thereof constituting seats for the cantilever slabs, and
  (5) said slabs having flat underfaces extending to said columns;



(c) reinforcing bars in said cantilever slabs and extending across the central holes thereof;
(d) grouting filling the central holes of the cantilever slabs and surrounding the reinforcing bars,
  (6) each cantilever slab being rendered monolithic with an associated one of the column sections by said grouting;
(e) rectangular bridging slabs spanning the gaps between adjacent ones of the cantilever slabs, the cantilever slabs providing cantilever support for the bridging slabs, and the bridging slabs defining rectangular openings therebetween; and
(f) rectangular in-filling slabs closing said openings,
  (7) all of said slabs forming continuous flat upper and under faces.

3,354,594
BUILDING STRUCTURE HAVING AN ELASTIC BEARING MEMBER IN AT LEAST ONE COURSE JOINT, METHOD FOR MAKING THE STRUCTURE AND INTERMEDIATE PLY FOR CARRYING OUT THE METHOD

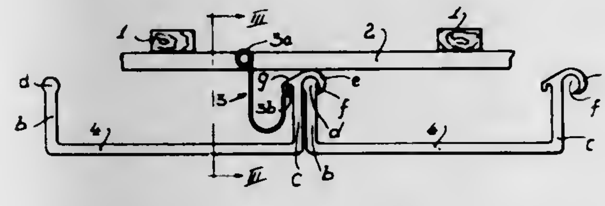
Frederick (Fredy) Kilcher, Berthastrasse 6,
Solothurn, Switzerland
Filed Sept. 1, 1964, Ser. No. 393,674
Claims priority, application Switzerland, Dec. 30, 1963,
16,053
8 Claims. (Cl. 52—251)



1. A building structure having a lower structure portion having an elongated upper bearing surface, a course joint formed between this bearing surface and an upper structure portion made of concrete cast on site, and elastic bearing means in said course joint for transmission of the load of the upper structure portion to the bearing surface of the lower structure portion, said bearing means including a central bearing strip of elastic material and one filling strip at each side of said bearing strip, such filling strips being made of a material having negligible resistance to crushing compared with that of the material of the bearing strip, and said bearing strips and filling strips being cemented to a tape carrier inserted between said upper structure portion and said bearing strip and filling strips, the bearing means formed by said tape carrier, bearing strip and filling strips completely covering the said bearing surface of the lower structure portion.

3,354,595
ACOUSTIC PANELS AND CEILINGS

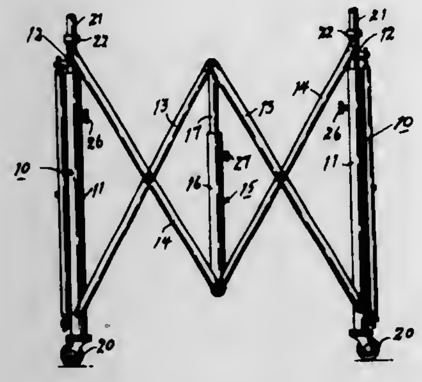
Pinhas Abciuk, Tel-Aviv, Israel, assignor to M. Abciuk & Co. Ltd., a corporation of Israel
Filed July 27, 1965, Ser. No. 475,072
Claims priority, application Israel, Nov. 5, 1964,
22,406
12 Claims. (Cl. 52—485)



1. A panel particularly useful in making acoustical ceilings, comprising a longitudinally extending bottom wall, a pair of longitudinally extending side walls, and an open top, one of said side walls being formed with a bead of increased thickness extending along the top, and the top of the other side wall being resilient and formed with a longitudinally extending recess adapted to receive by a snap-action fit the said bead of an adjacent panel, one of said side walls being further formed with an inwardly extending projection adapted to be engaged by a supporting member for supporting the panel from the ceiling.

3,354,596
COLLAPSIBLE SCAFFOLDING

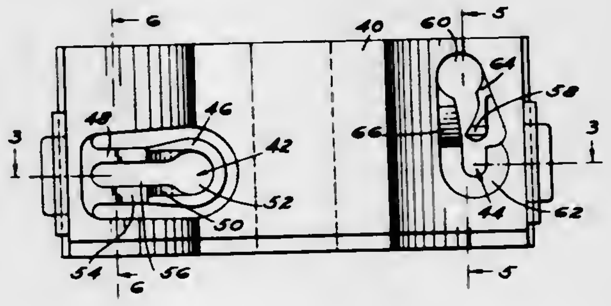
George F. Schafer, El Tahoe, Calif. (P.O. Box AV-Bijou, Lake Tahoe, Calif.)
Filed Apr. 25, 1966, Ser. No. 545,028
3 Claims. (Cl. 52—646)



1. In an articulated scaffolding assembly, the combination of a plurality of spaced and vertically extendable columns having a lower cylindrical portion for engagement with a supporting surface and a telescoping upper portion, a modified horizontally extending lazy-tong linkage forming a spacing and stabilizing connection between said vertically extending columns in which the extension of said lazy-tong linkage will determine the extension of said telescoping upper portion, a vertically extending telescoping strut interposed between the upper and the lower links of said lazy-tong linkage by which the extension of said lazy-tong linkage and the spacing of said columns may be fixed by the extension of said telescoping strut when the scaffolding is in use, a pair of crossed struts as a stabilizing means at the other opposite sides of said assembly, whereby the scaffolding may be collapsed along its lazy-tong extended dimension independently of the laterally spaced dimension of said columns, and characterized by the fact that the single stabilizing means at the opposite sides of the scaffolding assembly consists of two pivotly related diagonally extending struts, each secured at one end to the base of the laterally spaced vertically extending columns and slidably mounted at their upper end to the telescoping portion of said columns by a slidable collar through which the telescoping portion of said columns extend.

3,354,597
ADAPTER

Engelbert A. Meyer, Union Lake, Mich., assignor to Warren Fastener Corporation, Mount Clemens, Mich., a corporation of Michigan
Filed June 14, 1966, Ser. No. 557,577
11 Claims. (Cl. 52—718)



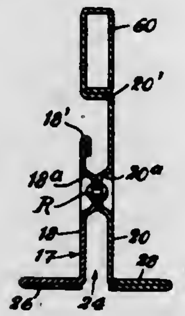
1. An adapter for attaching a hollow molding device to a support having an outer surface with a pair of spaced buttons attached thereto, said buttons having an enlarged head portion spaced from the plane of the support, comprising: a body having a pair of spaced generally perpendicularly related keyhole slots each terminating in a button seat adapted to be received beneath the head portions of said buttons, at least one of said keyhole slots having a restricted communication between the button seat and the keyhole aperture to inhibit withdrawal of the button from its seat.

3,354,598
VENTILATING CEILING AND SUSPENSION GRID THEREFOR

Merle A. Nicholson, St. Paul, Minn., assignor to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Filed July 30, 1965, Ser. No. 475,937
6 Claims. (Cl. 52—732)

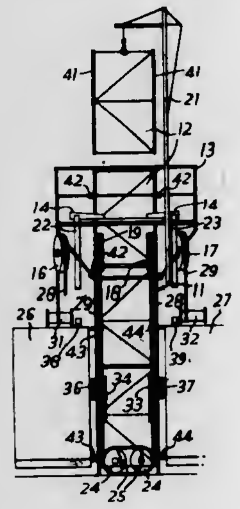
1. A grid member for a suspension system for supporting lay-in ceiling panels, comprising a structure T-shaped in cross-section having a vertical portion and oppositely directed horizontal flanges extending from the bottom of the vertical portion, said vertical portion comprising an L-shaped member consisting of one of said flanges and a vertical leg of length short of the length of said vertical portion, and further comprising a complementary space-forming web portion appreciably longer than said leg of the L and parallel to it with an intervening space opening

along the length of the grid member between said two flanges, said web member having integral therewith a rigidifying head of rectangular cross-section with one side flush with the said leg of said L-shaped member and an opposing side flush with said web portion, said L-shaped



member and said web portion being rigidly interconnected at a series of spaced locations by means crossing the space between them, said head being spaced above the upper end of said vertical leg of the L by a distance at least equal to the width of said space for establishing an air passage through said space.

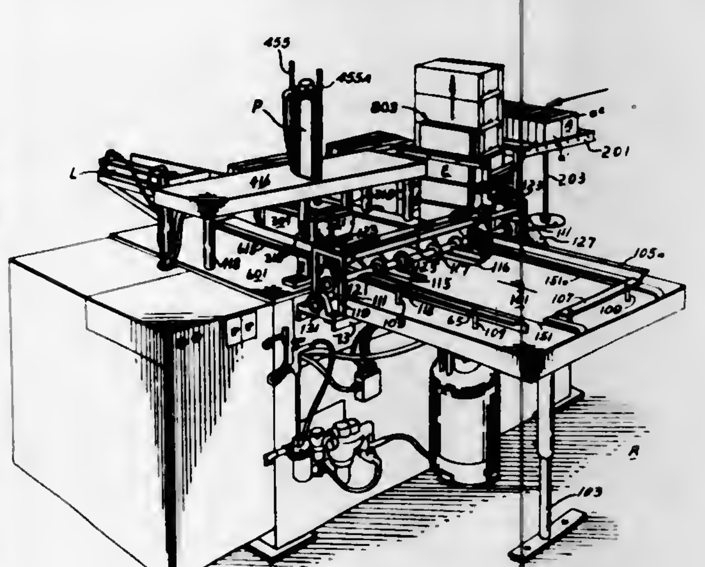
3,354,599
METHOD OF ERECTING A MAST
Derek John Martin, Much Hadham, England, assignor to D. Wickman & Company Limited, Ware, England
Filed Aug. 23, 1965, Ser. No. 481,551
Claims priority, application Great Britain, Aug. 28, 1964, 35,375/64
6 Claims. (Cl. 52—741)



1. A method of erecting a hoist on a mast, comprising the steps of

providing a hoist comprising a platform, a rotary idler mounted on said platform, a cage, a counterweight and a flexible tensile-force-transmitting member connecting the cage to the counterweight and passing over the idler to suspend the cage and counterweight therefrom,
securing the platform to the mast,
connecting opposite ends of a contractible and extendible jacking device respectively to the platform and the cage,
securing the cage to the mast below the platform,
releasing the platform from the mast,
extending the said device to raise the platform up the mast,
securing the platform to the mast,
releasing the cage from the mast,
contracting the said device to raise the cage up the mast,
repeating the six last-mentioned steps until the platform and cages reach the desired position on the mast, and
increasing the length of the said member by an amount which corresponds to the displacement of the platform up the mast.

3,354,600
BUNDLING MACHINE
Wolfgang Hoffmann, Montreal, Quebec, Canada, assignor, by mesne assignments, to International Paper Company, New York, N.Y.
Filed Dec. 8, 1964, Ser. No. 416,929
Claims priority, application Canada, Oct. 9, 1964, 913,682
27 Claims. (Cl. 53—24)

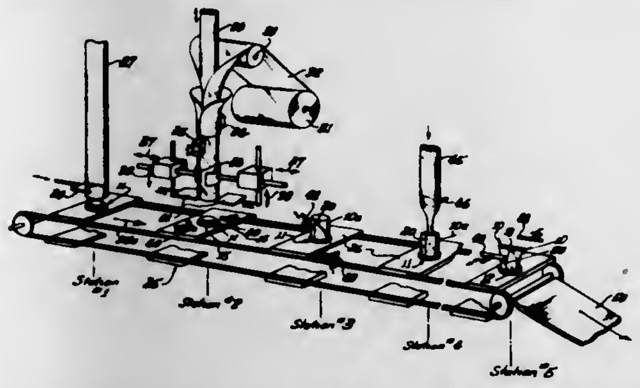


20. A method of bundling a plurality of arrays aligned to form a bundle comprising the steps of placing the array under compression, onto a sheet of substantially rectangular wrapping material and positioning it thereon to leave on each side of said array, and on one longitudinal side of the array a first longitudinal panel of wrapping material at least as large in width as the height of the array and on the other longitudinal side of the array a second longitudinal panel of wrapping material smaller in width than the combined height and width of the array, and juxtaposing, while said array is retained under compression, said side panels and said first and second longitudinal panels to the respective side of the array whereby said first and second longitudinal panels extend above the upper top edges of the array to form longitudinal first and second flaps, and the side and longitudinal panels together form pairs of front and rear corner webs extending from the corners of the array; the rear and front pairs of corner webs to the transverse sides of said array; said first longitudinal flap to the top of said array whereby said flap extends beyond the lateral edges of the array to form a pair of first longitudinal transverse flaps; said longitudinal flap to the top of said bundle whereby said second longitudinal flap extends beyond the lateral edges of the array to form a pair of second transverse flaps and said pairs of first and second longitudinal flaps to the transverse sides of said bundle.

3,354,601
METHOD OF MAKING STAND-UP PACKAGE
William S. Schneider, Glendale, and Arthur P. Corella, North Hollywood, Calif., assignors of ten percent to Wayne V. Rodgers, South Pasadena, Calif.
Filed June 21, 1965, Ser. No. 465,662
7 Claims. (Cl. 53—28)

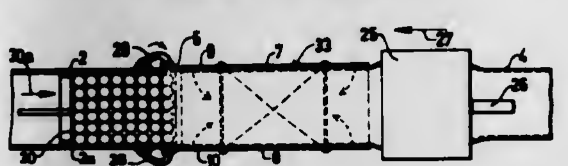
1. The method of making a container for fluent materials or the like, that comprises:

registering a rigid base and a mandrel;
moving a tube of thin, flexible film axially of the mandrel to surround a portion of the base;
attaching the tube to the base;



and separating the mandrel from the base to withdraw the mandrel from the tube.

3,354,602
METHOD FOR PACKING FOR BOTTLES AND THE LIKE
Cornelis Adrianus Doets, Leerdam, Netherlands, assignor to N.V. Vereenigde Glasfabrieken (United Glassworks) Schiedam, Netherlands, a company of Netherlands
Filed Aug. 14, 1963, Ser. No. 302,773
1 Claim. (Cl. 53—30)



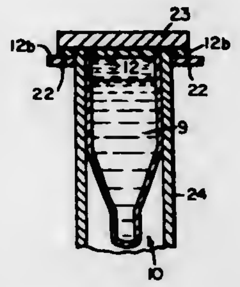
A method of containing a number of uniform articles each having rounded cross-sections so as to form a package having the shape of a rectangular parallelpiped, comprising the steps of

supporting the articles from below on a substantially horizontal support surface while arranging the articles in several rows between spaced vertical guide walls so as to form a bundle of articles having a generally rectangular parallelpiped configuration,
extending an open ended tube of flexible plastic foil horizontally from one end of said support surface, said tube having a normal cross-section less than that of said bundle of articles and a length greater than the corresponding dimension of the bundle,
supporting said tube from below and at the opposite sides thereof,
displacing said bundle longitudinally into the supported tube so that the latter is elastically stretched around said bundle to press together and prevent relative displacement of the individual articles with the ends of said tube projecting beyond the adjacent ends of the bundle, and
folding and heat sealing the projecting ends of the plastic tube so as to completely envelop said bundle.

3,354,603
METHOD OF MANUFACTURING A PLASTIC CONTAINER
Charles J. Katzew, Brockton, and Eugene F. Frost, Whitman, Mass., assignors, by direct and mesne assignments, to Brockton Contract Packaging Sales Corporation, Brockton, Mass., a corporation of Massachusetts
Filed Aug. 3, 1964, Ser. No. 386,918
5 Claims. (Cl. 53—30)

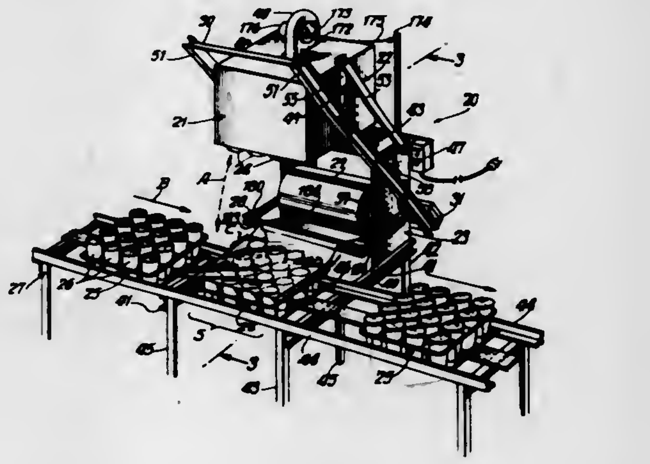
1. A method of forming an esthetically pleasing thermoplastic container comprising,

thermoforming a body section having one opened end from a sheet of thermoplastic material,
said body section having an outer peripheral wall at said opened end, said wall defining a rim having an inner perimeter and an outer perimeter,
said rim carrying a homogeneous outwardly extending flange,
enclosing said outer perimeter within a collar with said flange placed above an upper end of said collar,



placing a closure member having an outer configuration at least as great as said rim inner perimeter over said body section at said peripheral rim and heating said closure member while pressing it against said body section rim to form an outer peripheral rim on said closure member substantially equal in size and butt sealed to said peripheral rim while simultaneously separating said outwardly extending flange from said body section and severing an outer portion of said closure member which forces at least a part of said closure member past said body wall rim with said outer perimeter remaining substantially unchanged in dimension.

3,354,604
RECEPTACLE CAPPING MACHINE AND METHOD
Stephen W. Amberg, St. James, Klyde J. Vickary, Smithtown, and David L. St. Clair, Commack, N.Y., assignors to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 25, 1963, Ser. No. 311,499
36 Claims. (Cl. 53—42)



1. Apparatus for simultaneously applying individual shrink-film type closures from a common web of shrink-film material to the respective mouth rims of a plurality of open-ended receptacles, said apparatus comprising an air-heating chamber unit carrying a plurality of capping heads for applying said closures to the respective receptacles, and means between adjacent capping heads for severing said common web of shrink-film material to form individual oversized closure pieces respectively disposed on the mouth rims of said plurality of receptacles, each said capping head comprising a sealing tube having an open end for surrounding the mouth rim of one of said receptacles, and plunger means including a transversely disposed disc for engaging and holding shrink-film material against said receptacle mouth rim, said disc being smaller than said open end of the sealing tube, and

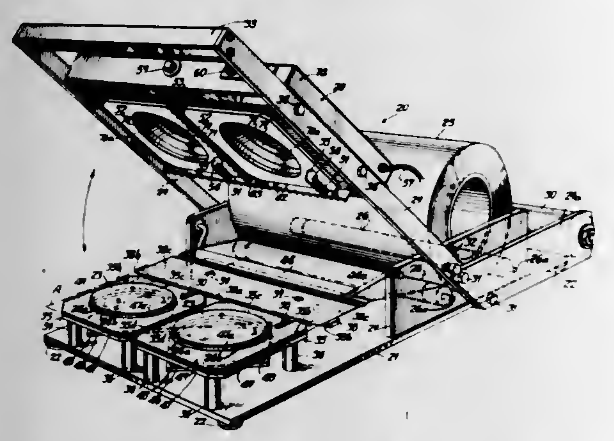
said plunger means being mounted for longitudinal movement centrally of said sealing tube from a first position of said disc wherein the disc projects a distance outwardly of said open said to a second position of said disc wherein the disc is within said sealing tube near said open end, said disc being normally disposed in its said first position and being movable from its said first position to its said second position responsive to its said engagement with said receptacle mouth rim, each said sealing tube having peripherally disposed aperture means for introducing air from said chamber unit to the interior of said sealing tube at a location between its said open end and said second position of said disc.

3,354,605
SHRINK-FILM CLOSURES

Stephen W. Amberg, St. James, N.Y., Ralph G. Amberg, Monticello, Ind., and Harold Porter, Jr., Setauket, and Julius Phillips, Bronx, N.Y., assignors to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware

Filed July 10, 1964, Ser. No. 381,739

19 Claims. (Cl. 53—42)



1. Apparatus for applying a shrink-film type closure to the mouth rim of an open-ended receptacle or the like, said apparatus comprising a pair of centrally apertured plates in initially spaced apart relation, the central apertures of said plates each being of size and configuration for accommodating said receptacle, means for moving at least one of said plates into and out of aperture-aligned cofacing contact relationship with the other, means for heating at least one of said plates, means for supporting said receptacle whereby when said plates are in their said cofacing contact relationship said receptacle is positioned within said central apertures of both said plates and the plane of the interface between said contact plates is disposed substantially parallel to, and spaced in normal direction a distance from, said receptacle mouth rim, and a knife edge attached to one of said plates, said knife edge projecting through the interface between said plates when in their said contacting relation and extending inwardly from the peripheral edge of one of said plates a distance towards, and having an inward end terminus spaced a distance from, the central aperture of the latter.

3,354,606
APPARATUS FOR AUTOMATICALLY SEALING CARTONS

Joseph A. Miller, Englewood, and Frank A. Kruglinski, North Bergen, N.J., assignors to General Corrugated Machinery Co., Inc., Palisades Park, N.J., a corporation of New Jersey

Original application Nov. 6, 1961, Ser. No. 150,236. Divided and this application June 28, 1966, Ser. No. 561,258

7 Claims. (Cl. 53—76)

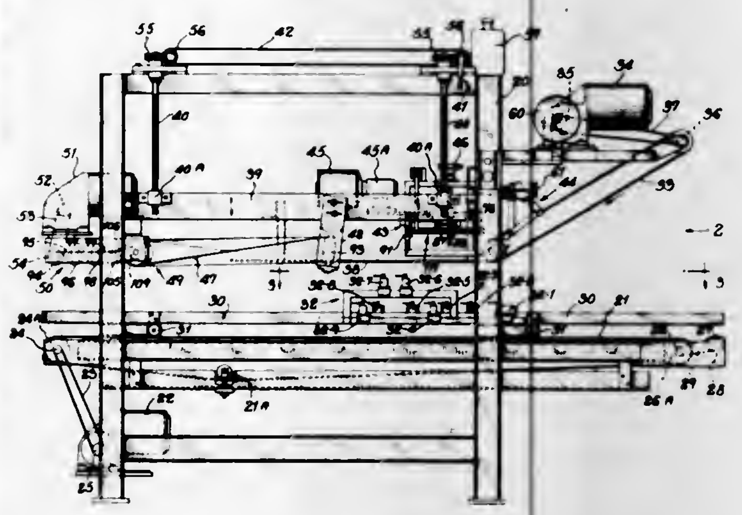
1. Apparatus for glue-sealing flapped cartons comprising:

a frame;

a conveyor within the frame; and the following elements affixed to the frame;

means for selectively applying wet glue to one of the flaps of the carton;

means for selectively applying quick setting plastic adhesive to one of the flaps of the carton;



means for folding the flaps such that the wet glue and the quick setting plastic adhesive lie between the folded flaps;

means for holding the folded carton closed until the quick setting plastic adhesive sets;

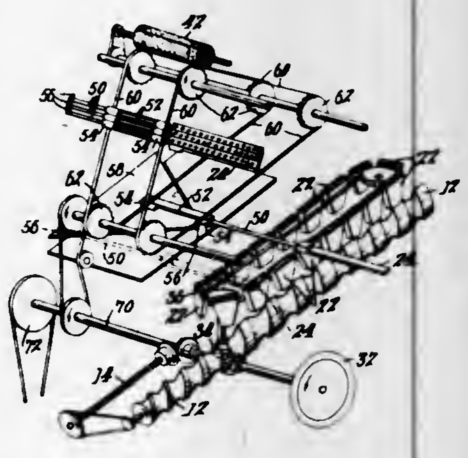
said conveyor moving the cartons such that the foregoing means act on the cartons as the cartons move along said conveyor.

3,354,607
SLAT TYPE COUNTING AND FILLING MACHINE

Eino E. Lakso, % Lakso Company Inc., Fitchburg, Mass. 01420

Filed May 20, 1965, Ser. No. 457,423

17 Claims. (Cl. 53—78)



1. An article counting and filling machine comprising a series of slat-like members, means supporting said members, means moving said members in a closed path in a direction generally transverse to the lengths thereof, each slat being provided with a series of cavities therein,

means to place articles in the cavities at one area of said path, means to invert the slats, means retaining the articles in the cavities during the inversion of the slats,

means moving a series of containers in an in-line relationship generally parallel to the direction of motion of the slats,

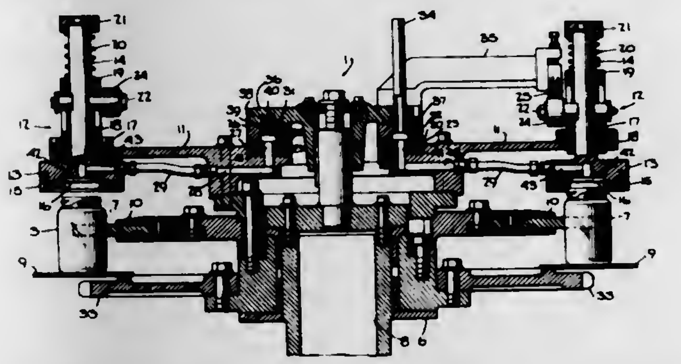
and a series of chutes at another area of said path, means supporting said chutes in position above the containers, means moving said chutes in concert with said containers, and means providing for the emptying of the articles from said cavities into said chutes and thence into said containers while the slats are inverted.

3,354,608
PURGING MECHANISM

Alexander W. Hart and George J. Foss, Lancaster, Ohio, assignors to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

Filed Nov. 14, 1963, Ser. No. 323,800

2 Claims. (Cl. 53—87)



1. An air purging unit for removing air from the headspace of containers comprising a plurality of purging heads for said containers, a manifold comprising at least one evacuation means for evacuating air from each container, at least one injecting means adjacent said evacuating means for injecting a fluid into a container, means for moving said purging heads and said containers past said evacuating means to cause air to be evacuated therefrom through said purging heads and for moving said containers past said injecting means to cause a fluid to be injected into the container headspace through said purging heads, each of said purging heads having a stationary flat planar screen thereacross, a sealing element below said screen adapted to seal the container during said evacuation and injection, said screen having more lines in one direction than in the other direction to form slots, said container being subjected to said evacuating means for a longer continuous period of time than it is subjected to said injecting means.

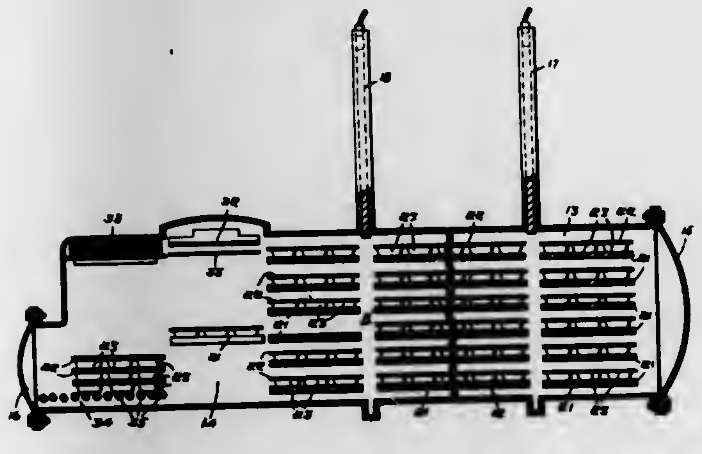
3,354,609
FREEZE DRYING METHOD AND APPARATUS

Wilhelm Nerge, Rodenkirchen, near Cologne, and Hanns Eilenberg, Cologne-Ehrenfeld, Germany, assignors to Leybold-Anlagen Holding A.G., Neugasse, Switzerland, a corporation of Switzerland

Filed Apr. 3, 1964, Ser. No. 357,321

Claims priority, application Germany, Apr. 6, 1963, L 44,579

5 Claims. (Cl. 53—112)



1. Apparatus for freeze-drying moisture-containing materials placed in heat-conductive traylike product containers, wherein the containers include bowl-like depressions and surrounding ridges, said container ridges being provided with means engageable by a conveyor means; said apparatus comprising:

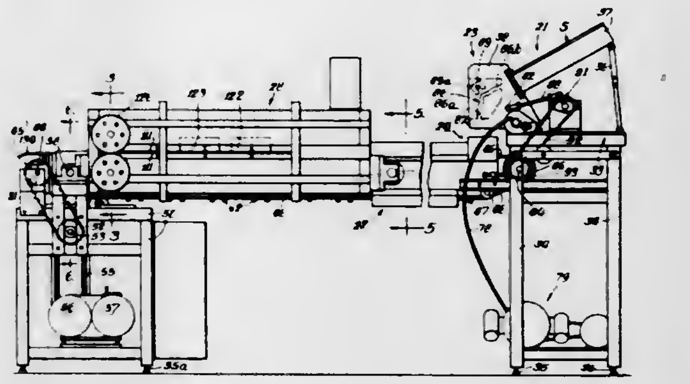
chamber means adapted for evacuation to below atmospheric pressure; heating means positioned within said chamber means, for heating the product containers and the product to be freeze dried; sealing means positioned within said chamber means for vacuum-tightly sealing the product containers; conveyor means positioned within said chamber for engaging the ridges of product containers to transport the containers in proximity to said heating means and to said sealing means.

3,354,610
BACKING BOARD HANDLING SYSTEM

James S. Stelzer, Fort Wayne, Ind., assignor to Peter Eckrich & Sons., Inc., a corporation of Indiana

Filed Aug. 13, 1964, Ser. No. 389,356

9 Claims. (Cl. 53—128)



9. A system for applying a backing board to an envelope so that the backing board has a flap portion folded to enclose an edge portion of the envelope while forming the backing board from a backing board blank having a continuous backing surface and a fold line defining a flap beyond said backing surface, which system comprises: conveyor means having a receiving station and a discharge station and means for supporting and carrying backing boards at equally spaced positions therealong from the receiving station to the discharge station, delivery means for delivering backing board blanks intermittently to the conveyor at said receiving station to be carried to said discharge stations, means associated with said conveyor for folding the flap of the blank along said fold line to an upwardly disposed position, means defining an envelope loading station intermediate said folding means and said discharge station at which said folded blank receives an envelope with an edge disposed on said backing surface adjacent said flap, means intermediate said loading station and discharge station for receiving the loaded backing board and folding said flap downward along said same fold line over the envelope edge to enclose the end edge of the envelope at said fold line with the resulting formed backing board backing the envelope.

3,354,611
PACKAGING

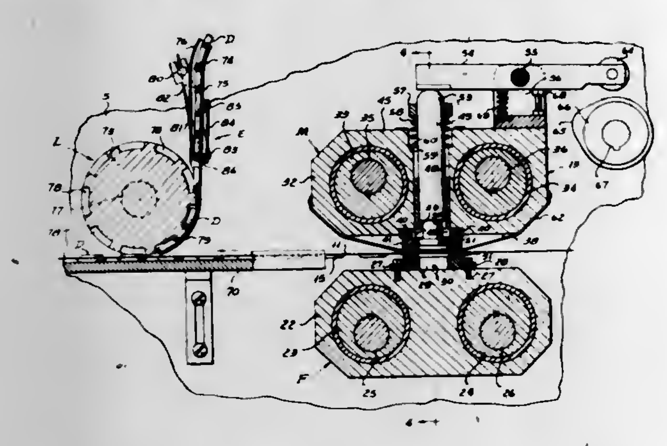
Alvin M. Powell, North Caldwell, N.J. (189 Sargeant Ave., Clifton, N.J. 07013)

Filed Mar. 17, 1964, Ser. No. 352,532

11 Claims. (Cl. 53—184)

1. In a machine for packaging commodities in sealed pockets of packages formed from layers of packaging material; means for forming projections having commodity receiving recesses on layers of packaging material including spaced die members between which the layers travel at a continuous and constant speed, means

for eccentrically moving said die members over a curved path into and out of projection forming position at a speed consonant with said first mentioned speed, and intermittently operated means associated with said first mentioned means for rendering said die members effective for forming the projections upon the layers when said die



members move into said position, means for inserting commodities into the recesses of one of the layers; and means operable for moving said layers at said speed and sealing them together about projections arranged on one layer in paired and opposed relation with those of the adjacent layer containing commodities to provide sealed pockets in packages formed from the sealed layers.

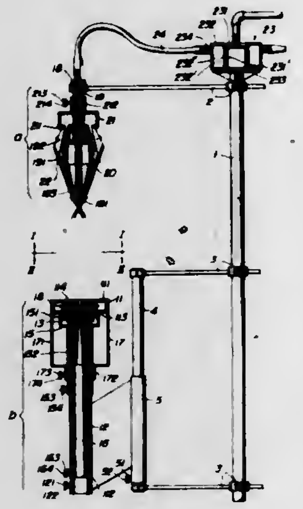
3,354,612
APPARATUS FOR AUTOMATICALLY WRAPPING RAYON CAKES

Shigeru Matsuoka, Shohachi Masai, and Shigemitsu Kawakami, Nobeoka-shi, Japan, assignors to Asahi, Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan, a corporation of Japan

Filed Dec. 23, 1964, Ser. No. 420,571

Claims priority, application Japan, Dec. 30, 1963, 38/71,659

3 Claims. (Cl. 53—204)



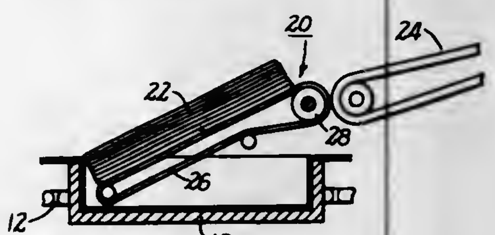
1. A wrapping unit for automatically wrapping tubular rayon cakes with corrugated protective nets comprising an upper mechanism including a support sleeve and a pusher ring at the lower end of said support sleeve, said ring having a diameter slightly smaller than the inner diameter of the cake, a plurality of wing assemblies pivotally connected to the outer periphery of the pusher ring and a wing actuator ring slidably mounted on the support sleeve and including a lower end portion for contacting the wing assemblies and pivotably moving the same between inward and outward positions; a lower mechanism arranged coaxially with said upper mechanism and including a tubular support sleeve, an inner tube slidably fitted in said support sleeve for receiving a corrugated net in cylindrical form and for pushing the corrugated net upwardly from the support sleeve, a net opener rod slidably mounted in said inner tube for lifting an end of the net from said inner tube, said opener rod including a plurality of resilient strips in the upper portion thereof for expanding the end of the net lifted from the inner tube, the wing assemblies being insertable into the expanded end of the net when in inward position and expanding said end to a widened cylindrical form when in outward position, an elevating sleeve slidably mounted on said tubular support sleeve and carrying a tubular lever actuating member in the upper portion thereof between a raised position and a lowered position, an outer tube constituted by a base portion slidably mounted on said elevating sleeve and a tubular portion having an inner diameter slightly larger than the outer diameter of the cake, a cake support connected to the top of said tubular support sleeve and slidably fitted in said tubular portion of the outer tube sleeve, a friction ring mounted on the top end of the inner tube and a clamp lever having a central portion pivotally supported on the under surface of said cake support and a lower portion enclosing said friction ring, said clamp lever being engageable by the tubular lever actuating member with the latter in the lowered position to clamp a portion of the net between itself and the friction ring and enable another portion of the net to be folded down over the outer tube, the outer tube being raisable to lift the folded over portion of the net and position it around a cake placed on the cake support; and a third mechanism for causing axial movements of said wing actuator ring, tubular support sleeve, inner tube, net opener rod, elevating sleeve and support sleeve in a predetermined time relation such that a first end portion of the corrugated net is expanded by the wing assemblies and folded down over the outer tube after which the outer tube is raised and the folded over portion is positioned around a cake placed on the cake support whereafter the other end portion of the corrugated net is pushed from the support sleeve by the inner tube and turned inside out, thereafter expanded by the net opener rod and then widened by the wing assemblies inserted therein and moved outwards after which the upper and lower mechanisms are moved towards one another so that the widened end of the net is folded down over the cake and over the already folded end of the net, the upper and lower mechanisms then moving to their original upper and lower positions for resumption of operation with another net and another cake.

3,354,613
PACKAGING APPARATUS WITH IMPROVED PRODUCT LOADER

George W. Anderson, Little Falls, John R. Harder, Cedar Grove, and Reid A. Mahaffy, Montclair, N.J., assignors to Mahaffy & Harder Engineering Company, Totowa, N.J.

Filed Apr. 28. 1965, Ser. No. 451,543

8 Claims. (Cl. 53—251)



1. Packaging apparatus of the type including a plurality of package supporting elements mounted in an endless loop for progressive movement around that loop, means for moving said package supporting elements with an intermittent indexing motion so that various package forming operations can be performed during the dwell period

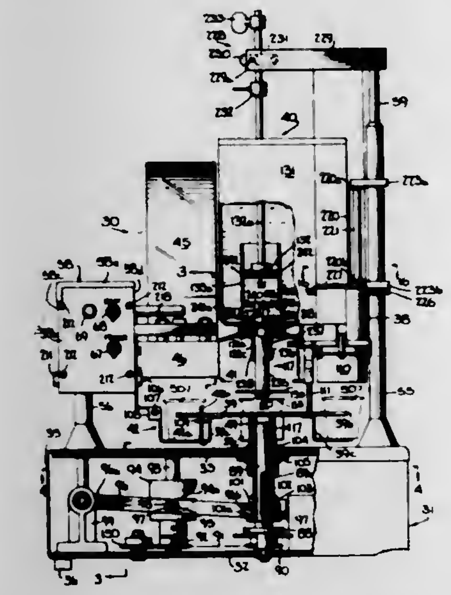
between each advancing step, said elements having means to hold package sections shaped to receive products to be packaged, said elements in a portion of said loop being arranged to support said package sections with the openings thereof facing upwards to receive products from above; a conveyor arranged to bring the products to a position above said loop portion and including endless belt means adapted to receive and support the products and to transfer them to a position immediately above one of the package sections in said loop portion, means mounting the output end of said conveyor belt means for translatory movement having a vertical component to shift said output end down towards the waiting unfilled package section, and control means synchronized with the movement of said endless loop of elements for effecting said translatory movement towards the waiting package section to deposit therein the products as they leave said conveyor, said control means including means operative to shift said conveyor belt means down towards the waiting package section during the dwell period between indexing steps.

3,354,614
DISPENSING, FILLING AND CAPPING OF PORTION CONTAINERS

David L. St. Clair, Commack, Stephen W. Amberg, St. James, Thomas E. Doherty, Stony Brook, and Julius Phillips, Bronx, N.Y., assignors to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 8, 1964, Ser. No. 402,496

40 Claims. (Cl. 53—282)



1. A machine for dispensing, filling and capping receptacles, said machine comprising a base having receptacle transport means mounted for movement thereon, said transport means having means providing a plurality of receptacle receiver stations thereof, respective receptacle dispensing, filler, and shrink-film capping apparatus mounted on said base in spaced apart relation with respect to each other in said operational sequence and adjacent said receptacle transport means, and drive means mounted on said base including means for moving said receptacle transport means to respectively and successively position its said receptacle receiver stations in operational alignment with said receptacle dispensing, filler and shrink-film capping apparatus, said receptacle dispensing apparatus having actuating means actuated by movement of said receptacle transport means to position at least one receptacle on each said receptacle receiver station when the receiver station is in said operational alignment therewith, and said receptacle filler and shrink-film capping apparatus being respectively adapted for actuation upon contact of a receptacle on one of said receptacle receiver stations when in said operational alignment therewith.

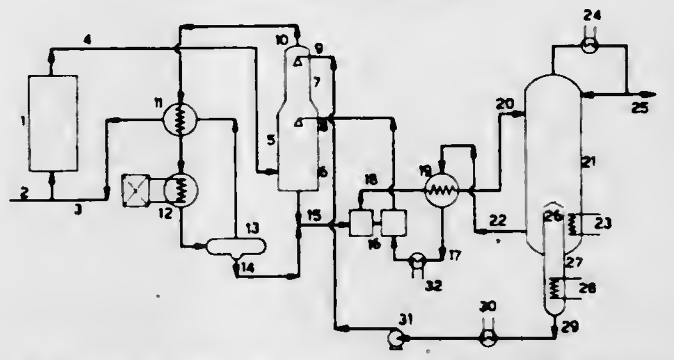
3,354,615
PROCESS FOR THE SEPARATION OF AMMONIA PRODUCED IN MEDIUM AND LOW PRESSURE SYNTHESIZING PLANTS

Mario Guadalupi, Milan, Italy, assignor to SNAM S.p.A., Milan, Italy, a company of Italy

Filed Aug. 2, 1965, Ser. No. 476,560

Claims priority, application Italy, Aug. 7, 1964, 17,230/64, Patent 736,029

3 Claims. (Cl. 55—40)



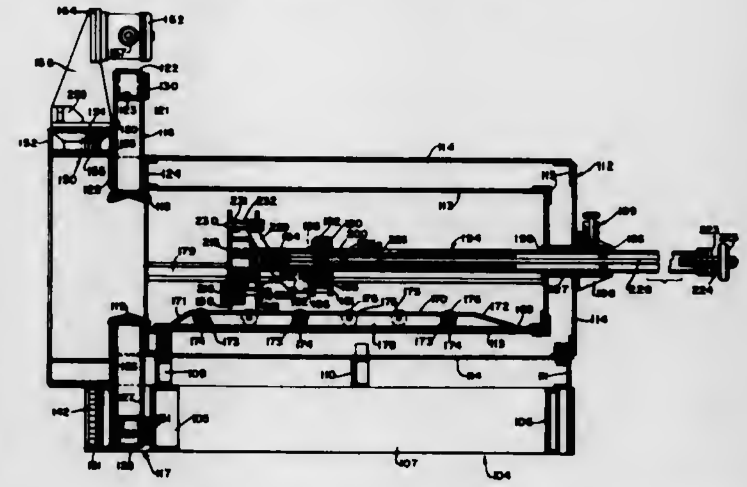
1. A process for the separation of ammonia produced from hydrogen and nitrogen by synthesis at pressures between 100 and 250 atmospheres, comprising subjecting the reaction products of synthesis to absorption in an absorption system by introducing into the reaction products serially a first absorbing solution having an ammonia content of from 15% to 40% by weight and a second absorbing solution having an ammonia content of from 1% to 10% by weight, while maintaining the synthesizing pressure and a temperature of from 0° to 100° C., cooling the head gas from the absorption system at a temperature between —20° and —30° C., separating the condensed vapors formed by the ammoniated solution from the cooled gas, and recycling the thus purified gas.

3,354,616
METHOD AND APPARATUS FOR LOADING AND UNLOADING A FILTER FOR RADIOACTIVE GASES

Jean Claude Lucas, Fontenay-aux-Roses, France, assignor to Saint-Gobain Nucleaire, Courbevoie, France

Filed Nov. 20, 1964, Ser. No. 412,723

35 Claims. (Cl. 55—96)



1. The method of removing from a filter casing, through a loading opening in a wall thereof, a filter element for radioactive gases passed through said casing, comprising, fixing the mouth portion of a sack of plastic sheet material to and about the opening, to seal the same, withdrawing the filter element through the opening and into the sack, sealing the sack between the filter element therein and the mouth portion of the sack, and severing the sealed area of the sack to leave a first portion of said area sealing the element within the sack, and a second portion of said area sealing the loading opening of said casing.

22. In a filtering caisson for radioactive fluids, a filter casing including a vertical front wall, a vertical lead shielding wall parallel with and adjacent said vertical wall, there being first and second registering loading openings in said walls, respectively, a circumferentially continuous sheet metal cover support fixed with and about said first opening in registration therewith and extending through said second opening to the front side of said second wall, to terminate in a circumferentially corrugated flange, a sack of flexible plastic material having its mouth portion fitting over and about said flange and the corrugations thereof, the body of said sack being folded into the space defined and surrounded by said flange, and an imperforate cover including a skirt portion fitting snugly over and about said flange and the mouth portion of said sack.

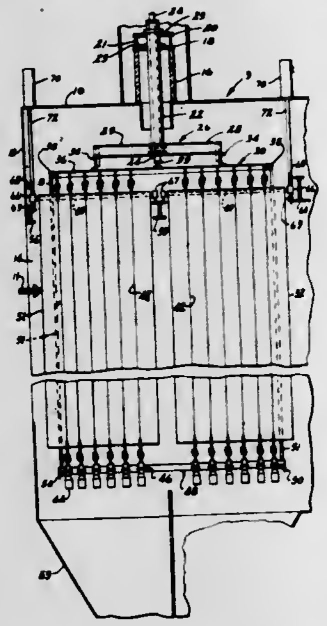
3,354,617

CORONA SHIELD FOR IONIZER WIRES

Edward C. Hoisington and Clement L. Martzolff, Detroit, Mich., assignors to American Standard Inc., a corporation of Delaware

Filed Oct. 14, 1966, Ser. No. 586,871

10 Claims. (Cl. 55—147)



1. An electrostatic precipitator comprising spaced apart vertically extending ionizer wires and spaced apart vertically extending collector elements located to collect particles ionized by said wires; said collector elements having their upper edges located below the upper ends of the wires, and their lower edges located above the lower ends of the wires; an overhead support mechanism for the ionizer wires substantially above the upper ends thereof; and means connected to the lower end of each wire and tensioning each of said wires for maintaining each wire taut; means connecting the upper end of each of said wires to said support mechanism comprising a tubular corona shield element telescoped onto the upper end portion of each of said wires, each tubular shield element and the contained section of the wire having portions thereof within and portions thereof, bent out of the axis defined by the respective taut wire and said bent portion defining an engagement surface resting on the support mechanism.

3,354,618

GAS EXCHANGER

Angelo Dounoucos, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Aug. 26, 1965, Ser. No. 482,770

3 Claims. (Cl. 55—158)

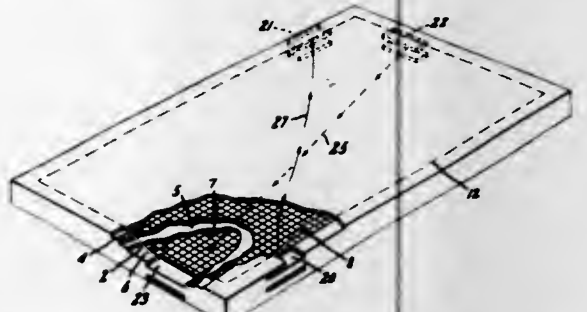
1. A gas transfer apparatus comprising

a plurality of imperforate membranes placed in closely spaced, substantially parallel relationship to each other to define flow areas therebetween,

means defining a first passage for directing flow of a feed fluid in proximity to at least one of said membranes, which fluid is composed of at least one gas which readily permeates said membrane,

means defining a second passage for directing flow of a receiving fluid in proximity to the other side of said membrane in a direction substantially opposite the direction of flow of the feed fluid, for providing a partial pressure differential that results in an optimum gas transfer relationship, said first and second passage means comprising a woven screen lying between said membranes for spacing said membranes from each other, and

sealing means comprising a siloxane potting compound for securing both said means defining the first passage and said means defining the second passage to said membrane in a manner whereby fluid must permeate the membrane to travel from the first passage to the second passage.



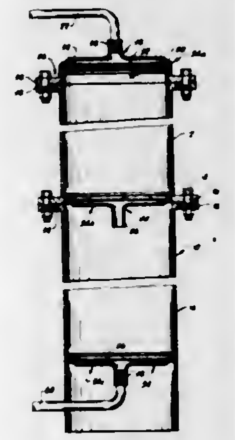
3,354,619

VAPOR PHASE CHROMATOGRAPHY SYSTEM

Alfred B. Carel, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Aug. 23, 1963, Ser. No. 304,103

14 Claims. (Cl. 55—197)



1. A vapor phase chromatographic system comprising:

(a) an elongated tubular column having an open inlet end and an open discharge end;

(b) a first gas sparging device positioned at the inlet end of said column means and extending transversely across the axis of said column, said first gas sparging device comprising:

  (1) a generally funnel-shaped member having a spout extending away from said column in coaxial alignment with said column; and

  (2) a porous disc positioned in said funnel-shaped member across the axis of said funnel-shaped member;

(c) a second gas sparging device positioned intermediate the ends of said tubular column and extending transversely across the longitudinal axis thereof, said second gas sparging device comprising:

  (1) a generally funnel-shaped member having a spout extending toward the discharge end of said column means in coaxial alignment with said column; and

  (2) a porous disc positioned in said funnel-shaped member across the axis of said funnel-shaped member;

(d) a third gas sparging device positioned at the lower end of said tubular column and extending transversely across the axis of said tubular column, said third gas sparging device comprising:

  (1) a generally funnel-shaped member having a spout extending toward the discharge end of said column in coaxial alignment with said tubular column; and

  (2) a porous disc positioned in said funnel-shaped member across the axis of said funnel-shaped member;

(e) means for introducing a gaseous mixture to the spout of said first gas sparging device; and

(f) a conduit connected to the spout of said third gas sparging device for receiving gas eluted from said tubular column means through said third gas sparging device.

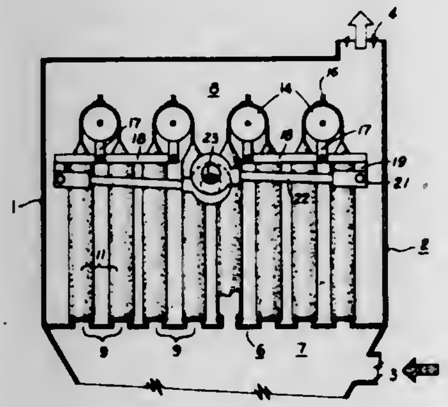
3,354,620

DUST COLLECTOR APPARATUS

Howard O. Scholl, Louisville, and Philip L. Hyatt, Prospect, Ky., assignors to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

Filed Jan. 15, 1965, Ser. No. 425,890

4 Claims. (Cl. 55—304)



1. Dust collector apparatus comprising: a filter bag housing including upstream dirty gas inlet means and downstream clean gas outlet means; horizontal partition means extending transverse said housing to divide said housing into a dirty gas plenum communicating with said dirty gas inlet means of said housing and a clean gas plenum communicating with said clean gas outlet means of said housing; said partition means having at least one pair of spaced rows of spaced and aligned apertures between said dirty gas and clean gas plenums; at least one pair of spaced rows of spaced and aligned filter bags vertically disposed in said clean gas plenum in spaced parallel relationship, said filter bags having closed upper end portions and open lower end portions connected to said apertures of said partition to communicate with said dirty gas plenum; a bag support means having its central longitudinal axis extending in a plane parallel to and intermediate said pair of spaced rows of filter bags above the closed upper ends of said bags, said bag support means having a circular cross-sectional contour with a maximum chord substantially equal to the distance between center lines of said rows of apertures in said partition; means to connect the closed upper portions of said pair of spaced rows of filter bags to said support means along the uppermost half thereof; and means to rotate said bag support means about its central longitudinal axis in oscillatory fashion to shake said filter bags supported thereby only in a substantially gentle lineal up and down fashion.

3,354,621

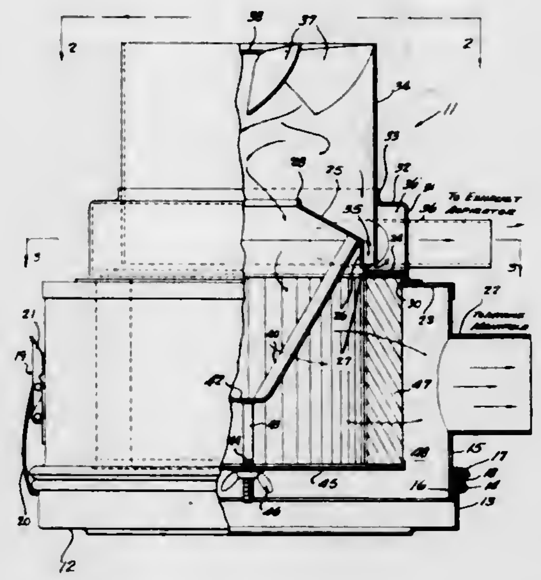
AIR CLEANER

Elias W. Wilson, Royal Oak, Mich.

(8 Dowd Court, Kimball, Nebr. 69145)

Filed Feb. 13, 1964, Ser. No. 344,581

8 Claims. (Cl. 55—337)



1. An air cleaning device for an internal combustion engine or other air-using device comprising a supporting base, a housing sealingly mounted on said base and having a top wall and an annular outer wall provided with an air outlet, said housing having an upstanding air inlet conduit including means for imparting centrifugal force, an annular connection collar securing the lower portion of said inlet conduit to the housing top wall and being spaced outwardly from said lower portion to define a dust collection space outwardly adjacent said inlet conduit, a dust outlet conduit connected to said collar, a downwardly divergent annular baffle member rigidly mounted axially in the lower portion of said inlet conduit and having a depending bottom marginal portion spaced inwardly from the bottom margin of said inlet conduit to define an annular passage leading downwardly to the bottom edge of said inlet conduit, outwardly-extending wall means merging with said depending marginal portion and said connection collar and spaced beneath the bottom edge of the inlet conduit to define an annular passage leading to said dust collection space, and an annular porous filter cartridge axially mounted in said housing below said baffle member constructed and arranged to constrain the flow of gas therethrough before passing through said air inlet.

3,354,622

UNIT FILTER ASSEMBLY

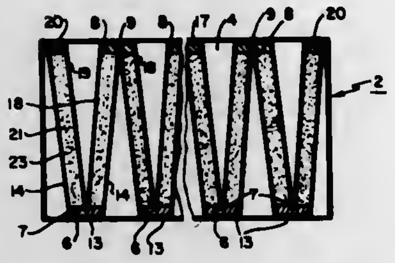
David J. Murphy, Jr., Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

Filed Aug. 2, 1965, Ser. No. 476,289

10 Claims. (Cl. 55—484)

1. A unit filter assembly comprising: an open-ended frame member having an upstream dirty gas inlet and a downstream clean gas outlet; a first set of spaced parallel support bars extending transversely across said dirty gas inlet; a second set of spaced parallel support bars extending transversely across said clean gas outlet in offset

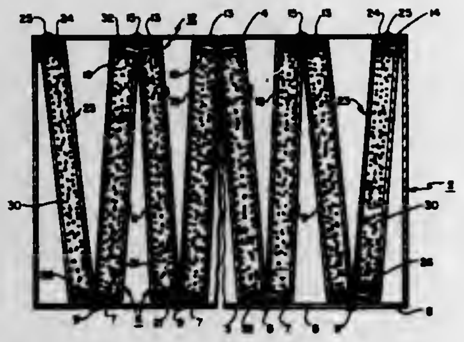
relation to said first set of support bars; a first set of longitudinally-extending plenum-forming members of substantially U-shaped cross section, each having its base portion co-extensive with and surrounding one of said first set of support bars, said first set of plenum-forming members having perforated flank portions extending from said dirty gas inlet toward said clean gas outlet with the ends thereof abutting the faces of said second set of support bars; a second set of longitudinally-extending plenum-forming members of substantially U-shaped cross section, each having its base portion co-extensive with and surrounding one of said second set of support bars, said second set of plenum-forming members having perforated flank portions extending from said clean gas outlet toward said dirty gas inlet with the ends thereof abutting the faces of said first set of support bars, the flank portions of said first and second set of U-shaped plenum-forming members being spaced from each other to form flow through plenum chambers, therebetween, the ends of said plenum chambers being determined by said support bars; and filter media material disposed within said flow through plenum chambers in sufficient quantities to substantially fill the same.



3,354,623

UNIT FILTER ASSEMBLY

Joseph R. Keller, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,224
4 Claims. (Cl. 55—484)

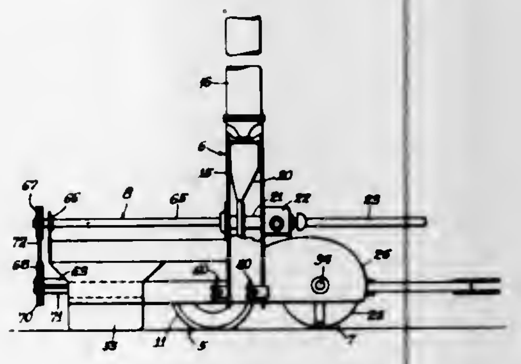


1. A unit filter assembly comprising: an open-ended frame member having an upstream dirty gas inlet and a downstream clean gas outlet; a first set of spaced, longitudinally-extending plenum-forming members of substantially U-shaped cross section disposed within said frame member, each having a base portion extending transversely across said dirty gas inlet and having perforated flank portions extending from said dirty gas inlet toward said clean gas outlet; a second set of spaced, longitudinally-extending plenum-forming members of substantially U-shaped cross section disposed within said frame member, each having a base portion extending transversely across said clean gas outlet and having perforated flank portions extending from said clean gas outlet toward said dirty gas inlet, the flank portions of said first and second sets having inwardly turned flanged members of smaller extent than said base portions engaging against flank portions of an opposite set of plenum-forming members to space adjacent flank portions of said first and second sets and form perforated plenum chambers therebetween; and filter media material disposed within said perforated plenum chambers in sufficient quantities to substantially fill the same.

3,354,624

FORAGE CUTTING AND DEPOSITING APPARATUS

Manfried L. Hoch, Lockport, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 1, 1965, Ser. No. 429,270
1 Claim. (Cl. 56—24)

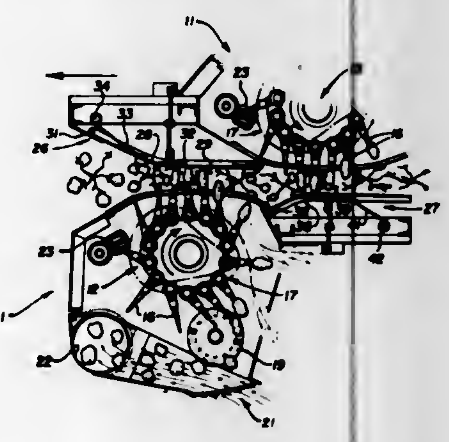


A combination forage harvester and blower mechanism comprising a fan housing having upright walls and an intervening circumferential wall with a generally tangential crop outlet, an inlet opening in each wall communicating with the interior of the housing, a conveyor in delivering relation of material to one opening, a crop harvesting mechanism in delivering relation to the other opening including chopping and air generating means adapted in the attached position to the blower mechanism to introduce an air flow under pressure into the housing to augment the discharge of material from the housing through the outlet attendant to material being fed into the housing by said conveyor.

3,354,625

AUTOMATIC PRESSURE DOOR CONTROL FOR COTTON PICKERS

Clyde L. Taylor, 1545 S. Chinowth Road, Visalia, Calif. 93277, and Russell E. Jordan, 285 W. I St., Brawley, Calif. 92227
Filed Apr. 9, 1964, Ser. No. 358,599
40 Claims. (Cl. 56—44)

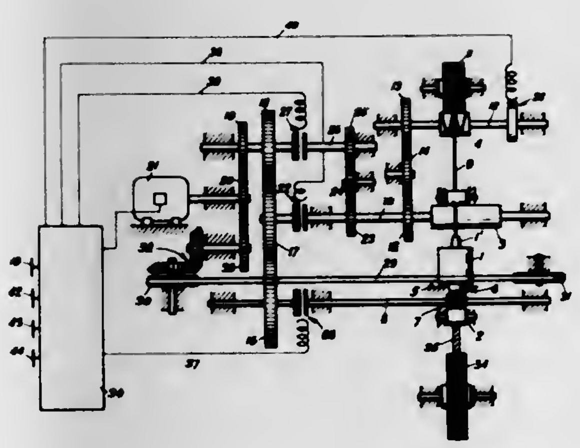


25. In a housing structure for a cotton harvester having a fore-and-aft extending plant receiving passage, the improvement comprising: upright wall structure adjacent to and defining at least a portion of one side of the passage composed of upper and lower vertically disposed fore-and-aft extending plates; means mounting the upper plate on the housing structure for lateral movement as respects the passage; and power means on the housing structure connected to the upper plate adjustable to effect positive lateral positioning of the latter relative to the passage.

3,354,626

METHOD AND APPARATUS FOR STOPPING AND STARTING A SPINNING MACHINE

Leopold Čížek, 412 Lukesova, Usti nad Orlici, Czechoslovakia; Zdeněk Šilar, 1043 Na Bile, Chocen, Czechoslovakia; and Julius Varga, 1029 Dr. Koraba, and Miroslav Zoubele, 195 Zizkova, both of Usti nad Orlici, Czechoslovakia
Filed Sept. 26, 1966, Ser. No. 582,473
17 Claims. (Cl. 57—78)



1. A method of terminating spinning operations of a spinning means by the steps of: stopping the feeding of fibers into said spinning means so that only the fibers remaining in said spinning means are spun into a yarn end; stopping forward transport of the spun yarn; and stopping operation of said spinning means; and of starting a spinning operation by the steps of: starting operation of said spinning means; transporting the spun yarn end back into said spinning means; feeding fibers into said spinning means so that the previously spun yarn end is connected with the yarn newly spun of fed fibers; and transporting the spun yarn forwardly to a take-up station.

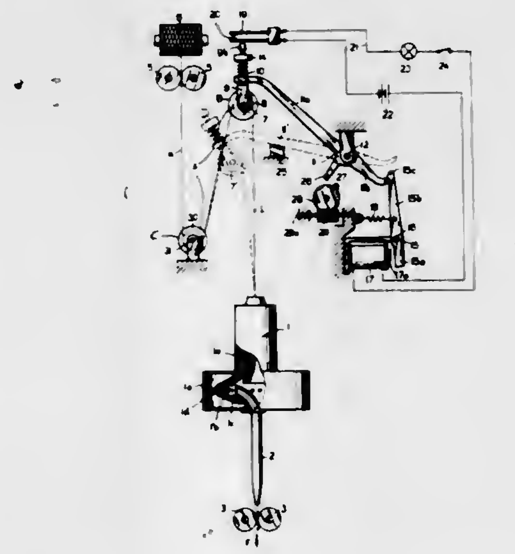
3,354,627

YARN CONTROL APPARATUS

Leopold Čížek, Usti nad Orlici, Zdeněk Šilar, Chocen, Miroslav Zoubele, Ceska Trebovz, and Jarmila Kubíčková, Usti nad Orlici, Czechoslovakia, assignors to Vyzkumny ustav bavlnarsky, Usti nad Orlici, Czechoslovakia
Filed Feb. 1, 1966, Ser. No. 524,223
19 Claims. (Cl. 57—81)

1. Yarn control apparatus comprising, in combination, yarn delivering means for delivering a moving yarn; receiving means for receiving the moving yarn; yarn guide means located between said delivering means and said receiving means for forming a loop in the yarn portion between the same, said yarn guide means having an actuated position for forming a larger loop in said yarn portion, a control position for forming a smaller loop, and a normal intermediate position for forming a loop of intermediate size; biassing means acting on said yarn guide means for holding the same in said normal position while a normal tension prevails in said yarn portion, and for moving said yarn guide means to said actuated position when the yarn tension drops; and operating means for causing movement of said yarn guide means to said control position and being actuated by said yarn guide means in said actuated position so that when the yarn tension drops due to an interruption of the yarn delivery, and said yarn guide means assumes said actuated position, said operating means causes movement of said yarn guide means to said control position whereby the size of the loop is reduced and part of said yarn portion is returned to said yarn delivering means for connection with the yarn being delivered by the same.

18. Yarn control apparatus comprising, in combination, means for spinning and twisting filaments into a yarn, and producing suction; take-up means for winding up the yarn; yarn guiding means located between said rotary means and said take-up means for forming a loop in the yarn portion between the same, and including a stationary yarn guide and movable yarn guide means, said movable yarn guide means having an actuated position farther spaced from said rotary means for forming a larger loop, and a normal position for forming a loop of selected size; an operating member having a normal position supporting said yarn guide means for movement between said positions, and having an operative position supporting said yarn guide means in a control position closer to said rotary means for forming a loop smaller than said selected size; biasing means supported on said operating member for urging said yarn guide means to said actuated position; electromagnetic means for causing movement of said operating member from said normal position to said operative position; and a switch for energizing said electromagnetic means and being operated by said yarn guide means in said actuated position so that when the yarn tension drops and said yarn guide means moves to said actuated position, said electromagnetic means causes movement of said operating member to said operative position whereby said yarn guide means assumes said control position, the size of the loop is reduced, and part of said yarn portion can be drawn by suction into said rotary means for connection with the yarn spun by the same.



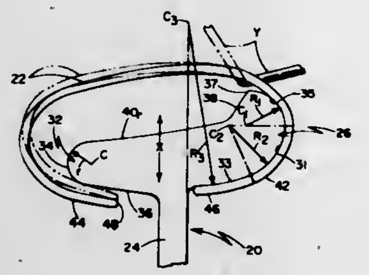
3,354,628

SPINNING AND TWISTING RING

Kurt Constantine Chilpan, Seneca, S.C., assignor to Maremont Corporation, Chicago, Ill., a corporation of Illinois
Filed May 11, 1967, Ser. No. 637,812
7 Claims. (Cl. 57—119)

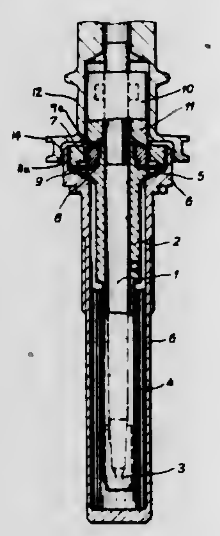
1. A twisting ring having
a substantially vertically disposed annular web and
a top flange on said web having inwardly and outwardly extending flange portions

said inwardly extending flange portion having a traveler engaging inner surface with
a median radius of curvature of the median area of said surface equal to substantially three-eighths to five-eighths of the vertical dimension of said inwardly extending flange portion



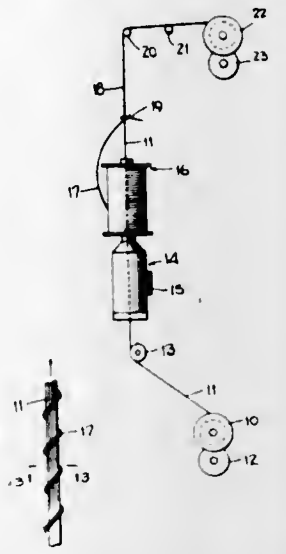
a lower radius of curvature of the lower area of said surface equal to substantially two to four times that of said median radius and
an upper radius of curvature of the upper are of said surface equal to substantially one-half to five-sixths times that of said median radius
said lower and upper radii of curvature being contiguous with said median radius.

3,354,629
SPINDLE FOR SPINNING AND TWISTING MACHINE
Karl Schmid, Zurich, Switzerland, assignor to Oerlikon-Buhrle Holding A.G., Zurich, Switzerland, a corporation of Switzerland
Filed Feb. 14, 1966, Ser. No. 527,167
Claims priority, application Switzerland, Feb. 19, 1965, 2,291/65
7 Claims. (Cl. 57—135)



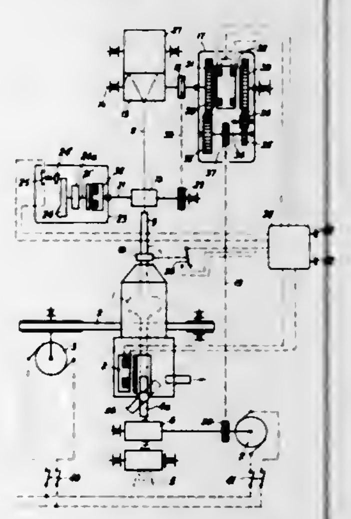
1. In a spindle construction for a spinning and twisting machine comprising a spindle housing, a collar bearing, a detachable housing portion carrying said collar bearing for fixedly mounting said collar bearing with said spindle housing, a bearing sleeve disposed within said spindle housing, and means for resiliently mounting said bearing sleeve within said spindle housing, said resilient mounting means comprising at least one annular disk for suspending said bearing sleeve within said spindle housing, said spindle housing having shoulder means against which bears said annular disk, said annular disk being fixedly retained by said detachable housing portion between the latter and said shoulder means.

3,354,630
COMPOSITE YARN STRUCTURE AND METHOD FOR PRODUCING SAME
Harry Segal, New York, N.Y., assignor to The Duplan Corporation, Winston-Salem, N.C., a corporation of Delaware
Filed Dec. 3, 1965, Ser. No. 511,478
8 Claims. (Cl. 57—151)



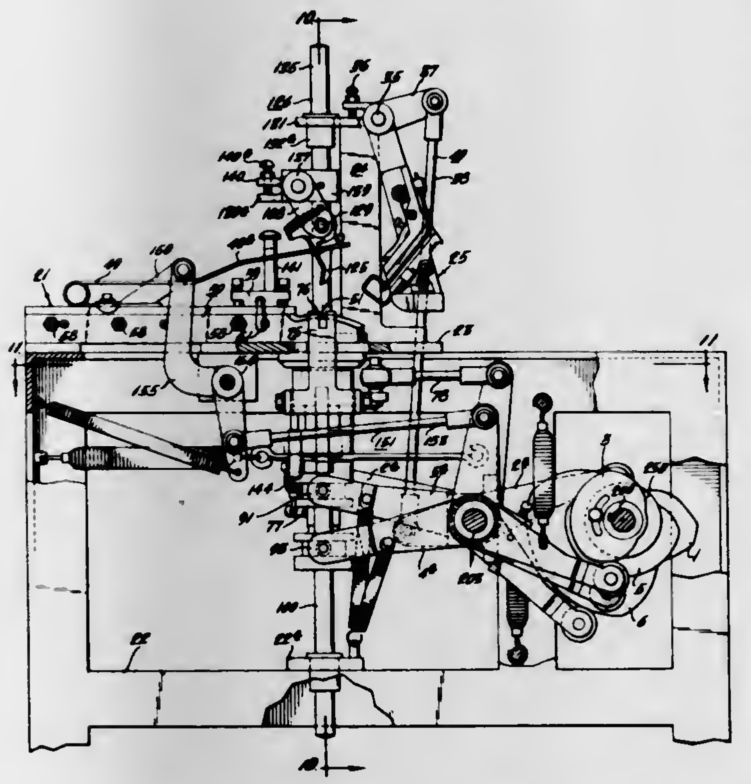
1. A composite yarn structure comprising a continuous filament thermoplastic stretch yarn component and a ribbon-like component having substantially less dye receptivity than said stretch yarn component.

3,354,631
METHOD AND APPARATUS FOR PREVENTING INTERRUPTION OF A SPINNING PROCESS DURING BREAKAGE OF THE SPUN THREAD
Jiri Elias, Brandys nad Orlici, Helena Adamkova, Usti nad Orlici, Miroslav Boucek, Jasenna, Jaroslav Kolar, Retova, and Miroslav Samek and Pavel Vlcek, Usti nad Orlici, Czechoslovakia, assignors to Vyzkumny ustav bavlnarsky, Usti nad Orlici, Czechoslovakia
Filed Apr. 20, 1966, Ser. No. 543,826
Claims priority, application Czechoslovakia, Apr. 20, 1964, 2,280/64
15 Claims. (Cl. 57—58.95)



1. A method for preventing interruption of a spinning process during breakage of the spun thread in a spinning machine having a rotating spinning chamber, comprising the steps of continuously withdrawing the spun thread in one direction out of a delivery tube projecting in said one direction from said spinning chamber; sensing the presence or absence of a thread in one end portion of the tube adjacent the spinning chamber; producing when the thread breaks and in the absence of a thread in said one end portion of the tube a signal; and using said signal to cause movement of said broken thread in a direction opposite said one direction before the broken end of the thread passes out of the tube so as to return the broken end into the spinning chamber.

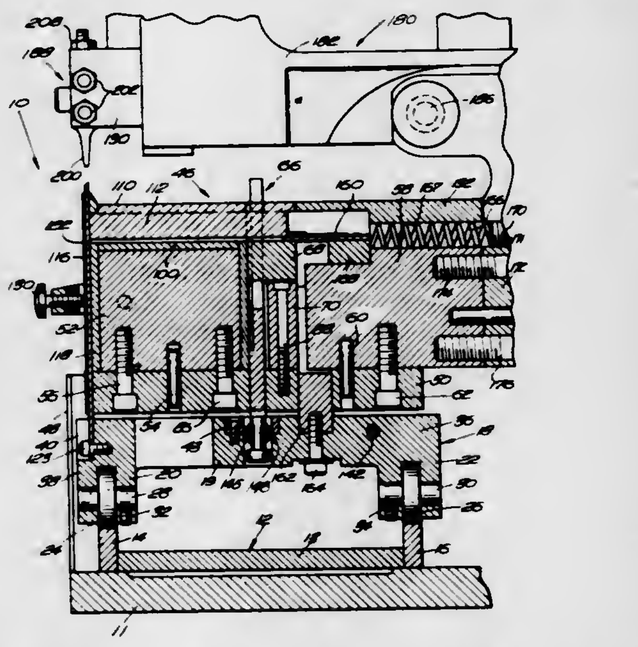
3,354,632
AUTOMATIC BELT MAKING MACHINE
Clifford Allen Creswell, Lancaster, Pa., assignor to The Arbee Corporation, Manheim, Pa., a corporation of Pennsylvania
Filed June 11, 1965, Ser. No. 463,286
14 Claims. (Cl. 59—3)



1. Apparatus for assembling links into a link type belt each of said links having a tab, an integral body portion connected to the tab through a constricted neck portion and at least one aperture, said links assuming a superimposed successive overlapping relation when in belt form; and said apparatus comprising in combination: a frame having a work area and track means for receiving said belt, said work area located at the terminus of said track means; arm means mounted on said frame for receiving, holding and feeding an individual link to a position superimposed in relation to said work area; link insertion means overlying said work area, operative to engage said individual link and remove it from said feed means upon said feed means assuming a position superimposed relative to said work area; said link insertion means including means to engage and insert the tab of said link into an aperture in said portion of said belt positioned in said work area; timing means interconnecting said feed arm means and said link insertion means to cause said means to operate in timed sequence; and belt advancing means, connected to said timing means to engage said belt in said track means and advance said belt.

3,354,633
AUTOMATIC LINKING MACHINE
Thomas J. Crafford, East Providence, R.I., assignor to Crafford Tool & Die Co., Providence, R.I., a corporation of Rhode Island
Filed May 12, 1964, Ser. No. 366,770
19 Claims. (Cl. 59—24)

1. In apparatus for linking a jump ring to a preformed chain or finding, a base, a carrier mounted on said base for movement relative thereto, cam means mounted on said base for longitudinal movement with respect thereto and engaging said carrier for effecting vertical movement thereof, a plate fixed to said base and located vertically above said carrier, spaced front and rear members mounted on said plate, a magazine assembly engaging said members and including a forward insert mounted on said first member and being shaped and proportioned for accommodating a plurality of U-shaped wire sections, a rear insert located between said members, an arbor located in said first insert and including a portion around which said wire sections are moved into engagement, cutting and forming means fixed to said carrier for movement therewith for periodically cutting a continuous wire strip into said wire sections and moving said wire sections into engagement with said arbor portion for formation into the U-shape thereof, means associated with said rear member and responsive to movement of said carrier for urging said cut and formed wire sections into said first insert, a plate assembly mounted on said front member and receiving the forward end of said arbor for locking said magazine assembly in position, a pusher blade connected to said carrier and projecting through said plate

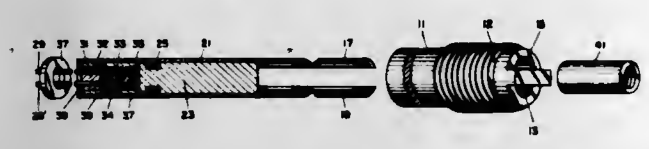


assembly for vertical movement relative thereto, said pusher blade being aligned with the forwardmost wire section for engagement therewith, whereby vertical movement of said carrier and pusher blade therewith will move said forwardmost wire section to an assembly position, means for locking said plate assembly to said front member, and a head assembly located vertically above said magazine assembly and including an upper forming die that is vertically aligned with said pusher blade and the wire section engaged thereby, said head assembly including means for periodically depressing said upper forming die for engagement with the wire section that is located at the assembly position for closing said wire section to form said jump ring, said depressing means including an operating member mounted for linear movement on said head assembly, means for actuating said operating member and means responsive to operation of said operating member for sequentially operating said cams means to elevate said carrier for moving the cut and formed wire section to the assembly position and for returning said cam means to the initial position thereof.

3,354,634
RETRACTABLE PISTON ACTUATOR
Robert McGirr, Orwigsburg, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,993
3 Claims. (Cl. 60—26.1)

3. An explosive operated actuating device comprising an elongated outer housing having an apertured end and attaching means, an elongated inner case which is slotted

approximately one-third its length and slidably fitted in said outer case and through said apertured end of the outer housing and mounted with connecting means, a piston in said inner case having a face portion comprising outwardly extending ribs which form a groove for receiving a sealing means which is in engagement with said inner case and having an opposite end portion bearing against said apertured end of said outer housing, a closing means and squib in said inner case spaced from the face of said piston and providing a pressure bearing surface opposite said piston, whereby upon exertion of pressure, resulting from the ignition of said squib, upon the said piston and said closing means, the slotted portion of the inner case is retracted into said outer housing.

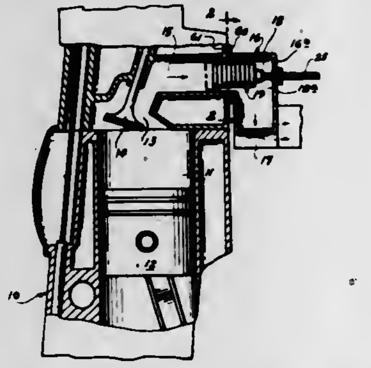


3,354,635
MEANS FOR BURNING THE EXHAUST GASES OF INTERNAL COMBUSTION ENGINES

Vincent Guarnaschelli, Greenlawn, N.Y., assignor, by mesne assignments, to Mutual Industries, Inc., Worcester, Mass., a corporation of Massachusetts

Filed Apr. 6, 1966, Ser. No. 540,614

18 Claims. (Cl. 60—29)



1. In combination with the exhaust chamber of a cylinder in the motor block of an internal combustion engine which chamber extends outward through the block from the exhaust valve of the cylinder, and the inverted-L-shaped union which connects the common exhaust manifold conduit of the engine to the outer end of said chamber wherein said union has a rear wall spaced outward from the motor block and said union provides at the upper end thereof a passage aligned with said exhaust chamber thereby forming together with said exhaust chamber a combined chamber, the cross-sectional area through said combined chamber being substantially rectangular, said rear wall having a hole therein aligned with the center line of said combined chamber, a high heat conducting insert having a stem extending from the rear end thereof in alignment with the center line of the insert, said insert being mounted in said combined chamber with said stem registering in said hole, and means for securing said stem in said hole.

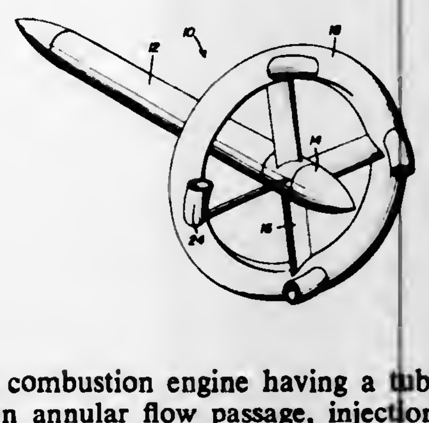
3,354,636
CIRCLE JET ENGINE

Orville H. Utrup and Kathryn M. Utrup, both of 2626 Alvarado NE., Albuquerque, N. Mex. 87110

Filed June 9, 1966, Ser. No. 556,341

15 Claims. (Cl. 60—39.35)

1. A combustion jet engine comprising, an endless tubular member forming a combustion chamber having a continuous flow path of constant cross-sectional area, a plurality of spaced exhaust nozzles connected to the tubular member and extending therefrom at an acute angle to the flow path, a plurality of spaced intake ducts connected to said tubular member at an acute angle to the flow path and projecting into the combustion chamber in overlapping relation to the exhaust nozzles to form spaced flow restriction zones within said combustion chamber, each restriction zone having a converging section formed by the intake duct, a diverging section formed by the exhaust nozzle and a throat section where the intake duct and exhaust nozzle overlap, fuel supply means mounted in each of the diverging sections of the restriction zones for injecting fuel into an inflow of air entering the combustion chamber from the intake ducts, ignition means mounted in each of the diverging sections downstream of the fuel supply means for producing combustion, and baffle means mounted by the tubular member in each of the diverging sections for deflecting combustion back flow into the flow path of combustion products.



12. In a combustion engine having a tubular member enclosing an annular flow passage, injection means connected to the tubular member for introducing a combustible mixture to the annular flow passage, and ignition means mounted by the tubular member in spaced relation to the fuel injection means for producing a flow of combustion products through the flow passage along a continuous flow path, wherein the improvement comprises; exhaust means diverting a portion of said flow of combustion products from the annular flow passage upstream of the fuel injection means at an acute angle to said continuous flow path, and flow restriction means formed in the annular flow passage for increasing the flow velocity of combustion products approaching the exhaust means and the injection means.

3,354,637
HYDROSTATIC POWER TRANSMISSION SYSTEM

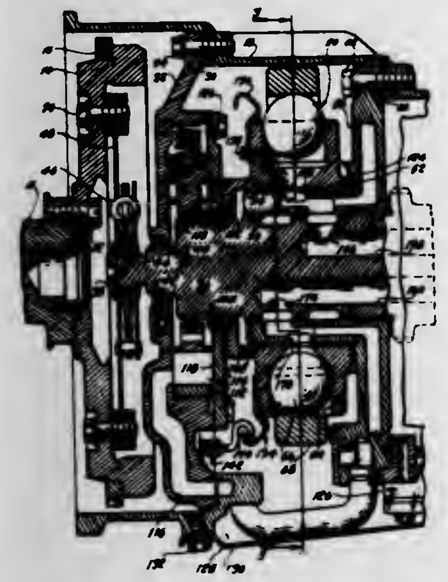
Howard L. Croswhite, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

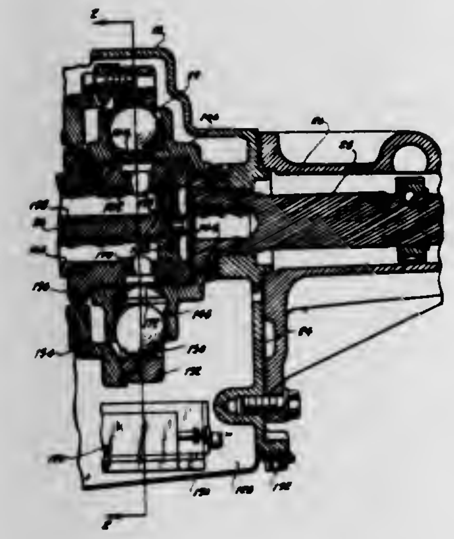
Filed Mar. 4, 1966, Ser. No. 531,991

6 Claims. (Cl. 60—53)

1. In a hydrostatic power transmission system adapted to deliver driving torque from a driving member to a driven member, a pair of hydrostatic fluid displacement units, each unit comprising a rotary cage having formed therein a plurality of radially disposed cylindrical openings, a separate ball piston element situated in each cylindrical opening, a cam race surrounding the piston elements of each hydrostatic unit, means for displacing the cam race for a first of said hydrostatic units to provide a controlled degree of eccentricity between it and the axis of rotation of the associated cage, a transmission housing surrounding said units, the cam race for said first hydrostatic unit being anchored to said housing, the cam race for the other hydrostatic unit and the cage for said first hydrostatic unit being connected drivably to said driving member, the cage for said other hydrostatic unit being connected to said driven member, a transverse wall connected to said transmission housing and extended between

said units, the cage for said first unit being journaled on said transverse wall, and pressure distribution passage structure for delivering fluid from one unit to the other including a plurality of radial ports formed in each cage, a separate one of said ports communicating with the radially inward region of each cylindrical opening, and servo means for displacing the cam race for said first hydrostatic unit in a plane that is transverse to the axis of rotation of the cage for said first unit.





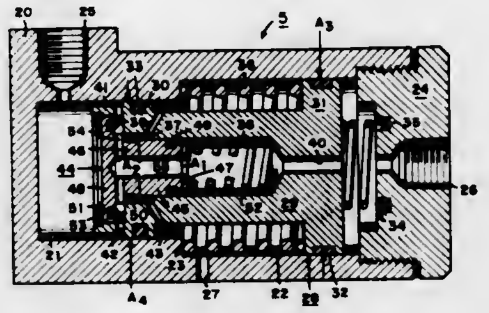
3,354,638
CONTROL VALVE

Raymond J. Kersting, Dellwood, Mo., assignor, by mesne assignments, to Wagner Electric Corporation, a corporation of Delaware

Filed Sept. 28, 1965, Ser. No. 490,984

12 Claims. (Cl. 60—54.5)

12. In a control valve having a housing, means having opposed portions and movable in said housing between opposed positions, other means on said first named means between said opposed portions for movement therewith toward one of the opposed positions and including means for engagement with said housing to limit movement of said other means with said first named means toward the other of the opposed positions, and a pair of opposed resilient means respectively contained between said opposed portions and said other means, one of said resilient means being compressed to oppose movement of said first named means toward the other opposed position and urge said included means toward movement limiting engagement with said housing while the other of said resilient means expands to simultaneously release a portion of its compressive force substantially equal to that stored by said one resilient means upon the compression thereof, the stored compressive force of said one resilient means being released upon movement of said first named means toward the one opposed position to assist such movement and said other resilient means being simultaneously compressed to restore the released portion of its compressive force in opposition to such movement of said first named means toward the one position until such movement disengages said included means from said housing.

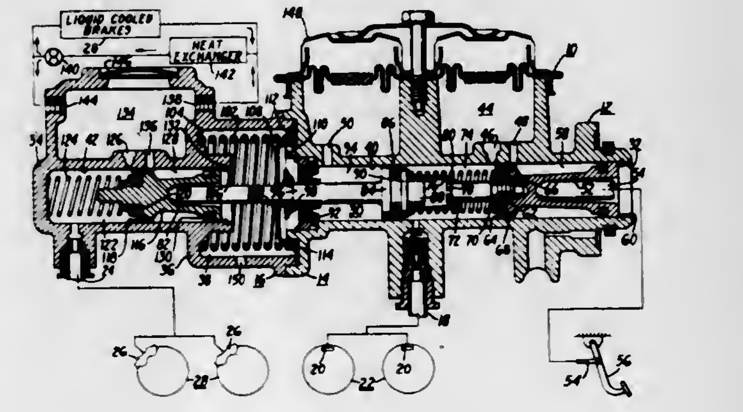


3,354,639
DUAL FLUID PRESSURIZING MECHANISM

Frederick R. Yost, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

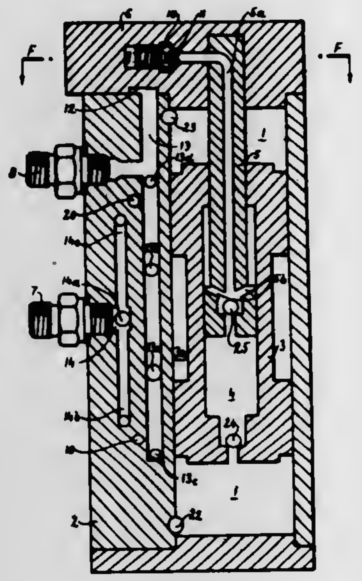
Filed Oct. 21, 1965, Ser. No. 499,472

15 Claims. (Cl. 60—54.5)



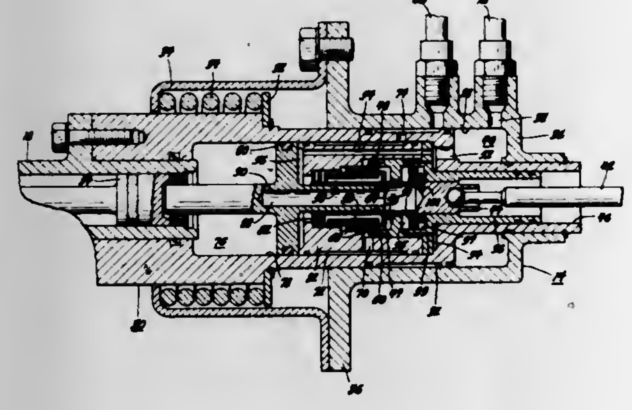
1. A two fluid pressurizing system comprising housing means, first and second fluid circuits respectively including first and second fluid pressurizing chambers in said housing means and respectively having first and second substantially unpressurized fluid chambers adjacent thereto and positioned between said pressurizing chambers in said housing means, said first and second fluid circuits respectively having first and second fluid reservoirs fluid connected respectively with said first and second substantially unpressurized fluid chambers and also respectively fluid connected with said first and second fluid pressurizing chambers when unpressurized, means responsive to pressurizing actuation of said first fluid pressurizing chamber to disconnect the fluid connection between said second fluid reservoir and said second fluid pressurizing chamber, means acting on said pressurizing actuation responsive means and withholding pressurizing actuation of said second fluid pressurizing chamber until a predetermined pressure level is reached in said first fluid pressurizing chamber, and a fluid circuit anti-contaminant chamber positioned between said substantially unpressurized fluid chambers in said housing means.

3,354,640
HYDRAULIC PRESSURE-MULTIPLIER
Miroslav Tišnovský, Prague, Czechoslovakia, assignor to Naradi, narodni podnik, Prague, Czechoslovakia
Filed May 19, 1966, Ser. No. 551,863
Claims priority, application Czechoslovakia, May 20, 1965, 3,290/65
10 Claims. (Cl. 60—54.5)



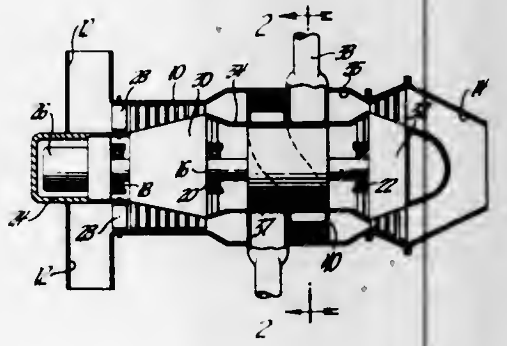
1. In a hydraulic pressure-multiplier, a stationary, hollow low-pressure cylinder means defining in its interior a low-pressure chamber, low-pressure piston means slidably supported in said low-pressure cylinder means for reciprocation therein, said low-pressure piston means being double-acting and having a hollow interior defining a high-pressure chamber, and stationary, double-acting high-pressure piston means fixedly carried by said low-pressure cylinder means and slidably received in said hollow low-pressure piston means in the interior of said high-pressure chamber formed therein.

3,354,641
PEDAL LIFT MECHANISM
James O. Helvern, Lewisburg, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 26, 1965, Ser. No. 482,727
7 Claims. (Cl. 60—54.6)



1. A brake pedal lift mechanism for a power brake booster, said mechanism comprising: a booster body having an inlet from a pressure source and an outlet to a reservoir; valve means slidably disposed in said booster body and arranged to control pressure communication between said inlet and outlet; force input means engaging said valve means for repositioning thereof; power output means slidably carried in said valve means and responsive to pressure routed from said inlet by said valve means to provide a power boost to a force provided by said force input means; and valve positioning means for maintaining a predetermined force against said valve means from one side in said booster body which is normally overcome by pressure from a pressure source thereby keeping said valve means and said force input means at a first predetermined position, said valve positioning means arranged to move said valve means and said force input means toward a second predetermined position as pressure at said inlet decreases below a minimum working pressure of the booster.

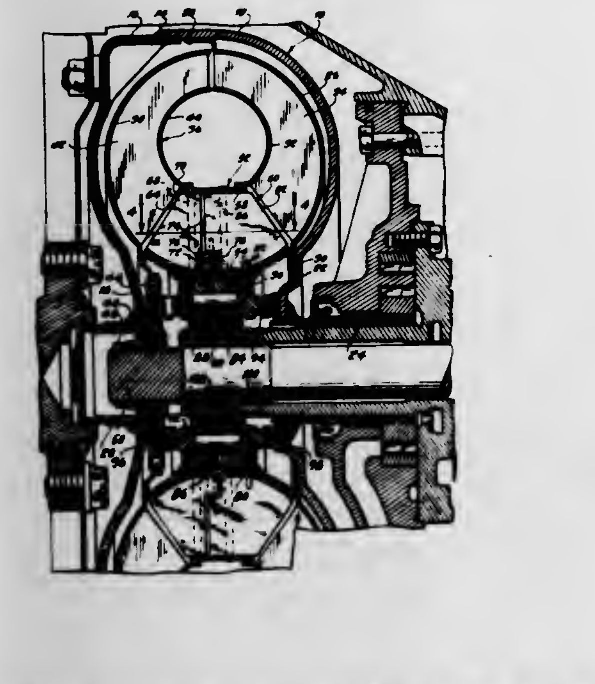
3,354,642
TURBOMAGNETIC PUMP
Karl G. Soder, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 18, 1965, Ser. No. 456,756
5 Claims. (Cl. 60—59)



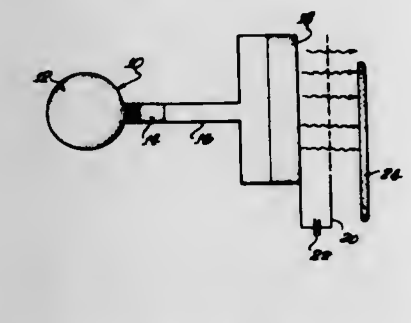
1. A turbomagnetic pump for pumping hot electrically conducting liquids comprising:
a casing having an inlet and an outlet,
a compressor rotatably mounted in said casing adjacent said inlet,
a turbine rotatably mounted coaxially with said compressor in said casing adjacent said outlet,
an annular passage extending between said compressor and said turbine to establish a flow path for a working fluid from said inlet to said outlet,
a drive shaft spaced radially inwardly from said annular passage coupling said turbine to said compressor,
a magnet mounted on said drive shaft between said compressor and said turbine,
a conduit extending transversely through said passage in proximity to said magnet for pumping hot electrically conducting liquids, and
heat exchange fins on said conduit disposed in said passage whereby heat is transferred from a hot liquid in said conduit to said working fluid in said conduit to cause the fluid to expand through said turbine and drive said compressor and magnet to compress said fluid and to magnetically pump said liquid.

3,354,643
HYDROKINETIC TORQUE CONVERTER MECHANISM WITH VARIABLE GEOMETRY STATOR BLADING
Andrew Paredes, Wayne, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 18, 1966, Ser. No. 551,012
10 Claims. (Cl. 60—54)

1. A hydrokinetic torque converter comprising an impeller, bladed stator and bladed turbine situated in toroidal fluid flow relationship in a common torus circuit, said stator being situated between the flow exit region of said turbine and the flow entrance region of said impeller and being comprised of two flow directing portions and means for individually mounting each stator portion for adjustment about radial axes to provide a fluid flow passage through said stator of variable geometry.



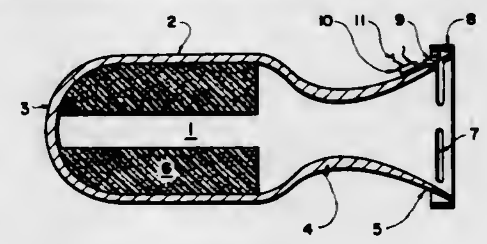
3,354,644
LIQUID PROTECTION OF ELECTRODES
Robert David Moore, Jr., Los Angeles, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California
Filed June 8, 1965, Ser. No. 462,202
11 Claims. (Cl. 60—202)



4. In an ion engine having a reservoir of ionizing material, a vaporizer for vaporizing said ionizing material and an ionizer for ionizing said vaporized material, the combination comprising:
an electrode in the path of said ionizing material for accelerating said ionized material;
a liquid coating the surface of said electrode; and,
means for maintaining a substantial portion of a surface of the electrode coated with said liquid metal, whereby erosion of the electrode is prevented.

3,354,645
METHOD AND APPARATUS FOR PRODUCING A NON-AXIAL THRUST VECTOR
Henry T. Hsia, Sunnyvale, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,318
6 Claims. (Cl. 60—204)

1. In a method for producing a non-axial thrust vector from a reaction motor which comprises exhausting gases through a convergent-divergent nozzle and injecting air into said gases at a portion of the periphery of the divergent portion of said nozzle whereby an unsymmetrical pressure distribution is produced within said divergent portion, the improvement which comprises inducting said air into said divergent portion at a point along said divergent portion wherein said gases are overexpanded.



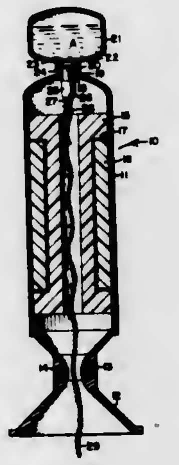
3,354,646
CHLORINE PENTAFLUORIDE AND METHOD
Walter Maya and Hans F. Bauer, Los Angeles, Calif., assignors to North American Aviation, Inc.
Filed Jan. 21, 1963, Ser. No. 253,521
10 Claims. (Cl. 60—211)

1. A process for synthesizing chlorine pentafluoride comprising the steps of preparing a supply of reactant gas having elemental molecules of fluorine and chlorine; subjecting the gas to an electrical discharge of an intensity sufficient to produce a glow in the gas, the glow having a wavelength at least as short as that of green light, thereby exciting the atoms of said fluorine and chlorine, whereby the excited atoms react with one another to form chlorine pentafluoride; withdrawing the chlorine pentafluoride from said discharge, and collecting the chlorine pentafluoride.

8. The method of producing thrust in a jet propulsion engine comprising the steps of injecting into a combustion chamber of the engine a liquid rocket fuel and a liquid oxidizer comprising chlorine pentafluoride, combusting the fuel and the oxidizer in said chamber and ejecting the combustion products to produce usable thrust.

10. The compound chlorine pentafluoride.

3,354,647
METHOD FOR INITIATING OR QUENCHING THE COMBUSTION IN A SOLID PROPELLANT ROCKET MOTOR
William C. Aycock, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 500,498
2 Claims. (Cl. 60—220)

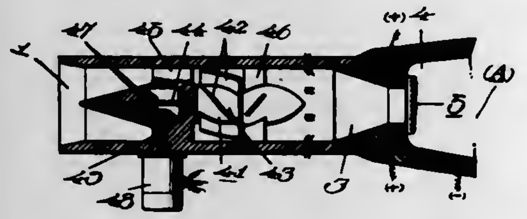


1. A method of initiating combustion in a rocket motor having zones of solid propellant therein separated by a barrier and a partially filled tank containing a liquid oxidative reactant comprising the steps of providing a

pressure rupturable closure for the tank, igniting one of the zones of solid propellant causing a portion of the gas stream created by the burning of the solid propellant to impinge upon and rupture said closure and thereafter enter said tank to pressurize said liquid oxidative reactant for injection onto the barrier during a pressure drop in a burning solid propellant zone for enhancing the burning thereof and the ignition of the unburned zone of solid propellant immediately adjacent the barrier.

3,354,648
WATER-JET ENGINE

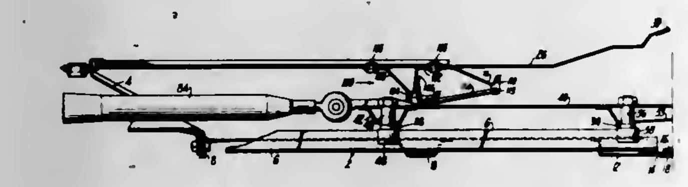
Jiro Asahina, 1402 Yamanouchi, Kanagawa Prefecture, Kamakura, Japan
Filed May 17, 1966, Ser. No. 550,786
Claims priority, application Japan, Mar. 24, 1966, 41/17,622
27 Claims. (Cl. 60—221)



1. A water jet engine comprising, in combination, an elongated tubular member having a leading inlet end and a trailing discharge end, so that when said member is propelled through a body of water, water will pass through said tubular member from said inlet to said discharge end; cavitation producing means in said tubular member intermediate the ends thereof for producing during fast forward movement of said tubular member a cavitation rearwardly of said means; means for continuously feeding fuel into the interior of the tubular member in the region of said cavitation producing means; and ignition means located in the cavitation produced by said cavitation producing means for igniting the fuel so that the combustion gases produced will drive the water passing through the tubular member with increased speed out of said discharge end to provide a forward thrust for said tubular member.

3,354,649
PRESSURE ACTUATED FLUID SEAL

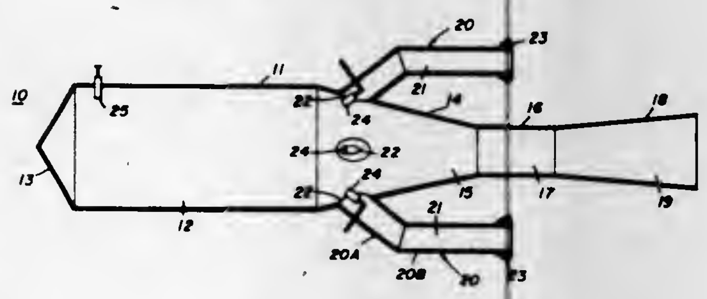
William M. Madden, Palm Springs, Fla., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Aug. 5, 1966, Ser. No. 570,480
10 Claims. (Cl. 60—271)

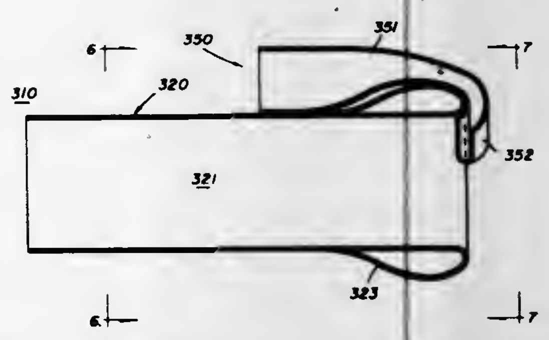


9. In combination:
(1) a combustion chamber comprising a first circular duct having a gas outlet,
(2) nozzle means extending around the end of said circular duct to vary the opening of the gas outlet of the first circular duct,
(3) connecting means having one end connected to said nozzle means and the other end connected to an actuator for moving said nozzle means.
  (a) said connecting means comprising a second circular duct mounted for axial movement around and spaced from said first circular duct,
(4) means sealing the annular opening between the first circular duct and the second circular duct,
  (a) an annular sealing surface extending outwardly around the first circular duct,
  (b) a plurality of cooperating seal segments extending around the annular opening between the first duct and second duct having contact with said second duct and with the annular sealing surface,
  (c) means mounting said seal segments to said first duct to permit the one side of each segment to contact said second duct and annular surface, and
  (d) said other side of each seal segment facing the nozzle means so that the pressure of fluid existing between the first circular duct and second circular duct will act against this other side to maintain the seal segments in sealing position.

3,354,650
PULSE-JET ENGINES OF THE VALVELESS TYPE

René Malroux, Villeneuve-le-Roi, France, assignor to Pulse Jet Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 6, 1965, Ser. No. 493,324
2 Claims. (Cl. 60—249)

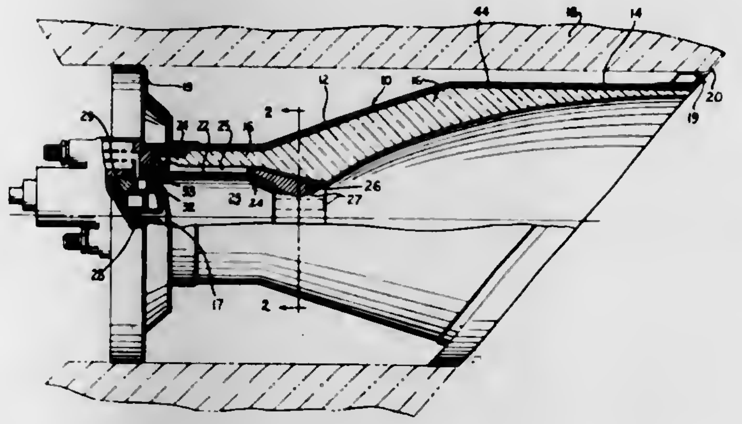




1. A valveless pulse-jet engine comprising an elongated longitudinally extending tubular first section defining therein a primary combustion chamber, a cap connected to the front end of said first section and closing the adjacent front end of said primary combustion chamber to the atmosphere, an elongated longitudinally extending and rearwardly converging tubular second section defining therein a secondary combustion chamber, the rear end of said first section being connected to the front end of said second section with the rear end of said primary combustion chamber opening into the adjacent front end of said secondary combustion chamber, an elongated longitudinally extending tubular third section defining an exhaust passage therethrough, the rear end of said second section being connected to the front end of said third section with the rear end of said secondary combustion chamber opening into the front end of said exhaust passage, the rear end of said third section being open, whereby the rear end of said exhaust passage constitutes an exhaust gas nozzle communicating with the atmosphere, the longitudinal axes of said first and second and third sections being arranged substantially in alignment along a common longitudinal axis, said second section having a length that is about ½ of that of said first section and that is about ⅛ that of said third section, an elongated longitudinally extending tubular fourth section defining an inlet passage therethrough, the longitudinal axis of said fourth section being in lateral off-set relation with respect to said common axis, the front end of said fourth section being connected to the front portion of said second section with the adjacent front end of said inlet passage opening into the front portion of said secondary combustion chamber, the rear end of said fourth section being open, whereby the adjacent rear end of said inlet passage constitutes a rear inlet nozzle communicating with the atmosphere, an elongated longitudinally extending tubular fifth section defining a scoop passage therethrough, the longitudinal axis of said fifth section being disposed in lateral off-set relation with respect to the longitudinal axis of said fourth section, the front end of said fifth section being open, whereby the adjacent front end of said scoop passage constitutes a mouth communicating with the atmosphere, the rear portion of said fifth section having a return bend therein disposed adjacent to the rear end of said fourth section, the rear end of said fifth section being forwardly directed and disposed in said air inlet nozzle, the rear end of said fifth section being open, whereby the adjacent rear end of said scoop passage constitutes an air outlet nozzle communicating with said air inlet nozzle, means for injecting fuel in finely divided form forwardly through the front end of said secondary combustion chamber and into the rear end of said primary combustion chamber and directed toward the front end thereof, and means for igniting the combustible mixture of fuel and air in said primary combustion chamber.

3,354,651
ABLATIVE ROCKET THRUST CHAMBER

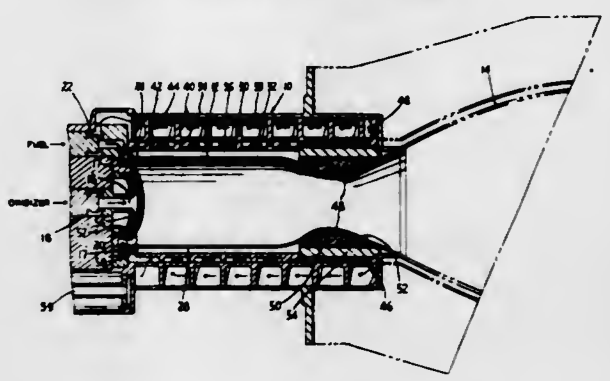
Raymond J. Novotny, Mount Fern, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed July 16, 1965, Ser. No. 472,447
8 Claims. (Cl. 60—258)



1. A rocket thrust chamber characterized by high efficiency and low heat transfer to its airframe enclosure comprising, in combination, a low mass radiation liner defining a combustion chamber terminating in a nozzle including a throat; a layer of ablative material concentric with and spaced from said liner and defining an air thermal radiation barrier therewith; an insert of a material having high heat conductivity surrounding said throat and contacting it and said layer and closing said air barrier; cooling passages extending longitudinally between said insert and said layer and connecting said air barrier with points downstream of said throat to vent the gases generated in said air barrier by the ablating layer; and means for injecting propellant into said chamber to produce a cooling uniform boundary layer with minimum flow disturbance of fuel-rich combustion products along the gas side of said liner.

3,354,652
ROCKET THRUST CHAMBER

Raymond J. Novotny, Mount Fern, N.J., and Frank R. Dunn, Prairie City, Iowa, assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Apr. 23, 1965, Ser. No. 450,366
17 Claims. (Cl. 60—260)



1. A rocket thrust chamber comprising, in combination, a low mass radiation liner defining a combustion chamber terminating in a nozzle including a throat; a coolant jacket spaced from said liner and defining a thermal radiation barrier therewith; and an insert of a material having high heat conductivity surrounding said throat and contacting it and said jacket; and means for circulating propellant through said jacket and injecting it into said chamber.

3,354,653
METHOD FOR APPLYING BITUMINIZED MINERAL AGGREGATE TO AN UNDERWATER SURFACE

Hermanus Meijer, Heemstede, and Jacobus E. Meblus, The Hague, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 4, 1964, Ser. No. 394,601
Claims priority, application Netherlands, Sept. 9, 1963, 297,636
6 Claims. (Cl. 61—1)

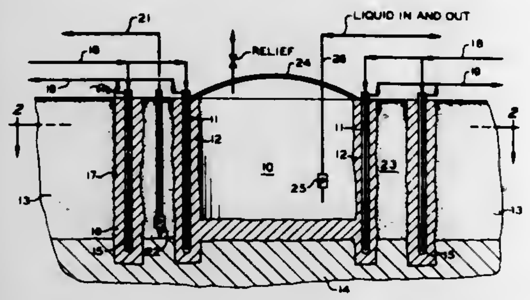
1. In a process for applying bituminized mineral aggregate to reduce erosion of underwater surfaces by dumping a mass of warmed bitumenized mineral aggregate into the water and allowing it to sink through the water onto the surface to be protected, the improvement comprising (1) admixing with the bitumenized mineral aggregate, prior to dumping, a minor amount of water sufficient to completely fill the pores of said aggregate, the temperature of the water-containing mixture being between the softening point of the bitumen in the bituminized mineral aggregate and about 100° C., and (2) dumping the water-containing mixture while it is maintained within the aforesaid temperature limits.

3,354,654
RESERVOIR AND METHOD OF FORMING THE SAME

Barney Vignovich, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 18, 1965, Ser. No. 465,073
9 Claims. (Cl. 61—.5)

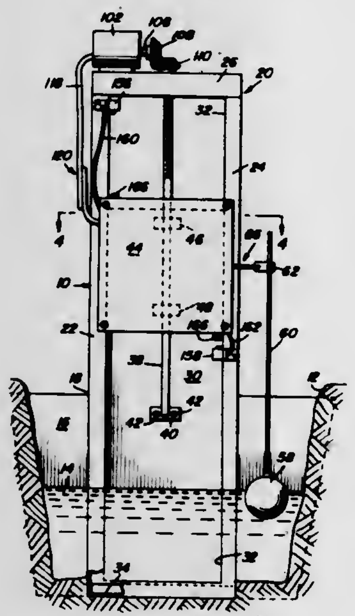
1. The method of forming an insulated reservoir in the earth's surface which comprises sinking a first ring of freeze pipes spaced within earth freezing distance of each other about the periphery of the reservoir site downwardly into an earthen formation that is water permeable and water saturated and directionally toward the center of the reservoir site so that the freeze pipes terminate within earth freezing distance from each other below the bottom of the reservoir site; sinking a second ring of freeze pipes spaced within earth freezing distance from each other substantially parallel to and spaced more than earth freezing

distance exteriorly from said first ring; circulating refrigerant through said freeze pipes to form a pair of spaced apart and concentric frozen earth vessels in the earth's surface with unfrozen water-saturated earth therebetween;



excavating the unfrozen earth from the inner vessel within the first ring of freeze pipes; removing substantially all of the water from the unfrozen earth between the vessels; and placing a roof over the reservoir.

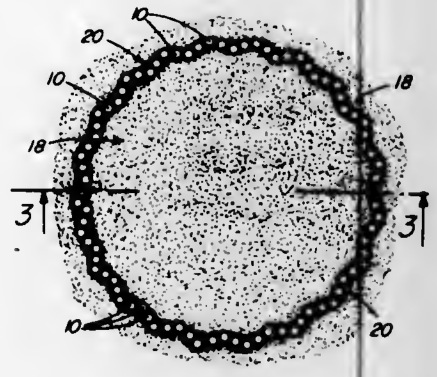
3,354,655
AUTOMATICALLY OPERATED DOOR FOR WATER CONTROL
Charles V. Armond, Yorba Linda, Calif. (117 N. Richman, Fullerton, Calif. 92632)
Filed Sept. 17, 1965, Ser. No. 487,988
10 Claims. (Cl. 61—28)



1. A system for regulating change in level of a fluid body comprising flow controlling gate means through which fluid from said fluid body may flow to reduce the level thereof, drive means connected to the gate means for positioning thereof to control the flow rate of said fluid, and control means connected to the drive means for varying the flow rate in response to changes in a predetermined positional relationship between the level of said fluid body and the position of the gate means, said control means including fluid level sensing means mounted by the gate means and movable therewith by the drive means.

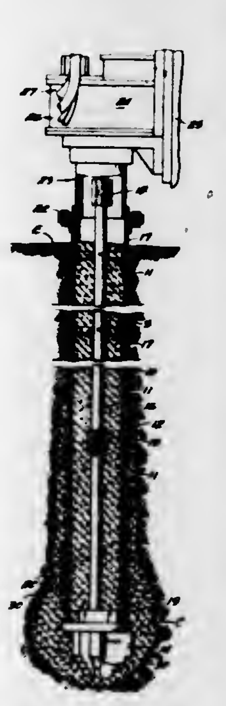
3,354,656
METHOD OF FORMING AN UNDERGROUND STORAGE CHAMBER
Frank C. Fahnestock, Roslyn Harbor, N.Y., assignor to Mobil Oil Corporation, a corporation of New York
Filed May 1, 1964, Ser. No. 364,180
12 Claims. (61—36)

1. A method for forming an underground chamber serviceable for the storage and insulation of liquids over a wide temperature range which comprises, forming a plurality of injection wells of desirable depth in the ground, said wells arranged to define the approximate perimeter of an underground chamber, inserting in each of said wells a hollow injection tube of a diameter such as to minimize the space between the outside wall of the tube and the well wall and to prevent vertical leakage of liquid soil-stabilizing material to be passed through said tube, said injection tube being closed at its lowest end within said wells and said tube having a plurality of holes in the lower portion of the walls thereof, injecting a



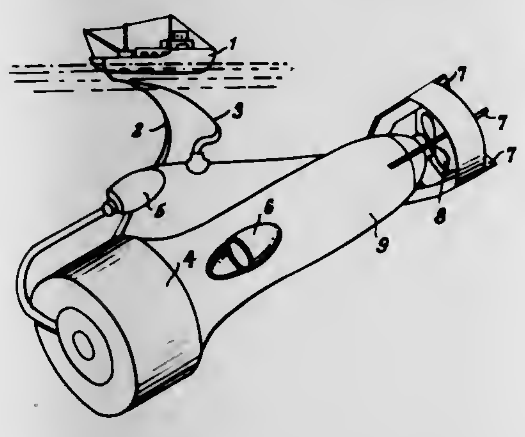
liquid soil stabilizing material through said tube to premeate the soil adjacent said plurality of wells beginning at the deepest portion in each of said wells in an amount sufficient to stabilize the soil, repeating said injection of soil stabilizing material at progressively higher portions of each of said wells until the adjacent soil surrounding the vertical length of each of said wells has been injected with said liquid, permitting the soil stabilizing liquid to set and consolidate said adjacent soil, and excavating unstabilized soil enclosed by said consolidated adjacent soil to form an excavated underground chamber.

3,354,657
METHOD FOR INSTALLING ANCHORING OR SUPPORTING COLUMNS IN SITU
Lee A. Turzillo, Bath, Ohio (2078 Glengary Road, Akron, Ohio 44313)
Filed May 3, 1965, Ser. No. 452,667
2 Claims. (Cl. 61—53.5)



1. A method of installing anchoring or like supporting columns at an earth situs, comprising: the steps of rotatively drilling into the situs a hollow cylindrical casing having an apertured bit affixed on its inner end for drilling rotation with the casing, while simultaneously pumping pressurized flushing fluid through the casing and apertured bit, into a hole being drilled; and continuing said drilling and flushing until the hole of predetermined depth is formed in the situs; pumping self-hardenable cementitious fluid under pressure through said casing and apertured bit, into a hole being drilled; and continuing said and occupy spaces and voids around the bit and upwardly between the casing and the surrounding earth along a substantial extent of the length of the casing; and allowing the cementitious material within said hollow casing and said occupied spaces and voids to solidify and thereby fixedly anchor the casing in the surrounding earth of the situs.

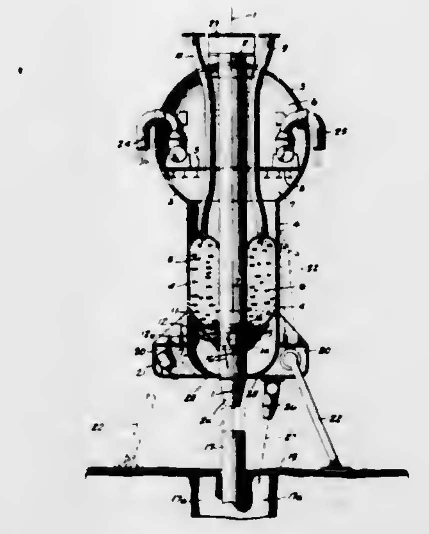
3,354,658
APPARATUS FOR PERFORMING UNDERWATER OPERATIONS
Sam Leonardi, 1245 NW. 7th Terrace, Fort Lauderdale, Fla. 33311
Filed Aug. 12, 1965, Ser. No. 479,235
6 Claims. (Cl. 61—69)



1. An apparatus for underwater operations comprising, a propelled underwater craft provided with a magnet at its forward end, a socket in the magnet for receiving and magnetically retaining an adaptor, the magnet being effective to be attached to a wrecked hull or metallic part thereof to thereby position the adaptor against the hull, and means carried by the adaptor for penetrably entering the hull and attaching the adaptor thereto, leaving the adaptor remaining attached to the hull.

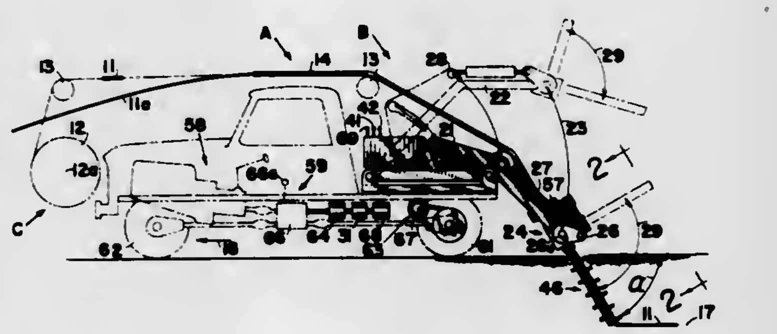
3,354,659
DEEP-SUBMERGENCE FOUNDATION VEHICLE
Guenther Wolfgang Lehmann, New London, Conn. (140 W. Kalmia St., San Diego, Calif. 92101)
Filed Sept. 27, 1965, Ser. No. 490,427
9 Claims. (Cl. 61—69)

1. A deep-submergence foundation vehicle comprising separately and in combination, a vertical center tube, a spherical pressure vessel, a pressure-equalized cylinder below and attached to said spherical pressure vessel, a concrete stowage space at the lower portion of said pressure-equalized cylinder, said concrete stowage space being an annular space between the vertical center tube and the pressure-equalized cylinder, at least one concrete filling tube from atop the spherical pressure vessel to the head of the concrete stowage space, a first conical extension at the lower end of the concrete stowage space, a second conical extension below and in continuation of said first conical extension, said second conical extension having a sleeve around the vertical center tube, said sleeve having discharge openings, corresponding openings in the vertical center tube, a gear for rotating said second conical extension and sleeve for rotating said discharge openings in the sleeve and in the vertical center tube in juxtaposition, free excess to outside for concrete in the concrete space through said discharge openings in juxtaposition, propulsion means at the spherical pressure vessel, ballast tanks at the lower portion of the vehicle, said ballast tanks hav-



ing draining holes at the bottom, means for ballasting and draining said ballast tanks, a box-ring at the lower end of the pressure-equalized cylinder, said box-ring carrying television cameras and stilts, an access hatch atop the spherical pressure vessel.

3,354,660
CABLE LAYER
Donald R. Vaughan, Woodland, Calif., assignor to Woodland Manufacturing Company, a corporation
Filed May 6, 1965, Ser. No. 453,677
13 Claims. (Cl. 61—72.2)

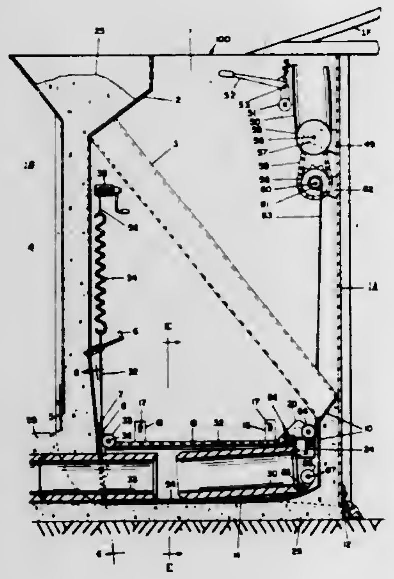


1. In a cable laying device for non-trenching placement of cable beneath the earth's surface of the type having an elongate tubular tool holding member adapted to be moved transversely through the earth and with its longitudinal axis substantially vertical, means in the center of said tool holding member to carry a cable to the bottom portion thereof, and means for rotating said tool holding member in a predetermined direction while simultaneously moving the tool holding member transversely through the earth's surface, the improvement comprising: a plurality of teeth mounted on and projecting from the surface of said tool holding member, each of said teeth forming an upper and lower surface disposed at an angle to force earth in a first direction during rotation, each tooth being mounted with respect to the closest next succeeding tooth with reference to the direction of rotation of the tool holding member and at a position opposite from the direction of displacement of earth affected by the preceding tooth.

3,354,661
PIPE LAYING APPARATUS
James C. Russell, Rte. 2, Box 742,
Yakima, Wash. 98902
Filed Jan. 16, 1964, Ser. No. 338,069
2 Claims. (Cl. 61—72.5)

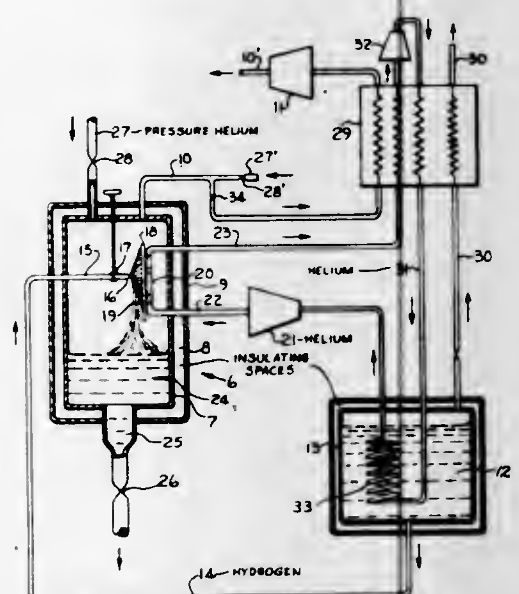
1. In an apparatus for laying pipe along the bottom of a trench:

- a longitudinally movable housing located within the trench for motion in a forward direction, said housing having a pair of laterally spaced upright side walls and transversely oriented upright front and rear walls connected to and extend across said side walls in longitudinally spaced positions, said rear wall being provided with an opening formed therethrough at the lower portion thereof to permit forward passage of said rear wall relative to pipe extending through the opening;
- a longitudinal strip of flexible material stationarily anchored within said trench at a location rearward of said housing extending through the housing rear wall opening and along the interior bottom portion of the housing;
- pipe positioning means within the housing to position individual sections of pipe on the strip of flexible material in frictional surface to surface contact therewith in a horizontal position along the interior bottom portion of the housing with each section of pipe so positioned being in coaxial longitudinal abutment with previously placed pipe in the trench;
- a bedding material placement chute on said housing having an outlet at the lower portion of the housing to direct bedding material beneath said strip of flexible material;



- backfilling means on said housing rearwardly adjacent to said rear wall to fill any remaining space about the pipe as the housing rear wall passes along the trench;
- and reciprocating force applying means within said housing to intermittently exert a rearward force on each section of pipe after it is positioned on the strip of material;
- said reciprocating force means comprising:
- a transverse pushing element located between said side walls at the lower portion of said housing, said pushing element being movably mounted on said housing for horizontal longitudinal motion relative thereto and being movable to a first position projecting across the pipe cross sectional area forward of a section of pipe positioned on said sheet of material by said pipe positioning means;
- and selectively operable power means on said housing operatively connected to said pushing element to selectively move said element to said first position and to subsequently move said pusher element horizontally rearward relative to the housing.

3,354,662
DYNAMIC FLASH PRODUCTION OF HYDROGEN SLUSH
John G. Daunt, Columbus, Ohio, assignor to Malaker Laboratories, Inc., Parsippany, N.J., a corporation of New Jersey
Filed Feb. 21, 1964, Ser. No. 346,488
7 Claims. (Cl. 62—10)

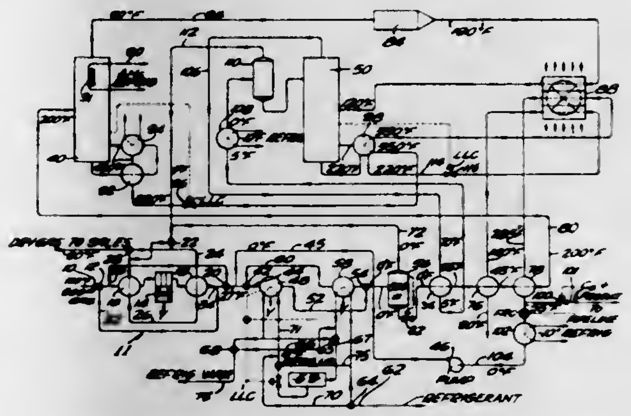


1. A process for producing hydrogen slush, comprising:
forcing liquid hydrogen from a storage tank through a nozzle to produce a jet stream,
impinging said jet stream upon a cooled surface disposed in an evacuated chamber,
removing hydrogen slush formed at said cooled surface and depositing it at the bottom of said chamber,
feeding cooling medium through a coil disposed in said tank to cool said medium, then
expanding said cooling medium to further lower its temperature, passing said cooling medium into said chamber to cool said surface,
drawing said cooling medium out of said chamber and compressing it for recycle, and
removing hydrogen slush from said chamber.

3,354,663
HYDRATE REMOVAL FROM WET NATURAL GAS
Lloyd T. Hendrix, Santa Ana, Calif., assignor to Atlantic Richfield Company, a corporation of Pennsylvania
Filed June 13, 1961, Ser. No. 116,763
9 Claims. (Cl. 62—12)

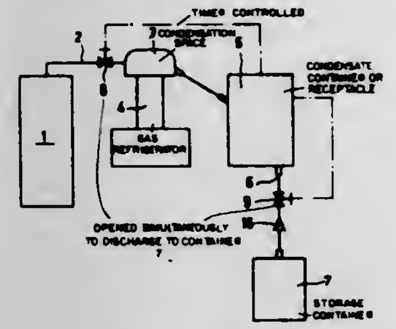
1. In a method for recovering propane and heavier hydrocarbons from wet natural gas, the steps comprising:
(a) compressing said wet natural gas to recover a compression condensate comprising water and liquid hydrocarbons,
(b) separating said natural gas from said condensate,
(c) removing said water from said liquid hydrocarbons in said condensate,
(d) commingling said hydrocarbon condensate with said natural gas to form a liquid hydrocarbon-gas mixture,
(e) alternately passing said mixture through one of at least a pair of alternating commingle chillers to effect condensation of entrained liquid hydrocarbons,

(f) simultaneously removing solid condensates formed in the other of said commingle chillers,



(g) separating said mixture of gas and condensed hydrocarbons, and
(h) fractionating said separated hydrocarbons.

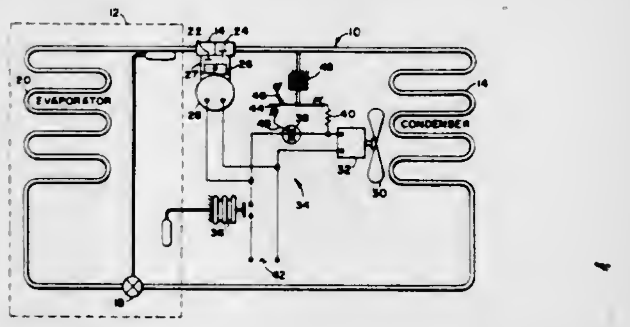
3,354,664
TRANSFERRING CONDENSED LIQUIDS TO A STORAGE CONTAINER
Johannes van der Ster, Gerardus Johannes Haarhuis, and Harm Jan Tuin, Emmasingel Eindhoven, Netherlands, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 444,634
Claims priority, application Netherlands, Apr. 11, 1964, 64—3,952
6 Claims. (Cl. 62—37)


TIMER CONTROLLED
CONDENSATION SPACE
CONDENSATE CONTAINER OR RECEPTACLE
GAS REFRIGERATOR
OPENED SIMULTANEOUSLY TO DISCHARGE TO CONTAINER
STORAGE CONTAINER

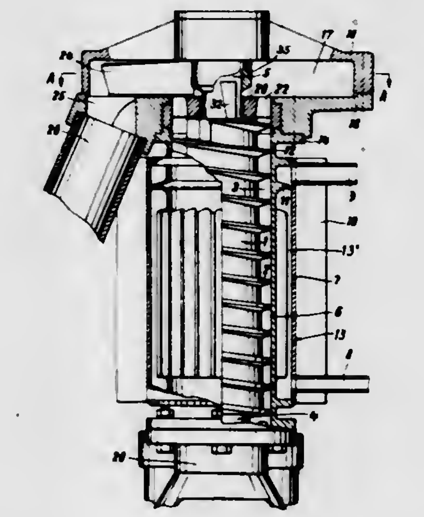
1. An apparatus for liquefying gas supplied under pressure to a receptacle which is cooled to the condensation temperature of the selected gas comprising a cold source for cooling said receptacle whereby said gas is condensed, an inlet pipe for said gas supply under pressure, an outlet pipe for said liquefied gas, a controllable valve in each of said inlet and outlet pipes, a storage container, and a control device which when the valve in said outlet pipe is closed maintains the valve in the inlet pipe open for a predetermined period of time, said control device thereafter closing said valve in the inlet pipe, said cold source continuing to cool said receptacle and reducing the pressure of said condensate until said pressure is lower than the pressure in said storage container, and thereafter said control device opening said valves in said inlet and outlet pipes when the pressure in the receptacle is at the said lower pressure whereby the condensate is forced into said storage container by said gas under pressure.

3,354,665
CONDENSER FAN SPEED CONTROL
Carl M. Lewis, Onalaska, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Dec. 1, 1966, Ser. No. 598,466
9 Claims. (Cl. 62—184)

1. A refrigeration apparatus comprising a refrigerant compressor; an air cooled refrigerant condenser; refrigerant throttling means; a refrigerant evaporator respectively serially connected in a closed refrigerant circuit wherein that portion of said refrigerant circuit extending from said compressor through said condenser to said throttling means is the high pressure side; a fan disposed to pass cooling air over said refrigerant condenser; an electric fan motor drivingly connected to said fan; a gated semiconductor switch; an alternating current power source; a first electric circuit serially connecting said alternating current power source, said gated semiconductor switch and said electric fan motor; a mechanically operated pressure responsive electric switch responsive to the pressure in said high pressure side of said refrigerant circuit; and a second electric circuit including said alternating current power source and the gate of said gated semiconductor switch; said mechanical pressure responsive electric switch being connected to control the electric current in said second electric circuit.



3,354,666
AUGER TYPE ICE MAKER
Christian Beusch and Friedrich Tinner, both of Bahnhofstrasse 29, Buchs, Switzerland
Filed Aug. 11, 1966, Ser. No. 571,934
Claims priority, application Switzerland, Aug. 17, 1965, 11,536/65
2 Claims. (Cl. 62—354)



1. Apparatus for producing ice continuously comprising means defining a cooling zone, conveyor means for passing water continuously into said cooling zone to cause freezing of the water, extrusion means at the delivery end of the conveyor means for extruding ice from the conveyor means and venting means between the conveyor means and extrusion means for venting air from the ice prior to extrusion thereof, the extrusion means comprises a perforated plate at the delivery end of the conveyor means, a shaft carrying the screw conveyor passes through the perforated plate, the venting means includes a channel extending axially in the surface of the shaft where said shaft passes through the plate, and at least one scraper blade mounted on the side of the extrusion means remote from the conveyor means.

3,354,667

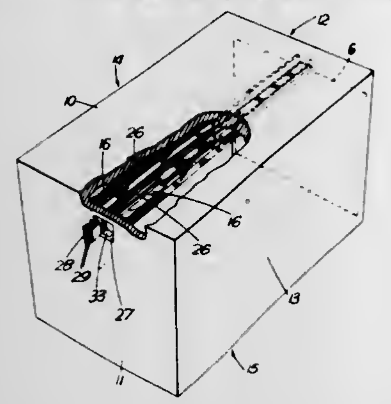
TRANSPORT CONTAINERS PROVIDED WITH COOLING MEANS

Thomas William Vernon Jervis, Moor Park, and Reginald John Galloway, Ruislip, England, assignors to Mickleover Transport Limited, London, England, a British company

Filed July 13, 1966, Ser. No. 564,876

Claims priority, application Great Britain, July 20, 1965, 30,865/65

5 Claims. (Cl. 62—372)



1. A structure for transporting perishable goods comprising:

(a) a sealed transport container for receiving said goods,
(b) a compartment adapted to receive blocks of cooling medium,
(c) which compartment is mounted on the container so as to extend along the greater part of the distance between opposite walls of the container
(d) at least one wall of which compartment is exposed to the interior of the container whereby heat is transferred from the atmosphere within the container to the cooling medium within the compartment
(e) and which compartment has at least one opening in an end wall thereof,
(f) closure means for said opening,
(g) receptacles for receiving said blocks of cooling medium and insertable through said opening,
(h) wheels mounted on the sides of the receptacles near the upper extremities thereof, and
(i) channels on the side walls of said compartment extending along the length thereof within which said wheels are disposed the arrangement being such that the walls of the receptacles and of the compartment are closely spaced.

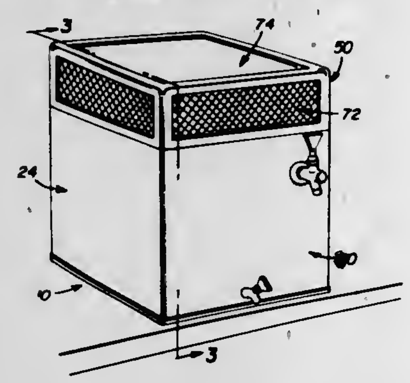
3,354,668

PORTABLE DRINK DISPENSER

Fred P. Cserny, 929 N. 7th St., Allentown, Pa. 18102

Filed Jan. 25, 1966, Ser. No. 522,957

6 Claims. (Cl. 62—449)



1. In combination, a portable, refrigerated beverage dispenser comprising a thermally insulated lower cabinet portion having a normally closed open top, through which is received a keg of beer, removable cover means for normally closing said open top, fluid handling means carried by said lower cabinet portion for pressure dispensing the contents of a keg of beer received therein without opening the normally closed open top of the dispenser whereby the entrance of generally warming ambient air into the interior of said lower cabinet portion during dispensing of the contents of the keg is precluded, said removable cover means including a self-contained thermostatically controlled refrigeration system provided with a heat absorption element projecting into said lower cabinet portion so as to be in heat transfer relationship to the keg of beer, said removable cover means being provided with an integral lip seal means for normally maintaining said removable cover means in sealing relation to said lower cabinet portion and provide a support means for said refrigeration means, and an upstanding false cover adapted to cover said refrigeration system, said false cover being provided with air vent means for venting to the atmosphere heat absorbed by said heat absorption element.

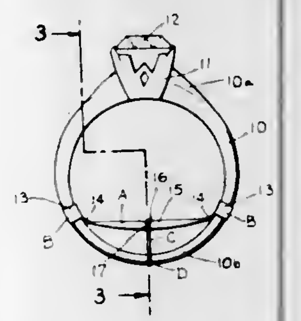
3,354,669

RING GUARD HAVING PIVOTED LOCKING LINK

Raymond A. McLees, Jr., 114 Anderson Ave., Anderson, S.C. 29621

Filed Mar. 10, 1965, Ser. No. 438,598

1 Claim. (Cl. 63—15.6)



A ring guard for a circular ring band including, an elongated thin guard member, means attaching the guard member adjacent each end thereof to the ring, said means being spaced about the ring to include a substantial segment of the ring band therebetween, an elongated thin link member pivotally secured to the guard member at the medial portion thereof being of sufficient length to extend across to the ring band, and means carried by the link at the free end thereof for attaching the link member to the band so that the link is adapted to be secured between the band and guard members and to be positioned normal to the guard member to provide a permanent brace therefor, whereby the ring band carrying the guard member which carries the pivoted unattached link may be passed over the finger and then the guard member positioned and the link attached.

3,354,670

FLEXIBLE COUPLING

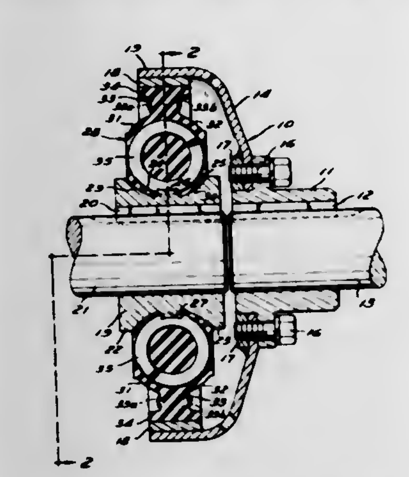
Thomas L. Fawick, Shaker Heights, Ohio, assignor to Fawick Corporation, a corporation of Michigan

Filed Sept. 3, 1965, Ser. No. 484,945

15 Claims. (Cl. 64—11)

1. A flexible coupling comprising:

a rotatable outer coupling structure;
a rotatable inner coupling structure mounted for rotation generally coaxial with said first coupling structure and disposed radially inward with respect to the latter;
a deformable and resilient annular body of rubber-like material engaged between said outer coupling structure and the outside of said inner coupling structure;
and a continuous coil spring annulus composed of successive interconnected helical turns embedded in said body of rubber-like material, with its successive helical turns disposed in succession along the annular extent of said body of rubber-like material.



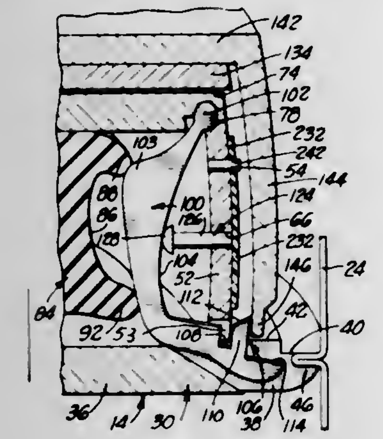
3,354,671

PATTERN DETERMINING DEVICE

William L. Carroll, 427 N. Magnolia, Whittier, Calif. 90601

Filed May 25, 1965, Ser. No. 458,567

16 Claims. (Cl. 66—50)



16. In a device for determining the position of the needles in a knitting machine, the combination of: a mounting bracket for securing said device in operative relationship with said knitting machine; a rotatable housing mounted on said mounting bracket and incorporating a plurality of drive surfaces engageable with said needles of said knitting machine to cause the rotation of said housing through a needle-engaging area; a plurality of jacks mounted in said housing and movable between retracted or extended positions; resilient means in said housing for urging said jacks toward said extended positions; selector pins mounted in said housing and engageable by said jacks, said selector pins being angularly oriented from the corresponding radius of said housing; and a selector pattern engageable with said selector pins to determine the location of said jacks in either the extended or retracted position.

3,354,672

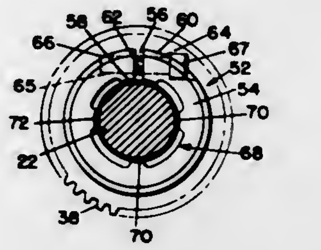
CONNECTING MEANS

Hans J. Klaeui, Shrewsbury, Mass., assignor to Crompton & Knowles-Malimo, Inc., Worcester, Mass., a corporation of Massachusetts

Filed Mar. 22, 1965, Ser. No. 441,462

7 Claims. (Cl. 66—84)

1. In a knitting machine for producing a textile fabric, said machine having a row of knitting needles, a first eccentric drive means to reciprocate said knitting needles, a plurality of thread guides for laying warp thread onto said knitting needles, a second eccentric drive means for reciprocating said thread guides in a vertical direction relative to said row of knitting needles and a third eccentric drive means for reciprocating said thread guides in a direction parallel to said row of knitting needles, a common drive shaft, connecting means to adjustably connect all of the aforementioned eccentric drive means, said connecting means comprising:



(a) a tubular sleeve having a continuous unbroken wall connected to each of said eccentric drive means, said sleeve extending along said drive shaft,
(b) a clamping collar surrounding said unbroken wall, and
(c) means to reduce the internal diameter of said collar to cause it to force said sleeve against said shaft in tight holding relationship therewith.

3,354,673

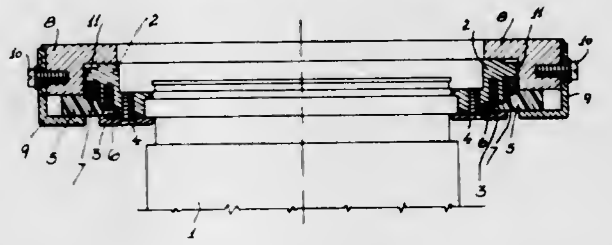
SINKER COVER MECHANISM FOR CIRCULAR KNITTING MACHINES

Vinicio Santoni, Via Amba D'Oro 9, Brescia, Italy

Filed Aug. 11, 1965, Ser. No. 478,921

Claims priority, application Italy, Aug. 14, 1964, 50,295, Patent 721,769

5 Claims. (Cl. 66—107)



1. In a circular stocking machine, a needle cylinder, a sinker crown secured thereto to rotate therewith, said sinker crown including a peripheral rib, a radially extending flange secured to said sinker crown and defining with said peripheral rib a circumferential groove around said sinker crown, a sinker cover overlying said sinker crown and radially spaced therefrom, and a plurality of rolling bearing members disposed in said groove in contact with said sinker cover, whereby said flange serves with said peripheral rib for housing the rolling bearing members and also for resisting the axial stresses, while said rolling bearing members resist the high radial stresses.

3,354,674

MANTLE WITH IMPROVED MOUNTING

Roy W. Hall, Oak Park, Ill., assignor to Aladdin Industries Incorporated, Chicago, Ill., a corporation of Illinois

Filed Oct. 18, 1965, Ser. No. 496,996

2 Claims. (Cl. 67—101)

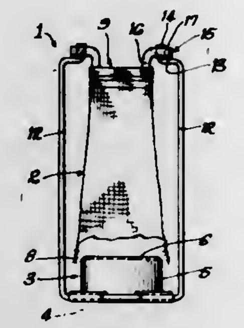
1. In a mantle-type illuminating device,

the combination comprising a ceramic ring,
a tubular mantle having its upper end secured around said ring,
a pair of upright supporting rods having elongated upper end portions which are flat and generally rectangular in cross section,

each of said flat end portions having a pair of flat vertically elongated side surfaces,

and means for supporting the lower ends of said rods,

said ring having a pair of outwardly projecting members having substantially vertical slots therein disengageably received over said flat upper end portions of said rods for removably supporting said ring between said rods,

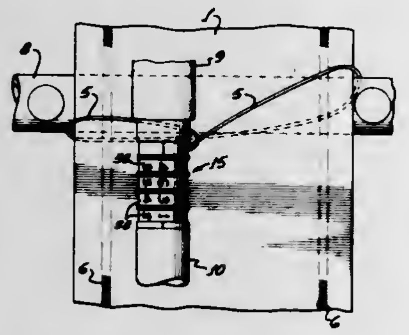


said slots being generally rectangular in cross section,

each of said members having a pair of flat vertically elongated internal surfaces within said slot therein and engaging said flat side surfaces on the corresponding rod for stabilizing said ring against rocking movement,

said ring and said mantle being readily removable from said rods by withdrawing said ring from the upper end portions of said rods.

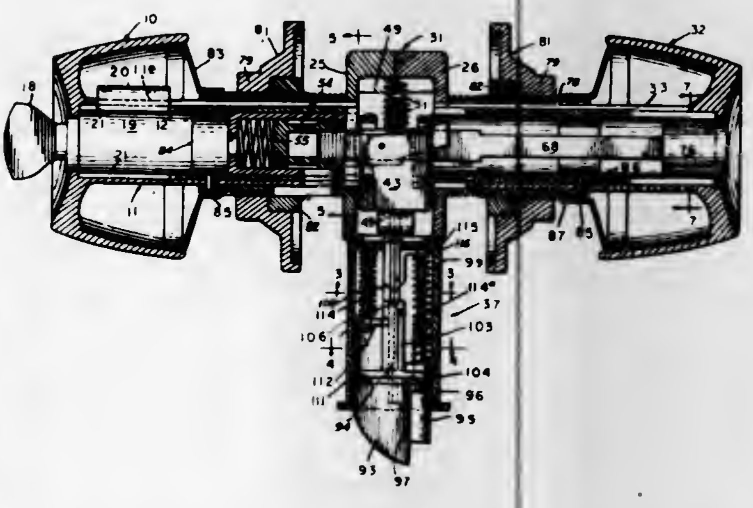
3,354,675
SKI POLE LOCK
Joanne M. Quigg, 2200 W. Brooks, 33,
Norman, Okla. 73069
Filed Sept. 16, 1965, Ser. No. 487,854
2 Claims. (Cl. 70—58)



1. An improved ski pole and locking device, comprising:

- (a) a hollow shaft and a grip adapted for removable connection to form a ski pole;
- (b) flexible means normally contained within said pole and adapted for extension to attach the pole to a fixed external object;
- (c) means for connecting and locking said grip to said shaft to permit normal use of the pole when said flexible means is retracted and to prevent detachment of the pole from the fixed object when said flexible means is extended, said connecting and locking means comprising
- (d) an annular sleeve tightly contained in the upper end of said shaft,
- (e) an elongated cylindrical barrel member having its lower portion tightly contained in said sleeve and having an axial bore through all but its lower portion,
- (f) an enlarged diameter collar including an enlarged diameter bore at the upper end of said barrel member,
- (g) a cylindrical aligning flange extending downward from said grip and adapted for removable insertion into said collar to maintain the grip and shaft in axial alignment,
- (h) a lock core extending downward from said aligning flange for insertion into said barrel bore,
- (i) a plurality of aligned locking teeth spaced along the length of said lock core and adapted to extend through a keyway in one side of said barrel member,
- (j) a plurality of locking rings rotatably mounted around said barrel member,
- (k) an internal ward on each said locking ring for overlaying a respective one of said teeth to lock said lock core in said barrel member, each said ward having a notch formed at one point in its circumference so that when all said notches are aligned with said teeth, the grip may be removed from the shaft,
- (l) indicia on each said ring for indicating the aligned position of said notches,
- (m) means on said grip and said shaft for preventing axial rotation of said grip relative to said shaft when connected thereto; and said flexible means comprising,
- (n) a flexible cord connected at its one end to the interior of said grip above said lock core and extending downward therefrom a substantial distance into said hollow shaft through apertures in said aligning flange, core, and barrel,
- (o) stop means at the lower end of said cord to prevent it from moving upward through the opening in said barrel; and,
- (p) a slot in said collar in registry with said apertures to permit said cord to extend out of said slot, around the fixed object and back through said slot, whereby said locking means may be unlocked to permit said grip to be removed from said shaft for wrapping said flexible cord around the fixed object and relocked with said grip reconnected to said shaft to prevent theft of the ski pole.

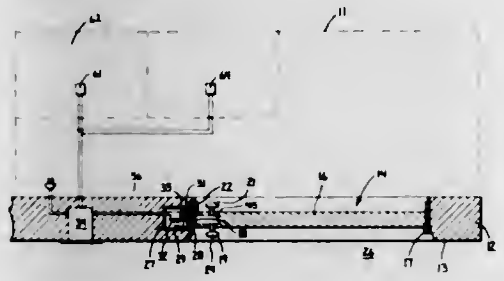
3,354,676
HEAVY DUTY DOOR LOCK SET
William B. Wilson, Corona, Calif., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed June 17, 1965, Ser. No. 464,666
6 Claims. (Cl. 70—146)



1. A door lock construction comprising an outer and an inner knob, each provided with an integral slotted sleeve, a housing having complementary housing sections each with a bearing, a tube mounted in and affixed to each sleeve of a knob and extending through a bearing so that each sleeve and tube is rotatable in the bearing of the housing section with the adjacent end of each tube projected into the interior of the housing and thereat

provided with an arcuate cam surface, a spring-loaded retractor in the housing having camming surfaces engaged by the arcuate cam surfaces of said tubes, a latch bolt connected to and retracted by the camming action of said retractor upon turning one of the knobs, and locking mechanism projecting through the inner knob, its tube and into the housing for locking the outer knob and its tube against rotation, said locking mechanism including an elongated locking bar projecting through the inner knob and its sleeve, its tube and into the housing, a locking clip pivotally mounted on the locking bar within the housing, said locking bar projecting through and longitudinally movable in said retractor with said locking clip cooperating with said retractor to retain said bar in its inwardly depressed locking position until released by turning the inner knob to retract the retractor and release the locking clip.

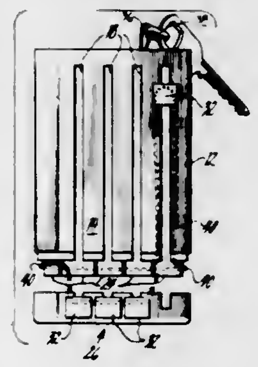
3,354,677
DOOR CONTROL SYSTEM
Clark L. Green, 3156 N. Bancroft,
Indianapolis, Ind. 46218
Filed June 1, 1965, Ser. No. 460,591
2 Claims. (Cl. 70—279)



1. In a building structure, the combination comprising:

- a building wall having a first opening therein;
- a door hingedly mounted in said opening and swingable between an open position and a closed position closing said opening;
- a stop on said wall, said stop permitting said door to swing in one direction only from its closed position;
- a knob operated latch at the swinging edge of said door;
- an electrically operable strike in said wall at the edge of said opening, said latch being normally received in said strike and engaged thereby, preventing said door from opening;
- a first key operated lock connected between said latch and said knob and having a key-slot therein and operable when locked to prevent unlatching of said door by said knob, said first lock being operable to an unlocked condition by a first key to enable unlatching of said door by operation of said knob;
- solenoid means in said strike and operable, when energized, to disengage said latch and release said door to swing open;
- a receptacle in said wall;
- a second key operated lock in said receptacle and having a key-slot therein facing outwardly from said wall in the same direction as the key-slot in said first lock;
- a deadbolt in said second lock;
- a source of electrical energy;
- a first normally-open electrical switch in a circuit with said source and said solenoid means, said switch being normally held open by said deadbolt, said second lock being operable to unlocked condition by a second key inoperative in said first lock, said second lock, when operated to an unlocked condition moving said deadbolt to a second position enabling closure of said first switch, said first switch thereupon closing to make said circuit and energize said solenoid means to release said door to swing open;
- a second normally-open switch connected in parallel with said first switch, said second switch having operating means inside the building structure, and said key-slots opening on the outside of said building,
- said first key being inoperative in said second lock,
- and said second lock being secured in said building wall and operable only by a key inserted in the key-slot thereof and only from outside the building.

3,354,678
KEY CASE
Jack Stifelman, 391 Oliver Road,
Enfield, Conn. 06030
Filed Aug. 23, 1965, Ser. No. 481,811
2 Claims. (Cl. 70—456)

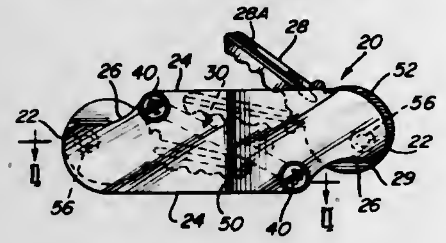


1. A key case for storing a plurality of keys so that any one key can be selectively extended therefrom, said case comprising a generally hollow thermoplastic housing having generally flat top and bottom walls arranged parallel to one another, said housing having side walls supporting said top and bottom walls in spaced relation to one another, said housing further including transversely spaced interior walls which are relatively thin compared to the thickness of a conventional key, which interior walls are also parallel to one another and are inclined with respect to said top and bottom walls at an angle of approximately 30°, all of said walls cooperating with one another to define a plurality of key receptacles, each of which key receptacles is adapted to slidably receive a conventional key, a closure for one end of said housing which defines an inner end of each of said key receptacles, a plunger slidably received in each of said key receptacles for reciprocable movement toward and away from an open end of each of said key receptacles, link means for connecting said keys to said plungers, each of said plungers including an integral button extending through an elongated slot in one of said housing walls associated with a particular key receptacle whereby each key can be selectively extended and retracted to and from a position outside said housing, each of said slots extending from the inner end of its associated key receptacle, to a point spaced inwardly from the outer edge thereof, cable means interconnecting said plungers so that advancing movement of one of said button connected plungers is accompanied by reverse movement of the remaining plungers so that only one key can be positioned outside said housing at any one time, and key camming notch means adjacent the open end of each of said key receptacles, each of said notch means being located opposite to the slot defining portion of each key receptacle so that return movement of that particular plunger connected button cams the key into alignment with the interior walls of said key receptacle, thereby facilitating the retraction of the key therein.

3,354,679

KEY HOLDER

James E. Le Fave, 4045 W. North Ave.,
Chicago, Ill. 60639
Filed Aug. 12, 1966, Ser. No. 572,131
9 Claims. (Cl. 70—456)

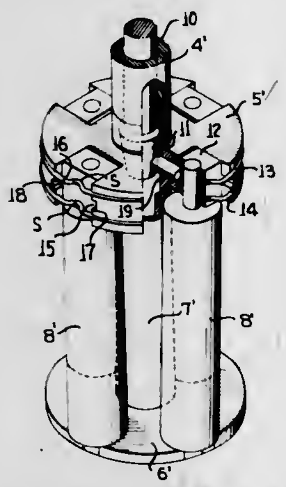


1. A key holder comprising:
- (i) a plurality of plate members of similar configuration secured together in spaced parallel planes and having a pair of opposite ends and opposite longitudinal edges,
- (ii) fastening means secured through said plate members adjacent to and spaced inwardly of said ends,
- (iii) spacer members of similar configuration between said plate members,
  - each spacer member comprising an elongate strip having enlarged opposite end portions and a medial body portion which is thicker in cross-section than that of the end portion,
- (iv) said fastening means extending through said end portions with the thickness of the opposite ends of the holder being less than that of the holder between said ends,
- (v) said spacer members being secured diagonally between said plate members to provide a key compartment between each pair of adjacent plate members on opposite sides of the spacer member,
- (vi) key pivot means in each compartment adapted to engage the head of a key for pivotal movement of the bit of the key into and out of the compartment,
- (vii) said plate members having arcuate notches in said longitudinal edges and extending between said fastening means and the adjacent end of the holder, said notches being aligned with the compartments to enable the head of a key to be engaged for selectively pivoting the key into and out of a compartment.

3,354,680

METHOD OF PRODUCING A CONICAL PAIL AND MACHINE FOR CARRYING OUT THE METHOD

Finn Jacobsen, Limhamn, Sweden, assignor to
AB Platmanufaktur, Malmo, Sweden
Filed Nov. 5, 1964, Ser. No. 409,204
22 Claims. (Cl. 72—126)

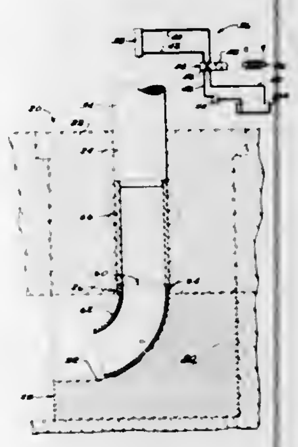


1. A tool for changing a pail body blank of generally cylindrical shape into a tapering body form, said tool comprising a supporting means having thereon a plurality of generally cylindriform shaping members arranged in a circle and presentable in a pail body blank with their axes converging toward a common point thereby to present shaping surfaces disposed to describe a frusto-coniform surface of rotation upon the imparting of rotation to the supporting means, means located at at least one end of each of said members mounting said members on said supporting means for transmission of shaping forces to said members solely through said mounting means whereby upon insertion of the tool into a generally cylindrical pail body blank and the bringing about of relative rotary movement between the blank and the tool the blank shape will be changed to frusto-conical.

3,354,681

TUBE FORMING MEANS AND METHOD

Daniel L. Lombard, Youngstown, Ohio, assignor to Lombard Corporation, Youngstown, Ohio, a corporation of Ohio
Filed Dec. 28, 1964, Ser. No. 421,569
13 Claims. (Cl. 72—166)



1. In apparatus for bending cold tubular members, the combination comprising: a support block having an opening within which said tubular member is supported; die means at one end of said support block within said opening for causing said tubular member to bend along a desired radius, said die means comprising a tapered land whose axially extending lines of contact with said tubular member vary from a minimum length at a first point on said circumference to a maximum length at a second point on said circumference, said first and second points corresponding respectively to areas of maximum and minimum frictional drag; said tubular member bending about said first point during extrusion thereof; and means for forcibly moving said tubular member through said die means.

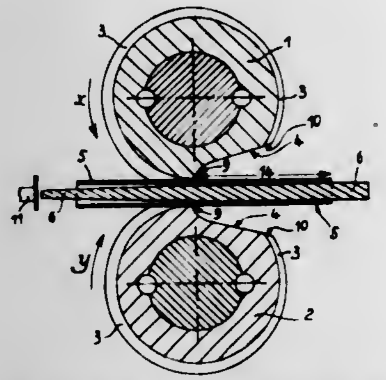
3,354,682

APPARATUS FOR FORMING METAL TUBES TO THE SHAPE OF A FRUSTUM OF A PYRAMID

Antoine Dupuy, Rue Peyrard, Saint-Bonnet-le-Chateau, Loire, France
Filed Apr. 14, 1965, Ser. No. 448,053
Claims priority, application France, Apr. 17, 1964, 8,921, Patent 1,401,473
2 Claims. (Cl. 72—192)

1. In an arrangement for producing tubular frustums of a pyramid out of a tubular blank, the provision of two rolls separated by a gap and provided each along its periphery with an engraving of a gradually decreasing depth and breadth and the cross-section of which roll engravings, when facing each other on either side of the gap between the rolls, cooperatively define the outer surface of the frustum to be obtained and the polygonal frusto-pyramidal mandrel having a shape which matches the inner surface of the frustum to be obtained, said mandrel being adapted to carry the tubular blank and to be urged

therewith through the gap between the rolls in a direction perpendicular to the plane of the axes of the rolls, to make the blank engage the engravings of the rolls, the input and output ends of each engraving being separated by a relieved portion of the corresponding roll.



3,354,683

THERMAL FATIGUE-RESISTANT AIRFOIL SHAPES FROM DISPERSION-MODIFIED METALS

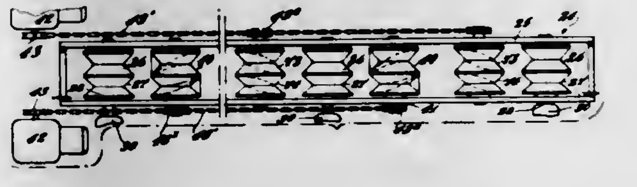
David B. Arnold, Ellicott City, Md., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 2, 1965, Ser. No. 511,213
1 Claim. (Cl. 72—206)

In a process for producing an airfoil shape for high temperature use the steps comprising rolling a sheet of thoria-strengthened nickel to the desired gauge and thereafter bending the rolled sheet along an axis substantially parallel to the axis of the rolling direction which has effected the maximum reduction in the gauge of said sheet.

3,354,684

ROLLING MILL HANDLING MECHANISM

Wilford E. Metzger, Jr., Reading, Pa., assignor to Birdsboro Corporation, Birdsboro, Pa., a corporation of Pennsylvania
Filed Dec. 20, 1965, Ser. No. 515,003
11 Claims. (Cl. 72—222)

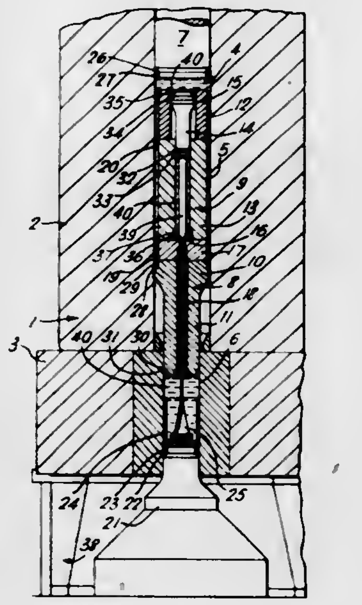


1. In rolling mill handling mechanism, a rolling mill table having a plurality of rotatable table rollers distributed along the same, each of said rollers having a plurality of aligned trough-like grooves for handling stock of generally rectangular cross-section on different rolling mill passes, and a plurality of rotatable transfer cam rollers interspersed among the table rollers, each transfer cam roller being immovable in the axial direction and having in line with grooves of two different passes of the table rollers a pair of trough-like grooves at one circumferential position of the cam rollers below the grooves in the table rollers and adapted to pass stock in the grooves in the table rollers without interference, and having around the circumference of the cam rollers between the said pair of trough-like grooves in the cam rollers a helical groove rising to raise the stock above the level of the table rollers, said helical groove having sides which change their inclination from one end of the helix to the other to turn the stock through 90° on its longitudinal axis and deposit it in table roller grooves corresponding to another rolling mill pass.

3,354,685

HYDROSTATIC EXTRUSION APPARATUS

Derek Green, Lytham St. Annes, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed July 15, 1965, Ser. No. 472,160
Claims priority, application Great Britain, July 31, 1964, 30,278/64
1 Claim. (Cl. 72—253)



Extrusion apparatus comprising a main pressure cylinder having a bore stepped in a major part and a minor part of smaller diameter than the major part, means for pressurising hydraulic liquid in the major part of the bore of the main cylinder, a free piston assembly having a main section including a piston head fitting in the major part of the bore of the main cylinder, the free piston assembly having a subsidiary extension of smaller diameter than the piston head projecting into and fitting the minor part of the bore of the main cylinder, a secondary cylinder in the main section of the free piston assembly having its longitudinal axis in the direction of the longitudinal axis of the free piston assembly, said secondary cylinder having one end open to the major part of the bore of the main cylinder on the side of the free piston assembly remote from the minor part of the core of the main cylinder and connecting at its other end with a co-extensive extrusion chamber also in the main section of the free piston assembly and of smaller diameter than the diameter of the secondary cylinder, the extrusion chamber being fitted with a plunger said plunger having a head fitting in the secondary cylinder outside the extrusion chamber, an extrusion die being fitted in the end of the extrusion chamber remote from the secondary cylinder said extrusion die having connection with the minor part of the bore of the main cylinder through a passageway leading from the outlet of the die through the subsidiary extension of the free piston assembly.

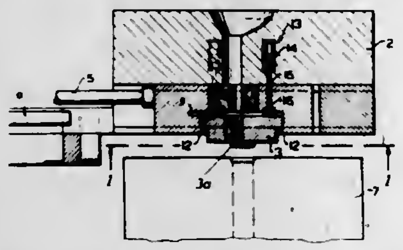
3,354,686

DEVICE

Ernst Petsch, Duisburg, Germany, assignor to Hydraulik G.m.b.H., Duisburg, Germany
Filed Nov. 2, 1965, Ser. No. 506,043
9 Claims. (Cl. 72—263)

1. A metal extrusion press comprising a body portion having an extrusion discharge opening, a carrier movable adjacent said body portion alongside said opening, a pressure die having an opening therethrough adapted to be aligned with the extrusion discharge opening, said pressure die being mounted in said carrier for movement in directions parallel to said discharge opening axis,

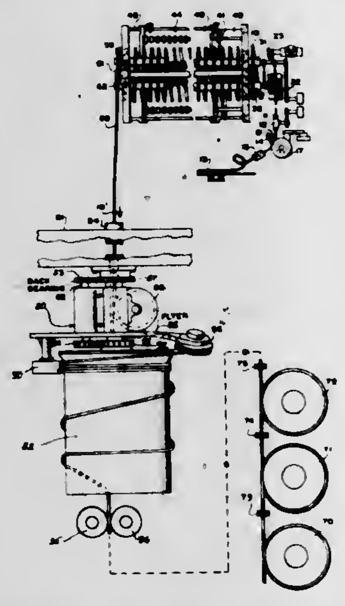
means associated with said die for displacing said die away from said discharge opening for removing any residue forming between said die and said discharge opening after extrusion, said body portions and said carrier when said die is displaced from said discharge opening together defining an access passage for a saw to move transversely to the discharge opening to cut away the residue and means for displacing said carrier to a position in which said die opening is aligned with said extrusion discharge opening and away from this position for removal and exchange of said die.



3,354,687
COMBINATION WIRE TREATING AND DRAWING APPARATUS AND PROCESS

Walter J. Manson, Niles, Mich., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware

Filed June 23, 1965, Ser. No. 466,326
3 Claims. (Cl. 72—280)

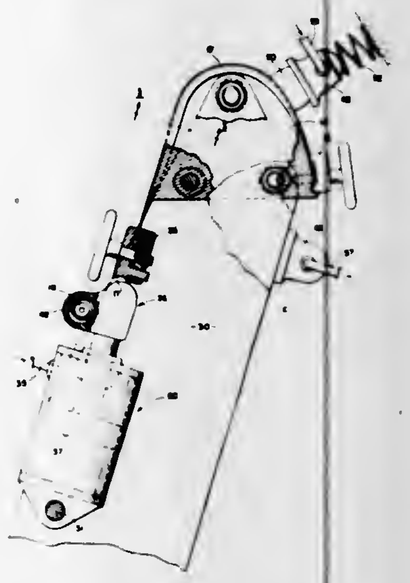


1. In a device for continuously subjecting wire to treatment with chemical liquids and then drawing the same, the combination comprising,
  means for continuously forming wire to the shape of a helix of uniform coil diameter,
  horizontal roller means for storing a consecutive series of the coils of the formed helix which is adjacent to the coil forming means so that the axis of the stored helix is horizontal and the lower portions of the stored coils are suspended from said horizontal roller means,
  at least one liquid container means surrounding the lower suspended portions of a plurality of said stored helical coils,
  means for continuously straightening the wire as it reaches the end of said horizontal roller means,
  stator block means for continuously winding said straightened wire onto a non-rotating block adapted to hold at least 20 turns of the wire,
  at least one wire propelling means substantially axially aligned with respect to said non-rotating block,
  die means for drawing said wire positioned between said wire propelling means and said non-rotating block.

3,354,688
SONIC TECHNIQUES AND APPARATUS FOR STRETCH FORMING

Albert G. Bodine, Jr., 7877 Woodley Ave., Van Nuys, Calif. 91406

Filed Jan. 18, 1965, Ser. No. 426,101
21 Claims. (Cl. 72—297)

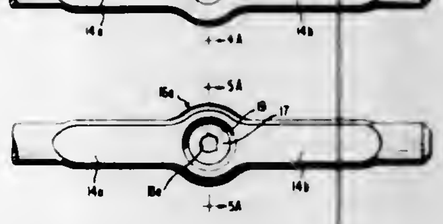


1. A method for stretch forming a member in conformance with a forming die comprising the steps of
  clamping opposite ends of said member to separate holding means,
  stretching said member by applying tension thereto, and
  while said member is being stretched applying sonic vibrations thereto, said vibrations being at a resonant frequency for substantially optimum efficiency of transfer of sonic energy to said member.

3,354,689
METAL FORMING

Anthony R. Tirone, Columbus, Ohio, assignor to Colorado Oil and Gas Corporation, Denver, Colo., a corporation of Delaware

Filed July 13, 1965, Ser. No. 471,547
19 Claims. (Cl. 72—334)



1. A process for forming a component with an enlarged land from metal rod, comprising: upsetting a portion of the rod to provide an enlarged section thereof having an increased volume of metal; coining the rod in the region of said enlarged upset section to form an enlarged land of desired maximum diameter and of desired thickness; punching in said enlarged land an aperture of sufficient size to provide space for inward flow of excess metal in a subsequent dimpling operation; dimpling a portion of said enlarged land around said aperture punched in the land, thus reducing the dimpled part of the land to desired thickness and causing metal to flow inwardly into the space created by the aforementioned aperture punched in said land; and punching the dimpled land portion of reduced thickness to remove

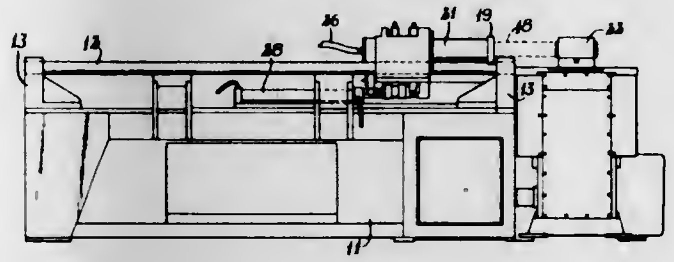
metal surrounding said aperture resulting from dimpling and thus provide a hole of desired size and configuration.

3,354,690
MACHINE FOR SHAPING TUBULAR STOCK

George F. Beckwell, Sugar Grove, Ill., assignor to Pines Engineering Co., Inc., Aurora, Ill., a corporation of Illinois

Filed May 10, 1965, Ser. No. 454,441
14 Claims. (Cl. 72—352)

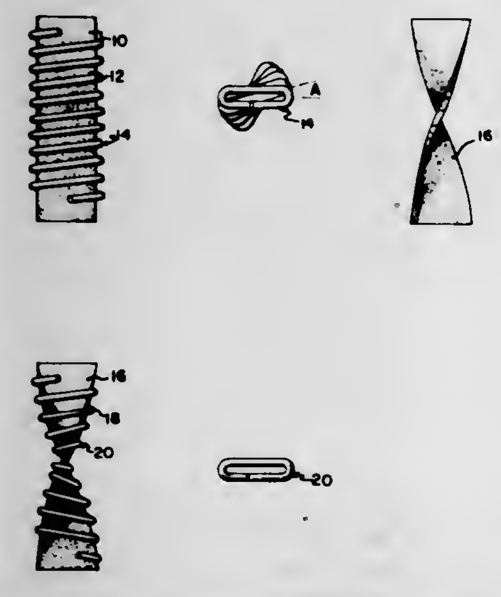
1. In a machine for forming tubular stock, a mounting frame, a forming die on said frame, a guide rail on said frame, a work-piece holding head guided on said rail for movement toward and away from said forming die, a pair of pressure shoes carried by said head one arranged on each side of the guide rail, and a hydraulic piston-cylinder assembly on said head operably connected to said pressure shoes, said hydraulic piston-cylinder assembly being operable when the head is advancing toward the forming die to urge the pressure shoes into tight binding engagement with the guide rail and to move said pressure shoes away from the guide rail when the head is advanced in the opposite direction.



3,354,691
PROCESS OF FABRICATING REFRACTORY METAL FORMS

Harold H. Hall, Jr., Marblehead, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Nov. 13, 1964, Ser. No. 410,980
5 Claims. (Cl. 72—371)



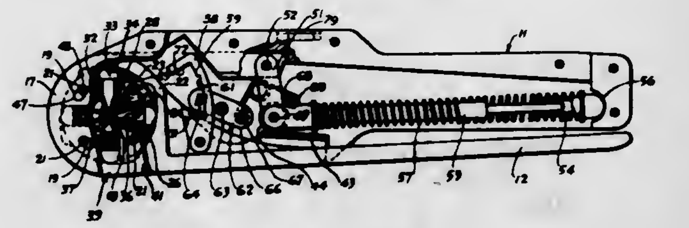
1. A method of manufacturing refractory metal wire forms having two oppositely disposed equal short sides and two opposing equal sides that are longer in length than said short sides, the steps which comprise: winding a length of refractory metal wire about a substantially straight preliminary mandrel; separating said wire form from said preliminary mandrel and allowing said wire to take a fixed set; forming a spiral mandrel having a shape opposite to the fixed set formed in the winding on said preliminary mandrel, winding a length of refractory metal wire about said spiral mandrel, the cross-section of which has two short oppositely disposed sides and two opposing sides that are longer than said short sides, separating said wire from said spiral mandrel and allowing the resulting wire form to spring back into a shape wherein said short sides of each turn and said longer sides of each turn are aligned.

3,354,692
ELECTRICAL CONNECTOR CONTACT CRIMPING TOOL

James E. Morris, Fort Worth, Tex., assignor to General Dynamics Corporation (Convair Division), San Diego, Calif., a corporation of Delaware

Application Feb. 9, 1962, Ser. No. 172,195, which is a division of application Ser. No. 757,514, Aug. 27, 1958, now Patent No. 3,059,511, dated Oct. 23, 1962. Divided and this application Dec. 31, 1964, Ser. No. 422,686

5 Claims. (Cl. 72—402)



1. Means for assuring a predetermined minimum crimping action has been applied to a connector comprising a crimping tool having handles for effecting crimping upon closure thereof, ratchet means interconnecting said handles, said ratchet means permitting closure of said handles but not opening thereof until said handles have been completely closed, said ratchet means permitting opening of said handles upon complete closure thereof, said ratchet means comprising a rack mounted on one of said handles with notches on the surface thereof and an abutting face at each end of said notches, a pawl assembly pivotally mounted on the other of said handles and having a pawl engageable with said notches and said abutting faces, said pawl being pivotally disengaged from said notches upon abutment with one of said faces, resilient means maintaining said pawl out of engagement with said notches until said pawl abuts the other of said faces, said resilient means thereafter maintaining said pawl in engagement with said notches until said pawl again abuts said one of said faces.

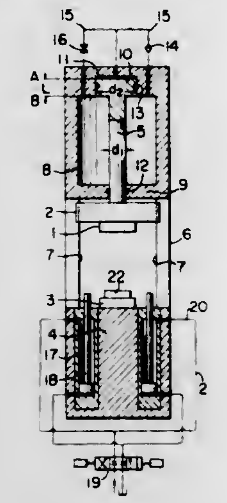
3,354,693
HIGH ENERGY RATE FORMING MACHINE

Akira Asari, Osaka, Japan, assignor to Kobe Steel Works, Ltd., Kobe, Japan

Filed July 21, 1964, Ser. No. 384,103
Claims priority, application Japan, July 24, 1963, 38/39,257
4 Claims. (Cl. 72—453)

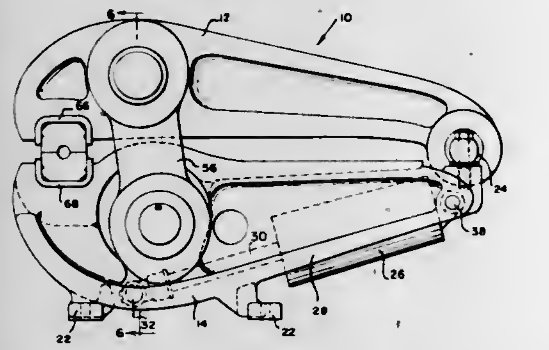
1. A high energy rate forming machine which comprises: a ram adapted to be actuated at a high rate by gas pressure; a piston provided on said ram; a pressure chamber adapted to contain gas under high pressure and having a diameter substantially larger than the diameter of said piston, said piston passing through a sliding seal in one end of said chamber; a plunger-cylinder assembly disposed between one end of said piston and the other end of said pressure chamber, said plunger being formed integral with said piston and said cylinder being formed

integral with said pressure chamber; and a jack device located entirely outside said chamber for returning said ram to its initial position after it has descended; said cylinder and said pressure chamber communicating with



each other by means of a check valve which opens only to said gas pressure chamber, and said cylinder and said pressure chamber also communicating with each other by means of a switching valve.

3,354,694
TRANSPORTABLE SWAGING PRESS
William H. Schwartz, 325 Summit, Corte Madera, Calif. 94925
Filed Aug. 31, 1964, Ser. No. 393,273
2 Claims. (Cl. 72—453)



1. A swaging press comprising: a pair of elongated jaw members hinged to one another at one of their ends and carrying die means at their other ends; linkage means connected to one of said jaw members generally remote from its hinged end; rotatable eccentric means journaled in the other of said jaw members and eccentrically connected to said linkage means; and hydraulically extendable power means having one end pivoted to said other member adjacent the hinged end of said other member, said power means including a piston and rod having an axis extending generally parallel to a longitudinal axis of said other jaw member; said power means being eccentrically connected to said rotatable eccentric means.

3,354,695
UNIFORMLY TAPERED TRANSITION MANDREL
Pedro A. Szente, Sao Jose dos Campos, Sao Paulo, Brazil, assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 16, 1964, Ser. No. 383,263
2 Claims. (Cl. 72—476)

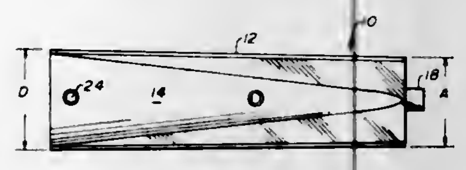
1. A mandrel for forming from a rectangular length of waveguide in one operation a microwave waveguide transition from a rectangular waveguide to circular waveguide capable of transmitting therethrough with minimum power losses microwave power of preselected wavelength said mandrel comprising

(a) a body member having a length equal to at least a half wavelength of said preselected wavelength;

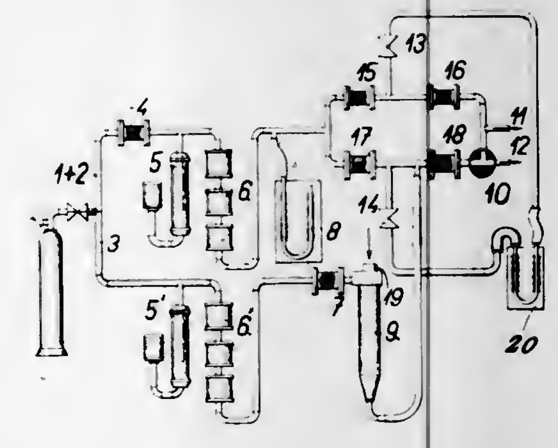
(b) said body member having a first terminus of substantially rectangular cross section and dimensions to facilitate snug insertion of such end into one end of said length of rectangular waveguide;

(c) said body member having a second opposite terminus of circular and larger total area cross section;

(d) said body member having a central portion extending between said first terminus and said second terminus, said central portion having a geometrically progressing cross section therealong defined by a generally rectangular shape having rounded lateral edges along the entire length thereof, said body portion having side portions adjacent each of the longer dimensions of said central portion, said side portions having cross sections along the entire length thereof which conform to a segment on a chord of a circle coaxial with the central axis of said central portion, the areas of said cross sections continuously increasing beginning at said first terminus and progressing toward said second terminus.

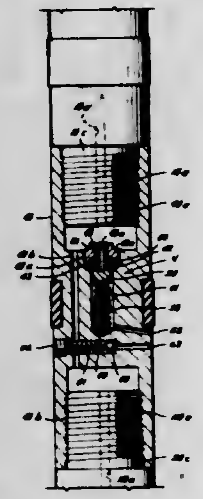


3,354,696
PNEUMATIC DETECTOR OF CHROMATOGRAPHIC FRACTIONS
Josef Novák and Jaroslav Janák, Brno, Czechoslovakia, assignors to Československá akademie věd, Prague, Czechoslovakia
Filed Jan. 31, 1964, Ser. No. 341,587
Claims priority, application Czechoslovakia, Feb. 14, 1963, 863/63
3 Claims. (Cl. 73—23.1)



1. A pneumatic detector of chromatographic fractions from a chromatographic column by measuring dynamic effects of gas flow through a pneumatic resistor, comprising, a conduit connected to a source of the same carrier gas that is used in the chromatographic column; a first line connecting a first and second pneumatic resistor in series between said conduit and a region downstream of said second pneumatic resistor; a second line connecting a third and fourth pneumatic resistor in series between said first conduit and said region; a second conduit connecting the output of the chromatographic column to said second line between said third and fourth resistors; a pressure responsive means connected to said first line between said first and second resistors and said second line between said third resistor and said second conduit.

3,354,697
PIPE TESTING APPARATUS
John P. Wilkerson, Pasadena, Tex., assignor to Loomis Hydraulic Testing Company, Inc., a corporation of Texas
Filed Sept. 20, 1965, Ser. No. 488,417
2 Claims. (Cl. 73—40.5)



1. In a pipe testing apparatus having longitudinally spaced packers, and a valve assembly for controlling the introduction of test fluid between said packers, the improvement residing in said valve assembly, including:

(a) a valve housing having a longitudinal bore therein with a counterbore to form an annular lateral shoulder,

(b) a cylindrical valve seat having a lateral flange with its outer portion disposed in engagement with said shoulder and its inner portion disposed inwardly of said shoulder to form an annular valve seat surface,

(c) a retainer cap removably mounted in said counterbore and engaging said lateral flange to retain same in engagement with said shoulder,

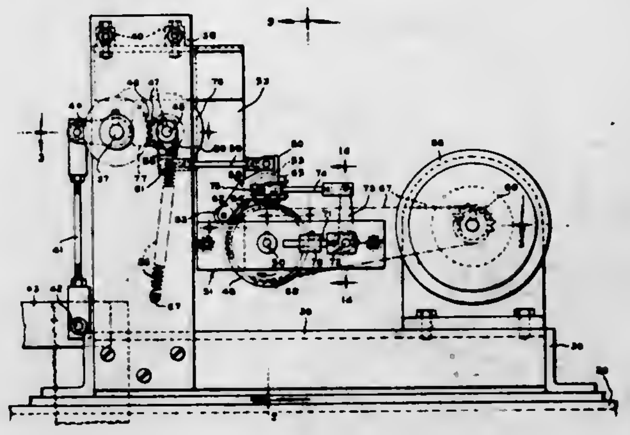
(d) said retainer cap having a longitudinal bore with an annular recess for receiving the cylindrical portion of said valve seat,

(e) a valve element having a guide tube extending into said longitudinal bore of said retainer cap and a laterally extending valve surface adapted to engage said valve seat surface to close fluid flow through said longitudinal bore, and

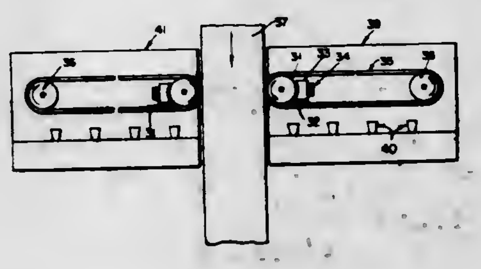
(f) said valve seat being formed of a plastic resilient material which is softer than said valve surface on said valve element for sealingly engaging each other when said valve element is in the closed position.

3,354,698
MASS MEASURING SYSTEM
John L. Christmann, Passaic, N.J., assignor to Merrick Scale Mfg. Company, Passaic, N.J., a corporation of New Jersey
Filed Jan. 21, 1965, Ser. No. 426,802
12 Claims. (Cl. 73—67.2)

1. A mass measuring system comprising an elastic member to support a load and excited into free oscillation by said load, the frequency of the oscillation varying inversely with the load, first means operatively connected to the elastic member and arranged to initiate and sustain the oscillation of said elastic member, second means actuated by the oscillation to count said oscillation, and third means cooperating with the second means to linearize the frequency of the oscillation.



3,354,699
ULTRASONIC MEASUREMENT APPARATUS EMPLOYING A COOLED CYLINDRICAL TRANSDUCER
Edmund H. Carnevale, Beverly, and Lawrence C. Lynnworth, Waltham, Mass., assignors to Parametrics, Inc., Waltham, Mass., a corporation of Massachusetts
Original application Mar. 10, 1964, Ser. No. 350,705, now Patent No. 3,315,520, dated Apr. 25, 1967. Divided and this application Feb. 17, 1967, Ser. No. 616,806
7 Claims. (Cl. 73—67.5)



1. Apparatus for measuring the ultrasonic transmission characteristics of a material comprising,

transducer means for transmitting and receiving ultrasonic energy, said transducer means providing pulses of ultrasonic energy in response to actuating electrical signals and providing output electrical signals in response to received pulses of ultrasonic energy, said transducer means including a generally cylindrical ultrasonic emitting surface arranged to rotate about the long axis of said cylinder and positioned in proximity to said material to be measured;

circuit means for actuating said transducer means to produce output pulses of ultrasonic energy and for comparing the time of occurrence of output electrical signals from said transducer with said ultrasonic energy pulses;

a belt arranged to travel between said cylindrical surface and a position removed from said cylindrical surface, said belt contacting both said cylindrical surface and said material to be measured for coupling ultrasonic energy between said cylindrical surface and said material to be measured; and

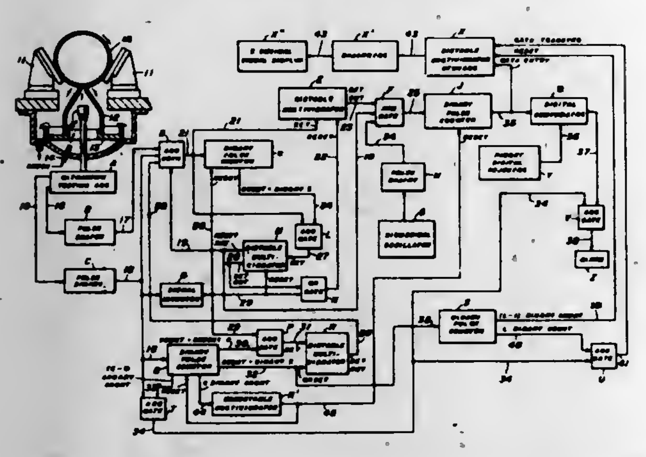
cooling means positioned to cool said belt as it travels to maintain the temperature at said cylindrical surface below a predetermined level.

3,354,700
APPARATUS FOR MEASURING THICKNESS OF MATERIALS BY SOUND-WAVE REFLECTION

Donald G. Schindler, Whitehall, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed July 2, 1964, Ser. No. 379,861

6 Claims. (Cl. 73—67.9)



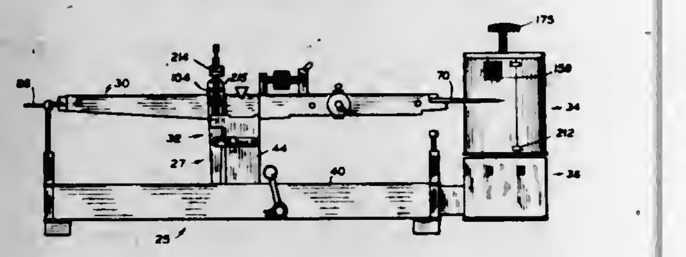
1. Apparatus for measuring the thickness of material capable of supporting ultrasonic waves comprising means for introducing successive pulses of ultrasonic waves through one surface of the material and delivering a signal on the arrival of each echo of a plural number of echoes from each pulse reflected from the opposite surface, means for generating a timing-frequency wave, means for accumulatively counting the number of cycles along said timing frequency wave occurring during the time spans of a predetermined number of reflected echoes resulting from a predetermined plural number of said pulses, and means responsive to said counting means for indicating a thickness measurement, said predetermined number of echoes and pulses being selected so that said means responsive to said counting means indicate directly in thickness measurement units.

3,354,701
MECHANICAL OSCILLOGRAPHS

Felix L. Yerzley, 66 Harrison St., Verona, N.J. 07044, and Ralph R. Roberts, Glen Rock, N.J. (48 Winding Way, Upper Saddle River, N.J. 07458)

Filed Feb. 18, 1965, Ser. No. 433,612

15 Claims. (Cl. 73—88)



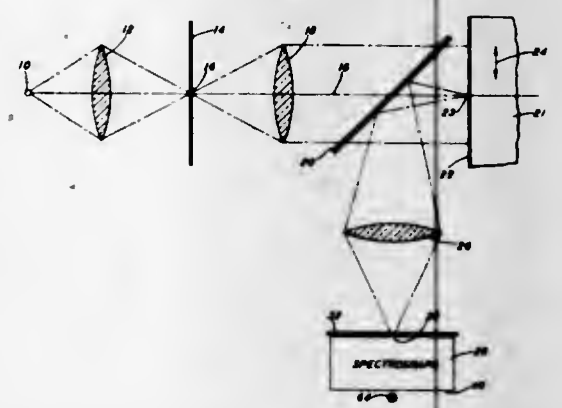
1. A mechanical oscillograph for the measuring of the mechanical properties of elastomeric vulcanizates and the like comprising: (1) a base; (2) a chronograph drum drive assembly disposed in fixed relationship to the base; (3) a chronograph drum carried by the drum drive assembly; (4) a pedestal carried by the base; (5) a balance beam having a knife edge which rests on and is supported by the pedestal, the beam being able to oscillate in respect to the base, and the beam carrying on its one end a recording means adapted to be moved toward and to engage the chronograph drum; (6) means to support a plurality of standard weights at more than one location on the balance beam said locations being between the recording end and the knife edge; (7) a counterweight carried by a threaded rod, the rod fixedly mounted on the balance beam so that as the counterweight is rotated it will move toward or away from the knife edge to provide the desired balance of the balance beam; (8) a flip-arm mounted on the balance beam and adapted to be rotated from a non-load to a load position to shift the center of gravity of the beam and attached components to provide a slight over-balance of the beam end having the recording means; (9) a stabilizing arm carried by the balance beam at a precisely predetermined point thereon, the stabilizing arm adapted to support a test specimen for the test thereon and (10) an upper test loading surface carried by the base and adjustable to provide a determined compression on the test specimen.

3,354,702
INTERFEROMETRIC STRAIN ANALYSIS

Edward Eisner, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 4, 1965, Ser. No. 453,137

4 Claims. (Cl. 73—88)



1. The method of obtaining the sum of the principal strains at numerous points on a surface of an object which comprises calibrating a specific transparent material for changes in thickness and refractive index with strain, coating the said surface of the object with a thin film of said transparent material, the thin film having a thickness of less than 0.1 mm. and having reflective coatings at least 94 percent reflecting on its major surfaces, applying in combination multiple-beam interferometric and spectroscopic techniques to obtain a first pattern of fringes of equal chromatic order for a first condition of strain on the object, subjecting the object to the strains to be investigated and repeating the application in combination of the said interferometric and spectroscopic techniques to obtain a second pattern of fringes of equal chromatic order whereby comparison of said first and said second patterns of fringes provides information relative to the sum of the principal strains at numerous points on the surface of the object.

3,354,703
SHIPS STRAIN MEASURING SYSTEM

Roger B. Russell, Jr., Kenmore, and Martin R. Bates, Buffalo, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 27, 1963, Ser. No. 291,212

5 Claims. (Cl. 73—88.5)

1. A device for determining the flexing stress of a structure at sea, comprising:

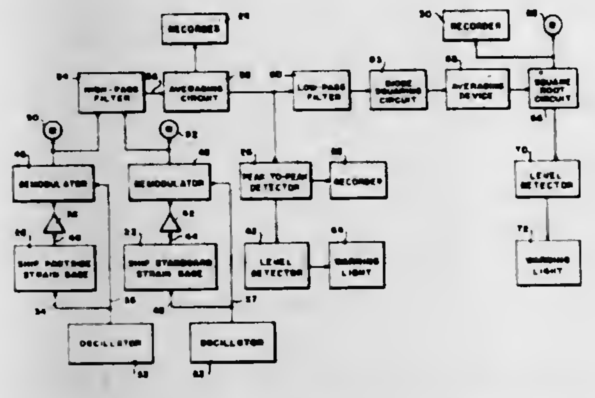
a source of AC voltage;

strain gage means, in contact with said structure and electrically connected to said source of AC voltage, for modulating said AC voltage directly in proportion to the stressing of said structure;

amplifier means, electrically connected to said strain gage means, for amplifying said modulated AC voltage;

demodulating means, electrically connected to said amplifying means, for converting said modulated AC voltage to a DC voltage which is a proportional and continuously valued representation of said stressing of said structure;

first display means, electrically connected to said demodulating means, for indicating the magnitude of said DC voltage;



squaring means, electrically connected to said demodulating means, for squaring said DC voltage;

averaging means, electrically connected to said squaring means, for providing a voltage output that is the mean value of said squared DC voltage;

square root determining means, electrically connected to said averaging means, for providing a voltage output that is the RMS of said DC voltage; and

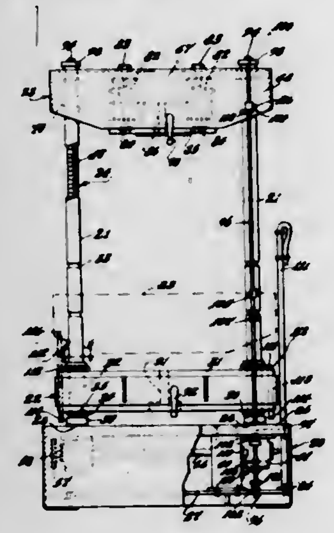
second display means, electrically connected to said square root determining means, for indicating the magnitude of said RMS voltage.

3,354,704
TENSILE, COMPRESSION, AND FLEXURE TESTING MACHINE

Wilbur T. Gloor, Berwyn, Pa., assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio

Filed Sept. 13, 1965, Ser. No. 486,906

6 Claims. (Cl. 73—93)



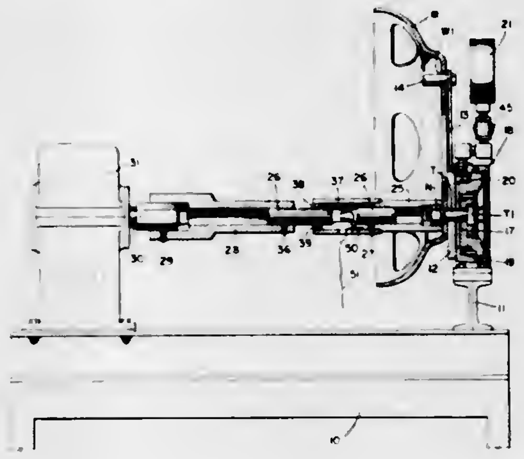
1. In a testing machine, a base plate, parallel guiding columns on each side secured to the base plate at spaced lateral positions and extending perpendicularly thereto, the guiding columns being free from stationary connection with one another across the machine at ends remote from the intermediate plate, a table secured to the guiding columns parallel to the base plate, a crosshead parallel to the table and guided on the guiding columns in a sliding relationship at a position in spaced relation from the table and on the opposite side of the table from the base plate, means including screws extending parallel to the guiding columns for moving the crosshead with respect to the table to apply load to a specimen, means for securing one end of the specimen to the table, and means including a force measuring system for securing the other end of the specimen to the crosshead, whereby the guiding columns between the table and the base plate transmit the longitudinal test load and the guiding columns beyond the table in the direction of the crosshead perform a guiding function by resisting force components due to off-center loading.

3,354,705
TORQUE-TENSION TESTING APPARATUS AND METHOD FOR NUT-BOLT ASSEMBLIES

Daniel P. Dyer, Jr., Grosse Pointe Park, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed June 21, 1965, Ser. No. 465,623

1 Claim. (Cl. 73—95)



A testing method for a nut and bolt combination including simultaneously recording and plotting of tension and torque data for creating a tension-torque curve from continuously turning the threads of a nut on the cooperating threads of a bolt between a position of zero tension and zero torque and a predetermined tension and then returning to the zero positions comprising the steps of:

(1) Mounting a threaded bolt to be tested in a pressure sensitive test device which restrains the bolt from rotative movement and lineal movement in one direction and includes means for indicating tension applied lineally to the bolt in said one direction,

(2) Placing a stop means between the ends of the bolt for resisting lineal movement of a nut cooperating with the threads of the bolt,

(3) Manually threading a nut on the threads of the bolt until the nut contacts the stop means,

(4) Securing turning means to the nut,

(5) Connecting a calibrated test torsion bar between the turning means and power means for rotating the nut,

(6) Connecting the pressure sensitive test device and the test torsion bar to X–Y graph recorder for simultaneously recording the torque applied to the nut-bolt combination and the tension created therein by movement of the nut,

(7) Actuating the power means for rotating the nut until a predetermined tension has been obtained or the nut has traveled a predetermined distance,

(8) Reversing the power means until the tension returns to the zero position while recording the reverse tension-torque curve on the X–Y graph recorder whereby cycles of testing may be recorded for showing the effects of wear on the torque requirements for overcoming friction between the nut and bolt.

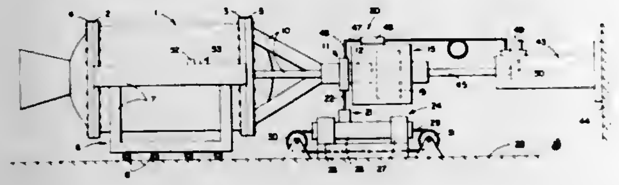
3,354,706

PROPULSOR MEASUREMENT SYSTEM

William Pennington, 3834 Crestway Drive, Los Angeles, Calif. 90043; Peter Price, 3346 Grayburn Road, Pasadena, Calif. 91107; and Ying-Nien Yu, 634 Kelton Ave., West Los Angeles, Calif. 90024

Filed Mar. 1, 1967, Ser. No. 629,846

15 Claims. (Cl. 73—116)



1. A device for testing a jet propulsion reactor comprising
a movable support means adapted to receive a jet reactor to be tested,
a forcer for resisting movement of said jet reactor,
said forcer including a first portion connected to said reactor and movable therewith, and a second portion,
said first portion being movable relative to said second portion,
inertial reference means for cancelling the effect of vibrations other than those directly induced by said jet reactor,
said inertial reference means including a mass movable in the same direction as said support means,
and servo means
for holding said first portion in a relatively stationary position and determining the force necessary for so holding said first portion, said servo means including error signal generating means comprising a reference part connected to said inertial reference means, and means for manifesting the magnitude of said force.

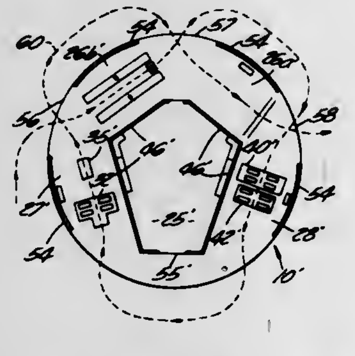
3,354,707

VEHICLE DIAGNOSTIC AND SERVICING FACILITY

Raymond W. Born, West Covina, Calif. (5464 Highway 99 at Jefferson, Fresno, Calif. 93725)

Filed July 11, 1966, Ser. No. 564,054

10 Claims. (Cl. 73—117)



1. A vehicle testing facility for subjecting a motor vehicle to comprehensive mechanical and electrical diagnostic testing in sequence in a plurality of test stations forming part of said testing facility and each equipped with test apparatus adapted to make different diagnostic tests including tests under simulated highway operating conditions thereby to provide information on deficient conditions and performance characteristics of the vehicle, said testing facility comprising a unitary building complex having a floor, a central monitoring room for use by customers while having their respective vehicles progressively and simultaneously diagnosed, said monitoring room having a plurality of windows in the wall thereof, said building complex including means providing a separate test station immediately outside each of said windows sized to accommodate a vehicle and each equipped with diagnostic testing and inspection equipment for making tests on a vehicle different from the tests made in each of the other test stations and the sum total of which is required to perform the aforesaid comprehensive testing of the vehicle, said facility floor including driveway means leading into and out of each of said test stations and to and from the exterior of said building complex and selectively usable to advance a vehicle from one test station to another test station until all components of said comprehensive diagnostic testing having been completed and for admitting a vehicle to or releasing a vehicle from any testing station while the adjacent testing station is occupied without interfering with testing operations in progress on a different vehicle in said adjacent station.

3,354,708

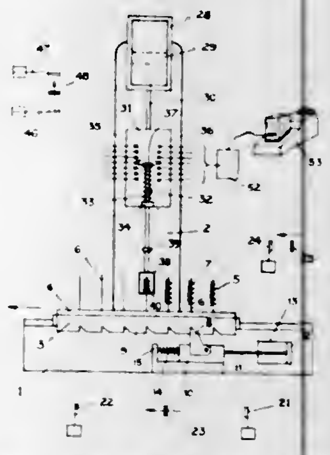
TESTING MACHINE FOR WRAPPED CONNECTIONS

Louis Joron, Issy-les-Moulineaux, France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 14, 1965, Ser. No. 471,949

Claims priority, application France, July 16, 1964, 981,869, Patent 1,412,452

9 Claims. (Cl. 73—133)



1. A machine for testing wrapped connections by measuring the force required to strip a coil off the terminal around which said coil is wound, said machine including:

(a) actuating means for applying force to cause motion of a member from a rest position through a stroke in a first direction and for returning said member in the opposite direction to said rest position;

(b) electro-mechanical means, including contacts operated at said rest position and at the end of said stroke in said first direction, for controlling said actuating means and the motion of said member in both directions;

(c) gripping means for applying force to strip said wound connection from said terminal;

(d) resilient means coupling said gripping means to said actuating means through said member, said resilient means being so disposed as to deflect as a measure of the force transmitted therethrough from said actuating means and said member to said gripping means;

(e) a series of electrical contacts so disposed as to be successively bridged by a member coupled to said gripping means, said contacts being coupled through said member to said actuating means whereby successive bridging of pairs of said contacts is an indication of the force applied to said resilient means;

(f) a series of relays coupled to respective pairs of said series of electrical contacts for storing the indications of force applied to said resilient means; and

(g) storage means responsive to said series of relays for preserving an indication of the force applied to said resilient means and transmitted through said gripping means to a wrapped connection under test.

3,354,709

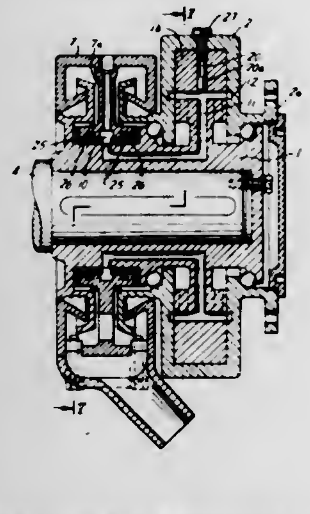
HYDROSTATIC TORQUE-MEASURING DEVICE

Georg Wiggermann, Kressbronn am Bodensee, Germany, assignor to Reiners & Wiggermann Maschinenfabrik, Kressbronn am Bodensee, Germany, a German corporation

Filed Apr. 19, 1965, Ser. No. 448,997

Claims priority, application Germany, Apr. 20, 1964, R 37,730

14 Claims. (Cl. 73—136)



1. A hydrostatic torque transmitting coupling for torque measuring purposes, comprising two relatively rotatable and coaxial rotors located one within the other and forming together a system of hydrostatic displacement cells which couple said two rotors to each other and have a variable volume depending upon the relative rotation of said rotors, a stationary fluid-pressure transmitter forming an annular structure coaxially seated on one of said rotors and having two diametrical side walls axially spaced from each other and a diametrical center wall subdividing the space between said side walls, said center wall having fluid duct means communicating through said one rotor with said cells and having exteriorly accessible means for connection of said duct means to stationary fluid pressure means, said cells having fluid inlet and outlet means communicating with said fluid duct means and variable in flow area in accordance with the relative rotation of said rotors so that fluid supplied by said stationary fluid pressure means to those cells decreasing in volume due to the relative rotation of said rotors is reduced and to those cells increasing in volume due to said relative rotation is increased whereby pressure of the fluid in said cells decreasing in volume is measurably increased and in said cells increasing in volume is measurably decreased in dependence upon the torque being transmitted, two coaxial centrifugal discs joined with said two rotors to rotate together therewith, said discs being located inside said transmitter on opposite sides of said center wall respectively and each having a conically widened rim portion extending away from said center wall to fling escaping fluid against the inner surface of one of said side walls, said transmitter forming respective collecting chambers for flung-away fluid on said opposite sides of said center wall, and each of said side walls having an inwardly protruding funnel-shaped portion coaxially surrounding said one rotor and widening toward the transmitter periphery and toward said center wall, said inwardly protruding portion extending in axially overlapping relation to, and within the periphery of, the adjacent one of said rim portions, said transmitter structure having outlet openings for drainage of fluid from said collecting chambers.

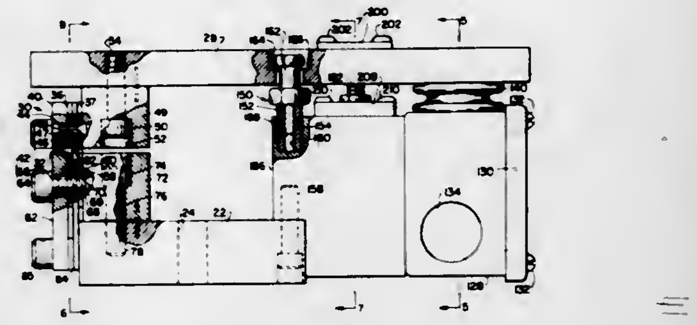
3,354,710

FORCE MEASURING INSTRUMENT

Clarence Johnson, 31649 Trillium Trail, Pepper Pike. Cleveland, Ohio 44124

Filed Oct. 19, 1965, Ser. No. 498,156

21 Claims. (Cl. 73—141)



1. A force measuring instrument comprising a support base, a platform for receiving forces to be measured, a flexure spring hinge yieldably pivotally mounting said platform on said base, said spring hinge being flexed by forces applied to said platform to provide for the pivotal deflection of said platform about a transverse axis, means connected to said platform to transmit the force-imparted pivotal motion of said platform to a utilization device; and means for selectively adjusting the resistance of said flexure spring hinge to pivotal deflection of said platform.

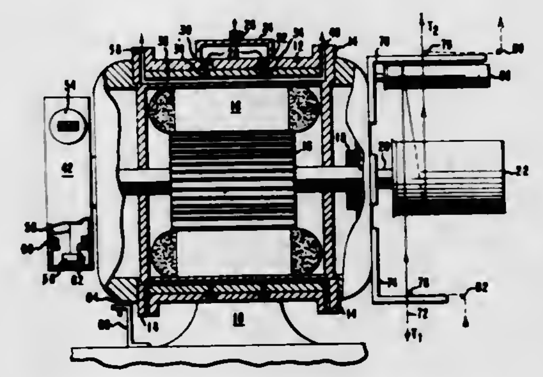
3,354,711

CONTINUOUS THREAD TENSION INDICATING DRIVE ROLLER

John Seymour Seney, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Feb. 9, 1967, Ser. No. 614,995

11 Claims. (Cl. 73—143)



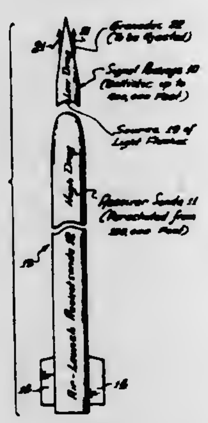
1. A yarn moving apparatus adapted for indicating simultaneously the tension in the yarn, said apparatus comprising: a yarn movement control roll; an electric motor operatively connected to said roll, to control the speed of the same, the frame of said motor and said driving roll being jointly suspended through an essentially frictionless contact, on a stationary support for free oscillation about an axis coincident with the axis of the motor; and indicator means rigidly connected to the frame of the motor for joint oscillation therewith whereby to indicate deviations of the motor frame from an assumed zero position as a result of variations in the torque imposed on the roll, said indicator means comprising: (a) a photocell arrangement, including a beam of light, supported in a fixed position relative to the frame of the motor; and (b) a thread-like element weighted to maintain an essentially constant vertical position, said thread-like element being supported for effectively interrupting said beam of light when the photocell arrangement is in the null position and for passing said light beam through when the indicating device, together with the motor, have deviated from said null position.

3,354,712
LINTING TEST
John R. Abrams, Fort Lee, Leif G. Blomquist, Pompton Lakes, and Jerome Fine, Passaic, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Filed Dec. 16, 1965, Ser. No. 514,387
2 Claims. (Cl. 73—150)

1. A process for evaluating the linting properties of an oil-in-water textile print paste to be printed on a textile material consisting in

(A) thoroughly mixing about 10–15 parts of the print paste with about 5 parts of fragments of said textile material,
(B) pressing out the excess fluid from the fragments of said textile material,
(C) separating the pressed-out fragments of said textile material from the print paste, and
(D) evaluating the flow properties of the thus recovered print paste.

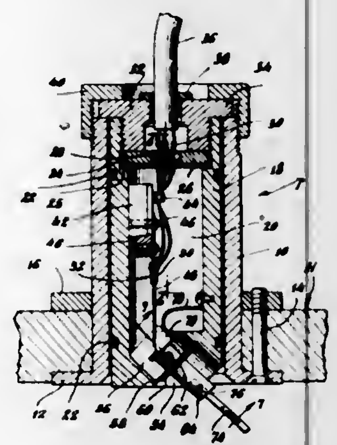
3,354,713
ACOUSTO-OPTICAL PROBING SYSTEM
Richard J. Sneed, Upland, and Klaus J. Kronenberg, Claremont, Calif., assignors to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware
Filed Sept. 10, 1965, Ser. No. 486,323
16 Claims. (Cl. 73—170)



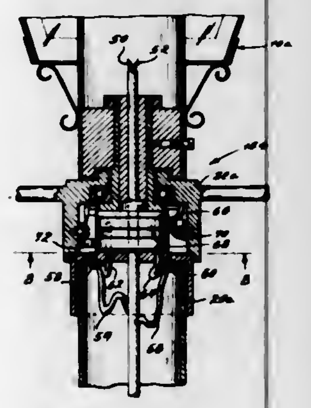
1. An acoustical-optical probing system comprising: a first vehicle for emitting optical and acoustical signals, a second vehicle for receiving and transmitting said signals emitted from said first vehicle, said first and second vehicles being operatively connected during launch and adapted to separate after launch, means for simultaneously co-launching said first and second vehicles, said first vehicle being of a low-drag configuration, said second vehicle being of a high-drag configuration, and means for causing said second vehicle to descend at a slower rate, whereby said first and second vehicles when launched simultaneously travel after a predetermined period of time in different trajectories, said first vehicle travelling in a higher trajectory than said second vehicle due to the low-drag configuration of said first vehicle.

3,354,714
MARINE SPEEDOMETER
Richard D. Condon and Harry A. Gill, Ridgefield, and Melvin W. Redmond, Jr., West Redding, Conn., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Dec. 1, 1964, Ser. No. 414,952
16 Claims. (Cl. 73—186)

12. An instrument for measuring the velocity of fluid flow which comprises: a substantially cylindrical hollow vertical housing; a removable hollow body positioned within said housing defining a lower opening; strut means pivotally mounted on said hollow body, a first end of said strut means being positioned within said body and a second end extending into the fluid to be measured; flexible diaphragm means encircling said strut and closing said lower opening; cantilever beam means mounted within said hollow body, the free end of said beam means being in contact with the first end of said strut for flexure of said beam means by movement of said strut; electrical circuit means including first and second variable impedance means mounted on oppositely flexing sides of said beam means; power supply means connected to supply an input potential to said circuit; amplifier means connected to receive and amplify an output potential from said circuit; and indicating means connected to the output of said amplifier means.

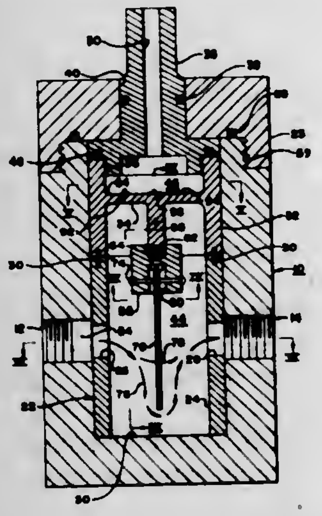


3,354,715
WEATHER VANE FIXTURE
Stanley R. Causey, Rte. 1, Irondale, Mo. 63648
Filed July 29, 1964, Ser. No. 385,935
3 Claims. (Cl. 73—188)



1. A weather vane fixture in combination with a light fixture assembly and support means therefor comprising a light fixture assembly and support means therefor, a weather vane fixture mounted in said support means at an intermediate location spaced from the light fixture assembly, said weather vane fixture comprising a first member fixedly attached to the support means and a second member including bearing means rotatably mounted on said first member, said first member having a portion that extends upwardly through the second member, means including an extension of the support means attached at one end to said first member and at the opposite end to the light fixture assembly, conduit means extending through said support means including the extension thereof and through said weather vane fixture for connection to said light fixture assembly to supply energy thereto, said second member having a weather vane thereon that rotates in response to wind direction, said weather vane including means thereon for pointing in the direction from which the wind is blowing including a member having a pointer portion on one end and a vane portion on the opposite end, electric light producing means mounted on said pointer portion, commutator means including an annular electrically conductive band mounted on said first member, an electrically conductive wiper mounted on said second member, said wiper moving on and engaging said annular band in every position of the second member, and means including electrical connection means associated with the conduit means and connected to the commutator means to supply electrical energy thereto for energizing the light producing means on the pointer portion of the weather vane in all positions thereof.

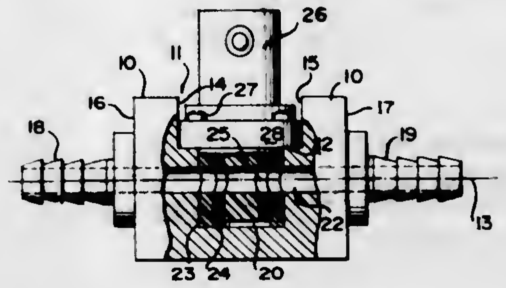
3,354,716
COMBINED RATE OF FLOW, PRESSURE AND TEMPERATURE GAGE
Donald Wiebe, Greensburg, and Richard B. Doorley, Pittsburgh, Pa., assignors to William S. Hansen, doing business as A. Stucki Company, Pittsburgh, Pa.
Filed Sept. 17, 1964, Ser. No. 397,171
20 Claims. (Cl. 73—198)



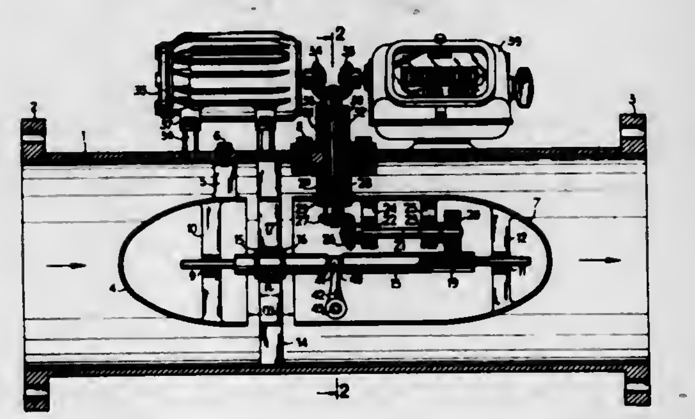
16. A device for measuring the rate of fluid flow within a conduit as well as the pressure and temperature of the fluid therein, comprising fluid-flow measuring means having a first pair of resistance-type strain gage devices thereon and responsive to the flow of fluid through said conduit, diaphragm means having a second pair of resistance-type strain gage devices thereon and responsive to pressure within said conduit, a third pair of resistance-type strain gage devices positioned external to said fluid conduit, first bridge circuit means adapted for connection to said first and third pairs of strain gage devices for indicating the rate of fluid flow through said conduit, second bridge circuit means adapted for connection to said second and third pairs of strain gage devices for indicating the pressure of the fluid within said conduit, and third bridge circuit means adapted for connection to said third pair of strain gage devices and one pair of said first and second pairs of strain gage devices for indicating the temperature of the fluid within said conduit.

3,354,717
HOT WIRE ANEMOMETERS
Pasco A. Minnick, Arlington, Va., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed June 23, 1965, Ser. No. 466,171
1 Claim. (Cl. 73—204)

A hot wire anemometer, comprising a metallic body having an axis,
a well extending into said body and intersecting said axis,
a split metallic cylinder located within said well,
means insulating said split metallic cylinder from said body,
a cylindrical hole extending through said body and said split metallic cylinder,
nipples incorporated in said body for leading fluid to and from said hole,
said split metallic cylinder being so oriented in said well that said hole extends partially through each of the halves of said split metallic cylinder,
a coaxial connector insulatedly secured to said split metallic cylinder and coaxial therewith,
said coaxial connector having a central axial conductor and a surrounding conductor,
a wire lead connecting said central conductor electrically to one of said halves,
a further wire lead connecting said surrounding conductor to the other of said halves,
a tungsten wire connected between said halves within said hole, said tungsten wire having a length approximately equal to the diameter of said hole, and
means detachably securing said coaxial connector to said body.



3,354,718
LIQUID METER
Henri Boutillon, Paris, France, assignor to Etablissements Boutillon S.A., Suresnes, Seine, France, a French body corporate
Filed Sept. 28, 1965, Ser. No. 490,903
Claims priority, application France, Oct. 20, 1964, 991,991
6 Claims. (Cl. 73—230)

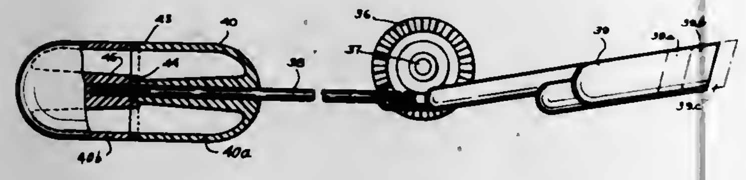


1. Liquid meter comprising tubular body, a liquid flow measuring screw which is freely rotatable and movable axially in said body, an auxiliary motor located outside said body and having an output shaft and terminals for connection to a source of current outside said body, a liquid volume indicator located outside said body, a transmission connecting the output shaft to the indicator to actuate the indicator and to the screw to rotate the screw, the transmission be capable of allowing said axial movement of the screw, regulating means associated with the motor for regulating the speed of rotation of the output shaft, the regulating means having an actuating member movable within said body in one direction for increasing and in another direction for decreasing the speed of rotation of the output shaft, and means operatively connecting the actuating member to the screw so that the actuating member is responsive to said axial

movement of the screw, whereby said velocity varies with variation in the linear velocity of the axial flow of said liquid, the screw tending to move in the direction of the liquid flow if the angular velocity of the screw is too low or in the direction opposed to that of said flow if the angular velocity of the screw is too high.

3,354,719
FLOAT FOR LIQUID LEVEL GAGE

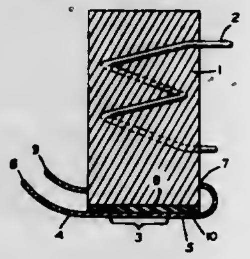
Leta S. Taylor, Paul B. Johnson, and Eugene D. Huskey, Garland, Tex., assignors to J. Y. Taylor Mfg. Company, a corporation of Texas
Filed Mar. 26, 1965, Ser. No. 442,870
1 Claim. (Cl. 73—322.5)



A float arrangement for a liquid level gauge, said float being connected to a float rod, and comprising, two opposed hollow portions of chemical resistant plastic secured together to form an effectively unitary float, each of said opposed hollow portions having an internal projection with said internal projections being in aligned relation and having their adjacent ends in interengaging relation and said float rod extending through and sealed in one of said internal projections and being secured by screw threads on said rod engaging screw threads formed in the other of said internal projections, and actuating means connected to said float rod and actuated thereby.

3,354,720
TEMPERATURE SENSING PROBE

Nathaniel E. Hager, Jr., Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Aug. 30, 1965, Ser. No. 483,738
5 Claims. (Cl. 73—355)

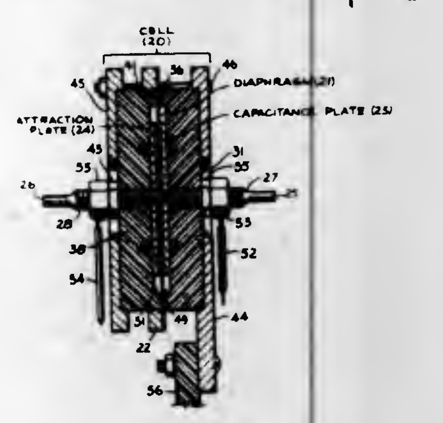


1. A probe for non-contact temperature measurement comprising

(1) a metal body,
(2) means for maintaining a desired temperature in said body,
(3) a platelet of two dissimilar metal foils joined at corresponding edges thereof to form a thermocouple junction and positioned on said body, one of said two metals being the same metal as that in said body,
(4) electrical insulation between said body and said platelet,
(5) an electrical connection between said body and the metal foil in said platlet dissimilar to the metal in said body, and
(6) electrical connections for making connections to a device for sensing potential differences on said body and on said metal foil in said platelet the same as the metal in said body.

3,354,721
PRESSURE GAGING SYSTEMS OF APPARATUS

Augustus H, Fiske, 264 Greenwood Ave., West Redding, Conn. 06875
Filed Oct. 23, 1965, Ser. No. 503,331
10 Claims. (Cl. 73—398)

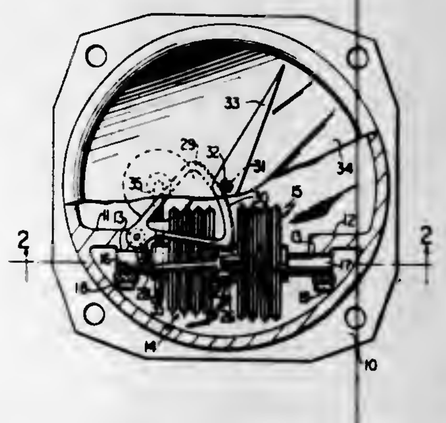


1. A pressure-gaging system comprising in combination:

(A) a dual-chamber gage cell having a rim-anchored thin flexible conductive diaphragm positioned between and separating from each other
  a sample chamber positioned between the diaphragm and a conductive sensing-plate
  and an opposite reference chamber positioned between the diaphragm and a conductive attraction plate,
  with the diaphragm and both plates electrically insulated from each other,
(B) conduit means respectively connecting the sample and reference chambers to separate sources of sample and reference pressures to be compared;
(C) indicating circuit means responsive to changes in the electrical relationship between the diaphragm and the sensing plate caused by pressure-differential-actuated flexing deflection of the diaphragm,
(D) and adjustable means supplying a variable preselected attraction voltage to the attraction plate to counteract the flexing deflection of the diaphragm.

3,354,722
DUAL MANIFOLD PRESSURE GAUGE

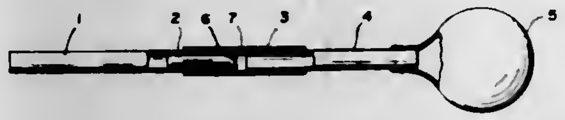
Ralph D. Waite, Sellersville, and Leon D. Johnson, Perkasie, Pa., assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,891
8 Claims. (Cl. 73—407)



1. A differential gauge comprising in combination, a case; aligned supporting means mounted on each side of the transverse centerline of said case; bellows means including means at each end thereof adapted to be connected to the respective supporting means such that each may be rotatably adjusted relative to the other; supporting means connecting the opposite ends of said bellows means together as well as to a link; linkage connecting said link to the movement of said gauge; and means forming part of said bellows supporting means for ensuring movement of said link along a rectilinear path parallel to the axis of said supporting means when said bellows means move due to different pressures within said bellows means.

3,354,723
MOLTEN METAL SAMPLER

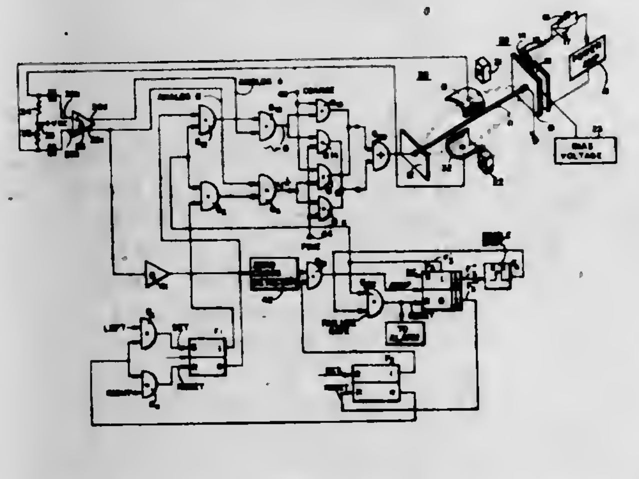
William F. Smith, Aliquippa, Pa., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 9, 1965, Ser. No. 446,939
6 Claims. (Cl. 73—425.6)



1. Apparatus for obtaining a sound rod-like sample of metal from a molten bath thereof comprising suction means, a tube of uniform bore detachably connected at one end to the suction means, a chill element in the tube, the chill element cross section being less than that of the bore so that suction produced by the suction means draws molten metal into the tube when its open end is immersed therein, the chill element cross section and length being sufficient to cause molten metal drawn into the tube to solidify against the chill, and means for positioning the chill element intermediate the open end of the tube and the suctions means.

3,354,724
STABLE REFERENCE APPARATUS

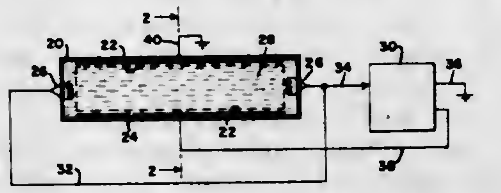
Jimmy H. Kabalan, Lynwood, and James F. McGurn, Anaheim, Calif., assignors to North American Aviation, Inc.
Filed Oct. 2, 1964, Ser. No. 401,184
5 Claims. (Cl. 73—505)



1. A spatial direction indicator comprising support means, a string mounted between two points of said support means, means for effecting vibration of said string at a predetermined frequency in a vibratory plane, magnetic means providing a magnetic field around said plane of vibration, means for providing a first alternating current signal having an amplitude which varies in accordance with the vibrations of said string times a factor K_1, means for providing a second alternating current signal having an amplitude which varies in accordance with the vibrations of said string times a factor K_2 wherein K_1 and K_2 are not equal, and means for selectively conducting said first or said second signal through said string to effect rotation of said vibratory plane.

3,354,725
ACCELEROMETER

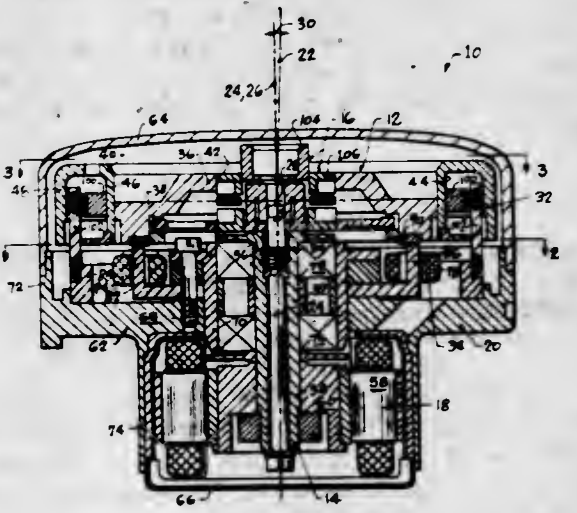
Eugene B. Canfield, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Aug. 20, 1963, Ser. No. 303,246
3 Claims. (Cl. 73—516)



1. An accelerometer comprising a hollow nonconducting tube having a substantially rectangular cross section and being substantially straight along a sensitive axis; said tube having enlarged end portions for mounting a silicon diaphragm on the extreme ends of said tube; a Fenner Window mounted on each of said diaphragms in mirror image relationship; a pair of motor electrodes mounted over substantially the entire internal area of two opposite sides of said tube; a pair of magnet pole faces of opposite polarity positioned adjacent to and covering substantially the entire area of the remaining two sides of said tube; a conducting fluid substantially filling said tube; an amplifier; means connecting the output of said Fenner Windows to the input of said amplifier; means connecting the output of said amplifier across said electrodes; said diaphragms having a defined spring constant; said Fenner windows, amplifier, motor electrodes, pole faces and conducting fluid forming a force generating means; said force generating means having an equivalent spring constant; and the ratio of said defined spring constant to said equivalent spring constant being low enough such that the output of said amplifier stays within its linear range over a range of acceleration it is desired to measure whereby when said accelerometer is subjected to acceleration along said sensitive axis the output of said amplifier is a measure of the acceleration and serves to restrict the motion of said fluid relative to said tube resulting from the acceleration.

3,354,726
TWO-AXIS GYRO

Walter J. Krupick, Succasunna, and Richard F. Cimera, Caldwell Township, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,648
20 Claims. (Cl. 74—5)



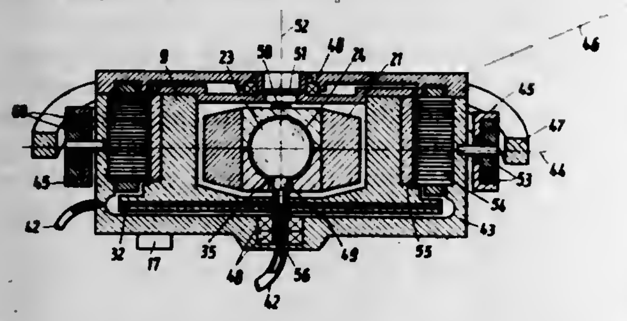
1. A one-piece, three-gimbal, four-bar, universal-joint flexure unit comprising:

a middle gimbal portion having a peripheral wall with a longitudinal axis and with axially-spaced end faces and having a first radial pivot axis and a second radial pivot axis disposed in quadrature with said longitudinal axis and intersecting therewith at a common pivot point;

an upper end gimbal portion disposed axially outwardly of one of said middle gimbal end faces and having two flexure bars respectively integral therewith at one end thereof and cantilevered therefrom and axially spaced along said first pivot axis with respective fixed-end connections at the other end thereof to said middle gimbal portion; and

a lower end gimbal portion disposed axially outwardly of the other of said middle gimbal end faces and having two flexure bars respectively integral therewith at one end thereof and cantilevered therefrom and axially spaced along said second pivot axis with respective fixed-end connections at the other end thereof to said middle gimbal portion.

3,354,727
GYROSCOPIC APPARATUS
Kurt Eichweber, Schutzenstrasse 77/79,
Hamburg, Altona, Germany
Filed Jan. 7, 1965, Ser. No. 423,956
Claims priority, application Germany, Nov. 17, 1964,
P 35,509
10 Claims. (Cl. 74—5.6)



1. Gyroscope apparatus comprising a support, a frame mounted on gimbals in the support, and an outer rotor mounted in the frame on trunnions the axis of which is perpendicular to the axis on which the frame is pivoted, wherein the improvement comprises a symmetrical annular inner rotor, having its mass concentrated adjacent to its equator, and having a spherical inner wall; the outer rotor having a central cavity and having fixed therein a central axle having a spherical portion which, with the spherical inner wall of the inner rotor, forms a gas bearing for supporting and entraining the inner rotor.

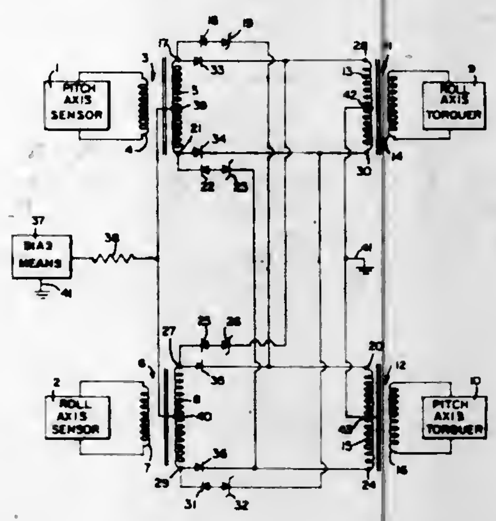
10. Gyroscopic apparatus according to claim 1 wherein the outer rotor is provided with a control for maintaining its axis vertical, and there is arranged on the inner rotor a mirror by means of which the resulting tilting of the inner rotor toward the west provides an indication of direction.

3,354,728
SEMICONDUCTOR TRANSFER CIRCUIT
Gerald L. Sullivan, Georgetown, Mass., assignor to General Electric Company, a corporation of New York
Filed May 17, 1965, Ser. No. 456,302
12 Claims. (Cl. 74—5.47)

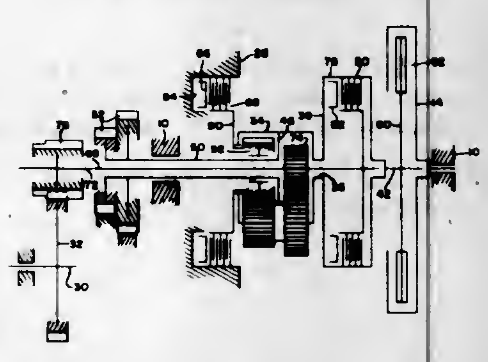
1. In a gyro system having a plurality of electrical torquers for erecting a gyro, a plurality of signal sources responsive to the position of the axes of the gyro with respect to a reference direction for controlling said torquers, first circuit means for interconnecting said sources and said torquers to cause precession erection of the gyro, second circuit means for interconnecting said sources and said torquers to cause direct erection of the gyro, the improvement comprising:

(a) said first and second circuit means including semiconductor switching means, and

(b) transfer control means connected to said semiconductor switching means so that when the output of said transfer control means is of one character, a precession erection of the gyro can be effected and when the output of said transfer control means is of another character, a direct erection of the gyro can be effected.

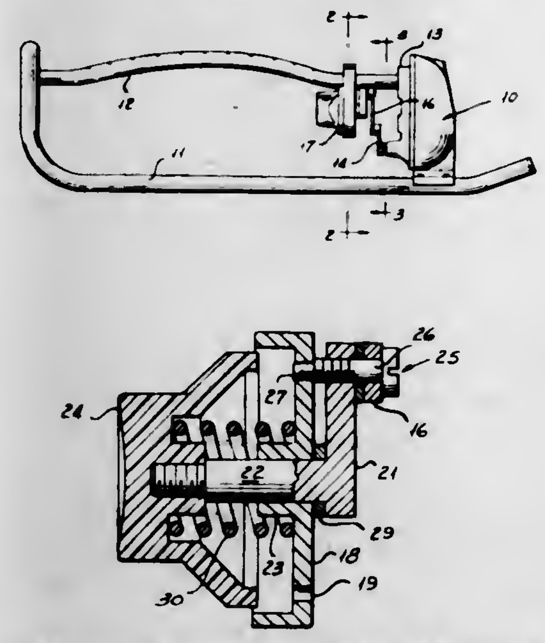


3,354,729
VEHICLE PLANETARY TRANSMISSION AND PTO
Gordon Le Roy Marquart, Jesup, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 539,687
10 Claims. (Cl. 74—15.84)



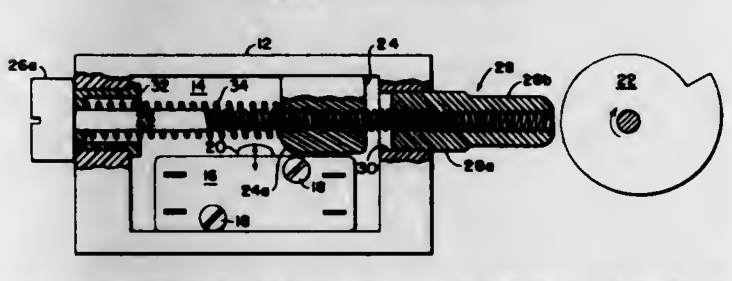
1. A vehicle transmission, comprising: a housing; a planet carrier journaled in the housing and including coaxially affixed thereto in axially spaced apart relation a hollow, forward input shaft and a hollow, rearward PTO-drive shaft; a propulsion shaft extending coaxially loosely through the carrier and having an input end ahead of the input shaft, an output end rearwardly of the PTO-drive shaft and an output sun gear affixed thereto intermediate said hollow shafts; means journaling said propulsion shaft in the housing; a reaction sun gear coaxially journaled about one of the hollow shafts; first and second conjointly rotatable planet pinions journaled on the carrier and meshing respectively with the sun gears; a power source coaxially ahead of the propulsion shaft; first drive means connecting the power source to the input shaft for driving the carrier at a selected speed; brake means, engageable between the housing and the reaction gear for holding the latter to produce reduction drive in the propulsion shaft when the carrier is driven, and disengageable to release said reaction gear; and second drive means coaxially adjacent to the first drive means and connectible to drive the propulsion shaft from the power source in unison with the carrier to produce direct drive in said propulsion shaft when the brake means is released, and disconnectible to release said propulsion shaft when the brake means is engaged.

3,354,730
ADJUSTABLE LINKAGE MECHANISM
Seth Waldo Thompson, 9 Gordon Road,
Essex Fells, N.J. 07021
Filed Sept. 14, 1965, Ser. No. 487,291
4 Claims. (Cl. 74—42)



1. Linkage mechanism comprising: a driving member movable in a plane of revolution around a first axis, a driven member movable in a plane of oscillation on a second axis parallel to the first axis, a shaft carried by the driven member and rotatable on an axis parallel to said first and second axes, said shaft extending outwardly from opposite sides of the driven member and being movable axially along its own axis, a crank fixed on one end of the shaft, a pivotal connection between said crank and the driving member, a pin carried by the crank and extending laterally therefrom toward said driven member on an axis parallel to the other axes, said driven member having a series of socket holes therein complemental to the pin and spaced apart on the circumference of a circle centered on the axis of said shaft, handle means fixed on the other end of the shaft and operative to move the shaft axially in one direction to seat said pin in a registering one of the socket holes and in an opposite direction to disengage it entirely from the hole, said handle means being rotatable while the pin is disengaged whereby to rotate the shaft and its crank to shift said pin selectively into registry with another one of the socket holes, and said pin while seated in a socket hole constituting a pivotal connection between said crank and the driven member and prohibiting angular shifting of the pivotal connection bodily relative to the driven member.

3,354,731
PLUNGER ACTUATED SWITCH
Edwin E. Kussmaul, Westwood, Mass., assignor to Kelek Company, Norwood, Mass., a corporation of Massachusetts
Filed Feb. 25, 1966, Ser. No. 529,991
5 Claims. (Cl. 74—55)



1. A plunger actuated switch mechanism having, in combination,

a shell defining an enclosure and having a pair of aligned openings defining bearings in the wall thereof,

a switch mounted in said enclosure and having a projecting operator element displaceable normally to the bearings,

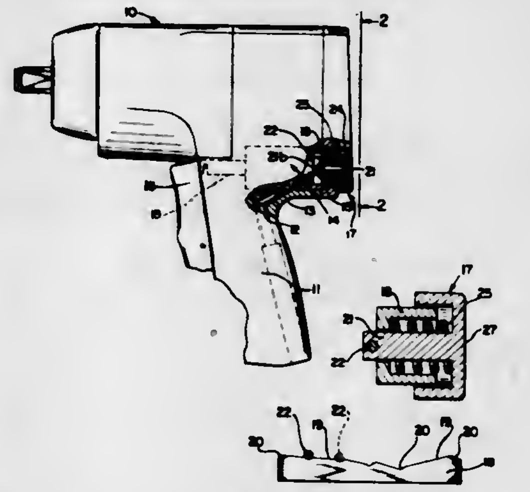
a threaded screw slidable in one of said bearings and having a head exterior to and engageable with the shell,

a plunger slidable in and extending from the other of said bearings and threaded upon the screw,

a block threaded upon the screw between the head and the plunger and adapted upon sliding of the screw and plunger to engage the operator element,

and a spring urging the block toward said other bearing and thereby urging the head toward engagement with the shell.

3,354,732
REGULATOR FOR VALVE OF PNEUMATIC TOOL
John L. Wickham, Baltimore, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Oct. 21, 1965, Ser. No. 499,734
5 Claims. (Cl. 74—99)



1. In a pneumatic tool, a regulator to limit the maximum movement of a valve member, thereby to regulate the maximum amount of compressed air admitted to the tool motor, said regulator comprising, in combination:

(a) a stationary member having a first cam means;

(b) a rotatable axially-movable stop member having second cam means;

(c) one of said cam means comprising angularly spaced pockets disposed at different axial positions;

(d) the other of said cam means comprising a member receivable selectively in said pockets;

(e) whereby to determine the axial position of said stop member relative to said tool; and

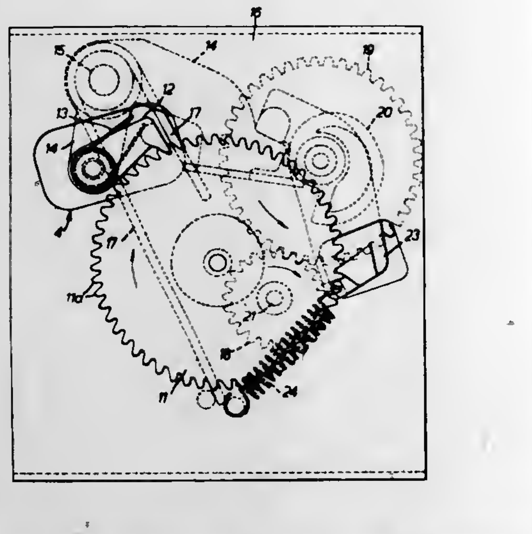
(f) abutment means on said stop member for engaging the valve member, thereby limiting the maximum movement of the latter.

3,354,733
PROCESS TIMERS
Roger J. Cartier, Vimercate, Milan, Italy, assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Sept. 29, 1965, Ser. No. 491,362
Claims priority, application Great Britain, Oct. 24, 1964,
43,452/64
2 Claims. (Cl. 74—125)

1. In a timing mechanism having control cams mounted for step-by-step advancement by means of a reciprocating pawl engaging a ratchet wheel rotatable with the cams, the improvement which comprises

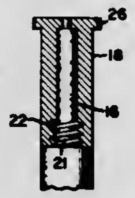
a masking device,

means controlled by one of the control cams for moving said masking device into a position in which it holds the pawl from engagement with the wheel, means on the masking device engaged by the pawl to permit the pawl to move the masking device out of its masking position, and



manually operable means for removing the masking device from the control of said one of the control cams.

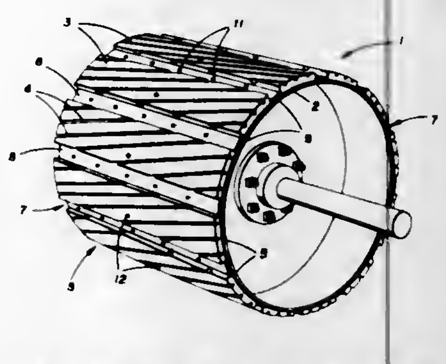
3,354,734
SPEED CHANGER FOR TAPE RECORDERS
William A. Sours and Yates M. Hoag, Utica, N.Y., assignors to General Electric Company, a corporation of New York
Filed June 28, 1965, Ser. No. 467,573
4 Claims. (Cl. 74—190)



1. A speed-changing arrangement for tape recorders and the like, comprising a drive shaft adapted to be rotated in driving engagement with a member to be driven, said drive shaft having a diameter for achieving a first speed of operation, and a one-piece hollow cylindrical sleeve adapted to be selectively placed over said drive shaft, said sleeve having an inner diameter for causing the sleeve to fit accurately and concentrically on said drive shaft and having an outer diameter for achieving a second speed of operation, said drive shaft and sleeve each being provided with a threaded portion for achieving threaded engagement of the sleeve to the shaft, said threaded portions being arranged to provide a relatively loose threaded fit with each other so as not to disturb the accurate concentric fit of said sleeve on said shaft.

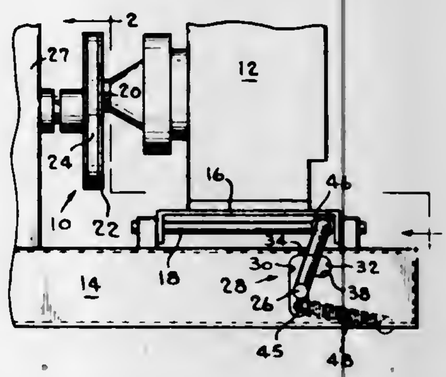
3,354,735
TRACTION-FACE ARRANGEMENT FOR DRUM-TYPE PULLEYS
William G. Holz, P.O. Box 109, Lodi, Calif. 95240
Filed Feb. 7, 1966, Ser. No. 525,673
3 Claims. (Cl. 74—230.7)

1. A traction-face structure, for a smooth-faced belt-driving pulley, comprising a plurality of initially separate traction sections each extending circumferentially of the pulley so that together they substantially completely surround the pulley, and means removably holding each section in position on the pulley independently of the other section; each section comprising a pad of traction material and a rigid backing plate on which the pad is secured, the plate extending beyond the edges of the pad circumferentially of the pulley to provide projecting flanges; said means including a strip member extending transversely



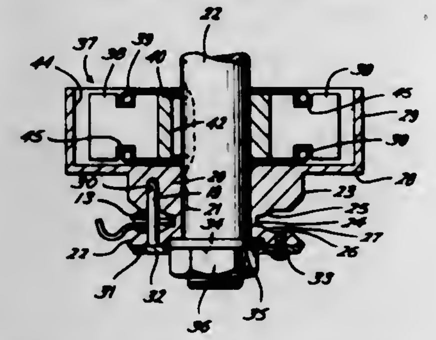
of and secured on the pulley between adjacent sections and forming, with the pulley face, grooves to receive the corresponding flanges in close sliding relation.

3,354,736
BELT SLIP PULLEY DRIVE SYSTEM
Edward A. Simi, Milwaukee, Wis., assignor to Douglas Motors Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 4, 1965, Ser. No. 492,413
8 Claims. (Cl. 74—242.13)



1. A pulley drive assembly comprising, in combination, first and second relatively spaced pulleys,
- a belt extending between and engaging both of said pulleys,
- first means supporting said first pulley for generally vertical movement toward and away from said second pulley to vary the center distance between said pulleys, said first means supporting said first pulley for movement from a normal, lower operative position wherein said belt is drawn taut between said pulleys to establish a driving connection therebetween toward an inoperative position generally above said normal position wherein said center distance is reduced and the tension on said belt is relieved to interupt said driving connection,
- and interlocking means including an operating member, second means defining a first vertically extending path, a land spaced horizontally from said first vertical path and an obstruction extending in a generally vertical direction and arranged horizontally between said land and said vertical path, said obstruction terminating at an opening providing communication between said land and said first path, said operating member engaged with said second means and supported for movement in a generally horizontal direction so that said operating member is movable between said land and said path,
- one of said operating member and said second means being connected to and movable with said first pulley, said operating member spaced from said opening when said first pulley is in said operative position and movement of said first pulley in a direction away from its operating position producing relative movement between said operating member and second means along said path and in a direction to move said operating means past said obstruction for movement in said opening for engagement with said land, said land and said operating member arranged to hold said first pulley away from said operative position when said operating member is engaged with said land.

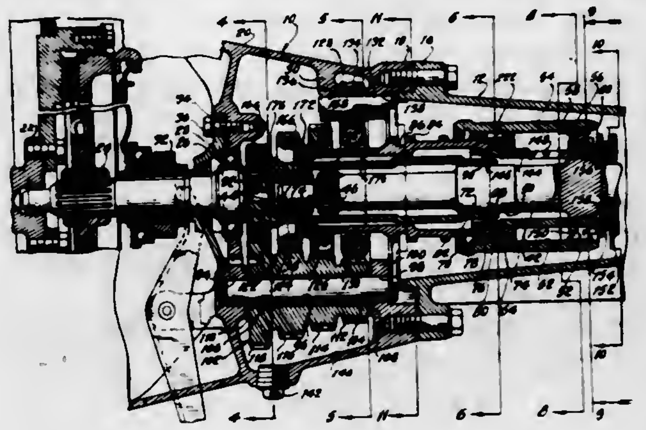
3,354,737
CHAIN SAW DRIVE SPROCKET
Jesse F. Wright, P.O. Box 284X, Rte. 5, Lufkin, Tex. 75901
Filed May 27, 1965, Ser. No. 459,167
3 Claims. (Cl. 74—243)



1. In a portable chain saw including a chain having cutting links, guiding links, and connecting links and a prime mover, the improvement residing in a drive sprocket comprising,
- a sprocket body,
- a pair of flanges extending radially outward from said body in parallel relation to define an annular groove, and
- driving pins extending across said annular groove and engaged in said flanges,
- said driving pins adapted to engage said chain to drive said chain,
- said driving pins being positioned sufficiently outward in said groove whereby in operation, each of said pins when driving said chain, would engage a cutting link and its associated connecting link at a point adjacent a guiding link with said guide link coacting with said pin to maintain it in engagement with said cutting link and said connecting link,
- said flanges define an inner portion of said groove of sufficient width to receive said guide link, an intermediate portion of said groove of increased width sufficient to receive the whole width of the chain and an outer portion of said groove of increasing width and of sufficient diameter to prevent inadvertent disengagement of said chain from said drive sprocket.

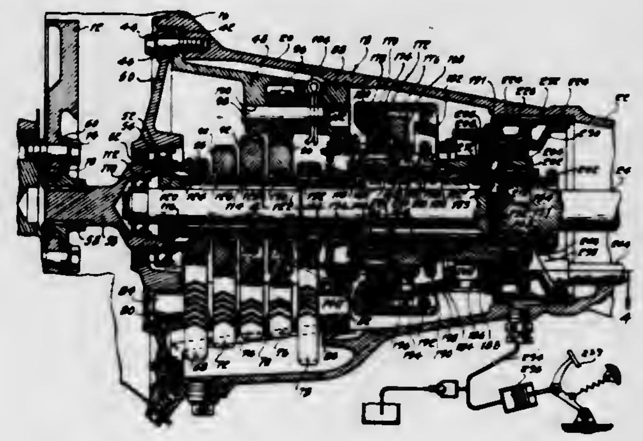
3,354,738
MULTIPLE SPEED RATIO POWER TRANSMISSION MECHANISM
Peter G. Ivanchich, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,567
10 Claims. (Cl. 74—330)

1. In a power transmission mechanism for delivering torque from a driving member to a driven member, a synchronizer clutch mechanism comprising concentric clutch members, one clutch member being connected to said driven member and rotatable therewith, first clutch teeth carried by said one clutch member, means for establishing and disestablishing selectively a torque delivery path between said driving member and the other synchronizer clutch member, said other synchronizer clutch member having formed thereon second clutch teeth that are adapted to engage the teeth of said one member as one of said synchronizer clutch members is shifted axially with respect to the other, a synchronizer clutch ring within the outermost one of said clutch members and frictionally engaging the inner periphery of the same, said clutch ring being split to provide two juxtaposed ends, and a thrust means for transferring torque from



said other synchronizer clutch member to one of said ring ends thereby establishing the clutching action between said ring and the inner periphery of said one clutch member as relative motion takes place between said synchronizer clutch members, the frictional action of said ring establishing synchronism between said clutch members prior to relative shifting motion of said first and second clutch teeth into engagement.

3,354,739
MULTIPLE SPEED RATIO POWER TRANSMISSION MECHANISM WITH SYNCHRONOUS SPEED RATIO SHIFTS
Peter G. Ivanchich, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,745
16 Claims. (Cl. 74—339)

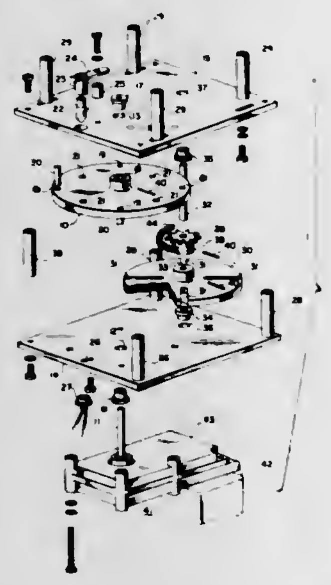


1. A power transmission mechanism for delivering driving torque from a driving member to a driven member comprising a power input gear connected to said driving member, a plurality of cluster gear assemblies mounted for rotation about axes parallel to the axis of said power input gear, torque output gears mounted for rotation about the axis of said power input gear and arranged in meshing engagement with said cluster gear assemblies, said torque output gears having formed thereon clutch teeth, a clutch shaft mounted concentrically with respect to said torque output gears, said clutch shaft having clutch teeth formed thereon, means for shifting said clutch shaft longitudinally with respect to the axis of said output gears whereby its clutch teeth engage selectively the teeth of said output gears, a friction clutch assembly adapated to establish a driving connection between said clutch shaft and said driven shaft comprising a clutch input element

drivably connected to said clutch shaft, a clutch output element, juxtaposed friction members carried respectively by said clutch input element and said clutch output element, a clutch reaction ring having a portion situated adjacent said friction members, means for applying a clutch engaging force to said friction members, a driving connection between said clutch output element and said driven member, and means for overruling the influence of said clutch force applying means whereby said friction members become disengaged to permit said clutch shaft to be shifted in the direction of the axis of said output gears.

3,354,740
CONVEYOR DRIVE AND INDEXING MECHANISM FOR LIQUID SCINTILLATION SPECTROMETERS

Raymond E. Cannon, San Diego, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Apr. 11, 1966, Ser. No. 541,595
9 Claims. (Cl. 74—436)

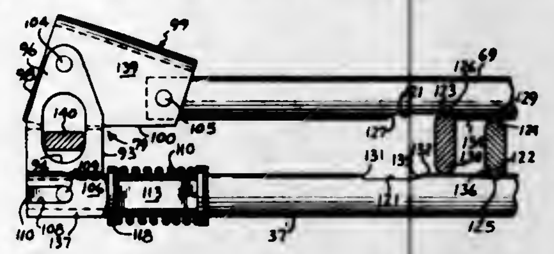


1. A conveyor drive and indexing mechanism for liquid scintillation spectrometers including:
- a drive motor having a motor output shaft;
- a drive wheel having at least three engaging mechanisms attached thereto, spaced evenly around its circumference, said drive wheel connected to said motor output shaft for driving said drive wheel;
- a driven wheel containing at least three slots extending inwardly from its circumference and spaced evenly therearound for cooperating with said engaging mechanisms, said engaging mechanisms and said slots being located to effectively provide a dwell time over several degrees of rotation of said drive wheel during which there is an insignificant amount of motion of said driven wheel; and,
- means connecting the output of said driven wheel to a conveyor drive sprocket whereby the output motion of said driven wheel and said conveyor drive sprocket is non-linear, effectively having dwell times, and has slow acceleration and deceleration curves.

3,354,741
SINGLE LEVER CONTROL FOR DUAL RAIL TRANSMISSION

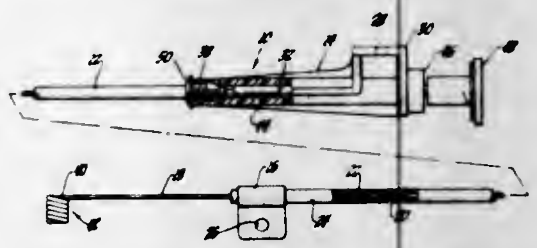
Lawrence M. Johnston, Jr., and Ronald C. Schroeder, Fort Wayne, Ind., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed June 14, 1965, Ser. No. 463,651
13 Claims. (Cl. 74—477)

1. In a power transmission mechanism, a pair of shiftable rails, said rails each being shiftable in opposite directions from a "neutral" position; and interlock means operatively engaging said rails and being operable to permit said rails to be shiftable independently of each other from their "neutral" position when force is applied thereto in one direction, said interlock means permitting one of said rails to be shiftable only after the other rail has been shifted to a predetermined position, said interlock means being operable to permit shifting of said rails in unison from their "neutral" position when force is applied thereto in the opposite direction.



3,354,742
REMOTE CONTROL ASSEMBLY CONSTRUCTION

August E. Tschanz, Chalfont, and Thomas E. Wilkey, Barto, Pa., assignors to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,304
9 Claims. (Cl. 74—501)



1. A remote control assembly comprising; a flexible conduit having an outer surface of organic polymeric material, a fitting of organic polymeric material, said fitting including attachment means for attaching the fitting to a support structure, a flexible motion transmitting core element movably supported in said conduit, and means independent of said attachment means mechanically interlocking said conduit and said fitting and including a snap-in portion and a receiving portion, said snap-in portion including means projecting generally outwardly therefrom and in mechanical locking engagement with said receiving portion to prevent relative movement between said snap-in portion and said retaining portion independently of said attachment means.

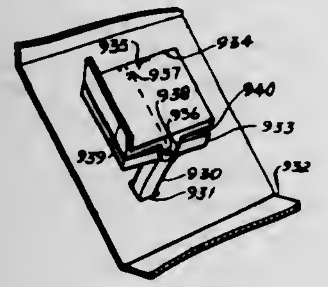
3. A remote control assembly as set forth in claim 1 wherein said fitting has first and second extremities thereof, said bore having an elongated length of reduced cross-section and a smaller length of enlarged cross-section adjacent said first extremity of said fitting and defining said receiving portion, said core element having a slider bar means attached to one end thereof and slidably supported in and guided by said elongated length of said bore, said slider bar means extending from said second extremity of said fitting, said snap-in portion being secured in said smaller length of said bore.

3,354,743
VEHICLE DRIVING CONTROLS

Raymond C. Strauss, 301 W. Lenawee St., Lansing, Mich. 48914
Original application Dec. 3, 1959, Ser. No. 857,221. Divided and this application Sept. 30, 1963, Ser. No. 323,187
4 Claims. (Cl. 74—560)

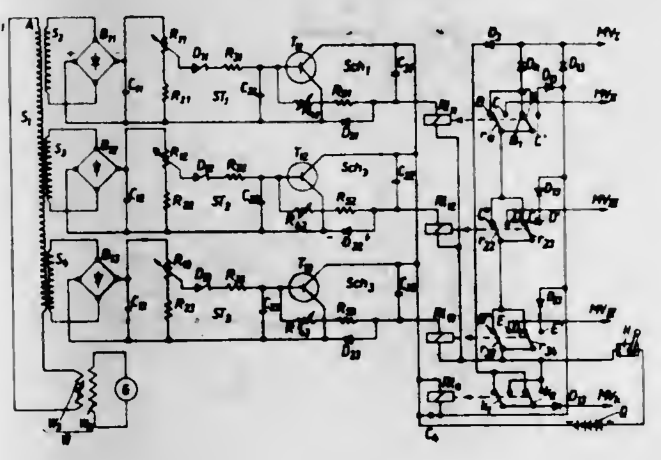
1. Within a vehicle driving compartment containing a foot operated brake control and a floorboard composed of a lower horizontal portion joined at one edge to an inclined portion, a brake pedal in said compartment for

engaging said brake control, a pivot arrangement connecting said brake pedal to a foot contactible surface overlaying pedal, said pivot arrangement establishing an axis about which said surface tilts in either of two opposite directions, the locations of said pivot arrangement providing numerous possible positions for the axis between a first position parallel to said horizontal portion of the floorboard and a last position perpendicular to said horizontal portion in a plane substantially parallel to the brake pedal, said surface being so positioned on said pivot arrangement that when the operator's foot is at rest on said surface the weight of the foot will urge the surface to tilt about the axis in one direction, and when the foot is applying pressure the force of the foot will urge the surface to tilt about the axis in the opposite direction, and means cooperating with said surface to support said pedal and foot in a brake released position when said surface is tilted in one direction and to render said pedal and foot unsupported when said surface is tilted in the opposite direction.



3,354,744
SHIFTING DEVICE FOR MOTOR VEHICLE TRANSMISSIONS

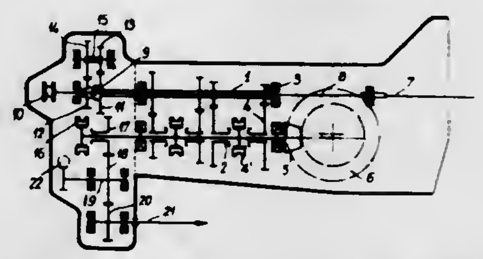
Willi Kühnle and Walter Frei, Friedrichshafen, Germany, assignors to Zahnradfabrik Friedrichshafen, Aktiengesellschaft, Friedrichshafen, Germany
Filed July 28, 1965, Ser. No. 475,462
Claims priority, application Germany, Aug. 1, 1964, Z 11,002
8 Claims. (Cl. 74—645)



1. In a vehicle having a multi-ratio transmission with a plurality of drive ratio establishing devices, a control system for automatically operating said devices comprising, means for generating a signal voltage varying in accordance with vehicle speed, a constant source of energizing current for actuating said drive ratio establishing devices, series connected switch means operatively connecting said source of energizing current to the devices for actuation thereof, a plurality of switch operating circuits respectively connected to said switch means for sequentially actuating said devices in response to variation in said signal voltage, and transformer means operatively coupling said generating means to each of said switch operating circuits for energization thereof at a predetermined signal voltage, each of said switch operating circuits having means for deenergization at a signal voltage different from said predetermined signal voltage.

3,354,745
TRANSMISSION GEAR-BOXES OF VEHICLES FOR TRANSMISSION ON ONE OR MORE AXLES, WITH SPECIAL REDUCTION FOR RUNNING ON VARIED GROUND

Gaetan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French work
Filed June 4, 1965, Ser. No. 461,337
Claims priority, application France, June 11, 1964, 977,938, Patent 1,407,696; Jan. 5, 1965, 850, Patent 87,137
9 Claims. (Cl. 74—665)

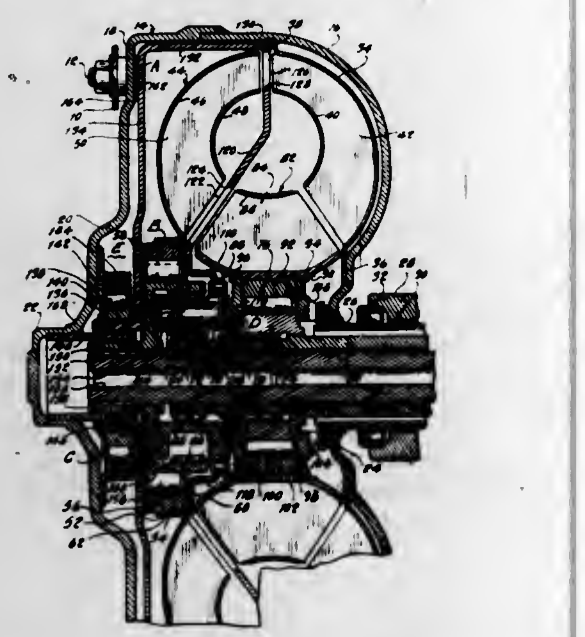


1. A change-speed gear unit for a motor vehicle transmission operatively connected to at least one drive axle and having a special speed reduction for running on varied ground, said vehicle including an engine, drive shaft operatively connected to be driven by said engine, said gear unit including a conventional change-speed gear box and an additional speed reduction gearing operatively connected to said change-speed gear box, a primary shaft operatively connected to said drive shaft, a secondary shaft operatively connected to drive said drive axle, gear pinion means on each said shaft, and means for selectively connecting said gear pinion means, said additional speed-reduction gear comprising sliding gear means operatively and selectively connecting said additional speed-reduction gear to the primary shaft thereby effecting a speed reduction of the drive axle, a central pinion driven by said secondary shaft, counter gears operatively connected to said central pinion for driving other drive axles.

3,354,746
HYDROKINETIC TORQUE CONVERTER WITH OVERDRIVE GEARING

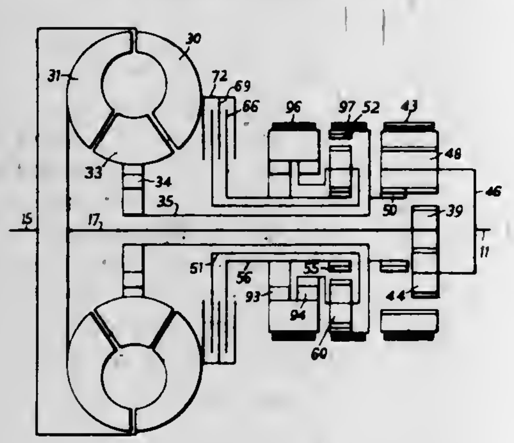
Andrew Paredes, Wayne, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,595
8 Claims. (Cl. 74—688)

1. A hydrokinetic power transmission mechanism comprising a bladed impeller and a bladed turbine situated in toroidal fluid flow relationship, a planetary gear unit comprising a ring gear, a carrier, a sun gear and planet pinions rotatably supported on said carrier in meshing engagement with said sun and ring gears, means for anchoring said sun gear to a stationary portion of said mechanism, a turbine driven shaft, means for connecting said ring gear to said turbine driven shaft, means for establishing a one-way driving connection between said turbine and said ring gear, selectively engageable clutch means for establishing and disestablishing a driving connection between said carrier and said impeller, said converter comprising also a bladed stator, one-way brake means for anchoring said stator against rotation in a direction opposite to the direction of rotation of said impeller while



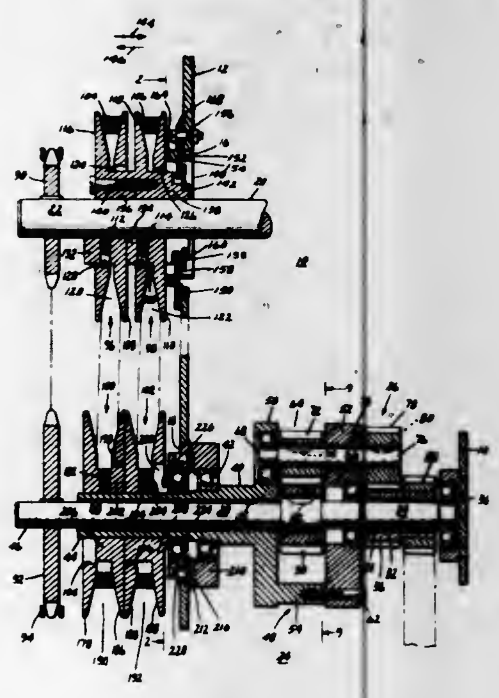
accommodating free-wheeling motion of said stator in the opposite direction, said one-way brake means comprising an inner race, and a stationary stator sleeve shaft splined to said inner race, said stator sleeve shaft being connected to said sun gear.

3,354,747
POWER TRANSMISSION APPARATUS
Howard Frederick Hobbs, 18 Warwick New Road,
Leamington Spa, England
Filed July 22, 1965, Ser. No. 473,985
Claims priority, application Great Britain, July 31, 1964,
30,319/64
16 Claims. (Cl. 74—688)



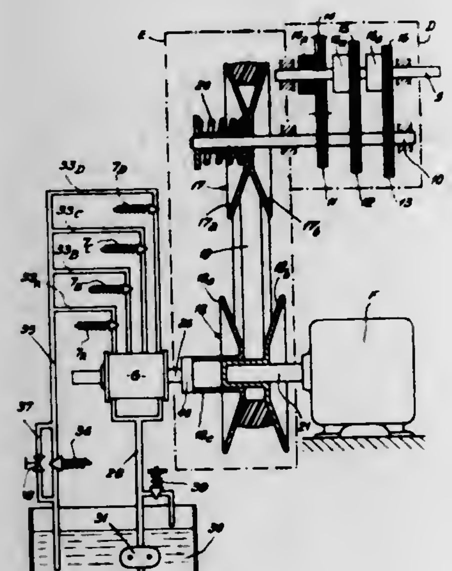
1. A power transmission apparatus comprising a primary input member (**15**), an output part (**11**), a fixed part (**42**), a hydro-kinetic torque transmitting device (**19**) having an impeller (**30**) and at least one turbine (**31**), a toothed gearing comprising a primary planetary gearing and a secondary planetary gearing, said primary planetary gearing including an input member (**39**) and an output member (**49**) and a reaction member (**50**), said secondary planetary gearing having a plurality of input members (**53, 56**) and an output member (**52**) and reaction parts (**61, 62**), a plurality of additional torque transmitting devices which include driving parts and driven parts (**66, 69**), a plurality of brakes of the self-energizing kind (**62, 63**), means connecting the said impeller drivably to the primary input member (**15**), means permanently connecting the said turbine at all times to the input gear (**39**) of said primary planetary gearing, means connecting the driven member (**45**) of said primary planetary gearing to said output part (**11**), means connecting the reaction member (**50**) of said primary planetary gearing at all times to the output member (**52**) of said secondary planetary gearing, said primary planetary gearing and said secondary planetary gearing having no other mechanical connection to each other, means connecting the driven parts (**66, 69**) of said additional torque transmitting devices drivably to said input members (**53, 56**) of said secondary planetary gearing and which input members act at times as input members, the driving parts of said additional torque transmitting devices comprising a common housing (**72, 73**), means drivably connecting said driving parts to said primary input member (**15**), means connecting the rotating parts of said brakes to said reaction parts (**61, 62**) of said secondary planetary gearing, which act at times as reaction members to react against said fixed part, to enable the input members of said secondary planetary gearing to be freed from and engaged with said primary input member independently and simultaneously in parallel with each other and simultaneously in parallel with said hydro-kinetic torque transmitting device to divide the torque in different proportions between a plurality of power paths and the components of the torque transmitting devices and reaction elements of said secondary gearing to be freed from and engage with said fixed part independently and simultaneously in parallel to hold said reaction member of said primary planetary gearing through said secondary gearing and provide a plurality of torque ratios and changes between one and another ratio or series of ratios without interruption and in a uni-directional manner without possibility of reversal of drive.

3,354,748
VARIABLE SPEED DRIVE
Gale C. Chapman, New Haven, Ind.
(121 N. Main St., Milford, Ind. 46542)
Filed June 9, 1965, Ser. No. 462,572
4 Claims. (Cl. 74—689)



1. A variable speed drive comprising: a frame having first and second spaced elements; said first frame element having first and second spaced openings therein; a drive shaft extending through said first opening and having an extension on one side of said first frame element; a planetary gear train disposed between said first and second frame elements and having a first input shaft extending through said second opening, a second input shaft sleeve coaxially surrounding said first input shaft, bearing means rotatably supporting said second input shaft on said first frame element, said first and second input shafts being parallel with said drive shaft, said first and second input shafts having extensions on said one side of said first frame element, said first input shaft extension having a portion extending beyond said second input shaft extension, a driving spur gear on said first input shaft and rotatable therewith, a pinion carrier on said second input shaft and rotatable therewith, a pinion shaft carried by said pinion carrier and parallel with said input and drive shafts, an output shaft sleeve coaxially surrounding said first input shaft, bearing means rotatably supporting said first input shaft on said second frame element, a driven spur gear on said output shaft and rotatable therewith, a first spur pinion on said pinion shaft and meshing with said driving gear, and a second spur pinion on said pinion shaft and meshing with said driven gear, said pinions being fixedly connected; said driving and driven gears forming a step-up speed ratio between said driving and driven gears; drive means on said drive shaft extension and said first input shaft extension portion and rotatably coupling the same for driving said first input shaft at a constant predetermined speed; and selectively variable means rotatably coupling said drive shaft extension and said second input shaft extension for driving the same at selectively variable speeds from above to below the speed of said drive shaft.

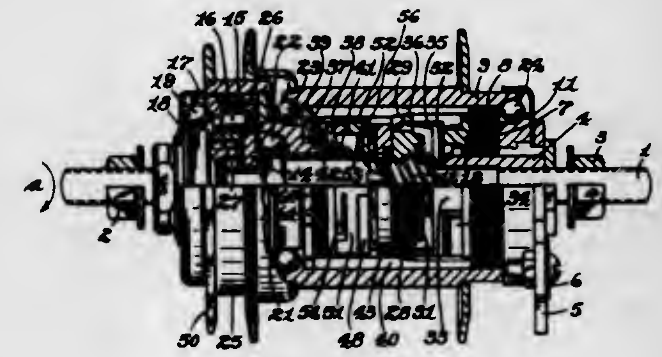
3,354,749
MULTIRATIO DRIVE
Jacques R. Sadler, 23 Rue Achille Millien,
Nevers, Nievre, France
Filed Mar. 15, 1965, Ser. No. 439,870
Claims priority, application France, Mar. 16, 1964,
967,581
6 Claims. (Cl. 74—745)



1. A multiratio transmission system from a drive to a driven shaft comprising:

a gearbox unit having means for setting the speed ratio therethrough to a selected one of a number of values;
a speed variator unit having a control element displaceable over a range of positions for varying the speed ratio therethrough over a range of values;
means operatively connecting both units in serial driving relation with each other between said drive and driven shafts;
a positional servo-motor including a cylinder member and a piston member slidable with respect to each other;
means connecting one of said members to said variator control element;
a power fluid circuit having a source of pressure fluid and an exhaust;
a pair of inlet ports opening into respective ends of said cylinder member and connected to said pressure source;
a series of exhaust ports opening into said cylinder at points spaced along the axial length thereof and individually sealable by said piston member;
exhaust passages connecting said exhaust ports individually with said exhaust;
valves selectively controlling said exhaust passages to select the equilibrium position assumed by said piston member relative to said cylinder member from a series of positions as determined by the positions of said exhaust ports and thereby select the variator speed ratio from a corresponding number of discrete values within its said range;
a common exhaust manifold having one end connected with all said exhaust passages and another end connected with said exhaust of the fluid circuit;
a cut-off valve positioned in said manifold;
a bypass line shunting said cut-off valve; and
an adjustable flow regulated orifice in said bypass line for controlling the velocity of relative displacement of said piston and cylinder members.

3,354,750
TWO SPEED HUB GEARING FOR VELOCIPEDES
Hollis K. Gleasman, Elmira, N.Y., assignor to The Bendix
Corporation, a corporation of Delaware
Filed Aug. 27, 1965, Ser. No. 483,082
7 Claims. (Cl. 74—750)

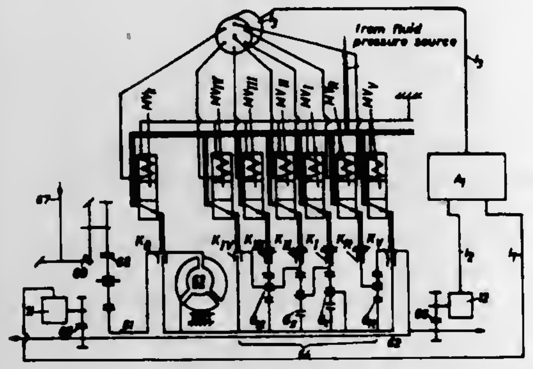


5. In a two-speed hub for velocipedes and the like the combination of:

a fixed axle;
a first threaded shaft member mounted coaxially with the axle;
a second shaft member mounted coaxially with the axle;
a driving means for rotating the first and second shaft members at different speeds;
a first driving clutch member threadedly received on the first threaded shaft member;
a second driving clutch member slidably journalled on the second shaft member;
driven means in the hub adapted to be selectively driven by the first and second driving clutch members;
shifting means for selectively driving the hub through said first and second driving clutch member having first and second toothed members, each toothed member having alternate teeth of unequal height such that said toothed members have a variable two position axial extent; and
means for indexing the second toothed members with respect to the first toothed members to bring its high teeth into and out of engagement with the high teeth of the second toothed member.

3,354,751
DUAL GENERATORS FOR ELECTRICALLY OPERATED GEAR TRANSMISSIONS

Willy Beig, Friedrichshafen-Waggershausen, Germany, assignor to Zahnradfabrik Friedrichshafen, Atiengesellschaft, Friedrichshafen am Bodensee, Germany
Filed July 28, 1965, Ser. No. 475,454
Claims priority, application Germany, Aug. 1, 1964, Z 11,003
5 Claims. (Cl. 74—752)

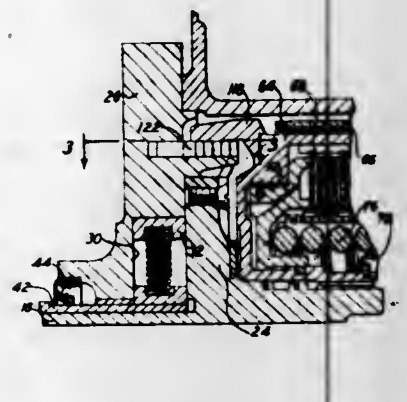


1. In a control system for a multispeed power transmission having an input shaft and a driven shaft, a hydraulic torque converter and a gearing device including clutch and brake means for establishing a plurality of delivery paths between said input shaft and said driven shaft, a fluid pressure source, fluid pressure operated servo means for engaging and disengaging said clutch and brake means, a source of electric power, solenoid operated valve means for shifting said servo means and selectively distributing said fluid pressure to said servo means and an automatic control device for connecting said source of electric power to the circuit of corresponding solenoid operated valve in response to the speed of said driven shaft, a pair of generators as said source of electric power drivingly connected with the driven shaft, said generators being connected in parallel and effecting a current the strength of which is sufficient for upshifting said transmission to higher gear speeds, each of said generators having a current strength sufficient to maintain said transmission in a selected gear speed and sufficient for downshifting said transmission in lower gear speeds.

3,354,752
MULTIPLE SPEED POWER TRANSMISSION MECHANISM WITH NON-SYNCHRONOUS RATIO SHIFT CONTROLLERS

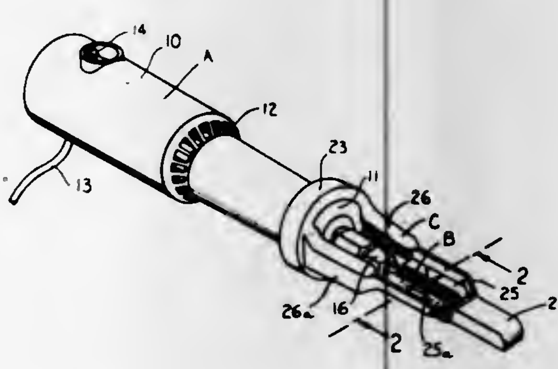
Norman T. General, Farmington, Stepas Smalinskas, Detroit, and Robert P. Zundel, Birmingham, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Original application Jan. 18, 1963, Ser. No. 252,333, now Patent No. 3,233,478, dated Feb. 8, 1966. Divided and this application Dec. 15, 1964, Ser. No. 418,433
1 Claim. (Cl. 74—763)

In a multiple speed power transmission mechanism having a housing and a gear unit with a plurality of gear elements therein, said gear elements being adapted to establish a torque delivery path from a driving member to a driven member, said driving member being connected to a first gear element, said driven member being connected to a second gear element, a reaction gear element, a movable race connected to said reaction gear element, a relatively stationary coupling race connected to said housing, overrunning coupling means disposed between said races, fluid pressure operated servo means for controlling shifting of said coupling means alternately to a coupling engaging position and to a coupling release position, said coupling being normally disengaged, said servo means having a pressure movable member engageable with said coupling means to shift the same to a coupling engaging position when fluid pressure is distributed thereto, a friction brake drum connected to said movable race, a friction brake band surrounding said drum, said pressure movable member being engageable with race engaging friction parts thereof and adapted to shift rotatably with respect to the axis of said drum from a first coupling engaging position to a second coupling engaging position, said pressure movable member extending axially with respect to the axis of said drum, said servo means including a pressure chamber in said housing, a movable piston in said pressure chamber engageable with said pressure movable member, and means for selectively pressurizing said piston, said coupling means being in the form of a coupling spring encircling one of said races, said pressure movable member being defined in part by one end of said spring, the other end of said spring being anchored to said stationary race, said piston being engageable with said one end of said spring whereby the effective diameter of said spring is changed upon application of fluid pressure to said servo means.



3,354,753
SAW CHAIN SHARPENER

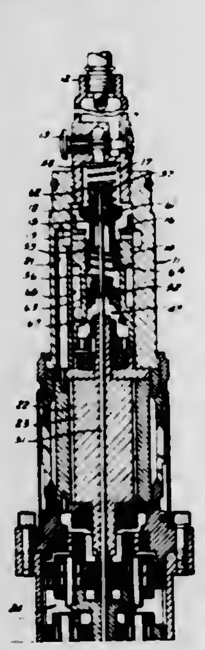
Paul H. Kennemore, P.O. Box 12, Greenwood, S.C. 29646
Filed Feb. 1, 1966, Ser. No. 524,033
3 Claims. (Cl. 76—37)



1. In a portable tool for sharpening teeth of a saw chain, each tooth having a cutting portion with a top plate thereon and a depth gauge spaced from the cutting portion providing a gullet therebetween, comprising: a motor; a housing enclosing said motor; said motor having a rotatable shaft extending out one end of said housing; an elongated abrasive rock, said abrasive rock being carried by said rotatable shaft of said motor in axial alignment therewith, said abrasive rock being of such size as to fit in the gullet of a tooth of a saw chain between the depth gauge and the cutting portion of the tooth; a guide for positioning said abrasive rock within the gullet of said tooth adjacent said cutting portion of said tooth during the sharpening operation of said tooth, said guide including a pair of laterally spaced planar surface members, said planar surface members being spaced vertically above the rotational axis of said elongated abrasive rock permitting a portion of said rock to extend between said spaced planar surface members so that a vertical cutting edge can be placed on the cutting portion of the tooth, while a hollow ground edge can be placed on said top plate, and said planar surface members being spaced laterally defining an elongated opening therebetween so that a cutting edge of the top plate of said tooth is visible during the sharpening operation of said tooth, whereby when said tool is being used to sharpen the teeth of a saw chain, one of said planar surfaces rests on said top plate of the tooth being sharpened providing a guide during the sharpening operation and whereby the teeth on an entire chain can be sharpened from either side of the saw chain.

3,354,754
NUT-RUNNER WITH REVERSE ROTATION BRAKE

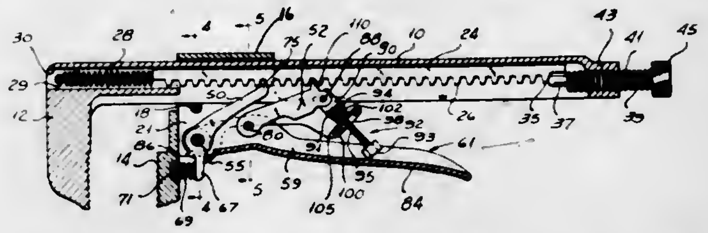
Lester A. Amtsberg, Utica, and William K. Wallace, Barneveld, N.Y., assignors to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 16, 1965, Ser. No. 508,049
9 Claims. (Cl. 81—52.4)



1. In a rotary nut-running tool including a motor having rotation in a positive direction, and an output spindle; a torque releasable cam clutch comprising a driven part axially slidable relative to and drivingly splined to the spindle, a driving part carried by the motor, a spring yieldably pressing the driven part axially into clutched engagement with the driving part, cam means on the driven part, and camming means on the driving part cooperable with the cam means on the driven part to cam the latter axially against the resistance of the spring out of engagement upon the driving part realizing a predetermined torque load, wherein the spring is adapted following such disengagement to return the driven part axially into re-engagement and wherein the cam means of the driven part is cooperable with the camming means of the driving part to cause relative reverse rotation of the driven part and as a consequence reverse rotation of the spindle during the time the driven part moves axially to re-engagement; and braking means having automatic response to a predetermined limited degree of such reverse rotation to brake the spindle against further rotation while permitting the driven part to return axially to re-engagement.

3,354,755
ADJUSTABLE WRENCH

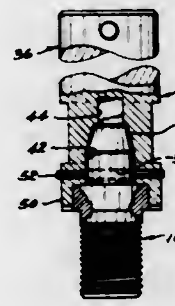
John Legrande, 419 Jackson Ave., Washington Township, Westwood, N.J. 07675
Filed July 15, 1966, Ser. No. 565,634
10 Claims. (Cl. 81—314)



1. In a wrench of a type including an elongated member, a first jaw fixedly mounted on the member, a carriage slidably mounted on said member, a second jaw mounted on the carriage and arranged in cooperative relation with the first jaw, said elongated member including a toothed rack bar, an operating handle pivotally mounted on the carriage, ratchet means supported by the carriage and the handle in operative engagement with teeth of the toothed rack bar, the ratchet means being effective upon pivotal movement of the handle relative to the carriage to cause a step by step actuation of the carriage and thereby the second jaw mounted thereon along the member and toward the first jaw; the improvement comprising means for slidably mounting the toothed rack bar in the elongated member, and operator-operative micro adjustment means carried by the elongated member for effecting a fine longitudinal adjustment of the position of the toothed rack bar in the elongated member to cause corresponding minute adjustments in the position of the carriage and the second jaw along said member toward and away from said first jaw dependent upon the sense of the adjustment of the micro adjustment means.

3,354,756
WRENCH HAVING A PLURALITY OF WORK ENGAGING MEANS

Gerald R. Rusk, 1152 E. Broadway, Maumee, Ohio 43537
Filed Apr. 18, 1966, Ser. No. 543,364
2 Claims. (Cl. 81—90)

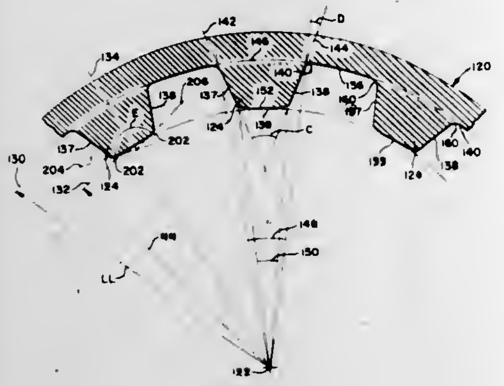


1. A wrench for rotating a guide pin being threadingly engageable with a core box, comprising an elongate body member, said body member having a T-shaped handle at one end and a generally tubular portion at the other end, said tubular portion having several means thereon to independently and cooperatively apply a torque on said guide pin, said means include at least one tang extending longitudinally from the wall of the tubular portion to engage a complementary portion of the guide pin, aligned lateral apertures in the wall of the tubular portion located for alignment with a transverse aperture in the guide pin for receiving a torque pin therethrough, said lateral apertures being spaced longitudinally inwardly from the end of the tubular portion from which said tang projects, and a polygonal shaped guide pin receiving surface on the internal wall of the tubular portion to nonrotatably lock on a polygonal portion of the guide pin.

3,354,757
SPLINE WRENCHING CONFIGURATIONS

David W. Grimm, Watchung, and Richard C. Baubles, Maplewood, N.J., assignors to Elastic Stop Nut Corporation of America, Union, N.J., a corporation of New Jersey

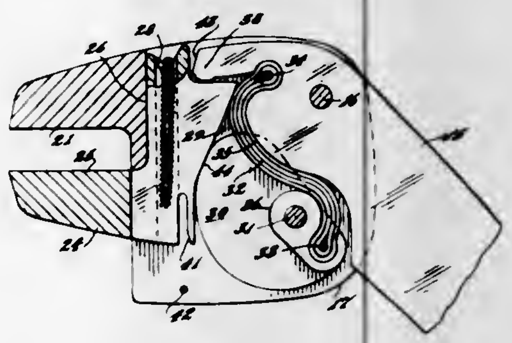
Filed June 13, 1966, Ser. No. 557,072
9 Claims. (Cl. 81—90)



1. A first generally cylindrical member extending axially along a longitudinal central axis and including a plurality of similar longitudinally extending wrenching splines, each projecting radially from a root to an apex, said splines being disposed circumferentially around the central axis and spaced equidistant from one another to establish a first wrenching configuration lying in a radially extending plane perpendicular to the central axis and engageable with a complementary second wrenching configuration of a complementary second generally cylindrical member having complementary splines, each projecting radially from a root to an apex, for wrenching operations, one of said first and second generally cylindrical members being a wrenching member fabricated of a material having a predetermined strength while the other of said generally cylindrical members is a wrenched member fabricated of one of a plurality of materials having a relatively wide range of strength, said wrenching configuration permitting such wrenching operations without failure of either the first or second generally cylindrical members and comprising a plurality of similar profiles disposed circumferentially around the central axis and spaced equidistant from one another, each said profile being symmetrical about a line of symmetry lying in said radially extending plane and passing through said central axis and the lines of symmetry of adjacent profiles being angularly displaced from one another at an angle equal to 360° divided by any whole number factor of twelve which is greater than one, each said profile extending radially between an arc of a circle of smaller diameter having a center lying on the central axis and an arc of a concentric circle of larger diameter and having confronting lateral boundaries extending between said arcs from the inner radial extremity to the outer radial extremity of the profile, said confronting lateral boundaries extending at least partially along lines lying in said radially extending plane and subtending an arc of a larger angle at the outer radial extremity than the angle of the arc subtended at the inner radial extremity such that the confronting lateral boundaries of each profile diverge radially outwardly at such an angle that adjacent lateral boundaries of consecutive profiles converge radially outwardly and the angle between each lateral boundary and a radial line passing through the intersection of the line along which that lateral boundary extends with the arc of the circle of larger diameter is great enough to render the first cylindrical member capable of easy fabrication but small enough to minimize hoop stress during wrenching operations, and the nominal lateral distance between said confronting boundaries being so related to the nominal lateral distance between the adjacent lateral boundaries of consecutive profiles such that upon the application of maximum wrenching torque, a wrench member of weakest material will tend to shear at the roots of the splines thereof while a wrenched member of strongest material will tend to shear the splines of the wrenching member at the roots thereof so as to tend to distribute shear strength available in each said member along said nominal lateral distances in both members during application of the desired wrenching torque in said wrenching operations.

3,354,758
SELF-ADJUSTING AND LOCKING WRENCH

Wayland F. Slayton, R.D. 1, Box 164,
Glen Mills, Pa. 19342
Filed July 7, 1966, Ser. No. 563,448
7 Claims. (Cl. 81—126)

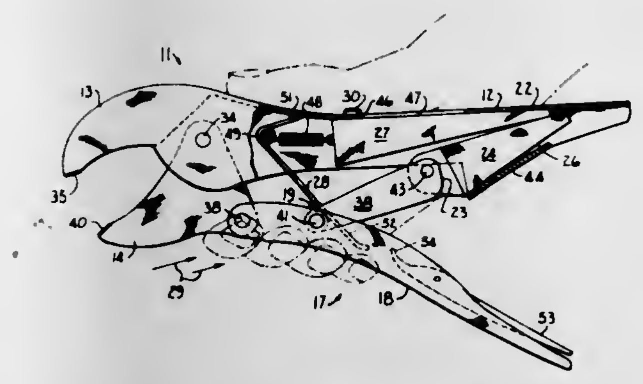


1. In a self-adjusting wrench, a handle, a jaw pivotally mounted to the handle, a coacting jaw slidably mounted on said pivotal jaw and operatively engaged by the handle for adjustment away from the pivotal jaw by movement of the handle, said sliding jaw having a wedge surface inclined in the direction of travel of the sliding jaw, a locking cam rotatably mounted on the pivotal jaw and having a spiral surface, interconnecting means between the handle and the cam for actuating the cam into locking position against the wedge surface of the sliding jaw in response to movement of the handle in the direction of application of torque to the wrench, the interconnecting means rotating the cam toward decreasing radii as the handle adjusts the sliding jaw away from the pivotal jaw and toward increasing radii and locking position against the wedge surface of the sliding jaw as the handle moves in the direction of application of torque, the interconnecting means comprising a link between the handle and the cam that is rigid under tension and rotates the cam into locking position as the handle moves in the direction of application of torque.

3,354,759
VISE GRIP PLIERS

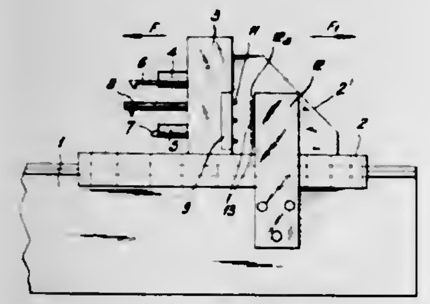
Thomas L. Cook, 1320 Egbert Ave.,
San Francisco, Calif. 94124
Filed May 3, 1966. Ser. No. 547,342
4 Claims. (Cl. 81—379)

1. A vise type pliers tool comprising a handle having a clamping jaw at the front end thereof, a second clamping jaw pivotally secured to said first clamping jaw in confronting relationship thereto, a pressure element having an end portion thereof pivotally secured to said second jaw, spring means engageable with said element for urging said jaws into clamping engagement, said handle at the rear end thereof defining a wedge pocket having forwardly diverging opposed surfaces, a first wedge slidable along one of said surfaces in varying angular relationship therewith, a lever having its end portions pivotally attached respectively to the forward end of said first wedge and to a medial portion of said element, a second wedge slidable along the other of said surfaces, said lever in one portion of pivotal movement relative to said element locking the position of said second jaw with respect to said first jaw with an object clampingly engaged therebetween, the position of said first wedge in said pocket determining the amount of opening between said jaws in the locked position thereof, and means for manually sliding said second wedge rearwardly and into wedging engagement with said first wedge.



3,354,760
PROGRAM-CONTROLLED MACHINE-TOOL SYSTEM

Jacques Barragan, 7 Rue Marc Sangnier, Sceaux, France
Filed Apr. 12, 1965, Ser. No. 447,269
Claims priority, application France, Apr. 20, 1964,
971,571
8 Claims. (Cl. 82—2)

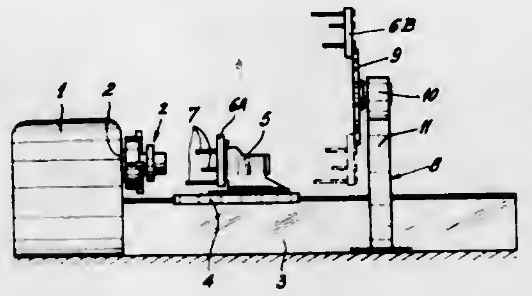


1. In a program-controlled machine-tool system, the combination comprising:

- a machine-tool including a work support and a tool support;
- a tool carrier unit affixable to the tool support for performing machining operations on the work in accordance with a selected program;
- a variably settable program unit on the machine tool having an array of program-setting members each including a bistable information storage element operable in accordance with any selected one of a variety of positional configurations to set the program unit in accordance with a corresponding one of a variety of machining programs, said array and tool support being relatively displaceable;
- and a set of program selector members carried by said tool carrier unit and arranged in a particular positional pattern to operate setting members of said array in accordance with a corresponding positional configuration on relative displacement between said array and tool support, consecutive operation of one setting member alternately placing the corresponding bistable element in each of its stable conditions, whereby the program unit is set in accordance with a corresponding machining program.

3,354,761
MACHINE-TOOL EMBODYING AUTOMATIC TOOL CHANGING MEANS

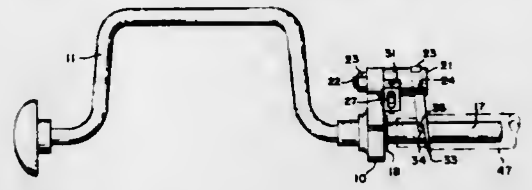
Jacques R. Sadier, 23 Rue Achille Millien,
Nevers, Nievre, France
Filed Apr. 12, 1965, Ser. No. 447,383
Claims priority, application France, Apr. 24, 1964,
972,283
7 Claims. (Cl. 82—2)



1. In a machine-tool the combination comprising means supporting a workpiece; a tool carriage displaceable over a first path towards and away from the workpiece; conveyor means having a series of supporting locations and movable to convey said locations over a second path generally intersecting said first path at a transfer station; a plurality of different tool carrier units; first engaging means on each of said units and cooperating first engaging means at each location of the conveyor means interengageable for removably supporting any one of said units at any one of said locations; second engaging means on each of said units and cooperating second engaging means on said carriage interengageable for removably affixing any one of said units to said carriage; said second engaging means being interengageable on movement of the carriage over said first path past the transfer station in one direction to transfer the unit at said station from the conveyor means to the carriage; means for firmly clamping the transferred unit with respect to the carriage; latching means at each location of the conveyor means associated with said first engaging means for releasably latching a unit to said conveyor means; and camming means on said carriage engageable with said latching means on movement of the carriage past the transfer station for actuating the latching means to a releasing position.

3,354,762
HOSE COVER STRIPPING TOOL

George D. Wolff, 8410 Dallas S.,
Seattle, Wash. 98108
Filed Nov. 25, 1966, Ser. No. 597,048
9 Claims. (Cl. 82—4)



1. In a tool for stripping the outer cover from an end portion of hose which is reinforced by a layer of wire, a mandrel fitting within said end, a frame supporting the mandrel and admitting to turning motion about the center of the mandrel as an axis, a blade holder carried by the frame to occupy a position spaced to one side of the mandrel and receiving from the frame a journal permitting rotary adjustment about an axis paralleling the axis of the mandrel, a blade having a linear slitting edge and carried by the blade holder in a position locating the edge in overylying relation to the mandrel in a plane biased somewhat more than 90° from the axis of the mandrel, the slitting edge, by said turning adjustment of the holder,

being adapted to be placed on a line projected tangent to a circle approximately coinciding with the outer surface of the hose's wire reinforcing, means for setting the holder in said adjusted position, and means for turning the frame relative to the hose in a direction causing the slitting edge of the blade to trace a spiral path in an end portion of the hose cutting therefrom a continuous ribbon of the outer cover.

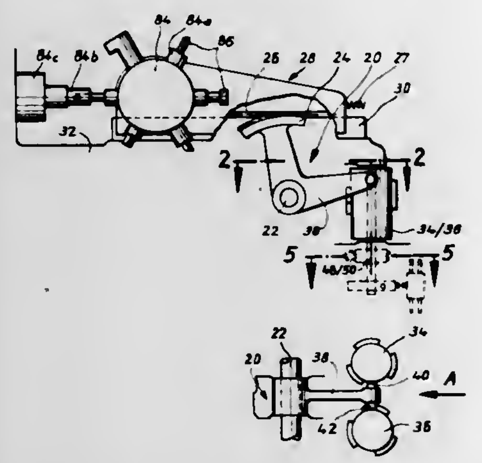
3,354,763
MACHINE TOOL

Karl Spohn and Gerhard Foll, Esslingen, Germany, assignors to Index-Werke K.G. Hahn & Tessky, Esslingen (Neckar), Germany

Filed Dec. 2, 1965, Ser. No. 511,069

Claims priority, application Germany, Dec. 5, 1964, J 27,056

20 Claims. (Cl. 82—21)



1. In a machine tool, a component movable between a starting position and a plurality of additional positions; a pair of rotary programming members; cam means provided on each of said programming members and each arranged to effect movement of said component to one of said additional positions; feeder means operatively connected with said component and having follower means arranged to track one of said cam means at a time; means for biasing said component to starting position and for urging said follower means into engagement with one of said cam means; first drive means for rotating said programming members at a first speed during movement of said component from a starting position to an additional position; and second drive means for rotating said programming members independently of each other and at a second speed exceeding said first speed whenever said component assumes one of said additional positions to rapidly disengage said follower means form the respective cam means so that said component may follow the action of said biasing means and the follower means engages another of said cam means, said cam means being positioned in such a way that said follower means is compelled to switch from engagement with the cam means on one of said programming members to engagement with the cam means on the other programming member whenever said one programming member is rotated by said second drive means.

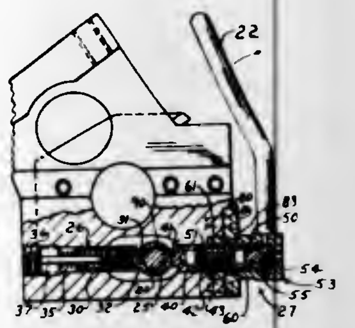
3,354,764
TURNING TOOL

Michael W. Papp, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 18, 1965, Ser. No. 495,546

4 Claims. (Cl. 82—24)

1. A tool comprising a body member adapted to be supported adjacent a rotating workpiece, a slide member adapted to support a cutting tool and carried by said body member for movement relative thereto transverse to the axis of rotation of the workpiece, an axially movable member carried by said body member and engageable with a portion of said slide member to provide for movement of said slide member upon movement of said axially movable member, a manually rotatable control member operatively connected with said axially movable member to effect movement thereof, said control member having a sleeve portion projecting into an opening in the body portion of said tool, and said axially movable member having a hollow sleeve portion slidably received in said sleeve portion of said control member, and means enclosed within said relatively axially movable sleeve portions and connecting said sleeve portion of said axially movable member with said sleeve portion of said control member to provide for axial movement of said sleeve portion of said axially movable member in response to rotation of said sleeve portion of said control member.

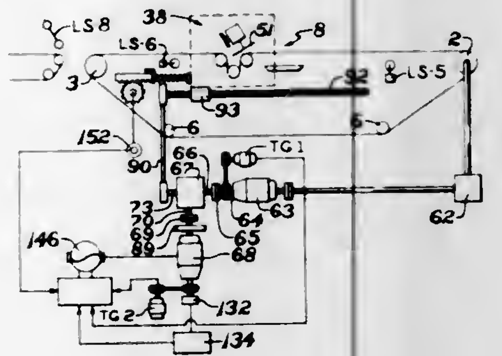


3,354,765
AUTOMATIC CUTTING DEVICE

Walter C. Frey, Akron, and Norman E. Reinhart, Cuyahoga Falls, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed Oct. 23, 1965, Ser. No. 504,014

18 Claims. (Cl. 83—71)



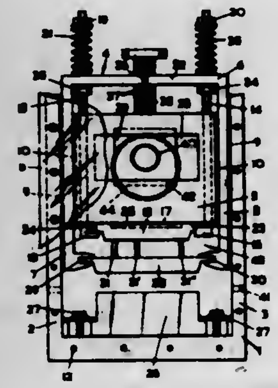
8. In an apparatus for cutting predetermined lengths of stock by a computer controlled apparatus in accordance with a stored program comprising: a support frame, an endless conveyor belt mounted on said frame having an upper run movable in a first direction, a movable member having a cutter mounted thereon for cutting stock carried by said conveyor belt, transmission means coupled to said movable member for controlling the reciprocable movement thereof, a first input means having a preselected output operatively connected to said transmission means for moving said movable member in said first direction, variable speed second input means operatively connected to said transmission means to vary or nullify the effect of said first input means on said movable member, said second input means having a pulse generating means connected thereto generating pulses in response to rotation or portions of rotation thereof, a control unit storing a set of electrical control signals therein, a counting circuit coupled to said pulse generating means and responsive to said pulses for maintaining a count continuously representative of the rotations of said second input means, said control unit operative to produce an output signal when said count corresponds to said set of electrical control signals, and control means coupled to said second input means and responsive to said output signal for regulating the output of said second input means to said transmission means.

3,354,766
TOOL CARRYING DEVICE FOR AN ECCENTRIC PRESS

Wilhelmus Hendrikus Johannes Dominicus Daalderop, deceased, late of Drumpt, Tiel, Netherlands, by Maria Johanna Wilhelmina Elisabeth Daalderop-van Oppenraaij, heir and guardian of minors, Drumpt, Tiel, Netherlands, Mathilde Wilhelmina Henriette Maria Wakkerman-Daalderop, Zwolle, Maria Wilhelmina Jozefa Gerarda Prummel Junior-Daalderop, Tiel, Wilhelmina Gerarda Johanna Maria Daalderop, Drumpt, Tiel, Emma Wilhelmina Maria Daalderop, Amsterdam, and Johanna Josepha Maria Daalderop, Nijmegen, Netherlands, heirs, assignor to N.V. Koninklijke Metaalwarenfabrieken voorheen J. N. Daalderop & Zonen, Binnenhoek, Tiel, Netherlands

Filed June 14, 1965, Ser. No. 463,965

13 Claims. (Cl. 83—133)



1. A tool carrying device for securing a punch tool in an eccentric press having a tool carrier comprising a main carrier having a holding surface for a first main tool section, an auxiliary movable carrier guided by said main carrier, resilient means biassing said auxiliary carrier towards an end position, carrying elements on said auxiliary carrier for separately carrying part of said main tool section in spaced relationship to said holding surface, said carrying elements including a collet element to clamp said main tool section against said holding surface through the action of said resilient means whereby said resilient means provides the spring tension for clamping said main tool section against said holding surface and at the same time provides the spring tension for urging said auxiliary carrier to an end position relative to said main carrier.

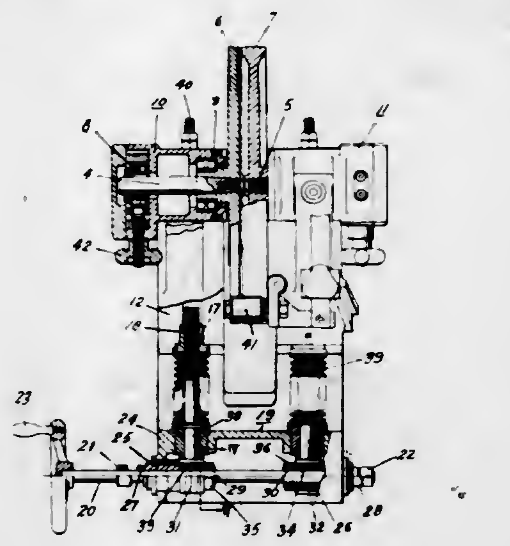
3,354,767
BAND SAWING MACHINE

Shinnosuke Funakubo, 19 3-chome, Fukagawa, Takabashi, Koto-ku, Tokyo, Japan

Filed Dec. 16, 1966, Ser. No. 602,248

1 Claim. (Cl. 83—201.14)

In a band sawing machine, a driving pulley, a pair of driven pulleys in close parallel disposition, a saw blade mounted on said driving pulley and on one of said driven pulleys, a backing blade mounted on said driving pulley and the other of said driven pulleys, said saw blade and said backing blade being in edge to edge contact, means for adjusting the distance between said driving pulley and said one driven pulley and means for adjusting the distance between said driving pulley and the other of said driven pulleys.

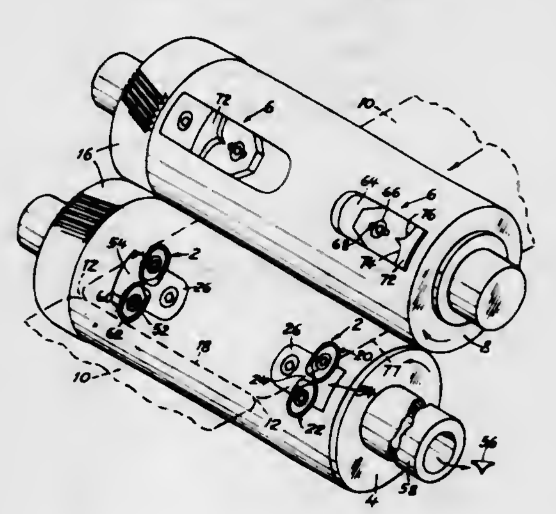


3,354,768
ROTARY CUTTERS FOR SHEET MATERIAL

Leonard P. Liick, 48 Mountainview Road, Trenton, N.J. 08628

Filed Oct. 20, 1965, Ser. No. 498,593

10 Claims. (Cl. 83—345)

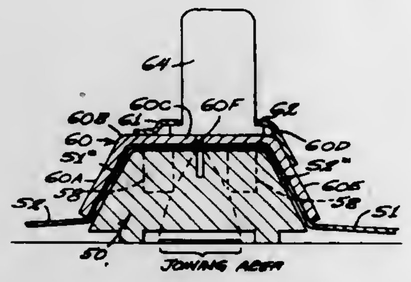


1. A device for forming an arcuate cut in a sheet of material, comprising two rotary members between which the sheet of material to be cut is movable, a punch carried by one of said rotary members and presenting an arcuate cutting edge corresponding in shape to the cut to be formed in the sheet of material, and a die carried by the other of said rotary members, said die having a plurality of side portions, one of which presents an arcuate cutting edge complementary with said cutting edge of the punch, said cutting edge of said side portion of the die being yieldably movable with respect to the rotary member by which the die is carried, said punch and die being located on said rotary members in position to bring the cutting edges thereof into cooperative contact while in inclined relation with respect to each other to form an arcuate scissors-like cut in said sheet of material upon rotation of said rotary members.

3,354,769
APPARATUS FOR STRIP TRIMMING PREPARATORY TO LAP JOINDER

Andrew E. Abramson and Andrew F. Kitchar, Excelsior, Minn., assignors, by mesne assignments, to Research Instruments & Controls, Inc., a corporation of Minnesota

Filed Jan. 24, 1966, Ser. No. 522,752
14 Claims. (Cl. 83—455)

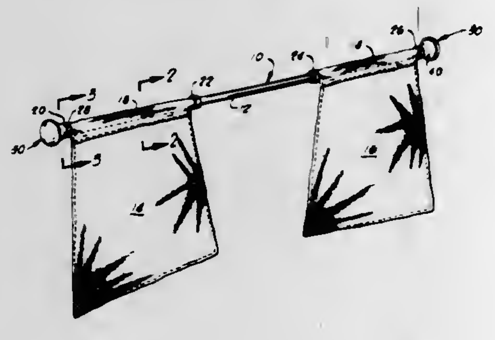


1. A machine for trimming the ends of aligned strips preparatory to lap joining, comprising a pair of interfitting elongated members composed of an under member having an upper surface and downwardly sloping walls, an upper member having an under surface fitting said under member upper surface and walls, said members each having a slot along its length, said slots being oriented so as to be aligned when the upper member is fitted onto the lower member, and knife means having a knife extending into said slots mounted on the upper member for movement along said slot.

3,354,770
BATON STRUCTURE

Leonard H. Haug, 1521 S. Pickard, Norman, Okla. 73069

Filed Oct. 24, 1965, Ser. No. 504,312
5 Claims. (Cl. 84—477)

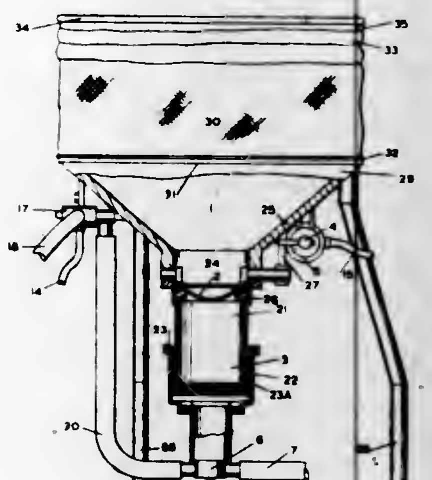


1. A baton comprising:
- an elongated shaft having first and second ends and having a cylindrical central section;
- a first cylindrical plastic sleeve surrounding and rotatably mounted on said shaft between the longitudinal center of said shaft and one end thereof for free rotation about the longitudinal axis of said shaft;
- a second cylindrical plastic sleeve surrounding and rotatably mounted on said shaft, said second cylindrical plastic sleeve being spaced from said first cylindrical plastic sleeve and positioned between the center of said shaft and the second end thereof for free rotation about the longitudinal axis of said shaft; and
- a flexible flag secured to each of said plastic sleeves for rotation therewith about the lonigtudinal axis of said shaft, each of said flags being secured along one of its edges to the respective plastic sleeve.

3,354,771
APPARATUS FOR THE CHARGING OF BLAST HOLES

Seymour A. J. Stark, 193 St. George's Road, Observatory Extension, Johannesburg, Transvaal, Republic of South Africa

Filed Aug. 17, 1965, Ser. No. 480,328
Claims priority, application Republic of South Africa, Aug. 25, 1964, 64/4,033; Sept. 24, 1964, 64/4,555; Feb. 4, 1965, 65/577
8 Claims. (Cl. 86—20)



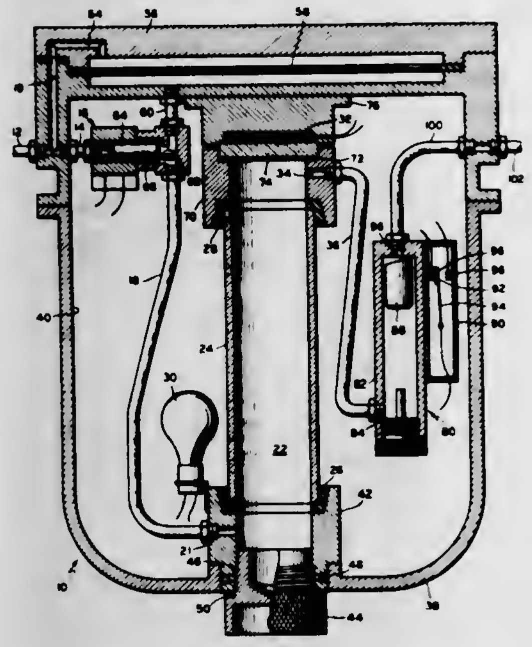
1. Blast hole charging apparatus comprising a hopper having a base and a gate in the base, said hopper adapted to be connected to discharge into a compressed air supply line, a pneumatic rolling diaphragm and pushrod assembly operatively connected to said gate to move the latter, a control valve assembly for the air supply, and means for remotely controlling the operation of the pushrod and the control valve, said gate comprising a rotatable plug in the form of part of a hollow sphere with axial pintles projecting therefrom and journaled in said base and a seal retained in said base and cooperating with said gate.

3,354,772
INSTRUMENT AND PROCESS FOR TESTING CONTAMINATION IN LIQUID MATERIALS

George J. Topol, Hamilton, Ontario, Canada, assignor to Bowser, Inc., Fort Wayne, Ind., a corporation of Indiana

Filed Nov. 16, 1961, Ser. No. 152,892
3 Claims. (Cl. 88—14)

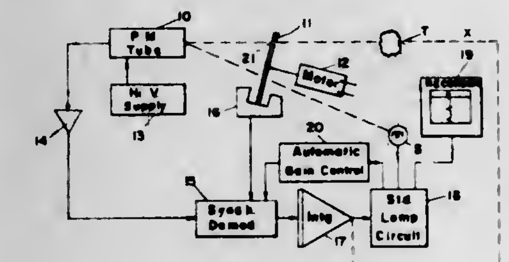
1. Apparatus for continuously testing the impurity level of liquid materials, comprising a chamber adapted to receive a continuous flow of liquid under test and for discharging said liquid, means associated with said chamber for illuminating the liquid under test within said chamber during its passage therethrough, photocell means for receiving only scattered light derived from illumination of contaminants in the liquid in said chamber, passage means connected to said chamber and having a divided flow path including a filter in one branch thereof and a valve for controlling the direction of flow whereby filtered or unfiltered liquid is controllably supplied to said chamber, outlet passage means through which the liquid passes out from the chamber, electrically controlled meter means for indicating the output of said photocell, a balancing circuit operatively combined with said meter and said valve whereby said electrically controlled meter means is calibrated to zero impurity during passage of filtered flow through said chamber, said balancing circuit including a timed switching means which periodically operates said valve to alternately pass filtered fluid with which the photocell is calibrated and unfiltered fluid which is to be tested to the chamber, and means for deactivating said balancing circuit to provide a meter reading responsive to said photocell means during passage of unfiltered liquid flow through said chamber and calibrated relative to said filtered flow.



3,354,773
AUTOMATIC OPTICAL PYROMETER SYSTEM WITH AUTOMATIC GAIN CONTROL

Warren T. Shreve, Maple Glen, Pa., assignor to Leeds & Northrup Company, a corporation of Pennsylvania

Filed July 1, 1963, Ser. No. 291,868
8 Claims. (Cl. 88—22.5)

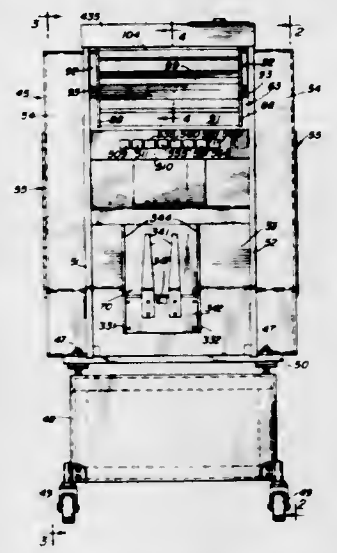


8. An optical pyrometer system comprising:
- a reference source and a target source,
- modulator means for cyclically modulating radiant energy from said reference source and from said target source,
- means for producing an AC signal of amplitude dependent upon the difference between the modulated radiant energies from said sources and of phase dependent upon which of said energies is the greater,
- means for producing timing pulses phase-locked to said AC signal,
- demodulator means controlled by said timing pulses for producing unidirectional pulses of amplitude and polarity dependent upon the amplitude and phase of said AC signal,
- integrator means to which said unidirectional pulses are supplied to adjust the temperature of one of said sources for matching of said energies, and
- an automatic gain-control circuit responsive to changes in the radiant energy level at which matching is effected for varying the duration of said unidirectional pulses in compensation for the disproportionate change of radiant energy with change of temperature at different radiant energy levels.

3,354,774
DATA ABSTRACT RECORDING MACHINES

Louis A. Smitzer, Chicago, Adolph J. Gawin, Skokie, Andrew Balint, Park Ridge, Robert F. Porazinski, Norridge, and Paul G. Bielik, North Riverside, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed June 1, 1964, Ser. No. 371,633
62 Claims. (Cl. 88—24)

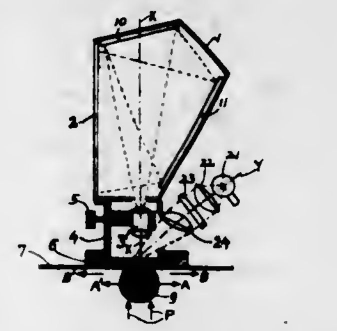


1. A machine for reproducing on electronic accounting machine type filing cards respective images of data contained on larger size documents, comprising;
- a document magazine assembly having means for successively feeding data-bearing documents therefrom,
- means to receive the successive documents from the magazine assembly and uninterruptedly transport them in a path which returns the documents to the magazine assembly,
- a scanner aligned with said transporting means for scanning each document in said path and operating to project a reduced size image of the document data,
- transfer means to which the reduced size document data images are projected,
- a card magazine having means for feeding cards successively therefrom,
- means for conveying the fed cards into image-receiving relation to and then beyond said transfer means,
- said transfer means applying the reduced images to the successive cards,
- means beyond said transfer means for treating the cards to fix the images thereon,
- a card receiver beyond said treating means,
- and means operative to activate all of said means in continuous cyclical coordination.

3,354,775
MICROPRINT VIEWER

Richard T. Erban, 145—38 Bayside Ave., Flushing, N.Y. 11354

Filed Aug. 12, 1964, Ser. No. 389,097
13 Claims. (Cl. 88—24)

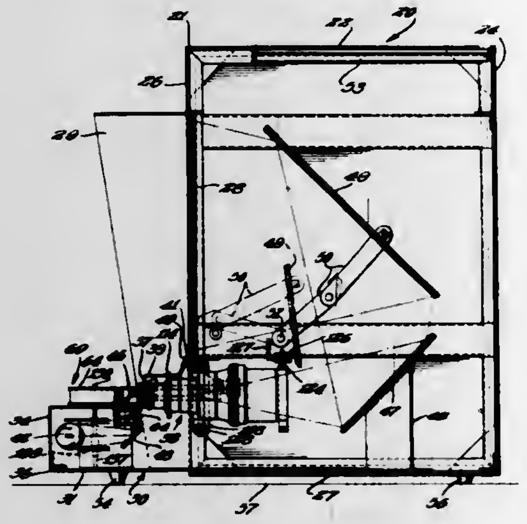


1. In combination with a microprint viewer for opaque microrecords, a stage for holding said micro records in

operator controlled position, said stage comprising a plate of transparent material and a first control means adapted to hold said records resiliently against said plate, at least a portion of said control means being movable relatively to said plate in at least one direction parallel to the surface of said plate while resiliently pressing said micro records against said surface, and a second control means adapted to superimpose upon said first control means a movement at substantialy right angles to the direction of said first control means movability with respect to said plate.

3,354,776
MICROFILM READER

Louis A. Smitzer, Chicago, Andrew I. Yohana, Skokie, and Daniel D. Call, Elk Grove, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 20, 1964, Ser. No. 412,620
18 Claims. (Cl. 88—24)



1. A microfilm reader comprising

a cabinet having a vertically disposed screen for viewing an image,

a light source in said cabinet,

and an optical track between said screen and said light source comprising

lens system for varying the magnification of the image while maintaining precision focus comprising continuously variable magnification zoom lenses continuously adjustable axially and means for axially adjusting said lenses for variable magnification between 20× and 40×, and a no-rewind cartridge for inserting a roll film into projecting relation with the optical track, said cartridge comprising an integral container having upper, lower and side walls and including two hubs spaced apart less than twice the radial dimension of the accumulated film and having means forming a film plane aperture through which the film passes from one hub to the other.

3,354,777
DOCUMENT FEEDING APPARATUS FOR MICROFILMING MACHINE

Robert H. Normandy, Deerfield, and Timothy P. Fitzgerald, Bensenville, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 12, 1965, Ser. No. 432,367
24 Claims. (Cl. 88—24)

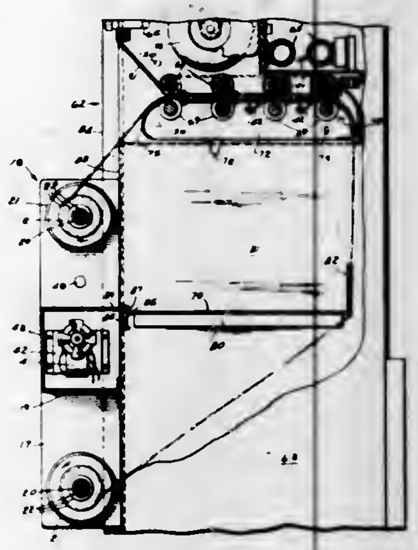
1. In a machine for photographically recording, as by microfilming either continuous web or sheet form of documents and including a document transport assembly and a document exposure aperture structure associated with said transport assembly for the exposure and scanning of documents carried by the transport assembly for continuous flow photographing of the documents,

said machine having a frame structure,

a continuous web supporting unit,

a sheet magazine and feeding unit,

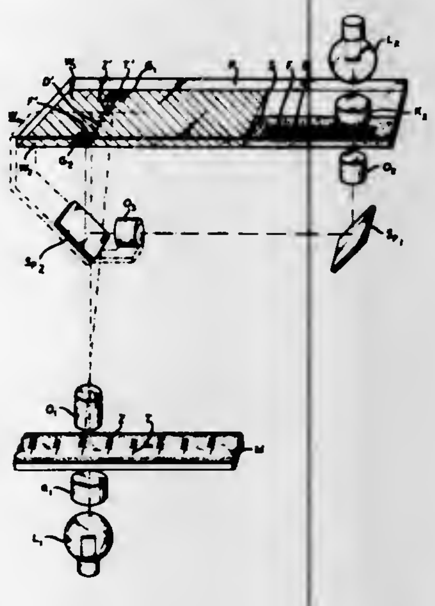
each of said units having means for attaching it to said machine frame structure,



and means carried by said machine frame structure and releasably engageable by said attaching means for mounting of the units in position on the machine to supply continuous documents from said web feeding unit and from said sheet magazine and feeding unit to said transport assembly for transport thereby.

3,354,778
DEVICE FOR THE ALIGNMENT AND READING OF DISTANCES AND ANGLES

August Koller, Traunreut, Upper Bavaria, Germany, assignor to Wenczler & Heidenhain, Traunreut, Upper Bavaria, Germany, a corporation of Germany
Application May 21, 1963, Ser. No. 292,173, which is a continuation of application Ser. No. 727,097, Apr. 8, 1958. Divided and this application Apr. 18, 1966, Ser. No. 549,118
Claims priority, application Germany, Apr. 11, 1957, H 29,863
11 Claims. (Cl. 88—24)



1. A device for the alignment and reading of distances and angles comprising

two light paths,

a first carrier carrying a main scale,

a second carrier carrying a fine scale,

image receiving means,

one of said light paths projecting an enlargement of a preset portion of said main scale onto said image receiving means, and

the other of said light paths projecting an enlargement of a preset portion of said fine scale onto said image receiving means,

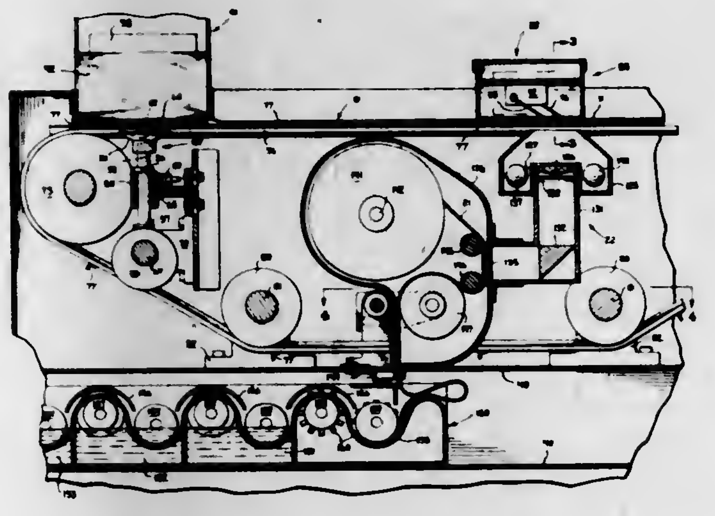
means for relative movement between said one of said light sets on the one hand of said other of said light paths and of said fine scale on the other hand, and

said one of said light paths being immovable and said other of said light paths together with said fine scale is movable relative to said one of said light paths,

the steps between consecutive fully written numbers of the fine scale thereby corresponding to the measuring exactness of the whole device.

3,354,779
APPARATUS FOR PHOTOGRAPHICALLY COMPOSING ADVERTISEMENTS IN COLUMN FORMAT FROM ADVERTISEMENTS ON INDIVIDUAL CARDS

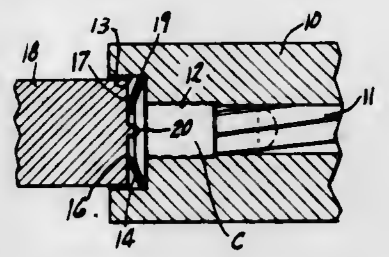
Robert N. Brown, Columbus, Ind., assignor, by mesne assignments, to Eltra Corporation, Brooklyn, N.Y., a corporation of New York
Continuation of application Ser. No. 295,474, July 16, 1963. This application July 21, 1966, Ser. No. 566,951
7 Claims. (Cl. 88—24)



1. Apparatus for composing and arranging classified advertisements of variable lengths in a column format with individual advertisements abutting one another, which advertisements are individually mounted on separate cards that are coded to indicate the length of the advertisement, said apparatus comprising a photographic station through which advertisement bearing cards are passed, an imaging station through which sensitized material for receiving images of the advertisement is passed, means including an optical system and a source of illumination for projecting an image of the advertisement on a card moving through the photographic station onto sensitized material moving through the imaging station, continuously driven conveyor means for carrying an individual card uninterruptedly through said photographic station, intermittently actuated driving means for moving sensitized material through said imaging station, means for reading the card coding as the card is carried through said photographic station, and control means responsive to said code reading means for actuating said driving means to move a specific amount of sensitized material continuously through said imaging station in synchronism with the movement of a card through said photographic station, whereby the specific amount of sensitized material being moved through the imaging station is variable and dependent on the length of the advertisement on the card moving through the photographic station in synchronism therewith.

3,354,780
BREECH SEAL FOR FIREARMS UTILIZING CASELESS AMMUNITION

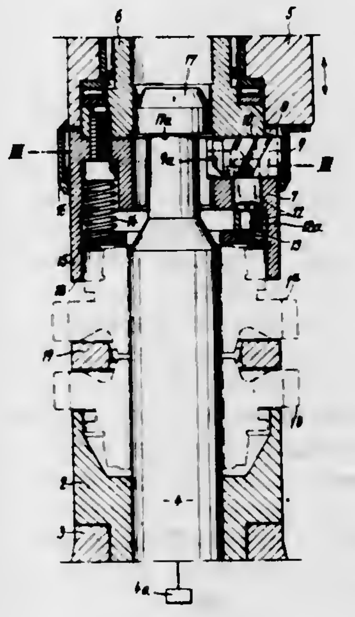
Marcus Ramsay, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Mar. 28, 1966, Ser. No. 538,078
5 Claims. (Cl. 89—26)



1. In a firearm of the type utilizing caseless ammunition, a breech gas seal device comprising in combination a barrel having a bore for receiving and chambering a round of caseless ammunition, a cooperating breech bolt operative to close the bore, and a Belleville type washer sandwiched between the breech bolt and the bore so that when the breech bolt is moved towards a chamber closing position the washer is deflected.

3,354,781
APPARATUS FOR CLAMPING GEARS AND THE LIKE

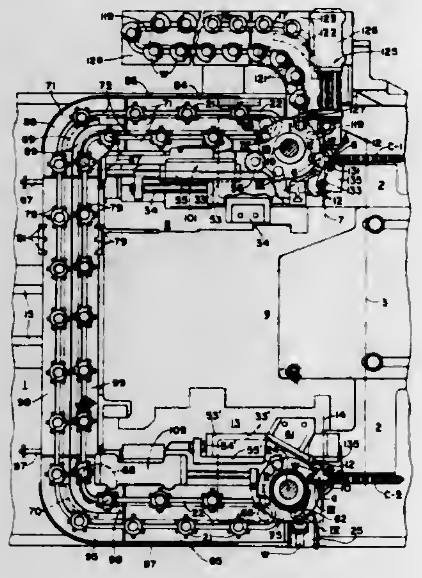
Max Kriegl, Munich, Germany, assignor to Carl Hurth, Maschinen- und Zahnradfabrik, Munich, Germany
Filed Oct. 23, 1965, Ser. No. 503,158
Claims priority, application Germany, Nov. 14, 1964, H 54,309
15 Claims. (Cl. 90—1)



1. An apparatus for clamping annular workpieces, comprising a first support; a second support, one of said supports being movable toward and away from the other

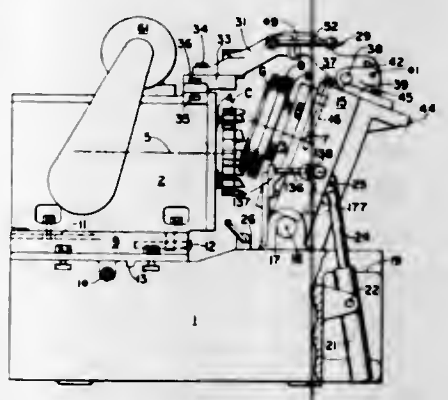
support and said first support being arranged to support a workpiece adjacent to said second support; a mandrel reciprocably received in said first support and having a head movable through and beyond the workpiece; a carrier provided on said second support and arranged to accommodate said head; at least one clamping member radially movably mounted in said carrier; cam means and follower means cooperating with said cam means, one of said means being provided on said clamping member and the other of said means being axially movably mounted in said carrier and being arranged axially movable with reference to said carrier in response to abutment with the workpiece and continued movement of said one support toward said other support, said cam and follower means being arranged to shift said clamping member inwardly and into the path of said head in response to said abutment of said other means with the workpiece and relative movement between said carrier and said other means.

3,354,782
TOOTH CUTTING MACHINE WITH WORK HANDLING MECHANISM
William G. Buchanan and George H. Howing, Rochester, N.Y., assignors to The Gleason Works, Rochester, N.Y., a corporation of New York
Continuation of application Ser. No. 356,711, Apr. 2, 1964. This application Mar. 24, 1966, Ser. No. 537,243
10 Claims. (Cl. 90—1)



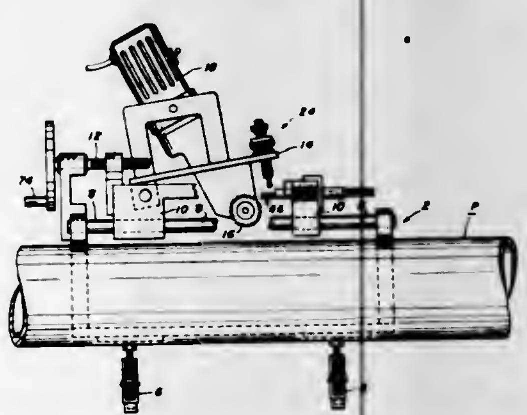
1. A tooth cutting machine having two substantially parallel work spindles, a work carrier adjacent each spindle arranged for angular indexing about an axis substantially parallel to the spindles to carry workpieces successively to and from the spindles, an endless flexible conveyor having work holders equally spaced therealong and arranged to carry workpieces from one to the other of said carriers, means for actuating said carriers, and means for intermittently operating said conveyor in time with actuation of the carriers, the conveyor upon each such operation moving through a distance corresponding to the spacing of the work holders therealong which is such that upon each operation of the conveyor one work holder is brought to one carrier and another to the other carrier, one such operation of the conveyor occurring between successive actuations of the carriers, the means for intermittently operating said conveyor comprising a pair of ratcheting actuators for intermittently advancing the conveyor, said actuators being arranged to act on portions of the conveyor adjacent the respective work carriers, and means connecting said actuators for simultaneous operation.

3,354,783
GEAR MACHINE OR THE LIKE
Norman W. Fowler, Rochester, N.Y., assignor to The Gleason Works, Rochester, N.Y., a corporation of New York
Original application May 4, 1964, Ser. No. 364,483, now Patent No. 3,269,270, dated Aug. 30, 1966. Divided and this application Jan. 28, 1966, Ser. No. 532,043
13 Claims. (Cl. 90—9.4)



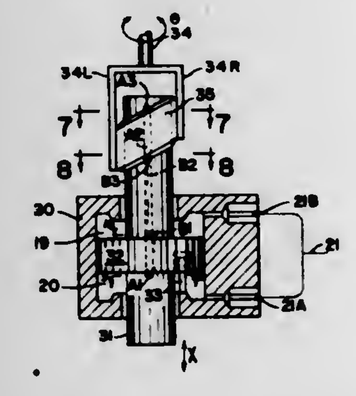
1. A gear cutting machine comprising a cutter spindle and a housing supporting said spindle for rotation and axial reciprocation, first and second cams co-rotatable in the housing and geared to the spindle for rotation in constant velocity ratio therewith, and means actuated by said cams for effecting axial reciprocation of the spindle, said means being arranged to combine the reciprocating motion effected by one cam with that effected by the other cam.

3,354,784
PORTABLE MILLING MACHINE
William L. Zemberry, Swissvale Borough, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Nov. 2, 1965, Ser. No. 506,097
1 Claim. (Cl. 90—12)



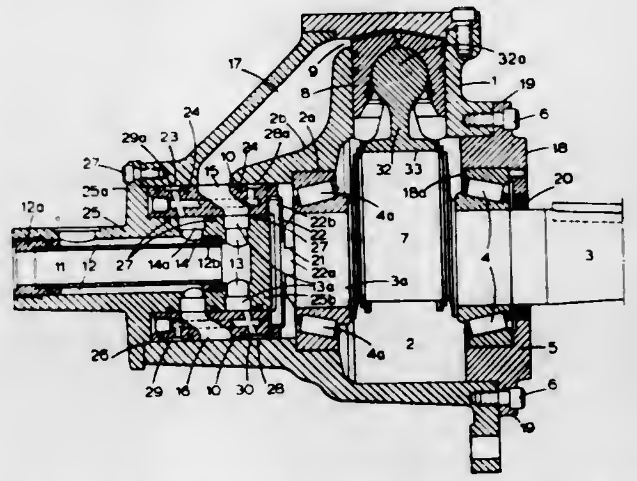
A portable milling machine comprising a frame adapted to be clamped on a workpiece column, a way on said frame, a carriage adapted to traverse said way, means for moving said carriage along said way, a platen pivoted on said carriage for movement toward and away from a workpiece to which said frame is clamped, a milling cutter journaled on said platen adapted to engage said workpiece and cutting notch therein when said platen is moved toward it, means for driving said milling cutter, a micrometer feeding mechanism mounted on and projecting through said platen adjacent said milling cutter adapted to effect pivotal movement of said platen, said micrometer feeding mechanism including a thimble yoke rigidly mounted on said platen, a feed screw shaft extending through said thimble yoke and said platen with a portion thereof projecting from said platen adjacent said cutter, means engaging said screw for preventing rotation thereof relative to said yoke and said platen, a thimble circumferentially and threadingly mounted on said screw shaft within said yoke for movement along said screw shaft within the confines of said yoke to effect pivotal movement of said platen, and a locking means on said carriage for releasably engaging the projecting end of said screw shaft.

3,354,785
MECHANISM FOR MUTUAL CHANGE BETWEEN DIFFERENT TYPES OF DISPLACEMENT AND AN AMPLIFIER OF FORCE OR TORQUE
Ryuichi Sagawa, Kohe, Japan, assignor to Kawasaki Jukogyo Kabushiki Kaisha, a corporation of Japan
Filed Mar. 26, 1965, Ser. No. 442,974
Claims priority, application Japan, Mar. 27, 1964, 39/16,874
4 Claims. (Cl. 91—49)



1. A servo motor for producing forceful motion on an output shaft by a minimum force applied to an input shaft comprising a closed cylinder, a snugly fitting piston mounted in said cylinder and providing with said cylinder a pair of chambers, means to maintain said piston against movement in one of an axial movement or a rotary movement while the piston is free to move in the other of an axial movement or a rotary movement, an output shaft connected to said piston, a first pair of independent passage means, one of said first pair of passage means providing a supply of fluid pressure to one chamber, the other of said first pair of passage means providing a supply of fluid pressure to the other chamber, a second pair of independent passage means, one of said second pair of passage means providing for release of fluid pressure from one chamber, the other of said second pair of fluid pressure passage means providing for release of pressure from the other chamber, said second pair of passage means opening to the periphery of said output shaft with their open ends in spaced relation, an input shaft mounted for movement in one of an axial movement or a rotary movement and in axial alignment with said output shaft, a plate mounted on said input shaft closely adjacent said output shaft, the edges of said plate extending at an acute angle to the axis of the output shaft, the edges of said plate being spaced apart a distance less than the distance between the most distant portions of the open ends of said second pair of passage means, said edges being spaced apart a distance greater than the distance between the closest portions of the second passage means, whereby movement of the input shaft in one of the axial or rotary movements will cause the second passage means to be partially closed by the plate and thereby control the flow of fluid from the chambers thereby controlling the differential pressure between both chambers continuously and linearly according to the amount of relative displacements between the plate and the output shaft to cause the motion of the piston and the output shaft in the other direction of said an axial movement and a rotary movement whereby a minimum control force on said input shaft will be changed to a substantial force on said output shaft corresponding to the control movement of said input shaft.

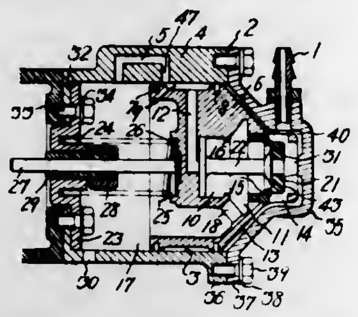
3,354,786
HYDRAULIC MOTORS
John Ferguson Bedford, London, England, assignor to Chamberlain Industries Limited
Continuation of application Ser. No. 380,977, June 25, 1964. This application Feb. 21, 1966, Ser. No. 540,118
Claims priority, application Great Britain, Dec. 21, 1960, 43,889/60; June 25, 1963, 25,285/63; Mar. 25, 1964, 12,759/64
29 Claims. (Cl. 91—180)



1. A motor comprising a main body part defining a set of symmetrical radial cylinders radiating from a common chamber in said body part; a shaft with its axis intersecting all of the axes of the cylinders, said shaft comprising an eccentric member in said chamber, said body part and said shaft being rotatable relative to each other; pistons in all of said cylinders in simultaneous driving connection with said eccentric member; a port at the outer end of each cylinder; a distributor valve; coupling means connecting said valve with said shaft; hydraulic fluid pressure inlet and return conduits; a pair of diametrically opposed distributor ports in said valve and with which said conduits are in continuous communication; individual passages connecting said cylinder ports with said conduits via said distributor ports in said valve; axially spaced peripheral channels in said valve, equalizing passages in said valve continuously connecting said channels with said hydraulic fluid pressure conduits to create at the periphery of said valve hydraulic fluid pressure to balance the forces due to the hydraulic fluid pressure acting upon said valve at its ports and circumferential grooves which receive sealing rings formed of resilient plastic, the circumferential grooves being positioned so that the rings define the axial limits of the effective areas of the valve member on which the hydraulic forces act.

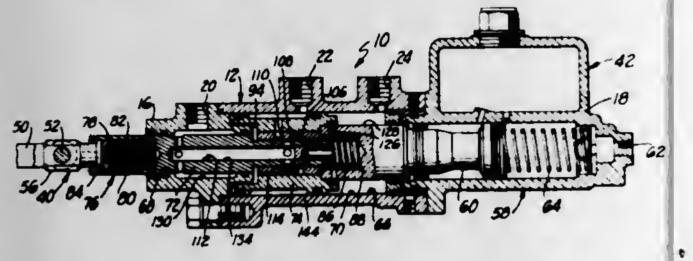
3,354,787
PNEUMATIC DRIVING GEAR
Kenichi Takahata, 84 3 Todoroki, Tamagawa, Setagaya-ku, Tokyo, Japan
Filed Oct. 25, 1965, Ser. No. 505,183
Claims priority, application Japan, Oct. 24, 1964, 39/60,361, 39/83,276
1 Claim. (Cl. 91—222)

A driving gear for driving an output motion, rod, comprising a piston having an annular channel in the circumference thereof and a valve chest therein, a valve body having front and rear valves and disposed in said valve chest, said valve body being in communication with said annular channel, a cylinder having an inwardly opening bypass air passageway, an air inlet and an exhaust in suitable locations thereof, said piston having an air communication hole in the rear portion thereof communicating said valve chest with the rear portion of said cylinder, said piston being slidably fitted in said cylinder, an output motion rod fixed to the front face of said piston and a spring interposed between said front face of said piston and the end of the cylinder opposed thereto in such a manner that said output motion rod projects outwardly of said end of said cylinder, whereby when air under pressure is supplied through said air inlet so as to move the piston and output rod against the spring, exhaust of the air causes the output motion rod to be retracted by means of the spring.



3,354,788
FLUID OPERATED BOOSTER

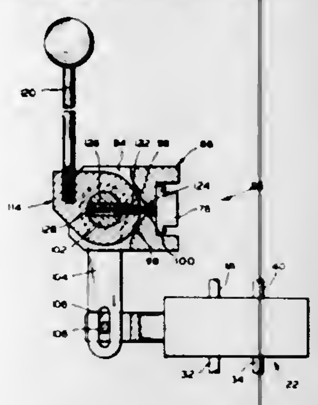
Robert A. Garrison, 735 Via Lido Soud, Newport Beach, Calif. 92660, and Charles F. Schoelm, Long Beach, Calif.; said Schoelm assignor to said Garrison
Filed Dec. 9, 1965, Ser. No. 512,728
2 Claims. (Cl. 91—373)



1. In a fluid operated booster for use with a fluid operated apparatus and another apparatus, the combination of:
- (a) a housing providing a cylinder having input and output ends and having therein an inlet port connectible to a source of operating fluid under pressure, an outlet port connectible to said fluid operated apparatus to deliver operating fluid under pressure thereto, and a reservoir port connectible to a reservoir;
- (b) concentric, relatively axially movable, input and output plungers axially movable in said cylinder and provided with passage means interconnecting said inlet and outlet ports in fluid communication;
- (c) said output plunger having an annular actuating surface which faces axially away from said output end of said cylinder;
- (d) said input plunger having an annular reaction surface which faces axially away from said input end of said cylinder;
- (e) movable input means adjacent said input end of said cylinder for axially moving said input plunger relative to said output plunger;
- (f) resilient connecting means yieldably interconnecting said input means and said input plunger;
- (g) movable output means adjacent said output end of said cylinder and connected to said output plunger and connectible to said other apparatus;
- (h) means for biasing said input and output plungers axially toward said input end of said cylinder; and
- (i) valve means embodied in said input and output plungers and responsive to relative axial movement thereof for selectively connecting said actuating and reaction surfaces in fluid communication with said inlet and reservoir ports, and for controlling the restriction to flow of operating fluid from said inlet port through said passage means to said outlet port, said input means and said input plunger being telescopically interconnected and said resilient connecting means including a compression spring between and seated on said input means and said input plunger.

3,354,789
CONTROL SYSTEM

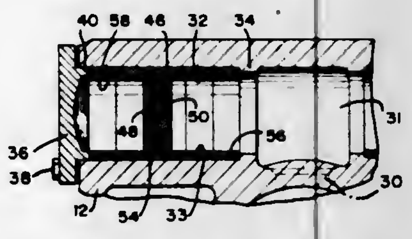
Frank J. Schenkelberger, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 29, 1965, Ser. No. 517,362
7 Claims. (Cl. 91—413)



1. For use with a valve and a switch, a control comprising a rotatable shaft operatively connected to the valve so that rotation of the said shaft actuates the valve, a manually operable member mounted on the said shaft for rotation, means carried by the said member for actuating the switch upon initial rotation of the said member, and means for connecting the said member and shaft together for conjoint rotation following initial rotation of the said member.

3,354,790
VOLUME ADJUSTING APPARATUS FOR COMPRESSOR CYLINDER CLEARANCE POCKETS

Hugh A. Race, Big Flats, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 22, 1965, Ser. No. 508,944
7 Claims. (Cl. 92—59)



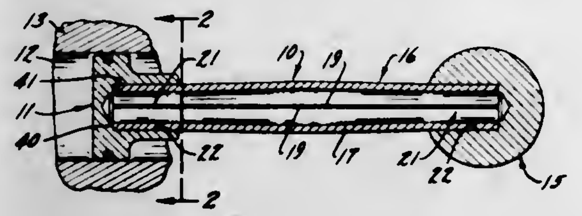
1. In combination with a compressor cylinder and a clearance pocket communicating with said cylinder, an apparatus for varying the volume of said clearance pocket communicating with said cylinder, comprising:
- a closure member disposed within said clearance pocket for closing a portion of the volume of said clearance pocket from communication with said cylinder; and
- a plurality of separable spacer rings disposed within said clearance pocket and relocatable therein to adjust the disposition of said closure member in said clearance pocket to vary the portion of the volume of said clearance pocket closed by said closure member from communication with said cylinder.

3,354,791
PISTON

Gunnar A. Wahlmark, 211 S. Rockford Ave., Rockford, Ill. 61108
Filed May 24, 1965, Ser. No. 458,004
4 Claims. (Cl. 92—109)

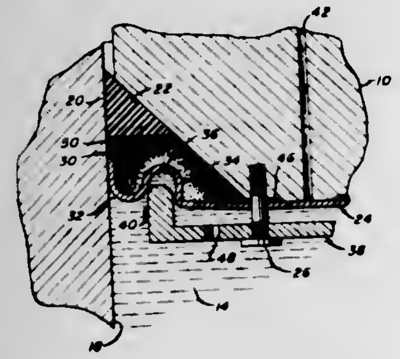
1. A piston construction, comprising: a piston head adapted for sliding movement in a cylinder, said piston head having a generally cylindrical bore formed therein,

a drive connection adapted to operatively connect the piston to receiving means, a shank connecting said piston head and said drive connection, said shank comprising a generally circular cylindrical hollow tube having one end seated in said bore, said tube having a longitudinally extending seam formed therein whereby it is radially resilient and compressible adjacent said one end, the normal transverse dimensions of said tube being larger than the greatest corresponding transverse dimensions of said bore so that radial compression of said tube when it is seated in said bore creates an interference fit between said tube and said piston head.



3,354,792
PRESSURE ACTUATED SEAL

Francis Joseph Fuchs, Jr., Princeton Junction, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 3, 1965, Ser. No. 461,065
15 Claims. (Cl. 92—174)

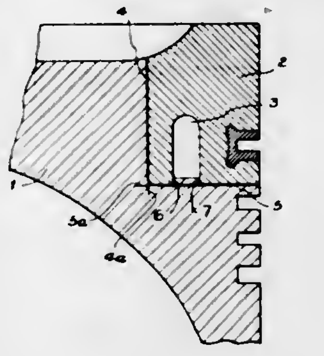


1. A seal for preventing leakage of fluid, pressurized to a relatively high pressure level, from a first region to a second relatively low pressure region comprising:
- a first member for spanning an opening to be sealed;
- means defining a chamber positioned adjacent said first member on the side thereto toward the first region; and
- a pressure gelable fluid in said chamber which pressure gelable fluid thickens at a pressure lower than said relatively high pressure, a pressure differential across the chamber causing said gelable fluid to conform to the shape of the chamber and to solidify thereby enhancing the seal provided by said first member.

3,354,793
PISTON FOR INTERNAL COMBUSTION ENGINES

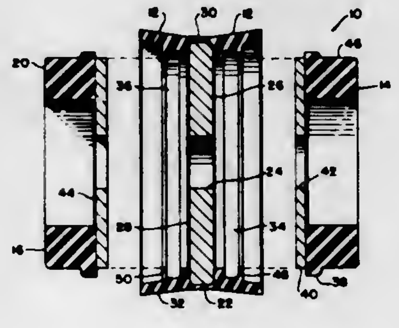
Alfred Meier, Nellingen uber Esslingen, Eberhard Kohl, Stuttgart, and Eberhard Rossmann, Schmiden, Germany, assignors to Mahle Komm.-Ges., Stuttgart-Bad Cannstatt, Germany
Filed Oct. 4, 1965, Ser. No. 492,428
Claims priority, application Germany, Nov. 26, 1964, M 63,267
1 Claim. (Cl. 92—231)

In an internal combustion engine piston having a piston head with a member inserted therein to form a hollow chamber in said head, and a charged particle beam weld in the seams between said head and said member, the im provement in which the beam welds extend from the outer surface of the piston head through the seams and into the body of said head without entering said chamber, the adjoining contacting interior surfaces between said head and said member being welded by the heat conducted to said interior surfaces from said beam, and said member having thin wall portions extending at an angle to said beam weld for forming said adjoining contacting interior surfaces.



3,354,794
PISTON STRUCTURE

Vacell D. Dailey, 6629 Winiate Drive, Waterford, Mich. 48095
Filed May 17, 1965, Ser. No. 456,297
4 Claims. (Cl. 92—243)



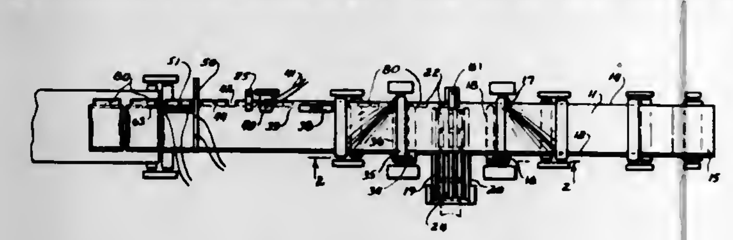
1. Piston structure comprising a sealing member including an annular disc, a seal secured to the outer periphery of the annular disc having an axially extending sealing flange thereon and including three axially spaced apart, radially inwardly opening annular recesses therein with the outer periphery of the disc positioned in the middle recess, a separate annular bumper member at each side of the sealing member, each including a radially outwardly extending peripheral flange received within one of the other annular recesses in the seal of the sealing member and an axially extending bumper portion extending axially outwardly of the seal.

3,354,795
METHOD AND APPARATUS FOR MAKING BAGS

Emanuel M. Kugler, 124 Richmond Place, Lawrence, N.Y. 11559
Filed Feb. 18, 1963, Ser. No. 259,313
6 Claims. (Cl. 93—8)

1. In a machine for continuously forming a series of flexible bags of the type having a reinforcing strip at one end thereof, which machine is characterized by a mechanism for advancing a continuous folded web of material having superimposed walls and and an integral longitudinal fold, a reinforcing strip feeding mechanism for inserting individual and separated reinforcing strips within said superimposed walls of said folded web of material adjacent the fold thereof, means to seal the mating surfaces of said folded web walls together along local and

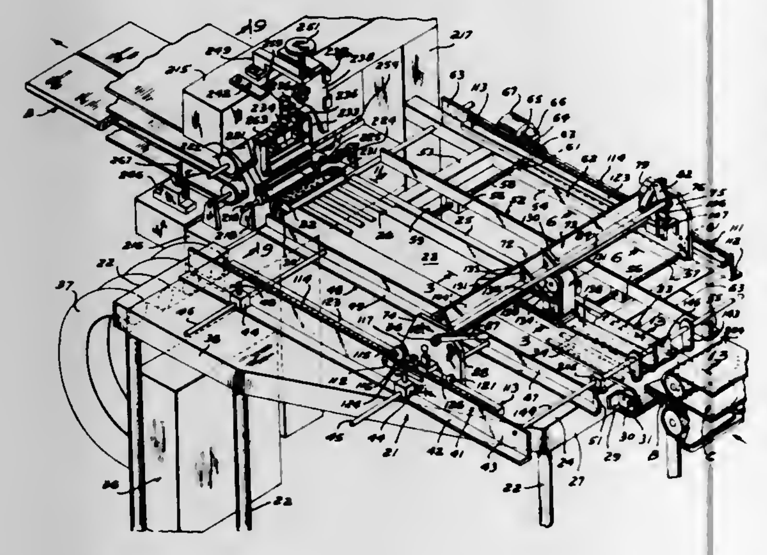
separated areas commencing between successive reinforcing strips and corresponding to bag width intervals in a



cross direction to the movement of said web, and means to segment said web at each of said local and separated areas to form individual bags.

3,354,796
SQUARING EQUIPMENT FOR FOLDED BOX BLANKS

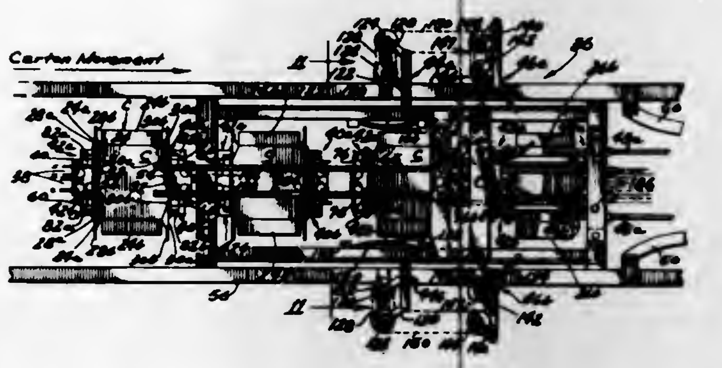
John Lopez, Westfield, N.J., assignor to Universal Corrugated Box Machinery Corporation, Linden, N.J., a corporation of New Jersey
Filed Oct. 30, 1964, Ser. No. 407,927
13 Claims. (Cl. 93—36)



1. Equipment for squaring the panels of a folded box blank comprising a conveyor belt having a horizontal run to carry such box blank with the gap between the folded top flaps thereof extending longitudinally of the conveyor belt, means to advance said conveyor belt, an alignment member in the path of movement of such box blank carried by said conveyor belt, and against which the leading edge of the box plank is adapted to abut with the gap between such folded top panels extending at right angles to said alignment member, to restrain movement of such box blank, means mounting said alignment member for movement thereof out of the path of said box blank to release the latter after the panels thereof have been squared, a pusher member movable against the trailing edge of such box blank as it is advanced by said conveyor belt to force the leading edge thereof against the alignment member thereby squaring the panels of such box blank, said alignment member comprising an elongated strip extending transversely with respect to said conveyer belt, a roller associated with said strip, a shaft extending transversely with respect to said conveyor belt and idly mounting said (first) roller, said elongated strip extending parallel to said (first) roller and having its ends secured to said shaft, a lever secured to said shaft to rotate the latter, means to actuate said lever to effect movement of said strip out of the path of movement of said box blank, and a second roller normally spaced from said first roller and movable toward the latter to clamp the box blank therebetween after the latter has been squared to retain the box blank in such squared condition.

3,354,797
METHODS AND MACHINES FOR FORMING CARTONS

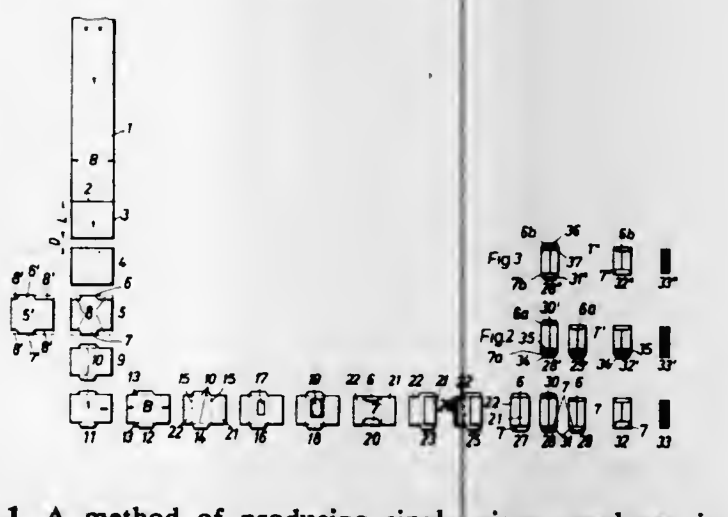
Robert J. Hickin, Seville, Ohio, assignor, by mesne assignments, to Packaging Corporation of America, a corporation of Delaware
Filed Feb. 18, 1965, Ser. No. 433,715
15 Claims. (Cl. 93—49)



1. A method of forming a carton from a tubular blank having gussets at the corners thereof capable of being folded inwardly between opposed walls of the blank, said method comprising squaring-up such tubular blank whereby said opposed walls thereof are in spaced substantially registered relation and at least one end of the blank is open, spreading apart said walls of said blank at said one end, partially folding the gussets inwardly between said spread walls of said squared-up blank, releasing said walls, completing the inward folding movement of the gussets, pressing said walls toward one another at said one end to maintain such gussets in their final infolded position and securing said walls of said blank.

3,354,798
METHOD OF MAKING ENVELOPES

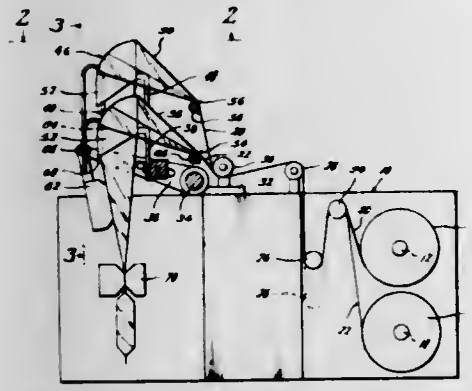
Richard Winkler, Burgermeister-Wink-Strasse, Rengsdorf, Germany, and Kurt Dünnebier, Am Birkenhang, Gladbach, Germany
Filed Aug. 5, 1965, Ser. No. 477,558
Claims priority, application Germany, Aug. 20, 1964, W 37,416
14 Claims. (Cl. 93—63)



1. A method of producing single piece envelopes in continuous operation, said method comprising the steps of feeding a continuous web of uniform width along a predetermined path and at a predetermined speed, making uniformly spaced crosswise cuts through said moving web, each of the cut-off web pieces constituting a preliminary envelope blank, accelerating each of said blanks to a higher predetermined speed causing a lengthwise spacing of said blanks along said path, cutting off marginal portions of each moving blank to define side, bottom and closure flaps, forming preliminary fold lines along the base lines at which said flaps are joined to the main body of the blanks, applying adhesive at least to one of the side flaps and to the bottom flap on one side thereof, and folding the side flaps and the bottom flaps upon one another along said fold lines.

3,354,799
PACKAGING APPARATUS

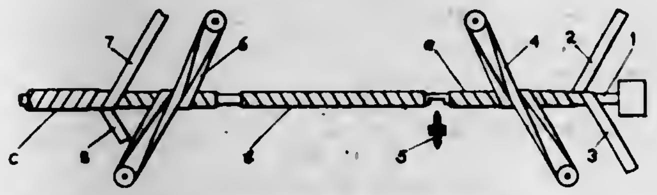
Harry W. Harrison, 2510 Broad St., Houston, Tex. 77017
Filed Nov. 14, 1963, Ser. No. 323,798
8 Claims. (Cl. 93—82)



1. Package making apparatus comprising
support means for positioning at least two web supply rolls in overlapping parallel relationship,
at least one tube former for forming a tube from the web from each web supply roll,
support means for said formers, and
a pair of reciprocable separable jaws for separately engaging the tubes from both of said web supply rolls and advancing said tubes in increments with respect to said formers.

3,354,800
METHOD OF MANUFACTURING PAPER PIPE

Isao Sato, 20–5 Yamate-cho, Osaka Prefecture, Hiraoka, Japan
Filed July 7, 1965, Ser. No. 470,046
Claims priority, application Japan, Apr. 26, 1965, 40/24,944; May 4, 1965, 40/26,313, 40/26,315
5 Claims. (Cl. 93—94)

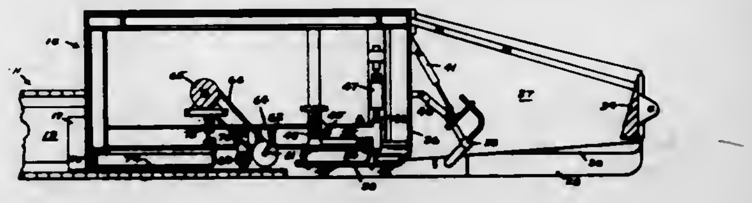


1. A method of manufacturing a paper pipe, comprising the steps of
spirally winding material papers about a mandrel by means of a turning force provided by endless belts to said material papers to revolve in one direction, and to form a cylinder,
cutting a predetermined length of said cylinder, without removing the latter from said mandrel, and
spirally winding material papers about said cylinder by means of a turning force in a direction opposite to the previous rotation, so as to cause said material papers to cross each other.

3,354,801
HIGHWAY SLIPFORM

Raymond A. Hanson, Palouse, Wash. 99161
Filed June 17, 1965, Ser. No. 464,686
7 Claims. (Cl. 94—46)

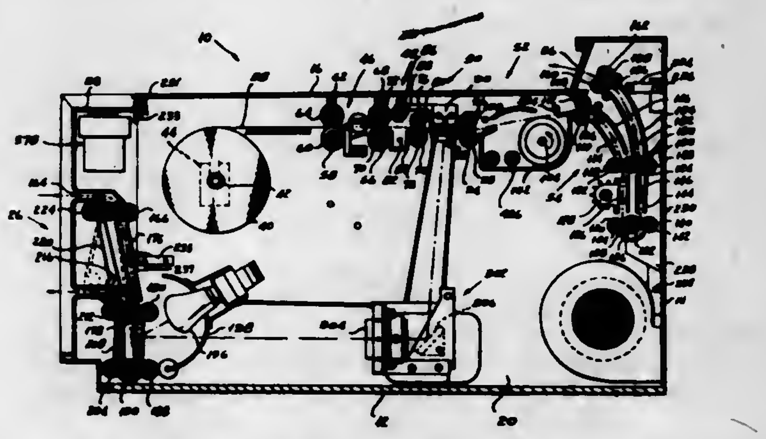
1. In a slipform of the type adapted to pour a lining of cementitious material over a surface traversed thereby during forward movement of the slipform;
a mobile framework;
first transverse metering means extending across said framework (at least a portion of) the lower surface of said first metering means being mounted on said framework for elevational motion relative to said framework, said lower surface being spaced above the surface to be lined;
second metering means extending across said framework, said second metering means being mounted on said framework rearwardly of said first metering means (at least a portion of) the lower surface of said second metering means being mounted on said framework for elevational motion relative to said framework, said lower surface of said second metering means being spaced above the surface to be lined at a height sufficiently equal to the spacing of said lower surface of said first metering means;



power means on said framework operatively connected to said first metering means to selectively effect elevational movement of the lower surface of said first metering means relative to said framework;
(first) control means operatively connected to said second metering means and to said power means to alternately cause said means to raise said first metering means responsive to lowering of the lower surface of said second metering means relative to said framework and to lower said first metering means responsive to raising of the lower surface of said second metering means relative to said framework;
and a linkage operatively connected to said first metering means and to said first control means adapted to neutralize said first control means responsive to elevational motion of the lower surface of said first metering means as effected by said power means.

3,354,802
TONER MONITORING SYSTEM FOR ELECTROSTATIC COPIER

Edward I. Doucette, Chatham, and William J. Grubbs, New Brunswick, N.J., assignors to Savin Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 22, 1964, Ser. No. 384,355
14 Claims. (Cl. 95—1.7)



1. In a copying machine for subjecting copy material to the action of a liquid developer made up of toner and carrier from a supply of developer, a light source, a photosensitive element, means mounting said element and said

light source in spaced relationship, means for flowing developer from said supply through the space between said element and said light source, means forming a first passage with a restriction therein, means for flowing developer from said developer supply through said first passage and back to said supply, a supply of liquid toner, means providing communication between said toner supply and said first passage adjacent said restriction, a second passage providing communication between the atmosphere and said first passage, means adapted to be actuated to close said second passage, an electrical circuit comprising said light source and said photosensitive element adapted to actuate said second passage closing means in response to a predetermined low toner content of said developer, a source of electrical energy, an original transport system for carrying an original along a predetermined path through said machine, a sensor disposed along said path to be actuated by an original moving along said path and means responsive to a predetermined number of actuations of said sensor for coupling said circuit to said source.

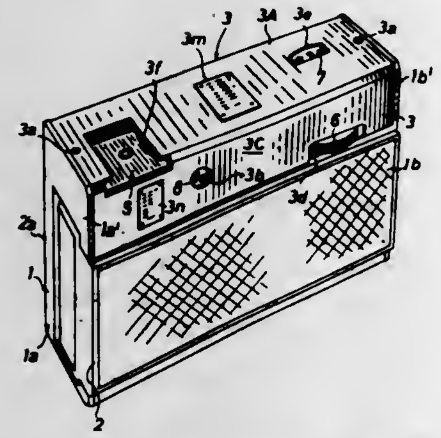
3,354,803
HOUSING FOR PHOTOGRAPHIC CAMERAS

Alfred Winkler, Munich, Dieter Engelsmann and Franz Landbrecht, Unterhaching, Munich, and Karl Bammesberger, Munich, Untermenzing, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany

Filed Feb. 24, 1965, Ser. No. 434,995

Claims priority, application Germany, Mar. 28, 1964, A 45,619

3 Claims. (Cl. 95—11)



2. In a camera, a portable housing comprising a lower part arranged to accommodate the film and at least a portion of the film transporting mechanism, said lower part having a first pair of side walls constituting the end walls and a second pair of side walls respectively constituting the front and rear walls thereof, said side walls having portions extending upwardly beyond said front and rear walls and defining between themselves a space; at least one camera component provided in said space; and a substantially U-shaped upper part having a top panel and a pair of depending panels, said second part forming an enclosure around said space between the upwardly extending portions of said side walls, at least one panel of said top part having a window exposing a portion of said component.

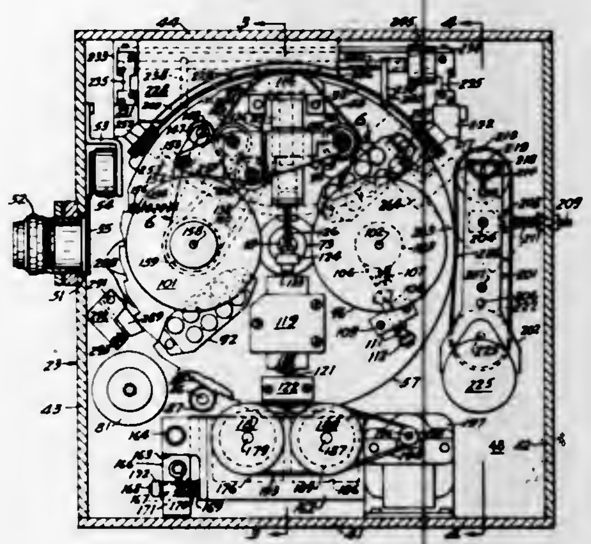
3,354,804
DEVELOPING CAMERA

Derrick A. Jones, Somerset Township, St. Croix County, Wis., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed July 23, 1964, Ser. No. 384,748

11 Claims. (Cl. 95—14)

1. An apparatus for rapidly imparting microfilm size photographic prints onto a receptor sheet by the use of an intermediate photosensitive strip material, comprising a casing, a support member, means rotatably mounting said support member within said casing, means on said support member adapted for supporting a supply roll of a said strip material and a take-up spool for said strip material, means on said support member defining a strip supporting surface positioned between the supply roll and take-up spool adjacent an edge of said member, stationary means disposed adjacent said member for exposing a portion of a said strip material disposed on said strip supporting surface to impart an image thereto, stationary means for electrographically coating the exposed portion of strip material with an image-forming substance for developing said image, means for stationarily positioning said strip supporting surface in alignment with said exposure means and for rotating said support member and said supporting surface past said coating means, and means for supporting a said receptor sheet in a position spaced from said coating means and adjacent said edge of said support member and for bringing a said sheet and strip material into contact for the transfer of the developed image from a said strip material to a said receptor sheet.



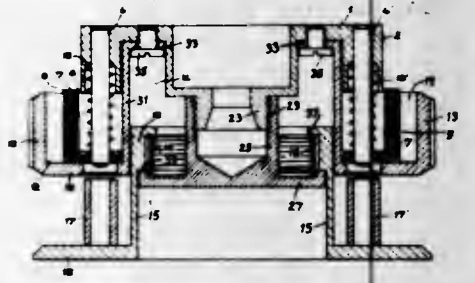
3,354,805
FOCUSING KNOB FOR PHOTOGRAPHIC CAMERAS

Claus Prochnow, Braunschweig, Germany, assignor to Rollei-Werke Franke & Heidecke, Braunschweig, Germany, a firm of Germany

Filed May 27, 1965, Ser. No. 459,188

Claims priority, application Germany, July 8, 1964, R 38,309

7 Claims. (Cl. 95—45)



1. A focusing knob for photographic cameras and the like, comprising a rotary base member, a rotary knob member mounted for axial displacement relative to said base member and also for rotation relative thereto when in one axial position, said knob member being nonrotatably coupled to said base member to turn therewith when in another axial position, a plurality of scale carriers mounted on one of said members, and means operated by a combination of axial movement and rotary movement of said knob member relative to said base member for moving a selected one of said scale members to effective operating position.

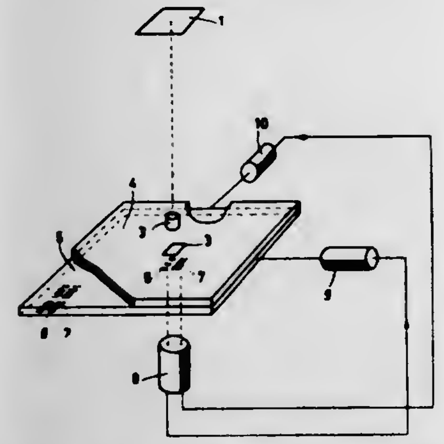
3,354,806
ARRANGEMENT BY MEANS OF WHICH A MEMBER DISPLACEABLE IN A FLAT PLANE MAY REPEATEDLY BE ADJUSTED IN A REPRODUCIBLE MANNER TO A PLURALITY OF POINTS WITH PRE-DETERMINED PAIRS OF CO-ORDINATES

Hendrik de Lang and Gerrit Pieter Brouwer, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 27, 1964, Ser. No. 414,095

Claims priority, application Netherlands, Dec. 5, 1963, 301,413

2 Claims. (Cl. 95—73)



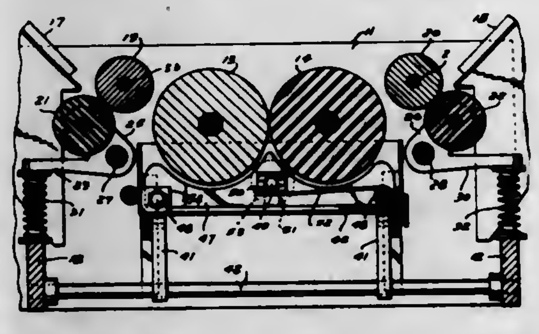
1. A device for repeatedly adjusting a reference member displaceable in a flat plane and in two directions in a reproducible manner to a plurality of points with predetermined pairs of coordinates, comprising a reference mark associated with each point on said reference member and coincides at least substantially with said point, said reference mark being constituted of two gratings, the lines of which are at right angles to each other, a photographic member secured to and movable with said reference member and adapted to have images produced thereon photographically, and separate electro-optical means for each grating for indicating the deviation from the correct position, said electro-optical means generating control voltages dependent upon the positions of said gratings and which each serve for the displacement of the reference member in one of the coordinate directions to the correct position.

3,354,807
PLATE PROCESSING MACHINE

Ellwood J. Horner, Armond, N.Y., assignor to R. Hoe & Co. Inc., New York, N.Y., a corporation of New York

Filed June 18, 1965, Ser. No. 465,087

3 Claims. (Cl. 95—94)



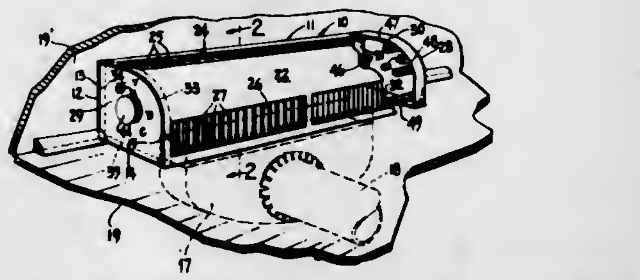
2. A plate finishing machine comprising cooperating pressure rollers and means for supplying a plate and emulsion sheet thereto, a developer tank containing developing liquid partly immersing the said rollers, a guide rack comprising a plurality of guide plates spaced from the roller surfaces and substantially parallel thereto for guiding the plate and sheet down under the rollers and then up between them, an agitator comprising a shaft journaled in the said rack and carrying a plurality of paddle elements spaced along the rollers, a drive wheel for said agitator fixed to the said shaft beyond the plate and sheet engaging portions of the rollers, and means pressing the said drive wheel against a said roller for driving the agitator to stir the developer when the machine is running, the last said means comprising spring elements supporting the said agitator shaft within the tank and urging it upward, whereby engagement of the said wheel determines the shaft position relative to the rollers.

3,354,808
AIR DISTRIBUTION DEVICE

Lawrence Macrow, 481 Chair Factory Road, Elma, N.Y. 14059

Filed Oct. 20, 1965, Ser. No. 498,885

4 Claims. (Cl. 98—40)



1. An air distribution device comprising an elongated housing having wall portion means and first and second opposite end portions, air inlet aperture means in said housing, first elongated discharge aperture means in said wall portion means of said housing for discharging air in a relatively horizontal direction, second elongated discharge aperture means in said wall portion means of said housing and spaced from said first elongated discharge aperture means for discharging air in a relatively vertical direction, elongated baffle means confined entirely within said wall portion means of said housing and having first and second ends and extending in substantially the same direction and as said housing, said first and second ends of said baffle means being located proximate said first and second end portions, respectively, of said housing, first and second shaft means in alignment with each other extending from said first and second ends, respectively, of said baffle means, first means journalling said first shaft means solely for rotation relative to said first end portion of said housing, second means journalling said second shaft means solely for rotation relative to said second end portion of said housing, and means coupled to said baffle means for rotating said baffle means to a first position to effect communication between said air inlet aperture means and said first discharge aperture means or to a second position to effect communication between said air inlet aperture means and said second discharge aperture means or to a third position to obstruct flow through said air inlet aperture means.

3,354,809
MOVABLE COVER MEANS FOR ROOM AIR CONDITIONER

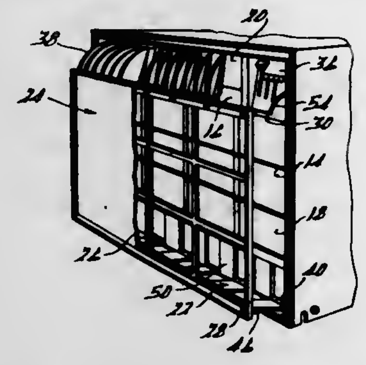
Ladd J. Orr, Englewood, and Joseph S. Jessee, Jr., Dayton, Ohio, assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Oct. 13, 1965, Ser. No. 495,614

11 Claims. (Cl. 98—94)

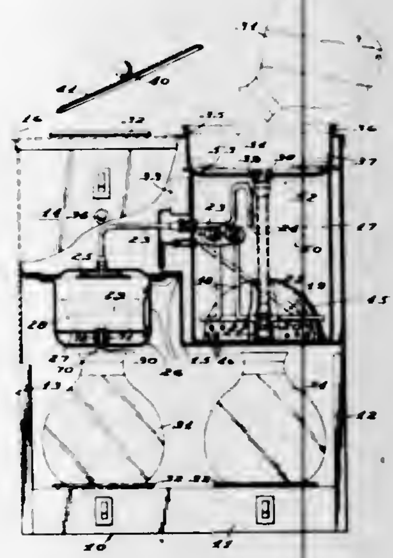
1. An air conditioning unit comprising a housing having a top and bottom portion, a front wall provided with an air inlet opening and an air outlet opening, and having

a control apparatus for said air outlet opening and a cover assembly capable of completely sealing said front wall, said control apparatus and said cover assembly being simultaneously movable between an open and closed position, said control apparatus comprising a plate pivotally mounted on said front wall on an axis substantially in the plane of said front wall and transverse of the air outlet opening for movement between a closed position substantially in the plane of said front wall in registry with the air outlet opening to an open position in which substantially all of said plate projects forwardly from said front wall, said control apparatus further including a plurality of vanes carried by said plate and extending across the air outlet opening, said cover assembly comprising first and second movable interconnected sections which substantially seal said front wall when said cover assembly is in a closed position, said sections having mutually abutting edges with said first section being pivotally mounted at least generally near the bottom of said front wall and transverse of the air inlet opening for movement between a closed position generally in the plane of said front wall to an open position in which substantially all of said first section projects forwardly from said front wall, and said second section of said cover assembly being pivotally connected to said plate and to said first section for movement from a closed position in which said second section is substantially flush with said housing and abutting said first section, to an open position in which said second section is substantially parallel to and spaced from said front wall and normal to said plate and first section.



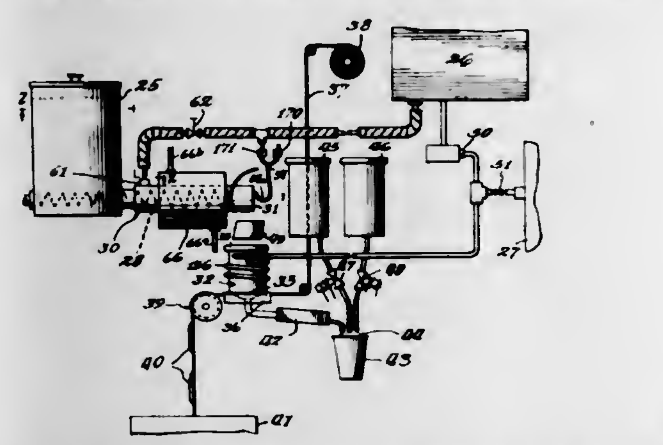
3,354,810
SIMPLIFIED COFFEEMAKING MACHINE
Walter R. Lorang, 2339 W. Maple Road,
Walled Lake, Mich. 48088
Filed May 13, 1966, Ser. No. 549,838
5 Claims. (Cl. 99—282)

1. A simplified coffeemaking machine comprising,
a cabinet,
a water spreader head on said cabinet,
a brew pot removably mountable on said cabinet below said spreader head for containing ground coffee;
said cabinet normally supporting a catch flask;
said brew pot having an open top for receiving hot water from said spreader head and a bottom aperture for emitting brewed coffee to a catch flask positioned below said brew pot,
an open top hot water reservoir can in said cabinet,
an electrical water heating element in said cabinet at said can for heating water in said can;
an outlet water tube leading from said can to said spreader head from a point spaced below said open top of said can and above the bottom of said can;
said outlet water tube draining water in said can down to the level of said tube to establish the normal hot water reservoir supply of said can;
said can having a sufficient capacity above said outlet water tube to receive a quantity of water to make a batch of coffee;
the user pouring a quantity of water into said can equal to the batch of brewed coffee whereupon the water in said can is raised above said outlet tube;
said outlet tube draining water in said can above said outlet tube down to the level of said tube thereby supplying hot water from said can through said outlet tube and said spreader head to said brew pot to make the brewed coffee and to re-establish the reservoir water level in said can at said outlet tube;
a pan superposed over said can for receiving water poured by the user;
an inlet pipe leading from the bottom of said pan to the bottom of said can to channel batch water poured into said pan to the bottom of said can;
said pipe having a bottom aperture adjacent the bottom of said can and a top aperture just below said pan providing a breather vent between the interior of said pan and the interior of said can; and
a cover on said pan having an aperture;
said pipe breather aperture and said cover vent aperture insuring that atmospheric pressure is communicated to said can through said pan, pipe and apertures;
a user pouring batch water directly into said pan whereupon said poured batch water is delivered by said pipe from said pan to the bottom of said can and the hot water in said can rises above said outlet tube and is conducted by said outlet tube to said spreader head and introduced to said brew pot; said pipe, pan and apertures providing a steam and water vapor condensation chamber above said can.

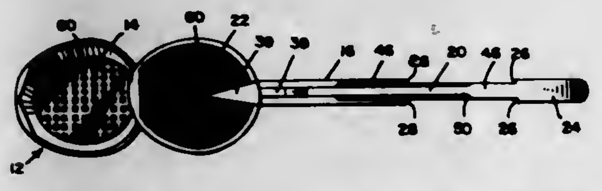


3,354,811
BEVERAGE BREWING APPARATUS
Alan M. King, Lake Forest, Ill., assignor to Interstate United Corporation, a corporation of Illinois
Continuation of application Ser. No. 365,109, May 5, 1964. This application Dec. 21, 1966, Ser. No. 603,683
9 Claims. (Cl. 99—282)

1. In a beverage brewing apparatus including a beverage brewing chamber having a filtered outlet;
a supply of particulate, insoluble beverage ingredient;
a source of brewing water connected with said brewing chamber;
means for applying pressure to the interior of said chamber to force liquid through the filter; and
means for measuring a charge of ground beverage ingredient, the improvement which comprises:
  means for directing a charge of ground beverage ingredient from said measuring means to said brewing chamber; and
  means connected with said water source for mixing a quantity of water, less than that required to brew the beverage, with the charge of ground beverage ingredient before it reaches the brewing chamber.



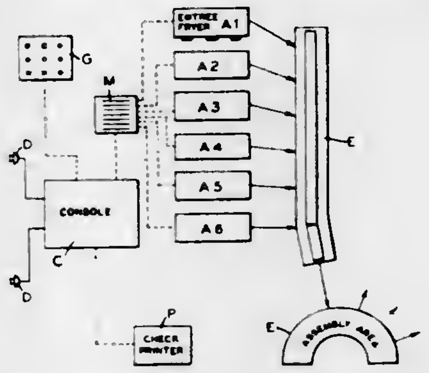
3,354,812
INFUSING DEVICE
Thomas S. Gorton, Jr., 82 Larchwood Drive,
Cambridge, Mass. 02138
Filed Mar. 16, 1965, Ser. No. 440,112
5 Claims. (Cl. 99—323)



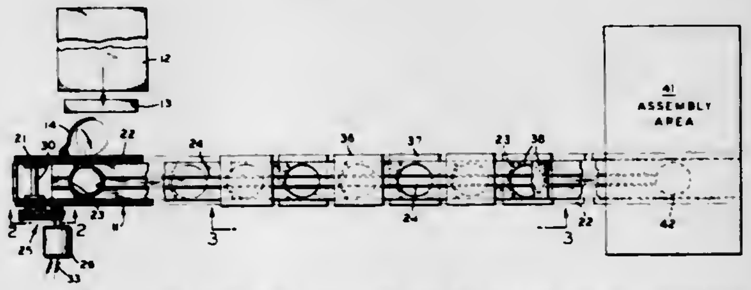
1. An infusing device comprising an infusion material holding portion having a handle and a perforated bottom wall, and a perforated cover member having a handle slidingly mounted on the first handle and operable to move the cover member into closed or open position relative to the material holding portion, said cover member being provided with a stop engageable with said holding portion when the cover is in its open position to prevent complete detachment of the cover member from the holding portion, said cover member being downwardly inclined relative to its handle and capable of flexing to disengage the stop and permit detachment of the cover member from the holding portion, the ends of said handles including means cooperating to limit the movement of the cover member into closed position.

3,354,813
DISPENSING APPARATUS
Werner Herman Meyer, Northvale, N.J., and James J. Curry, New Canaan, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Oct. 15, 1965, Ser. No. 496,491
5 Claims. (Cl. 99—336)

1. A container dispensing unit comprising a frame, a boat containing storage chute mounted on said frame arranged to hold a nested stack of inverted containers, a pair of stationary ledges mounted at the base of such chute and supporting the lowermost container at the opposite sides of its top rim, a reciprocating blade extending substantially the length of the container support portion of one of said stationary ledges positioned on one of said ledges, said blade being reciprocated on command so as to displace one edge of the lowermost containers of the stack from its supporting position on the ledge below said blade, a vacuum cup arranged to grasp the lowermost inverted container of the nested stack which is resting on said ledges to invert said container and to deliver same right side up after said blade has displaced the edge of the lowermost container from the supporting ledge, means to reciprocate said blade, and means to provide vacuum to said vacuum cup and to vent said vaccum as said container is turned right side up by said vacuum cup.



3,354,814
SELECTIVE HEATING APPARATUS
Bernard Harold Friedman, Yonkers, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Oct. 23, 1965, Ser. No. 503,867
3 Claims. (Cl. 99—353)

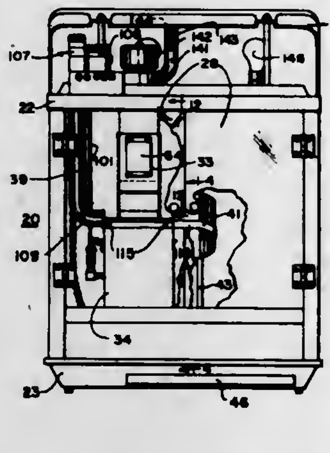


1. An apparatus for heating sliced food items conveyed in an oriented sequence comprising:
a conveyor arranged to transport sliced food items having sliced inner faces and unsliced outer faces,
a separating mechanism to arrange the slices on the conveyor in series with the sliced inner faces alternately facing up and down,
a plurality of longitudinally-spaced heating elements disposed above and below said conveyor arranged to simultaneously heat a plurality of said faces of said items transported on said conveyor,
a step-type drive means arranged to move said conveyor in predetermined sequence of differing intervals, so that the sliced inner faces of said items on said conveyor pause near said heating element and are preferentially subjected to relatively greater amount of heat therefrom than the unsliced outer faces of said items, and
an automatic bread roll dispenser slicer and a de-stacker, wherein rolls individually fed to a slicer are separated and positioned sequentially on said conveyor, while maintaining their orientation, and wherein said de-stacker comprises a piston with a plurality of pins, a solenoid coupled to said piston, and a stripper plate engaging said piston.

3,354,815
MACHINE FOR COOKING FOOD CHIP MATERIALS
David B. Evans, Sycamore Township, Hamilton County, and John C. Evans, Columbia Township, Hamilton County, Ohio, assignors to Gold Medal Products Co., Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 8, 1966, Ser. No. 571,064
5 Claims. (Cl. 99—407)

1. A machine for cooking food chips which comprises a kettle, means for heating oil in the kettle, paddle means

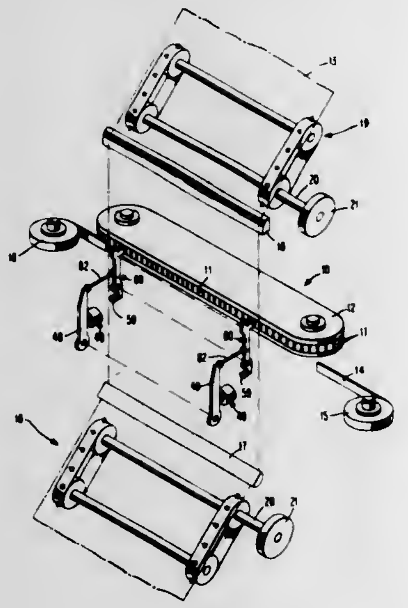
arranged to dip cooked chips out of oil in the kettle to transfer the cooked chips to a position spaced from said



oil, and means for projecting an air blast transversely of said paddle means to discharge the chips therefrom.

3,354,816
LINE PRINTER WITH PROPORTIONAL SPACING CONTROL MEANS

George A. Giannuzzi, Vestal, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Sept. 19, 1966, Ser. No. 580,323
8 Claims. (Cl. 101—93)



1. In a high speed printer having means for moving a plurality of type characters continuously relative to a print line on a document and having a plurality of impact means for selectively effecting impact between the document and type characters,

data storage means for storing coded representations of characters to be printed on the document and their width values,

additional storage means for storing a representation of at least a portion of characters in the data storage means in accordance with their relative positions, according to their cumulative width values,

width counter means responsive to the width values of character representation in the data storage means,

moving means for effecting relative movement of the document and impact means to a plurality of positions, along the print line,

means for storing data representations in the additional storage means in accordance with the count of the width counter and the position of said moving means,

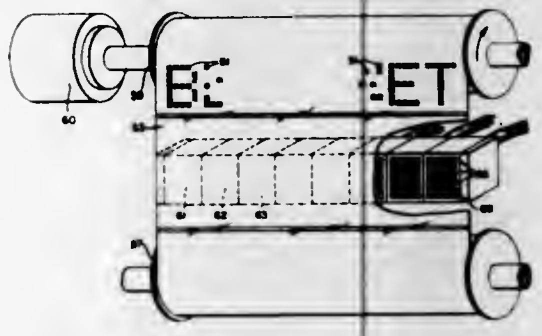
means producing a coded representation of the type member at different print positions,

compare means responsive to an identity between such coded representations produced and the representation in the additional storage means connected for effecting operation of an associated impact means, to print the character represented, and

means operable in response to printing characters for which representations are in the additional storage means for effecting operation of said moving means to effect relative movement of the document and impact printing means to another of said positions.

3,354,817
HIGH SPEED THERMAL MATRIX PRINTER

Richard S. Sakurai and Ernest E. Trimbur II, Philadelphia, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 30, 1961, Ser. No. 121,184
9 Claims. (Cl. 101—93)

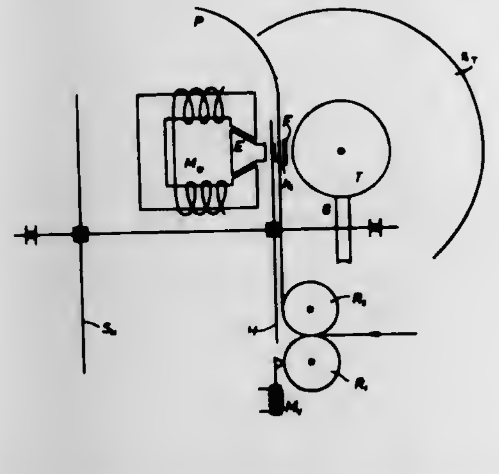


1. In a recording device comprising a plurality of first electrodes, second electrodes adjacent ones of said first electrodes, a plurality of high resistive elements electrically connecting ones of said first electrode with a second electrode to provide marking elements for recording information, said resistive elements lying in a plane transverse to said first electrodes and said second electrode, second and first circuit means connected respectively to said first electrodes and said second electrode, means for selectively energizing certain of said second circuit means, and further means for energizing said first circuit means in time coincidence with the energization of said second circuit means to thereby effect current flow through selected ones of said resistive elements to generate a marking pattern of information.

3,354,818
ELECTRO-MECHANICAL SERIAL PRINTERS

Gerhard Haas, Hamburg, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 496,037
Claims priority, application Germany, Oct. 16, 1964, F 35,286
4 Claims. (Cl. 101—93)

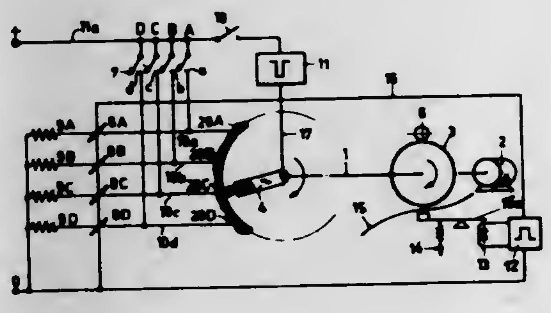
1. An electromechanical serial printer comprising a rotatable type cylinder having a plurality of raised characters thereon, a plurality of magnetically controllable hammers, each of said hammers having a striking face, means for advancing a printing material between said hammers and said cylinder, a continuously rotatable hammer carrier, the axis of rotation of said type drum being parallel to the plane of the striking face of a hammer in striking position, said plurality of hammers being arranged on the face of said hammer carrier in a helical array about the axis of rotation of said carrier, a selectively operable magnet, means sequentially rotating said carrier and positioning each of said hammers into striking position between said printing material and said magnet in synchronism with the movement of said type cylinder and means



responsive to the position of said type cylinder to selectively actuate said magnet when a desired character is in front of a hammer in striking position.

3,354,819
APPARATUS FOR STORING INFORMATION AND TRIGGERING PRINTING OPERATIONS AND THE LIKE

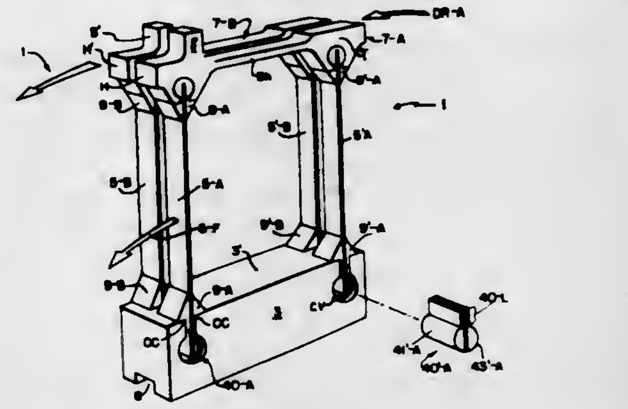
Oskar Stürzinger, Baar, Zug, and Bruno Gemperle, Steinhausen, Zug, Switzerland, assignors to Anstalt Europaische Handelsgesellschaft, Vaduz, Liechtenstein
Filed Dec. 9, 1963, Ser. No. 329,034
Claims priority, application Switzerland, Dec. 14, 1962, 14,768/62
12 Claims. (Cl. 101—93)



7. Apparatus for triggering a desired operation, particularly for application with printing machines, comprising read-in means for selectively reading-in information relevant to a printing operation desired to be undertaken, means for storing such read-in printing-operation information, said storing means comprising magnetic rings each capable of assuming two different magnetic conditions, one such magnetic condition being in response to selective printing-operation information received from said read-in means and stored by an associated magnetic ring, the other magnetic condition being in response to information discharged by read-out means, read-out means for retrieving the stored printing-operation information, said read-out means including an impulse generator for driving said associated magnetic ring into the other magnetic condition, conductor means cooperating with said magnetic storage rings such that the magnetic reversal of said associated magnetic ring from said one magnetic condition into the other magnetic condition induces a trigger pulse in said conductor means, and means including a further impulse generator electrically coupled with said conductor means responsive to said trigger pulse for controlling the performance of the selectively read-in printing operation.

3,354,820
PRINT HAMMER SUPPORTING SPRING ASSEMBLY AND METHOD OF MAKING SAME

James L. Braxton, Jr., Moorestown, N.J., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 26, 1966, Ser. No. 575,443
23 Claims. (Cl. 101—93)

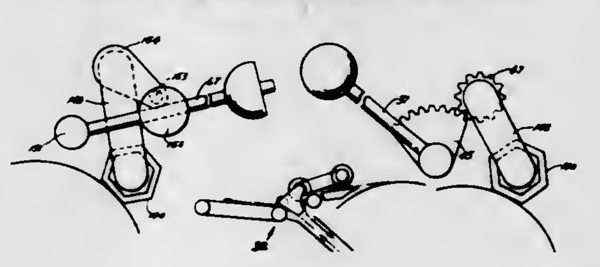


1. In a flexure spring mounting arrangement wherein at least one flexure spring means is joined to a relatively rigid member at a bonding surface thereof so as to be bent flexingly with respect thereto, an improved composite joining arrangement comprising:

cavity means for each spring means extending into said surface of said member; metallic bonding means fixedly connecting one end of each said spring means to said member, at the inner portion of said cavity means; and elastomeric fillet means adhered between each said spring means and said member along a portion of said spring means adjacent said connection with said bonding means so as to graduate the stiffness gradient and damp out extreme stresses therealong.

3,354,821
TANDEM PRINTER CONTROL

Warren B. Howe and William Kyle, Euclid, Ohio, assignors to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Apr. 15, 1964, Ser. No. 360,051
4 Claims. (Cl. 101—142)

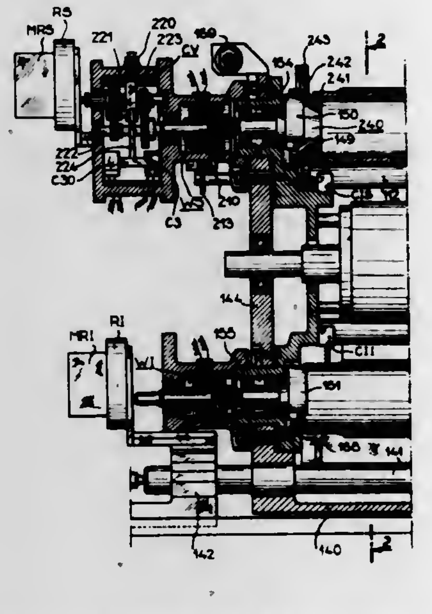


1. In a system duplicating machine a first planographic printing head including a rotary cylinder means for carrying a replaceable master, a second planographic printing head arranged in tandem with the first head and including a rotary cylinder means for carrying a replaceable master; means for taking a sheet printed by said first head and feeding it to the second head; means for applying plate-etch solution to a master on said first head by movement in a predetermined direction; means for applying plate-etch solution to a master on said second head by movement in the same direction along a path parallel to the movement of said first-named applying means; a manually pivotable control lever for each of said applying means on the respective head; and drive means for transmitting control from each control lever to its applying means for moving each said applying means from an inoperative position into contact with its respective master when the control lever on its head is moved

towards the other head, and for withdrawing each said applying means from contact with its respective master when moved away from the other head, one said drive means having direction reversing means in said transmitting control for producing the same direction of movement in said applying means from opposite control lever travel.

3,354,822
ARRANGEMENTS RELATING TO THE PRINTING RIBBON IN PRINTING MACHINES

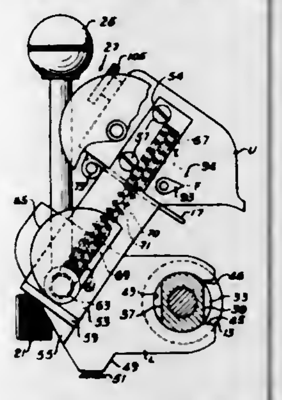
Yves Christian Dollot, Bougival, France, assignor to Societe Industrielle Bull-General Electric (Societe Anonyme), Paris, France
Filed Jan. 17, 1966, Ser. No. 520,931
Claims priority, application France, Feb. 22, 1965, 6,512
5 Claims. (Cl. 101—336)



1. In a system for moving an inked ribbon in a printing mechanism, in either of two opposite directions, or where necessary in only one direction, the combination comprising a first and a second driving roller, an inked ribbon whose two ends are each fixed to one of the said rollers, driving means for driving each roller separately in one direction and comprising for each roller an electric induction motor mechanically coupled to the said roller through an electromagnetic clutch, a speed-changing device disposed between the motor for driving the first roller and the clutch associated with the said roller for effecting the drive of the said roller at one of two different speeds, in dependence upon a previous manual positioning of the said device, an alternating-current source, a direct-current source, and switching means for controlling the supply of current to the motors and to the clutches, the said switching means being controlled in dependence upon the manual positioning of the speed-changing device in such manner that, when the said device is brought into a first position, the clutch of the first roller is connected to the direct-current source for transmitting a maximum torque, the inductor of the motor of the first roller is connected to the alternating-current source for driving the said roller at high speed through the associated clutch, the clutch of the second roller is supplied with direct current of lower strength permitting slipping of the said clutch, and the inductor of the second roller is connected to the direct-current source for creating a magnetic braking field on the armature of the said motor and ensuring tensioning of the ribbon, while, when the said speed-changing device is brought to a second position, the clutch of the first roller is connected to the direct-current source for transmitting a maximum torque, the inductor of the motor of the first roller is connected to the alternating-current source for driving the said roller at reduced speed through the associated clutch, and the clutch of the second roller is connected to the direct-current source for permitting maximum mechanical coupling between the second roller and the motor associated therewith in order to create on the second roller driven by the ribbon an opposed torque which ensures the tensioning of the said ribbon.

3,354,823
INK FOUNTAIN FOR DISPENSING PACKAGED INK

Francis K. Lake, Euclid, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Jan. 28, 1965, Ser. No. 428,775
18 Claims. (Cl. 101—350)



1. In combination, a rotary duplicating machine having:
- a rotary printing cylinder,
- an elongate flexible package of pasty ink having a dispensing mouth running the length thereof along one side, substantially equal in length to the printing cylinder,
- an ink fountain for dispensing pasty ink from said package, and
- a train of parallel ink rolls for receiving the ink from the fountain and transmitting it directly to the printing cylinder;
  - said fountain including the following:
    - (a) an elongate fountain roller substantially equal in length to the printing cylinder and package mouth, and means for rotatably supporting the same on a fixed axis adjacent and parallel to the ink train,
    - (b) means for supporting the ink package adjacent the fountain roller in fixed relation thereto with the full length of its dispensing mouth in continual contact with the surface of the roller and extending substantially the length of the roller,
    - (c) elongate package retaining means spaced from and parallel to said roller, including a clamping member movable between a package retaining position and a package releasing position for grasping and holding the package by an elongate margin of said package parallel to and on the opposite side from its dispensing mouth, said package retaining means being so located as to maintain the package in a position with its mouth in dispensing contact with the fountain roller;
    - (d) means to effect movement of said clamping member; and
    - (e) means to apply to an ink package held by said retaining means a progressive squeezing action simultaneously along the entire length of the package to dispense ink from the package mouth onto the surface of the fountain roller throughout substantially the entire length thereof and in substantially uniform amounts therealong.

3,354,824
LITHOGRAPHIC FOUNTAIN SOLUTIONS AND METHOD OF USE

Robert C. Griffith, Chicago, and Edwin T. Dunning, Mount Prospect, Ill., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Filed May 4, 1964, Ser. No. 364,786
2 Claims. (Cl. 101—451)

2. A method of lithographic printing comprising applying to a lithographic plate a fountain solution comprising a minor amount of phosphoric acid, water, at least 15% of the volume of the fountain solution of an alkanol selected from the group consisting of ethanol and isopropanol, and from 7 to 58 g. of cobalt nitrate and from .01 to 22.4 g. of acetic acid per gallon of fountain solution, subsequently applying to said plate a hydrophobic ink and then printing upon a substrate with said plate.

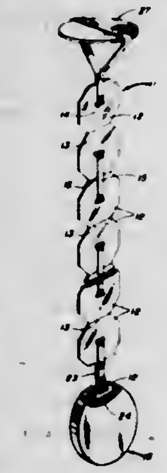
3,354,825
LITHOGRAPHIC PLATE AND METHOD OF MAKING SAME

John E. Pickard, Selma, Ind., assignor to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana
No Drawing. Filed June 19, 1967, Ser. No. 647,227
7 Claims. (Cl. 101—455)

6. A method of producing an insoluble, hydrophilic layer on a metal substrate comprising applying to a clean, grained metal plate at a temperature between about 150° F. and 190° F. a freshly-prepared aqueous coating solution formed by mixing between 12% and 17% by weight of sodium peroxide and phosphorus pentoxide in water whereby oxygen is evolved at said surface, the ratio of sodium peroxide per mole of phosphorus pentoxide being between about 0.5 to 1.2 moles, said solution including between about 2.5% and 4% by weight of sodium metasilicate and between about 0.1% and 1% by weight of sodium molybdate; insolubilizing coating on said substrate by exposure to a chromate ion, and removing any water-soluble materials remaining on said plate, whereby a coating is formed on said substrate.

3,354,826
MULTIPLE EXPLOSIVE, LINE CHARGE, PACKAGE

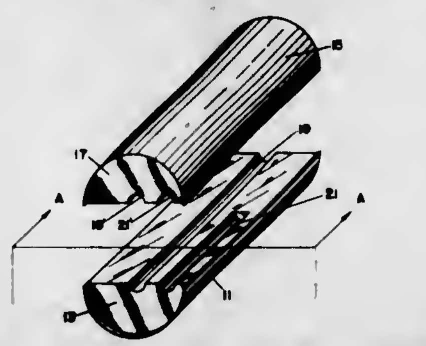
Carl A. Axelson, Beverly, Mass., and Elton Y. McGann, Williamsburg, and John H. Smith, Seaford, Va., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 24, 1966, Ser. No. 589,138
5 Claims. (Cl. 102—22)



1. A foldable articulated explosive strip adapted to be exploded underwater in a vertical line position, comprising:
- a plurality of discs arranged in a line;
- resilient means passing through the approximate center of each of the discs and holding each disc in contacting relation with its adjacent disc, said resilient means being tensed and extending beyond said strip at each end;
- means adhesively affixed to each face of the discs and holding the resilient means in tensed condition, said adhesively attached means being in sections extending the distance to two discs, said sections being oppositely staggered with relation to each other to provide continuous attachment of the discs by means of the adhesive sections, throughout the length of the strip;
- means attached to one end of the resilient means threaded through the discs to detonate said strip; and
- means attached to the other end of said resilient means to serve as a deterent to descent of the strip through the water and to extend the strip to a vertical line position.

3,354,827
WATERPROOF PRIMER CARTRIDGE

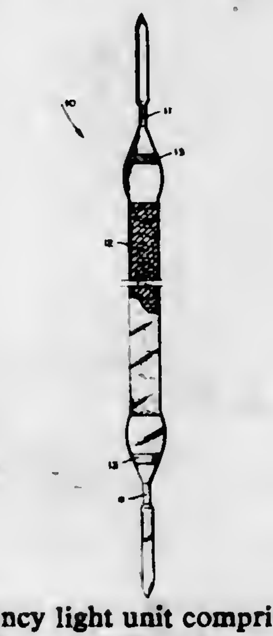
Richard G. Nelson, Tamaqua, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,667
7 Claims. (Cl. 102—24)



1. A cylindrical explosive priming device which comprises, two elongated hemicylindrical waterproof sections each having mating surfaces and containing an explosive charge sealed therein, each of said mating surfaces provided with at least one mirror image depression, and means for holding the said elongated waterproof sections together with contact of said mating surfaces.

3,354,828
EMERGENCY LIGHT UNIT

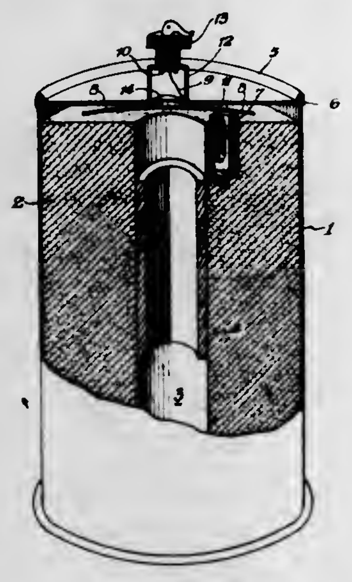
Sydney Shefler and Steven M. Little, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Sept. 23, 1965, Ser. No. 490,781
4 Claims. (Cl. 102—37.8)



1. An emergency light unit comprising
- an hermetically sealed light transmitting tube provided with frangible break tips on each end;

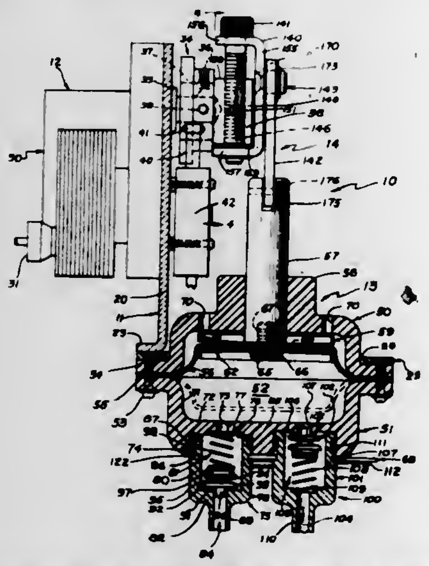
a cylindrical wick saturated with an oxyluminescent composition substantially filling the tube; and
a filter which passes only air firmly seated in each end of said tube adjacent the ends of said wick;
whereby rupture of said tips permits air to enter through the filters to activate the wick.

3,354,829
SMOKE SIGNAL
Frank M. Nichols, 6 Colfax St., South River, N.J. 08882
Filed Mar. 8, 1966, Ser. No. 532,724
8 Claims. (Cl. 102—90)



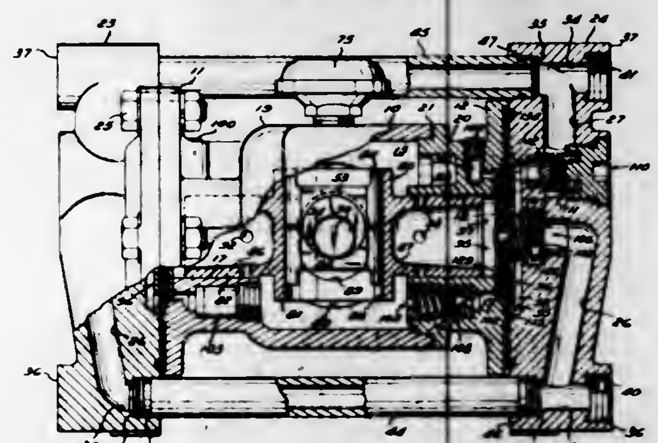
1. A smoke signal device comprising a water-tight container with an orifice centrally located in the top cover of said container, a charge comprising combustible smoke generating material disposed within said container, a means for igniting said charge, a centrally located axial flue-like passageway through said charge and a substantially non-heat conducting tube insert situated within said passageway and below the passageway orifice, said tube being substantially shorter than the passageway and having a diameter only slightly less than the diameter of the flue-like passageway.

3,354,830
PUMP MEANS
Holy S. Mortara, Deerfield, Ill., assignor to Rock-Ola Manufacturing Corporation, Chicago, Ill., a corporation of Delaware
Filed July 22, 1965, Ser. No. 473,966
3 Claims. (Cl. 103—38)



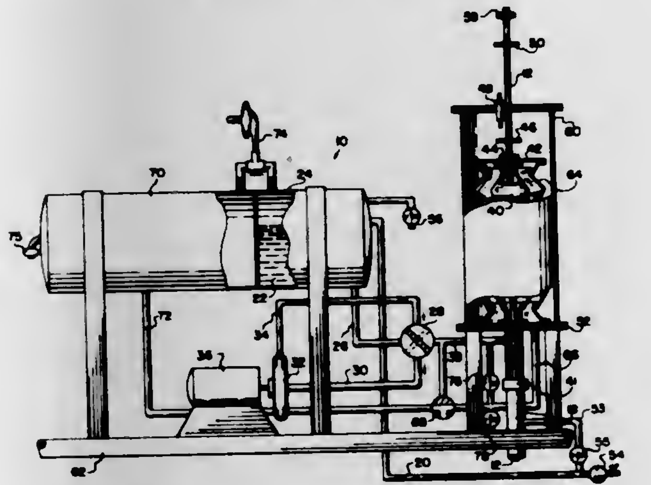
1. In combination, vacuum pump means having means enclosing a vacuum chamber, reciprocating diaphragm piston means in said chamber, and inlet and outlet means communicating with said chamber; rod means connected to said piston means for reciprocating the same in said chamber, rotatably driven shaft means, means pivotally interconnecting said shaft means and rod means including adjustable eccentric means for reciprocating said rod means, means for selectively adjusting said eccentric means to accordingly vary the stroke of said piston means, inlet and outlet check valve means over said inlet and outlet means respectively, for controlling the flow of fluid unidirectionally through said chamber according to the intake and discharge strokes, respectively, of said piston means; each of said check valve means comprising a unitary body member having an internal check valve chamber, said body member being removably inserted in a socket formed therefor in the chamber enclosing means of said pump means, a unitary elastic valve member mounted within said valve chamber, and spring means axially biasing said valve member against a seat provided adjacent one end of said valve chamber to control the flow of fluid therepast; and retainer means slidingly engageable with recessed portions formed in the body member of each of said check valve means and with spaced locking means on said chamber forming means, said retainer means being operative to removably lock said valve means in the sockets therefor.

3,354,831
PISTON DIAPHRAGM PUMP
Richard C. Acker, Chagrin Falls, and Eugene Bahniuk, Gates Mills, Ohio, assignors to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 4, 1966, Ser. No. 604,502
12 Claims. (Cl. 103—44)



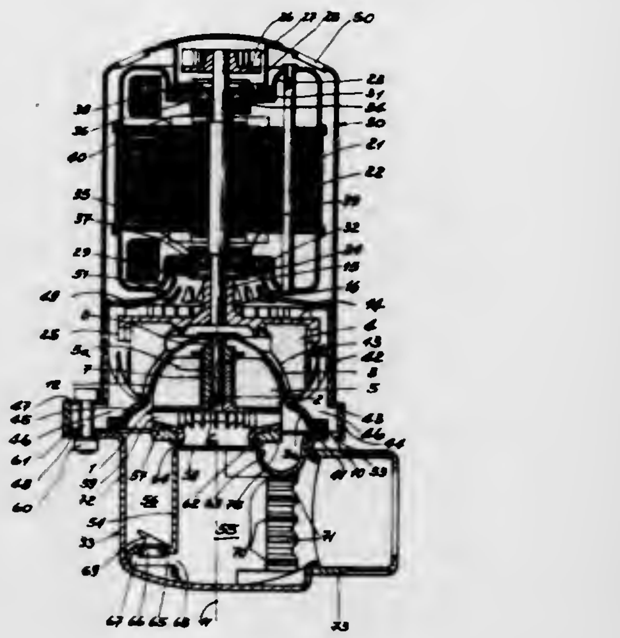
1. A pump comprising a housing member defining a fluid cavity and a cylinder bore, a piston in said cylinder bore, drive means to reciprocate said piston, a head member secured to said housing defining a diaphragm cavity at the outer end of said cylinder bore, a diaphragm separating said diaphragm cavity into working chamber opening to said cylinder bore and a pumping chamber, said diaphragm being of a laminated construction having a first layer of resilient elastomeric material and a second layer of a highly chemically resistant material exposed to the fluid in the pumping chamber, said diaphragm having a relatively stiff reinforcing disc disposed between said first and second layers, said disc having an outer diameter substantially at least as great as the diameter of said pumping chamber, mounting means securing the outer periphery of said diaphragm to one of said members including a pair of opposed clamping faces, one of said clamping faces having a rounded annular protuberance adjacent its inner periphery extending axially beyond said clamping face and the other of said clamping faces having a recessed surface adjacent its inner periphery opposite said protuberance, said mounting means being so constructed and arranged that when said diaphragm is clamped between said clamping faces said protuberance and said recessed surface are axially separated from one another by at least substantially the thickness of said diaphragm, said protuberance axially of setting the unclamped from the clamped portions of said diaphragm and thereby prestressing the unclamped portion, inlet and outlet ports opening into said pumping chamber, and valve means in said inlet and outlet ports, whereby reciprocation of said piston acts upon fluid within said working chamber and imparts oscillation to said diaphragm to draw fluid into and force fluid out of said pumping chamber.

3,354,832
WELL PUMP
John V. Graham, John B. Keeling, and Leonard L. Robinett, all of 918 W. Monroe, Lovington, N. Mex. 88260
Filed Mar. 4, 1966, Ser. No. 531,901
14 Claims. (Cl. 103—46)



1. In an oil well having:
(a) a pump far beneath the earth,
(b) a tubing extending from the pump to the surface of the earth, and
(c) a sucker rod in the tubing attached to the pump, the reciprocation of the sucker rod operating the pump;
(d) the improvement for reciprocating the sucker rod comprising in combination with the above:
(e) a bellows having
  (i) a bottom plate,
  (ii) a top plate, and
  (iii) an impervious expandable member between the top plate and bottom plate,
(f) the bottom plate fluidly sealed to the top of the tubing,
(g) the sucker rod attached to the top plate,
(h) a reservoir of fluid,
(j) a means connected to said reservoir for pressurizing said fluid,
(k) valve means interconnecting said means for pressurizing, reservoir, and bellows for flowing fluid under pressure into and out from said bellows responsive to the position of said sucker rod,
(m) thus pumping said well,
said impervious expandable member including:
(n) a series of bellows rings connecting the base plate and top plate,
(o) each ring being an annular, pliable, imprevious fabric band with
(p) a rigid circular hoop attached at top and bottom,
(q) said hoops approximately the same diameter,
(r) the bottom of each ring telescoped over the top of the next adjacent ring,
(s) so that the top of the fabric is pressed by the internal pressure in the bellows against the bottom hoop to form a fluid tight seal.

3,354,833
DEVICE FOR THE MAGNETIC TRANSMISSION OF TORQUE
Nikolaus Laing, 35–37 Hofener Weg, 7141 Aldingen, Germany
Filed Nov. 26, 1965, Ser. No. 509,714
Claims priority, application Germany, Nov. 27, 1964, A 47,710
15 Claims. (Cl. 103—87)

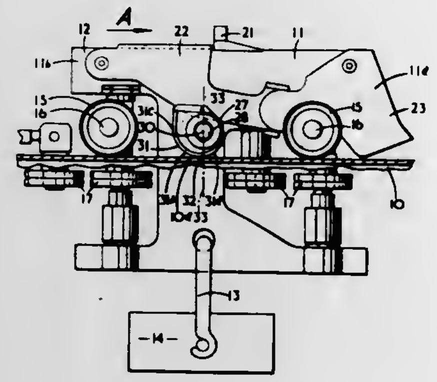


12. Fluid pumping means including a magnetic machine or coupling for generating a rotating magnetic field; said machine or coupling including a first ferromagnetic member defining an axis and interior surfaces thereabout, a second ferromagnetic member defining an axis and exterior surfaces thereabout, means mounting the second member so that its axis intersects the axis of the first member in a fixed point, so that relative to the first member it can rotate about its axis and have limited universal movement about said fixed point and so that said interior and exterior surfaces are located for passage of magnetic flux between them, said members each comprising an equal number of pole segments of alternating polarity forming said surfaces and having centres of magnetic action lying in a plane normal to the respective axis of rotation, the planes of both members lying to the same side of the fixed point with that of the second member nearer thereto than that of the first member; and said fluid pumping means comprising an electric motor, said first member being mounted on the shaft of said motor for rotation therewith and defining a substantially hemispherical inner contour, a substantially hemispherical partition secured in spaced relation from said contour, said second member being mounted for rotation on a point bearing secured on said partition coaxially with said shaft, said second member further comprising means constituting a pump impeller for cooperation with guide means comprising a pump casing including inlet and outlet ducts.

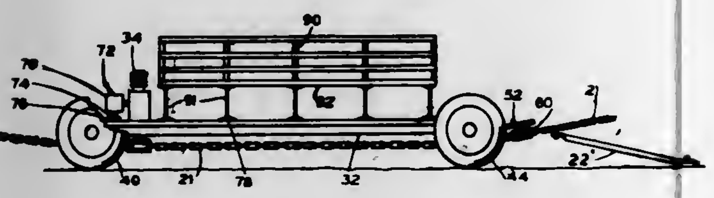
3,354,834
CONVEYORS FOR CONVEYING GOODS
Olaf John Barclay Orwin, Quinton, Birmingham, England, assignor to Fisher & Ludlow Limited, Tipton, England, a British company
Filed Apr. 22, 1965, Ser. No. 450,063
Claims priority, application Great Britain, May 9, 1964, 19,424/64
8 Claims. (Cl. 104—172)

1. A conveyor for conveying goods, comprising a trolley track having an upwardly directed load supporting face, a powered trolley driving element, a plurality of load carrying trolleys of said trolleys having a plurality

of load supporting wheels the undersides of which are in engagement with said load supporting face of the track, said trolleys being adapted to be advanced along the track by said driving element, means for disconnecting the drive from said driving element to the trolleys, each of said trolleys having mounted thereon for pivotal movement about an axis transverse to the direction of advancement of the trolleys, a cam member having a downwardly directed cam face of convexedly curved configuration adapted frictionally to engage with an upwardly directed part of the trolley track, means biasing said cam face into frictional negagement at all times with said upwardly directed part of the trolley track, said trolley track engaging cam face in a circumferential direction along the length thereof which is rearwardly of the trolley being spaced by a progressively increasing distance from the axis of pivoting of the cam member, so that the part of the convexedly curved cam face which is in contact with the upwardly directed face of the trolley track is at all times situated to the rear of a vertical plane containing said axis of pivoting, considering the track horizontal.

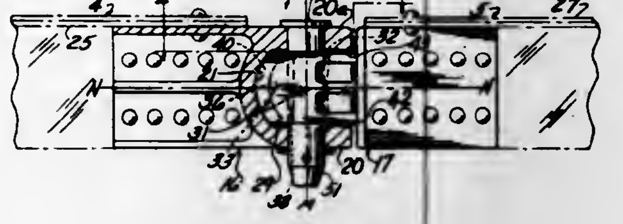


3,354,835
TRANSPORT APPARATUS
Robert A. Pannick, Lower Lake Road, and Robert T. Edmunds, 80 Elm St., both of Norwich, N.Y. 13815
Filed Mar. 30, 1965, Ser. No. 443,906
4 Claims. (Cl. 104—173)



4. A ski lift comprising an endless loop of relatively stationary sprocket chain disposed on a ski slope, means for anchoring and yieldingly supporting said chain at a predetermined height above the ground and at predetermined intervals along the length thereof, said support means comprising a plurality of tension arms anchored at one end with respect to the ground and affixed to the underside of said chain at the other end, said arms being yieldingly inclined to yieldingly support said chain at the predetermined height, and a car adapted to straddle said chain and having power driven sprocket means engaging said chain at a level below said predetermined height, for propelling said car therealong in the direction to resiliently depress and tension said arms as the car progresses along the chain, said car having steering means and means forward of said sprocket means for engaging said chain and actuating said steering means in response to deviation of the car laterally with respect to the chain.

3,354,836
ARTICULATED RAILWAY VEHICLE
Donald Willison, Lyndhurst, Kenneth L. De Penti, Mayfield Heights, and Hans B. Weber, Bedford, Ohio, assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 22, 1965, Ser. No. 501,034
10 Claims. (Cl. 105—3)



1. In a series of semi-permanently connected railway cars adapted to traverse an S-shaped track section of known curvature, the combination comprising:

(a) a car-to-car coupling comprising universally pivotally connected elements, each element fixed to an adjacent car and connected with each other in radially fixed relation with respect to a center of relative pivotal movement;

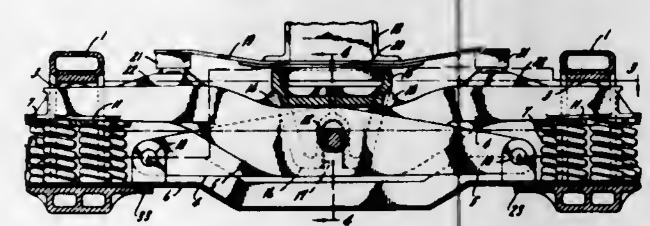
(b) car truck mechanism under the end portion of each car adjacent said coupling comprising:

  (1) one car truck member attached to car body and frame structure in substantially immovable relationship in respect to the horizontal transverse direction of the respective car,

  (2) a track-following truck portion including a wheel assembly adapted to maintain tracking and rolling relation with a track, and a second car truck member attached to said assembly in journal-bearing relation therewith,

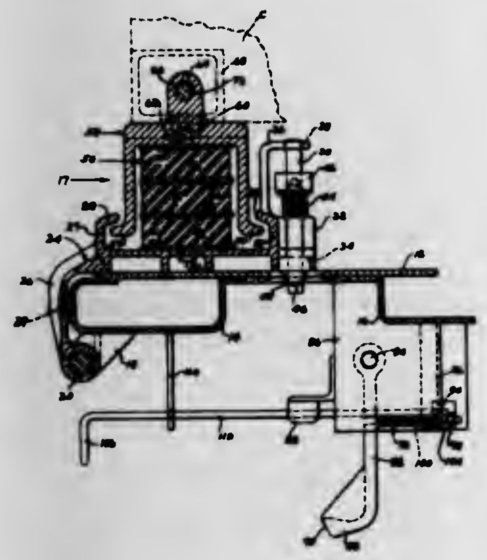
  (3) resilient means disposed between the two members for transmitting car loads from the first member to the second member, said members having relative freedom of movement in ranges corresponding to said curvature in said transverse direction to maintain said wheel assemblies in tracking relation with said track sections.

3,354,837
EQUALIZING SPRING BOLSTER FOR RAILROAD CARS
Ray C. Williams, Chicago, Ill., assignor to Standard Car Truck Company, Chicago, Ill., a corporation of New Jersey
Filed Dec. 21, 1964, Ser. No. 419,646
6 Claims. (Cl. 105—197)



1. A railroad car truck, including windowed side frames, a spring plank extending thereacross into the windows, load bearing springs in the windows, extending upwardly from each end of the spring plank, a pair of bolster half sections, each pivoted at its lower end on the spring plank and extending diagonally upwardly to penetrate one of the windows at its upper end and to rest upon the springs in the windows, a pivot pin extending through the bolster sections where they intersect, a saddle, resting upon at least one of the bolster sections, a center plate carried thereby, flanges extending downwardly from the saddle, slotted to receive and support the entire load of the car on the truck and so positioned as to positively prevent the application of load pressure on the center plate.

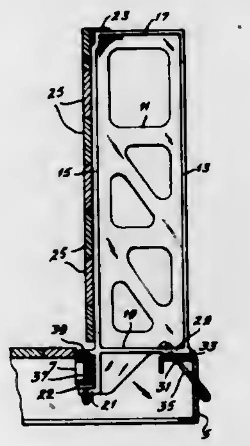
3,354,838
CONTAINER SUPPORT FOR RAILWAY FLATCARS
Erling Mowatt-Larssen, Hazel Crest, Ill., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Jan. 17, 1966, Ser. No. 521,140
8 Claims. (Cl. 105—366)



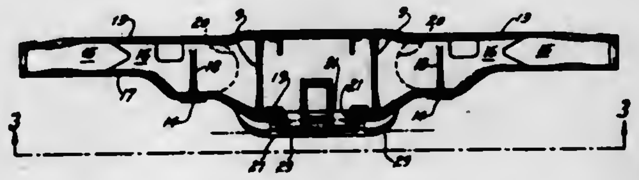
1. A railway flatcar for carrying a container comprising a side sill extending longitudinally along each side of the railway car, a deck, and a separate container support structure for each lower corner of the container, each container support structure comprising a lower base support mounted adjacent a side sill for pivotal movement between an operable position on the deck and an inoperable position stored beneath the deck and adjacent side sill, means on said lower base support to releasably secure the lower base support in operable position onto the deck, an upper container support mounted on the lower base support and adapted to engage and secure the lower corner of a container, and cushioning means between the upper container support and the lower base support permitting a cushioned movement of the upper container support longitudinally of the car upon the exertion of buff and draft forces against the car, said cushioning means comprising a resilient shear pad and said upper support comprising a generally channel-shaped member fitting over said shear pad and having lower outwardly extending flanges, said lower base support having upper inwardly extending flanges superjacent said outwardly extending flanges to restrain upward movement of said upper support upon impact forces being exerted against the railway car.

3,354,839
DETACHABLE BULKHEAD POST
Richard L. Lich, St. Louis, Mo., and Robert R. Cease, Granite City, Ill., assignors to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware
Filed Apr. 9, 1965, Ser. No. 446,882
5 Claims. (Cl. 105—376)

1. Vehicle framing comprising an underframe having a pair of longitudinally spaced transversely extending members and an upright post of substantial depth lengthwise of the vehicle in cross section and having a lower portion overlyingly engaging one of said underframe members and another lower portion projecting away from said one member and underlyingly engaging the other of said underframe members, upstanding abutment means on the top of said one underframe member facing in the direction of said other underframe member and engaging a transverse surface of said post facing away from said other underframe member whereby to prevent movement of said post lengthwise of the underframe away from its underlying engagement with said other underframe member, another transverse surface of said post facing said other underframe member and engageable therewith to prevent movement of said post from its overlying relation with said one member, and means detachably securing said post to said underframe members and in engagement with said abutment means, said securing means being substantially free from shear stresses lengthwise of the vehicle by reason of the engagement of said post and abutment, said securing means including a bolt inclined lengthwise of the vehicle downwardly and in the direction of said one member from said other member, said bolt being detachably secured to said post and to a portion of said one member spaced from said abutment and holding said post in engagement with said one member and with said abutment means thereon, said securing means further including a substantially upright bolt passing through said underlying post portion and said other underframe member and holding said underlying portion in engagement with said other underframe member, there being a third portion of said post overlying said second member and normally vertically spaced therefrom for preventing substantial vertical separation of said underlying portion from said second member when said post is in engagement with said abutment means on said first member.



3,354,840
UNDERFRAME STRESS RELIEF MEANS
James C. Travilla, Ladue, and John R. Vogel, Northwoods, Mo., assignors to General Steel Industries Inc., Granite City, Ill., a corporation of Delaware
Filed Aug. 5, 1965, Ser. No. 477,564
4 Claims. (Cl. 105—420)



1. Underframe structure for a railroad car comprising a transverse beam underlyingly supported at its center and vertically loaded at its ends, said beam having spaced top and bottom walls forming respectively its tension and compression members, the central portion of said bottom wall comprising a depending vertically disposed cylindrical boss and a horizontal wall portion surrounding said boss and perpendicularly intersecting the same, said boss forming a pivot center plate for supporting said

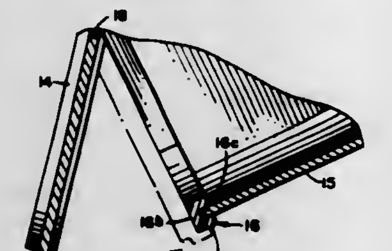
underframe on a swivel truck, there being grooves of arcuate cross section formed in said wall structure along the intersection between said boss and said horizontal wall portion in the interior angle thereof, said grooves being elongated lengthwise of the car and serving to eliminate angular intersections transversely of said beam between said horizontal wall portions and said boss without interfering with the pivot function of said boss, said grooves being formed only at the sides of said cylindrical boss, the arcuate cross section of said grooves being of substantially greater radius than that of the ungrooved portions of the intersection of said horizontal wall with said cylindrical boss, each said groove contour being of maximum radius an equal distance on both sides of the transverse diameter of said cylindrical boss, the radius and depth of each said groove gradually diminishing at both sides of said maximum radius region until each said groove disappears and the radius becomes a constant minimum value through equal distances on both sides of the longitudinal diameter of said cylindrical boss.

3,354,841
RAILWAY CAR DOOR GASKET

James S. Barry, Omaha, Nebr., assignor of one-half to International Paper Company, New York, N.Y., and one-half to The Stanley Works, New Britain, Conn., a corporation of Connecticut

Filed Mar. 4, 1966, Ser. No. 531,922

7 Claims. (Cl. 105—424)



1. In combination, a drop bottom car having at least one opening to the bottom thereof, a slide fixed to said bottom below the same in angled relation thereto, a door pivotally mounted on said bottom for cooperative relation with said slide in closing said opening, said slide having at least three generally orthogonally related side edges adapted to confront corresponding edge portions of said door when the latter is in closed position, and resilient gasketing mounted on said edges, said gasketing being relatively elongated and having a generally U shape in transverse section with the said edges projecting into said U shape and being clampingly received by said gasketing, whereby said door is adapted to selectively compress said gasketing to compensate for deviations in said door and edges from sealing contact.

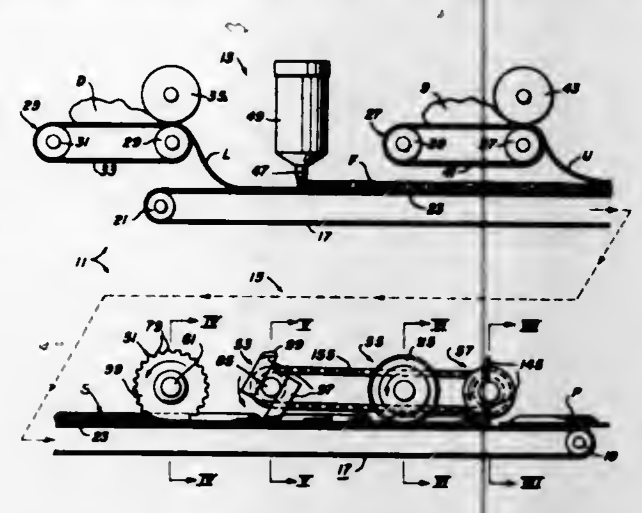
3,354,842
CRIMPING AND FORMING MEANS FOR PIE MAKING MACHINES

Robert O. Manspeaker, Memphis, Tenn., assignor of twenty-five percent to Roy Woods, Memphis, Tenn., and of fifty percent to Margaret Woods, Memphis, Tenn.

Filed May 28, 1965, Ser. No. 459,613

9 Claims. (Cl. 107—1)

1. Attachment means for converting an existing pie making machine in which the crimping and forming is done manually by operators standing along a moving conveyor of said machine and which conveyor carries a continuous reach of pie stock including a lower sheet of dough, an upper sheet of dough, and pie filling between said upper and lower dough sheets, to a machine in which the crimping and forming is done mechanically; said attachment means comprising crimping wheel means, means attachable to said existing pie making machine for rotatably mounting said crimping wheel means in position to rotatably engage substantially continuously said upper dough sheet of said reach of pie stock for pressing and crimping said upper and lower dough sheets together substantially continuously in a crimped line portion extending longitudinally of said reach of pie stock, means connected to said crimping wheel means including friction drive wheel means for frictionally contacting said conveyor to rotatably drive said crimping wheel means, crimping bar means, means attachable to said existing pie making machine for rotatably mounting said crimping bar means in position to rotatably engage intermittently with said upper dough sheet of said reach of pie stock for pressing and crimping said upper and lower dough sheets together intermittently substantially in crimped line portions extending transversely of said reach of pie stock, cutter wheel means, means attachable to said existing pie making machine for rotatably mounting said cutter wheel means in position to rotatably engage substantially continuously with said longitudinally extending crimped line portion of said reach of pie stock for severing the pie stock along said longitudinally extending crimped line portion, cutter bar means, means attachable to said existing pie making machine for rotatably mounting said cutter bar means in position to rotatably engage intermittently with said transversely extending crimped line portions of said reach of pie stock for severing the pie stock intermittently along said transversely extending crimped line portions and for forming a plurality of individual pies having crimped edges, means connected to said crimping bar means and said cutter bar means and including friction drive wheel means for frictionally contacting said conveyor to concurrently and synchronously drive said crimping bar means and said cutter bar means.



3,354,843
DOUGH FORMING MACHINE

Carlos Velazquez, 75 Paradise Ave. 94111, and Jose da Silva Frias, 2988 Mission St. 94110, both of San Francisco, Calif.

Filed Mar. 1, 1965, Ser. No. 436,073

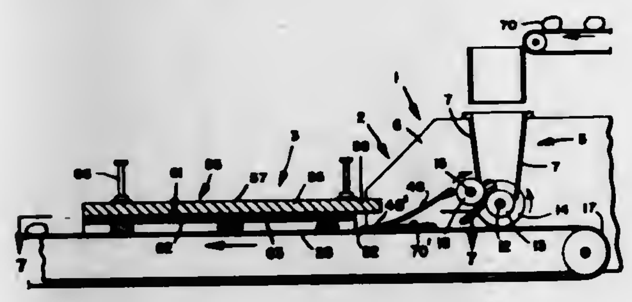
3 Claims. (Cl. 107—9)

1. In a machine for forming dough into rolls for baking, which machine includes means for forming dough into a flat sheet, a conveyor movable in one direction for supporting such sheet for movement in one direction along a path of travel, and means for rolling said sheet on itself about an axis extending transversely of said path during said movement of said conveyor and sheet to form said sheet spirally into a roll, the improvement that comprises:

(a) a stationary open-ended mold disposed across said path providing an inlet at one end and an outlet at the opposite end and extending longintudinally thereof having a roll engaging side facing said conveyor, said side having a concave cross-sectional contour in a direction transversely of said path that is complementary to the desired convex outer curvature of the roll to be formed;

(b) means supporting said mold in a position relative to said conveyor for entry of said roll into said inlet and exit out of said outlet and for engagement of said roll engaging side thereof with said roll, under pressure, while said conveyor carries said roll past said mold into said inlet and out of said outlet, whereby said roll will be rolled through said mold from one end thereof to the other and will be molded to have a convex outer contour upon moving out of said outlet that is complementary to the contour of said dough engaging side of said roll;

(c) said dough engaging side of said mold being of resilient material yieldable under the pressure of said roll of dough to thereby simulate the resiliency and yieldability of the palm of a hand in a manual dough rolling operation.



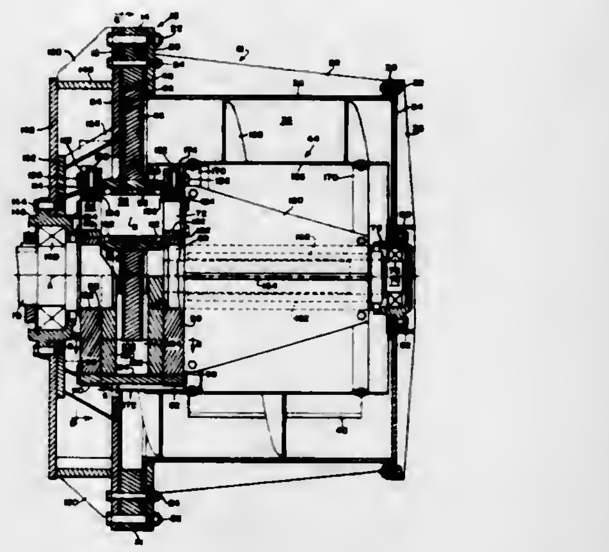
3,354,844
WAFERING MACHINE DIE AND ROTOR STRUCTURE

Walter M. Roll, Murray W. Forth, and Roy E. Harrington, Moline, Ill.; said Roll and said Forth assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Continuation of application Ser. No. 363,045, Apr. 16, 1964, which is a continuation of application Ser. No. 162,670, Dec. 28, 1961. This application May 5, 1965, Ser. No. 453,306

18 Claims. (Cl. 107—14)

1. In a wafering machine, the combination of support means; die means in the form of an annulus carried by the support means and including a plurality of uniformly circumferentially spaced generally radial die openings and an inner periphery from which said openings radiate; a single circular press wheel arranged eccentrically within said periphery of orbit about the axis of the annulus with the outer periphery of said wheel substantially in rolling contact with the annulus periphery to force material into said openings; a crankshaft carrying the wheel, including a wheel shaft extending coaxially through and journaling the wheel and having opposite end portions projecting axially beyond opposite sides of said wheel, a first support shaft extending away from one side of the wheel on the axis of the annulus and having a portion proximate to and axially short of said one side of the wheel, a second support shaft extending away from the other side of the wheel in coaxially spaced relation to the first support shaft and having a portion proximate to and axially short of said other side of the wheel; a pair of cheek members respectively at opposite sides of the press wheel and rigidly secured respectively to said portions of the first and second support shafts, each cheek member having a first portion extending into radially overlapping relation to the associated end of the wheel shaft and a second diametrically opposite portion extending radially beyond the periphery of the wheel, means connecting the first portions of the cheek members respectively to the wheel shaft ends and tying the wheel shaft and first portions rigidly together against relative axial displacement, and means rigidly cross-connecting said second portions of the cheek members; and bearing means journalling the first and second support shafts on the support means.

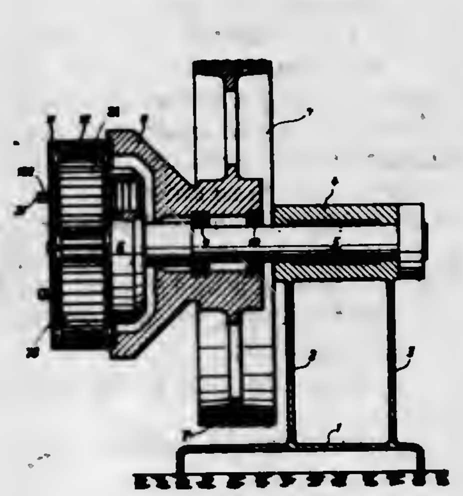


3,354,845
A PELLET MILL HAVING ADJUSTABLY MOUNTED ROLLERS

Richard Schultz, Uzwil, Switzerland, assignor to Gebrüder Bühler, Uzwil, Switzerland

Filed June 22, 1965, Ser. No. 466,004

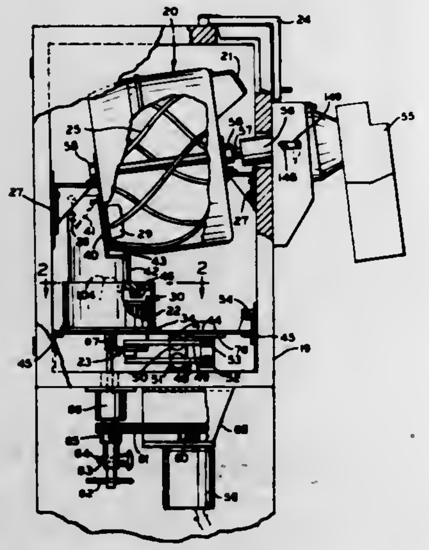
6 Claims. (Cl. 107—14)



1. A machine for compressing material such as fodder into compact form comprising a hollow compression mold having an inner and outer end, means closing said inner end of said mold, a roller carrier mounted adjacent said mold inner end, means for rotating said roller carrier and said mold relatively in substantial concentricity, said roller carrier having at least one bore therethrough, an eccentric bolt assembly including an intermediate portion for rotatably mounting a compression element with said hollow compression mold, an inner eccentric end portion for mounting said eccentric bolt assembly on said roller carrier which extends into the bore of said roller carrier, and an outer end portion accessible from the exterior of said machine, an adjustable element located adjacent said outer end portion of said eccentric bolt assembly and accessible from said outer end of said mold, and tensioning means carried on said inner eccen-

tric end portion of said bolt assembly and connected to said adjustable element, said tensioning means being displaceable upon movement of said adjustable element into bearing engagement with said roller carrier.

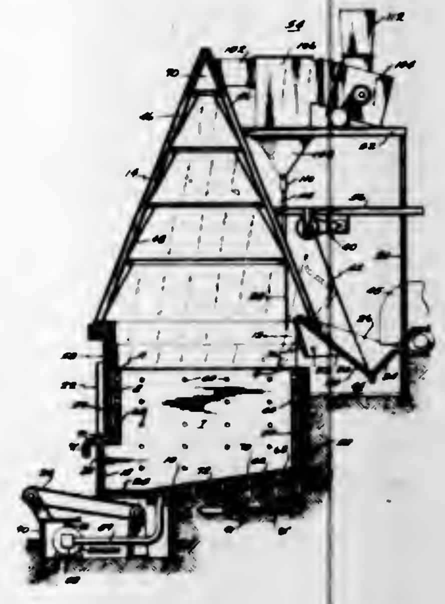
3,354,846
MOLDING APPARATUS
Ferdinand F. Ferrary, Springdale, and George Feldstein, Stamford, Conn., Zygmunt Dziekonski, Lake Mahopac, N.Y., and Marian Markowicz, Wilton, and Stanley M. Dombroski, Stamford, Conn., assignors to American Machine and Foundry Company, a corporation of New Jersey
Filed July 3, 1964, Ser. No. 380,158
25 Claims. (Cl. 107—15)



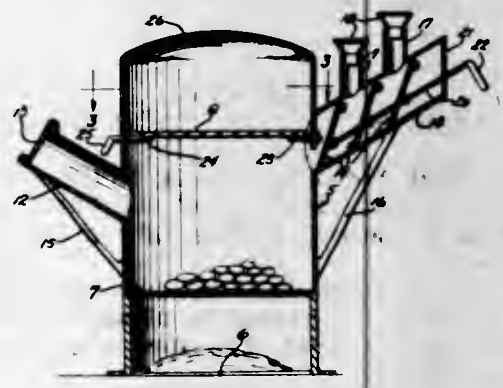
16. A molding apparatus comprising:
- a reservoir with a longitudinal axis fixedly mounted on a support and having axially-spaced openings, one of said openings being a discharge opening, the other of said openings being an intake opening for containing bulk material to be molded;
- a blender element in said reservoir;
- means for activating said element relative to said fixed reservoir to agitate substantially the entire mass of material in said reservoir and to convey said material from said intake opening to said discharge opening and out of said reservoir;
- a hopper into which material is delivered from said reservoir;
- a molding unit for forming molded portions of said material;
- a rotatable stirring and feeding mechanism disposed in said hopper;
- means for actuating said mechanism to feed material from said hopper into said molding unit; and
- means for operating said unit to form said molded portions.

3,354,847
INCINERATOR
Roland E. Clement, Menasha, Wis., and Edward T. Knox, 1906 Memorial Drive, Appleton, Wis. 54911; said Clement assignor to said Knox
Filed Aug. 1, 1966, Ser. No. 569,188
11 Claims. (Cl. 110—7)

1. An incinerator comprising, an upwardly open combustion chamber defined by a plurality of walls, an upwardly converging chimney spanning said combustion chamber, means lining the walls of said combustion chamber to form a separate air chamber along each wall of said combustion chamber, each of said air chambers communicating with said combustion chamber through a plurality of ports, and means for supplying air independently to each of said air chambers and through the ports to said combustion chamber to stimulate combustion therein.



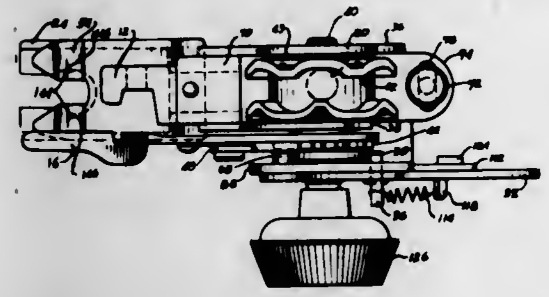
3,354,848
COMBINED TRASH BURNER AND BARBECUE PIT
Charles C. Tolston, 3400 Bell Crossing Drive, Kansas City, Kans. 66104
Filed June 17, 1965, Ser. No. 464,670
5 Claims. (Cl. 110—18)



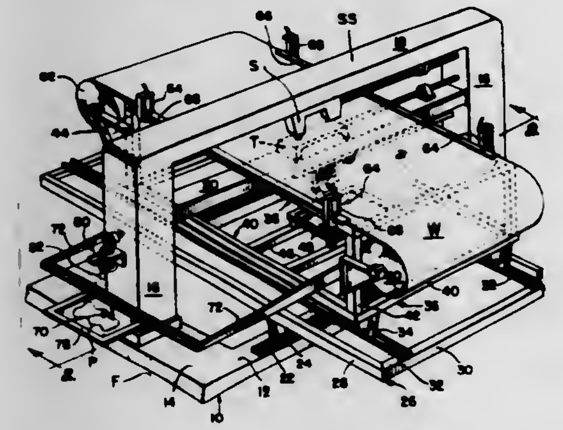
1. A combined trash burner and barbecue pit of the character described, comprising a vertically disposed cylindrical metal container having both a fire grate and a barbecue grate therein; and a door opening onto the said fire grate, as well as a separate door that opens onto the said barbecue grate; and a trash loading chute projecting outward from the side of the said metal container as well as a smokestack that projects outward from the other side of the said metal container.

3,354,849
SEWING MACHINE ATTACHMENT FOR SEWING BUTTONS
Charles Curello, East Haven, and Basil S. Nickerson, North Haven, Conn., assignors to Mite Corporation, New Haven, Conn., a corporation of Delaware
Filed Apr. 15, 1965, Ser. No. 448,490
11 Claims. (Cl. 112—115)

1. A sewing machine attachment for sewing two hole or four hole buttons, said attachment comprising an adaptor to be secured to the presser bar of a sewing machine, a fork to engage the needle bar of the sewing machine to drive the attachment, a foot to support a button, mechanism driven by the fork to oscillate the foot for zig-zag stitching through two holes of the button, a shift cam driven by the fork to shift the foot longitudinally to change the stitching from the said two holes to the other two holes of a four hole button, a two-position selector lever arranged to make the shift cam inoperative when sewing a two hole button, detent means to hold the said selector lever in either its two hole or four hole position as desired, and stop means operative on the mechanism which oscillates the foot for zig-zag stitching causing said mechanism to stop the oscillation after a predetermined number of zig-zag stitches.

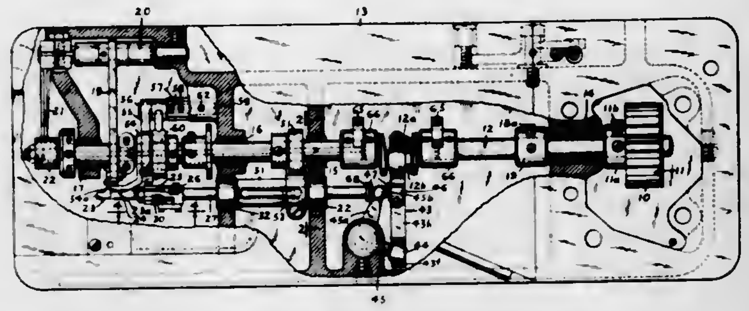


3,354,850
FEED CONTROL MECHANISM FOR QUILTING MACHINE ARRANGEMENT
Wayne G. Story, 7 Hickory Lane, Algonquin, Ill. 60102
Filed Aug. 25, 1965, Ser. No. 482,496
5 Claims. (Cl. 112—118)



1. In a quilting machine arrangement, the combination of:
- (a) supporting structure;
- (b) a power driven sewing mechanism mounted on the supporting structure;
- (c) a workpiece holding carriage mounted on the supporting structure for universal movement in a horizontal plane adjacent said sewing mechanism;
- (d) a power driven feed drive mechanism mounted on the supporting structure and engageable with the carriage to move it in said horizontal plane and including:
  - (i) a feed wheel support mounted for rotation about a vertical axis;
  - (ii) a feed wheel mounted on said support for rotation about a horizontal axis;
- (e) a feed control mechanism connected to the feed drive mechanism and operable to rotate the feed wheel support about its vertical axis to guide the direction of feed of the workpiece carriage;
- (f) a single power source;
- (g) power transfer means operable to transfer power to the sewing and feed drive mechanisms;
- (h) differential gearing means connecting the power transfer means with both the feed drive and feed control mechanisms to compensate for relative movement therebetween and thereby maintain a fixed relation between the speeds of the sewing and feed drive mechanisms to insure uniformity of stitches of the sewing mechanism.

3,354,851
LOOPER MECHANISM FOR SEWING MACHINES
John N. Covert, Lombard, Ill., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed June 30, 1965, Ser. No. 468,462
13 Claims. (Cl. 112—200)



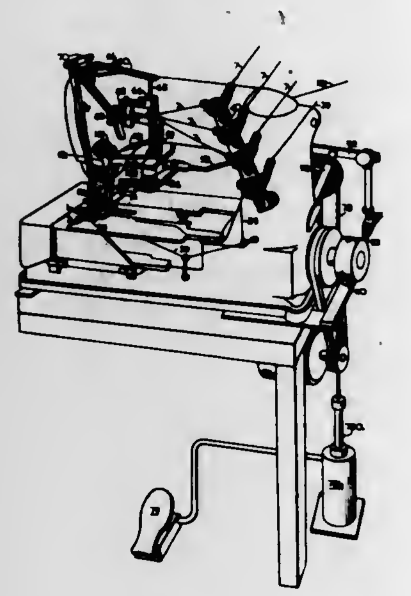
1. In a sewing machine having a frame, said frame carrying work feeding mechanism, a reciprocatory needle, a four motion looper cooperating with said needle, a drive shaft, and connections from said drive shaft for imparting loop seizing and shedding movements and needle avoid movements to said looper, the combination which comprises a rod extending transversely of the direction of feed imparted by said work feeding mechanism and having said looper releasably connected thereto, said rod being mounted in said frame for reciprocatory and oscillatory movements to provide respectively, said loop seizing and shedding and said needle avoid movements to said looper, said connections from said drive shaft serving to impart said reciprocatory and oscillatory movements to said rod, and means readily operable by the operator for partially disconnecting said looper from said rod to enable free bodily movement of said looper longitudinally of said rod.

3,354,852
DOUBLE LOCK STITCH SEWING MACHINES
Alan Malcolm Kennedy, Collaroy Plateau, New South Wales, and Keith Samuel Wood, Chester Hill, New South Wales, Australia, assignors to Bond's-Wear Pty. Limited, Camperdown, near Sydney, New South Wales, Australia
Filed Apr. 16, 1965, Ser. No. 448,592
Claims priority, application Australia, Apr. 24, 1964, 43,693/64
5 Claims. (Cl. 112—252)

1. Improvements relating to a 400 type double lock stitch sewing machine wherein said sewing machine includes a presser bar, a throat plate, a needle and looper thread tension assembly, a looper, and a take-up thread carrier, said improvements comprising in combination:
- (i) a presser foot including wiping, holding and cutting blade units mounted on the presser bar of said machine to hold the needle and cover threads and to sever such threads at the completion of a sewing operation adjacent the garment being sewn and to hold the free ends of the threads until they are pulled into the next garment to be sewn, said presser foot comprising a rectangular plate having an upturned end at the front thereof and raised side portions providing slide guides, a bracket at the rear of said presser foot for mounting it on the presser bar, said presser foot also having a slot for the passage of needles and threads therethrough and a second slot through said upturned end to provide clearance for said wiping blade unit, said wiping blade unit being slidably mounted on the presser foot between the slide guides and including a post and a wiping blade adapted to travel across the needle slot, said wiping

blade unit having a lost motion slot in the edge thereof remote from the wiping blade, said cutting blade unit comprising a lever rotatably mounted on the presser foot beneath the wiping unit, a pin on the power end of said lever, said pin projecting into said lost motion slot, a cover plate fixed to the presser foot above the wiping blade unit, said plate having a guide and travel limit slot therein for receiving said post on the wiping unit, said holding blade unit comprising a holding blade rotatably mounted on the presser foot in the path of travel of said wiping blade, a spring engaging said holding blade to hold it resiliently in engagement with the presser foot in position to resiliently register with the wiping blade,

(ii) a second thread cutting unit mounted on the machine below and juxtaposed the throat plate and including a looper thread slackener and a pick-up finger,



(iii) slackeners for the needle and cover threads to minimize the likelihood of breaking such threads at the commencement of a sewing operation; and

(iv) means to actuate said wiping, holding and cutting blade units of said presser foot, said second thread cutting unit, and said slackeners for the needle and cover threads, said means comprising link and lever mechanisms operatively connected to each of said wiping, holding and cutting blade units of said presser foot, said second thread cutting unit, and said slackeners for the needle and cover threads, pneumatic means operatively connected to said link and lever mechanisms, and a foot pedal controlling said pneumatic means.

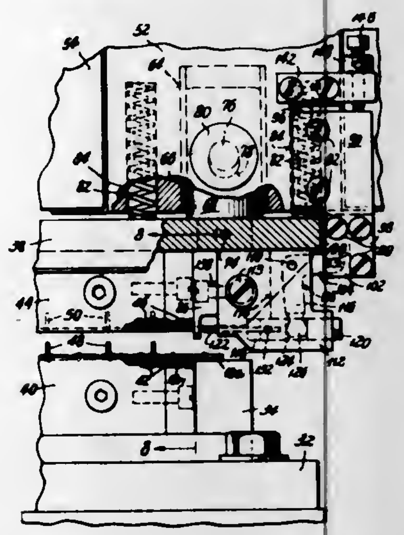
3,354,853
PROCESS OF MANUFACTURING SLIDING CLASP FASTENERS

Wilhelm Haussmann, Walldorf, Hesse, Germany, assignor to Hans-Ulrich Sohr, Haus Waffenschied, Germany
No Drawing. Filed Sept. 27, 1963, Ser. No. 311,978
9 Claims. (Cl. 112—265)

1. A process for the manufacture of sliding clasp fasteners having interlocking wire helices which comprises heating wires of thermoplastic material while shaped into helices to a temperature ensuring their approximate dimensional stability, sewing the helical wires into stringers, and then finally setting the helical wires by heating them to a setting temperature which is near the melting temperature of the thermoplastic material comprising the wires under moist conditions.

3,354,854
METHOD AND APPARATUS FOR MAKING ELECTRIC CONTACT PINS

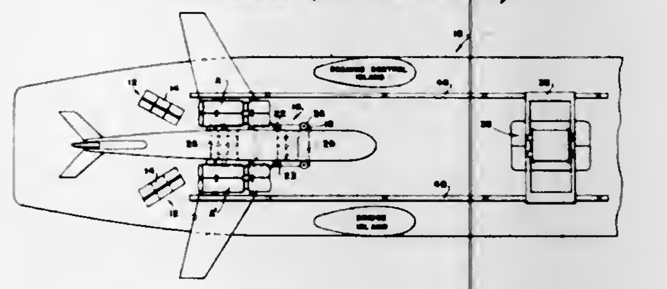
Andrew J. Kosha, Stratford, Conn., assignor to The Bead Chain Manufacturing Company, Bridgeport, Conn., a corporation of Connecticut
Filed Apr. 26, 1965, Ser. No. 450,967
17 Claims. (Cl. 113—119)



1. In the method of making elongate tubular electric contact pins having opposite open ends for receiving a contact wire therethrough in which a pin of predetermined configuration is die formed in an indefinite length of tubular stock material, and subsequently is severed from the stock material and has burrs protruding from one end of the pin formed by the severing of a preceding pin while said pin was being formed in the stock material, which burrs are liable to be bent inwardly of the pin into the path of the contact wire as a result of contact with other objects during subsequent handling to an extent which prevent free passage of the contact wire through the pin, the improvement comprising the step of applying an expanding force to said one end of the pin prior to said subsequent handling to cause any existing burrs to be flared outwardly of the pin and thereby prevented from being bent inwardly into the path of the contact wire during said subsequent handling.

3,354,855
SEAPLANE DOCKING SYSTEM

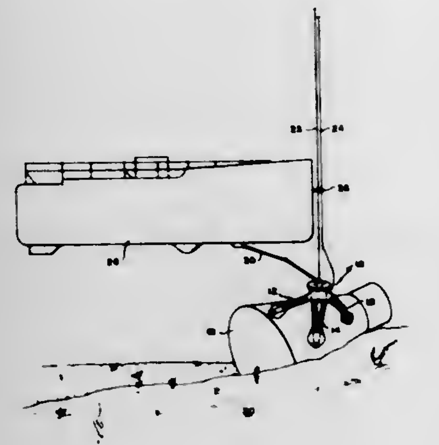
John Bader, 2511 Woodley Road NW., Washington, D.C. 20008
Filed Dec. 29, 1958, Ser. No. 783,625
9 Claims. (Cl. 114—43.5)



1. A seaplane docking apparatus comprising a submersible tender having a top deck, a cradle for receiving and supporting a seaplane above said deck, means mounting the cradle on the top deck for vertical movement of the cradle relative to the top deck from a retracted position substantially resting on the deck to an elevated position spaced above the deck, means mounted on the deck for guiding a floating seaplane into position above the cradle, means on the cradle for centering the seaplane above the cradle with the longitudinal axis of the plane in substantially the same vertical plane as the longitudinal axis of the cradle, and means operated by movement of the seaplane into position above the cradle for elevating the cradle into supporting contact with the seaplane.

3,354,856
SUBMERGED OBJECT LIFTING DEVICE

Joseph R. Annibale, Brooklyn, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 16, 1966, Ser. No. 536,588
7 Claims. (Cl. 114—51)



1. A submerged object lifting device comprising:

a flexible supporting means having a central portion and a plurality of arms radially extending from said central portion;

a plurality of suction cup means, attached to the central portion and to the radially extending portions of said supporting means, for attaching said supporting means to a submerged object;

a suction producing means attached to said supporting means;

tube means, connected to said suction producing means and to said suction cups, for allowing the passage of fluid from said suction cups to said suction producing means to thereby reduce the pressure within the chambers formed between said suction cups and the submerged objects;

mass controlling means attached to said arms comprising:

container means;
ballast means; and
valve means;
said container means being attached to said supporting means for containing said ballast means;
said valve means being attached to said container means for operatively controlling the discharging of said ballast means from said container means.

3,354,857
HYDROFOIL CRAFT

Stephen W. Hobday, 219 Sycamore Road, Farnborough Hants, England
Filed Sept. 13, 1965, Ser. No. 486,716
19 Claims. (Cl. 114—66.5)

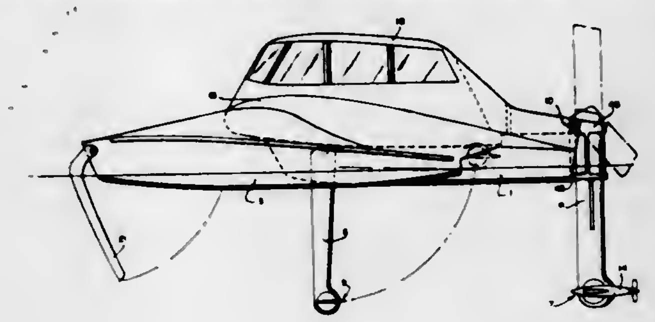
1. In a hydrofoil craft, of the type adapted for fully foil-borne operation, the combination comprising,

a trimaran hull,

at least one strut disposed between each pair of hulls and supporting a lift-imparting foil adjacent its one end,

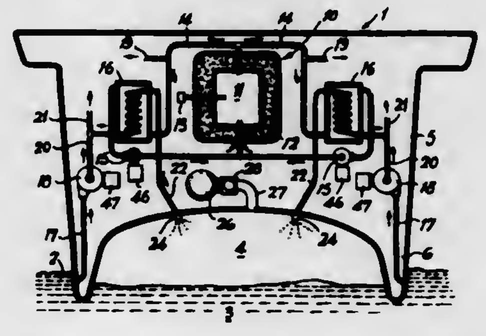
support means for connecting each strut to at least one of the hulls of the associated pair,

said support means selectively permitting operation of at least some of said struts from a downwardly extended position in which said foils are disposed to permit fully foil-borne operation of said craft to a rearward fully retracted position in which said struts and the associated foils are protected by the outermost hulls and means within said strut responsive to rotation of said strut from its downwardly extended position to its rearwardly retracted position for maintaining a positive angle of incidence between the associated foil and the hull of said craft over at least a part of the rotation of said strut.



3,354,858
WATER-BORNE GAS-CUSHION VEHICLES

John Anthony Boutland, Hythe, Southampton, England, and Sidney Thomas Jelly, Ottawa, Ontario, Canada, assignors to Hovercraft Development Limited, London, England, a British company
Filed Apr. 4, 1966, Ser. No. 540,075
Claims priority, application Great Britain, Apr. 6, 1965, 14,614/65
10 Claims. (Cl. 114—67)



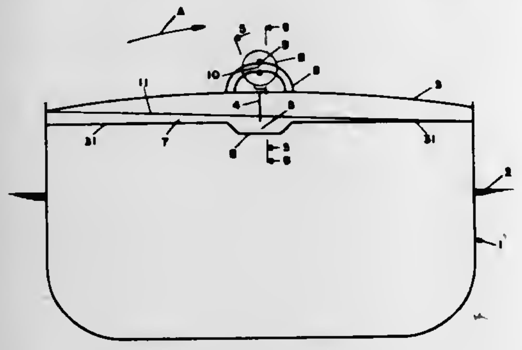
1. A water-borne gas-cushion vehicle provided with means for forming a vehicle-supporting cushion of steam in the cushion space, said means comprising intake means for taking in water from beneath the vehicle, heating means for raising the temperature of the water taken in, pressurising means for raising the pressure of the water so as to prevent it boiling-off when heated, and spray discharge means for spraying the heated and pressurised water into the cushion space where it flashes into steam.

3,354,859
SHIP STABILIZATION SYSTEMS

Frank J. Nickels, Jr., Swarthmore, Pa., assignor to Sun Shipbuilding & Dry Dock Company, Chester, Pa., a corporation of Pennsylvania
Filed July 1, 1966, Ser. No. 562,274
2 Claims. (Cl. 114—125)

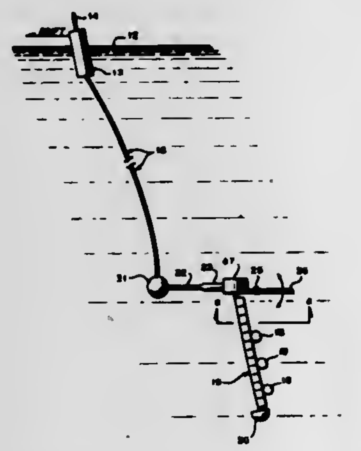
1. A stabilization system for a marine vessel comprising a single elongate enclosure extending transversely across a marine vessel to be stabilized, the central region of the bottom wall of said enclosure being depressed below the level of the remainder of said bottom wall, a body of liquid in said enclosure having a liquid level such that in a repose horizontal condition an air space is provided above said liquid; an imperforate baffle plate centrally

mounted in said enclosure and extending downwardly from the upper wall thereof for a limited distance into said body of liquid, thereby separating said air space



only into two approximately equal portions, an air duct connected between said two air space portions, and an orifice plate removably mounted in said duct for throttling the passage of air therethrough.

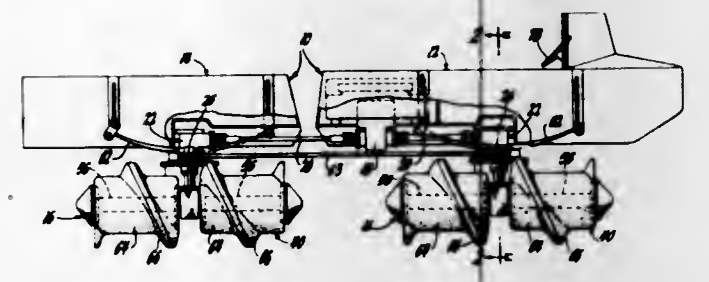
3,354,860
MECHANICAL ISOLATION OF HYDROPHONES BY HYDROPLANES
John R. Dale, Willow Grove, and Harry R. Menzel, Hatboro, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 27, 1966, Ser. No. 561,663
9 Claims. (Cl. 114—235)



1. A hydrophone suspension system for reducing spurious hydrophone signals caused by cable vibrations and induced surface motion in a fluid field, said system comprising:
- first means suspending a cable below the surface of a sea; and
- second means hydrodynamically streaming a hydrophone on a hydroplane remote from said cable and substantially normal thereto, said second means including compliant coupling means for isolating said hydroplane from flow induced cable vibrations and wave induced vertical displacement of said cable whereby spurious hydrophone signals are reduced.

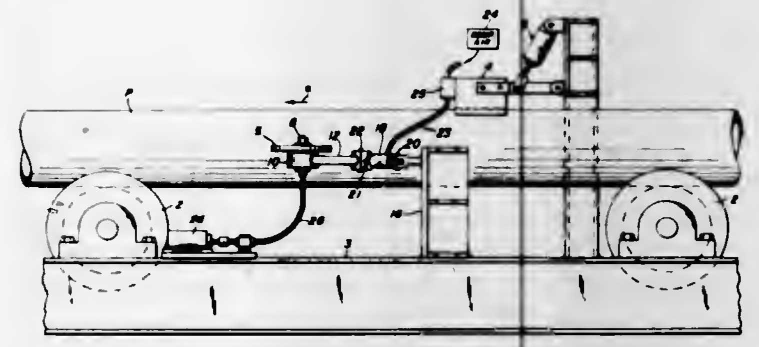
3,354,861
SCREW DRIVEN AMPHIBIOUS VEHICLE
Howard A. Wilcox and Mieczyslaw G. Bekker, Santa Barbara, Calif., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 17, 1965, Ser. No. 508,235
6 Claims. (Cl. 115—1)

1. An amphibious vehicle comprising a support structure, propulsive means including a plurality of axially rotatable screw rollers, all having similar screw threads spiraling therearound in the same direction, means pivotally mounting the screw rollers to the structure on steering axes normal to the roller axes, means for axially rotating



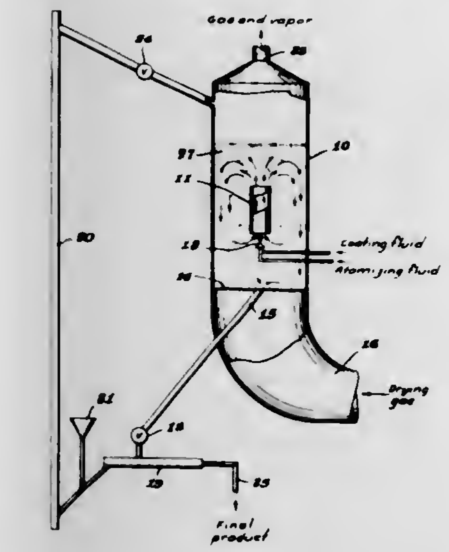
the rollers in the same direction, and steering means connected to the rollers to pivot the rollers about the steering axis.

3,354,862
MEANS FOR MARKING OBJECTS
William F. Franz, Green Tree, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Mar. 16, 1965, Ser. No. 440,086
1 Claim. (Cl. 118—8)



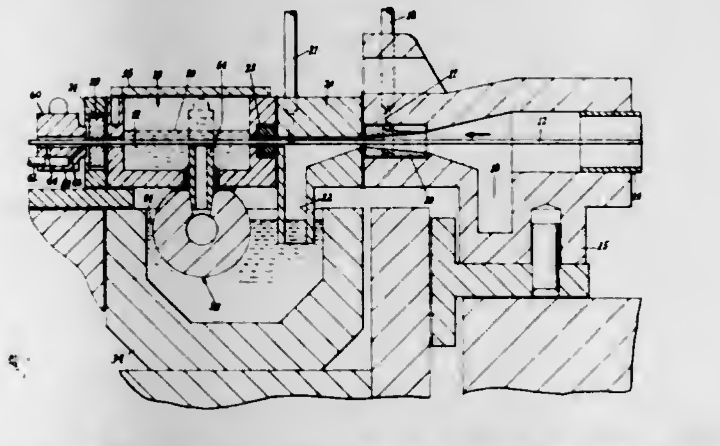
Apparatus for marking an elongated object having a hard surface to indicate places where defects occur in said surface, said apparatus comprising:
- roller supports for carrying said object,
- means for moving an object lengthwise over said roller supports,
- a bracket member mounted adjacent the path of said object surface,
- a lever pivotally connected to said bracket member,
- a shaft rotatably mounted on said lever,
- a wheel fixed to said shaft so as to rotate with the shaft, said wheel having a periphery of greater diameter than said shaft, said periphery being composed of a depositable marking material,
- a motor connected to said shaft for rotating the shaft and wheel,
- an air cylinder connected to said lever so that when actuated, said air cylinder moves said lever to bring said periphery of said rotating wheel into a sliding frictional, non-penetrating contact with said hard surface of said object,
- means for detecting defects in said object surface, said means mounted adjacent the path of said object surface,
- an air supply line connected to said air cylinder and having a valve for opening and closing said line, and
- a solenoid operating said valve and connected to said means for detecting defects in said object surface, so as to cause said valve to open and said air cylinder to be actuated in response to the detection of a defect in said object surface.

3,354,863
APPARATUS FOR COATING PARTICULATE MATERIALS
Jack B. Reynolds, Ludington, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,384
2 Claims. (Cl. 118—62)



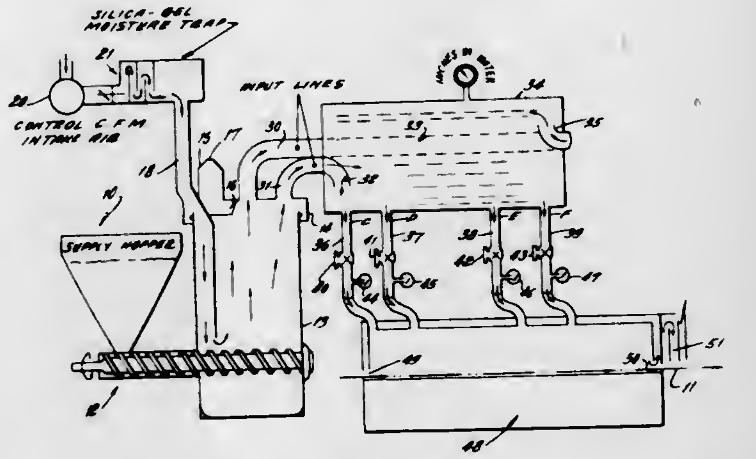
2. An apparatus for coating particulate material comprising; a vertically disposed column having at least one vertical draft tube positioned therein, a bi-fluid nozzle positioned within said column and below each said draft tube, said nozzle directed substantially upwardly, thereby to propel atomizing and coating fluid through said draft tube, a grid across the interior of the column below the bi-fluid nozzle, a source of drying gas connected to the lower portion of the column below the grid, elevator means communicating between the lower and the upper portions of the columns, exhaust duct means communicating with the upper portion of the column, and a product recovery line communicating with the interior of the column above the grid.

3,354,864
APPARATUS FOR COATING METALLIC STRANDS
Earle L. Knapp, Kansas City, Mo., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Sept. 3, 1964, Ser. No. 394,158
11 Claims. (Cl. 118—63)



1. An apparatus for coating a metallic strand with a molten coating comprising:
- (a) a coating compartment adapted to be supplied with molten coating metal to not more than a normal level, and having entrance and exit apertures for the passage of a strand in a horizontal path in opposed walls thereof, said apertures being disposed immediately below said normal level;
- (b) an exit die having a restricted die orifice;
- (c) means floatingly securing said exit die to said compartment in alignment with said exit aperture; and
- (d) a gas finishing nozzle disposed closely adjacent said exit die and adapted to direct at least a portion of the gas passing therethrough into said exit die.

3,354,865
CLOUD DISPERSION OF FINE PLASTIC POWDER
John J. Quackenbush, Monroe, and Herbert O. Corbett, Bridgeport, Conn., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Apr. 12, 1966, Ser. No. 542,040
2 Claims. (Cl. 118—309)



1. Apparatus for the dusting of a flat elongated web with an even distribution of powdered particles of varying particle size and varying density; said apparatus comprising a source of said powdered particles; a supply canister comprising a sealed chamber connected to said source; a blower pump means connected to said supply canister for pressurizing the interior thereof; a controlled source of dry air connected to said supply canister for controllably supplying dry air to the pressurized interior of said supply canister; an equilibrium cloud chamber comprising a hermetically sealed elongated chamber; a first and second outlet channel extending from said supply canister and connected to the interior of said cloud chamber at first and second spaced portions thereof; a settling chamber having an input port and output port for passing a web through the interior of said settling chamber and a pressure relief port; said cloud chamber having a plurality of spaced conduits extending from spaced interior portions thereof and extending into respectively spaced interior portions of said settling chamber at the top of said settling chamber and above the web received within said settling chamber.

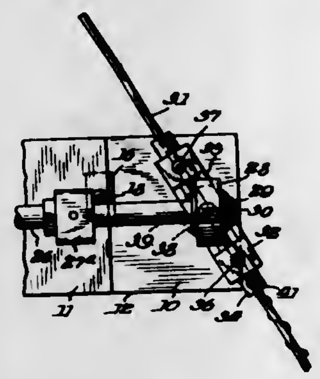
3,354,866
COATING APPARATUS INCLUDING MEANS TO ROTATE AND TRANSLATE A ROD-SUBSTRATE
Frank D. Karkoska, 5211 S. Halsted St., Chicago, Ill. 60609
Continuation of application Ser. No. 99,756, Mar. 31, 1961. This application Apr. 25, 1966, Ser. No. 549,768
9 Claims. (Cl. 118—409)

1. An apparatus adapted for providing rotational and translational movement to a rod about which foil is adapted to be wound, said apparatus comprising:
- a base member;
- drive means mounted upon said base member having a drive shaft extending therefrom;
- a wheel having a frictional drive surface and connected to said drive shaft whereby said wheel is capable of rotation in a plane substantially perpendicular to the longitudinal axis of said drive shaft;

a guide block means adapted for receiving said rod, said guide block means comprising a passageway extending through the length of said block means and having an opening which is at least as large as the maximum width of a rod adapted to be passed through said passageway;

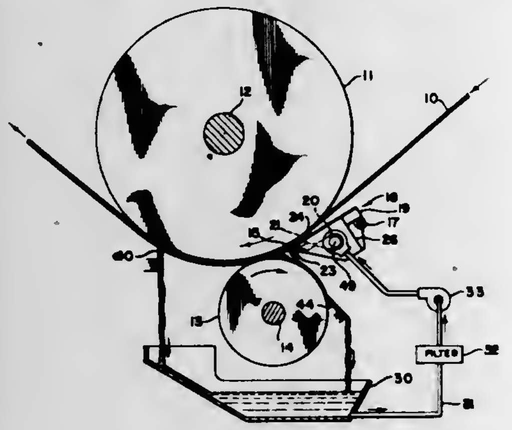
said block means being pivotally mounted upon a fixed axis on said base member, said block means having a vertically extending groove intersecting at least a portion of said passageway, said wheel being disposed within said groove with its drive surface being in general alignment with the longitudinal extent of said passageway and adapted for driving engagement with a rod when it is located in said passageway; and,

means for positioning said guide block means askew to the plane of rotation of said wheel whereby to effect rotational and translational movement of a rod when it is placed in said apparatus.



3,354,867
MEANS TO VARY EFFECTIVE WIDTH OF PROJECTED COATING MATERIAL

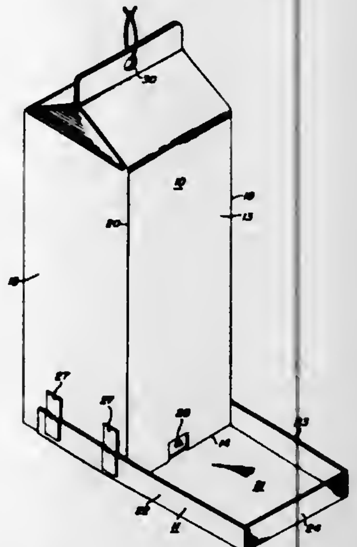
Anthony W. Pomper, Metuchen, and Orland W. Grant, East Brunswick, N.J., assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed July 12, 1965, Ser. No. 470,997
5 Claims. (Cl. 118—603)



1. In a web coating apparatus, the combination comprising a backup roll for a traveling web to be coated; a counter-rotating metering roll disposed beneath said backup roll and in contact relationship with a coated portion of said web entrained about said backup roll; a coating material supply nozzle having a slotted outlet of fixed width which is substantially coextensive with the nip formed by said rolls; said nozzle disposed with respect to said nip whereby to project a sheet of coating material into said nip and onto the portion of the traveling web thereat; a coating material supply reservoir disposed beneath said metering roll; coating material feed means communicating said reservoir with the nozzle; trough-shaped means mounted on each transverse end of said nozzle and having sections thereof spaced from the nozzle outlet and disposed in the path of the sheet of coating material projected from the fixed slot outlet whereby to intercept portions of such projected sheet; said trough-shaped means further disposed so that the intercepted portions of coating material are returned to the reservoir; said trough-shaped means being laterally adjustably mounted on said nozzle ends whereby to effect variation of the width of said sheet of coating material projected and delivered into said nip and onto the traveling web portion thereat.

3,354,868
COMBINATION PACKAGED CONTAINER AND BIRD SEED FEEDER MEANS

George V. Woodling, 22077 W. Lake Road, Rocky River, Ohio 44116
Filed Apr. 22, 1966, Ser. No. 544,473
7 Claims. (Cl. 119—52)



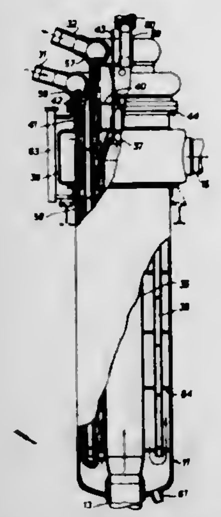
1. Combination packaged container and bird seed feeder means, said packaged container having at least base panel means and a first side panel meeting with said base panel means and defining a first corner edge, said feeder means having at least utility panel means, said feeder means being positionable relative to said packaged container in first and second positions, means for securing said feeder means to said packaged container in said first and second positions, said feeder means in said first position having said utility panel means releasably disposed against said first side panel of said packaged container, said feeder means in said second position having said utility panel means secured underneath and in contact with said base panel and extending outwardly away from said first corner edge, said packaged container having aperture means through which bird seed is rendered available to birds for eating, said aperture means being disposed above said utility panel means in said outwardly extending position, whereby said utility panel means in said outwardly extending position is disposed to receive and render bird seed which comes out of said aperture means available to the birds for eating, said utility panel means in said outwardly extending position also constituting perch means upon which the birds may perch while eating bird seed rendered available to them.

3,354,869
HEAT EXCHANGERS

John Allen, Appleton, Warrington, and Derek Taylor, Knutsford, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Jan. 4, 1966, Ser. No. 518,693
Claims priority, application Great Britain, Jan. 4, 1965, 242/65
4 Claims. (Cl. 122—32)

1. In a liquid metal heater steam generator of the shell and tube type, the combination comprising means forming a shell, a liquid metal inlet for admitting the liquid

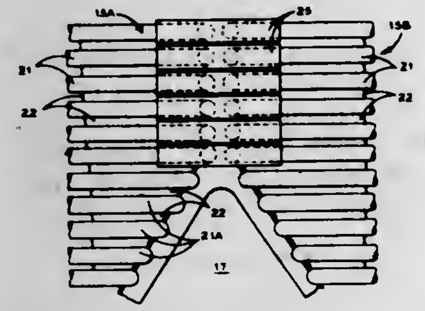
metal to the interior of the shell, a liquid metal outlet for the discharge of liquid metal from the interior of said shell, at east one baffle disposed substantially upright in the shell interior between said inlet and said outlet for defining in the liquid metal flowpath from said inlet to said outlet a downward flow pass followed by an upward flow pass, heat exchange elements disposed in the downward and upward passes and adapted for the generation



of steam therein, headers to which the heat exchange elements are connected adjacent the top of the shell, separate gas spaces defined respectively over the downward and upward passes by a sealed relationship with the shell of an upper portion of the baffle, and means to charge the separate gas spaces with gas and thereafter maintain them isolated whereby during operation of the generator different pressures prevail in the gas spaces.

3,354,870
TUBE FITTING ARRANGEMENT FOR FURNACE BOTTOM

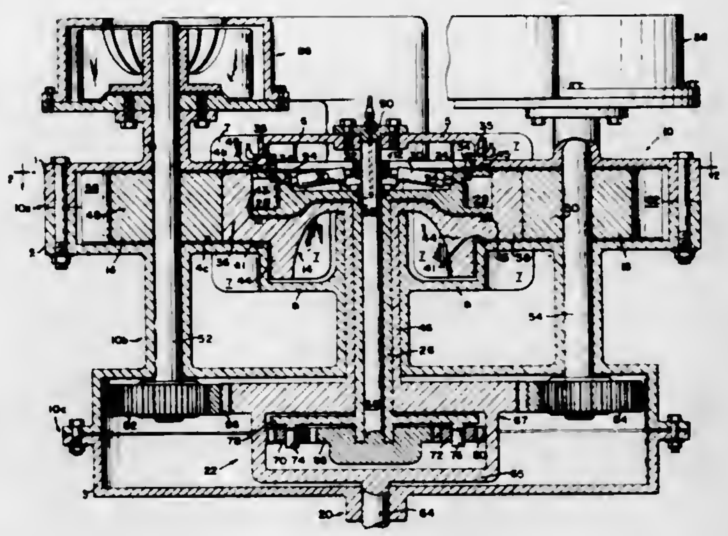
Edward P. Darlinger, Barberton, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 20, 1965, Ser. No. 498,740
7 Claims. (Cl. 122—235)



1. In combination, a pair of substantially planar impervious boundary walls delimiting a furnace chamber, said walls intersecting each other at an angle less than 180° on the furnace side thereof, each of said walls being formed with a plurality of parallel contiguous tubes weld-united along their lengths, a plurality of modular fitting bodies weld-united to one another to define an assembly having a fluid impervious exterior surface bridging said walls along their path of intersection, each fitting body having two separate internal flow passages, each of said flow passages having an inlet end and an outlet end, the outlet ends of the flow passages associated with each fitting body being angularly spaced-apart in accordance with the intersection angle of said walls and each outlet end being connected to a tube of a corresponding wall, and header means connected to the inlet ends of each of said flow passages to accommodate the flow therethrough of fluid between said header means and the wall tubes connected to respective outlet ends of said flow passages, the inlet ends of the flow passages associated with each fitting body being angularly spaced-apart from each other, and at least one flow passage in each fitting body having inlet and outlet ends angularly spaced-apart from each other.

3,354,871
ROTARY INTERNAL COMBUSTION ENGINE

Frank J. Skrob, Box 247, Twisp, Wash. 98856; George M. Gibson, executor of said Frank J. Skrob, deceased
Filed Dec. 2, 1965, Ser. No. 511,142
13 Claims. (Cl. 123—13)



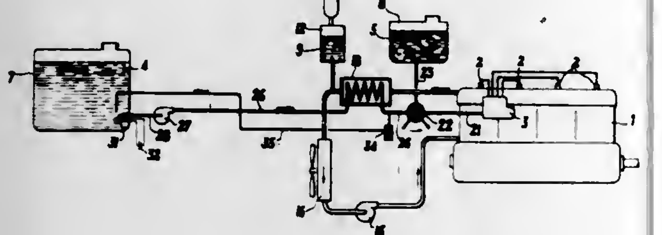
1. A rotary combustion engine which comprises:
a housing having inlet and exhaust ports;
a central rotary means rotatable in said housing and together therewith defining an annular chamber which communicates with said ports, said central rotary means having a plurality of combustion chambers communicating with said annular chamber;
a planetary piston means having at least one piston member revolvable around said central rotary means in said annular chamber;
a rotary cut-off means rotatable in said housing to intersect said annular chamber and sweep the rotary means such that said annular chamber is divided into compression and expansion zones, said rotary cut-off means having at least one piston recess for receiving said piston member therein to permit passage of said piston member thereby as said piston member revolves around said central rotary means;
power output means adapted to be rotated by revolution of said planetary piston means;
and means adapted to rotate said central rotary means and said rotary cut-off means in response to revolution of said planetary piston means such that said piston member successively closes off said combustion chambers from said annular chamber.

3,354,872
FUEL SUPPLY SYSTEM FOR AN INTERNAL COMBUSTION ENGINE

Jean Louis Gratzmuller, 66 Blvd. Maurice Barres, Neuilly-sur-Seine, France
Filed July 16, 1965, Ser. No. 472,441
Claims priority, application France, July 23, 1964, 982,732
4 Claims. (Cl. 123—30)

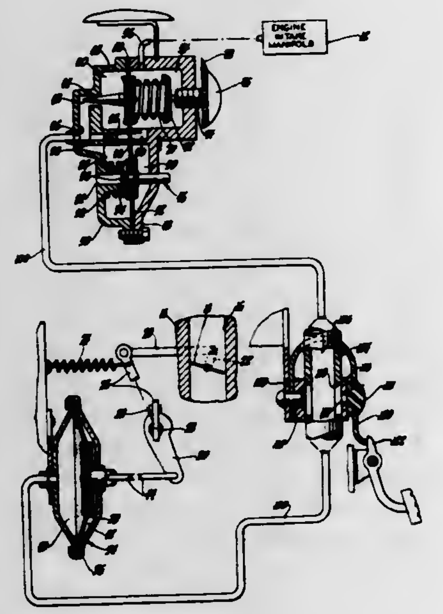
1. In a system for feeding preheated fuel to the fuel injection pump of an internal combustion engine having a cooling water jacket, said system including a fuel reservoir, a fuel delivery pump connected to said reservoir

for drawing fuel therefrom and for delivering such fuel to said injection pump, a heat exchanger interposed between said fuel delivery pump and said injection pump, and a closed cooling circuit means including said cooling water jacket, a circulation pump and a water supply, the



improvement for preventing vaporization of said water which comprises a fluid pressure means connected to said closed cooling circuit, said fluid pressure means exerting on said water supply, a substantially constant pressure of sufficient magnitude to prevent the formation of steam within said closed circuit.

3,354,873
CONSTANT SPEED CONTROL SYSTEM
John B. Burnell, Brighton, Victoria, Australia, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 500,057
15 Claims. (Cl. 123—103)

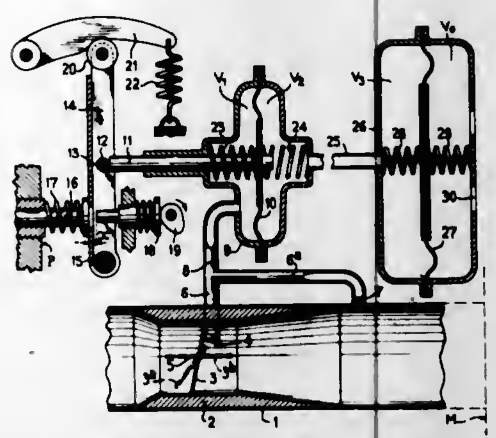


4. In a vehicle, the combination of an engine having a throttle valve and a source of air which changes in absolute pressure by an amount and in a direction which directly varies in accordance with the amount and direction of power demand changes made on the engine by changes in vehicle road load and is further variable directly in accordance with the amount of change in throttle valve opening,

control means responsive to said changes in absolute pressure,

and means controlled by said control means for producing a force for moving said throttle valve in a direction to change the absolute pressure in the same direction to change the engine delivered power in direct relation to the power demand changes to maintain the vehicle at a stable road speed.

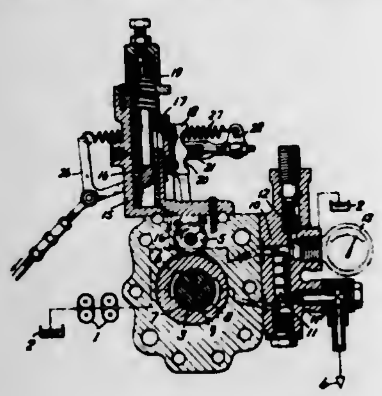
3,354,874
DEVICE FOR REGULATING A FUEL INJECTION PUMP FOR AN INTERNAL COMBUSTION ENGINE AS A FUNCTION OF THE DEPRESSION PREVAILING IN THE INDUCTION PIPE
Marcel Dangauthier, Paris, France, assignor to La Publicite Francaise, Paris (Seine), France, a French body corporate
Filed Nov. 2, 1965, Ser. No. 506,074
Claims priority, application France, Feb. 9, 1965, 4,826/65
3 Claims. (Cl. 123—139)



1. Device for regulating a fuel injection pump for an internal combustion engine, said device comprising a wall defining the induction pipe of the engine, a first chamber, a flexible diaphragm partly defining the chamber and operatively connected to an element of the injection pump controlling the flow of fuel from the latter so that movement of the diaphragm varies the fuel flow, the said wall defining induction pipe including a wall portion defining a Venturi having a neck portion, an air entry regulating throttle located in the neck portion, a first aperture in that part of said wall portion defining said neck portion of the Venturi, a second aperture in said wall in a position downstream of the Venturi relative to the fluid flow through the induction pipe, and means putting the chamber in communication with simultaneously the first aperture and the second aperture, the position of the first aperture being such that the first aperture is wholly on the downstream side of the throttle in the idle speed position of the throttle whereas a part of the first aperture is on the upstream side of the throttle when the throttle occupies a position corresponding to the beginning of an acceleration of the engine and wholly exposed to the suction prevailing in said neck portion in the fully open position of the throttle.

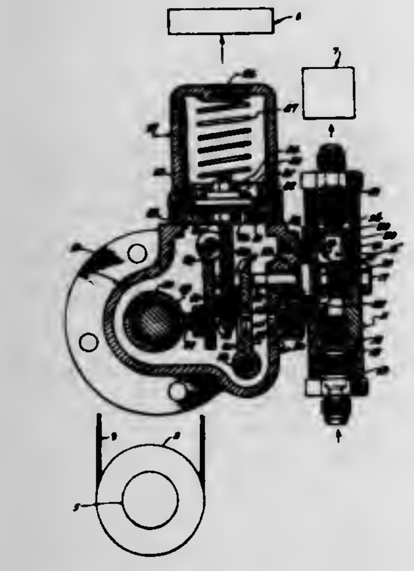
3,354,875
APPARATUS FOR ADJUSTMENT OF FUEL INJECTION AMOUNT IN INTERNAL COMBUSTION ENGINES
Ryuzo Kajikawa, Eiichi Hasimoto, and Eiji Tahara, Tokyo, Japan, assignors to Kabushiki Kaisha Honda Gijutsu Kenkyusho, Yamato-machi, Kitaadachi-gun, Saitama-ken, Japan, a corporation of Japan
Filed Mar. 12, 1965, Ser. No. 439,365
Claims priority, application Japan, Apr. 15, 1964, 39/20,989
2 Claims. (Cl. 123—140)

1. In apparatus for adjusting the fuel injection amount per cycle for an internal combustion engine, a fuel vane pump having an adjustably eccentrically mounted rotor, a fuel injection nozzle connected to the output of said vane pump, said vane pump being driven synchronously with said engine, a pressure gear pump having its output connected to the input of said rotary vane pump, an oil pressure cylinder, a piston slidably mounted in said cylinder, said cylinder being connected to the discharge side of said pressure gear pump, a slidable cam surface connected to said piston, cam follower means engageable with said cam surface, and means actuated by said cam



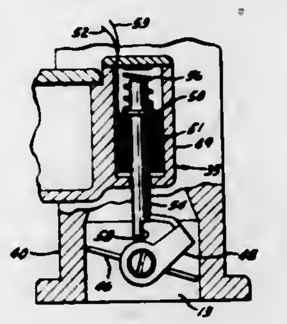
follower means and adapted to vary the eccentrically of the rotor of said fuel vane pump, whereby the fuel injection amount per cycle is adjusted in accordance with the contour of said cam surface.

3,354,876
FUEL INJECTION SYSTEM
Roger O. Durham, 3966 Marathon St., Los Angeles, Calif. 90029
Filed Oct. 21, 1965, Ser. No. 499,451
7 Claims. (Cl. 123—140)



1. A fuel pumping system for an internal combustion engine having a crankshaft and an intake manifold, said system comprising a diaphragm type fuel pump adapted for connection to an engine and having a pump operating element, a pressure sensitive apparatus adapted for connection to the intake manifold of an internal combustion engine, said apparatus having a diaphragm movable in response to intake manifold pressure and a fulcrum rod contacting said diaphragm and movable thereby, a cam adapted for rotation in response to rotation of a crankshaft of an internal combustion engine, a linkage means having two levers with substantially oppositely disposed fulcrums, said levers being disposed substantially parallel to each other, said fulcrum rod positioned between said levers and by its position affecting the amount of movement that actuation of one lever imposes upon the other, one of said levers contacting said cam to be actuated thereby and the other lever contacting said pump operating element, rotation of said cam causing movement of said pump operating element to pump fuel to the engine, the quantity of fuel pumped by said fuel pump being controlled by the position of said fulcrum rod between said levers, and at least one of said levers having a stop member extending towards said other lever and being of such dimensions that said fulcrum rod is substantially freed from contact with said levers for an interval corresponding to a portion of the rotation of said cam, and said fulcrum rod during said interval being freely movable by said diaphragm of said pressure sensitive apparatus so that small changes in intake manifold pressure will affect the position of said fulcrum rod.

3,354,877
MEANS FOR PREVENTING AUTO IGNITION AT ENGINE SHUT DOWN
Albert W. Zub, St. Louis, and Edward N. Crawford, Ferguson, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Mar. 25, 1966, Ser. No. 537,391
9 Claims. (Cl. 123—198)

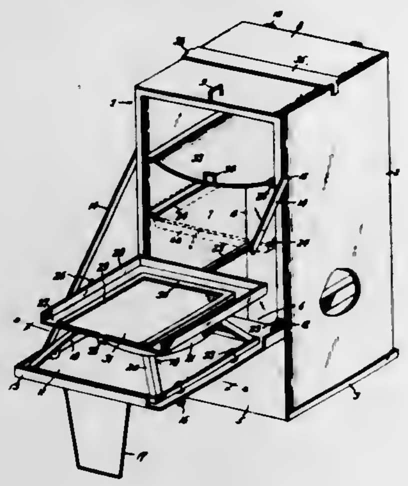


1. In a fuel system for an internal combustion engine including a carburetor having; a body, a mixture conduit formed in said body, a throttle comprising a plate carried on a shaft, the latter being journalled in the body and operable between open and closed positions to regulate air flow through said mixture conduit to control engine speed, limiting means for locating said throttle in a partially open position to pass sufficient air and fuel mixture therethrough whereby said internal combustion engine is sustained at idle speed, an ignition circuit including a source of electric current, and an engine starter switch, the latter being adjustable to "on" and "off" positions to control operation of said internal combustion engine, electrically actuated release means connected to said curburetor for permitting said throttle to assure a fully closed position in the mixture conduit thereby substantially closing the latter to preclude flow of air-fuel mixture therethrough, and timer means connected to said electrically actuated release means and to said ignition circuit respectively to maintain said release means in the actuated position for a predetermined period of time subsequent to said engine starter switch being adjusted to the "off" position to discontinue operation of the engine.

3,354,878
PORTABLE RANGES
Edmond Balls, 1747 Church St. NW., Washington, D.C. 20036
Substituted for abandoned application Ser. No. 670,981, May 20, 1946. This application Dec. 22, 1965, Ser. No. 544,037
2 Claims. (Cl. 126—275)

1. In a range of the class described, a bottom firebox, an oven above said box having an open top, an oven door above said firebox opening downwardly into a fully opened, horizontal position, pairs of opposed rack bars on the sides of said oven arranged at different levels to provide an upper, a lower and an intermediate pair with the lower pair at the level of the door when said door is fully opened, a roller-supported cradle operative from a position of rest on said door for rolling onto the lower pair of rack bars into said oven, and a false oven bottom removably mounted on said cradle for movement into said oven thereby below the intermediate pair of rack bars, the intermediate pair of rack bars being adapted to

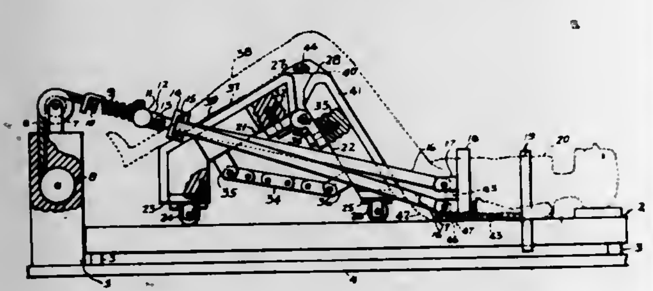
support a pan thereon, and a heat baffle plate disposed on the upper pair of rack bars to prevent the escape of heat from the top of said oven and confine the heat close to the pan, said false bottom being formed of superposed solid plates one of which is removable to reduce the thickness of said bottom and thereby reduce resistance to the passage of heat through the false bottom.



3,354,879

KNEE, HIP AND BACK FLEXER

Odis B. Briggs, 2991 Concord Road,
Beaumont, Tex. 77703
Filed July 8, 1963, Ser. No. 293,313
4 Claims. (Cl. 128—71)



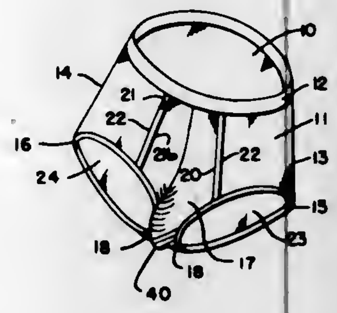
1. In a traction device the combination of a table having means to secure the upper trunk of a patient thereto, a hinged roller carriage having a pair of inclined sections connected by a hinge means at their topmost ends, said roller carriage having antifrictional rollers mounted beneath said sections and being located on the table top surface adjacent said trunk securing means, movement limiting means connecting said sections below said hinge means, and traction applying means including strap means to engage the lower trunk of a reclining patient, said traction applying means being located on one end of said table and adapted to apply traction to a patient who is secured to the table top surface with his legs draped over said roller carriage.

3,354,880

MEN'S UNDERGARMENT

Harry T. Coughlin, Dobbs Ferry, N.Y., and Joseph A. Canale, Shrewsbury, N.J., assignors to Cluett, Peabody & Co., Inc., Troy, N.Y., a corporation of New York
Filed Sept. 23, 1965, Ser. No. 489,649
1 Claim. (Cl. 128—159)

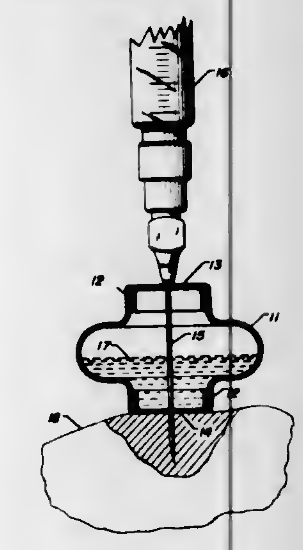
A brief as described comprising in combination: a back panel, a front panel sewed to said back panel along mating side seams, said panels having opposed cut-away portions; an elastic waistband joined to the top edges of said panels, said front panel having a free edge which extends between the cut-away portions and which is slightly concavely curved toward said waistband such that the curve is an arc of a circle, said free edge joined at its extremities at points which are equidistant from said waistband; a single ply center panel partially overlapping said front panel and extending from the waistband to the bottom-most edge of said back panel between the cut-away portions and sewn to the back panel along said edge, said center panel extending from said waistband in generally parallel seams along which it is sewn to said front panel, one side of said center panel being free along a portion of its length to cooperate with the free edge of said center panel, and binding pieces joining all of said panels to form frontward facing leg openings at said opposed cut-away portions; said center panel comprising two side-by-side pieces extending the full length of said panel, each of which is cut on a bias along a mating edge and being joined along said edge to form an elongated pouch portion; all of said panels being comprised of stabilized yarn.



3,354,881

HYPODERMIC NEEDLE PROTECTOR

Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products, Company, Des Plaines, Ill., a corporation of Delaware
Filed Nov. 3, 1964, Ser. No. 408,476
8 Claims. (Cl. 128—215)

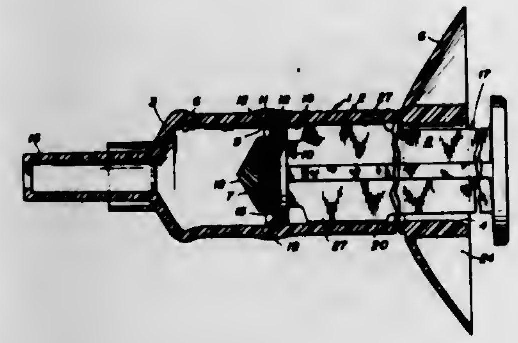


1. A hypodermic needle protector detachable from its associated syringe and needle comprising a flexible-walled tube having a normally extended configuration adapted to enclose at least the outlet tip portion of the hypodermic needle but capable of being resiliently axially compressed by hand to a deformed configuration wherein the ends of the tube are appreciably closer together; each end of the tube including a septum supporting shoulder; and a perforable flexible self-sealing septum closing each end of the tube and supported by its respective shoulder, one of said septa being pierced by said needle when the tube is normally extended and both of the septa being completely pierced by said needle when the tube is deformed.

3,354,882

HYPODERMIC SYRINGE

George Coanda, Glendale, Calif., assignor to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed Oct. 26, 1964, Ser. No. 406,248
2 Claims. (Cl. 128—218)



1. A hypodermic syringe comprising: a thin-walled thermoplastic barrel with a front wall having an inner frusto-conical surface sloping toward a central discharge opening; and a thermoplastic stopper sufficiently rigid to create a traveling sealing-bulge progressively along said thin-walled barrel as the stopper slides along the bore of said barrel, said stopper having a rear wall and a front wall respectively bounded by peripheral trailing and leading edges, said edges having disposed therebetween a convexly curved sealing surface tapering rearwardly substantially from said leading to said trailing edge, said stopper having a centrally located, forwardly tapered nose portion, said barrel having a deformable pocket with an internal surface that is permanently bulged outwardly regardless of the position of said stopper in said barrel bore, said pocket being immediately adjacent the inner frusto-conical barrel surface and substantially bounding the rearward margin thereof, the largest diametrical portion of said rearwardly tapered convex sealing surface of said stopper progressively bulging said deformable pocket until the stopper seats at the rear margin of the inner frusto-conical surface of said barrel, said deformable pocket having an inner surface configuration complementary to the outer periphery configuration of said stopper, said forwardly tapered nose portion being so conformed in relation to the said stopper leading edge so as to permit said leading edge to completely move through said pocket in sealed relation and ultimately seat at the rear margin of said frusto-conical barrel surface.

3,354,883

DISPOSABLE SYRINGE HAVING FRANGIBLE MEANS FOR MIXING PLURAL MEDICAMENTS

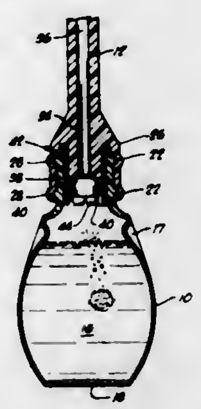
James E. Southerland, deceased, late of Tulsa, Okla., by Elizabeth Lee Southerland, executrix, 1121 S. Canton, Tulsa, Okla. 74112
Filed Mar. 8, 1965, Ser. No. 439,520
7 Claims. (Cl. 128—232)

1. A syringe for injecting medicaments into the human body comprising:

a bored nozzle having a discharge aperture at one end thereof;

a collapsible bulb having a neck portion detachably connected to said nozzle, said neck portion having an outer free end; and

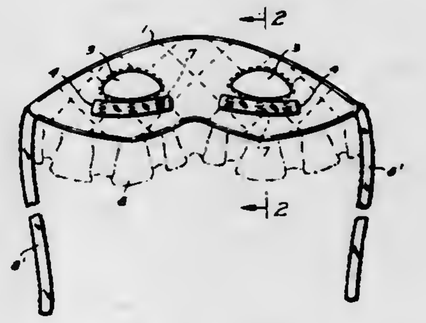
frangible means in said nozzle and defining a chamber in said nozzle for the containment of a medicament, said frangible means including a cap closing one side of said chamber and having flange means extending radially outwardly relative to the axis of the bore through said nozzle, said nozzle, while connected to the neck portion of said bulb, being axially movable relative to said bulb, from a first position, in which said frangible means is intact, to a second position in which said flange means cooperates with the outer end of the neck portion to effect rupturing of said cap to release said medicament into said bulb.



3,354,884

COSMETIC FACE MASK

Ann Rudo, 50 E. 72nd St., New York, N.Y. 10021
Filed Feb. 16, 1965, Ser. No. 433,012
6 Claims. (Cl. 128—260)



3. A cosmetic face mask, comprising, in combination, a mask member adapted to cover at least the upper portion of the face of a wearer and formed with eye openings, said mask member having an inner face directed towards the wearer; each including a liquid permeable fabric cover and core portion of absorbent material secured to and beneath said eye openings to engage the face of the wearer beneath the eyes; attaching means for removably attaching said pads to said inner face of said mask member; and means for attaching said mask member to the head of the wearer with said elongated absorbent pads pressing against the face of the wearer beneath the eyes.

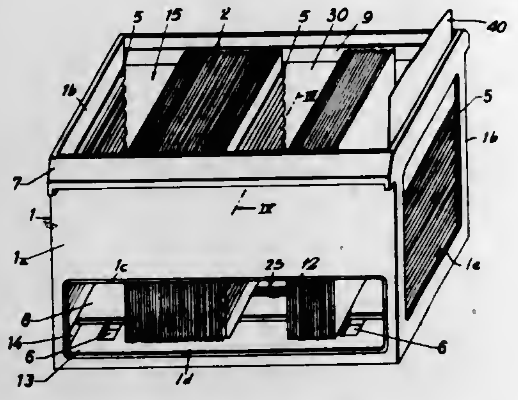
3,354,885

CARD SUPPORT

Wilhelm Ludwig, 79 Kirchheimer Strasse,
Nurtingen, Wurttemberg, Germany
Filed Nov. 10, 1964, Ser. No. 410,249
Claims priority, application Germany, Nov. 12, 1963,
L 46,313; Apr. 23, 1964, L 47,668
2 Claims. (Cl. 129—16.1)

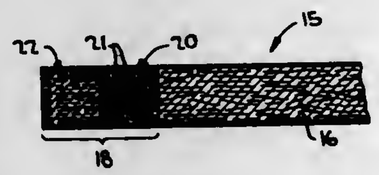
1. A card support, comprising a box-shaped housing including a first bottom wall having an upper side, and pairs of upstanding side and end walls of which the latter are each provided with a cut out, a frame fixedly received in said housing and including a pair of upstanding side panels and at least two upstanding end panels fixedly secured to said side panels and each being parallel with one of said end walls, one of said end panels being spaced from and defining a gap with the associated end wall, each of said end panels having equidistant parallel rows of perforations in registry with the cut out of the respective end wall and each thereof having an outer side provided with corrugations parallel with said rows of

perforations and defining waves whose crests are separated from each other by distances corresponding to distances between adjoining rows of perforations, said rows of perforations being respectively located in said waves and penetrating said crests thereof so that a selector needle to be inserted into the perforations is positively guided thereinto by the walls bounding the respective wave; a second bottom wall disposed in said housing beneath said end panels and having an underside facing the upper side of said first bottom wall, said second bottom wall being slidable between two positions relative to said first bottom wall and one of said bottom walls having projections extending beyond said side thereof and received in complementary recesses provided in the side of the other bottom wall when said second bottom wall is moved to one of said positions whereby, when moved to the other position, said second bottom wall is automatically lifted by said projections; and a selector sheet receivable in said gap and being provided with indicating means for indicating to an operator predetermined ones of said perforations into which said selector needle is to be inserted.



3,354,886
BONDED SILICA GEL PRODUCTS

Richard M. Berger and Reavis C. Sproull, Richmond, Va., assignors to American Filtrona Corporation, a corporation of New York
Filed Apr. 29, 1966, Ser. No. 546,315
The portion of the term of the patent subsequent to Nov. 16, 1982, has been disclaimed
11 Claims. (Cl. 131—10.9)



1. A stable, self-supporting, elongated rod consisting essentially of constituents selected from the group consisting of:

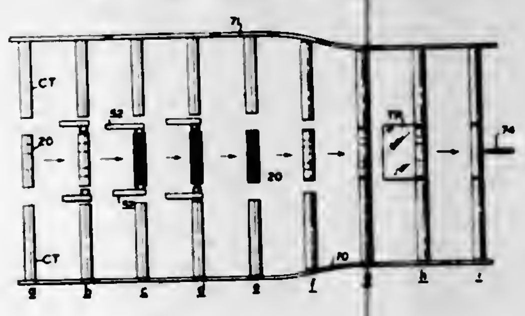
(a) from approximately 25 to approximately 95 percent by weight of silica gel particles, the individual particles having a maximum dimension which is a small fraction of the minimum dimension of said rods;
(b) from at least 5 to approximately 50 percent by weight of a thermoplastic resin, said thermoplastic resin being operative essentially alone to effect bonding bridges between juxtaposed constituents through heating and subsequent cooling; and
(c) an additive material having a maximum dimension which is a small fraction of the minimum dimension of said rods;

said rod further being characterized by:

(1) said silica gel particles serving as the major active component of said rod;
(2) said thermoplastic resin essentially alone serving as a binder between said constituents and defining a multiplicity of discrete bonding means predominantly individually smaller than said silica gel particles;
(3) said constituents cooperating through said bonding means to give structural continuity to said rod as a self-sustaining, substantially particulate stable body in the form of a continuous porous matrix;
(4) said constituents being comingled in any cross-section of said body and with said silica gel particles randomly arranged in said rod such that a multiplicity of said silica gel particles are present in substantially any cross-section of said body; and
(5) said body deriving its stability substantially only from said cooperation between said bonding means and said constituents.

3,354,887
APPARATUS FOR COMPACTING CIGARETTE FILTER TIP ASSEMBLIES CONTAINING GRANULAR MATERIAL

Floyd Vanmeda Hall, Durham, N.C., assignor to Liggett & Myers Tobacco Co., New York, N.Y., a corporation of New Jersey
Filed Jan. 4, 1965, Ser. No. 423,098
12 Claims. (Cl. 131—94)



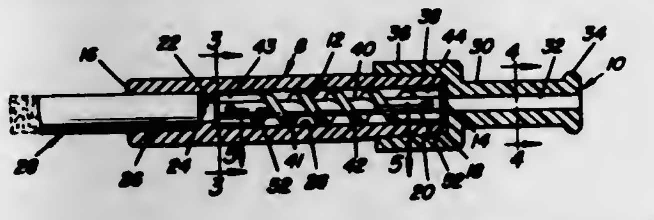
12. In combination with a cigarette filter tip attachment machine wherein cigarette filter tip assemblies are deposited successively into interposed relation between cigarette tobacco portions, an apparatus for compacting cigarette filter tip assemblies, said apparatus comprising at least one pair of movable pressure pads in facing relation between and with respect to which cigarette filter tip assemblies may be brought successively into axially aligned relation in the course of travel of said assemblies through said machine, and actuating means for moving said pressure pads toward and away from each other, said means being engaged with the drive system of said machine in such a way that said pressure pads are moved toward each other when a cigarette filter tip assembly is brought into axially aligned position between them to bear on the ends of and exert compacting force upon said assembly and are thereafter moved away from each other in the course of continued operation of said cigarette filter tip attachment machine and further travel of said cigarette filter tip assembly.

3,354,888
CIGARETTE HOLDER WITH SMOKE STREAM SPIRALLING CORE

Frank S. Parrigin, 162 St. Ann Drive, Lexington, Ky. 40502
Filed Dec. 10, 1965, Ser. No. 513,036
3 Claims. (Cl. 131—202)

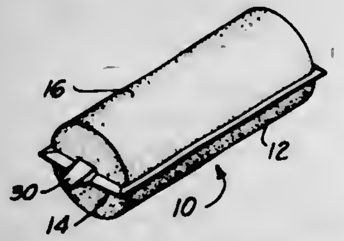
1. A cigarette holder comprising: a barrel embodying an axial bore having an internal annulus providing a socket for an end portion of a cigarette and also a mainstream smoke passage open at its downstream end, a reversible core fitted removably in said passage, said core embodying a solid axial shaft having an encompassing helical thread defining an open-ended mainstream smoke

spiralling groove, the respective end portions of said shaft being enlarged and having flat terminal end portions, each flat end portion having a transverse kerf extending thereacross from a first peripheral surface portion to a diametrically opposite second peripheral surface portion and communicating with a complemental angularly disposed lonigtudinal kerf formed in said second peripheral surface portion and defining a substantially L-shaped groove communicating with an adjacent coacting end of said smoke spiralling groove, said transverse kerf gradually increasing in depth from said first peripheral surface portion to said second peripheral surface portion, and a mouthpiece detachably mounted on the rearward end of said barrel.



3,354,889
HAIR CURLER WITH ONE-PIECE FLEXIBLE HAIR FASTENING FRAME

David G. Zeman, 2455 W. 190th St., Redondo Beach, Calif. 90278
Filed Nov. 27, 1964, Ser. No. 414,147
1 Claim. (Cl. 132—41)



A hair curler, said hair curler comprising:

a frame structure, said frame structure having side rails joined to first and second ends to define a substantially rectangular frame;

said frame structure further comprising a pin, said pin having a hinge end and a detent end, said frame structure lying in a plane, which plane passes substantially through the center of said side rails, said ends and said pin;

a tubular roll positioned upon said pin and between said side rails and said ends, the improvement comprising:

a hinge web integrally formed on said pin and on said first end so that said entire frame structure is integrally formed;

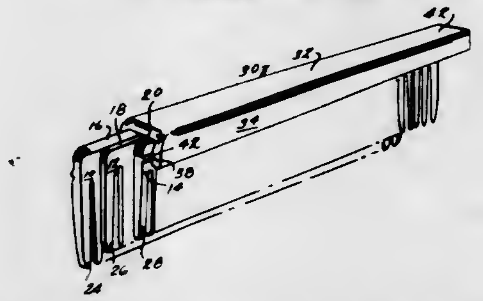
outer faces and interior walls on said ends and said side rails, said inner walls on said ends substantially facing each other and said inner walls on said side rails substantially facing each other, said inner walls and said outer faces lying at an acute angle with respect to the plane so that said frame can be injection molded;

a detent opening formed in said second end and a detent web formed on said detent end of said pin, said detent web entering said detent opening adjacent the interior wall of said second end facing said first end, said detent opening extending through said second end and substantially uniformly increasing in size so that it is larger on the side of said second end facing away from said first end so that said detent opening and at least a portion of said detent web can be formed by a mold plug pulled out of said second end and in a direction away from said first end;

said frame structure being made of flexible polymer composition material so that said pin can be deflected so that said detent web is out of said detent opening and said pin can be moved relative to said side walls by bending of said hinge web, said hinge web restraining said hinge end of said pin with respect to said first end of said frame structure.

3,354,890
MAGNETIC COMB ASSEMBLY FOR USE WITH A HAIR COMPOSITION HAVING MAGNETIZABLE PARTICLES

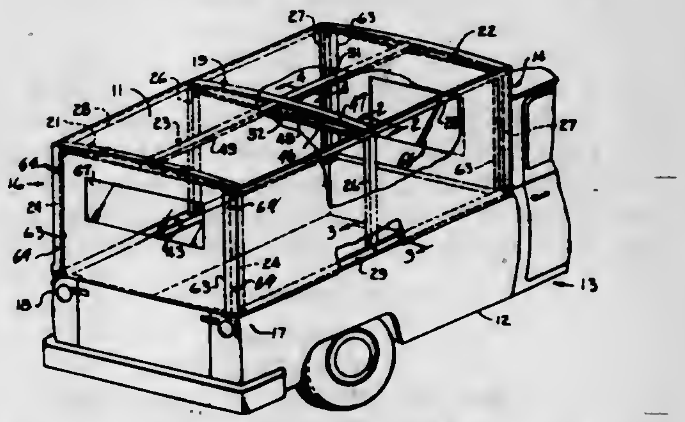
Curtis L. Collison, % General Aniline & Film Corp., P.O. Box 12, Linden, N.J. 07036
Filed June 26, 1964, Ser. No. 378,315
2 Claims. (Cl. 132—136)



1. A comb comprising (a) a holder having a back member and a pair of spaced parallel side bars, each of said side bars having a longitudinally extending groove and (b) a plurality of juxtaposed comb members comprising a forward and rearward comb member and at least one comb member intermediate said forward and rearward comb members, said forward and rearward comb members each having a longitudinally extending tongue complementary to said grooves whereby said forward, intermediate and rearward comb members are slidably and retainingly received in said holder, the teeth of one comb member being in staggered relationship with the teeth of the next adjacent comb member and the teeth of each comb member containing a magnetizable material, the effective tooth length of each of said comb members being varied so that when received in said holder, the rearward comb member extends outwardly from said holder a distance greater than said intermediate comb member which in turn, extends outwardly from said holder a distance greater than said forward comb member.

3,354,891
PORTABLE CAMPER OF FABRIC ADAPTED FOR MOUNTING TO A BOX OF A PICKUP TRUCK

Frank Edward Brown, 4519 Walnut St., Oakland, Calif. 94619
Filed Sept. 8, 1965, Ser. No. 485,693
7 Claims. (Cl. 135—1)



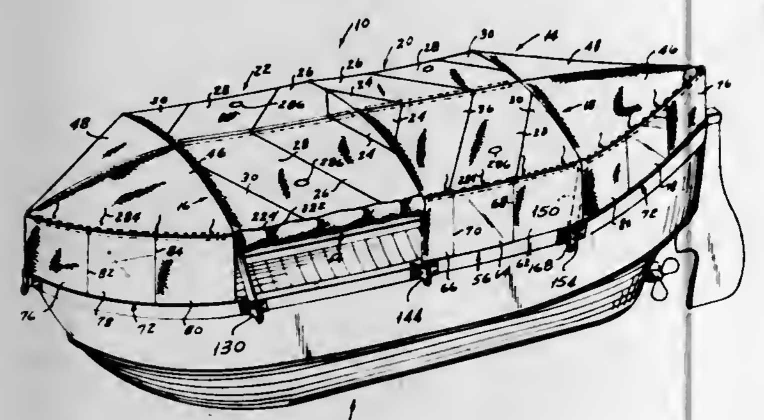
1. A portable camper fastened to an open topped box of a pickup truck to provide a sheltered enclosure, the combination comprising with said box a framework of generally U-shaped cross section comprised of separable parts detachably mounted to said box including first and

second pairs of spaced apart struts detachably vertically mounted respectively to first and second opposite sides of said box in a rectangular configuration, first and second crossbeams and first and second horizontal support beams each one of which is horizontally detachably mounted individually between one pair of adjacent struts at the terminal ends thereof distal said box, a fabric covering having five rectangular segments integrally joined in a cross-like configuration having a center segment and a segment extending from each side thereof, said covering detachably mounted to said framework with its rectangular center segment disposed to cover the area defined by the crossbeams and horizontal support beams and said rectangular segments extending therefrom arranged to cover the areas defined between said struts, closure means joining adjacent edges of rectangular segments extending from said center segment, a plurality of eyelets fastened to the rectangular segments of said covering extending from said center segment thereof, a spring associated with each eyelet, each spring mounted under tension between said eyelet associated therewith and said box, at least first and second fabric extensions secured respectively to the terminal ends of first and second opposite rectangular segments of said covering to define respectively first and second sleeves which extend the length of said rectangular segments, and third and fourth horizontal support beams inserted respectively into said first and second sleeves, said third and fourth horizontal support beams being detachably secured to said framework.

3,354,892
BOAT CANOPY

Leonard P. Frieder, Clarks Green, Pa., assignor to Gentex Corporation, New York, N.Y., a corporation of Delaware

Filed July 15, 1965, Ser. No. 472,293
23 Claims. (Cl. 135—6)

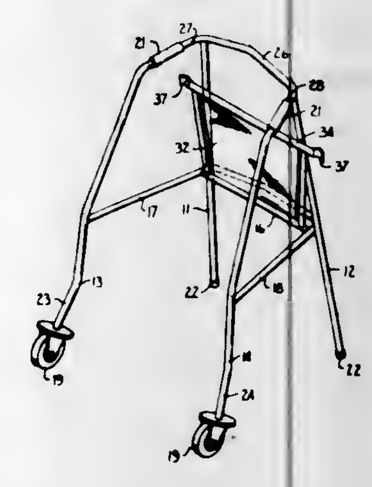


1. A canopy and frame assembly for a boat having a gunwale including in combination a rigid bow arch, means including generally vertically extending spaced legs stationarily secured to said gunwale for mounting said bow arch adjacent the bow of the boat, a rigid stern arch, means including generally vertically extending spaced legs stationarily secured to said gunwale for mounting said stern arch adjacent the stern of said boat, a cover and means including adjustable tensioning members carried by said cover and engaging said arches for stretching said cover across and between said arches.

3,354,893
WALKER

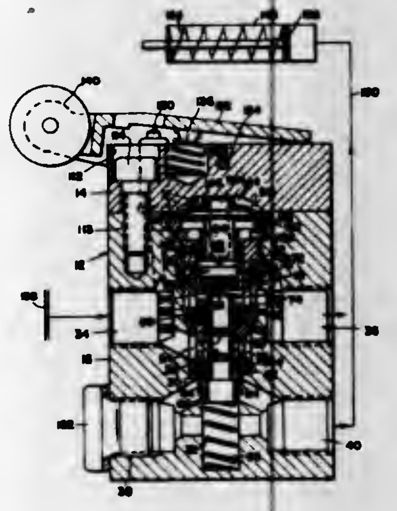
Egon Fritz Schmerl, 333 Scenic Ave.,
Piedmont, Calif. 94611
Filed Oct. 12, 1966, Ser. No. 586,178
2 Claims. (Cl. 135—45)

1. A mobile walker comprising a pair of laterally spaced and generally vertically disposed front legs having fixed ground engaging bottom end portions, a pair of laterally spaced rear legs, ground engaging wheel means mounted on the bottom end portions of said rear legs, a brace member extending transversely of and connecting said front legs and extending between and connecting one leg of each pair to the respective leg of the other pair and defining a generally U-shaped rearwardly opening frame, said rear legs merging into an upper forwardly extending U-joint, said U-joint diverging rearwardly and inclined downwardly from front to rear, hand gripping means disposed along each side of said U-joint adjacent the forward portion thereof, and said gripping means being spaced horizontally rearwardly relative to said ground engaging portions of said front legs a distance substantially less than the relative horizontal distance between said gripping means and said wheel means.



3,354,894
VALVE MECHANISM

Kurt Stoll, Esslingen (Neckar), Germany, assignor to Kurt Stoll KG. Maschinen u Apparatebau, Neidlingen, Teck, Germany
Filed Dec. 7, 1965, Ser. No. 512,093
12 Claims. (Cl. 137—1)

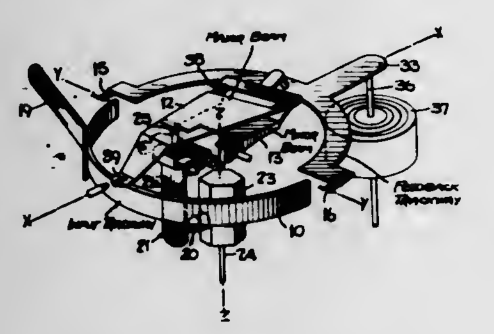


1. A valve mechanism comprising
a valve body,
at least one outlet port in said valve body,
a first and a second port in said valve body adapted to be connected to a fluid under pressure,
valve means in said valve body movable between a first and a second position to control the flow of a fluid through said valve mechanism,
said valve means providing a passage between said first port and said outlet port and preventing the flow of fluid between said second port and said outlet port when in the first position, and providing a passage between said second port and said outlet port and preventing the flow of fluid between said first port and said outlet port when in the second position,
biasing means in said valve body for biasing said valve means to said first position,
valve operating means for moving said valve to the second position, and means selectively actuatable to communicate fluid under pressure from said first and second ports to said valve operating means to operate the same.

12. In a method for controlling the flow of fluid under pressure, the steps comprising
connecting a port with the fluid under pressure,
providing for a communication of the fluid under pressure from the port to the outlet,
alternately closing and opening the communication of the fluid under pressure from the port to the outlet,
utilizing the fluid under pressure at the port to alternately open and close the communication of fluid from the port to the outlet, communicating the fluid under pressure from the outlet to exhaust the fluid therefrom to another port after the communication from the first mentioned port to the outlet is closed and closing the communication from the outlet to the other port before opening the communication from the first mentioned port to the outlet,
disconnecting the first mentioned port from the fluid under pressure and connecting the other port with the fluid under pressure, and utilizing the fluid under pressure at the other port to alternately open and close the communication from the other port to the outlet,
and reversely opening and closing respectively a communication of the fluid under pressure from the outlet to exhaust the same to the first mentioned port after the communication from the other port to the outlet has completely closed.

3,354,895
PNEUMATIC CONTROLLER

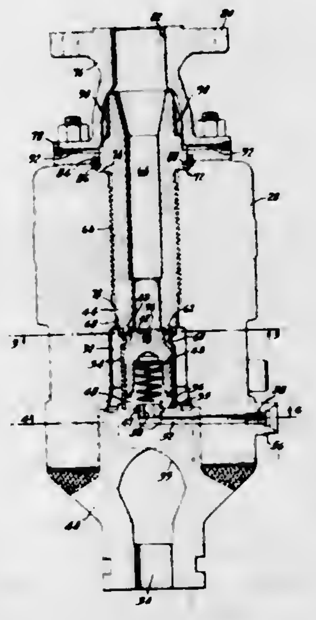
Joseph H. Wiseman, Jr., Holland, Pa., assignor to Fischer & Porter Co., Warminster, Pa., a corporation of Pennsylvania
Filed Dec. 14, 1965, Ser. No. 513,782
9 Claims. (Cl. 137—86)



1. A pneumatic controller for adjusting the position of a flapper relative to a nozzle to convert changes in motion to changes in fluid pressure, said controller comprising:
(A) a semicircular input trackway rotatable about a first axis passing through the center thereof,
(B) means to apply an error signal to said input trackway to cause a rotation thereof about said first axis as a function of said signal,
(C) a semicircular feedback trackway pivoted at its end for movement with reference to a second axis perpendicular to said first axis,
(D) means to apply a feedback signal to said feedback trackway to effect movement thereof with respect to said second axis, and
(E) an intermediate beam assembly mounted for rotation about a third axis mutually perpendicular to the first and second axes, said assembly including:
  (a) a minor beam pivoted at one end, the other end of which rides on said feedback trackway whereby said minor beam is raised or lowered in accordance with the movement of said feedback trackway,
  (b) a major beam one end of which is pivoted at a point on said minor beam, the other end of which rides on said input trackway whereby said major beam is raised or lowered on one end in accordance with movement of said minor beam and in the other end in accordance with the movement of said input trackway, and
  (c) actuator means on said major beam in operative engagement with said flapper to cause it to shift relative to said nozzle in accordance with the movement of said major beam.

3,354,896
SAFETY VALVE

Homer E. Ferrill, Alexandria, La., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Feb. 24, 1965, Ser. No. 434,910
5 Claims. (Cl. 137—219)

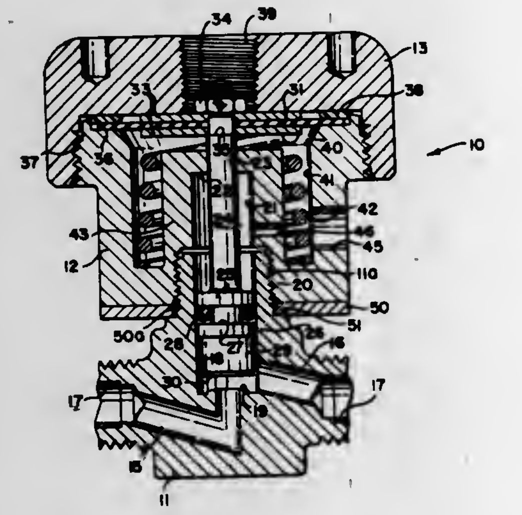


1. In a pilot operated safety valve, an elongated valve body having an axial bore, said bore at one end providing an inlet passage to the valve, a bushing removably engaged within the other end of said bore and forming an outlet passage for the valve in coaxial alignment with said inlet passage, said bushing having means at its inner end providing a valve seat facing inwardly of said body and disposed coaxially of said bore, means providing a wall extending generally transverse to the alignment of said passages and spaced between said seat and said inlet passage, means supporting said wall on said body including a plurality of webs extending radially of said bore, a sleeve disposed coaxially of said seat between said inner end of said bushing and said wall, a valve disc slidably engaged within said sleeve and engaged at one end with said seat, the other end of said disc being spaced spaced from said wall to provide a control chamber, means providing a fluid passage communicating at one end with said control chamber and extending through one of said webs and outwardly through said valve body, and means providing openings in said sleeve

in continuous restrictive communication between said inlet passage and said control chamber when said disc is in engagement with said seat.

3,354,897
DIAPHRAGM VALVE WITH VENTING APERTURES IN BODY

Ulrich H. Koch, Pinole, and Gary A. Soderlund, Richmond, Calif., assignors to Whitey Research Tool Co., Emeryville, Calif., a corporation of California
Filed Oct. 12, 1964, Ser. No. 403,144
5 Claims. (Cl. 137—312)

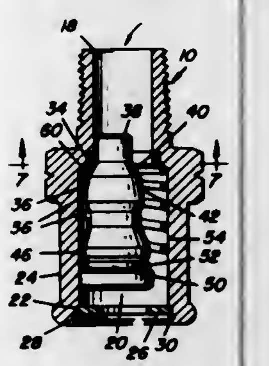


1. A valve comprising a body having inlet and outlet ports formed therein;

- a generally cylindrical valve chamber in said body interconnecting said ports and including a sealing seat;
- a bonnet secured to said body;
- a central bore in said bonnet defined by a cylindrical side wall and an end wall;
- the bore in said bonnet being generally coaxial with and opening toward the valve chamber in the body;
- a valving member comprising a valve head slidably received in said valve chamber in both the open and closed positions of said valve, and a valve stem extending through the central bore in said bonnet and slidably received through a bore provided in said end wall with the free end of the valve stem extending therebeyond;
- a flexible diaphragm member secured to the valve stem adjacent the free end thereof and being protected by said end wall from any escaping process fluid;
- a cap member enclosing said diaphragm and secured to said bonnet with the peripheral portions of said diaphragm being clamped between the cap member and said bonnet;
- an annular chamber in said bonnet concentric with said central bore and separated therefrom by the said side wall;
- said annular chamber opening in the direction opposite the direction in which the central bore in the bonnet opens;
- spring means in said annular chamber with one end of said spring means operatively interconnected with said diaphragm thereby biasing said diaphragm and said stem in one direction;
- fluid passage means in said cap member whereby fluid pressure may be introduced against said diaphragm thereby to overcome the bias of said spring means;
- a first venting aperture through the side wall separating said central bore from said annular chamber and disposed between the valve head and the end wall of the bore in the bonnet; and
- a second aperture in said bonnet venting said annular chamber to the atmosphere.

3,354,898
CRANKCASE VENTILATING VALVE HAVING ROTATABLE METERING PLUNGER

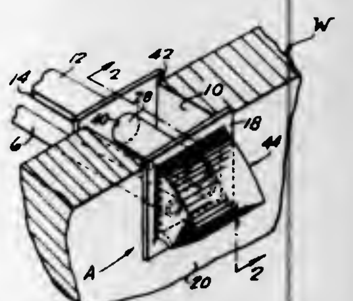
William I. Barnes, Birmingham, Mich., assignor to Standard Screw Company, a corporation of New Jersey
Filed May 2, 1966, Ser. No. 546,995
7 Claims. (Cl. 137—331)



1. A flow metering valve adapted for use in an automotive crankcase ventilating system comprising a generally elongated valve housing having an inlet end and an outlet end, said housing having a bore provided with a restricted portion intermediate its ends constituting a metering orifice, a generally elongated metering plunger in the bore of said housing, one end portion of said plunger extending into said orifice, a sealing member disposed adjacent the inlet end of said housing, said plunger and said sealing member being magnetically attracted to prevent flow through said valve until a predetermined flow pressure is attained, and support means movably mounted in said housing, engaging said restricted portion of said housing, and yieldably supporting said plunger after said predetermined flow pressure has been attained to permit axial movement of said plunger relative to said orifice in response to changes in pressure in said valve housing, said support means loosely engaging said plunger to permit relative movement between said support means and said plunger.

3,354,899
UNITARY MULTIPLE OFF-WALL DRAINS

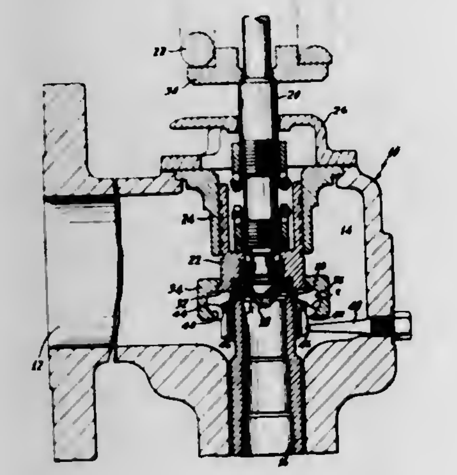
William C. Buchanan, 1023 Cerro Alto, San Antonio, Tex. 78213
Filed May 14, 1965, Ser. No. 455,931
4 Claims. (Cl. 137—360)



1. A device of the character described, comprising a vertical outer plate having an outer side, a downwardly and outwardly-angled spout fixed to said outer side, said spout having a relatively long outwardly and downwardly-curved top wall, a relatively short outwardly and downwardly-angled bottom wall, and terminal sidewalls, said walls defining at their bottom edges a horizontally-elongated discharge opening located in a plane inclined upwardly and outwardly from said outer plate, said outer plate being formed with a plurality of openings, said openings opening into the upper part of the spout, respective horizontal tubes having outer ends secured to the outer plate and severally communicating with said openings, a vertical inner plate formed with openings passing said tubes, said tubes having threaded inner ends, and respective pipe couplings threaded on said inner ends and bearing against the inner surface of the inner plate, said couplings reaching inwardly beyond the inner ends of the tubes and being adapted to be severally connected to drainpipes.

3,354,900
SAFETY VALVE HAVING VARIABLE AREA SECONDARY ORIFICE

Homer E. Ferrill, Alexandria, La., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Feb. 24, 1965, Ser. No. 434,766
12 Claims. (Cl. 137—477)

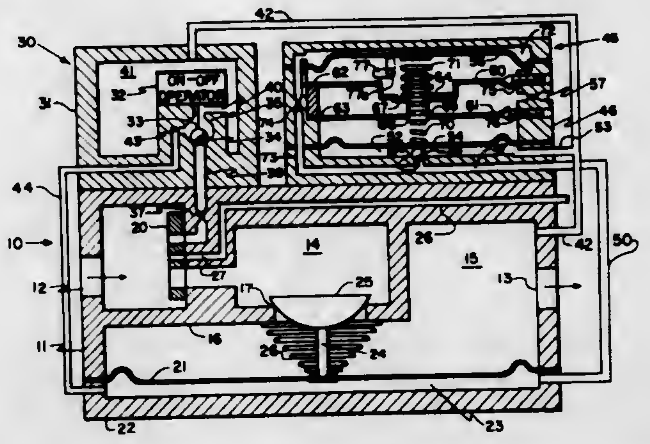


1. In a safety valve, a valve body providing a fluid path between an inlet and an outlet, a valve seat fixed in said path relative to said body, a movable valve disc engaged with said seat and movable away from said seat in response to urging of fluid pressure above a predetermined amount at said inlet, means providing a primary orifice in said path on the inlet side of said disc, first means in said path on the outlet side of said disc responsive to the presence of fluid pressure flowing past said disc when removed from said seat to aid disc movement away from said seat, said first means being movable with said disc and cooperating with second means fixed relative to said valve body defining a huddle chamber having an outlet orifice in fluid flow communication with said primary orifice when said disc is spaced from said seat, said first and second means including means providing a decrease in the area of said outlet orifice in response to movement of said valve disc over at least a portion of its travel away from said seat within the extent of cooperation between said first and second means.

3,354,901
CONTROL APPARATUS

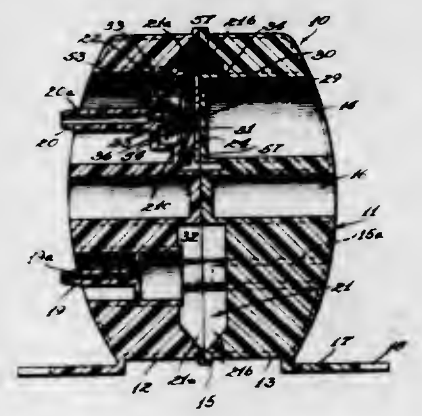
Paul Dietiker, Redondo Beach, Keith T. Krueger, Garden Grove, and Hugh M. Morgan, Los Angeles, Calif., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 18, 1965, Ser. No. 456,705
22 Claims. (Cl. 137—495)

22. A pressure regulator valve comprising: a valve body having an inlet and an outlet; a valve closure member in said body and operable to control fluid flow therethrough; operating means operably connected to said closure member and including means responsive to pressure at said outlet to position said closure member to maintain a uniform pressure at said outlet, said operating means including loading means opposing said outlet pressure and thereby determining the outlet pressure at which the valve regulates; means operable by the fluid pressure to additionally load said operating means to cause the valve to regulate at a predetermined higher pressure; means connecting said additional loading means to an area supplied with fluid only when flow through the valve is initiated; and time delay means associated with said additional loading means and rendering said additional loading means operable only after a predetermined time after initiation of flow through the valve.



3,354,902
PLASTIC VACUUM STORAGE TANK

Frank E. Obermaier, Park Ridge, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed May 11, 1964, Ser. No. 366,282
1 Claim. (Cl. 137—496)



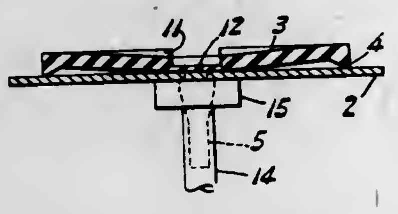
A valve assembly comprising,

- a body having a flow path therethrough,
- an abutment wall in said flow path,
- a diaphragm supported at its periphery and disposed in said flow path, and
- a coil spring engaging and biasing said diaphragm toward said abutment wall,
  - said diaphragm comprising an outer annular bead, an enlarged central portion and a web portion interconnecting said bead and said central portion,
  - said central portion being axially forwardly offset in the direction of said abutment wall, said central portion further comprising a central axial aperture, a converging side wall terminating in a radially extending wall member, and a recess formed in said radially extending wall member to provide a raised annular sealing bead encircling said aperture substantially radially outwardly thereof, said web portion being axially inclined from said annular bead toward said central portion and comprising flat parallel front and rear walls, said rear wall comprising a portion surrounding said aperture and forming a cylindrically shaped axially extending collar for receiving one end of said coil spring to center said spring against said diaphragm.

3,354,903

DISC VALVE

John T. Caruso, Kenmore, N.Y., assignor, by mesne assignments, to Scott Aviation Corporation, Lancaster, N.Y., a corporation of New York
Filed Sept. 11, 1963, Ser. No. 308,203
5 Claims. (Cl. 137—512.15)

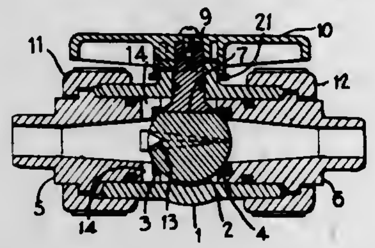


1. A flapper valve comprising, in combination with an annular valve seat, a circular valve body of resiliently flexible material having a peripheral sealing lip, means mounting said valve body on one side of said seat with said lip urged into sealing engagement with said seat, a diametral groove extending completely across said valve body in the side thereof opposite said seat, said groove providing a body portion of substantially uniform reduced thickness extending completely across said valve body, and a supporting web across said seat in back-up relation to said reduced body portion, said valve body mounting means comprising anchor lug means extending from said reduced thickness body portion on the web side thereof, said lug means engaging said web and orienting said body portion with respect thereto, said anchor lug means defining hinge axes in said reduced thickness body portion and coextensive therewith about which the opposite halves of said body fold relatively easily upon opening movement of said valve in response to flow in one direction, and said supporting web being substantially as wide as said groove and substantially coextensive therewith for supporting said reduced thickness body portion against reverse flow.

3,354,904

METERING FAUCET

Carl Federle, Neuhausen, and Erich Guldener, Uhwiesen, Switzerland, assignors to Georg Fischer Aktiengesellschaft, Schaffhausen, Switzerland
Filed Oct. 29, 1965, Ser. No. 505,711
Claims priority, application Switzerland, Nov. 4, 1964, 14,249/64
4 Claims. (Cl. 137—556.6)

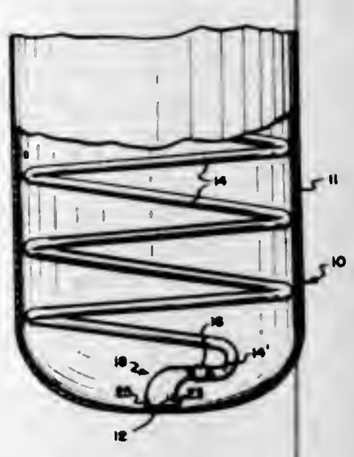


1. A metering faucet which includes: a tubular housing, inlet means arranged in one end portion of said housing, outlet means arranged in the other end portion of said housing, at least one of said inlet and outlet means being in the form of an insert member adjustably secured to said housing, first and second coaxial ring means respectively arranged in the inner ends of said inlet and outlet means in spaced parallel relationship to each other while facing each other, a rotatable cock loosely disposed in said housing and provided with a spherical surface and interposed between and engaged by and centered by said first and second ring means, and first and second ring means forming sealing ring means in sealing engagement with said spherical surface, one only of said inlet and outlet means being provided with bypass channel means of substantial area bypassing the respective ring means in said one of said inlet and outlet means and providing a channel through which at least part of the liquid passing through the valve flows, said spherical surface having an area extending circumferentially thereof in about the plane of the axis of said first and second ring means and provided with a groove extending into the surface and around the axis of rotation of said cock and increasing in cross-section from a desired minimum cross-section at one end along the extension of said passage means to a desired maximum cross-section at the other end, the ends of said groove being spaced apart around the ungrooved portion of the cock a distance at least as great as the circumferential extent of the cock exposed inside one of said ring means, and means for rotating said cock in said housing.

3,354,905

FLUID DISTRIBUTOR

John D. Lewis, Berkeley Heights, N.J., and Morgan C. Sze, Garden City, and Harold B. Kohn, Yonkers, N.Y., assignors to Vehoc Corporation, a corporation of Delaware
Filed Mar. 31, 1965, Ser. No. 444,302
1 Claim. (Cl. 137—590)



In means for conveying chilled pressurized fluid into and out of a bottle wherein a conduit extends downwardly into the bottle and opens adjacent the bottom thereof, a fluid distributor at the open end of the conduit comprising:

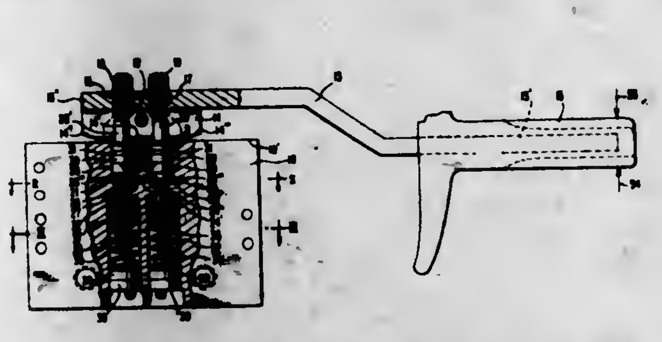
(a) a neck portion attached to and communicating with the open end of the conduit,
(b) a mouth providing the only communication with the neck portion and facing downwardly toward the bottom of the bottle, and
(c) lugs extending downwardly from the periphery of the mouth and resting against the bottom of the bottle to define apertures between the mouth and the bottom of the bottle of greater total flow capacity than the open end of the conduit.

3,354,906

CONTROL MECHANISM

Ernst J. H. Fiala, Berlin, Rudolf Andres Sindelfingen, and Willi Jurowski, Fellbach, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürken, Germany
Filed Sept. 17, 1964, Ser. No. 397,177
Claims priority, application Germany, Sept. 20, 1963, D 42,522
15 Claims. (Cl. 137—596.2)

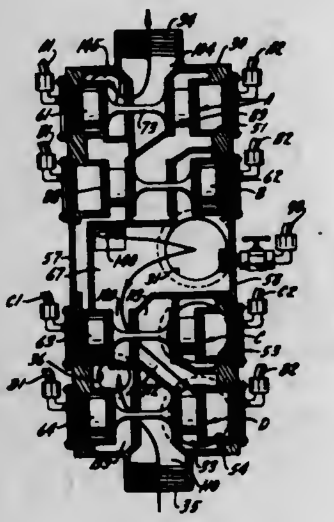
1. A fluid valve, comprising: a housing having a first fluid passage and a second fluid passage; separate first and second valve means for normally closing each of said passages, respectively, separate first and second shifting means for each of said passages, respectively, mounted for movement toward and away from the corresponding first and second valve means for opening the corresponding valve means by movement in one direction to a first position; separate additional third and fourth valve means, each drivingly connected with a corresponding one of said first and second shifting means, respectively, for closing the corresponding passage only after movement of the corresponding shifting means in said one direction a substantial distance past said first position to said second position; first actuator means for selectively and alternately moving each of said shifting means to said first position; and second actuator means for moving said additional third and fourth valve means into their closed position and said shifting means into their second position, and for simultaneously holding both of said additional third and fourth valve means in their closed position and said shifting means in their second position.



3,354,907

WATER CONDITIONING SYSTEM

Benjamin H. Kryzer, St. Paul, and Thomas J. Schoenecker, North St. Paul, Minn., and Kenneth J. Burkhardt, Oceanside, N.Y., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed June 3, 1963, Ser. No. 284,936
6 Claims. (Cl. 137—599.1)

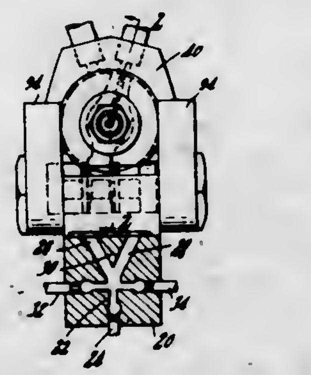


1. A valve arrangement for controlling the flow of water and recharging fluid to and from a water softener tank during service and regeneration, comprising; a valve body in fluid communication with a water softener tank, four valve bores within said valve body, a valve core slidably mounted in each of said bores and defining valves A, B, C, and D, each of said valves being a two-position valve, a raw water inlet orifice to said valve body, a soft water outlet orifice from said valve body, a raw water bypass outlet orifice from said valve body, soft water being directed to service through said raw water bypass outlet during normal service softening and raw water being directed thereto during regeneration when said bypass outlet is unplugged, while water is directed to service only during service softening when said raw water bypass outlet is plugged.

3,354,908

PRESSURE FLUID CONTROL VALVE

George Napoleon Levesque, Warwick, R.I., assignor to Brown & Sharpe Manufacturing Company, North Kingstown, R.I., a corporation of Rhode Island
Filed Sept. 29, 1965, Ser. No. 491,306
8 Claims. (Cl. 137—610)



1. A power operated valve comprising, a valve housing having a cylindrically walled valve aperture with circumferentially spaced ports opening through said walls into one side of said aperture, an axle disposed within said aperture having formed therein a pressure fluid inlet conduit, a rotatively shiftable valve body on said axle having a nozzle outlet portion thereof fitted to said wall including a radially disposed nozzle passageway connected with said axle inlet conduit and shiftable into alignment alternatively with each of said ports, bearing supports disposed across said aperture providing bearings for said axle along an axis within said aperture at opposite sides of said valve body constructed and supported so that deformation of said bearing supports along said axis within the elastic limit of the material produces a corresponding tilting deformation of the bearing support portions of the bearing axis, said bearing supports being oriented so that a relative deformation of said bearing elements along said axis produces tilting movement of both bearing axes to bow said axle toward the side wall of said aperture having said ports, and adjusting means for effecting a said relative axial deformation of said bearing elements and thereby for adjusting the clearance of said nozzle extension of said valve body relative to said aperture wall.

3,354,909

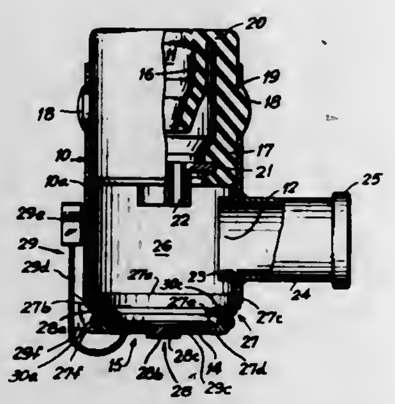
VALVE STRUCTURE

Harald Anton Ake Wallgren, Alvsjo, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Feb. 10, 1965, Ser. No. 431,498
Claims priority, application Sweden, Feb. 13, 1964, 1,757/64
2 Claims. (Cl. 137—612.1)

1. Valve structure of the class described for controlling flow of liquid from a source of supply under pressure to first and second places having, in combination,

(a) a housing having an inlet for liquid adapted to be connected to the source of supply under pressure, said housing defining a space having a first outlet through which liquid supplied to the inlet is adapted to flow from the space to the first place and a second outlet through which liquid supplied to the inlet is adapted to flow from the space to the second place,
(b) the housing comprising a hollow cylindrical member in the form of a sleeve having the inlet at one end thereof and the second outlet at the opposite end thereof, said cylindrical member having an opening between the inlet and the second outlet which defines the first outlet,

(c) the hollow cylindrical member comprising a straight wall section having an extreme end terminating at the opposite end thereof at the second outlet,
(d) a separate ring-shaped element which is L-shaped in section and has an opening therein, said element including a first flange of annular form at the periphery thereof and a second flange which extends radially inward from said first flange,
(e) means for securing the first flange of said ring-shaped element to the extreme outer end of the straight wall section of said hollow cylindrical member,
(f) the second flange of said ring-shaped element defining an end wall of said housing with the opening therein functioning as the second outlet,
(g) a valve member,
(h) said second flange having outer and inner faces, means comprising said inner face functioning as a seat for said valve member when the latter is in its closed position,
(i) means comprising first and second arms, said first arm including said valve member,
(j) means for mounting said valve member within said space for pivotal movement to and from its closed position at the inner face of said second flange,

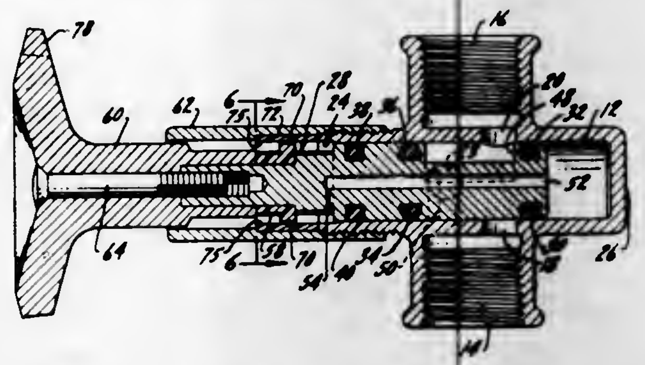


(k) said valve member mounting means comprising a fixture about which said first and second arms are angularly movable, said fixture including a first part and said ring-shaped element including a second part at its exterior formed to receive and hold said first part when said first part is moved sideways with respect to said second part,
(l) said second arm being disposed at the exterior of said housing and functioning as a lever for manually moving said valve member on said first arm to and from its closed position, and
(m) said cylindrical member providing a path for liquid to enable liquid passing from the inlet to be divided and flow through both the first and second outlets when said valve member is moved toward its open position from its closed position at the inner face of said second flange, and to enable said valve member to be subjected to the pressure of the liquid in said space when it is moved to its closed position at the inner face of said second flange and all of the liquid flows from said space through said first outlet.

3,354,910
MIXING VALVE

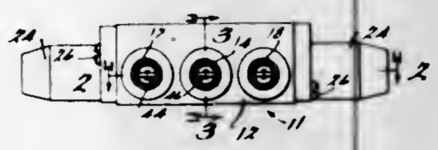
**Alfred M. Moen, 25 Lakeview Drive,
Grafton, Ohio 44044
Filed May 13, 1965, Ser. No. 455,380
22 Claims. (Cl. 137—625.17)**

1. In a valve for mixing hot and cold water, a housing having a central chamber, hot and cold water inlets in said housing in communication with said chamber, a pair of discharge openings in said housing in communication with said chamber, said discharge openings being circumferentially spaced one from another and both being axially spaced from said inlets, a reciprocal and rotatable stem positioned in said chamber, sealing means effective between said stem and said housing, said stem having a notched area of a size and shape to permit one or both of said inlets to be placed in communication with one of said discharge openings, means limiting rotation of said stem through an arc such that said notch can only be placed in communication with one of said discharge openings at a time, and means for selecting said one discharge opening from said pair of discharge openings.



3,354,911
SEAL RETAINER AND SPACER

**Don R. Fall, Troy, Mich., assignor to Ross Operating Valve Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 14, 1965, Ser. No. 496,046
3 Claims. (Cl. 137—625.69)**



1. In a spool valve assembly, a body having a bore, a spool having spaced lands within said bore, axially spaced ports in said body, an annular seal in said bore between said ports, and a spacer in said bore opposite at least one of said ports, said spacer having a pair of end rings, one of which is engageable with said seal and axially extending bars between said end rings equidistantly angularly spaced around said spacer, one of bars being slightly radially enlarged with respect to the others with the length of the radial enlargement being about equal to the port diameter whereby the radial enlargement will lock into position within its corresponding port when the spacer is inserted in the bore with said enlarged bar aligned with said port.

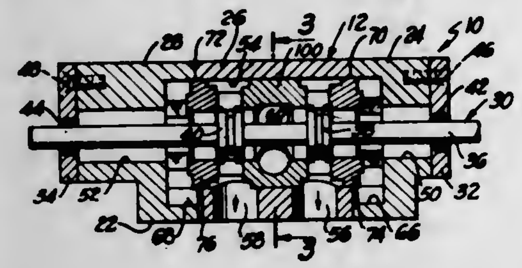
3,354,912
SECTIONAL HYDRAULIC VALVE STRUCTURE

**Carroll G. Gordon, 3 William Court, Menlo Park, Calif. 94025, and William F. Stoesser, 3366 Fayette Drive, Mountain View, Calif. 94040
Filed Jan. 11, 1965, Ser. No. 424,612
4 Claims. (Cl. 137—625.69)**

1. A hydraulic valve structure, said hydraulic valve structure comprising a valve body and a valve spool;

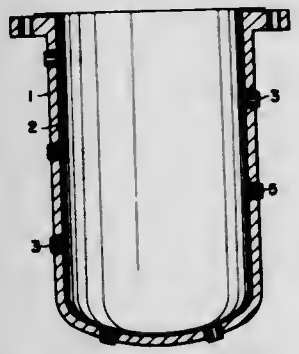
said valve body being formed of first, second and third body sections, said body sections having an axis therethrough, a cylindrical bore formed in said first, second and third body sections, said cylindrical bore terminating in the first and second faces in said first and third body sections and said cylindrical bore extending all the way through said second body section, said cylindrical bore defining adjacent cylindrical surfaces in said first and second and said second and third body sections, first, second and third sleeves positioned within said bore, said first, second and third sleeves each having a cylindrical outer surface formed about said axis and engaging with the interior surfaces of said bore, said first sleeve having its outer surface engaging in said bore at said adjacent cylindrical surfaces in said first and second body sections and said third sleeve having its outer surface engaging within said bore at said adjacent cylindrical surfaces in said second and third body sections so that said body sections are maintained by contact with adjacent surfaces with the axes of said bores coaxial, said first sleeve being in axial engagement with said first face in said first body member and in axial engagement with said second sleeve, said second sleeve also being in axial engagement with said third sleeve, said third sleeve also being in axial engagement with said second face in said third body section so that said first, second and third sleeves are axially restrained, means securing said body sections together, a valve bore through said first, second and third sleeves and positioned with the axes of said valve bore coaxial with said axis;

said valve spool being positioned within said valve bore, said valve spool having lands thereon so as to regulate flow of fluid through said valve bore.



3,354,913
HIGH ANTICORROSION METAL LINING STRUCTURE

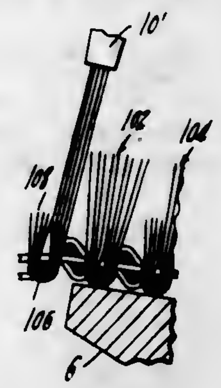
**Asahiko Goto, Nada-ku, Kobe, Japan, assignor to Kobe Steel Works, Ltd., Fukiai-ku, Kobe, Japan
Filed Aug. 9, 1963, Ser. No. 301,111
Claims priority, application Japan, Aug. 15, 1962, 37/35,426/62
10 Claims. (138—147)**



1. A metal structure lined with a fluid tight, dissimilar metal liner which cannot be welded thereto, a plurality of sleeve-like plugs of a metal which can be welded to said dissimilar metal mechanically secured in plug holes in the metal structure and contacting the dissimilar metal liner, the plugs being weldingly attached to the metal liner by welds in the interior of the sleeve-like plugs, whereby the liner is securely mounted against the surface of the metal structure without using holes in the liner.

3,354,914
AXMINSTER PILE FABRIC AND METHOD FOR MAKING THE SAME

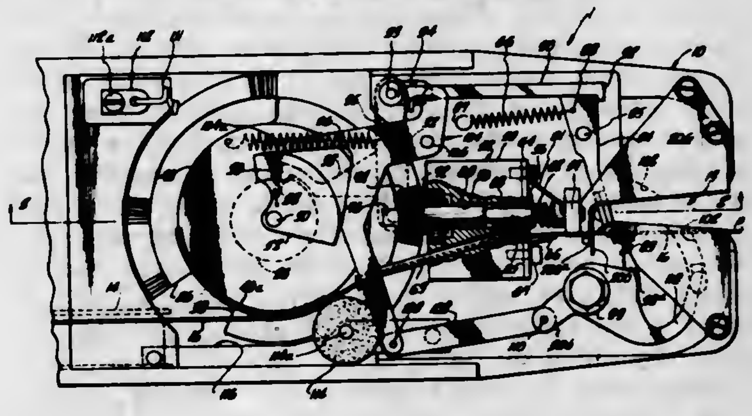
**Raymond J. Carrigan, Thompsonville, and Wayne T. Harrison, Enfield, Conn., assignors to Bigelow-Sanford, Inc., Thompsonville, Conn., a corporation of Delaware
Filed Jan. 6, 1966, Ser. No. 519,097
6 Claims. (Cl. 139—399)**



1. The method of weaving an Axminster pile fabric floor covering having certain weftwise rows of pile tufts in the form of J-tufts and other weftwise rows of pile tufts in the form of U-tufts which comprises, in forming a weftwise row of pile tufts each having two legs of different lengths upstanding at opposite sides of a weft, the steps of forming a shed of binder warp threads, wiping the free ends of a weftwise row of pile yarns between said threads into said shed, partially withdrawing the pile yarns, inserting a weft into said shed, turning the free ends of the pile yarns, while the yarns are so withdrawn, about said weft to form the shorter one of said legs, and severing said pile yarns at points spaced farther from said weft than the free ends of said yarns to form the longer one of said legs, and forming a following weftwise row of pile tufts each having two legs upstanding at opposite sides of a weft, by repeating said steps but with the omission of said withdrawing step to form in the same fabric a following weftwise row of pile tufts having all its legs of equal length.

3,354,915
TYING APPARATUS

**John R. Johnson, Arcadia, and Robert W. Taylor, Crestline, Calif., assignors to Royal Industries, Inc., Pasadena, Calif., a corporation of California
Filed Jan. 25, 1965, Ser. No. 427,546
13 Claims. (Cl. 140—93)**



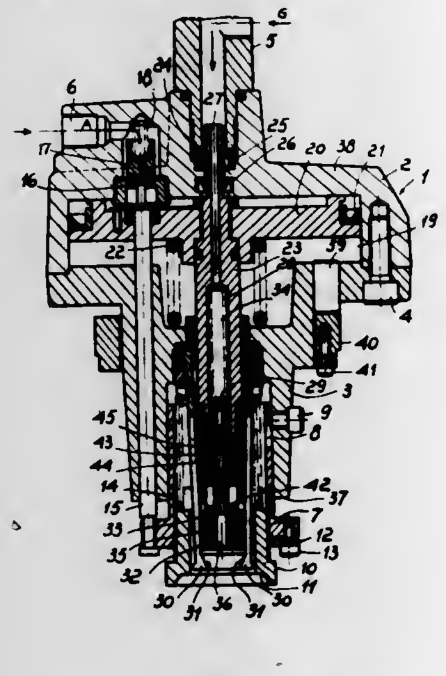
1. Apparatus for tagging and tying articles with tie material capable of being twisted to form a tie comprising means for advancing a pre-selected length of tie material to be tied along a predetermined path, means for positioning and temporarily holding a tag in the predetermined path to be secured to the pre-selected length of tie material, and means for twisting and tying the pre-selected length of tie material around an article to be tied to thereby secure the tag to the article to be tied, the

positioning means being constructed and defined to release its hold on the tag with the withdrawal of the tied article from the tying apparatus.

3,354,916

HEAD FOR CLAWING THE VALVE ON AN AEROSOL BOMB AND FOR THE SIMULTANEOUS FILLING THEREOF WITH A METERED AMOUNT OF PROPELLANT

**Tommaso Ruscitti, 11 Via Amedeo d'Aosta,
Milan, Italy
Filed Mar. 22, 1965, Ser. No. 441,559
Claims priority, application Italy, Mar. 25, 1964, 45,422
9 Claims. (Cl. 141—20)**

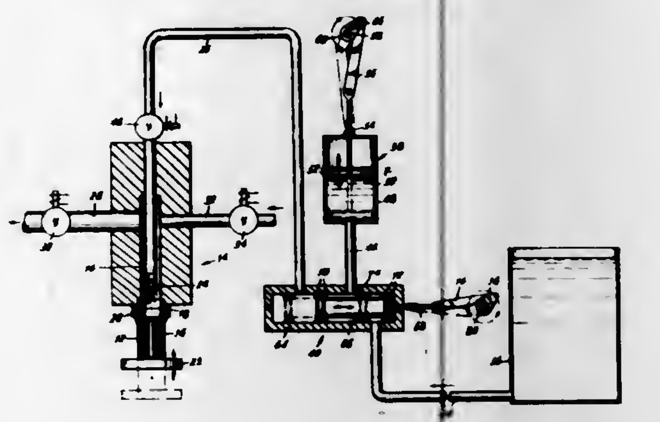


1. A filling and clawing head for containers, such as aerosol containers, comprising cylinder means, piston means slidable in said cylinder means for movement along a working stroke, said cylinder means and piston means having a common axis, claw means coaxially fixed to said cylinder means for clawing a valve assembly onto a container upon radial spreading of said claw means with respect to said axis, wedge means fixed to said piston means for movement therewith and coacting with said claw means for radially spreading the latter during the working stroke of said piston means, said claw means surrounding said wedge means and said wedge means having a hollow interior, filling means carried by said piston means and extending into said hollow interior of said wedge means for engaging and opening a valve of the valve assembly of the container and for admitting propellant into the container through the open valve thereof in response to movement of said wedge means with said piston means along the working stroke of the latter, positioning means for positioning a container and said cylinder means one with respect to the other at a location where said claw means is properly positioned with respect to the valve assembly to be clawed onto the container by radial spreading of the claw means, said positioning means and said cylinder means forming a pair of coaxial means axially movable one relative to the other along their common axis during positioning of the container at said location, valve means communicating with said cylinder means for admitting into the latter pressure fluid for driving said piston means along its working stroke upon opening of said valve means, and opening means coacting with said valve means and responding to movement of said one of said pair of means for automatically opening said valve means to admit the pressure fluid to act on said piston means when the container is located by the positioning means at said location.

3,354,917

CONSTANT VOLUME, VACUUM-AIR, LIQUID IMPREGNATING DISPENSER

**Edward C. Swanson, Cleveland, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 6, 1964, Ser. No. 335,917
3 Claims. (Cl. 141—54)**

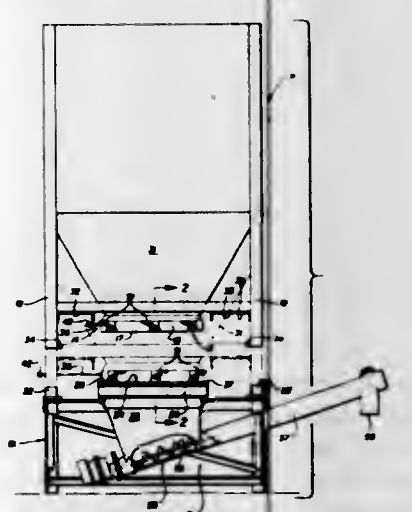


1. A liquid dispenser for dispensing a predetermined and uniformed amount of a liquid into a container and for uniformly impregnating a porous mass disposed in said container comprising, in combination: a dispensing manifold forming a vacuum chamber therein and having an open bottom end to which said container is mounted; a distributing nozzle disposed in said vacuum chamber and adapted to deposit said liquid onto the top of said porous mass in said container; means for evacuating said vacuum chamber and for introducing air under pressure into said vacuum chamber after said liquid has been deposited in order to force said liquid uniformly into said porous mass; and a liquid delivery system comprising a liquid reservoir, a positive displacement pump and a slide valve communicating with said pump and said distributing nozzle for feeding the liquid from said reservoir to said pump in one position thereof and for feeding the liquid from said pump to said distributing nozzle in another position thereof, said pump comprising a casing having a movable piston therein provided with a piston rod, and a linkage mechanism connected to said piston rod and including means for adjusting the piston stroke of said pump.

3,354,918

BIN AND UNLOADING STAND

**Clarence B. Coleman, Oakland, Calif. (2401 Merced St., San Leandro, Calif. 94577)
Filed Feb. 21, 1966, Ser. No. 528,944
5 Claims. (Cl. 141—363)**

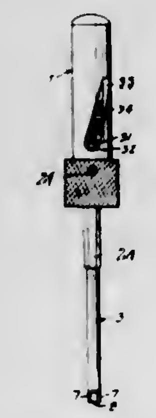


1. A bin having base supports and a discharge opening and a closure means therefor, said discharge opening being formed in the bottom of said bin, a depending annular wall surrounding said discharge opening, a receiving conduit and bin supporting means adapted to receive in and locate said base supports with said bin opening in registration with said conduit, said bin supporting means comprising a stand having portions adapted to receive and locate said base supports and said conduit carried by said stand and having an open upper end in vertical registration with said discharge opening when said bin is mounted on said stand, an annular spring member of resilient impervious material mounted in sealed relation on said conduit, a gasket supporting ring member supported for vertical reciprocation on said spring member in sealed engagement therewith, and a sealing gasket mounted on said ring member in sealed relation thereto and being formed and positioned for receiving and supporting said wall in sealed relation therewith by engaging the lower end of said annular wall and yielding downwardly under the load of said bin against resistance of said spring member to provide a pressure sealed engagement with said wall.

3,354,919

SCREWDRIVER WITH SCREW HOLDING MEANS

**Masao Sugaya, 1870 4-chome, Higashi Komatsugawa-cho, Edogawa-ku, Tokyo, Japan
Filed June 8, 1965, Ser. No. 462,206
5 Claims. (Cl. 145—50)**

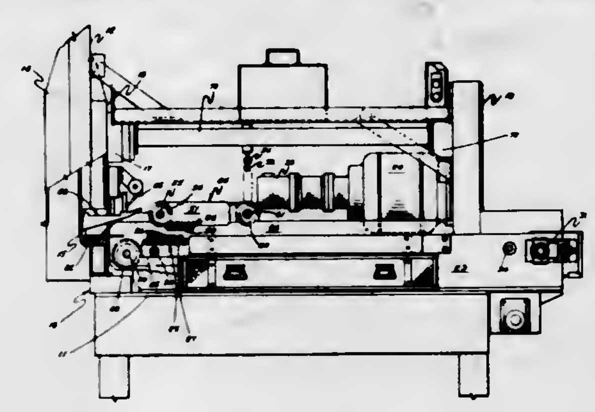


1. A screwdriver comprising grip means; a sleeve shank means operatively fastened to said grip means and formed at its end remote from said grip means with not less than two radially outwardly disposed blade means; a rotary mandrel means rotatively arranged in said sleeve shank means and provided within said remote end of said sleeve shank means with a center blade means; and means associated with said grip means and rotary mandrel means selectively actuatable by the user for rotatably driving said rotary mandrel means relative to said sleeve shank means to grippingly engage the respective blade means with a screw to be driven, the said sleeve shank means and grip means being slidably connected and respectively formed with an enlarged flanged bead and an inwardly directed cooperating abutment stage to prevent disassembly in one direction, said rotary mandrel means being slidably and rotatably received in said sleeve shank means and formed with an enlarged head member having a tapped opening in its side wall carrying a cam follower pin and washer assembly, said grip means in the area of said enlarged head member being provided with a slanted generally axially directed slot slidingly receiving said washer of said cam follower pin and washer assembly for rotatably driving said mandrel means when said grip means is moved axially relative to said mandrel means, and jam locking means interposed between said grip means and said sleeve shank means for selective operation by the user to lock said grip means against relative movement with respect to said mandrel means when a screw is gripped by said blade means.

3,354,920

BACON SLICING APPARATUS

**Henry F. Hertwig, Naperville, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 2, 1965, Ser. No. 476,617
10 Claims. (Cl. 146—95)**

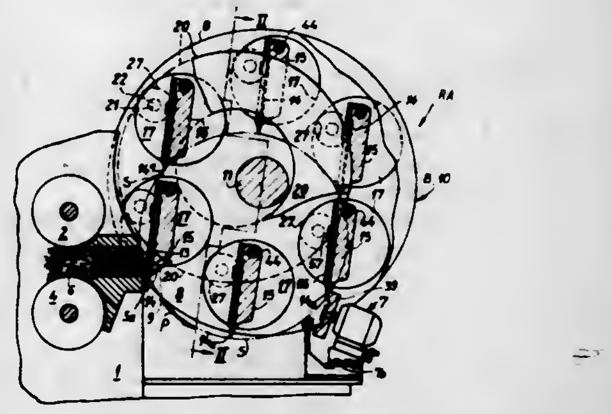


1. In a slicing machine having a rotating slicer blade and a blade anvil and adjacent side guide across which a slab of material is moved forwardly into the path of the blade, the improvement comprising: an endless conveyor rearwardly of said anvil; an overhead feed tractor spaced above said endless conveyor; a plurality of brake means arranged laterally above said anvil between said tractor and the knife blade, said brake means exerting a downward force on a slab above said anvil to restrain forward movement of said slab; and a side brake means positioned above said anvil opposite said side guide and biased to exert a force against a side of said slab to further restrain forward movement of said slab.

3,354,921

APPARATUS FOR CUTTING TOBACCO

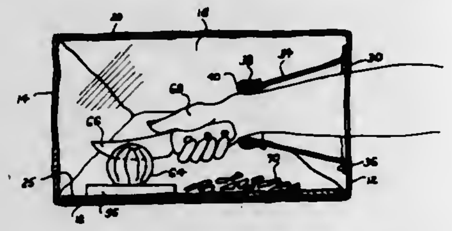
**Uwe Elsner, Hamburg-Bramfeld, Germany, assignor to Hauni-Werke Korber & Co. Kg., Hamburg-Bergedorf, Germany
Filed Nov. 3, 1965, Ser. No. 506,160
Claims priority, application Great Britain, June 19, 1964, 25,456/64; Nov. 6, 1964, 45,433/64
20 Claims. (Cl. 146—120)**



1. An apparatus for cutting tobacco and similar materials, comprising a frame; a rotor assembly mounted in said frame for rotation about a first axis; a knife holder mounted in and rockable with reference to said assembly about a second axis which is at least nearly parallel to said first axis; rocking means for rocking said holder in response to rotation of and with reference to said assembly; a knife mounted on said holder and having an elongated cutting edge which orbits in an endless path in response to rotation of said assembly; grinding means adjacent to a first portion of said path for sharpening said cutting edge; a feed for changing the position of said knife with reference to said holder in response to rocking of said holder so as to compensate for wear in response to sharpening by said grinding means; and conveying

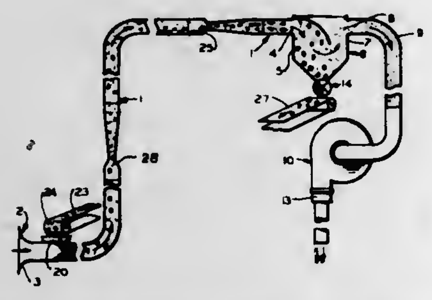
means for advancing the material to be cut into a second portion of said path so that such material is severed by said cutting edge.

3,354,922
FUMEPROOF, TRANSPARENT ENCLOSURE FOR PREPARING ONIONS
Wilbert James, 492 Convent Ave. Apt. 32,
New York, N.Y. 10031
Filed July 14, 1965, Ser. No. 471,970
1 Claim. (Cl. 146—215)



A fume-proof enclosure comprising, a collapsible, flexible, transparent, plastic hollow body, rectangular in configuration when erected, said body having front side, rear side, end side, top and bottom walls, one of said side walls having a pair of spaced circular entrance openings therein, a pair of tapered plastic sleeves secured at their wide ends to the peripheral edges of said openings, said sleeves extending inwardly of the body, means on the inner ends of the sleeves for sealing the sleeves on the wrists of the hands of an operator inserted into the sleeves, said openings and sleeves serving as entrances for onions to be peeled and cut by the hand of the operator inserted through one of the sleeves, the means for sealing the sleeves on the wrists constituted by cuffs on the inner ends of the sleeves, elastic bands in the cuffs for urging the cuffs around the wrists, a thin, flexible, removable plastic panel on the top surface of the bottom wall for collecting and wrapping the waste onion skins, and reinforcing the bottom wall and a flat chopping board insertible through one of the sleeves to the interior of the body and seatable on the bottom wall for supporting an onion while being peeled and cut and preventing damage to the removable panel and bottom wall.

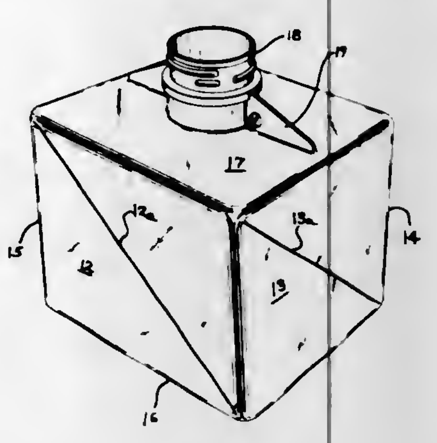
3,354,923
METHOD AND APPARATUS FOR STEMMING, CAPPING AND CLEANING RAISINS
James P. Voller, Fresno, Calif., assignor to Sun-Maid Raisin Growers of California, Fresno, Calif., a cooperative association of California
Filed Oct. 22, 1964, Ser. No. 405,803
7 Claims. (Cl. 146—222)



1. The method of stemming and capping raisins of different individual masses that includes the steps of:
(a) moving an air stream generally in one direction within and enclosed path of travel from an inlet to an outlet;
(b) carrying said raisins in said one direction in approximately the central portion of said air stream substantially free from physical support; and,
(c) rubbing the raisins of adjacent pairs thereof together for a sufficient time to loosen and free said capstems and caps therefrom; and then
(d) collecting said raisins free from said capstems and stems after separation of said capstems and stems from said raisins.

5. Apparatus for stemming and capping raisins that comprises:
(a) an elongated conduit having an inlet at one end and an outlet at the opposite end;
(b) suction means in communication with said outlet for inducing a flow of air into said inlet and through said conduit toward said outlet at a velocity sufficient to support and carry said raisins from said inlet to said outlet;
(c) said conduit including a horizontally disposed end portion at and extending generally toward said opposite end, and said one end being open to provide said inlet with said end portion being formed with an upwardly opening slot extendng transversely of said conduit for passing therethrough a layer of raisins of substantially uniform thickness and of a width substantially equal to the length of said slot into said portion of conduit, and means for supplying such layer to said slot for falling by gravity through the latter into said portion of said conduit;
(d) said conduit including collecting means therein at the end thereof adjacent to said suction means for collecting the raisins separate from the caps and stems that have been removed from said raisins.

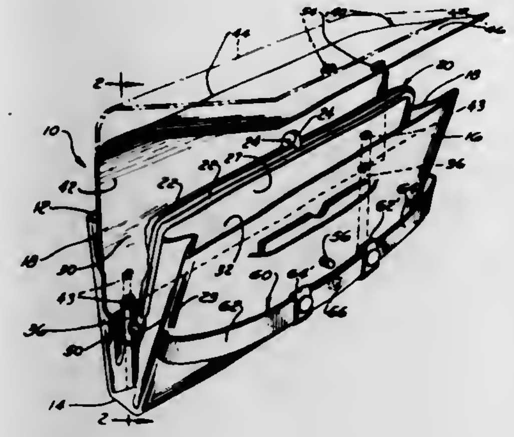
3,354,924
COLLAPSIBLE CONTAINER
Stewart H. Birrell, Sylvania, Ohio, and Robert M. Fey, Severna Park, Md., assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed May 23, 1966, Ser. No. 552,107
1 Claim. (Cl. 150—.5)



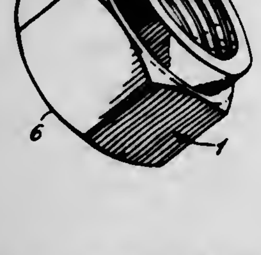
A collapsible container comprising a body portion having four sides and a pair of ends integrally joined to form a closed body, one of said ends having a neck opening formed therein, each of said sides having a rectangular configuration and having a foldline extending diagonally thereacross, all of said foldlines being disposed in substantially the same position on their respective sides, said container being movable from an expanded to a collapsed position by means of relative rotational movement of said ends about the axis of the body portion.

3,354,925
LADY'S PURSE
Charles Doppelt, 601 10th Ave., Hollywood, Fla. 33020
Filed Nov. 27, 1964, Ser. No. 414,126
6 Claims. (Cl. 150—33)

1. A purse of the character described having a back and a front wall, a pocket formed adjacent the back wall, a closure flap secured to said back wall so as to be slidable relative to said back wall to extend the length of said closure flap, a portion of said closure flap being confined within said pocket, a locking member secured to said front wall, the outer end of said closure flap being releasably secured to said locking member, and a handle strap secured to said purse and extending forwardly of the closure flap, said handle strap adapted to be detachably secured to said locking member to retain said closure flap in closed position.

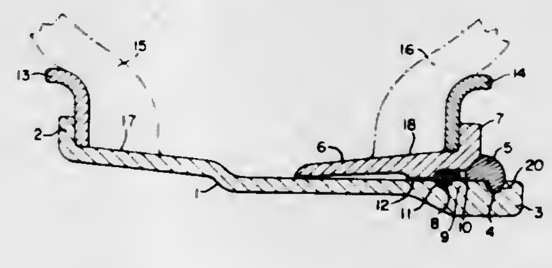


3,354,926
SELF-LOCKING NUT AND METHOD OF MANUFACTURING THE SAME
James Leonard Mattick, Cardiff, Wales, assignor to Firth Cleveland Fastenings Limited, a company of Great Britain
Filed Jan. 8, 1964, Ser. No. 336,441
Claims priority, application Great Britain,
Jan. 11, 1963, 1,455/63
6 Claims. (Cl. 151—21)



3. A one-piece all metal self-locking nut made from a nut blank having a polygonal nut body, an annular collar of reduced cross section extending directly from the non-bearing end of the nut body and an uninterrupted screw threaded bore extending axially through the nut blank; said nut being formed by the process which comprises passing the collar of the nut blank along a plane of travel perpendicular to the nut axis into a nip constituted by opposed nut blank engaging surfaces of two spaced members where said surfaces continuously vary in separation along the plane of travel of the nut to converge towards an area of minimum nip spacing and to diverge away from said area with at least one of said surfaces being curved in said plane and both said surfaces being rough, and maintaining said minimum nip spacing substantially constant while moving at least one of said members so that the members frictionally grip the collar to force the nut through the nip while simultaneously causing the nut to turn about its axis with a rolling action of less than 360° such that as the collar passes with the said rolling action between the members, said rough surfaces engage and inwardly deform areas of the collar lying substantially opposite each other in said plane where said deform areas together extend over less than the complete collar circumference, and markings being impressed into said collar by said surfaces in portions extending over less than the complete collar circumference with the markings at the circumferential end of a portion being lightly impressed into said collar and progressively increasing in depth toward the center of the portion and wherein the threads in said collar and in a part of said nut body are deformed radially inwardly of said bore.

3,354,927
RIM STRUCTURE
William D. Pile, Stow, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Dec. 1, 1965, Ser. No. 510,901
5 Claims. (Cl. 152—410)

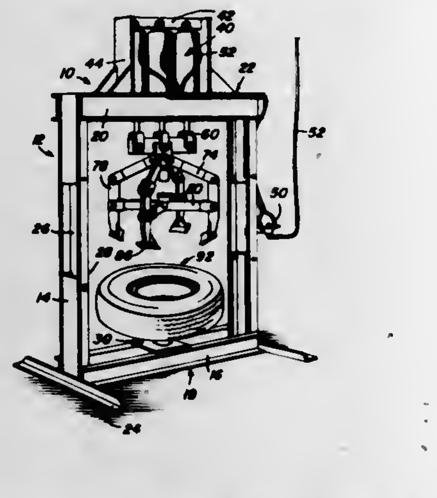


1. A multiple-piece vehicle wheel rim for mounting a tire thereon comprising:
(A) an annular rim base having
  (1) an annular radially outwardly facing gutter along one edge thereof,
  (2) an annular radially outwardly facing lock ring seating surface adjacent the axially inner edge of the gutter,
  (3) a radially outwardly extending flange along the edge of the rim base opposite the gutter, and
  (4) a tire bead seat on the radially outer face of the rim base adjacent the flange to receive one bead of the tire when mounted thereon;
(B) a removable annular bead seat band telescopically mounted on the rim base and having
  (1) a radially outer face,
  (2) a radially inner face,
  (3) a flange extending radially outwardly from the axially outward edge of said bead seat band,
  (4) a beveled seating surface located at the axially outer and radially inner corner of the bead seat band, said beveled surface lying radially outwardly from the lock ring seating surface on the rim base when the bead seat band is assembled thereon, and
  (5) a tire bead seat on the radially outer face of the bead seat band adjacent the flange to receive one bead of the tire mounted thereon;
(C) an annular elastomeric seal ring between the rim base and the bead seat band; and
(D) an annular transversely split lock ring of substantially "L" shaped cross section having
  (1) a body portion extending radially inwardly into the gutter of the rim base to prevent axially outward movement of the lock ring and the bead seat band on the rim base,
  (2) an integral annular rib extending axially inwardly from the body portion and engaging the beveled seating surface of the bead seat band

and the lock ring seating surface to provide positive concentric positioning of the bead seat band with respect to the rim base and to transmit loads from the bead seat band to the lock ring seating surface on the rim base and

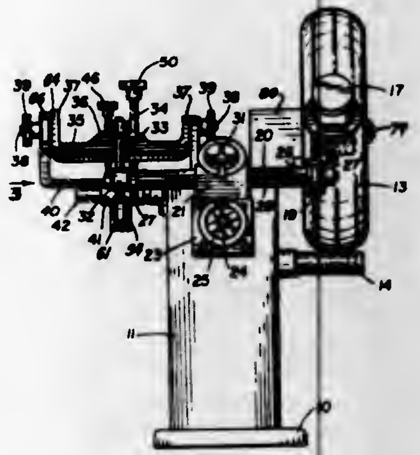
(3) all the area of contact between the lock ring and the rim base being in the gutter of the rim base and axially inwardly thereof.

3,354,928
TIRE DEMOUNTING MACHINE
Jesse J. Copeland and Jack H. Coe, Hanford, Calif., assignors to Hitchcock Transportation Co., a corporation of California
Filed Oct. 8, 1965, Ser. No. 493,964
7 Claims. (Cl. 157—1.2)



1. A tire demounting device comprising a frame, an upwardly projecting tire receiving pedestal rigidly fixed relative to said frame, at least two aligned spaced fluid rams mounted vertically on said frame in spaced relation above said pedestal, each ram including a depending extensible and retractable shaft, an elongated generally horizontal pressure beam, said beam being fixed to the lower ends of the ram shafts, said shafts being engaged with the beam at the opposite ends thereof, the center of said beam being in vertical alignment with said pedestal, a plurality of elongated radially projecting links, means pivotally mounting the inner ends of said links on the beam at the center thereof, a vertically elongated pressure arm associated with each link, means pivotally interlocking the upper end of each arm with the outer end of the associated link, cross-bracing means extending between the vertical pressure arms, means pivotally securing said cross-bracing means to each of said arms at a point between the upper and lower ends thereof, a pressure shoe rigidly fixed to the lower end of each pressure arm, each shoe being substantially flat and mounted with a downward and inward inclination, a limit block fixed to and depending centrally from the pressure beam below the inner ends of the radially projecting links for selective engagement with the cross-bracing means so as to limit pivotal movement of the arms in response to downward movement of the pressure beam, a removable adapter mountable on said cross-bracing means in a manner so as to project centrally thereabove for engagement by the limit block, thereby modifying the limit of pivotal movement of the arms, said cross-bracing means comprising a plurality of bar portions extending radially outward from a common center to the individual arms, said removable adapter including a body defining a downwardly opening recess for receiving each bar portion so as to enable a fixed positioning of said adapter at the center of the bar portions, said adapter also including a flat upper end for engagement by said limit block.

3,354,929
TIRE TRUING MACHINES
Elby Edward French, Littleton, Colo., assignor to O. K. Tire and Rubber Co., Littleton, Colo., a corporation of Colorado
Filed July 16, 1965, Ser. No. 472,589
7 Claims. (Cl. 157—13)

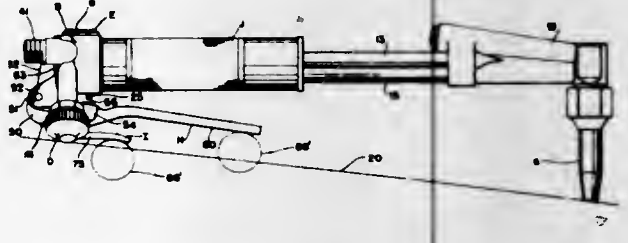


2. A machine for truning a tire while mounted on a wheel, comprising;

(a) a frame;
(b) means for mounting and rotating said wheel mounted on said frame;
(c) a follower shaft slidably and rotatably mounted on said frame parallel to the axis of said wheel;
(d) cutting means mounted on said follower shaft in a spaced relation to the axis of the wheel;
(e) a template follower mounted on said follower shaft;
(f) a relatively flat, arcuately contoured template mounted on said frame in the path of said template follower to pivot about an axis parallel to said follower shaft and thereby vary the effect of the template on said template follower;

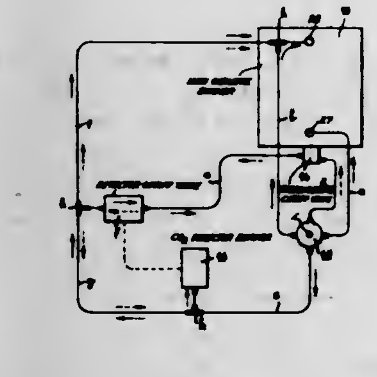
whereby, the template follower will travel along said arcuately contoured template to effect rotation of said follower shaft to move said cutting means towards and away from said tire to true the tire in correspondence with the contour of said template.

3,354,930
VALVE CONTROL MECHANISM FOR GAS TORCHES
Frank Hach, Jr., Euclid, Ohio, assignor to The Harris Calorific Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 14, 1966, Ser. No. 527,339
4 Claims. (Cl. 158—27.4)



1. In an oxy-fuel gas torch including a body and a nozzle, a pair of manually adjustable valves in said body for controlling the volume and mixture of gases supplied to said nozzle, a pair of on-off valves in said body each having an open and a closed position for starting and stopping the flow of gas to said nozzle, a lever pivotally mounted on said body and operatively associated with said last-mentioned valves said lever being pivotable from a first position where said valves are closed to a second position where said valves are open and locking means for selectively locking said lever in both of said positions, including a toggle member pivotally mounted on said lever and movable in the same direction as said lever from a first station, in which said lever is locked in its first position, to a second station in which said lever is locked in its second position.

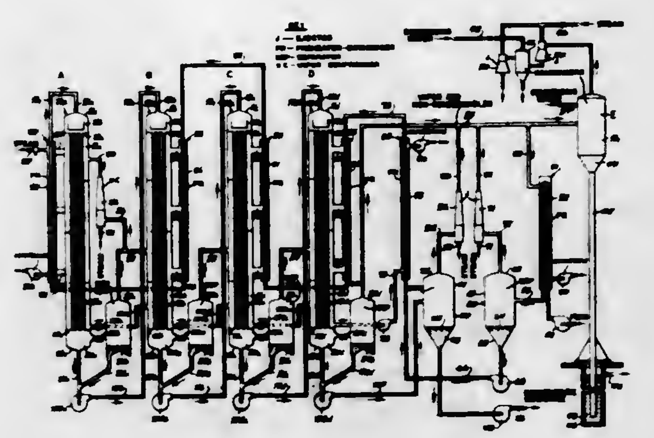
3,354,931
CARBON DIOXIDE DETECTING SAFETY DEVICE FOR APPARATUS OPERATING THROUGH CATALYSIS OF GASEOUS HYDROCARBONS
Roger Risse, Lyon, France, assignor to Societe Lyonnaise des Applications Catalytiques, Caluire, France
Filed Dec. 31, 1963, Ser. No. 334,788
Claims priority, application France, Jan. 15, 1963, 43,225, Patent 1,375,002
3 Claims. (Cl. 158—139)



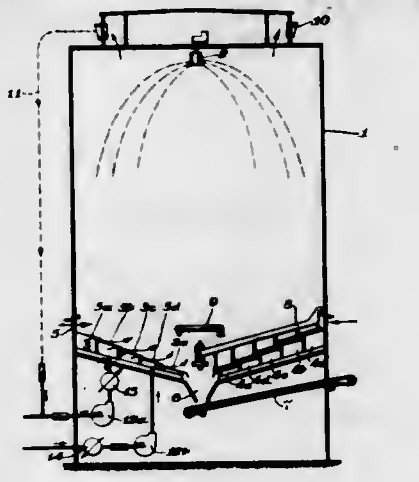
1. The combination comprising a main burner; a catalytic flameless detector burner located to be oxygenated from the air ambient to the main burner; a gaseous fuel supply means; a manually controlled conduit means forming a first connection between said supply means, the main burner and the detector burner; and a thermostatically controlled by-pass conduit means forming a second connection between said supply means and said main burner and having a thermal sensing element sensing the activity of said detector burner and operative to shut off flow through said second connection when the activity is low due to an intolerably high content of inert gas in the ambient air.

3,354,932
MULTIPLE-EFFECT EVAPORATOR STRUCTURE
Warren E. Hesler, Williamsville, and Albert W. Eckstrom, Snyder, N.Y., assignors to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed May 28, 1965, Ser. No. 459,775
4 Claims. (Cl. 159—17)

1. A multiple effect evaporator, comprising a barometric condenser having an upper condensing chamber, means supplying a coolant to said condensing chamber, means maintaining a vacuum in said condensing chamber, and a vertical barometric leg supporting said chamber and receiving at its upper end the condensate from said condensing chamber and open at its lower end, means supporting said barometric leg with its open lower end submerged in a body of water in a hotwell, a group of at least a first effect and a second effect steam chests surrounding said barometric leg above said hotwell and each enclosed in a tubular vertical shell having tubes surrounded by a steam space, bracket means supporting substantially the full weight of each of said steam chest shells from said barometric leg and its supporting means, means introducing steam into the steam space of the first effect steam chest, means separating the vapor generated in such tubes of the first effect steam chest, means conveying said vapor into the steam space of the second effect steam chest, means separating the vapor generated in the tubes of the second effect steam chest, means conveying said last mentioned vapor to said condensing chamber, and means conducting the material to be evaporated successively through the tubes of said first and second effect steam chests.



3,354,933
SPRAY DRYING PROCESS FOR PRODUCING GRANULATES
Wilhelm Wengeler, Bochum-Stiepel, Germany, assignor to Friedrich Uhde G.m.b.H.
Filed Apr. 20, 1965, Ser. No. 449,408
8 Claims. (Cl. 159—48)

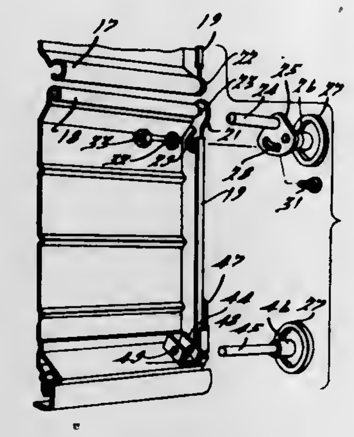


1. A process for the granulation of chemical materials by spraying the materials in droplet form in a spray tower and introducing a gas through the floor of the tower countercurrent to the falling drops, characterized in that the gas is introduced through different separated concentric slots in the floor of the tower at variable temperatures so that hot gas enters the tower through the outer concentric slots and cool gas enters the tower through the inner concentric slots.

3,354,934
GARAGE DOOR
Robert F. Stansberry, Beverly Hills, Mich., assignor to Garland Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Aug. 5, 1964, Ser. No. 387,654
5 Claims. (Cl. 160—209)

1. In a garage door, a plurality of panels hinged together at their adjacent edges, links secured to the ends of the panels with the ends in overlapping relation, pivot pins on the centerline of the hinges securing the ends of

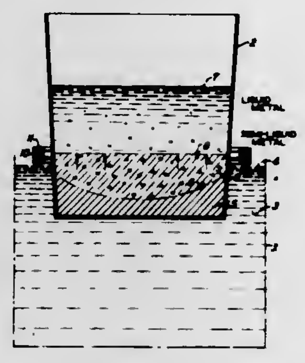
the links together to form a chain at the ends of the panels in each side of the door, a plate on each said pivot pin, a wheel mounted on each said plate offset from the pivot pin, substantially vertical track at the sides of the garage door opening, the wheels being mounted in said track, and means securing each plate to the adjacent link after being adjusted about the center of the pivot pin to position the adjoining panels in desired spaced relation to the tracks.



3,354,935
MANUFACTURE OF LIGHT-METAL CASTINGS

Karl Ernst Mann, Meinerzhagen, Westphalia, Germany, assignor to Otto Fuchs K.G., Meinerzhagen, Westphalia, Germany

Filed Apr. 7, 1964, Ser. No. 358,047
Claims priority, application Germany, Apr. 13, 1963, F 39,487; Apr. 26, 1963, F 39,588
8 Claims. (Cl. 164—48)



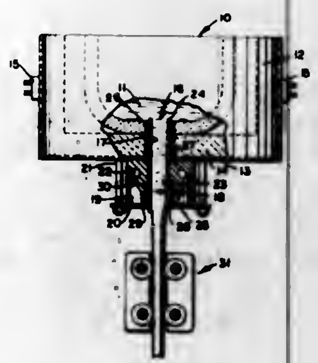
1. In the process of producing ingots of light metal and light metal alloys by casting such by directional solidification of a metallic melt; the improvement which comprises providing in at least the region adjacent both the liquidus and pre-solidus zones nuclei of crystallization in such concentration that at least 80 percent of the grain structure of the ingots formed possess an average grain surface area of about 2 to 50 mm.^{2}.

3,354,936
CONTINUOUS CASTING PROCESS

Oliver B. Atkin, Hamden, Conn., assignor to Anaconda American Brass Company, a corporation of Connecticut

Filed May 26, 1965, Ser. No. 459,040
2 Claims. (Cl. 164—82)

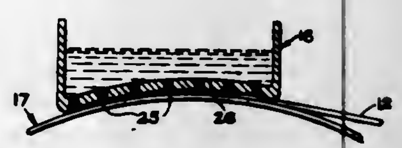
1. In a method of continuously casting metal shapes wherein molten metal is fed through a chilled mold, solidified within the mold and contracted away from the walls of the mold while being continuously fed therethrough, the improvement comprising casting copper metal alloys which are alloyed with metals having a higher vapor pressure than copper so that the metal having the higher vapor pressure distills from the surface of the hot metal shape after solidification and condenses on the surface of the mold within the separation formed by said contraction, said mold surface characterized by not being wet by the alloy being cast, withdrawing the metal shape in a first direction toward the exit end of the mold, cyclically stopping and reversing the casting direction of the metal shape for a fraction of the time period of withdrawal, reabsorbing the condensed metal onto the reversed portion of the metal shape which is brought into juxtaposition with the condensed metal, and with drawing the metal shape in said first direction again.



3,354,937
PROCESS AND APPARATUS FOR CONTINUOUS CASTING

Auzville Jackson, Jr., 115 Santa Clara Drive, Richmond, Va. 23229

Filed May 14, 1965, Ser. No. 455,729
9 Claims. (Cl. 164—87)



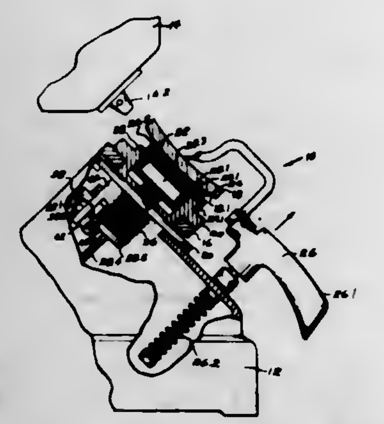
1. A process of casting molten metal and the like into solid form, comprising the steps of passing molten metal and the like through a plurality of small orifices, the orifices having outlet ends which are disposed along a path, the orifices being distributed longitudinally of the path and also transversely of the path, relatively moving a beat extracting surface maintained at a temperature below the fushion temperature of such metal and the like in close contiguous relationship to the path and to the outlets of the orifices so that the molten metal and the like is cooled along the path with said heat extracting surface, and passing the heat from the metal and the like being deposited at a more downstream point along the path through previously deposited solid metal to said heat extracting surface, said orifices and the relative movement of the heat extracting surface causing elongation of the crystals of molten metal and the like deposited.

3,354,938
APPARATUS FOR BLOCKING LENSES

Donald A. Carignan and Bradford Canterbury, Southbridge, Mass., assignors to American Optical Company, Southbridge, Mass.

Filed July 2, 1964, Ser. No. 379,863
1 Claim. (Cl. 164—150)

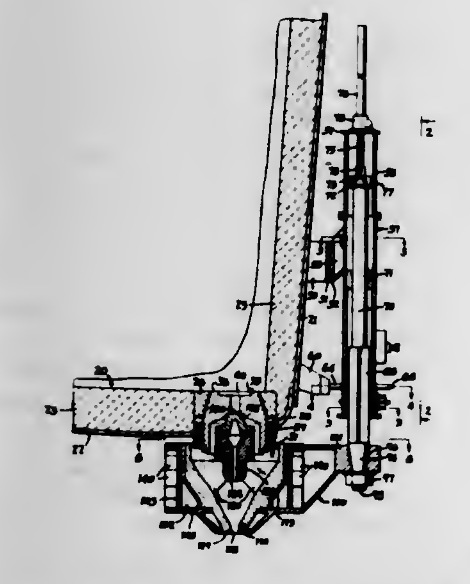
Apparatus for molding and attaching blocks to lens blanks selected from among a related series of blanks of different base surface curvatures, said apparatus comprising mold means having cavity with an annular open end upon which any one of said lens blanks of said series may be disposed with its base surface curvature facing into the cavity for closing the cavity, a piston defining the bottom of said cavity, said piston being movable longitudinally in said cavity to dispose said bottom at different desired settings of distance from said open end according to variations desired of the volume of said mold cavity between said bottom and the base surface curvature of any one blank of said series disposed upon said open end of said cavity, means for moving said piston, means only externally of said cavity for regulating said movement, said regulating means being calibrated for said settings in terms of said base surface curvatures of said lens blank series and means for introducing moldable material into said mold cavity to form a lens block of the desired volume adherently upon the base surface curvature of a lens blank closing said cavity.



3,354,939
APPARATUS FOR HANDLING MOLTEN METAL

Albert Calderon, Cleveland, Ohio, assignor to Calderon Automation, Inc., Cleveland, Ohio

Filed July 17, 1964, Ser. No. 383,356
12 Claims. (Cl. 164—254)

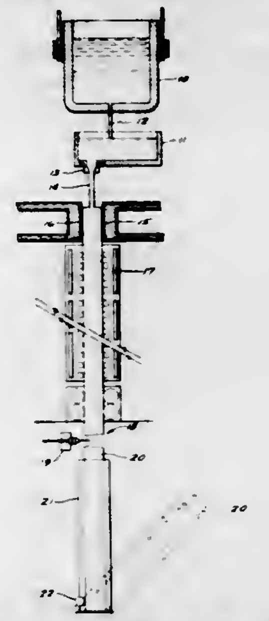


12. In a receptacle for molten steel or the like molten metal, a nozzle located adjacent the lower end of said receptacle and having a bore communicating with the interior of said receptacle, a valve body located below said nozzle and having an upper extremity movable in a vertical straight line path defined by the axis of said nozzle bore to control the flow of metal from the receptacle through said nozzle bore, means defining a chamber below and carried by said valve body, means defining an annular flange circumscribing the nozzle and the valve body to peripherally confine the flow of molten metal from the nozzle and valve body, and actuatable power means externally of said receptacle for moving said valve body and said chamber along the vertical straight line path to accommodate a variable flow of molten metal through said nozzle bore against said upper extremity of said valve body and into said chamber.

3,354,940
CONTINUOUS CASTING APPARATUS WITH IMPROVED NOZZLE COMPOSITION

Frank H. Walther, Jr., Bethel Park, and Joseph R. Ryan, Irwin, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 16, 1965, Ser. No. 448,633
2 Claims. (Cl. 164—281)



1. The combination with apparatus for the continuous casting of steel, including a container of molten metal positioned above a tundish, which tundish includes a nozzle opening from a lower portion thereof with its exit orifice positioned above a cooling mold, the improvement comprising said nozzle being ceramically bonded and characterized in that at least 80%, by weight, of its structure is the phase $MgO \cdot Cr_2O_3$ and being substantially free of materials which form glass at temperatures of about 2000° F.

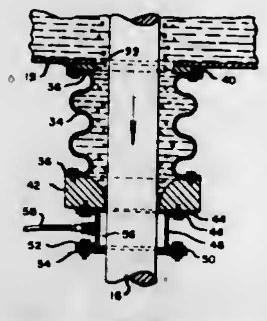
3,354,941
CONTINUOUS DIRECT CHILL-TYPE CASTING UNIT

Fred E. Halstead, Rochester, Pa., assignor to Halstead Metal Products, Inc., Zelienople, Pa., a corporation of Pennsylvania

Filed May 24, 1965, Ser. No. 458,135
3 Claims. (Cl. 164—283)

1. In continuous casting apparatus of the type in which a continuously cast ingot traveling in a vertically downward direction passes through a tank having a cooling liquid therein and thence through an opening in the bottom of the tank, the improvement in means for preventing the substantial escape of liquid through said opening in the tank comprising a guide bushing surrounding the ingot below the opening in the tank, an annular flexible bellows interconnecting the guide bushing and the tank to form a cavity communicating with said tank, seal means carried on the lower end of said guide bushing, said seal means being generally annular in configuration and having an inner periphery in close abutting relationship with the cast ingot, the arrangement being such that the bellows will flex to follow any nonlinearity in the ingot as it

is cast, and guide rolls beneath the seal means and between which the ingot passes, the guide rolls being spaced from the seal means a sufficient distance to permit lateral movement to the ingot as it travels downwardly.

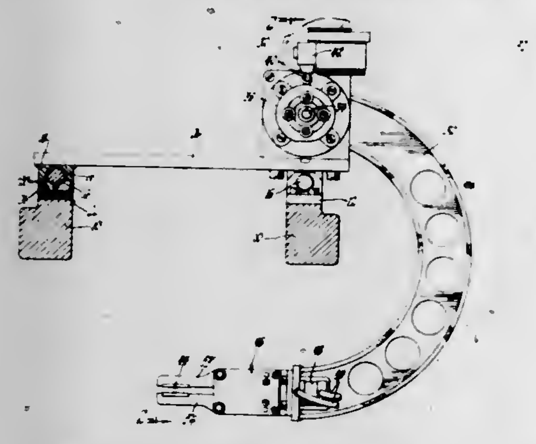


3,354,942
SPRUE EXTRACTOR FOR MOLDING MACHINES

Max E. Todd, Anderson, and John M. Cox, Pendleton, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 6, 1965, Ser. No. 493,437

2 Claims. (Cl. 164—344)



1. Material handling apparatus for withdrawing castings and runners from a casting machine and depositing the castings and runners at a point apart from the casting machine, said apparatus comprising: a rotary hydraulic cylinder adjustably carried on a casting machine and responsive to pressure input to generate a rotational movement of an output member; a substantially arcuate shaped arm carried by the output member of the hydraulic cylinder and arranged to be movable in and out of space in the casting machine wherein the casting operation takes place; gripping means responsive to hydraulic pressure to open and close in scissor-like fashion and carried by said arcuate shaped arm and arranged to move therewith; and sequencing means including cams carried on said arcuate shaped arm and cam operated limit switches carried on the casting machine responsive to movement of the output member of said hydraulic cylinder as it assumes various radial portions, said sequencing means arranged to electrically control output of hydraulic pressure from a source to said hydraulic cylinder and said gripping means to move said arcuate arm and said gripping means into engagement with casting material within the machine and removing the material therefrom at an appropriate time during the casting cycle of the machine.

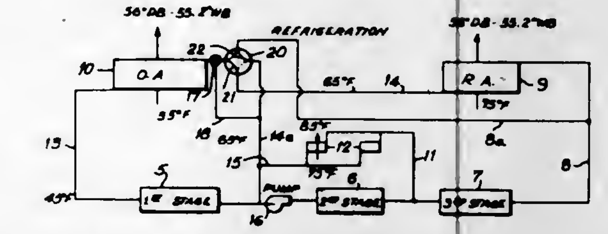
3,354,943
AIR CONDITIONING SYSTEM

Alden I. McFarlan, 691 Dorian Road, Westfield, N.J. 07090

Filed Mar. 11, 1965, Ser. No. 438,891

21 Claims. (Cl. 165—2)

1. A method of air conditioning a building comprising, the steps of, supplying a conditioned fluid to the periphery of each floor of the building at temperatures above the temperature to be maintained on said floor when heating is required and below said temperature when cooling is required to balance only the heat transmitted by conduction through the peripheral walls of the building, supplying conditioned air to each space in the building to be conditioned at a temperature below the temperature in said space to balance the remaining load in the space, and controlling the volume of the conditioned air supplied to each space in accordance with changes in the load within the individual space.



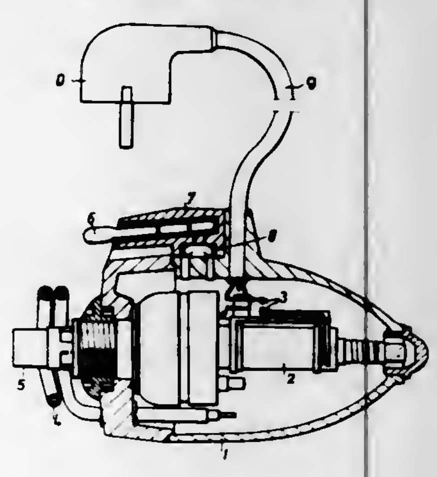
3,354,944
TEMPERATURE CONTROL UNIT FOR MAINTAINING THE TEMPERATURE OF A LIQUID BATH AT A DETERMINED MAGNITUDE

Otto Koelle, Melsungen, Germany, assignor to B. Braun, Melsungen, Germany

Filed June 17, 1965, Ser. No. 464,678

Claims priority, application Germany, June 18, 1964, B 77,293

7 Claims. (Cl. 165—26)



1. A temperature control unit for maintaining the temperature of a liquid bath at a predetermined magnitude, said temperature control unit comprising
  an integrally shaped liquid-tight housing for immersion in a liquid bath; and
  temperature control means positioned in said housing and extending into said liquid bath for maintaining the temperature of said liquid bath at a predetermined magnitude, said temperature control means comprising temperature regulating means for regulating the temperature of said liquid bath, agitating means for agitating said liquid bath to produce uniform temperature throughout said bath, energizing means positioned outside said housing for energizing said temperature regulating and said agitating means, temperature sensing means, and connecting means positioned partly outside said housing connecting said energizing means to said temperature regulating means and to said agitating means via said temperature sensing means, so that when the same senses the temperature of said bath to be different from said predetermined magnitude said energizing means energizes said temperature regulating and said agitating means to produce thereby a liquid bath having a temperature at said predetermined magnitude throughout said bath.

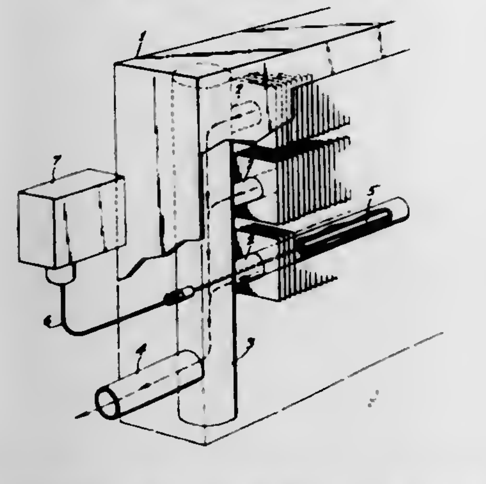
3,354,945
TUBE HEAT EXCHANGER WITH ANTI-FREEZE THERMOSTAT

Lars-Owe Grudeborn, Jonkoping, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden

Filed Mar. 29, 1967, Ser. No. 626,817

Claims priority, application Sweden, May 11, 1964, 5,707/64

2 Claims. (Cl. 165—40)



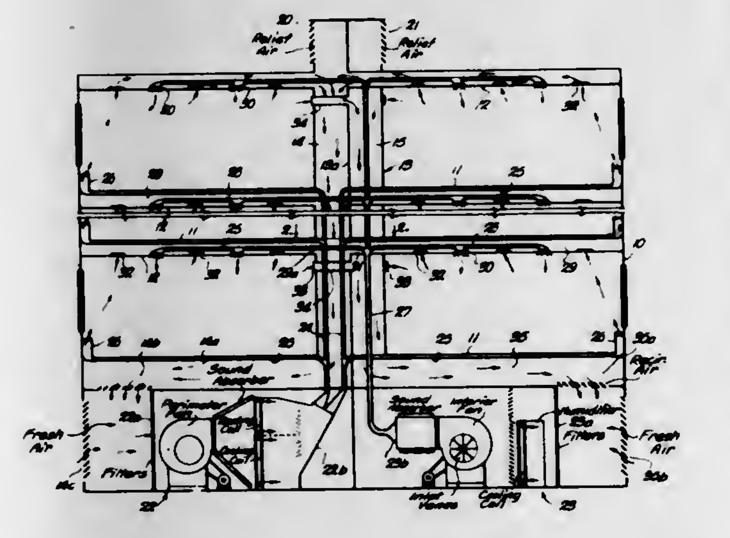
1. In a tubular heat exchanger for heating outdoor air having at least one tube connected at one end to a remote source supplying heated water and at the other end to a return pipe, an inlet for introducing outside air to said heat exchanger and an outlet for discharging the heated outdoor air from said heat exchanger, said inlet having control means for reducing the cooling effect of outdoor air upon the water flowing through said tube; the improvement comprising an antifreeze thremostat for operating said control means including a sensing body in said tube in the flow path of the water close to and upstream of the water return pipe.

3,354,946
AIR CONDITIONING SYSTEM

Frank J. Dean, Jr., Kansas City, Mo., assignor to Tempmaster Corporation, a corporation of Missouri

Filed July 30, 1965, Ser. No. 475,998

9 Claims. (Cl. 165—48)



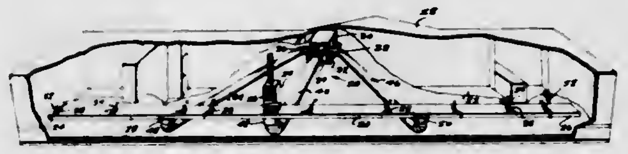
1. In an air conditioning system in a building having at least one room, said room having a ceiling and enclosed space above the ceiling, the combination of
  forced air heating means having a suction side and a discharge side,
  forced air cooling means also having a suction side and a discharge side,
  heating duct means connected at one end thereof with the discharge side of said heating means and proceeding to and terminating at the other end in a perimeter outlet to said room,
  air return duct means connecting said enclosed space with the suction side of said heating means thereby to impose suction to said space,
  heat generating lighting means positioned in an opening in the ceiling establishing communication between said space and the interior of said room, said lighting means constructed to permit the flow of air from said room into said space and to guide same in heat exchange relationship with said lighting means,
  cooling duct means separate from said heating duct means and connected with the discharge side of said forced air cooling means, said cooling duct means running to and discharging through outlets to the interior of said room, and
  air return duct means connected at one end with an opening to the interior of said room and returning to and connected at its other end with the suction side of said forced air cooling means to provide a confined flow path for return air from said room to said forced air cooling means and operable to maintain the return air from said cooling means segregated from the return air being returned to the heating means.

3,354,947
AIR-CONDITIONING SYSTEM FOR A MOBILE HOME

Philip R. McKinnon, 337 Maywood Drive, Charlotte, N.C. 28205

Filed Dec. 20, 1965, Ser. No. 514,793

12 Claims. (Cl. 165—50)



1. In a mobile home equipped with a central heating system that includes a built-in hot-air duct of small cross-sectional area having vents opening therealong into the mobile home interior, an air-conditioning system comprising an air-conditioning unit located exteriorly of said mobile home and having intake and discharge ports, an intake duct communicating with the interior of the mobile home and the intake port of said exterior air-conditioning unit and being of substantial cross-section for passage of a large volume of air from the mobile home interior to the air-conditioning unit, and a delivery duct of substantial cross-section communicating with the discharge port of said exterior air-conditioning unit and said built-in duct intermediate the ends of the built-in duct for distribution of conditioned air from said air-conditioning unit into the mobile home through the built-in duct and vents in both directions from said intermediate delivery duct communication.

3,354,948
FLUID COOLED TUBE SUPPORT AND METHOD OF MAKING SAME

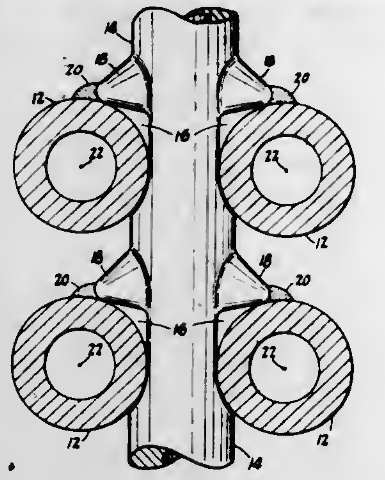
Byron J. Round, Simsbury, Conn., and William G. Benz, Jr., Signal Mountain, Tenn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 500,397

4 Claims. (Cl. 165—67)

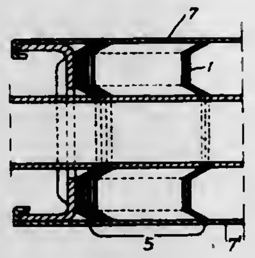
1. A hanger support for supporting at least one tubular element within a high temperature zone, comprising an upright fluid cooled hanger tube, said tubular element ar-

ranged adjacently thereto in a generally horizontal position; a depression forming a cradle in the wall of said hanger tube for receiving a portion of the contour of said element; a bulge formed directly above said depression, said bulge being produced from the material displaced to form said depression, and extending a substantial distance over the upper part of said tubular element; and a weld uniting said bulge with said upper part to suspend said element from said bulge.



3,354,949
TUBULAR RADIATOR WITH FINS

Gaetan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, a French works
Filed Jan. 15, 1965, Ser. No. 425,736
Claims priority, application France, Jan. 18, 1964, 960,807, Patent 1,391,850; Mar. 5, 1964, 966,241, Patent 86,065; Dec. 30, 1964, 475, Patent 87,095
5 Claims. (Cl. 165—181)



1. A finned tubular radiator comprising a plurality of stacked elements, each said element comprising a substantially rectangular plate having at least one conically flanged orifice therein, said plate's orifice being eccentrically positioned in said plate in the upstream direction of gaseous flow through the radiator, the ratio of the surface area of the plate to area of the orifice being no less than five to one, at least two opposing edges of said plate having an angle of inclination with respect to the plane of the plate so as to form closed outer side plates on said radiator, said flanged plate orifice and said opposing edges serving to facilitate the centering of said plates forming said stacked elements and thereby defining a free space between two contiguous plates and means for holding said plates in fixed relationship.

3,354,950
METHOD AND APPARATUS FOR ACCOMMODATING TELESCOPING ACTION

Walter E. Hyde, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Feb. 25, 1965, Ser. No. 435,152
10 Claims. (Cl. 166—.5)

9. A method of enabling fluid pressure within conduit means to be changed without substantially affecting axial force transmitted through said conduit means, said method comprising:

disposing a conduit string having telescoping first and second portions within a well, with the lowermost of said portions having a closed interior beneath said first and second portions;

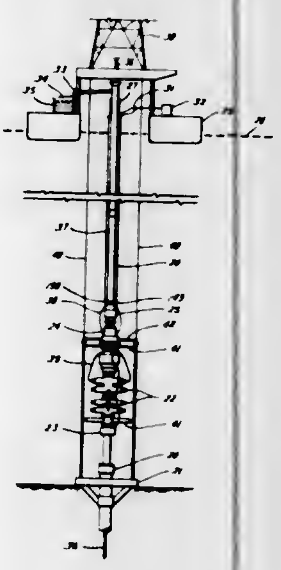
filling the interior of said conduit string with pressurized fluid;

changing the pressure of said fluid contained with said conduit string; and

exerting an hydraulic lifting force on said lowermost conduit string portion substantially equal to the change in downwardly directed axial force imposed upon said lowermost conduit string portion in response to said pressure change.

3,354,951
MARINE DRILLING APPARATUS

George M. Savage, Thibodaux, La., and Robert E. Bradbury, Jr., Houston, Tex., assignors to The Offshore Company, Houston, Tex., a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,735
8 Claims. (Cl. 166—.6)



1. A buoyant marine conductor for marine drilling comprising,

an inner tubular member,

an outer tubular member,

closure means secured to said members at each end securing said inner member within said outer member and closing the annular space between said members,

a plurality of control lines extending longitudinally through said annular space,

a plurality of stabbers extending through the closure means at one end of said conductor and each of said stabbers being connected to a control line,

a transverse slot in the exterior of each of said stabbers,

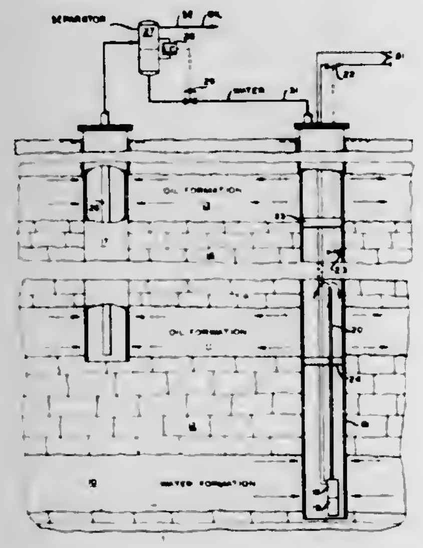
a plurality of blocks engaging said slots,

means securing said blocks to the closure means through which said stabbers extend, and

a plurality of bushings positioned within the closure means at the opposite end of said conductor defining a stabber receiving bore and each of said bushings being connected to a control line.

3,354,952
OIL RECOVERY BY WATERFLOODING

Charles J. Engle, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 9, 1965, Ser. No. 478,380
8 Claims. (Cl. 166—7)

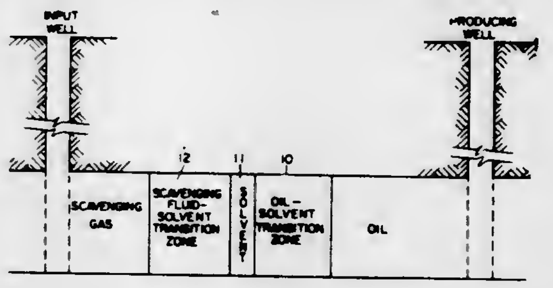


1. A method of waterflooding an oil-bearing formation to recover oil therefrom comprising producing water into a borehole from a water-bearing formation situated below said oil-bearing formation; lifting said water within said borehole to a height below ground surface but which is sufficient to provide a hydrostatic head of pressure greater than the formation pressure of said oil-bearing formation; and waterflooding said oil-bearing formation by allowing the water to pass outward from said borehole directly into said oil-bearing formation.

3,354,953
RECOVERY OF OIL FROM RESERVOIRS

Richard A. Morse, Tulsa, Okla., assignor to Pan American Petroleum Corporation, a corporation of Delaware
Filed June 14, 1952, Ser. No. 293,544
16 Claims. (Cl. 166—9)

1. A method of recovering oil from a subterranean oil reservoir comprising the steps of injecting into said reservoir a quantity of a liquid miscible with said oil, said quantity of miscible liquid being sufficient to form a first transition zone with said oil and then to provide a band of substantially pure miscible liquid in said reservoir at all times behind said first transition zone as said oil is driven through the pores of said reservoir, injecting into said reservoir behind said miscible liquid a quantity of a scavenging fluid which is substantially more soluble in said liquid than in said oil to displace said band of miscible liquid through said reservoir and provide a zone of substantially pure scavenging fluid behind a second transition zone between said miscible liquid and said scavenging fluid, and withdrawing a mixture of said miscible liquid and said scavenging fluid from said second transition zone producing a well located in said reservoir within said second transition zone, whereby the length of said second transition zone is substantially reduced.


INPUT WELL
PRODUCING WELL
12
11
10
SCAVENGING GAS
SCAVENGING FLUID-SOLVENT TRANSITION ZONE
SOLVENT
OIL-SOLVENT TRANSITION ZONE
OIL

16. A method of recovering oil from a subterranean oil reservoir with water comprising the steps of: injecting a liquid solvent into said reservoir through an injection well said solvent being characterized by being completely soluble in said crude oil and in water in all proportions, and being injected in sufficient amount to produce within said reservoir in the neighborhood of said injection well a bank of said crude oil, a two phase transition zone of mixtures of said solvent and said crude oil and said solvent and naturally occurring formation waters, a single phase mixture of said solvent, said crude oil and said formation waters and a bank of said solvent contiguous to said single phase mixture; thereafter injecting water into said reservoir through said injection well at a pressure sufficient to drive said banks and said two phase and single phase mixtures toward said producing well; and withdrawing said crude oil from said producing well.

3,354,954
STEAM INJECTION PROCESS FOR RECOVERY OF PETROLEUM

Thomas S. Buxton, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
No Drawing. Filed Dec. 20, 1965, Ser. No. 515,241
6 Claims. (Cl. 166—11)

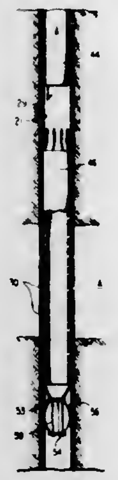
1. In a method for recovering petroleum from an underground deposit thereof, said deposit being penetrated by an injection well and a producing well, the improvement which comprises injecting steam into said deposit via said injection well until it breaks through into said producing well, and thereafter discontinuing the introduction of said steam until the bottom hole temperature in said producing well is below the temperature of said steam at breakthrough into said producing well to permit said steam to condense in the more permeable zones of said deposit, producing hot fluids containing petroleum from said producing well and repeating the above cycle.

3,354,955
METHOD AND APPARATUS FOR CLOSING AND SEALING OPENINGS IN A WELL CASING

William B. Berry, P.O. Box 1951,
Clarksburg, W. Va. 26301
Filed Apr. 24, 1964, Ser. No. 362,442
22 Claims. (Cl. 166—14)

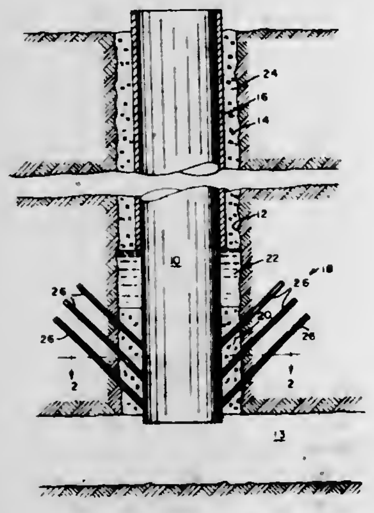
1. Apparatus for temporarily sealing apertures formed in the casing of a well comprising a carrying member, means connected to said carrying member for lowering and raising same in said casing, an elongated tubular sealant member of uniform diameter throughout its length positioned within said carrying member for lowering same in said casing to the area of the apertures, an elongated tension unit, said unit having a diameter commensurate

with that of said sealant members, flexible means connecting said sealant member to said tension unit and retaining said sealant member and tension unit in operative spaced relation, said tension unit positioned subjacent said carrying member for engaging said casing below said apertures to facilitate the removal and complete separation of said sealant member from said carrying member within the area of said apertures.



14. The method of sealing perforations and slits in the casing of a well, with a unitary elongated hollow sealant member having a normal external diameter commensurate with the internal diameter of the casing, which comprises longitudinally crimping said sealant member from one end to the other to form an inturned buckled portion and reduce its external diameter, completely encircling said sealant member at spaced points throughout its length with a plurality of retaining means for securing said sealant member in said crimped condition, lowering said sealant member within said casing to a point adjacent said perforations, removing said retaining means to allow said sealant member to expand into engagement with said casing and overlie the perforations therein.

3,354,956
BOTTOM-SUPPORTED CASING
Robert G. Critz and James H. Cobbs, Tulsa, Okla., assignors to Fenix & Scisson, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Oct. 24, 1965, Ser. No. 504,345
4 Claims. (Cl. 166—29)



1. A method of anchoring and sealing a large diameter casing in an earth bore hole comprising

applying to the exterior of the upper portion of said casing a lubricative compound,

lowering the casing in the bore hole with the uncoated portion at the bottom,

pouring an anchoring strata of grout in the annulus between the lower portion of the uncoated portion of the casing and the bore hole,

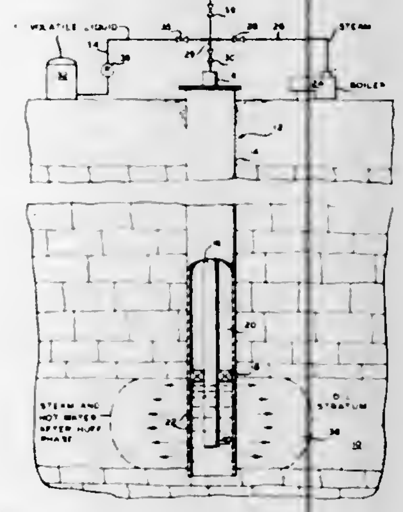
pouring a strata of chemical seal in the annulus between the upper portion of the uncoated portion of the casing and the bore hole, the lower surface of the chemical seal strata resting upon the upper surface of the anchoring grout strata, and

pouring a grout in the annulus between the coated portion of the casing and the bore hole.

3,354,957
METHOD OF ACID TREATING WELLS
Richard L. Every and D'Arcy A. Shock, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Filed June 4, 1965, Ser. No. 461,506
5 Claims. (Cl. 166—39)

1. A method for increasing the production of wells in a water-bearing formation which is reactive to hydrochloric acid comprising introducing substantially pure liquid anhydrous hydrogen chloride into said formation traversed by the well.

3,354,958
OIL RECOVERY USING STEAM
Harry W. Parker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 496,090
11 Claims. (Cl. 166—40)



1. A process for producing oil from a permeable oil stratum penetrated by a well which comprises the steps of:

(1) injecting steam into said stratum thru said well for a substantial period to heat said stratum and build up pressure therein;

(2) terminating the injection of steam and injecting into said stratum a liquid more volatile than water which is volatile at downhole temperature;

(3) maintaining said well closed in for a substantial soaking period so as to vaporize at least a substantial portion of the liquid injected in step 2 and drive heat deeper into said stratum from said well; and

(4) thereafter, opening said well to flow and producing oil therefrom.

3,354,959
HYDRAULIC FRACTURING WITH SPACED PROPS
Clarence R. Fast and George C. Howard, Tulsa, and Fredrick H. Rixe, near Catoosa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Nov. 19, 1965, Ser. No. 508,858
5 Claims. (Cl. 166—42)

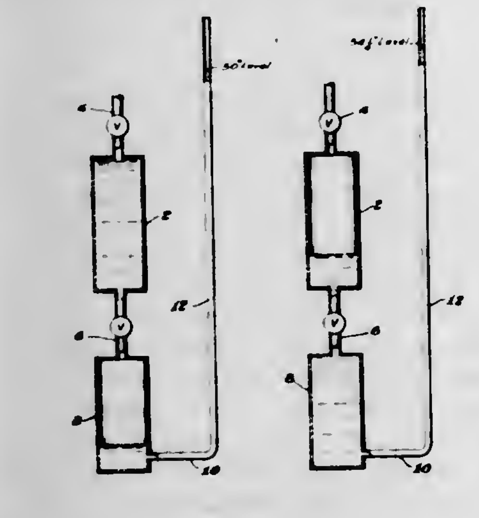
1. A method of fracturing a subsurface earth formation penetrated by a well in which method a liquid is forced down a well under sufficient pressure to fracture said formation, and in which fracture propping particles are included in said liquid together with temporary particles for spacing said props apart, and in which the density of one type of particle is from about 1.1 to about 1.4 times the density of the other type of particle, the improvement comprising use of spacer particles having a diameter D_s in the expression

$$D_s = D_p \frac{\rho_s}{\rho_p}\left(0.5\frac{\rho_s}{\rho_p}+0.5\right)$$

where:

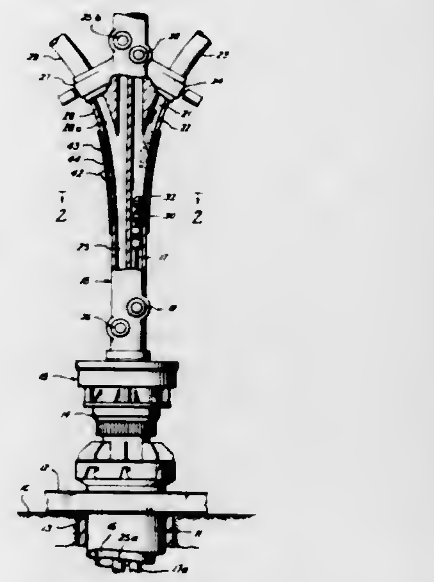
D_s=spacer particle diameter
D_p=propping particle diameter
ρ_s=spacer particle density
ρ_p=propping particle density.

3,354,960
METHOD OF CONSERVING ENERGY IN THE TREATMENT OF WELLS
Frank H. Braunlich, Jr., and Charles L. Lunsford, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 23, 1965, Ser. No. 466,397
14 Claims. (Cl. 166—42)



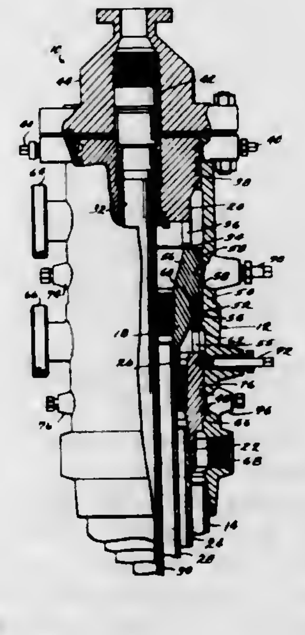
9. The method of treating a subterranean formation penetrated by a well which is provided with a tubing extending therein to a zone in the formation where treatment is desired and is more-or-less centrally positioned in the wellbore of the well to provide two concentric passageways consisting of an inner tubular passageway and an outer annular passageway which comprises: (1) injecting down one of said passageways, designated injection passageway, a space-filling liquid which is substantially chemically unreactive at the existing conditions in the well, in an amount at least equal to the volume of the other passageway; (2) injecting down the injection passageway a gas which is substantially chemically unreactive at the existing conditions in the well in an amount sufficient to insure the presence of a gas phase and a liquid phase at the conditions existing at any level in the wellbore; (3) injecting down the injection passageway a treating liquid in an amount sufficient to provide adequate treatment of the formation; (4) injecting down the injection passageway a weighting liquid in an amount sufficient to displace the space-filling liquid, gas, and treating liquid from said injection passageway into the other passageway and to fill all of said injection passageway; and (5) closing in the well until the gas has risen to the top of the displacing liquid whereby pressure is gradually increased at the treatment level of the wellbore thereby causing treating liquid to be gradually forced into the formation during the time the gas was rising through the liquid in the wellbore.

3,354,961
APPARATUS FOR GUIDING A WELL TOOL BEING PUMPED OUT OF A WELL INTO A LATERALLY BRANCHING FLOW LINE
John V. Pennington, Houston, Tex., assignor to Cameron Iron Works, Inc., Houston, Tex.
Filed May 26, 1965, Ser. No. 458,957
6 Claims. (Cl. 166—75)



1. Apparatus for use in a well having a production bore for the passage of fluids and well tools, comprising a wellhead having a vertical bore adapted to form a continuation of the production bore, said vertical bore branching upwardly into a plurality of bores including a flow line bore, and magnetic means located on the wellhead for exerting a magnetic force on well tools of magnetizable material sufficient to divert such tools into the flow line bore as such tools travel upwardly in the vertical bore.

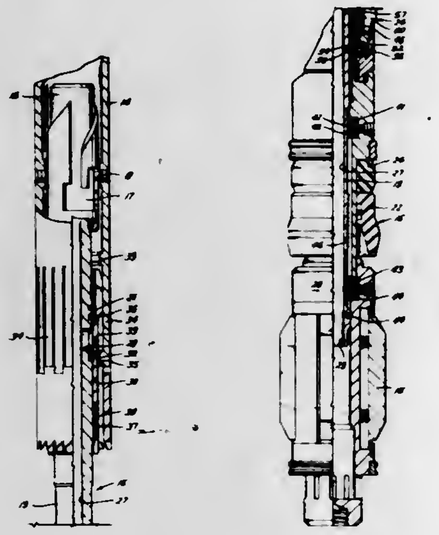
3,354,962
COMPACT CASING HEAD AND HANGER
Elwood K. Pierce, Jr., Houston, Tex., assignor to Gray Tool Company, Houston, Tex., a corporation of Texas
Filed Jan. 3, 1964, Ser. No. 335,563
6 Claims. (Cl. 166—89)



1. In a well head assembly: a compact unitary head for receiving hangers and associated strings of pipe, said head including a unitary body member having a vertical

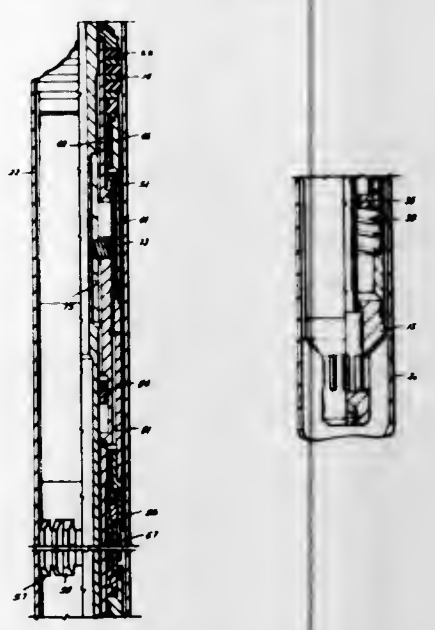
bore therethrough, said bore defining an upper annular tapered seat and a lower annular tapered seat concentric with and disposed below said upper seat, said upper seat facing more toward the vertical than said lower seat; a hanger member in engagement with and supported on said upper and lower seats, said hanger member including a unitary tubular body having a lower portion, an upwardly extending annular extension and means associated with said lower portion for suspending a string of casing therefrom, said extension having a downwardly facing annular shoulder in mating engagement with said upper seat and said lower portion having a downwardly facing annular shoulder in mating engagement with said lower seat, the relative vertical distances between said shoulders and between said seats being such that the shoulder on said extension engages said upper seat before the shoulder on said lower portion engages said lower seat when said hanger member is lowered into said head, said extension being of radially deflectable construction relative to said lower portion and, in the final position of said hanger member, being deflected radially inwardly from its undeflected position by engagement with said upper seat whereby the weight of a casing string suspended by said suspending means will be supported partially by said upper seat and partially by said lower seat.

3,354,963
WELL PACKING APPARATUS
David E. Young, Bellaire, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Nov. 17, 1965, Ser. No. 508,352
18 Claims. (Cl. 166—120)



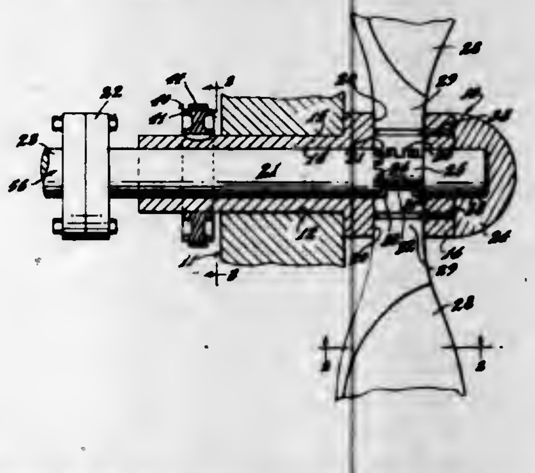
15. A well tool sized and adapted for reception in a well bore comprising; first and second telescoping members movable relative to one another between spaced positions; pressure-responsive anchor means on said first member adapted for anchoring said well tool in a well bore in response to an actuating pressure; a pressure chamber coupled to said anchor means and including a movable piston between said members; means responsive to movement of said second member toward one of said spaced positions moving said piston for developing a pressure in said chamber to actuating said anchor means; means releasably securing said members against return to the other of said positions but allowing further movement of said second member toward said one position; and means permitting application of well bore pressure to said piston for further movement thereof independently of said second member to develop additional pressure in said chamber.

3,354,964
WELL BORE PACKING APPARATUS
David E. Young, Bellaire, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Dec. 10, 1965, Ser. No. 512,858
15 Claims. (Cl. 166—120)



2. A well tool sized and adapted for reception in a well bore comprising: a tubular housing; pressure-responsive packing means including a member having a piston portion telescoped within one end of said housing and fluidly sealed thereto and an exposed portion including abutment means spaced from said housing end, a sleeve telescoped around an intermediate portion of said member, annular expansible packing element around said member and between said abutment means and sleeve, and means fluidly sealing said sleeve to said housing and member for defining an enclosed space between said sealing means and piston portion; a mandrel movably disposed within said housing and arranged for movement therein between spaced positions; pressure-developing means including piston means fluidly sealed within said housing and slidable in response to movement of said mandrel toward one of its said positions for developing an increased hydraulic pressure; and passage means interconnecting said pressure-developing means and said enclosed space.

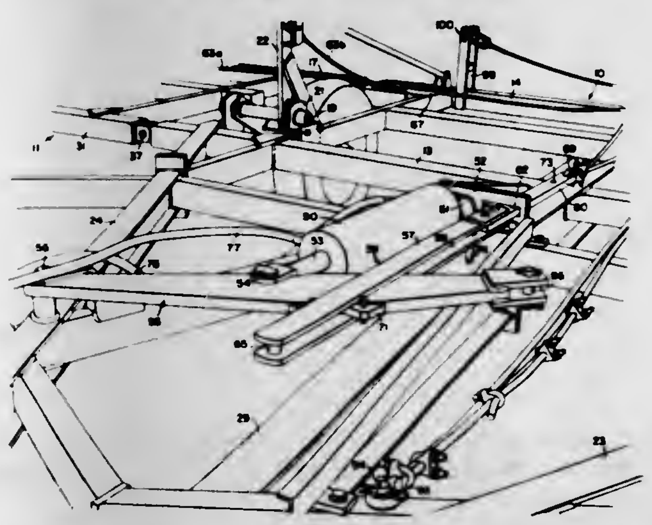
3,354,965
CHANGEABLE-PITCH PROPELLER
Fritz Reimers, Bridge St., Mont Clare, Pa. 19453
Filed May 15, 1967, Ser. No. 638,502
4 Claims. (Cl. 170—160.29)



1. A changeable-pitch propeller comprising an axially rotatable hollow outer shaft having a plurality of radially extending thru openings, an axially rotatable inner shaft

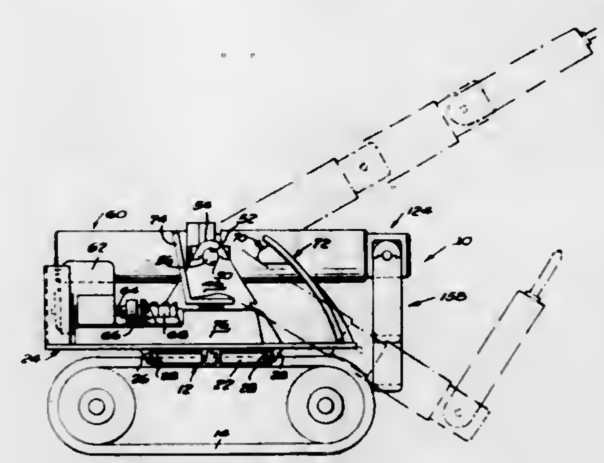
extending coaxially within said outer shaft for rotation with and relative to said outer shaft, said inner shaft being adapted for connection to a reversible power shaft, a plurality of blade shanks journaled in said thru openings for rotation with said outer shaft and rotation relative thereto about the respective axes of said openings, a propeller blade projecting from each of said shanks generally radially of the outer shank, interengaging drive means on said inner shaft and on the inner ends of said shanks for axially rotating the latter in opposite directions upon axial rotation in opposite directions of said inner shaft relative to said outer shaft, limit means limiting the axial rotation of said shanks to predetermined positions in opposite directions of inner-shaft rotation relative to said outer shaft, and clutch means engageable with said outer shaft upon direction reversal of said inner shaft to rotate said outer shaft relative to said inner shaft, whereby reversed rotation of said inner shaft effects axial rotation of said shanks to change the pitch of said blades.

3,354,966
OUTRIGGER TYPE CHISEL PLOW
William W. Jackson, Altoona, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Oct. 19, 1964, Ser. No. 404,573
1 Claim. (Cl. 172—311)



An implement frame for supporting earthworking tools comprising: a main frame section; a ground support means mounted on said main frame section for movement between transport and working positions relative to the main frame section to respectively raise and lower the main frame section relative to the ground; an auxiliary frame section connected with said main frame section for movement between an extended, operative position and a retracted inoperative position relative to said main frame section; a force transmitting member mounted on the main frame section for movement in one direction to cooperate with the ground support means and move the ground support means toward its transport position, and in the other direction to permit the ground support means to move toward its working position; a two-way power member mounted between the main frame section and force transmitting member operable in one way to move the force transmitting member in said one direction, and operable in the other way to move the force transmitting member in said other direction; means for locking said ground support means in its transport position and for permitting independent two way operation of said power member, and motion transmitting means connected with said auxiliary frame section and selectively cooperable with said force transmitting member for retracting and extending the auxiliary frame section upon said independent operation in one way or the other of said power member.

3,354,967
MOBILE FURNACE DELINING MACHINE
Lawrence Skendrovic, 402 Glencoe Drive, West Mifflin, Pa. 15122
Filed Oct. 23, 1965, Ser. No. 504,024
10 Claims. (Cl. 173—43)



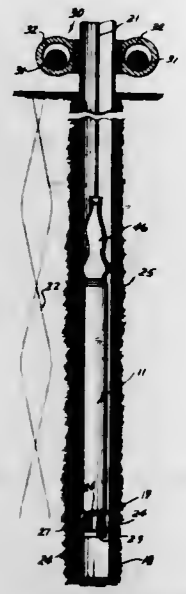
1. In a mobile furnace delining machine the combination comprising,
a frame member,
propelling means for supporting and propelling said frame member on an underlying surface,
a platform mounted on said frame member for rotation about a vertical axis relative to said frame member,
an extensible cylindrical tubular boom member pivotally mounted on said platform, said boom member arranged to pivot in a vertical plane about a transverse axis intermediate the boom end portions,
means to pivot said cylindrical tubular boom member relative to said platform,
said cylindrical tubular boom member having axially aligned and telescopically positioned tubular members,
hydraulic actuating means to axially move certain of said tubular members relative to other of said tubular members,
a tool holder mounting head secured to an end portion of said cylindrical tubular boom member,
said mounting head having a hydraulic actuator arranged transversely to the longitudinal axis of said cylindrical boom member,
said hydraulic actuator having a shaft member rotatably mounted therein, said shaft member extending transversely to the longitudinal axis of said cylindrical boom member and having end portions extending beyond said hydraulic actuator,
a tool holder having an end portion connected to said shaft end portions for rotation therewith so that upon actuation of said hydraulic actuator said tool holder pivots relative to said cylindrical boom in a vertical plane, and
a percussive tool mounted in said tool holder and extending forwardly therefrom.

3,354,968
SONIC METHOD AND APPARATUS FOR CASING DRIVING UTILIZING SONIC AMPLITUDE BOOSTING
Albert G. Bodine, Jr., 7877 Woodley Ave., Van Nuys, Calif. 91406
Filed Oct. 22, 1965, Ser. No. 501,349
8 Claims. (Cl. 175—56)

1. A method for utilizing vibrational energy in driving an elongated member into an earthen formation comprising the steps of

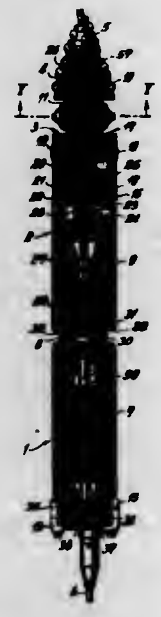
applying vibrational energy to said member at the surface end thereof from a first vibrational energy source to drive said member into said earthen formation,

placing a second vibrational energy source having an output at a frequency substantially the same as that of said first energy source at a point near the driving end of said member, and



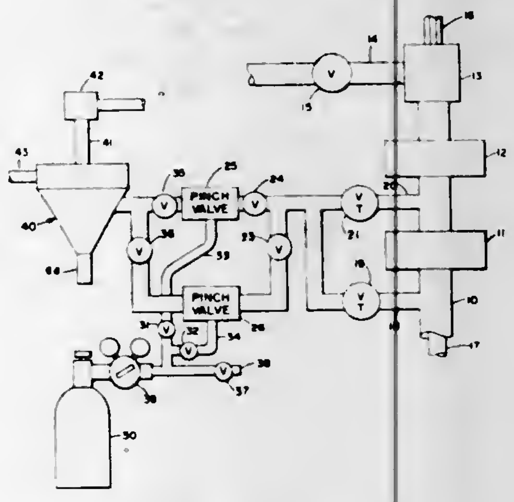
removably connecting said second vibrational source to said member at a point therealong so as to provide in-phase vibrational energy in said member to boost the energy supplied thereto by said first vibrational source.

3,354,969
SELF-PROPELLED DRILLING MACHINE
Wolfgang Ebeling, 49 Heinrich von Stephanstrasse, Salzgitter-Bad, Germany
Filed Sept. 25, 1963, Ser. No. 311,547
Claims priority, application Germany, Sept. 27, 1962, E 23,594; Sept. 29, 1962, S 81,842
15 Claims. (Cl. 175—94)



1. A self-propelled drilling machine comprising, in combination, a rigid housing; a radial guide bearing at the front end of said housing; a drilling tool rotatably mounted in said radial guide bearing and of a size suitable to bore a hole into which said housing can pass; a driving mechanism in said housing and coupled to said drilling tool for driving the same; an advancing mechanism disposed in said housing for advancing the machine in the bore hole and comprising rollers disposed on the periphery of said housing, shafts transversely mounted in said housing and each carrying a pair of said rollers respectively on opposite end portions of said shafts, steep-pitch screw threads formed at said end portions of said shafts and in engagement with corresponding steep-pitch screw threads formed in bores of said rollers, springs acting on said rollers for urging the same outwardly, and gear means coupling said rollers to said driving mechanism; and a guide device at the rear of said housing for guiding said housing in said bore hole.

3,354,970
CONTROLLING HIGH-PRESSURE WELLS WHILE DRILLING
James L. Lummus, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Feb. 8, 1965, Ser. No. 430,918
7 Claims. (Cl. 175—218)

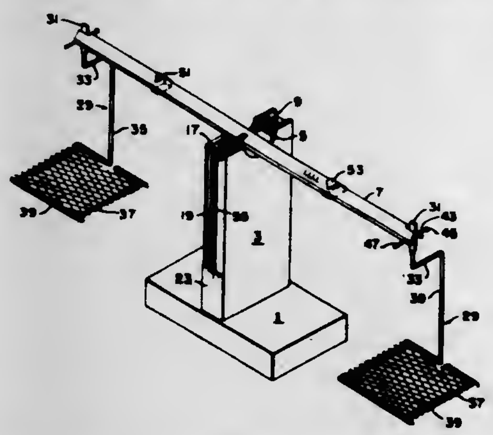


1. Apparatus for controlling a drilling well in which a high-pressure fluid enters the well from drilled formations, said apparatus comprising:

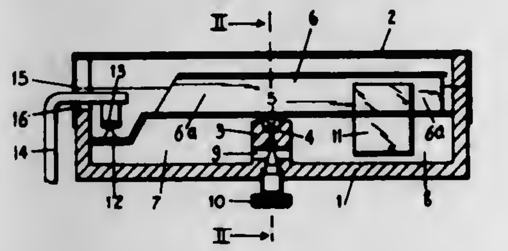
a casing extending into said well,
a drill pipe extending into said well through said casing,
a seal between said casing and said drill pipe near the top of said well,
a conduit extending through the wall of said casing at a level below said seal,
a pinch valve on said conduit, said pinch valve including a flexible sleeve through which drilling fluid containing large bit cuttings and lost circulation material can flow from said conduit, and a high-pressure housing surrounding said sleeve, the internal dimensions of said housing being sufficiently greater than the external diameter of said sleeve to provide a chamber into which gas can be introduced around said sleeve,
high pressure fluid to be applied to the outside of the sleeve of said pinch valve,
and means for regulating the pressure of the fluid applied to the outside of the sleeve of said pinch valve.

3,354,971
EQUAL ARM BALANCE WITH IMPROVED SHEET METAL BEAM
Arthur M. Vash, Newton, and Wesley G. Perry, Wayland, Mass., assignors to Damon Engineering Inc., Needham Heights, Mass., a corporation of Delaware
Filed Aug. 8, 1966, Ser. No. 570,853
6 Claims. (Cl. 177—126)

5. In a balance, a beam comprising a sheet of metal having a pair of parallel spaced wall portions joined by mutually inclined wall portions intersecting along a longitudinal centerline of the beam, and a pair of transversely aligned substantially polygonal apertures having apices directed away from each other formed on said mutually inclined wall portions substantially at the longitudinal center of gravity of the beam.

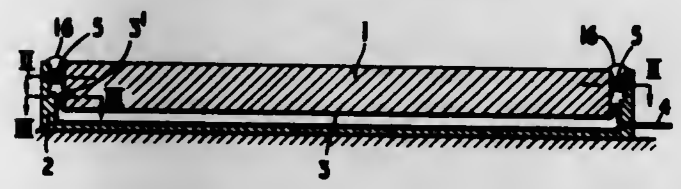


3,354,972
WEIGH SCALE WITH BEAM ACTING AS PISTON IN PNEUMATIC DAMPENER
Alfred Hammerschlag, Delft, Netherlands, assignor to Fijn Mechanische Industrie "Becker's Sons" N.V., The Hague, Netherlands, a company of Netherlands
Filed Oct. 10, 1966, Ser. No. 585,642
Claims priority, application Netherlands, Oct. 14, 1965, 65—13,288
5 Claims. (Cl. 177—188)



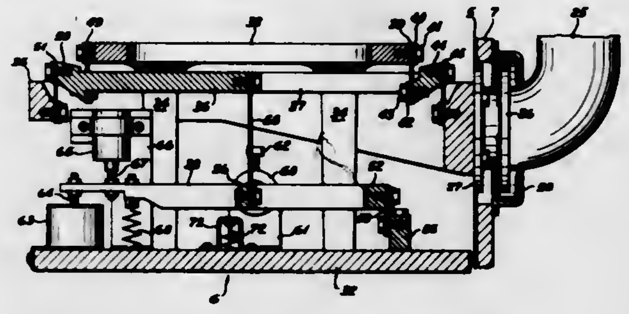
1. A balance weighing device comprising a box-shaped support, a bi-armed balance beam, bearing means, said beam being pivotally supported in said support by said bearing means, an air filled chamber within said support, a substantially vertical partition dividing said chamber into two compartments, said partition providing narrow passages operatively interconnecting said compartments, the arms of said beam extending oppositely of each other on different sides of said partition and forming, in said chamber, pistonwise movable wall parts of said compartments, respectively, so as to constitute, together with said air filled compartments, said partition and said passages, damping means for said beam.

3,354,973
PLATFORM MOUNT FOR WEIGHING MACHINES
John Churchill Farquhar, 53 Oakley St., London SW. 3, England
Filed Aug. 12, 1965, Ser. No. 479,165
8 Claims. (Cl. 177—208)



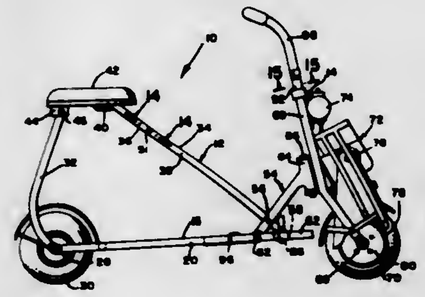
1. A weighing machine comprising a vertically-movable load-controlled member, a co-operating stationary part, a rolling diaphragm between said movable member and stationary part to form a fluid-containing pressure capsule, a load measuring device connected to said capsule, and guiding means for the vertically-movable member consisting of rolling rods located, with their axes horizontal, between opposed side surfaces of said movable member and stationary part.

3,354,974
WEIGHING SCALE UTILIZING FLEXURE PLATE PIVOTS AND HORIZONTAL DAMPING
Paul M. Kintner, Huntington Station, N.Y., and Peter J. Tolan, Scituate, Mass., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Aug. 31, 1965, Ser. No. 483,975
10 Claims. (Cl. 177—229)



1. A weighing scale comprising:
(a) a platform means for supporting a load to be weighed;
(b) means for supporting said platform means including means for allowing vertical deflection of said platform means substantially in proportion to the load carried thereby;
(c) a plurality of pivots comprising flexure plates for connecting said platform means to said means for supporting said platform means;
(d) said flexure plates being alined in substantially parallel vertical planes to have a common horizontal direction of flexural freedom to allow horizontal movement of said platform means in a direction normal to said vertical planes; and
(e) viscous damping means for damping horizontal movement of said platform means in said normal direction.

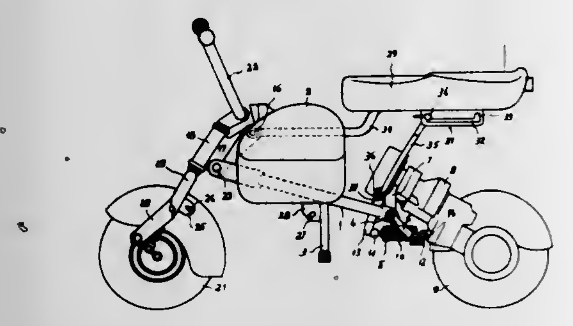
3,354,975
FOLDABLE VEHICLE
Robert W. Stuart, 955 Caniff Road, Columbus, Ohio 43221
Filed Feb. 10, 1966, Ser. No. 526,616
9 Claims. (Cl. 180—31)



1. In a portable foldable vehicle, in combination, a chassis and a steering column, said chassis comprising a lower chassis portion, support means pivotally mounted on said lower chassis portion and including an upper seat portion, said support means including brace means detachably connected between said seat portion and said lower chassis portion for permitting said seat portion and support means to be disposed in the general plane of said lower chassis portion, coupling means between said lower chassis portion and said steering column and including a

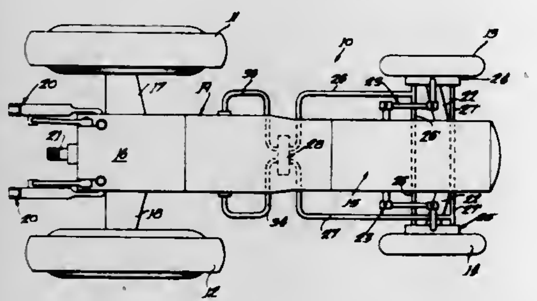
substantially vertical pivot portion for providing a steering-axis portion therebetween, said coupling means including a pivotal connection with said lower chassis portion for permitting said chassis to be disposed in the general plane of said steering column, and latch means detachably connecting said steering column and said chassis for retaining said chassis and steering column in folded relationship.

3,354,976
MOTORCYCLES
Javier Sanglas Camps, Calle Fernando Agullo 12,
Barcelona, Spain
Filed Jan. 28, 1966, Ser. No. 523,782
Claims priority, application Spain, Jan. 29, 1965,
309,092/65
3 Claims. (Cl. 180—32)



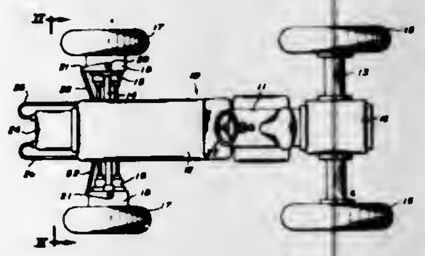
1. A motorcycle having a foldable frame, characterised in that the frame comprises a central, longitudinally extending rail at the rear end of which is articulated, by means of a suspension device, a cantilever engine unit, said unit being provided with the driving wheel of the motorcycle, a steering fork mounted at the front end of said rail and being foldable below said rail, a support member pivotally mounted at the front end of said rail and extending rearwardly and carrying the rider's seat which is connected to said rail by means of a further support member adjustable relative to said seat and serving to maintain the seat in its raised position when the motorcycle is in use, and in its lowered position when the frame is folded.

3,354,977
VEHICLE WITH SELECTIVE HYDRAULIC DRIVE MEANS
John F. Swift, Chicago, Ill., assignor to International Harvester Company, a corporation of Delaware
Filed June 22, 1965, Ser. No. 465,862
9 Claims. (Cl. 180—44)



1. A self-propelled vehicle combination having a power plant and including at least one first ground-engaging element and at least one second ground-engaging element, an infinitely variable speed ratio reversible hydromechanical power transmission unit having a power input shaft drivenly connected to said power plant and a power output shaft drivingly connected to said first ground-engaging element, said transmission unit comprising a housing with a multicylinder hydraulic pump drivenly connected to said power input shaft, said pump having a mechanical force reacting means positioned for transmitting mechanically at least a portion of the power from said power input shaft to said power output shaft, a multicylinder hydraulic motor drivingly connected to said power output shaft, said transmission unit having hydraulic connecting means for communicatively connecting said pump with said motor for hydraulically transmitting power from said power input shaft to said power output shaft in parallel relation with power transmitted by said mechanical force reacting means, said hydromechanical power transmission unit having a source of fluid pressure power-take-off in said hydraulic connecting means, a second hydraulic motor drivingly connected to said second ground-engaging element, second hydraulic connecting means communicatively connecting said second hydraulic motor to said source of fluid pressure power-take-off of said hydromechanical power transmission unit, and adjustable means in said second connecting means for establishing reverse flow to said second motor whereby said power plant energizes said hydromechanical power transmission unit to drive hydromechanically said first ground engaging element and hydrostatically drive said second ground-engaging element for propelling said vehicle in a forward or reverse direction depending upon the position of said adjustable means.

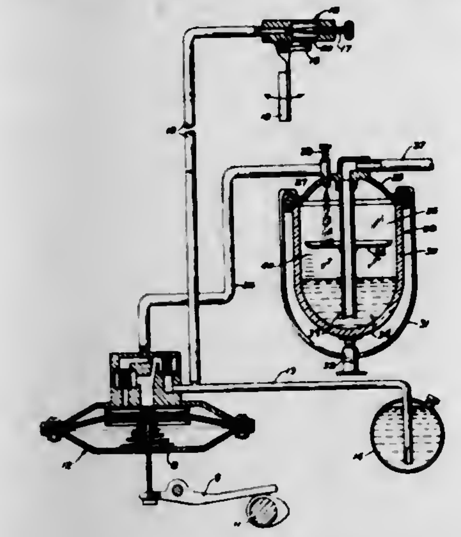
3,354,978
SPEED RESPONSIVE HYDROSTATIC DEVICE
Tadeusz Budzich, 80 Murwood Drive,
Moreland Hills, Ohio
Filed July 12, 1965, Ser. No. 471,094
47 Claims. (Cl. 180—44)



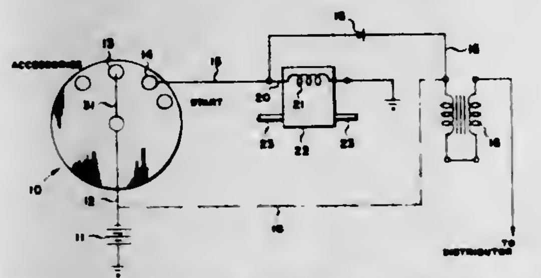
33. In a self-propelled vehicle having a frame, an engine and first and second sets of wheels mounted on said frame, driving means interposed between said engine and said first set of wheels, the combination therewith of a fluid power transmission and control system interposed between said engine and said second set of wheels comprising, a fluid pump, said pump having flow changing means and means to operate said flow changing means to maintain a substantially constant fluid discharge pressure within the maximum capacity of the flow changing means, at least one fluid motor drivingly connected to said second set of wheels, each of said fluid motors having fluid ports operably connected to said pump, each of said motors having displacement changing means, and speed sensitive control means to operate said displacement changing means to change displacement of said motor in response to speed change.

3,354,979
FUEL FEEDING SYSTEM FOR VEHICLES
Brooks Walker, 1280 Columbia Ave.,
San Francisco, Calif. 94111
Filed Jan. 25, 1965, Ser. No. 427,722
6 Claims. (Cl. 180—77)

1. A fuel feeding system for a vehicle having an engine for driving said vehicle, including in combination a fuel tank, a fuel pump connected to said tank and driven by power from said engine, a fuel and air mixing device attached to said engine, an accumulator through which fuel passes from said fuel pump to said fuel and air mixing device, said accumulator having a portion of its housing transparent for viewing the height of the fuel in the accumulator and an outlet located near the bottom of said accumulator and leading to said fuel and air mixing device, an inlet nozzle near the top of said accumulator for discharging fuel coming from said pump, and an air bleed device connected to the intake side of said fuel pump for introducing air in order to help establish a sizable head of air above the fuel in said accumulator.



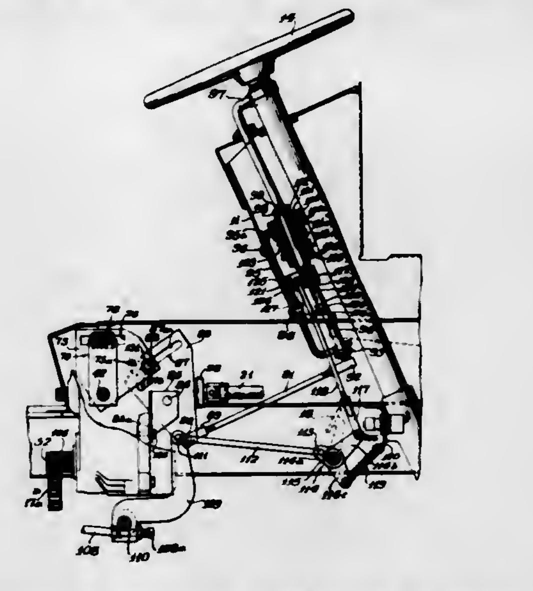
3,354,980
THEFT PREVENTION DEVICE FOR MOTOR VEHICLES
Niels H. Nielsen, Austell, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Feb. 16, 1966, Ser. No. 527,925
3 Claims. (Cl. 180—114)



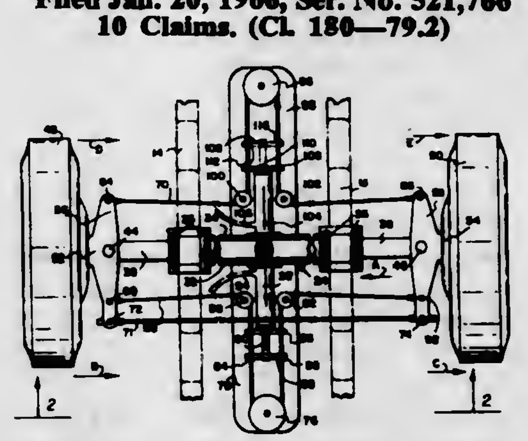
1. A theft prevention device for a vehicle having an engine, a fuel line for the delivery of fuel to said engine and an electrical circuit including a power source therefor to fire said fuel in said engine comprising a normally closed shutoff valve connectable in said fuel line, a one-way flow valve connectable in said circuit to limit the direction of current from said source to said engine, and an actuator for said shutoff valve connectable in said circuit on the remote side of said one-way valve relative to said engine responsive to current in said circuit for movement thereof out of its normally closed position for the flow of fuel to the engine.

3,354,981
HAND CONTROL MECHANISM FOR VEHICLE WITH HYDROSTATIC TRANSMISSION
William C. Swanson and John S. Lam, Clarendon Hills, and Donald W. Moyer, Downers Grove, Ill., assignors to International Harvester Company, a corporation of Delaware
Filed Mar. 7, 1966, Ser. No. 532,217
10 Claims. (Cl. 180—77)

1. In a vehicle having an engine and traction wheels with a hydraulic pump and motor transmission system operatively connected therebetween and with said system including a swash plate tiltable in one direction from a neutral position for varying the transmission ratio of the system with the vehicle moving in one direction and tiltable in an opposite direction form a neutral position for varying the transmission ratio of the system with the vehicle moving in an opposite direction, and braking mechanism for braking the vehicle, a control mechanism, comprising: means for controlling the tilt of the swash plate including control actuating means pivotally mounted on a support and rotatable in either direction from a neutral position for selectively positioning the swash plate in any one of a plurality of positions for establishing corresponding transmission ratio settings for the system; brake actuating means operable for energizing the braking mechanism and including an actuation member rotatably mounted on the vehicle; interlocking means operatively connected to said brake actuating means for movement therewith and cooperative with said control actuating means for returning the latter means to its neutral position upon rotation of the actuation member of said brake actuating means.



3,354,982
STEERABLE TRAILER WHEEL MECHANISM
Arthur G. Schramm, 4632 N. 49th Place,
Phoenix, Ariz. 85018
Filed Jan. 20, 1966, Ser. No. 521,766
10 Claims. (Cl. 180—79.2)



1. In a steerable trailer wheel mechanism the combination of: a frame; axle suspension means carried by said frame; an axle means movably mounted on said axle suspension means; steerable wheels rotatably mounted on said axle means, said axle means movable on said suspension means in opposite first and second actuating directions substantially at right angles to the normally forward and rearward rolling directions of said wheels; substantially vertical axis means on said axle means about which said wheels are pivotally steerable in first and second opposite steering directions at angles to said normally forward and rearward rolling directions; first and second steering means coupled to said wheels and said frame and operable in response to movement of said axle means on said axle suspension means in said first and second

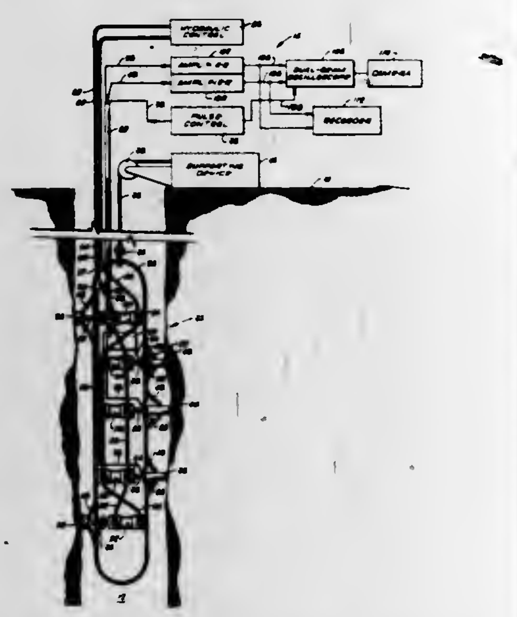
actuating directions, said first steering means adapted and disposed to steer said wheels in said first steering direction at an angle to said normally forward and rearward directions in response to movement of said axle means in said first actuating direction; said second steering means adapted and disposed to steer said wheels in said second steering direction opposite to said first steering direction and at an angle to said normally forward and rearward directions in response to movement of said axle means in said first actuating direction.

3,354,983
METHOD AND APPARATUS FOR OBTAINING SHEAR WAVE VELOCITIES

Everett L. Erickson, Ponca City, Okla., and Jesse T. Cherry, Livermore, Calif., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Jan. 18, 1965, Ser. No. 426,099

11 Claims. (Cl. 181—.5)



1. Apparatus for obtaining shear wave velocity in an earth formation, comprising:

means for generating a shear wave in the earth formation; said means comprising:
- a first group of mutually bonded laminations which exhibit positive magnetostriction;
- a second group of mutually bonded laminations which exhibit negative magnetostriction, said second group being bonded to said first group along an abutting surface therebetween; and
- means for producing a magnetic field around said first and second groups;

first means for detecting wave energy in the formation;

second means for detecting wave energy in the formation which is aligned with the generating means and said first means and is a known distance from said first means; and

means for measuring the travel time of the wave energy between said first and second means.

3,354,984
DEPTH CONTROLLED MARINE SEISMIC DETECTION CABLE

George M. Pavey, Jr., Dallas, Tex., assignor to Whitehall Electronics Corporation, Richardson, Tex.

Filed Aug. 19, 1965, Ser. No. 480,868

9 Claims. (Cl. 181—.5)

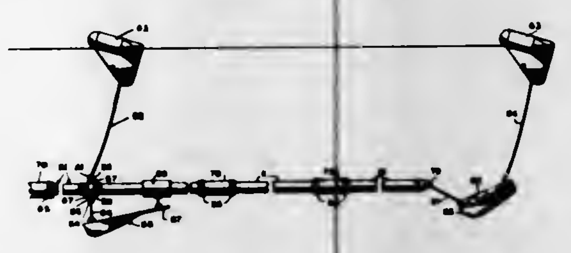
1. A waterborne seismic prospecting system for subaqueous geological structures comprising, in combination,

(1) an oil filled flexible elongated neutrally buoyant detector streamer comprising a plurality of discrete detection streamer sections serially connected and adapted to be towed by a vessel at a uniformly high rate of speed beneath the surface of a body of water, each of said sections having a plurality of seismic detecting devices therein,

(2) a lead in tow cable secured to the vessel for towing the streamer through the water,

(3) longitudinally extensible elastic yieldable means interconnecting the trailing end of said tow cable with the leading end of said detection streamer for preventing vibrations from the tow cable from adversely affecting said detecting devices while the streamer is towed through the water at a high rate of speed,

(4) and additional longitudinally extensible elastic means interconnecting the adjacent trailing and leading ends respectively of at least one pair of said detection streamer sections intermediate the bead and trailing sections of said streamer for maintaining the streamer at a predetermined depth of submersion at the interconnected sections, said elastic interconnecting means comprising,



(5) a fitting sealed to a pair of oil filled hose members secured thereto and having a plurality of equally spaced bores extending longitudinally therethrough,

(6) means for establishing a longitudinally extensible elastic towing connection from the outer ends of said hose members to the end portions of a pair of detection streamer sections adjacent thereto,

(7) a depressor connected to said fitting,

(8) a streamlined float secured to said fitting and towed thereby in a position directly above the depressor, and

(9) means including a plurality of longitudinally extensible elastic strain cables extending interiorly throughout substantially the combined lengths of both members for preventing vibrations from the interconnected float and depressor from adversely affecting the response of the detection streamer to seismic signals reflected upwardly from a subaqueous geological formation while the detection streamer is towed at a fixed depth throughout the length thereof and at a relatively high rate of speed within the water.

3,354,985
SEISMIC PROSPECTING METHOD OF LOCATING A SUSPECTED FAULT

Neil R. Sparks, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Sept. 22, 1966, Ser. No. 584,629

8 Claims. (Cl. 181—.5)

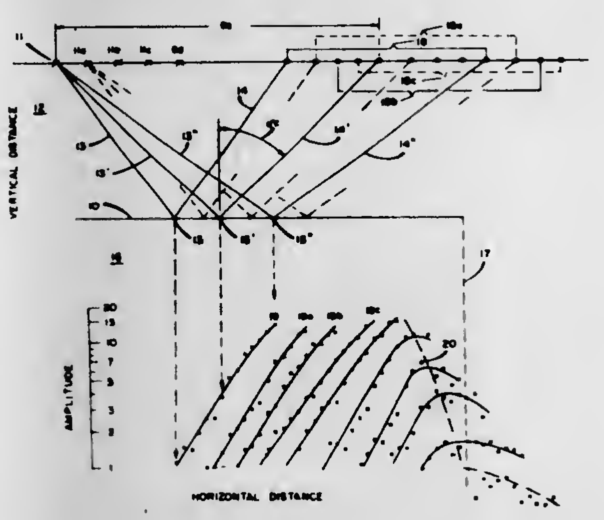
1. A method of seismic prospecting directed toward the location of a suspected fault in a particular underground formation wherein said underground formation and overlying material has a critical distance d_c, said method comprising:

(a) locating a spread of seismic detectors at a first location in alignment with a first point and said suspected fault, at least one of said detectors being located a distance less than d_c from said shot point and at least another of said detectors being located a distance at least as great as d_c from said shot point,

(b) initiating a seismic wave in the earth at said first point,

(c) detecting the resulting seismic wave signal arriving at the said seismic detectors, including the event characterized by reflection from from the upper surface of said formation,

(d) obtaining a value of the magnitude of the maximum amplitude of said reflected event for each detector of said spread,



(e) moving said spread of detectors in a straight line to a second location in a direction toward said suspected fault,

(f) initiating a second seismic wave at a second point, the spacing of the detectors at said second location and the point at which the second seismic wave is initiated being the same as that of the first spread of detectors and said first point,

(g) repeating steps (c) and (d) for the second seismic wave,

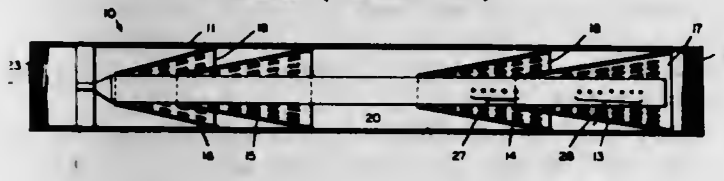
(h) recording the value of the maximum amplitude of said reflected event for each detector for each location of said spread of detectors for each seismic wave initiation.

3,354,986
MUFFLER WITH FRUSTO-CONICAL BAFFLE MEMBERS SPACED ALONG CENTRAL TUBE

William A. Moss and Rose E. Griffin, Lafayette, La., assignors, by direct and mesne assignments, of fifty percent to said Moss, twenty-five percent to James D. Parkerson, and twenty-five percent to J. Arthur Roy, all of Lafayette, La.

Filed July 21, 1965, Ser. No. 473,631

9 Claims. (Cl. 181—57)



1. A compact muffler comprising an elongated tubular, imperforate, casing defining an inlet opening and an outlet opening aligned therewith,

a tube extending substantially axially of said casing and having a closed end spaced within and apart from said outlet opening,

a plurality of frusto-conical members surrounding said tube and defining at least two overlapping expansion chambers and acting as baffle means,

at least two of said plurality of members being spaced apart intermediate said outlet and inlet openings to define a flow chamber of larger volume than either of said expansion chambers and arranged in axial alignment therewith,

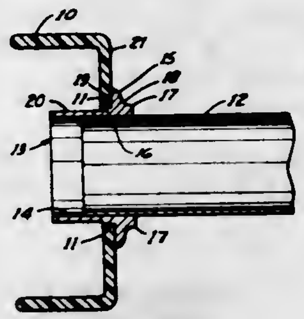
and apertures defined by said members and said tube to provide a gas flow passageway from a portion of said tube adjacent said inlet opening through said expansion chambers and said flow chamber to said outlet opening.

3,354,987
LADDERS

Richard L. Werner, Sharon, Pa., and Lawrence A. Kocina, Simsbury, Conn., assignors to R. D. Werner Co., Inc., Greenville, Pa., a corporation of Pennsylvania

Filed Sept. 16, 1965, Ser. No. 487,743

4 Claims. (Cl. 182—228)



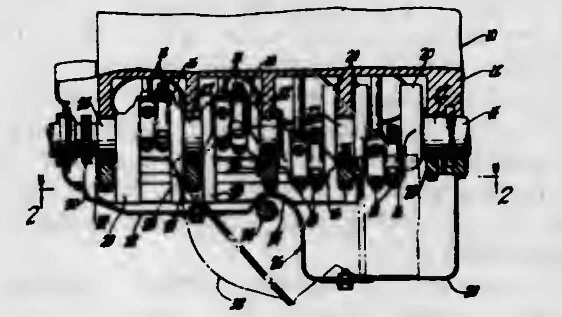
1. A joint for a ladder rail having a rung opening in said rail, comprising a rung, a tubular ferrule, said ferrule having a tubular body portion including a substantially peripherally disposed preformed annulus of predetermined relatively greater radial extent than the remainder of said body portion and extending radially outwardly thereof, a shoulder portion, an end portion of lesser diameter than said shoulder portion projecting outwardly of said rail opening, the said preformed annulus abutting substantial portions of one side of the said rail surrounding the rung opening, the said shoulder portion of the ferrule closely fitted within the said opening and reinforcing portions of the rail surrounding the same, the end portion formed into a second annulus of relatively lesser circumference than said preformed annulus compressively engaging portions peripherally surrounding the rung opening on an opposite side of said rail, the said preformed annulus and shoulder affording support both axially and radially.

3,354,988
ENGINE WITH BAFFLED OIL PAN

Thomas R. Leonard, Lansing, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 17, 1965, Ser. No. 488,146

8 Claims, (Cl. 184—6)



1. In combination with an internal combustion engine having a crankshaft rotatably carried in the lower portion thereof, said crankshaft having a plurality of longitudinally spaced eccentric portions,

an oil pan closing said engine lower portion adjacent said crankshaft and having at one end a sump portion to contain a charge of lubricating oil,

said oil pan including a pair of side walls and a floor interconnecting said side walls, said floor having a raised portion extending transversely thereacross between said sump portion and the other end of said oil pan to provide clearance for a member to pass transverely under said pan, and

baffle means extending longitudinally along one side of said pan and over said raised portion and including means to receive oil swept to said side of the pan other end by said crankshaft eccentric portions and to carry said oil over said raised portion and back to said sump portion to prevent the trapping of excessive oil in said pan other end by said raised portion.

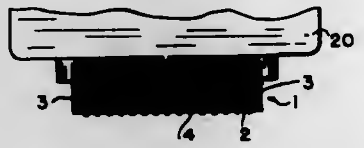
3,354,989

OIL COLLECTOR AND PROJECTING MAGNETIC RETENTION MEANS THEREFOR

Donald J. Anderson, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Aug. 30, 1965, Ser. No. 483,506

5 Claims. (Cl. 184—106)



1. An oil collector comprising a container having drainage openings and being of a material which is distortable by hand and resistant to oil, said container including side means, a bottom and an open top, a filling of an oil-absorbent material in said container, and permanent magnet means secured to said side means projecting above the open top and the side means for supporting the container from a magnetically responsive housing in spaced relation with the housing.

3,354,990

IMPACT ABSORBING DEVICE

Malte Lorentz Stahl, Linköping, Sweden, assignor to SAAB Aktiebolag, Linköping, Sweden, a corporation of Sweden

Filed Dec. 9, 1965, Ser. No. 512,735

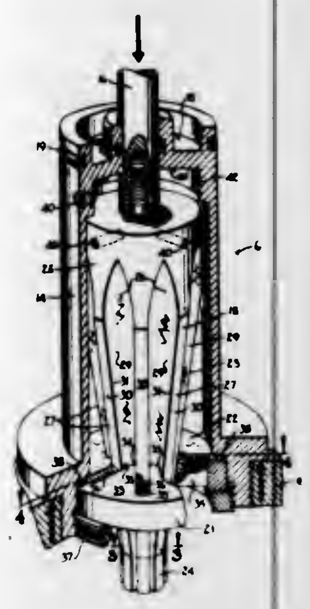
Claims priority, application Sweden, Dec. 12, 1964, 15,498/64

4 Claims. (Cl. 188—1)

3. Impact absorbing means connected between two bodies that may be subjected to opposing load forces exerted along a defined axis, said impact absorbing means being of the type comprising a pair of cooperating shearing elements, each connected with one of said bodies to be moved thereby toward the other element in response to load forces on its body and each of said shearing elements having shearing edges opposing and cooperable with the shearing edges on the other, and a homogeneous shearable member normally interposed between said elements but adapted to be sheared by them when opposing load forces upon said bodies along said axis exceed a predetermined value, to thus absorb energy from one of said bodies while permitting it to have limited motion relative to the other, said impact absorbing means being characterized by:

(A) one of said shearing elements having a portion that projects radially with respect to said axis and has a pair of surfaces that are substantially parallel to one another and to said axis, and another surface that extends obliquely to said axis and intersects said parallel surfaces to define the shearing edges on said one element;

(B) said shearable member having a surface disposed substantially transversely to said axis so that during shearing thereof said portion of said one shearing element has steadily increasing engagement of its parallel surfaces with the shearable member; and



(C) the other of said shearing elements having a slot that defines the shearing surfaces thereon and in which said portion on the first mentioned shearing element is closely receivable.

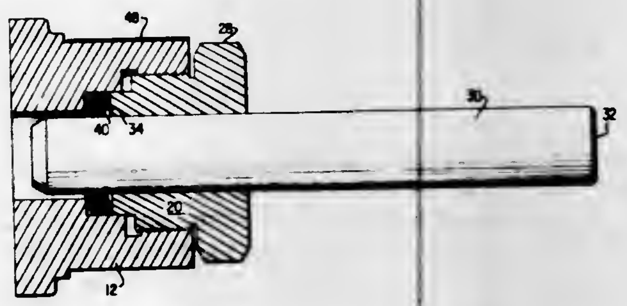
3,354,991

SHOCK ABSORBER

Grant F. Kenworthy, Des Plaines, Ill., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed May 11, 1966, Ser. No. 549,303

3 Claims. (Cl. 188—67)



1. A manually resettable shock absorber for absorbing unidirectional moving load, the shock absorber comprising:

(a) a stationary body including a bore extending therethrough,

(b) a gland including a bore extending therethrough,

(c) means for adjustably mounting the gland on the body for relative axial movement with the bores of the gland and body substantially aligned,

(d) a smooth surfaced cylindrical rod extending through the bores with only one end of the rod being disposed for contact by a moving load to be decelerated,

(e) means on the body and gland defining an adjustable cavity surrounding the rod, the cavity being adjustable by relative axial movement of the gland on the body,

(f) at least one annular friction absorbing disc positioned in the cavity with the inner periphery of the disc adjacent to the rod and the outer periphery of the disc in the adjustable cavity and spaced from an inner peripheral wall thereof,

(g) the annular disc being dish-shaped and the entire outer periphery of the disc being closer to the end of the rod to be contacted by the moving load than the entire inner periphery of the disc,

(h) and, a rigid fulcrum in the stationary body formed by a corner edge of the bore and cavity, the fulcrum contacting the side of the disc near the inner periphery thereof on the side face of the disc adjacent the stationary body, an end face of the gland defining the adjustable cavity being adapted to contact the outer periphery of the disc so that upon relative axial adjustment of the gland on the body, the inner periphery of the disc may provide an adjustable friction force on the surface of the smooth cylindrical rod.

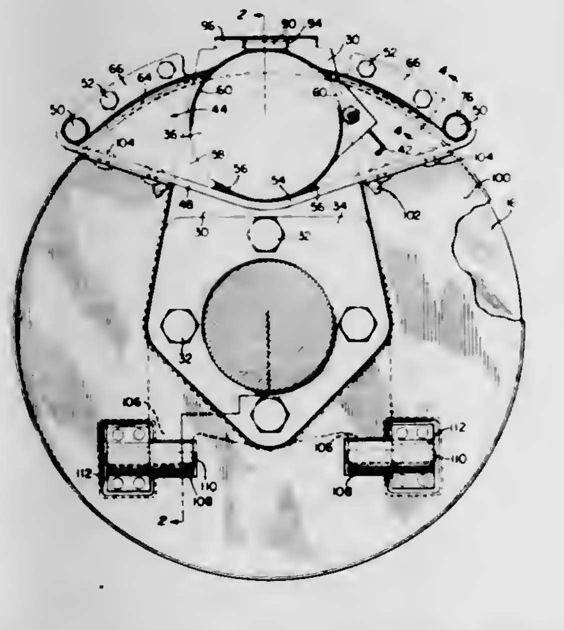
3,354,992

SPOT-TYPE DISC BRAKE WITH DUST COVER

Albert W. Cook, Tallmadge, and John W. Runner, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Aug. 23, 1965, Ser. No. 481,856

4 Claims. (Cl. 188—73)



1. The combination in a spot type brake of an axle, a wheel rotatable on the axle, a disc rotatable with the wheel, a stamped sheet metal pressure unit straddling a portion of the periphery of the disc, said pressure unit having an anvil portion on one side of the disc and a cup portion on the other side of the disc, a torque plate fixed to the axle and extending between the anvil portion and the cup portion of the pressure unit in a position closely parallel to the disc and radially beyond the disc, the radially outer end of the torque plate being bifurcated, a key joining the cup portion and anvil portion of the pressure unit and slidably extending through the bifurcated end of the torque plate, a piston slidably mounted in the cup portion, a block of friction material engaging the piston and movable by the piston against one side of the disc, said friction material extending slidably through a hole in the torque plate, a second block of friction material in the anvil portion and movable against the other side of the disc, means for supplying fluid under pressure to to cup portion behind the piston, a dust shield substantially covering one side of the disc and surrounding the torque plate, means securing the dust shield to the pressure unit, and means pivotally mounting the dust shield in relation to the torque plate at a distance greater than about one-half of the diameter of the disc from the pressure unit to provide hinged movement of the pressure unit to and from the disc.

3,354,993

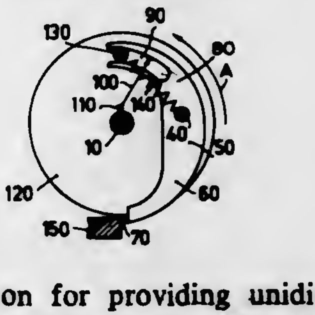
ONE WAY BRAKE FOR A SELF-STARTING SYNCHRONOUS MOTOR

Piet van der Lely, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 8, 1965, Ser. No. 462,304

Claims priority, application Netherlands, June 9, 1964, 64—6,486; June 16, 1964, 64—6,795

4 Claims. (Cl. 188—82.77)



1. A transmission for providing unidirectional rotation for a synchronous motor comprising: a motor shaft having an end face thereon; an output shaft having an end face thereon; said end faces of said motor shaft and said output shaft being in opposed spaced relation; a body pivotally mounted on said end face of said drive shaft; stop means adjacent said body adapted to engage said body to prevent rotation of said motor shaft in one direction; and a pin mounted on the end face of said output shaft slidably engaging said body, said pin drivably interconnecting said motor shaft and said output shaft during rotation of said motor shaft in the other direction and guiding said body into abutting engagement with said stop means during rotation in said one direction.

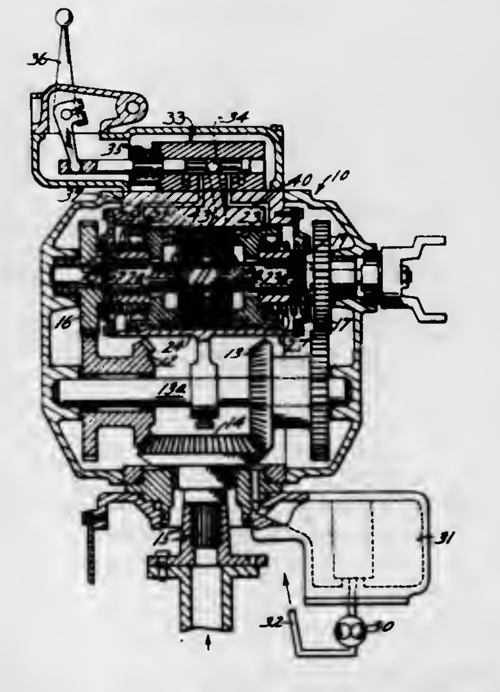
3,354,994

TRANSMISSION LOCKING MEANS

Alfred W. Sieving and Paul C. Rosenberger, Decatur, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Feb. 1, 1966, Ser. No. 524,073

3 Claims. (Cl. 192—4)



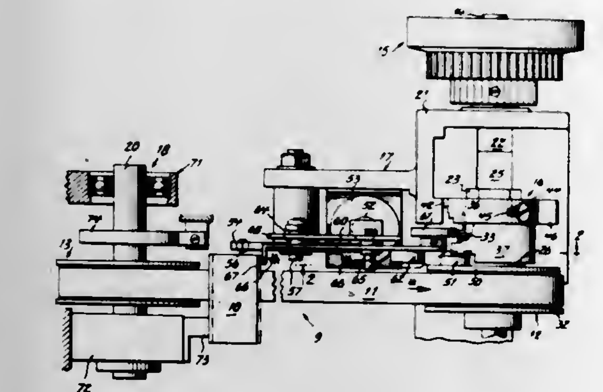
1. In a forward-reverse transmission having an output shaft, forward and reverse drive gearing, two clutches concentric with the shaft to selectively engage the for-

ward and reverse gearing therewith and brake means for the shaft disposed between the clutches, the improvement which comprises said brake means being in the form of two separate brakes, and means operable upon engagement of either clutch to release only one of said brakes.

3,354,995
CLUTCH ARRANGEMENT

John C. Morris, East Norwalk, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 7, 1966, Ser. No. 532,216
13 Claims. (Cl. 192—3.5)

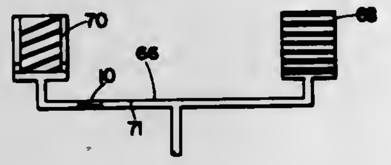


1. A device of the class described comprising,
(a) a driving element,
(b) a driven element,
(c) means for supporting said driving and driven elements for rotation,
(d) a coiled spring member operatively connected to said driven element and adapted for rotation therewith,
(e) a portion of said spring member encompassing a portion of said driving element and operable for movement into an engaged position and a disengaged position with respect to said driving element,
(f) lug means on said spring member,
(g) stop means carried by said support means for engaging said lug for biasing said spring at a predetermined level of tension under conditions when said spring portion is in the disengaged position, and
(h) actuating means operable to urge said portion of said spring member into said engaged position for transmitting torque to the driven element to effect conjoint rotation of said driving and driven elements.

3,354,996
APPARATUS AND METHOD FOR CLUTCH REPAIR

Jess A. Lewis, 1230 Dell Cove Drive, Fort Wayne, Ind. 46804

Filed July 21, 1965, Ser. No. 473,636
18 Claims. (Cl. 192—85)

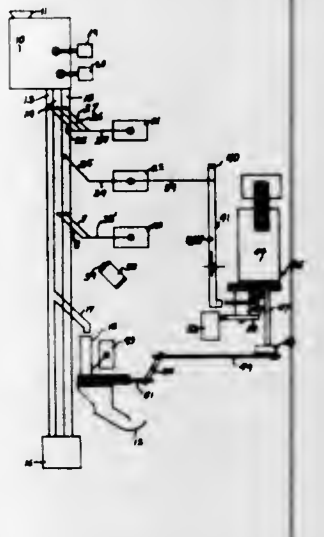


1. A flow-restricting device comprising a tubular member having opposite ends, a cylindrical exterior surface and a cylindrical interior bore, said exterior surface and said interior bore being coaxial and extending between the opposite ends of said member, said exterior surface having an annular groove therein intermediate said ends, said annular groove having a bottom surface coaxial with said interior bore and said exterior surface and two opposite facing and upstanding side walls generally perpendicular thereto, and an O-ring positioned in said groove, said O-ring having a portion thereof radially extending beyond said exterior surface, said side walls being spaced apart a distance greater than the cross-sectional diameter of said O-ring.

3,354,997
COIN CHANGERS

Richard L. Hansard, Florissant, Mo., assignor to Coin Acceptors, Inc., St. Louis, Mo., a corporation of Missouri

Filed July 9, 1965, Ser. No. 470,694
3 Claims. (Cl. 194—10)



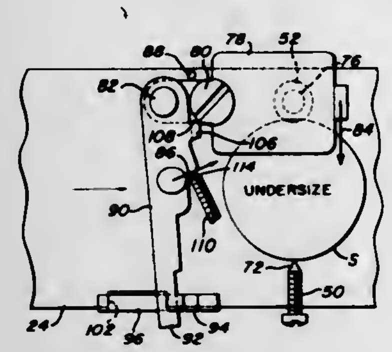
1. A coin changer for vending machines comprising:
(a) a plurality of coin switches each operable from an initial to an actuated position by a descending coin,
(b) a credit accumulator device,
(c) circuit means interconnecting said coin switches and said accumulator device,
(d) said accumulator device being adapted to register a unit of credit for each operation of any one of said coin switches,
(e) a vend switch,
(f) means actuating said vend switch when said accumulator device registers a predetermined number of credit units,
(g) means for paying out change coins, including a drive motor,
(h) an electro-magnet coacting with one of said coin switches to retain the same in actuated condition,
(i) a carrier switch operatively connected to said electro-magnet for controlling the energization thereof, and,
(j) cam means geared to said payout drive motor and actuating said carrier switch.

3,354,998
COIN CHUTE CONSTRUCTION

Mitchell A. Hall, 445 Rossford Ave., Fort Thomas, Ky. 41075

Filed Jan. 7, 1966, Ser. No. 519,234
20 Claims. (Cl. 194—57)

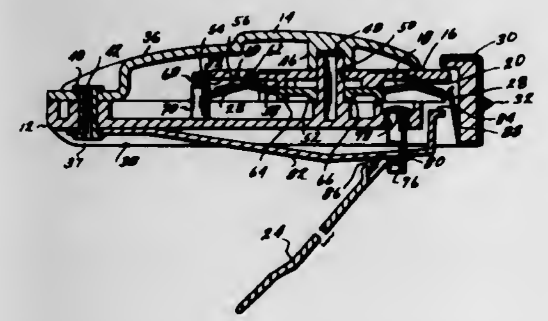
1. A coin chute comprising in combination: an elongate reciprocable coin slide apertured to receive and advance a coin or slug, said slide being movable between a normal position of retraction and a position of full advancement; guide means for the slide, including a rear housing having therein a chamber through which the slide may advance a coin or slug; a latch pivoted upon the housing, and a keeper on the slide, said latch being movable to engaging and disengaging positions with respect to the keeper; means yieldingly urging the latch constantly toward said keeper-engaging position; a calipering means including a carrier rockable relative to the housing, and a calipering element movable with the carrier, operative to caliper a coin or slug while advancing through the housing chamber; and means controlled by the movable calipering element, for disposing the latch to keeper-engaging position when a slug undergoing calipering is either oversize or undersize in comparison with an acceptable coin, the keeper being so located upon the slide as to engage with the latch prior to full advancement of the coin slide.



3,354,999
EMBOSSING IMPLEMENT WITH TAPE ADVANCED BY LATCHED DIE MEMBERS

Louis Bucalo, Holbrook, N.Y., assignor to Kinemotive Corporation, Farmingdale, N.Y., a corporation of New York

Filed Apr. 4, 1966, Ser. No. 539,960
9 Claims. (Cl. 197—6.7)

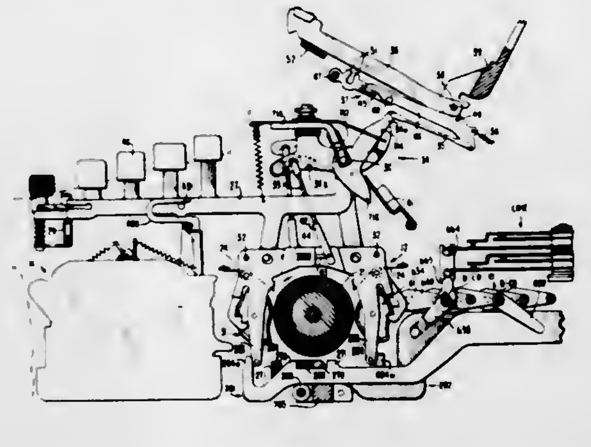


1. An apparatus for embossing symbols into a strip medium, comprising:
means defining a passage for said strip medium;
die means defining a plurality of pairs of mating dies for said symbols, said die means being rotatable to position a select mating pair of said dies in said passage;
means for displacing at least one die of said select pair of dies to accomplish forceful engagement between said select pair of mating dies; and
latch means for holding said one die of said select pair displaced in an embossing relationship with said strip and the other die of said select pair after said means for displacing is returned to its original position, said die means being rotatable while said latch means holds said select pair of dies and said strip in an embossing relationship, said latch means being arranged so that after a predetermined amount of rotation of said die means, said latch means is released, whereby said strip medium is advanced by said selected die pair as said selected die pair is held in embossing relation by said latch means and rotated, and the advance of said strip medium is terminated when said latch means is released after said predetermined rotation of said die means.

3,355,000
TYPE BAR ACTUATING MECHANISM WITH SEPARATE DRIVE AND ACTUATING BELL CRANKS

Edwin O. Blodgett, Rochester, N.Y., assignor to Friden, Inc., a corporation of Delaware

Filed May 31, 1966, Ser. No. 553,911
18 Claims. (Cl. 197—17)



1. A power driven type bar actuating mechanism comprising a type bar supported for pivotal motion between type impression and rest positions, an actuating bell crank and a drive bell crank, means for supporting said bell cranks in side-by-side relation upon a common support axis for coaxial pivotal motion, means mechanically coupling said actuating bell crank and type bar to effect spring bias positioning of said type bar in said rest position thereof and for actuating-bell-crank drive motion of said type bar toward said type impression position thereof, said drive bell crank having an arm portion in abutting driving engagement with an arm portion of said actuating bell crank, and power actuating means mechanically coupled to said drive bell crank for selective power drive movement thereof in one angular direction from a position of rest and for return movement thereof in the opposite angular direction to said position of rest to move said type bar to said type impression position thereof by actuating force angularly exerted by said drive bell crank through said abutting driving engagement with said coaxially supported actuating bell crank and thereafter to permit spring-bias return movement of said type bar to said rest position thereof.

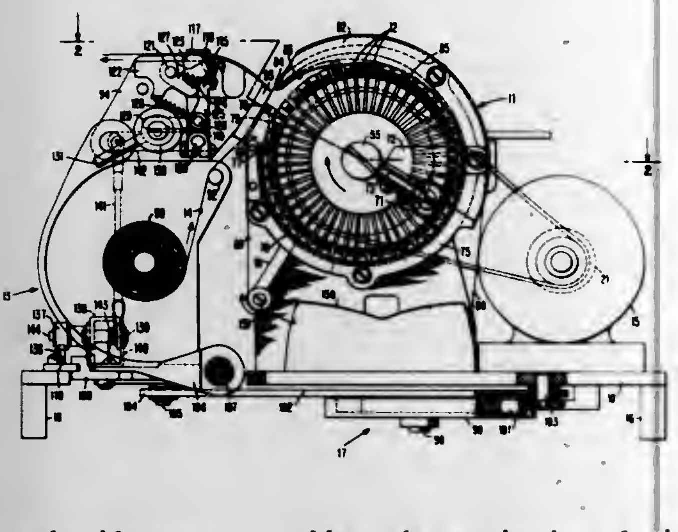
3,355,001
SERIAL ON-THE-FLY PRINTER USING A PAIR OF SEQUENTIAL TYPE MEMBER GUIDES

David W. Reed, Endicott, Victor R. Simpson, Owego, and Larry D. Zolnosky, Binghamton, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed May 16, 1966, Ser. No. 550,486
2 Claims. (Cl. 197—18)

1. In a device for printing on a record medium, the combination comprising:
rotary type carrier means having a plurality of type members pivotally supported thereon and each movable from a stored position to a print position;
means for rotating said carrier to urge said type members outwardly from said carrier by centrifugal force and move said members successively past a printing location on said record medium;
means in addition to said centrifugal force for continuously biasing each said type member outwardly from said carrier;
means on said carrier for producing a force holding each said type member in said stored position;
means operable to counteract said holding force and selectively release said type members from said holding means;

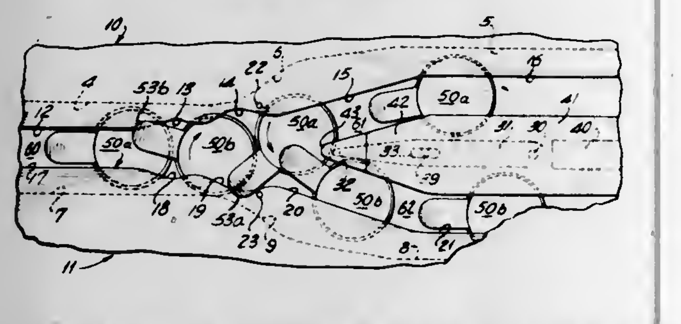
first guide means adjacent said carrier means for receiving released ones of said members and providing a force in a direction opposite to said centrifugal force and said biasing means for restraining said members in a position intermediate said stored and print positions; and



second guide means operable at the termination of said first guide means for applying an outward force in the same direction as said centrifugal force and said biasing means to direct said members in said intermediate position to said print position at said printing location.

3,355,002
METHOD AND APPARATUS FOR DIVIDING THE FLOW OF ARTICLES

Eugene Greck, Westfield, N.J., assignor to American Flange & Manufacturing Co., Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,457
5 Claims. (Cl. 198—31)

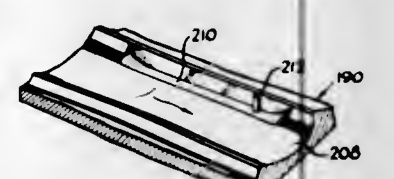


1. The method of dividing the flow of articles from a single path into two separate paths comprising conveying a series of articles in contacting relationship seriatim along an inlet path, staggering said articles so that alternate articles move respectively toward one side and toward the other side of said inlet path while maintaining said contacting relationship, separating said respective alternate articles into two separate outlet paths and imparting to said articles at the point of separation rotational movement in a direction such that the leading portion of said articles rotates away from said point of separation.

3,355,003
FOOD HANDLING APPARATUS

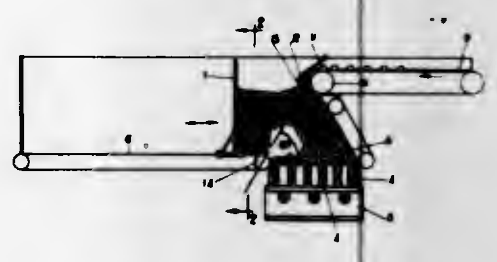
Clyde D. Wayne, Wilmette, and Harry A. Tabernacki, Chicago, Ill., assignors to National Dairy Products Corporation, Chicago, Ill., a corporation of Delaware
Original application June 25, 1964, Ser. No. 377,892, now Patent No. 3,301,454, dated Jan. 31, 1967. Divided and this application Apr. 26, 1966, Ser. No. 563,314
7 Claims. (Cl. 198—32)

1. An apparatus for receiving objects disposed in side-by-side relation and advancing them in a given direction while repositioning them into single file order, said apparatus comprising a conveyor defining a channel extending in said given direction and having side walls arranged so as to enable a pair of objects disposed in side-by-side relation to be advanced therealong, said conveyor being operable to move the objects along the channel in the given direction, said side walls of said channel being formed so as to slope upwardly in both directions from adjacent the longitudinal centerline of said channel, means defining a recess in at least one of the sloping side walls of said channel effective to receive a side edge portion of one of a pair of side-by-side objects, and means defining an abutment within said recess effective to engage the leading edge of the one of the pair of side-by-side objects and detain said object until the other of the pair of objects has passed so as to thereby re-orient the objects from a side-by-side to a single file disposition.



3,355,004
STORAGE BINS

John P. Rupert, Stellenbosch, Cape Province, Republic of South Africa, assignor to Tobacco Research & Development Institute (Proprietary) Limited
Filed June 8, 1966, Ser. No. 556,030
Claims priority, application Republic of South Africa, June 17, 1965, 3,194/65
7 Claims. (Cl. 198—44)



1. A storage bin consisting in an elongated trough, a fixed end to the trough, means for continuously feeding articles to the bin at the fixed end, a withdrawal point in the base of the bin adjacent the fixed end for continuously withdrawing articles from the bin, a movable band forming the floor of the bin except over the withdrawal point, a false end to the trough mounted on the movable band and movable towards and away from the withdrawal point by moving the band, and means to actuate the band to move in response to differences between the rate of feeding and the rate of withdrawal.

3,355,005
LOADING DEVICE AND METHOD FOR TRANSFER POINTS

Joseph Craggs, Morrisonville, and Keith McCann, Taylorville, Ill., assignors to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 2, 1965, Ser. No. 444,966
15 Claims. (Cl. 198—103)

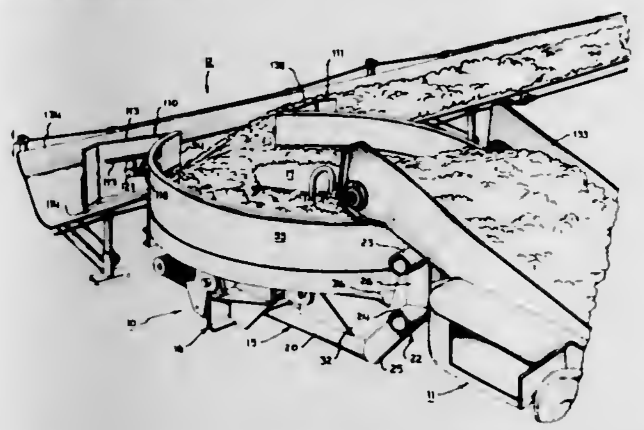
1. A device for transferring surge loads of particulate type material to substantially unidirectional material removal means, said device including in combination with substantially unidirectional material removal means

a turntable assembly and supporting structure therefor,

drive means operable to rotate said turntable assembly at a rate consonant with the capacity of the material removal means to accept material without undesirable spillage,

means for directing material carried near the edge portion of the turntable assembly and discharge therefrom under the impetus of movement imparted by the turntable assembly along a substantially tangential path with respect to the periphery of the turntable assembly, and positioned to discharge the material to the material removal means which is adjacent said turntable assembly,

said material directing means including a wall structure formed about only a portion of the edge of the turntable assembly,



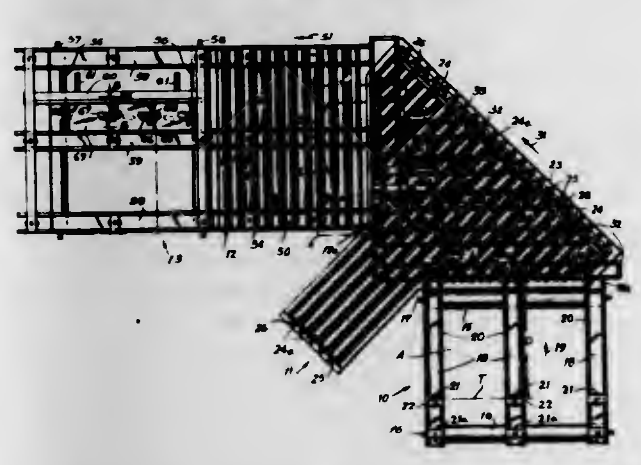
said wall structure forming a discharge exit in the area of tangency of the path of the discharged material from the turntable assembly,

said wall structure further forming an upwardly open loading area above the turntable assembly which enables surge loads to be deposited into the turntable assembly at any point from the center to the edge portion thereof and,

means for orienting the turntable assembly in a position in which that portion of the edge of the turntable assembly in which the tangential discharge exit is formed may be at an elevation above the level of the material removal means whilst a portion of the device remote from the tangential discharge exit may be below the level of the material removal means.

3,355,006
ARTICLE CONVEYOR DEVICE

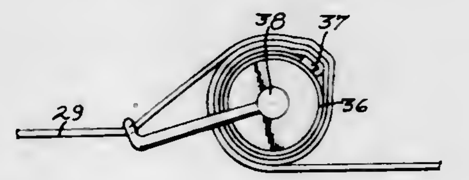
Alfred Heilbrunn, Scranton, Pa., assignor to Chromographic Press, Inc., Hamden, Conn., a corporation of Connecticut
Filed July 28, 1966, Ser. No. 568,437
11 Claims. (Cl. 198—105)



1. A device for guiding a flat article progressively across the surfaces of first and second, angularly offset conveyors having coplanar drive surfaces without varying the orientation of said article, comprising first anti-friction, hold down means disposed above one said conveyor for pressing said article against said drive surface of said one conveyor, thereby to cause said article to advance with said surface until said article passes beyond said hold down means, and second, laterally extended hold down means disposed above the said drive surface of said second conveyor for simultaneously engaging the lead edge of said article at spaced points as the same passes from said first to said second conveyor, said first and second hold down means being spaced apart a distance equal to the length of said articles, whereby said article is transferred from the control of said first to the control of said second conveyor.

3,355,007
VARIABLE LENGTH CONVEYOR

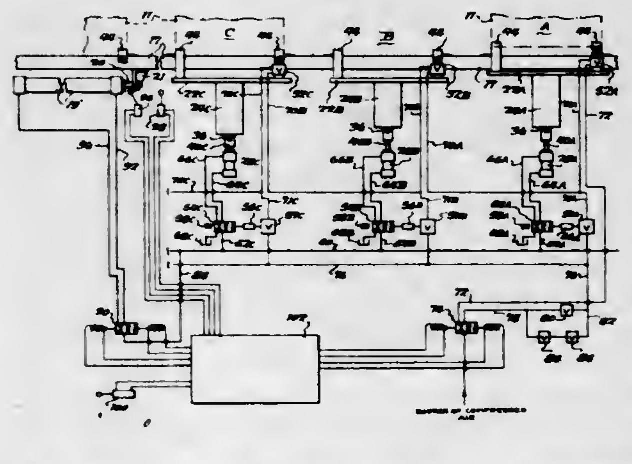
Tommy A. Middlesworth, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 13, 1966, Ser. No. 579,058
4 Claims. (Cl. 198—139)



1. A conveyor comprising a frame having longitudinally spaced portions; a driving pulley rotatably mounted on one of said portions; an idler pulley rotatably mounted on the other of said portions; a flexible belt trained over said driving and said idler pulleys; means for adjusting said pulleys relatively longitudinally to any one of several operating positions; a plurality of torsion spring members disposed at spaced intervals about the periphery of said flexible belt, said torsion spring members being biased to wind up belt slack in response to diminution in belt operating tension so that the peripheral extent of said belt automatically conforms to any one of said operating positions.

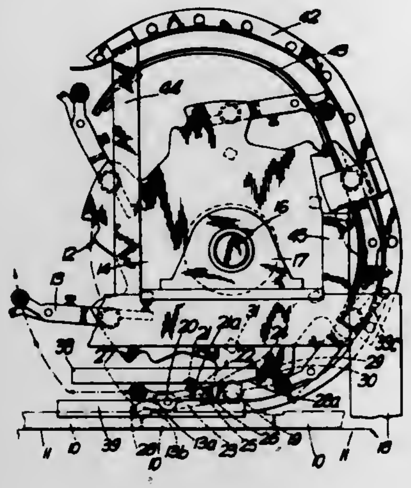
3,355,008
ACCUMULATING TRANSFER CONVEYOR

Carl J. Milazzo, Tonawanda, N.Y., assignor to Hohl Machine & Conveyor Co., Inc., Buffalo, N.Y.
Filed July 1, 1966, Ser. No. 562,356
10 Claims. (Cl. 198—219)



1. An accumulating transfer conveyor comprising reciprocating transfer means adapted to support articles at a plurality of positions and advance the same along a predetermined path from a first position to successive positions, means associated with said positions to remove articles at said positions from said transfer means, and means including article sensing means associated with said positions and operable in response to the presence of an article blocked at one of said positions to maintain such blocked article removed from said transfer means during advance of the latter along said path.

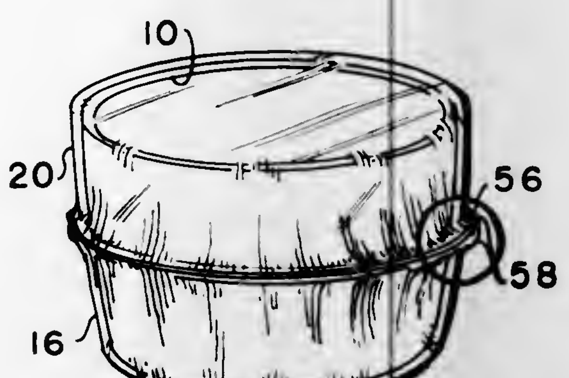
3,355,009
ARTICLE PROPELLING APPARATUS
George Harold Carter, Reigate, England, assignor to Redland Tiles Limited, Reigate, England
Filed Feb. 10, 1966, Ser. No. 526,594
Claims priority, application Great Britain, Feb. 17, 1965, 6,918/65
12 Claims. (Cl. 198—221)



1. Article propelling apparatus comprising a guideway, and means for propelling articles along the guideway including a rotary member having two parallel coaxial disc which are mounted above the guideway for rotation about a horizontal axis, a plurality of shafts which are mounted on the two discs in peripherally spaced relationship to each other and which extend parallel to the axis of rotation of the discs, a pair of pawls mounted on each shaft for rotation about the axis of the shaft relative to the discs, each pawl having a nose portion for engaging an article on the guideway, stop surfaces on the discs for limiting swinging movement of the pawls about their respective axes towards the axis of rotation of the rotary member, first fixed guide means at the sides of the guideway and projections on the pawls engaging the guide means to guide the pawls along the guideway as the pawls are carried along the lowest part of their circular path, abutments on the discs for lifting the pawls out of engagement with the articles on the guideway at the downstream end of the fixed guide means, adjustable stop screws on the respective pawls for engaging said abutments, second fixed guide means providing peripherally-extending slots at the sides of the rotary member for controlling the rotational positions of the pawls relative to the rotary member about their respective axes, the pawls having respective portions for engaging the slots, said pawls each comprising a first portion pivotally connected to the rotary member, a second portion pivotally connected to the first portion about an axis which is offset lengthwise of the pawl from and parallel to the axis of rotation of the pawl on the rotary member, the first and second portions having respective abutment surfaces together defining a limiting position of relative rotation of the first and second portions, one of which abutment surfaces is provided by an adjustable stop screw, and a spring connected between the first and second portions and urging them into said limiting position.

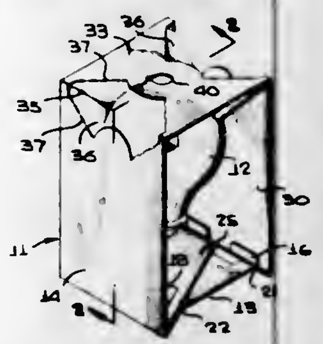
3,355,010
HEAT SHRINKABLE PACKAGE
John W. Harrison, Winchester, Mass., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Filed Mar. 16, 1966, Ser. No. 541,891
3 Claims. (Cl. 206—46)

1. A package comprising
(a) an article,
(b) a first biaxially oriented thermoplastic film completely and tightly enclosing the lower portion of said article,
(c) a second biaxially oriented thermoplastic film completely and tightly enclosing the upper portion of said article,



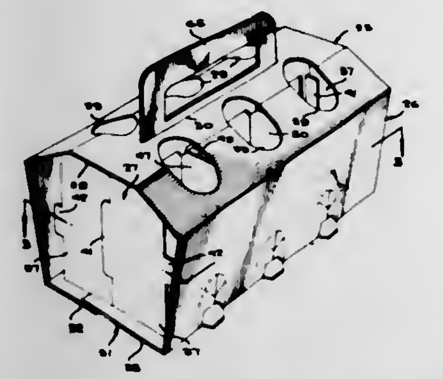
(d) an elastic thickened bead portion comprising a seal between said first and second films, said bead encircling completely the article intermediate its end portions, fitting the periphery of said article more tightly than the remaining portions of said films, and having substantially less orientation then the remaining portions of said films.

3,355,011
ELECTRIC LIGHT BULB CARTON
Francis A. Cilluffo, Elmhurst, N.Y., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 11, 1963, Ser. No. 264,095
8 Claims. (Cl. 206—46)



8. A one-piece carton for an article having an enlarged bulbous portion at one end and a small base portion at the other end thereof, said carton being formed of a plurality of integral panels for encircling said article with adjacent panels being in angular relation, one of said panels being a top panel for lying closely adjacent to and opposing said bulbous portion remotely from said base portion and being connected to two adjacent side ones of said panels along fold lines, a pair of opposed flaps extending into said carton along each of said fold lines, each of said flaps bridging the respective one of said fold lines and having a portion formed from both said top panel and the respective adjacent side panels, each of said flaps being folded along a continuation of the respective fold line and being of an angular cross-section, said flaps extending inwardly of said carton for engaging said bulbous portion, and means on said carton remote from and extending upwardly and inwardly thereof toward said top panel for engaging said base portion for retaining said article in engagement with said pairs of flaps.

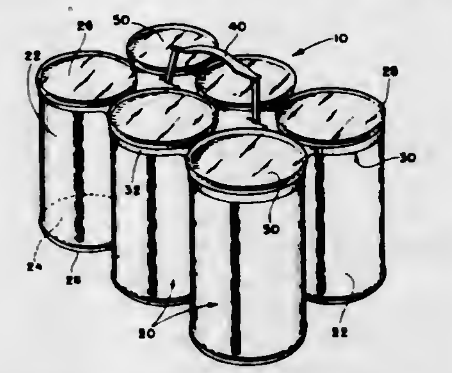
3,355,012
DOUBLE WALL SEPARATOR FOR BOTTLE CARRIERS
Arthur J. Weiss, Bergenfield, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 31,691, May 25, 1960. This application Jan. 21, 1965, Ser. No. 429,205
15 Claims. (Cl. 206—65)



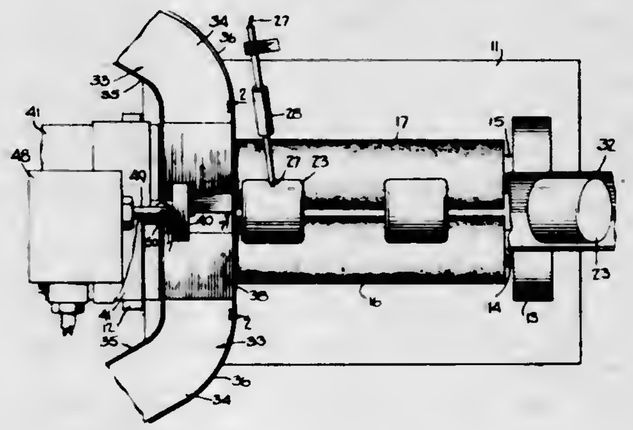
15. An article carrier comprising a tubular carton having open ends, a plurality of articles in said carton, a separator disposed within said carton for maintaining said articles out of direct contact with one another, said separator including a pair of upstanding walls, a pair of intermediate flanges struck from each of said walls, a pair of flanges of one of said walls being directed outwardly from the plane thereof in a first direction to form intermediate article spacers disposed generally normal to the plane of said one wall, another of the pair of flanges of the other of said walls being directed outwardly from the plane of said another wall in a direction opposite to said first direction to form intermediate article spacers disposed generally normal to the plane of said another wall, said flanges being joined to associated walls by fold lines, the fold lines in each wall being spaced from one another a predetermined distance, the length of each flange normal to said planes being greater than one-half said predetermined distance whereby said intermediate flanges are of a maximum length to either side of said walls for the material available between said fold lines, at least another pair of intermediate flanges struck from each of said walls, and each flange of said at least another pair of intermediate flanges being intimately adjacent an associated one of said first-mentioned pair of flanges whereby each of said article spacers is of a two-ply thickness.

3,355,013
CONTAINER CARRIER PACKAGE HAVING PROTECTIVE TOP COVERS
Ougljesa Jules Poupitch, Itasca, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Sept. 23, 1965, Ser. No. 489,670
8 Claims. (Cl. 206—65)

1. A container package unit comprising a plurality of containers each having at least one transverse enlargement projecting outwardly from the side walls thereof, a plastic carrier member having a plurality of apertures therein corresponding to the number of containers, the material portions surrounding each of the apertures having a peripheral measurement less than that of the corresponding container with which it is to be associated and capable of yielding circumferentially whereby the insertion of containers axially through said apertures causes the material portions around each aperture of the plastic carrier member to stretch and deform for engaging and resiliently gripping the containers beneath said enlargements to resist container withdrawal, separate cover means overlying the upper ends of said containers and held in position by and connected to material portions around each aperture of the plastic carrier member whereby removal of said plastic member causes removal of said cover means, and handle means for transporting the package.

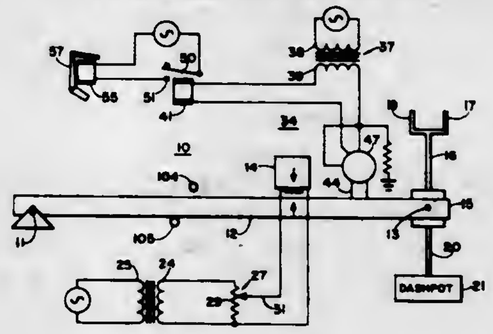


3,355,014
AUTOMATIC SURFACE FLAW DETECTOR
Daniel J. Howles, Jamestown, N.Y., assignor to TRW Inc., a corporation of Ohio
Filed Nov. 6, 1964, Ser. No. 409,514
7 Claims. (Cl. 209—73)



1. An automatic surface inspection device comprising two slightly skewed rollers with means for rotating the rollers in the same direction, means for directing a beam of light onto a rotatable workpiece on the rollers and a light conducting means having a small light receiving area from an acceptable surface, electrical means connected to said light conducting means for converting the received light into an electrical signal for selecting or rejecting the article, an article holding means at the discharge end of the rollers, means connected to said electrical means and operated in response to the electrical signal for moving said article in different directions depending upon the presence of detected flaws.

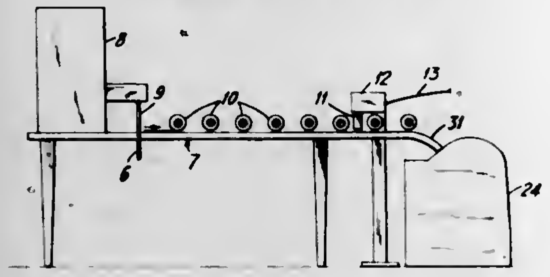
3,355,015
CONTROL APPARATUS FOR GRADING OBJECTS
Curtis M. Cervin, 5004 Xerxes Ave. S., Minneapolis, Minn. 55410
Filed Apr. 23, 1965, Ser. No. 450,381
13 Claims. (Cl. 209—73)



5. The method of sorting articles capable of a rolling action comprising the steps of placing the articles on a

horizontal support, pushing the articles in seriatum by means of a separate member for each article, permitting a gravity force to alter the velocity of each article in the sequence to thereby advance each article with respect to its pushing member, sensing a physical property of an article while in advance of its pushing member, and laterally ejecting an article while its property is being sensed if it be different from a predetermined magnitude.

3,355,016
SORTING DEVICE FOR CODE BEARING ARTICLES
David C. Prince, P.O. Drawer W, Boynton Beach, Fla. 33435
Filed Jan. 4, 1965, Ser. No. 423,231
3 Claims. (Cl. 209—74)



1. A sorting device including, in combination with a sorting table,

timing means to physically separate a plurality of articles to be sorted and place the articles on the table in an ordered and timed sequence,

progressing means to receive the articles and physically move them along the table,

code reading means to pick up a code printed on the articles, which code is in the form of a line of bits of visible markings which are representative of language characters but are not themselves language characters,

wherein the said markings are physically contiguous to the characters represented by those markings, the said characters are visible and printed on the articles, the said code reading means is responsive to the code markings but not to the characters, and the line of markings is aligned in the direction of movement of the articles,

the said reading means consisting of a single reading head adapted to read each of said lines,

operating means responsive to the said code reading means, and

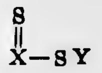
a plurality of bins each having a gate plate controlling the opening into its bin,

wherein the operating means moves a plate in response to the code on the article,

and also including an intermediate tape mechanism comprising a first driven roller responsive to the code reading means so that it drives only during the reading of the code, a magnetic write head contiguous to the first driven roller, a second driven roller responsive to the ready condition of the bins, a magnetic read head contiguous to the second driven roller, and a continuous loop of magnetic tape having two variable loose loops, wherein the write head is connected to the code reading means and the read head is connected to the operating means.

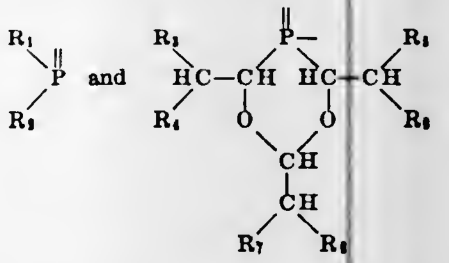
3,355,017
METHOD FOR EFFECTING ORE FLOTATION
Vernon Paul Wystrach, Noroton Heights, and Michael McKay Rauhut, Norwalk, Conn., and Wilfred Lawson Freyberger, Houghton, Mich., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Dec. 2, 1966, Ser. No. 598,597
10 Claims. (Cl. 209—166)

1. In a process for beneficiating base metal ores containing a major amount of middling particles by subjecting said base metal ore as a pulp to froth flotation, said pulped ore being selected from the group consisting of copper sulfides, zinc sulfides, lead sulfides, iron sulfides and mixtures thereof, the improvement which comprises: incorporating in said pulped base metal ore a dithiophosphinate promoter having the formula:



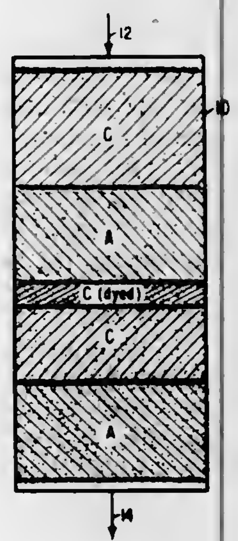
$$\overset{\overset{S}{\|}}{X}-SY$$

wherein X is selected from the group consisting of



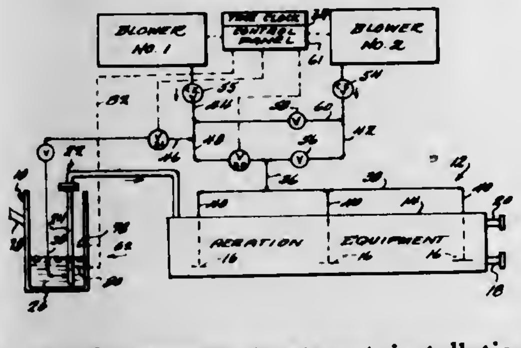
wherein Y represents a member selected from the group consisting of H, ammonium, alkali metal, and alkaline earth metal; and each R represents an alkyl group having 2 to 12 carbon atoms or a lower cycloalkyl; and floating off an enriched concentrate containing middling particles of desired metal values.

3,355,018
DEMINERALIZATION OF WATER
Verity C. Smith, Dedham, Mass., assignor to Barnstead Still and Sterilizer Co., Boston, Mass., a corporation of Massachusetts
Filed Dec. 18, 1964, Ser. No. 419,530
6 Claims. (Cl. 210—94)



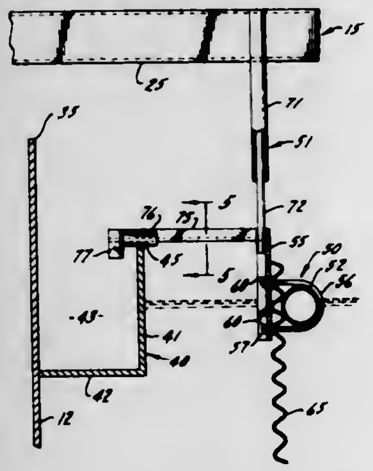
1. An ion exchanger for demineralizing water comprising a container having an inlet and an outlet and containing a bed comprising a first layer of cation exchange resin adjacent to the inlet, a second layer of anion exchange resin adjacent to said first layer, a third layer of cation exchange resin adjacent to said second layer, and a fourth layer of anion exchange resin between said third bed and said outlet, said cation exchange resin in said first and third layers having a dissociation constant of at least 10^{-3}, a portion thereof other than that adjacent to the fourth layer being dyed with an indicator which will change color upon substantial exhaustion of the ion exchange capacity of said resin, the portion thereof adjacent to the fourth layer being undyed.

3,355,019
EDUCTOR CONTROL IN SEWAGE TREATMENT PLANT
Ryan D. Mitchell, Thomasville, Ga., assignor to Davco Manufacturing Corporation, Thomasville, Ga., a corporation of Georgia
Filed Nov. 3, 1965, Ser. No. 506,152
4 Claims. (Cl. 210—104)



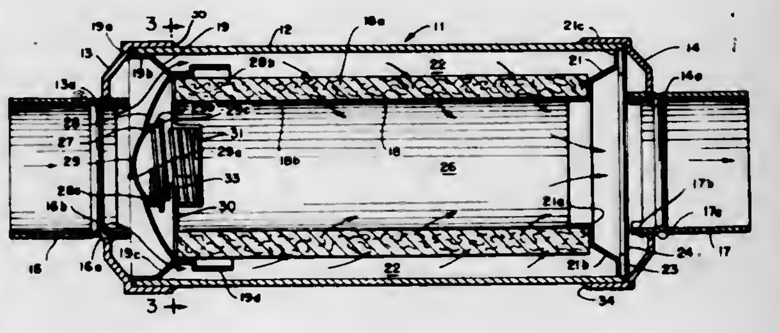
1. An aerobic sewage treatment installation comprising: sewage treating means for aerating sewage; sewage collection means for collecting sewage prior to its treatment in said treating means; air lift means including an eductor pipe having one end dipping into sewage in said collection means and its other end connected to deliver sewage to said treating means, said air lift means further including an air supply pipe connected to deliver air into said eductor pipe below the level of sewage in said collection means; first and second blowers for supplying compressed air through separate outlets; valve and conduit means connecting the outlet of said first blower with said treating means and with said air supply pipe, said connecting means including a normally closed first valve and a conduit extending therefrom to said air supply pipe, said connecting means further including a normally open second valve and a conduit extending therefrom to said treating means; conduit means connecting the outlet of said second blower with said treating means, said last-named conduit means being separate from the conduits associated with said first and second valves whereby when only one blower is operated air therefrom is passed to said treating means and whereby when both blowers are operated and when the positions of said first and second valves are reversed, air from said first blower passes to said air supply pipe and air from said second blower passes to said treating means.

3,355,020
SEWAGE TREATMENT SYSTEM
John W. Parks, Overland Park, Kans., Ralph A. Olson, Kansas City, Mo., and Marvin E. Wood, Lawrence, Kans., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey.
Filed Feb. 17, 1965, Ser. No. 433,313
13 Claims. (Cl. 210—121)



1. In a sewage treatment tank having a cylindrical wall with a rotating bridge surmounting said wall and a cylindrical weir mounted internally of the wall for controlling the passage of effluent liquid from the tank, a scum baffle arrangement comprising: generally circular bouyant means having a diameter slightly smaller than the cylindrical weir and adapted to float on liquid in the tank, baffle means associated with said bouyant means, said baffle means and bouyant means being vertically movable with the liquid level in the tank so that said baffle means prevents the passage of floatable material over the weir, and mounting means for connecting said bouyant means to the rotating bridge for rotation therewith.

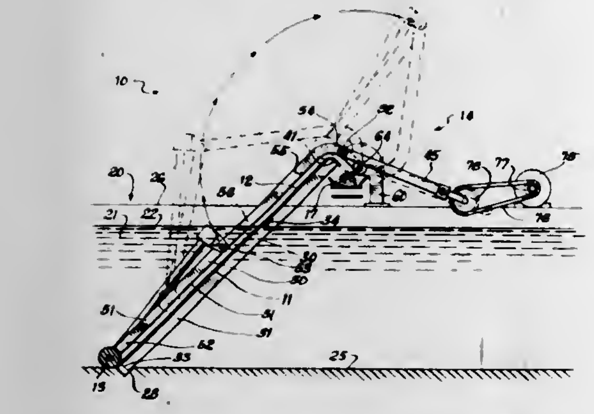
3,355,021
INLINE REFRIGERANT FILTER ASSEMBLY HAVING A BY-PASS VALVE THEREIN
Evan Jones, Evanston, Ill., assignor to Henry Valve Company, Melrose Park, Ill., a corporation of Illinois
Filed Jan. 27, 1965, Ser. No. 428,339
2 Claims. (Cl. 210—130)



1. A refrigerant filter assembly, comprising an elongated sleeve-like casing, an inlet cover plate and an outlet cover plate sealingly secured to opposite end of said casing, means for connecting said inlet and outlet cover plates with open ends of a suction line in a refrigeration system so that the flow of refrigerant through said suction line will enter at said inlet cover plate and exit adjacent said outlet cover plate, a tubular filter element fixedly secured to said casing by first and second mounting brackets, said first mounting bracket being positioned adjacent said inlet cover plate and having apertures formed therein through which said refrigerant can pass, said second mounting bracket being continuous and solid so as to prevent said refrigerant from passing therethrough, a domed inlet cap having an open end sized to extend around the outer surface of said tubular filter element, said domed inlet cap being positioned adjacent said inlet cover plate to direct the flow of refrigerant from said inlet cap through said apertures in said first mounting bracket along the outer surface of said tubular filter element for passage therethrough, said domed inlet cap including an outer annular member fixedly secured to said first mounting bracket, said domed inlet cap also including a centrally disposed inner cap member sized to sealingly engage with the interior rim of said outer annular cap member, said inner cap member being movable along a direction parallel to the flow of incoming refrigerant, spring means biasing said inner cap member in sealing relation with said outer annular cap member, said spring means being adapted to compress to permit the movement of said inner cap member to provide a by-pass flow path for said refrigerant through the opening in said outer annular cap member when the flow resistance through said filter element reaches a predetermined value, and heat shield means including a continuous skirt-like member surrounding in spaced-away relation one end of said filter element adjacent one of said cover plates for protecting said filter element from high temperatures developed at said cover plate.

3,355,022
FILTERING APPARATUS

Carl H. Nordell, Crystal Bay, Lake Tahoe, Nev. 89402
Filed Aug. 19, 1965, Ser. No. 481,033
6 Claims. (Cl. 210—162)

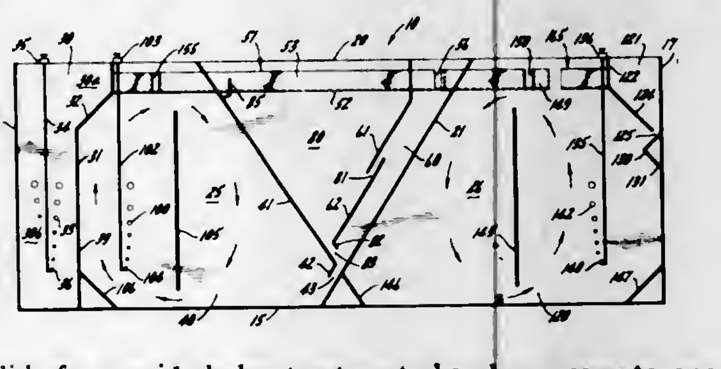


2. Filtering apparatus for removing undesired solids from a flowing stream of filterable liquid comprising a frame means; a screening means secured to and supported by said frame means, said screening means comprising a screen portion supportably positioned in said flowing stream by said frame means and defining an upstream face confronting said flowing stream for intercepting and removing solids therefrom, said screen portion extending from the bottom of said stream upwardly to an upper edge above said flowing stream, and a solids receiving portion adjacent said upper edge including a rearwardly extending segment defining a surface which is at an angle to said upstream face of said screen portion, said rearwardly extending segment terminating in an edge downstream of said screen portion and above the surface of said flowing stream; screen clearing means for engaging said screening means and said solids receiving portion, reciprocating means for supportably positioning and moving said screen clearing means along and against said upstream face and said solids receiving portion from the bottom of said stream to the downstream edge of said solids receiving portion of said screening means for collecting solids intercepted by said screening means, said reciprocating means comprising an upper link means and a lower link means pivotally interconnected at one end of each link means, pivoting means fixedly positioned adjacent said solids receiving portion of said screening means for pivotally supporting the end of said upper link means remote from said lower link means, means connecting said screen clearing means to the end of said lower link means remote from said upper link means, drive means for oscillating said upper link means about said pivoting means from a first position toward said upstream face of said screening means, whereat said screen clearing means is positioned adjacent the bottom of said stream to a second position away from said upstream face, whereat said screen clearing means is positioned adjacent the downstream edge of said solids receiving portion of said screening means, said remote ends of said upper and lower link means being drawn toward one another as said upper link means is moved from said first position to said second position.

3,355,023
SEWAGE TREATMENT SYSTEM

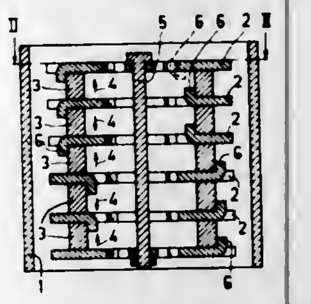
Joseph W. Foster, Kansas City, Mo., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Aug. 25, 1965, Ser. No. 482,523
4 Claims. (Cl. 210—195)

1. An apparatus for effecting activated sludge treatment of sewage, and the endogenous respiration of excess sludge manufactured in the treatment, comprising: a treatment tank, means dividing said tank into a first stage aeration chamber, a second stage aeration chamber, an energy absorption chamber, a settling chamber, and sludge treatment chamber means, means for feeding solid bearing liquid sewage to said first stage aeration chamber, first connecting passage means for transferring sewage from said first stage aeration chamber to said energy absorption chamber, second connecting passage means for transferring sewage from said energy absorption chamber to said settling chamber, third connecting passage means for transferring solids from said energy absorption chamber and said settling chamber to said second stage aeration chamber, fourth connecting passage means for transferring sludge from said second stage aeration chamber to said first stage aeration chamber, aeration means in said first stage aeration chamber, aeration means in said second stage aeration chamber, fifth connecting passage means for transferring sludge from said second aeration chamber to said sludge treatment chamber means, sixth connecting passage means for transferring floating solids from said sludge treatment chamber means to one of said aeration chambers, means for withdrawing effluent from the settling chamber, aeration means in said sludge treatment chamber means, and control means in said first and fifth connecting passage means which prevent the flow of sludge to said sludge treatment chamber means during normal sewage treatment while allowing the flow of sewage from said first aeration chamber to said energy absorption chamber, and permitting the flow of sludge from said second stage aeration chamber to said sludge treatment chamber means during aerobic digestion treatment of the sludge, while preventing the flow of sewage from said first aeration to said energy absorption chamber.



3,355,024
MAGNETIC FILTER

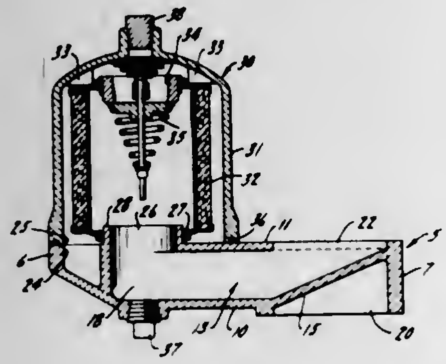
Derek Robert Skoyles, East Grinstead, and Arthur James Tyrrell, Ashtead, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 18, 1965, Ser. No. 426,137
Claims priority, application Great Britain, Feb. 3, 1964, 4,460/64
2 Claims. (Cl. 210—222)



1. A magnetic filter for filtering ferromagnetic material from a flowing liquid comprising a plurality of spaced annular discs of soft ferromagnetic material, a plurality of rings of permanent magnetic material, each ring being interposed between spaced adjacent annular discs to form a stack, and means for axially clamping said discs and rings together, the outer diameter of each of said rings being smaller than the outer diameter of each of said discs, and wherein said rings magnetize said discs axially in directions such that each disc is of a magnetic polarity opposite the adjacent disc, each of the discs in said stack being provided with lugs projecting in opposite directions to thereby clamp said rings on either side thereof and serve to maintain the discs and rings in a substantially concentric stacked arrangement, and whereby a flow path is formed down the center of said stack and around said stack.

3,355,025
FILTER MANIFOLD

Walter J. Kudlaty, Elmhurst, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 1, 1965, Ser. No. 492,209
3 Claims. (Cl. 210—249)



1. A manifold for connecting a filter assembly housing between a source of unfiltered fluid and a receptacle for filtered fluid including:

an elongated hollow body having an interior chamber divided into a plurality of side-by-side passages by longitudinally extending partitions,

an inlet to said chamber adapted to be connected to said source of unfiltered fluid and an outlet from said chamber adapted to be connected to the receptacle for said filtered fluid with said inlet and outlet being spaced apart on opposite sides of said body in alignment with each other,

an outlet to a filter assembly housing from said body and an inlet from said housing formed in said body with said outlet and inlet being concentric and the outlet surrounding the inlet,

at least one of said passages connecting said chamber inlet to said filter assembly housing outlet, and

at least another one of said passages connecting said filter housing inlet with said chamber outlet, said longitudinally extending partitions dividing the interior chamber into three passages with the outer passages connecting the same inlet and outlet.

3,355,026
PORTABLE FILTER

Richard J. Schut, 16108 Via Primero, San Lorenzo, Calif. 94580
Filed Mar. 2, 1966, Ser. No. 531,233
5 Claims. (Cl. 210—416)

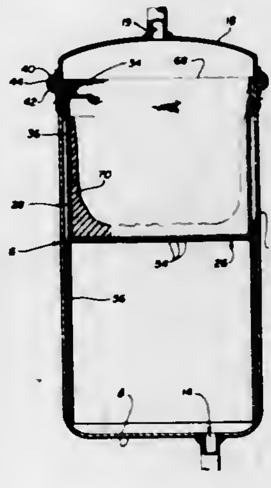
1. A filtering apparatus for liquid cooking oils comprising:

an open topped container having a bottom wall and upstanding side walls for receiving liquid oil having a discharge opening in said bottom wall adapted for connection to a vacuum pump;

a removable container top formed and dimensioned for sealing engagement with the open top of said container and having an intake opening therein adapted for communication with a source of unfiltered oil;

a perforated false bottom member mounted in said container and spaced from said bottom wall forming a lower chamber and an upper chamber and spaced from said side walls permitting oil flow therebetween;

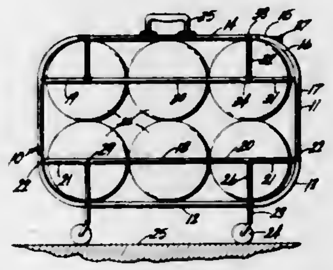
a sleeve member having a perforated upstanding side wall mounted in spaced relation to said walls of said upper chamber and having a first position within said upper chamber wherein a first end is in engagement with said false bottom and a second position within said upper chamber wherein said first end is spaced from said false bottom; and



an open topped filter member having a bottom and side walls longer than said sleeve for receipt within said sleeve member and dimensioned for seating against said container walls when said sleeve is raised to said second position.

3,355,027
PORTABLE COMBINATION CARRIER AND RACK FOR BASKETBALLS AND THE LIKE

Roger A. Gibbons, Clintonville, Wis., assignor to Romac, Inc., Fond du Lac, Wis., a corporation of Wisconsin
Filed Sept. 13, 1965, Ser. No. 486,768
10 Claims. (Cl. 211—14)



6. A ball carrier comprising a substantially vertical generally U-shaped frame, the arms of the U carrying coaxially arranged bearings defining a substantially horizontal pivotal axis, a lower elongated ball carrying rack in said frame, an upper elongated ball carrying rack pivoted on said bearings to swing through substantially 180° from a down or closed position in a predetermined spaced parallel relation to said lower rack to cage two rows of balls between the two racks, to an up or open position wherein both racks function separately to hold balls, and means for releasably securing said upper rack in either of its two operative positions.

3,355,028
PORTABLE BICYCLE STAND

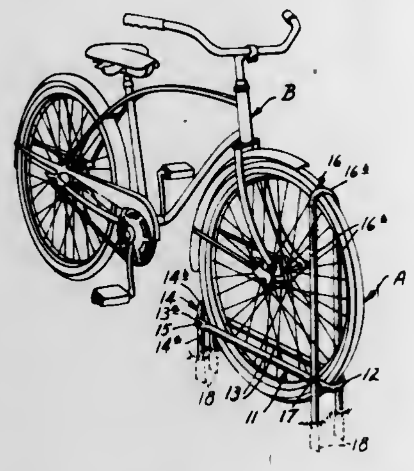
Raymond O. Mork, 712 Bristol St., Worthington, Minn. 56187
Filed Oct. 14, 1965, Ser. No. 495,820
4 Claims. (Cl. 211—21)

1. A collapsible-portable bicycle stand comprising:

(a) a generally horizontal U-shaped frame member, opposite arms of which are adapted to receive therebetween a bicycle wheel, the closed end thereof limiting movements of said wheel in one direction,

(b) a relatively short leg element pivotally secured to one of said arms adjacent the other end of said horizontal frame member for pivotal movements from an upstanding operative position to a collapsed position coplanar with said frame member,

(c) means carried by said realtively short leg element limiting movement of a wheel received between said arms in a direction away from said closed end,



(d) a relatively long leg element pivotally secured to one of said arms adjacent said closed end of said frame member for movements from an upstanding operative position to an inoperative collapsed position coplanar with said horizontal frame member and with said short leg element,

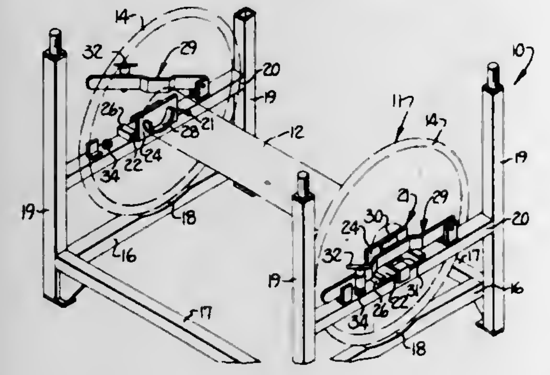
(e) said relatively long leg element projecting upwardly in closely spaced relation to one side of a wheel received between said arms and limiting lateral movement of said wheel in one direction, and

(f) means carried by the upper end of said relatively long leg element and limiting lateral movements of a wheel received between said arms in the opposite direction.

3,355,029

BEAM HOLDING MEANS

Charles W. Eurey, Lincolnton, N.C., assignor to Excel, Inc., Lincolnton, N.C., a corporation of North Carolina
Filed Oct. 24, 1965, Ser. No. 504,510
9 Claims. (Cl. 211—44)



1. In combination with a rack for receiving and supporting during transport and storage a generally cylindrical beam having a pair of spaced apart heads and a central axially directed opening in each head, means for securing a beam against displacement relative to the rack so that damage to the beam is avoided, said means comprising:

a first member mounted on the rack for axial movement relative to the beam supported on the rack and adapted to engage a beam head thereof and the central opening therein,

a second member for engaging said first member and being movable between beam locked and unlocked positions,

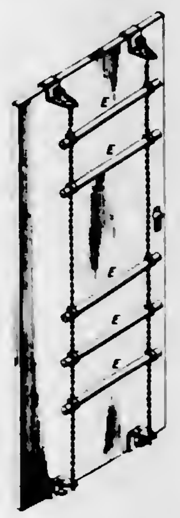
one of said members having a cam surface thereon adapted to be engaged by the other of said members upon movement of said second member to the beam locked position so that said first member is moved axially of the beam into engagement with the beam head thereof and the central opening therein, and

means for securing said second member in the beam locked position.

3,355,030

DOOR SUPPORTED ADJUSTABLE TOWEL RACK

Norman E. Cathcart, R.R. 1,
White Pigeon, Mich. 49099
Filed Dec. 6, 1965, Ser. No. 512,582
1 Claim. (Cl. 211—87)

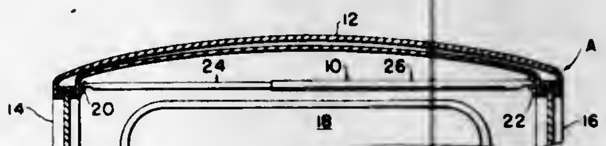


A towel rack comprising a pair of spaced, opposed vertically extending chain elements, a plurality of horizontal elongate towel supporting bars extending between said chains, each of said bars having an aperture adjacent the end thereof, said chains extending through said apertures, means comprising a spring clip on said bar adjacent said apertures for attaching said chains to said bars, means for attaching the upper and lower ends of each chain on a vertically extending panel, said supporting means comprising a bracket having a hook element adapted to be hooked over the top and bottom edges of said panel, a flap stamped out of and extending from a wall of said hook element, said flap having a slot therein, an end of each said chain attached in said slot, and an element projecting outwardly from said bracket below said flap and said chain passing over said element to space said chains laterally from said panel.

3,355,031

CAR CLOTHES RACK

Raymond A. Kleehammer, 2929 Burns Ave.,
Detroit, Mich. 48214
Filed Oct. 21, 1965, Ser. No. 499,323
1 Claim. (Cl. 211—123)

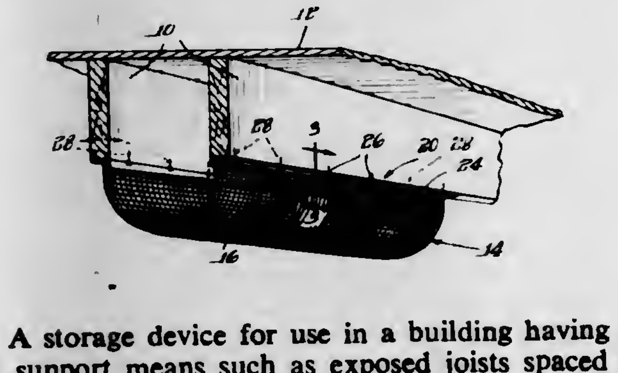


A hanger for clothes and the like for use in an automobile having upwardly projecting hooks within the passenger space on opposite sides thereof, said hanger comprising elongated, straight, telescoping tubular rods, said rods being of uniform circular cross-section from their telescoping ends throughout substantially their full lengths except at their outer ends, the top wall portion at the outer end of each rod being undeformed and retaining the full circular cross-section of the remaining length of the rod, the bottom wall portion at the outer end of each rod being deformed radially inwardly toward said top wall portion to a downwardly concave condition concentric with said top wall portion, said top and bottom wall portions at the outer end of each rod being substantially 180° in circumferential extent and in substantially full surface-to-surface contact throughout said 180° to provide a reinforced double wall end structure of limited axial extent and of substantial strength, and aligned, registering apertures in the contacting top and bottom wall portions adjacent the outer extremity of each rod, said aligned apertures being located at the midpoint in the circumferential extent of said contacting top and bottom wall portions at the outer end of each rod and adapted to receive one of said hooks with the portions of said contacting top and bottom wall portions circumferentially beyond said apertures extending downwardly alongside said hooks to provide a stable mounting, said rods being axially slidable relative to one another to adjust the overall length of said telescoping rods to correspond to the distance between said hooks or to foreshorten the same when not in use.

3,355,032

STORAGE DEVICE

Dale J. Vercellotti, Westmont, Ill., assignor of one-third interest to Gordon J. Loebeck, Clarendon Hills, Ill., and one-third interest to Albina J. Mouish, Westmont, Ill.
Filed Dec. 17, 1965, Ser. No. 514,567
9 Claims. (Cl. 211—134)



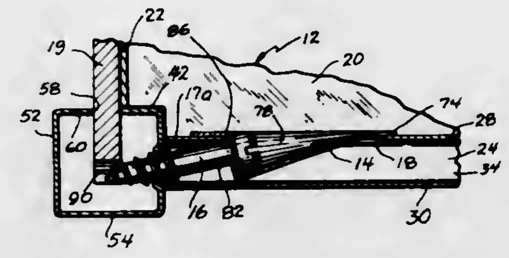
1. A storage device for use in a building having overhead support means such as exposed joists spaced apart a predetermined distance, comprising a sheet of flexible material having a pair of longitudinal edges spaced greater than said predetermined distance, elongated reinforcing means secured to said longitudinal edges, and means on said elongated reinforcing means adapting said storage device for attachment to said overhead support means with said longitudinal edges brought toward one another and spaced substantially said predetermined distance with said flexible material depending therefrom in curved form.

3,355,033

KNOCKDOWN STEEL SHELVING UNIT AND CORNER FASTENING MEANS THEREFOR

Irwin J. Ferdinand, Glencoe, and Dale R. Lopatka, Glenview, Ill., assignors to S. A. Hirsh Mfg. Co., Skokie, Ill., a corporation of Illinois
Filed Oct. 21, 1965, Ser. No. 499,203
8 Claims. (Cl. 211—148)

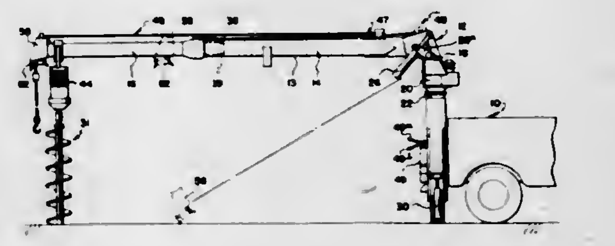
3. In a knockdown steel shelving unit, the combination of an elongated upright cross sectionally rectangular corner post having a side wall provided with vertically spaced perforations therethrough, a generally rectangular horizontally disposed shelf cut away at the corners to engage two adjacent side walls of the posts and having a depending rectangular box flange with spaced outer and inner vertical walls extending along a longitudinal edge thereof and terminally opening against said side wall, said inner wall having an aperture therethrough spaced from said opening, said side wall having outwardly die struck rib sections above and below each perforation received within said flange opening between the inner and outer flange walls, fastening means for drawing the open end of the flange into rigid contact with the side wall around said rib sections including a sheet metal stamping having a border flange engaging the face of the inner wall and a tapered offset chute in the center thereof received in said aperture with the taper deepening towards the post and terminating in a thrust wall having a bolt receiving aperture therethrough that is in alignment with said perforation, and a bolt extending through said bolt aperture at an angle to the side wall of the post and threadedly received in the perforation with a half turn of the thread beyond the perforation resting against the other side of the post wall whereby the bolt with the thrust wall of the chute maintains the flange square to the side wall of the post.



3,355,034

EXTENSIBLE BOOM WITH LOAD COMPENSATING MEANS

James H. Holan, Rocky River, and Curtis W. Verrell, Fairview Park, Ohio, assignors to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Original application Aug. 7, 1964, Ser. No. 388,217. Divided and this application Sept. 19, 1966, Ser. No. 580,530
7 Claims. (Cl. 212—55)



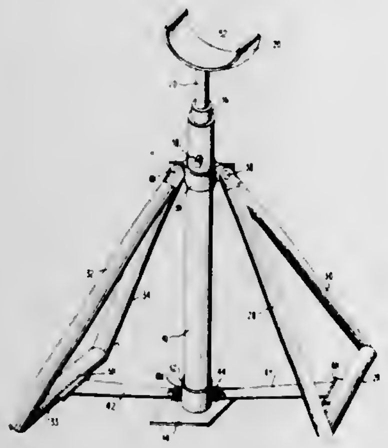
1. An extensible derrick boom for use with mobile platforms or the like, said derrick boom comprising, an inner relatively stationary boom section and at least one outer extensible boom section disposed for telescopic movement with respect to said inner boom section, said outer boom section having a plurality of spaced openings adjacent the outermost end thereof, fluid actuated motor means operative on the boom for extending and retracting the outer boom section with respect to the inner boom section, an interchangeable auxiliary boom section detachably coupled in telescopic relation on said outer boom section for selectively varying the effective length of the boom, said auxiliary boom section having a plurality of spaced openings adjacent the innermost end thereof, and a locking mechanism for locking said auxiliary boom section in selective extended or retracted lengthwise position with respect to said outer boom section, said locking mechanism including a removable locking member in-

sertable through selective of the openings in the respective outer and auxiliary boom sections, when in aligned position thereof, and a bracket member attached adjacent the outermost end of said outer boom section for interlocking coacting engagement with said removable locking member for retaining the same in said openings and for locking said auxiliary and outer boom sections in extended or retracted position.

3,355,035

PORTABLE TANK LOADER

Jeffrey A. Bennett, Box 3, Stone Ridge, N.Y. 12484
Filed Jan. 28, 1965, Ser. No. 428,783
2 Claims. (Cl. 214—1)



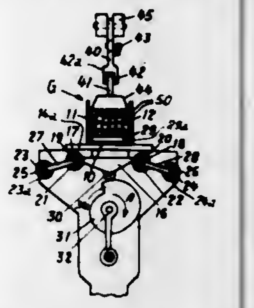
1. A portable apparatus adapted for tank handling applications comprising in combination
a central support column,
a base plate connected to the lower portion of said support column and adapted to rest on a supporting surface to bear the weight of the tank,
a cradle having a configuration adapted to conform to that of the tank being handled,
means associated with the central column and supporting said cradle for adjusting the vertical height of said cradle,
pairs of hinged normally retracted leg members associated with said apparatus,
said leg members being connected to a bracket associated to the upper region of said central support column and extending therefrom,
said leg members including horizontal stabilizing members joining the lower portions thereof,
and a slidable collar means for pivotally attaching said horizontal members to said central support column whereby said normally retracted legs may be extended during said tank handling application, said collar means being limited in downward displacement by said base plate,
said cradle supporting means being rotatable in a horizontal plane to permit manual rotation of said cradle and its associated tank to the desired loading position without rotating said base plate or said leg members.

3,355,036

APPARATUS FOR JARRING RODS

Willy Pöll, Zurich, Switzerland, assignor to Holding Intercito SA., Zurich, Switzerland, a corporation of Panama
Filed Jan. 5, 1966, Ser. No. 518,843
Claims priority, application Switzerland, Jan. 12, 1965, 379/65
10 Claims. (Cl. 214—1)

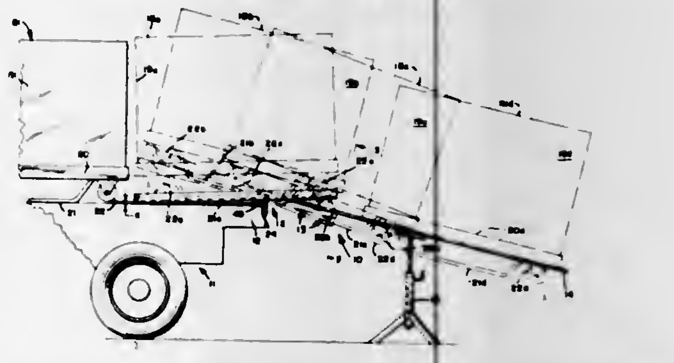
10. Apparatus for the jolting of rod-like members into a compact stack having a desired cross-sectional configuration, comprising stationary guide channel means for containing a quantity of rod-like members, an up and down movable jarring plunger extending from beneath into said stationary guide channel means, and a movable packer ram extending from above into said guide channel means.



3,355,037

CARGO UNLOADING DEVICE

Fred L. Dodd, Minneapolis, Minn., assignor to Premium Corporation of America, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 1, 1966, Ser. No. 569,202
7 Claims. (Cl. 214—44)



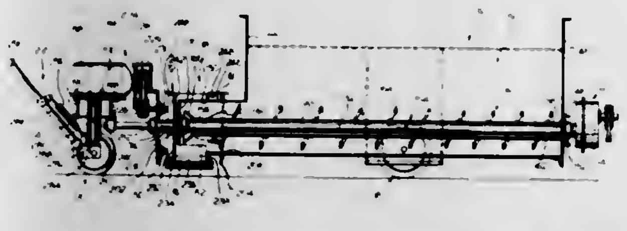
1. A cargo unloading device adapted to unload palletized cargo from a truck having a bed and a rearward opening, said cargo unloading device comprising,
a cargo receiving bed adapted to be affixed to the bed of a truck, said cargo receiving bed tiltable about an axis disposed generally horizontal relative to the truck bed and generally parallel with the rearward opening of the truck, said cargo receiving bed adapted to receive palletized cargo from the truck bed and tilt about the axis thereof providing an incline urging the palletized cargo generally downwardly,
a ramp co-operable with said tiltable cargo receiving bed and adapted to receive palletized cargo therefrom, said ramp adapted to be attached at the rearward opening of the truck and extend to a predetermined level to permit said cargo receiving bed in its tilted position to urge palletized cargo onto said ramp for controlled descent from the truck bed to the predetermined level, said ramp having means receiving ramp supports and
a plurality of ramp supports co-operable with the means receiving ramp supports whereby the ramp is supported at predetermined intervals between the level of the truck bed and the predetermined level at which the cargo is unloaded, said ramp supports having means adjusting the vertical dimension to permit compensation for irregularities in the level at which the cargo is to be unloaded.

3,355,038

DUMP TRUCK PILER

Alfred D. Sinden, Aurora, Ill., assignor to Stephens-Adamson Mfg. Co., a corporation of Illinois
Filed Dec. 1, 1965, Ser. No. 510,787
Claims priority, application Australia, Sept. 29,1965, 64,676/65
5 Claims. (Cl. 214—45)

1. A truck dump piler comprising:
a wheeled structure comprising an open topped elongated hopper including a funneling portion at the lower end thereof,
a screw conveyor journaled in said structure and extending longitudinally of said funneling portion and generally parallel to the longitudinal dimension of said hopper,
said hopper funneling portion being defined by upwardly diverging side walls that are shaped to provide free access of the load, when dumped into the hopper, to said conveyor under the action of gravity,
thrower means mounted adjacent one end of said hopper,
said conveyor being positioned to feed the material of the load to said thrower means,
means for driving said thrower means at relatively high material throwing speeds to pile the material fed thereto by said screw conveyor,

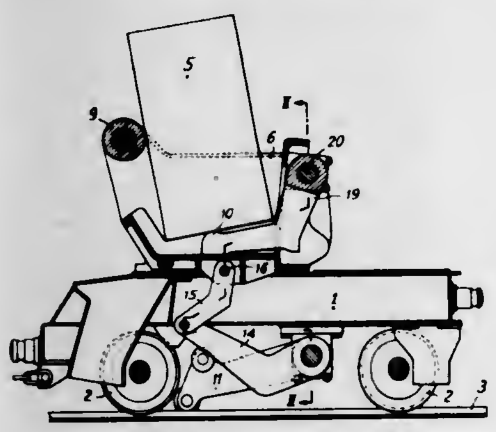


and means for driving said conveyor at a relatively low uniform speed adapted to provide a uniform feed of the material forming the load to said thrower means when the conveyor is submerged by the load,
said screw conveyor being fully exposed to the load across the space defined by said hopper funneling portion side walls,
said wheels of said piler comprising:
a pair of wheels journaled on said piler adjacent the longitudinal center of and on either side of said hopper,
and a wheel assembly supporting said thrower means,
said wheel assembly being connected to said piler for swiveling action about a substantially vertical axis,
and a tow handle secured to said wheel assembly,
whereby said piler may be rotated in a horizontal plane about a vertical axis passing adjacent said longitudinal center of said hopper for adjusting the position of the piler for piling purposes.

3,355,039

INSTALLATION FOR FEEDING INGOTS TO A ROLLER TABLE

André Nectoux, Le Creusot, France, assignor to Societe des Forges et Ateliers du Creusot, Paris, France
Filed Apr. 14, 1966, Ser. No. 542,606
Claims priority, application France, Apr. 22, 1965, 14,157
2 Claims. (Cl. 214—62)

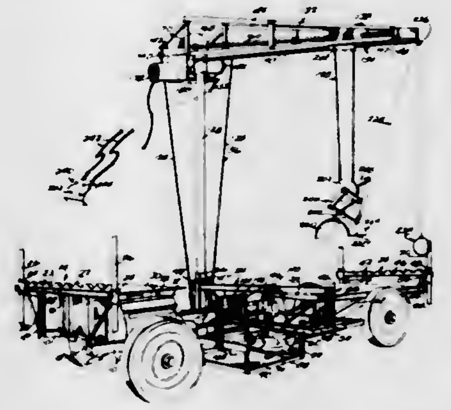


1. A carriage, a table, said carriage being movable along an axis of said table, said carriage comprising a chassis, a cradle for an ingot tiltably mounted on said chassis tiltable about an axis at right angles to the direction of movement of the carriage to transfer the ingot to the table, a control lever articulated on said chassis, means for tilting said cradle connected to said control lever, a stationary ramp engaged by said control lever during movement of the trolley along the table rotating said control lever and tilting said cradle, a pusher pivoted in said cradle and means for connecting said pusher and said control lever to push the ingot from the tilted cradle including a lever controlling said pusher pivotally mounted on said carriage and a system of articulated levers connecting said lever to said pusher, said lever being rotated by said control lever at the end of the tipping movement of said cradle toward said table.

3,355,040

PIPE TRANSPORTER AND HANDLER

Henry F. Guttridge, Rural Rte. 2, Liberal, Kans. 67901
Filed Dec. 10, 1965, Ser. No. 513,009
7 Claims. (Cl. 214—75)

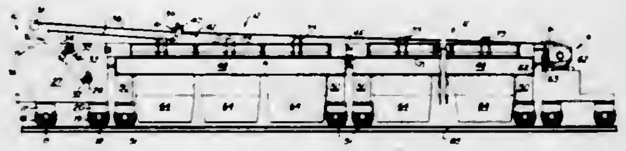


6. A pipe transporter and handler comprising a vehicle; transverse pipe racks at each end of said vehicle; a mast mounted on one side of said vehicle and centrally of the length thereof; a boom affixed to the top of said mast and extending across said vehicle; a winch slidable along said boom; pipe grappling means adapted to be raised and lowered by said winch; reversible means for driving said winch and reversible means for sliding said winch along said boom.

3,355,041

HAULAGE TRAIN FOR UNDERGROUND MATERIALS

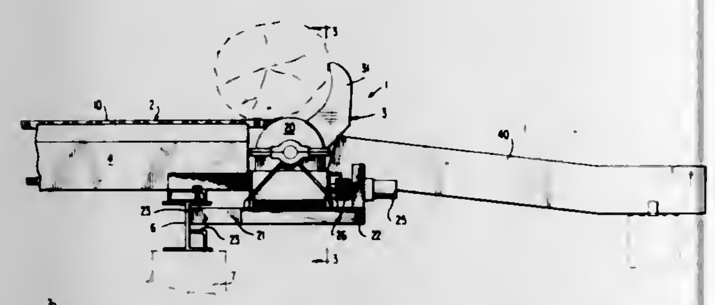
Paul C. O'Leary, Salt Lake City, Utah, assignor to Machinery Center, Inc., Salt Lake City, Utah, a corporation of Utah
Filed Aug. 31, 1965, Ser. No. 484,004
5 Claims. (Cl. 214—83.3)



1. A material-carrying car for use with a train having a material-loading car, a scraper, and means to move material from said material-loading car throughout the length of the train, said material-carrying car comprising
a frame;
wheel supporting the frame for movement on tracks;
at least one open-topped tub carried by said frame, said tub being adapted to be lifted vertically therefrom and to be repositioned thereon;
slide means extending across the open top of the tub, said slide means comprising two parallel, spaced rails, dimensioned so that material dropped therepast will fall into the tub, the rails extending beyond the open top of the tub and one of the rails extending

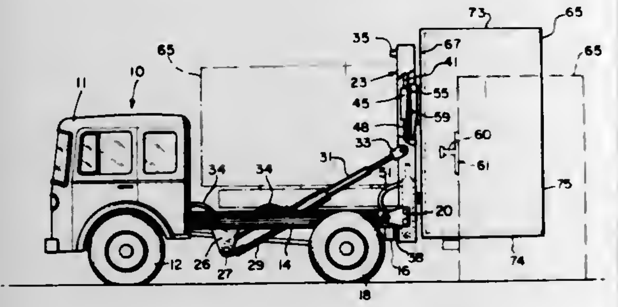
beyond the corresponding end of the other rail at each of the opposite ends of the tub beyond which the rails extend.

3,355,042
LIVE DECK AND LOADER ASSEMBLY
John S. Mellott and Hayes R. Mellott, both of Rte. 1, Box 97, Mercersburg, Pa. 17236
Filed June 18, 1965, Ser. No. 465,069
5 Claims. (Cl. 214—91)



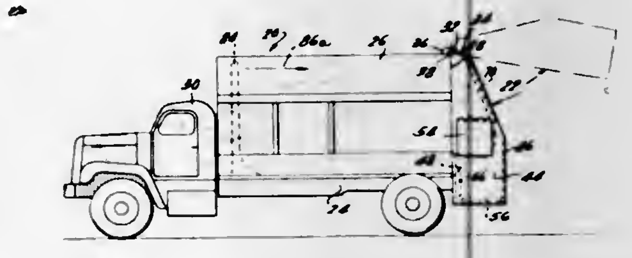
1. A live deck and stop and loader assembly for a saw mill comprising, a log supporting platform positioned to one side of a carriage track of the saw mill, a drive shaft rotatably mounted on said platform substantially parallel to the carriage track, said drive shaft being positioned below the top surface of said platform on the side thereof adjacent the carriage track, a log stop and loader journaled for limited pivotal rotation on said drive shaft, said stop and loader including an elongated rocker arm having a concave upper surface, and power means for rotating said rocker arm for pivotal movement on said shaft to alternately elevate the respective ends thereof above said platform to feed logs individually onto the carriage of the saw mill, an idler shaft mounted at the side of said platform opposite said one side, a plurality of sprocket wheels mounted on said drive shaft and on said idler shaft, a plurality of endless conveyer chains mounted on and extending between the sprocket wheels on said drive and idler shafts with the upper portion of said chains between said shafts extending over and supported by the upper surface of said platform, and motor means for driving said drive shaft and said conveyer chains to move logs along the upper surface of said platform toward the carriage track and into engagement with said log stop and loader.

3,355,043
TRUCK AND BODY CONNECTION MEANS
Virgil O. Talbert, Wilmette, Ill., assignor to International Harvester Company, a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,560
2 Claims. (Cl. 214—501)



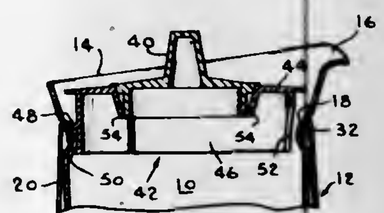
1. An automotive tractor including a rear end portion having a fifth wheel type coupling member and a load hauling body, a fifth wheel mount connected to and rockable over a rear end portion of said tractor, mount control means for positioning said fifth wheel mount vertically and horizontally, guide means providing a fifth wheel track on said fifth wheel mount and disposed longitudinally thereof, said load hauling body having a king pin depending therefrom, latch means carried by said coupling member for effecting a positive connection between said king pin and said coupling member, fifth wheel motivating means for selective positioning of said coupling member longitudinally of said track, whereby said coupling member can be disposed at varying heights in a vertical plane to elevate a load hauling body adjacent said tractor and rock such body into load hauling position on said tractor as said fifth wheel mount is positioned horizontally.

3,355,044
REFUSE TRUCK
Arthur W. Nelson, % Weld-Built Body Co., 276 Long Island Ave., Wyandanch, N.Y. 11798
Filed Mar. 25, 1965, Ser. No. 442,702
4 Claims. (Cl. 214—518)



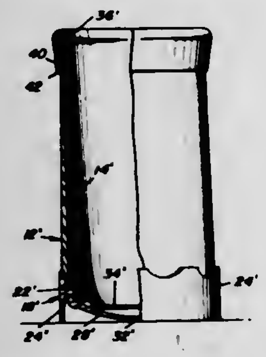
1. A refuse truck comprising a refuse storage chamber and a tail gate hopper pivoted to the truck and having an inner wall which closes an end opening of said chamber, an opening provided in said inner wall for communication with said chamber, said hopper having means to load uncompacted refuse charges therein, elevator means provided in said hopper, compacting means provided in said hopper to convert each uncompacted charge into a compacted refuse charge for elevation by elevator means to a raised position, and discharge means provided in said hopper for moving each raised compacted charge from said elevator means through said inner wall opening into said refuse chamber, and unloading means provided in said storage chamber for discharging said compacted charges through said end opening when said hopper is pivoted to a position to uncover said end opening, said hopper having an outer wall and a pair of side walls, said loading means being an opening defined in said outer wall, and said compacting means comprising a pair of cooperating compacting members movable together from retracted positions adjacent said inner and outer walls, respectively.

3,355,045
INSULATED BEVERAGE SERVER
David Douglas, 1119 Lincoln Blvd., Manitowoc, Wis. 54220
Filed Oct. 24, 1965, Ser. No. 504,339
2 Claims. (Cl. 215—13)



1. A beverage server comprising:
a glass liner member having a grooved neck portion;
an insulating jacket mounted on said liner and having an inwardly extending lip portion positioned in sealing engagement with said grooved neck portion of said liner, said insulating jacket member having a wall portion and a bottom spaced from the wall and bottom of said glass liner respectively; and
a cover assembly for said glass liner, said cover assembly including an outer cover member having a central opening therein and a removable center plug member mounted in said central opening.

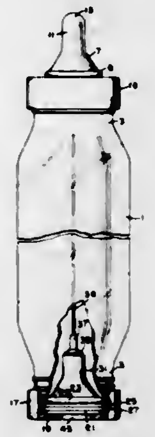
3,355,046
INSULATING TUMBLER
Ross T. Jolly, 10116 San Juan Ave., South Gate, Calif. 90281
Filed Apr. 22, 1966, Ser. No. 544,582
11 Claims. (Cl. 215—13)



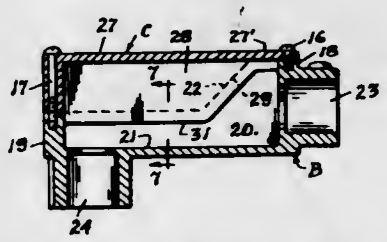
11. An insulating tumbler comprising a generally tubular body closed at one end and open at the other end, a generally tubular inner member closed at one end portion and open at the other end portion, said one end portion of said member being endwise telescoped in the open end of said body with at least portions of the telescoped portion of said member disposed in spaced relation relative to the corresponding portions of said tubular body and with the outer surfaces of the open end portion of said member received in the open end of said body in frictionally retained engagement therewith, said corresponding portions including deformable portions of said body displaceable inwardly by an inward force directed thereon from the exterior of said body and operable, by being inwardly displaced, to eject said member at least slightly outwardly of said open end of said body, said open end portion of said member projecting outwardly of the open end of said body and including a circumferentially extending generally radially outwardly projecting shoulder facing toward the closed end portion of said member and abuttingly engaged with the end edges of the open end of said body.

3,355,047
PRESSURE EQUALIZATION MEANS FOR BABY BOTTLE
Daniel E. De Sole, 29 S. Manning Blvd., Albany, N.Y. 12203
Filed Mar. 10, 1966, Ser. No. 533,275
4 Claims. (Cl. 215—11)

4. Pressure equalization means for use with a baby bottle for the admission of air interiorly of the bottle to equalize the interior bottle pressure with the atmosphere; said pressure equalization means including an opening within that range small enough to minimize and retard the flow therethrough of formula or milk, but large enough to allow the passage of air in sufficient quantity to allow of practically automatic equalization of the air pressure in the bottle with the atmosphere, said pressure equalization means including a tube and an internally threaded, lower-retaining cap, said tube having an outturned flange and said opening, said bottle having an externally threaded, reduced lower portion, said reduced lower portion having a bottom, said outturned flange being disposed between said lower-retaining cap and said bottom of said reduced lower portion, and being retained in such disposition by mutual engagement of the threaded portions of said reduced lower portion and said lower-retaining cap, said bottle having a reduced upper portion, said reduced upper portion having a lowermost portion, said tube opening projecting above said lowermost portion.



3,355,048
JUNCTION BOXES FOR ELECTRICAL CONDUITS
William Maier, 125 Lawlor Terrace, Stratford, Conn. 06075
Filed May 3, 1966, Ser. No. 547,226
7 Claims. (Cl. 220—3.94)

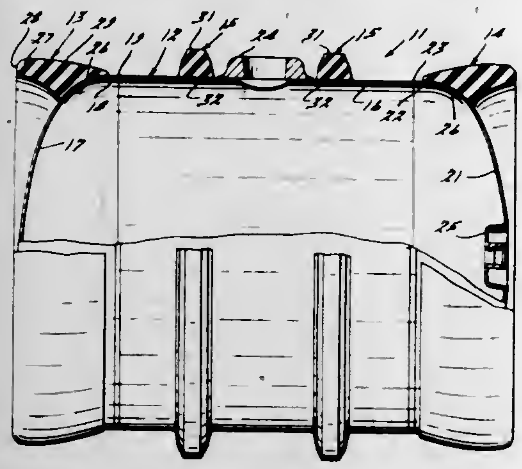


1. An electrical conduit junction box, comprising an elongated box body consisting of a base section and a complemental cover section removably secured thereto, said base section having rounded first and second end walls with connecting side walls and also having a bottom wall, conduit receiving sockets provided exteriorly on the first end wall and on the bottom wall adjacent the second end wall, said first end wall being relatively high and the second end wall being relatively low and said side walls being stepped downwardly from the high end wall to the low end wall whereby to facilitate convenient access to the interior of said base section when the cover section is removed, said cover section having a top wall with rounded ends one of which overlies the high end wall of the base section and also having a depending marginal skirt rounded at the other end of the top wall with side portions of the skirt being stepped upwardly from the rounded skirt end to the first mentioned end of said top wall, said skirt being in complemental abutment with said low end wall and said stepped side walls of the base section.

3,355,049
BARREL
Terence M. Nolan, Philadelphia, and David J. Trevarrow, Jr., Maple Glen, Pa., assignors to Kelsey-Hayes Company, a corporation of Delaware
Filed May 20, 1965, Ser. No. 457,317
2 Claims. (Cl. 220—5)

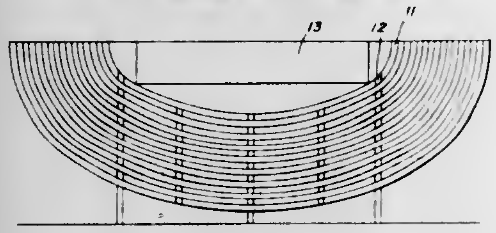
1. A barrel comprising a generally cylindrical center band, first and second generally elliptical heads affixed to each end of said center band around its circumference,

said center band and said heads being formed of a generally thin sheet metal construction devoid of reinforcing chines at the juncture of said heads with said center band, and a pair of elastomer shock supports, each of said elastomer shock supports being comprised of a generally cylindrical skirt portion affixed at one of its ends to a respective one of said heads adjacent the juncture of said one head with said center band, each of said skirt portions terminating at its other end in a generally circular supporting surface spaced from the respective head, the outer periphery of each of said skirt portions being spaced radially beyond the circumference of said center band, each of said elastomer shock supports being substantially more resilient than said heads and said center band.



3,355,050
LUNAR CRYOSTAT

Neil P. Ruzic, Beverly Shores, Ind. 46301
Filed Sept. 2, 1964, Ser. No. 393,969
3 Claims. (Cl. 220—9)



1. A lunar cryostat comprising in combination: a nesting stack of a plurality of spaced upwardly concave dish-shaped members, each of said dish-shaped members being characterized by a diametrical curvature adequate to block lateral thermal radiation from entering the innermost portion thereof, each of said members having its convex surface highly reflective to radiant heat and its opposed concave surface highly absorbent to radiant heat, said stack being formed so as to have all like surfaces facing in the same direction and to have a convex heat reflecting surface at the bottom of said stack and wherein the top of said stack and the spaces between each of said dish-shaped members are open to ambient environment, and thermal insulating means separating the dish-shaped members of said stack from each other.

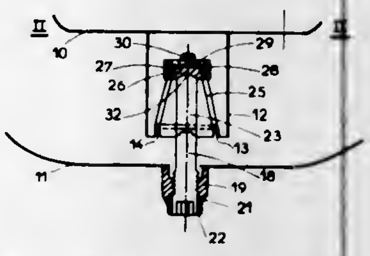
3,355,051
LOW THERMAL CONDUCTIVITY ATTACHMENT

Edmond André Kloeckner, Sevres, and Jean M. Royet, Saint-Maur, France, assignors to Compagnie Generale d'Electricite, Paris, France, a corporation of France
Filed June 19, 1964, Ser. No. 376,485
Claims priority, application France, June 21, 1963, 938,979
8 Claims. (Cl. 220—15)

1. An insulating support element for supporting and thermally isolating wall members of low temperature storage containers, said containers comprising at least an inner vessel and an outer vessel surrounding said inner vessel in spaced relation to said inner vessel in combination, comprising:

a first support member mounted on the surface of one of said vessels, said first support member extending toward the surface of the other vessel in the space between said vessels,

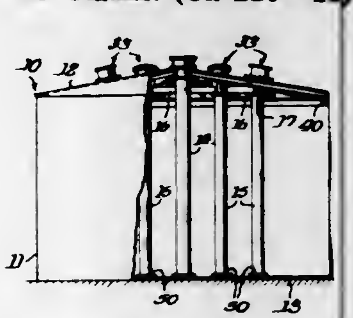
a second support member mounted directly opposite said first support member on said other vessel, said second support member extending at least partially within said first support member, and



means including a flexible cable formed of a material of low thermal conductivity mechanically connecting the free end portion of said first support member to the free end portion of said second support member partially within said first support member with said connecting means under tension and said first support member and said second support member under compression.

3,355,052
ADJUSTABLE ROOF-SUPPORTING COLUMN FOR TANKS

Taavi Kaups, Rijswijk, South Holland, Netherlands, assignor to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed Dec. 27, 1965, Ser. No. 516,427
18 Claims. (Cl. 220—18)



1. In a tank for the storage of materials comprising a bottom, a side wall, a roof and a plurality of vertically disposed columns within said tank supporting said roof,

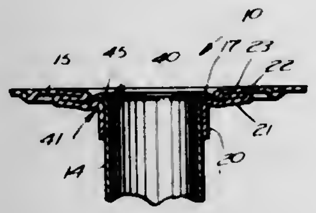
the improvement which comprises adjustable means connecting the upper ends of said columns with said roof whereby vertical displacement of said columns, and commensurate displacement of the column-supported roof, resulting from soil or foundation subsidence or elevation beneath the columns can be compensated for by adjustments made in said adjustable means to raise or lower the roof, said adjustable means being operably adjustable from outside the tank.

3,355,053
METAL CAN AND CLOSURE THEREFOR

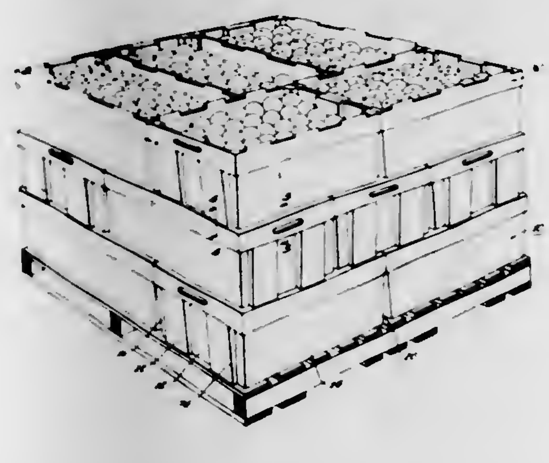
Edward W. Sexton, Cambridge, Mass., assignor to Sexton Can Company, Inc., Everett, Mass., a corporation of Massachusetts
Filed Nov. 2, 1965, Ser. No. 506,048
5 Claims. (Cl. 220—23)

1. In a metal can of the character described comprising a cylinder, means for closing one end of said cylinder and a cover for the other end of said cylinder, said cover

comprising a tube, means for closing one end of said tube, a flange extending outwardly from the other end of said tube, an annular member having a tubular member surrounding and in face-to-face engagement with the outer portion of said tube which is adjacent to said flange, and a first layer extending outwardly from said tubular member, underlying said flange and extending outwardly beyond its periphery, the improvement comprising said annular member having a second layer integral with said first layer, extending inwardly from the periphery of said first layer towards the axis of said tubular member with its inner margin located outwardly of said tube, said second layer overlying the outer portion of said first layer and overlying at least the outer portion of said flange, and a third layer integral with said second layer, overlying it and extending outwardly from its inner margin and means for sealing said third layer to the said other end of said cylinder.

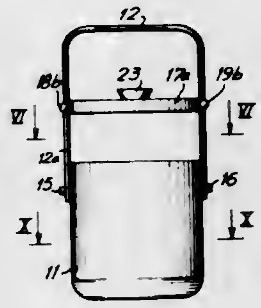


3,355,054
STACKABLE-NESTABLE CONTAINER
James D. Wilson, Long Beach, Calif., assignor to Banner Metals, Inc., Compton, Calif., a corporation of Ohio
Filed May 23, 1966, Ser. No. 552,046
5 Claims. (Cl. 220—23.6)



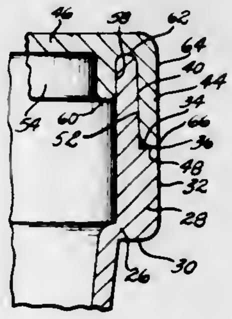
1. A rectangular stackable-nestable container adapted to be nested with other like containers, and adapted to be stacked in a multiple-level tier, with each layer in the tier containing a plurality of the containers in a juxtaposed relationship, and with the containers in the tier mutually inter-locked, one with the other, said container comprising: a bottom; a pair of side walls extending upwardly from said bottom; a pair of end walls extending upwardly from said bottom; an outwardly extending rim formed in said walls and extending around the periphery of the container adjacent the upper edge thereof; a plurality of fluted sections formed in each of the walls of one of said pairs and extending upwardly to said rim; and a plurality of lug projection members formed in said rim and extending upwardly from the upper edge of the container at spaced intervals along each of the walls of the other of said pairs; said fluted members defining recessed under portions at the lower ends thereof in position to lock over certain of the aforesaid lug projection members of lower like containers, and said bottom being provided with recessed under portions at spaced intervals along each of the walls of the other of said pairs to lock over others of the aforesaid lug projection members of the lower like containers.

3,355,055
FREE-SLIDING GUIDE DEVICE FOR A CONTAINER COVER
Henry Abbey, Rego Park, N.Y.
(711 Shore Road, Long Beach, N.Y. 11561)
Filed June 1, 1965, Ser. No. 460,124
13 Claims. (Cl. 220—38)



1. A free-sliding guide device for a container cover for a container having a basin and a handle pivotally affixed to said basin, said container cover having a peripheral surface, said guide device comprising two pairs of spaced guide projections extending from the peripheral surface of said container cover on opposite sides thereof, the projections of each of said pairs of projections extending or opposite sides of a corresponding portion of said handle.

3,355,056
LIVE FISH CONTAINER
Jacob John Fisch, Miami Beach, Fla., assignor to Hobbyfish Incorporated, Miami, Fla., a corporation of Florida
Filed Apr. 20, 1965, Ser. No. 449,503
1 Claim. (Cl. 220—42)



A container adapted to contain live fish or the like in a life preserving fluid, said container comprising:

a tubular body fabricated of transparent plastic and having a bottom wall and a continuous upstanding side wall means terminating at an upper edge which circumscribes an open mouth permitting access to the interior of said body;

said side wall means including a thickened reinforcing bead portion formed by outwardly extending spaced apart upper and lower shoulders and an exterior side surface extending between said shoulders;

said side wall means including an opposed pair of end walls and opposed front and rear walls, said end, front and rear walls all tapering and converging downwardly and inwardly from said bead portion to said bottom wall to provide said tubular body with a frusto-pyramidal shape which will not distort the appearance of a fish placed in the fluid therein;

said side wall means including an upper margin portion extending between said upper shoulder and said upper edge;

a cover including a top panel and a depending peripheral skirt having a lower edge engageable against said upper shoulder when said cover is applied to said body to close said open mouth;

said cover further including a continuous rib depending from said top panel in parallel juxtaposition to and inwardly of said peripheral skirt;

said rib and said skirt defining therebetween, a continuous annular channel adapted to sealingly receive said upper margin portion;

said annular channel and said upper margin portion and said upper edge being configured whereupon when said upper margin portion is disposed therein, the outer surface of said margin portion will sealingly engage against the inner surface of said peripheral skirt, the inner surface of said margin portion will sealingly engage against said rib and said upper edge will sealingly engage against that portion of the underside of said top panel which forms the bottom of said annular channel;

said cover and said body thus cooperating to effect a continuous sealing engagement along said upper margin portion from substantially the lower end of said rib to substantially the lower end of said peripheral skirt;

said peripheral skirt having a thickness such that the outer surface thereof is coextensive with said exterior side surface portion of said reinforcing bead;

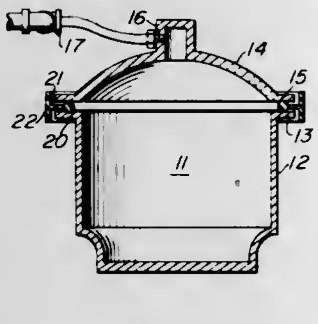
said container thus having said cover and said body tightly sealed together to hermetically seal the contents therewithin and further having a reinforced and strengthened upper portion which enables said container to be manually gripped and carried by said lower shoulder without causing any container deformation.

3,355,057
DESICCATOR SEAL

Alan P. MacKenzie and Calvin Kroener, Madison, Wis., assignors to La Pine Scientific Company, a corporation of Illinois

Filed Dec. 31, 1964, Ser. No. 422,760

9 Claims. (Cl. 220—46)



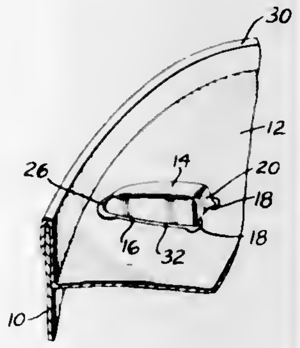
1. A desiccator seal and locator therefor for a desiccator having a bowl with a horizontal flange and a cover with a mating horizontal flange, said seal and locator consisting entirely of an annular seal of substantially circular cross-section, an annular outwardly extending, horizontal web integrally formed with said seal and having a lesser height than said seal and a vertically arranged annular flange on the outer extremity of said web and extending above and below the latter and having a length greater than the height of said seal whereby said seal may be easily located on a desiccator bowl flange and a desiccator cover easily located on and removed from said seal without interference between said seal, the bowl and the cover.

3,355,058
PUSH-IN CAN LID

Charles T. Asbury, 717 Isle of Palms, Fort Lauderdale, Fla. 33301

Filed Dec. 6, 1965, Ser. No. 512,583

11 Claims. (Cl. 220—48)



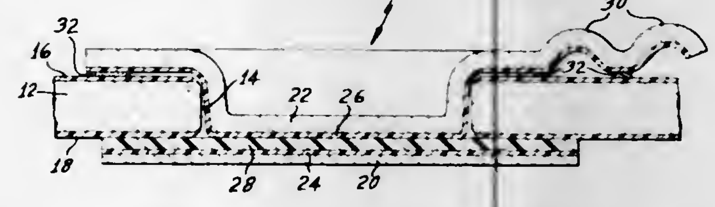
1. In a tear open can lid; a tab embossed in said lid and forming a raised region in the lid near the periphery thereof longer in the radial direction of the lid than in the circumferential direction thereof, said tab being rounded at its radially outer end and flat at its radially inner end and somewhat curved along its sides, and a score line extending along the sides and around the outer end of the tab to permit the tab to tear free from the lid when pressed downwardly, said score line leading to a point at the outer end of the tab.

3,355,059
LAMINATE WITH SEVERABLE PORTION

Alfred Edward Balocca, Wheaton, and Richard Leo Joosten, Cary, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed May 13, 1964, Ser. No. 367,048

13 Claims. (Cl. 220—53)



1. A laminate having a severable portion and comprising:

a continuous metallic sheet having aperture therein;

a first non-elastomeric layer juxtaposed to one side of said sheet in overlying relationship to said aperture;

a second non-elastomeric layer juxtaposed to the opposite side of said sheet in overlying relationship in said aperture;

said second layer being fabricated of a material of uniform tearability which is more readily tearable than the material of said first layer;

an adhesive material interposed between said sheet and said second layer to secure said second layer to said sheet;

said adhesive material extending across said aperture;

one of said non-elastomeric layers having an embossment extending into said aperture to thus bond portions of said first and second non-elastomeric layers to one another by said adhesive material; and the other of said non-elastomeric layers being substantially flat;

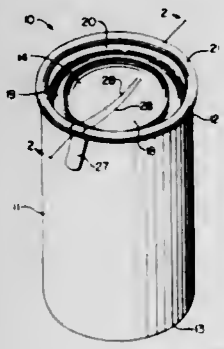
means for removably attaching the unbonded portion of said first layer to said sheet, marginal to said aperture; and said first layer being manually engageable to be pulled away from said sheet to thus cause the bonded portion of said second sheet to tear away and remain bonded to said first sheet, thereby opening said aperture.

3,355,060
CONTAINER WITH IMPROVED LIFT-OFF END CLOSURE

William G. Reynolds, Richmond, and Edward G. Maeder, Guido Kraus, and Daniel S. Cvacho, Chesterfield, County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed May 21, 1965, Ser. No. 457,594

13 Claims. (Cl. 220—54)



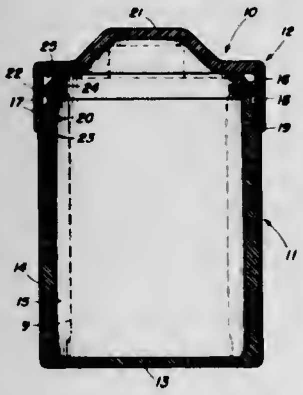
1. In combination, a container body having an open end provided with a recess in the interior surface thereof, and a closure for said container body having a central portion spanning said open end and having an intermediate portion snap-fitted in said recess to close said open end, said intermediate portion being annular and having a substantially S-shaped cross-sectional configuration throughout its entire length to provide resiliency for said snap fitting relation with said container body, said S-shaped configuration being substantially normal to said interior surface of said container body, said closure having an outer portion interconnected to said intermediate portion and engaging the exterior surface of said container body.

3,355,061
PLASTIC CONTAINER

Ernst G. Ritter, Webster, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 3, 1966, Ser. No. 583,564

1 Claim. (Cl. 220—60)



A cartridge film protective container of the type having a cylindrical open ended body, said open ended body having an enclosed bottom wall confronting its open end and a peripheral side wall upstanding from said bottom wall for forming a lengthwise interior for storing said film and a removable open ended cap, said cap having a closed top wall confronting its open end and a peripheral side wall depending from said top wall for forming a lengthwise cap interior for receiving the open end of said body wherein the improvement comprises,

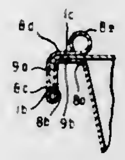
- a tapered portion next adjacent said open end of the interior surface of said side wall of said body, said tapered surface progressively increasing outwardly as a function of lengthwise distance of said open end and having a continuing cylindrical surface extending from its lower end,
- a first groove recessed in said cylindrical surface next adjacent and spaced below said lower end of said tapered surface,
- a second groove recessed in said cylindrical surface axially spaced below said first groove along said cylindrical surface,
- a shoulder projecting outwardly from said body exterior surface next adjacent and below said second groove and forming a limit stop for said cap upon inserting said cap on said body,
- said cap side wall having a flexible beaded edge at its open end, and
- an internal wall depending from said cap top wall and spaced within said cap peripheral wall for defining therewith a cap recess, whereby manual insertion of said cap on said body causes said beaded edge to slide over and along said tapered portion and said cylindrical surface until said beaded edge snap fits into said first groove and on further insertion said beaded edge slides along said cylindrical surface below said first groove until said beaded edge snap fits into said second groove against said shoulder, and said body tapered portion slides into said cap recess thereby providing improved light isolation of the film stored in said container, and said first groove provides a safety catch snap fit engagement with said cap beaded edge when said cap is improperly lifted and detached from said second groove.

3,355,062
CONTAINER CLOSURE SEAM

John S. Milne, Chicago, Ill., assignor to Monsanto Company, a corporation of Delaware

Filed Oct. 10, 1962, Ser. No. 229,591

7 Claims. (Cl. 220—67)



1. A container comprising:
- a thin walled receptacle having side wall means and lip means extending therefrom adjacent a receptacle opening;
- said lip means being configured to form a generally L-shaped cavity, said L-shaped cavity being defined by
  - a first portion of said lip means extending laterally outwardly of said side wall means, away from said receptacle opening,
  - a second portion extending from said first portion substantially perpendicular thereto, said second portion being spaced from and extending opposite said side wall means,
  - a third portion extending from said second portion, toward and substantially perpendicular to the plane of said first portion, said third portion cooperating with said second portion to form one leg of said L-shaped cavity,
  - and a fourth portion extending from said third portion inwardly toward the opening of said re-

ceptable and being substantially parallel to said first portion, said fourth portion cooperating with said first portion to form the other leg of said L-shaped cavity;

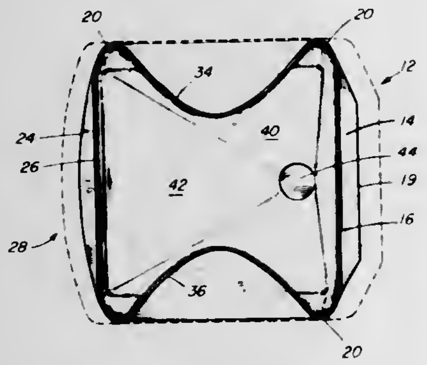
said second and third lip means portions defining a rim spaced from and disposed opposite to said receptacle side wall means; and

a thin walled cover adapted to close said receptacle opening;

said thin walled cover having a peripheral edge extending into each leg of said L-shaped cavity with an outer edge portion being gripped by said second and third lip means portions and an inner edge portion being gripped by said first and fourth lip means portions.

3,355,063
NESTABLE BODIES FOR RIGID CONTAINERS

Peter A. Latham, Stow, and Paul E. Brefka, Framingham, Mass., assignors, by mesne assignments, to Mobil Oil Corporation, a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,705
13 Claims. (Cl. 220—97)

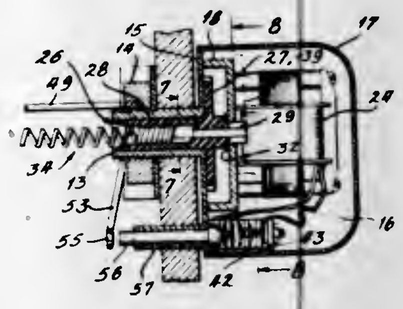


1. A nestable article which comprises a thin-walled hollow body open at one end and constructed of thermoplastic material capable of substantial flexing in thin sections without cracking, at least two substantially opposite side wall panels of said body being laterally flexible over substantial areas of said panels adjacent to said open end, at least two relatively rigid side wall panels each substantially oppositely disposed in the wall surface between said flexibe panels and having a plurality of separate unbroken ribs substantially parallel to the plane of said open end to resist inward and outward flexing of said rigid panels, said ribs extending substantially across said rigid panels in areas adjacent to said open end, the height of said ribs being substantially reduced adjacent to the ends of said ribs, and at least two of said flexible panels and at least two of said rigid panels converging away from said open end to thereby diminish the cross section of said body, whereby said body is readily releasable from nesting engagement inside articles of similar configuration upon bending said flexible panels inwardly to displace adjacent areas of said rigid panels inwardly without bulging the rigid panels substantially outward.

3,355,064
MERCHANDISE DISPENSING MACHINE MODULE INCLUDING A HELICAL ARTICLE DISCHARGE MEANS

Stanley O. Schlaf, Rte. 1, Box 233,
Winfield, Mo. 63389
Filed Dec. 22, 1966, Ser. No. 603,823
5 Claims. (Cl. 221—14)

1. In a merchandise dispensing machine comprising replaceable merchandise dispensing modules mounted on a support panel with drive means mounted in a casing positioned against the back side of the panel, means for energizing the drive means, switch means for deenergizing the drive means when a dispensing cycle has been completed, said switch means including a cam and cam follower, a hollow hub connected to the casing and projecting through the panel, retainer means connected to the hub and bearing against the front side of the panel to fasten the modules to the panel, and helix shaped dispensing and merchandise supporting rod means projecting from the front side of the panel, the improvement comprising:

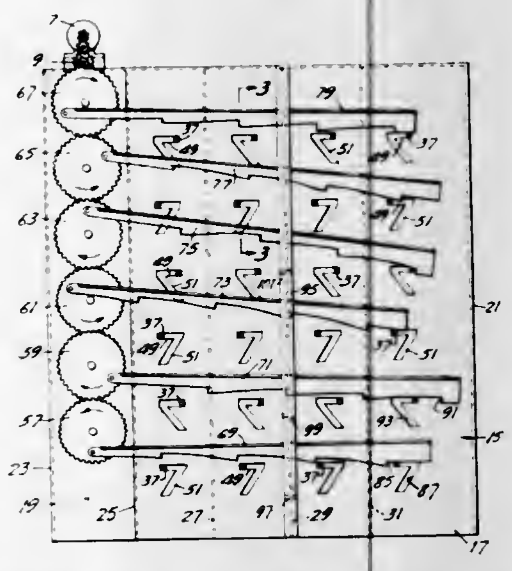


(a) an integral one piece hollow member having a cylindrical leading portion whose outer surface is journaled in the hollow hub, a gear portion engageable with the drive means and positioned within the casing and the aforesaid cam portion projecting from the casing, and a counterbored receptacle in the leading portion, and

(b) the dispensing and merchandise supporting rod is a one piece wire helix having closely adjacent windings at the trailing edge and spaced windings over the major portion of its length, the top surfaces of the said windings being flattened to a size to frictionally engage the counterbored receptacle to fasten the helix to the hollow member.

3,355,065
DISPENSING APPARATUS

James A. Moe, 503 Carolyn Lane,
White Bear Lake, Minn. 55110
Filed Aug. 3, 1966, Ser. No. 569,857
8 Claims. (Cl. 221—90)



1. A module for a refrigerated article dispensing mechanism which is adapted to be coin operated comprising

(A) a plurality of shelves arranged in a row,

(B) hinge means pivoting each of said shelves along one edge,

(C) support means extending generally normal to said edge beneath each shelf and movably affixed to said shelf,

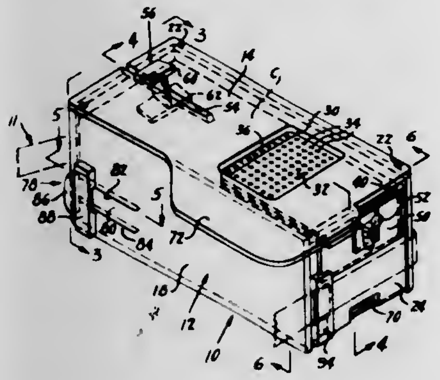
(D) wall means disposed adjacent an opposite edge of said shelves and parallel to said hinge means,

(E) ledge means on said wall means upon which said support means for each shelf is adapted to rest with said shelf in a plane normal to said wall means, and

(F) cam means movable in a plane parallel with said wall means for moving said support means relative to said ledge means affording displacement of said support means from said ledge means so the shelf may pivot on said hinge means to a position generally parallel to said wall means whereby an article placed upon said shelf may be dumped.

3,355,066
MARKING AND CARRYING CONTAINER FOR DATA PROCESSING CARDS

Gilbert H. Schlichting, 1180 Vance Way,
Sparks, Nev. 89431
Filed Mar. 9, 1966, Ser. No. 532,951
12 Claims. (Cl. 221—259)



1. A container for carrying data processing cards and for permitting marking of such carried cards, said container comprising:

a casing having spaced apart parallel top and bottom walls, end walls and side walls connected together to form an internal cavity adapted to contain a stack of data processing cards;

said top wall having a shaped portion therein forming an array of discrete marking apertures therein;

said array including a plurality of vertically and horizontally aligned marking apertures;

said bottom wall having an opening therein coaxially aligned beneath said shaped portion along an axis extending perpendicularly between said top and bottom walls to facilitate digital insertion for raising said stack of cards into contact with the underside of said top wall until the uppermost card in said stack can be marked by a marking instrument inserted through the appropriate marking aperture.

3,355,067
RECORDING PILL DISPENSER

Martin Espinal, 5529 Marconi Ave.,
Carmichael, Calif. 95608
Filed Apr. 27, 1967, Ser. No. 634,231
14 Claims. (Cl. 222—23)

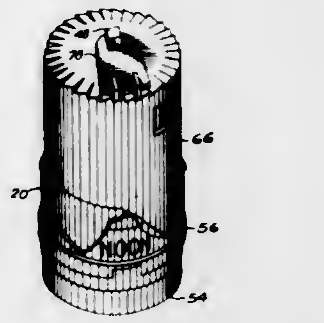
1. A recording pill dispenser, comprising:

a container for pills, said container having a cylindrical side wall portion and a substantially planar top closure portion having at least one dispensing aperture therethrough;

a plurality of time indicating upwardly extending projections disposed about the outer periphery of the container;

a dispensing cap, having a cylindrical side wall portion with an opening therethrough and a substantially planar top closure portion, rotatably and telescopically received over the top portion of the container; means resiliently biasing the cap toward the container top portion for maintaining the container in a normally closed condition; and

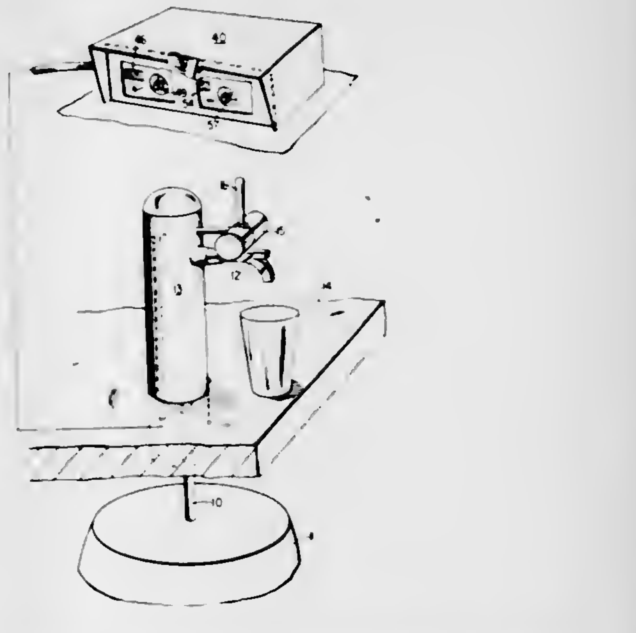
at least one downwardly extending projection comprising an extension of the cap side wall portion selectively received between said upwardly extending projections;



whereby when the cap is rotated relative to the container said cap is caused to be lifted from the container top to permit a pill to be dispensed and when the cap is further rotated said cap again closes the container, one of said upwardly extending projections adjacent said downwardly extending projection being indicative of the last opening of the dispenser.

3,355,068
DISPENSER HAVING MEANS TO POUR MAIN AND SUPPLEMENTAL QUANTITIES OF LIQUIDS

Philip W. Harland, Perkasie, and Milton Mollick, Allentown, Pa., assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,699
12 Claims. (Cl. 222—30)

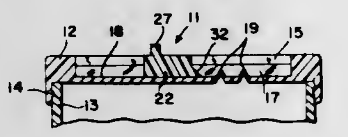


1. In a beer or the like dispensing apparatus, the combination including valve means for controlling flow of beer from a supply to a receptacle, valve actuating means operable to open said valve, handle means for initially controlling the energization of said actuating means to pour a first main measured quantity of beer independently of the operator, means associated with said handle means for further controlling the energization of said actuating means to selectively add a supplemental quantity of beer to said main quantity upon termination of the pouring of said first measured quantity which is a predetermined percentage of said main quantity, once each operation thereof.

2. An apparatus according to claim 1, including means for indicating the total number of operations of said valve means.

3,355,069
DISPENSING CONTAINER

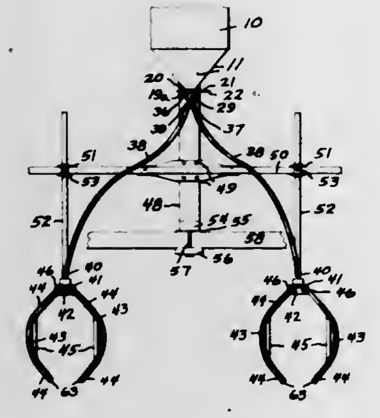
Gilbert De Wayne Miles, Ossining, N.Y., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,503
9 Claims. (Cl. 222—83)



1. In a dispensing container assembly, a hollow container member having an opening, an initially imperforate cover member extending across said opening and having a flat external surface portion integrally formed with at least one upwardly extending hollow projection, means providing a slide guide on the upper side of said cover, and a rigid closure element having a cutting edge shiftably mounted and retained in said guide for movement in a plane along said surface portion between one position where it is spaced from said projection and a second position where said element severs said projection on the first movement thereto to form a dispensing opening communicating with the interior of said container member, said closure element thereafter serving in said first position to uncover said dispensing opening for dispensing and in said second position for closing said dispensing opening.

3,355,070
FIELD APPLICATOR WITH METERING ORIFICE AND ADJUSTABLE DISTRIBUTING MEANS

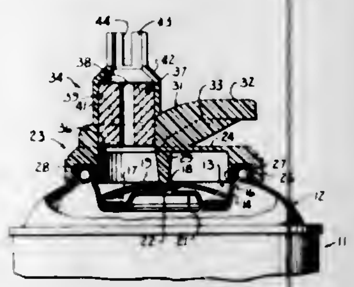
Robert Dethmers, Boyden, Iowa 51234
Filed Oct. 19, 1965, Ser. No. 497,671
4 Claims. (Cl. 222—177)



1. A field applicator comprising a framework, a hopper attached to said framework, a pair of tubes communicating to said hopper, a pair of distributing units communicating with said tubes, each of said distributing units including frame members, further tubes attached to said frame members, brackets to which said frame members are adjustably secured, means for positioning said distributing units at pre-selected lateral and vertical distances, including vertically positioned rods attached to said brackets, means for positioning said rods vertically and laterally with respect to said framework, a housing communicating with said hopper, said housing including a valve opening, a plate slidably engaged with said housing, said plate having a plurality of different sized openings, means for positioning any of said openings to communicate with said valve opening.

3,355,071
COLOR IMPARTING DISPENSER FOR AEROSOL PRODUCTS

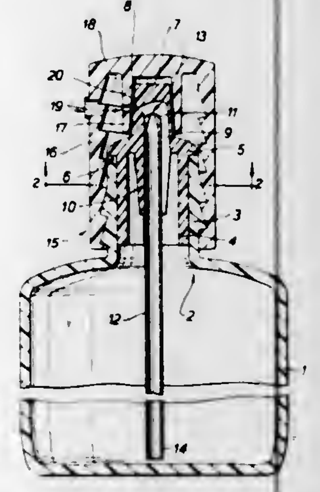
Mahlon K. Jordan, Berkeley, Calif., assignor to Avoset Company, Oakland, Calif., a corporation of California
Filed Feb. 23, 1966, Ser. No. 529,495
1 Claim. (Cl. 222—190)



In an aerosol container having a valve adjacent the upper end thereof and normally maintaining the container in a closed condition, a cap member overlying said valve and including an integral valve actuator depending therefrom and movable to unseat said valve upon downward movement thereof, said cap member including a top wall and a peripheral skirt releasably engageable with said container, said top wall having an integral dispensing spout extending upwardly therefrom intermediate said actuator and said skirt, said spout having a diametrically reduced portion adjacent its upper distal end, a pellet containing a coloring and/or flavoring positioned in said spout of cylindrical configuration to engage the inner bore of said spout and of a diameter preventing passage thereof through said reduced portion, and said pellet having an axial bore therethrough in alignment with said spout bore.

3,355,072
SPRAY DISPENSING APPARATUS

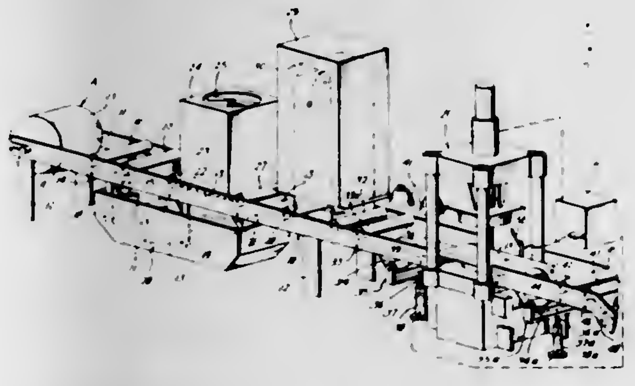
William George Sheppard and Jarman Maldwin Lloyd Jones, London, England, assignors to Riddell Products Limited, London, England, a British company
Filed July 1, 1966, Ser. No. 562,174
3 Claims. (Cl. 222—211)



1. A liquid storage and spray dispensing apparatus having a bellows portion, a liquid containing portion, a spray dispensing nozzle having a spray-discharge orifice therein from which spray may be dispensed by a pumping action on said bellows portion and a cap movably mounted upon said spray dispensing nozzle, said cap having an opening therein and being movable relative to said spray dispensing nozzle between a first position in which said spray discharge orifice and said opening are aligned so that spray may be dispensed and a second position in which said cap seals said spray discharge orifice, said cap having two cylindrical coaxial side walls, one within the other, said outer and inner side walls each having a circular opening, the two openings being aligned with respect to each other and being alignable with said spray-discharge orifice in said first position of said cap so that spray may be dispensed from the said apparatus without restriction by said cap, said inner wall serving in said second position of the cap to seal said spray-discharge orifice.

3,355,073
METHODS OF AND APPARATUS FOR PRODUCING SHAPED PRODUCTS

Jack L. Moore and John A. Roming, both of 109 Ave. D, Lawton, Okla. 73501
Filed Sept. 24, 1962, Ser. No. 225,610
21 Claims. (Cl. 223—12)

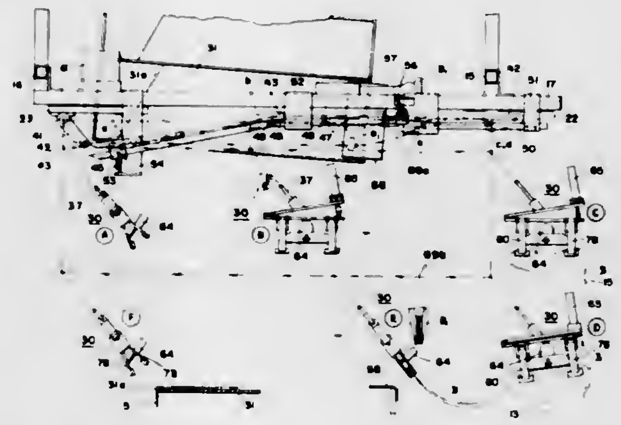


1. An apparatus for producing shaped articles from a web of material including,
- a support structure having means for receiving a supply roll of web material at one end thereof,
- means for moving the web of material longitudinally along a horizontal path,
- a forming and molding device mounted on the frame and spaced from the supply roll of wab material,
- whereby sections of the web material may be moved successively into the forming and molding area of said device,
- said forming and molding device having means for forming a section of the material within the forming and molding area into a desired shape,
- and molding the same into said shape while the section of material being formed and molded is integral with the remainder of the web,
- means controlling tension in said web of material to maintain a predetermined tension in said web of material as it is moved by said moving means and to relieve longitudinal tension in said web of material during the forming and molding of said material by said forming and molding device,
- cutting means associated with the molding device for cutting out the molded article from the web of material, and
- means for removing the molded article from the forming and molding area after the molding operation has been completed.

3,355,074
SYSTEM FOR REMOVING STOCKINGS FROM FORMS

Grant H. Brewin, Souderton, and Herbert P. Scott, Hatboro, Pa., assignors to Proctor Hydro-Set Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 1, 1965, Ser. No. 436,040
34 Claims. (Cl. 223—112)

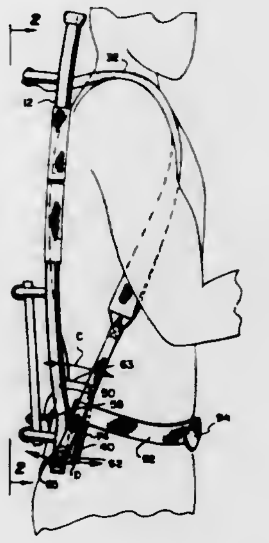
9. Apparatus for removing stockings from forms comprising:
- supporting means,
- a carriage movable along said supporting means,
- gripping means carried by said carriage for gripping the foot portion of a stocking while on a non-horizontal form,
- means for actuating said gripping means to grip the stocking,
- means for pivoting said gripping means about one end thereof,



- means for guiding said gripping means along a predetermined path to remove the stocking from the form,
- deflecting means spaced from and in alignment with said predetermined path for engaging the leg portion of the stocking to position the leg portion in a substantially horizontal plane, and
- means for releasing said gripping means with respect to the stocking when the leg portion of the stocking has been moved into a substantially horizontal plane.

3,355,075
PACK FRAME

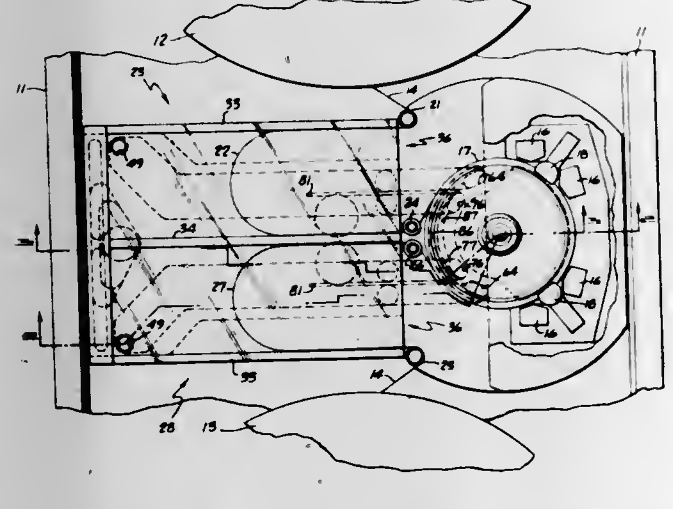
William H. Dean, 5634 E. Wilshire Drive, Scottsdale, Ariz. 85257
Filed July 25, 1966, Ser. No. 573,147
21 Claims. (Cl. 224—25)



1. In a pack frame for carriage on the back of a human body the combination of: a substantially rigid frame having a longitudinal axis normally disposed substantially vertical, said frame having upper and lower ends, opposite sides and forward and rearward portions; first means for securing shoulder engaging straps to an upper portion of said frame; a pair of shoulder straps having respective first ends connected by said first means to said frame; said shoulder straps having second respective ends; second means for securing said second ends to said frame at portions thereof relatively lower than said first means; a hip engaging means disposed to surround

human hips, said hip engaging means having disengageable belt portions and belt fastening means for securing said belt portions together and adapted for holding said hip engaging means in surrounding position on the human hips; and movable connection means connecting said frame to said hip engaging means, said movable connection means adapted to permit relative movement of said hip engaging means and said frame about a vertical axis, about a side to side directed horizontal axis, and about a forward and rearward directed horizontal axis.

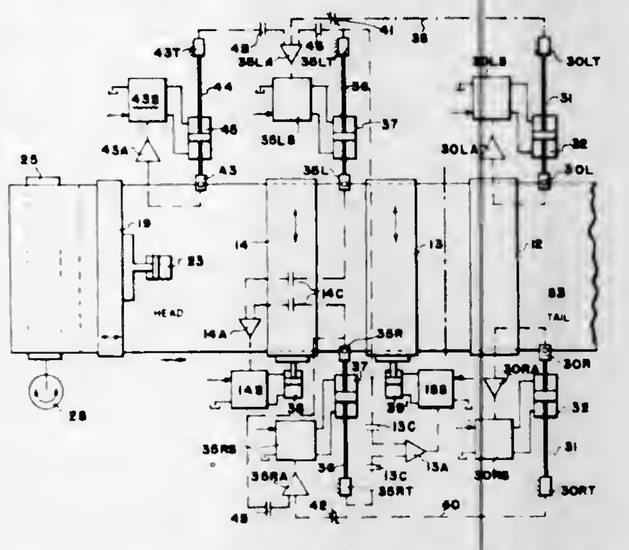
3,355,076
TAPE DRIVING APPARATUS
Walter J. Cheney, San Mateo, and Fritz A. Frick, Redwood City, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed May 5, 1965, Ser. No. 453,350
15 Claims. (Cl. 226—11)



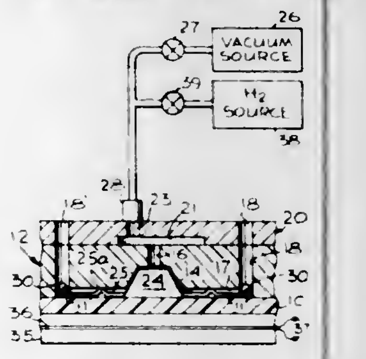
13. A tape transport including a pneumatic capstan, a pneumatic tape loop chamber, and a source of vacuum coupled to said chamber, characterized in that:
said capstan is pneumatically coupled to said tape loop chamber at a predetermined point that is normally on the low-pressure side of said loop;
whereby said tape is clamped to said capstan so long as said loop is of normal length, and said tape is unclamped from said capstan when said loop extends beyond said predetermined point.

3,355,077
APPARATUS FOR ALIGNING STRIP IN STRIP JOINING EQUIPMENT
Foster R. Woodward, Warren, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio
Filed Sept. 15, 1965, Ser. No. 487,557
10 Claims. (Cl. 228—5)

1. In combination with apparatus for joining strip in general end-to-end relation and having an entry clamp and an exit clamp for holding strip lengths to be joined during the joining cycle and said entry clamp being so mounted and having means whereby it may be moved transversely of the longitudinal line of strip with respect to the exit clamp, a third strip clamp adjacent the entry end of said entry clamp and being also so mounted and having means whereby it may be moved transversely of said longitudinal line with respect to said exit clamp, strip edge position sensors at the entry end of said entry clamp and at the exit end of said exit clamp to generate signals determinative of the longitudinal alignment of a strip length passing through all of said clamps, and means responsive to the signals generated by said sensors to actuate said means to move said third clamp whereby upon closing of said third clamp and with said entry and exit clamps opened the head portion of the succeeding strip length may be moved transveresly so that its centerline is aligned longitudinally with respect to the centerlines of said exit and entry clamps.



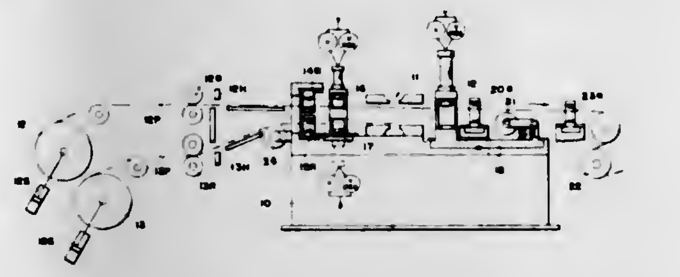
3,355,078
APPARATUS FOR ASSEMBLING ELECTRICAL COMPONENTS
Charles W. Smith, Canoga Park, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 413,024
20 Claims. (Cl. 228—44)



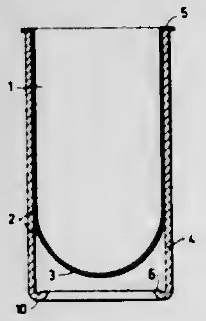
1. Apparatus for assembling electrical components having leads extending outwardly from a body portion on a supporting plate and having conductors carried thereon, comprising:
a template having depressions therein for retaining said components in positions for their leads to be registered with and connected to said conductors and having an aperture therethrough at the position of each of said depressions, and
means for connecting said apertures to vacuum source means for maintaining said components in said depressions,
said template having means for receiving said supporting plate to align said conductors with said leads, said template having additional apertures therethrough aligned with each of said leads to permit connecting said leads to said conductors.

3,355,079
APPARATUS FOR ALIGNING STRIP IN STRIP JOINING EQUIPMENT
Robert S. Ellis, Flossmoor, Ill., assignor to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio
Filed May 11, 1964, Ser. No. 366,520
9 Claims. (Cl. 288—47)

1. Apparatus for aligning both longitudinally and laterally the trailing end portion of a first strip length with the lead end portion of a second strip length preparatory to joining the same into one continuous strip length, comprising strip joining means, means beyond the exit end thereof for sensing the position of a side edge of the first mentioned portion at a plurality of longitudinally spaced points and thereby orienting the longitudinal center line of said first mentioned portion in a predetermined direction, means for skewing the lead end portion of said second strip length to bring the longitudinal center line thereof into accurate parallelism with said direction, and means for shifting said lead end portion of said second strip length laterally to bring the side edges thereof into accurate lateral alignment with the side edges of the trailing end portion of said first strip length.



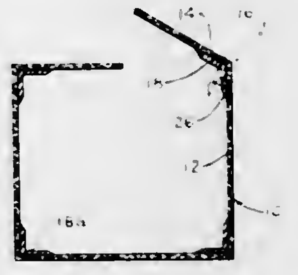
3,355,080
CONTAINER
Anders Ruben Rausing, Blentarp, and Rolf Lennart Ignell, Lund, Sweden, assignors, by direct and mesne assignments, to Tetra Pak Rausing & Co. KG., Hochheim/Main, Germany, a company of Germany
Filed Feb. 28, 1966, Ser. No. 530,525
Claims priority, application Sweden, Mar. 18, 1965, 3,493/65
4 Claims. (Cl. 229—14)



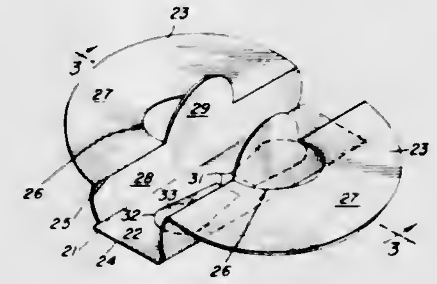
1. A container comprising a preformed liner of relatively thin, flexible plastic material, said liner having a cylindrical body portion, an open upper end surrounded by an integral outwardly extending flange and an integral closed bottom portion, and a cylindrical sleeve of relatively stiff cardboard material snugly fitting the outer surface of said cylindrical portion of said liner, the upper edge of said sleeve abutting against said flange of said liner and the lower end of said sleeve extending downwardly at least as far as said bottom portion of said liner and having an inwardly turned edge portion providing a foot for said container, said inturned edge portion also preventing any wicking action from taking place at the raw edge of said sleeve.

3,355,081
PLASTIC LINER FOR CARDBOARD BOX
Joseph Kachurchak, 584 Surfside Drive, Akron, Ohio 44319
Filed Apr. 12, 1966, Ser. No. 542,098
5 Claims. (Cl. 229—14)

1. In combination
a box of paperboard or the like, said box having side panels and top and bottom flaps, with horizontally extending, spaced endless fold lines separating the side panels from the flaps,
an elongated cut resistent liner strip positioned on the inside of said box of paperboard extending around the entire girth thereof, a portion of said strip being bonded to the inside of the top flaps on that side of the fold line with the remaining portion extending in non-adhered fashion over the fold line and a portion of the side panels, said strip being free to flex inwardly when a cutting instrument is cut through said body of paperboard and is pressed thereagainst to thereby prevent entrance of the cutting instrument into the box.



3,355,082
FINGER-GRIP FOOD-PRODUCT CONTAINERS
Arthur B. Wood, 192 N. Clark St., Chicago, Ill. 60601
Filed Apr. 13, 1965, Ser. No. 447,796
7 Claims. (Cl. 229—16)

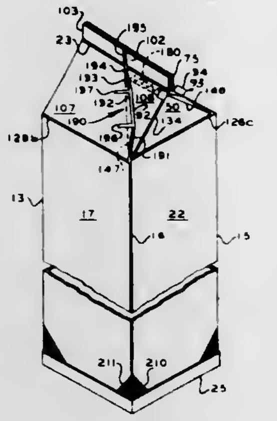


1. A finger-grip food-product container comprising a base portion, and a pair of transversely-spaced, upwardly-extending flaps of identical contour integrated with the opposite side margins of the base portion, whereby the margins of the respective flaps define an unobstructed opening upwardly from the base, the flaps each having scores spaced upwardly from the base portion permitting a portion of the flaps to be disposed transversely upward, said flaps each having an inverted V-shaped slit extending upwardly from the score to define a tongue for finger contact when a portion of the flaps are disposed outwardly to facilitate eating access to the product with the container gripped between the fingers on one hand.

3,355,083
CONTAINER
Isaac L. Wilcox, Fulton, N.Y., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed May 9, 1966, Ser. No. 548,472
10 Claims. (Cl. 229—17)

1. A gable top container of sheet material comprising a tubular body having four side walls; a bottom closure fixed to said body; first and second upper panels constituting a pair of opposed roof panels inclining toward each other and overlying the top of the body; third and fourth upper panels constituting a pair of opposed rectangular end closure panels, each comprising a triangular end closure panel and a pair of triangular fold-back panels, the opposed triangular end closure panels being infolded between said roof panels from the opposite gable ends formed by the latter, and with their apexes located at the central area of the gable,

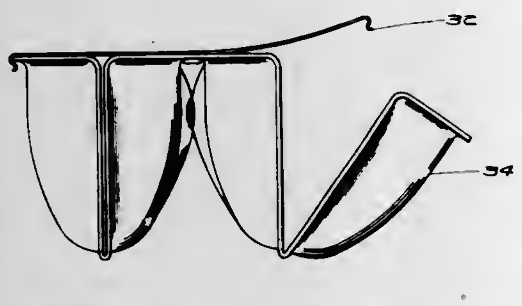
each pair of triangular fold-back panels being joined to the opposite sides of the respective one of said triangular end closure panels along fold lines which are in proximity with said roof panels, said fold-back panels being folded against the underside of said roof panels; a ridge panel surmounting each of said roof panels; a ridge panel surmounting each of said fold-back panels; each pair of ridge panels surmounting a pair of fold-back panels being hinged together at the apex of the contiguous end closure panel and being folded about such hinge joinder in face-to-face relation between the ridge panels surmounting said roof panels; a first one of said upper panels being provided with a weakened line of severance lying solely within the upper portion thereof below the respective sur-



mounting ridge panel and extending transversely of said first one panel and terminating at its ends in spaced relation to the side edges of said first one panel, said first one panel having a coating of thermosplastic material permanently bonded on the exterior side thereof; a tape overlying the exterior side of said weakened line of severance, at least the surface of said tape confronting said first one panel being formed of thermoplastic material heat-sealable to said thermoplastic coating on said first one panel, said tape being bonded to the entire marginal area of said first one panel about said weakened line of severance by the heat sealing of said thermoplastic materials; all score lines which would otherwise intersect said weakened line of severance being interrupted in the area of said weakened line of severance.

3,355,084
CONTAINERS

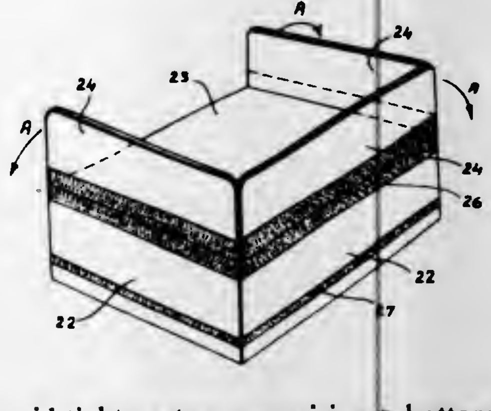
Donald W. Donovan, Glastonbury, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 500,796
3 Claims. (Cl. 229—28)



1. A one-piece, self-supporting, multi-compartmented container of rigid polystyrene, which comprises a substantially planar plastic sheet which has been molded to form a plurality of depression pairs, each depression pair being designed to form opposing sides of a compartment when the sheet is folded between the individual depressions making up the pair with portions of the outer surfaces of adjacent compartments being fused together, said container having at least one cover flap located at the edge of the sheet which is designed for snap attachment with another portion of the sheet and at least two pairs of fastening tabs on its edges for engagement when the sheet is folded between the individual depression pairs.

3,355,085
SEALED CARTONS

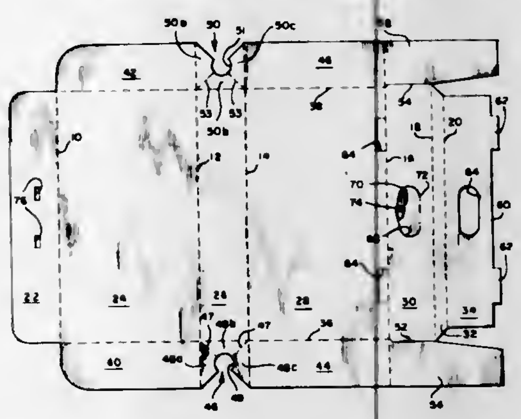
Wictor Carl Olaf Lindström, Gothenburg, Sweden, assignor to Jagenburg & Medin AB, Boras, Sweden, a corporation of Sweden
Filed Apr. 17, 1964, Ser. No. 360,676
Claims priority, application Denmark, Nov. 9, 1963, 5,259/63; Mar. 13, 1964, 1,272/64
3 Claims. (Cl. 229—31)



1. A liquid-tight carton comprising a bottom, walls integral therewith and folded up therefrom, folded-in corner areas between adjacent walls and integral therewith, a lid hingedly connected with the upper edge of one wall and integral therewith, inturned flaps extending along the upper edges of the other walls and sealed to the lower side of said lid, said flaps being, on the walls adjacent that connected with said lid, extended along the upper edges of said folded-in corner areas and integral therewith, said lid being provided at its edges with flaps folded down the outer side of said walls and sealed thereto by a continuous sealing strip at the joint between said lid flaps and the upper edges of said walls.

3,355,086
CARTON

Robert B. Ingle, Fort Worth, Tex., assignor to Hoerner-Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed June 21, 1965, Ser. No. 465,311
6 Claims. (Cl. 229—31)

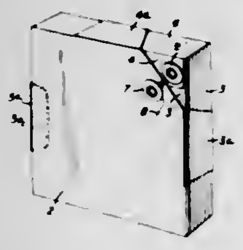


1. A carton formed from a single blank sheet of material which is cut and scored to be folded into a complete box, comprising:
a bottom wall, top wall and an end wall hingedly interconnecting the bottom wall and top wall,
a front wall hingedly connected along one edge to the bottom wall,

bottom side walls hingedly connected to the side edge of said bottom wall,
top side walls hingedly connected to the side edges of the top wall,
end wall flaps hingedly connected to the ends of the end wall and to the edges of said top and bottom side walls, said end wall flaps being divided into quadrants foldable into overlapping relation when the carton is fully erected,
dust flaps hingedly connected to the bottom side walls, said dust flaps being foldable into alignment with the hinged interconnection of said bottom wall and front wall,
a locking flap substantially corresponding in length to the height of said front wall but of reduced width hingedly connected to the opposite edge of the front wall foldable into overlying relation to said dust flaps,
said locking flap having a tab extending along its opposed free edge,
a recess in said bottom wall corresponding to said locking flap tab and registerable therewith when said locking flap is folded into overlying relation to said dust flaps, and
registered handle means including relatively elongated apertures in said front wall and locking flap.

3,355,087
CONTAINERS

Thomas Turnbull IV, 11 Kingsway, Mobile, Ala. 36608
Filed Nov. 17, 1965, Ser. No. 508,267
3 Claims. (Cl. 229—40)

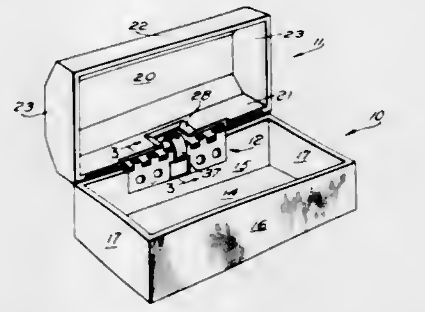


1. A return mail container comprising a blank, including a front panel having two faces each carrying an address, a rear panel having two faces, said rear panel being generally complementary in shape to said front panel, one side wall connected by reversible fold lines to corresponding edges of said front and said rear panels, a first side wall flap secured to said rear panel by a reversible fold along an edge of said first side wall flap adjacent said one side wall, two second side wall flaps secured to edges of said front panel by reversible fold lines each said side wall flap having a tuck portion, complementary locking tabs on a complementary edge of each said panel opposite each of said first and second side wall flaps, on the other said panel to engage about and secure said corresponding side wall flap in place, the corner of said rear panel remote from said side wall, and from said side wall flap, secured to said rear panel being cut off along a line extending between the locking tabs.

3,355,088
BOX WITH SECTIONS OF CONTRASTING MATERIAL HINGED TOGETHER

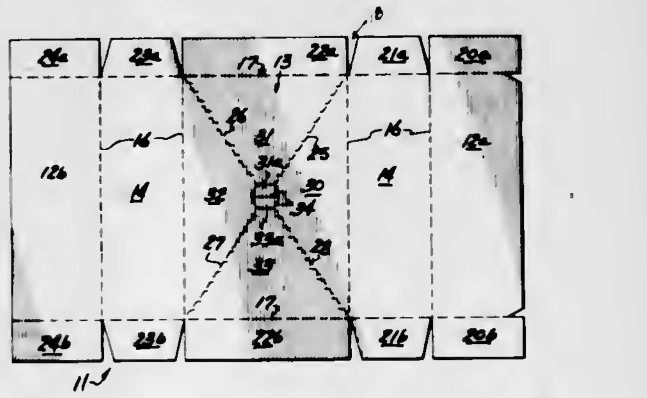
Lewis Douglas Young, Providence, R.I., assignor to Douglas Young, Inc., a corporation of Rhode Island
Filed Mar. 6, 1967, Ser. No. 621,032
4 Claims. (Cl. 229—44)

1. A box comprising a body section and a cover section, each section having front, back and side walls abutting edge to edge in the closed position of the box, one of said sections being of cardboard and the other of said sections being of a harder material such as metal or plastic, a hinge connecting the back walls of said sections comprising a pair of plates hingedly connected, one of said plates having prongs adapted to be driven into the cardboard back wall to attach the plate thereto and the other plate and rear wall of the other section having cooperating means to lock said other hinge plate to the back wall of the other section.



3,355,089
BOX CONSTRUCTION

Charles L. Champlin, Rittman, Ohio, assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed May 5, 1966, Ser. No. 547,908
10 Claims. (Cl. 229—51)

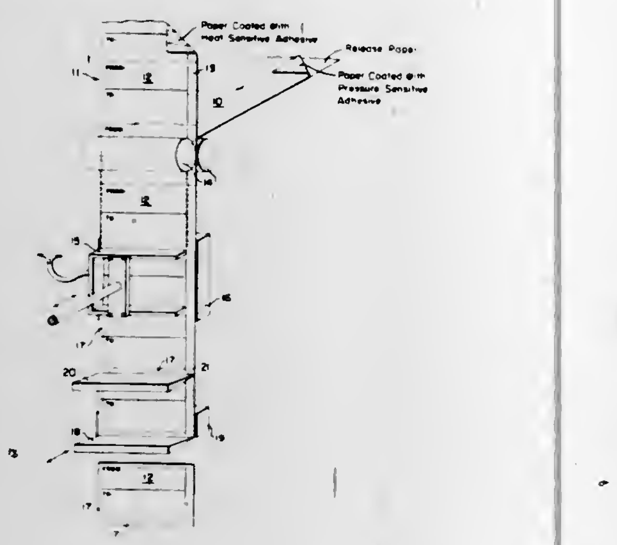


1. A box formed from an integral blank of fibrous sheet material comprising a bottom panel, upright side walls delimiting said bottom panel, and a top panel disposed in spaced registered relation with respect to said bottom panel and having the periphery thereof hingedly connected to said side walls by foldlines; said top panel includes a plurality of sections separated from one another by a plurality of angularly disposed tear scores, a portion of each section terminates at a foldline connection with a side wall and a second portion of each section terminates at a common location disposed within said top panel.

3,355,090
ENVELOPE STRIP

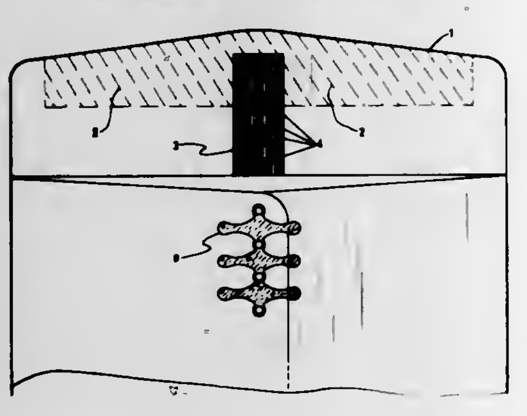
Richard A. Werby, 18 Alfred Road, Framingham, Mass. 01701
Filed Dec. 7, 1965, Ser. No. 512,125
1 Claim. (Cl. 229—69)

A continuous envelope strip adapted for feeding through a business machine for treatment of successive envelopes thereon, and comprising a continuous two-ply backing web of which one ply is provided with a coating of adhesive and the other is present as a coextensive release liner, and a series of rectangular envelope top sheets progressively arranged and each adhesively sealed to the uncoated face of the base web ply in areas defining an envelope enclosure, the strip being thus constructed for die cutting into a series of unitary envelopes each protected by a removable release liner covering its rear surface and including in its permanent structure a portion of the said base ply, each top sheet having a laterally projecting uncoated flap adapted to be folded inwardly, concealed and secured beneath the adhesive-coated face of the rear ply of the unitary envelope when the latter is attached to a package.



3,355,091
CLASP ENVELOPE

Loukas Loukopoulos, 11060 E. McNichols, Detroit, Mich. 48234
Filed Oct. 21, 1966, Ser. No. 588,455
4 Claims. (Cl. 229—78)



1. In an envelope comprising an envelope body having an open edge and a foldable closure flap for closing said edge, and a fastening clasp centrally secured to said body adjacent said edge and having a pair of free deformable clasp end portions;

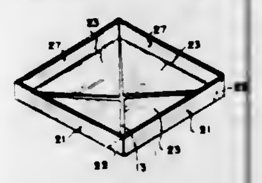
the improvement comprising a pair of spaced apart perforations formed in the flap, each arranged to register with and receive one of the clasp end portions for thereafter bending the clasp end portion into the plane of the flap to secure the flap in closed position;

and a second deformable clasp identical to said first mentioned clasp, fastened upon said body adjacent to but spaced from said first clasp, there being at least one additional pair of spaced apart perforations formed in said flap and spaced from said first mentioned pair of perforations;

said clasps both being insertable within and interlocked with said pairs of perforations respectively, the perforations of one pair of perforations being closer together than the spacing between the perforations of the second pair of perforations, and both pairs of perforations being centrally aligned relative to each other.

3,355,092
SELF-WRAPPING GIFT BOX

Ellery J. Le Pain, Detroit, Mich., assignor to Plumbing Research and Development Company, Oak Park, Mich., a corporation of Michigan
Filed May 12, 1966, Ser. No. 549,623
11 Claims. (Cl. 229—87)



1. In a box including flanged cover and bottom elements;

the improvement of a self-wrapping gift box comprising a sheet of wrapping material juxtaposed over one of said elements and its flanges throughout 360°;

first adhesive means securing said sheet to said one element;

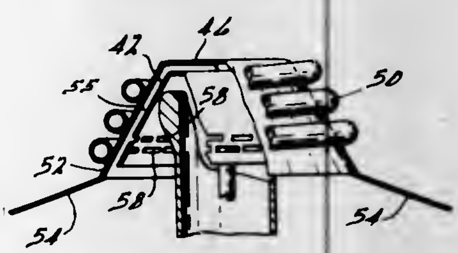
portions of said sheet being loosely reverse-folded over the interior of said flanges and terminating in a plurality of flaps loosely overlying the interior of said box element;

said flaps being removable from said interior and being of sufficient size to cooperatively overlie the other box element enclosing its exposed portions;

and second adhesive means securing said flaps thereto.

3,355,093
DIFFUSION PUMP

George H. Bancroft, Rochester, N.Y., assignor, by mesne assignments, to The Bendix Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 15, 1965, Ser. No. 439,622
1 Claim. (Cl. 230—101)



A vapor diffusion pump with a nozzle having a discharge skirt for directing vapor discharge from said nozzle, a cap surrounding said skirt and spaced therefrom, forming a vapor collecting space intermediate said nozzle skirt and said cap, means for cooling said cap to provide a vapor condensing inner surface thereon, and a plurality of flow paths formed in said skirt for removing vapor boundary layer adjacent said skirt, said flow paths operative to transmit said boundary layer into said vapor collecting space wherein it is condensed on said inner surface.

3,355,094
DIFFUSION VACUUM PUMP

Václav Opolský, Prague, Czechoslovakia, assignor to Ceskoslovenska akademie ved, Prague, Czechoslovakia
Continuation of application Ser. No. 379,304, June 30, 1964. This application July 11, 1966, Ser. No. 564,433
Claims priority, application Czechoslovakia, July 2, 1963, 3,806/63; Nov. 1, 1963, 6,015/63
4 Claims. (Cl. 230—101)

1. A diffusion vacuum pump comprising, in combination:

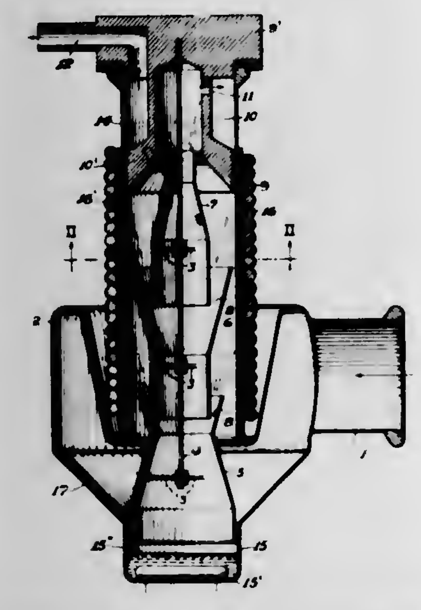
(a) a boiler;

(b) a tubular diffuser member having an axis extending vertically in the operative condition of the pump and being upwardly spaced from said boiler in said condition;

(c) an annular chamber about said axis having an upper annular portion radially outwardly spaced from an axially coextensive portion of said diffuser member and a lower portion axially connecting said boiler to said diffuser member,

(1) respective walls of said upper portion and of said coextensive portion radially defining therebetween a space extending about said axis and being open to the atmosphere in said condition of the pump,

(2) said lower portion communicating with said boiler and said diffuser member;



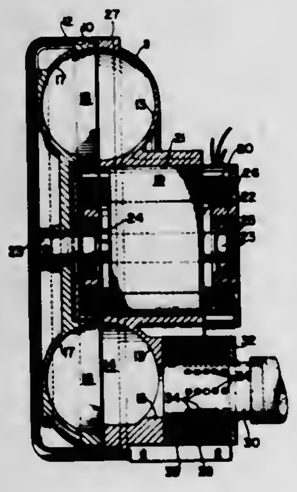
(d) first connector means for connecting said upper portion to a space to be evacuated;

(e) second connector means for connecting a portion of said diffuser member remote from said chamber to a forepump; and

(f) a jet axially extending from said boiler toward said diffuser member and being partly axially coextensive with said lower portion.

3,355,095
COMBINED CASING AND NOISE MUFFLER FOR A VORTEX FAN

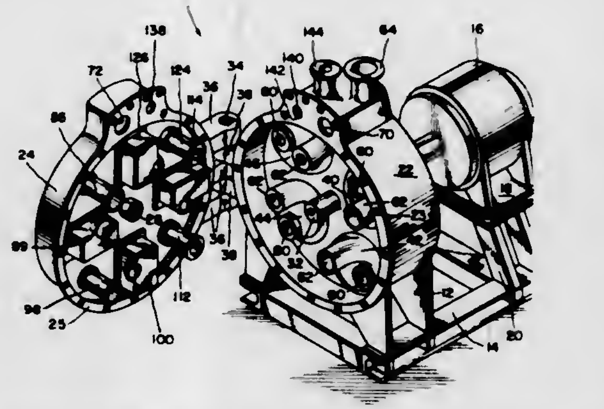
Joel W. Hollenberg, Middlesex, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 1, 1966, Ser. No. 524,132
1 Claim. (Cl. 230—125)



A casing for a vortex fan comprising a unitary casting, a semi-toroidal channel formed in one face thereof, a cylindrical motor-supporting housing formed in the opposite face thereof, a radial dividing wall in said channel, apertures formed in said casing in the region close to and on opposite sides of said dividing wall, said apertures communicating with said channel to provide openings for fluid flow into and out of said channel, separate straight self-supporting fluid guiding ducts connected to said openings and extending normally away from said casing on the same side thereof as the motor-supporting housing, cavity means formed integrally with said casing and surrounding each of said ducts, flange means carried by each duct and forming with said duct and cavity means a single closed resonant chamber for each duct, said ducts having a series of distributed wall perforations providing acoustial coupling between the interior of each duct and the respective chamber, and a preformed annular body of material having a frequency-selective sound energy dissipative characteristic substantially filling each of said chambers, said ducts each having an imperforate portion extending exteriorly of its respective chamber beyond said flange means to provide means for direct connection to external fluid flow systems.

3,355,096
MULTI-STAGE INTERCOOLED COMPRESSOR

Hanns Hornschuch, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 15, 1966, Ser. No. 527,707
18 Claims. (Cl. 230—209)



1. A multi-stage, intercooled, rotary compressor comprising:

a housing having a body portion and a cover portion detachably connected to said body portion;

inlet means in said housing for admitting fluid to be compressed into said housing;

outlet means in said housing for discharging compressed fluid from said housing;

a plurality of stage rotary compressors disposed within said body portion of said housing and each having an inlet conduit and an outlet conduit;

driving means operatively connected to said stage compressors for driving said stage compressors;

a plurality of cooler means disposed within said cover portion of said houisng;

coolant conduit means operatively connected to said cooler means for conveying coolant fluid thereto and discharging coolant fluid therefrom;

inlet conduit means communicating said inlet means with the inlet conduit of a first of said stage compressors for conveying fluid from said inlet means to said inlet conduit of said first of said stage compressors;

outlet conduit means communicating said outlet means with the outlet conduit of a second of said stage compressors for conveying fluid discharged through said outlet conduit of said second of said stage compressors to said outlet means;

a plurality of intermediate conduit means disposed within said cover portion of said housing;

each of said intermediate conduit means extending adjacent one of said cooler means such that fluid passing through said intermediate conduit means is cooled by one of said cooler means; and

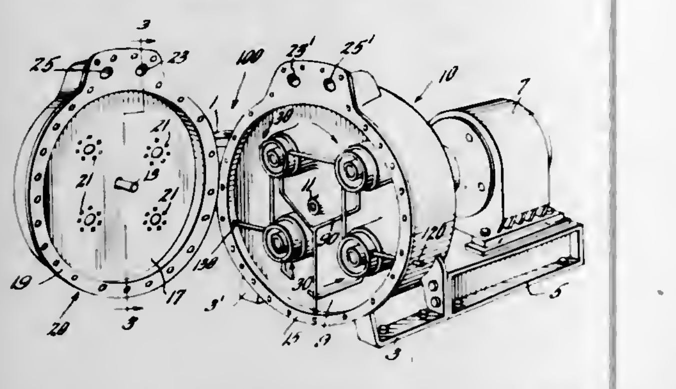
each of said intermediate conduit means having its opposing ends communicating with the inlet conduit of one of said stage compressors and the outlet conduit of another of said stage compressors such that fluid discharged through the outlet conduit of said first of said stage compressors passes serially through the others of said stage compressors before entering the inlet conduit of said second of said stage compressors.

3,355,097
FLUID MACHINE

Hanns Hornschuch, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 22, 1965, Ser. No. 515,559

9 Claims. (Cl. 230—209)



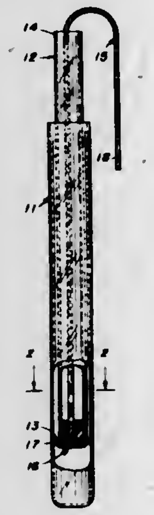
1. An air compressor comprising a casing having an inlet and an outlet, centrifgual pump unit means disposed within said casing, means serially connecting said pump unit means between said casing inlet and outlet such that said pump unit means compress the air in successive stages, means disposed within the outlet of each pump unit means for cooling the air compressed in each pump unit means before its entry into the next succeeding pump unit means, and water separation means disposed in the outlet of each pump unit means, all of said means being totally enclosed within said casing.

3,355,098
SERUM SEPARATION APPARATUS AND METHOD

Andrew F. Farr, South Gate, Calif., assignor to Bioconsultants, Inc., Glendale, Calif., a corporation of California

Filed July 6, 1964, Ser. No. 380,497

8 Claims. (Cl. 233—26)



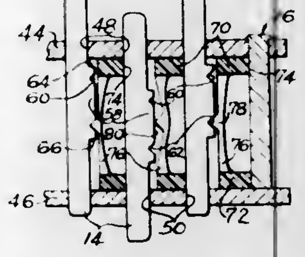
1. An apparatus for separating a clear liquid from settled-out immiscible liquids and/or settled-out solids in a suspending liquid contained therein, comprising an outer transparent tubular member; a plunger tube longitudinally movable within said outer member; a piston head mounted on the closed inner end of said plunger tube, said piston head making sliding sealing contact with the inner walls of said outer tubular member, and flexible capillary tube disposed within said plunger tube, one end of said capillary tube extending through said piston head to communicate with the space in said outer tubular member below said piston head.

3,355,099
SPRING DETENT

Walter B. Whippo, Park Ridge, Kenneth L. Bick, Morton Grove, and Chester Brown, Chicago, Ill., assignors to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois

Filed Mar. 21, 1966, Ser. No. 536,142

10 Claims. (Cl. 235—60)



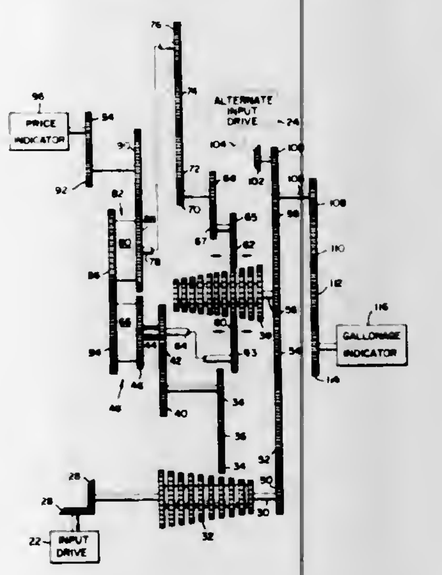
1. A spring detent of unitary construction having two spaced first portions of heavy cross section in a first transverse direction, said first portion being adapted to be anchored, a second portion of substantially thinner cross section in said same transverse direction extending between said two first portions and being resilient, and a detent element projecting outwardly away from the plane of said second portion intermediate its ends and adapted to engage and retain a movable member adjacent thereto, said detent being made of a solid, resilient synthetic resinous material which is highly resistant to abrasion.

3,355,100
COMPUTING MECHANISM FOR COUNTERS

Leif J. Sundblom, Castro Valley, Calif., assignor to Rockwell Manufacturing Company, Statesboro, Ga., a corporation of Pennsylvania

Filed Feb. 17, 1967, Ser. No. 616,820

3 Claims. (Cl. 235—61)



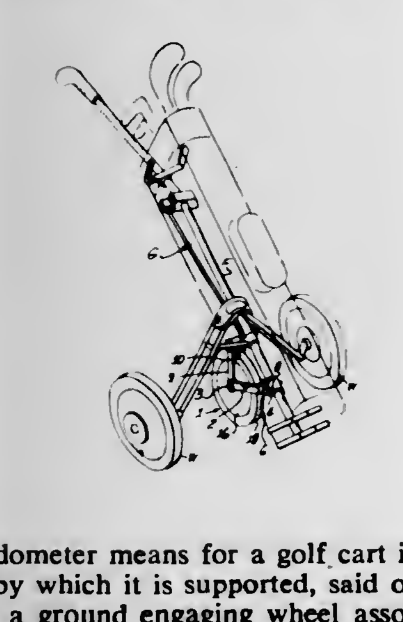
1. A computing mechanism for counters, comprising:
(a) a source of input motion;
(b) first gear stack means driven by said input motion;
(c) second gear stack means driven at a predetermined fraction of the velocity of said input motion;
(d) first pick-off gear means cooperating with said first stack means to provide a high-order output;
(e) second pick-off gear means cooperating with said second stack means to provide an intermediate-order output;
(f) third pick-off gear means cooperating with said second stack means to provide a low-order output;
(g) first combining means for mechanically subtracting said intermediate-order output from said high-order output;
(h) second combining means for mechanically subtracting said low-order output from the output of said first combining means; and
(i) means for registering the output of said second combining means.

3,355,101
ODOMETER FOR GOLF CART

Allen Levinson, 1550 Lake St., Glendale, Calif. 91201

Filed May 23, 1966, Ser. No. 552,035

3 Claims. (Cl. 235—95)



1. An odometer means for a golf cart including a pair of wheels by which it is supported, said odometer means comprising a ground engaging wheel associated with the golf cart rotatable as the golf cart is propelled along the ground, a wheel revolution recording means constituting a meter having operating means disposed in close proximity to said wheel, and means carried by said wheel momentarily actuating said operating means at each revolution of said wheel in one direction of rotation thereof only, said meter having indicating means so calibrated to the circumference of said wheel as to indicate the extent of propulsion of the golf cart causing rotation of said wheel in said one direction in terms of linear measurement, said wheel being mounted for rotation on a support axle carried by a frame structure having means affording detachable connection with a member of a golf cart and said detachable connection with the golf cart frame including pivot means disposed axially parallel to axis of said wheel and the axial line of the golf cart wheels affording independent accommodation of said wheel to the surface of the ground traversed thereby.

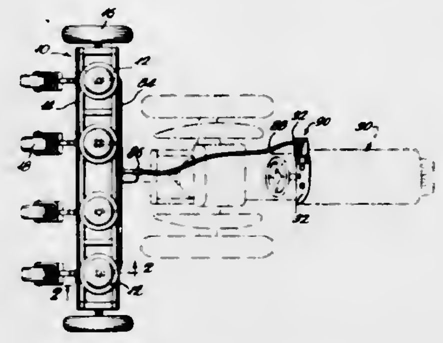
3,355,102
SEED PLANTER FEEDING INDICATOR AND COUNTING MECHANISM AND CIRCUIT CONTROL DEVICE

Lester Gregory, Jr., Yellville, Ark., assignor to Calark, Inc., Yellville, Ark., a corporation of Arkansas

Filed Sept. 13, 1965, Ser. No. 486,938

14 Claims. (Cl. 235—98)

1. A seed planting detection and counting mechanism comprising a seed planter having feeding means and a dispensing chute to receive seed from the feeding means, a unit supported within the dispensing chute, said unit being of an interior size to permit seeds to pass therethrough, an electric signal circuitry adapted to be connected with a source of electric potential and including an electrically energized indicator element, and an electric switch structure in said circuitry forming a part of said unit and including a seed actuated blade for opening and closing the signal circuitry.

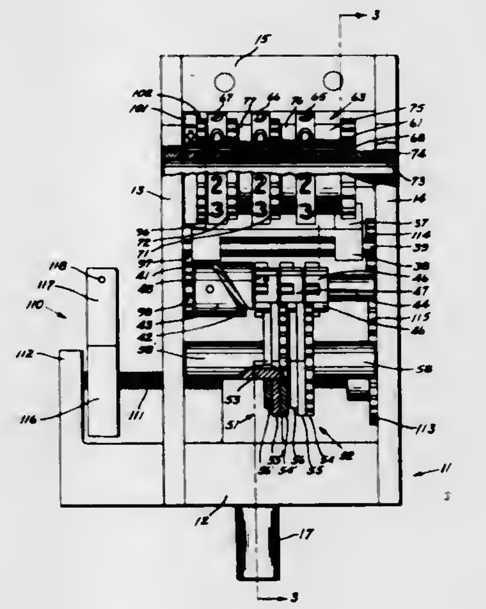


3,355,103
REVERSING MECHANISM FOR DIGITAL COUNTERS

Paul U. Lannerd, 4541 College Ave., Indianapolis, Ind. 46205; Robert Paul Lannerd, administrator of said Paul U. Lannerd, deceased

Filed Mar. 22, 1961, Ser. No. 97,704

5 Claims. (Cl. 235—103)

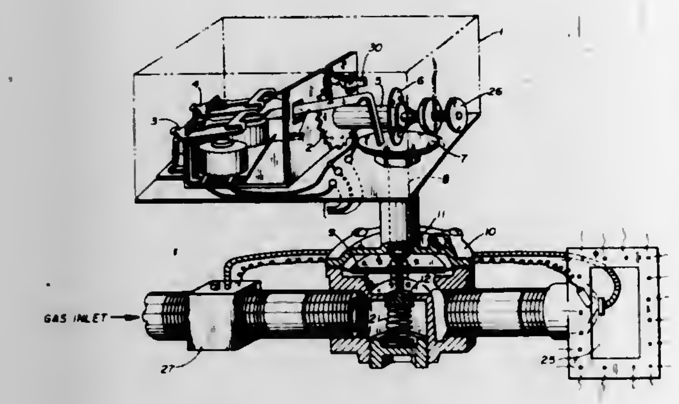


1. A reversing mechanism for a digital counter comprising: a housing, a first shaft rotatably supported by said housing, first and second output gears separately supported on said first shaft, an input gear for simultaneously rotating said first and second output gears in opposite directions, a second shaft supported by said housing parallel with said first shaft, a reversing gear slidably supported on said second shaft, a third shaft supported by said housing parallel with said first shaft, a yoke slidably mounted on said third shaft and engaging said reversing gear for selectively positioning said reversing gear in engagement with said first and second output gears, a fourth shaft supported by said housing parallel with said first shaft and a memory gear assembly mounted on said fourth shaft and synchronized with said input gear for axially moving said yoke at a predetermined position of said input gear.

3,355,104

CONSTANT HEAT CONTROL SYSTEM

Chauncey Adams, Jr., Tulsa, Okla.
(3525 Randall Drive, Independence, Mo. 64050)
Filed Oct. 23, 1965, Ser. No. 503,999
4 Claims. (Cl. 236—77)

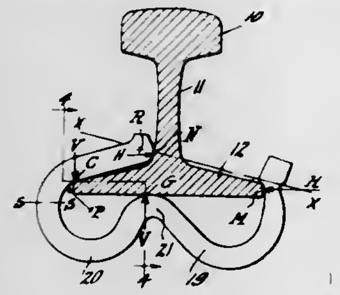


1. In combination, a thermostatic control system for precisely controlling room temperature in a closed area, electrical means for furnishing electrical impulses including a source of direct current, electrical wire means to transmit the electrical current, a resistor, a capacitor, a neon light, a photo-electric cell, the said neon light and photo-electric cell being enclosed in a light tight box, connection means to transmit electrical impulses from the said photo-electric cell to a bi-metallic strip, contact means to transmit electrical impulses from the said bi-metallic strip to two solenoids with extension arms, one of the extension arms of solenoid being extended in a downward position to provide a full downward stroke opening a regulator valve momentarily, both of the said extension arms actuating mechanical means, the said mechanical means including a rachet mounted on a shaft, a precise eccentric wheel mounted on the end of said shaft, a second shaft actuated by the movement of said eccentric wheel to open and close a valve located in the valve regulator body.

3,355,105

RAIL ANCHOR

James R. Steele and Stephen M. Lounsberry, Jr., Owego, N.Y., assignors to Moore & Steele Corporation, Owego, N.Y., a corporation of Delaware
Filed May 4, 1966, Ser. No. 547,598
7 Claims. (Cl. 238—330)

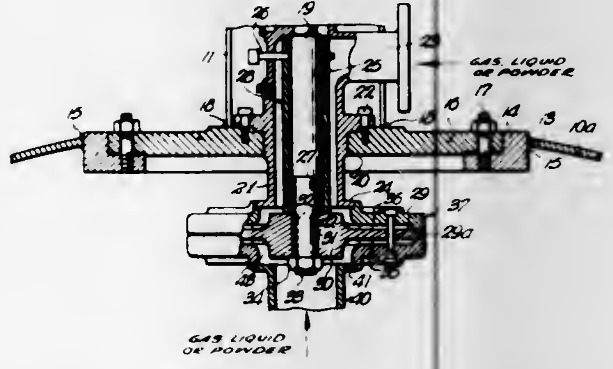


1. A one piece rail anchor comprising an under rail portion having a tie engaging portion and a portion adapted to engage the under surface of the rail, a rail web engaging portion, and a rail flange engaging portion, said under surface engaging portion having the form of an upwardly convex smooth curve of which, when said anchor is in final position, the uppermost convex portion engages said rail under surface at points lying in substantial alignment longitudinally of said rail, which points are closer to the adjacent rail flange edge than the point at which the rail web engaging portion engages a rail web surface, said last surface and said flange edge lying on the same side of the longitudinal axis of said rail.

3,355,106

MIXING ATOMIZING ROTOR

Ward A. Graham, Kansas City, Mo., assignor to Stratford Engineering Corporation, Kansas City, Mo., a corporation of Delaware
Original application Apr. 30, 1964, Ser. No. 366,217. Divided and this application Oct. 21, 1965, Ser. No. 499,856
3 Claims. (Cl. 239—9)



1. The process of mixing and atomizing fluids comprising

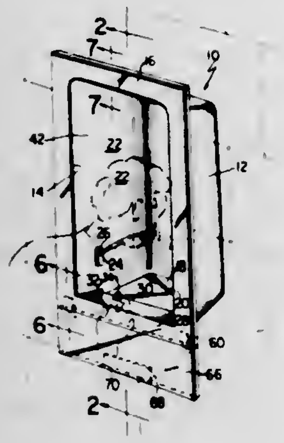
feeding a first fluid to be mixed and atomized in a first separate sealed passageway vertically from above into a first separate upper zone of an atomizing rotor,
simultaneously feeding a second fluid to be mixed and atomized in a second separate sealed passageway vertically from below into a second separate lower zone of said atomizing rotor,
simultaneously accelerating said fluids in said separate upper and lower rotor zones outwardly toward a common mixing zone in the peripheral portion of the rotor,
simultaneously wedging and compressing each of said unmixed fluids in a separate fluid wedging and compressing zone immediately prior to contact thereof in said common mixing zone,
simultaneously contacting and mixing said wedged and compressed fluids in said common mixing zone immediately prior to discharge from a fluid atomizing orifice in said rotor,
and thereafter discharging said mixed fluids from said rotor through a common fluid atomizing orifice.

3,355,107

DRINKING FOUNTAIN

John P. Hansel, Riverside, Conn., assignor to Filtrine Manufacturing Company, Waldwick, N.J., a corporation of New Jersey
Continuation of application Ser. No. 505,100, Oct. 14, 1965. This application June 29, 1966, Ser. No. 563,336
7 Claims. (Cl. 239—29)

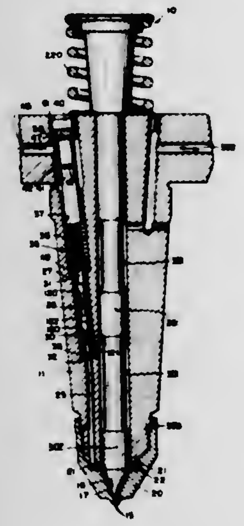
1. A drinking fountain comprising three plain vertically extending side walls and a bottom constituting a vertical chamber open on one vertical side and into which a drinker must put his face to drink, a drain in said bottom, a water outlet in one wall arranged to direct a stream of water to fall toward said drain, said outlet having a planar generally flush and smoothly rounded cover through which said stream of water passes, a low wall across the fourth side of said chamber over which the face of said drinker must project and a smooth water valve plunger projecting upward through the top of said wall in the middle portion thereof to lie below said drinker's face when in use, whereby the plain vertical side walls, the smooth and generally flush cover and the drinker's hand on said plunger provide protection in the event of jostling.



3,355,108

CHECK VALVE CARTRIDGE ASSEMBLY

Clessie L. Cummins, Jr., Indianapolis, Ind., assignor to The Buehler Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Oct. 21, 1965, Ser. No. 499,986
9 Claims. (Cl. 239—90)



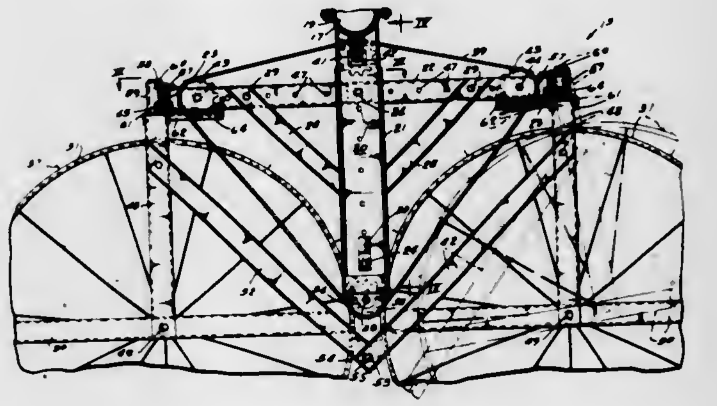
1. In a liquid fuel injection nozzle for the combustion chamber of an internal combustion engine, said nozzle comprising a housing having a liquid fuel passage therein connected to a fuel supply, said housing having a bore therein with a plunger chamber and seat at the inner end thereof and an orifice in said seat leading into said combustion chamber, a fuel injection plunger having a cylindrical inner end portion reciprocal in said bore adjacent said plunger chamber and having its innermost end portion adapted to mate with said seat at the end of the injection stroke of said plunger, said fuel passage leading into said plunger chamber; the improvement which comprises:

a check valve assembly including a cylindrical cartridge having a passage therethrough, a pair of check valves mounted on and contained within said cartridge and controlling flow through said cartridge passage, said housing having a counterbore therein which defines a portion of said fuel passage and receives said cylindrical cartridge, said counterbore defining with said fuel passage a shoulder, and means for holding said cartridge in abutment with said shoulder.

3,355,109

MOBILE IRRIGATION DEVICES WITH SWIVELLY ADJUSTABLE WHEELS

David Kane, 5036 Roosevelt Road,
San Antonio, Tex. 78214
Filed Aug. 4, 1965, Ser. No. 477,229
17 Claims. (Cl. 239—213)



1. A mobile irrigation device of the character described comprising:

a main frame structure having means thereon for supporting an irrigation water pipe,
a supporting wheel,
a sub-frame rotatably mounting said wheel,
separable means carried in part on the main frame to drive the wheel rotatably for advancing the device along one axis of movement,
means swivelly connecting the sub-frame to the main frame for relative swiveling and limited separating movements to enable turning of the sub-frame and the wheel from said one axis of movement into a second axis of movement,
said separable drive means separating incident to said separating movement of the sub-frame to effect a disconnection of the drive means to enable swiveling movement of the wheel and sub-frame relative to the main frame, and
releasable means for maintaining said sub-frame in the orientation for movement along either said one axis or along said second axis.

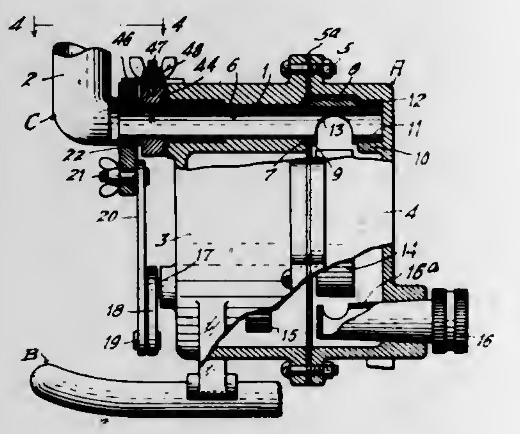
3. A mobile irrigation device of the character described comprising:

a main frame structure having means thereon for supporting an irrigation water pipe,
a supporting wheel,
a sub-frame rotatably mounting said wheel,
means connecting said sub-frame to said main frame for relative swiveling and limited separating movement,
means for driving said wheel comprising a driving member mounted on the main frame and cooperating driving means on the wheel coactive to drive the wheel rotatably in one swivelled orientation of the sub-frame relative to the main frame,
releasable means maintaining the sub-frame in said one orientation,
said sub-frame being swivelly movable into a second orientation and said driving means on the wheel being separable from said driving member by separating movement of the sub-frame relative to the main frame, and
releasable means for maintaining the sub-frame in said second orientation.

16. A mobile irrigation device of the character described comprising:
- an elongated main frame having means thereon for supporting an irrigation water pipe,
- a supporting wheel,
- a sub-frame rotatably mounting said wheel, said wheel having a tire tread with worm slot apertures in circumferential series therein,
- a driving worm mounted on said main frame and resting on said tread in meshing relation to said worm slot apertures and thereby supporting the main frame on the wheel, and
- means coupling the sub-frame and the main frame together.

3,355,110
OSCILLATING AND ROTATING LAWN SPRINKLER

Seth W. Thompson, 9 Gordon Road,
Essex Fells, N.J. 07021
Filed Sept. 26, 1966, Ser. No. 581,912
5 Claims. (Cl. 239—242)

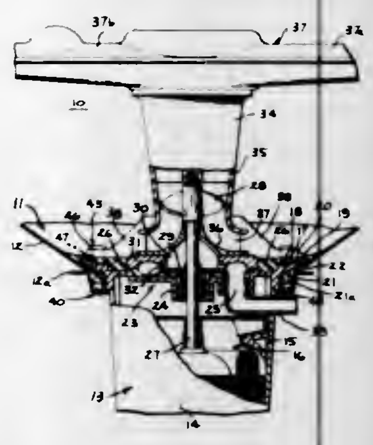


1. In a lawn sprinkler, the combination of:
- (a) a supporting frame,
- (b) a water motor including a housing on said frame having an inlet and an outlet and provided with a driving crank outside said housing,
- (c) a sprinkler supply pipe journalled in said housing to oscillate about a horizontal axis and communicating with said outlet to receive water therefrom,
- (d) a driving connection between said crank and said sprinkler supply pipe to oscillate the latter,
- (e) said driving connection including an arm rotatable loosely on and carried by the sprinkler supply pipe and having a pivotal connection to said crank,
- (f) and connector means including a part carried by said supply pipe for oscillation therewith and movable thereon selectively into a fixed driving connection between said arm and the sprinkler supply pipe to oscillate the pipe or into a fixed holding connection between an element of the motor housing and the sprinkler supply pipe to anchor the latter against oscillation.

3,355,111
DISHWASHER POWER UNIT HOUSING AND MOUNTING MEANS

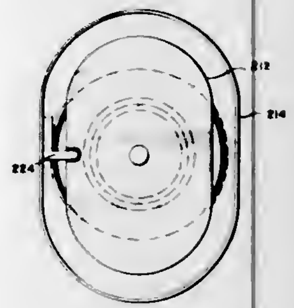
John W. Barnstead, Brazil, Ind., assignor to General Electric Company, a corporation of New York
Filed Dec. 20, 1965, Ser. No. 514,784
10 Claims. (Cl. 239—251)

1. In a dishwashing appliance having a wash chamber, a motor and housing means for housing said motor to be in power output communication with said chamber through an opening in a bottom wall of said chamber, the improvement which includes said housing means having an outer end and a peripheral wall, mounting means for said housing means to be releasably interconnected with said bottom wall of said chamber, said mounting means including rim means connected with said housing means and projecting outwardly from said peripheral wall for said outer end and said peripheral wall of said housing means to be installed through said bottom wall and an inner portion of said rim means to extend between said peripheral wall and the periphery of said opening and an outer portion of said rim means to extend outwardly overlying said bottom wall beyond the periphery of said opening, said mounting means further including elastomeric means having flange means extending under said outer portion of said rim means and along the inside surface of said bottom wall, said elastomeric means further including lip means disposed under said inner portion of said rim means and extending from said flange means, said lip means being in said opening and having an outer end, said mounting means further including anti-rotationally detained clamp means adjacent to said outer end of said lip means and movable toward said inner portion of said rim means for compressing said lip means toward said rim means and bulging said outer end of said lip means outwardly into frictional engagement with said bottom wall of said wash chamber at the periphery of said opening, said mounting means further including means engaging said clamp means and operable from within said wash chamber for imparting movement to said clamp means.



3,355,112
BEAD DISPENSER FOR USE WITH APPARATUS FOR MARKING ROAD SURFACES

William R. Shaffer and Frank E. Miller, Huntingdon, Pa., assignors to Wald Industries, Inc., Huntingdon, Pa., a corporation of Pennsylvania
Filed Dec. 4, 1964, Ser. No. 416,089
7 Claims. (Cl. 239—380)

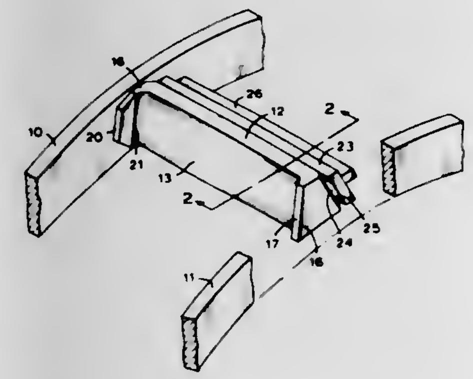


1. A dispenser for distributing granular materials over a linear area adapted for mounting in conjunction with road marking equipment comprising
- a housing for the dispenser,
- a vertically reciprocable stem mounted in said housing and extending through the top thereof,

- a piston mounted on said stem for movement therewith,
- a passageway for air into said housing in a location to move said piston,
- spring means mounted to oppose movement of said piston by air flow into said housing,
- stop means to limit the vertical movement of said stem in at least one direction,
- a frusto-conical valve member mounted on the lower end of said stem,
- an inlet means into said housing located above said valve member for the granular materials,
- a shroud member attached to the lower edge of said housing and extending below said valve member,
- a resilient seal encircling said valve member and contacting the surface of said valve member in its highest position of reciprocal movement,
- said frusto-conical valve member including at least a lower portion in the shape of a geometric solid figure with differing longitudinal and transverse dimensions,
- said shroud member having a shape with its bottom edge substantially in the shape of a geometric plane figure of complementary shape,
- and means to rotate said shroud member and said valve member in unison, attached to at least one of said members.

3,355,113
STRIKING PLATE FOR DISINTEGRATING MILL

Alfred F. Meger, Yardley, Pa., and Arthur L. Hawthorne, St. Clairsville, Ohio, assignors to J.M.J. Industries, Inc., Belleville, Ill., a corporation of Illinois
Filed Oct. 26, 1964, Ser. No. 406,377
12 Claims. (Cl. 241—191)

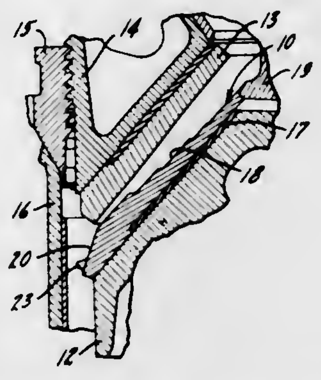


5. In an impact means adapted for use between a pair of spaced rings of a rotor in a disintegrating mill:
- (a) a striking plate having a leading impact face with an inner edge and an outer edge,
- (b) integral flanges at each end of the plate, the end flanges extending forwardly of the leading impact face a greater distance adjacent the inner edge than at the outer edge to provide wedge surfaces adapted to be arranged at an angle to a radius of the rotor, and
- (c) means wedgingly engaging the wedge surfaces of the end flanges to hold the striking plate to the rings.

3,355,114
MANTLE LIFTING MEANS

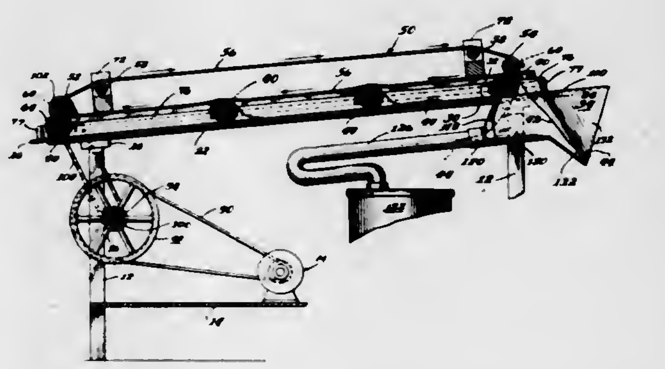
Jerome C. Motz, Milwaukee, Wis., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 14, 1964, Ser. No. 396,151
2 Claims. (Cl. 241—293)

1. For use on a gyratory crusher or the like, an upwardly truncated, centrally open, frusto-conic mantle formed and adapted to fit on a gyratory head in a supported relation and to be applied to it, or removed from it, by linear displacement along the axis of a head, said mantle having an upwardly and inwardly inclined, generally conic outer wear taking surface and a lower circumferential border surface inclined downwardly from the wear taking surface, whereby to be out of the crushing zone which the mantle assists in defining, said border surface having outwardly projecting lugs angularly spaced thereabout and downwardly and outwardly spaced from the wear taking surface, each of said lugs having a downwardly opening notch located on the under side thereof, with said lugs out of the path of flow of crushed material delivered by the wear taking surface, and being adapted to receive a cable or cables for the movement of the mantle, with said cables converging at a single point of support.



3,355,115
APPARATUS FOR SHAPING PULL SKEINS OF YARN AND FOR CONTAINING THE LOOSE ENDS THEREOF

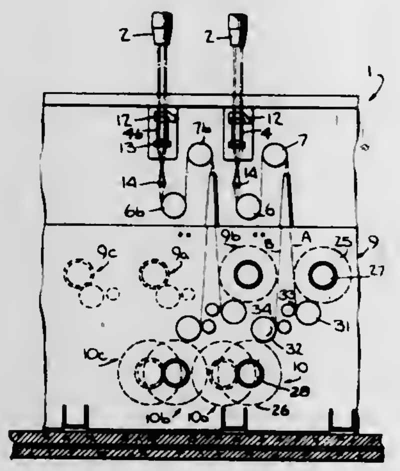
Robert C. Potts, Rochelle, Ill., assignor to Caron Spinning Company, Rochelle, Ill., a corporation of Illinois
Filed Oct. 1, 1965, Ser. No. 492,046
6 Claims. (Cl. 242—1)



1. An apparatus adapted to shape pull skeins and to contain the loose ends thereof and comprising an elongated roll table for the pull skeins presenting an upwardly facing planar table surface for receiving the pull skeins and having a front receiving end and a rear discharge end, a conveyor assembly including an endless belt having a lower straightaway reach section overlying the table and spaced upwardly from said surface a distance slightly less than the diameter of the pull skeins and extending substantially parallel to said surface, said reach section and surface being adapted to receive the pull skeins therebetween and, upon movement of the portion of the belt within the reach section in a rearward direction, to impel the pull skeins rearwardly on the table by a rolling action to shape the same to substantially cylindrical form and cause the loose ends thereof to become wrapped upon the generally cylindrical outer surface of the pull skeins and pressed into the cylindrical confines thereof, a suction head disposed at the receiving end of the roll table and presenting a suction orifice into which said loose ends of the pull skeins are adapted to be drawn under the influence of inrushing air, means for applying subatmospheric pressure to said orifice, and means for driving said belt in a skein-impelling direction.

3,355,116
YARN TAKEUP

Peter Conrad, Charlotte, N.C., assignor to Celanese Corporation, a corporation of Delaware
Filed Oct. 1, 1964, Ser. No. 400,706
9 Claims. (Cl. 242—18)

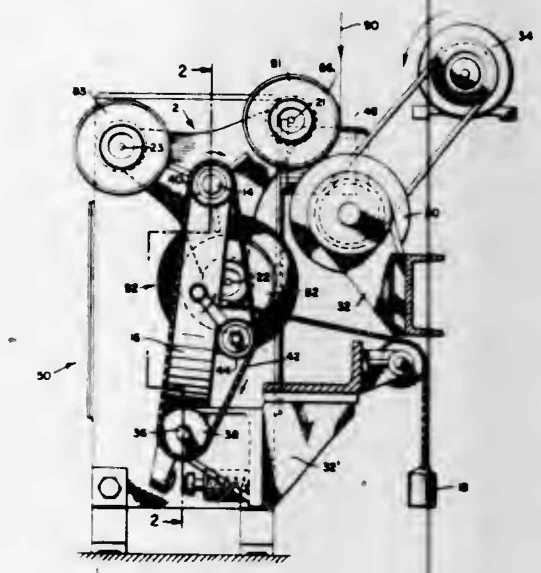


1. A yarn takeup comprising a rotatable support for a core on which yarn is wound, a frame mounting said rotatable support with the axis of said support in a fixed position during the winding operation, a godet roll for delivering yarn continuously, a traverse guide for receiving yarn from said godet roll and guiding said yarn back and forth to distribute the yarn across said core, the construction and arrangement being such that the path of the yarn from said godet roll to said traverse guide is substantially vertical, a print roll for receiving yarn from said traverse guide, said print roll transporting said yarn to said core and driving said core, a carrier, guided for rectilinear movement in a substantially vertical direction, for supporting said traverse guide and said print roll in fixed relation to each other, motor means on said carrier for driving said print roll and said traverse guide, means for supplying a fluid under pressure, means for transmitting to said carrier the force exerted by said fluid, the latter means transmitting said force to said carrier in an upward direction opposing the downward gravitational force on said carrier, the construction and arrangement being such that the resultant of the forces on said carrier is a force urging said carrier in a direction to press said print roll against said core.

3,355,117
YARN-WINDING APPARATUS

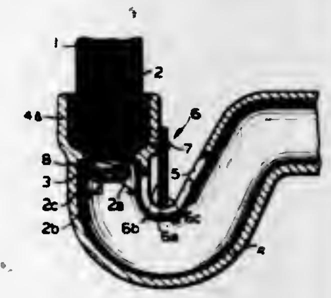
Wolfgang Werner Gerhardt, Fritz Johannes Kunze, and Wolfgang Erhard Pfaff, Karl-Marx-Stadt, Germany, assignors to Institut fur Textilmaschinen, Karl-Marx-Stadt, Germany
Filed Aug. 4, 1965, Ser. No. 477,098
12 Claims. (Cl. 242—18)

1. Yarn-winding apparatus comprising a rotary spool carrier turnable about a predetermined axis and carrying a plurality of rotary driven members uniformly distributed about and respectively having axes parallel to said predetermined axis, each rotary driven member being adapted to have spool of yarn wound thereon, a rotary driving member having an axis parallel to that of said spool carrier and said driven members, said rotary spool carrier having a plurality of operating positions equal to the number of driven members and angularly displaced with respect to each other by the angular distance from one driven member to the next driven member about said predetermined axis, said rotary driven members respectively cooperating in said operating positions of said spool carrier with said driving member to have spools of yarn wound thereon by said driving member which frictionally rotates said driven members while winding yarn thereon, and turning means operatively connected to said spool carrier for turning the latter periodically about said predetermined axis from one operating position thereof to the next operating position thereof, said turning means at each of its operating cycles turning said spool carrier in two stages from one operating position to the next operating position, and said turning means during the first stage of each cycle turning said spool carrier through a part of said angular distance which maintains said driving member in engagement with a spool wound on one driven member and simultaneously in engagement with the next driven member on which a spool is to be wound so that said next driven member will be brought up to its proper speed of rotation before the actual winding of yarn thereon commences and while the winding of yarn on the next preceding driven member is completed, and said turning means turning said spool carrier through the remainder of said angular distance during the second stage of each operating cycle when the winding of the yarn on said next preceding driven member has been completed.



3,355,118
DEVICE FOR REMOVING A FOOT BUNCH OF YARN FROM A COP

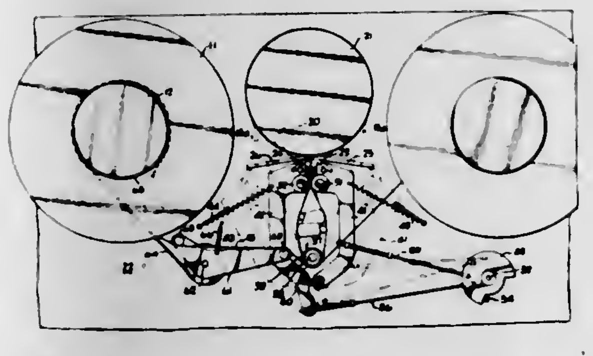
Wilhelm Küpper, Rickelrath 51, Kreis Erkelenz, Germany, assignor to Walter Reiners, Monchen - Gladbach, Germany
Filed May 13, 1966, Ser. No. 549,912
Claims priority, application Germany, May 26, 1965, R 40,719
5 Claims. (Cl. 242—35.6)



1. A device for readying a cop by removing a foot bunch therefrom, comprising a pneumatic suction tube of curved shape forming a bight, said tube having a nozzle end adapted to receive the foot portion of the cop to be readied and having a nozzle opening of a diametrical size between the diametrical sizes of the respective core and yarn-doby of the cop, and yarn severing means securely mounted in the bight of said tube, said yarn severing means and yarn from the foot bunch of the cop being mutually engageable for severing the yarn.

3,355,119
CAPSTAN AND WIND DRIVE AND ACTIVATION MECHANISM THEREFOR

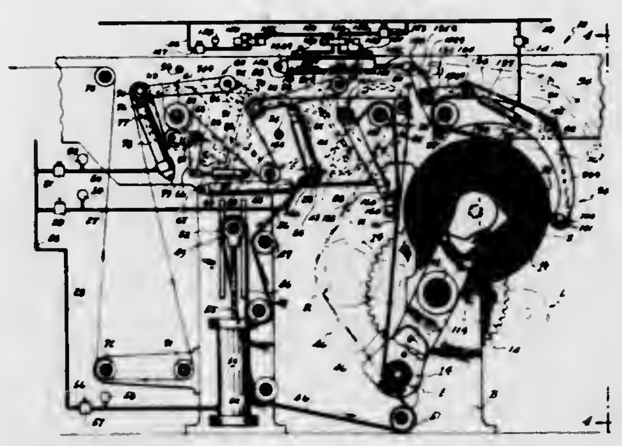
Delmar Ronald Johnson and Richard Allen Hathaway, Des Plaines, Ill., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed June 23, 1965, Ser. No. 466,254
11 Claims. (Cl. 242—55.12)



1. In a tape transport having a rotatable supply reel support and a rotatable takeup reel support and a rotatable capstan which is in driving relation with the tape, a drive system for selectively operating the tape transport in an off mode, a transduce mode, a fast forward mode and a rewind mode, said drive system including in combination, a first motor for rotating the supply reel and takeup reel supports, first drive means operable between first and second positions to couple and uncouple, respectively, said first motor and the supply reel support, second drive means operable between first and second positions to couple and uncouple, respectively, said first motor and the takeup reel support, a first control connected to said first and second drive means and selectively operable to off mode, fast forward mode and rewind mode positions, said first control operating in the off mode position to position each of said first and second drive means in the second position thereof, said first control operating in the fast forward mode position to position said first drive means in the second position thereof and to position said second drive means in the first position thereof, said first control operating in the rewind mode position to position said first drive means in the first position thereof and to position said second drive means in the second position thereof, a second motor for rotating the capstan, third drive means operable between first and second positions to couple and uncouple, respectively, said second motor and the capstan, said capstan being freely rotatable when said thread drive is in its second position, a second control connected to said third drive means and operable between an off mode position wherein said third drive means is in the second position thereof to a transduce mode position wherein said third drive means is in the first position thereof, said second control operating in the transduce mode position to operate said second drive means to the first position thereof irrespective of the effect of said first control, and means for preventing the operation of said second control in said transduce mode position when said first control is in either of the fast forward mode and the rewind mode positions.

3,355,120
WEB-ROLL DRIVING APPARATUS FOR AUTOMATIC SPLICING ROLLSTAND

William F. Huck, 81 Greenway Terrace, Forest Hills, N.Y. 11375
Filed June 18, 1965, Ser. No. 464,926
17 Claims. (Cl. 242—58.3)



1. In an apparatus for transferring a running web from a first rotating roll to a second such roll at a moment when the two rolls have substantially different diameters, including a first drive belt having a run thereof in driving engagement with the periphery of said first roll at the moment of transfer, a second drive belt movable from an inoperative position against said second roll so as to engage a progressively increasing length of a run of the second belt with the periphery of said second roll to drive the latter prior to, and at the moment of transfer, and means operative after the transfer to bring said second roll into driving engagement with said first belt by a movement in the course of which the periphery of said second roll is drivingly engaged by both of said belts:

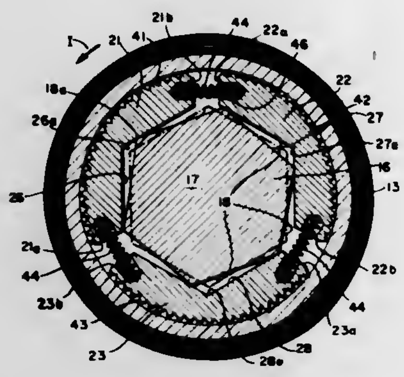
drive means for said belts including a slippable connection operative in response to movement of said second belt against said second roll to transmit a progressively increasing driving force from said drive means to said second belt as the length of said run of the latter engaging said second roll, and hence the resistance to slipping of said second belt relative to said second roll are progressively increased, whereby to obtain gradual acceleration of said second roll through non-slip engagement thereof by said second belt, and variable drive ratio means providing a certain drive ratio between said belts at the moment of transfer and providing a different drive ratio therebetween during the simultaneous driving engagement thereof with said second roll, whereby the roll contacting surfaces of both belts are driven at precisely the same speed when individually engaging the first and second rolls, respectively, and when simultaneously engaging the second roll.

3,355,121
EXPANSIBLE CHUCK FOR TUBULAR CORE

Leon C. Wright, Hartsville, S.C., assignor to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina
Filed Oct. 13, 1966, Ser. No. 586,430
6 Claims. (Cl. 242—68.2)

1. A chuck for a tubular core comprising, in combination, a shaft, an intermediate portion of polygonal cross-sectional shape on said shaft, said intermediate portion having adjacent faces intersecting to form an apex, a plurality of circumferentially spaced segments freely positioned in overlying relationship with said shaft intermediate portion, each of said segments having a V-shaped inner surface corresponding to and arranged in overlying mating relationship with a pair of adjacent faces on said

shaft intermediate portion, collar means mounted on said shaft adjacent each end of said shaft intermediate portion for limiting radially outward movement of said segments, means for yieldingly urging said segments radially outward into engagement with said collar means and into uniformly spaced parallel relationship with said shaft intermediate portion, said apexes being arranged to engage said V-shaped inner surfaces on said segments upon relative movement between said segments and shaft intermediate portion to cam said segments radially outward into driving engagement with a tubular core mounted on said chuck.

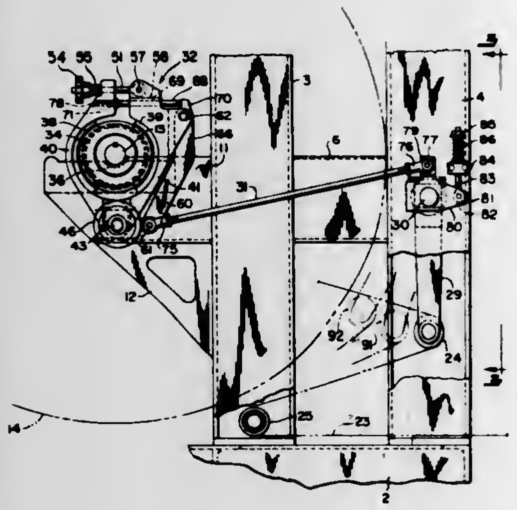


3,355,122
WEB ROLL STAND

Robert B. Thatcher, Fort Worth, Tex., assignor to The Chandler & Price Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 11, 1966, Ser. No. 519,847

8 Claims. (Cl. 242—75.43)



1. A roll stand for web rolls and the like comprising a web roll shaft support, a brake drum mounted on such web roll shaft, a pair of brake shoes mounted on holders pivoted together beneath such shaft, means operative yieldingly to hold said holders together about said drum to exert a predetermined maximum braking pressure thereon, and means responsive to variations of tension on the web payed from such roll instantaneously to vary such braking pressure below the predetermined maximum by prying said holders apart.

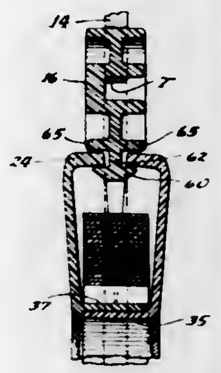
3,355,123
FISH TAPE WINDER

William G. Schinske, Sycamore, Ill., assignor to Holub Industries, Inc., a corporation of Illinois

Filed Sept. 30, 1965, Ser. No. 491,521

16 Claims. (Cl. 242—84.8)

1. A fish tape winder comprising, in combination, a ring-shaped reel for housing said tape comprising a pair of interfitted substantially identical members formed of a break resistant dielectric material, said members having a radially extending side wall outwardly terminating in an inturned flange, and means disposed radially inwardly of said flange for engaging a like member to form said reel, the combined width of said inturned flanges of said engaged members being greater than the combined width of said members at said engaging means so that said flanges are urged together in normal abutting relation under pressure, and a combination handle and guide member having a channel portion thereon adapted to embrace said flanges in bearing relation so as to be manually slidable about said reel on said flanges, means defining an aperture in said handle providing an opening to the inside of said reel, said tape passing between said flanges and through said opening, the forward edges of said flanges being spread at the point where said tape passes through said reel and frictionally engaged with said tape so as to control the position thereof relative to the reel as the tape is payed out and reeled in.

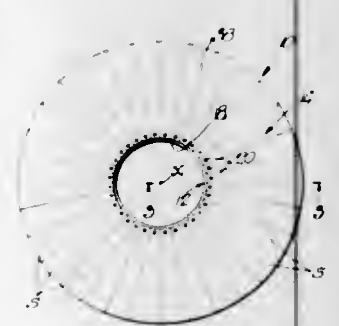


3,355,124
CIRCULAR WING STRUCTURE

Cadwallader W. Kelsey, Guilford, Conn., assignor to Skycar, Inc., New Haven, Conn., a corporation of Connecticut

Filed Dec. 27, 1965, Ser. No. 516,604

8 Claims. (Cl. 244—35)



1. A circular wing structure, comprising a rigid center support with a vertical axis, and substantially circular upper and lower wing sections of which each section is formed of complemental flat flexible metal sheets joined together at adjacent margins thereof, said wing sections being with central parts thereof joined to said support in vertically spaced relation with each other and being secured to each other at their outer peripheries from which they diverge to said support, with said wing sections being over the extent of their divergence from their outer peripheries to said support devoid of any connections between them, and the joints of the sheets of each wing section lending rigidity to the latter.

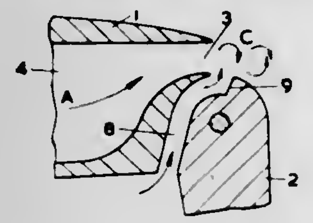
3,355,125
FLAP SYSTEMS FOR AIRCRAFT

Alastair William Rodney Allcock, Northwood, England, assignor to Power Jets (Research and Development) Limited, London, England

Filed Oct. 21, 1965, Ser. No. 499,239

Claims priority, application Great Britain, Dec. 11, 1964, 50,618/64

3 Claims. (Cl. 244—42)



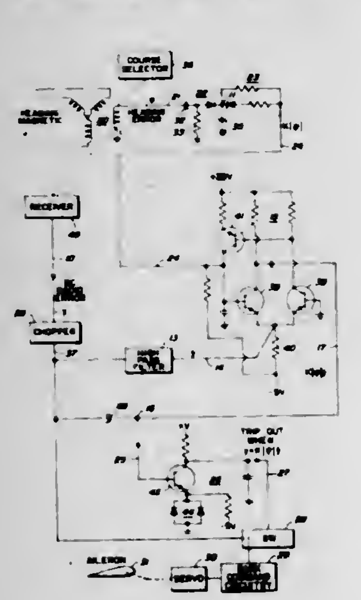
1. A flap system for an aircraft having an aerofoil comprising a flap pivoted behind the trailing edge of the aerofoil, the upper surface of the aerofoil being raised relative to that of the flap to define a rearwardly directed nozzle extending spanwise along the trailing edge of the aerofoil; a connection between the nozzle and a fluid pressure source, the upper surface of said flap being exposed both to normal aerodynamic flow and to fluid flow discharged by the nozzle; a flow channel between the trailing edge of the aerofoil and the leading edge of the flap and defined at least in part by the flap; and a discontinuity formed in the surface of the leading edge of said flap, and adapted, during a predetermined range of flap angles, to close off flow through said channel and, during another range of flap angles, to permit flow through said channel and to initiate aerodynamic separation of the flow at the leading edge of said flap.

3,355,126
RADIO BEAM CAPTURE CIRCUIT FOR AIRCRAFT GUIDANCE

Charles A. Oppedahl, deceased, late of Cedar Rapids, Iowa, by Roberta A. Oppedahl, administratrix, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Sept. 6, 1966, Ser. No. 577,550

6 Claims. (Cl. 244—77)



1. In an aircraft control system of the type including means for controlling the heading of an aircraft in response to an error signal proportional to the angular displacement of the aircraft with respect to a selected radio defined course line, means for developing a control signal upon said radio error signal reaching a value equaling a predetermined function of the velocity of said aircraft, the distance between the aircraft and the source of said radio defined course, and the angle between the heading vector of said aircraft and said radio defined course line; said means comprising first signal developing means for producing a first course datum signal proportional to the absolute value of the angle between said aircraft heading vector and said radio defined course line, second signal developing means for producing a second signal proportional to the rate of change of said radio error signal, signal multiplying means receiving said first and second signals and developing an output proportional to the product thereof, signal comparison means receiving said radio error signal and the output product from said multiplying means, threshold monitoring means receiving the output from said comparison means and developing an output signal upon the input thereto becoming zero, and control means responsive to said output signal whereby said aircraft is caused to follow a segment of a circular path between respective points of tangency of said heading vector and said selected radio defined course vector, the radius of said circular path being defined as

$$\frac{V^2}{g \tan \phi}$$

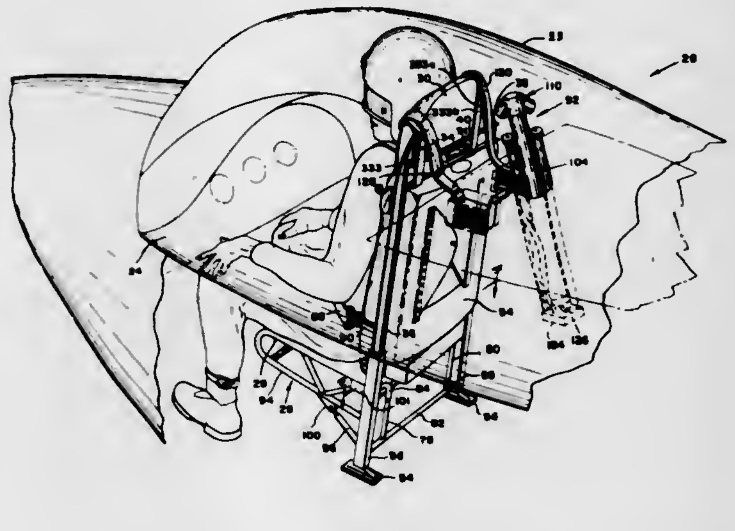
when V is aircraft velocity, g is the gravity vector, and ϕ is a predetermined aircraft bank limit angle.

3,355,127
OCCUPANT ESCAPE APPARATUS FOR AN AIRCRAFT OR THE LIKE

Robert M. Stanley, Denver, and Eric C. Griffiths, Aurora, Colo., assignors to Stanley Aviation Corporation, Denver, Colo.

Continuation of application Ser. No. 390,709, Aug. 19, 1964. This application Dec. 6, 1966, Ser. No. 599,628

3 Claims. (Cl. 244—122)

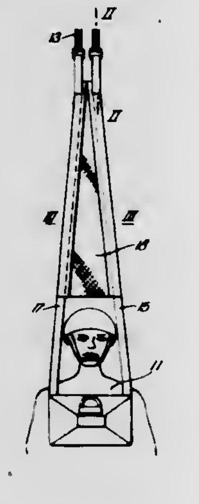


1. An escape apparatus for removing an occupant from a moving vehicle and comprising a rocket mounted in said vehicle, means for selectively launching said rocket from said vehicle, a flexible tow line, means so securing said tow line to said rocket and said occupant that it is pulled taut by flight of said rocket away from said vehicle to extract said occupant from said vehicle, a seat assembly mounted in said vehicle for said occupant and having a seat back and a seat pan, means hinging said seat pan to said seat back, means for releasably retaining said seat back and said seat pan in normal sitting positions, means responsive to the tension applied through said towline for releasing said means retaining said seat back and said seat pan, guide rail means for providing the upward guided movement of said seat back, and means for trans-

mitting the upward rocket extracting force to displace said seat back upwardly, said seat pan being so secured to said seat back that its rearward end is swung upwardly as said seat back is upwardly displaced to form with said back a chute for straightening the occupant's posture as he is extracted from said vehicle.

3,355,128
HARNESS

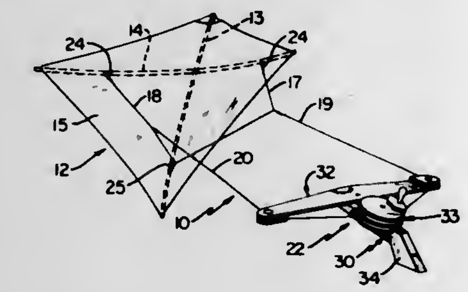
John Rothwell Mitchell, Woking, England, assignor to G. Q. Parachute Company Limited, Woking, England, a British company
Filed May 19, 1966, Ser. No. 551,284
Claims priority, application Great Britain, July 9, 1965, 30,068/65
4 Claims. (Cl. 244—151)



1. In a parachute harness for use with a parachute having rigging lines, spaced pairs of riser webs connecting said harness to the rigging lines, readily detachable means for connecting the riser webs of each pair together in face contacting, non-folded relation longitudinally thereof, said means comprising an elongated apron fixedly secured to one riser web longitudinally thereof, and detachably secured about said riser webs in a pull-apart connection, said connection holding said riser webs together until the canopy of the parachute is substantially fully deployed.

3,355,129
KITE CONTROL ASSEMBLY

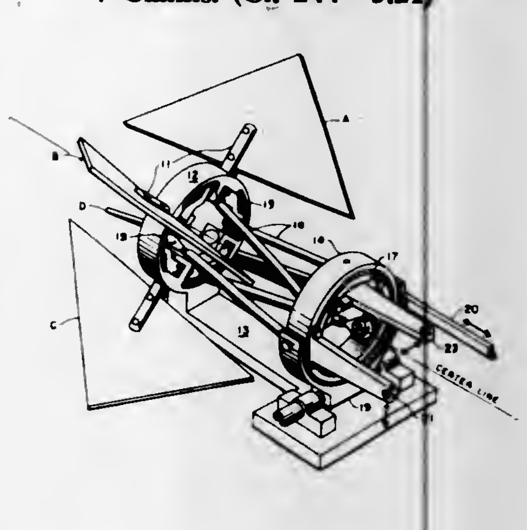
Ernest V. Kinsey, 5510 Brentwood, Arvada, Colo. 80002
Filed July 13, 1966, Ser. No. 573,732
9 Claims. (Cl. 244—155)



1. A control assembly for airborne devices comprising a reel including a main support having a handle portion, a spool mounted for rotation about a vertical axis on said support forwardly of said handle, said spool being provided with upper and lower control line-receiving grooves thereon, a guide member positioned on said main support including oppositely directed, laterally extending arms, a guide portion at the outer terminal end of each arm being aligned in a plane common to one of the control line-receiving grooves on said spool, and a pair of control lines extending in opposite directions from the grooves and passing through an aligned guide portion for connection in spaced relation to the airborne device.

3,355,130
ANTI-SQUEEZE MODE CONTROL SURFACE MECHANISM

Vernon C. Dell, Corona, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 10, 1965, Ser. No. 513,060
7 Claims. (Cl. 244—3.21)



1. A roll, pitch, and yaw mixing, and positive squeeze mode lockout steering and control mechanism for roll-stabilized missiles, comprising:

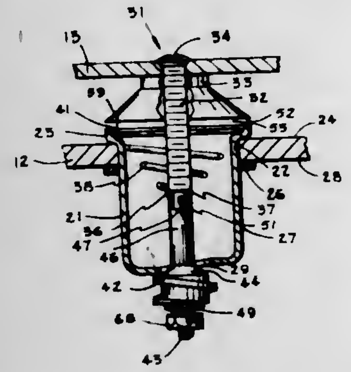
(a) a mount means having a defined longitudinal axis,
(b) first, second, third, and fourth pivot means equidistantly spaced and rotatably mounted about the longitudinal axis of said mount means such that the axes of rotation of said pivot means are aligned radially in a single plane perpendicular to said longitudinal axis,
(c) first, second, third, and fourth steering surface means affixed to the radially outward ends of respective said pivot means,
(d) a gimbals control means mounted with its center substantially on said mount means longitudinal axis for angular movement about its center and longitudinal movement in the general direction of said longitudinal axis,
(e) first, second, third, and fourth linkage means connecting respectively the radially inward ends of respective first, second, third, and fourth pivot means to respective first, second, third, and fourth points equidistantly spaced about said gimbals control means such that any movement of any of said points in the direction of said longitudinal axis will cause reciprocal directional rotation of respective said pivot means about their axes of rotation depending upon the longitudinal direction of movement of said points.

3,355,131
HOLD-DOWN FOR RECORD CHANGER

William A. Fordeck, Garrett, and Carl R. Hart, New Haven, Ind., assignors to The Magnavox Company, Fort Wayne, Ind., a corporation of Delaware
Filed Feb. 1, 1966, Ser. No. 524,322
4 Claims. (Cl. 248—20)

1. The combination comprising:
a support member having upper and lower faces;
a mounting member disposed above said support member;
first connector means connecting said mounting member to said support member and normally supporting said mounting member in spaced relation to said support member;

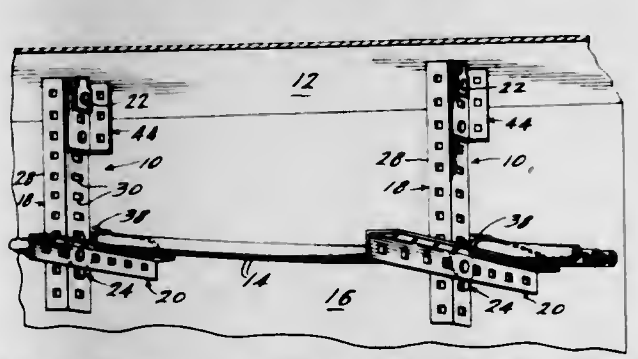
a fastener in said connector means accessible from above said mounting member, said fastener having a right-hand thread thereon threadedly received in said mounting member, and said fastener having a left-hand thread thereon threadedly receivable by a portion of said connector means affixed to said support member;



said fastener being operable from above said mounting member to affix said mounting member to said support member.

3,355,132
STUD WELDING

John C. Jenkins, Lorain, Ohio, assignor to Gregory Industries, Inc., Lorain, Ohio, a corporation of Michigan
Filed Sept. 30, 1965, Ser. No. 491,802
12 Claims. (Cl. 248—59)



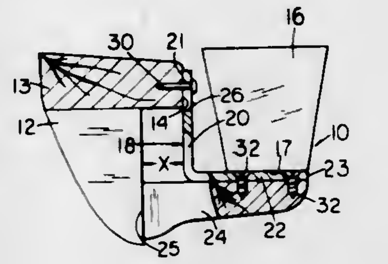
1. A cable hanger comprising a first elongate member having a plurality of openings spaced therealong, a support to be affixed to part of a ship, said support having a shank with a hole therein, a bolt extending through said shank and said elongate member affixing the two together, a second elongate member having a plurality of second openings spaced therealong, a connection for said members including a rectangular plate-like portion having a central hole therethrough, a pair of legs on opposite sides of said central hole extending in a common direction from said plate-like portion, said pair of legs being engageable with said first member, and a second pair of legs on opposite sides of said central hole and extending in a common direction from said plate-like portion, said second pair of legs being engageable wtih said second member, bolt means extending through said central hole of said connection and through openings of said first and second members affixing said members together, and means for holding cables on said second member on either side of said first member.

3,355,133
BRACKET ARRANGEMENT

George F. Barchfeld, 47 Ridge Road, Upper Saddle River, N.J. 07458
Filed July 12, 1965, Ser. No. 471,046
5 Claims. (Cl. 248—236)

1. A bracket adapted to be removably fastened to a window sill for support of a window box comprising

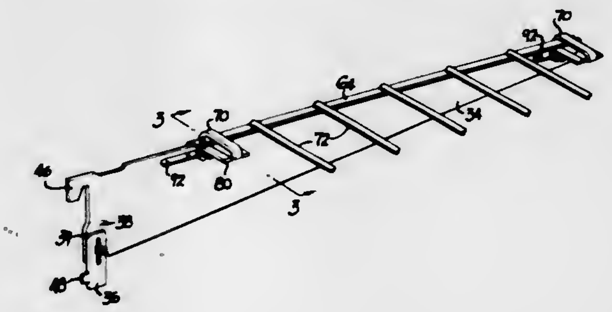
(a) a support member being provided with a substantially upright portion and a horizontal portion,
(b) means for removably fastening the upright portion of the support member to the window sill,
(c) a mounting base having an abutment face, at least one locating pin protruding from said abutment face and adapted to provide engagement with the building exterior, and



(d) means for securing said base to the horizontal portion of said support wherein said abutment face is adapted to engage the building exterior to absorb a major portion of the force transmitted by the window box when positioned on said bracket.

3,355,134
SHELF SUPPORT

Robert G. Chesley, Farmington, Mich., assignor to Chesley Industries, Inc., Farmington, Mich., a corporation of Michigan
Filed Oct. 22, 1965, Ser. No. 502,125
9 Claims. (Cl. 248—250)



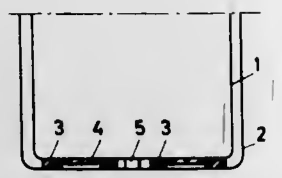
6. A shelf structure arrangement for supporting shelves on spaced apart upright members, brackets for securement to said upright members, clamps secured to said brackets and including lower supporting portions and upper clamping portions, said portions on two adjacent brackets extending toward each other and providing clamping areas of sufficient width to compensate for variations in shelf widths and variations in spaced apart distances of said upright members to receive the side peripheral edges of said shelves in said areas to clamp same to said brackets.

3,355,135
CARGO TANK SUPPORT

Bengt Gunnar Bengtsson, Goteborg, Sweden, assignor to Aktiebolaget Gotaverken, Goteborg, Sweden, a corporation of Sweden
Filed Jan. 13, 1966, Ser. No. 520,320
Claims priority, application Sweden, Jan. 22, 1965, 837/65
3 Claims. (Cl. 248—350)

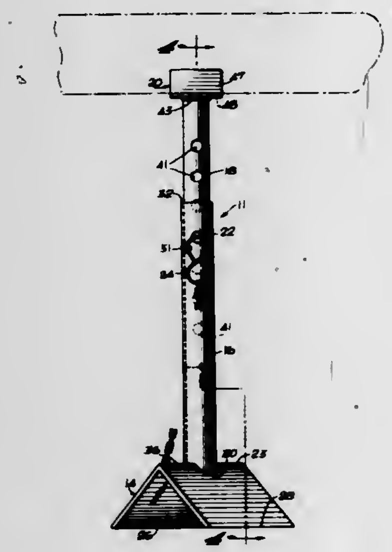
1. Means for supporting a container subjected to thermal movements, especially a cargo tank in a ship, in relation to a support base by means of members having different heights in unloaded condition; comprising:
a plurality of a first type of widely spaced relatively tall support members attached to the container bottom

structure as well as to the support base, said first type support members being designed alone to carry the empty container at a distance from the support base and to permit a limited movement of the container in relation to said support base;



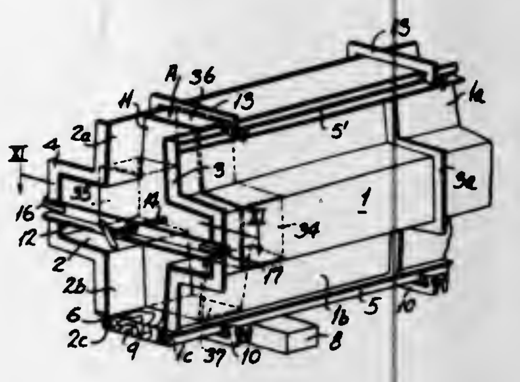
a plurality of a second type relatively short support members being fixed to either the bottom structure of said container or to the base support at a distance from said first support members, whereby during an initial decrease in temperature of the container a relative movement between said container and the support base may take place before support members of said second type become engaged for carrying purposes.

3,355,136
ADJUSTABLE SUPPORT DEVICE FOR A VEHICLE
Henry C. Staples, 701 W. 27th St.,
Hialeah, Fla. 33013
Filed Sept. 13, 1965, Ser. No. 487,001
1 Claim. (Cl. 248—352)

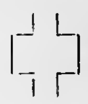


An adjustable support device for a vehicle which has been raised by a bumper jack to hold it in a raised position comprising; an angle beam platform to rest on a support surface beneath a vehicle with the apex of the included angle in an inverted position and the outer edges engaging the support surface, said platform being symmetrical along the apex and parallelogrammatic in plan; a tubular standard having a first end, said first end being integrally secured to said platform and including a second end and a V-shaped diametrical notch seated on the apex of the beam platform with the edges of the notch on the platform circumposing a circle centrally on the platform as seen in plan and supporting the standard above the beam platform; and a diametrical hole through the side walls of the standard adjacent the second end and, the axis of said hole being in a plane parallel to the projection in plan of the platform and diagonal with respect to alternate corners of the parallelogrammatic projection; an extension member telescopically received in the standard and having a plurality of parallel aligned diametrical holes at spaced intervals therealong; a channel form cradle mounted to the distal end of the member with the flanges extending away from the platform and the center line of the web being transverse of the axis of the holes in the member and said axis of the holes in the member extending diagonally with respect to alternate corners of the projection in the same manner as the axis of the hole in the side wall of the standard; a pin sized for passage through the holes of the standard and member to hold the member in a fixed position relative to the standard when in an extended position and to secure the member in the standard when in a telescoped position, said member being of a length relative to that of the standard such that, when it is in the collapsed state with the cradle abutting the said second end, the extension depends in the standard and the distal most hole of the member is aligned with the hole of the standard; and flexible ligament means to connect the pin to the platform whereby forward or rearward movement of a vehicle supported on said support device will tend to urge one of said diagonal corners of said base into the suppor surface and the edge of the base extending therefrom into the support surface to appreciably resist movement of said vehicle.

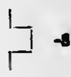
3,355,137
MOLD FOR MANUFACTURING CONCRETE MEMBERS HAVING CRUCIFORM CROSS SECTION
Yoshiro Tsuzuki, 2 of 76 Mitsukesoto, Hon-aza Deguchimachi, Numazu, Shizuoka Prefecture, Japan
Filed Aug. 2, 1965, Ser. No. 476,577
Claims priority, application Japan, Aug. 3, 1964, 39/44,477
11 Claims. (Cl. 249—48)



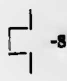
1. An apparatus of molding flasks for manufacturing concrete members of cruciform cross section, which comprises an assembled molding flask of


-shaped

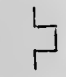
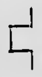
cross section constituted by arranging a molding flask of


-shaped

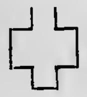
cross section formed of a plate selected from the group consisting of a thin sheet iron plate and a synthetic resin plate and a molding flask of


-shaped

cross section formed similarly of a plate selected from the group consisting of a thin sheet iron plate and a synthetic resin plate, in opposite and in parallel in spaced relations with each other; a bottom plate disposed in horizontal and having the desired width, thickness and length, the plate being at its both sides tightly fastened together with the bottom portions of the said

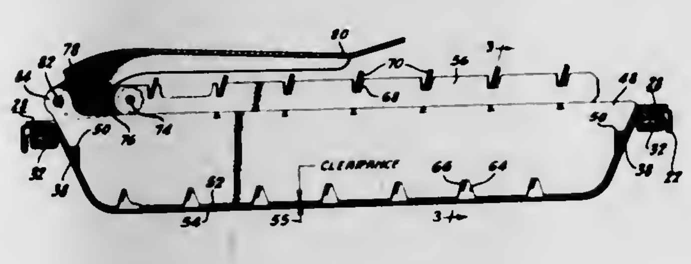

-shaped and

-shaped

molding flasks respectively by means of clamping devices to form a matrix of


-shape

and front and rear closure plates of cruciform sheet iron plates each slightly smaller in shape than the configuration along the inner periphery of both front and rear open ends of the matrix, the closure plates respectively being positioned fixedly inside of the both front and rear open ends of the matrix by means of a front fastening and fixing device and a rear fastening and fixing means respectively.

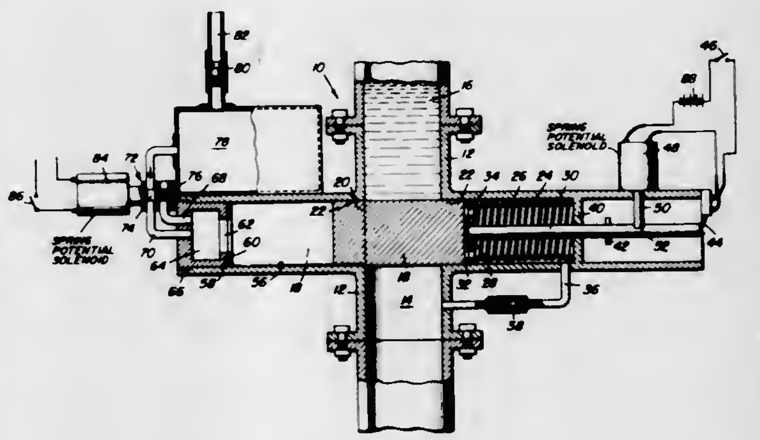
3,355,138
FREEZING TRAY
Arthur J. Frei, Sr., Dayton, and Franklin E. Merica, Fairborn, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 8, 1965, Ser. No. 424,321
5 Claims. (Cl. 249—71)



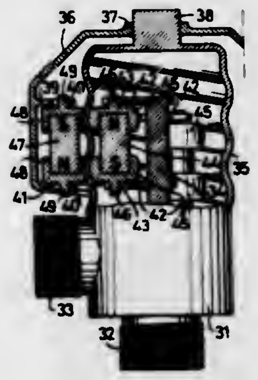
4. A freezing tray including an elongated container pan, a grid for dividing the interior of said pan comprising a lower longitudinal wall extending longitudinally of said pan and transverse movable walls supported by said longitudinal wall and extending transversely relative to said pan and said longitudinal wall, wherein the improvement comprises providing pads upon the opposite ends of said pan, each pad having an elevated support and a slot for supporting said longitudinal wall at such an elevated position and preventing its rotation relative to the bottom of the pan to provide a small clearance between said movable walls and the pan throughout their entire movement for preventing the rubbing of the movable walls upon the pan.

3,355,139
SOLENOID CONTROLLED VALVE MECHANISM
Stephen F. Kittredge, 78 Smith St.,
South Portland, Maine 04101
Filed Oct. 11, 1965, Ser. No. 494,446
10 Claims. (Cl. 251—30)

9. In a valve mechanism, a valve body having a through passageway, a free floating gate valve, a gate valve track extending transversely of said valve body through passageway, valve opening means comprising a compression spring biased between one end of said gate track and an end of said free floating gate valve, means limiting the expansion of said compression spring short of said through passageway, and spring potential solenoid means holding said spring in compressed condition for releasing it to expand and activate said free floating valve to the other end of said gate track to valve open position, and valve closing means comprising a fluid pressure chamber provided at the other end of said gate valve track of a size and shape to receive said gate valve when in valve open position, a fluid pressure supply conduit leading to said pressure chamber, a fluid pressure release conduit leading from said gate track chamber, a spring potential solenoid and solenoid armature fluid pressure valve means, said fluid pressure valve means intercepting both said pressure supply and pressure release conduit, pressure valve means alternately providing a passageway through either pressure conduit while simultaneously closing the other pressure conduit, said solenoid armature valve means being spring operated in one direction and solenoid operated in the other direction.



3,355,140
MAGNETICALLY OPERATED FLUID CONTROL VALVE
Obel F. E. Andersen, Kokkedal, Denmark, assignor to Eric Schaumburg, Holmenkollen, Norway
Filed Sept. 3, 1965, Ser. No. 484,847
Claims priority, application Denmark, Nov. 9, 1964, 4,317/64
10 Claims. (Cl. 251—65)

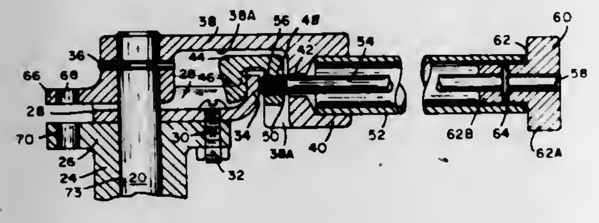


1. A fluid control valve comprising a valve body having a flow passage extending therethrough, a valve member displaceable within said valve body for selectively opening and closing said flow passage, an actuating member located within said valve body and operatively connected to said valve member for displacing said member,

a displaceable manoeuvring member on the outer side of said valve body, first magnet means supported by said actuating member second magnet means supported by said manoeuvring member, so said first and second magnet means are located in pairs opposite one another at either side of a wall of said valve body for transmitting movements of said manoeuvring member to said actuating member, wherein at least said first magnet means is supported by said actuating member so as to enable it to perform a rolling movement along said wall of said valve body.

3,355,141
VALVE HANDLES

Robert K. Cooper, Tulsa, Okla., assignor to The Hale Company, Tulsa, Okla., a corporation of Ohio
Filed Dec. 9, 1964, Ser. No. 417,170
9 Claims. (Cl. 251—101)

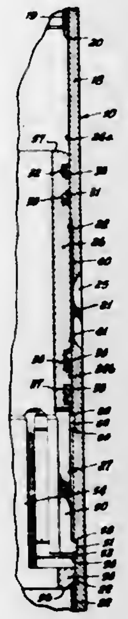


1. In combination
a valve body having a flow passageway therethrough and a stem opening therein;
a closure member rotatably supported in said flow passageway adaptable in one rotatable position to close said passageway and in another position to open said passageway;
a valve stem affixed at one end to said closure member, the other end extending sealably and rotatably through said valve body stem opening;
a segmented cup member affixed to the exterior of said valve body adjacent said stem opening, the segmented cup member having an integral outer tubular portion coaxial with said stem opening;
a handle member affixed to said valve stem exterior of said valve body and extending substantially perpendicular of said valve stem, a portion of the handle member lying exteriorly of said tubular portion, the handle member having a recess in the lower surface thereof;
an inverted U-shaped clamp member having parallel leg portions straddling said tubular portion of said cup segment, the leg portion furthest from the valve stem having a threaded opening therein, the clamp member loosely received in said recess in said handle member; and
means in said threaded opening in said clamp member forcibly engaging the exterior tubular surface of said segmented cup member to nonslidably retain said clamp member and thereby said handle member in a preselected position.

3,355,142
SLEEVE OR PISTON TYPE VALVE DEVICE

Archer W. Kammerer, Jr., Fullerton, Calif., and Luis F. Castro, Houston, Tex., assignors to Baker Oil Tools, Inc., City of Commerce, Calif., a corporation of California
Filed Sept. 29, 1964, Ser. No. 400,063
20 Claims. (Cl. 251—175)

1. In a valve device: a body member having a fluid passage; a valve member shiftable longitudinally in said body member to control flow of fluid through said passage; one of said members having a sealing surface; the other of said members having a pair of pliant, elastic seal rings spaced from each other and engageable with said sealing surface to close said passage, first portions of said seal rings disposed toward each other having cylindrical surfaces adapted to sealingly engage said sealing surface, and second portions of said seal rings disposed away from each other having circumferential relief grooves adjacent to said cylindrical surfaces.

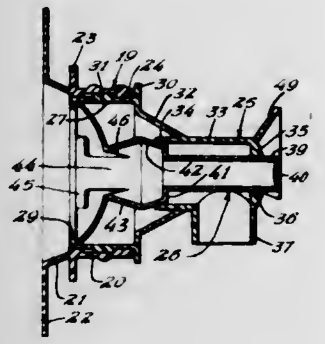


2. In combination: a body member; a member shiftable longitudinally to said body member; one of said members having a sealing surface; the other of said members having a pair of pliant, elastic seal rings spaced from each other and engageable with said sealing surface to prevent fluid leakage between said members; first portions of said seal rings disposed toward each other having cylindrical surfaces adapted to sealingly engage said sealing surface, and second portions of said seal rings disposed away from each other having circumferential relief grooves adjacent to said cylindrical surfaces, each relief groove being defined by a first wall tapering away from the cylindrical surface of its seal ring in a direction axially away from said first portion of its seal ring and also away from said sealing surface, said first wall merging into an inner groove wall, said inner wall merging into a second wall tapering in a direction axially away from said first portion and toward said sealing surface.

3,355,143
PLASTIC VALVES

Oscar G. Mueller, Grand Island, Nebr., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Oct. 19, 1965, Ser. No. 497,816
10 Claims. (Cl. 251—321)

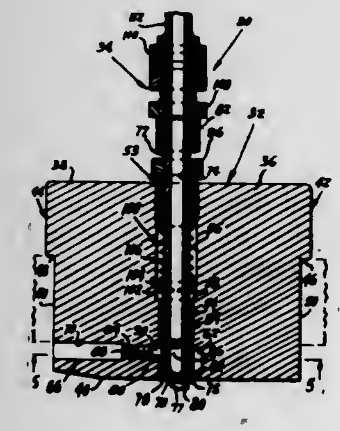
1. A valve comprising:
a plastic body including
a substantially cylindrical end portion,
a frusto-conical connecting portion having its large diameter end connected to said cylindrical end portion,
a relatively smaller diameter sleeve connected to the small diameter end of said connecting portion,
said sleeve having a discharge passage therein,
a plastic valve element comprising a substantially frusto-conical valve portion engageable with the end of said sleeve, a valve stem projecting axially from the small diameter end of said valve portion, and a plurality of resilient angularly spaced arms extending outwardly and rearwardly from the other end thereof,
means on said cylindrical end portion of said valve engaging said resilient arms to urge said valve portion against the end of said sleeve,



said valve stem projecting from said sleeve to permit actuation of said valve element.

3,355,144
VALVE

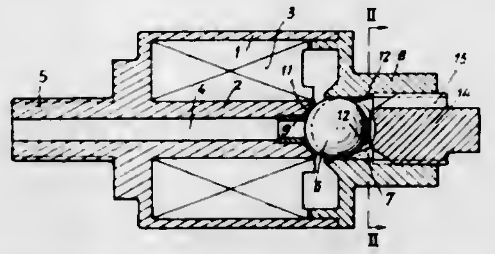
Stanley B. Knudtson, 1920 Highway 99 S., Junction City, Oreg. 97448
Filed June 18, 1965, Ser. No. 464,931
6 Claims. (Cl. 251—322)



1. In combination, a valve and a valve holder,
said valve holder having an upper and a lower surface and forming an opening connecting said upper and lower surfaces;
said valve comprising
a member having an upper and a lower end, a longitudinal axis, an opening parallel to said longitudinal axis, a transverse slot adjacent said lower end communicating with said opening, means closing said opening at said lower end of said member, said member further including a vertically disposed slot adjacent its said lower end;
first means slidably mounted on said member adjacent its said lower end, said first means including an opening disposed adjacent said vertically disposed slot;
means securing said first means in said opening of said valve holder adjacent its said lower surface, said securing means including a detent disposed in said opening of said first means, and means disposed adjacent said detent urging said detent into said vertically disposed slot, means in said opening of said valve holder for engagement with means on said member for limiting the downward movement of said member;
second means slidably mounted on said member adjacent its said upper end;
means seecuring said second means in said opening of said valve holder adjacent its said upper surface; and
means biasing said member downwardly.

3,355,145
ELECTRICALLY OPERATED VALVES

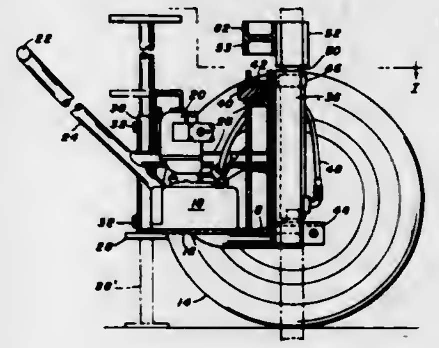
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Oct. 18, 1965, Ser. No. 497,166
Claims priority, application France, Oct. 20, 1964, 992,017, Patent 1,422,165; Oct. 8, 1965, 34,320, Patent 88,831
7 Claims. (Cl. 251—141)



1. A ball-type electrically operated valve comprising a shell-type electromagnet with a fixed core forming a fluid inlet passage into the electrically operated valve and a cover embodying a fluid outlet passage, a ball-valve made of magnetic material and a seat being interposed between said cover and said core, and the assembly consisting of said core, cover and seat being so devised that when the electrically operated valve is energized said ball-valve closes the magnetic field between said cover and said core in a position of attraction against said seat that leaves a certain air gap between said ball valve and said core, characterized in that said seat is formed internally of said core at the end of said inlet passage and in that a housing for said ball-valve provides guidance therefor along the seat axis and comprises passages for flowing the fluid about said ball-valve, said passages being shaped to cause rotation of the ball in response to flow.

3,355,146
POST PULLING APPARATUS

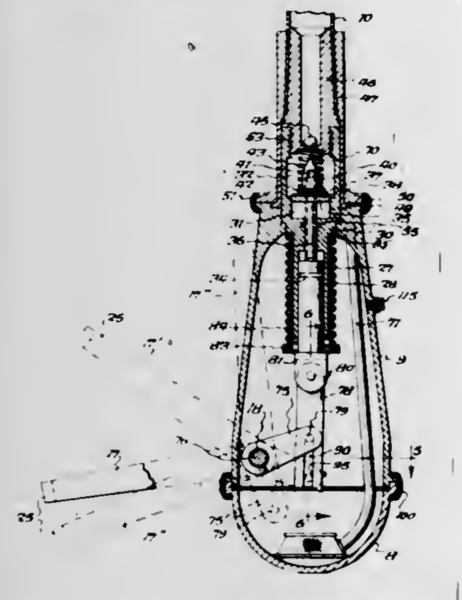
James E. Ashworth, Moraga, Calif., assignor to United States Steel Corporation, a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,077
6 Claims. (Cl. 254—29)



1. Apparatus for extracting from a solid substance a workpiece having a part thereof embedded beneath the surface of said solid substance, said apparatus comprising:
a frame;
two resilient elements mounted on said frame having an area of contact with said surface of solid substance;
an attachment means secured to said workpiece; and
a pressure means connected to said attachment means and also connected to said frame at a location above the area of said surface of solid substance between the areas of contact of said resilient elements, said pressure means adapted to exert on said frame a force that is toward said surface of solid substance and on said attachment means a force that is outward from said surface of solid substance,

said pressure means being capable of moving said connected frame against said resilient elements so as to compress the resilient elements,
said pressure means also being capable of exerting a force on said attachment means that will initially move said attachment means and secured workpiece outwardly relative to said surface of solid substance,
and said resilient elements and pressure means together being capable of continuing the outward movement of said workpiece after said pressure elements have compressed said resilient means and initially moved said workpiece.

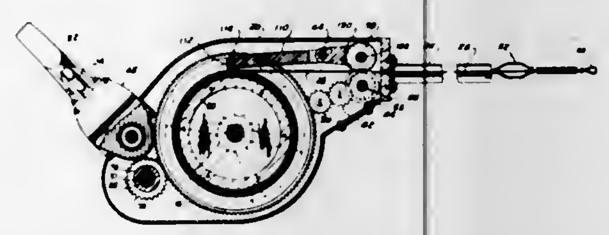
3,355,147
LIFTING AND SUPPORTING DEVICE
John B. Gormley, 60 McClellan Circle, Buffalo, N.Y. 14220
Filed Sept. 13, 1965, Ser. No. 486,970
16 Claims. (Cl. 254—93)



1. A load supporting device including a base,
a pair of telescopically arranged tubes, one of which is supported on said base and the other of which is slidably arranged to support a load and movable vertically relatively to said first tube and having liquid-tight connection therewith,
a casing of tubular form interposed between said base and a said first tube,
a check valve in said casing for controlling the admission of fluid to the lower end of said first tube,
a hollow base into which said casing extends,
a cylinder on said casing,
a piston in said cylinder,
a disk valve which confines liquid to said casing,
means for reciprocating said piston to apply pressure to liquid for delivery to said casing,
and a bypass for conducting liquid from said pump to said casing without moving said disk valve.

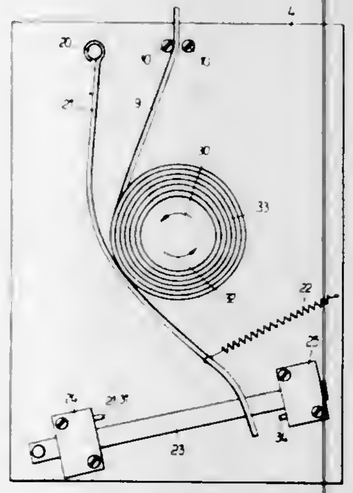
3,355,148
FISH CABLE TOOL
Gilbert Botello, 1912 Prichard Lane, Dallas, Tex. 75217, and Robert E. Johnson and Elmer A. Stockton, Dallas, Tex.; said Johnson and said Stockton assignors to said Botello
Filed Oct. 15, 1965, Ser. No. 496,290
21 Claims. (Cl. 254—134.3)

1. A fish cable tool comprising:
(a) a rotatable drum about which a fish cable can be wound;
(b) a driving source;
(c) first driving means;
(d) a first driving pulley disposed in front of said drum for engaging said cable coupled to said first driving means for being driven thereby in one rotational sense to drive said cable out of said tool when said first driving means is actuated;
(e) a second driving pulley disposed adjacent said first driving pulley for engaging said cable in gripping relationship with said first pulley;
(f) second driving means coupled between said first driving means and said second pulley for driving said second pulley in an opposite rotational sense to said first pulley in response to said first driving means being actuated;
(g) third driving means coupled to said drum for driving said drum in a rotational direction to retract said cable into said tool and wind it about said drum;



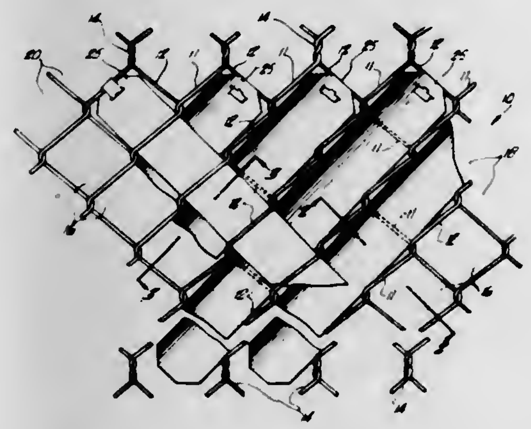
(h) clutch means for selectively coupling said driving source with said first driving means and said third driving means for the alternative actuation thereof, respectively, said drum being freely rotatable when the said first driving means is not coupled to said driving force and said first and second driving pulleys being freely rotatable when said third driving means is not coupled to a said driving source;
(i) first means for urging said first and second driving pulleys together; and
(j) a plate member pivotally supported with one end thereof bearing against said cable on said drum and means biasing said one end toward said drum for producing level winding of said cable onto said drum when said drum is driven and for preventing undesired rotation of said drum when said first and second driving pulleys are driven.

3,355,149
APPARATUS FOR RAISING AND LOWERING BLINDS
Hans Wiegelmann, Hardtstrasse, Helmut Germann, Im Triesch 3, and Peter Cherubin, Hardtstrasse, all of Sinn, Germany
Filed Dec. 6, 1965, Ser. No. 511,911
Claims priority, application Germany, Dec. 10, 1964, B 79,684; Apr. 10, 1965, B 81,397
12 Claims. (Cl. 254—173)



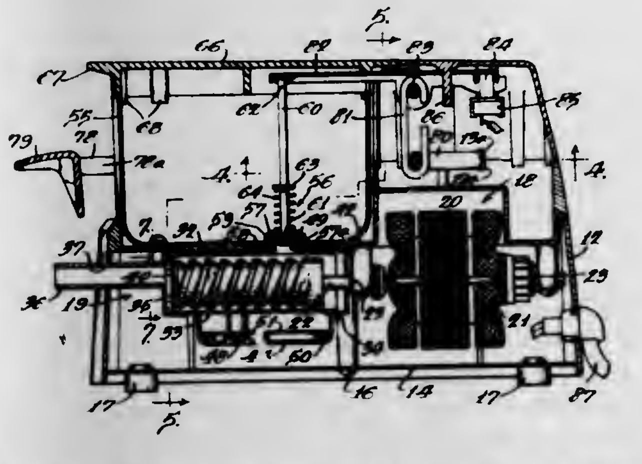
1. Apparatus for raising and lowering a blind of the type which is controlled from a rotatable cylinder, comprising a rotatable winding element mounted remotely from the cylinder, an electric motor connected to operate the winding element, a strap connected to and extending between the cylinder and the winding element and which when wound on to the winding element will cause rotation of the cylinder when the electric motor is oprated to raise the blind, the motor and the winding element being disposed beneath the blind cylinder, an electrical control circuit for the motor including at least one microswitch, and sensing means which senses the amount of the flexible driving element wound on the winding element, the sensing means being operatively associated with the microswitch to actuate the latter, thereby stopping the motor, when the blind reaches a predetermined position.

3,355,150
SLAT FOR CHAIN-LINK FENCE
William H. Taylor, Los Angeles, Calif. (5510 S. Sepulveda Blvd., Culver City, Calif. 90230)
Filed Oct. 23, 1965, Ser. No. 503,544
4 Claims. (Cl. 256—34)



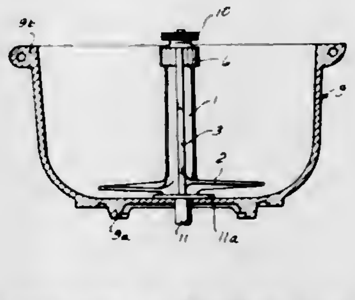
1. Slat means for use with a chain-link fence, the fence being woven of intersecting wire strands and forming a series of channels, the slat means being elongated, relatively narrow, and received in one of the channels, tab means integrally formed on and extending from one end of the slat means, and a locking ear integrally formed on one of said means, the other of said means having an aperture, the tab being deformed around a wire strand in the fence and back against the slat, the ear being in locking engagement through the aperture to secure the end of the slat in the channel.

3,355,151
LATHER GENERATOR
Conrad T. Menzel, Milwaukee, Wis., assignor, by mesne assignments, to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 10, 1966, Ser. No. 585,598
11 Claims. (Cl. 259—10)



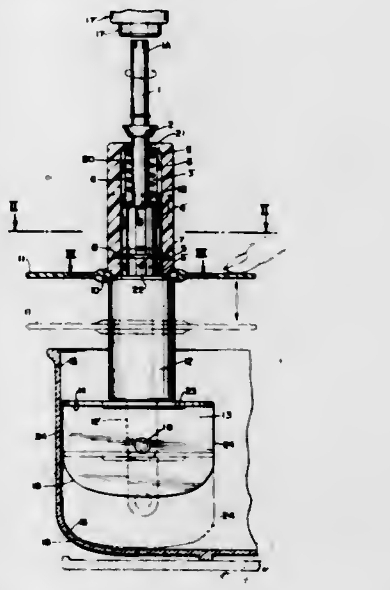
1. A lather generating apparatus comprising a tubular lather generating conduit, an elongated screw of uniform diameter received within said conduit in closely spaced relation to the inner walls of said conduit, liquid soap supply means to deliver liquid soap on the top of said screw, an outlet spout connected to one end of said conduit, the cross sectional area of said spout being substantially less than the cross sectional area of said conduit, a motor driving said screw in a direction to move lather produced by said screw toward said outlet spout, a baffle plate positioned within said conduit between one end of said screw and the end of said conduit to which said spout is connected, said plate comprising a disc the outer edges of which engage the inner wall of said conduit, spaced notches around the periphery of said plate through which said lather passes moving from said screw to said spout.

3,355,152
KNEADING APPARATUS
Fritz Otto, Serturnstrasse 46, Hameln (Weser), Germany
Filed Sept. 8, 1965, Ser. No. 485,794
Claims priority, application Germany, Oct. 8, 1964, ST 22,649
16 Claims. (Cl. 259—107)



1. A rotary kneading or agitating tool, comprising an elongated hub; at least one narrow, elongated transversal kneading member connected only at one end thereof to one end of said hub and freely projecting outwardly from the latter, said kneading member being arranged substantially transversally to the axis of said hub; and at least one flat narrow deflecting element projecting from said hub in a plane parallel to said axis and extending from said kneading member toward the other end of said hub.

3,355,153
STIRRING DEVICE
Albert C. Nolte, Jr., Oyster Bay, N.Y., assignor to Elton Industries, Inc., Oyster Bay Cove, N.Y., a corporation of New York
Filed Oct. 12, 1966, Ser. No. 586,239
6 Claims. (Cl. 259—111)



1. Apparatus for stirring, comprising, in combination, at least one bowl having a wall and a circumferential bot-

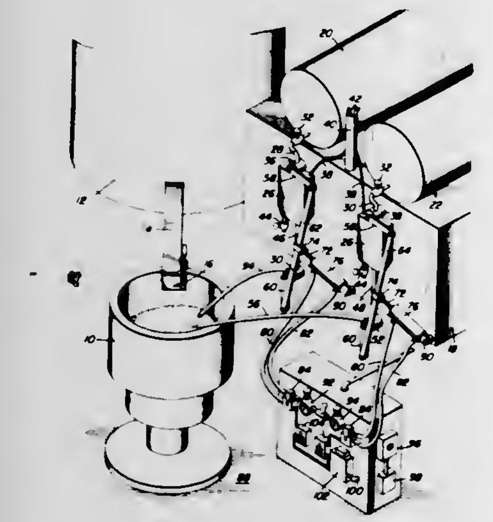
tom junction portion of a predetermined contour, a rotatable blade assembly comprising a solid blade of substantially planar configuration having sides joining the bottommost portion thereof in a predetermined contour substantially identical with the contour of said bowl and having a large surface area relative to the projected cross-sectional area of said bowl, and means for vertically moving said blade assembly to different positions in the bowl, at least one of said portions including a bottommost portion of said bowl.

3,355,154
METHOD AND APPARATUS FOR ACCURATELY PROPORTIONING FOUNDRY SAND INGREDIENTS

Ralph E. Kawecki, New Britain, Conn., assignor to Southington Manufacturing, Inc., a corporation of Connecticut

Filed Feb. 11, 1966, Ser. No. 526,878

7 Claims. (Cl. 259—149)



7. In a method of mulling foundry sand, the steps of discharging a measured amount of sand into a muller, gravity feeding a measured amount of acid into the sand in the muller, mulling the sand and acid for a preset time, then gravity feeding a measured amount of binder into the mulled mixed sand and acid, and then mulling the sand, acid and binder for a time preset in accordance with the amounts of sand, acid and binder therein to blend the sand, acid and binder into foundry sand having desired characteristics.

3,355,155
HUMIDIFIER FOR AIR CONDITIONING SYSTEMS

John H. Heltzen, 22856 Leonora Drive, Woodland Hills, Calif. 91364, and Richard W. McCahon, 1018 S. Gladys, San Gabriel, Calif. 91776

Filed Sept. 21, 1966, Ser. No. 580,988

4 Claims. (Cl. 261—130)

1. A humidifier for an air conditioning system, said humidifier comprising:

(a) a pan adapted to be exposed to an air stream produced by an air conditioning system;

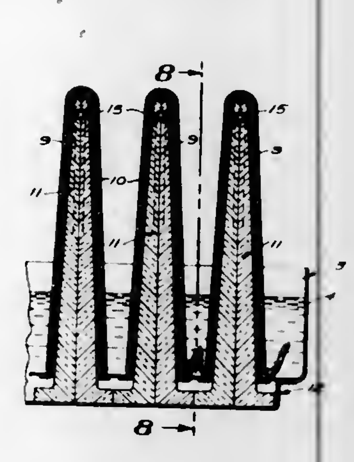
(b) a plurality of hollow shells extending upwardly from the bottom of said pan, the interior of each shell being isolated from the interior of said pan and open at its underside;

(c) a sub-pan secured to the bottom of said pan and the interiors of said shells being exposed to said sub-pan;

(d) a series of heating element supports mounted in said sub-pan and extending into said shells;

(e) a series of heating elements carried by said supports for heating said shells;

(f) wicks covering said shells;



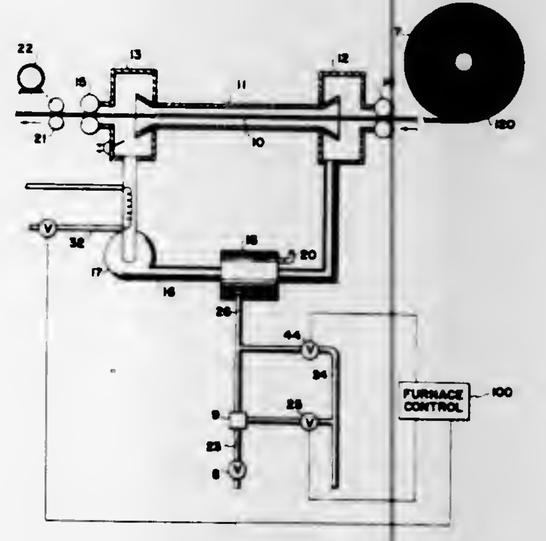
(g) and means for supplying water to said pan and for maintaining a selected level of water therein in which the lower ends of said wicks are emersed.

3,355,156
CONTROL SYSTEM

Ralph Hanna, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio

Filed June 14, 1965, Ser. No. 463,486

14 Claims. (Cl. 263—3)



1. A control system for apparatus adapted to have material in the form of strips passed therethrough for heating or cooling, comprising means for passing said material through said apparatus, means for changing the internal temperature of said apparatus to change the temperature of said material from a first incoming level to a second desired level, means for controlling the speed of passage of said material through said apparatus in response to said internal temperature, means for setting said internal temperature changing means to selectively provide an upper predetermined temperature level and a lower predetermined temperature level within said apparatus, the temperature within said apparatus changing from one level to the other level over a period of time in response to the selection of said other level, means for sensing the approach of an end of a strip and a selective means responsive to said sensing means for selecting one of said upper and lower predetermined temperature levels.

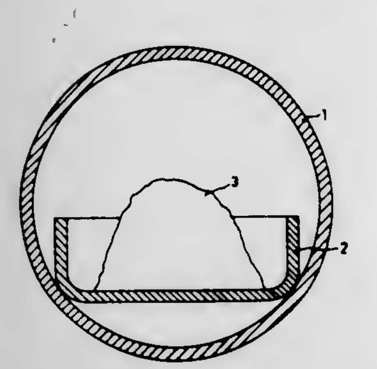
3,355,157
TUNNEL FURNACE

Lubertus Schultink, Emmasingel, Eindhoven, and Gradus Klopman, Hengelo, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 8, 1965, Ser. No. 512,454

Claims priority, application Netherlands, Dec. 31, 1964, 64—15,294

2 Claims. (Cl. 263—6)



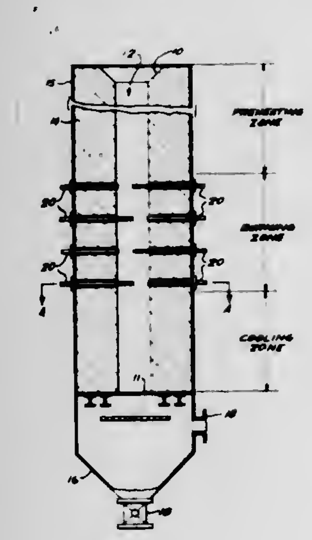
1. In a combination a tungsten refractory furnace member and a movable tungsten refractory carrier member slidable on said furnace member wherein at least one of said members is thoriated tungsten whereby sticking of said members at refractory temperature is eliminated.

3,355,158
SHAFT KILN

William W. Campbell, Carl E. Rossi, and William R. Good, Ludington, Mich., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa.

Filed Apr. 26, 1966, Ser. No. 545,360

4 Claims. (Cl. 263—29)



1. In a vertical shaft kiln including means defining preheating, dead burning, and cooling zones in which a raw material charge moves from top to the bottom, the improvement comprising short and elongate burners positioned in spaced rows throughout the dead burning zone and extending into said dead burning zone, the elongate burners being water cooled and positioned alternately with short burners so that the downward flow of the charge is not interrupted substantially, said elongate burners having ports spaced over the portion of the burners within the dead burning zone, said ports arranged to open on the exterior of the burner on substantially the lower 180 degrees thereof.

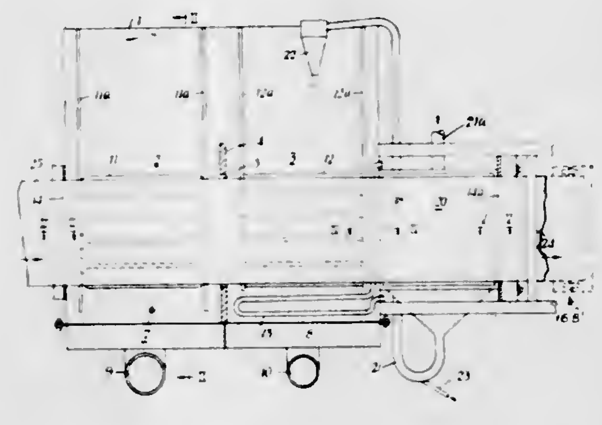
3,355,159
APPARATUS FOR CONTINUOUS HEAT TREATMENT OF SHEET OR STRIP MATERIAL

Peter Ayers, High Wycombe, England, assignor to The British Aluminium Company Limited, London, England, a company of Great Britain

Filed May 22, 1963, Ser. No. 282,378

Claims priority, application Great Britain, May 23, 1962, 19,867/62

10 Claims. (Cl. 266—3)



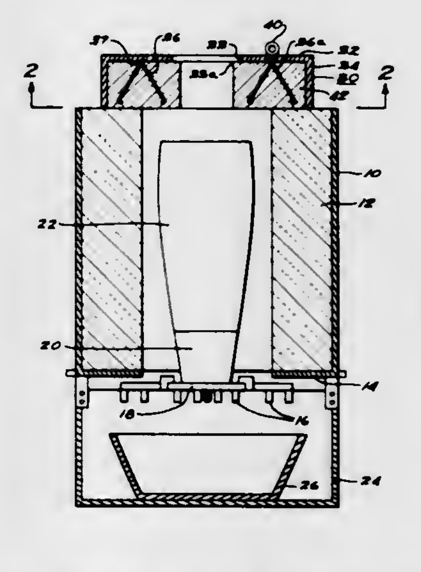
1. Apparatus for heat treating strip material comprising two chambers for fluidisable material, an outlet slot from one chamber and an inlet slot to the other chamber, both slots being dimensioned and arranged to permit the passage therethrough of the strip material with its wider faces contained in substantially vertical planes, means for heating and fluidising the fluidisable material in the one chamber and means for fluidising and cooling the fluidisable material in the other chamber.

3,355,160
CRUCIBLE MELTING FURNACE

John Brewster Given, Perrysburg, Ohio, assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 14, 1965, Ser. No. 447,997

6 Claims. (Cl. 266—33)

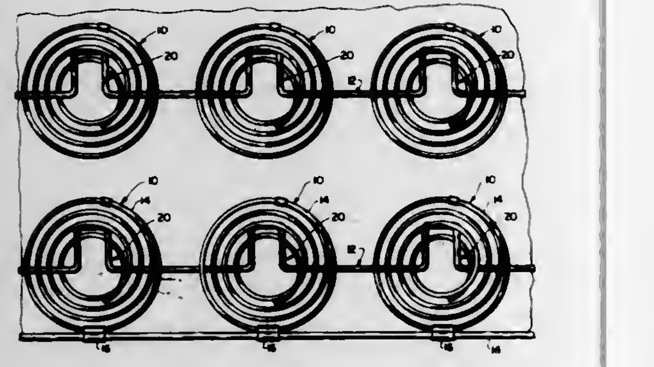


5. A cover suitable for use with a crucible melting furnace consisting essentially of a metal plate having a substantially centrally located aperture therein and outer peripheral downwardly extending sidewalls, a plurality of generally V-shaped metal members, characterized by having an apex with legs emanating therefrom, secured to the undersurface of the metal plate at the apex thereof substantially equal distances apart, said legs extending substantially the distance of the sidewalls, the metal mem-

bers being located substantially centrally between the aperture in the metal plate and the sidewalls, and a layer of monolithic refractory material in contact with said monolithic layer having an opening therein in alignment with the aperture in the metal sheet, said metal members being completely embedded in said monolithic layer whereby to constitute the sole means of support and reinforcement for the monolithic layer.

3,355,161
COIL SPRING SUPPORT WIRE STRUCTURE

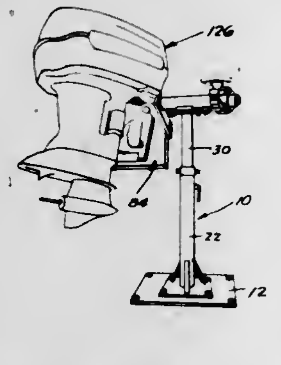
Edward Pawlikowski, Argo, Ill., assignor to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Sept. 6, 1966, Ser. No. 577,464
7 Claims. (Cl. 267—100)



1. A seat spring assembly comprising a frame having a plurality of generally parallel coil spring support wires extending from end to end, and a series of coil spring anchor loops formed along each wire, each of said loops bridging adjacent straight wire sections disposed at different levels and being formed with sockets for interlocking engagement with the bottom coil of the associated spring.

3,355,162
REPAIR STAND

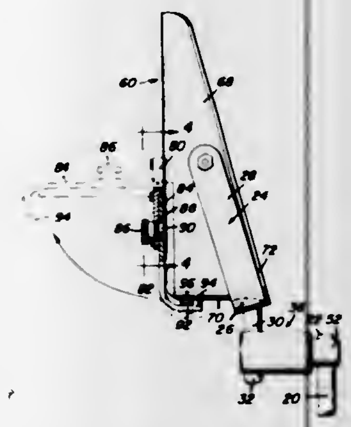
Robert M. Kerr, P.O. Box 1135, Winter Garden, Fla. 32787
Filed June 7, 1966, Ser. No. 555,805
4 Claims. (Cl. 269—71)



1. A repair support stand for an outboard motor or the like, the stand comprising:
- a base;
- a standard assembly of changeable height connected to the base;
- the standard assembly including a pivotal stand extension;
- a tube secured to the stand extension;
- an arm mounted within the tube for pivotal movement with respect thereto;
- a motor mounting saddle on one end of the arm; and
- a brake assembly connected to the opposite end of the arm and to the stand extension, the brake assembly including a brake drum, a band, and clamping means for changeably exterting pressure on the band about the clamp.

3,355,163
ADJUSTABLE STIRRUP FOR PHYSICIAN'S EXAMINING TABLE

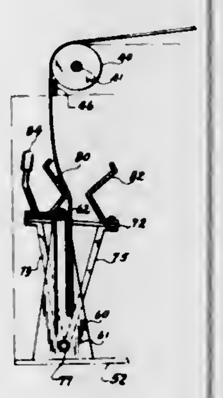
Jorma M. Leinassar, 21 Skyline Place, Astoria, Oreg. 97103
Filed Aug. 30, 1965, Ser. No. 483,412
11 Claims. (Cl. 269—328)



1. In combination, a physician's examination table provided at the usual foot end with a fixedly mounted adapter bracket, an upright mounted in said bracket and which, when in use, assumes a position perpendicular to a horizontal component of said table, a stirrup cradling yoke having a bight portion provided with a depending stud, coupling and mounting means for said yoke carried by an upper end of said upright, said stud being operatively joined to said coupling means, and a foot steadying stirrup pivotally cradled between the arms of said yoke, said stirrup embodying means capable of accommodatingly seating and supporting a foot of the patient occupying said table.

3,355,164
RECIPROCATING ZIG-ZAG FOLDER

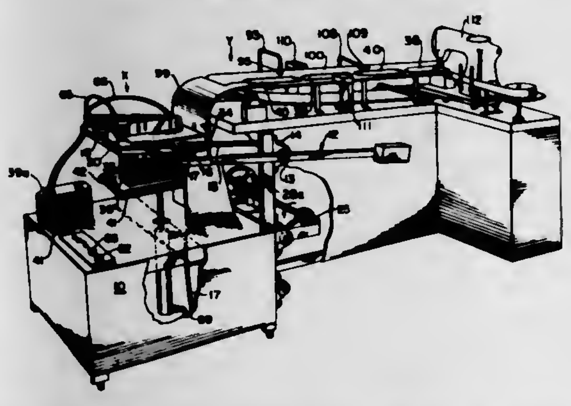
Jonas Stulman, 153 Eagle Rock Way, Montclair, N.J. 07042
Filed Oct. 23, 1965, Ser. No. 503,913
3 Claims. (Cl. 270—79)



1. Flexible sheet material handling apparatus comprising means for unrolling said material of a given width from a bolt thereof and passing it downwardly in a substantially vertical path, a crossbar disposed in a substantially horizontal line parallel to said path and substantially coextensive with said width, a pair of fixed parallel disposed brackets spaced to receive the opposite ends of said crossbar to fixedly dispose said crossbar in said line, a substantially rectangular normally horizontally disposed frame comprising a first pair of sides disposed parallel to and substantially equal in length to said crossbar and a second pair of end sides disposed externally and close to said brackets, a pair of arms convergingly extending from each of the respective undersurfaces of said end sides, to join at respective registered points on said brackets, means for pivotedly affixing said pairs of jointed arms at said points, a pair of members respectively disposed on the upper surfaces of said first pair of sides, each of said members being V-shaped in cross-section, the apices of said V's being in opposed spaced relationship and parallel to said first pair of sides, and means for reciprocally manually pivoting said frame about said points to intersect said path alternately with each of said members, correspondingly deflecting said material from said path along said width and to correspondingly lock said material against said crossbar by surface contact with said members during periods between successive pivotings to loop said material over said crossbar in alternate folds.

3,355,165
FABRIC STRETCHING AND/OR ALTERNATELY-REVERSING MECHANISM FOR SEPARATING FABRIC PIECES FROM A STACK THEREOF

Wyndham F. Southwell, Wilkesboro, and Nicholas Wehrmann, North Wilkesboro, N.C., assignors to L & L Manufacturing, Inc., a corporation of Delaware
Filed Apr. 20, 1965, Ser. No. 449,460
12 Claims. (Cl. 271—12)

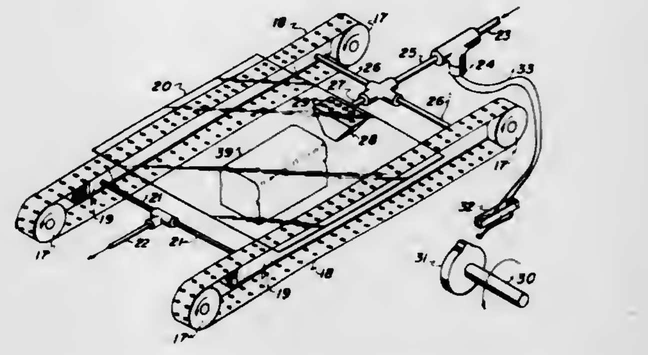


8. Mechanism for transferring pieces of fabric from a stack thereof to a reception means, comprising means to pick up a piece of fabric from the top of a stack and to deposit it with the same side up as when it was on the top of the stack and to pick up a succeeding piece of fabric from the top of the stack and to deposit it with the opposite side up than when it was on the top of the stack, said pick-up means comprising a pair of pick-up elements, and means to operate said pick-up elements to pick up a fabric piece at the same time and to release it at different times.

3,355,166
AUTOMATIC WRAPPING MACHINE INCLUDING A SUCTION STOP PLATE

William W. Plumb, Dallas, Tex., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed June 24, 1965, Ser. No. 466,526
1 Claim. (Cl. 271—45)

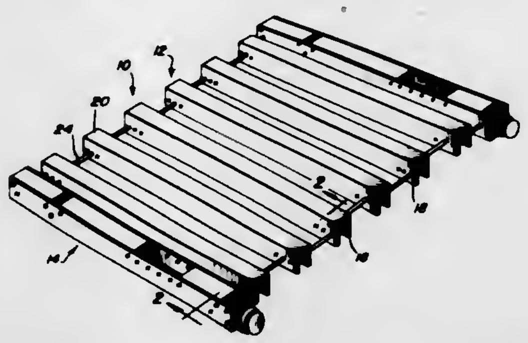
In a wrapping machine including a web-feeding mechanism comprising a pair of continuously movable perforate conveyer belts adapted to pass over the top perforate surfaces of a pair of suction chambers by means of which a sheet of wrapping material can be conveyed to a position above the article that is to be wrapped, the improvements consisting of
- (a) a hollow suction stop plate located directly below the position on the machine at which the wrapping of the article with the wrapping material is to begin, the said stop plate having a perforate top surface and an open bottom, whose sides each taper inwardly toward its open bottom, and a conduit inside the plate that has a slot or orifices directed downwardly toward the open bottom, which conduit is adapted to produce a suction at the top surface of the plate upon the injection of compressed air therethrough as the result of the Bernoulli effect,



- (b) conduits in each of the suction chambers, each of which has orifices through which air may be injected into the chambers,
- (c) a common conduit connecting the conduits in each of the suction chambers and the conduit in the hollow suction stop plate, and
- (d) a valve in the common conduit whose opening and closing is controlled by a solenoid that is actuatable by a cam on a main shaft of the machine.

3,355,167
LEVELING PLATFORM WITH LIFT ELEMENTS AND DIVIDERS

Hudson D. Reeves, Oxnard, Calif. (127 Vernon Way, Santa Paula, Calif. 93060)
Filed Oct. 22, 1965, Ser. No. 500,812
11 Claims. (Cl. 271—61)



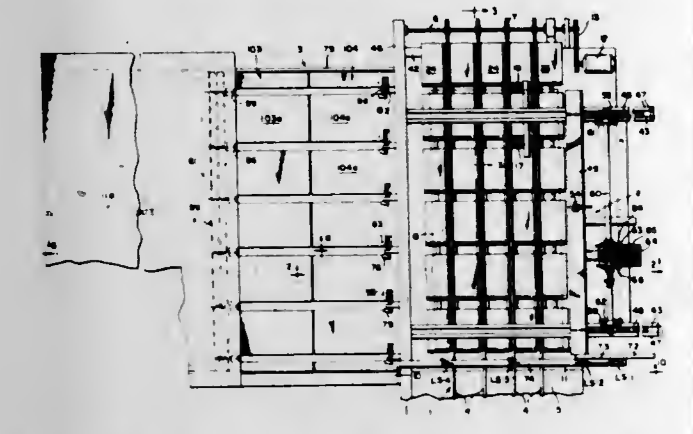
1. A leveling unit for a stack of sheet material comprising an elongated body for positioning under a stack of sheet material, a pair of spaced elevators mounted on said body for vertical movement between a retracted position and an extended position, actuating means connected to each of said elevators and operable to move the latter between said retracted and extended positions, said actuating means extending outwardly from said body at the same end thereof and operable independently of each other and including a pair of handle means orientated in axial alignment with each other.

3,355,168
SHEET MATERIAL HANDLING DEVICE

Victor H. Clausen, Bellevue, and Arnold Zweig, Olympia, Wash., assignors to Simpson Timber Company, Seattle, Wash., a corporation of Washington
Filed Dec. 7, 1965, Ser. No. 512,135
14 Claims. (Cl. 271—68)

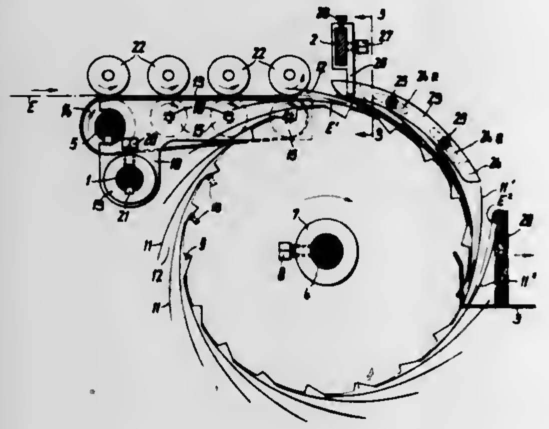
1. A sheet handling device comprising in combination; conveyor means for moving a sheet to a predetermined position, means to raise said sheet above said conveyor,

a normally closed drop table movable to an open drop position, pusher means for contacting said sheet and moving the same onto said drop table simultaneously with the raising of the sheet, and means to actuate said drop table to the open position after a predetermined time delay upon the sheet being moved thereto.



3,355,169
DEVICE FOR DISTRIBUTING WORK PIECES

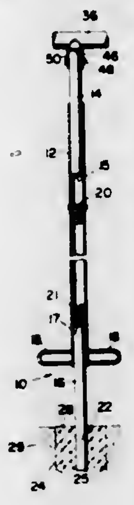
Peter Seyl, Irlich, Rhineland, Germany, assignor to Richard Winkler, Neuwied, and Kurt Dunnebier, Gladbach, Germany
Filed July 15, 1965, Ser. No. 472,110
Claims priority, application Germany, Sept. 19, 1964, W 37,579
10 Claims. (Cl. 271—71)



1. A device for delivering individual generally sheet-like work pieces from a supply station to a receiving station in upright side-by-side position, said device comprising a rotary disk continuously driven in a predetermined direction when the device is in operation, a plurality of leaf springs secured on one end to the periphery of said disk in circumferentially spaced and overlapping relationship, the free parts of said springs extending generally tangentially in reference to the disk and in opposition to the rotational direction thereof to define outwardly widening pockets open at the top and at the sides between each two adjacent springs, feed means for continuously feeding the work pieces, one by one, into successive pockets in frictional engagement with the inner wall surfaces thereof, operational stationary arcuate guide means, mounting means supporting said guide means adjacent to the periphery of said disk for engagement with the leaf springs thereon to limit the top openings of the pockets to a maximal radial width against the bias of said springs thereby controlling the frictional force experienced by the work pieces when entering the pockets, and stationary receiving means positioned to accumulate thereon in side-by-side upright position work pieces successively withdrawn from the open pockets, said receiving means including spaced apart support members straddling said springs thereon whereby portions of the work pieces protruding from the springs on opposite sides thereof are retained by the support members when the springs pass between the same.

3,355,170
CHILDREN'S BOUNCING APPARATUS

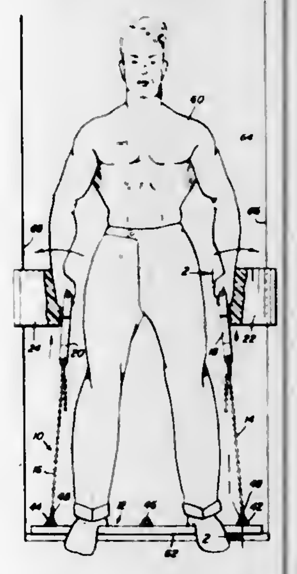
Harold W. Haubert, Mifflintown, and Morris R. Rudy, Burnham, Pa., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed June 7, 1965, Ser. No. 461,782
4 Claims. (Cl. 272—57)



1. A bouncing apparatus comprising a pair of axially aligned cylindrical guide elements having opposed free extremities, means providing a rigid support for each of said cylindrical guide elements in vertically spaced relation, a movable member formed integrally with axially aligned tubular sleeve portions each slidably embracing one of said cylindrical guide elements, spring abutment means carried by said movable member and extending within the upper one of said tubular sleeve portions, spring means substantially constrained within said lower one of said tubular sleeves between said abutment means and one of said cylindrical guide elements, and user supporting means carried exteriorly of said movable member.

3,355,171
ISOMETRIC EXERCISER WITH ELONGATED NON-ELASTIC TENSION MEMBERS

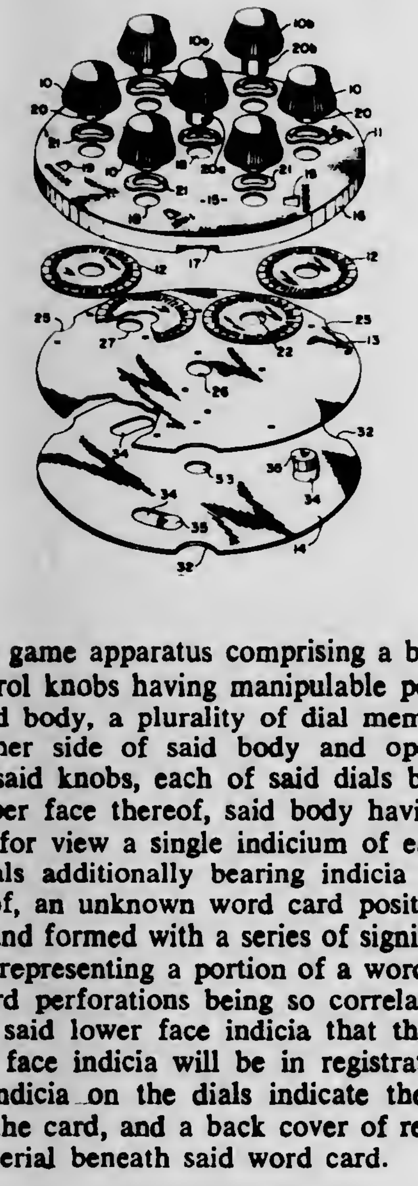
Robert J. Oesau, Albuquerque, N. Mex. (100 Keating Drive, Stratford, Conn. 06497)
Filed Mar. 29, 1965, Ser. No. 443,371
8 Claims. (Cl. 272—82)



1. An exercise assembly adapted for affording modified isometric exercise, said assembly including at least one hand grip assembly, at least one elongated and non-elastic tension member, and block-shaped body means constructed of resilient material, said hand grip assembly and at least one end portion of said tension member including coacting means securing said tension member to said hand grip assembly, the other end portion of said tension member including means adapted for securement to an anchor member, abutment surface means facing and spaced slightly from said hand grip assembly in a direction extending laterally of the longitudinal axis of said tension member, said body means of resilient material being disposed adjacent said hand grip assembly and said abutment surface means, said body means being adapted to be held between the hand grip assembly and said abutment surface means by a user while exerting a pull on said hand grip assembly.

3,355,172
WORD GAME

Adrian E. Aukens, 260 Breezewood Drive, Bay Village, Ohio 44140
Filed Sept. 1, 1965, Ser. No. 484,187
9 Claims. (Cl. 273—1)



1. Word game apparatus comprising a body, a plurality of control knobs having manipulable portions at one side of said body, a plurality of dial members disposed on the other side of said body and operatively connected to said knobs, each of said dials bearing indicia on the upper face thereof, said body having means for displaying for view a single indicium of each dial, each of said dials additionally bearing indicia on the lower face thereof, an unknown word card positioned beneath said dials and formed with a series of significant perforations each representing a portion of a word, the location of said card perforations being so correlated to the locations of said lower face indicia that the perforations and lower face indicia will be in registration when the viewable indicia on the dials indicate the word represented by the card, and a back cover of relatively transparent material beneath said word card.

3,355,173
BASEBALL GAMEBOARD

Eugene I. Selker, 4938 N. Sedgewick Road, Lyndhurst, Ohio 44124
Filed May 21, 1964, Ser. No. 369,167
6 Claims. (Cl. 273—89)

1. A baseball game comprising a relatively flat mounting base having a front, rear, right and left side, said mounting base marked to simulate a baseball diamond having a playing field with home plate at the middle of the front side of said mounting base, said mounting base having a plurality of apertures with corresponding field deflectors;

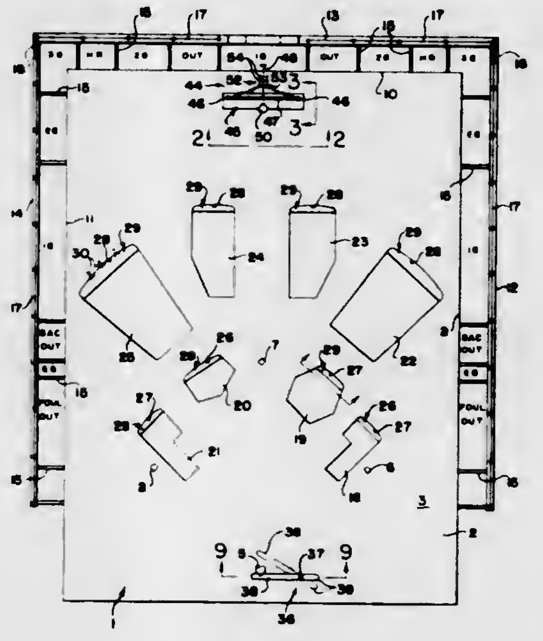
each of said field deflectors connected to its corresponding aperture and designed to simulate the function of a real-life counterpart;

a ball;

a pitching device mounted substantially equidistant from the sides of the mounting base;

a bat with an aperture, a handle and a striking surface rotatably mounted on said mounting base;

a batting pin positioned in said aperture in said bat for rotatably mounting said bat;



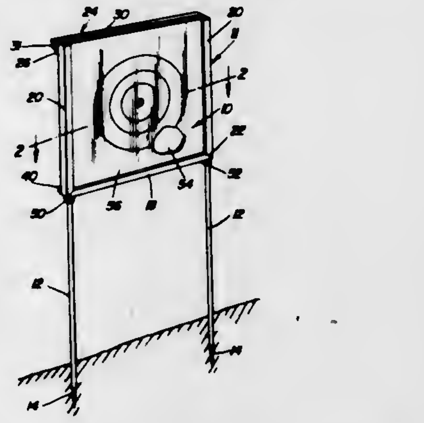
said batting pin being located with respect to said home plate in a manner which will allow the striking surface of said bat to pass over said home plate when the bat is rotated about said batting pin;

said aperture in said bat having a diameter sized to envelop loosely said batting pin thus permitting some rotation of the bat about its longitudinal axis; and

the striking surface of said bat having a normally vertical flat portion which, when the bat is rotated about its longitudinal axis, faces upwardly and rearwardly thus lofting the ball as it strikes it.

3,355,174
PORTABLE TARGET STAND

Lawrence W. Hutson, Alamogordo, N. Mex., assignor to Hutson and Sons, Inc., a corporation of Texas
Filed Mar. 26, 1964, Ser. No. 354,960
5 Claims. (Cl. 273—102)



1. A target and portable knockdown stand comprising, in combination, a frame embodying channel-irons joined in planar cooperating relationship, the channel portions thereof communicatively cooperating and providing a track-like receiver and holder, an insertable and remov-

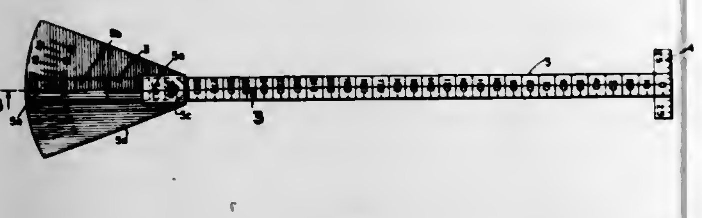
able composite target, said target comprising a solid backing panel with a standard paper target superimposed upon and affixed to a front surface thereof, said target being fitted into said holder, a pair of frame erecting and supporting legs, means on a bottom marginal portion of said frame for detachably joining the legs to said frame in planar spaced apart parallel relationship, and means on a rearward side of said channel-irons for removably storing the legs in criss-crossed relationship when they are not in use.

3,355,175
TABLETOP SIMULATED GOLF GAME APPARATUS WITH DISTANCE AND ERROR INDICATING DEVICE

Terry M. Carroll, 277 N. Lakewood Drive, Panama City, Fla. 32401, and Rudy Hofstetter, 733 N. 9th Plaza, Parker, Fla. 32401

Filed Oct. 15, 1964, Ser. No. 403,985

6 Claims. (Cl. 273—134)



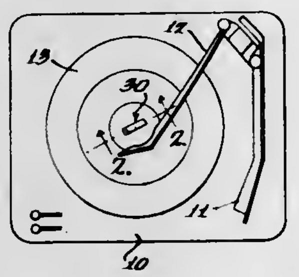
5. A distance and error indicator for use in a simulated golf game comprising a base which is colored on one side of its axis in contrast to the color of the other side; indicia at one end of the base denoting angular variation from the axis of the base; a transparent arm pivoted on the axis of the base adjacent the other end of the base and carrying a guide disposed over the pivot, said arm having a marker thereon cooperating with said indicia; and a transparent scale member having indicia thereon indicating yardage from 0 to 300 yards axially slidable in the said guide.

3,355,176
SPINDLE ADAPTER

Ernest O. P. Tatter, Addison, and Philip Vazzano, Des Plaines, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware

Filed May 11, 1965, Ser. No. 454,842

7 Claims. (Cl. 274—10)



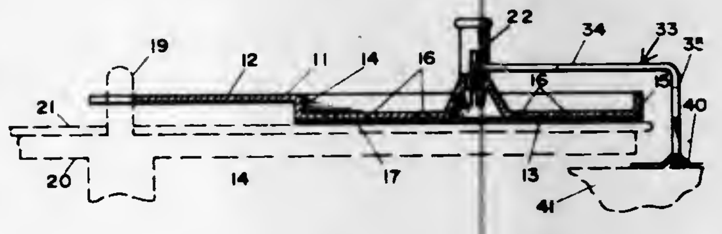
1. A spindle adapter for use with a rotatable phonograph turntable and a spindle of relatively small diameter for records having center holes of correspondingly small diameter, said spindle having a shiftable upper end portion movable between a record supporting position and a record ejecting position for laterally shifting a record relative to said spindle in combination, an adapter body for supporting and centering a stack of records with large diameter center holes, said body having a passage extending for substantially the entire length thereof for placement on said spindle, the portion of said passage for reception of said spindle upper end portion being larger than said spindle end portion so that movement of said spindle end portion from record supporting position to record ejecting position can take place when said adapter body is placed on said spindle; means at the top of said body engageable with the upper end portion of the spindle to position said body on the spindle and to guide said spindle end portion in moving from record supporting position to record rejecting position, a shelf on said body for supporting a stack of records, an opening in said body adjacent said shelf, a lever pivotally mounted on said body and having a first portion positioned in said passage portion and engageable with said shiftable spindle portion and a second portion positioned to extend outwardly of said opening and move across said shelf, means at the lower portion of said body for rotatably supporting records, and means on said body at the side opposite said shelf sloped to lead the record stack down onto said shelf and terminating at a level a record thickness above the shelf whereby actuation of the shiftable spindle portion moves the second portion of the lever outwardly of said opening and across the shelf to shift a record off the shelf and beneath the sloped means whereupon the ejected record is free to move onto said turntable while the sloped means guides the succeeding record at the bottom of the record stack onto said shelf.

3,355,177
RECORD CLEANING DEVICE

Karl G. King, Sr., 1921 NW. 79th St., Miami, Fla. 33126

Filed Jan. 7, 1965, Ser. No. 423,927

4 Claims. (Cl. 274—47)



3. A record cleaning device comprising a flat body portion having a slot at one end, an arcuate portion extending in from the other end of said body portion along the length thereof and disposed such that the arcuate portion forms a cross-section which is perpendicular to the length thereof, end walls mounted on said arcuate portion forming a liquid receiving trough, a plurality of openings in said arcuate portion, pad means mounted on the outer surface of said trough whereby liquid placed on said trough will pass through said openings and wet said pad means, a handle mounted in said trough and extending upwardly for swinging said record cleaning device, said handle having a slotted portion, an anchoring member extending beyond said one end of said flat body portion, means releasably securing one end of said anchoring member to said slotted portion and fastening means for securing said other end of said anchoring member to a stationary body.

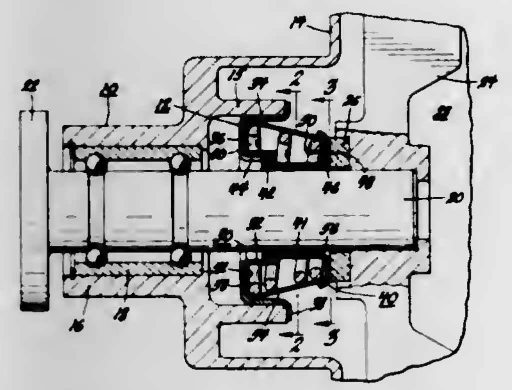
3,355,178
SEAL ASSEMBLY

James Robert Hornaday, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 23, 1964, Ser. No. 412,949

1 Claim. (Cl. 277—87)

A seal assembly comprising, a fixed housing having a recess forming portion thereon, a rotary shaft directed through said recess having means thereon including a rotatable ring seal element, a first fixed housing portion including a radially outwardly directed peripheral edge indexed against the fixed housing and a radially outer annular wall directed axially from said peripheral edge adapted to be press fit within the fixed housing recess, said first housing portion including a second annular, axially directed wall thereon located in spaced relationship with respect to the rotary shaft and radially inwardly of said radially outer wall, a radially directed annular end member on said first housing joining said axially directed walls, a second fixed non-rotatable housing portion having a tubular extension thereon extending axially and located radially inwardly of said second wall of said first housing portion and including one end thereof located in telescoping relationship with the radially inwardly, axially directed wall on said first housing portion, coacting means on said telescoping tubular extension and axially directed wall for preventing relative rotation between said housing portions, said second housing portion including a radially outwardly directed flange on the opposite end of said tubular extension, said radially outwardly directed flange having the peripheral edge thereof bent in the direction of said first housing portion and extending generally axially of said tubular extension thereof, a flexible sealing sleeve located between said radially directed end wall of said first housing portion and said radially directed flange on said second housing portion, a radially inwardly directed edge on each end of said sealing sleeve, and a spring disposed within said flexible sealing sleeve and between said sleeve and said telescoping tubular extension on said second housing portion, said spring having opposite ends thereon engaging said radially inwardly turned edges of said sleeve for biasing said sleeve into tight sealing fixed engagement with said first housing portion at the juncture between said radially outer axially directed wall and said end wall of said first housing portion and with said second housing portion at said axially directed peripheral edge of said radially outwardly directed flange, said axially directed peripheral edge serving to retain said spring against said sleeve edge with said sleeve edge in sealing engagement with said second housing portion, said radially outwardly directed flange portion of said second housing member having an outer axially facing surface thereon extending from said tubular extension to said axially directed peripheral edge located in rotatably sealing sliding engagement with said ring seal on said rotatable shaft.



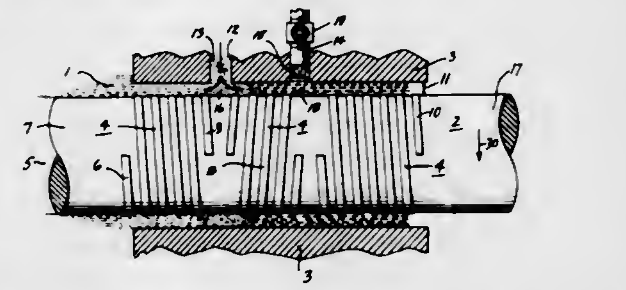
3,355,179
GAS BUFFERED SCREW SEAL

John M. McGrew, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Aug. 24, 1964, Ser. No. 391,611

8 Claims. (Cl. 277—134)

1. A screw seal for a rotatable member projecting into a liquid comprising
- a stationary member surrounding the rotatable member,
- a first means to force flow of liquid back into its area of containment,
- means for placing a gas into contiguous relation with the liquid to aid in retaining the liquid within its area of containment,



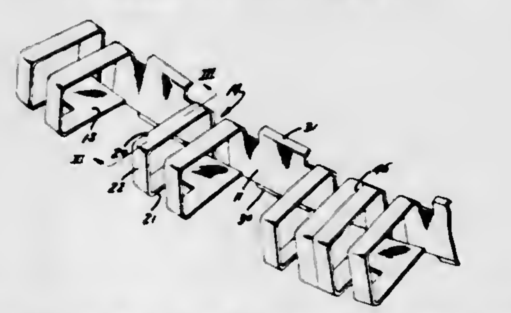
- means for placing a buffer liquid into contiguous relation with the gas to retain the gas in the area wherein it is placed, and
- a second means to retain the buffer liquid in the area in which it is placed.

3,355,180
NARROW GROOVE PISTON RING

Douglas W. Hamm, Muskegon, Mich., assignor to Muskegon Piston Ring Company, Muskegon, Mich., a corporation of Michigan

Filed Oct. 8, 1965, Ser. No. 494,085

9 Claims. (Cl. 277—139)



1. A spacer-expander for a narrow piston ring, said spacer-expander having a one-piece annular body member; said body member having a plurality of circumferentially spaced connection webs arranged along the inner bight portion thereof; a plurality of elongated U-shaped spring members each having a pair of legs and a connecting bar; the ends of said legs of each spring members remote from said connecting bar being integral with an axial edge of said connecting webs, each leg of each pair with a different one of said connecting webs, and said spring members forming the only connection between said connecting webs; each of said spring members being formed into a radially outwardly extending loop having a pair of parallel sides forming a first rail seat and a second rail seat axially spaced from each other; a portion of each of said legs extending axially between said rail seats and forming rigid support pillars arranged along the radially outer face of said body member; the free end of said second rail seat being adjacent said webs.

3,355,181
SEALING STRUCTURES EMBODYING CLOSED CELL ELASTOMERIC MATERIAL

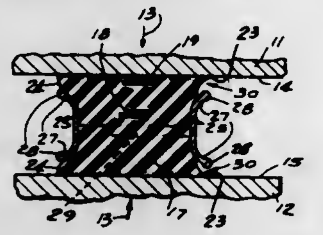
Richard L. Olson, Hickory Hills, Ill., assignor to Dike-O-Seal, Incorporated, Chicago, Ill., a corporation of Illinois

Filed Nov. 18, 1964, Ser. No. 411,980

4 Claims. (Cl. 277—180)

1. A pressure assembly comprising:
- a pair of separable substantially rigid members with flat planar confronting parting faces providing a parting joint to be substantially sealed against fluid pressure therethrough in at least one direction;
- said members having between and engaging the parting faces a stationary seal against pressure fluid escape thereby comprising a strip of elastomeric material

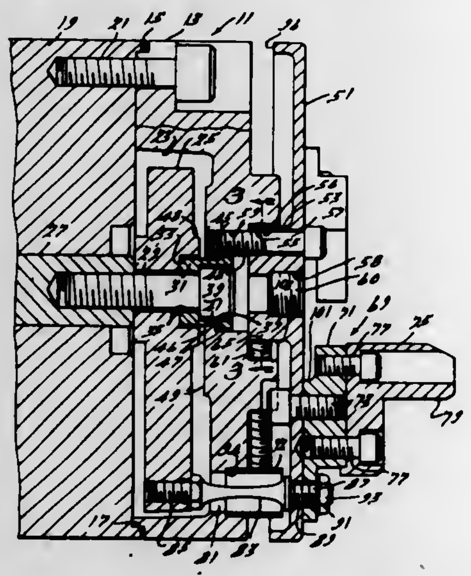
having substantially separate, independently acting, small, generally bubble-like gas cells having flexible interconnecting walls of the elastomeric material;
said strip having oppositely facing sealing surfaces which are respectively engaged sealingly against said parting faces;
and a confining blow-out preventing member rigid relative to and secured to the strip on the side thereof which is opposite to the side toward which said fluid pressure is directed and having surfaces which oppose said parting faces and beyond at least one of which rigid member surfaces a substantial portion of the strip having thereon one of said sealing surfaces normally projects substantially;
said parting faces being engaged under pressure toward one another and against said strip;



said projecting portion being bulk compressibly displaced by the pressure engagement of said parting faces against the strip into the initial volume of the main portion of the strip by elastic volume reduction of the gas cells in the strip and as confined between said parting faces and said confining member;
and said strip having on said side toward which the fluid pressure is directed an unconfined wall face portion which under said pressure engagement normally bulges outwardly by virtue of internal compression forces in the strip and which wall face portion is displaced inwardly by compression of the material and curves oppositely to the bulge under sealed fluid pressure whereby a diehedral angle sealing lip is exposed to the fluid pressure and is pressed thereby against the adjacent parting face.

3,355,182
INTERNAL DIAPHRAGM CHUCK

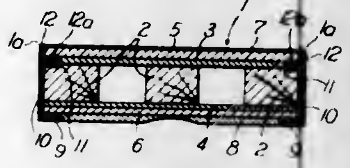
George Hohwart, Farmington, and Paul Toth, Allen Park, Mich., assignors to N. A. Woodworth Company, Ferndale, Mich., a corporation of Michigan
Filed May 28, 1965, Ser. No. 459,808
18 Claims. (Cl. 279—2)



1. An internal diaphragm chuck having a body, a resilient diaphragm having a central hub fixed to said body, actuator means movable within said body and connected to said diaphragm and adapted to flex the latter relative to its hub and said body, a plurality of angularly spaced jaws mounted on said diaphragm and spaced radially outwardly from the central hub, said hub having flat peripheral surfaces each aligned radially inwardly from a respective one of said jaws.

3,355,183
SKI HAVING PROTECTIVE EDGE STRIPS ON ITS UPPER EDGES

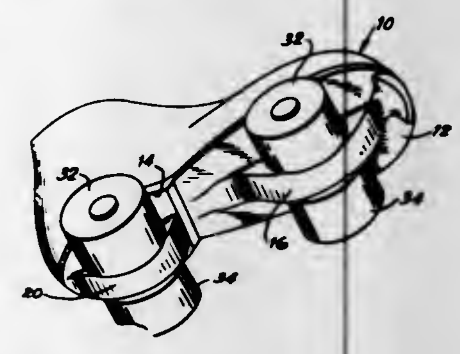
Franz Kneissl, Kufstein, Tyrol, Austria, assignor to Franz Kneissl Skifabrik, Kufstein, Tyrol, Austria
Filed June 21, 1965, Ser. No. 465,479
Claims priority, application Austria, June 22, 1964, A 5,322/64
6 Claims. (Cl. 280—11.13)



1. A ski comprising, in combination:
(a) means forming an elongated, non-metallic ski body having top and bottom surfaces which concept for their edges are non-metallic, said ski body having metallic reinforcing strips embedded in the bottom surface thereof at the bottom side edges thereof, said ski body having, on each side face thereof, a longitudinal groove near the top side edge thereof;
(b) two metallic protective strips arranged along the two side faces of said ski body, respectively, each strip having a flat main portion whose faces lie against the respective side face of said ski body and whose upper edge forms the upper edge of the ski on the side at which the respective strip is located, each strip further having an approximately centered longitudinal web portion which is transverse to the main portion of the respective strip and which is directed inwardly into said ski body and lies in the respective longitudinal groove; and
(c) means for anchoring each web in the respective groove.

3,355,184
ROLLER SKATES

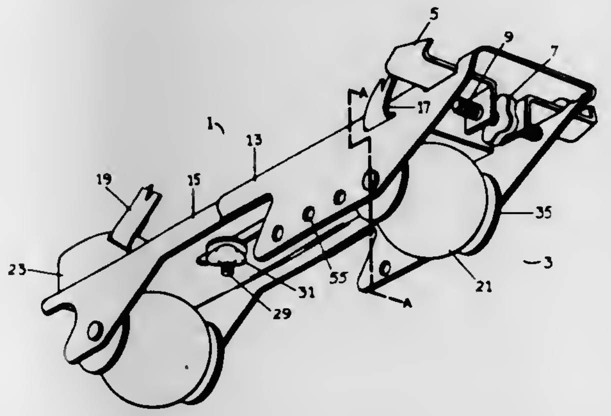
Jim L. Green, 71 N. Sierra St., Reno, Nev. 89501
Filed Dec. 20, 1965, Ser. No. 515,138
1 Claim. (Cl. 280—11.19)



A roller skate comprising a shoe having a sole and a heel, first and second hollow sleeves open at both ends, first and second shafts, each shaft being positioned in a corresponding sleeve, first and second wheels secured to opposite ends of the first shaft and rotatable about the first shaft within the first sleeve, third and fourth wheels secured to opposite ends of the second shaft and rotatable about the second shaft within the second sleeve, first means securing said first sleeve to said sole by molding and second means securing said second sleeve to said heel by molding, molding of sole to extend to toe to form a skate brake, said first means supports said first sleeve extending horizontally in a direction transverse to the longitudinal direction of the shoe and wherein said second means supports said second sleeve with the second sleeve extending horizontally in a direction transverse to said longitudinal direction, each wheel contains a set of ball bearings rotatable about the corresponding sleeve, each of the first and second means is provided with a hole through which the corresponding sleeve extends.

3,355,185
BALL SKATE DEVICE

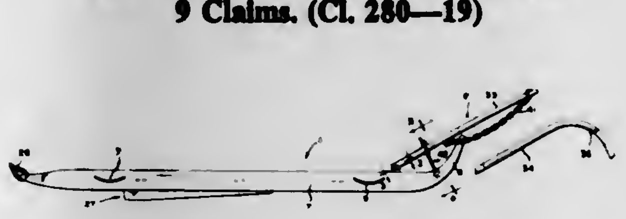
George D. Carter, 5658 E. Lancaster, Apt. 29, Fort Worth, Tex. 76112
Filed Oct. 22, 1965, Ser. No. 501,790
2 Claims. (Cl. 280—11.23)



1. In a skate having rolling means comprising a ball shaped member rotatably mounted on an axle that is supported by the skate body, the improvement comprising,
(a) first wheel means adjacent said ball shaped member and rotatably mounted on said axle,
(b) second wheel means rotatably mounted on said axle and abutting said ball shaped member and said first wheel means,
(c) said first wheel means having a radius lesser than the radius of said ball shaped member, and
(d) said second wheel means having a radius greater than the radius of said first wheel means.

3,355,186
RESCUE TOBOGGAN

Victor Earl Bradley, 25802 W. Valley Highway, Kent, Wash. 98031
Filed Dec. 28, 1965, Ser. No. 516,865
9 Claims. (Cl. 280—19)



1. A rescue toboggan comprising; a sled body, a harness frame, one end of said frame terminating in laterally spaced side rails, means to pivotally connect said rails to the sled body adjacent one end thereof, said harness frame being movable between a folded position overlying the sled body and an extended operating position so as to project beyond said one end of the sled body in an upwardly inclined direction, and selectively engageable lock means for locking said harness frame in the extended position, said locking means comprising first and second lock members, means to pivotally mount said lock members on the sled body to swing in a path to engage the respective rails of the harness frame when said frame is moved to the extended position, each of said lock members having a slot therein for reception of the respective rails, and keeper means on each lock member in engagement with the associated rail, whereby said harness frame may be pivoted to the folded position for transport and pivoted to the extended position for operating in a locked and unlocked position.

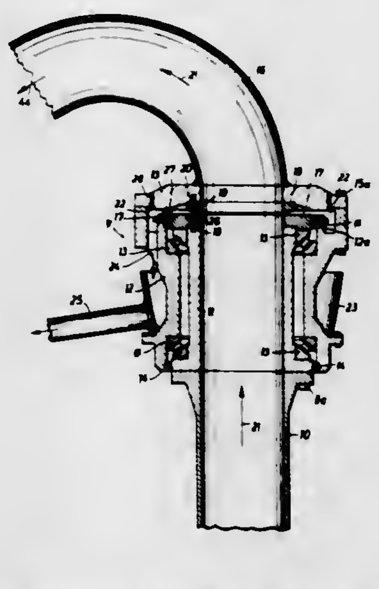
3,355,187
LEAF HANDLING DEVICE

Melbourne Brindle, Bridgewater, Conn. 06752
Filed Aug. 9, 1966, Ser. No. 571,285
5 Claims. (Cl. 280—19)

1. A device for collecting and transporting lawn debris such as leaves and the like, said device comprising: a generally rectangular sheet of flexible material having front, rear and side edges; a pair of relatively rigid battens adapted to be secured in tandem along the rear edge of said sheet and each to extend between an inner end positioned near the longitudinal center of said sheet and an outer end adjacent to each of said side edges; means to secure the outer ends of said battens to each other, and flexible means secured along said side edges whereby the sheet may be gathered about a load of debris gathered on the sheet in a flat condition, by pivoting said battens one against the other and securing the outer ends thereof to provide the rear closed end of a boat-like receptacle, and the forward portion of said sheet gathered about the remainder of the load by manipulation of said flexible means.

3,355,188
JOINT FOR WELL DRILLING APPARATUS

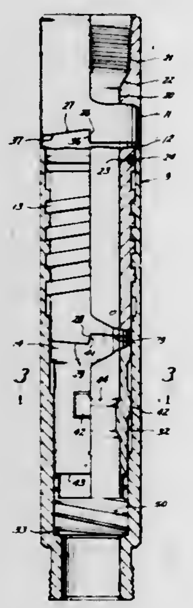
Franz-Josef Knickelmann, Graf-Salm-Str. 31, Bedburg, Germany, and Heinz Hoerter, Mittelstr. 12, Sindorf, Kreis, Bergheim, Germany
Filed Apr. 2, 1965, Ser. No. 444,997
Claims priority, application Germany, Apr. 3, 1964, R 37,607
12 Claims. (Cl. 285—13)



1. In a well drilling apparatus, a tube having a lower end; a string of rotary drill pipe including a top section having an upper end, said drill pipe being arranged to

convey a stream of drilling mud; and a joint between said tube and said drill pipe, comprising a rotary inner sleeve rigid with the upper end of said top section and having an upper end portion adjacent to but spaced from the lower end of said tube, an outer sleeve rigid with the lower end of said tube, said outer sleeve surrounding and being rotatably supported by said inner sleeve, a first ring rigid with the upper end portion of said inner sleeve, and a second ring rigidly mounted within said outer sleeve adjacent to but spaced from said first ring and defining therewith a narrow unobstructed annular gap, said outer sleeve defining a path communicating with said gap and said rings and said sleeves together forming a continuous substantially enclosed passage for enabling escape of a portion of the mud of the stream of drilling mud and for discharge of such portion from said outer sleeve.

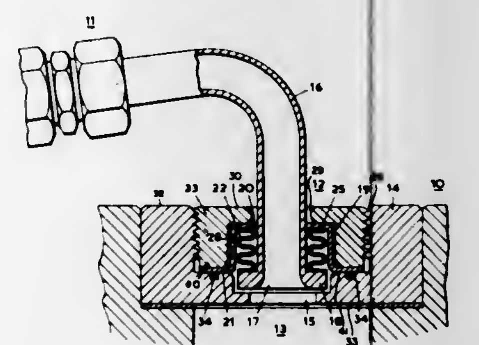
3,355,189
SAFETY JOINT
Malvern M. Hasha, 414 South Coast Bldg., Houston, Tex. 77002
Filed Feb. 5, 1965, Ser. No. 430,716
1 Claim. (Cl. 285—36)



A safety joint comprising:

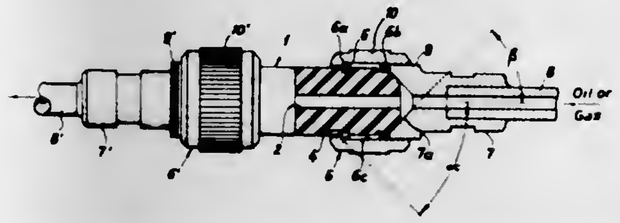
(a) an upper tubular member,
(b) a lower tubular member,
(c) thread means in each of said members for threadedly connecting said members together,
(d) longitudinally extending opposed shoulders on said upper member and said lower member, respectively, for transmitting torque when said members are connected together,
(e) ratchet means on said upper member below said thread means,
(f) said ratchet means including at least two surfaces which are inclined at an angle relative to the longitudinal axis of said upper member and a circumferential surface extending between said inclined surfaces,
(g) longitudinally movable pawl means in said lower tubular member,
(h) said pawl means including at least two surfaces which are inclined at an angle relative to the longitudinal axis of said movable means and a circumferential surface extending between said inclined surfaces for engaging said inclined surfaces on said ratchet means in said upper member and for engaging the circumferential surfaces of said upper member and movable means when said upper and lower members are connected together to prevent disconnection of said members,
(i) spring means abutting the lower end of said movable means for urging it upwardly whereby said inclined surfaces and said circumferential surfaces of said upper member and longitudinally movable member are always engaged;
(j) shoulder means in said longitudinally movable pawl member for receiving a release member for moving such pawl member longitudinally out of engagement with said ratchet means to allow said thread means to be disconnected; and
(k) shoulder means in said upper member and shoulder means on said release member for engaging with each other whereby said release member may be withdrawn with the upper member when said upper and lower members are disconnected.

3,355,190
PIPE CONNECTORS
Alan Edward Francis, Brisbane, Queensland, Australia, assignor to the English Electric Company Limited, London, England, a British company
Filed Apr. 5, 1965, Ser. No. 445,561
Claims priority, application Great Britain, Apr. 9, 1964, 14,746/64
6 Claims. (Cl. 285—50)



1. A connector device for providing a flexible connection between a manifold and an associated fluid duct, said connector device comprising, in combination; a manifold cover having an internally threaded aperture, an annular seating face at the inner end of the threaded aperture, an aperture extending from the seating face to the other side of the manifold cover; a tubular member having one end arranged for connection to the associated fluid duct, a flange on the tubular member adjacent the other end thereof; a cup-like connector member having an annular side wall, an aperture in the base thereof, and a flange extending outward from the other end of the annular side wall, the cup-like member being positioned over the said other end of the tubular member with the said other end extending through the base aperture; a resilient metal bellows surrounding the tubular member disposed between the base of the cup-like member and the flange on the tubular member and sealed to the base of the cup-like member and to the flange on the tubular member; and an externally threaded cup-like device having a flat annular rim and an aperture in the base thereof disposed over the cup-like member with the tubular member extending through the aperture in the base of the cup-like device, the cup-like device being threadably engaged with the internally threaded aperture in the manifold cover so as to clamp the flange of the cup-like member in a fluid tight manner between the rim of the cup-like device and the annular seating face in the manifold cover.

3,355,191
INSULATING JOINT
Paul Tzschirntsch, Berlin-Niederschoneweide, Germany, assignor to Veb Kabelwerk Oberspree (KWO), Berlin-Oberschoneweide, Germany, a corporation of Germany
Filed May 26, 1965, Ser. No. 458,953
5 Claims. (Cl. 285—52)



1. An insulating joint for interconnecting two metallic conduits, comprising a rigid insulating sleeve, a pair of externally threaded metallic nipples bearing coaxially upon respective ends of said sleeve and respectively secured to said conduits as terminations thereof, a pair of clamping nuts threadedly engaging said nipples, respectively, and extending over the ends of said sleeve toward each other, said sleeve being provided with a pair of axially spaced peripheral grooves overlain by said nuts and spaced from said nipples, and a pair of metallic rings of substantially circular cross-section projectingly received in said grooves, said nuts having free ends formed with inturned lips positively engaging said rings and bearing upon them in an axially outward direction and with a radially inward force component, said nipples having generally frustoconical recesses facing said sleeve and accommodating respective ends thereof, said ends being rounded and bearing upon the walls of said recesses.

3,355,192
THREADED CONNECTIONS
Joseph A. Kloesel, Jr., and Sam T. Crews, Midland, Tex., assignors to Drilco Oil Tools, Inc., Midland, Tex., a corporation of Texas
Filed Aug. 9, 1965, Ser. No. 494,996
3 Claims. (Cl. 285—94)

1. A threaded coaxial tubular connection for two tubular members suitable for connecting mine raise drill pipe, e.g. of the order of four to twelve inches in diameter, comprising

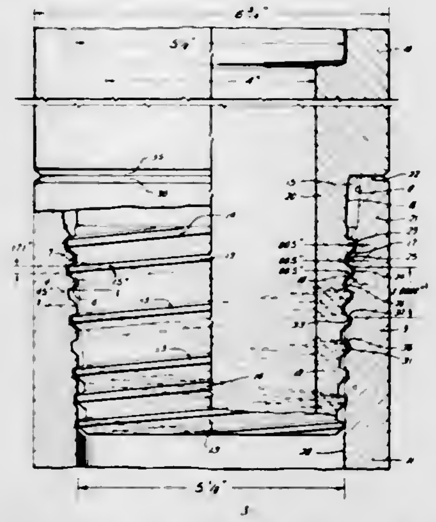
a box on one end of one of said tubular members, said box having an internally tapered bore flaring toward the mouth of the box and merging at its smaller diameter end with the cylindrical inner periphery of said one tubular member, said box having a transverse end face adjacent the larger diameter end of said bore, the inner periphery of said box being unthreaded over a portion of its area extending from said end face toward the juncture of the tapered bore of the box with the cylindrical inner periphery of said one member, said unthreaded portion forming the mouth of the box,

said box having double, modified buttress, helical threads projecting inwardly from said bore toward the axis of the members and extending from the mouth of the box toward said juncture of the tapered bore of the box and zthe cylindrical inner periphery of said one member, said threads projecting inwardly no farther than the cylindrical surface defined by said inner periphery of said one member so that the threads gradually reduce in height as they approach said junction until they vanish altogether at said junction,

said threads having a lead between ¾ inch per foot and 1¼ inches and having a height in the range of ⅛ inch to 3/16" and an average width of the same order of magnitude as the height, the pressure thread flank angle being of the order of 10 to 20 degrees, the other thread flank angle being of the order of 30 to 60 degrees,

a pin on an internal upset end of the other of said tubular members, tapering down toward the end of the pin, the large diameter end of said pin having a smaller diameter than the diameter of the outer periphery of said other tubular member forming a transverse shoulder adjacent the large diameter end of said pin adapted for engagement with said end face of the box,

said pin having double, modified buttress, helical threads similar to the threads on the box projecting outwardly from said pin away from the axis of the members and extending from a plane spaced axially from said shoulder toward the end of the pin, said pin and box threads being narrower than the spaces between the threads leaving space between the nonpressure thread flanks when the connection is made up,



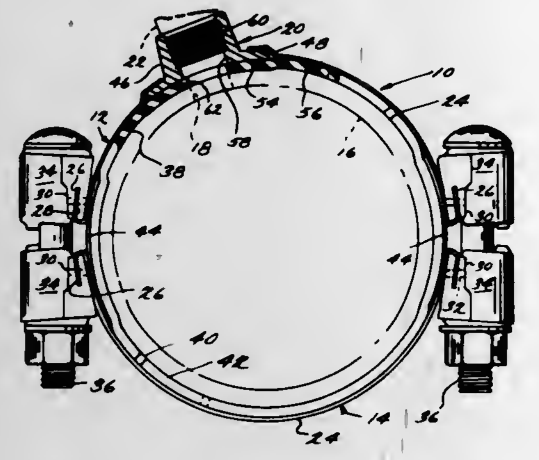
the portion of the pin extending from the shoulder to the commencement of the pin threads constituting the pin root, the outer periphery of the pin root being a tapered surface relieved below the taper of the threaded portion of the pin, said pin root lying opposite the mouth of the box when the connection is made up, the length of said pin root and box mouth being of the same order of magnitude as the lead of said threads,

said pin and box having a taper in the range of 1¼ inches per foot to 1¾ inches per foot, the distance from the box end face to the apex of the box thread crest cone being greater than the distance from the pin shoulder to the apex of the pin thread root cone and the distance from the box end face to the apex of the box thread root cone being greater than the distance from the pin shoulder to the apex of the pin thread crest cone so that when the pin shoulder and box end face are in engagement there are spaces between the pin and box thread crests and the adjacent portions of the box and pin peripheries, the last said spaces remaining even after the box has been made up on the pin beyond the initial engagement of pin shoulder and box end face by an axial travel of the order of 5% of the lead.

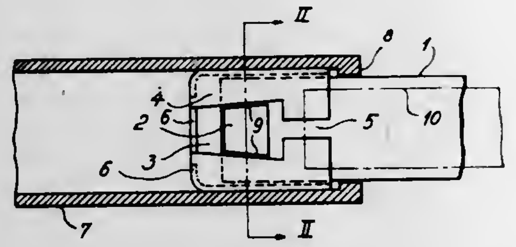
3,355,193
SERVICE CONNECTION CLAMP
Robert W. Craig, Marvin G. Spitzer, and Joe E. Yonker, Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois
Filed Mar. 23, 1966, Ser. No. 536,719
4 Claims. (Cl. 285—197)

1. A service side outlet means for connecting a main pipe line or the like with a service pipe line comprising: a flexible band having a selected width and a selected

radius of curvature about a band axis, said band having an interior surface provided with a non-circular recess, said non-circular recess having a hole therethrough; an outlet fitting having a non-circular base complementary to and received in said non-circular recess of said band and a service pipe line receiving portion extending outwardly through the hole in said non-circular recess, said noncircular base having a thickness greater than the depth of said recess in said band whereby the base projects inwardly of the interior surface of said band when received in the recess and said outlet fitting having a bore therethrough; a gasket member carried by said flexible band on the interior surface thereof, said gasket member covering all of the interior surface of the base of said outlet fitting and at least a portion of the interior surface of said band surrounding the recess, said gasket member having a port therein aligned with the bore in said outlet fitting and said gasket member being adhesively secured to the interior surface of said band after said outlet fitting is positioned with its base in said recess whereby said gasket member retains said outlet fitting in position prior to use of the service side outlet means; and means for retaining said band on the main pipe line with the outlet fitting projecting therefrom.

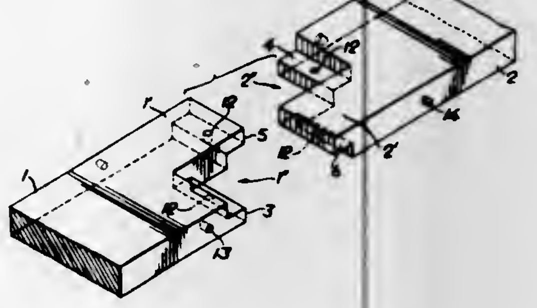


3,355,194
LOCKING DEVICE FOR TELESCOPIC TUBES
Benny Allan Rasmussen, Copenhagen, Denmark, assignor to Jomi Industri A/S, Copenhagen, Denmark
Filed June 2, 1965, Ser. No. 460,810
3 Claims. (Cl. 285—302)



1. A locking device for telescoping tubes comprising an inner tube, an outer tube concentric therewith, and a cylindrical, expandable bushing surrounding an end of the inner tube and frictionally engaging the inner surface of the outer tube, said bushing having a longitudinally extending slot means extending through at least one end thereof with a wedge-shaped portion converging toward said end of the inner tube, said inner tube having a wedge-shaped projection means complementary to said wedge-shaped slot and having a circumferential extent greater than the minimum circumferential extent of said slot for engaging said wedge-shaped portion and expanding said bushing against said outer tube thereby frictionally locking said tubes against longitudinal movement, and, said outer tube having an inwardly extending flange portion means having a diameter less than the diameter of said bushing, said slot means at the end of said bushing toward the inwardly extending flange portion of said outer tube being narrower than said wedge-shaped projection, whereby the wedge-shaped projection pulls said bushing against said inwardly extending flange portion when said tubes are longitudinally extended.

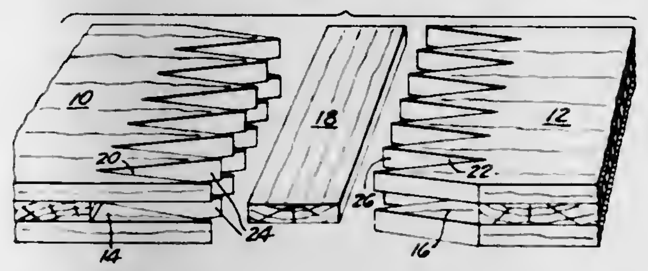
3,355,195
JOINT STRUCTURE FOR PLATE MEMBERS
Umekichi Takayanagi, Amagasaki, and Sakuro Kuwahara, Nishinomiya, Japan, assignors to Kobe Steel Ltd., Fukia-ku, Kobe, Japan
Filed Nov. 2, 1964, Ser. No. 408,300
Claims priority, application Japan, June 10, 1964, 39/45,753
3 Claims. (Cl. 287—20.92)



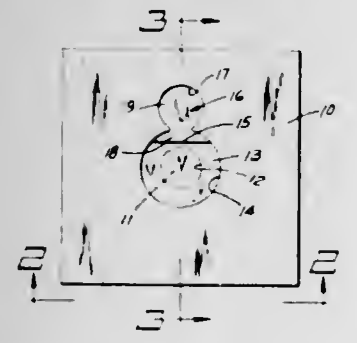
1. An assemblable and disassemblable joint structure for plate members which comprises:
(a) two end-to-end interengaging plate members (1, 2),
(b) said plate members adapted, when interengaged, to lie in a common plane,
(c) said plate members each comprising an upwardly facing stepped portion (3, 4) of substantially half the width of the plate member in said plane,
(d) said plate members comprising laterally of said stepped portions (3, 4), projecting portions (1′, 2′) of substantially half the width of the plate member, in said plane,
(e) said projecting portions (1, 2) of the two plate members being of substantially the same length, extending beyond the stepped portions (3, 4) thereof, and each comprising a downwardly facing step engagement portion (5, 6) adapted to rest upon the stepped portion of the other interengaging plate member,
(f) the step engagement portion (5, 6) of each interengaging plate member thus being supported on and holding down the stepped portions (3, 4) of the other interengaging plate member,
(g) whereby the interengaged portions of the plate members are permitted to be tilted upwardly from said common plane, but are restrained against tilting below said common plane.

3,355,196
SMOOTH JOINT FOR STRUCTURAL SHEETS AND MEMBERS
George C. Harrison, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,369
7 Claims. (Cl. 287—20.92)

6. A joint for structural members comprising a pair of abutting structural elements, each element having a plurality of alternate mortises and tenons along its abutting edge, the mortises and tenons of the two panels being in staggered relation and interfitting, a central portion of each edge being cut away throughout substantially the entire extent thereof to define a cut-out portion having mortises and tenons on either side thereof with the depth of said cut-out portion being substantially equal to the length of said tenons, the cut-out portions of the abutting panels being in alignment, a spline traversing said joint and substantially filling said cut-out portions, contacting surfaces of said spline, said tenons, and said mortises being bonded to each other by a resilient elastomeric adhesive.



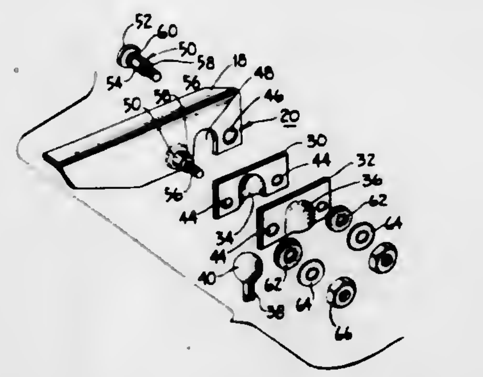
3,355,197
LOCKING KEY
George E. Tessmer, 4044 Fieldview, Orchard Lake, Mich. 48033
Filed Oct. 8, 1965, Ser. No. 494,018
3 Claims. (Cl. 287—52.05)



1. In a combination,
(a) a carrier member having a surface thereon;
(b) a first cylindrical hole in said carrier member and extended inwardly on an axis perpendicular to said surface;
(c) a second cylindrical hole formed in said carrier member and extended inwardly on an axis parallel to the axis of said first hole and perpendicular to said surface, and the peripheral walls of said holes intersecting along a line spaced from the hole axes to provide a narrow interconnecting passage therebetween;
(d) a removable member seated in said first cylindrical hole;
(e) a locking key having a body portion seated in said second cylindrical hole and having a narrow arm extended through said interconnecting passage into said first cylindrical hole and which arm carries an enlarged key portion that engages said removable member to hold it against rotation in said first cylindrical hole.

3,355,198
TRANSMISSION LINKAGE ASSEMBLY
Raymond A. Deibel, Cheektowaga, N.Y., assignor to Trico Products Corporation, Buffalo, N.Y.
Filed Apr. 24, 1964, Ser. No. 362,223
3 Claims. (Cl. 287—87)

1. In a linkage assembly for a windshield wiper transmission comprising a pair of linkage elements pivotally secured to each other by a ball joint; said ball joint comprising a ball stud having a ball at its free end secured to one of said linkage elements, the other linkage element of said pair of linkage elements including a pair of opposing separable socket halves for reception of said ball, stud means cooperable with axially movable clamping means for securing said socket halves in position about said ball, centrally apertured resilient means of elastomeric material positioned on said stud adjacent an outer surface of one of said socket halves to be compressed by said clamping means and producing a force sufficient to maintain said socket halves in position about said ball, stop means integral with said stud means fixed in position intermediate said clamping means and the outer surface of the adjacent socket half for limiting the force applied by said clamping means, said stud means having a knurled section adjacent one end for rigidly securing said stud means at an opening in said other linkage element at a controlled distance from said stop means.



3,355,199
BALL AND SOCKET JOINT
James O. Melton, Norman, and Thomas B. Wilkinson, Oklahoma City, Okla., assignors to Jamco, Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed Mar. 16, 1964, Ser. No. 352,026
3 Claims. (Cl. 287—90)

1. A ball and socket joint for interconnecting two relatively moving members comprising:

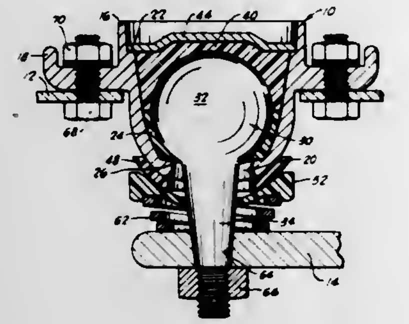
a generally tubular socket member having an internal flange portion at one end and adapted for attachment to one of said two relatively moving members to be interconnected by said joint, said tubular socket member having a hollow interior wall of generally circular transverse cross-section which tapers from a relatively small diameter adjacent said internal flange portion to a relatively larger diameter at the opposite end of said tubular socket member from said internal flange portion;

a first high density synthetic resin bearing insert member having an external surface formed on a frustum of a cone so that said first insert member tapers from a relatively large diameter to a relatively smaller diameter, said first insert member having a substantially hemispherical socket formed therein and located in said tubular socket member with the external surface of said first insert member bearing against the tapered internal surface of said generally tubular socket member;

a second synthetic resin bearing insert member having a substantially frusto-spherical socket formed therein, defined by an aperture extending therethrough, said second insert member having an exterior surface bearing against the tapered internal wall of said tubular socket member, said second insert member being located in said tubular socket member adjacent said internal flange portion and cooperating with, and contacting, said first insert member to form a substantially spherical chamber within the two contacting insert members;

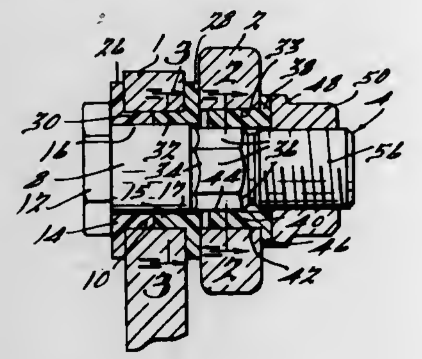
a substantially spherical ball member having a ball portion positioned in said chamber and having a spindle portion projecting from said ball portion and through said aperture in said second insert member, said spindle portion being adapted for attachment to the other of said two relatively moving members;

a high density synthetic resin sheath around the ball portion of said ball member and a part of the spindle portion of said ball member, said synthetic resin sheath extending through the aperture in said second insert member and being constructed of a synthetic resin differing from the synthetic resins from which said first and second insert members are constructed; and



a closure plate socket member located within said tubular member and engaged with said first insert member to retain said first and second insert members and said ball member within said tubular socket member, said internal flange portion at one end of said socket terminating in an aperture the inner periphery of which is provided with a smooth rounded contour thus preventing sharp edged contact with the portion of the synthetic resin sheath extending therethrough.

3,355,200
FASTENER ASSEMBLY FOR ANGULAR JOINT
Harold A. Storch, Birmingham, Mich., assignor to Federal Screw Works, Detroit, Mich., a corporation of Michigan
Filed Nov. 15, 1965, Ser. No. 507,742
4 Claims. (Cl. 287—101)



1. In a fastener assembly,

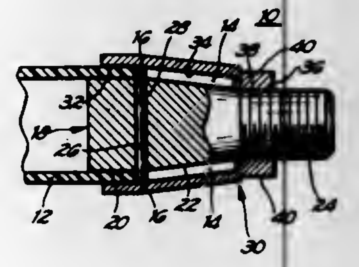
a uniform diameter cylindrical shaft having a supporting portion adapted to support a first load member, a shoulder portion of noncircular cross section axially spaced from one end of said supporting portion, and a threaded portion formed at one end of said shaft adjacent said shoulder portion,

locking bushing means for supporting a second load member and defining an aperture having a contour matable with the contour of said shoulder portion and being slidably carried thereon, whereby said lock bushing means is non-rotatably secured on said shaft, said bushing means having a uniform diameter outer periphery and defining a radially outwardly extending flange portion at one end thereof, a spacer member rotatably mounted on said supporting portion and having radially outwardly extending face portions engageable witht he confronting sides of said load members for maintaining a predetermined spacing between said load members, and

a nut threaded on said threaded portion and adapted to urge said lock bushing means longitudinally as said nut is advanced on the shaft,

said lock bushing means having one end thereof axially spaced from one of said load members to provide for wear take-up when wear occurs between said load members.

3,355,201
ATTACHMENT FITTINGS FOR TUBULAR MEMBER
Le Roy E. Barwick, East Stroudsburg, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 488,565
1 Claim. (Cl. 287—119)

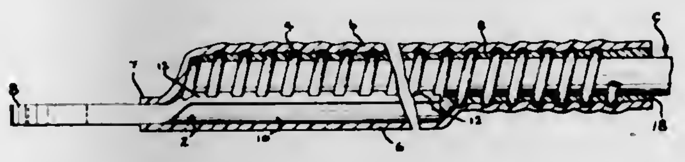


In combination with a resilient tubular member, an end fitting comprising an insert wedge having a substantially cylindrical portion formed at one end, a frustoconical portion formed intermediate its ends and a threaded cylindrical stud portion formed at its other end, the large diameter end of said frustoconical portions being in registry with said cylindrical portion and its small diameter end being in substantial registry with said stud, said cylindrical and frustoconical portions being disposed within said tubular member and said stud extending outwardly therefrom; a radial aperture formed in said tubular member and said insert wedge; a pin extending through said apertures for resisting axial or rotational movement of said wedge with respect to said tubular member; a plurality of longitudinal slots formed in said tubular member and extending from the end thereof in overlaying relation to said frustoconical portion; a unitary hollow ferrule having a cylindrical portion at one end and a reduced diameter wall portion at its other end and having a threaded aperture for threadably engaging said stud, and a frustoconical interior surface interconnecting said cylindrical portion and said wall portion, said threaded aperture retaining said frustoconical wedge portion and said ferrule frustoconical interior surface in generally concentric relation with the tubular member end portion compressively retained therebetween, said threaded stud portion projecting axially beyond the ferrule end wall in the assembled position to provide a connecting means for fastening other devices.

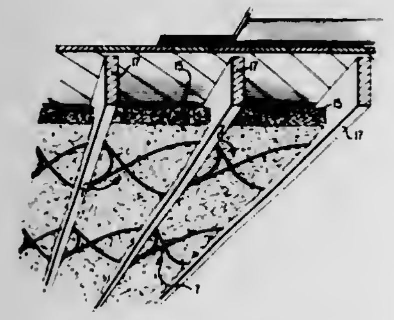
3,355,202
TERMINATING DEVICE FOR LINEAR BODIES
Suel Grant Shannon, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 1, 1965, Ser. No. 492,165
8 Claims. (Cl. 287—119)

7. A connector device for joining two fibrous glass cables comprising the combination of a lug member having a generally U-shaped body with diagonal slots therein, a

helically wound spring member disposed in said slots and adapted to overhang the ends of said body to provide strain relief means where said cables join said connector, sleeve means around said body adapted to hold said spring in coaxial relationship with said body, binding means comprising a suitable mixture of liquid epoxy resin disposed in said body prior to cable insertion for adhering said cables to said connector after cable insertion.



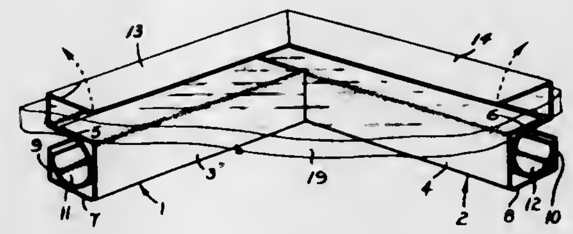
3,355,203
INSULATION RETAINER
Barton A. Stauffer, 1113 Crest Lane, Lancaster, Pa. 17601
Filed Oct. 25, 1965, Ser. No. 505,159
5 Claims. (Cl. 287—189.35)



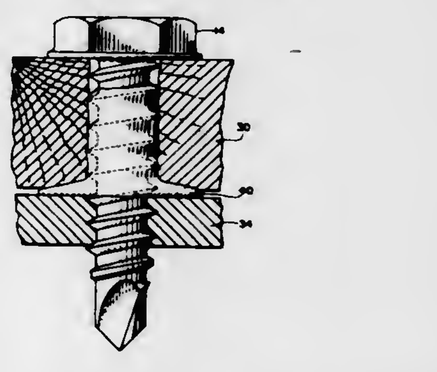
5. A retainer of the character described, for supporting insulation batts between spaced frame members, comprising a resilient one-piece wire element including a pair of relatively movable resilient leg members disposed in crossover relation to form a generally X-shaped member, said leg members having free end portions formed with chisel-shaped points defining a first pair of penetrating tips adapted to be embedded into the frame members, and a transversely extending, resilient arcuate member extending in the direction of the crossover and interconnecting the leg members on one side of the crossover, the arcuate member being connected to the leg members by portions of the wire being bent back upon themselves with the bends having chisel-shaped points at the extremities thereof to define a second pair of penetrating tips, wherein axial compression of the retainer for insertion between the frame members results in movement of the respective tips of each pair of penetrating tips away from one another, whereby the resilience of the retainer produces a biasing force urging the legs in the direction of their original position to thereby embed the end portions into the frame members.

3,355,204
INTERLOCKING JOINTS FOR PANEL FRAMES
Arthur A. Philpot, 37 Northumberland St., Tusmore, South Australia, Australia
Filed July 15, 1964, Ser. No. 382,723
3 Claims. (Cl. 287—189.36)

1. An interlocking joint for a frame wherein a pair of adjoining frame members comprising the joint are formed of sheet metal and each has in its cross-sectional shape sides forming a channel with a narrow mouth, a first member having an outwardly projecting tab at one end, the second member having a slot at one end, whereby the two ends are joined to form a corner of the frame with the tab of the first member lying against an inner surface of a wall of the second member, and first and second locking members releasably retained in the said first and second frame members respectively, each locking member having in its cross-sectional shape a part circular portion located within its respective frame member and each being rotatable therein to engage frictionally the inner surfaces of the walls thereof and the second locking member additionally engaging frictionally said tab against said inner surface of the second member upon rotation.



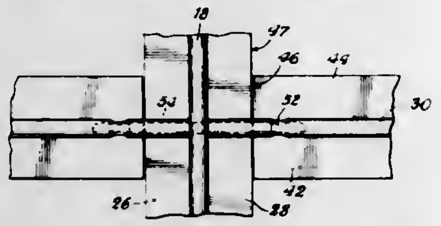
3,355,205
FUNCTIONAL COATING OF DRILL SCREWS
David P. Wagner, Elmhurst, and Charles E. Gutshall, Roselle, Ill., assignors to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Dec. 16, 1965, Ser. No. 514,276
7 Claims. (Cl. 287—189.36)



1. In combination a coated self-drilling screw fastening a first imperforate panel in juxtaposed relation to a second imperforate panel, said first panel having a predetermined hardness and said second panel having a greater relative hardness than said first panel, said screw including a head having driving means, a threaded shank and a drilling tip on the extremity of the entering end of said shank opposite said head, a coating on said shank and a substantial portion of said entering end, said coating filling a substantial portion of the void existing between the root and crest diameters along a substantial axial extent of the threaded portion of said shank whereby only a minimal portion of the crests of said threads are available for contact with a work panel, said coating having a lesser degree of hardness than said screw, said coating being harder than the predetermined hardness of said first panel through which the screw is applied and said coating being softer than the second panel to which the screw is applied, said screw being harder than both panels, whereby said drilling tip and said entering end will form a hole and partial thread to pull said screw through said first panel with said coating and its associated minimal exposed crests on said threaded shank providing readily strippable engagement in said first panel to permit free rotation of said screw during the drilling of said second panel, said coating being stripped off to said screw by said second harder panel to expose the threads on said shank for intimate engagement with said second panel whereby said panels are drawn into juxtaposed relation.

3,355,206
SUSPENSION GRID FOR CEILINGS

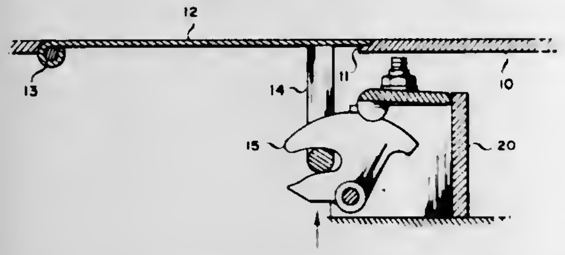
Donald J. Valsvik, Stillwater, Minn., assignor to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Filed Feb. 2, 1966, Ser. No. 524,617
3 Claims. (Cl. 287—189.36)



1. A suspension grid for suspended ceilings comprising a runner having a vertical web and horizontal flanges at the bottom of said web, a first cross-member having a vertical web and horizontal flanges at the bottom of its web, said cross-member endwise abutting one side of said runner in grid-forming position, a second cross-member having a vertical web and horizontal flanges at the bottom of its web, said second cross-member endwise abutting the other side of said runner in longitudinal alignment with said first cross-member, said runner having a hole through its web, said hole being in alignment with the abutting ends of said cross-members, each of said cross-members having an elongated pin-receiving tubular portion as part of and parallel to their respective webs, said tubular portions being in alignment with each other and with said hole in said runner web, all of said flanges in assembled grid-forming position being in substantially the same plane, a pin extending from within the tubular portion of said first cross-member through the hole in the web of said runner and into the tubular portion of said second cross-member, said hole being in the upper portion of the web of said runner, said cross-members being sheet material bent to provide face-wise abutting layers forming the web of each cross-member with the bend connecting the layers being enlarged to provide said tubular pin-receiving portions for each cross-member, respectively, such that the tubular portions are ridges at the top of their respective webs and have their axes in substantially the same plane as their respective webs.

3,355,207
LOCKING MECHANISM

Ronald B. Newman, Newhall, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Feb. 26, 1965, Ser. No. 435,485
4 Claims. (Cl. 292—78)



1. A locking mechanism comprising:

a catch rotatably mounted on a fixed pivot carried by relatively stationary structure;

a slot in the edge of said catch defining a cam surface adapted to receive a complemental element carried by a relatively movable member, at least the outer end of said slot being laterally disposed at all times with respect to said pivot and in the path of movement of said complemental element whereby movement of said member causes the rotation of said catch by said element to and from the engaged and disengaged positions;

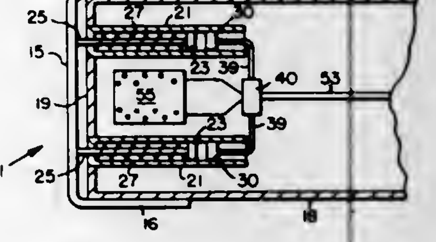
an external surface of said catch defining an arc of a circle concentric about said pivot with a notch signal arcuate therein on the opposite side of said pivot with respect to said slot;

a latch having a single arcuate projection complemental to said notch and disposed therein only when the catch is located in the aforesaid element engaging position; and

resilient means constantly operative on said latch to maintain it with its arcuate projection in contact with said external catch surface at all times, the center of said pivot and the center of said notch forming an acute angle with the center of said pivot and the center of said complemental element when said catch is in said element engaging position whereby rotation of the catch as aforesaid to the element-engaging position is substantially unresisted by the force of said resilient means, ultimately locating said projection in said notch directing the forces of said resilient means on the catch in opposition to the forces applied by said movable member in the direction of the element-disengaging position.

3,355,208
MOTOR ACTUATED BUMPER

Walter B. Brock, R.D. 1, Victor, N.Y. 14564
Filed Aug. 8, 1966, Ser. No. 571,043
6 Claims. (Cl. 293—9)



1. In an automotive vehicle having means for driving the vehicle,

(a) a protective bumper disposed at one end of said vehicle and reciprocable thereon between extended and retracted positions,

(b) fluid pressure operated means connected to said driving means to supply fluid in a direction to move said bumper to its extended position, when said drive means is operative,

(c) spring means for constantly urging said bumper to its retracted position, and

(d) a throttle valve for throttling the return flow of the fluid thereby to cushion retracting movement of said bumper, when said driving means is operative,

(e) said spring means operating to return said bumper wholly to its retracted position, when said driving means is inoperative.

3,355,209
MATERIAL HANDLING DEVICE

Chester L. Richards, Jr., and Sherman S. Smith, Indianapolis, Ind., assignors to Magnetic Devices, Inc., Indianapolis, Ind., a corporation of Indiana
Filed May 10, 1965, Ser. No. 454,520
5 Claims. (Cl. 294—65.5)

1. A material handling device comprising:

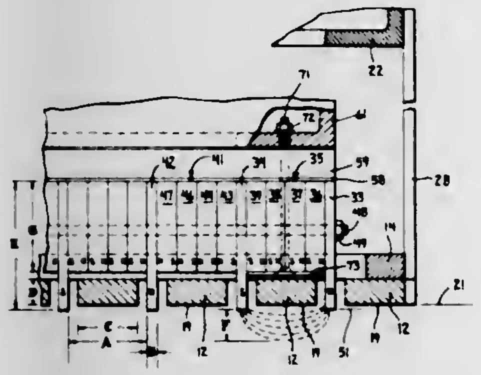
a rigid stripper grid including a plurality of parallel horizontally spaced elongated face bars of non-magnetic material of rectangular cross section,

and said stripper grid including a plurality of horizontally spaced support bars on top of said face bars and transverse thereto, said support bars being of non-magnetic material and affixed to said face bars to complete a rectangular stripper grid, each of said

face bars having throughout its length a flat lower face, all of said flat lower faces being disposed in a first horizontal plane;

a rigid stripper frame disposed above said stripper grid and including a generally rectangular central stripper frame portion connected to said central frame portion and having a grid perimeter frame portion, said central frame and upper frame portions having hangers affixed thereto and depending therefrom and affixed to said support bars and to said perimeter frame portion to rigidly attach said stripper grid to said stripper frame;

a magnet assembly mounted above said stripper grid and below said central and upper stripper frame portions, said magnet assembly including rows of magnet units, each row including a plurality of flat ferromagnetic plates disposed in vertical planes with the lower marginal edges thereof disposed in a second horizontal plane, said plates providing pole pieces and extending down through the spaces between said grid face bars and grid connector bars, said pole pieces being movable vertically in said spaces between the grid face bars and grid connector bars to move said second horizontal plane up and down with respect to said first horizontal plane,



each row of said magnet assembly further including a plurality of horizontally stacked elongated sheets of magnetic material, each of said sheets having a north-pole face and a south-pole face in parallel vertical planes and arranged so that the south-pole face of one sheet is in contact with the north-pole face of the next adjacent sheet, each said magnet unit including a stack of said sheets above one of said grid face bars and sandwiched between two parallel horizontally spaced pole pieces in such manner that the outermost faces of each stack are of opposite magnetic polarity, each magnet unit of a row sharing a pole piece with the next adjacent magnet unit of the row, and the outermost faces of two stacks in contact with a single pole piece being of the same polarity so that alternate pole pieces in a row are of the same polarity, and each pole piece of one row being coplanar with a pole piece of opposite polarity in the next adjacent row, and the magnetic fields between the pole pieces being selected to provide control of field depth, to produce a negligible value of field depth at distance below said second horizontal plane greater than ⅜ inch, when desired, each row of magnets including tie rods extending through said magnet sheets and pole pieces of the row, holding the sandwiched relation between the pole pieces and magnet sheets;

said magnet assembly including a rigid magnet frame of non-magnetic material above said rows of magnet units, and a rigid face board between said rows and said frame; said magnet assembly including non-magnetic bolts passing vertically through said magnets and said frame and affixing said rows of magnet units to said magnet frame; and said magnet assembly including four upstanding hanger posts affixed to said magnet frame, each of said posts having low friction cam followers projecting horizontally therefrom, said followers having parallel rotational axes;

a cam frame having four horizontally extending slots therein received on bearings mounted on said stripper central frame portion whereby said cam frame is provided with vertical support and enabled to move horizontally, guided by said central stripper frame and supported by said bearings for low friction linear movement, said cam frame including four notches in upper edges thereof, said notches having slopes inclined in the same direction at 15 degrees from horizontal, said notches receiving said cam followers mounted to said upstanding posts of said magnet assembly, said cam followers being in a fixed position relative to said second plane and, when resting in the bottom of said notches, supporting said second plane defined by the lower edges of said pole pieces below said first plane defined by the lower faces of said grid face bars, whereby ferromagnetic pieces suspended by the handling device directly contact said pole pieces;

said magnet assembly and stripper frame having vertical guide means thereon cooperating to permit relative vertical movement between said magnet assembly and said stripper grid and prevent relative horizontal movement therebetween, said cam frame being thereby employed to vertically support the magnet assembly and being operable when moved horizontally to raise said magnet assembly with respect to said stripper grid face bars to raise the flux field with respect to said first plane and reduce the holding power thereof with respect to ferromagnetic pieces coming in contact with the lower face of said stripper grid face bars;

a reversible electric motor affixed to said central stripper frame portion;

a rotary-to-linear motion transmission means coupling said motor to said cam frame, whereby said motor is operable, when energized, to move said cam frame horizontally, said motor being reversible to enable bi-directional operation of said cam frame to selectively raise and lower the magnet assembly for stripping material suspended by the magnet assembly from the pole pieces.

3,355,210
BAGGAGE RACK ASSEMBLY

Alan R. Cripe, Richmond, Va., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 28, 1965, Ser. No. 516,899
1 Claim. (Cl. 296—28)

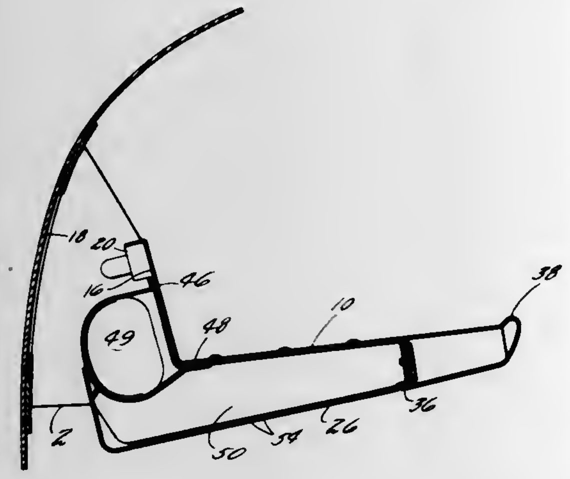
A passenger vehicle overhead baggage rack with integral exhaust ducting comprising:

a plurality of angular mounts for affixing the baggage rack to the wall of the vehicle, each of the mounts including an upwardly directed portion adjacent the vehicle wall and an outwardly directed portion extending toward the interior of the vehicle, each of the angular mounts having an opening therethrough;

a longitudinal beam affixed to the free ends of the outwardly directed portions of the respective mounts;

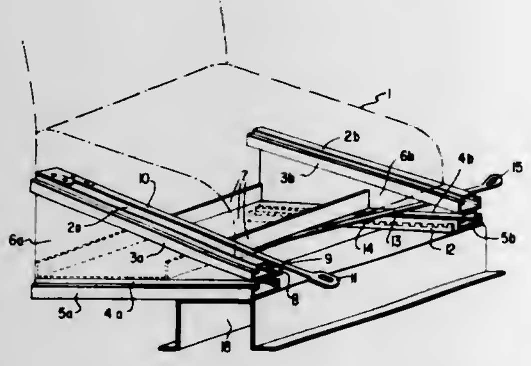
a top sheet of substantial rigidity athwart the mounts and connected thereto for supporting baggage, the top sheet being formed to substantially conform to the upper surface of the angular mounts to which it is connected, the upwardly directed portion of the top sheet being spaced a substantial distance from the inner wall of the vehicle;

a perforated sheet affixed to the bottom of the respective mounts and extending therebtween;
a closure member affixed to the inner side of the baggage rack to form an exhaust duct integral therewith, the closure member being attached to the opening in the angular mount, the opening forming part of the exhaust duct and providing communication therefor between adjacent baggage rack sections, the combination of the closure member, beam, top sheet and perforated sheet defining an exhaust chamber internal of the baggage rack, the exhaust duct being provided with access to the exhaust chamber to permit air from the vehicle interior to be drawn into the exhaust duct through the openings in the perforated sheet and through the exhaust chamber;
and a light fixture attached to the baggage rack in the space provided between the top sheet and the vehicle wall to furnish indirect lighting to the interior of the vehicle.



3,355,211
ADJUSTABLE SEAT CONSTRUCTION FOR MOTOR VEHICLES

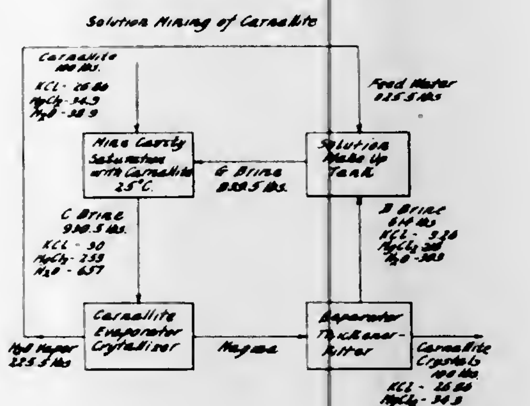
Erwin Kölle, Sindelfingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Nov. 23, 1965, Ser. No. 509,394
Claims priority, application Germany, Nov. 28, 1964, D 45,944
18 Claims. (Cl. 296—65)



1. A horizontally and vertically adjustable seat, especially for motor vehicles, comprising seat frame means, horizontal rectilinear guide means for said frame means for guiding the latter substantially in a horizontal direction, and inclined guide means operatively connected with said horizontal guide means and sloping downwardly in the rearward direction, said horizontal guide means supported for independent actuation on said inclined guide means to enable in effect horizontal and vertical adjustments of the seat independently of one another.

3,355,212
SOLUTION MINING OF CARNALLITE

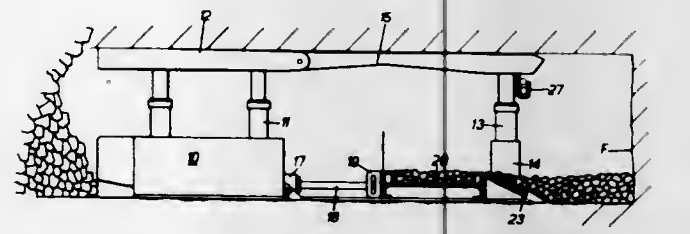
Robert Wilson Day, Henrico County, Va., assignor to Reynolds Metals Company, Henrico County, Va., a corporation of Delaware
Filed July 2, 1965, Ser. No. 469,233
12 Claims. (Cl. 299—5)


Solution Mining of Carnallite
Carnallite 100 lbs.
Feed Water
Mine Cavity Saturation with Carnallite 25°C.
G Brine
Solution Make Up Tank
C Brine
B Brine
Carnallite Evaporator Crystallizer
Magma
Evaporator Thickener-Filter
Carnallite Crystals 100 lbs.

3. Method of solution mining carnallite from an underground deposit thereof comprising the steps of contacting said deposit with an aqueous extractant comprising a solution of potassium chloride and magnesium chloride in concentrations corresponding to phase diagram relationships which render said extractant capable of dissolving carnallite without decomposition of the carnallite, removing the resulting carnallite solution from the deposit, and recovering the carnallite from the solution.

3,355,213
MINE ROOF SUPPORTS AND CONVEYORS FOR USE IN CONJUNCTION THEREWITH

Jeffrey W. Seddon, Standish, near Wigan, England, assignor to Gullick Limited, Wigan, England, a British company
Filed Nov. 15, 1965, Ser. No. 507,766
Claims priority, application Great Britain, Nov. 26, 1964, 48,046/64
10 Claims. (Cl. 299—31)

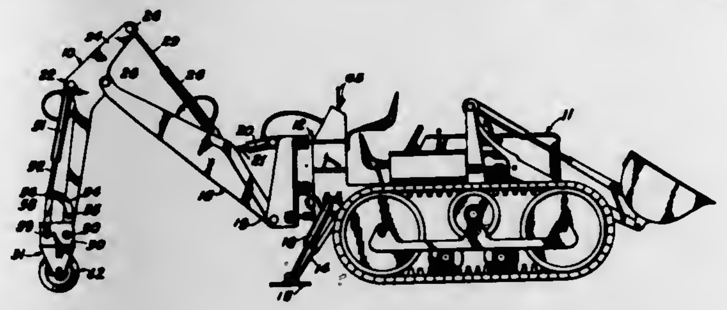


1. In a mine roof support, including spaced apart rearward and forward roof support units with respect to a mineral face to be mined, a conveyor passing between said rearward and forward support units and advanceable therebetween towards the mineral face, and pressure-fluid ram means operative to advance the support, the improvement comprising collecting means on the foremost side of said conveyor for directing cut material on the mine floor adjacent the mineral face into said conveyor as the latter is advanced towards the mineral face.

3,355,214
VEHICLE-MOUNTED ASPHALT CUTTER

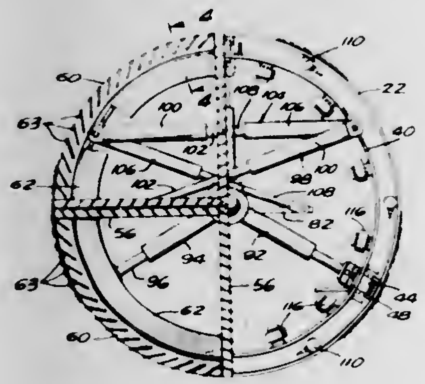
Ellis Glen McClure, Red Oak, Ga., assignor of one-half to George Graf, Atlanta, Ga.
Filed Feb. 2, 1967, Ser. No. 613,566
4 Claims. (Cl. 299—40)

1. Apparatus for cutting a hardened surface comprising a vehicle, an upwardly extending support member pivotally connected at its lower end to said vehicle, a downwardly extending support member pivotally connected to the upper end of said upwardly extending support member, (and) a cutting member rotatably connected to the lower end of said downwardly extending support member, said cutting member being rotatable about a laterally extending axis, and means for pivoting said cutting member about the lower end of said downwardly extending support member in a plane extending normal to said laterally extending axis.



3,355,215
OSCILLATING TUNNELING MACHINE

John C. Haspert, Arcadia, and Richard A. Wallers, Newport Beach, Calif., assignors to Smith Industries International, Inc., Los Angeles, Calif., a corporation of California
Filed Nov. 7, 1966, Ser. No. 592,518
44 Claims. (Cl. 299—60)

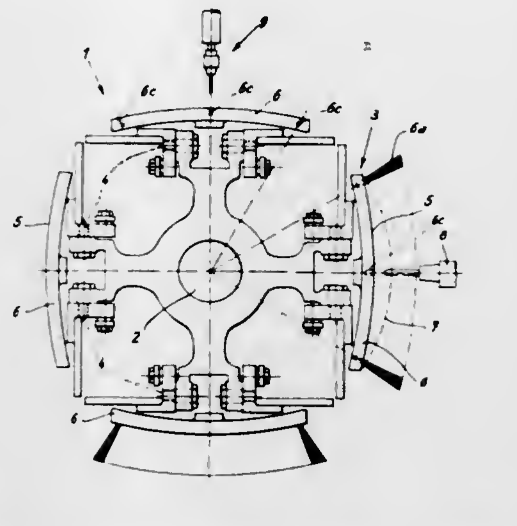


1. In a tunneling machine, the combination comprising:
a frame having a front end adapted to be progressively advanced toward a tunnel face which is to be cut;
a cutting head for engaging the tunnel face and adapted for oscillatory movement in a plane parallel to the tunnel face;
means rotatably mounting said cutting head on said frame for oscillation of said cutting head in said plane;
linear actuating means disposed in a plane parallel to said plane of oscillation and adapted for reciprocating linear extension and retraction; and
means coupling said actuating means to said frame and to said cutting head so that said actuating means produces oscillation of said cutting head in said plane of oscillation.

3,355,216
BRUSH MAKING MACHINE

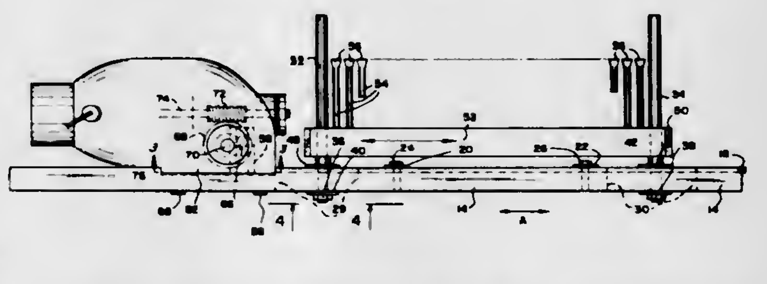
Heinz Zahoransky, Todtnau, Black Forest, Germany, assignor to Anton Zahoransky, Todtnau, Black Forest, Germany
Filed Aug. 24, 1965, Ser. No. 482,060
Claims priority, application Germany, Aug. 24, 1964, Z 11,047
15 Claims. (Cl. 300—3)

1. In a machine for producing brushes of the type wherein the bristles are embedded in one face of a back support, indexable carrier means rotatable about a predetermined axis and comprising angularly spaced holders for back supports; a first station adjacent to said carrier means and comprising means for drilling holes into the back supports substantially at right angles to said axis; a second station located downstream of said first station and comprising filling means for introducing bristles into the holes drilled at said first station substantially at right angles to said axis; and means for moving said carrier means toward and away from said filling means.



3,355,217
BROOMCORN SEPARATING DEVICE

Socorro Lopez, 2909 E. Latham St., Phoenix, Ariz. 85008
Filed June 13, 1966, Ser. No. 557,189
4 Claims. (Cl. 300—18)



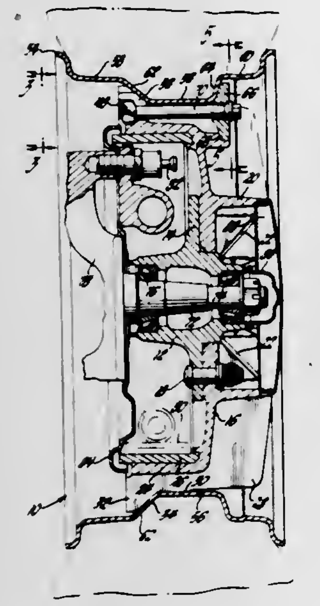
1. In a broomcorn separating device the combination of: a broomcorn comb assembly having upstanding teeth with their upper ends directed upwardly and slightly spaced apart; a frame on which said broomcorn assembly is reciprocally mounted so as to move the teeth of the assembly laterally of their axes and of the spaces between them; and a motor coupled to said assembly and adapted to reciprocate the assembly in said direction laterally of the axis of said teeth.

3,355,218
WHEEL ASSEMBLY

Lothrop M. Forbush, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 28, 1966, Ser. No. 530,667
1 Claim. (Cl. 301—6)

A wheel assembly comprising,
a rim having a base flange and spaced first and second annular flanges,
a spider having a plurality of circumferentially spaced radially extending ribs, each rib having portions seating the base and first flanges,
pairs of the ribs being each interconnected by a web including a slot and defining a curved surface cavity adjacent thereto,

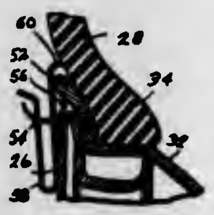
a seat formed on the spider in substantial axial alignment with each web and spaced from the web,
a lug corresponding to each web seating on each seat and on the second flange,



and retaining means interconnecting the corresponding lugs and webs to mount the rim on the spider, retaining means including
  a bolt attached to each lug and projecting axially between the interconnected rib pair through the slot,
  and a nut having a curved surface rockably mounted on the cavity curved surface for adjustable positioning to engage the bolt.

3,355,219
WHEEL COVER RETAINING MEANS

John Henry Brumfield, 3900 N. Weber, Colorado Springs, Colo. 80907
Filed Apr. 9, 1965, Ser. No. 446,908
4 Claims. (Cl. 301—37)

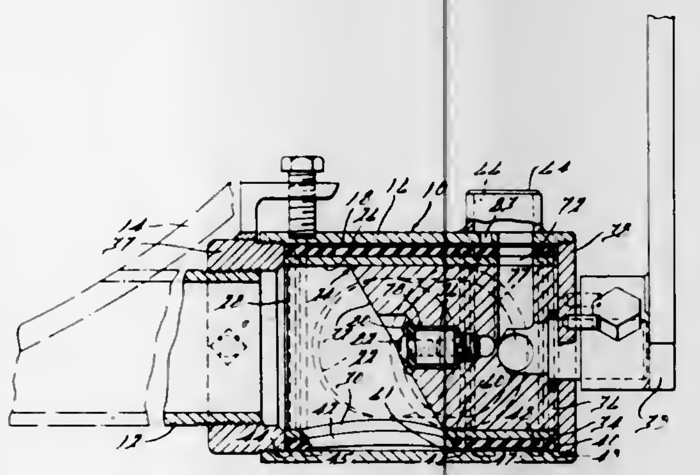


1. In combination with a vehicle wheel, comprising;
a rim attached to the wheel;
a pneumatic tire having a bead and mounted on said rim;
a wheel hub cover mounted on one side of said wheel;
a clip member disposed between said tire bead and the said rim; and
a retainer member carried by said clip which extends over the outer edge of said hub cover and bears against the outside surface thereof and extends radially of the wheel rim and bears against the side wall portion of the said pneumatic tire.

3,355,220
CONCRETE VALVE STRUCTURE

Warren Durand Brown, 6328 Dakota Circle, Birmingham, Mich. 48010
Filed Mar. 17, 1966, Ser. No. 535,193
20 Claims. (Cl. 302—36)

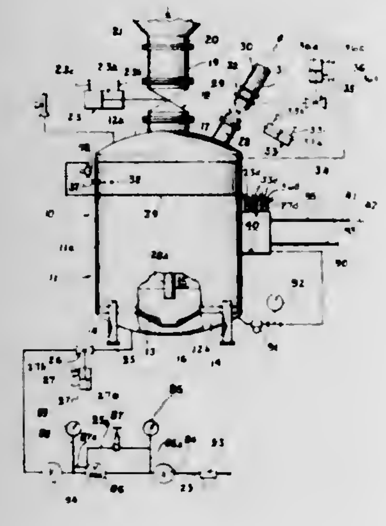
1. Apparatus for controlling the flow of cementitious materia's or the like from a source of supply to discharge means comprising:
conduit means defining a material flow path extending from and communicating with said source of supply to receive and carry material from said source of supply to said discharge means;
valve means in said conduit means in said flow path to selectively permit and prevent flow of material from said source of supply to said discharge means;
said valve means comprising:
  a valve housing having material inlet and outlet openings,
  a movable valve core slidably mounted in said valve housing between said openings and being movable therein between a closed position preventing flow of material through said conduit means and an open position permitting flow of material through said conduit means,
  said valve core having at least one surface slidably supported in said valve housing,
  said valve core being movable transversely to the flow path of material moving through said conduit means from said inlet opening to said outlet opening,
  said surface being located for transverse shearing movement through material flowing through said conduit means,
  a rubber-like protective covering positioned between said surface and said housing and slidably supporting said valve core relative to said housing,
  rib means projecting outwardly on said protective covering and providing support surfaces between said valve core and said valve housing,
  the support surfaces of said rib means forming wiping edges and comprising a minor portion of the total surface area between said valve core and said valve housing,
  said rib means defining valley areas between said rib means comprising a major portion of the total surface area between said valve core and said valve housing,
  said rib means being under stress by compression between said valve core and said valve housing,
  and said valley areas being relatively unstressed and spaced inwardly from said wiping surfaces and being relatively friction free during sliding movement of said valve core relative to said housing,
  an air inlet to said valve housing and an air outlet from said valve housing,
  and said movable valve core being slidably mounted between said air inlet and said air outlet and being movable between a closed position preventing flow of air through said valve housing and an open position permitting flow of air through said valve housing,



  said valve core being simultaneously movable between said closed position preventing flow of material through said conduit means and said open position permitting flow of material through said conduit means.

3,355,221
SELF-PURGING, PNEUMATIC CONVEYING APPARATUS

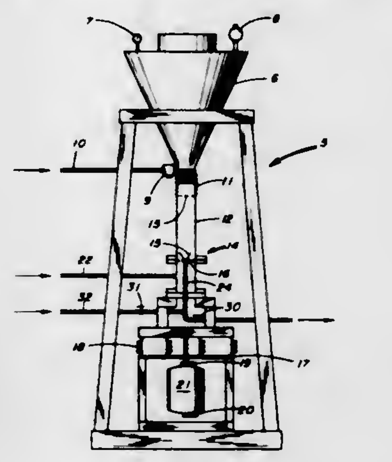
Brian R. Reuter, Houston, Tex., assignor to Consolidated Engineering Company, Inc., Houston, Tex.
Filed Jan. 3, 1966, Ser. No. 518,353
11 Claims. (Cl. 302—53)



1. Material transporting apparatus comprising a container including a material plenum above, a gas plenum below, and a gas permeable diaphragm thereinbetween, a solenoid actuated, valve operator moved, fill valve controlled inlet from a material source, a solenoid actuated, valve controlled, material discharging duct from said material plenum, a solenoid actuated, valve controlled gas duct connecting gas plenum and a regulated compressed gas source, a solenoid actuated, valve controlled, purge by-pass connecting material plenum and discharge duct downstream from said discharge valve, an electrical power source to circuitry connecting said solenoids, a variable and a fixed time delay relay, a latching first relay, a second relay, a normally open, a normally closed, and a control pressure sensitive switch, said control switch closing circuit, as container pressure falls to a predetermined initial, substantially atmospheric, to open said fill valve and to start the interval of a preselected variable time delay switch to lapse, thus to actuate said latching first relay to open the variable time delay switch circuit, to close said fill valve, and to close circuit to said fixed time delay switch, which, after its fixed time, opens said gas supply valve and closes said purge valve, gas now increasing container pressure to successively higher predetermined values, as successively, said control switch opens, said normally closed switch opens, and said normally open switch closes to open said discharge valve and to actuate said second relay to close discharge valve bypass circuit and to partially close latching relay circuit, material now discharging and container pressure dropping to successively lower predetermined values, as successively, said normally open switch opens and said normally closed switch closes to complete latching relay circuit closure to close said gas supply and discharge valves, to open said purge valve, and to deenergize said second relay, said material purging until container pressure further drops to initial pressure to start repetition of the aforesaid cycle.

3,355,222
GYRATORY FLUIDIZED SOLIDS FEEDER

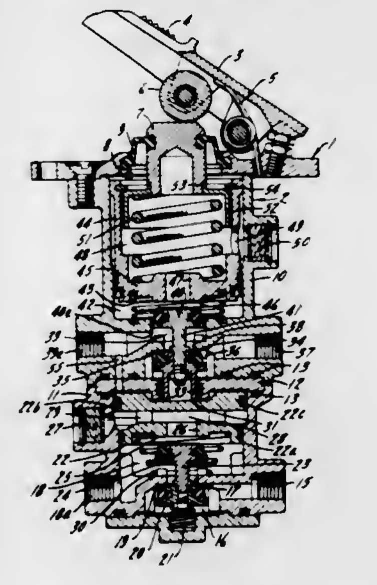
James R. Neely, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 4, 1966, Ser. No. 540,100
9 Claims. (Cl. 302—56)



1. A solids feeder comprising:
means providing a fluidization chamber having upper, central, and lower parts;
solids inlet means for admitting solids to the upper part of said chamber;
gas inlet means for admitting gas to the lower part of said chamber;
outlet means for exhausting a mixture of solids and gas from the lower part of said chamber;
platform means substantially horizontally disposed and fixedly secured to said means providing a fluidization chamber, said platform means being substantially flat;
resilient support means secured to said platform means in such a manner as to resiliently suspend said platform means for limited movement in any direction; and
means fixedly secured to said platform means for imparting thereto gyratory motion in the horizontal plane thereof and in the radial and tangential planes with respect thereto.

3,355,223
DUAL APPLICATION VALVE

Boleslaw Klimek, Des Plaines, Ill., assignor to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois
Filed July 28, 1966, Ser. No. 568,623
2 Claims. (Cl. 303—52)

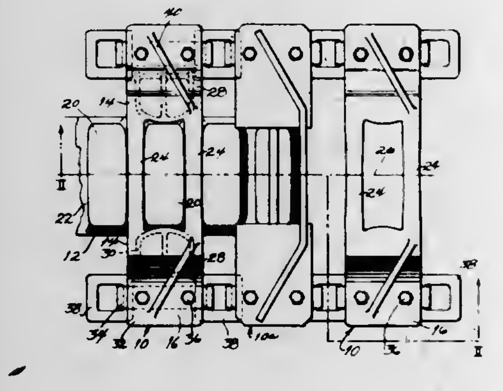


1. A brake pressure application valve including a housing, a first pressure inlet, a first pressure outlet, a first

valve controlling communication between said first inlet and first outlet, a second pressure inlet, a second pressure outlet, a second valve controlling communication between said second inlet and second outlet, said first inlet and outlet being sealed against communication with said second inlet and outlet at all positions of said valves, and means for operating said valves including a first piston reciprocal in said housing for operating contact with said first valve, a second piston reciprocal in said housing for operating contact with said second valve, said first valve having a poriton positioned for operating contact with said second piston, said operating contact between said first valve and said second piston being provided by an extension on said first valve, said extension being slidable in said housing and a seal engaging said housing and said extension.

3,355,224
ENDLESS TRACK DRIVE SHOE

Frederick A. Skanes, Burlington, Ontario, and Robert W. Logue, Hamilton, Ontario, Canada, assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 28, 1965, Ser. No. 428,790
12 Claims. (Cl. 305—53)



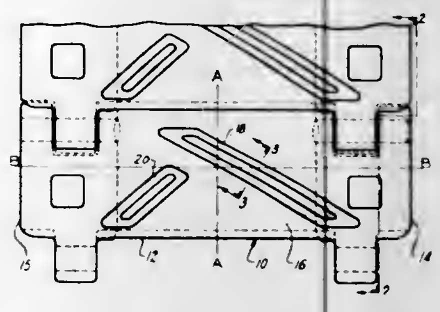
1. In a positive drive, articulated, endless track assembly having a longitudinal axis, a unitary, two-bar, track shoe for use with pneumatic, track-driving tire provided with straight transverse grooves in the tread thereof having a uniform pitch spacing, said shoe comprising;

- two separate, transversely-spaced-apart, stepped plates;
- two drive bars connected in a crosswise deposition therebetween, being spaced apart along said longitudinal axis from one another; and
- domed guides each integrally depending substantially normal from a different one of said plates, upon a tread facing side thereof; said guides being hollow and including a plurality of internal and external ribs generally parallel with said crossbars and reinforcing the domes of said guides;
- each drive bar being upon the same plate side with, in end-to-end alignment with, and integrally bridging between, the domed guides.

3,355,225
GROUSER CONFIGURATION FOR TRACK TREAD LINKS

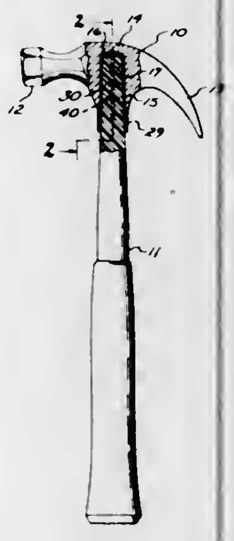
Glenn S. McDowell and Christopher G. Deurell, Claremont, N.H., assignors to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 4, 1966, Ser. No. 518,589
10 Claims. (Cl. 305—53)

1. A tread link for a self-laying track comprising: an elongated generally flat tread surface having a longitudinal center line and a transverse center line, a plurality of elongated grousers extending across and outwardly from portions of said tread surface, adjacent ones of said grousers being spaced from each other on and extending in their entirety along intersecting axes, at least one of said adjacent grousers extending across said longitudinal center line, and said adjacent grousers forming an overlapping configuration as viewed along lines parallel to said transverse center line.



3,355,226
STRIKING IMPLEMENTS

William E. Portz, Geneva, Ohio, assignor to True Temper Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 11, 1966, Ser. No. 549,290
8 Claims. (Cl. 306—32)

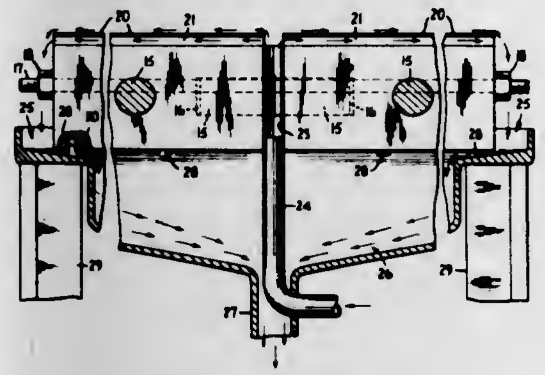


1. A striking implement comprising a striking head having a closed end socket disposed therein, a handle or shaft having one end extending a substantial distance into said socket, the said end of said handle or shaft having wire material having at least two legs disposed on opposite sides thereof and extending longitudinally of the said ends of said handle or shaft, centering said handle or shaft in said socket and frictionally securing the handle or shaft to said head and adhesive material in said socket confined by said longitudinally extending wire material within longitudinally extending spaced areas between portions of the handle or shaft and walls of said socket.

3,355,227
FABRICATION OF LARGE FLAT BEARINGS

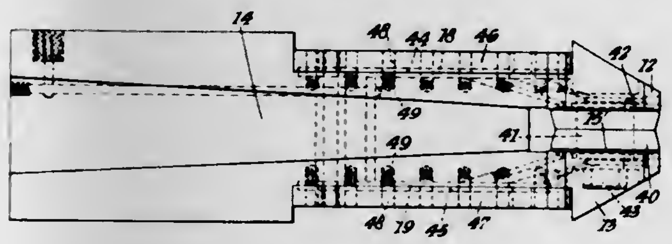
Edward C. Hobaica, Mystic, Conn., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 25, 1965, Ser. No. 427,701
2 Claims. (Cl. 308—5)

2. A composite flat bearing comprising at least four flat bearing segments assembled in abutting relation, each segment having a flat bearing surface covered with a layer of polytetrafluoroethylene, each segment being formed with a groove along the edge of the bearing surface and abutting the adjacent segment means for retaining the segments in assembled abutting relation with their bearing surfaces coplanar and with the grooves intersecting at a junction and means forming a passageway leading through the bearing to the junction to permit application of a fluid lubricant to the grooves.



3,355,228
ROD MILLS

Kenneth Pennycuick, Northill Grange, near Biggleswade, England, assignor to British Ropes Limited, Doncaster, England, a British company
Filed Mar. 19, 1965, Ser. No. 441,092
Claims priority, application Great Britain, Mar. 25, 1964, 12,554/64
2 Claims. (Cl. 308—9)



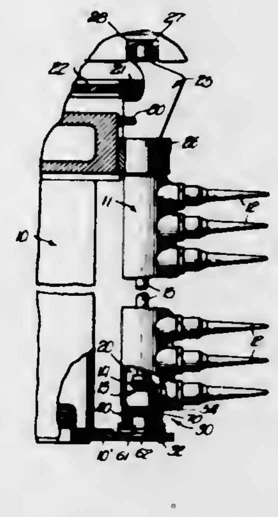
1. In a rod mill: a final guide roller assembly comprising a final guide roller having a pair of opposed plane faces, a pair of guide box sleeves located one at each side of the guide roller and having substantially plane faces adjacent the said plane faces of the guide roller, the said faces of the guide box sleeves having a plurality of recesses therein, a supporting arm for the guide box sleeves, said arm including channels formed by grooves in the arm for conveying pressurized supporting liquid to the recesses, the said channels branching in the region of the outer end of the supporting arm to supply the said plurality of said recesses, the arm comprising detachable capping members adapted to close the groove, and means for continuously feeding pressurized supporting liquid to said channel means and recesses to generate lubricating and supporting films between the adjacent plane faces of the guide box sleeve and the guide roller.

3,355,229
COTTON PICKER BAR PIVOT LUBRICATING MEANS

James E. Sadler, 3317 Park Ave.,
Memphis, Tenn. 38111
Filed Aug. 16, 1965, Ser. No. 479,755
11 Claims. (Cl. 308—78)

1. In a cotton harvester having a rotatable picking drum including a spindle bar provided with a central bore defining a lubricating fluid reservoir, a lower pivot bearing assembly for rotatably mounting the lower end of said spindle bar to said drum, said bearing assembly comprising:

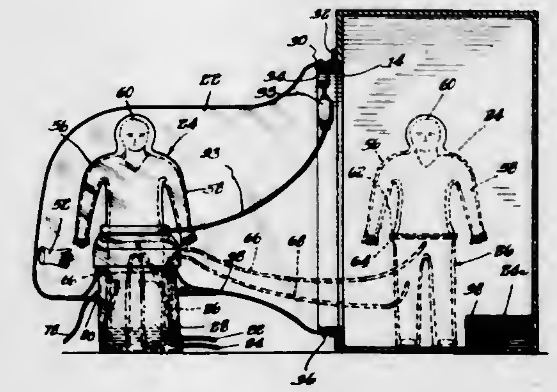
- a cup shaped bushing secured within said bore in the lower end of said spindle bar and defining a cylindrical chamber for the receipt of a mounting pin,
- said bushing including a top portion extending laterally across said bore substantially sealing the lower end of said bar and further including a lubricant port to bring said reservoir into communication with said chamber and to permit a metered flow of lubricating fluid to enter said chamber from said reservoir,



- a mounting pin extending upwardly into said chamber and joined to said drum to rotatably mount said spindle bar on said drum, and
- lubricating distributing means in communication with said lubricant port within said chamber to distribute the lubricating fluid uniformly throughout said chamber.

3,355,230
METHOD AND APPARATUS FOR ENTERING A SEALED ENCLOSURE

Philip C. Trexler, Stoneham, Mass., assignor to Snyder Manufacturing Company, Inc., New Philadelphia, Ohio, a corporation of Ohio
Filed Aug. 27, 1964, Ser. No. 392,391
12 Claims. (Cl. 312—1)



1. An apparatus for enabling a person to enter and subsequently leave an enclosure having a sealed port for continuously maintaining said port in a sealed condition, comprising means defining said port, a suit for said person and including initially separate complementary first and second portions, said first suit portion including a peripheral margin and sealed and secured to said port defining means and serving to seal said port, said second suit portion comprising a peripheral margin connectable to said first mentioned margin for completing the suit, means

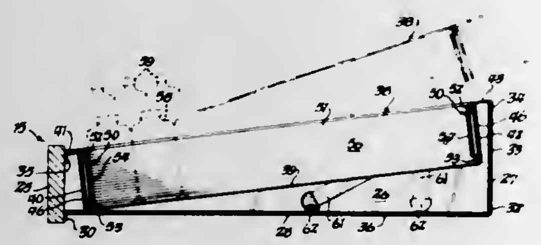
initially enclosing exterior surfaces of said second suit portion and including a margin sealed to said margin of said second suit portion, enclosing means defining a sealed space around the exterior surfaces of said second suit portion for enabling the second suit portion exterior surfaces to be maintained in a decontaminated condition, said margins of said enclosing means and said second suit portion being positionable against said margin of said first suit portion after a person has put on both of said suit portions, and said margins being sealable together and severable for joining said suit portions to each other and for separating said suit portions from said port defining means and said enclosing means and for joining said enclosing means with said port defining means for enabling a person to walk freely through said port while leaving a port in a sealed condition.

3,355,231
DRAWER

Francis C. Kegel, Tonawanda, N.Y., assignor to Barrett-Kegel Corporation, Frankinville, N.Y., a corporation of New York

Filed Jan. 4, 1966, Ser. No. 519,404

3 Claims. (Cl. 312—45)



1. A drawer adapted for horizontal sliding movement into and out of a cabinet through a horizontally elongated rectangular drawer opening in the side of the cabinet, the drawer having vertical front, side and rear vertical walls connected together adjacent their ends to form general continuations of one another, a horizontal slide rail fixed to the drawer adjacent and parallel with each of said side walls and slidingly supported by said cabinet to provide such horizontal sliding movement into and out of the cabinet, said front and rear walls being of a horizontal length generally equal to the horizontal width of said opening wherein the invention comprises the upper edge of said front wall being spaced from the top edge of said opening, in the closed position of said drawer within said cabinet, a distance to enable manual access into the front part of the drawer when the drawer is closed, means carried by said walls and having a bottom wall sloping downwardly, with reference to the horizontal, from said rear wall to said front wall whereby upon sliding said drawer on its side rails horizontally out of said cabinet through said opening a quantity of articles can be conveniently loaded on said bottom wall and upon thereafter sliding said drawer on its side rails into said cabinet the articles so placed on said tray tend to slide down toward said front wall to be successively manually accessible through said opening without sliding said drawer out of said cabinet through said opening.

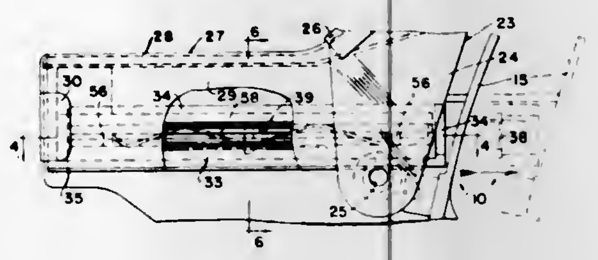
3,355,232
ASH RECEPTACLE FOR AUTOMOBILES

Jack W. Blake, Grand Rapids, Mich., assignor to F. L. Jacobs Co., Detroit, Mich., a corporation of Michigan

Filed Jan. 24, 1966, Ser. No. 522,674

13 Claims. (Cl. 312—242)

1. A guide structure for a longitudinally extensible ash receptacle, or a like device having a body member slidable in relation to a fixed mounting member, said structure comprising means providing a pair of parallel guide tracks each fixedly secured on a surface of one of said respective members and spaced vertically from one another in a substantially common plane, said tracks providing transversely spaced, parallel guide surfaces, and a slide unit having elongated, oppositely acting slide members spaced vertically from one another and movable longitudinally relative to one another in slidable engagement with and guidance by said respective guide surfaces, said slide unit being movable longitudinally relative to both of said tracks for a compound, double extension and retraction travel of said body member relative to said mounting member in the operation of said guide structure.

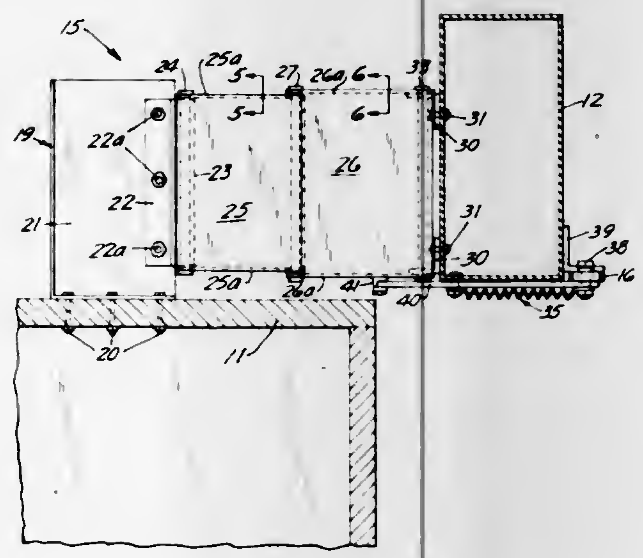


3,355,233
EXTENSIBLE RETAINING DEVICE

Buford W. Olson, Hopkins, Minn., assignor to Charles Olson & Sons, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed Oct. 7, 1966, Ser. No. 585,192

6 Claims. (Cl. 312—325)



1. An extensible retaining device adapted to extend from a retracted position to an extended position, said extensible retaining device adapted to be affixed to a mounting surface at one end and to a receiving frame at the other end to permit relative movement therebetween said extensible device comprising,

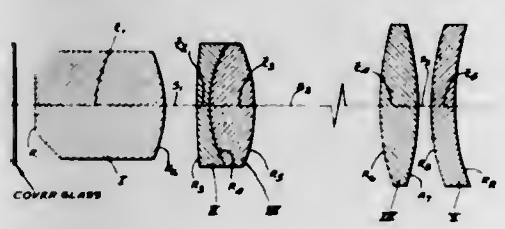
- a retracted position stop member adapted to be affixed to a mounting surface,
- an inner link member pivotally attached at one end to said retracted position stop member, said inner link member adapted to project outwardly of said stop member in the extended position and to engage said stop member in the retracted position,
- an outer link member pivotally attached at one end to the other end of said inner link member and at the other end adapted to be pivotally attached to the receiving frame said outer link member, in the extended position, adapted to extend substantially outwardly from the extended position of said first link member and, in the retracted position, adapted to contact said stop member in substantially superimposed relation relative to said inner link member, one of said link members having an extended position stop element attached thereto whereby movement past a predetermined position is retarded,
- lever means adapted to be pivotally attached to the receiving frame whereby said extensible device may be interchangeably positioned in the retracted position and in the extended position,
- a connecting rod pivotally attached at one end to said lever means and pivotally attached at the other end to said outer link member, and
- bias means adapted to urge said lever means and said connecting rod toward said outer link member, said bias means urging said lever means and said connecting rod to permit, in the retracted position, urging of said outer link member into contact with said stop member thereby locking said extensible device in the retracted position and, in the extended position, urging said outer link member in the predetermined position thereby locking said extensible device in the extended position.

3,355,234
FOUR COMPONENT MICROSCOPE OBJECTIVE

Robert M. Muller, Cheektowaga, N.Y., assignor to American Optical Company, Southbridge, Mass.

Filed May 18, 1964, Ser. No. 368,266

3 Claims. (Cl. 350—176)



1. In an optical system for microscopes of the type comprising: a telescope objective characterized by deliberately introduced undercorrected axial color, positive coma, and substantially zero spherical aberration, said telescope objective consisting of a positive singlet and a negative meniscus spaced rearwardly of the positive singlet and concave to the rear, and a microscope objective optically aligned with said telescope objective, said microscope objective being inherently afflicted both with lateral color and with tangential curvature of field and being characterized both by deliberately introduced overcorrected axial color and by deliberately introduced negative coma, the axial aberrations deliberately introduced in the microscope objective being opposite in sign and substantially equal to the corresponding axial aberrations deliberately introduced in the telescope objective, said telescope objective being spaced rearwardly from said microscope objective by an amount sufficient to permit the deliberately introduced axial aberrations of the telescope objective to substantially cancel, for the telescope objective-microscope objective combination, the inherent lateral color and tangential curvature of field contributions of the microscope objective while also leaving the said combination well corrected for axial color, spherical aberration and coma, the improvement comprising:

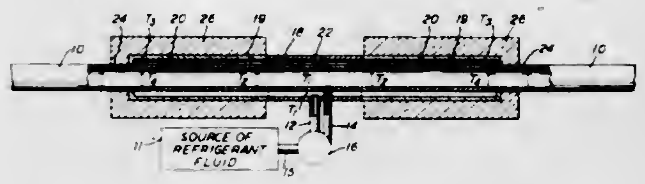
- said microscope objective consisting of three lenses, a single front lens and a cemented doublet,
- said front lens having a plano front surface and a rear surface working aplanatically, and being afflicted with undercorrected spherical aberration and undercorrected axial color,
- said doublet being shaped to maximize overcorrected spherical aberration thereof sufficient to cancel the undercorrected spherical aberration of both said front lens and said telescope objective, and having overcorrected axial color sufficient to cancel the undercorrected axial color of both said front lens and said telescope objective while being afflicted with positive coma,
- and said front lens being of a thickness to cancel the positive coma of both said doublet and said telescope objective.

3,355,235
GASEOUS LENS EMPLOYING REFRIGERANT EFFECT

Dwight W. Berreman, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 7, 1964, Ser. No. 402,170

3 Claims. (Cl. 350—180)



1. A structure for establishing a gaseous lens for focusing a beam of ultrahigh frequency electromagnetic wave energy comprising a section of conduit having a path substantially concentric with its longitudinal axis for the transmission of said beam, means impervious to fluid enclosing an annular space surrounding said section of conduit, an input port connected to said annular space for injecting a fluid under appreciable pressure to fill said space, said section of conduit including a portion permeable to said fluid under appreciable pressure and an adjacent portion of a material highly conductive to heat and impervious to fluid, both said portions being interposed between said enclosed annular space and the interior of said section of conduit, and an exhaust port connected to said section of conduit for removing gas from the interior of said section of conduit through the said adjacent impervious portion of said section.

3,355,236
AUTOMATIC OPTICAL CONTROL APPARATUS

Gordon Philip Taillie, Rochester, and Ralph R. Tilly, Ontario, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Jan. 2, 1964, Ser. No. 335,242

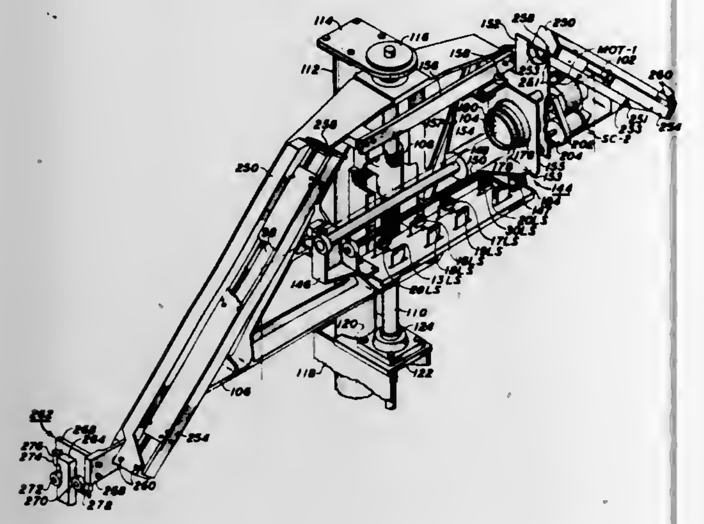
2 Claims. (Cl. 350—187)

1. An optical system for use in a document reproducing apparatus of the type wherein enlarged or reduced copies are made of an original document including:

- a support column;
- a frame movable alonge the length of the support column;
- means to move the frame along the length of the support column to vary the length of a light path within the document reproducing apparatus;
- a lens assembly movably mounted on the frame;
- an object mirror supported on the frame in a position to reflect a light image received from a source outside of the optical system to the lens assembly;
- an image mirror supported on the frame in a position to reflect a light image received from the lens assembly to a point outside the optical system;
- means to move the lens assembly to preselected positions between the object mirror and the image mirror;

control means to coordinate the position of the optical frame along the column and the position of the lens assembly including:

- a first series of switches with actuating mechanisms positioned in interference relationship with the movement of the frame along the length of the support column,
- a second series of switches with actuating mechanisms positioned in interference relationship with the movement of the lens assembly, and

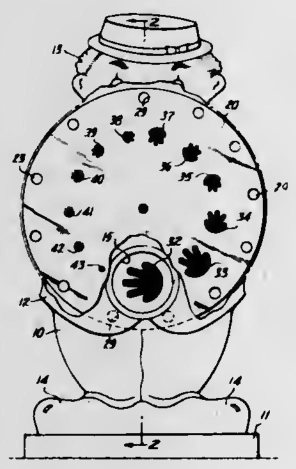


electrical circuit means connecting the first series of switches to the means to move the frame and the second series of switches to means to move the lens assembly and including selector means to control operation of the means to move the lens assembly through a desired switch in each of the first and second series of switches respectively, thereby permitting a predetermined selection of a light path for image enlargement or reduction.

3,355,237

VISUAL ACUITY TESTING APPARATUS WITH TEST CHARACTERS REPRESENTING STYLIZED HUMAN HAND

Winea J. Simpson, P.O. Box 46,
Loma Linda, Calif. 92354
Filed Jan. 15, 1963, Ser. No. 251,692
2 Claims. (Cl. 351—37)

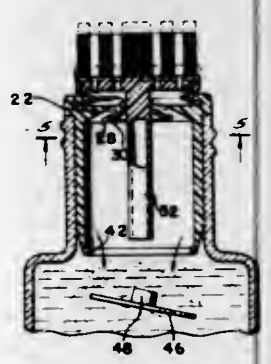


1. In a device for testing visual acuity; a generally flat opaque member having an opening therethrough; a translucent disc pivotally mounted on one side of said member on an axis spaced from said opening; a plurality of opaque means on said disc, each defining a visual acuity test character, each test character comprising a stylized representation of a human hand with the fingers and thumb thereof all pointing in the same general direction, the thumb and little finger being of the same size and configuration, said hand being symmetrical about a center line extending along the middle finger, the circumscribing outline of each representation being substantially circular and the width of the fingers being substantially equal to the width of spaces therebetween, at least adjacent said circular outline; each representation differing from certain others in the direction of orientation of their fingers on said disc and differing from the remaining representations in the size of their circular outlines; said characters being positioned on said disc to be selectively visible through said opening, from the other side of said member, upon rotation of said disc; and cooperating indicia and index means on said one side of said member and on said disc for identifying the particular character then visible through said opening and the direction of orientation of the fingers thereof.

3,355,238

MIXING ASSEMBLY FOR BRUSH-HEADED APPLICATOR

Gilbert Schwartzman, 20 Wilmot Circle,
Scarsdale, N.Y. 10583
Filed Aug. 31, 1966, Ser. No. 576,430
8 Claims. (Cl. 401—41)



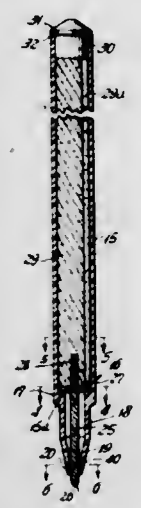
1. An applicator for use with a container provided with an open neck and having a first substance disposed therein, said applicator comprising a retainer ring having a projecting portion for reception in said neck, said ring having a valve opening therein forming a valve seat, a valve assembly including a valve stem extending through said opening and provided with a valve member engageable with said valve seat to close said opening and being movable with respect to said valve seat to control fluid flow through said opening, an applicator head integral with said valve stem, a resilient bellows secured to said ring, said bellows being connected to said applicator head, said projecting portion being provided with sealing means to hold a second substance within said retainer ring, said valve stem being engageable with said sealing means upon depression of said bellows to open said projecting portion to permit the second substance to mix with the first substance, said bellows normally urging said valve member against the valve seat to close said opening.

3,355,239

MARKING DEVICE

George J. Albrecht, Fairfield, Conn., assignor to Almar Industries, Inc., Norwalk, Conn., a corporation of Connecticut
Filed Oct. 22, 1965, Ser. No. 500,909
7 Claims. (Cl. 401—148)

1. A marking device comprising a tubular barrel having an elongate nib of a material capable of capillary action mounted therein and having a writing point projecting therefrom, said nib having a radial flange intermediate the ends thereof, and an ink bearing filler confined within the barrel and having the rear end of the nib embedded in the filler, the forward end of the filler abutting the radial flange and yieldingly holding said

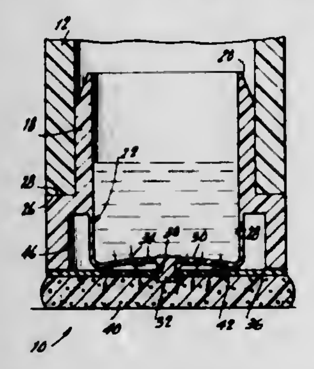


nib in said projecting position, the filler-contacting area of the radial flange being of substantially the same shape and extent as the end of the filler and said nib and filler cooperating to meter the flow of ink to vary the marking action in response to variation in the writing pressure thereon.

3,355,240

APPLICATOR WITH BONDED OR SNAP FITTED COVER

Gilbert Schwartzman, 20 Wilmot Circle,
Scarsdale, N.Y. 10583
Filed Apr. 15, 1966, Ser. No. 542,870
7 Claims. (Cl. 401—205)

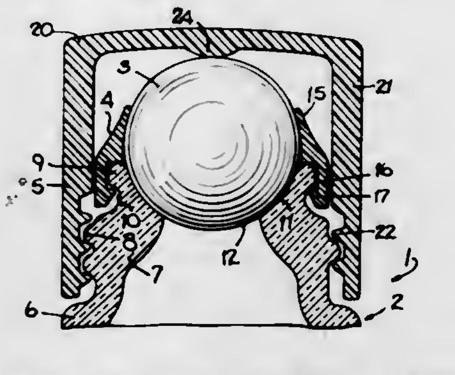


1. A fluid applicator comprising a retainer ring having a projecting portion extending downwardly therefrom and a peripheral flange extending upwardly therefrom, a dome shaped web flexible resilient integral with said retainer ring and having a flat top portion provided with a plurality of rows of apertures therethrough, said web having a side wall extending substantially coextensive with said flange, said flat top portion having an upwardly extending detent integral therewith, and a cover comprising a relatively thin rigid disk having a relatively thick resilient porous layer bonded thereto, said disk having a series of rows of bores therethrough offset from said rows of apertures, said disk having an opening therein through which said detent extends, said disk being secured to said flange with said disk normally abutting and overlying said flat top portion closing said apertures, said flat top portion being movable away from said disk upon application of force on said detent so as to permit fluid flow through said apertures and said bores.

3,355,241

APPLICATOR PACKAGE

Edward L. Rowe, Baltimore, Md., assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 497,221
3 Claims. (Cl. 401—213)



1. A dispensing applicator comprising a glass container for a liquid to be dispensed, said glass container comprising a body portion and a rim at its upper end forming a mouth, the inside of said mouth having an annular, spherical, ball-seating surface rounded to conform generally to the shape of a ball adapted to seat thereon, a ball seated in said seating surface, a retaining ring of flexible, resilient material adapted to be mounted over the mouth of the container to retain said ball in position for rotation relative to said seating surface, the inside of said retaining ring having an uninterrupted, curved, annular ball retaining surface rounded to conform generally to the shape of said ball, said seating surface in the bottle covering substantially one half of said ball, the retaining surface in the retaining ring having a portion with a diameter greater than the diameter of said ball adjacent the seating surface on the bottle and a portion having a diameter less than the diameter of said ball adapted to engage the ball above its maximum diameter to retain it in position, the outer surface of said bottle rim having an annular enlargement, said retaining ring having an annular channel adapted to be snapped over the annular enlargement on the container, said retaining ring adapted to hold the ball loosely on the seating surface in the container so that the ball may be moved slightly off said seating surface to facilitate the dispensing of the contents of the container, and means for causing the ball to seat tightly on said seating surface to seal the bottle.

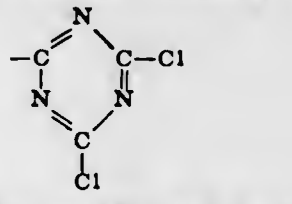
CHEMICAL

3,355,242

REACTIVE DYES AND METHYLOLATED-4,5-DIHYDROXY-IMIDAZOLIDONE-2, IN COLORING CELLULOSIC TEXTILES

Herman B. Goldstein, Cranston, and Michael A. Silvestri, Providence, R.I., assignors to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 11, 1960, Ser. No. 41,743
15 Claims. (Cl. 8—17)

1. The method of dyeing textiles to color them and impart wash and wear characteristics thereto, comprising dyeing said textile with a reactant dye having at least one reactive group from the class consisting of



and $SO_2—CH_2—CH_2—OSO_3H$ and impregnating said textile with a solution of between 2 and 20 weight percent of a compound from the class consisting of 1,3-dimethylol-4,5-dihydroxy-imidazolidone-2 and 1,3-dimethoxymethyl-4,5-dihydroxy-imidazolidone-2 in the presence of an acid catalyst and then drying and curing the resulting dyed, impregnated textile at temperatures between 200° F. and 400° F. for a period from 30 seconds to 600 seconds.

3,355,243
PROCESS FOR THE DYEING OF POLYACRYLONITRILE FIBERS

Jakob Bindler, Rieben, and Emanuel Durr, Arlesheim, Basel-Land, Switzerland, assignors to J. R. Geigy, A.G., Basel, Switzerland

No Drawing. Filed June 8, 1964, Ser. No. 374,233
Claims priority, application Switzerland, June 11, 1963, 7,284/63
19 Claims. (Cl. 8—55)

1. A process for the production of level dyeings on copolymeric acrylonitrile fibers having dyesites corresponding to a color saturation value above 2, comprising dyeing this material with an acid dye liquor which contains at least one basic dyestuff and, as dye assistant, a polyamine the molecule of which consists of a polyalkene polyamine moiety having from three to five quaternized basic nitrogen atoms, a polyglycol ether chain of from 10 to 50 ethyleneoxy groups and at least one lipophilic substituent, and steaming and rinsing the resulting dyeing.

3,355,244
PRODUCTION OF VANADIUM OXYTRICHLORIDE

Thomas R. Carter and Frederick Fahnoe, Ashtabula, Ohio, and Eugene P. Supinski, Tuscola, Ill., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed May 14, 1965, Ser. No. 455,977
13 Claims. (Cl. 23—17)

1. A process of preparing vanadium oxytrichloride which comprises establishing a fluidized bed in a reaction zone, said bed comprising less than about 15% by weight finely divided vanadium pentoxide, less than about 2% by weight of a finely divided carbonaceous material, and the remainder being an inert, finely divided, solid diluent fluidizing said bed with chlorine at a gas velocity sufficient to maintain said bed in a fluidized state, maintaining a reaction temperature in said bed within the range of about 950° to 1050° F., and recovering reaction product gases containing vanadium oxytrichloride.

3,355,245
PROCESS FOR PRODUCING COPPER TELLURIDE

Runyon G. Ernst, Woodbridge, N.J., assignor to American Metal Climax, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 6, 1964, Ser. No. 402,016
10 Claims. (Cl. 23—50)

1. A process for producing copper telluride in the form of CuTe comprising precipitating CuTe by adding copper in particulate form to an aqueous sulfuric acid solution having a temperature of at least 60° C. and containing tellurium dioxide in an amount in excess of its solubility in said solution and recovering said precipitated CuTe therefrom.

3,355,246
CRYSTALLINE ZEOLITE ZK-21

Guenter H. Kuehl, Morrisville, Pa., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed July 18, 1966, Ser. No. 565,715
9 Claims. (Cl. 23—113)

1. A solid crystalline aluminosilicate having the composition, in its dehydrated form, expressed in terms of approximate mol ratios of oxides as follows:

$$1.0\pm0.2M_{2/n}O:Al_2O_3.YSiO_2:ZP_2O_5$$

wherein M is a metal cation, *n* is the valence of M, Y is between about 1.9 and 4.5 and Z is between about 0.01 and $(Y+2)/_{48}$, said crystalline aluminosilicate having an X-ray diffraction pattern substantially as shown in Table 1.

3,355,247
PRODUCTION OF HIGH STRUCTURE FURNACE CARBON BLACK

Joseph C. Krejci and Murl B. Howard, Phillips, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed May 25, 1964, Ser. No. 369,876
11 Claims. (Cl. 23—209.4)

1. A process for producing a high structure furnace carbon black product, which process comprises:

introducing separate but coaxial and contiguous streams of (1) a normally liquid hydrocarbon feedstock having a BMCI value of at least 95 and (2) a free oxygen-containing gas having a free oxygen concentration of at least 33 volume percent into a body of hot combustion gases in a carbon black furnace, said gas being introduced in an amount sufficient to supply at least 7.4 s.c.f. of oxygen per gallon of said feedstock;

partially burning said feedstock in said furnace under carbon black producing conditions by the action of the heat contained in said hot combustion gases to produce said carbon black product;

and recovering said carbon black product from the effluent from said furnace.

3,355,248
PROCESS FOR PRODUCING HYDROGEN AND CARBON WITH AN ESSENTIALLY IRON-FREE CATALYST

John C. Hayes, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,661
4 Claims. (Cl. 23—209.5)

1. A method for improving the decomposition conversion of a normally gaseous hydrocarbon charge stream to carbon and hydrogen which comprises, contacting said stream at decomposition conditions with a catalyst consisting of alumina-silica and nickel, said catalyst containing less than 0.02% by weight of iron.

3,355,249
PRODUCING HYDROGEN AND POWER

Arthur M. Squires, 245 W. 104th St., New York, N.Y. 10025

Filed June 29, 1966, Ser. No. 561,449
5 Claims. (Cl. 23—213)

1. An improved process useful in the production of hydrogen and power, comprising:

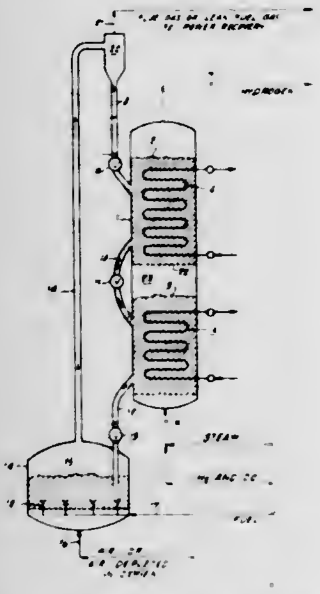
(a) supplying a pulverulent solid containing intermingled microscopic crystallites of calcium oxide and magnesium oxide to each of at least two fluidized beds;

(b) fluidizing a first bed at elevated temperature with a gas containing carbon monoxide and steam;

(c) subjecting offgas from said first bed to treatment which includes the employment of at least part of said gas to fluidize a second bed at a lower temperature which is below the equilibrium decomposition temperature of calcium hydroxide at the partial pressure of steam in said gas in step (b);

(d) withdrawing hydrogen product from said second bed; and

(e) withdrawing solid from each of said fluidized beds, and calcining the solid withdrawn from at least one

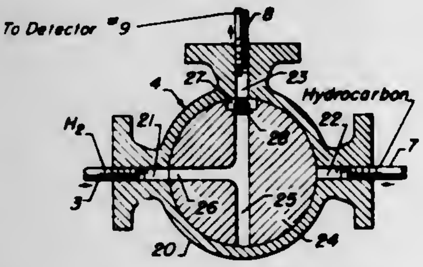


of the beds in a bed fluidized by air or air-depleted-in-oxygen and supplied with a fuel.

3,355,250
METHOD AND APPARATUS FOR DETERMINING THE DIFFUSIVITY OF POROUS SOLIDS

Robert L. Gorring, Haddon Heights, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Jan. 10, 1964, Ser. No. 336,987
19 Claims. (Cl. 23—232)



8. A method of determining the diffusivity of a porous solid which comprises contacting a particle of such porous solid with a gaseous hydrocarbon atmosphere for a time sufficient to saturate the pores of said particle with the hydrocarbon, then rapidly transferring the particle from said hydrocarbon atmosphere into a stream of gaseous hydrocarbon-free elutant while restraining the particle from substantial movement by said stream, and continuously measuring the hydrocarbon concentration in said stream as a function of time at a point downstream from the particle, and computing from such measurement the diffusivity of said porous solid according to nonsteady state diffusion theory as exemplified by Equation 1 of the specification.

3,355,251
DETERMINATION OF CHLORINE DIOXIDE

Paul Willis McConnaughey, Pittsburgh, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania

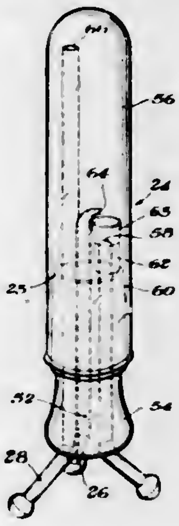
No Drawing. Filed Oct. 15, 1964, Ser. No. 404,188
3 Claims. (Cl. 23—232)

1. A method of detecting chlorine dioxide in a gas which comprises the steps of passing the gas to be tested through a body of inert granular solid carrying N,N,N',N'-tetraphenylbenzidine reagent, said body being confined within a transparent container and said reagent being changed to tan color by contact with chlorine dioxide.

3,355,252
LIQUID SAMPLE COMBUSTION APPARATUS

John A. De Bliek, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Jan. 4, 1965, Ser. No. 422,957
8 Claims. (Cl. 23—253)



1. Liquid sample combustion apparatus comprising

(A) an enclosed sample injection vessel having a top, bottom, and side walls, a fuel gas and sample inlet tube ending adjacent to said bottom, means for coupling gas to said gas and sample inlet tube, means for inserting sample liquid into said gas and sample inlet tube, a gas and sample outlet tube, said outlet tube being coupled to the top part of said vessel;

(B) means for heating said sample injection vessel;

(C) a sample burner assembly having, within an enclosed elongated envelope, a top and bottom, a vaporized sample and fuel gas tubular element having an orifice at one end thereof, a sleeve, said sleeve surrounding the orificed end of said sample and fuel gas tubular element and extending beyond said end, said sleeve having a diameter substantially larger than the diameter of said sample and fuel gas tubular element, an oxygen inlet tube, said oxygen inlet tube having an orifice directed towards the longitudinal axis of said sleeve and slightly above the end of the sleeve which extends beyond said sample and fuel gas tubular element, means near the top of said envelope for withdrawing combustion products from said envelope, and

(D) means for condensing combustion products removed from said burner assembly.

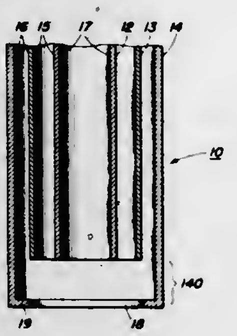
3,355,253
MULTI-TUBE BURNER

Peter Tillmann, deceased, late of Leverkusen, Germany, by Margarete Tillmann, sole heir, Cologne-Deutz, Germany, and Achim Külling and Gerhard Hitzemann, Leverkusen, Germany, assignors to Titangesellschaft m.b.H., Leverkusen, Germany, a corporation of Germany

Filed Apr. 10, 1964, Ser. No. 358,961
Claims priority, application Germany, Apr. 13, 1963, T 23,838
6 Claims. (Cl. 23—277)

1. A multi-tube burner for use in the manufacture of fine particle size TiO_2 by combustion of gaseous $TiCl_4$ with oxygen, or oxygen containing gases, in a reaction chamber in the presence of an auxiliary flame for maintaining combustion, said burner comprising at least three tubular members arranged coaxially and with their walls spaced radially with respect to each other thereby providing annular gas passages between the respective tubes, the gaseous $TiCl_4$ being fed through the innermost tube

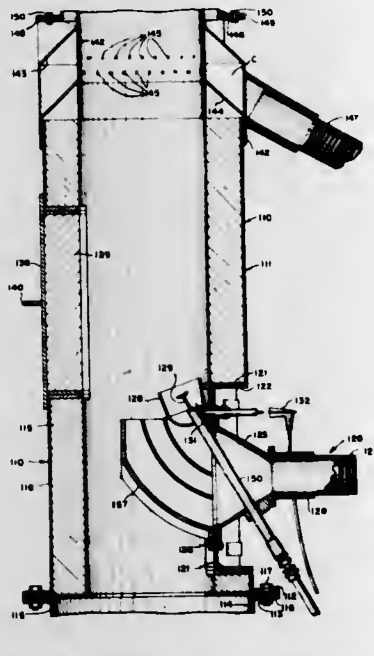
of the burner, and the oxygen or oxygen containing gases and the combustible gas being fed through the annular gas passages surrounding the innermost tube of the burner, the outermost tube of said burner being constructed with an extension provided with a restricted aperture, said restricted aperture being arranged concentric with said burner tubes and spaced longitudinally at least 5.0 mm. from the open ends of said gas passages, the area of said restricted aperture being no greater than the free cross-sectional area of said burner.



3,355,254
WASTE PRODUCTS COMBUSTION APPARATUS

Gordon H. Hoskinson, Floral Park, N.Y., assignor to Cornell-Hoskinson Mfg. Corp., Long Island City, N.Y., a corporation of New York

Filed Apr. 26, 1966, Ser. No. 545,353
2 Claims. (Cl. 23—277)

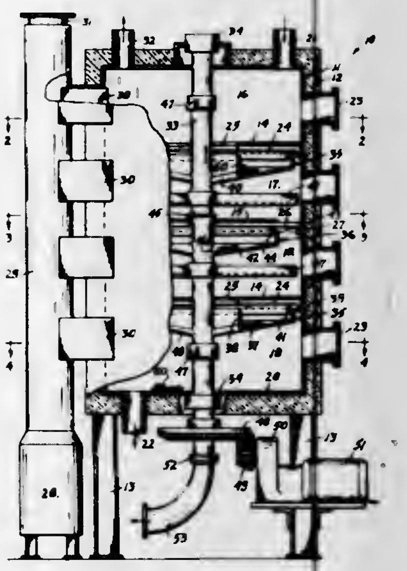


1. Apparatus for permitting the emission of waste products of combustion to the atmosphere in an unobjectionable state comprising; an inner exhaust smoke stack member adapted to be connected to a fire burning apparatus, said inner member forming a continuous passageway for the passing of waste products of combustion therethrough, said inner stack member including a lower portion adapted to be connected to a fire burning apparatus and having a refractory lining therewith, and a metal upper portion secured to the upper end of said lower portion, air supply means secured to said lower portion of said inner stack member adjacent the end to be connected to the fire burning apparatus to impart air thereinto, fuel dispensing means for imparting fuel into said inner stack member immediately adjacent said air supply means, ignition means for igniting said fuel to effect an initial burning of the waste products of combustion in the lower portion of said inner stack member; and an outer exhaust stack member secured to the upper portion of said inner stack member in circumferentially spaced, enveloping relationship, with at least that part of said inner stack member which is enveloped by said outer stack member being made of a material having high heat conductivity, the upper free end of said outer stack member being spaced well beyond the terminal free end of said inner stack member, the lower part of said upper portion of the inner stack member just above the upper end of the lower portion of the inner stack member and below the bottom free end of the outer stack member being provided with a plurality of upwardly inclined small apertures therearound, air supply means associated with said inner stack member for passing air through said apertures, said circumferentially spaced relationship of said outer stack member to said inner stack member forming a continuous, elongated air passageway in substantially sealed relationship therebetween of substantial length along which air will be drawn therethrough from the end of said outer stack member adjacent said air supply means and will be heated in heat exchange relationship with said inner stack member, said heated air mixing with the waste products of combustion emerging from the free end of said inner stack member to effect a self-ignition of such formed mixture to further burn the waste products of combustion within the outer stack member.

3,355,255
APPARATUS FOR RECOVERY OF TALLOW

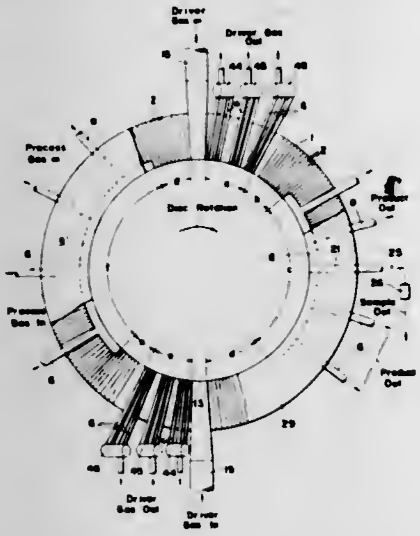
Emile J. Jemal, Yonkers, N.Y., assignor to Mine and Smelter Supply Co., Denver, Colo., a corporation of Colorado

Filed Oct. 8, 1965, Ser. No. 494,024
11 Claims. (Cl. 23—280)



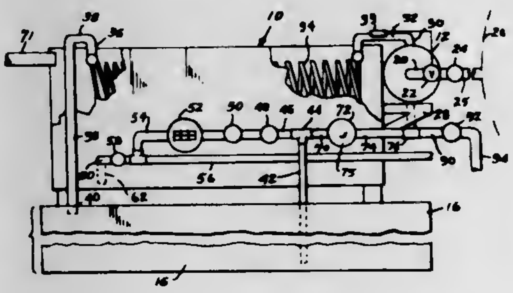
1. In an apparatus for recovery of tallow from waste animal flesh material, the combination of a vertically elongated housing, a plurality of foraminous partitions disposed in vertically spaced relation in said housing and separating the interior thereof into a plurality of material treatment zones, means for delivering material to be treated into the uppermost zone in said housing, said partitions leaving spaces so that material under treatment in one zone may drop into the next underlying zone and successively into the lowermost zone in the housing, means for delivering hot gases into the several zones of the housing to melt and extract tallow from materials on the respective partitions thereof, a hollow vertical shaft extending through the housing, a set of trays mounted on said shaft below the respective partitions for reception of melted tallow gravitating through the foraminous partitions from the material under treatment thereon, means for discharging melted tallow from said trays into said hollow shaft, and means for discharging material after treatment from the lowermost zone of said housing.

3,355,256
ADJUSTABLE PORT RING CONSTRUCTION
William B. Hansel, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Dec. 3, 1964, Ser. No. 415,764
6 Claims. (Cl. 23—284)



1. In a wave reactor utilizing a straight elongated shock tube rotatably driven about an axis transverse to its length within a port ring whose longitudinal axis is substantially collinear with the axis of rotation of said tube: an improved port ring assembly comprising a ring-shaped holder having a plurality of radially-extending grooves therein; a plurality of elongated members one of which is removably positioned in each respective one of said grooves, said members being alternatively of either tubular or solid construction; and a ring-shaped cover detachably secured to said holder to retain said members in position in the grooves while allowing, when said cover is detached from said holder, a change in the distribution of said members in said grooves.

3,355,257
ANHYDROUS AMMONIA CONVERTER
Harold W. Sorensen, St. James, Minn. 49782
Filed Nov. 12, 1963, Ser. No. 322,649
5 Claims. (Cl. 23—285)



1. An apparatus for converting anhydrous ammonia to an aqueous solution of ammonium hydroxide which comprises in combination:

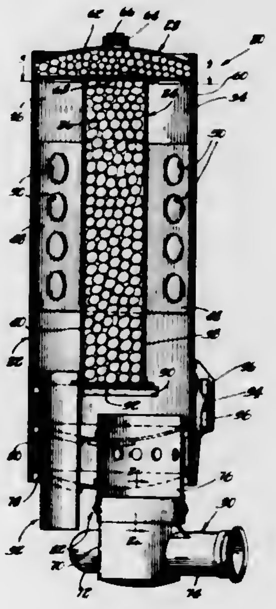
(A) a chamber for mixing anhydrous ammonia and water,
  (1) said chamber having an inlet and an outlet,
  (2) duct means connected to said inlet for connecting said chamber to a source of anhydrous ammonia under pressure,
  (3) distributor means within said chamber and connected to said inlet for distributing anhydrous ammonia within said chamber,
  (4) further duct means connected to said chamber for connecting said chamber to a source of water,
  (5) valve means in said further duct means for interrupting the flow of water after a predetermined volume of water has been admixed with anhydrous ammonia in said mixing chamber,

(B) a heat exchanger means for cooling newly formed ammonium hydroxide,
  (1) said heat exchanger including a first tank relatively larger in volume than said mixing chamber,
  (2) means for supplying a cooling medium to said first tank,
  (3) an elongated tortuous path duct within said first tank in indirect heat exchanging relationship with said cooling medium,
  (4) one end of said elongated duct being connected to the outlet of said mixing chamber,

(C) an ammonium hydroxide storage tank relatively larger in volume than said heat exchanger tank,
  (1) the other end of said elongated duct of said heat exchanger means being connected to said storage tank,
  (2) duct means connecting said storage tank to the inlet of said mixing chamber, and

(D) pump means in said duct between said storage tank and mixing chamber for circulating ammonium hydroxide between said storage tank and mixing chamber and from said mixing chamber through said heat exchanger means back to said storage tank.

3,355,258
CATALYTIC EXHAUST MUFFLER WITH INTERNAL RESERVOIR
Dean G. Thomas, Stoughton, Wis., assignor to Nelson Muffler Corporation, Stoughton, Wis., a corporation of Wisconsin
Filed Dec. 4, 1963, Ser. No. 327,907
2 Claims. (Cl. 23—288)

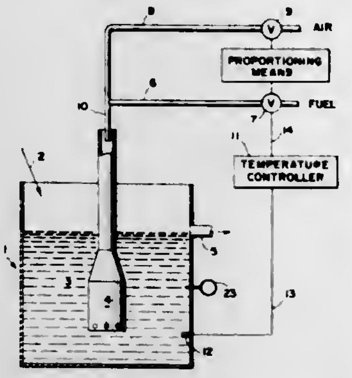


1. A muffling device for controlling an engine emission comprising: retention means for a particulate catalyst, said retention means including laterally spaced, substantially vertical planar walls of substantial height and having gas-passing apertures therein whereby to cooperate in establishing horizontal flow through said retention means; shell means surrounding said retention means and spaced apart from the faces of said walls to define separate inlet and outlet gas chambers; mounting means attaching said walls to said shell means and cooperating to isolate said chambers from each other; and reservoir means superposed on said retention means and having relatively large opening means communicating with said retention means for free movement of catalyst.

3,355,259
PROCESS FOR MELTING SULFUR

Delbert A. Lipps, New Orleans, La., James D. Best, Freeport, Tex., and Paul A. Rubero, New Orleans, La., assignors to Freeport Sulphur Company, New York, N.Y., a corporation of Delaware

Filed Feb. 3, 1964, Ser. No. 342,148
3 Claims. (Cl. 23—293)

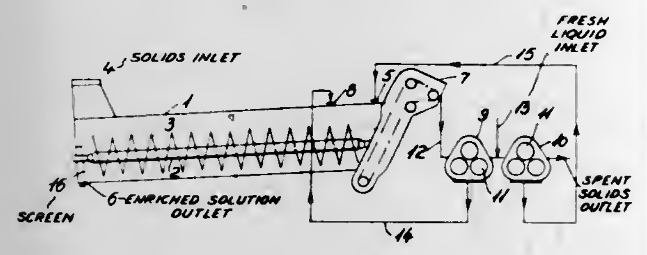


1. A method of melting solid sulfur comprising maintaining a body of molten sulfur between about 238 and 320° F., introducing hot combustion product gases into and below the surface of the molten sulfur in controlled amounts, adding solid sulfur into the molten sulfur, and withdrawing molten sulfur at about the same rate at which solid sulfur is added.

3,355,260
COUNTERCURRENT LIXIVIATION OF DISINTEGRATED MATERIAL WITH SUBSEQUENT MULTIPLE PRESSING AND RECYCLE OF EXPRESSED LIQUID

Henning Anton Brüniche-Olsen, Gentofte, Denmark, assignor to Aktieselskabet de Danske Sukkerfabrikker, Copenhagen, Denmark

Filed Dec. 28, 1964, Ser. No. 421,225
Claims priority, application Denmark, Jan. 13, 1964, 159/64
1 Claim. (Cl. 23—310)



A process for the continuous lixiviation of disintegrated material comprising the steps of supplying disintegrated material to one end of a continuous counter-current lixiviating trough, conveying said material through said trough to the other end thereof, removing said material from said other end of said trough, subjecting lixiviated material removed from said lixiviating trough at the other end thereof to a first pressing operation and at least one subsequent pressing operation, supplying fresh lixiviating liquid to said lixiviated material after it has been subjected to said first pressing operation and before subjecting it to said subsequent pressing operation, supplying the liquid resulting from said subsequent pressing operation to said other end of said lixiviating trough as primary lixiviating liquid, supplying the liquid resulting from said first pressing operation to an intermediate zone of said lixiviating trough as secondary lixiviating liquid passing said primary and secondary lixiviating liquid along said trough countercurrent to the movement of the material being lixiviated, removing said lixiviating liquid from the one end of the lixiviating trough as enriched solution.

3,355,261
CHEMICAL PROCESS

Henry C. Miller, Wilmington, Del., and Earl L. Muetterties, West Chester, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,652
12 Claims. (Cl. 23—362)

1. A process for preparing alkali metal and alkaline earth metal dodecahydrododecaborates which comprises reacting

(a) diborane,
(b) a tetrahydroborate selected from the class consisting of alkali metal tetrahydroborates and alkaline earth metal tetrahydroborates, and
(c) a compound selected from those of the formulas consisting of $RO(CH_2CH_2O)_mR'$, R'SR", RR'R"N and RR'R"P wherein R, R' and R" each are of up to 12 carbon atoms and are selected from the class consisting of alkyl and cycloalkyl, and R' and R" can be joined together to form a ring with the heteroatom, and wherein m is a cardinal number of from 2 to 6 inclusive,

at a temperature of at least 120° C. in the substantial absence of oxygen and water and at a pressure of about one atmosphere.

10. A process for preparing $Na_2B_{12}H_{12}$ which comprises reacting B_2H_6, $NaBH_4$, and $N(C_2H_5)_3$ at a temperature of from 120° C. to 300° C. in the substantial absence of oxygen and water and at a pressure of about one atmosphere.

3,355,262
CHEMICAL PROCESS

Francis M. Beaird, Jr., and Paul Kobetz, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

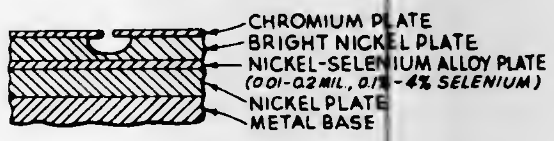
No Drawing. Filed Sept. 30, 1963, Ser. No. 312,281
7 Claims. (Cl. 23—365)

1. The process for making sodium aluminum tetrahydride comprising reacting sodium aluminum hexahydride, aluminum and hydrogen in the presence of an organic liquid reaction medium stable at reaction conditions, said medium being selected from the group consisting of ethers, aliphatic hydrocarbons, and aromatic hydrocarbons and the reaction being at a pressure of about 1000 to 5000 pounds per square inch and at a temperature of about 100 to 200° C.

3,355,263
THREE-LAYER NICKEL LAMINATE

Arthur H. Du Rose, Euclid, and William J. Pierce, Cleveland, Ohio, assignors, by mesne assignments, to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware

Filed Nov. 10, 1964, Ser. No. 410,062
11 Claims. (Cl. 29—183.5)


CHROMIUM PLATE
BRIGHT NICKEL PLATE
NICKEL-SELENIUM ALLOY PLATE
(0.01-0.2 MIL., 0.1%-4% SELENIUM)
NICKEL PLATE
METAL BASE

1. As a new article of manufacture, a laminated coating comprising a first nickel layer on a metal base to be protected, a second nickel electrodeposit consisting essentially of 0.1–10 percent by weight of selenium and overlying said first nickel layer and a third nickel layer overlying said second nickel layer, said first nickel layer being firmly bonded to said base, said second nickel layer being firmly bonded to said first nickel layer and said third nickel layer being firmly bonded to said second nickel layer.

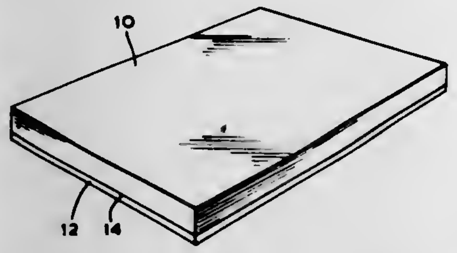
3,355,264

COMPOSITE IMPACT AND ABRASION RESISTANT MATERIAL

Philip C. Kempe, Toronto, Ontario, Canada, assignor to Canada Iron Foundries Limited, Montreal, Quebec, Canada

Filed Feb. 3, 1965, Ser. No. 430,078

1 Claim. (Cl. 29—183.5)



A composite impact and abrasive resistant plate comprising a wear resistant, brittle cast alloy component of a martensitic-austenitic matrix containing finely dispersed carbides compatible with the matrix material, said carbides being selected from the group consisting of the carbides of iron, chrominum, molybdenum, tungsten, vanadium and titanium; a second component of a ductile, machinable and weldable ferrous material being of such thickness that the ratio of the thickness of the first component to the thickness of the second component is between and including 3 to 1 and 15 to 1, said second component being fixed to said first component by means of an intermediate continuous layer of a vacuum brazed copper alloy adapted to form a metallurgical bond with each of said first and second components.

3,355,265

METHOD OF PRODUCING DUCTILE COATED STEEL AND NOVEL PRODUCT

Robert M. Hudson, Churchill Borough, Allegheny County, and Andrew Lesney, Frazer Township, Allegheny County, Pa., assignors to United States Steel Corporation, a corporation of Delaware

No Drawing. Filed Apr. 16, 1965, Ser. No. 448,875

14 Claims. (Cl. 29—183.5)

13. A steel foil product comprising a fully annealed, cold rolled steel base less than 0.004 inch thick having a protective metal coating from the group consisting of chromium, copper, nickel and titanium metallurgically bonded thereto at the interface but not completely alloyed therewith at the surface of said coating.

3,355,266

BLANKS FOR VEHICLE BUMPERS

Paul R. O'Brien, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Original application Oct. 26, 1960, Ser. No. 65,138, now Patent No. 3,212,941, dated Oct. 19, 1965. Divided and this application Aug. 26, 1965, Ser. No. 482,839

10 Claims. (Cl. 29—190)

1. A blank for an aluminum containing metallic automotive vehicle bumper formed from an irregularly cross-sectioned extrusion.

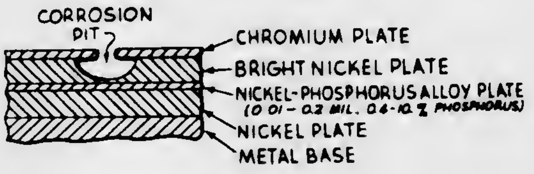
3,355,267

CORROSION RESISTANT COATED ARTICLES AND PROCESSES OF PRODUCTION THEREOF

Arthur H. Du Rose, Euclid, Ohio, assignor, by mesne assignments, to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware

Filed Feb. 12, 1964, Ser. No. 344,474

19 Claims. (Cl. 29—194)



1. As an article of manufacture a metal substrate and a laminate bonded to said metal substrate comprising three firmly bonded layers of nickel including an intermediate layer of a nickel-phosphorus alloy sandwiched between and in adherent contact with a phosphorus-free lower layer of nickel and a phosphorus-free upper layer of nickel said intermediate layer comprising from about 0.4% to about 10.0% by weight phosphorus.

18. A method of electroplating from an aqueous solution a corrosion protective composite coating on a metal surface susceptible to atmospheric corrosion which comprises the steps of (1) electroplating on said surface in at least one electroplating step an adherent layer consisting essentially of nickel having a thickness of about 0.3 mil to about 2 mils and sulfur content of less than about 0.15 percent, to thus form an adherent lower layer, (2) depositing directly on said lower layer in at least one plating step an adherent intermediate layer consisting essentially of a plate selected from the group consisting of nickel plate and nickel-cobalt alloy plate containing at least about 75 percent nickel, said intermediate layer having a thickness of about 0.01 mil to about 0.2 mil and an average phosphorus content of about 0.4 percent to about 10 percent, (3) electroplating directly on said intermediate nickel layer an adherent upper layer in at least one electroplating step consisting essentially of an electroplate selected from the group consisting of nickel electroplate and nickel-cobalt alloy electroplate containing at least about 50 percent nickel, said upper layer having a thickness of about 0.15 to about 1 mil and an average sulfur content of 0.03 to 0.3 percent, said upper nickel layer containing a lower percentage of sulfur than said intermediate nickel layer, and a higher percentage of sulfur than said lower layer, said top layer being plated from an aqueous nickel bath containing from about 0.004 to about 1 gram per liter of a bath soluble sulfur compound.

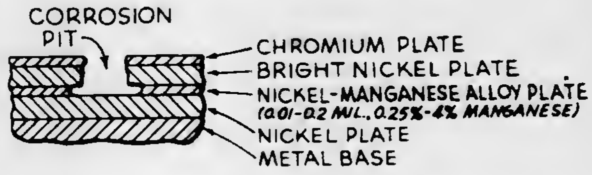
3,355,268

CORROSIVE PROTECTED COMPOSITE HAVING TRIPLATED NICKEL DEPOSITS AND METHOD OF MAKING

Arthur H. Du Rose, Euclid, and Karl S. Willson, Cleveland, Ohio, assignors, by mesne assignments, to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware

Filed July 22, 1964, Ser. No. 384,457

11 Claims. (Cl. 29—196.6)



1. A firmly bonded laminated corrosion-protective composite coating on a metal base susceptible to atmos-

pheric corrosion comprising as its essential layers three adjacently bonded layers of electrodeposits, the lower layer of which consists essentially of an electroplate selected from the group consisting of nickel electroplate and nickel-cobalt alloy electroplate containing at least about 50% nickel, the intermediate layer of which is a manganese-containing electroplate selected from the group consisting of nickel electroplate and nickel-cobalt alloy electroplate containing at least about 75% nickel, said manganese being present in said intermediate layer in sufficient quantity to render said intermediate layer anodic to its adjacent layers, and the upper layer of which consists essentially of an electroplate selected from the group consisting of nickel electroplate and nickel-cobalt electroplate containing at least about 50% nickel.

3,355,269
GELLED FUEL AND PROCESS

Joseph Winkler, Hazleton, Pa., assignor to General Foam Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed June 20, 1966, Ser. No. 558,615

8 Claims. (Cl. 44—7)

4. A gelled heating fuel composition comprising a normally liquid fuel containing at least one oxygenated hydrocarbon which is free of functional groups reactive with organic isocyanates and a high molecular weight polyurethane formed by reaction between a semipolymer which is soluble in said liquid fuel and has a molecular weight of at least about 1000, with a chain extending agent having at least two isocyanate functional groups per molecule; said semipolymer having at least two groups which are reactive with said isocyanate functional groups; and said liquid fuel containing a carbon and oxygen in a ratio not greater than about 7:1.

3,355,270
METAL CHELATE COMBUSTION IMPROVER FOR FUEL OIL

James W. Amick, Highland, and Russell A. Hunt, Jr., Griffith, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed June 3, 1963, Ser. No. 284,831

7 Claims. (Cl. 44—68)

1. A fuel composition comprising a major amount of a fuel oil and above about 100 lbs./1000 bbls. of said fuel oil of a catalytic metal chelate as a combustion catalyst for said fuel oil, said metal chelate being prepared by the process comprising:

(a) mixing at a temperature below about 140° F.
  (1) an alkyl para-substituted phenol having about 1–22 carbon atoms in said alkyl group, and
  (2) a polyamine having between 2 and 5 amino groups and an ethylene group linking each pair of amino groups,

thus forming a first reaction product;

(b) adding an aldehyde having from 1–2 carbon atoms, to said first reaction product at a temperature below about 176° F., thus forming a second reaction product;

(c) heating said second reaction product at a temperature of at least about 266° F. to form a chelating agent; and

(d) forming a metal chelate with said chelating agent, said metal being a transition metal having an atomic number from 22–29.

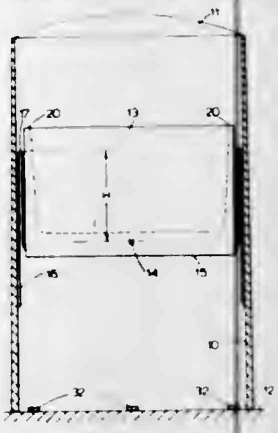
3,355,271
GAS HOLDER

Brian S. Soan, Addlestone, Weybridge, and Roy A. Waller, Carshalton, England, assignors to Kins Developments Limited

Filed Aug. 17, 1964, Ser. No. 389,942

Claims priority, application Great Britain, Aug. 16, 1963, 32,463/63

2 Claims. (Cl. 48—174)



1. A gas holder comprising a tank having an inner wall; a piston having an outer wall and movable up and down in the tank; a flexible diaphragm seal attached between said walls, the seal rolling on one of said walls and off the other as the piston moves and defining at all floating positions of the piston an inverted U-shaped gas-confining pocket; the top of said pocket being at a height above the center of gravity of the piston sufficient to render the piston self-stabilizing, the height of said pocket being always greater than

$$\frac{r}{\pi + 4/\pi}$$

where r is the radius of the piston.

3,355,272
ABRASIVE COMPOSITIONS AND STRUCTURES THEREOF COMPRISING A THERMOSETTING RESIN AND A THERMOPLASTIC POLYARYLENE POLYETHER

William J. D'Alessandro, Old Bridge, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 24, 1964, Ser. No. 413,620

18 Claims. (Cl. 51—298)

1. Abrasive composition comprising abrasive grains and a binding amount of a binder therefor comprising a heat hardenable resin and from about 1 to about 50 percent by weight, based on the weight of said resin, of a linear thermoplastic polyarylene polyether composed of recurring units having the formula

$$\text{+O—E—O—E'+}$$

wherein E is the residuum of a dihydric phenol and E' is the residuum of a benzenoid compound having an inert electron withdrawing group in at least one of the positions ortho and para to the valence bonds, and where both of said residua are valently bonded to the ether oxygens through aromatic carbon atoms.

3,355,273
METHOD FOR MAKING BUBBLE FREE FIBER OPTICAL IMAGE-TRANSFER DEVICES

Walter P. Siegmund, Woodstock, and Henry B. Cole, East Woodstock, Conn., assignors, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

Filed Nov. 19, 1962, Ser. No. 238,394

1 Claim. (Cl. 65—4)

A method for making a fused fiber optical image-transfer device comprising the steps of arranging a plurality of light-conducting optical fibers each embodying a core of light-transmitting glass material of relatively high index of refraction having gases dissolved therein and a cladding of light-transmitting glass material of relatively low index of refraction having gases dissolved therein in side-by-side relation in a bundle so that corresponding opposite ends of the fibers cooperate to define mosaic faces at respective opposite ends of the bundle, establishing and maintaining a superatmospheric fluid pressure in a zone immediately surrounding the fibers so that the surfaces of said fibers are directly subjected to said fluid pressure, said fluid pressure exceeding the equilibrium vapor pressure of said gases dissolved within said fiber glass materials at a fusing temperature of said materials, and heating the fibers to said fusing temperature while the fiber surfaces are subjected to said fluid pressure for fusing the fiber claddings together in vacuum-tight relation to each other.

3,355,274

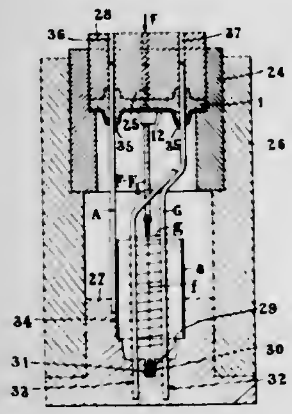
METHOD OF AND MEANS FOR MANUFACTURING ELECTRON TUBE SOCKETS

Pierre Patriarche, Courbevoie, and Roger Letournier, Colombes, France, assignors to Compagnie Industrielle Francaise des Tubes Electroniques, Timbaud, France

Filed Nov. 5, 1964, Ser. No. 409,252

Claims priority, application France, Nov. 8, 1963, 953,128, Patent 1,383,051; 953,129, Patent 1,383,052

6 Claims. (Cl. 65—23)



1. A method of manufacturing an electron tube base comprising, disposing temporarily in a supported condition a plurality of pre-shaped leads of said electron tube in positions relatively fixed corresponding to an arrangement of positions in which said leads are disposed permanently angularly spaced in said electron tube base, inserting said leads into lead-insertion holes receiving said leads on a disc-shaped, destructible, metallic film die and supporting said die on a bottom side surface thereof with said leads extending through said lead-insertion holes and transversely of said die, disposing glass particles over a top side surface of said die opposite to the bottom side surface, confining said glass particles and said destructible die in a space of confinement, melting said glass particles into an integral mass defining said base, applying pressure to the molten glass while confined directing pressure forces toward said die to make the molten glass flow into all portions of said space of confinement thereof to shape the molten glass into a desired configuration of said base and to flow about each lead along a limited axial length thereof for adherence to each lead and for holding said leads axially in fixed positions and fixed angularly relative to each other when the mass of molten glass hardens, setting the molten glass sufficiently for removal of said destructible die and said mass of glass thereon from the space of confinement thereof, removing said die and mass of glass from said space of confinement, and removing said metallic destructible die from the tube base.

6. A mold for manufacturing an electron tube base comprising, means for disposing temporarily in a supported condition a plurality of pre-shaped leads of said electron tube in positions relatively fixed corresponding to an arrangement of positions in which said leads are disposed permanently angularly spaced in said electron tube base including means for receiving a disc-shaped, destructible, metallic film die having lead-insertion holes and for supporting said die on a bottom side surface thereof with said leads inserted in said holes extending through said lead-insertion holes and transversely of said die, means defining a cavity for receiving glass particles over a top side surface of said die opposite to the bottom side surface including removable means cooperative with the last-mentioned means for confining said glass particles, said destructible die and a length of each of said leads adjacent said destructible die in a space of confinement of said cavity for melting said glass particles while confined into an integral mass defining said base and operable axially of said leads to apply pressure to the molten glass while confined directing pressure forces toward said die to make the molten glass flow to shape the molten glass into a desired configuration of said base and to flow about each lead along a limited axial length thereof for adherence to each lead and for holding said leads axially in fixed positions and fixed angularly relative to each other when the mass of molten glass hardens, and the removable means being selectively removable after setting of the molten glass sufficiently to allow removing said die and mass of glass from said space of confinement and removing of said metallic destructible die from the tube base.

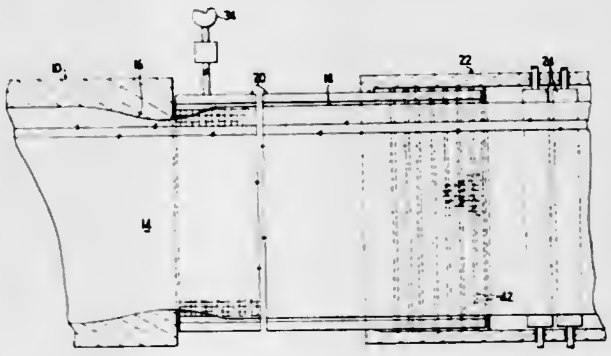
3,355,275

METHOD OF FORMING A GLASS RIBBON ON A GAS SUPPORT BED

John E. Sensi, Arnold, and William F. Galey, Saxonburg, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 24, 1963, Ser. No. 283,011

4 Claims. (Cl. 65—99)

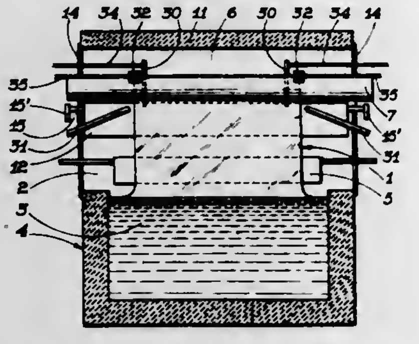


1. A method of forming glass sheets which comprises:
establishing above a flat forming surface a gaseous support capable of exerting an upward supporting pressure on a mass of molten glass when disposed thereon,
applying a mass of molten glass on said gaseous support to form a ribbon having lateral edges,
heating said gas of said support to a temperature sufficient to maintain said glass molten and flowable throughout,
flowing said molten glass laterally until it reaches a selected width,
thereafter cooling said glass at said selected width to a temperature below the melting temperature of the glass, and
removing said cooled glass from said gaseous support.

3,355,276

BENDING CHAMBER FOR THE MANUFACTURE OF SHEET GLASS BY DRAWING

Gustave Javaux, Brussels, Belgium, assignor to Glaverbel, Watermael-Boitsfort, Belgium, a Belgian company
Filed Sept. 10, 1963, Ser. No. 307,841
Claims priority, application Belgium, Oct. 31, 1962, 499,150
7 Claims. (Cl. 65—194)

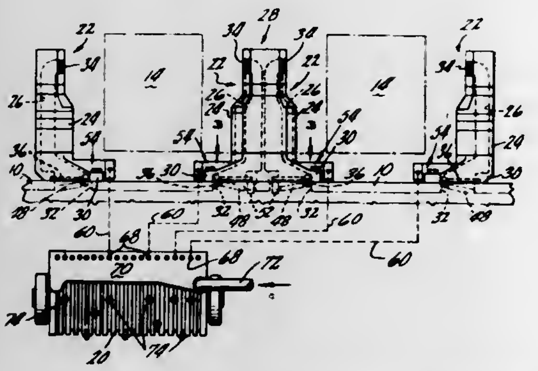


1. In apparatus for forming sheet glass comprising a drawing chamber through which the sheet is drawn vertically from a molten glass bath, a substantially closed bending chamber located above said drawing chamber, and an annealing chamber adjoining said bending chamber and offset from said drawing chamber, first baffle means shielding said bending chamber from said drawing chamber while permitting the glass sheet to pass vertically therethrough, second baffle means shielding said bending chamber from said annealing chamber while permitting the bent glass sheet to pass therethrough, and third baffle means forming at least one of the vertical walls enclosing said bending chamber, a bending roll in the bending chamber defined by said baffle means, means in said bending chamber for heating the edges of the glass sheet before the bending thereof about said bending roll, baffles disposed in the vicinity of the ends of the bending roll and shielding the central portion of the glass sheet from the radiation of said heating means, and temperature modifying means for modifying the temperature of that portion of the bent sheet that had been heated by said edge heating means to reestablish the thermal uniformity of the sheet before any substantial annealing takes place.

3,355,277

MOLD COOLING CONTROL APPARATUS FOR A GLASSWARE FORMING MACHINE

Joseph P. Miller, Tariffville, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Jan. 21, 1965, Ser. No. 426,724
6 Claims. (Cl. 65—355)



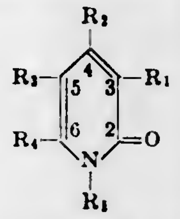
1. An improvement for cooling a glassware forming machine of the type having at least one mold which can be closed to form molten glass and then opened for removal of the formed object, and also having driven means for opening and closing the mold including a driven control member operable to effect the opening and closing in timed sequence, the said improvement comprising conduit means having an outlet opening for directing cooling air onto said mold and having a base for mounting said conduit means on the machine and which defines an inlet opening connectible with a source of cooling air under pressure, a damper pivotally supported on said conduit means in one of its said openings for movement between a first position at least partially closing the associated opening and a second more open position, means biasing said damper into one of its said positions, a fluid motor operable responsive to fluid under pressure to place said damper in its other position, and control means for said fluid motor including a valve connected thereto and connectible with a source of fluid under pressure, and valve actuating means carried by the control member of the machine to operate said valve and thereby to direct more air onto the mold when it is closed.

3,355,278

HERBICIDAL COMPOSITION AND METHOD

Edward D. Weil, Lewiston, and Jerome Linder, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Mar. 27, 1964, Ser. No. 355,498
19 Claims. (Cl. 71—94)

1. A method for repressing plant growth which comprises applying to a site of plant growth a growth-repressing quantity of a compound of the formula

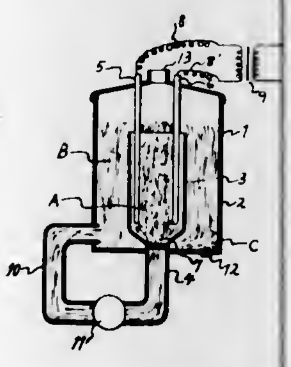


wherein R_1, R_2, R_3, and R_4 are selected from the group consisting of halogen, hydrogen, lower hydrocarbyl, lower hydrocarbyloxy, hydroxy, amino, lower hydrocarbylamino, nitro, carboxyl, carboxymethyl, and, in the case of adjacent members of the group of R_1, R_2, R_3 and R_4, the termini of a fused carbocyclic ring containing a total of from 5 to 8 carbon atoms, at least one of R_1, R_2, R_3 and R_4 is halogen and wherein R_5 is selected from the group consisting of hydrogen, a metal cation, an ammonium cation, lower hydrocarbyl ammonium and a lower acyl group and, whe nat least one of R_1, R_2, R_3 and R_4 is amino or lower hydrocarbyl amino, lower hydrocarbyl.

3,355,279

METHOD AND APPARATUS FOR MANUFACTURING MICROFINE METALLIC POWDER

Wataru Ishibashi, Toyonaka, Japan, assignor to Iwatani & Company, Ltd.
Filed May 18, 1965, Ser. No. 456,645
19 Claims. (Cl. 75—5)



1. A method of manufacturing microfine metallic powder, which comprises: charging a reaction chamber containing a pair of electrodes and water with coarse

grains of a metallic material; impressing a pulsating voltage between said electrodes of such magnitude that spark discharges occur among said grains devoid of arcing between said electrodes, the energy of said spark discharges comminuting said coarse grains and producing finer metallic particles.

3,355,280
HIGH STRENGTH, MARTENSITIC STAINLESS STEEL

Glenn W. Tuffnell, Ridgewood, and Frank W. Schaller, Ringwood, N.J., and Ralph B. G. Yeo, Mount Lebanon, Pittsburgh, Pa., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 25, 1965, Ser. No. 467,104
7 Claims. (Cl. 75—128)

7. A stainless steel having a martensitic microstructure with less than 5% delta ferrite and less than about 5% austenite and characterized by a yield strength of at least 100,000 pounds per square inch, said steel consisting essentially of 13% to 15% chromium, 4% to 6% nickel, carbon up to 0.12%, nitrogen in an amount up to about 0.1%, the sum of the carbon plus nitrogen not exceeding about 0.13%, up to about 1.5% molybdenum, up to about 1% manganese, up to about 1% silicon, up to about 0.15% aluminum, and the balance essentially iron.

3,355,281
METHOD FOR MODIFYING THE PHYSICAL PROPERTIES OF ALUMINUM CASTING ALLOYS

Virgil L. Hansley and Fred K. Morgan, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 22, 1964, Ser. No. 361,900
5 Claims. (Cl. 75—138)

1. A method for modifying the physical properties of aluminum casting alloys which comprises adding thereto a property-improving amount of an alkaline earth metal and an alkali metal in the form of a master alloy consisting essentially of about 0.5 to 20% by weight of an alkaline earth metal, about 0.01 to 1% by weight of an alkali metal, and about 79 to 99% by weight of aluminum.

3,355,282
ALLOYS OF ALUMINUM-CADMIUM-COPPER

Shiro Kudo, Sakai-shi, Seiichi Yada, Ube-shi, and Takayuki Yamauchi and Eiichi Fukasaku, Sakai-shi, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed June 7, 1965, Ser. No. 462,041
Claims priority, application Japan, June 10, 1964, 39/32,583
3 Claims. (Cl. 75—139)

2. Ternary alloy consisting essentially of aluminum, cadmium and copper, and containing

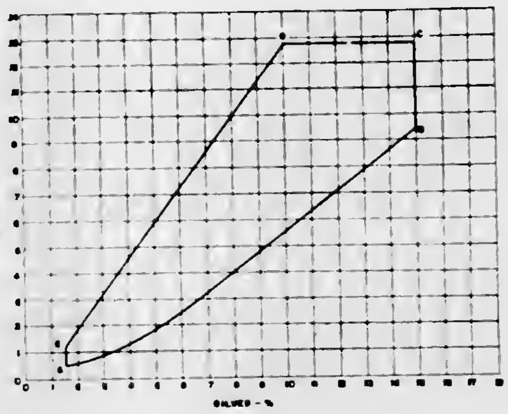
	Parts by weight
Aluminum	55.0
Cadmium	0.4
Copper	44.6

3,355,283
BRAZING ALLOY

Arthur T. Cape, Monterey, Calif., assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware

Filed June 11, 1965, Ser. No. 463,402
2 Claims. (Cl. 75—151)

1. A brazing alloy consisting of from about 1.5% to about 15% silver and about .05% to about 1.25% manganese in coordinated amounts falling within the ranges defined by the area bounded by the line ABCDEA in the accompanying drawing, the balance of the alloy being substantially all cadmium.



3,355,284
HEAT-TREATABLE CREEP-RESISTANT SOLDER

Douglas J. Harvey, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,204
6 Claims. (Cl. 75—166)

1. A high strength creep-resistant lead-based alloy comprising, by weight, 1.0 to 5.0% tin, 0.1 to 2.0% silver, 0.1 to 0.8% cadmium, and the balance substantially all lead.

3,355,285
CREEP RESISTANT SOLDER ALLOY

Douglas J. Harvey, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,313
2 Claims. (Cl. 75—166)

1. A high strength creep resistant lead based alloy comprising, by weight, 1% to 5% tin, 0.1% to 2% silver, 0.1% to 0.4% zinc, and the balance substantially all lead.

3,355,286
NICKEL BASE ALLOY

Dean N. Williams, Horace R. Ogden, Allen W. Hodge, and Frank F. Schmidt, Columbus, Ohio, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Jan. 28, 1965, Ser. No. 428,884
1 Claim. (Cl. 75—170)

An alloy consisting of essentially 45% by weight of tungsten, 10% cobalt and 45% nickel and characterized by excellent fabricability, ductility and toughness, capable of being cold rolled and drawn >50%.

3,355,287
COBALT-BASE ALLOYS

Arthur T. Cape, Monterey, Calif., assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware

No Drawing. Filed May 26, 1965, Ser. No. 459,109
3 Claims. (Cl. 75—170)

1. A cobalt-base alloy, especially adapted for hard facing and brazing purposes, said alloy consisting of from .05 to 2% carbon, 0.5 to 5% silicon, 1 to 3.5% boron, 18 to 32% iron, and the remainder essentially all cobalt, the minimum amount of cobalt being 64%.

3,355,288

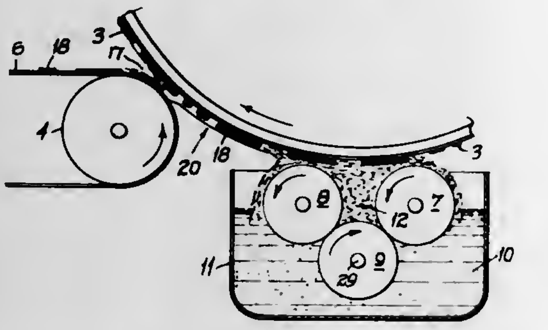
ELECTROSTATIC PRINTING METHOD AND APPARATUS

Josef Matkan, Malvern, South Australia, Australia, assignor to Research Laboratories of Australia Pty. Limited, North Adelaide, South Australia, Australia

Filed Nov. 17, 1964, Ser. No. 411,795

Claims priority, application Australia, Nov. 19, 1963, 37,824/63

7 Claims. (Cl. 96—1)



3. An improved method of effecting electrostatic printing in which a master having a photoconductor surface thereon carrying an insulating section is carried on a cylinder, and while the cylinder is rotating subjecting the master to a corona discharge to charge the insulating image bearing sections, then discharging the non-insulating sections of the photoconductor surface by light, then passing the charged areas through a developer station and applying liquid developer against the surface of the master without mechanical contact between the applicator mechanism and the master, then moving the developed master to a transfer station while maintaining a film of liquid developer on the master, and then passing the developed image from the master to a receiving member carried around a roller spaced from the face of the master to leave a gap between the surface face of the master and the receiving member wherein such gap is filled by developer liquid, and applying an electrical field through the developer in the gap to transfer the developed image from the master to the receiving member.

5. A machine for effecting electrostatic printing comprising a cylinder adapted to contain a master having insulating and relatively conducting sections forming an image, a combined charging and transfer station adjacent the cylinder including a transfer roller over which a web of material which is to receive the final print is passed, said spacing of the roller in relation to the master on the cylinder being such as to leave a gap between the web and the surface of the cylinder to hold a film of developer liquid carried by the master and said roller being positioned in relation to the cylinder so that its horizontal axis is within thirty degrees of the horizontal centerline of the master cylinder, high voltage generating means to apply a charging current between the roller and the cylinder, and a developer station adjacent the cylinder comprising rollers adjacent the cylinder but not in contact with the master thereon, means to supply developer to the said rollers, means to drive the cylinder, means to drive the transfer roller to cause the web to move in the same direction at the same peripheral speed as the master on the cylinder, and means to drive the developer rollers to lift developer against the master on the cylinder, the gap between the developer rollers and the cylinder being such that developer is carried from the developer station to the transfer station by the master on the cylinder whereby printing of the image on the master is effected by liquid developer applied to the surface of the master and transfer is similarly effected by electrical transfer through a film of liquid between the surface of the master and the web.

3,355,289

CYCLICAL XEROGRAPHIC PROCESS UTILIZING A SELENIUM-TELLURIUM XEROGRAPHIC PLATE

Richard Harrison Hall, Syracuse, and Mortimer Levy, Scarsdale, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed May 2, 1962, Ser. No. 191,818

2 Claims. (Cl. 96—1.4)

1. An imaging method comprising:

(a) providing a xerographic plate having an electrical conductive support, a layer of long electron range vitreous selenium overlaying said support, and a layer overlying said vitreous selenium layer comprising a selinum-tellurium alloy containing between about 5 to 40 percent tellurium by weight;

(b) electrostatically charging said plate to a negative potential;

(c) exposing said plate to a pattern of light and shadow to form a latent electrostatic image;

(d) developing the plate with electroscopically attractable material to form an image;

(e) transferring the image to a support material;

(f) charging said plate to a positive potential, whereby said plate is regenerated for further use.

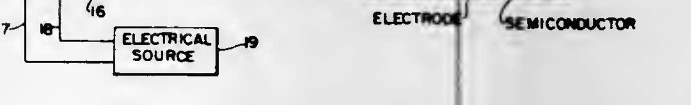
3,355,290

ELECTRO-CATALYTIC PHOTOGRAPHY

Jean J. Robillard, 210 Harris Ave., Woonsocket, R.I. 02903

Filed June 27, 1962, Ser. No. 205,600

13 Claims. (Cl. 96—1.5)



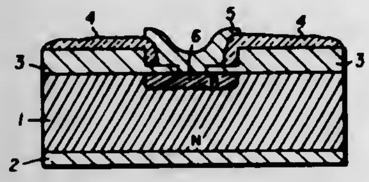
1. An electro-catalytic photographic recording medium comprising a semiconductor oxide having two oxidation states of different color, said oxide being substantially in the higher state of oxidation and doped with an impurity in a quantity to render said semiconductor oxide sensitive to the introduction of a relatively small number of metal ions of a solid catalyst with an electric field to change said oxide by catalytic action from the higher to a lower state of oxidation, and a photoconductive material distributed over a surface substantially coextensively with said oxide.

8. The method of producing a substantially permanent visible photographic record characteristic of a radiation image comprising the steps of projecting said image on a sensitized surface comprising a semiconductor material having two oxidation states of different color and a photoconductive material, said semiconductor being substantially in the higher state of oxidation and doped with an impurity in a quantity to render said semiconductor material sensitive to the introduction of a relatively small number of ions of a solid metal catalyst, placing a solid catalyst source in contact with said surface and impressing an electric field throughout said surface to inject said metal ions of said catalyst into said surface in accordance with the conductivity of said photoconductive material causing said semiconductor material to convert to said lower oxidation state in selected areas thereof.

3,355,291

APPLICATION OF GLASS TO SEMICONDUCTOR DEVICES

Stephen S. Baird, Richardson, and James A. Cunningham, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 8, 1963, Ser. No. 314,743
7 Claims. (Cl. 96—27)

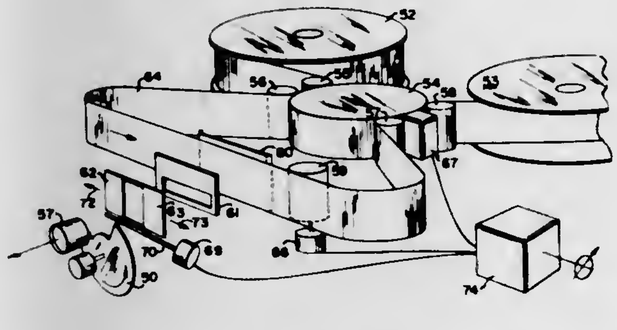


1. The method of selectively applying a layer of glass to a semiconductor device comprising the steps of: applying a slurry of glass in a photoresist polymer to the surface of a semiconductor device, exposing the surface of the device through a mask to a light source, developing the photoresist polymer to form the configuration left by the mask, heating the device in an oven containing an oxygen atmosphere to a temperature sufficiently high to melt the glass deposited thereon and to burn away the polymer remaining on the device.

3,355,292

CINEMATOGRAPHIC PROCESS

Floyd E. White, Jr., 3008 Verdugo Road, 4, Los Angeles, Calif. 90065
Filed Aug. 13, 1962, Ser. No. 216,669
5 Claims. (Cl. 96—39)



1. A cinematographic method for the production of motion pictures on a film strip having a continuously variable aspect ratio, comprising the steps of:

intermittently exposing a series of visible images onto a standard motion picture film strip so that the major axis of the image frames extend in the direction of the major axis of the film strip,

masking the film strip during said exposing step to selectively define the area and dimensions of each exposed image frame,

selectively varying the frame-to-frame displacement of the film strip during said exposing and masking steps to correspond to the major linear dimensions of the image frames defined by said masking step, and thereafter

processing the film strip through standard film processing equipment to provide a completed film having visible images thereon.

2. A cinematographic method for the production of motion pictures on a film strip having a continuously variable aspect ratio, comprising the steps of:

intermittently exposing a series of visible images onto a standard motion picture film strip so that the major axis of the image frames extend in the direction of the major axis of the film strip,

masking the film strip during said exposing step to fixedly define the height of each image frame along the transverse axis of the film strip,

selectively masking the film strip during said exposing and height-masking steps to variably define the width of each image frame along the longitudinal axis of the film strip,

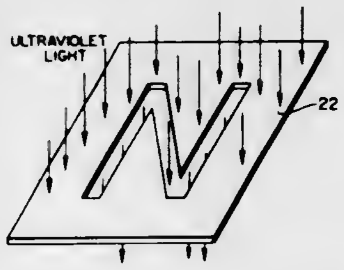
selectively varying the frame-to-frame displacement of the film strip during said height-masking and width-masking steps to correspond to the selected image frame width, and thereafter

processing the film strip through standard film processing equipment to provide a completed film having visible images thereon.

3,355,293

CONVERSION OF BENZO-INDOLINOSPIROPYRAN IMAGE TO FIXED RED IMAGE

Peter L. Foris, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Feb. 26, 1964, Ser. No. 347,437
9 Claims. (Cl. 96—48)



1. The process for converting an image formed by ultraviolet light in a thin layer of molecules of a benzo-indolinospiropyran which consists of the steps of (a) subjecting the layer to NO_2 gas; and (b) subjecting the layer of (a) to heat sufficient to raise the temperature until the image becomes red in hue by reflected light.

3,355,294

PHOTOCHROMIC COMPOSITIONS CONTAINING BLEACHING RATE ACCELERATORS

Sydney Arthur Giddings, New Canaan, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Dec. 9, 1964, Ser. No. 417,234
14 Claims. (Cl. 96—90)

1. A composition of matter comprising (1) a polymer, (2) a solvent therefor, (3) a metal compound having the formula

$$MX_mO_n(OR)_p$$

wherein M is a metal selected from the group consisting of titanium, zirconium, tungsten, hafnium, tantalum, zirconium, chromium, vanadium and niobium, X is a halide, R is selected from the group consisting of an alkyl radical having from 1–12 atoms, inclusive, an aryl radical having from 6–10 carbon atoms, inclusive, and

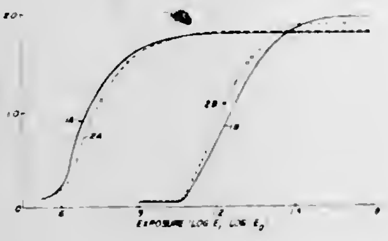
$$\underset{\underset{O}{\|}}{-C}-R^1$$

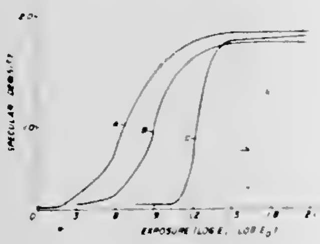
R^1 is selected from the group consisting of an alkyl radical having from 1–12 carbon atoms inclusive, and an aryl radical having from 6–10 carbon atoms, inclusive, m and p are whole positive integers of from 0–6 inclusive, and n is a whole positive integer of from 0–2, inclusive, the total of $2n$ plus m plus p being equal to the valence of the metal M, at least 1 of m and p being an integer of at least 1, at least one of said polymer and said solvent containing oxygen, and (4) 0.01 mol to 5.0 mols, per mol of (2), of a metal salt which, in solution, has an oxidation potential of from about —.30 to about —1.65.

3,355,295
NUCLEATED VESICULAR FILM

William J. Priest, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Feb. 11, 1964, Ser. No. 344,071
3 Claims. (Cl. 96—91)





1. In a vesicular film comprising a support having coated thereion a layer comprising a water-insoluble, thermoplastic, polymeric binder having a permeability constant for nitrogen ranging from 1×10^{-11} to 1×10^{-15} and a compound which releases nitrogen upon imagewise exposure to radiation, the improvement which comprises adding to said layer a wax in particulate form dispersed as a discontinuous phase throughout said binder to provide nucleation sites for the formation of nitrogen bubbles in said binder.

3,355,296
PROCESS OF CULTIVATING HIGH PROTEIN CONTAINING MICRO-ORGANISMS ON HYDROCARBON FEED MIXTURES

Michael B. Perkins, Linden, N.J., and Louis E. Furlong, Madison, Wis., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed May 6, 1964, Ser. No. 365,391
19 Claims. (Cl. 99—14)

1. A process for preparing a high protein food which comprises:

(a) providing an inoculant of aerobic microorganism cells, water and oxygen;

(b) supplying to said inoculant a feed mixture comprised of

  (1) C_1 to C_{35} n-hydrocarbons containing less than 0.1 weight percent aromatics in an aqueous growth medium containing in its essential components water, a nitrogen compound, a phosphorus compound and water-soluble inorganic salts of sodium, potassium, magnesium, calcium, iron and manganese, and

  (2) An oxygen containing gas to form a biosynthesis bath;

(c) establishing and maintaining in said biosynthesis bath an upper froth zone wherein the weight ratio of froth bacteria to froth hydrocarbons exceeds 1.0 to 1, and a lower slurry zone;

(d) establishing and maintaining in said biosynthesis bath a weight ratio of bacteria cells in said froth to bacteria cells in said slurry in excess of 1.0 to 1;

(e) establishing and maintaining in said biosynthesis bath a weight ratio of hydrocarbons in said froth to hydrocarbons in said slurry of less than 2 to 1;

(f) removing a froth mixture of bacteria cells, aqueous growth medium and unconverted hydrocarbons from said froth zone;

(g) separating bacteria cells from the remainder of said froth mixture, and

(h) drying the separated bacteria cells to obtain directly a high protein food.

3,355,297
PROCESSES FOR TREATING WORT

Keith Christopher Stowell, Newark, England, assignor to J. M. Collet & Company Limited, Gloucester, England

No Drawing. Filed Jan. 9, 1964, Ser. No. 336,620
Claims priority, application Great Britain, Jan. 25, 1963, 3,188/63
10 Claims. (Cl. 99—52)

1. The method of at least partially removing anthocyanogens from wort, which comprises introducing into wort mash an additive soluble in aqueous solution selected from the group consisting of formaldehyde and polymers thereof in amounts of 50 to 500 parts per million parts by weight of the grist from which the wort is made, and at a stage in production of the wort sufficiently early to avoid undesirable side effects otherwise caused by said additive.

3,355,298
PROCESS OF MAKING CHEMICALLY ACIDIFIED SOUR CREAM TYPE PRODUCTS

Ira Loter, Fair Lawn, N.J., assignor to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,415
8 Claims. (Cl. 99—54)

1. A process of preparing a chemically fermented sour cream type product comprising the following steps:

(a) preparing an emulsion by emulsifying a fatty component selected from the group consisting of edible fatty vegetable oils, edible hydrogenated oils, edible animal fats and mixtures thereof into milk, said milk having a butterfat content of from about 0.01% by weight to about 5% by weight and a total non-fat solids content of 8% to 16% by weight in the presence of an edible organic emulsifying agent having a melting point below about 140° F., said fatty component being present in said emulsion in an amount sufficient to provide a total fat content in said emulsion of from about 7% to about 25% by weight,

(b) homogenizing said emulsion at a pressure of at least 1,000 p.s.i.g. while heating said emulsion to a temperature of from about 110° F. to 200° F.,

(c) heating said emulsion to a temperature of from about 160° F. to 225° F., said emulsion having intimately introduced therein at least 0.01% by weight of said emulsion of an edible organic colloidal stabilizer,

(d) adding to said emulsion at least one compound selected from the group consisting of non-toxic edible acids and acidogens which are capable of forming non-toxic acids upon slow hydrolysis while maintaining substantially the same total fat content of said emulsion,

(e) agitating said emulsion and said compound until the pH of the emulsion falls within the range of from about 3.5 to about 6, so as to form a thick viscous sour cream type product.

3,355,299

METHOD OF PREPARING DEEP FAT FRIED FRENCH AND STRING POTATOES

Richard L. McLaughlin, American Falls, and Earl E. Anderson, Pocatello, Idaho, assignors to Lamb-Weston, Inc., Portland, Oreg., a corporation of Oregon

Filed Aug. 24, 1964, Ser. No. 391,432

6 Claims. (Cl. 99—100)

1. A process of producing an improved frozen French fried potato product from raw potatoes comprising segmenting said potatoes into strips, water blanching said strips for about 3½ minutes to about six minutes at a temperature of from about 155° F. to about 165° F., oil blanching said strips for from about 50 seconds to about 90 seconds at a temperature at from about 270° F. to about 325° F., then freezing said strips, initially deep fat frying said strips for from about 4 minutes to about 5 minutes at a temperature of from about 300° F., to about 340° F., air cooling said strips for a time sufficient to reduce the temperature of said product to about 120° F., and deep fat re-frying said strips for from about 1½ to about 2 minutes at a temperature of from about 300° F. to about 325° F.

3,355,300

DRY ICE CREAM MIX COMPOSITION AND A METHOD FOR PRODUCING SAME

Araxia B. Avedikian and Souren Zacharia Avedikian, both of 34 Athens Road, Short Hills, N.J. 07078

No Drawing. Filed May 20, 1963, Ser. No. 281,781

2 Claims. (Cl. 99—136)

1. A process for preparing a dry composition of matter, an ice cream mix, which comprises the blending of an oil of vegetable origin selected from the group consisting of corn oil, cottonseed oil, peanut oil, soybean oil, and coconut oil, the total amount of the oil constituting about 2.95 to 10.05 percent, with suitable emulsifying agents selected from the group consisting of polyoxyethylene sorbitan monostearate, polyoxyethylene sorbitan tristearate, polyoxyethylene sorbitan monooleate, a monostearate derivative of propylene glycol fatty acid, and a palmitate derivative of propylene glycol fatty acid, the total amount of emulsifying agents being from about 1.8 to 4.09 percent, heating such blend to make it fluid enough to pour, contacting this fluidized mixture with powdered materials consisting of corn hydrolyzate as a secondary sweetening agent and a bodying agent together with primary sweetening agents selected from the group consisting of sucrose, cyclamate, and saccharin, the corn hydrolyzate constituting from about 12 to 39 percent and the sucrose constituting from 22 to 30 percent when used as the principal sweetener, protective agents selected from the group consisting of methyl cellulose, sodium carboxymethyl cellulose, and natural gums, wherein intimate contact is brought about between the fluidized mixture and the powdery solid particles by pressure and friction, until the mass becomes an essentially uniform powdery mixture both in consistency and in appearance, and then mixing this with about 36 to 57 percent of non-fat milk solids and with flavoring materials and additional protective agents, all percentages herein being by weight in the dry mixture.

3,355,301

FLAVOR IMPROVEMENT FOR FOODSTUFFS COMPRISING TREATING FOODSTUFFS WITH A COMPOUND OF THE GROUP OF 5(4)-AMINO-4(5)-IMIDAZOLECARBOXAMIDE RIBOSIDE-5'-PHOSPHORIC ACID AND NON-TOXIC SALTS THEREOF

Hsing T. Huang, Groton, and Gilbert M. Shull, Old Lyme, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Aug. 28, 1963, Ser. No. 305,223. Divided and this application Dec. 7, 1966, Ser. No. 616,141

12 Claims. (Cl. 99—140)

1. A process for improving the flavor of a foodstuff which comprises treating said foodstuff with a compound selected from the group consisting of 5(4)-amino-4(5-imidazolecarboxamide riboside-5'-phosphoric acid and the non-toxic salts thereof.

3,355,302

ANTI-SPATTERING PLASTIC SHORTENING

Edward R. Purves, Springfield Township, Hamilton County, Louis H. Going, Loveland, and Robert D. Dobson, Greenhills, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 24, 1964, Ser. No. 339,909

5 Claims. (Cl. 99—163)

1. A plastic shortening suitable for frying and baking comprising fatty glyceride having admixed therewith from about 0.2% to about 1.0%, by weight, of an acid-treated fatty acid monoester of polyoxyethylene sorbitan containing an average of about 20 oxyethylene units per molecule, said fatty acid having from about 12 to about 22 carbon atoms per molecule, said acid treatment being sufficient to give the monoester a pH of less than 7 in the presence of a trace of water, and from about 0.01% to about 0.25%, by weight, of an oil-insoluble, water-soluble salt of phosphoric acid.

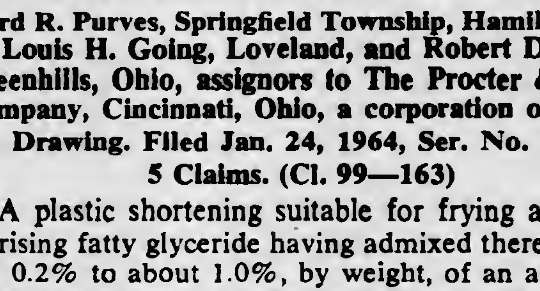
3,355,303

BREAD PACKAGE

George L. Meyers, Menasha, Wis., assignor to American Can Company, New York, N.Y.

Filed June 29, 1964, Ser. No. 378,503

3 Claims. (Cl. 99—173)



2. A package comprising a product such as a loaf of bread and a heat shrinkable bag having superposed sheets in-folded at one end to form a gusset and seamed along side edges to form a tubular bag with an open end, the gusset including a flat bottom portion and spaced recessed portions which terminate at the side seams, an opening in one of the recessed portions of the gusset to serve as a valve for exhausting air from the bag, said opening being so positioned as to be closed by the gusset after the air is exhausted from the bag.

3,355,304
TWO-STAGE COOKING AND DEHYDRATING PROCESS FOR POTATOES AND LIKE VEGETABLES

John A. Barnes, Circle Pines, and Harry C. Nora, Minneapolis, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed May 27, 1964, Ser. No. 370,457
14 Claims. (Cl. 99—207)

1. An improved dehydration process for potatoes and the like including at least two successive cooking steps the first of which is carried out at a lower temperature than the second and a drying step the improvement comprising carrying out the first cooking step with the potatoes in a whole condition and the second cooking step after the potatoes have been divided into pieces.

3,355,305
INSOLUBILIZATION OF PROTEINS WITH SULFOLANES

Paul M. Westfall, St. Albans, W. Va., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Sept. 14, 1964, Ser. No. 396,356
12 Claims. (Cl. 106—146)

1. The method for insolubilizing water-soluble protein which comprises contacting said protein with a 3,4-dihalotetrahydrothiophene 1,1-dioxide, each of whose halogen atoms has an atomic number of from 17 to 53, inclusive, in an aqueous medium having a pH of from about 7.5 to about 10 and thereafter evaporating the water from said aqueous medium.

3,355,306
EPOXY FOAMS PREPARED BY THE REACTION OF A POLYEPOXIDE WITH A BOROXINE AND AN AMINE BORANE

Anthony J. Krol, Evans City, Pa., assignor to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed May 13, 1964, Ser. No. 367,215
8 Claims. (Cl. 106—122)

1. A foamed resinous product obtained from the reaction of a mixture comprising a liquid polyepoxide reaction having an epoxy equivalent value greater than 1.0, with from 0.1 to 140 parts per 100 parts polyepoxide of a boroxine selected from the group consisting of lower trialkoxyboroxines and triaryloxyboroxines, and a catalytic amount sufficient to form a foamed product of an amine borane in which the amine is a hydrocarbon amine having from 2 to 12 carbon atoms.

3,355,307
SINGLE MIX STARCH ADHESIVE

John J. Schoenberger, Downers Grove, and Raymond P. Citko, Chicago, Ill., assignors to Corn Products Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 21, 1964, Ser. No. 398,061
10 Claims. (Cl. 106—213)

1. A process for preparing a corrugating adhesive which comprises:

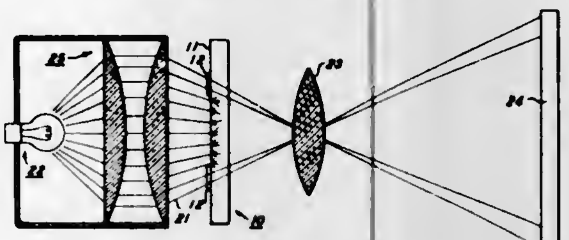
(1) preparing a heated reaction mixture of ungelatinized starch selected from the group consisting of unmodified starch and chemically modified starch, water, and alkali in proportions such that the mixture contains between about 10% and about 40% starch solids by weight and the pH is between about 8 and about 13, with the temperature of said mixture ranging from about 165° F. to about 70° F.;

(2) allowing the reaction to proceed until a Stein Hall viscosity of about 20 to about 90 seconds is reached, and

(3) stopping the reaction by addition of a reaction stopper whereby the gel point of the reaction mixture after said series of steps is thus adjusted to between about 135° F. and about 160° F.

3,355,308
PROJECTION TRANSPARENCY HAVING A TRANSPARENT POWDER IMAGE

Lewis E. Walkup, Columbus, Ohio, assignor, by mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York
Original application June 24, 1963, Ser. No. 289,904, now Patent No. 3,196,765. Divided and this application Dec. 24, 1964, Ser. No. 420,870
3 Claims. (Cl. 117—9)



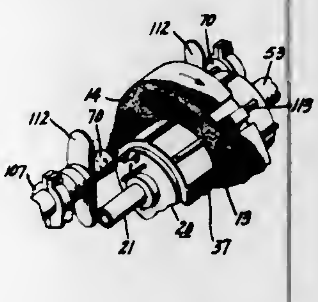
1. A projection transparency comprising:

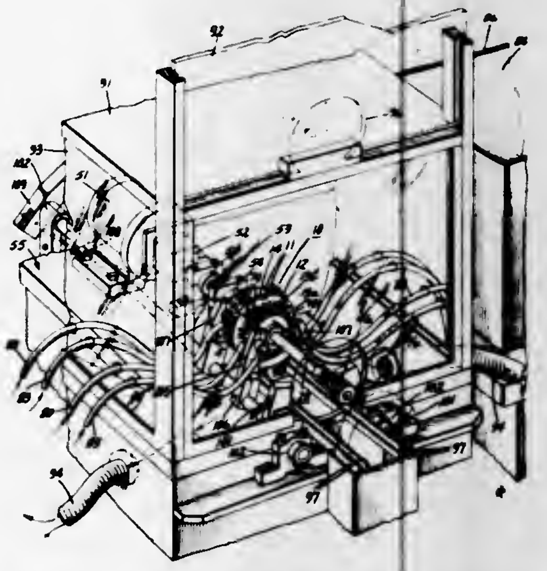
(a) a support member of normally transparent material having a light diffusing surface; and

(b) a transparent powder image on said surface.

3,355,309
METHOD AND APPARATUS FOR APPLYING COATINGS ONTO ARTICLES OF MANUFACTURE

Norman A. Bender and Robert O. Kerr, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York
Filed July 15, 1963, Ser. No. 295,020
15 Claims. (Cl. 117—18)





1. A method of forming an adherent integral layer of insulating material on the walls of winding accommodating slots extending axially through a core for use in dynamoelectric machines and on the slot edges at each side of the stator core, with the stator core having slot entrance walls in communication with a peripheral surface thereof, the method comprising the steps: mounting the stator core on a support having axial ribs extending between the slot entrance walls; intiating relative rotation between powder applying devices and the stator core while the surfaces to

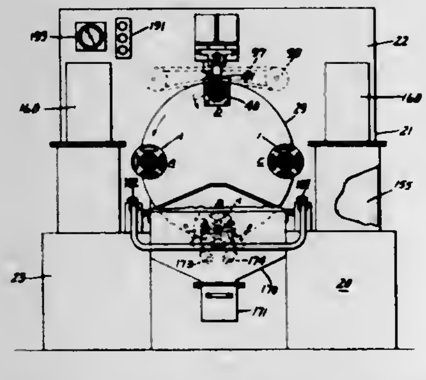
be coated are heated at least as high as the temperature at which the powder to be applied coalesces; directing a mass of insulating layer-forming powder toward the side faces and slot edges of the stator core during said relative rotation concurrently from at least one powder applying device adjacent each side of the stator core, with the ribs aiding in the prevention of powder buildup on the slot entrance walls adjacent to the ribs and with the direction of application from one side being in generally facing relation to the direction of application of one of the devices on the other side to establish a flow pattern within the slots for depositing the powder in a coalesced coating thereon; and hardening the coalesced coating into an adherent, integral layer covering the slot walls and edges.

9. In an apparatus for applying a mass of solid powder insulating material, which coalesces when heated into an adherent integral protective layer, onto heated walls of winding accommodating slots having slot entrances adjacent a bore and extending axially through a magnetic stator core and on the slot edges at each side of the stator core; an assembly having means for concurrently supporting and rotating the stator core while masking a part of the stator core including selected surfaces of the slot entrances and adjacent bore not to be coated, said assembly being expandable between a retracted position in which the stator core may be moved relative to the assembly means and an expanded position in which a part of the core including portions of the slot entrances is frictionally engaged by said assembly means, said assembly means being insensitive to the heat of the core, means including a valve connected to said assembly for controlling the flow of fluid toward and away from said assembly to operate said assembly means between said retracted and expanded positions and to maintain said assembly means in said expanded position; means for rotating the assembly in the expanded position when the core is supported thereon; and a plurality of powder applying devices mounted adjacent said assembly in spaced relation with one another for directing powder toward the side faces and slots of the core as said assembly and core rotate, at least one powder applying device on one side of the core having an applicator mouth in generally angularly offset, opposed relation to an applicator mouth of one of said devices disposed on the other side of the core, said generally opposed mouths establishing a turbulent flow pattern in the slots for depositing powder in a generally uniform coating on the walls thereof.

3,355,310
METHOD OF FORMING LAYERS OF INSULATING MATERIAL IN SLOTS OF MAGNETIC CORES

Milton V. de Jean and Dean E. Shaffer, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York

Filed July 15, 1963, Ser. No. 295,073
6 Claims. (Cl. 117—18)



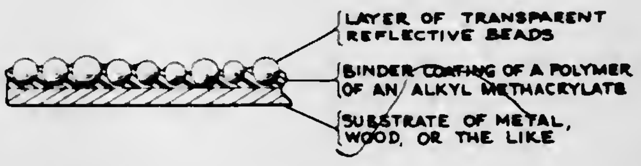
1. The method of forming a layer of insulating material on the surface of axially extending winding accommodating slots, and slot edges of a magnetic core for use in an electric inductive device comprising the steps: mounting the core in pre-heated condition onto a holder and moving the holder into firm frictional engagement with a selected surface of the core for support thereof; driving the holder and core held thereby into a spray coating station; applying insulating material in powder form onto at least the slot surfaces thereof from powder applicators disposed at least at one location adjacent each side of the core while concurrently turning the holder at a speed sufficiently low to permit the disposition of powder on the slot surfaces throughout the axial length of the slots and covering the slot edges, thereby to form a generally uniform coating thereon with the holder being maintained in communication to a source of fluid pressure, and with the holder aiding to prevent the formation of a layer of insulating material on at least the selected surface of the core frictionally engaged thereby; driving the core and holder away from the coating station, and removing the coated core from the holder within twelve seconds from the time of powder deposition on the slot surfaces to prevent the formation of a hardened insulating bridge at the selected surface of the core adjacent holder.

3. The method of claim 1 in which the insulating material is applied onto at least the slot surfaces at a pressure not substantially in excess of six p.s.i. from the powder applicators as the holder is turned at a speed not substantially above thirty r.p.m. thereby to insure powder collision in the vicinity of the axial center of the slots without appreciably reducing the pre-heated condition of the core.

3,355,311
REFLECTIVE COATINGS

Karl R. Gosselink, Rocky River, Ohio, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 22, 1963, Ser. No. 317,881
2 Claims. (Cl. 117—33)


LAYER OF TRANSPARENT REFLECTIVE BEADS
BINDER COATING OF A POLYMER OF AN ALKYL METHACRYLATE
SUBSTRATE OF METAL, WOOD, OR THE LIKE

1. A reflective surface consisting of a substrate having thereon an adherent layer of a binder coating comprising a thermoplastic polymer of an alkyl methacrylate and attached to said binder coating a layer of small, transparent, reflective beads of a thermoplastic polymer of at least one alkyl methacrylate, said beads having a diameter of from about 5 to about 40 mils, said binder coating and said beads both being of the same thermoplastic polymer.

2. A reflective surface consisting of a substrate having thereon an adherent layer of a binder coating comprising a thermoplastic polymer of methyl methacrylate and attached to said binder coating a layer of small, transparent, reflective beads of a thermoplastic polymer of methyl methacrylate, said beads having a diameter of from about 5 to about 40 mils.

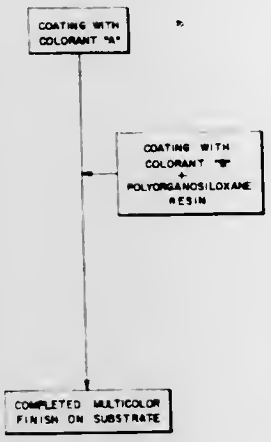
3,355,312
MULTICOLOR COATING PROCESS AND COATED ARTICLE

Charles H. Coney, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Nov. 27, 1963, Ser. No. 326,345
8 Claims. (Cl. 117—41)

1. Process of preparing a multicolored coating on a substrate which comprises first applying to said substrate, in any order, a first coating comprising 20–40 parts mixed fatty acid ester of cellulose containing acetyl and

fatty acid radicals of 3–4 carbon atoms; 20–60 parts alkylated ureaformaldehyde resin; 10–30 parts polyepoxide compound; 0.1–10 parts acid catalyst; and a colorant; and then applying over said first coating, a second coating comprising 20–40 parts mixed fatty acid ester of cellulose containing acetyl and fatty acid radicals of 3–4 carbon atoms; 20–60 parts alkylated ureaformaldehyde resin; 10–30 parts polyepoxide compound; 0.1–10 parts acid catalyst; 0.005 to about 1 part polyorganosiloxane resin and a different colorant than that employed in said first coating.


COATING WITH COLORANT "A"
COATING WITH COLORANT "B" + POLYORGANOSILOXANE RESIN
COMPLETED MULTICOLOR FINISH ON SUBSTRATE

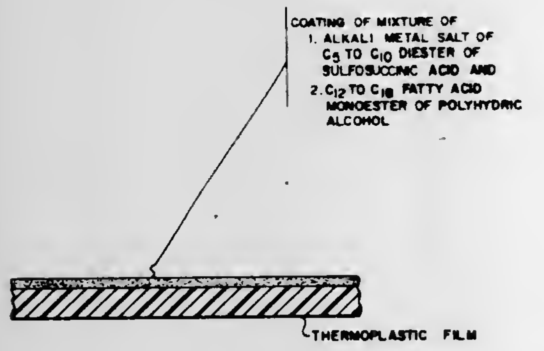
3,355,313

METHOD OF RENDERING THERMOPLASTIC MATERIAL ANTI-FOGGING AND RESULTANT ARTICLE

Frank E. Eastes, Spartanburg, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

Filed Aug. 24, 1964, Ser. No. 391,745

13 Claims. (Cl. 117—47)


COATING OF MIXTURE OF
1. ALKALI METAL SALT OF C_5 TO C_{10} DIESTER OF SULFOSUCCINIC ACID AND
2. C_{12} TO C_{18} FATTY ACID MONOESTER OF POLYHYDRIC ALCOHOL
THERMOPLASTIC FILM

13. A process for improving the antifogging characteristics of polyethylene film comprising:

(a) subjecting at least one surface of said film to corona discharge treatment,

(b) dissolving 0.01 to 0.5 weight percent of a sodium diester of sulfosuccinic acid and 0.05 to 0.75 weight percent of glyceryl mannitan laurate in a solvent selected from the group consisting of alkyl alcohols and alkyl acetates having 2 to 5 carbon atoms per molecule to form solution A, the ratio of the latter to the former being 10:1 to 1:1,

(c) uniformly dispersing 0.05 to 2.0 weight percent finely divided polyvinyl chloride in solution A to form solution B,

(d) coating the corona treated film surface with solution B, and

(e) removing substantially all of said solvent from said coating by drying.

3,355,314

COATING METHOD FOR GLASS FABRIC AND PRODUCT THEREOF

Roland K. Gagnon, Kraainem, Brussels, Belgium, and Frank J. Lachut, Pawtucket, R.I., assignors to Owens-Corning Fiberglas Corporation, Toledo, Ohio, a corporation of Delaware

No Drawing. Filed May 21, 1964, Ser. No. 369,296

9 Claims. (Cl. 117—72)

1. The method of coating a fabric consisting of woven glass fibers to improve the abrasion resistance of the fabric; said method comprising the steps of: applying to the woven glass fiber fabric a composition including (a) polyvinyl alcohol, (b) an alkylated resin selected from the group consisting of alkylated urea aldehyde resins and alkylated melamine aldehyde resins, (c) a catalyst for said resin, (d) colloidal silica and (e) water; said composition being an aqueous solution excepting for the colloidal silica dispersed therein; said resin and polyvinyl alcohol being respectively present in a ratio of from 3.5:1.0 to 8.0:1.0 and said colloidal silica constituting about 2.5% by weight of the alkylated resin; drying the coating; applying a second coating of a dilute solution of a Werner-type complex compound having an acido group of at least 10 carbon atoms; and drying the second coating to drive off the diluent and insolubilize the Werner-type complex compound on the coated fibers of the fabric.

3,355,315

PROCESS FOR TREATING OILY SURFACES WITH POLYEPOXIDE COMPOSITIONS

Robert M. Jorda and Thomas J. Robichaux, Houston, and Noyes D. Smith, Jr., Bellair, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 27, 1962, Ser. No. 226,754

1 Claim. (Cl. 117—97)

A process for treating the interior surfaces of a conduit which comprises pumping through the conduit a volume of reactant-depositing liquid containing enough compound having a plurality of amino hydrogen atoms to leave a film of liquid containing that compound on the surfaces being treated; pumping through the conduit, immediately behind the reactant-depositing liquid, inert liquid having a significant but incomplete solubility in the reactant-depositing liquid, using a volume of inert liquid sufficient to maintain a separation between the reactant-depositing liquid and fluid pumped through the conduit behind the inert liquid; pumping through the conduit, immediately behind the inert liquid, a volume of liquid containing sufficient polyepoxide having more than one vic-epoxy group to contact substantially all of the film deposited by the reactant-depositing liquid.

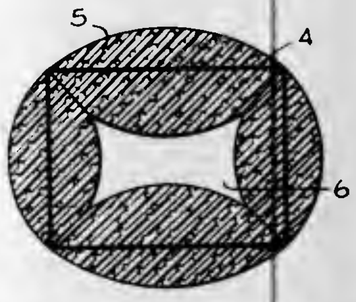
3,355,316

FOAM PRODUCT AND PROCESS

Carl Hellman, West Engelwood, and John Bogdany, Lodi, N.J., assignors to General Foam Corporation, New York, N.Y., a corporation of New York

Filed Nov. 6, 1963, Ser. No. 321,904

12 Claims. (Cl. 117—98)



1. A cellular, resilient, substantially non-porous polyurethane structure consisting essentially of an open cell

polyurethane foam substrate in which the major proportion of the strands describing the open cells are surrounded with a foamed polymer which is formed from ethylenically unsaturated monomers.

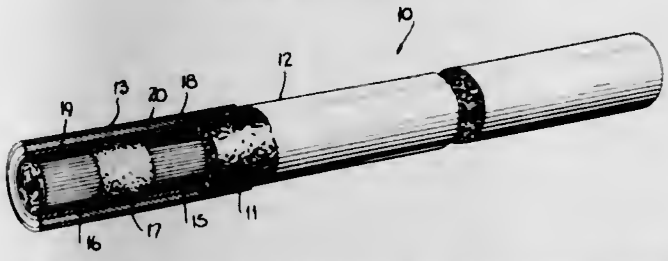
3,355,317

PROCESS OF IMPREGNATING ADSORBENT MATERIALS WITH METAL OXIDES

Charles H. Keith II, Charlotte, Vello Norman, Chapel Hill, and William W. Bates, Jr., Durham, N.C., assignors to Liggett & Myers Tobacco Co., New York, N.Y., a corporation of New Jersey

Filed Mar. 18, 1966, Ser. No. 535,601

6 Claims. (Cl. 117—100)



1. A process for impregnating an adsorbent material for use as a tobacco smoke filter, which comprises the steps of

(1) soaking an adsorbent material selected from the group consisting of activated carbon, alumina, natural and synthetic clays and silica gel and having a particle size of 8 to 300 mesh and having a surface area in excess of 1 million square centimeters per gram in an aqueous ammoniacal impregnating solution consisting essentially of at least about 20% by weight of ammonia and at least one metal compound selected from the compounds of cobalt, copper and zinc which are soluble in said solution and decomposable into an oxide of said metal,

(2) removing said adsorbent material from said impregnating solution,

(3) drying said adsorbent material in an inert atmosphere by (a) heating to a temperature in the range of about 160° C. to about 180° C. in from about 5 minutes to about 30 minutes and (b) thereafter heating at a temperature in the range of about 200° to about 500° C. to cause said metal compound to be decomposed into an oxide of said metal, and

(4) recovering an adsorbent material product impregnated with at least one metal oxide selected from the oxides of cobalt, copper and zinc.

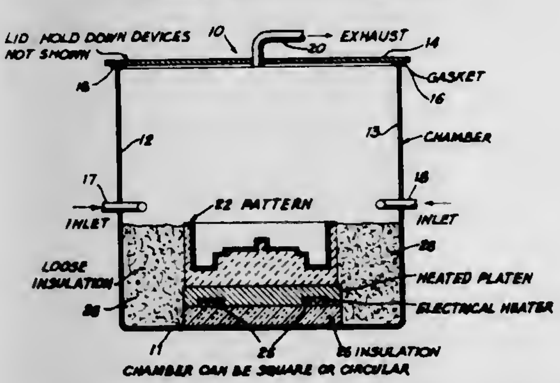
3,355,318

GAS PLATING METAL DEPOSITS COMPRISING BORON

William C. Jenkin, Dayton, Ohio, assignor to Union Carbide Corporation, New York, N.Y.

Filed Sept. 26, 1963, Ser. No. 311,892

3 Claims. (Cl. 117—107.2)



1. A method of producing hard metal coatings composed of boron and other metals by gas plating which comprises bringing a gaseous mixture comprising a heat-decomposable boron hydride selected from the group consisting of boranes, diboranes, tetraboranes and pentaboranes and a heat-decomposable carbonyl of a metal selected from the metals of Groups VI–b, VII–b and VIII of the Periodic Table of elements, in contact with a metal substrate heated to a temperature at which said gaseous mixture decomposes to form metals and produce on said substrate a deposit of a mixture of boron and said metal selected from Groups VI–b, VII–b and VIII, said coating of mixed metals being wear resistant.

3,355,319

SELF-SUPPORTING FILM WITH A HEAT-SEALABLE COATING OF AN IONIC COPOLYMER OF AN OLEFIN AND CARBOXYLIC ACID WITH METAL IONS DISTRIBUTED THROUGHOUT

Richard Watkin Rees, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 17, 1964, Ser. No. 352,658

8 Claims. (Cl. 117—122)

1. An article of manufacture comprising a heat-sealable film structure including a base layer of a self-supporting film of organic thermoplastic polymeric material having a heat-sealable coating on at least one surface thereof of an ionic copolymer selected from the class consisting of direct copolymers of

α-olefins having the general formula $RCH{=}CH_2$ wherein R is a radical selected from the class consisting of hydrogen and alkyl radicals having from 1 to 8 carbon atoms, the olefin content of said copolymer being at least 50 mol percent based upon said copolymer,

and an alpha, beta-ethylenically unsaturated monocarboxylic acid, the acid monomer content of said copolymer being from 5 to 25 mol percent based upon the copolymer,

said copolymer having a melt-index between about 0.5 and about 40 and containing uniformly distributed throughout said copolymer a metal ion having an ionized valence of 1 to 3 inclusive, wherein at least 10 percent of said monovalent carboxylic acid copolymer are neutralized by said metal ion and exist in an ionic state.

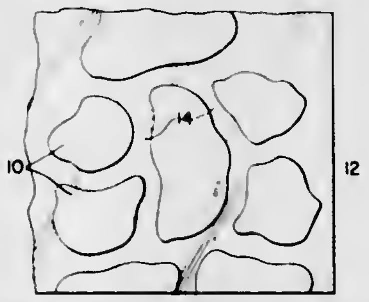
3,355,320

METHOD OF FORMING MESH-LIKE STRUCTURE

Rueben S. Spriggs, San Pedro, and Arthur J. Learn, Torrance, Calif., assignors to TRW Inc., a corporation of Ohio

Filed May 20, 1964, Ser. No. 368,811

15 Claims. (Cl. 117—210)



1. A method of forming a mesh-like structure, comprising:

producing a multiplicity of tiny agglomerates by vacuum depositing a first material on a substrate;

filling the voids between said agglomerates with a second material to a depth less than the thickness of said agglomerates;

and removing said agglomerates to leave said second material formed into a mesh-like structure on said substrate.

3,355,321

RECRYSTALLIZATION OF SULPHIDES OF CADMIUM AND ZINC IN THIN FILMS

Aron Vecht, Harlow, England, assignor to Associated Electrical Industries Limited, London, England, a British company

No Drawing. Filed May 14, 1964, Ser. No. 367,553
Claims priority, application Great Britain, May 21, 1963, 20,242/63
8 Claims. (Cl. 117—62)

1. A method of recrystallizing the sulphides of cadmium and zinc in thin films, which comprises immersing a metal sulphides selected from the group consisting of cadmium and zinc sulphides as a layer on a substrate in an inert organic liquid to which has been added in a finely divided state a metal selected from the group consisting of copper and silver, and keeping the layer immersed in the liquid for a sufficient time for the required recrystallization to be accomplished.

3,355,322

UNHYDROLYZED ETHYLENE VINYL ACETATE LATEX COMPOSITIONS CONTAINING A PROTECTIVE COLLOID AND FIBROUS MATERIALS COATED WITH SAME

Roy Worrall, Newport, and Eric James Shepherd, Pinner, England, assignors to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Oct. 28, 1963, Ser. No. 319,547
Claims priority, application Great Britain, Nov. 21, 1962, 44,018/62
5 Claims. (Cl. 117—126)

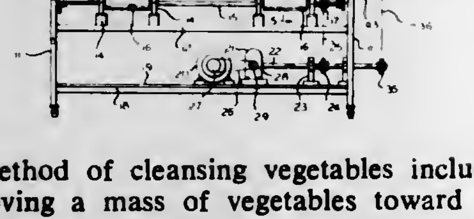
1. An article of manufacture comprising a fibrous material coated with from 10 to 70 percent by weight of the fibrous material of a composition consisting essentially of from 10 to 60% by weight of an unhydrolyzed copolymer of ethylene/vinyl acetate having from 20 to 70% by weight ethylene and correspondingly from 80 to 30% by weight vinyl acetate, said composition also containing from 0.1 to 5 percent by weight of a protective colloid.

3,355,323

METHOD OF CLEANING VEGETABLES

Robert L. Dyar, 1825 S. Kinnichinnic Ave., Milwaukee, Wis. 53204

Filed Dec. 20, 1965, Ser. No. 514,891
6 Claims. (Cl. 134—25)



1. The method of cleansing vegetables including the steps of moving a mass of vegetables toward a brush rotating about a substantially horizontal axis and in such wise that vegetables frontally opposed to said brush are contacted by said brush, rotating said brush in a direction such that the bristles of the brush move toward those vegetables in said mass which are frontally opposed to said brush and upwardly with respect thereto whereby contact between said brush and said vegetables so frontally opposed results in scrubbing of the skins of said vegetables while moving said vegetables over the mass and toward the rear of the moving mass, moving the brush bodily, while continuing the rotation of the brush, in the direction of the movement of said mass, when the inertia of said mass, as determined by the height of vegetables immediately adjacent the rotating brush, builds up above a predetermined amount, and moving said brush, while rotating said brush, toward its original position when the said inertia of said mass falls below said predetermined amount, and continuing the movement of said mass until all of the vegetables in said mass have been contacted several times by said brush.

3,355,324

METHOD OF CLEANING INK FROM RUBBER DIES

Robert William Catzen, Pikesville, Md., assignor to Covington Manufacturing Corporation, Baltimore, Md., a corporation of Maryland

Filed Jan. 24, 1964, Ser. No. 339,975
11 Claims. (Cl. 134—29)

1. A method of cleaning and removing ink from rubber printing dies without the need for mechanical scrubbing or brushes, said method comprising the steps of:

(a) supporting the dies with the printing faces thereof directed upwardly, on an arcuate foraminous surface;

(b) intermittently subjecting the printing faces on the dies to a spray of sodium silicate cleaning solution for a first given period of time of sufficient length such that said dies are cleaned and effectively free of ink when subjected to steps (c) and (d);

(c) then for a second given period of time less than said first given period of time, intermittently subjecting the printing faces on the dies to a water spray;

(d) then for a third given period of time less than said first given period of time, intermittently subjecting the printing faces on the dies to an air blast.

3,355,325

BATTERY PLATE MANUFACTURE

Edwin J. McHenry, Millington, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed July 12, 1965, Ser. No. 471,442
1 Claim. (Cl. 136—24)

A method for the fabrication of cadmium battery plates for use in nickel-cadmium alkaline cells comprising the steps of heating a porous nickel sinter plaque having a porosity of at least 70 percent in a reducing atmosphere at a temperature of at least 700° C. for a period of at least ten minutes, reducing the temperature of the nickel sinter plaque to below 321° C., applying a thin cadmium foil to the surface of the nickel sinter plaque, heating the plaque and the foil to a temperature in excess of 321° C. whereby the cadmium melts, wets the nickel and is distributed throughout the porous sinter plaque, and cooling the impregnated sinter plaque, all of the foregoing steps being conducted in a reducing atmosphere, and thereafter forming the cadmium-impregnated plaque by electrolytically cycling the plaque in a solution of an alkali metal hydroxide.

3,355,326

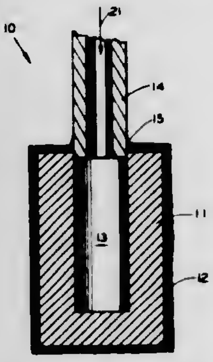
METHOD OF PREPARING ELECTRODES

Donald E. Semones, Worthington, and Walter E. Chase, Columbus, Ohio, assignors to Battelle Memorial Institute, Columbus, Ohio, a corporation of Ohio

Filed June 3, 1963, Ser. No. 285,042
4 Claims. (Cl. 136—86)

1. A method of preparing a fuel electrode for use in a fuel cell that comprises affixing a surface layer of catalyzed porous carbon to a porous supporting member of conductive material, placing the electrode thus made in an electrolyte having substantially the composition of the electrolyte in said fuel cell, activating said surface layer to increase its wettability by forcing a predetermined amount of said electrolyte through said porous

supporting member and into said surface layer and thereby saturating said surface layer with said electrolyte, and

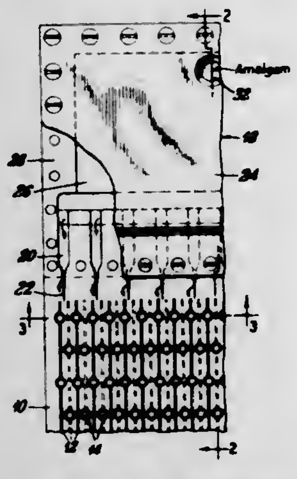


then utilizing said electrode in said fuel cell to generate current.

3,355,327
ELECTRODE FOR A FLOWING FILM OF LIQUID MATERIAL

Erwin A. Schumacher, Cleveland, Milton B. Clark, North Royalton, and Lawrence J. Uline, Lakewood, Ohio, and Helio A. Trull, St. Petersburg, Fla., assignors to Union Carbide Corporation, a corporation of New York

Filed Dec. 23, 1963, Ser. No. 332,687
8 Claims. (Cl. 136—86)



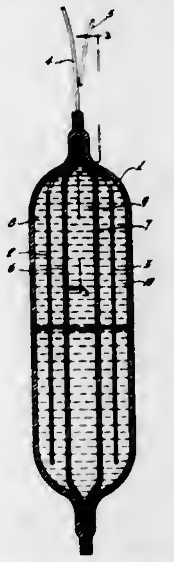
1. In an anodic material amalgam-oxidant fuel cell comprising an anode, a cathode, and an electrolyte in electrochemical relationship with the two, the improvement for maintenance of a substantially uniform film of said amalgam on said anode, which improvement in combination therewith consists of an anode comprising a relatively thin body made of a conductive material substantially inert to the cell environment; said body having a plurality of spaced parallel channels on each main side of said body and extending vertically for substantially the entire length of said body and having a plurality of spaced openings between and extending to the two main sides of said body, each of said openings communicating with at least one of said channels; and header means near the top of said body for introducing said amalgam to the sides of said body.

3,355,328
ELECTRIC CURRENT-PRODUCING CELL WITH BUFFER ZONE

William F. Meyers, Blue Bell, and Donald W. Klopp, North Wales, Pa., assignors, by mesne assignments, to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Oct. 27, 1964, Ser. No. 406,798
8 Claims. (Cl. 136—93)

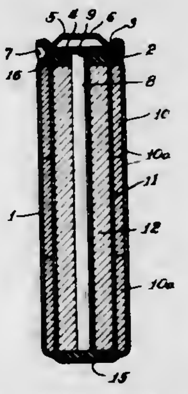
1. In an electric current-producing cell system involving: (1) an anode of an electropositive metal higher in the electrochemical series than zinc; (2) an anolyte in contact with said anode consisting essentially of an electrically-conductive solution, substantially free of hydrogen ions, in a protic solvent and having an electrical conductivity of at least 10^{-3} ohm^{-1} cm.$^{-1}$; (3) a depolarizing cathode, and (4) a catholyte in contact with said cathode consisting essentially of an electrically conductive acid solution in a protic solvent, the anion of which acid is at least as low in the electrochemical series as the depolarizer of said depolarizing cathode and said catholyte having an electrical conductivity of at least 10^{-3} ohm^{-1} cm.$^{-1}$; the improvement of a buffer zone physically separating said anode and anolyte from said cathode and catholyte, said zone containing an electrically conductive solution of a salt the cation of which is an electropositive metal higher in the electrochemical series than zinc and the anion of which is at least as low in the electrochemical series as said depolarizer, and said zone being bounded, between it and said anolyte by a positive ion-permeable diaphragm containing bound negative groups and between it and said catholyte by a negative ion-permeable diaphragm containing bound positive groups whereby said anolyte is in positive ionic-flow relationship with said buffer zone and said catholyte is in negative ionic-flow relationship with said buffer zone but ion diffusion between said anolyte and said catholyte is substantially negligible.



3,355,329
CELL HAVING INTEGRAL VALVE, TERMINAL, AND CONTACT MEMBER ASSEMBLY

Milton E. Wilke and William R. Brooks, Freeport, Ill., assignors to Clevite Corporation, a corporation of Ohio

Filed Feb. 28, 1966, Ser. No. 530,587
10 Claims. (Cl. 136—134)



1. In a voltaic cell comprising a container including therein electrodes comprising a cathode and an anode, and cell electrolyte, the improvement which comprises an integral assembly comprising an electrically conductive outer terminal member, a disc-form diaphragm valve comprised of a resilient metal, and an electrically conductive contact member engaging said anode in electrical

contact therewith, the periphery of said outer terminal member being in contact engagement with and a limited area thereof being affixed to the periphery of said diaphragm valve, the central portion of said outer terminal member being spaced apart from the central portion of said diaphragm valve to permit said diaphragm valve to bow into the space therebetween, said terminal member having an aperture therein to permit the passage of gas therethrough, said contact member having one end thereof affixed to a central portion of said diaphragm valve, a sealing gasket of an electrically non-conductive sealable material disposed in sealing engagement over the edges of both said diaphragm valve and said terminal member, the open end of said cell container being arranged for clamping said gasket radially against the edges of said diaphragm valve and said terminal member, the arrangement being such that said cell is normally in a hermetically sealed condition, and whereby gas pressure developed within said cell of a predetermined magnitude causes said diaphragm valve to bow outwardly and its free edge to recede from said gasket while said gasket is restrained in position by the edge of said terminal member, thereby breaking the seal between said diaphragm and said gasket and permitting gas to flow out of said cell until the gas pressure within the cell has again been reduced sufficiently to reestablish the seal, and whereby in constructing said cell, said assembly may be inserted as a unit thereby facilitating said construction.

3,355,330
METAL TREATING PROCESSES

Josef Rothkegel and Peter Flittner, Frankfurt am Main, and Gerhard Koch, Oberursel, Germany, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Mar. 3, 1964, Ser. No. 349,161
5 Claims. (Cl. 148—6.15)

1. A process for imparting improved corrosion resistance to ferrous metal surfaces which comprises contacting the ferrous metal surface to be treated with an aqueous phosphoric acid pickling solution containing arsenic in an amount within the range of about 10 to 300 milligrams per liter, maintaining said pickling solution in contact with the metal surface for a period sufficient to effect pickling of the metal surface without substantial formation of phosphate coating on the surface, and, thereafter, contacting the thus-pickled ferrous metal surface with an aqueous phosphatizing solution for a period sufficient to form a corrosion resistant phosphate coating on the surface.

3,355,331
POLYMERIZATION-INHIBITED BUTADIENE AS A WELDING AND CUTTING TORCH FUEL

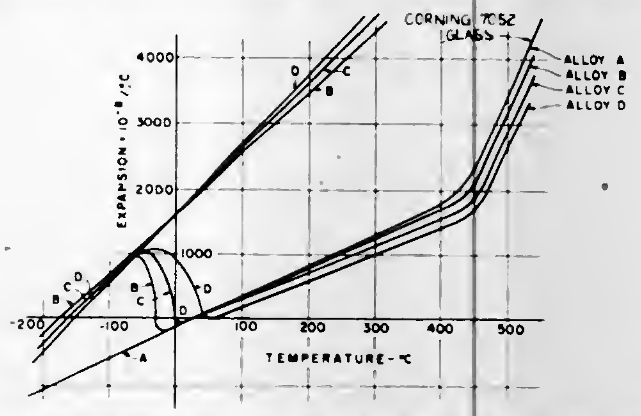
Marvin M. Johnson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 13, 1964, Ser. No. 411,122
6 Claims. (Cl. 148—9)

4. The process of cutting metal comprising burning a fuel consisting essentially of 85 to 95 percent by weight butadiene, 5 to 15 percent C_2 to C_4 paraffins and monoolefins, and 0 to 5 percent C_2 to C_4 acetylenes and propadiene in a flame containing an excess of free oxygen and directing said flame against the metal to be cut so that said metal is heated and oxidized and thereby cut.

3,355,332
GLASS-METAL SEAL

Sheldon Bitko, Stamford, Conn., assignor of one-half to Harry Ernest Rubens, Greenwich, Conn.
Filed Oct. 28, 1963, Ser. No. 319,474
3 Claims. (Cl. 148—13)

1. In the method of heat treating a glass to metal composite wherein the glass surrounds the metal, and the metal consists substantially of an iron-nickel-cobalt alloy, the step of transforming the metal from the gamma to the alpha phase microstructure at temperatures between 0° C. to 300° C.



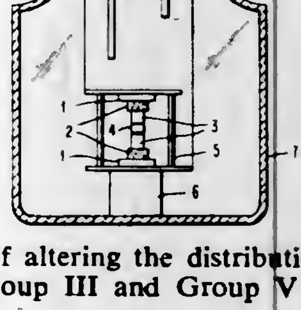
3,355,333
SELECTIVE HARDENING OF AGE-HARDENABLE ALLOYS AND ARTICLES PRODUCED THEREBY

Alan George Haynes, Sevenoaks, Kent, and George Mayer, Cobham, Surrey, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 22, 1964, Ser. No. 398,414
Claims priority, application Great Britain, Sept. 24, 1963, 37,540/63
8 Claims. (Cl. 148—142)

5. A process for the selective hardening of an article formed from a homogeneous mass of age-hardenable, austenitic-martensitic, iron-base alloy to thereby produce a first relatively hard portion and a second relatively soft and ductile portion in said article, said alloy containing about 24% to 30% nickel and about 1.5% to 9% of metal selected from the group consisting of aluminum and titanium, comprising solution heat treating said article, cooling said alloy whereby the alloy is substantially austenitic, heating said article at a temperature above the martensitic transformation range and within the temperature range of about 590° C. to about 760° C. for a time sufficient to age harden said alloy in the austenitic state, cooling said article to a temperature below about 32° C. to thereby transform said alloy to martensite and thereafter heating only said first portion of said article to a second temperature within the range of about 260° C. to 650° C. for a time sufficient to age harden said alloy in the martensitic state while maintaining said second portion of said article below said first and second temperatures.

3,355,334
METHOD OF SHAPING P-N JUNCTION PROFILES

Vir A. Dhaka and Edward S. Wajda, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 31, 1965, Ser. No. 444,330
8 Claims. (Cl. 148—186)



1. A method of altering the distribution of impurities selected from Group III and Group V of the periodic

table in a semiconductor device whose material is selected from the class consisting of silicon and germanium which impurities are of both a p-conductivity type and an n-conductivity type and which impurities are each characterized by a temperature dependent mobility such that, above a particular temperature which lies in the range of several hundred degrees centigrade to the melting point of the semiconductor, the mobility directions of the respective different conductivity type impurities are opposite to one another, said method comprising the steps of:

raising the temperature of the device above said particular temperature; and

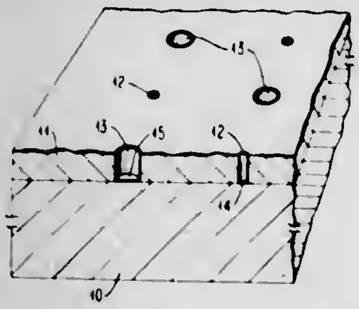
passing a direct electric current through said device for a sufficient period of time to achieve a particular distribution of both the p-type and n-type impurities where the electromigration of the respective impurities is proportional to the time during which current is passed through said device.

3,355,335

METHOD OF FORMING TUNNELING JUNCTIONS FOR INTERMETALLIC SEMICONDUCTOR DEVICES

James H. Butler, Dudley A. Chance, and Samuel S. Im, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 7, 1964, Ser. No. 402,248
17 Claims. (Cl. 148—177)



1. The method of forming a tunneling junction for an intermetallic semiconductor device while simultaneously establishing therefor a current-voltage characteristic having a time-stable valley current comprising:

heating a degenerative P-type gallium arsenide semiconductor member in contact with an N-type significant impurity member in a temperature range of 450–630° C. to permit said members to alloy;

maintaining said members in said range for an interval of at least 40 minutes; and

cooling said members rapidly at a rate of at least 10° C./second to approximately 300° C. and thereafter cooling slowly for several minutes to ambient temperature to form said tunneling junction.

3,355,336

THICKENED WATER-BEARING INORGANIC OXIDIZER SALT EXPLOSIVE CONTAINING CROSS-LINKED GALACTOMANNAN AND POLYACRYLAMIDE

William M. Lyerly, Hagerstown, Md., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 18, 1966, Ser. No. 573,206
6 Claims. (Cl. 149—60)

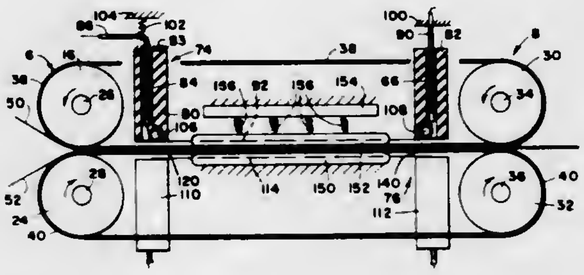
1. In thickened water-bearing explosives comprising inorganic oxidizing salt, fuel, water and thickening agent, the improvement which comprises using as the thickening agent the combination of cross-linked galactomannan and polyacrylamide, the weight ratio of said polyacrylamide to galactomannan being about from 0.1:1 to 10:1, the resulting explosive being water-resistant and non-segregating yet pourable.

3,355,337

CONTINUOUS RADIANT HEAT SEALING AND CUTTING APPARATUS

Seymour Zelnick, Toms River, N.J., assignor to Weldotron Corporation, Newark, N.J., a corporation of New Jersey

Filed Sept. 1, 1965, Ser. No. 484,393
5 Claims. (Cl. 156—85)



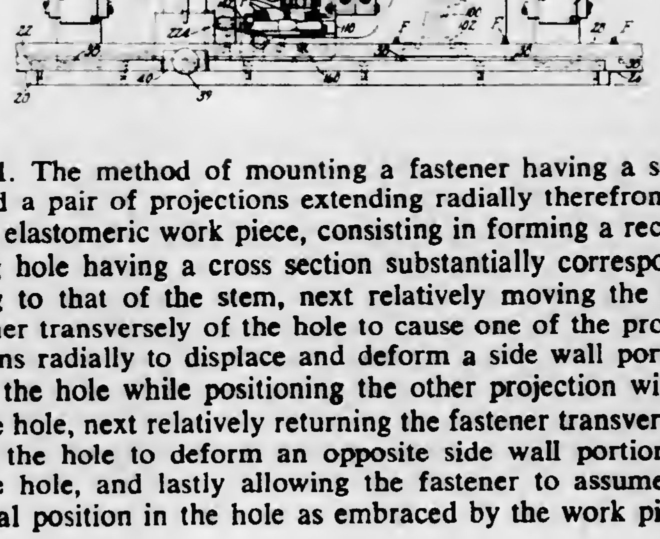
5. A method of progressively sealing together two superposed webs of heat-shrinkable thermoplastic material, comprising progressively clamping together the marginal subportions of two superposed portions of the webs between two spaced apart sets of clamping means and progressively conveying the peripherally clamped together portions initially adjacent a relatively low temperature radiant heat source to progressively shrink but not melt clamped together portions into intimate contact with each other and subsequently adjacent a relatively high temperature radiant heat source to progressively melt a gap into the shrunk portions and to join together the superposed edges of the webs bounding the gap.

3,355,338

METHODS AND MACHINES FOR MOUNTING FASTENER INSERTS IN AN ELASTOMER

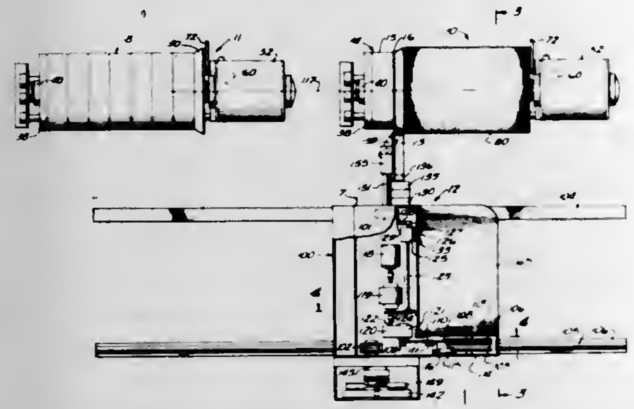
Roland Heeley, Beverly, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed May 5, 1964, Ser. No. 365,043
15 Claims. (Cl. 156—92)



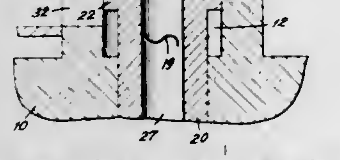
1. The method of mounting a fastener having a stem and a pair of projections extending radially therefrom in an elastomeric work piece, consisting in forming a receiving hole having a cross section substantially corresponding to that of the stem, next relatively moving the fastener transversely of the hole to cause one of the projections radially to displace and deform a side wall portion of the hole while positioning the other projection within the hole, next relatively returning the fastener transversely of the hole to deform an opposite side wall portion of the hole, and lastly allowing the fastener to assume its final position in the hole as embraced by the work piece.

3,355,339
METHOD AND APPARATUS FOR MAKING SOLID TIRES
Robert E. Hineline, Tustin, Calif., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Nov. 7, 1963, Ser. No. 322,130
14 Claims. (Cl. 156—112)



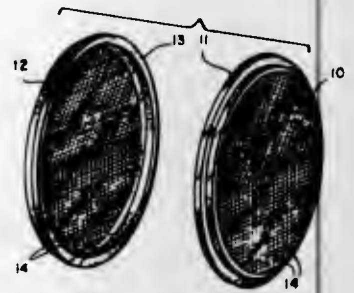
1. The method of building solid tires on circular, cylindrical rims of wheels having equal outside diameters, said method including the steps of stacking a plurality of said wheels on a common shaft with said rims forming a cylindrical drum having a common rotational axis with said shaft, producing an elastomeric ribbon having a width greater than the maximum thickness of the desired solid tire, winding said ribbon along the outer surface of said drum with the inner face of said ribbon forming a sharp angle, in a radial plane passing through said axis, with said surface and the outer face of said ribbon forming an obtuse angle with said surface in the same plane, and with adjacent turns overlapping each other, said ribbon thereby producing a continuous elastomeric layer on the outer surface of said drum, and thereafter circumferentially cutting through said layer in line with the circular contact junctions of adjacent rims to form individual solid tires.

3,355,340
METHOD AND APPARATUS FOR SECURING SPOUTS TO FILM
William L. Calvert and Henry H. Anderson, Westfield, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Aug. 13, 1964, Ser. No. 389,252
14 Claims. (Cl. 156—256)



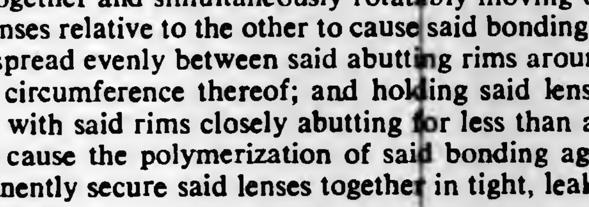
9. Method for securing a spout having a flange portion and a neck portion to film which comprises:
- (a) supporting a sheet of film;
- (b) positioning a flange spout member proximate an annularly, rigidly supported portion of said film;
- (c) forcing the neck portion of said spout through said film in the zone formed by said annular support;
- (d) advancing said spout through the pierced portion of said film until said flange of said spout contacts said film; and
- (e) securing said flanged portion of said spout to said film.

3,355,341
METHOD OF PERMANENTLY JOINING MATING PLASTIC REFLECTOR DISCS
Joseph V. Bertsche, Milwaukee, Wis., assignor to Gleason Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed July 23, 1964, Ser. No. 384,731
1 Claim. (Cl. 156—295)



A method of manufacturing a plastic reflector comprising the steps of: molding a first plastic reflex lens having a concave inner surface with a plurality of trihedral reflector points formed thereon and having a peripheral rim with a flat inner surface; molding a second, similar plastic reflex lens having a concave inner surface with a plurality of trihedral reflector points formed thereon and having a peripheral rim with a flat inner surface; applying to the inner rim surface of one of said lenses a non-solid, polymerizable bonding agent consisting essentially of a cyanoacrylate monomer modified with a thickening agent and plasticizer, said bonding agent being completely devoid of solvents which could produce fumes capable of deleterious chemical reaction with such plastic material to dull said trihedral reflector points, and said bonding agent being adapted to set in less than one minute at room temperature; immediately positioning said lenses with their inner surfaces in facing relationship with said inner rim surfaces abutting, and with said non-solid bonding agent therebetween; immediately pressurably urging said lens rims together and simultaneously rotatably moving one of said lenses relative to the other to cause said bonding agent to be spread evenly between said abutting rims around the entire circumference thereof; and holding said lenses together with said rims closely abutting for less than a minute to cause the polymerization of said bonding agent to permanently secure said lenses together in tight, leakproof engagement.

3,355,342
METHOD OF SUPPORTING LENS BLANKS FOR GRINDING AND POLISHING
Robert K. Lanman, Pasadena, Calif., assignor to Armorlite Lens Company, Inc., Burbank, Calif., a corporation of California
Filed Feb. 26, 1965, Ser. No. 435,529
5 Claims. (Cl. 156—295)



1. That method of supporting semi-finished lens while grinding and polishing the unfinished face thereof which method comprises, placing a plurality of thin flexible spacers at spaced points against the upwardly facing surface of a lens block inwardly of the rim thereof, placing a quantity of fluent adhesive in the center of the lens block adequate to provide a layer of distributed adhesive as thick as said spacers over the upper surface of said lens block, lowering a blank lens onto said adhesive with

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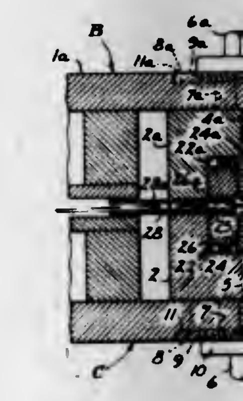

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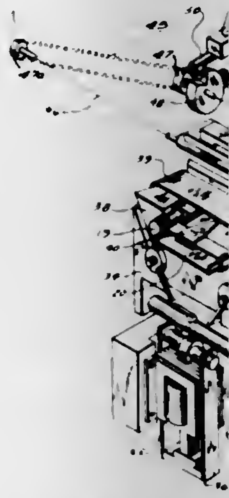

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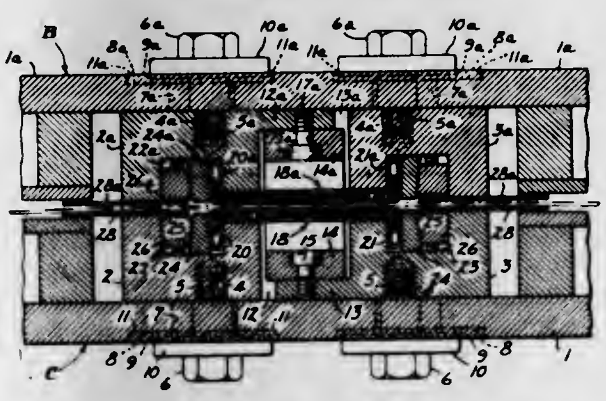
the finished surface thereof facing downwardly, pressing said lens blank firmly toward said spacer elements to distribute said adhesive throughout the thin space between said lens blank and said lens block, and allowing said adhesive to take a set before proceeding to finish grind the exposed upper surface of the adhesively anchored lens blank.

3,355,343
METHOD AND APPARATUS FOR BUTT SPLICING COATED FABRIC

Howard G. Beck, Medina, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Dec. 30, 1963, Ser. No. 334,243
10 Claims. (Cl. 156—304)

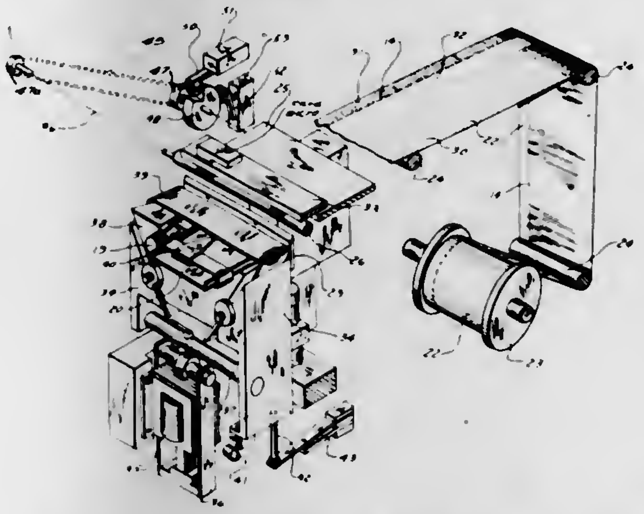


1. A method of splicing rubberized tire cord fabric edge to edge which comprises placing the edges of two pieces of fabric to be spliced along a desired line of splice, gripping the marginal portions of said pieces adjacent the line of splice between two layers of laterally contractable mesh arranged for contracting movement perpendicular to the line of splice, and contracting said mesh layers to move the alined end edges of said material into engagement with one another and to squeeze said edges together to make a splice.

3,355,344
APPARATUS FOR HANDLING BOOK-BORROWING TRANSACTIONS

Arthur Brody, South Orange, N.J., Richard Sroka, Jamaica, N.Y., and Emil J. Ozimek, Williamsport, Pa., assignors to Bro-Dart Industries, a corporation of New Jersey

Filed Dec. 4, 1964, Ser. No. 416,056
8 Claims. (Cl. 156—355)

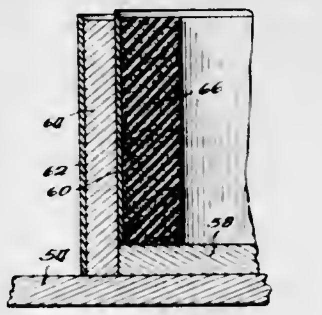


1. In an apparatus for handling book-borrowing transactions, a downwardly directed platen, a solenoid beneath it, a tab applicator carried by the solenoid core and movable upward against the platen when the solenoid is energized, a supply of adhesive-coated imprintable tape and means for intermittently advancing it to interpose successive end regions thereof between the platen and the applicator, said applicator including means for severing the interposed end region to define a tab and for imprinting and pressing the tab upwardly, a holder on said applicator for temporarily accommodating a borrower card bearing data transferrable to said tab during the imprinting operation, a dating mechanism carried by said applicator adapted to imprint a selected due-date designation upon said tab, means for accommodating a book card in a tab-receiving position beneath the platen in the path of upward movement of the applicator so that the imprinted tab is pressed by the applicator into adhesive contact with said card, and an electric switch activated by the insertion of the book card to tab-receiving position for energizing said solenoid.

3,355,345
DIE FOR DIELECTRIC HEAT SEALING

Ernest J. Braun, Chicago, Ill., assignor, by mesne assignments, to Union Carbide Corporation, New York, N.Y., a corporation of New York

Filed Mar. 18, 1964, Ser. No. 352,748
9 Claims. (Cl. 156—380)



7. Apparatus for bonding two batts containing heat fusible material to form a scouring pad comprising: a dielectric heating source having a first and second electrode between which the batts are to be interposed; said first electrode including a first blade mounted thereon substantially perpendicular thereto for communication with a first portion of the batts to form the outer dimension thereof; a second blade mounted thereon substantially perpendicular thereto and adapted for communication with a second portion of the batts exterior said first portion, said blades being circumferentially disposed in the form of the desired seam and the edge of said first blade extending a greater vertical distance from said platen than the edge of said second blade whereby the combination of the heat generated within the batts by the high frequency electrical energy and the pressure exerted by said electrodes causes a heat bonded, substantially unnoticeable seam after the batt residue is removed; said second electrode having means to allow the batt to expand in the direction of said second electrode whereby the resulting pad is symmetrical in thickness with respect to the central plane.

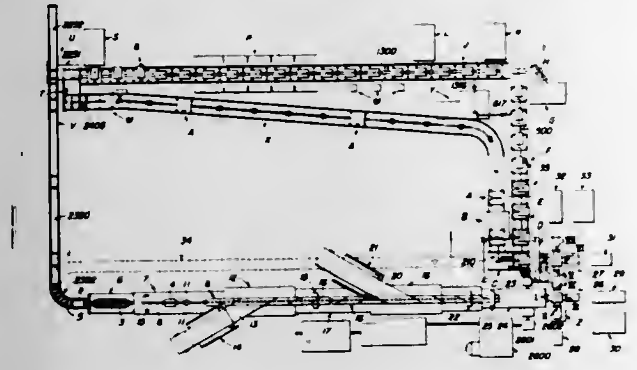
3,355,346
AUTOMATIC TIRE BUILDING APPARATUS

Sheppard A. Black, Wayne, and John D. Heide, Ramsey, N.J., assignors to Uniroyal, Inc., a corporation of New Jersey

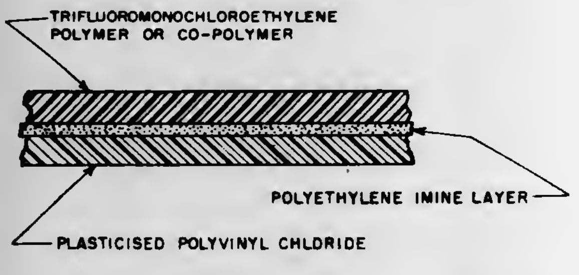
Filed Jan. 17, 1964, Ser. No. 338,326
93 Claims. (Cl. 156—396)

5. A machine for continuously building tires on a series of drums movable through the machine and including means for winding layers of ply fabric on the drums and means for adding bead rings to the ends of the ply layers to form cylindrical tire carcasses on the drums, comprising: a pluraity of movable drum carriers; means at a loading station for loading said carcass bearing drums onto said drum carriers; conveying means for supporting said drum carriers and advancing said drum carriers in

equal step-by-step movements from said loading station through a plurality of equally spaced successive stations located along said conveying means, the drum carriers stopping at each station between advancing movements of said conveying means; at least one tread applicator unit located at a station downstream of said loading station for applying treads to said carcasses; at least one stitcher unit located at a station downstream from said tread applicator unit; signalling means positioned on each of said drum carriers for signalling the presence of a carcass on said drum carriers; and means at each of said tread applicator and stitcher units cooperable with said signalling means upon arrival of drum carriers at their respective stations for selectively initiating cycling of said units.



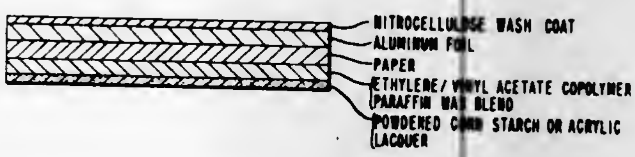
3,355,347
LAMINATED FILM AND PROCESS FOR PREPARING IT
Kenneth R. Habermann, Wood-Ridge, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Oct. 9, 1964, Ser. No. 402,727
7 Claims. (Cl. 161—189)


TRIFLUOROMONOCHLOROETHYLENE POLYMER OR CO-POLYMER
POLYETHYLENE IMINE LAYER
PLASTICISED POLYVINYL CHLORIDE

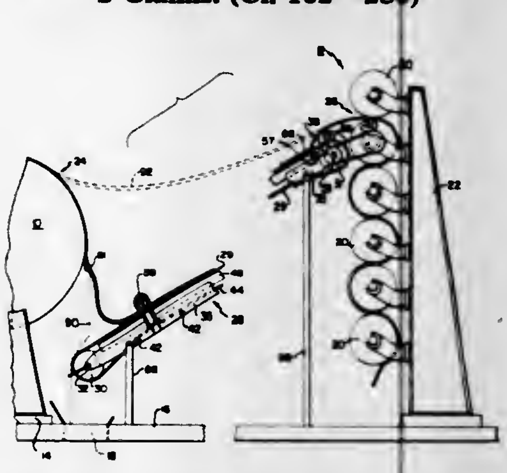
1. A laminated film structure which comprises a layer of (1) a film of a polymer of trifluoromonochloroethylene selected from the group consisting of homopolymers of trifluoromonochloroethylene and copolymers theerof with vinylidene fluoride and tetrafluoroethylene wherein the trifluoromonochloroethylene is present in a major proportion, said film having thereon (2) a uniform, adherent coating of a polymerized ethylene imine of the magnitude of at least about .03 lb. per 3,000 square feet, said coating being joined in turn to (3) a film of plasticized polyvinyl chloride containing between about 5 parts and about 60 parts of a plasticizer per 100 parts of polyvinyl chloride.

3,355,348
HEAT SEALABLE-ALUMINUM FOIL PAPER LAMINATE
Stanley T. Lamar, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 2, 1964, Ser. No. 394,023
6 Claims. (Cl. 161—213)

1. A printable heat-sealable flexible sheet structure comprising an aluminum foil/paper laminate having (1) a nitrocellulose wash coat on the said aluminum foil, (2) a blend containing 15–40% by weight of an ethylene/vinyl acetate copolymer having a copolymerized vinyl acetate content of 15–35% by weight and a melt index of 0.1–500, and a paraffin wax having a melting point of at least 150° F. coated onto the said paper, and (3) a member selected from the group consisting of powdered corn starch and an acrylic lacquer coated onto the said blend.


NITROCELLULOSE WASH COAT
ALUMINUM FOIL
PAPER
ETHYLENE/VINYL ACETATE COPOLYMER PARAFFIN WAX BLEND
POWDERED CORN STARCH OR ACRYLIC LACQUER

3,355,349
APPARATUS FOR CONVEYING LEAD STRIP FROM DRIERS TO CALENDERS IN PAPER-MAKING
Andrew G. Devlin, 981 Greendridge Crescent, Victoria, British Columbia, Canada
Filed Dec. 14, 1964, Ser. No. 417,961
2 Claims. (Cl. 162—286)

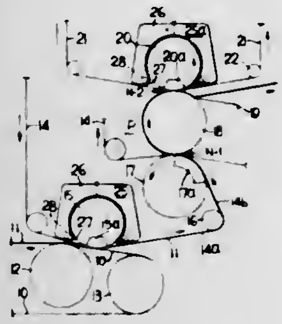


1. Apparatus for transporting a lead strip of paper web from the drier of a paper making machine and feeding it into the first pass of the calenders of said machine, comprising an elongated frame, an air pervious endless belt movably mounted on the frame and having its upper run travelling from the drier to the first pass of the calenders and being arranged to receive the lead strip from the drier, a vacuum chest having a perforated top extending longitudinally of and below and in slidable contact with the upper run of the belt, means for evacuating air from the chest so as to apply a vacuum at the undersurface of the belt and thereby cause the lead strip to cling to the latter, air blast means beneath and extending transversely of the upper run of the belt at the calender end thereof for directing a blast of air upwardly therethrough so as to lift the lead strip therefrom and extend the latter towards the first pass of the calenders, and an elongated idling roller arranged beside the belt adjacent the drier end thereof pivotally mounted for vertical pivotal movement between a position extending transversely over the belt and lead strip so as to maintain the lead strip in engagement with the belt when said lead strip is being moved to the calenders and a position clear of the lead strip to permit the latter to lift off the belt after it passes into the calenders.

3,355,350
PAPER MACHINE
George E. Reynolds, Appleton, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 18, 1964, Ser. No. 419,446
2 Claims. (Cl. 162—358)

1. A save-all assembly for the web outrunning side of a suction roll for paper making machines, comprising: a housing structure having a top portion, a side wall por-

tion depending from said top portion and a flat bottom surface connected to a lower part of said depending side wall portion, said bottom surface extending inwardly a predetermined distance from said side wall portion and terminating with an edge parallel to said side wall portion; a curved surface connected to said edge and bending upwardly therefrom to define with said bottom surface a moisture collecting pocket, said curved surface having an imperforate portion from said edge to a predetermined level within said pocket above which said curved surface defines a moisture admitting inlet opening therethrough in communication with said pocket; and a pair of spaced vertical end walls enclosing the laterally spaced ends of said pocket, at least one of said end walls defining an outlet opening at least in part below said imperforate portion of said curved surface between said edge and said inlet opening to drain said pocket.



3,355,351

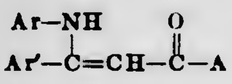
INSECTICIDAL AND FUNGICIDAL USAGE OF β-ARYLAMINO CINNAMOYL COMPOUNDS

Kenneth Wayne Ratts, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application June 28, 1965, Ser. No. 467,722. Divided and this application Sept. 29, 1965, Ser. No. 491,425

7 Claims. (Cl. 167—30)

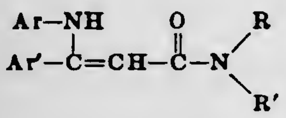
5. The method of controlling mosquito larvae which comprises contacting same with an insecticidally toxic amount of a β-anilino-cinnamate of the formula



$$\mathrm{Ar'-\overset{\overset{\textstyle Ar-NH}{|}}{C}=CH-\overset{\overset{\textstyle O}{\|}}{C}-A}$$

wherein A is lower alkoxy and wherein Ar and Ar' respectively are aryl having from 6 to 10 carbon atoms selected from the group consisting of phenyl, alkylphenyl and alkoxyphenyl.

7. The method of controlling fungi which comprises contacting same with a fungicidally toxic amount of a β-anilino-cinnamide of the formula



$$\mathrm{Ar'-\overset{\overset{\textstyle Ar-NH}{|}}{C}=CH-\overset{\overset{\textstyle O}{\|}}{C}-N\genfrac{}{}{0pt}{}{\diagup R}{\diagdown R'}}$$

wherein Ar and Ar' respectively are aryl having from 6 to 10 carbon atoms selected from the group consisting of phenyl, alkylphenyl and alkoxyphenyl, wherein R is selected from the group consisting of lower alkyl, lower alkenyl and lower alkoxyalkyl, and wherein R' is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl and lower alkoxyalkyl.

3,355,352

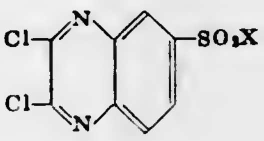
FUNGICIDAL COMPOSITION

Junnosuke Hattori, Toshiaki Ozaki, and Seiji Koike, Toyonaka-shi, Kosuke Yoshioka, Hirakata-shi, and Hiroshi Sugiyama, Ashiya-shi, Japan, assignors to Sumitomo Chemical Company Ltd., Osaka, Japan, a corporation of Japan

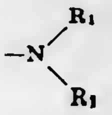
No Drawing. Filed July 29, 1963, Ser. No. 298,465

11 Claims. (Cl. 167—33)

1. A fungicidal composition containing, as the essential active ingredient, an effective fungicidal amount of a 2,3-dichloroquinoxaline-6-sulfon-amide having the formula



wherein X is selected from the group consisting of



$$-N\genfrac{}{}{0pt}{}{\diagup R_1}{\diagdown R_2}$$

morpholyl, and piperidyl, R_1 and R_2 being selected from the group consisting of hydrogen atom, lower alkyl, cyclohexyl, benzyl, phenethyl, phenyl, and substituted phenyl having at least one substituent from the group consisting of lower alkyl, lower alkoxy and halogen, in an acetone vehicle.

3,355,353

O,O-DIALKYL S-[2-HALO-1-(N-PHTHALIMIDO)ETHYL] PHOSPHORODITHIOATES AND PHOSPHOROTHIOATES AS INSECTICIDES

Joel D. Jamison, Westminster, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 21, 1966, Ser. No. 535,735

20 Claims. (Cl. 167—33)

1. A compound of the group consisting of O,O-dialkyl S-[2-halo-1-(N-phthalimido)ethyl] phosphorthioate and O,O - dialkyl S - [2 - halo-1-(N-phthalimido)ethyl] phosphorodithioate wherein alkyl is methyl or ethyl and halo is bromo or chloro.

3,355,354

METHODS AND COMPOSITIONS FOR RELIEF OF GAS-CAUSED GASTROINTESTINAL DISTRESS IN WARM-BLOODED ANIMALS

Bruno Puetzer, White Plains, Leonard Mackles, New York, and Martin M. Perl, Brooklyn, N.Y., assignors, by mesne assignments, to Tintex Corporation, % Revlon, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 14, 1963, Ser. No. 323,554

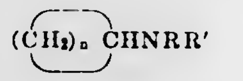
11 Claims. (Cl. 167—55)

1. A therapeutic composition capable of providing relief from distress caused by the accumulation and adherence of gas in and to the walls of the gastrointestinal system which comprises from about 5 to about 20 percent by weight of a metal soap selected from the group consisting of magnesium stearate, calcium stearate, zinc stearate and aluminum stearate, from about 0.1 to about 2 percent by weight of a microcrystalline wax having a melting point in the range of from about 170° F. to about 195° F., from about 68 to 97 percent by weight of white mineral oil having a viscosity in the range from about 55 to about 90 Saybolt Seconds Universal at 100° F. and from about 1 to about 10 percent of a dispersing agent selected from the group consisting of fatty acid esters of glycols, glycerol and sorbitol and polyoxyethylene substituted fatty acid esters of polyhydric alcohols.

3,355,355
ANTIVIRAL CYCLOALKYLAMINE COMPOSITIONS AND METHOD

Robert John Stedman, Paoli, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Feb. 5, 1965, Ser. No. 430,752
29 Claims. (Cl. 167—65)

4. A method of preventing viral infections selected from the group consisting of myxoviruses, poxviruses, Herpesviruses, and picornaviruses comprising administering to a susceptible mammal an effective, but nontoxic, amount of an antiviral composition comprising a member of the group consisting of a compound of the structure



$(CH_2)_n\ CHNRR'$

and the pharmaceutically acceptable, nontoxic acid addition salts thereof, wherein:

n is a positive integer from 6 to 11, and
R and R′ are each selected from the group consisting of hydrogen, lower alkyl, and lower alkanoyl of up to 6 carbon atoms.

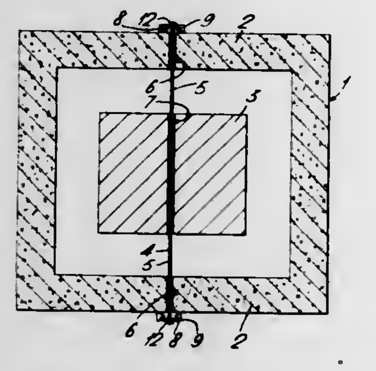
3,355,356
THERAPEUTIC COMPOSITIONS CONTAINING NITRATE ESTERS

Robert H. Broh-Kahn, Hastings on Hudson, and Alexander Galat, Yonkers, N.Y., assignors to Bard Pharmaceuticals Inc., a corporation of New York
No Drawing. Original application Apr. 26, 1962, Ser. No. 190,233, now Patent No. 3,275,642, dated Sept. 27, 1966. Divided and this application Sept. 13, 1965, Ser. No. 496,218
4 Claims. (Cl. 167—65)

3. A therapeutic composition comprising a compound selected from the group consisting of the nitrate salt of the nitrate ester of 3-pyridine carbinol and the nitrate ester of 3-pyridine carbinol and a pharmaceutically acceptable carrier in unit dosage form so that each unit dose contains from 1 to 200 mg. of said compound.

3,355,357
PRESTRESSED CONCRETE PRESSURE VESSELS FOR USE IN NUCLEAR INSTALLATIONS

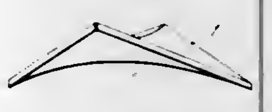
Frederick Sage, Risley, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed June 3, 1965, Ser. No. 460,947
Claims priority, application Great Britain, June 17, 1964, 25,003/64
7 Claims. (Cl. 176—40)



1. A nuclear reactor installation comprising a cylindrical concrete pressure vessel having cylindrical side walls adapted to withstand forces produced by internal pressure of the fluid within the chamber and having opposing ends, a nuclear reactor core and heat exchangers contained in said pressure vessel, an annular shield wall within said vessel for separating said core from said heat exchangers, the said heat exchangers being disposed annularly around said core, elongate means capable of withstanding tensile load extending between the opposing ends and disposed inwardly of said pressure vessel side walls, means for anchoring said elongate means to each of the opposing ends of said pressure vessel thereby connecting the said ends together for bracing said ends for opposing the outwardly directed forces produced by internal pressure of fluid within the vessel, means for cooling said elongate means in regions within the pressure vessel where said elongate means becomes subjected to elevated temperatures, said elongate means being constituted by cable means, and said means for cooling said elongate means comprising a pressure tight tube containing the cable means and extending outside the concrete pressure vessel pressure boundary at both ends, and including means for directing a flow of cooling fluid over the cable means within the pressure tube.

3,355,358
NUCLEAR FUEL ELEMENT HAVING SHEATH OF ANTICLASTIC FORM

John Leslie Craston, Wallingford, and Stanley Frederick Pugh, Abingdon, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Apr. 11, 1966, Ser. No. 541,591
Claims priority, application Great Britain, Apr. 13, 1965, 15,625/65
7 Claims. (Cl. 176—67)



2. A nuclear fuel element comprising a core of nuclear fuel enclosed within a gas-tight sheath, said sheath comprising at least one pair of spaced parallel walls of anticlastic form.

6. A fuel element assembly for a nuclear reactor comprising a plurality of anticlastically curved fuel plates secured in an edge to edge relationship, and wherein each fuel plate is rectangular in plan and provided with a core of nuclear fuel located within a frame, the core and frame being sandwiched between a pair of spaced parallel sheets of anticlastic form.

3,355,359
PROCESS FOR PRODUCING L-GLUTAMIC ACID BY USING CORYNEBACTERIUM MELASSECOLA

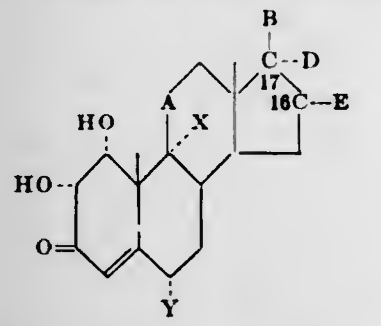
Tetsukazu Goto, Shuichi Nishio, and Hiroshige Kojima, Nobeoka-shi, Takatsugu Kawano, Yokohama-shi, and Shiro Hayakawa and Hitoshi Araki, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushikikaisha, Osaka, Japan
No Drawing. Filed July 12, 1965, Ser. No. 471,438
Claims priority, application Japan, July 18, 1964, 39/40,477
28 Claims. (Cl. 195—29)

1. A process for producing L-glutamic acid by fermentation comprising the steps of: preparing a fermentation medium containing carbohydrate, a nitrogen source and inorganic salts, inoculating said medium with *Corynebacterium melassecola*, fermenting said medium in the presence of at least one member selected from the group consisting of surface active agents and antibiotics under aerobic submerged conditions, and recovering the L-glutamic acid thus produced from said medium.

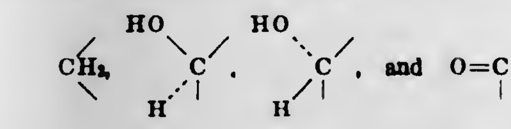
3,355,360
METHOD OF PREPARING 1,2-DIHYDROXY STEROIDS AND DERIVATIVES THEREOF

Louis Israel Feldman, Spring Valley, Chester Eric Holmlund, Pearl River, and Karl Jollivette Sax, West Nyack, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed July 28, 1966, Ser. No. 568,376
10 Claims. (Cl. 195—51)

1. A method of preparing steroids of the formula:



wherein A is selected from the group consisting of



B is selected from the group consisting of hydroxy, lower alkanoyloxy, acetyl and hydroxyacetyl; D is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, lower alkynyl and lower alkanoyloxy, and B and D taken together represent =O; E is hydrogen, and D and E taken together represents a lower alkylidenedioxy group; X and Y are selected from the group consisting of hydrogen and halogen, which comprises subjecting a steroid selected from the group consisting of the corresponding 1,2-dehydro- and 1,2-dihydro-androstenes and -pregnenes to fermentation with an induced 1,2-dihydrogenating microorganism prepared by growing in androst-4-ene-3,17-dione and selected from a member of the genera consisting of Bacillus, Corynebacterium, Bacterium, Mycobacterium and Nocardia and recovering the converted steroid therefrom.

3,355,361
RECOVERY AND PURIFICATION OF UROKINASE

Alex Lesuk, Bethlehem, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 15, 1964, Ser. No. 404,156
21 Claims. (Cl. 195—62)

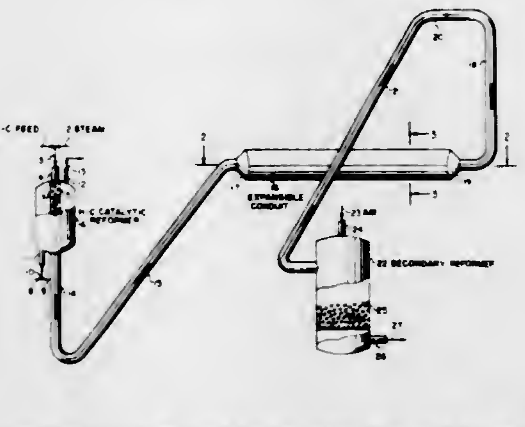
6. In a method of obtaining urokinase which comprises the steps of: treating mammalian urine with a reagent causing formation of a urokinase-containing precipitate; collecting the urokinase-containing precipitate; and eluting the urokinase from said precipitate, the improvement which comprises eluting the urokinase from the urokinase-containing precipitate with a dilute aqueous solution of 6,9-diamino-2-ethoxyacridine.

15. The method for purification of urokinase which comprises: adsorbing urokinase from an aqueous solution containing at least 500 CTA units of urokinase per milliter of solution at a pH in the approximate range 5.0 to 6.5 onto carboxymethylcellulose; and collecting the carboxymethylcellulose with urokinase adsorbed thereon and eluting the urokinase therefrom.

20. Human urokinase in substantially homogeneous form, having a molecular weight of approximately 54,000 and having a specific urokinase activity of approximately 652,000 CTA units per milligram of nitrogen and approximately 104,000 CTA units per mg, of estimated protein, and being substantially free of pyrogens and thromboplastic substances.

3,355,362
HYDROCARBON CATALYTIC REACTOR WITH THERMALLY INSULATED EXPANSION TRANSFER CONDUIT

Paul Korwin, Flushing, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,646
9 Claims. (Cl. 196—136)



1. A hydrocarbon catalytic reactor with a thermally insulated linear expansion transfer conduit substantially free of thermal stress for transferring a high temperature partially reformed synthesis gas stream from a primary steam reformer for the catalytic reforming of a fluid hydrocarbon to a secondary reformer for further catalytic reforming of said partially reformed synthesis gas with air which comprises a first conduit, said first conduit having at least two sections of different linear directions, a first sleeve, said first conduit extending from said primary steam reformer to said first sleeve, a second sleeve, said second sleeve being coaxial with and spaced away from said first sleeve, a second conduit, said second conduit extending in a constant linear direction between said sleeves with each end of said second conduit terminating within one of said sleeves with sliding fit contact, whereby linear thermal expansion of said second conduit is accommodated by displacement of both ends of said second conduit within said sleeves, a third conduit external to and substantially coaxial with said second conduit, fluid-impervious closure means extending between each end of said third conduit and one of said sleeves, a bed of refractory packing disposed in the annular space between said second and said third conduit, and a fourth conduit, said fourth conduit extending from said second sleeve to said secondary reformer and having at least two sections of different linear directions.

3,355,363
METHOD OF PRODUCING A NONAGGLOMERATING CHAR FROM A STRONGLY CAKING COAL

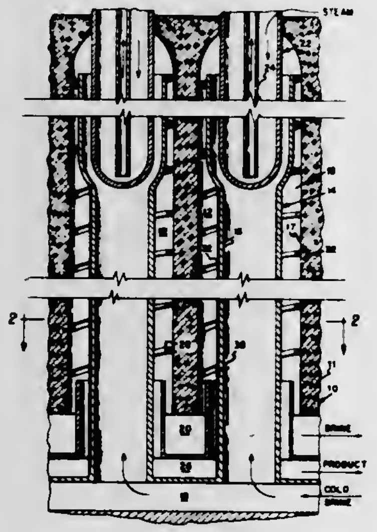
Stanley J. Gasior, Pittsburgh, and Albert J. Forney, Coraopolis, Pa., assignors to the United States of America as represented by the Secretary of the Interior
No Drawing. Filed Feb. 14, 1964, Ser. No. 345,053
9 Claims. (Cl. 201—9)

1. A method of forming a nonagglomerated char from particles of caking coal, said particles having a size of at least about ⅛ inch, which comprises heating said coal in a fixed bed to its softening temperature in flowing contact with a gas containing a small but effective concentration of oxygen, said oxygen concentration being in the

range of about 0.5 to about 3.0 percent, and thereafter continuing said contacting while controlling the temperature of said coal so as to raise the temperature of said coal through its plastic range in not less than about 1 hour.

3,355,364
PLURAL CONDUIT FLASH FILM EVAPORATOR FOR DISTILLING AND CONDENSING SEA WATER

Roland Philip Hammond, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 22, 1965, Ser. No. 489,443
6 Claims. (Cl. 202—172)

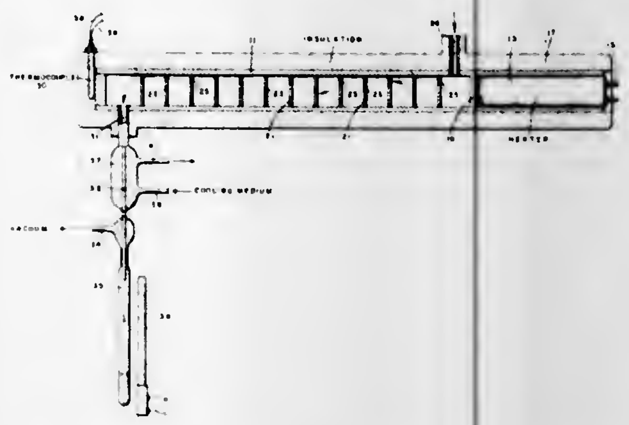


1. A vertical flash evaporator for distilling sea water and other concentratable liquids, comprising an elongated, vertically oriented conduit for conducting a liquid to be distilled in an upward direction, heating means disposed adjacent to the uppermost end of said conduit for heating the liquid, a vertically oriented, elongated surface disposed in close proximity to and exposed to outer surface portions of said conduit for conducting said liquid in a downward direction subsequent to the heating of the liquid and the conduction thereof through said conduit with said downwardly directed flow of liquid being at a temperature greater than that of the conduit and the liquid therewithin for progressively heating the liquid as it is conducted through the conduit due to the temperature differential between the oppositely flowing liquids, and flow liquid retarding means contiguous to the vertical surface along essentially the entire length thereof for forming and maintaining the downwardly directed flow of liquid in the form of a film to define a flashing volume between the film and the relatively cooler outer surface portions of the conduit for causing a portion of the liquid forming the film to vaporize and condense on said outer surface portions of the conduit and define a discrete downwardly directed flow of condensate thereon.

3,355,365
HORIZONTAL DISTILLATION ANALYZER WITH PLURAL DISTILLATE RECEIVERS

Roger M. Butler and Israel S. Pasternak, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed July 2, 1964, Ser. No. 379,824
8 Claims. (Cl. 202—197)

1. Apparatus for distilling and analyzing small quantities of high boiling materials and the like, comprising a hollow heat conducting bar horizontally positioned containing a series of spaced perforated disks, means for passing a sample of the material to be tested through said series of disks, heating means at one end of the bar and insulating means for establishing a temperature gradient along said bar with the temperature decreasing from the point of feed introduction to its exit, and means for receiving samples of materials distilled through said system.



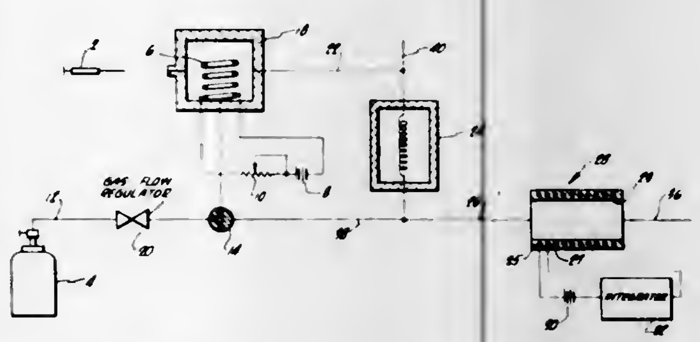
3,355,366
PROCESS FOR INHIBITING FOAMING OF HEXACHLOROBUTADIENE-1,3 BY ADDITION OF DIATOMACEOUS EARTH

William Q. Beard, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Jan. 21, 1966, Ser. No. 522,055
1 Claim. (Cl. 203—20)

A process for inhibiting foaming normally encountered during boiling of a foamable liquid comprising hexachlorobutadiene-1,3 comprising adding particulate diatomaceous earth to said foamable liquid in an amount sufficient to reduce the foaming tendencies thereof.

3,355,367
METHOD AND APPARATUS FOR CHROMATOGRAPHIC MOISTURE ANALYSIS

Roger F. Marsh, Arcadia, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Aug. 10, 1964, Ser. No. 388,624
6 Claims. (Cl. 204—1)



3. A process for determining the amount of water present in liquid hydrocarbons comprising the steps of:

vaporizing a sample of the water-bearing liquid hydrocarbons,

passing the vaporized sample with an inert carrier gas which has been pre-wetted with a predetermined amount of moisture to a suitable chromatographic column, and substituting the inert carrier gas for hydrocarbons by passing the sample therethrough,

selectively flowing the water and inert carrier gas from the column to an electrolytic cell having a pair of electrodes bridged by a film of hygroscopic material interiorly of the cell, and

impressing an electric potential across the cell electrodes to electrolyze moisture absorbed by the hygroscopic material.

3,355,368
ELECTRODEPOSITION OF METALS

Edwin J. Smith, Steubenville, and Leslie D. McGraw, Columbus, Ohio, assignors, by direct and mesne assignments, to National Steel Corporation, Weirton, W. Va., a corporation of Delaware
No Drawing. Filed Dec. 13, 1962, Ser. No. 244,293
14 Claims. (Cl. 204—14)

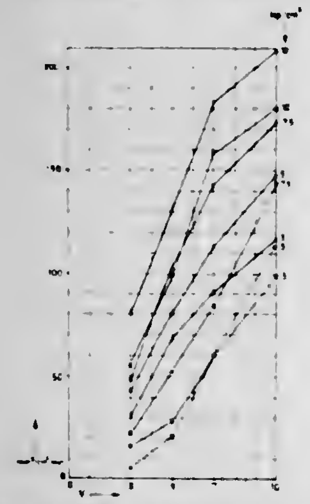
1. A process for electrodepositing a metallic material on an electrically conductive substrate comprising

subjecting at least a portion of the substrate as a cathode to the action of an electrolyzing electric current while immersed in a bath consisting essentially of an organic complex of an aluminum halohydride and solvent ether,

the bath containing about 0.1–5% by volume of uncombined solvent ether.

3,355,369
PROCESS USING A FLUORIDE ELECTROLYTE FOR THE ELECTROLYTIC AND ELECTROCHEMICAL WORKING OF METALS

Remy Chaperon, Oberengstringen, and Werner Ullmann, Locarno-Orselina, Switzerland, assignors to A.G. fur Industrielle Elektronik AGIE, Losone-Locarno, Switzerland, a corporation of Switzerland
Filed Dec. 9, 1963, Ser. No. 329,021
Claims priority, application Switzerland, Dec. 11, 1962, 14,500/62
10 Claims. (Cl. 204—143)



1. A process for the electrolytic working of metallic workpieces comprising the steps of providing a workpiece formed of a material selected from the group consisting of steel and cemented carbides as one electrode and spacing said workpiece a small distance from another electrode, filling the space between said electrodes with an electrolyte and removing material from said workpiece by passing a direct current between said electrodes and through said electrolyte, said electrolyte consisting essentially of an aqueous solution of a water soluble fluoride salt having a pH ranging from a generally neutral solution to a mildly alkaline solution.

3. Process for the electrolytic working of metallic workpieces according to claim 1 including the step of covering the surfaces of the workpiece which are not to be worked with an electron conductive layer in order to limit material removal.

3,355,370
CATHODIC PROTECTION METHOD AND APPARATUS

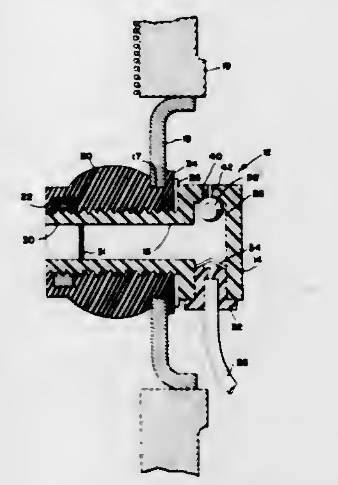
Hugh M. Baker, Jr., Washington, D.C. (620 Baltimore-Annapolis Blvd., Glen Burnie, Md. 21061)
Filed Jan. 15, 1964, Ser. No. 337,791
2 Claims. (Cl. 204—147)

1. A method of protecting a water jacket of a water cooled engine from the corrosive effects of saline water within the water jacket which comprises,

applying to the water jacket of the engine sufficient electrical potential to render same a cathode,

insulatingly disposing an anode to the exterior of the water jacket in fluid communication with the interior thereof,

electrolyzing any water confined to the interior of the water jacket,



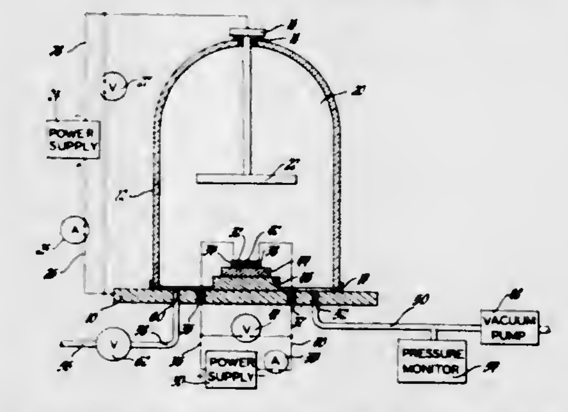
venting to atmosphere gases inclusive of chlorine produced at the anode while simultaneously preventing the escape of the water from the engine water jacket,

providing a power source and resistor means shunted by a diode in circuit with the anode and the cathode, and

compensating for two different values of said source to maintain the current between the anode and the cathode constant by reversing the electrical connections of said resistor means.

3,355,371
METHOD OF ANODIZING A METAL IN A PLASMA INCLUDING CONNECTING SAID METAL IN A SEPARATE ELECTRICAL CIRCUIT

John W. Hile, Royal Oak, and Matthew C. McKinnon, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 29, 1964, Ser. No. 378,760
7 Claims. (Cl. 204—164)



1. A process for the formation of a thin, high purity oxide film of a precisely controlled thickness on an oxidizable substrate comprising the steps of positioning said oxidizable substrate between and electrically isolated from a cathode and an anode, reducing the oxygen pressure environment surrounding said oxidizable substrate to a pressure ranging from about 1 to 1000 microns of mercury, applying a low voltage in a first circuit ranging from about 0.1 to 15 volts across said oxidizable substrate, and applying a high voltage in a second circuit ranging from about 400 to 1000 volts across said cathode and said anode whereby said oxidizable substrate is immersed in a glow discharge, said low voltage determining the thickness of said oxide film.

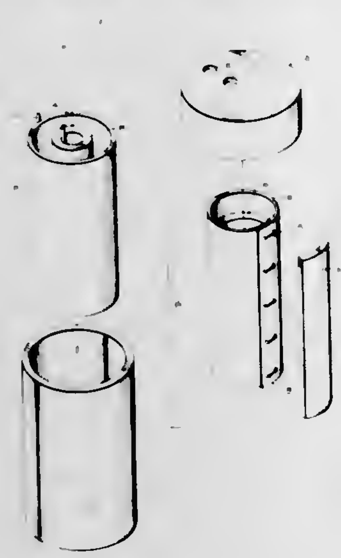
3,355,372

SYSTEM, APPARATUS, AND METHOD FOR THE REMOVAL OF BACKGROUND STAIN BY MEANS OF ELECTRIC CURRENT FROM AN ELECTROPHORESIS SUPPORTING MEDIUM

Thomas G. Ferris, 5420 Alta Vista Road, Bethesda, Md. 20014; Richard E. Budd, 659 Wildwood Blvd., Williamsport, Pa. 17701; and Robert E. Easterling, 721 Courtland Drive (P.O. Box 711), Sanford, N.C. 27330

Filed Mar. 6, 1963, Ser. No. 263,361

5 Claims. (Cl. 204—180)



1. A method of removing stain from an electrophoresis supporting medium comprised of a slab of gel which includes:

- adhering said slab of gel to filter paper,
- configuring the laminate formed of said gel and filter paper into a generally cylindrical shape with the gel on the interior thereof,
- fastening the adjacent end portions of the filter paper together to retain the laminate in its generally cylindrical, relatively rigid form,
- disposing said laminate generally vertically concentrically in electrolyte between a pair of generally concentrically spaced generally cylindrical electrodes and free of contact with each electrode,
- maintaining the electrolyte at a level essentially just covering the upper edge of said gel, and
- applying a direct electric potential difference between said electrodes to attract stain from said gel through said filter paper toward the outer electrode.

3,355,373

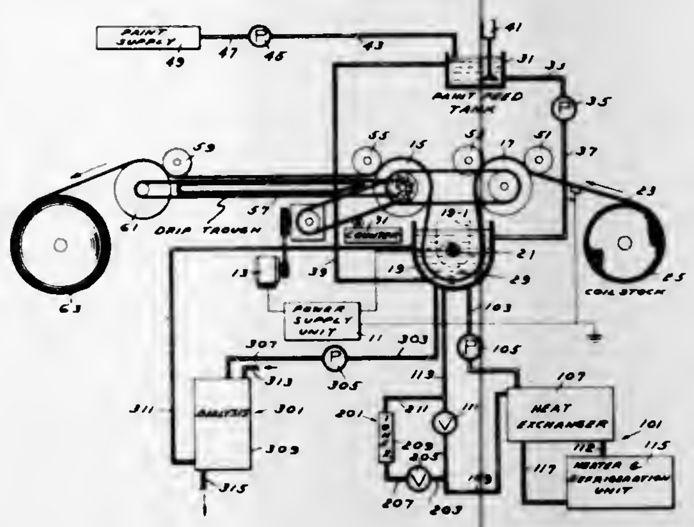
METHOD FOR ADJUSTING THE BATH COMPOSITION IN A CONTINUOUS ELECTRODEPOSITION PROCESS

George E. F. Brewer, Novi, and Gilbert L. Burnside, Oak Park, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 30, 1963, Ser. No. 334,333

6 Claims. (Cl. 204—181)

1. In a method of operating a continuous electrocoating operation wherein electrically conductive objects are provided with an organic coating by electrically induced deposition of organic coating material upon said objects while said objects are passing through an aqueous dispersion of said coating material retained in a coating tank, the improvement which comprises feeding a first portion of an aqueous dispersion of organic coating material to said tank to provide a first bath therein, feeding a second and significantly smaller portion of said dispersion to a second and significantly smaller tank to form a second bath therein, passing a continuous strip of electrically conductive sheet material through said second bath at a rate such that the ratio of the volume of said second bath to the surface area of said strip passing therethrough per unit time is significantly smaller than the ratio of the volume of said first bath to the surface area of the workpieces passing therethrough per unit time, transmitting a direct current of electrical energy through said second bath between the segment of said strip within said second bath and an electrode in contact with said second bath thereby forming an organic coating on said strip, monitoring the coating on said strip and adjusting the replacement feed to said first bath in accordance with changes in the coating formed on said strip.



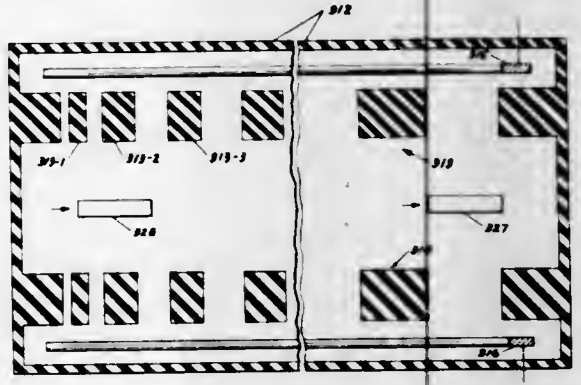
3,355,374

METHOD OF ELECTROCOATING WITH VARIATION OF ELECTRICAL INDUCEMENT

George E. F. Brewer, Novi, Gilbert L. Burnside, Oak Park, and Allen H. Turner, Ann Arbor, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 30, 1963, Ser. No. 334,482

9 Claims. (Cl. 204—181)



1. In a continuous method of coating which comprises passing electrically conductive objects through a liquid coating bath having an organic coating material dispersed therein and a first electrode in electrical communication therewith, each of said objects while passing through said bath serving as a second electrode, and providing a direct current flow of electrical energy through said bath and between said first electrode and said second electrode thereby electrically inducing deposition of said coating material upon said second electrode, the improvement which comprises passing said second electrode through a zone of predetermined electrical inducement to coating as measured by the current density upon an uncoated electrode and thence into a zone of greater electrical inducement to coating as measured by the current density upon an uncoated electrode before removing said second electrode from said bath.

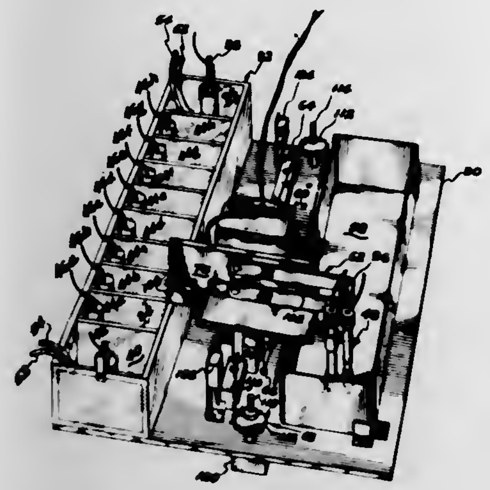
3,355,375

APPARATUS FOR ELECTROPHORETIC FRACTIONATION OF AMPHOLYTES

Durward B. Badgley, Chicago, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed Oct. 9, 1962, Ser. No. 229,442

9 Claims. (Cl. 204—299)



3. An improved apparatus for the electrophoretic fractionation of ampholytes, said apparatus comprising: a bank of a plurality of cells for containing a solution of ampholytic materials, said cells permitting migration of ampholytes therebetween; an anode and a cathode positioned at opposite ends of the plurality of cells; a plurality of pH adjusting electrodes, one of said electrodes positioned in each cell, said anode, cathode, and electrodes being connectable to a source of D.C. potential having positive and negative sides; first relay switches connected between each said electrode and the negative side of said D.C. potential; second relay switches connected between each of said electrodes and the positive side of said D.C. potential in parallel to said first switch, both said first and second switches being normally open; first switching means adapted to sequentially connect the first relays to a source of electric power to close one of said first relay switches and place a negative potential on one of said electrodes; a second switching means adapted to sequentially connect the second relays to the source of electric power and close one of said second relay switches and place a positive potential on one of said electrodes; control means between said first and second switching means and the source of electric power, said control means adapted to connect not more than one of said first and second switching means to said source of electric power in accordance with the variation of the pH level in a given cell from a desirous pH level; a rinse tank spaced parallel to said cells; a pH sensing means connected to said control means, said sensing means adapted to be inserted into each cell and into said rinse tank; a track positioned between said rinse tank and said cells; a carriage slidingly supported on said track; a stop member adjacent said track opposite each cell; a limit switch mounted on said carriage for engaging each stop member; a pair of arms rotatably mounted on said carriage, said arms being positioned to be rotatable through an arc transverse of said carriage between said rinse tank and said cells, said arms being connected together to remain parallel throughout rotation and pivotally supporting said pH sensing means at the ends thereof; a reversible motor connected to drive at least one of said arms; a pair of trip switches mounted at each side of said carriage in the path of said arms, said switches being electrically connected to said reversible motor to stop the movement of said arms and reverse the motor at positions where the pH sensing means is inserted in a cell and said rinse tank; and a drive motor connected to said carriage for moving it along said track, said drive motor being electrically connected to said limit switch to stop said carriage at positions where the pH sensing means will be adjacent successive cells.

3,355,376

HYDROCRACKING OF POLYNUCLEAR HYDROCARBONS

Everett Gorin, Pittsburgh, Robert T. Struck, Bridgeville, and Clyde W. Zielke, Pittsburgh, Pa., assignors, by mesne assignments, of one-half to Consolidation Coal Company, a corporation of Delaware, and one-half to the United States of America as represented by the Secretary of the Interior

Filed Nov. 15, 1965, Ser. No. 507,970

9 Claims. (Cl. 208—10)

1. In the process for converting polynuclear aromatic hydrocarbonaceous feedstock to gasoline by hydrocracking wherein the feedstock is contacted with molten zinc chloride in the presence of hydrogen at elevated temperature and pressure to effect hydrocracking of the feedstock, the improvement which comprises maintaining a mixture of zinc chloride and zinc oxide in a hydrocracking zone, said chloride and oxide being in a mole ratio of at least ten parts chloride to one part oxide.

3,355,377

ACTIVATED CARBON IN THE PREPARATION OF BINDER PITCH

Laurence F. King, Moorestown, Ontario, Canada, assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,076

10 Claims. (Cl. 208—22)

1. A process for producing a petroleum-derived pitch which comprises (a) heating, under partial reflux conditions, a petroleum hydrocarbon fraction having an initial boiling point of about 400° F. and an end boiling point of about 1100° F. in the presence of an activated carbon catalyst to form an overhead fraction and a bottoms fraction; (b) separating said catalyst from said bottoms fraction; (c) subjecting said bottoms fraction to a vacuum distillation; and (d) recovering, as the pitch product, the residuum of said vacuum distillation.

10. The petroleum derived pitch produced according to the process of claim 1.

3,355,378

AMYLOSE IN THE REDUCTION OF POUR POINT

Inder Cheema, Madison, and Harold N. Weinberg, East Brunswick, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed July 8, 1965, Ser. No. 470,486

11 Claims. (Cl. 208—28)

1. An improved process for lowering the pour point of a waxy oil fraction, the said waxy oil fraction pouring at a temperature of 60 to 120° F. and containing waxy long chain normal paraffins which comprises contacting the said waxy oil fraction with 10–70 wt. percent of amylose whereby a complex forms between said amylose and said long chain normal paraffins, the said contacting taking place at a temperature of 0 to 300° F. and a pressure of 0 to 200 p.s.i.g. for a period of 5 to 180 minutes, filtering the said waxy oil whereby the said complex is removed and a dewaxed oil is obtained which pours at a temperature of —50 to 10° F.

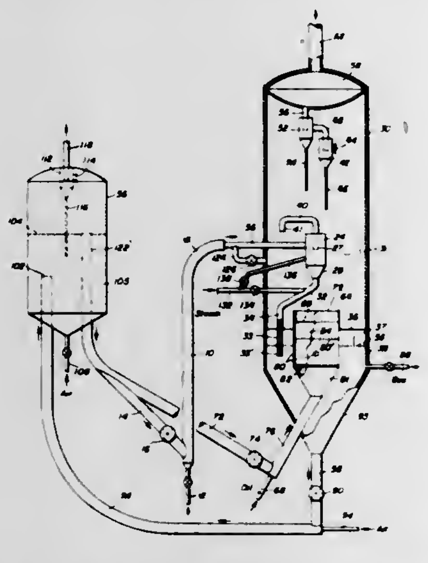
3,355,379
POLY-ALPHA-OLEFIN DEWAXING AID

Joseph J. Leonard, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 8, 1965, Ser. No. 485,937
5 Claims. (Cl. 208—33)

1. A process for solvent dewaxing a hydrocarbon oil comprising mixing said oil with a dewaxing solvent and from 0.01 to 1.00% by weight of a poly-alpha-olefin having an average molecular weight of 1.0 to $4,0\times10^7$, chilling the mixture to precipitate wax, and passing said mixture to a filter whereby the precipitated wax is separated from the oil.

3,355,380
CONTROLLING CATALYST HOLDUP IN CONVERSION OF HYDROCARBONS

Edward C. Luckenbach, Mountainside, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed July 27, 1965, Ser. No. 475,085
10 Claims. (Cl. 208—153)

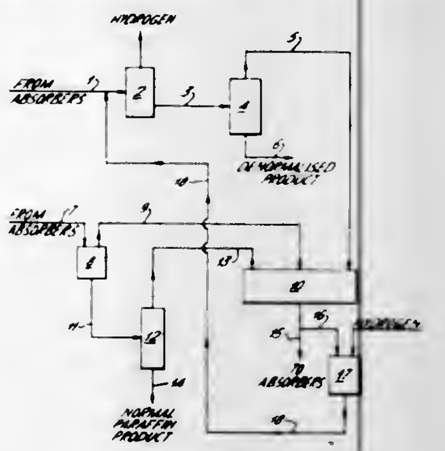


1. A process for converting hydrocarbons which comprises passing a relatively dilute suspension of catalyst particles in hydrocarbon vapors as an upflowing stream through an elongated conversion zone, passing a portion of the suspension from the exit end of said elongated conversion zone to a separation zone arranged in an enlarged zone to separate spent catalyst particles from partially converted hydrocarbon vapors, passing another portion of the suspension through a by-pass line as a by-pass stream around said separation zone and into said enlarged zone to separate spent catalyst particles from partially converted vapors, combining partially converted hydrocarbon vapors from said separation zone and from said by-pass line, passing said combined partially converted hydrocarbon vapors upwardly in said enlarged zone where conversion is completed and passing converted hydrocarbon vapors through a second separation zone to recover converted hydrocarbon vapors from entrained catalyst particles.

3,355,381
REMOVING OLEFINS FROM MOLECULAR SIEVE DESORPTION GAS

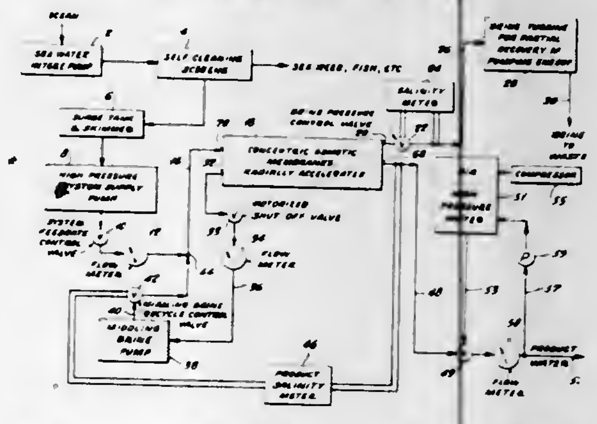
John Francis Gardner, Thames Ditton, Surrey, Paul Anthony Lawrence, Stanwell, Middlesex, and John Neil Turnbull, Twickenham, Middlesex, England, assignors to The British Petroleum Company Limited, London, England, a corporation of England
Filed Oct. 28, 1966, Ser. No. 590,277
Claims priority, application Great Britain, Nov. 4, 1965, 46,754/65
7 Claims. (Cl. 208—310)

1. In a cyclic process employing molecular sieves to separate straight chain hydrocarbons from branched chain and cyclic hydrocarbons, in which process the circulation of desorbing and purging medium is effected, and in which process olefins tend to build up in the circulating desorbing medium to an equilibrium level, the olefin concentration is controlled by hydrogenating at least a proportion of the olefins in the circulating desorbing medium, thereby maintaining the olefin concentration at a level below the equilibrium level.



3,355,382
CENTRIPETAL ACCELERATION METHOD AND APPARATUS

Morgan G. Huntington, Galesville, Md., assignor to Waterdrink, Inc., Salt Lake City, Utah, a corporation of Nevada
Continuation of application Ser. No. 385,964, July 29, 1964. This application Oct. 22, 1964, Ser. No. 418,574
22 Claims. (Cl. 210—22)

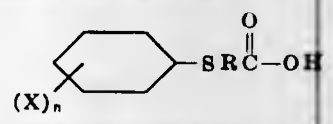


1. In a process for the desalination of a saline solution wherein said saline solution is placed into contact with one side of a semi-permeable membrane under a pressure greater than the osmotic pressure of said saline solution, the improvement comprising subjecting said saline solution to acceleration greater than gravity in a direction away from said one side of said membrane.

3,355,383
POLYHALOPHENYLTHIOALIPHATIC ACIDS AND THEIR ESTERS AND SALTS

Gilbert H. Berezin, Walnut Creek, Guy H. Harris, Concord, and Bryant C. Fischback, Walnut Creek, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 13, 1959, Ser. No. 826,462
25 Claims. (Cl. 252—33.6)

1. A lubricant composition consisting essentially of a lubricant base and from 0.1 percent to 20 percent by weight of a compound selected from the group consisting of those acids having the formula



wherein R is a saturated aliphatic hydrocarbon radical containing from 1 to 18 carbon atoms, inclusive, and the halogenated derivatives thereof, said halogen substituent having an atomic number of 17 to 35 and X is a halogen substituent having an atomic number from 17 to 35 inclusive, and *n* is an integer from 4 to 5, inclusive, and their alkali metal, alkaline earth metal, ammonium, alkylamine and alkanolamine salts and lower alkyl esters.

3,355,384
LITHIUM SOAP GREASES CONTAINING A RUST INHIBITOR

William P. Scott, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Filed Sept. 14, 1964, Ser. No. 396,361
14 Claims. (Cl. 252—36)

1. A lithium base lubricating grease comprising a liquid lubricating oil and a grease-forming amount of a lithium fatty acid soap, said grease containing a rust inhibiting amount of a combination of lead naphthenate and a petroleum oxidation product, wherein said lead naphthenate is present in an amount in the range of about 0.50 to about 5.0 percent (weight) and said petroleum oxidation product is present in an amount in the range of about 0.50 to about 5.0 percent (weight), said petroleum oxidation product being a mixture of saturated aliphatic oxygen-containing compounds obtained by controlled partial oxidation of petroleum hydrocarbons and comprising about 23–40 percent by weight saturated aliphatic carboxylic acids, about 7–50 percent by weight neutral lactones and esters from said acids and about 24–40 percent by weight unsaponifiable non-acidic oxygen-containing aliphatic compounds.

3,355,385
PROCESS FOR REMOVING ORGANIC COATINGS

Charles Joseph Mackley, Philadelphia, Pa., assignor to Pennsalt Chemical Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed June 18, 1965, Ser. No. 465,151
4 Claims. (Cl. 252—104)

1. The process of removing an organic coating from a substrate without corroding the substrate by contacting the organic coating for a time sufficient to release the organic with coating a stripping composition in which the principal ingredients consist essentially of hydrogen peroxides, water and at least one organic paint stripping solvent, said hydrogen peroxide and organic paint stripping solvents being present at concentrations effective in releasing the organic coating from the substrate, and thereafter, removing the said stripping composition and released organic coating from the substrate.

3,355,386
GERMICIDAL NONIONIC-DETERGENT IODINE COMPOSITIONS

Abraham Cantor, Elkins Park, Pa., and Murray W. Winicov, Flushing, N.Y., assignors to West Laboratories, Inc., Long Island City, N.Y., a corporation of New York
No Drawing. Filed Oct. 19, 1965, Ser. No. 498,130
15 Claims. (Cl. 252—106)

1. A detergent-iodine composition providing enhanced iodine color in high use dilution, said composition consisting essentially of a detergent-iodine complex providing a germicidally effective amount of iodine, the detergent component of said complex being a water soluble primary alcohol-ethylene oxide condensate having an alcohol moiety with an average carbon content within the range of C_{12} to C_{18}, and

$$\frac{n}{2}-1$$

to $2n-1$ mols of ethylene oxide, where *n* is the average number of carbon atoms in said alcohol moiety, the ratio of detergent to available iodine in said complex being at least 5:1.

9. A detergent-iodine composition providing enhanced iodine color in high use dilution, said composition consisting essentially of a detergent-iodine complex providing a germicidally effective amount of iodine, the detergent component of said complex being a water soluble alkylphenol-ethylene oxide condensate in which the alkyl substituent comprises one or more primary aliphatic radicals having a total of 12 to 18 carbon atoms, and the number of mols of ethylene oxide is within the range of 0.8 to 3.0 times the number of carbon atoms in said alkyl substituent, the ratio of detergent to available iodine in said complex being at least 5:1.

12. A detergent-iodine composition providing enhanced iodine color in high use dilution, said composition consisting essentially of a detergent-iodine complex providing a germicidally effective amount of iodine, the detergent component of said complex being a water soluble primary alcohol-alkylene oxide condensate represented by the formula

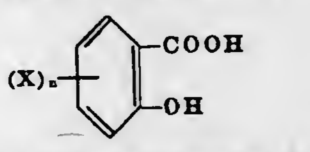
$$RO(EO,PO)_x(EO,PO)_yH$$

wherein R is C_{12} to C_{18} primary alkyl, EO and PO represent ethylene oxide and propylene oxide respectively, the weight percent of EO is within the range of 0 to 45% in one of the blocks *x*, *y* and within the range of 60 to 100% in the other of the blocks *x*, *y*, and the total number of moles of combined EO and PO is in the range of 6 to 40 moles, with 1 to 10 moles in the PO rich block, and 5 to 30 moles in the EO rich block, the ratio of detergent to available iodine in said complex being at least 5:1.

3,355,387
CLEANSING COMPOSITION

Emil T. Hinkel, Jr., Bethlehem, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 8, 1965, Ser. No. 512,520
3 Claims. (Cl. 252—106)

1. A stable, non-soap cleansing composition consisting essentially of an aqueous emulsion of alkylphenoxypolyalkylene ether sulfonate containing 0.1–1.0% by weight of a halogenated salicylic acid of the formula



wherein X is halogen and *n* is a number from 1 to 3, the amount of said sulfonate being between 10 and 20% of said composition by weight, said emulsion having a pH of 5–6.

3,355,388
CLEANSING COMPOSITIONS ADAPTED TO INHIBIT THE FORMATION OF BODY ODOR

Kenneth S. Karsten, Westport, Conn., assignor to R. T. Vanderbilt Co., Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Apr. 7, 1967, Ser. No. 629,115
5 Claims. (Cl. 252—107)

1. A composition consisting essentially of a detergent base selected from the class consisting of at least one of water soluble soaps, nonionic detergents, anionic detergents and mixtures thereof, and a skin-substantive anti-

oxidant selected from the class consisting of mono-, di-, and tri-styrenated phenols, tri-[(intermediate-alkyl) phenyl] phosphites, 2,2'ditertiary butyl-4,4'-isopropylidene diphenol (para intermediate-alkyl phenyl) phosphites, and 2,2'-methylenebis [6-(1-methyl-cyclohexyl)-para-cresol], said antioxidant being present in said composition in an amount in the range of at least about 1% to about 4% by weight and sufficient to inhibit the formation of body odor from an area of the human body cleansed with said composition.

3,355,389
DETERGENT BARS HAVING LIME SOAP DISPERSING CHARACTERISTICS

David M. Marquis, Orinda, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed July 20, 1964, Ser. No. 383,914

11 Claims. (Cl. 252—121)

6. A detergent bar having good lime soap dispersing characteristics, and suitable for use in hard water, consisting essentially of a water-soluble soap, a water-soluble nonsoap synthetic detergent salt of an organic sulfuric reaction product having in its molecular structure a member selected from the group consisting of sulfonic acid and sulfuric acid ester radicals, and, as a lime soap dispersant, a water-soluble salt of thiodisuccinic acid having at least two hydrogen atoms of the carboxyl groups replaced by a metal selected from the group consisting of the alkali metals and magnesium, the aforesaid ingredients being present in proportionate amounts by weight percent based on soap, lime soap dispersant, and synthetic detergent ranging from 5 to 90, soap; 5 to 90, nonsoap synthetic detergent; and 5 to 25, lime soap dispersant.

3,355,390
METHOD FOR PREPARING HOMOGENEOUS DETERGENT SLURRY

Edwin L. Behrens, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 6, 1965, Ser. No. 511,985

7 Claims. (Cl. 252—137)

1. The process of preparing a homogeneous detergent slurry comprising the steps of

(a) mixing, by weight of the final detergent slurry, from about 25% to about 40% water, from about 1% to about 20% of an alkylene oxide-containing nonionic synthetic detergent, from about 1% to about 50% of the trisodium salt of nitrilotriacetic acid, said salt of nitrilotriacetic acid being added in amount sufficient to provide an easily pumpable, homogeneous slurry but in an amount less than its own solubility in the final slurry; and thereafter,

(b) adding and mixing homogeneously therein to form the final slurry from about 5% to about 60% of an hydratable sodium tripolyphosphate builder salt; the amount of said builder salt being not more than about five times the weight of said trisodium salt of nitrilotriacetic acid.

3,355,391
TRICHLOROTRIFLUOROETHANE WATER EMULSION SYSTEM

Bernhardt Joseph Eiseman, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 3, 1964, Ser. No. 408,683

2 Claims. (Cl. 252—153)

1. An emulsion system consisting essentially of a basic composition containing, by weight, 0.25 to 50% water, 0.1 to 45% isopropylammonium dodecylbenzenesulfonate and at least 30% 1,1,2-trichloro-1,2,2-trifluoroethane, and, as inhibitors, 0.15% nitromethane and 0.07% propargyl alcohol, based on the basic composition.

3,355,392
ALKALINE GERMICIDAL CLEANER WITH COLOR INDICATOR

Abraham Cantor, Elkins Park, Pa., and William Schmidt, Jamaica, and Murray W. Winicov, Flushing, N.Y., assignors to West Laboratories, Inc., Long Island City, N.Y., a corporation of New York

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,161

5 Claims. (Cl. 252—99)

1. An alkaline germicidal cleaning composition having indicator means to signify the minimum contact time for effective germicidal action in use dilutions thereof, said composition consisting essentially of a mixture of inorganic alkaline cleaning components providing a pH of 10.5 to 11.5 in aqueous use dilution containing amounts of the order of 1.0 to 2.5% by weight of said composition, 0.25 to 3% of a quaternary ammonium germicide selected from the group consisting of benzethonium chloride, dodecyl benzyl trimethyl ammonium chloride, dodecyl benzyl diethyl ethanol ammonium chloride, cetyl pyridinium chloride and bromide, dodecyl benzyl triethanol ammonium chloride, N(lauroyl colaminoformylmethyl)pyridinium chloride, and dodecyl benzyl diethanol ammonium chloride, 0.01 to 0.1% of a water soluble dye selected from the group consisting of F.D. & C. Blue No. 1, D. & C. Blue No. 4, D. & C. Blue No. 7, F.D. & C. Violet No. 1, F.D. & C. Blue No. 2, F.D. & C. Green No. 1, F.D. & C. Green No. 2, and Crystal Violet, and an oxygen releasing inorganic per-compound in an amount to decolorize said dye in such use dilution in a time interval of 0.5 to 5 minutes, said inorganic per-compound being selected from the group consisting of perborates, persulfates, perphosphates, percarbonates, and stabilized (granular coated) sodium peroxide.

3,355,393
SMALL SPHERICAL NUCLEAR FUEL PARTICLES AND PROCESSES OF MAKING SAME

Roger E. Swanson, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Sept. 14, 1965, Ser. No. 487,294

20 Claims. (Cl. 252—301.1)

12. A small spherical particle having a diameter in the range of about 10 to 500 microns adapted to sintering without melting to a spherical particle having a diameter of about the same order of magnitude as the original particle containing a refractory uranium compound, consisting essentially of uranium trioxide containing from about 1 to 65 percent by weight of an additive substance of the group consisting of carbon and refractory metallic oxides homogeneously dispersed therein in finely divided form, the amount of said additive being from about one up to about 15 percent by weight when said additive is carbon.

19. A spherical particle about 10 to 500 microns in diameter adapted to heating to produce a preform useful for making spherical particles having a diameter of about the same order of magnitude as the original particle containing a refractory uranium compound for use in nuclear fuel elements, consisting essentially of hydrated uranyl nitrate and in admixture therewith from about 1 to 15 percent by weight, based on the total weight of the mixture, of a finely divided substance of the group consisting of carbon and finely divided refractory metallic oxides.

3,355,394
STABLE WATER-IN-OIL DISPERSIONS AND PROCESS FOR THEIR MANUFACTURE

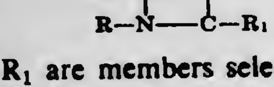
Helmut Korbanka, Hofheim, Taunus, and Fritz Soldan, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,384

Claims priority, application Germany, Nov. 8, 1963, F 41,228

10 Claims. (Cl. 252—309)

1. In the process for the manufacture of a stable water-in-oil dispersion by dispersing water in a water-insoluble oily material consisting essentially of a liquid aliphatic or aromatic hydrocarbon, grease, oil or wax, the improvement which comprises adding as dispersing agent a copolymer of ethylene and a compound of the formula



$$R-\overset{CH_2=CH}{\overset{|}{N}}-\!\!-\overset{O}{\overset{\|}{C}}-R_1$$

wherein R and R_1 are members selected from the group consisting of alkyl-, aryl-, aralkyl-groups and methylene groups linked to a saturated ring, said dispersing agent being oil-soluble.

3,355,395
ANTIFOAM COMPOSITION AND METHOD OF REDUCING AND PREVENTING FOAMING IN AQUEOUS SYSTEMS

Richard W. Awe, Daniel R. Pail, and Gordon L. Axon, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

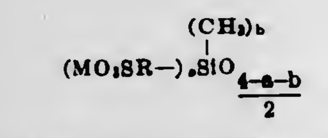
No Drawing. Filed Mar. 27, 1964, Ser. No. 355,490

17 Claims. (Cl. 252—321)

1. An antifoam composition comprising an intimate admixture of

(1) a sulfur-containing siloxane copolymer containing an average of from 1.75 to 2.1 organic radicals per silicon atom, said copolymer consisting essentially of

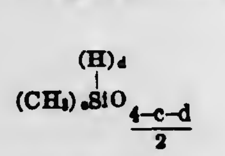
(A) from 0.04 to 3.0 mol percent units of the formula



$$(MO_3SR-)_a\overset{(CH_3)_b}{\overset{|}{Si}}O_{\frac{4-a-b}{2}}$$

wherein M is selected from the group consisting of NH_4^+ ions, alkali metal and hydrogen atoms, R is a divalent hydrocarbon radical selected from the group consisting of alkylene radicals containing from 2 to 30 inclusive carbon atoms, cycloalkylene radicals containing from 4 to 18 inclusive carbon atoms and aralkylene radicals containing from 7 to 18 inclusive carbon atoms, wherein the sulfur atom is attached to the carbon atom in R which is at least the second carbon atom away from the silicon atom, a has an average value of from 1 to 3 inclusive, b has an average value of from 0 to 2 inclusive and the total average value of $a+b$ is from 1 to 3 inclusive, and

(B) from 97.0 to 99.96 mol percent siloxane units of formula



$$(CH_3)_c\overset{(H)_d}{\overset{|}{Si}}O_{\frac{4-c-d}{2}}$$

wherein c has an average value of from 1 to 2.1 inclusive, d has an average value of from 0 to 1 inclusive and the total value of $c+d$ is from 1.75 to 2.1 inclusive, and

(2) a finely divided filler selected from the group consisting of silica and carbon black,

there being, based on the total weight of the composition, from 90 to 99 percent by weight of (1) and from 1 to 10 percent by weight of (2).

2. A method of reducing and preventing foaming in aqueous systems which comprises admixing with said aqueous system a minor amount sufficient to inhibit foam of the composition of claim 1.

3,355,396
PRODUCTION OF SILICA-ALUMINA HYDROGEL-ALUMINA HYDROGEL CRACKING CATALYSTS

Robert R. Otremba, Chicago, and George C. Atteberry, Villa Park, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 4, 1963, Ser. No. 321,318

6 Claims. (Cl. 252—440)

1. A process for manufacture of a cracking catalyst which comprises mixing a silica-alumina hydrogel containing on a dry basis about 65–75% by weight of silica, as SiO_2, and 25–35% by weight of alumina, as Al_2O_3, with an alumina hydrogel in an amount sufficient to provide in the mixture a total alumina content, as Al_2O_3, of 40–55% by weight on a dry basis, washing said alumina hydrogel with water to remove a portion of the water-soluble electrolyte residues therein prior to mixing of said alumina hydrogel and said silica-alumina hydrogel, said residues comprising sodium ion and sulfate, said residues being 35–65% by weight of the sodium ion, as Na_2O, and 35–65% by weight of sulfate ion present in the hydrogel prior to washing, drying the resultant hydrogel mixture to produce a xerogel, and washing the xerogel with water to remove residual electrolyte therein.

3,355,397
TETRAFLUOROETHYLENE EPOXIDE POLYETHERS

Joseph Leo Warnell, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,242

4 Claims. (Cl. 260—2)

1. A homopolymer of tetrafluoroethylene epoxide consisting essentially of recurring units having the formula $—CF_2—CF_2O—$, said polyether having a degree of polymerization of at least 50 and an inherent viscosity of at least 0.2 as measured in perfluorobutyloxolone.

3,355,398
CELLULAR POLYURETHANES PREPARED UTILIZING SODIUM BOROHYDRIDE AS A BLOWING AGENT

Robert E. Kass, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

No Drawing. Filed May 5, 1964, Ser. No. 365,166

6 Claims. (Cl. 260—2.5)

1. A process of preparing a cellular polyurethane structure of uniform small cell size comprising mixing and reacting,

(A) an organic polyol having a hydroxyl functionality of two or more per molecule each of which hydroxyl group is available to react with an organic polyisocyanate,

(B) an organic polyisocyanate, and

(C) up to about 10% of sodium borohydride as a blowing agent wherein the polyol reacts with both the organic polyisocyanate and the sodium borohydride, thereby generating hydrogen gas, in situ, to expand the polyurethane.

3,355,399
REINFORCEMENT OF ORGANIC LATEX POLYMERS WITH SILSESQUIOXANES

Joseph Cekada, Jr., Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,379

16 Claims. (Cl. 260—3)

1. A latex of an organic polymer containing as a reinforcing agent a silsesquioxane having the unit formula $RSiO_{3/2}$ wherein R is a member selected from the group consisting of the methyl, ethyl, vinyl, phenyl and 3,3,3-trifluoropropyl radicals, said silsesquioxane having a particle size in the range of 10 to 1000 A.

3,355,400
POLYETHER-LIGNIN COMPOSITIONS

Keith L. Smith, Charleston, Nelson R. Eldred, South Charleston, George W. Buttrick, Charleston, and Alfred E. Winslow, Scott Depot, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 26, 1960, Ser. No. 58,157

6 Claims. (Cl. 260—17.5)

1. A solid, water-soluble association product of a blend of water-soluble resinous polymerized ethylene oxide having at least an average of about four hundred non-cyclic aliphatic oxygen ether groups and a reduced viscosity above about 0.5, determined by the dissolution of 0.2 gram of polymerized ethylene oxide in 100 milliliters of acetonitrile at 30° C., and lignin obtained from effluent cooking solutions recovered as waste liquor from pulping processes.

3,355,401
ALKALI SOLUBLE ESTERS OF EPOXY RESINS

Edward Butler Tanner, Hampton, England, assignor to Pinchin, Johnson & Associates Limited, London, England, a British company

No Drawing. Filed Apr. 7, 1964, Ser. No. 358,062

Claims priority, application Great Britain, Apr. 16, 1963, 14,781/63

14 Claims. (Cl. 260—18)

1. A process for the manufacture of water-thinnable coating compositions which comprises preparing a condensation polymer by heating together and thereby condensing, with the elimination of water, a glycidyl polyether of a dihydric phenol with a combination of at least two acidic materials, said combination consisting essentially of

(a) at least one monobasic fatty acid, and

(b) at least one dimerised fatty acid, the individual proportions of (a) and of (b) being such that (i) they do not exceed the chemical equivalent of the glycidyl polyether and (ii) the acid number of the condensation polymer is in the range of 30 to 90 mgm. KOH/gm., neutralizing the condensation polymer so obtained and adding an amphipathic solvent and water to the neutralized condensation polymer.

3,355,402
DYEABLE POLYPROPYLENE FIBERS CONTAINING ALUMINUM SALTS

Minoru Sasaki, Tsuzuku Yamamoto, Akira Ichikawa, Takao Ohzeki, Kazuo Senda, and Shigenobu Masunaka, Ohtake-shi, Japan, assignors to Mitsubishi Rayon Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Sept. 4, 1964, Ser. No. 394,596

Claims priority, application Japan, Sept. 5, 1963, 38/47,357; July 20, 1964, 39/41,161

9 Claims. (Cl. 260—23)

1. Dyeable polypropylene fibers comprising polypropylene and from 0.1 to 10 percent by weight of at least one of the compound represented by a general formula of $(R_1COO)_mAl(OR_2)_n$ wherein R_1 is an alkyl radical having from 7 to 29 carbon atoms, R_2 is an alkyl radical having from 1 to 18 carbon atoms, *m* and *n* are integers selected from the group consisting of 1 and 2 with a condition of $m+n=3$.

3,355,403
SOLVENT SOLUTION OF WATER-INSOLUBLE SALTS OF ALPHA,BETA-ETHYLENICALLY UNSATURATED CARBOXYLIC ADDUCTS WITH FATTY ACID ESTERS OF ALLYL ALCOHOL-VINYL AROMATIC COPOLYMERS

Frank J. Hahn, Springfield, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,299

12 Claims. (Cl. 260—23)

1. A coating composition comprising:

(A) from 10 to 100 parts by weight of a water-insoluble salt of an adduct of (1) an alpha,beta-ethylenically unsaturated carboxylic compound and (2) a fatty acid ester of a copolymer of a styrene monomer and an allyl alcohol monomer having the structure of a co-reaction product of (a) from 0.75 to 1.25 carboxyl equivalents of fatty acid and mixtures thereof having an iodine unsaturation number by the ASTM D1467–57T test method of from about 50 to 220 and (b) 1.0 hydroxyl equivalents of a copolymer of a styrene monomer and an allyl alcohol monomer, and

(B) 100 parts by weight of a solvent mixture comprising (1) from 60 to 90 parts by weight of water and (2), correspondingly, from 40 to 10 parts by weight of an organic cosolvent selected from the class consisting of 2-(n-propoxy)-propan-1-ol, 2-(n-butoxy)-propan-1-ol, 1-(n-propoxy)-propan-2-ol, 1-(n-butoxy)-propan-2-ol, and mixtures thereof,

said styrene monomer being selected from the group consisting of styrene, alpha-alkyl styrenes, ring-substituted alkyl styrenes, alpha-alkyl ring-substituted alkyl styrenes, halo-styrenes, haloalkyl styrenes, and mixtures thereof; said allyl alcohol monomer being selected from the group consisting of allyl alcohol, methallyl alcohol, chlorallyl alcohol, and mixtures thereof.

3,355,404
STYRENE POLYMERS CONTAINING BEHENIC ACID AS A LUBRICANT

Norman R. Ruffing and Floyd B. Nagle, Midland, and Winfield S. Haynes, Jr., Freeland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 25, 1965, Ser. No. 427,962

6 Claims. (Cl. 260—23)

1. A composition of matter consisting essentially of a normally solid thermoplastic styrene polymer having intimately incorporated throughout from 0.01 to 2 percent by weight of a saturated aliphatic monocarboxylic acid consisting of at least 75 percent by weight of an acid having from 22 to 25 carbon atoms in the molecule.

3,355,405
HEAT SEALING COMPOSITIONS CONTAINING PETROLEUM WAX AND A BLEND OF ETHYLENE POLYMERS

Leo W. Tyran, Lewiston, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 14, 1966, Ser. No. 586,660

4 Claims. (Cl. 260—28.5)

1. A heat-sealable adhesive composition comprising, by weight, (1) 99 to 85% of a petroleum wax and (2) 1 to 15% of a blend of ethylene polymers, said blend comprising (A) 99 to 60% of an ethylene copolymer containing 65 to 85% ethylene and 15 to 35% of a monomer selected from the group consisting of ethyl acrylate and methyl methacrylate and having a melt index of 0.1 to 500; and (B) 1 to 40% of a free radical-produced, branched ethylene polymer containing at least 92% ethylene and up to 8% of a copolymerized ethylenically unsaturated monomer and having a melt index of 0.01 to 100.

3,355,406
SILICONE RUBBER LATEXES REINFORCED WITH SILSESQUIOXANES

Joseph Cekada, Jr., Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,556

23 Claims. (Cl. 260—29.2)

1. A silicone latex comprising

(1) a curable essentially linear silicone polymer having a D.P. of at least 10 and, as a reinforcing agent

(2) a silsesquioxane having the unit formula $R''SiO_{3/2}$, wherein R″ is a member selected from the group consisting of the methyl, ethyl, vinyl, phenyl and 3,3,3-trifluoropropyl radicals, said silsesquioxane having a particle size in the range of 10 to 1000 A.

3,355,407
METHOD OF PRODUCING AQUEOUS EMULSIONS OF RESINS OF THE PHENOLFORMALDEHYDE TYPE INCLUDING A SOFTENER FOR IMPREGNATING FIBROUS MATERIALS

Rinse Dijkstra, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 14, 1964, Ser. No. 403,906

Claims priority, application Netherlands, Oct. 21, 1963, 299,534

4 Claims. (Cl. 260—29.3)

1. A method of producing an aqueous emulsion of a low-molecular weight phenol formaldehyde resin, said method comprising the steps, reacting, in an alkaline aqueous medium, a mixture of a monohydroxybenzene and a molecular excess of formaldehyde in an amount not greater than about 1.5 grammols of the formaldehyde per grammol of the monohydroxybenzene, adding oleamide to said reaction medium in an amount of about 10 grams to about 35 grams of the oleamide per grammol of the monohydroxybenzene compound, decreasing the pH of the reaction medium to a value between about 2.5 and 5 by the addition of an acidic substance and allowing said reaction to continue until at least about 1.2 grammols of formaldehyde have reacted with each grammol of the monohydroxybenzene.

3,355,408
PROCESS AND COMPOSITION OF MATTER

James F. Mayer, Hinsdale, and Jack L. Harrier, Lansing, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Jan. 25, 1965, Ser. No. 427,929

6 Claims. (Cl. 260—29.6)

1. A thermosetting composition comprising

(A) a water-soluble unsaturated polyester consisting essentially of the reaction product of

  (I) a polycondensation reaction product of

    (a) benzene tricarboxyl-affording compound,

    (b) mono-olefinic unsaturated dicarboxyl-affording compound having 4 carbon atoms in the backbone of said compound and a total of 4–5 carbon atoms,

    (c) benzene dicarboxyl-affording compound, and

    (d) C_{2-6} glycol of the group consisting of alkylene glycol, ether glycol or mixtures thereof;

  said (a) and (b) being present in a respective mole ratio of about 5:1–1:5; said (c) being present in an amount of about 0.25–2 moles per mole of (a); and the amount of (d) being about 85–120 mole percent of the amount required to react with the carboxyl groups of said reactants (a), (b), and (c); said polycondensation reaction product having an acid number of about 20–100; and

  (II) an alkaline water-solubilizing agent; and

(B) a water-insoluble, polymerizable monomer of the group consisting of styrene, C_{1-4} alkyl acrylate or C_{1-4} alkyl methacrylate.

3,355,409
PREPARATION OF STABLE FILM FORMING AQUEOUS POLYAMIDE DISPERSIONS

Thomas C. Bissot, Grand Island, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 29, 1965, Ser. No. 451,968

8 Claims. (Cl. 260—29.6)

1. The process for preparing a film-forming aqueous polymer dispersion comprising:

(a) completely dissolving 15–25% by weight of

  (1) a polyamide of a diamine and a dicarboxylic acid, and

  (2) as a modifier, a phenol, aromatic alcohol or aromatic glycol which at least swells said polyamide, or an epoxy compound hydrolyzable to such modifier, the amount of said modifier or epoxy compound being such as to provide 20–30% modifier based on the weight of siad polyamide and said modifier, in 75–85% by weight of an aliphatic alcohol-based solvent system which is substantially water-immiscible,

(b) emulsifying the resulting solution in water, then

(c) adding to and milling together with the resulting emulsion an aqueous solution containing about 10% by weight of a completely dissolved polyvinyl alcohol having a percent hydrolysis of 78–90%, and a 4% water solution viscosity of 20–45 centipoise as determined at 20° C. by the Hoeppler falling ball method, the amount of said aqueous solution being sufficient to supply 5–15% of said polyvinyl alcohol based on the total weight of said polyamide and said modifier, and thereafter,

(d) gradually evaporating at least 98 weight percent of said alcohol-based solvent system from the emulsion over a time period of 3–8 hours.

3,355,410
SOLUTION POLYMERIZATION OF ACRYLONITRILE USING A CATALYST SYSTEM COMPRISING AN OXIDIZING AGENT AND SILVER, VANADIUM OR RHODIUM AND SALTS THEREOF

Clarence C. Dannelly and John R. Caldwell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 270,195, Apr. 3, 1963. This application Oct. 22, 1965, Ser. No. 502,400

32 Claims. (Cl. 260—30.4)

1. A process for preparing a solution of acrylonitrile polymer which can be used directly to make shaped articles which comprises polymerizing monomeric material

consisting of from 50–100% by weight of acrylonitrile and up to 50% by weight to make a total of 100% of at least one other monoethylenically unsaturated, polymerizable compound containing a single $CH_2{=}C<$ group, in an organic liquid which is a solvent for polyacrylonitrile. at a temperature of from −70 to 100° C., with (1) from about 0.0001 to about 3.0% by weight based on monomer weight of a catalyst selected from the group consisting of silver, vanadium, rhodium and their salts and (2) from about 0.025 to about 2.0% based on monomer weight of an oxidizing agent selected from the group consisting of monoperoxysulfuric acid, peroxydisulfuric acid, ammonium salt of monoperoxysulfuric acid, ammonium salt of peroxydisulfuric acid, an alkali metal salt of monoperoxysulfuric acid, an alkali metal salt of peroxysulfuric acid and sulfur tetroxide in combination with water.

3,355,411
COATING COMPOSITION FOR PRIMING PVC SURFACES

Neville B. Stokes and Christopher M. Allen, Leicester, England, assignors to United Shoe Machinery Corporation, Flemington, N.J., and Boston, Mass., a corporation of New Jersey

No Drawing. Filed Nov. 21, 1966, Ser. No. 595,611

Claims priority, application Great Britain, Nov. 27, 1965, 50,495/65

3 Claims. (Cl. 260—30.4)

1. A priming composition for use on surfaces of polyvinyl chloride to be bonded to second surfaces with an ethylene vinyl acetate copolymer, the said priming composition consisting essentially of a solution of equal parts by weight of (a) an ethylene vinyl acetate copolymer comprising 18% to 30% vinyl acetate and having a melt index of less than 15, and (b) an after chlorinated polyvinyl chloride containing approximately 64% chlorine in a solvent comprising tetrahydrofuran said solution having about two to ten parts by weight of solids per hundred parts by weight of solution.

3,355,412
RESINOUS COMPOSITIONS

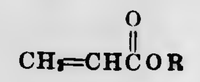
Donald P. Hart, North Olmsted, Ohio, and Joseph E. Plasynski, New Kensington, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,092

8 Claims. (Cl. 260—31.2)

7. An adhesive composition which when dried forms a tacky, pressure-sensitive film, said composition consisting essentially of organic solvent and dissolved therein a solution polymerized interpolymer of:

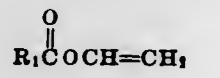
(1) from about 40 percent to about 85 percent by weight of at least one compound of the formula:



$$CH_2{=}CH\overset{O}{\overset{\|}{C}}OR$$

where R is an alkyl radical having from about 4 to about 18 carbon atoms, and

(2) from about 60 percent to about 15 percent by weight of at least one compound of the formula:



$$R_1\overset{O}{\overset{\|}{C}}OCH{=}CH_2$$

where R is an alkyl radical having from 1 to about 5 carbon atoms;

said interpolymer having a viscosity of from about 3000 centipoises to about 110,000 centipoises as a 50 percent solution in isopropyl acetate and having a Williams plasticity between about 1.4 and about 3.5.

3,355,413
POLYESTER FIBERS RESISTANT TO RESOILING DURING LAUNDERING

John Edward Kiefer, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 14, 1966, Ser. No. 586,671

4 Claims. (Cl. 260—31.4)

1. A process for preparing a soil resistant polyester fiber, said process comprising (a) mixing a polyester powder with from about 0.25 to about 5 percent by weight, based on the weight of said polyester, of a fatty acid ester of a poly(ethylene glycol), said fatty acid having 10 to 22 carbon atoms, said poly(ethylene glycol) having a molecular weight of at least 2,000 and said polyester being prepared from at least one diol and at least one dibasic acid, (b) melt spinning said soil resistant polyester fiber therefrom.

3,355,414
THERMOSETTING POLYESTERS

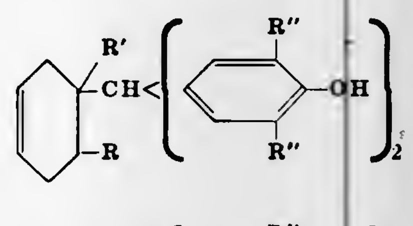
John R. Caldwell and Winston J. Jackson, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 14, 1961, Ser. No. 137,976

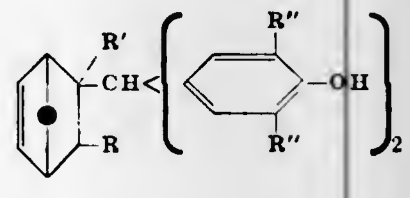
18 Claims. (Cl. 260—33.8)

1. An olefinically unsaturated, linear thermosetting polycarbonate or copoly(ester-carbonate) of constituents consisting essentially of (A) a member selected from the group consisting of bisphenols free of olefinic unsaturation and olefinically unsaturated bisphenols, said olefinically unsaturated bisphenols being selected from the group consisting of

(a)

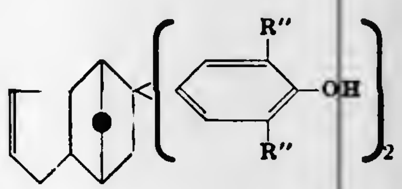


(b)



and

(c)



wherein R is a member selected from the group consisting of hydrogen atoms and methyl, ethyl, propyl, butyl, and phenyl groups, R' is a member selected from the group consisting of hydrogen atoms and methyl, ethyl, propyl, and butyl groups, and R'' is a member selected from the group consisting of hydrogen atoms, chlorine atoms, and methyl, ethyl, propyl, and butyl groups, and (B) a diacid chloride selected from the group consisting of (1) a bischloroformate of an olefinically unsaturated diol having a molecular weight of less than about 800, (2) a bischloroformate of a hydroxy terminated polyester derived from an excess of a diol having from 2 to 20 carbon atoms and a dicarboxylic acid and having a molecular weight of from about 800 to about 5000 in which polyester one of the polyester constituents contains olefinic unsaturation, and (3) phosgene, said bisphenol necessarily being (a), (b), or (c) when said diacid chloride is solely composed of phosgene in which case said polymer is a polycarbonate.

3,355,415
NEW POLYMERIC MATERIALS

Roy Worrall, Newport, England, assignor to Monsanto Chemicals Limited, London, England, a British company

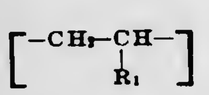
No Drawing. Filed Dec. 26, 1962, Ser. No. 247,300

The portion of the term of the patent subsequent to Jan. 3, 1984, has been disclaimed

10 Claims. (Cl. 260—41)

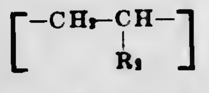
1. A polymeric material consisting essentially of in copolymerized form (a) from 50 to 97 weight percent of an ethylenically unsaturated monomer and (b) correspondingly, from 50 to 3 weight percent of a functional interpolymer consisting of a plurality of recurring structural groups corresponding to the following structural formulae

(1)



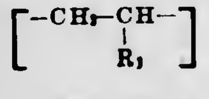
$$\left[\begin{array}{l}-CH_2-CH-\\ \qquad\quad |\\ \qquad\quad R_1\end{array}\right]$$

(2)



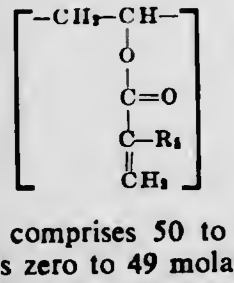
$$\left[\begin{array}{l}-CH_2-CH-\\ \qquad\quad |\\ \qquad\quad R_2\end{array}\right]$$

(3)



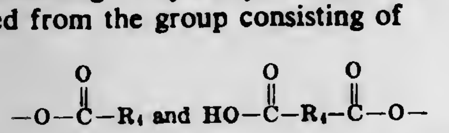
$$\left[\begin{array}{l}-CH_2-CH-\\ \qquad\quad |\\ \qquad\quad R_3\end{array}\right]$$

(4)



$$\left[\begin{array}{l}-CH_2-CH-\\ \qquad\quad |\\ \qquad\quad O\\ \qquad\quad |\\ \qquad\quad C{=}O\\ \qquad\quad |\\ \qquad\quad C-R_5\\ \qquad\quad \|\\ \qquad\quad CH_2\end{array}\right]$$

wherein Formula 1 comprises 50 to 95 molar percent, Formula 2 comprises zero to 49 molar percent; Formula 3 comprises zero to 49 molar percent and Formula 4 comprises 1.0 to 20 molar percent, the total of formulae 1, 2, 3 and 4 being 100 molar percent; and wherein R_1 is selected from the group consisting of hydrogen, phenyl and alkyls of form 1 to 2 carbon atoms; R_2 is selected from the group consisting of hydroxyl and hydroxy methylene; R_3 is selected from the group consisting of



$$-O-\overset{O}{\overset{\|}{C}}-R_4 \text{ and } HO-\overset{O}{\overset{\|}{C}}-R_4-\overset{O}{\overset{\|}{C}}-O-$$

wherein R_4 is a hydrocarbon residue of from 1 to 12 carbon atoms and R_5 is selected from the group consisting of hydrogen and alkyls of from 1 to 4 carbon atoms.

3,355,416
DYEABLE POLYPROPYLENE

Robert W. Stevenson, Edison Township, Middlesex County, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 27, 1963, Ser. No. 283,548

2 Claims. (Cl. 260—41)

1. Tactic polypropylene having incorporated therein between about 0.1 percent and about 5 percent, by weight of the final polymer composition, of a silica gel having particle size of between about 12 millimicrons and about 1 micron.

3,355,417
SULFUR-CURED MINERAL-LOADED ALPHA-OLEFINS WITH REDUCED SURFACE BLOOM

Kenneth Vincent Martin, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 4, 1965, Ser. No. 492,901

8 Claims. (Cl. 260—41)

1. In a process for the sulfur-curing of zinc oxide-containing, mineral filler-loaded elastomeric copolymers of at least one α-monoolefin and at least one non-conjugated hydrocarbon diene; the improvement of reducing the surface bloom from said cured copolymers which consists in incorporating, before cure, of (I) about 1 to 2.5 parts of tetramethyl thiuram disulfide per 100 parts of copolymer, and (II) about 0.5 to 1.5 parts of 2-(morpholinothio)benzothiazole per part of (I).

3,355,418
STABILIZATION OF METHYL METHACRYLATE AND COPOLYMERS AGAINST DISCOLORATION WITH ORGANIC PHOSPHITES

Lars Ove Oldsberg, Perstorp, Sweden, assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 23, 1964, Ser. No. 420,811

2 Claims. (Cl. 260—45.7)

1. In a method for the production of polymers of methyl methacrylate containing at least 85%, by weight, of methyl methacrylate and up to 15%, by weight, of a different acrylate, wherein an aqueous suspension of the methacrylate is formed, the suspension is heated to at least about 60° C. in the presence of a free-radical generating catalyst and the resultant polymer is recovered and extruded into pellets, the improvement which comprises adding thereto, prior to extrusion, 0.05% to about 0.5%, by weight, based on the weight of the polymer, of tridecyl phosphite.

3,355,419
STABILIZED CIS 1,4 POLYBUTADIENE

Wendell S. Cook, Canal Fulton, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,149

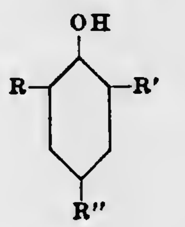
25 Claims. (Cl. 260—45.9)

1. Polybutadiene having incorporated therein 0.15 to 2.5 parts of a stabilizer mixture per 100 parts of the polymer,

the polymer being stereolinear due to polymerization with a lithium-based catalyst

and exhibiting by infra-red technique substantially 30 to 40 percent of cis-1,4-structure and substantially 6 to 15 percent, 1,2-structure, the balance being trans-1,4-structure;

the stabilizer mixture being composed of 0.05 to 0.5 part of Component 1 which has the formula



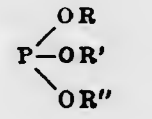
in which

R is an aliphatic hydrocarbon radical containing 1 to 12 carbon atoms,

R' is an aliphatic hydrocarbon radical containing 4 to 12 carbon atoms of the class consisting of tertiary-alkyl and alicyclic radicals, and

R'' is an n-alkyl radical containing 1 to 4 carbon atoms,

0.05 to 1 part of Component 2 which is a phosphite of the formula



in which

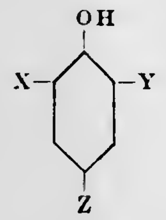
R is an alkyl group containing 4 to 12 carbon atoms;

R' is from the class consisting of phenyl and mono-alkylphenyl in which the alkyl group contains 1 to 4 carbon atoms; and

R″ is from the class consisting of alkyl groups containing 4 to 12 carbon atoms, phenyl and mono-alkylphenyl in which the alkyl group contains 1 to 4 carbon atoms, and

0.05 to 1 part of Component 3 is from the class consisting of

(a) compounds of the class having the formula



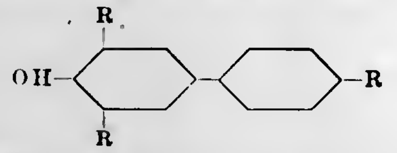
in which

X is a primary or secondary phenylalkyl radical having 1 to 3 carbon atoms in the alkyl group,

Y is a tertiary-alkyl radical having 4 to 12 carbon atoms, and

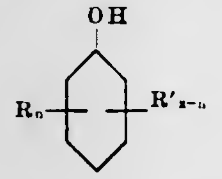
Z is a primary or secondary alkyl radical having 1 to 4 carbon atoms,

(b) compounds having the formula



in which each R is a tertiary-alkyl group of 4 to 12 carbon atoms,

(c) a mixture of compounds, each having the formula



in which

x is selected from the group consisting of 2 and 3,

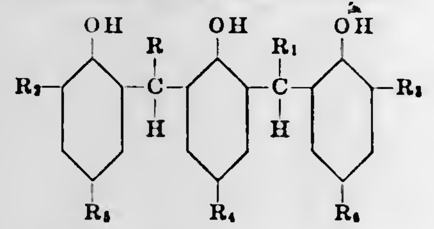
n is selected from the group consisting of 0, 1, 2 and 3, but does not exceed the value of *x*,

R is selected from the group consisting of t-butyl and t-amyl, and

R′ is selected from the group consisting of t-octyl and t-nonyl,

R and R′ being attached to the benzene ring in the 2-, 4- and 6-positions; and a major portion of said mixture being composed of tri-t-alkylated phenols in which two of said three alkyl groups are selected from the class consisting of t-octyl and t-nonyl groups, and in which the third t-alkyl group is selected from the class consisting of t-butyl and t-amyl groups.

(d) compounds having the formula



in which

R and R_1 are from the class consisting of hydrogen and alkyl groups containing 1 to 3 carbon atoms,

R_2 and R_3 are each a t-alkyl group consisting of 4 to 12 carbon atoms,

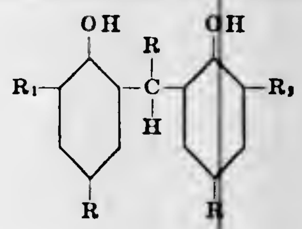
R_4 is from the class consisting of hydrogen and alkyl groups containing 1 to 4 carbon atoms, and

R_5 and R_6 are each an alkyl group containing 1 to 4 carbon atoms,

(e) compounds of the class consisting of cyclohexylated, cyclopentylated, alpha-methylcyclohexylated and alpha - methylcyclopentylated phenols, cresols and xylenols having substituents in substantially all of the 2-, 4- and 6-positions,

(f) N-acyl-p-aminophenols in which the acyl group contains 4 to 18 carbon atoms, and

(g) compounds having the formula



in which

R is from the class consisting of hydrogen and alkyl groups containing 1 to 3 carbon atoms,

R_1 and R_2 are each a t-alkyl group containing 4 to 12 carbon atoms, and

R_3 and R_4 are each an alkyl group containing 1 to 4 carbon atoms.

3,355,420
HALOGENATED RESINS STABILIZED WITH DIBASIC LEAD PHOSPHITE AND DIBASIC LEAD SULFITE

Hans Friedmann, Ernst Katscher, and Nikolaus Schredl, Vienna, Austria, assignors to Loba Chemie Dr. Paul Low-Beer & Co., Vienna, Austria

No Drawing. Filed June 2, 1965, Ser. No. 460,849
Claims priority, application Austria, June 22, 1964, 5,339/64
7 Claims. (Cl. 260—45.75)

1. A plastic polymeric composition of increased resistance to heat and light which contains a halogen-containing polymeric resin and a stabilizer to heat and light, said stabilizer consisting of a mixture of dibasic lead phosphite and dibasic lead sulfite, the percentage by weight of lead sulfite in said mixture being 5–95 and the percentage by weight of lead phosphite in said mixture being the balance to 100, said stabilizer mixture being present in the composition in an amount of 1–5% by weight, based on the weight of the composition, said halogen-containing polymeric resin being selected from the group consisting of polyvinylchloride, polyvinylidene chloride, a copolymer of vinylchloride and methylacrylate, a copolymer of vinyl chloride and vinyl acetate, a tripolymer of vinylchloride, vinyl acetate and maleic anhydride, a copolymer of vinyl chloride and vinylidene chloride, a polyvinylfluoride.

3,355,421
CIS-1,4-POLYBUTADIENE STABILIZED WITH A COMBINATION

Wendell S. Cook, Canal Fulton, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

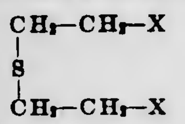
No Drawing. Filed Oct. 18, 1963, Ser. No. 317,146
8 Claims. (Cl. 260—45.85)

1. Polybutadiene having incorporated therein 0.15 to 2.5 parts of a 3-component stabilizer mixture per 100 parts of the polymer in order to maintain the gel content below 5 percent,

the polymer being stereolinear due to polymerization with a lithium-based catalyst

and exhibiting by infra-red technique substantially 30 to 40 percent of cis-1,4-structure and 1,2-structure between 6 and 15 percent, the balance being trans-1,4-structure;

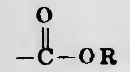
the stabilizer mixture being composed of 0.05 to 1.0 part of Component 1 which has the formula



$$\begin{array}{l}CH_2{-}CH_2{-}X\\ |\\ S\\ |\\ CH_2{-}CH_2{-}X\end{array}$$

in which each X is a radical from the class consisting of

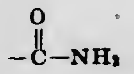
(a)



$$-\overset{\overset{O}{\|}}{C}-OR$$

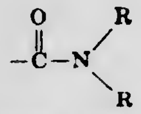
in which R is an alkyl radical containing 1 to 18 carbon atoms,

(b)



$$-\overset{\overset{O}{\|}}{C}-NH_2$$

(c)

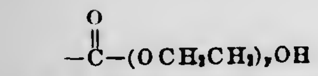


$$-\overset{\overset{O}{\|}}{C}-N\begin{matrix}\diagup R\\ \diagdown R\end{matrix}$$

in which each R is an alkyl radical containing 1 to 12 carbon atoms,

(d) $-C{\equiv}N$, and

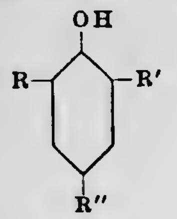
(e)



$$-\overset{\overset{O}{\|}}{C}-(OCH_2CH_2)_yOH$$

in which *y* is a whole number from 1 to 20;

0.05 to 0.5 part of Component 2 which has the formula



in which

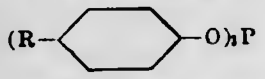
R is an aliphatic hydrocarbon radical containing 1 to 12 carbon atoms,

R′ is an aliphatic hydrocarbon radical containing 4 to 12 carbon atoms of the class consisting of t-alkyl and alicyclic radicals, and

R″ is an n-alkyl radical containing 1 to 4 carbon atoms; and

0.05 to 1 part of Component 3 which is from the class consisting of

phosphites which have the formula



in which R is from the class consisting of hydrogen and alkyl groups containing 1 to 12 carbon atoms.

3,355,422
STABILIZED POLYESTER-BASED POLYURETHANE COMPOSITION

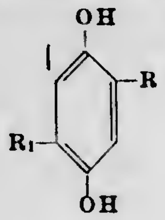
Gordon D. Brindell, Wayne, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,341
5 Claims. (Cl. 260—45.85)

1. Composition comprising:

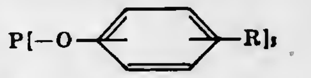
(1) a polyurethane which is a reaction product of a hydroxy-terminated polyester of a glycol and a saturated dicarboxylic acid with an organic diisocyanate,

(2) a 2,5-dialkyl hydroquinone of the formula



where R and R′ are the same or different alkyl radicals,

(3) an aromatic phosphite of the formula



where R has at least one of the values H and an alkyl group, and

(4) a chemical of the formula

$$S(—CH_2CH_2COOR)_2$$

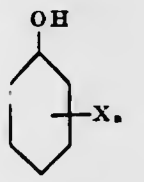
where R is H or an alkyl radical.

3,355,423
STABILIZATION OF HALOGENATED POLYOLEFIN COMPOSITIONS

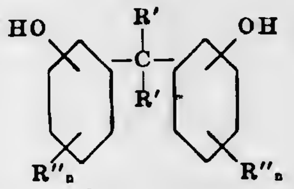
James P. Scullin, Pompton Lakes, and Arthur F. Fletcher, Elizabeth, N.J., assignors, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Sept. 25, 1962, Ser. No. 226,152
3 Claims. (Cl. 260—45.95)

1. A thermally stabilized resinous composition comprising chlorinated polyethylene containing approximately 20% to 70% by weight of chlorine and approximately 2% to 6% based on the weight of said chlorinated polyethylene of a stabilizer, said stabilizer comprising a polyhydric alcohol selected from the group consisting of pentaerythritol and sorbitol and a phenol selected from the group consisting of phenols having the structure



wherein X represents a substituent selected from the group consisting of halogen, alkyl having from 1 to 8 carbon atoms, nitro, carboxyl, and hydroxyl and *n* represents a number in the range of zero to 3 and phenols having the structure



wherein each R′ represents a member selected from the group consisting of hydrogen and lower alkyl, R″ represents a member selected from the group consisting of lower alkyl and halogen, and *n* represents a number in the range of zero to 3 and containing approximately 0.15 part to 8 parts by weight of said polyhydric alcohol per part by weight of said phenol.

3,355,424
METHOD FOR THE PREPARATION OF AMINOALKYLSILOXANE COPOLYMERS

Lawrence H. Brown, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed July 29, 1964, Ser. No. 386,040
18 Claims. (Cl. 260—46.5)

1. A process for the preparation of polyaminoalkylsubstituted organosiloxane copolymers which comprises reacting

(1) At least one compound selected from the group consisting of

(A) silanes of the formula $R''_x(Z_nR')Si(OR)_{3-x}$, where:

- x is an integer of from 0 to 2 inclusive, each R is an alkyl radical of less than 4 carbon atoms,
- R′ is an aliphatic hydrocarbon radical containing a number of carbon atoms selected from the group consisting of 1, 3, 4 and 5 carbon atoms and having a valence of $n+1$, where n is an integer of from 1 to 3 inclusive,
- Z is a monovalent radical attached to R′ by a carbon-nitrogen bond and is composed carbon, nitrogen and hydrogen atoms and contains at least 2 amine groups in which the nitrogen atoms are attached only to substituents selected from the group consisting of hydrogen, and aliphatic hydrocarbon, cycloaliphatic hydrocarbon, and aromatic hydrocarbon radicals, the nitrogen in Z being present only in said amine groups, the ratio of carbon atoms to nitrogen atoms in the substituent $—R'Z_n$ being less than 6:1, and each R″ is a monovalent hydrocarbon radical free of aliphatic unsaturation, and

(B) partial hydrolyzates formed by mixing (A) with up to 60 percent of its theoretical equivalent of water, with

(2) At least one organosiloxane of the average general formula

$$R'''_ySi(OH)_mO_{\frac{4-m-y}{2}}$$

where each

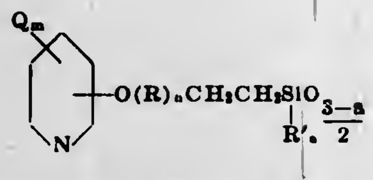
- R‴ is selected from the group consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals,
- m has a positive average value up to and including 2,
- y has an average value of from 1 to 2.5 inclusive, and the sum of $y+m$ has an average value up to and including 3, the value of m being such that the organosiloxane (2) contains at least 1.0% by weight of hydroxyl groups,

by contacting (1) and (2) in liquid phase in an amount such that there is at least 10 percent by weight of (1) based on the combined weight of (1) and (2).

3,355,425
ORGANOPOLYSILOXANES

Loren A. Haluska, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Original application Aug. 6, 1964, Ser. No. 387,988. Divided and this application Jan. 16, 1967, Ser. No. 619,109
5 Claims. (Cl. 260—46.5)

1. A polymeric composition containing at least one unit of the formula



where Q is a lower alkyl radical, R is a divalent radical, free of aliphatic unsaturation, selected from the group consisting of hydrocarbon radicals and radicals containing carbon, hydrogen, and oxygen in an ether linkage, R′ is selected from the group consisting of monovalent hydrocarbon radicals free of aliphatic unsaturation, the hydroxyl group, and hydrolyzable groups, n is an integer of 0 to 1, and m and a are integers of 0 to 2, any other units present being of the formula

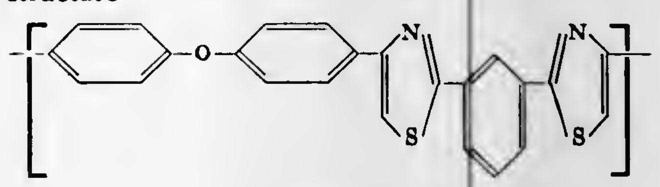
$$Z_bSiO_{\frac{4-b}{2}}$$

where Z is selected from the group consisting of monovalent hydrocarbon and halohydrocarbon radicals, and b is an integer of 0 to 3.

3,355,426
THIAZOLE POLYMERS

James M. Craven, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 26, 1963, Ser. No. 304,686
6 Claims. (Cl. 260—47)

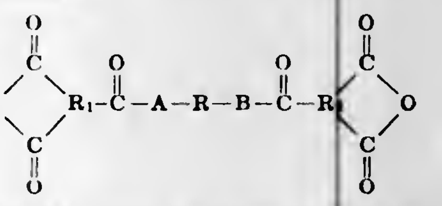
1. A thiazole polymer consisting of recurring units of the structure



3,355,427
POLYIMIDES OF A BIS-(TRIMELLITATE) DIANHYDRIDE AND A DIAMINE

Donald F. Loncrini, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Oct. 31, 1963, Ser. No. 320,556
24 Claims. (Cl. 260—47)

1. A dimethyl formamide insoluble imide group polymer consisting essentially of the reaction product of equimolar amounts of (1) at least one polyanhydride having the general formula



where A is selected from the group consisting of oxygen, NH and sulfur; B is selected from the group consisting of oxygen, NH and sulfur, R is a divalent organic radical containing at least two carbon atoms; R_1 and R_2 are selected from the group consisting of trivalent aromatic carbocyclic and saturated aliphatic hydrocarbon radicals, and (2) at least one organic primary diamine.

3,355,428
POLYOXYMETHYLENE PROCESS

Lyndon D. Boyer and Wayne R. Sorenson, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Nov. 25, 1964, Ser. No. 413,879
11 Claims. (Cl. 260—67)

1. In a process for preparing stable polyoxymethylene wherein a feed polyoxymethylene having at least one of the two terminals of the polyoxymethylene chain occupied by a hydroxyl group is reacted with an excess of acetic anhydride to form polyoxymethylene acetate and a solution mixture of acetic anhydride and acetic acid unsuitable for reaction with additional polyoxymethylene feed, and wherein polyoxymethylene acetate is separated from said solution mixture, the improvement which comprises:

(a) continuously reacting said solution mixture with ketene to convert acetic acid to essentially all acetic anhydride; and

(b) cycling said acetic anhydride from (a) to the acetylation reaction without necessity of an intervening distillation.

3,355,429
COPOLYMERS OF ALIPHATIC ALDEHYDES AND PROCESS FOR MAKING THEM

Klaus Weissermel, Kelkheim, Taunus, and Karl Rehn, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed July 6, 1966, Ser. No. 563,091
Claims priority, application Germany, Apr. 16, 1960, F 31,022
6 Claims. (Cl. 260—67)

1. A process for the production of copolymers which comprises the step of copolymerizing acetaldehyde with a higher aliphatic saturated aldehyde having from 3 to 9 carbon atoms at a temperature within the range of −30 to −120° C. while in the presence of 0.0005 to 1%, calculated on the total weight of the monomers, of at least one organic metal compound of the formula

$$Me(R)_n$$

wherein Me represents a metal of groups 2 and 3 of the Periodic Table of Mendeleeff, R represents a member selected from the group consisting of a hydrogen radical, a monovalent radical of an aliphatic hydrocarbon containing 1–10 carbon atoms and a monovalent alkoxy radical containing 1–10 carbon atoms and n corresponds to the valency of said metal, the proportion by weight of acetaldehyde and higher aldehyde comonomers being from about 1:4 to about 20:1.

4. Copolymer formed of acetaldehyde and a higher, saturated aliphatic aldehyde containing from 3 to 9 carbon atoms, the proportion by weight of acetaldehyde and higher aldehyde comonomers being from about 1:2 to about 10:1 and said copolymer having a molecular weight of 10,000 to 500,000, being insoluble in aliphatic, alicyclic, aromatic hydrocarbons, aliphatic alcohols, ketones and esters and having an infrared spectrum characteristic of recurring acetyl groups.

3,355,430
AMINOPLAST TEXTILE FINISH PREPARED BY CO-REACTING FORMALDEHYDE, UREA AND AMINOETHANOL

Kenneth Herald Remley, Warren Township, Somerset County, N.J., and Joseph Richard Anghinetti, Kennebunkport, Maine, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Nov. 12, 1964, Ser. No. 410,789
4 Claims. (Cl. 260—70)

1. A process for preparing a water-soluble aminoplast comprising reacting in an aqueous medium relative amounts of 1 mole of urea with between 3.5 and 4.0 moles of formaldehyde and between .4 and .8 mole of 2-aminoethanol at a temperature between from 70° C. to 100° C. for from 60 to 180 minutes, continuing the reaction thereafter at a temperature from 50 to 80° C. in the presence of sufficient alkali metal hydroxide to maintain a pH of at least 9.7 until the unreacted formaldehyde content of the reaction mixture is less than 4%.

3,355,431
REACTION PRODUCT OF AN ISOCYANATE-TERMINATED POLYURETHANE AND AN AMMONIA FORMALDEHYDE CONDENSATE AND PROCESS OF PREPARING SAME

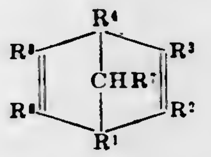
Clare Augustus Stewart, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 24, 1964, Ser. No. 377,501
17 Claims. (Cl. 260—72)

1. The curable reaction product of (a) the prepolymer obtained by reacting a stoichiometric excess of an organic polyisocyanate with a compound containing at least two hydroxy groups and (b) the isocyanate reactive product obtained by reacting formaldehyde and ammonia in the presence of solvent, the molar ratio of formaldehyde to ammonia being at least 0.8:1 and the amount of (b) being at least sufficient to react with the NCO groups present in (a), with the proviso that when said solvent is water, the molar ratio of said isocyanate reactive product to said NCO groups is as little as 0.5:1.

3,355,432
POLYMERIZATION OF TRIOXANE AND NORBORNADIENE

Kornel D. Kiss, University Heights, Ohio, assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,843
12 Claims. (Cl. 260—73)

1. A reproducible process for preparing a thermally-stable oxymethylene copolymer composition from a mixture comprising a major amount of trioxane and a minor amount of a norbornadiene monomer having the structural formula



wherein R^1 to R^7 are each selected from the group consisting of hydrogen and lower alkyl radicals containing up to 4 carbon atoms with no more than one R being an alkyl radical, which process comprises charging to a high shear reactor the said monomeric mixture and a cationically-active polymerization catalyst; reacting, in an inert atmosphere and under substantially anhydrous conditions, the resultant reaction mixture with shearing and blending until copolymerization is initiated therein and the formation of insoluble copolymer is first observed; thereafter, while continuing shearing and blending of the first reaction mixture, adding thereto at a predetermined rate another mixture of the same reaction ingredients, which mixture is a liquid wherein copolymerization has not yet advanced to the formation of solid copolymer, whereby the addition of this mixture reduces initially the reaction rate in the first copolymerization mixture and then controls the over-all reaction rate thereof at a constant level; then continuing the shearing and blending of the copolymerization reaction mixture while the consistency thereof is transformed from a heavy suspension to a dry, predominantly granular material; and finally recovering a copolymer product having an inherent viscosity of at least 1.2, as determined at 60° C., employing a solution containing 0.5 g. of the copolymer product per 100 milliliters of solution, the solvent being p-chlorophenol containing 2 percent of alpha-pinene, by weight.

3,355,433
MANGANESE PENTACARBONYL COMPOUNDS AS CATALYSTS IN THE PREPARATION OF POLYESTERS

Yuzi Okuzumi, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 2, 1964, Ser. No. 348,781
9 Claims. (Cl. 260—75)

5. In a process for preparing a polymeric polyester by subjecting at least one bis ester of a dicarboxylic acid to alcoholysis in the presence of an excess of a glycol and thereafter subjecting the bis glycol ester formed to self-condensation with the removal of glycol, the improvement which comprises carrying out the alcoholysis and condensation reaction in the presence of a manganese pentacarbonyl compound.

3,355,434
METHOD FOR PREPARING POLYESTER RESINS
John G. Milligan and Harold G. Waddill, Austin, Tex., assignors to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

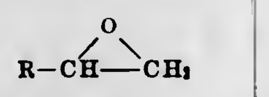
No Drawing. Filed Mar. 2, 1964, Ser. No. 348,804

7 Claims. (Cl. 260—75)

1. In a method for preparing an olefinically active unsaturated polymeric polyester which comprises reacting

(A) an initiator selected from the class consisting of dibasic acids and dihydric aliphatic alcohols,

(B) a terminal oxirane compound having the formula:



wherein R is hydrogen, a C_1–C_{18} alkyl group, an aryl group or a C_1–C_4 haloalkyl group, and

(C) a dicarboxylic organic acid anhydride component comprising from about 10 to about 100 mol percent maleic anhydride at a temperature in the range of about 80° to about 150° C. in the presence of a catalyst selected from the group consisting of alkali metal hydroxides, halides and carbonates, tertiary amines, quaternary ammonium hydroxides and salts, quaternary phosphonium salts and sulfonium salts, and thereafter heating said polyester at a temperature within the range of about 190° to about 250° C. for a period of time within the range of about one to about five hours, the improvement which comprises adding an acid in an amount ranging from about 0.25 to about 2 equivalents of acid per equivalent of polyesterification catalyst subsequent to the polyesterification step and prior to the step of heating at 190° to 250° C., said acid being selected from the group consisting of inorganic mineral acids and organic carboxylic and sulfonic acids.

3,355,435
POLYURETHANE CASTING COMPOSITIONS CROSSLINKED BY BIS (AMINOARYLENE) SULFONES
Anthony F. Finelli, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 3, 1965, Ser. No. 430,187

5 Claims. (Cl. 260—75)

1. A polyurethane elastomer comprising the reaction product of an excess of an organic diisocyanate with a material selected from the class consisting of polyester diols and the polyester amides and then crosslinking with a bis (aminoarylene) sulfone.

3,355,436
NOVEL PHOSPHORYLATED POLYOLS AND POLYURETHANES PRODUCED THEREFROM
Martin R. Lutz, Gene Nowlin, and Hugo Stange, Princeton, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application Sept. 12, 1961, Ser. No. 137,521, now Patent No. 3,294,873, dated Dec. 27, 1966. Divided and this application May 4, 1966, Ser. No. 555,643

7 Claims. (Cl. 260—75)

1. A flame-retardant polyurethane composition comprising the condensation product of

(A) one hydroxyl equivalent weight of a diorgano phosphorylated high molecular weight polyol derived from the reaction of

(1) a liquid polyol selected from the class consisting of a liquid polyether and a liquid polyester having an average molecular weight of 200–5,000, and containing an average of at least three hydroxyl groups per molecule, with

(2) a diorgano phosphorochloridate having the formula $(X_nRO)_2P(O)C\ l$ in which X is selected from the group consisting of chlorine and bromine, *n* is 0–4 and R is an organic radical selected from the group consisting of alkyls containing 1–5 carbon atoms, phenyl, and tolyl,

said phosphorylated polyol containing at least 2% by weight phosphorus and an average of at least two hydroxyl groups per molecule, and having a viscosity of less than 4,000 poises at 25° C., and

(B) at least one isocyanate equivalent weight of an aromatic polyisocyanate,

said polyurethane composition containing at least 5% by weight halogen.

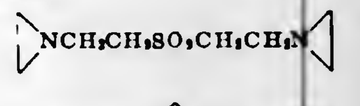
3,355,437
COPOLYMERS OF AZIRIDINE COMPOUNDS
Giuliana C. Tesoro, Dobbs Ferry, N.Y., and Kelvin B. Domovs, Newark, N.J., assignors to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 7, 1966, Ser. No. 563,393

7 Claims. (Cl. 260—77.5)

1. A process of preparing a polymeric material comprising reacting together as the sole polymerizable ingredients at least two aziridinyl monomers which differ in the basicity-type of their respective aziridine nitrogens as evidenced by their having different aziridinyl functional groups selected from the class consisting of amine, carbamate, carboxamide, cyanuramide, phosphonitrilamide and carbamide, said monomers being selected from the group consisting of

[A]



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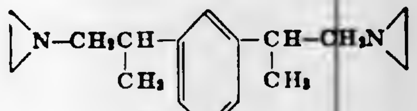

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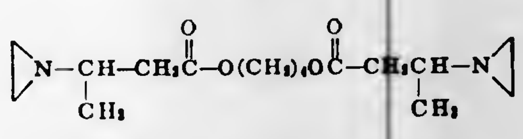

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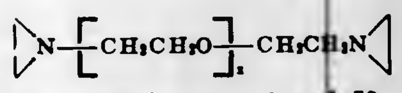
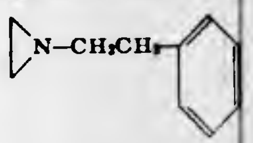


wherein X is an integer between 1 and 50

[E]



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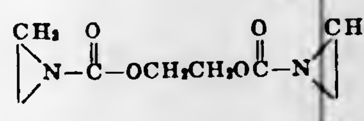

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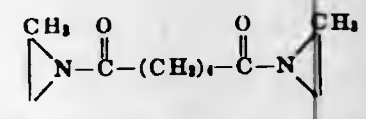

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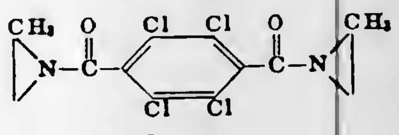

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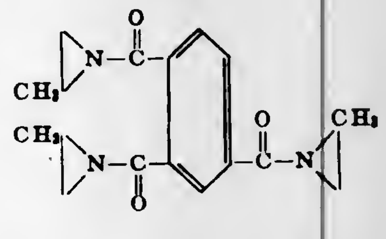

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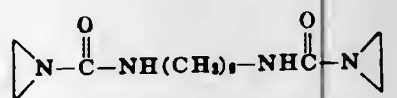

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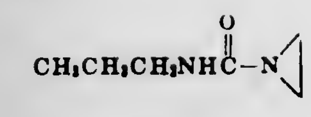

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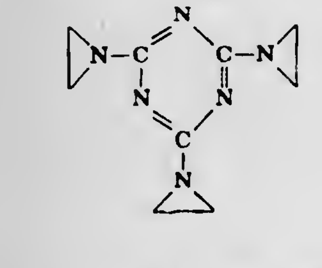

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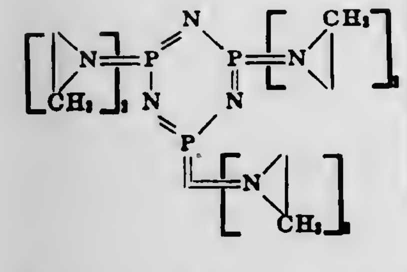


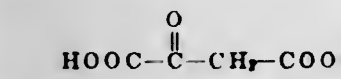
at least one of said two different monomers being at least bifunctional with respect to the aziridine group, and recovering the desired polymeric material.

3,355,438
PREPARATION OF ETHYLENE AND ITACONIC ANHYDRIDE COPOLYMERS
Harold D. Lyons, Overland Park, Kans., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 29, 1964, Ser. No. 407,572

15 Claims. (Cl. 260—78.5)

1. A process for preparing a copolymer of ethylene and itaconic anhydride comprising, forming a solution of a monoalkyl itaconate of the formula



$$HOOC-\overset{\overset{O}{\|}}{C}-CH_2-COOR_1$$

in an alcohol of the formula

$$R_2-OH$$

wherein R_1 and R_2 are identical alkyl radicals containing from 1 to 8 carbon atoms; and copolymerizing ethylene with said monoalkyl ester of itaconic acid in said solution in the presence of a free radical catalyst, whereby a copolymer of ethylene and itaconic anhydride is formed.

3,355,439
POLYMERS OF COORDINATION COMPLEXES OF VINYLPHOSPHINES AND METAL SALTS, AND PROCESS FOR PREPARING SAME
Frank J. Welch, Charleston, and Herbert J. Paxton, Jr., Elkview, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 30, 1963, Ser. No. 320,005

13 Claims. (Cl. 260—80)

1. A normally solid addition polymer of a coordination complex represented by the formula

$$MA_m(R_2PCH=CH_2)_x$$

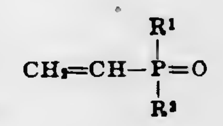
wherein M is a metal selected from the group consisting of the metals present in Group II–B of the Periodic Table; A is a member selected from the group consisting of acetate and monovalent inorganic anions; R is a monovalent hydrocarbon radical having from 1 to 20 carbon atoms; *m* is an integer having a value equal to the valance of metal M; and *x* is an integer having a value equal to the coordination number of metal salt MA_m.

3,355,440
ETHYLENE/VINYL PHOSPHINE OXIDE COPOLYMERS AND BLENDS OF SAME WITH POLYPROPYLENE
Nathan L. Zutty, Frank J. Welch, Jr., and Edward M. Sullivan, Charleston, George M. Bryant, South Charleston, and Andrew T. Walter, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 27, 1963, Ser. No. 334,045

4 Claims. (Cl. 260—88.1)

1. A copolymer of ethylene and a vinylphosphine oxide represented by the formula



$$CH_2=CH-\underset{R^2}{\overset{R^1}{P}}=O$$

wherein R^1 and R^2 are monovalent hydrocarbon radicals free of aliphatic unsaturation containing from 1 to 14 carbon atoms, said copolymer having a polymerized vinyl-phosphine oxide content of from 2.5 to 40 percent by weight and a density of from 0.91 gram/cc. to 0.98 gram/cc.

3,355,441
PREPARATION OF REACTION PRODUCTS OF TETRAFLUOROHYDRAZINE WITH POLYVINYLFUROATE, USEFUL AS ENERGETIC BINDERS FOR PROPELLANTS
Anthony J. Passannante, Metuchen, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 16, 1961, Ser. No. 134,799

9 Claims. (Cl. 260—88.5)

1. Process for preparing N_2F_4 adducts of polyvinyl furoate which comprises solvating the polyvinylfuroate in a liquid solvent of low reactivity selected from the group consisting of acetonitrile, chloroform, carbon tetrachloride, and mixtures of acetonitrile with a halogenated hydrocarbon, and reacting the thus solvated polyvinyl furoate with admixed N_2F_4 at a reaction temperature in the range of about 100° C. to 130° C. under pressure and with an amount of the N_2F_4 to chemically combine from 2 to 4 NF_2 groups with double bonds of each furan nucleus in the polyvinylfuroate and recovering the resulting polyvinylfuroate-N_2F_4 adduct product containing the NF_2 groups.

3,355,442
PROCESS FOR SEPARATION OF CHLORINATED POLYMERS FROM CARBON TETRACHLORIDE BY AZEOTROPIC DISTILLATION
John Heyward Taylor, Widnes, England, assignor to Imperial Chemical Industries Limited, London, SW. 1, England, a corporation of Great Britain

No Drawing. Filed Aug. 26, 1963, Ser. No. 304,638

Claims priority, application Great Britain, Sept. 17, 1962, 35,282/62

5 Claims. (Cl. 260—92.8)

1. A process for the isolation of a chlorinated polymer selected from the group consisting of chlorinated polyvinyl chloride, chlorinated polyethylene, chlorinated polypropylene, chlorinate natural rubber and chlorinated polyisoprene from a mixture comprising said chlorinated polymer and carbon tetrachloride, which comprises adding to said mixture an amout of an aliphatic alcohol selected from the group consisting of methanol, ethanol, a propanol and tertiary butanol at least sufficient to form an

azeotrope with said carbon tetrachloride, removing by fractional distillation the azeotrope of said carbon tetrachloride with said alcohol, and subsequently removing any residual alcohol from the polymer.

3,355,443
METHOD OF POLYMERIZING ETHYLENE

Kazuo Itoi, Kurashiki, Japan, assignor to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan

No Drawing. Filed Feb. 11, 1964, Ser. No. 343,967
Claims priority, application Japan, Feb. 14, 1963, 38/6,015
4 Claims. (Cl. 260—94.9)

1. A method of producing polyethylene having a molecular weight of about 10,000 to 150,000 which comprises polymerizing ethylene in the presence of a catalyst prepared by mixing an organotin monohydride having the formula R_3SnH, wherein R is selected from the group consisting of alkyl, aryl and cycloalkyl radicals, and titanium tetrachloride in the presence of ethylene, the molar ratio of said organotin monohydride to titanium tetrachloride being less than 2.

3,355,444
PROCESS OF FINING GELATIN USING PHOSPHATES AND WATER-SOLUBLE CARBONATES

Nicholas J. Kalafatas, Arlington, and George A. Consolazio, Burlington, Mass., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 4, 1966, Ser. No. 531,782
7 Claims. (Cl. 260—118)

1. A process of fining a gelatin solution containing metallic ions and organic contaminants consisting of:
(1) adding a compound furnishing phosphate ion to said gelatin solution,
(2) adjusting the pH of said solution to at least about 6.0,
(3) adding a carbonate selected from the group consisting of soluble alkali metal and ammonium carbonates to said solution,
(4) adjusting the pH of said solution to about 8.5 to 9.5, whereby a carbonate precipitate of metallic ions forms, and
(5) separating said precipitate together with coprecipitated and occluded contaminants from said solution.

3,355,445
PROCESS OF FINING GELATIN BY MEANS OF CARBONATE PRECIPITATION

Nicholas J. Kalafatas, Arlington, and George A. Consolazio, Burlington, Mass., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 4, 1966, Ser. No. 531,783
5 Claims. (Cl. 260—118)

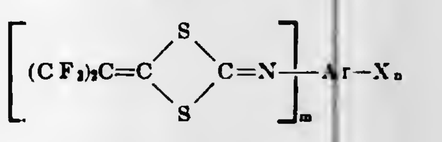
1. A process of fining a gelatin solution containing metallic ions and organic contaminants consisting of:
(a) adding to said solution having a pH of at least about 6.0 a carbonate selected from the group consisting of soluble alkali metal and ammonium carbonates;
(b) adjusting the pH of said solution to about 8.0 to 10.0, whereby a carbonate precipitate of metallic ions forms; and
(c) separating said precipitate together with co-precipitated and occluded contaminants from said solution.

3,355,446
SELECTED 2 - ARYLIMINO - 4 - HEXAFLUOROISOPROPYLIDENE-1,3-DITHIETANES AND THEIR PREPARATION

Maynard S. Raasch, Fairfax, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,880
12 Claims. (Cl. 260—152)

1. A compound of the formula



wherein
m is a whole number from 1 to 2;
Ar is 1- to 3-ring arylene;
X is selected from the group consisting of halogen, lower alkyl, lower hydrocarbyloxy, in which any unsaturation is ethylenic, 1- to 6-carbon carbacyl, phenylazo, nitro and lower carbalkoxy; and
n is a whole number from 0 to 3.

3,355,447
TREATMENT OF XANTHOMONAS HYDROPHILIC COLLOID AND RESULTING PRODUCT

John J. O'Connell, San Diego, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware

No Drawing. Filed Apr. 28, 1964, Ser. No. 363,296
11 Claims. (Cl. 260—209)

1. The process of treating a Xanthomonas hydrophilic colloid to improve the stability thereof which comprises heating an aqueous solution of said colloid having a pH of about 7.0 to 9.0 to an elevated temperature ranging from 150° F. to 170° F. and holding said aqueous solution at said temperature for at least twenty minutes, cooling the heated colloidal solution to a temperature in the range of from 40° F. to 100° F. and adjusting the concentration of said colloid in said solution to an amount not to exceed 1.0% by weight thereof, and filtering the resulting cooled aqueous Xanthomonas hydrophilic colloid solution.

3,355,448
METHOD OF IMPROVING VISCOSE FILTRATION BY THE ADDITION OF A SURFACE ACTIVE AGENT

Robert C. Rieke, Everett, and Jesse H. Brown, Marysville, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

No Drawing. Filed Sept. 10, 1964, Ser. No. 395,564
8 Claims. (Cl. 260—217)

1. A method of improving viscose prepared from wood pulp, comprising: adding a surface active agent to the pulp intended for the manufacture of the viscose selected from a group consisting of a condensate product of N,N-bis (2 hydroxyethyl) dodecanamide, N,N-bis (2 hydroxyethyl) decanamide, N,N-bis (2 hydroxyethyl) octadecanamide, N,N-bis (2 hydroxyethyl) 9 octadecenamide and mixtures thereof; then, filtering said viscose.

3,355,449
WATER SOLUBLE CELLULOSE ETHERS AND THEIR PRODUCTION

Kagenobu Inoshita and Tadamasa Morikawa, Shiga-gun, Japan, assignors to Toyo Spinning Co., Ltd., Osaka, Japan

No Drawing. Filed June 10, 1964, Ser. No. 374,183
Claims priority, application Japan, June 19, 1963, 38/32,223
6 Claims. (Cl. 260—231)

1. A process for producing water-soluble cellulose ether which comprises (1) pre-treating cellulose with a

15 to 25% aqueous solution of caustic alkali, (2) pressing the resulting alkali cellulose to a press ratio of from 1.5 to 4.0, (3) treating the pressed cellulose with a member selected from the class consisting of alkylhalide, acrylonitrile, and halogenated acetic acid and salts thereof until a D.S. value of from 0.05 to 0.5 is attained, (4) reducing the amount of the alkali to less than 10% based on the weight of the pre-treated cellulose, and (5) contacting the treated cellulose with gaseous alkylene oxide.

3,355,450
17-DIALKYLAMINOALKYL ETHERS OF STEROIDS

Eugene L. Woroch, Itasca, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 24, 1962, Ser. No. 225,887
2 Claims. (Cl. 260—239.55)

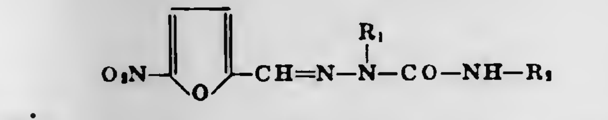
1. The process of preparing 3-ethylenedioxy-17-dialkylaminoalkoxysteroids consisting essentially of
treating a 3-ethylenedioxy-17-hydrosteroid with an alkali metal having an atomic weight of less than 40 in the presence of a water-immiscible, inert, organic solvent,
reacting the suspension formed with a dialkylaminoalkylhalide wherein said halide is selected from the group consisting of chlorine and bromine,
destroying any excess alkali metal, and isolating the formed ether.

3,355,451
NEW SEMICARBAZONES AND PROCESSES FOR THEIR PREPARATION

Wilfred Herbert Hook, Brooklands, Sale, and Jack Raymond Green, Romiley, England, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 27, 1964, Ser. No. 414,430
Claims priority, application Great Britain, Nov. 28, 1963, 46,971/63
6 Claims. (Cl. 260—240)

1. A 5-nitro-2-furaldehyde semicarbazone of the formula



(I)

wherein
R_1 is a 2-hydroxy-1-cycloalkyl radical with 5–7 ring members and 5–9 carbon atoms, and
R_2 is a member selected from the group consisting of hydrogen and alkyl with at most 3 carbon atoms.

3,355,452
DERIVATIVES OF 7-AMINO-CEPHALOSPORANIC ACID

Jakob Urech, Basel, Bruno Fechtig, Binningen, Rolf Bosshardt, Basel, Hans Bickel and Karl Schenker, Binningen, and Max Wilhelm, Allschwil, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 1, 1965, Ser. No. 460,475
Claims priority, application Switzerland, June 5, 1964, 7,338/64; Apr. 2, 1965, 5,497/65
14 Claims. (Cl. 260—243)

1. Process for the manufacture of O-desacetyl-O-carbamoyl-7-acylamino-cephalosporanic acids whose 7-N-acyl group is a carboxylic acid radical, the CO group of which is bonded to a carbon atom, wherein desacetyl-7-amino-cephalosporanic acid, whose 7-amino group is substituted by a member selected from the group consisting of (1) an acyl group of the formula $R_2(CH_2)_nCO$, in which *n* stands for a whole number from 0 to 4 and R_2 represents a member selected from the group consisting of phenyl, naphthyl, phenoxy, phenylmercapto, heterocyclyloxy having 5 to 6 ring members, heterocyclylthio having 5 to 6 ring members, cycloalkyl having 5 to 6 ring carbon atoms and heterocyclyl having 5 to 6 ring members, the heteroatom of each of said heterocyclyl moieties being a member selected from the group consisting of nitrogen, sulfur and oxygen, and (2) an eliminable radical selected from the group consisting of t-butoxycarbonyl, trityl, carbobenzoxy and said carbobenzoxy group substituted by a member selected from the group consisting of nitro, halogen and lower alkoxy is reacted in an inert organic solvent at ambient temperature with an isocyanic acid ester of the formula

$$R_1—N{=}C{=}O$$

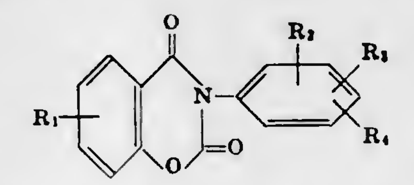
in which R_1 repersents a member selected from the group consisting of lower alkyl-sulfonyl, phenyl-sulfonyl, tolylsulfonyl, lower alkanoyl, lower alkoxycarbonyl, lower aliphatic hydrocarbon, lower aliphatic hydrocarbon substituted by at least one member selected from the group consisting of phenyl, halogenphenyl, nitrophenyl, halogen, lower alkoxy and lower alkyl-mercapto, phenyl, naphthyl, phenyl substituted by a member selected from the group consisting of lower alkyl, lower alkoxy, nitro and halogen, naphthyl substituted by a member selected from the group consisting of lower alkyl, lower alkoxy, nitro and halogen, and said eliminable radical attached to the 7-amino group in a compound thus obtained is split off and the O-desacetyl-O-carbamoyl - 7 - aminocephalosporanic acid thus obtained is 7-N acylated to provide said $R_2(CH_2)_nCO$ substitutent attached to the 7-amino group.

3,355,453
N-SUBSTITUTED BENZO-1,3-OXAZINE-DIONE-(2,4)

Klaus Hasspacher, Biberach an der Riss, Germany, assignor, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

No Drawing. Filed May 24, 1963, Ser. No. 282,887
Claims priority, application Germany, May 25, 1960, T 18,445
12 Claims. (Cl. 260—244)

1. An N-substituted benzo-1,3-oxazine-dione-(2,4) of the formula



wherein:
R_1 and R_2 are selected from the group consisting of chlorine and bromine,
R_3 is selected from the group consisting of hydrogen, chlorine and bromine, and
R_4 is selected from the group consisting of hydrogen, chlorine, bromine and nitro.

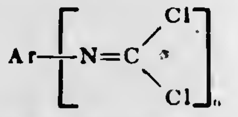
3,355,454
N-TRIFLUOROMETHYLAMINES AND PROCESS FOR THEIR PRODUCTION

Erich Klauke, Cologne-Flittard, and Engelbert Kühle, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Original application Apr. 23, 1963, Ser. No. 274,916. Divided and this application Sept. 28, 1965, Ser. No. 491,015
Claims priority, application Germany, May 15, 1962, F 36,806
6 Claims. (Cl. 260—249.5)

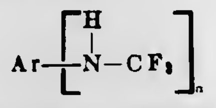
1. A process for producing N-trifluoromethylamines

which comprises contacting isocyanate-dichlorides of the formula



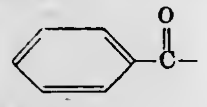
$$Ar-\left[N=C\begin{matrix}Cl\\ \\ Cl\end{matrix}\right]_n$$

with at least a reactive amount of anhydrous hydrofluoric acid in the absence of an organic solvent, to obtain a product having the formula



$$Ar-\left[\overset{H}{\underset{|}{N}}-CF_3\right]_n$$

wherein Ar is a triazinyl, an aromatic nucleus having up to 10 carbon atoms and a substituted aromatic nucleus having as substituent group a member selected from the group consisting of chloro, methyl, nitro, trifluoromethyl, carboxymethyl, cyano, and



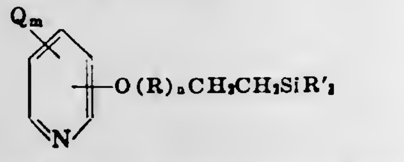
and *n* is an integer of 1-2.

3,355,455
CERTAIN PYRIDYL SILANE DERIVATIVES

Loren A. Haluska, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Aug. 6, 1964, Ser. No. 387,988
5 Claims. (Cl. 260—297)

1. A compound of the formula



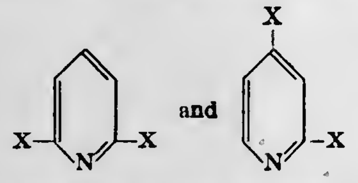
where Q is a lower alkyl radical, R is a divalent radical having from 1 to 18 inclusive carbon atoms, free of aliphatic unsaturation, selected from the group consisting of hydrocarbon radicals and radicals containing carbon, hydrogen, and oxygen in an ether linkage, R′ is selected from the group consisting of monovalent hydrocarbon radicals free of aliphatic unsaturation having from 1 to 18 inclusive carbon atoms, the hydroxyl group, and hydrolyzable groups selected from the group consisting of lower alkoxy groups, alkoxyalkoxy groups, acyloxy groups, ketoxime groups, halogen groups and isocyanate groups, *n* is an integer of 0 to 1, and *m* is an integer of 0 to 2.

3,355,456
PRODUCTION OF MONOHALOPYRIDINOLS

Arthur R. Sexton, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 6, 1965, Ser. No. 453,839
4 Claims. (Cl. 260—297)

1. A process for making a monohalopyridinol which comprises reacting by contacting a dihalopyridine having a formula selected from the group consisting of



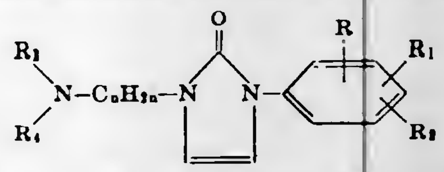
wherein X is halogen of atomic number 17–35 with 1.5–2.5 moles of alkali metal hydroxide at 90–250° C., said dihalopyridine and alkali metal hydroxide being at least partially dissolved in a solvent consisting of a tertiary alkanol of 4–5 carbon atoms and 0–50% of water based on the weight of alkanol, and recovering a monohalopyridinol from the reaction mixture thereby obtained.

3,355,457
SUBSTITUTED 2-IMIDAZOLINONES

William Blythe Wright, Jr., Woodcliff Lake, N.J., and Herbert Joseph Brabander, Nanuet, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 21, 1965, Ser. No. 457,816
12 Claims. (Cl. 260—309.6)

1. A compound selected from those of the formula:



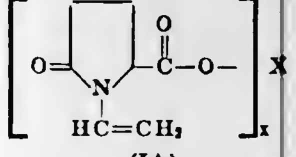
wherein R, R_1, and R_2 are members of the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, nitro and trifluoromethyl and R_1 and R_2 when on adjacent carbon atoms may represent the methylenedioxy group; R_3 and R_4 are members of the group consisting of lower alkyl, phenyl(lower)-alkyl, and when taken together with the nitrogen are pyrrolidino, lower alkylpyrrolidino, piperidino, lower alkylpiperidino, morpholino, lower alkyl morpholino, hexamethyleneimino, lower alkylpiperazinyl and phenylpiperazinyl; *n* is an integer from 2 to 4 and an acid addition salt thereof.

3,355,458
N-ALKENYL PYROGLUTAMIC ACID AMIDES, SALTS AND 1,1′ METHYLENE BIS-(ALLYL PYROGLUTAMATES) THEREOF

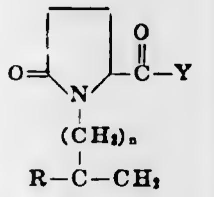
Frederick M. Meigs, Westfield, Albert L. Micchelli, Middletown, David Wasserman, Springfield, and John D. Garber, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 16, 1964, Ser. No. 360,405
17 Claims. (Cl. 260—326.3)

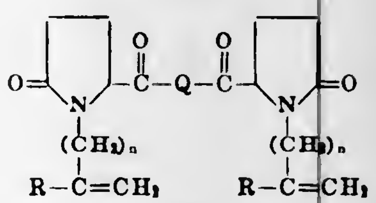
1. A compound having the formula



(IA)

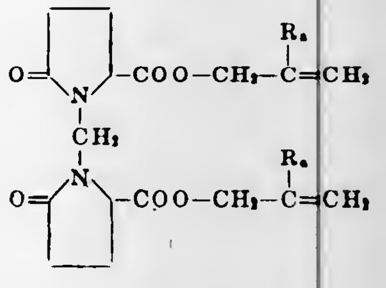


(IIA)



(IIIA)

and



(IVA)

wherein each *n* is independently selected from the group consisting of 0 and 1; when *n* is 0, R is hydrogen; when *n* is 1, each R is independently selected from the group consisting of hydrogen and methyl; each

R_a is independently selected from the group consisting of hydrogen and methyl;

X is a cation selected from the group consisting of hydrogen, ammonium, protonated amines, and a metal selected from the group consisting of sodium, potassium, lithium, silver, calcium, magnesium, barium, mercury, aluminum, iron, zinc, nickel, manganese and chromium; when X is hydrogen or ammonium, *x* is 1; when X is a protonated amine, *x* is an integer equal to the sum of the primary and secondary amine nitrogens; when X is a metal, *x* is an integer equal to the valence of the metal;

Y is an amino group; and

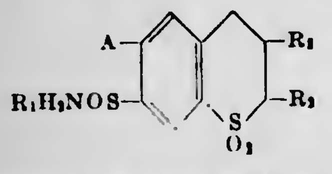
Q is a divalent radical of a polyamine forming a diamide with the carbonyl groups.

3,355,459
DERIVATIVES OF THIACHROMANES AND PROCESS FOR PREPARATION

Jacques Robert Boissier, Paris, and Charles Edouard Malen, Fresnes, France, assignors to Societe anonyme dite: Societe Industrielle pour la Fabrication des Antibiotiques (S.I.F.A.), Paris, France, a French company

No Drawing. Filed May 13, 1964, Ser. No. 367,202
Claims priority, application France, May 24, 1963, 935,905; July 26, 1963, 942,800
15 Claims. (Cl. 260—327)

1. Compound of the general formula:



in which A represents a member selected from the group consisting of halogen atoms and a lower alkyl radical, and R_1, R_2 and R_3 each represent a member selected from the group consisting of hydrogen atoms and a lower alkyl radical.

3,355,460
HIGH-ENERGY ORGANIC COMPOUNDS OZONIZED

Perry A. Argabright and Ralph J. Leary, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 1, 1961, Ser. No. 107,282
3 Claims. (Cl. 260—339)

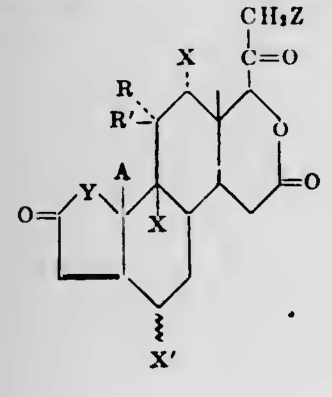
1. Ozonide of NF_2-containing cyclic unsaturated ether from the group consisting of ozonide of bis (NF_2) adduct of furan and ozonide of bis (NF_2) dioxene.

3,355,461
STEROIDAL LACTONES AND THEIR PREPARATION

Patrick A. Diassi, Westfield, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,783
4 Claims. (Cl. 260—343.2)

1. A compound selected from the group consisting of steroids of the formula



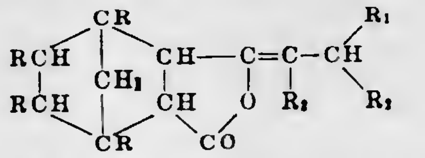
and the 6,7-dehydro derivatives thereof, wherein Y is selected from the group consisting of methylene, ethylene and vinylene; A is selected from the group consisting of hydrogen and methyl; R is hydrogen, R′ is selected from the group consisting of hydrogen and hydroxy, and together R and R′ is oxo; each X is selected from the group consisting of hydrogen, chlorine, fluorine and lower alkyl, at least one X being selected from the group consisting of hydrogen and lower alkyl; X′ is selected from the group consisting of hydrogen, lower alkyl, chlorine and fluorine; and Z is selected from the group consisting of hydrogen, chlorine, fluorine, hydroxy and the acyloxy radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms.

3,355,462
NORBORNENE LACTONES AND THEIR PREPARATION

Yves Colleuille and Philippe Perras, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French corporation

No Drawing. Filed Oct. 23, 1963, Ser. No. 318,176
Claims priority, application France, Oct. 25, 1962, 913,406; Sept. 24, 1963, 948,508
9 Claims. (Cl. 260—343.3)

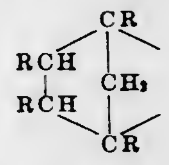
1. A polycyclic lactone of the formula:



in which each R taken separately represents hydrogen, lower alkyl, carboxyl, lower alkoxy carbonyl, lower alkanoyl, lower alkanoyloxy, lower alkanoyloxy (lower alkyl), hydroxy, lower alkoxy, or phenoxy, the two R radicals attached to secondary carbon atoms also representing, when taken together, the radical

$$-CH=CH-CH_2-$$

R_1 represents hydrogen, cyano, carboxyl, lower alkoxycarbonyl, lower alkyl, lower hydroxyalkyl, lower cyanoalkyl, lower carboxyalkyl, lower alkoxycarbonyl (lower alkyl), or aldehyde and R_2 and R_3 are the same or different and, when taken separately, are each hydrogen or lower alkyl, and, when taken together, are lower alkylene, lower alkyl-substituted lower alkylene, or a 1,3 - cyclopentylidene radical of formula:



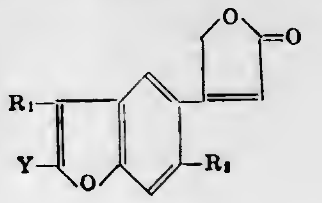
where R is as hereinbefore defined.

3,355,463
5 - (2 - OXO - 2,5 - DIHYDRO - 4 - FURYL) - BENZO(b)-FURANS AND INTERMEDIATES THEREFOR

Josef Schmitt, L'Hay-les-Roses, France, assignor to Etablissements Clin-Byla, Paris, France, a company of France

No Drawing. Filed Feb. 1, 1965, Ser. No. 429,642
Claims priority, application France, Feb. 7, 1964, 963,087
11 Claims. (Cl. 260—343.6)

1. A furan compound having the formula:



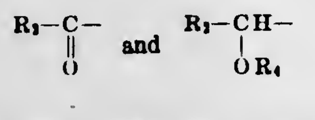
(A)

wherein

R_1 represents an alkyl

R_3 represents a member of the group consisting of hydrogen and alkoxy and

Y represents a member of the group consisting of



$$R_2-\underset{\displaystyle O}{\overset{}{\underset{\|}{C}}}- \quad \text{and} \quad R_2-\underset{\displaystyle OR_4}{\underset{|}{CH}}-$$

in which R_2 represents a member of the group consisting of alkyl, unsubstituted phenyl, and substituted phenyl having from 1 to 3 substituents selected from the group consisting of hydroxy, alkanoyloxy, alkoxy, and dialkylamino alkoxy, and R_4 represents a member of the group consisting of hydrogen, alkyl, alkanoyl, and carboxy alkanoyl, each of said alkyl, alkoxy, and alkanoyl having from 1 to 4 carbon atoms.

3,355,464

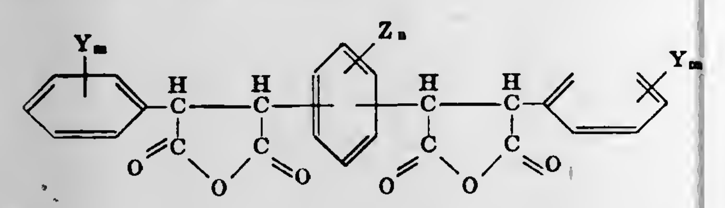
DIPHENETHYLBENZENE TETRACARBOXYLIC ACID DIANHYDRIDES AND DERIVATIVES

Ferdinand B. Zienty, Warson Woods, and Myron J. Holm, Olivette, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application June 5, 1964, Ser. No. 373,065, now Patent No. 3,293,278, dated Dec. 20, 1966. Divided and this application Mar. 24, 1966, Ser. No. 537,014

4 Claims. (Cl. 260—347.3)

1. A diphenethylbenzene-α,α′,β,β′-tetracarboxylic acid dianhydride of the formula



wherein Y is hydrogen, lower alkyl, lower alkoxy or halogen, Z is lower alkyl or halogen, *m* is a cardinal number from 0 to 2 inclusive and *n* is a cardinal number from 0 to 2 inclusive.

3. A compound according to claim 1 which is p-diphenethylbenzene-α,α′,β,β′-tetracarboxylic acid, dimethyl ester.

4. A compound according to claim 1 which is p-diphenethylbenzene - α,α′,β,β′ - tetracarboxylic acid, dimethyl ester, dichloride.

3,355,465

PREPARATION OF KETONIC OXIDATION PRODUCTS FROM OLEFINICALLY UNSATURATED COMPOUNDS

Michael Sidney Jeremy Dallas and Jack Hilton, Birkenhead, England, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Jan. 18, 1963, Ser. No. 252,314

Claims priority, application Great Britain, Jan. 24, 1962, 2,557/62

18 Claims. (Cl. 260—406)

1. A process for the production of ketonic oxidation products from olefinically unsaturated compounds comprising

(a) combining (i) an aliphatic, olefinically unsaturated compound reactable with a water soluble, ionizable mercuric salt in the presence of a solvent having at least one hydrogen replaceable by a sodium atom to produce an ionizable adduct, said compound being selected from the group consisting of substantially linear olefinically unsaturated aliphatic hydrocarbons having from 8 to 22 carbon atoms and alkyl esters of substantially linear olefinically unsaturated fatty acids wherein the acid has from 8 to 22 carbon atoms, (ii) an alcohol having from 1 to 4 carbon atoms, and (iii) a mercuric salt of a cation exchange resin which is a sulfonated cross-linked polymer of an aromatic vinyl hydrocarbon, said compounds (i), (ii) and (iii) being capable of reacting with each other to form a water-insoluble adduct, said compounds being combined with each other at a temperature between about 0° C. and 100° C. in the presence of water the amount thereof not exceeding approximately 5% by volume of said alcohol (ii), whereby an adduct is formed; and

(b) allowing said adducts to rearrange with the formation of a ketonic oxidation product of said olefin and extracting said ketonic oxidation product from said resin with a solvent therefor selected from the group consisting of said alcohol (ii) an diethyl ether as said ketonic oxidation product is formed.

3,355,466

COMPLEXES OF HEAVY METAL HALIDES AND N,N,N′,N′ - TETRAKIS(HYDROXYALKYL)ALKYLENE DIAMINES

Harold L. Elkin, Levittown, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa.

No Drawing. Filed July 2, 1963, Ser. No. 292,479

10 Claims. (Cl. 260—429)

1. A complex compound adapted to be used in the vulcanization of polymers, said compound being a solid coordination complex of an N,N,N′,N′-tetrakis(hydroxyalkyl)alkylene diamine and heavy metal halide, the mole ratio of heavy metal halide to diamine being greater than 1:1.

3,355,467

ZIRCONYL NITROPHENATES AND THEIR PREPARATION

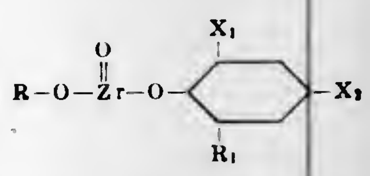
Eugene P. Di Bella, Rochelle Park, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed June 17, 1964, Ser. No. 375,965

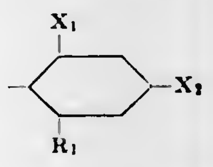
9 Claims. (Cl. 260—429.3)

7. The method for the production of zirconyl nitrophenates which comprises heating zirconium tetrachloride with a stoichiometric excess of a nitrophenol in the presence of a solvent selected from the group consisting of benzene, toluene, and xylene at the reflux temperature of the reaction mixture until the evolution of hydrogen chloride ceases.

9. A zirconyl nitrophenate having the structure



wherein R represents a member selected from the group consisting of (1) alkyl groups having from 8 to 22 carbon atoms and (2) the group having the structure



X_1 and X_2 each represents a member selected from the group consisting of H and NO_2, at least one of the substituents X_1 and X_2 representing NO_2; and R_1 represents an alkyl group having from 1 to 4 carbon atoms.

3,355,468

PROCESS FOR PREPARING TRICYCLOHEXYLTIN CHLORIDE

Justin L. Hirshman, East Brunswick, and Joseph G. Natoli, Parlin, N.J., assignors to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 8, 1964, Ser. No. 358,378

14 Claims. (Cl. 260—429.7)

1. The process for preparing $(C_6H_{11})_3SnX$ by the reaction of $(C_6H_{11})MgX$ and SnX_4 in molar ratio of 3:1 wherein X is selected from the group consisting of chloride and bromide which comprises maintaining a reaction mixture containing SnX_4, adding to said reaction mixture $(C_6H_{11})MgX$ in amount of 3 moles per mole of SnX_4, and agitating said reaction mixture during said addition whereby said reaction mixture is maintained substantially uniform thereby forming $(C_6H_{11})_3SnX$.

3,355,469

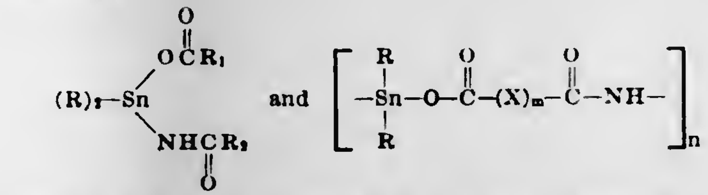
ALKYLAMIDO(DIALKYL)TIN CARBOXYLATES AND THE METHOD OF PREPARING THEM

Sheldon Herbstman, Bronx, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 9, 1964, Ser. No. 358,620

12 Claims. (Cl. 260—429.7)

1. An organotin compound selected from the class consisting of:



wherein R is alkyl of from 1 to 8 carbon atoms, R_1 and R_2 are each selected from the class consisting of an alkyl radical of from 1 to 18 carbon atoms, phenyl and naphthyl, X is an alkylene bridge, *m* is an integer of from 2 to 8 and *n* is an integer of from 5 to 25.

3,355,470

PROCESS FOR PREPARING TRI-CYCLOHEXYLTIN HALIDES

Joseph G. Natoli, Parlin, N.J., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 6, 1964, Ser. No. 365,524

8 Claims. (Cl. 260—429.7)

1. The process for preparing $(C_6H_{11})_3SnX$ wherein X is selected from the group consisting of chloride and bromide which comprises maintaining a reaction mixture containing $(C_6H_{11})_2SnX_2$, adding to said reaction mixture $(C_6H_{11})MgX$ in amount equivalent to $(C_6H_{11})_2SnX_2$, agitating said reaction mixture during said addition whereby said reaction mixture is maintained substantially uniform thereby forming $(C_6H_{11})_3SnX$, and recovering said $(C_6H_{11})_3SnX$.

3,355,471

TRIBASIC LEAD ISOPHTHALATES AND PREPARATION THEREFOR

Leonard M. Kebrich, Miller Place, N.Y., and Edward L. White, Freehold, N.J., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 8, 1964, Ser. No. 358,373

3 Claims. (Cl. 260—435)

2. A process for preparing a tribasic lead salt of isophthalic acid which comprises the steps of forming a mixture of water, lead oxide, and isophthalic acid, said isophthalic acid being present in such amount that for each mole of isophthalic acid there are 4 moles of lead oxide, reacting said mixture until complete formation of said basic lead salt at a temperature ranging from about 15° C. to about 100° C., filtering and drying said basic lead salt.

3,355,472

DIORGANO ANTIMONY (III) DITHIOCARBAMATES AND THE PREPARATION THEREOF

Nathaniel L. Remes, Livingston, and John J. Ventura, East Brunswick, N.J., assignors to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 24, 1964, Ser. No. 362,479

20 Claims. (Cl. 260—446)

1. A novel composition of the formula

$$R_aSb(SSNCR'_2)_{3-a}$$

wherein R is selected from the group consisting of alkyl, aryl, and alkenyl; R′ is selected from the group consisting of hydrogen and hydrocarbon; and *a* is an integer less than 3.

3,355,473

HYDROXYORGANOSILANES

Harold A. Clark and Loren A. Haluska, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Original application Apr. 1, 1963, Ser. No. 269,781, now Patent No. 3,317,460, dated May 2, 1967. Divided and this application Dec. 21, 1966, Ser. No. 603,416

9 Claims. (Cl. 260—448.2)

1. A silane having the general formula

$$[(HO)_cR]_bSiR'_a$$

wherein each R is independently selected from the group consisting of trivalent and tetravalent hydrocarbon and hydrocarbon radical free of aliphatic unsaturation, *a* is atom through a silicon-carbon bond, R′ is a monovalent hydrocarbon radical free of aliphatic unsaturation, *a* is an integer from 2 to 3 inclusive, *b* is an integer from 1 to 2 inclusive, the sum of *a* and *b* being 4, *c* is an integer from 2 to 3 inclusive, *c* being 2 when R is trivalent and *c* being 3 when R is tetravelent, and all of the hydroxyl groups are primary hydroxyl groups.

3,355,474

PROCESS FOR PRODUCTION OF HYDROXY-ENDBLOCKED SILOXANE FLUIDS

Marshall L. Wheeler, Jr., Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 1, 1963, Ser. No. 292,068

11 Claims. (Cl. 260—448.8)

1. A process for the production of hydroxy-endblocked organopolysiloxanes which consists essentially of contacting an organopolysiloxane containing at least one silicon-bonded group selected from the class consisting of halogen atoms and acyloxy groups with a finely divided solid particulate water-containing basic anion exchange material, and wherein the amount of anion exchange material present in the reaction system is at least sufficient to provide sufficient water to hydrolyze all of the halogen atoms and acyloxy groups of the siloxane and also to neutralize the resulting acids produced by such hydrolysis, and recovering a hydroxy-endblocked organopolysiloxane product from the reaction mixture.

3,355,475

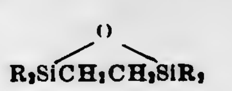
IODINE AS A POLYMERIZATION CATALYST FOR CERTAIN SILAZANES AND SILOXANES

Ronald H. Baney, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Feb. 26, 1964, Ser. No. 347,396

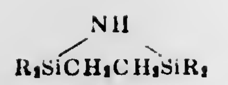
3 Claims. (Cl. 260—448.2)

1. The process of contacting a composition consisting essentially of at least one compound selected from the group consisting of



$$R_2\overset{\frown O \frown}{SiCH_2CH_2SiR_2}$$

and



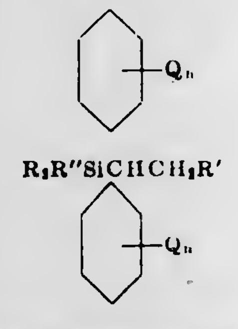
$$\overset{NH}{R_3SiCH_2CH_2SiR_3}$$

where R is selected from the group consisting of the following radicals: alkyl, aryl, haloalkyl, and haloaryl; R′ is selected from the group consisting of alkyl and aryl radicals; and R″ is an alkyl radical, with from 0.001 to 5 weight percent of elemental iodine; whereby a polymeric composition is formed.

3,355,476
ORGANOSILICON COMPOUNDS MADE FROM STYRENES

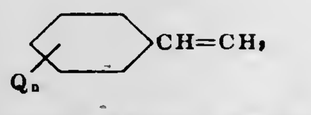
Alvin E. Bey and Donald R. Weyenberg, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Aug. 5, 1964, Ser. No. 387,773
6 Claims. (Cl. 260—448.2)

1. The process of making a compound of the formula



comprising reacting at a temperature of —15 to +35° C., in the presence of an inert solvent which is essentially free of active hydrogen,

(a) one molar part of a compound of the formula R′Li,
(b) from 1 to 10 molar parts of a compound of the formula $R_2R''SiX$, and
(c) from 0.5 to 10 molar parts of a compound of the formula



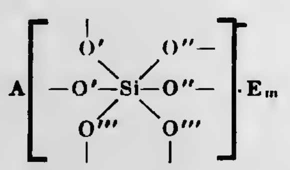
ingredient (a) being added to the mixture last, where

R is a nontertiary alkyl radical of no more than 6 carbon atoms,
R′ is an alkyl radical of more than 1 carbon atom,
R″ is selected from the group consisting of nontertiary alkyl radicals of no more than 6 carbon atoms and aryl radicals,
Q is an alkyl radical of no more than 6 carbon atoms,
n is an integer of 0 to 2, and
X is a halogen atom.

3,355,477
HEXACOORDINATE SILICON COMPLEXES

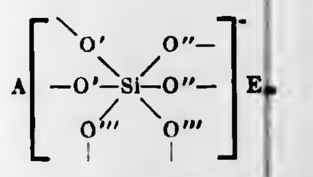
Cecil L. Frye, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Nov. 16, 1964, Ser. No. 411,586
9 Claims. (Cl. 260—448.8)

1. Hexacoordinate silicon complexes having the general formula



wherein the O′ oxygen atoms are attached to carbon atoms of an aromatic ring which are ortho to each other, the O″ oxygen atoms are attached to carbon atoms of an aromatic ring which are ortho to each other, the O‴ oxygen atoms are attached to carbon atoms of an automatic ring which are ortho to each other, A is a cation formed from an amine, E is unprotonated amine and *m* has a value greater than zero.

9. A method for preparing hexacoordinate silicon complexes having the general formula



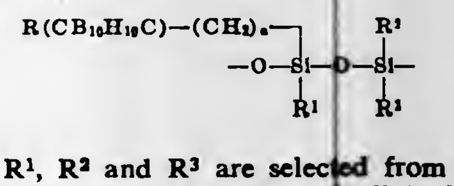
wherein the O′ oxygen atoms are attached to carbon atoms of an aromatic ring which are ortho to each other, the O″ oxygen atoms are attached to carbon atoms of an aromatic ring which are ortho to each other, the O‴ oxygen atoms are attached to carbon atoms of an aromatic ring which are ortho to each other, A is a cation formed from an amine, E is unprotonated amine and *m* has a value greater than zero, which method comprises reacting

(1) a silica source,
(2) an aromatic compound having at least two hydroxy groups on the aromatic ring which are ortho to each other and
(3) a stoichiometric excess of an amine, whereby the above hexacoordinate complexes are obtained.

3,355,478
CARBORANE-SUBSTITUTED SILICONES

Marvin M. Fein, Westfield, Joseph Green, Dover, and Eugene L. O'Brien, Rockaway, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed Sept. 30, 1964, Ser. No. 400,582
6 Claims. (Cl. 260—465)

1. A copolymer consisting essentially of recurring units of the formula:



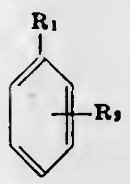
$$\overset{R(CB_{10}H_{10}C)-(CH_2)_a-}{-O-\underset{R^1}{Si}}-O-\underset{R^3}{\overset{R^2}{Si}}-$$

wherein R, R^1, R^2 and R^3 are selected from the group consisting of hydrogen, aliphatic, cycloaliphatic and aryl radicals and *a* is an integer including O.

3,355,479
PROCESS FOR PRODUCING AROMATIC NITRILES

Taijiro Oga, Hideo Ichinokawa, and Masatomo Ito, Ohta-ku, Tokyo, Japan, assignors to Showa Denko Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Oct. 19, 1964, Ser. No. 404,941
Claims priority, application Japan, Oct. 22, 1963, 38/55,939
6 Claims. (Cl. 260—465)

1. A process for the production of aromatic nitriles, wherein all nitrile groups are attached directly to the aromatic ring, which comprises contacting at a temperature in the range of 250 to 500° C. a gaseous mixture containing (1) at least one substituted benzene represented by the general formula:



wherein R_1 repersents a loweralkyl group and a lower alkenyl group; R_2 represents hydrogen atom, a lower alkyl group, a lower alkenyl group or a cyano group; and the benzene nucleus being optionally further substituted by halogen (2) ammonia and (3) molecular oxygen-containing gas with a catalyst composition consisting essentially of an oxide of arsenic and an oxide of vanadium supported on an inert carrier wherein the atomic ratio of arsenic to vanadium being between 5:1 and 1:3, the concentration of the substituted benzene in said gaseous mixture being in the range of 0.5 to 10% by volume, the amount of ammonia in said gaseous mixture being at least one mol to one mol of the alkyl or alkenyl group in the substituted benzene, and the amount of molecular oxygen in said gaseous mixture being at least 1.5 times the theoretical ratio for stoichiometric reaction to form the nitriles.

3,355,480
ROOM TEMPERATURE VULCANIZING SILICONE RUBBER COMPOSITIONS

Joel F. Di Paola, Cohoes, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Oct. 20, 1966, Ser. No. 587,974
7 Claims. (Cl. 260—465)

1. A room temperature curing organopolysiloxane composition stable under anhydrous conditions and curable to the solid, elastic state upon exposure to moisture comprising an acyloxyaminosilane having the formula:

$$(RR'N)_a(YO)_b(R''O)_c(Y')_{4-a-b-c}Si$$

and a liquid silanol chain-stopped polydiorganosiloxane having the formula:

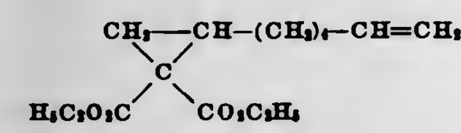
$$HO[(Y'')_2SiO]_nH$$

where R is a monovalent hydrocarbon radical free of aliphatic unsaturation; R′ is a member selected from the class consisting of hydrogen and monovalent hydrocarbon radicals free of aliphatic unsaturation; R″ is an alkyl radical; Y is a monovalent acyl radical of an aliphatic monocarboxylic acid having from 1 to 6 carbon atoms; Y′ is a monovalent hydrocarbon radical free of aliphatic unsaturation; Y″ is a member selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals and cyanoalkyl radicals; *a* is a whole number equal to from 1 to 2, inclusive; *b* is a whole number equal to from 1 to 2, inclusive; *c* is a whole number equal to from 0 to 2, inclusive; the sum of *a* plus *b* is a whole number equal to from 2 to 3, inclusive; the sum of *a* plus *b* plus *c* is a whole number equal to from 3 to 4, inclusive; and *n* has a value of at least 10.

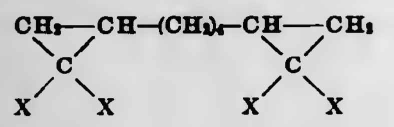
3,355,481
CYCLOPROPANE DERIVATIVES OF 1,7-OCTADIENE

Jerome Robert Olechowski, Lake Charles, La., assignor, by mesne assignments, to Columbian Carbon Company, a corporation of Delaware
No Drawing. Filed Sept. 28, 1964, Ser. No. 399,864
4 Claims. (Cl. 260—468)

1. Cyclopropane derivatives of 1,7-octadiene selected from the group consisting of



and

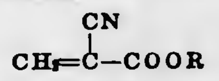


wherein X is a member of the group consisting of a halogen and carboethoxy.

3,355,482
STABILIZED CYANOACRYLATE ADHESIVES

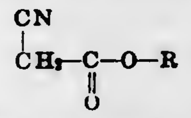
Harry W. Coover, Jr., and Thomas H. Wicker, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed June 20, 1966, Ser. No. 558,608
9 Claims. (Cl. 260—464)

1. A process for preparing a stable ester of α-cyanoacrylic acid of the formula



$$CH_2=\overset{CN}{C}-COOR$$

wherein R is a member of the group consisting of alkyl groups having 1–16 carbon atoms, cyclohexyl and phenyl, which comprises reacting an ester of cyanoacetic acid of the formula



$$\overset{CN}{CH_2}-\underset{O}{\underset{\|}{C}}-O-R$$

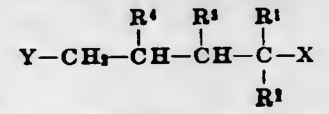
wherein R is as defined above, with formaldehyde in the presence of a basic polymerization catalyst to form a lower polymer of said α-cyanoacrylate, adding to the reaction product an organic sulfur-containing-compound selected from an alkyl sulfate, mercaptan, alkyl sulfide, alkyl sulfone, alkyl sulfoxide, alkyl sulfite or 3-sulfolene, said compound being added in amounts sufficient to generate in situ a stabilizing compound having a boiling point or decomposition temperature from about 5° C. at 760 mm. to about 300° C. at 1 mm., and depolymerizing said lower polymer in the presence of an acidic inhibitor at a temperature of about 175–200° C. and condensing stabilized α-cyanoacrylate monomer, said amounts being sufficient to provide said monomer with 0.0005–0.003 percent by weight sulfur as determined by X-ray fluorescence analysis.

7. The stabilized product produced by the process of claim 1.

3,355,483
ALKYL SUBSTITUTED DIFUNCTIONAL HEXANES

Joseph B. Dickey and Edmund B. Towne, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Mar. 5, 1965, Ser. No. 437,572
7 Claims. (Cl. 260—488)

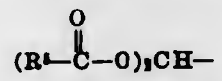
1. A compound of the formula:



$$Y-CH_2-\overset{R^4}{CH}-\overset{R^3}{CH}-\underset{R^2}{\overset{R^1}{C}}-X$$

wherein R^1, R^2, R^3 and R^4 represent hydrogen or lower alkyl groups and wherein at least three of the groups represented by R^1, R^2, R^3 and R^4 are lower alkyl, and wherein Y represents formyl and X represents a group selected from the following:

(1) di-(acyloxy)methyl groups having the structural formula



$$(R^5-\overset{O}{\overset{\|}{C}}-O)_2CH-$$

wherein R^5 is a lower alkyl group, and
(2) di-(alkoxy) methyl groups having the structural formula $(R^6O)_2CH—$ wherein R^6 is a lower alkyl group.

3,355,484
PROCESS FOR MAKING BIODEGRADABLE DETERGENTS

Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Aug. 20, 1964, Ser. No. 390,996
6 Claims. (Cl. 260—505)

1. A process for the production of detergents which comprises telomerizing butadiene with an alkylbenzene

containing an alpha-hydrogen group and from 1 to 8 carbon atoms in the alkyl group in the presence of alkaline catalyst selected from the group consisting of alkali metal, alkali metal amide, alkali metal oxide, alkali metal alkoxide and alkali metal hydride dispersed on a refractory oxide support at a temperature of from about 80° to about 200° C., pressure of from about 200 to about 2,000 p.s.i.a., LHSV of from about 0.5 to about 5.0 and alkylbenzene to butadiene mole ratio of at least 1.5 to 1 to linearly add the butadiene to said alkyl group, hydrogenating the aliphatic side-chain of the resultant telomerization product with hydrogen at a temperature of from about 50° to about 300° C. and a pressure of from about 25 to about 1000 p.s.i.a. in the presence of a hydrogenation catalyst selected from the group consisting of Group VIII metals and copper chromite to form phenyl alkane, and introducing a hydrophilic sulfonic acid group into said phenyl alkane.

3,355,485
PREPARATION OF SODIUM CYCLOHEXYL SULFAMATE FREE OF SULFATE IONS

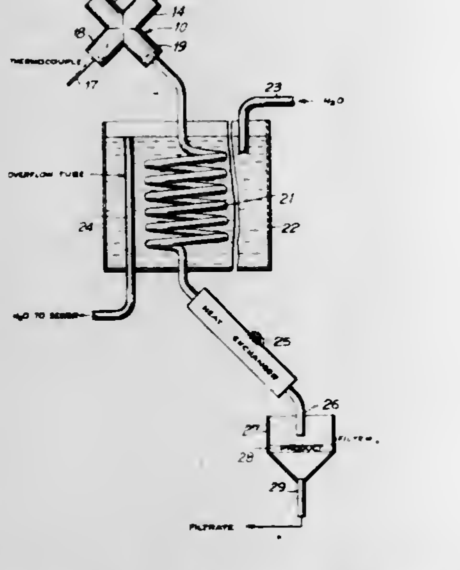
Vipin D. Shah, Waukegan, Ill., assignor to Abbott Laboratories, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Sept. 20, 1963, Ser. No. 310,440
2 Claims. (Cl. 260—513.6)

1. The process of preparing sodium cyclohexylsulfamate free of sulfate ions, comprising the steps of

hydrolyzing cyclohexylammonium - N - cyclohexylsulfamate with a 5–20% excess over the stoichiometric amount of calcium hydroxide,
filtering the solution,
adding to the filtrate sodium hydroxide in an amount at least equal to the stoichiometric amount,
filtering off the precipitated calcium hydroxide, and
recovering the sulfate-free sodium cyclohexylsulfamate from the filtrate.

3,355,486
CONTINUOUS PROCESS OF SYNTHESIZING AMINO-IMINOMETHANE-SULFINIC ACID

Sidney Berkowitz, Highland Park, Morton Meadow, Trenton, and Donald S. Bunin, Metuchen, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 8, 1965, Ser. No. 424,325
5 Claims. (Cl. 260—513.7)



1. The continuous process of synthesizing amino-iminomethane-sulfinic acid, which comprises continuously feeding an aqueous solution of thiourea containing from 0.7% to 10% by weight of thiourea to a reaction zone, concurrently continuously feeding an aqueous solution of hydrogen peroxide into said reaction zone and producing an intimate mixture of these reactants, the amount of hydrogen peroxide thus introduced being such as to produce a reaction mixture containing from 1.5% to 12% by weight of hydrogen peroxide, continuously withdrawing reaction mixture from said reaction zone, maintaining the reaction zone at a temperature within the range of from 5° C. to 80° C., controlling the rate of flow of said aqueous solution of thiourea and said stream of hydrogen peroxide and the rate of withdrawal of the reaction mixture from said reaction zone so that the residence time of the reactants and the reaction product in said reaction zone is within the range of from 0.1 second to 10 minutes and the pH of the reaction mixture is from 5 to 7, cooling the reaction mixture immediately upon withdrawal from the reaction zone thus forming a slurry of amino-iminomethane-sulfinic acid crystals, and continuously separating the amino-iminomethane-sulfinic acid crystals from the slurry.

3,355,487
PREPARATION AND PURIFICATION OF CHLORENDIC ACID FROM HEXACHLOROCYCLOPENTADIENE AND MALEIC ANHYDRIDE IN A DIELS-ALDER CONDENSATION

Richard H. Kimball, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Sept. 19, 1962, Ser. No. 224,800
16 Claims. (Cl. 260—514)

1. A process for preparing a substantially pure chlorendic acid which comprises reacting maleic anhydride and hexachlorocyclopentadiene in a Diels-Alder condensation, in the presence of an organic solvent, forming a solution of an impure chlorendic acid anhydride in the organic solvent, adding to the said solution a concentrated aqueous solution of acetic acid, having a concentration of at least about 28 percent by weight, so as to hydrolyze the chlorendic acid anhydride to chlorendic acid, and form a solution of impure chlorendic acid in acetic acid, countercurrently contacting the resulting solution of impure chlorendic acid in the acetic acid with monochlorobenzene, thereby extracting the major portion of the impurities from the chlorendic acid into the monochlorobenzene, separating the chlorendic acid solution from the monochlorobenzene, diluting the chlorendic acid solution to an acetic acid concentration below about 28 percent by weight and, thereafter, crystallizing a purified chlorendic acid from the solution.

3,355,488
CALCIUM CHLORIDE SALT OF PENICILLAMINE

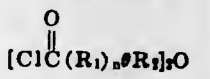
Albert Robert Restivo, Belleville, and Frank A. Dondzila, East Brunswick, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 13, 1964, Ser. No. 359,479
1 Claim. (Cl. 260—534)

Calcium chloride salt of D-penicillamine.

3,355,489
DI-ACID CHLORIDES OF BIS-CARBOXY CARBORANYL ALKYL ETHERS

Daniel Grafstein, Morristown, and Jack Bobinski, Rockaway, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed July 19, 1963, Ser. No. 296,892
8 Claims. (Cl. 260—544)

1. A compound of the formula

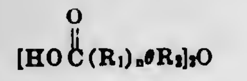


$$[Cl\overset{O}{\overset{\|}{C}}(R_1)_n\theta R_2]_2O$$

wherein R_1 is alkylene having 1 to 6 carbon atoms, R_2 is lower alkylene, *n* is 0 or 1, and θ is carboranyl,

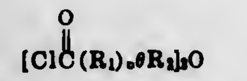
$$—C_2B_{10}H_{10}—$$

5. A process for chlorinating a bis(12-carboxyalkyl-11-carboranylalkyl)ether of the formula



$$[HO\overset{O}{\overset{\|}{C}}(R_1)_n\theta R_2]_2O$$

to form compounds of the formula



$$[Cl\overset{O}{\overset{\|}{C}}(R_1)_n\theta R_2]_2O$$

wherein R_1 is alkylene having 1 to 6 carbon atoms, R_2 is lower alkylene, *n* is 0 or 1, and θ is carboranyl,

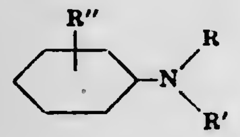
$$—C_2B_{10}H_{10}—$$

which process comprises reacting said ether with phosphorus pentachloride in refluxing phosphorus oxychloride.

3,355,490
PROCESS OF MANUFACTURING CYCLOHEXYLAMINES

Frederik H. Van Munster, Waukegan, Ill., assignor to Abbott Laboratories, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Aug. 19, 1964, Ser. No. 390,719
8 Claims. (Cl. 260—563)

1. The process of manufacturing an amine of the formula

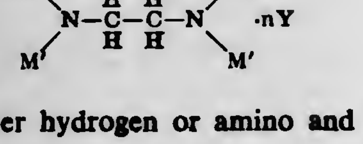


wherein R represents a member selected from the group consisting of straight-chain alkyl and branched alkyl, and wherein R′ represents a member selected from the group consisting of hydrogen and straight-chain alkyl, and wherein R″ is a member selected from the group consisting of hydrogen and methyl, consisting essentially of the step of reacting a substantially equimolar mixture of an aromatic compound selected from the group consisting of cresol and phenol, and an amine of the formula RNHR′, with gaseous hydrogen at a temperature between 60° and 150° C. and at a hydrogen pressure above 15 p.s.i.g. in the presence of at least 0.02% of catalyst selected from the group consisting of palladium and rhodium, said amount of catalyst being based on the amount of phenol.

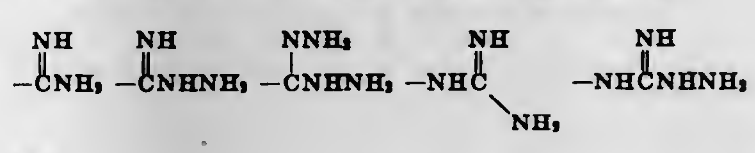
3,355,491
1,2-ETHYLENEBIS(AMINOGUANIDINES)

Earl Thomas Niles, Midland, Mich., and Erma G. Nosser, Concord, and Phyllis D. Oja, San Francisco, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 9, 1965, Ser. No. 486,600
15 Claims. (Cl. 260—564)

1. 1,2-ethylenebis(aminoguanidine) compounds corresponding to the formula

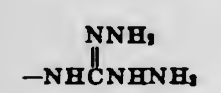


where M is either hydrogen or amino and M′ is



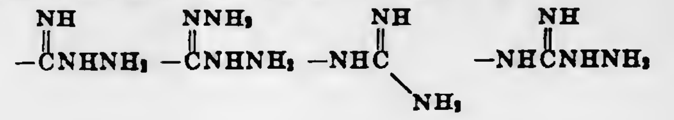
$$-\overset{NH}{\overset{\|}{C}}NH_2,\ -\overset{NH}{\overset{\|}{C}}NHNH_2,\ -\overset{NNH_2}{\overset{|}{C}}NHNH_2,\ -NH\overset{NH}{\overset{\|}{C}}-NH_2\quad -NH\overset{NH}{\overset{\|}{C}}NHNH_2$$

or



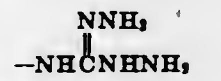
$$-NH\overset{NNH_2}{\overset{\|}{C}}NHNH_2$$

Y is a mono-, di- or tribasic acid and *n* is an integer ranging from 1 to 4, said compound being further characterized in that when M is hydrogen, M′ is



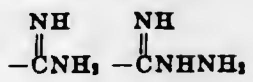
$$-\overset{NH}{\overset{\|}{C}}NHNH_2\ -\overset{NNH_2}{\overset{\|}{C}}NHNH_2\ -NH\overset{NH}{\overset{\|}{C}}-NH_2\quad -NH\overset{NH}{\overset{\|}{C}}NHNH_2$$

or



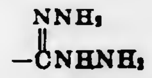
$$-NH\overset{NNH_2}{\overset{\|}{C}}NHNH_2$$

and when M is amino M′ is



$$-\overset{NH}{\overset{\|}{C}}NH_2\ -\overset{NH}{\overset{\|}{C}}NHNH_2$$

or



$$-\overset{NNH_2}{\overset{\|}{C}}NHNH_2$$

3,355,492
DICHLOROBIS(DIFLUORAMINO)METHANE

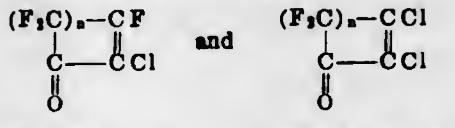
Robert L. Rebertus, Mendota Heights, and John G. Gagnon, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Oct. 5, 1964, Ser. No. 404,201
1 Claim. (Cl. 260—583)

The compound dichlorobis(difluoramino)methane.

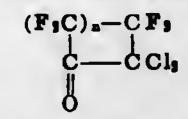
3,355,493
PROCESS FOR PYROLYSIS OF 2,2-DICHLOROPERFLUOROCYCLOALKANONES

Louis G. Anello, Basking Ridge, and Richard F. Sweeney, Randolph Township, Dover, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 25, 1965, Ser. No. 427,936
6 Claims. (Cl. 260—586)

1. The process for preparing a mixture of chlorofluorocycloalkene-1-ones of the formulas



wherein *n* is an integer of 2 or 3, which comprises heating a 2,2-dichloroperfluoroalkane-1-one of the formula

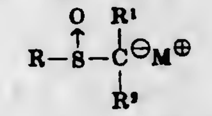


wherein *n* is as defined above, in the vapor phase at temperatures between about 250° C. and about 500° C. for periods of at least about 10 seconds.

3,355,494
PREPARATION OF KETOSULFOXIDES

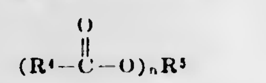
Warren I. Lyness, Mount Healthy, and David E. O'Connor, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 30, 1965, Ser. No. 444,068
5 Claims. (Cl. 260—586)

1. The process of preparing a 2-ketoalkyl alkyl sulfoxide comprising the step of reacting a salt of a sulfinyl carbanion having the formula



$$R-\overset{O}{\overset{\uparrow}{S}}-\overset{R^1}{\underset{R^2}{C}}{}^{\ominus}M^{\oplus}$$

wherein R is selected from the group consisting of hydrocarbon groups and alkoxy substituted hydrocarbon groups, the total number of carbon atoms in said R group being from 1 to 30 carbon atoms and where R^1 and R^2 have the same definition as R or are hydrogen atoms and wherein the total number of carbon atoms in the sulfoxide compound does not exceed 32, and not more than two of the R, R^1, and R^2 groups in the compound contain aryl groups and wherein M is an alkali metal, with an acylating agent having the formula:


$$(R^4-\overset{O}{\overset{\|}{C}}-O)_nR^5$$

wherein R^4 is selected from the group consisting of hydrocarbon groups containing from 1 to 29 carbon atoms, methoxy phenyl, trifluoro methyl phenyl, fluorophenyl, and hydroxyphenyl groups, and wherein R^5 represents the alkyl portion of the alcohol part of the ester and contains from 1 to 20 carbon atoms and *n* is an integer from 1 to 3 corresponding to the number of hydroxy groups present on the alcohol.

3,355,495

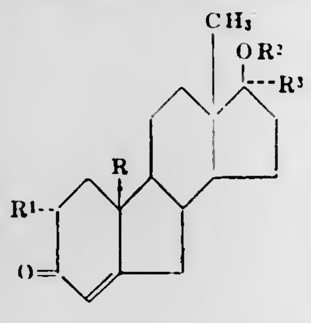
2-SUBSTITUTED B-NORANDROSTENES AND ESTRENES

Kenneth C. Holden, Stratford, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 6, 1965, Ser. No. 477,949

6 Claims. (Cl. 260—586)

1. A chemical compound of the formula:



wherein:

R is hydrogen, hydroxymethyl, or methyl;

R^1 is lower alkyl of up to four carbon atoms, allyl, or methylallyl;

R^2 is hydrogen or lower alkanoyl of up to six carbon atoms;

R^3 is hydrogen, methyl, or ethyl; and when R^3 is hydrogen, R^2 can be 1-cyclopentenyl, 1-cyclohexenyl, or 2-tetrahydropyranyl.

3,355,496

PRODUCTION OF NEOCARBORANE BY CONCURRENT DEALKYLATION AND REARRANGEMENT OF ALKYLCARBORANES

Carl W. Schoenfelder, Livermore, Calif., and Marvin M. Fein, Westfield, N.J., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed May 18, 1965, Ser. No. 456,821

11 Claims. (Cl. 260—606.5)

1. The process of preparing neocarborane by the concurrent dealkylation and rearrangement of alkylcarboranes having at least 3 carbon atoms in the alkyl radical, at a temperature greater than 450° C., above atmospheric pressure, until said neocarborane product is formed and isolating said product therein.

3,355,497

MANUFACTURE OF 4,4′-DICHLORODIPHENYL SULFONE

Edward G. Budnick, Garwood, N.J., assignor to Plains Chemical Development Co., Garwood, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 1, 1965, Ser. No. 429,636

7 Claims. (Cl. 260—607)

1. A process for the preparation of 4,4′-dichlorodiphenylsulfone which comprises reacting a mixture of 1 mole of dimethyl pyrosulfate and 2 to 3 moles of sulfur trioxide with chlorobenzene in an amount of at least one mol more than the number of mols of sulfur trioxide at a temperature of room temperature up to 100° C. and recovering 4,4′-dichlorodiphenylsulfone.

3,355,498

BIS-PERFLUOROALKANE-SULFONES

Ivan Pascal, Wilmington, Del., and Richard Bernard Ward, Kennett Square, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 19, 1965, Ser. No. 426,659

6 Claims. (Cl. 260—607)

1. Compounds having the structure

$$RSO_2(CF_2CF_2)_nSO_2R$$

wherein R is an organic radical selected from the group consisting of C_1 to C_{10} alkyl and C_4 to C_{10} cycloalkyl and *n* is a positive integer of from one to twenty.

3,355,499

PROCESS FOR PREPARING PHENOL MONOETHERS OF MONO- AND POLYETHYLENE GLYCOLS

Arthur Freeman, Linden, and Harry Kaplan, Westfield, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 1, 1962, Ser. No. 199,254

4 Claims. (Cl. 260—613)

1. In the process of condensing an alkylene oxide of 2 to 4 carbon atoms with an alkyl phenol at a temperature substantially within the range of 110 to 200° C. in the presence of an alkaline catalyst, the improvement which comprises pre-heating the alkyl phenol in an inert atmosphere to a temperature of at least 100° C., but not substantially higher than, and not more than 50 centigrade degrees below, the selected reaction temperature range, adding the alkaline catalyst to the pre-heated alkyl phenol at said temperature, and thereupon introducing the alkylene oxide while heating the mixture to the selected reaction temperature range.

3,355,500

4,4′-BIS(1,1,3,3-TETRAFLUORO-1,3-DICHLORO-2-HYDROXY-2-PROPYL)-DIPHENYLETHER

Basil S. Farah, Allentown, Pa., and Everett E. Gilbert, Morris Township, Morris County, and Julian A. Otto, Stockholm, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 18, 1964, Ser. No. 352,936

1 Claim. (Cl. 260—613)

4.4′ - bis(1,1,3,3 - tetrafluoro-1.3-dichloro-2-hydroxy-2-propyl)-diphenylether.

3,355,501

PROCESS FOR THE PRODUCTION OF HYDRATED OLEFINS

Efim Biller, Fribourg, Switzerland, and Gottfried Nettesheim and Gerhard Stern, Wesseling, near Cologne, Germany, assignors to Union Rheinische Braunkohlen Kraftstoff Aktiengesellschaft, Wesseling, near Cologne, Germany, a corporation of Germany

No Drawing. Filed June 8, 1965, Ser. No. 462,417

7 Claims. (Cl. 260—614)

1. In the process for the production of alkyl ethers and alkanol by hydration of olefines with 2 to 6 carbon atoms per molecule comprising reacting a mixture consisting essentially of said olefine and an aqueous solution of an acid-acting metal halide selected from the group consisting of the halides of zinc, copper, calcium, boron and aluminum at a temperature of between about 80 and 140° C. and at

a pressure sufficient to maintain the olefine in the liquid phase, the improvement which comprises performing the hydration in the presence of an alkyl halide with up to 10 carbon atoms per molecule, the ratio of said alkyl halide being from about 0.1 1.0 mol per mol of metal halide employed.

3,355,502

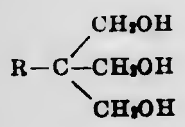
PROCESS FOR THE PRODUCTION OF MONOHYDROXY DIETHERS OF TRIHYDRIC ALCOHOLS

Hermann Delius, Ahrensburg, Germany, assignor to Reichhold Chemicals, Inc., White Plains, N.Y.

No Drawing. Filed Sept. 2, 1964, Ser. No. 394,043

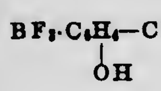
8 Claims. (Cl. 260—615)

1. A process for the production of monohydroxy diethers of β,γ-alkenols and alkanols wherein (1) trivalent alkenols of the general formula:


$$R-C(CH_2OH)_3$$

wherein R is selected from a group consisting of methyl and ethyl radicals, are etherified with (2) β,γ-alkenols containing not more than six carbon atoms and no other substituents with at least a triple molar excess in the presence of a mixed catalyst comprising (1) mercuric oxide and (2) boron trifluoride complexes selected from a group consisting of

$BF_3 \cdot C_2H_5—O—CH_2CH_2OH$
$BF_3 \cdot (CH_3COOH)_2$
$BF_3 \cdot (C_4H_9)_2O$
$BF_3 \cdot (C_2H_5)_2O$
$BF_3 \cdot H_2O$
$BF_3 \cdot 2H_2O$
$BF_3 \cdot (C_6H_5OH)_2$


$$BF_3 \cdot \underset{\displaystyle OH}{\underset{|}{C_6H_4}}-CH_3$$

$BF_3 \cdot C_2H_5—NH_2$
$BF_3 \cdot N(C_2H_5OH)_3$
$BF_3 \cdot OC(NH_2)_2$
BF_3·hexamethylenetetramine
BF_3·piperidine

the etherification being performed at substantially the boiling temperature of the reacting compounds and substantially within the range of 80–140° C., water being continuously removed from the reaction and the mixed catalyst being used substantially within the range of 1–5% by weight of the β,γ-alkenols, and being added in several stages during the reaction.

3,355,503

PREPARATION OF HYDROQUINONE

Piero Pino, Pisa, Giuseppe Braca, S. Frediano a Settimo, and Gianco Sbrana, Pisa, Italy, assignors to Lonza Ltd., Gampel, Switzerland (Direction: Basel, Switzerland)

No Drawing. Filed Aug. 13, 1964, Ser. No. 389,478

Claims priority, application Switzerland, Aug. 15, 1963, 10,091/63

5 Claims. (Cl. 260—621)

1. A process for preparing hydroquinone which comprises reacting acetylene with carbon monoxide and hydrogen, wherein the mole ratio of carbon monoxide to hydrogen is in the range of 0.2 to 10, at temperatures of 100 to 300° C. and at pressures of 50 to 350 atmospheres in an organic solvent which does not contain mobile hydrogen atoms, in contact with trimeric ruthenium tetracarbonyl in amounts of 0.5 to 1 g. per liter of solution.

3,355,504

PREPARATION OF 2,6-DIALKYL PHENOLS

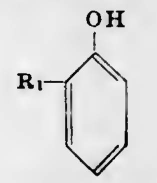
Thomas H. Coffield, Farmington, and Gordon G. Knapp and John P. Napolitano, Royal Oak, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 5, 1963, Ser. No. 321,396

16 Claims. (Cl. 260—624)

1. A process for the preparation of a di-ortho-substituted phenol which comprises reacting a mixture consisting essentially of

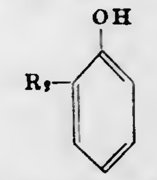
(a) a phenol having the formula:



wherein R_1 is selected from the group consisting of alkyl of from 2–12 carbon atoms, cycloalkyl of from 6–12 carbon atoms and aralkyl of from 8–12 carbon atoms,

(b) an olefin, and

(c) an aluminum salt of a phenol having the formula:



wherein R_2 is selected from the group consisting of alkyl of from 2–12 carbon atoms, cycloalkyl of from 6–12 carbon atoms and aralkyl of from 8–12 carbon atoms,

said mixture being substantially free of phenol and phenol-generating ethers.

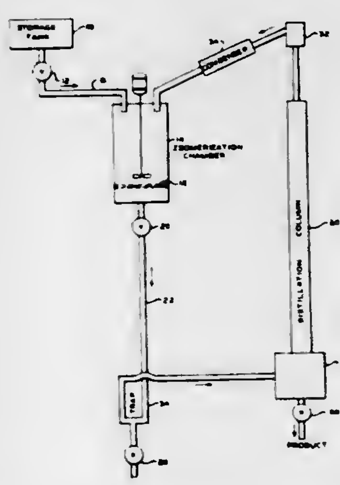
3,355,505

PROCESS FOR ISOMERIZING TERTIARY VINYL CARBINOLS

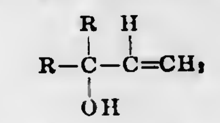
Robert J. Tedeschi, Whitehouse Station, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 19, 1963, Ser. No. 292,188

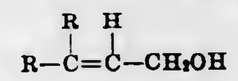
7 Claims. (Cl. 260—642)



1. A process for the isomerization to a primary allylic alcohol of a tertiary vinyl carbinol having only vinyl unsaturation and having the formula


$$R-\overset{R}{\underset{OH}{C}}-\overset{H}{C}=CH_2$$

and said primary allylic alcohol having the formula


$$R-\overset{R}{C}=\overset{H}{C}-CH_2OH$$

wherein R represents an alkyl radical, which comprises continuously introducing said tertiary vinyl carbinol into an isomerization zone containing a moist sulfonated polystyrene ion exchange resin catalyst cross-linked with divinyl benzene, said moist catalyst containing at least about 90% water, having a mesh size of about 50 to 100, and being continuously agitated, heating said tertiary vinyl carbinol in the liquid phase in said isomerization zone in the presence of said catalyst at a temperature in the range of 40° C. to 70° C., continuously withdrawing a reaction mixture containing a primary allylic alcohol, unreacted tertiary vinyl carbinol, and water from said isomerization zone, distilling said reaction mixture to obtain a distillate of tertiary vinyl carbinol and water and a residue containing primary allylic alcohol, continuously recycling said tertiary vinyl carbinol and at least some of said water to said isomerization zone, whereby to maintain water continuously present in said isomerization zone and to maintain said ion exchange resin continuously moist, and recovering the primary allylic alcohol from said residue.

5. A process for the isomerization of 3-methyl-1-butene-3-ol to 3-methyl-2-butene-1-ol which comprises continuously introducing 3-methyl-1-butene-3-ol into an isomerization zone containing a catalyst consisting of a moist sulfonated polystyrene ion exchange resin cross-linked with divinyl benzene, heating said 3-methyl-1-butene-3-ol in the liquid phase in said isomerization zone at a temperature in the range of about 60° C. to 70° C., continuously withdrawing a reaction mixture containing 3-methyl-2-butene-1-ol and unreacted 3-methyl-1-butene-3-ol from said isomerization zone, distilling said reaction mixture to obtain a distillate of 3-methyl-1-butene-3-ol and a residue containing 3-methyl-2-butene-1-ol, continuously recycling said distillate to said isomerization zone while maintaining said ion exchange resin continuously moist by introducing water into said isomerization zone during said continuous recycling, and recovering 3-methyl-2-butene-1-ol from said residue.

3,355,506
PROCESS FOR THE PREPARATION OF POLYCHLOROCYCLOHEXADIENES

Eugene P. Di Bella, Rochelle Park, and Adolph J. Deinet, Woodcliff Lake, N.J., assignors, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware
No Drawing. Filed Mar. 5, 1962, Ser. No. 177,264
3 Claims. (Cl. 260—648)

1. The process which comprises the steps of contacting toluene with chlorine at a temperature between approximately 0° C. and 40° C. in the presence of a germanium tetrachloride catalyst until at least 1.0 gram atom of chlorine has been added per mole of toluene, adding to the reaction mixture a catalyst selected from the group consisting of iodine and indium trichloride, and continuing the chlorination until a total of at least 3.0 gram atoms of chlorine has reacted per mole of toluene thereby forming methyl polychlorocyclohexadiene.

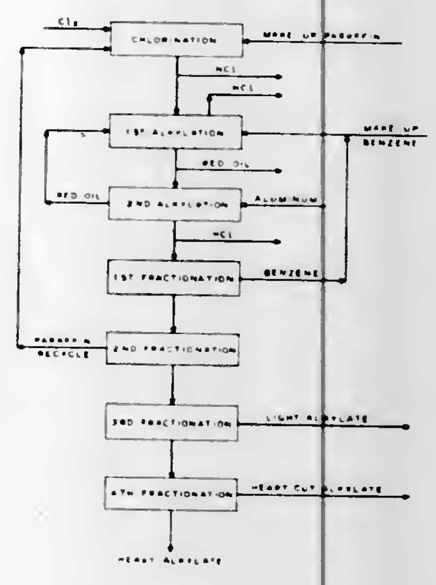
3,355,507
PREPARATION OF 1,2-DICHLORO-3,3,4,4-TETRAFLUOROCYCLOBUTENE

Ogden R. Pierce, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,195
5 Claims. (Cl. 260—648)

1. The process comprising contacting
(1) hexachlorobutadiene at a temperature of 200 to 500° C. with
(2) essentially anhydrous HF in the presence of
(3) a dry catalyst consisting essentially of aluminum oxide having dispersed on the surface thereof a halide of a promoter metal selected from the group consisting of metals of Groups IB, VB, VIB, VIIB and VIII of the periodic table, said catalyst having been contacted before use with HF in the presence of water, whereby 1,2-dichloro-3,3,4,4-tetrafluorocyclobutene is produced.

3,355,508
CONTINUOUS PROCESS FOR ALKYLATING AN AROMATIC HYDROCARBON

Howard N. Moulden, San Anselmo, Calif., assignor to Chevron Research Company, a corporation of Delaware
Filed July 3, 1963, Ser. No. 292,578
14 Claims. (Cl. 260—671)



1. Continuous process for the production of detergent alkylate by the alkylation of an aromatic hydrocarbon with alkyl chloride in a first alkylation zone followed by alkylation in a second alkylation zone, which comprises subjecting a stoichiometric excess of an aromatic hydrocarbon compound and a mixture of C_8–C_{18} alkyl chlorides consisting predominantly of secondary alkyl chlorides and a minor but substantial portion of primary alkyl chlorides to alkylating conditions in a first alkylation zone in the presence of a red oil catalyst complex obtained from the second alkylation zone, said red oil catalyst complex constituting about 5 to 25 percent by volume of the contents of said first alkylation zone, continuing alkylation in the first alkylation zone until about 90–95% of the alkyl chlorides have been converted, passing the effluent from the first alkylation zone to a first settling zone to form a first red oil phase and a first organic phase comprising alkylaromatic hydrocarbons, alkyl chlorides, aromatic hydrocarbon compound, and hydrogen chloride, recycling a portion of the red oil catalyst phase to the first alkylation zone, discharging a portion of the red oil phase corresponding in amount to that supplied from the second alkylation zone, so as to maintain a volume of 5 to 25 percent by volume of red oil catalyst complex in the first alkylation zone, passing the first organic phase into a second alkylation zone, and therein contacting it with aluminum metal under alkylation conditions, continuing the alkylation until substantially all of the alkyl chloride has been converted, thereby producing a second reaction product mixture comprising alkylaromatic hydrocarbons, aromatic hydrocarbons, and red oil catalyst complex, passing the effluent from the second alkylation zone to a second settler to form a second organic phase and a second red oil catalyst phase, passing said red oil catalyst to the first alkylation zone, and recovering alkylaromatic hydrocarbons from the second organic phase.

3,355,509
OLEFIN SEPARATION WITH STRONTIUM AND CADMIUM MOLECULAR SIEVES

James Leslie Carter, Chatham, Peter Joseph Lucchesi, North Plainfield, and Eugene Richard Nightingale, Jr., Murray Hill, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed July 15, 1965, Ser. No. 472,316
19 Claims. (Cl. 260—677)

1. A process for separating olefins from olefin containing streams which comprises passing a stream containing olefinic and non-olefinic constitutents through a molecular sieve adsorption zone, the said molecular sieve adsorption zone containing a molecular sieve selected from the group consisting of cadmium type X, strontium type X, cadmium type Y or strontium type Y molecular sieves whereby the said olefins are selectively adsorbed, said sieve zone being maintained at a temperature of —50° F. to 160° F.

3,355,510
OLEFIN DIMERIZATION PROCESS

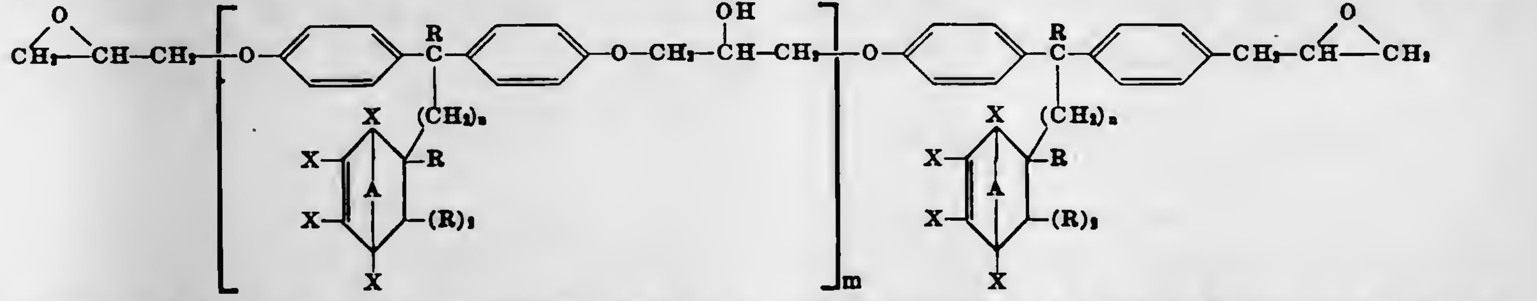
Lawrence G. Cannell, Albany, and Eugene F. Magoon, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 14, 1965, Ser. No. 513,837
6 Claims. (Cl. 260—683.15)

1. In the process for the dimerization of α-olefins by contacting a hydrocarbon α-monoolefin of from 3 to 8 carbon atoms with a catalytic amount of a hydrocarbon-soluble nickel compound and an alkyl aluminum halide in an inert reaction environment in the liquid phase at a temperature from about 40° C. to about 150° C., the improvement which comprises using as the alkyl aluminum halide a dialkylaluminum fluoride wherein all alkyls are alkyl of up to 6 carbon atoms.

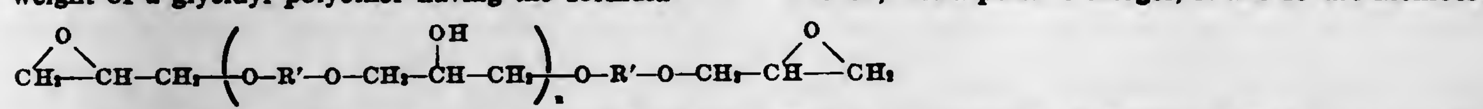
3,355,511
FLAME RETARDANT EPOXY COMPOSITIONS CONTAINING POLYGLYCIDYL ETHERS OF HEXAHALO BICYCLOHEPTADIENE BISPHENOLS

Carl G. Schwarzer, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 9, 1965, Ser. No. 447,091
3 Claims. (Cl. 260—830)

1. A flame retardant epoxy resin composition comprising a mixture of from 10 to about 80% by weight of a glycidyl polyether having the formula



wherein each R is independently selected from the group consisting of hydrogen and a lower alkyl, X is selected from the group consisting of chlorine and bromine, A is selected from the group consisting of —CH_2— and CX_2—, *n* is an integer from 0 to 6 and *m* is an average number between 0 and 4, and from about 20 to about 90% by weight of a glycidyl polyether having the formula



where R′ is a divalent hydrocarbyl radical of a dihydric phenol and *n* is an average number between 0 and 20.

3,355,512
PROCESS FOR CURING POLYEPOXIDES WITH THE REACTION PRODUCT OF H_2S AND TRI OR POLY FUNCTIONAL POLYEPOXIDES

William De Acetis, Berkeley, and Herbert A. Newey, Lafayette, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 289,429, June 20, 1963. This application Dec. 8, 1966, Ser. No. 600,262
13 Claims. (Cl. 260—830)

1. A process for converting polyepoxides having more than one vic-epoxy group to products which are insoluble and infusible and have excellent resistance to heat which comprises reacting (1) the polyepoxide having more than one vic-epoxy group with (2) a reaction product of hydrogen sulfide and a polyepoxide having at least three vic-epoxy groups, said polyepoxide having at least three epoxy groups and the hydrogen sulfide being combined in a mole ratio varying from 1:20 to 1:4, the reaction product defined in (2) and the polyepoxide defined in (1) being combined in a chemical equivalent ratio of .8:1.5 to 1.5:.8.

3,355,513
MESOMORPHIC PHASE POLYMERS

Charles Sadron, Gilles Finaz, and Antoine Skoulios, Strasbourg, France, assignors to Centre National de la Recherche Scientifique, Ministere de l'Education Nationale Republique Francaise, Paris, France
No Drawing. Filed Apr. 24, 1962, Ser. No. 210,604
Claims priority, application France, Apr. 27, 1961, 860,082
19 Claims. (Cl. 260—857)

1. A physically rigid polymer structure essentially consisting of a rigidified block or graft copolymer in the mesomorphic phase retaining the molecular orientation of a liquid crystal.

3,355,514
STABILIZATION OF POLYOXYMETHYLENE WITH A POLYESTERAMIDE AND A PHENOLIC ANTIOXIDANT

Thérèse Van De Walle, Lievin, and Michel Brault, Bruay-en-Artois, France, assignors to Houilleres du Bassin du Nord et du Pas-de-Calais, Douai (Nord), France, a French public establishment
No Drawing. Filed Oct. 16, 1964, Ser. No. 404,499
Claims priority, application France, Oct. 17, 1963, 950,859; June 12, 1964, 978,012
6 Claims. (Cl. 260—857)

1. A composition consisting essentially of a high molecular weight polyoxymethylene in admixture with a phenolic antioxidant and a polyesteramide of the formula:

$$\{OC—R—CONH—(CH_2)_m—HNCO—R—COO— (CH_2)_n—OCO—R'—CONH—(CH_2)_p—NH— CO—R—CO—O—(CH_2)_n—O\}_x$$

wherein m, n and p are positive integers in the range of 1 to 12, *x* is a positive integer, R and R′ are members of the group consisting of alkylene radicals containing from 4 to 10 carbon atoms and phenylene, the polyesteramide being present in an amount of from about 0.8 to about 5.0% by weight based on the weight of the polyoxymethylene said phenolic antioxidant and polyesteramide being the sole stabilizers for the polyoxymethylene.

3,355,515
SECONDARY AROMATIC AMINES AS STORAGE STABILIZERS FOR UNSATURATED POLYESTERS CONTAINING HYDROPEROXIDES

Hans Rudolph and Karl Raichle, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Feb. 23, 1966, Ser. No. 529,252
Claims priority, application Germany, Apr. 21, 1965, F 45,867
6 Claims. (Cl. 260—864)

1. A storage-stable, hardenable mass consisting essentially of a mixture of (a) an unsaturated polyester which is the condensation product of an α,β-ethylenically unsaturated dicarboxylic acid and a polyalcohol, (b) at least one compound selected from the group consisting of copolymerizable, monomeric unsaturated compounds and a non-copolymerizable solvent for said unsaturated polyester, (c) a catalytic amount of a hydroperoxide polymerization catalyst and (d) a storage-stabilizing amount of a secondary aromatic amine of the formula:

$$R—NH—Ar$$

wherein Ar is aryl and R is selected from the group consisting of alkyl, cycloalkyl and aryl.

3,355,516
GRAFT POLYMERS OF VINYL CHLORIDE AND COMONOMER ONTO A PARTIALLY HYDROLYZED ETHYLENE-VINYL ESTER BACKBONE POLYMER

Dietrich Hardt, Bonn, Herbert Bartl, Cologne-Stammheim, and Rudolf Wust, Cologne-Muelheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Apr. 14, 1965, Ser. No. 447,987
Claims priority, application Germany, May 14, 1964, F 42,878
19 Claims. (Cl. 260—878)

1. A graft copolymer of a mixture of (a) vinyl chloride and (b) monoethylenically unsaturated monomers containing within the molecule a member selected from the group consisting of carboxylic acid and esterified carboxylic acid groups said mixture being grafted upon a backbone of a copolymer of ethylene and a vinyl ester of an organic carboxylic acid, said backbone copolymer having been partially hydrolyzed to remove from 10 to 60% of the ester groups.

3,355,517
PROCESS FOR PREPARING VINYL CHLORIDE COPOLYMERS

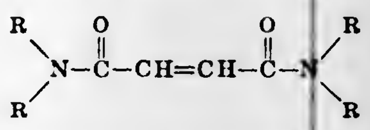
Stefan Müllner and Walter Albert, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed June 15, 1965, Ser. No. 464,219
Claims priority, application Germany, June 20, 1964, F 43,226
8 Claims. (Cl. 260—878)

1. A process for preparing vinyl chloride polymers having a high notched bar impact strength and simultaneously a high dimensional stability under heat by copolymerizing vinyl chloride with acrylic acid esters in aqueous emulsion or suspension in the presence of catalysts, emulsifiers and suspension stabilizers and in the presence of an elastomeric polymer and prepolymerizing part of the vinyl chloride with the co-components, which comprises polymerizing vinyl chloride with 2 to 6% by weight, calculated on the total weight of the starting components, of an acrylic acid alkyl ester, the alkyl group of which ester contains 5 to 15 carbon atoms, and 2 to 6% by weight, calculated on the total weight of the starting components, of an elastomeric, preponderantly amorphous copolymer of ethylene, propylene and 1 to 10% by weight of a non-conjugated aliphatic or alicyclic diolefin.

3,355,518
COPOLYMERS

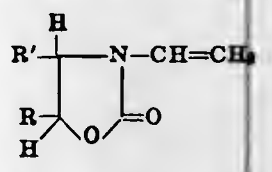
Edward M. Sullivan and Nathan L. Zutty, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Nov. 25, 1964, Ser. No. 414,008
8 Claims. (Cl. 260—895)

1. A composition comprising a blend of (A) from about 25 to 99 percent by weight of a polyolefin and (B) from about 1 to 75 percent by weight of a normally solid copolymer of ethylene and a comonomer selected from the group consisting of the fumaramides of the formula:



$$R_2N-\overset{O}{\overset{\|}{C}}-CH=CH-\overset{O}{\overset{\|}{C}}-NR_2$$

and the oxazolidinones of the formula:



wherein R′ is selected from the group consisting of hydrogen and alkyl of 1 to 6 carbon atoms and R is alkyl of from 1 to 6 carbon atoms.

3,355,519
CHLORINATED POLYETHYLENES

Erwin Alfons Müller and Klaus Hoehne, Leverkusen, and Wilhelm Becker, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed July 9, 1963, Ser. No. 293,880
Claims priority, application Germany, July 11, 1962, F 37,284
5 Claims. (Cl. 260—897)

1. A chlorinated polyethylene blend suitable for lacquers, which is prepared from a mixture of (A) 90–10 parts by weight of a polyethylene having an intrinsic viscosity of between 0.1 and 0.4 (dl./g.) and (B) 10–90 parts by weight of a polyethylene having an intrinsic viscosity of between 0.6 and 1.0 (dl./g.), the intrinsic viscosities of said polyethylenes (A) and (B) differing by at least 0.4 units, said mixture of polyethylenes being homogeneously chlorinated and containing 61.8 to 72% by weight of chlorine.

3,355,520
POLYOLEFIN BLENDS CONTAINING FREE-RADICAL ETHYLENE POLYMERS AND MINOR AMOUNTS OF ISOTACTIC POLYPROPYLENE

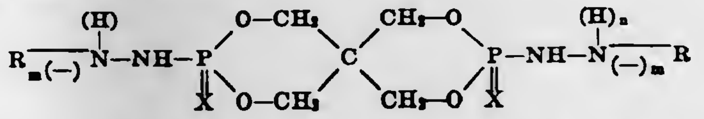
Daniel Edwin Maloney and Richard Watkin Rees, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 17, 1964, Ser. No. 360,764
1 Claim. (Cl. 260—897)

A polymeric blend especially adapted for wire coating consisting essentially of a normally solid, free-radical produced, branched polyethylene and 3.1 to 5.3 percent by weight based upon said polyethylene of a normally solid polypropylene having a melting point of at least 135° C. and a density in the range of 0.870 to 0.920, at least 70% of said polypropylene being insoluble in refluxing heptane and having a melting point of at least 160° C. and a density in the range of 0.910 to 0.920.

3,355,521
HYDRAZINE DERIVATIVES OF PENTAERYTHRITOL PHOSPHATES

Arthur D. Bliss, Guilford, Miriam J. Gruber, New Haven, and Rudi F. W. Rätz, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia
No Drawing. Filed Aug. 17, 1965, Ser. No. 480,486
10 Claims. (Cl. 260—923)

1. Hydrazine derivatives of pentaerythritol phosphates having the formula

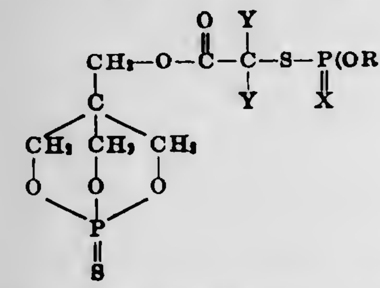


wherein X is oxygen or sulfur; R is hydrogen, alkylidene having 1–9 carbon atoms, chloroalkylidene having 2–5 carbon atoms, benzylidene, halogenated benzylidene and nitrated benzylidene; *m* and *n* are integers from 0–1 and the sum of *m* and *n* is always 1, R represents hydrogen only when *n* is 1, and R represents said divalent radicals only when *m* is 1.

3,355,522
BICYCLIC THIOPHOSPHATE ESTERS OF O,O-DIALKYL S-CARBOXYMETHYL PHOSPHATES

Rudi F. W. Rätz, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia
No Drawing. Filed Jan. 25, 1965, Ser. No. 427,912
7 Claims. (Cl. 260—927)

1. Bicyclic thiophosphate esters having the formula

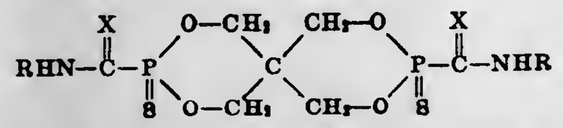


wherein X is selected from the class consisting of oxygen and sulfur, each Y is independently selected from the class consisting of hydrogen and chlorine, and R is alkyl having 1–18 carbon atoms.

3,355,523
BIS-CARBAMOYL SPIROPHOSPHONOTHIOATES

Arthur D. Bliss, Guilford, and Rudi F. W. Rätz, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia
No Drawing. Filed Mar. 4, 1965, Ser. No. 437,268
17 Claims. (Cl. 260—927)

1. Substituted bis-carbamoyl spirophosphonathioates having the formula:

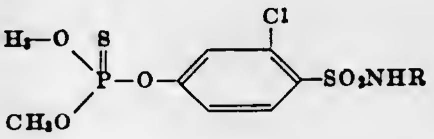


wherein X is selected from the class consisting of oxygen and sulfur; and wherein R is selected from the class consisting of alkyl having 1–18 carbon atoms, alkenyl having 3–8 carbon atoms, cycloalkyl having 5–7 carbon atoms, aryl having 6–10 carbon atoms, halogenated phenyl, nitrated phenyl, phenyl having a lower alkoxy substituent, benzyl and alkylthiomethyl having 2–5 carbon atoms.

3,355,524
O,O-DIMETHYL-O-(3-CHLORO-4-ALKYLSULFAMOYLPHENYL)PHOSPHOROTHIOATES

Saichiro Kuramoto, Toyonaka-shi, Keimei Fujimoto, Minoo-shi, Yositosi Okuno, Nishinomiya-shi, Hideo Sakamoto, Itami-shi, Masataka Nakagawa, Yamatotakada-shi, and Toshio Mizutani, Amagasaki-shi, Japan, assignors to Sumitomo Chemical Company Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Mar. 16, 1964, Ser. No. 352,341
5 Claims. (Cl. 260—944)

1. A compound of the formula



where R is lower alkyl.

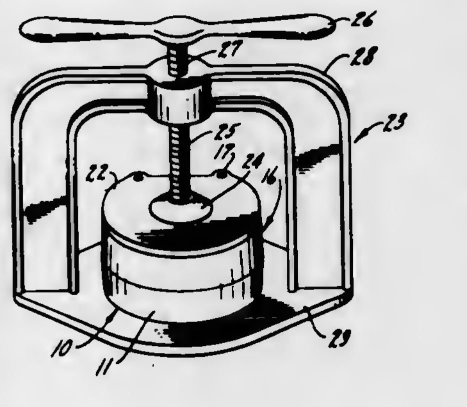
3,355,525
PROCESS FOR PREPARING URANIUM DIOXIDE-YTTRIUM OXIDE-ZIRCONIUM DIOXIDE MICROSPHERES

Jean G. Smith and Frederick T. Fitch, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Oct. 12, 1965, Ser. No. 495,352
17 Claims. (Cl. 264—.5)

1. A process for forming uranium dioxide-yttrium oxide-zirconium dioxide microspheres comprising mixing an ammonia-releasing agent with a feed selected from the group consisting of an aqueous solution of soluble salts of U^{+4}, Y^{+3}, and $(ZrO)^{+2}$ and an aquasol of uranium dioxide-yttrium oxide-zirconium dioxide containing from zero up to saturation quantities of soluble salts of U^{+4}, Y^{+3}, and $(ZrO)^{+2}$, the proportions of each of the uranium, yttrium, and zirconium compounds in the feed being sufficient to form a microsphere having the composition, expressed as weight percents, of from 30 to 55 percent uranium dioxide, 10 to 45 percent yttrium oxide, and 15 to 55 percent zirconium dioxide, introducing the mixture in the form of droplets into a dehydrating solvent having a solubility for water of from 1 to 30 weight percent and having a temperature sufficiently high to cause substantial decomposition of the ammonia-releasing agent; and recovering partially dehydrated microspheres from the dehydrating solvent.

3,355,526
METHOD OF MOLDING URETHANES

Eugene Molnar, La Grange, Ill., assignor to Coe Laboratories Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 10, 1965, Ser. No. 478,624
1 Claim. (Cl. 264—16)



A method of casting elastomeric urethane resin products for dental applications, which products are substantially free of voids, said method including the steps of: mixing a urethane resin with a substantially room temperature curing system to obtain a urethane casting mixture,

confining a charge of the urethane casting mixture in a first mold part of a mating two part mold,

overfilling said first mold part with said urethane casting mixture,

partially curing the deposited urethane casting mixture in said first mold part until the urethane casting mixture assumes a honey-like consistency,

placing the other mating mold part upon the first mold part,

forcing the mold parts together with a force sufficient to overcome the resistance of the partially cured urethane casting mixture, and

maintaining the force upon the mated mold parts until the urethane casting mixture is substantially cured.

3,355,527
PROCESS FOR MANUFACTURING CARBON PRODUCTS

Akinori Muta, Suginami-ku, Tokyo-to, Masaaki Furukawa, Hino-shi, Tokyo-to, and Kinichi Koyama, Nishitama-gun, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho and Hitachi Kasei Kogyo Kabushiki Kaisha, both of Chiyoda-ku, Tokyo-to, Japan, both joint-stock companies

Filed July 6, 1965, Ser. No. 469,571

Claims priority, application Japan, July 7, 1964, 39/37,956

2 Claims. (Cl. 264—29)

1. A process for manufacturing carbon products which comprises sintering within a non-oxidizing atmosphere a synthetic polymer having as its base material a condensation product of pyrrole and furfural and having a desired configuration, thereby to produce a carbon product of a configuration similar to said desired configuration of the synthetic polymer.

3,355,528
REFRACTORY GUNNING MIX

George R. Henry, Bethel Park, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 23, 1966, Ser. No. 604,127

6 Claims. (Cl. 264—30)

1. Method of pneumatically repairing the interiors of steelmaking furnaces which cannot be maintained at temperature during the repair, comprising the steps of:

(1) preparing a batch consisting essentially of about 20 to 80 parts, by weight, of a coarse basic refractory aggregate sized so that 20 to 40 parts, by weight, are —4+10 mesh and the remainder substantially all —10+65 mesh, about 20 to 40 parts, by weight, of dead burned partially stabilized dolomite substantially all —65 mesh and up to 5 parts binder material,

(2) pneumatically emplacing the batch on the interiors of the furnaces with the addition of water to the batch as it is being emplaced.

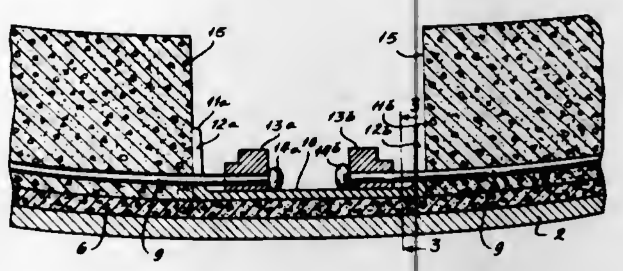
3,355,529
METHOD OF FORMING POST TENSIONED CONCRETE LINERS IN CONDUITS

Robert E. Easterday, 3961 Tholozan Ave., St. Louis, Mo. 63116; Joan L. Easterday, executrix without bond of the last will of Robert E. Easterday, deceased

Filed June 24, 1965, Ser. No. 466,585

10 Claims. (Cl. 264—32)

1. A method of forming post tensioned concrete liners in existing conduit comprising the steps of applying a thin coating of cementitious material to the internal surface of the conduit securing a stress bearing member by said cementitious material to said conduit, supporting stressing wires around the interior of said conduit with the ends thereof extending into said stress bearing member, forming a layer of concrete around said stressing wires exteriorly of said bearing member, and post tensioning said wires.

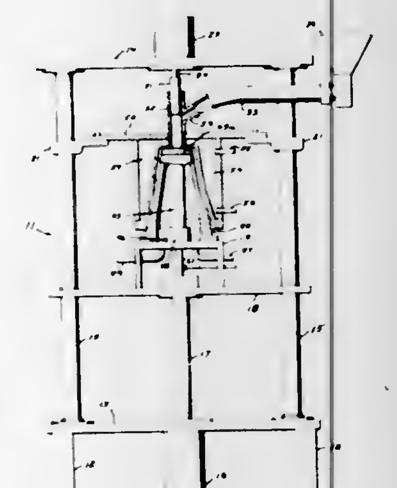


3,355,530
METHOD FOR FORMING FOAMED PLASTIC ARTICLE

William A. Dart, Mason, Mich., assignor to Dart Manufacturing Company, Mason, Mich., a partnership of Michigan

Original application Jan. 20, 1964, Ser. No. 338,686. Divided and this application Mar. 4, 1966, Ser. No. 549,081

5 Claims. (Cl. 264—51)



1. In a method for forming a plastic article, the steps which include:

(a) filling a mold cavity with expandible resin beads;

(b) removing excess moisture from steam to be utilized in foamably expanding said resin beads by passage of the steam through a condensate collecting chamber located within the mold assembly; and

(c) introducing said steam from said chamber directly through a channel system into said mold cavity so as to foamably expand said resin beads to form a plastic article.

3,355,531
METHOD AND APPARATUS FOR THE PREPARATION OF THERMOPLASTIC RESINOUS FILM

Charles C. Barnhart, Cleveland, and Harold G. Ahlich, Fairview Park, Ohio, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

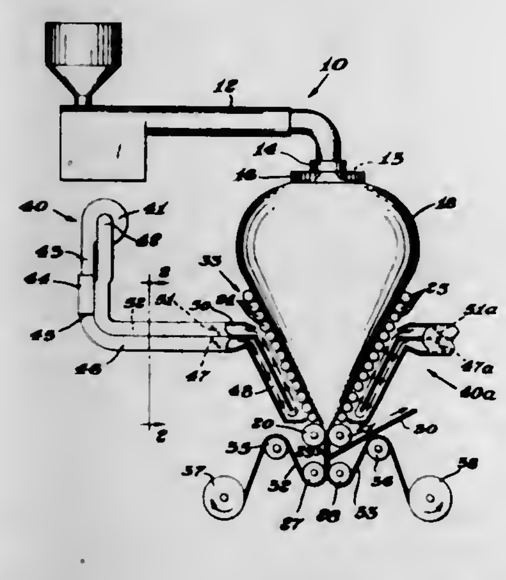
Filed May 13, 1965, Ser. No. 455,392

8 Claims. (Cl. 264—95)

5. In a method for the extrusion of biaxially oriented heat-shrinkable thermoplastic resinous film by the trapped bubble process which comprises,

extruding a tubular stream of a heat-plastified thermoplastic resinous material, trapping the fluid within the tube sufficient to cause distention and biaxial orientation to the tube, cooling the tube below the thermoplastic temperature,

collapsing the tube to a flattened configuration by means of a collapsing assembly, the collapsing assembly converging away from a source supplying the tubular stream,



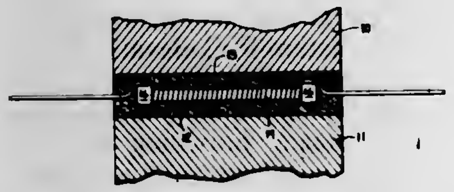
the improvement which comprises heating the tube in a region of contact with the converging collapsing assembly to a sufficient degree to permit minor shrinkage thereof and subsequently removing a flat tube.

3,355,532
MOLDED RESISTOR AND METHOD OF FABRICATING SAME

Lloyd J. Bracht, Kenneth L. Devall, and Herbert J. Krause, Huntington, Ind., assignors, by mesne assignments, to LTV Electrosystems, Inc., Greenville, Tex., a corporation of Delaware

Filed Jan. 15, 1963, Ser. No. 251,633

4 Claims. (Cl. 264—234)



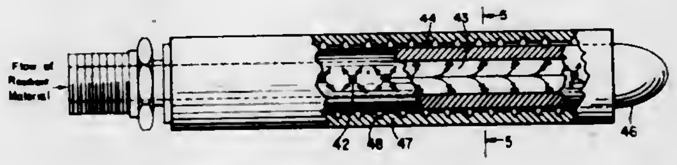
1. A method of manufacturing power resistors of the type wherein a resistance element is encased in a protective material comprising: first forming a dry mix by blending the following ingredients substantially in the listed proportions by weight of the final wet mix: inorganic fibrous material 65%, finely divided aluminum silicate pigment 12%, ground mica 6%, glaze stain 1.5%; second adding to the dry mix silicone resin in solvent to provide a final wet mix with the liquid resin solution providing substantially 16% of the total wet mix weight; third heating tumbling and sifting the final wet mix to evaporate said solvent from the final mix and to provide a controlled granulation thereof; fourth compressing the granulated mix about the resistance element at a pressure ranging from one-quarter to ten tons per square inch; and finally subjecting the molded resistor to a time-temperature cycle of approximately 200° F. for one-half hour, 350° F. for one hour and 500° F. for two hours.

3,355,533
METHOD OF LINING INTERNAL SPIRAL GROOVES OF A TUBE WITH RESILIENT MATERIAL

George Mistic, Niles, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed June 3, 1964, Ser. No. 372,285

3 Claims. (Cl. 264—267)



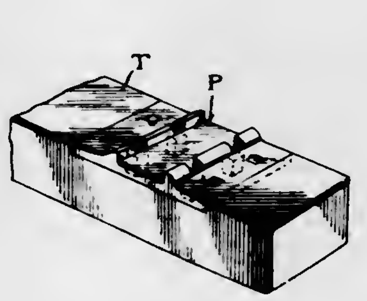
1. A method of evenly filling at least a portion of a spiral groove cut on the inside wall of a hollow cylindrical tube with a resilient material while maintaining the inside wall of the tube between said grooves substantially free of said resilient material, including the steps of, placing within said tube a tubular injection tool which has an outside diameter substantially equal to the diameter of said inside wall of said tube and radial holes in the outside surface thereof, applying said resilient material under a predetermined pressure through said radial holes whereby said resilient material is forced into at least a portion of said grooves, and withdrawing said tool from said tube.

3,355,534
METHOD OF PREPARING A SYNTHETIC RAILWAY TIE

Emory L. Groff, Pompano Beach, Fla., assignor, by mesne assignments, to Poor & Company, Chicago, Ill., a corporation of Delaware

Original application Sept. 10, 1965, Ser. No. 486,273. Divided and this application Apr. 12, 1966, Ser. No. 542,056

1 Claim. (Cl. 264—273)



A method of manufacturing pre-plated railroad ties from settable material while in its fluid state,

wherein, the tie plate includes side portions and spaced shoulders projecting in a normal direction from one face thereof and provided with line spike openings through said shoulders, and also includes tie fastening receiving openings outwardly of said shoulders, which consists in,

placing the tie plate in a mold having a wall provided with spaced slots to receive the opening-equipped shoulders, and disposing the adjacent face of the plate in abutment with said wall to form pockets with said fastening openings,

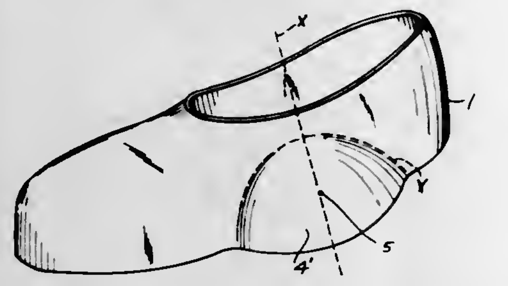
plugging said line spike openings through said shoulders to form pockets in the tie to receive rail fastenings,

and filling the mold with moldable synthetic resinous material to key into said fastening receiving openings and also to engage the opposite side portions of the plate.

3,355,535

PROCESS FOR PRODUCING A SHOE-UPPER

Elias W. R. Hain, Charleston, and Robert R. Cosner, South Charleston, W. Va., and Rudolf G. Brautigam, Elmhurst, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Dec. 13, 1963, Ser. No. 330,382
7 Claims. (Cl. 264—321)

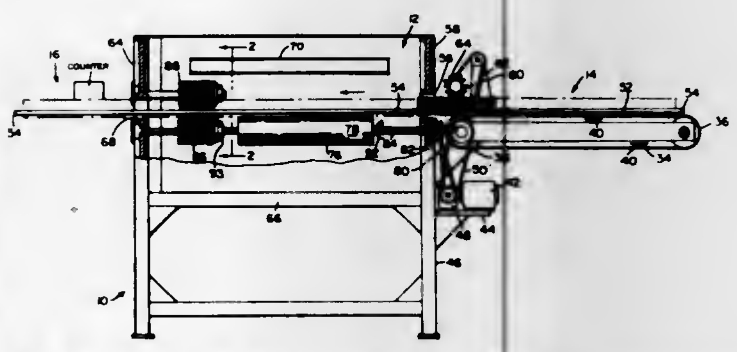


1. A process for the production of a shoe-upper which comprises providing at least a portion of a surface of a sheet of solid, heat-set extensible material over at least a substantial portion of the opening of an essentially concave cavity having the shape of a shoe-upper and being defined by surfaces of solid, non-extensible material, said cavity having an axis determined as that line extending from the center of the opening to a point on the surface of the cavity, which point is determined as the maximum total distance obtainable of all lines extending from the perimeter of the opening to a point on the surface of the cavity, the surfaces of said concave cavity being defined by said solid, non-extensible material extending from said point in a direction lateral of said axis and thereafter rising to the perimeter of said opening in a direction incapable of intersection with said axis so as to form the reverse shape of the arch of said shoe-upper, applying sufficient force to said sheet to cause said sheet to conform to the configuration of said cavity and heating said sheet in said conformed state, said heat being of sufficient intensity and being applied for a sufficient time to heat-set the sheet so that upon withdrawal of said sheet from said cavity, said sheet retains the shape of a shoe-upper defined by said cavity, and then reversing said reverse arch shape to provide an indented arch portion of said shoe upper.

3,355,536

RIM ROLLING MACHINE AND METHOD

Eric L. Midgley and Carl R. Jank, Danvers, Mass., assignors to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland
Filed Aug. 18, 1965, Ser. No. 480,551
11 Claims. (Cl. 264—322)



9. A method of forming rolled rims on containers having rims with skirts comprising the steps of

feeding the containers in nested relationship horizontally through a heating chamber to raise the temperature of the skirts within the formable range,

imparting rotation directly to each container to apply an even application of heat to the rims while the containers are in the nested relationship.

and thereafter passing the rims through the volutes of a number of threaded rollers to bend the skirts inwardly toward the container axis.

ELECTRICAL

3,355,537

ALUMINUM INDUCTION FURNACE LINING CONSTRUCTION USING ZIRCON AND CALCIUM ALUMINATE

Peter T. Troell and Albert L. Renkey, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Oct. 12, 1964, Ser. No. 403,322
6 Claims. (Cl. 13—35)

1. An aluminum induction furnace including a primary coil separated from a molten metal confining cavity by a thin layer of refractory ramming mix, said refractory consisting of a batch of a zircon refractory aggregate in a brickmaking graded size range and finely divided commercial calcium aluminate, said commercial calcium aluminate being substantially free of iron oxide and containing at least about 75% of calcium aluminate compounds, said batch being substantially free of free lime and comprised of about 90 to 60% refractory aggregate and about 10 to 40% calcium aluminate, by weight.

3,355,538

RADAR LANDMASS SIMULATOR

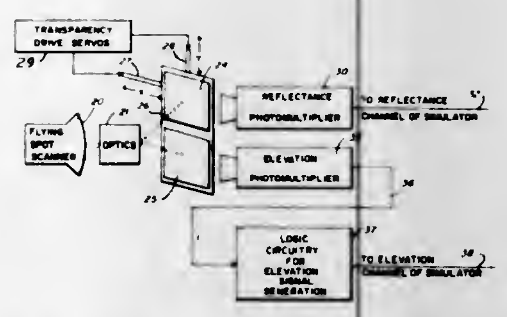
David E. Thomas and Robert L. Merten, Yellow Springs, Ohio, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 25, 1966, Ser. No. 589,471
6 Claims. (Cl. 35—10.4)

1. In a radar simulator, an elevation signal generator comprising:

a flying spot scanner;

a factored storage member having coded elevation information stored thereon in the form of a plurality of pairs of adjacent areas of predetermined gray levels disposed to be traversed by a spot of light from said scanner, each of said gray level pairs being representative of a predetermined elevation;

photomultiplier means disposed to receive scanner light transmitted thereto from said storage means, said photomultiplier means providing an output corresponding to light received from each of said gray levels;

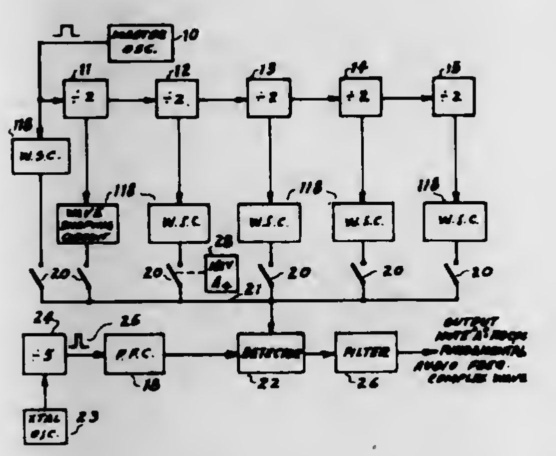

TRANSPARENCY DRIVE SERVOS
29
28
27
24
20
21
26
FLYING SPOT SCANNER
OPTICS
25
30
REFLECTANCE PHOTOMULTIPLIER
TO REFLECTANCE CHANNEL OF SIMULATOR
ELEVATION PHOTOMULTIPLIER
36
37
LOGIC CIRCUITRY FOR ELEVATION SIGNAL GENERATION
TO ELEVATION CHANNEL OF SIMULATOR
38

logic means responsive to changes of said photomultiplier output to provide elevation signals corresponding to elevational values represented by traversal of said scan from one gray level to another of predetermined pairs of gray levels.

3,355,539

SAMPLING TONE GENERATOR SYSTEM FOR ELECTRONIC ORGANS

Walter Munch, Jr., Park Hills, Ky., and Alfred W. Scheide, Cincinnati, Ohio, assignors to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 27, 1963, Ser. No. 312,159
14 Claims. (Cl. 84—1.23)

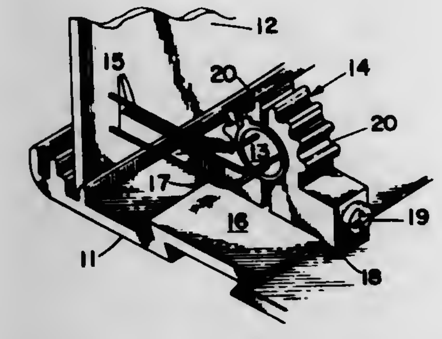


1. A tone generating system for an electronic organ, comprising a plurality of supersonic harmonic rich signal sources having fundamental frequencies arranged at least approximately in octave relationship, at least one narrow pulse signal source generating sampling signals in the form of sharp pulses in a frequency range having at least one fundamental frequency differing from the lowest fundamental frequency of said plurality of sources by a difference at least approximately equal to the fundamental frequency of a note in the musical scale, a sampling device connected to said at least one narrow pulse source, and means for connecting said plurality of signal sources to said sampling device selectively at will in any combination, and means connected to said sampling device for deriving therefrom audio tone components.

3,355,540

ELECTRICAL COMPONENT HEAT SINK COUPLING

Richard B. Newell, Attleboro, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Oct. 21, 1965, Ser. No. 500,036
1 Claim. (Cl. 174—15)

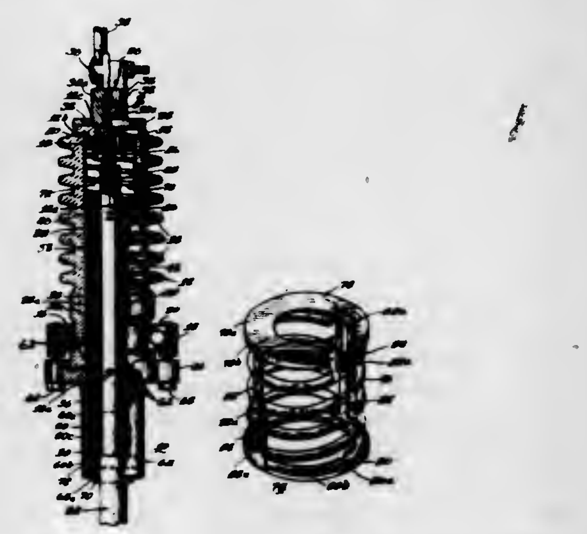


A heat sink coupling system for an electrical component in an industrial instrument, said coupling system comprising, in combination, an industrial instrument housing with a portion of said housing formed of aluminum and operative as a heat sink, a dove-tail strip integrally formed in said housing portion by the extrusion thereof, a two-part clamp assembly as a heat sink coupling clamped on said dove-tail strip for adjustable movement therealong, and in surface-to-surface heat transfer relation from said coupling to said dove-tail, said coupling having clamping means for receiving and holding a heat emitting electrical component, said clamp assembly being formed of aluminum with heat dissipation fins, provided overall with a dull black surface, to draw heat from said electrical component to the outer surface of said heat sink coupling, said surface also providing electrical insulation between said electrical component and said heat sink coupling, means for drawing the parts of said coupling together to simultaneously grip said component and said dove-tail strip, and a component support panel mounted edgewise on said housing portion, whereby connectors from said electrical components are extended through said board to electrical circuitry thus isolated from said heat emitting components.

3,355,541

ELECTRIC CABLE TERMINAL ASSEMBLY WITH RESTRAINED RESILIENT MEMBER

Walter Hornberger, Lyons, Ill., assignor to Joslyn Mfg. and Supply Co., Chicago, Ill., a corporation of Illinois
Filed Oct. 12, 1964, Ser. No. 403,211
9 Claims. (Cl. 174—73)



1. An apparatus for terminating an electrical cable of the type including a central conductor with a surrounding insulating cover, said apparatus comprising a rigid housing having an open-ended cavity defined therein for receiving an end portion of said cable, a tubular elastic filler disposed around said end portion of said cable and inserted therewith into said cavity, said filler including an inner end and an outer end, means applying end force to said outer end of said filler to force said filler into said cavity, resilient means in said cavity disposed between the housing and the inner end of said filler for providing a resilient end force on said filler and means maintaining said resilient means in a partially compressed condition prior to insertion of the filler into the cavity for exerting a preselected minimum force against the inner end of said filler upon insertion of said filler into said cavity.

6. Apparatus for use in exerting a preselected minimum resilient end force on the elastic filler of a cable terminating device comprising a resilient member normally expandable along the length thereof and means for maintaining said resilient member in said compressed condition including a pair of end restraining members having body portions disposed at opposite ends of said resilient member, each of said restraining members including a plurality of restraining legs joined to said body portion and extending toward the other member, each leg on one member slidably engaging a leg on the other member, and interlocking means on pairs of engaged legs for limiting the movement of said members away from one another

and permitting movement toward one another against the force of the resilient member.

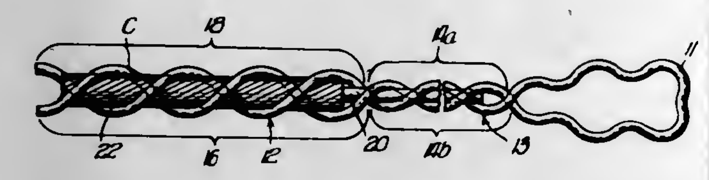
3,355,542

PREFORMED HELICAL APPLIANCE FOR LINEAR BODIES

Thomas J. Finn, Cleveland, Ohio, assignor to Preformed Line Products Company, Cleveland, Ohio, a corporation of Ohio

Continuation of application Ser. No. 318,972, Oct. 25, 1963. This application Sept. 23, 1966, Ser. No. 581,660

15 Claims. (Cl. 174—79)



14. A dead end for use on a cable having a core and an outer layer around the core comprising at least one helically pre-shaped element having a first helical section intermediate its ends and other helical sections adjacent its ends, said other helical sections having substantially the same preshaped internal helical diameter and said first helical section having a preshaped internal helical diameter which is less than said diameter of said other sections by a pre-determined ratio, said element being return bent adjacent the mid-point of said first helical section to form a bight having legs projecting therefrom, said legs being inter-twisted to define a cable gripping portion composed of a length of said first helical section and one of said other helical sections, said other helical sections and said length of said first helical section defining said cable gripping portions of said legs being preshaped with an open helical pitch which permits said cable gripping portions to be coaxially aligned and intertwisted with each other for wrapping said portions in encircling coaxial relationship about said cable to grip said core with said first helical section and grip said outer layer with said other helical sections of said dead end.

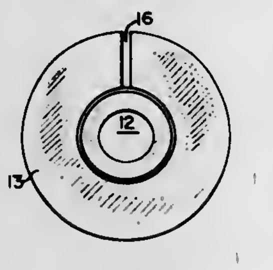
3,355,543

HOLLOW-CORE CABLE

Joseph B. O'Mara, Hastings-on-Hudson, and Ralph G. D'Ascoli, Yonkers, N.Y., assignors to Anaconda Wire and Cable Company, a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 501,424

3 Claims. (Cl. 174—84)



1. A copper connector for a hollow-core cable conductor comprising:

(A) a bored cylinder having an outside diameter closely fitting into the hollow core of said conductor,
(B) a circular flange spaced a substantial distance from both ends of said cylinder,
  (a) said flange being substantially equal in outer diameter to said conductor,
  (b) said flange having a radial channel extending to the surface of said cylinder,
(C) annular grooves at both ends of said cylinder,
(D) annular gaskets fitting said grooves and compressibly extending slightly above the surface of said cylinder, whereby solder is prevented from flowing beyond the ends of said cylinder.

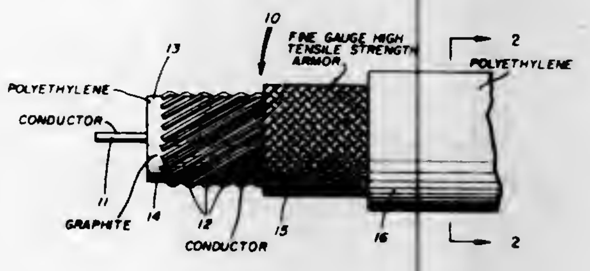
3,355,544

SMALL DIAMETER HIGH TENSILE STRENGTH COAXIAL ELECTRICAL CABLE

Vivian G. Costley, Takoma Park, and James E. Cottrell, Wheaton, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Feb. 24, 1965, Ser. No. 435,412

7 Claims. (Cl. 174—106)



1. A light weight, small diameter, flexible multi-conductor electrical cable having a high tensile strength comprising

an elongated cylindrical body of dielectric material,
a first electrical conductor embedded axially within said cylindrical dielectric body,
a second electrical conductor formed on the outer peripheral surface of said dielectric body concentrically about said first conductor,
an armor formed concentrically about said second conductor and in contact therewith,
said armor being formed of a plurality of fine guage, high-tensile strength wires braided into a cylindrical sheath, each of said wires having a diameter of approximately 0.005 inch or smaller and a tensile strength in excess of approximately 500,000 pounds per square inch.

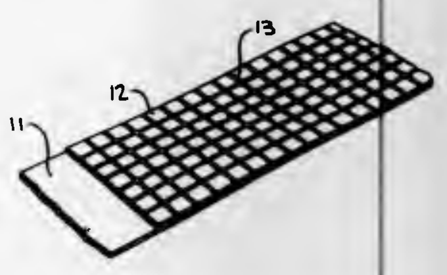
3,355,545

ELECTRICALLY CONDUCTIVE PRESSURE SENSITIVE ADHESIVE TAPES

Timothy J. Kilduff, 2703 Queens Chapel Road, Mount Rainier, Md. 20822, and Allan M. Biggar, 3121 N. Oakland St., Arlington, Va. 22207

Filed Oct. 8, 1964, Ser. No. 402,668

5 Claims. (Cl. 174—119)



1. An electrically conducting pressure sensitive adhesive tape which makes electrical contact on the adhesive side of the tape comprising:

(a) a thin, flexible strip of backing material,
(b) a thin, uniform layer of pressure sensitive adhesive covering one side of said backing material, and
(c) a thin, flexible strip of metal mesh embedded in said adhesive and running lengthwise of said backing material, said layer of adhesive having a thickness approximately that of said metal mesh.

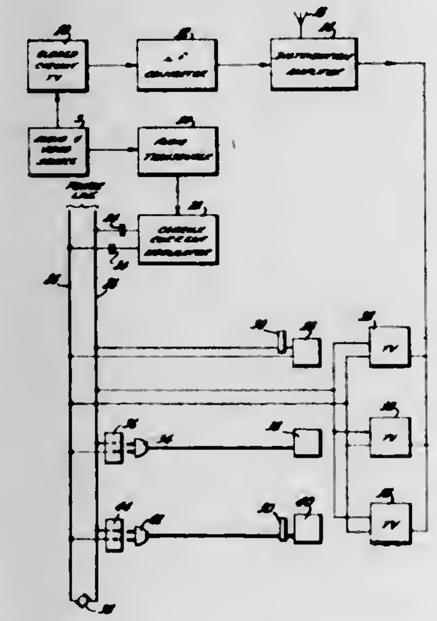
3,355,546

PAY SOUND SYSTEM FOR CLOSED CIRCUIT TELEVISION IN WHICH THE AUDIO COMPONENT IS CONVEYED VIA CARRIER CURRENT TRANSMISSION

Leonard H. King, 67 Southgate Road, Valley Stream, N.Y. 11581

Filed Feb. 27, 1964, Ser. No. 347,799

2 Claims. (Cl. 178—5.6)



1. Apparatus for presenting a combined video and audio source over a closed circuit television system comprising in combination:

(a) a power source;
(b) a plurality of television receivers arranged to be energized from said power source;
(c) a common video and sound distribution means connected to each of said receivers;
(d) video transducer means and video processing means for providing a signal to said common video and sound distribution means responsive to the combined video and audio source;
(e) audio transducing means for detecting the audio portion of the combined video and audio source and to provide an audio signal;
(f) modulator means arranged to receive said audio signal from said audio transducing means for providing for the transmission of a modulated carrier signal with a modulation pattern indicative of the said audio signal;
(g) means for coupling said modulated carrier signal to said power source; and
(h) receiver means connected to said power source to receive said modulated carrier signal and to detect the audio signals modulated thereon.

3,355,547

OPEN LOOP SERVO SYSTEM FOR MAGNETIC TAPE RECORDING AND REPRODUCING APPARATUS

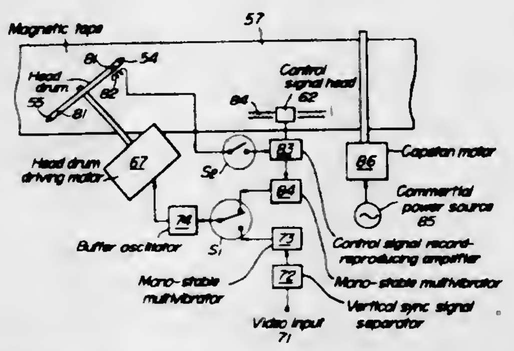
Shozo Aratani, Osaka, and Toshio Morita, Moriguchi-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Oct. 18, 1963, Ser. No. 317,212

Claims priority, application Japan, Oct. 20, 1962, 37/47,055, 37/47,056

5 Claims. (Cl. 178—6.6)

3. A recording and reproducing apparatus for recording and reproducing wide band signals on a magnetic tape comprising a rotary head including a magnetic transducer adapted to successively sweep across said magnetic tape at an angle to the longitudinal axis thereof, a periodic reference signal source, means for deriving a signal responsive to said periodic reference signal source, an electric motor operably connected to drive said rotary head in synchronization with the derived signal, said motor having a rotor with poles spaced thereabout at fixed angular positions, said rotary head being driven by said motor in a fixed phase relation to said reference signal to thereby describe record tracks on said magnetic tape.



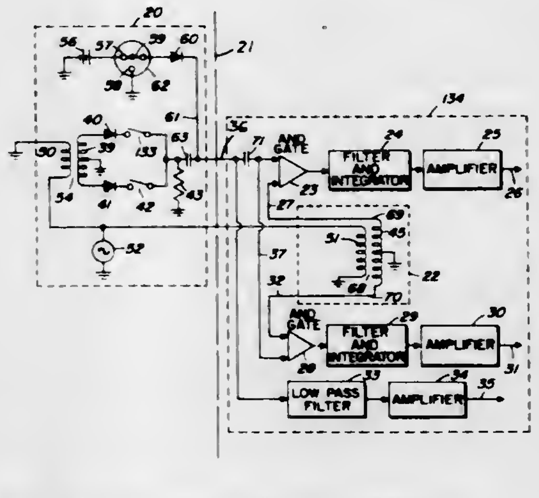
3,355,548

DATA TRANSMITTING SYSTEM WITH DATA REPRESENTED BY COMBINATIONS OF DIFFERENT PULSE AND D.C. SIGNALS

Richard M. Hodge, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed June 29, 1965, Ser. No. 468,019

17 Claims. (Cl. 178—68)



1. A data transmission system comprising:
transmitting station means;
transmission means; and
receiving means;
said transmitting means comprising first generating means for supplying a plurality of trains of pulses to said transmission means, with the pulses of each train occurring at regular intervals, and with the pulses of each train being phase displaced from the pulses of each other train of pulses;
said transmitting means further comprising second generating means for supplying a D-C voltage signal to said transmission means;
said receiving means comprising:
  synchronizing signal source means constructed to generate a plurality of synchronizing signals individually synchronous with the pulses of a particular one of said trains of pulses;
  a first plurality of detecting means each responsive to a particular train of pulses and a particular synchronizing signal to produce an output signal; and
  second detecting means responsive to said D-C signal to produce an output signal.

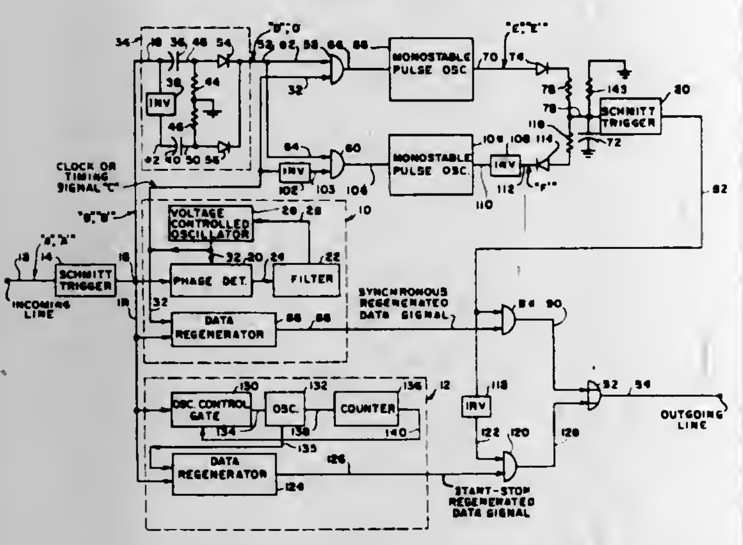
3,355,549

UNIVERSAL REPEATER

Jack F. Alexander and Paul E. Morris, Sanford, Fla., assignors to Ortronix, Inc., Orlando, Fla., a corporation of Florida

Filed Nov. 27, 1963, Ser. No. 326,514

17 Claims. (Cl. 178—70)



1. A universal repeater for connection to an incoming line adapted to receive a series of informational pulses and to an outgoing line which comprises a synchronous repeater having a clock signal output and a synchronous repeating signal output; a baudot repeater having a baudot repeating signal output; first means coupling the input sides of said synchronous repeater and said baudot repeater to said incoming line; an energy storage means; second means coupled to said incoming line for providing an increment of energy to said energy storage means whenever a selected portion of each informational pulse coincides with a selected portion of the clock signal output of said synchronous repeater and to provide an opposite increment of energy to said energy storage means whenever a selected portion of each informational pulse does not coincide with a selected portion of said clock signal output; a first gate connected between the repeating signal output of said synchronous repeater and said outgoing line; a second gate connected between the repeating signal output of said baudot repeater and said outgoing line; and third means responsive to the energy level in said energy storage means for opening one of said gates and closing the other gate.

3,355,550

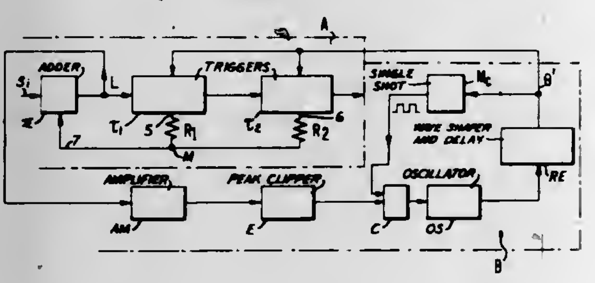
SYNCHRONIZED CLOCK GENERATOR

Jean Lemière, Cagnes-sur-Mer, and Constantin Michael Melas, Antibes, France, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 9, 1965, Ser. No. 486,085

Claims priority, application France, Mar. 4, 1965, 7,551

3 Claims. (Cl. 178—88)



1. A data receiver comprising:

an analog adder responsive to an input data waveform having more than two significant information levels dependent on input data previously sent, and to a threshold signal level set in accordance with previously sent input data, and having an adder signal output which is an algebraic function of the comparison between said incoming data and said threshold signal level,

said adder signal output having a preselected level when the compared signals are equal;

variable threshold setting means, including shift register means, connected to said analog adder and responsive to said adder signal output for setting said threshold signal level;

phase locked oscillator circuit means connected to said analog adder and responsive at preselected times to the preselected level of said adder signal output for generating clock timing signals,

said phase locked oscillator circuit means including means responsive to said clock timing signals for enabling said phase locked oscillator means to generate said clock timing signals only at those points where said incoming data waveform crosses said variable threshold level and which have a constant phase relationship with one another;

said phase locked oscillator circuit means connected to said variable threshold setting means for supplying said clock timing signals to said variable threshold setting means.

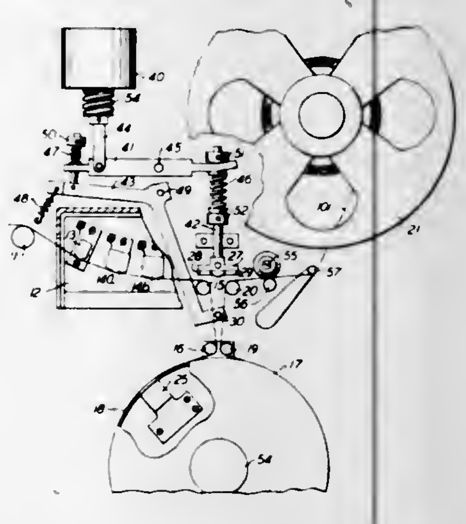
3,355,551

ANALYSIS AND REPRESENTATION OF COMPLEX WAVES

Anthony J. Prestigiacomo, North Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 5, 1964, Ser. No. 372,955

7 Claims. (Cl. 179—1)



1. Sound spectrograph apparatus which comprises, in combination, means for supporting a selected portion of a magnetic tape record bearing a message signal about a drum, means including a magnetic reproducer rotatably supported within said drum for repetitively reproducing said selected record portion, means for sequentially clamping said selected tape record in a fixed position about said drum, and for thereafter supplying sufficient tension said tape record to assure intimate contact of said tape about said drum during reproduction, means for developing a measure of signal amplitude in each of a plurality of narrow frequency bands in said selected record portion, one such measure being developed during each of said plurality of reproductions, means for displaying said measures of amplitude as a function of frequency and time, means including a stylus member responsive to said measures of amplitude for controllably engaging said display means with a preselected constant force, means for moving said stylus relative to said display means in synchronism with said repetitive reproductions of said selected record portions, means for sequentially releasing said tension and clamping means upon completion of said reproductions, and means for systematically advancing selected contiguous segments of said tape record for reproduction.

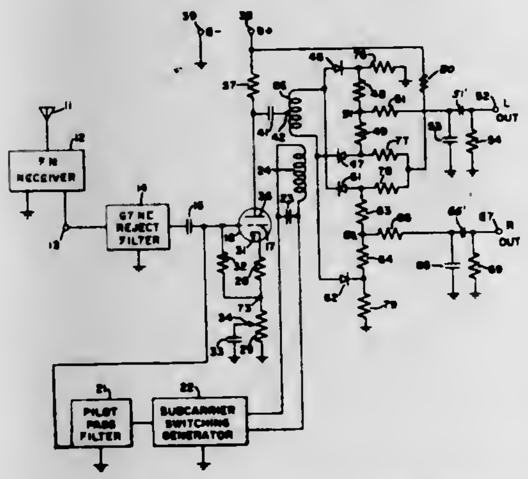
3,355,552

BIASING ARRANGEMENT FOR AUTOMATIC STEREOPHONIC RADIO RECEIVER

Antal Csicsatka, Utica, N.Y., assignor to General Electric Company, a corporation of New York

Filed June 30, 1964, Ser. No. 379,246

4 Claims. (Cl. 179—15)



1. In a stereophonic demodulator circuit including left and right signal sampling circuits, each signal sampling circuit having a pair of diode circuits each containing a diode and being effectively connected in parallel in the path of a composite stereophonic signal, said diodes being connected for signal conduction in mutually opposite directions in said diode circuits, and switching means for causing said diodes to become switched simultaneously from non-conduction to the conduction state at periodic intervals for sampling the composite signal to derive a stereophonic output signal, said diodes having a combined parallel impedance versus voltage characteristic curve which is non-linear in the quiescent state, the improvement comprising applying a biasing voltage to means for biasing said pair of diodes during both stereophonic and monophonic operation to establish a single bias condition to shift the impedance versus voltage characteristic curves of said diode circuits relatively apart in a direction and to an extent that the combined parallel impedance thereof is substantially constant with respect to signal voltage, whereby a monophonic signal can pass through said parallel diode-circuits substantially undistorted.

3,355,553

SYNCHRONIZING SYSTEM FOR MULTI-FREQUENCY CARRIER TRANSMISSION

Masahisa Miyagi, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Mar. 19, 1965, Ser. No. 441,222

Claims priority, application Japan, Mar. 21, 1964, 39/15,539

13 Claims. (Cl. 179—15)

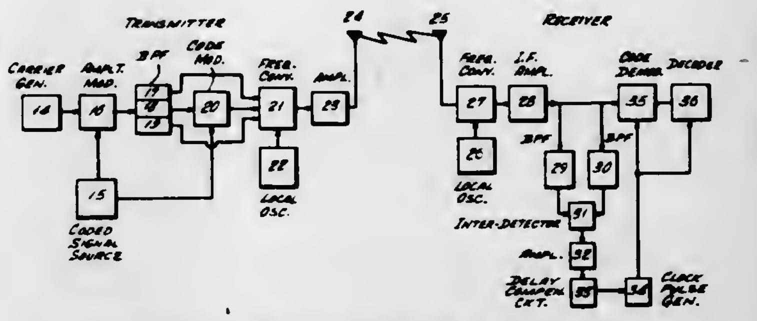
1. A synchronizing system for multifrequency carrier transmission characterized in that the same includes:

a transmitter, said transmitter including:

an oscillator having an output modulated by pulses from a clock pulse generator,

means for selecting particular side-band components from a plurality of side-band components produced by such modulation,

and means for producing at least one carrier wave for carrying the main information signal and at least two pilot carrier waves of different frequencies for simultaneous transmission in a composite wave;



and a receiver, said receiver including:

means for extracting said pilot carrier waves from said composite waves,

interdetection means for developing a frequency-difference signal from said pilot carrier waves,

and means for utilizing said frequency difference signal to maintain bit-synchronism with a pulse signal train having a frequency which is a multiple or sub-multiple of the frequency of said clock pulses.

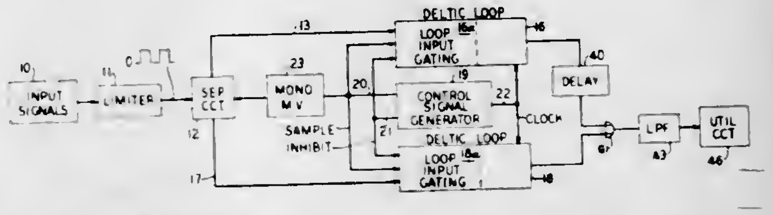
3,355,554

HIGH SPEED SPLIT CHANNEL TIME COMPRESSOR

Peter S. Fuss, Randolph Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 22, 1964, Ser. No. 384,552

6 Claims. (Cl. 179—15.55)



1. In combination:

plural deltic circuits for producing at the output thereof of a time compressed version of signals applied to the input thereof,

a source of input signals,

means coupling said signals to said deltic circuits with different amounts of delay,

means in said deltic circuits simultaneously gating signals from said coupling means into all of said deltic circuits, and

means combining the outputs of said deltic circuits.

3,355,555

PRIVATE BRANCH TELEPHONE SYSTEM WITH CAMP-ON FACILITIES

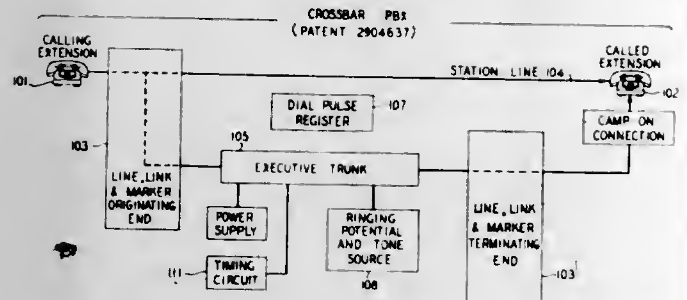
Louis E. Thelemaque, Brooklyn, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 29, 1964, Ser. No. 385,973

8 Claims. (Cl. 179—18)

1. In a telephone system, a private branch exchange, a calling extension and a busy called extension at said private branch exchange, means initiated by said calling extension for camping on the line of said busy called extension, means for transmitting an audible signal to said

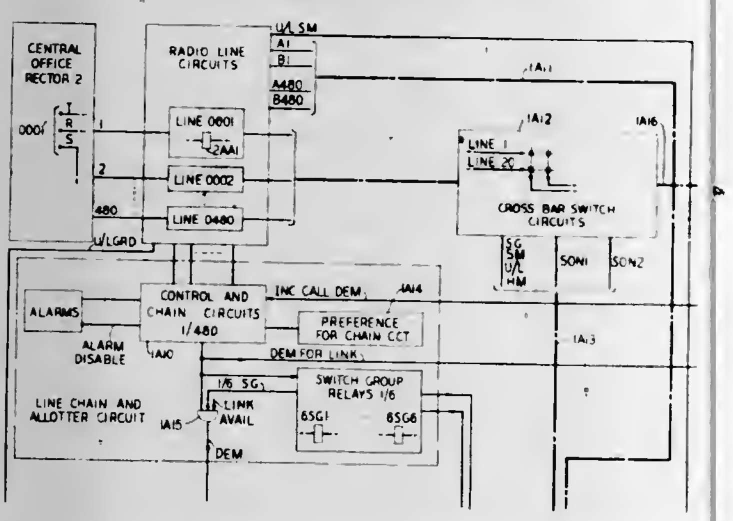
calling extension and to said busy called extension when the line of said called extension is camped on, and means effective upon said calling party first going on hook after initating camp on and said called party subsequently going



on hook for ringing both extensions, said last-mentioned means being effective also if said called party goes on hook within a predetermined, relatively short, interval before said calling party goes on hook.

3,355,556
AUTOMATIC MOBILE RADIO TELEPHONE SWITCHING SYSTEM

Ralph A. Chaney, New Shrewsbury, N.J., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York
Filed May 18, 1964, Ser. No. 368,218
20 Claims. (Cl. 179—41)

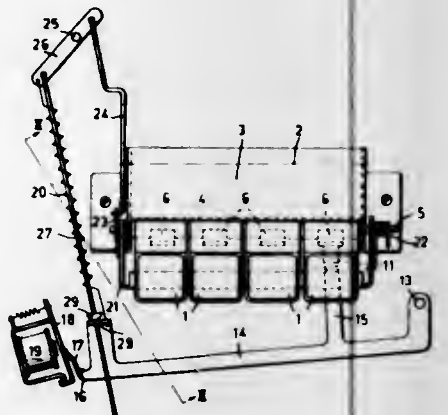


1. A mobile radio telephone system comprising a plurality of mobile telephone units, a control terminal individual to a particular area code designation, each of said mobile units having a unique office code, directory station number and area code designation, means in said control terminal effective during a calling connection to a particular unit for generating first signals representative of said mobile directory station number, sender means for prefixing to said first signals second signals representative of the area code designation of said control terminal, and additional means in said sender means for outpulsing said first and second signals to differentially select among stations having the same office code and directory station number designation.

3,355,557
AUTOMATIC UNCOUPLING APPARATUS FOR A RECORDER/REPRODUCER

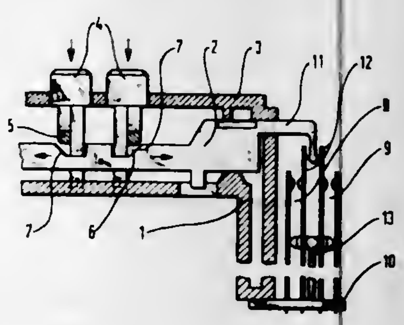
Friedrich Laa and Karl Rupp, Vienna, Austria, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 3, 1964, Ser. No. 349,112
Claims priority, application Austria, Mar. 13, 1963, A 1,981/63
7 Claims. (Cl. 179—100.2)

1. Automatic uncoupling apparatus for a recorder/reproducer to be operated by marks on the record carrier and an associated circuit closed by said marks, and in which at least one operating condition of said recorder/reproducer is controlled by a push button and associated means which are locked in an operating position, the combination comprising; locking means for releasably holding said push button and associated means in an operating position, uncoupling means connected with said locking means, a pawl means connected with said uncoupling means for latching said uncoupling means in a rest position, electromagnetic means connected with said pawl means for latching and unlatching said uncoupling means in said rest position, a first biasing means connected with said uncoupling means at one location thereon for moving said uncoupling means to release said locking means, and means interconnecting said first biasing means with said push button and associated means for energizing said first biasing means when said push button and associated means are moved into an operating position from an inoperative position.



3,355,558
PUSH-BUTTON ACTUATED SWITCHES FOR DIAL TELEPHONE STATIONS

Albert Geese and Erwin Awakowicz, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Munich, Germany
Filed July 26, 1965, Ser. No. 474,829
Claims priority, application Germany, Aug. 25, 1964, S 92,787
3 Claims. (Cl. 200—5)

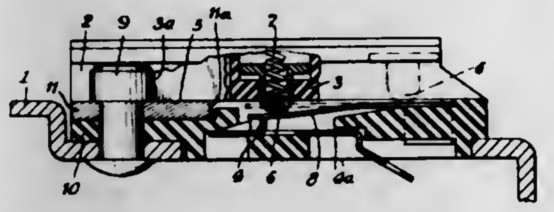


1. In a push-button operated dial telephone signalling apparatus including links shiftable in opposite directions from a center rest position by actuation of different push buttons and including a pair of contact sets for each link respectively translated to operative from inoperative positions by movement of the link in said different directions, and

a single actuating element attached to one end of each said link and extending into a position between the associated pair of contact sets, said pair of contact sets being mounted together at one side of the apparatus.

3,355,559
CONNECTOR SWITCH IN A VIEWFINDER SOCKET ON A PHOTOGRAPHIC CAMERA FOR AN ELECTRONIC FLASH GUN

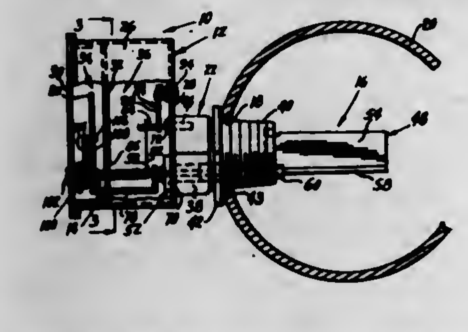
Johann Hahn, Stuttgart, Paul Greger, Braunschweig, and Herbert Weidner, Volkmarode, near Braunschweig, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany
Filed Oct. 29, 1964, Ser. No. 407,417
Claims priority, application Germany, Nov. 2, 1963, Z 10,447
1 Claim. (Cl. 200—52)



In a photographic camera having a planar surface on which is mounted a viewfinder socket provided with spaced parallel guide ribs, the combination of said viewfinder socket with a switch and an attachment plug longitudinally slidable between said guide ribs for the detachable connection with a flash gun, a base plate having a longitudinal opening mounted above said surface so that the opening will register with an opening in said planar surface, said switch including a first contact member mounted on said base plate extending normally in the plane of said planar surface and below the upper surface of said base plate, means insulating said contact member from said viewfinder socket, and a second contact formed of a flexible strip also extending parallel with said first contact member, said flexible strip being connected to an insulating plate arranged below said base plate and projecting over the recess therein, said flexible strip being moved into conductive engagement with said first contact member when said attachment plug is slidably inserted into said viewfinder socket between said guide ribs, the area of said contact strip which projects over said recess being substantially smaller than the tip of a finger so that accidental engagement of the finger with said contact strip will cause said fingertip to touch a minor portion of said strip so that said contact strip will be insufficiently flexed to move the same into electrical engagement with said first contact member.

3,355,560
COMBINATION FLOW RESPONSIVE SWITCH AND INDICATING GAGE

Frank W. Murphy and Frank W. Murphy, Jr., both of 3131 S. Sheridan Road, P.O. Box 4537, Tulsa, Okla. 74114
Filed May 17, 1966, Ser. No. 550,702
3 Claims. (Cl. 200—81.9)



1. A combination flow responsive switch and indicating gauge which, in combination, comprises:

an elongate means for connecting the switch to a fluid carrying conduit, said connecting means having a longitudinal passage therethrough;

a housing for the switch and gauge components secured at the exterior end of the connecting means;

a single shaft extending from the housing through the passage to extend into the conduit;

at least one annular seal in the passage to prevent fluid flow therethrough and to permit free rotation of the shaft therein;

an eccentrically mounted paddle on the shaft in the conduit, said paddle being so constructed and so disposed as to rotate the shaft about its longitudinal axis in response to fluid flow;

means resiliently biasing the shaft against rotation for causing the degree of rotation to be proportional to the rate of fluid flow;

a pointer carried by the shaft in the housing;

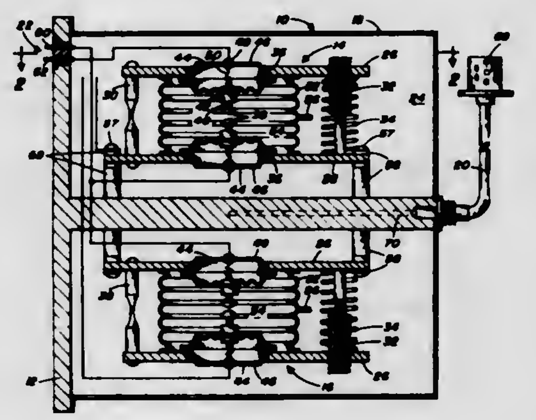
a contact carried by the pointer;

a plate carrying indicia adjacent the pointer for marking the flow rate; and

a contact in the housing for being engaged by the contact carried by the pointer, said pointer contact and said contact being adapted to complete an electrical circuit upon engagement.

3,355,561
AMBIENT PRESSURE RESPONSIVE SWITCH

Robert E. Eby, Silver Spring, and William K. Boettinger, Baltimore, Md., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 1, 1966, Ser. No. 526,323
4 Claims. (Cl. 200—83)



1. A pressure responsive switch apparatus comprising:

at least one switch element, said element including a pair of opposed, spaced apart diaphragms, a resilient bellows between said diaphragms, said diaphragm and bellows constituting a reference pressure chamber, means for pressurizing said reference pressure chamber to a predetermined pressure, a pair of coacting contacts carried by said diaphragms within said reference pressure chamber, said contacts, respectively, being electrically connected through said diaphragms into an electric circuit;

a housing completely surrounding said switch element so as to form a sealed pressure chamber therearound, said switch element being mounted within and wholly spaced from the walls of said housing;

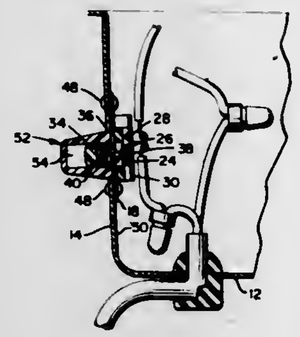
coupling means mounted on a wall of said housing for connecting said contacts into the electric circuit; and

sensing means mounted on a wall of said housing for attenuating turbulent pressure within said pressure chamber, said sensing means including a pressure tube exterior of said housing and a pair of attenuator tubes interior of said housing, whereby actuation of said switch element is effected through said sensing means as the pressure within said pressure chamber acts upon said opposed diaphragms, against the pressure in said reference pressure chamber, and, when the predetermined pressure within said reference pressure chamber is attained, said contacts touch or separate for either closing or opening the electric circuit.

3,355,562

VACUUM CLEANER OPERATING SWITCH CONSTRUCTION

Wilton E. Boyd, Mayfield Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed Sept. 29, 1966, Ser. No. 583,014
4 Claims. (Cl. 200—86.5)



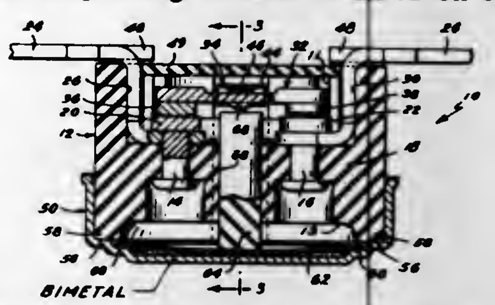
1. An electrical appliance comprising:
(a) a housing for enclosing said appliance, said housing having a wall including an inner surface and an outer surface;
(b) an enlarged opening extending through said wall, said opening having narrow side surfaces extending generally perpendicular to said housing wall;
(c) a relatively fragile switch including a casing having a front wall, rearwardly extending side walls, and a switch actuating knob extending through said front wall;
(d) said switch being fixed to said appliance housing so that the front wall of said switch casing abuts the inner surface of said housing and said actuator knob extends through said enlarged opening;
(e) an integrally formed switch operator and limit stop member positioned over said switch actuator knob, said member including a rear surface slidable on the front wall of said switch and an integrally formed stop abutment surface for cooperation with one of the narrow side surfaces of said enlarged opening to prevent overtravel of said switch knob by contact of said abutment surface with said narrow side surface so that the switch operator may be readily actuated by the foot of a user.

3,355,563

LOST MOTION THERMOSTATIC ELECTRICAL SWITCH

Raymond J. Ruckriegel, Versailles, Ky., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 336,750, Jan. 9, 1964. This application Aug. 11, 1966, Ser. No. 571,946
3 Claims. (Cl. 200—138)

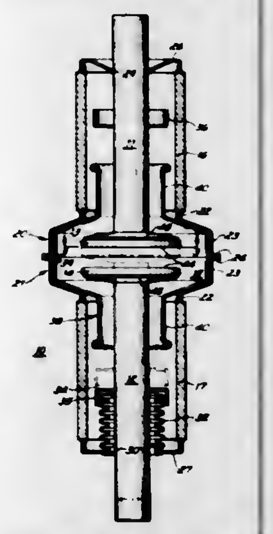
1. A thermostatic electric switch comprising a housing; a web of electrically insulating material formed in said housing to provide first and second cavities separated by said web; a pair of electrically conductive rivets mounted on said web to provide a pair of stationary electrical contacts in said first cavity; a pair of electrically conductive terminals mounted on one of their ends on said rivets and retained in fixed position by a pair of recesses found in said housing; a bridge support carrying a pair of movable electrical contacts mounted adjacent the ends of said bridge support for engagement with said stationary contacts; said bridge support being bendable intermediate its ends to locate said member and stationary contacts relative to each other; a resilient spring member each of whose ends is retained in a recess formed in said housing, the central portion of said spring member forming a receptacle for the central portion of the bridge member to resiliently urge said movable contacts into engagement with said stationary contacts; a transfer pin located in an aperture formed in said web for slidable movement therewithin, one end of said transfer pin being spaced by a predetermined amount from said bridge support; a thermostatic snap-acting element mounted on said housing adjacent the other end of said transfer pin for movement in response to a temperature change to move said transfer member into engagement with said bridge support to move said movable contacts out of engagement with said fixed contacts; said predetermined space between said transfer pin end and said bridge support providing a lost-motion connection therebetween such that creep movement of said thermostatic element is absorbed in said lost-motion connection without transfer of movement to said bridge support sufficient to move said movable contacts out of engagement with said fixed contacts.



3,355,564

VACUUM-TYPE CIRCUIT INTERRUPTER

John W. Ranheim, 6452 S. 13th St., Oak Creek, Wis. 53154
Filed June 3, 1966, Ser. No. 555,079
14 Claims. (Cl. 200—144)



1. An arc interrupting device including an evacuated envelope, said envelope including a pair of elongated hollow open-ended insulated housing portions, a hollow open-ended arcing chamber composed of relatively thin metallic material and being disposed between said insulating housing portions, first sealing means for affixing said chamber to one end of each of said housing portions, means for sealing the other ends of each of said insulating housing portions, a pair of electrodes disposed within said envelope, an enlarged arcing region provided on each of said electrodes, said arcing regions being disposed in an opposed relation within said arcing chamber and each having a transverse dimension which is large relative to the diameter of said housing portions, said arcing chamber having a central portion whose transverse dimension is substantially larger than that of said housing portions and whose axial length is substantially shorter than that

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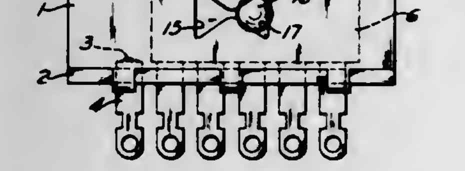
of said insulating housing portions, and a thin-walled metallic arc shield disposed between said arcing regions and said arcing chamber and having a bulbous central portion affixed to said arcing chamber and end portions extending therefrom toward the other ends of said housing portions and between said housing portions and said electrodes, said end portions also being disposed between said electrodes and said first sealing means, said arc shield being composed of a first metallic material characterized by a high thermal conductivity and said arcing chamber being composed of a different metallic material characterized by a substantially greater ability to resist deformation as a result of a large pressure differential across it than is said arc shield.

3,355,565

SLIDE SWITCH INDEXING DEVICE INCLUDING SPRING DETENT MEANS

Robert M. Daul, Park Ridge, Ill., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed June 29, 1967, Ser. No. 649,958
4 Claims. (Cl. 200—166)

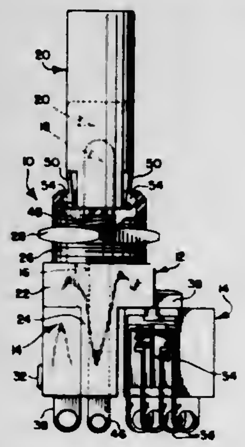


1. A slide switch comprising a housing containing a line of fixed contacts, a movable contact, a slide in the housing moving the movable contact back and forth along the fixed contacts, a wall of the housing having a longitudinal slot therein, and a spring-pressed detent carried by the slide and projecting into said slot, the detent engaging the side walls of the slot as the detent moves back and forth therein, said side walls of the slot tapering inwardly toward each other from both ends to provide a space between their centers much narrower than the ends of the slot, whereby the slot has end portions tapered toward each other and connected by a central gap.

3,355,566

LIGHTED PUSH BUTTON SWITCH ASSEMBLY

George J. Bury, Lake Villa, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Mar. 1, 1967, Ser. No. 619,821
7 Claims. (Cl. 200—167)

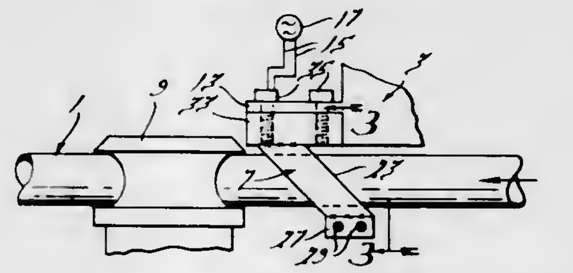


7. In a lighted push button switch assembly having a pair of snap-action switch devices each operated by a switch actuator element and being mounted to a bracket element on opposite sides of lamp means, the improvement comprising a manually removable hollow push button element for operating each switch actuator element and mounted in slidable relationship on said bracket element with the hollow portion thereof aligned with and receiving said lamp means, and means releasably retaining the hollow push button element relative to said bracket element including a pair of deflectable spring fingers on said hollow push button element each positioned within an opening provided in the bracket element, each said opening being aligned with one of the switch actuator elements for orienting each deflectable spring finger relative to one of the switch actuator elements, each deflectable spring finger when received by its respective opening being positioned for engaging and operating one of said switch actuator elements.

3,355,567

SLANTED COUPLER FOR TUBE WELDING

Donald P. Worden and John P. Shimkus, Racine, Wis., assignors to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Jan. 23, 1967, Ser. No. 610,965
11 Claims. (Cl. 219—8.5)



1. In an induction heater wherein opposite edges of a metal strip are welded together to form tubing of a predetermined diameter as it is moved in one longitudinal direction along a fixed predetermined path extending axially of the tubing, said heater including a frame and a source of radio frequency oscillating electrical current, the improvement comprising a single loop coupler connected to said source and supported on said frame at a longitudinal portion where said tubing edges are separated from each other by a gap so that said tubing passes through the coupler and current is induced in the metal to heat said edges on opposite sides of the gap to welding temperature, said coupler loop comprising a pair only of substantially parallel arms each enveloping substantially one half the circumference of the tubing and extending at an acute angle to the path of the tubing with the portion of the coupler loop adjacent said edges being substantially farther downstream than the portion of the coupler diametrically opposite to said edges, said arms being spaced apart adjacent an end thereof to provide a non-conductive gap in said loop adjacent to the gap between said metal edges.

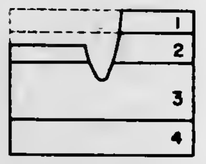
3,355,568

ELECTRON-BEAM MACHINING OF SPECIMENS AND ITS CONTROL BY X-RAY RADIATION MEASUREMENTS

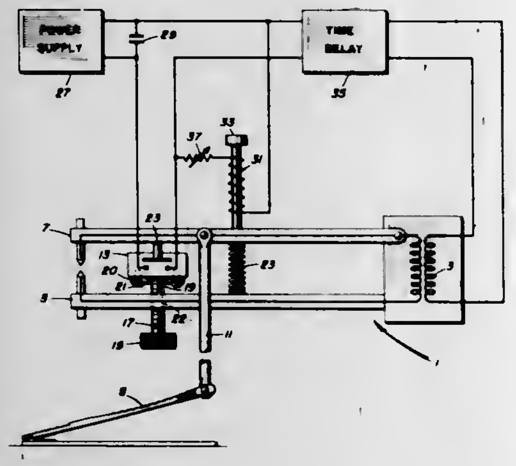
Tadamasa Hirai, Shinjuku-ku, Tokyo-to, Hiroshi Ueda, Suginami-ku, Tokyo-to, and Chusuke Munakata and Hiroshi Watanabe, Kitatama-gun, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed July 23, 1963, Ser. No. 297,125
Claims priority, application Japan, July 28, 1962, 37/31,969
4 Claims. (Cl. 219—69)

1. A method of machining a specimen having a plurality of layers of different compositions which comprises: projecting a high energy electron beam of variable intensity to a specified part of one layer of the specimen

to be machined for cutting through at least said one layer to an underlying chemically different layer; detecting the wave length of a characteristic X-ray emitted from the part; and controlling the intensity of said electron beam in accordance with a detection of a change in the wave length of said characteristic X-ray.



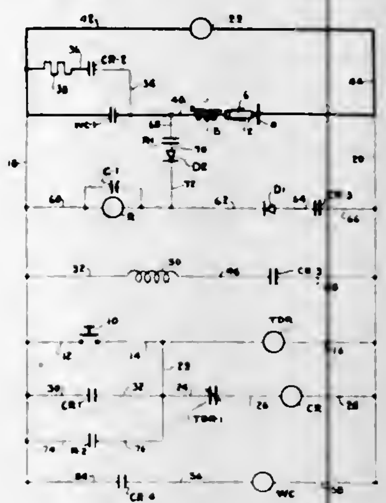
3,355,569
PRESSURE STABILIZED WELDING APPARATUS
Frederick R. Muccino, Clarksville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 8, 1964, Ser. No. 366,208
6 Claims. (Cl. 219—86)



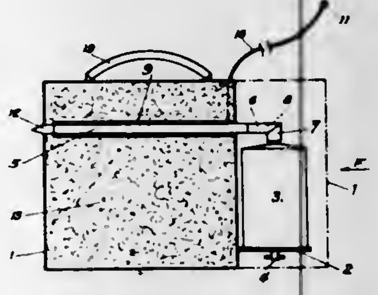
4. In a welder comprising a source of direct current, a capacitor connected to said source of current, a welding head having a pair of electrodes, means closing and applying initial pressure between said electrodes, and a power transformer having its primary winding connected to said capacitor and its secondary winding connected to said pair of electrodes, the improvement including,
   means for applying a secondary pulsed force to said welding electrodes,
   means responsive to the pressure between said electrodes for energizing said secondary force applying means,
   means for initiating a welding pulse, and
   means for delaying said welding pulse whereby the welding current reaches its maximum value after said secondary pulsed force has reached its peak value.

3,355,570
SAFETY CIRCUIT FOR DRAWN-ARC, STUD-WELDING APPARATUS
Paul A. Glorioso, Amherst, Ohio, assignor to Gregory Industries, Inc., Lorain, Ohio, a corporation of Michigan
Filed July 17, 1963, Ser. No. 295,721
8 Claims. (Cl. 219—98)

6. Welding apparatus for welding a stud to a workpiece comprising a chuck for engaging a stud, means for supplying welding current to said chuck to the workpiece, lifting means for retracting the chuck from the workpiece, plunging means for moving the chuck toward the workpiece, control means for controlling the lifting means and the supply means to retract said chuck and the stud to strike an arc between the stud and the workpiece when said control means is energized, and to cause said chuck and the stud to plunge toward the workpiece and the arc to be extinguished when the control means is deactivated after a period of time, trigger means for operating said control means, safety relay means actuated when the chuck is engaged with the stud and the stud is welded to the workpiece to prevent re-energization of said control means when the trigger means is released, the chuck is still in contact with the stud, the stud is welded to the workpiece, and for a short period after the chuck is separated from the welded stud.

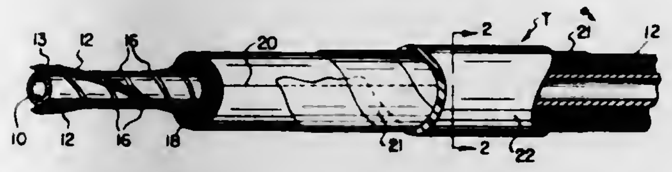


3,355,571
DEVICE FOR THE PRODUCTION OF AEROSOLS
Henry de Kerivily, 12 Rue Angelique-Verien, Neuilly-sur-Seine, France
Filed Apr. 6, 1965, Ser. No. 445,894
Claims priority, application France, Apr. 7, 1964, 970,052, Patent 1,402,924
2 Claims. (Cl. 219—214)



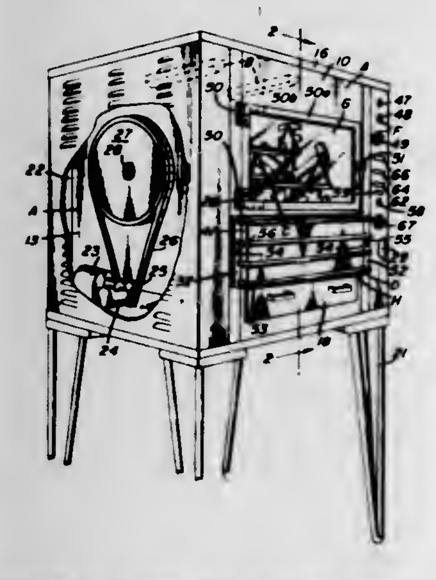
1. A device for the production of dry aerosols from solutions, which comprises:
   a pressure container for discharging the solution under pressure, said pressure container having a projecting head through which the solution is discharged;
   a first conduit mounted at one end thereof on said head and extending away therefrom, said first conduit having an enlarged free space therewithin into which the solution flows and becomes present as a mist therein, said first conduit further including a first portion slidably sleeved on said head and a second portion extending at an angle to said first portion, said enlarged free space being formed in said second portion;
   a second conduit mounted on the other end of said first conduit and extending away therefrom;
   a frame for supporting said container, said frame including an enlarged enclosure surrounding and spaced from said second conduit and insulation means filling said enclosure surrounding said second conduit; and
heating means associated with said second conduit for heating and drying the mist flowing therethrough.

3,355,572
COMPOSITE ELECTRICALLY HEATED TUBING PRODUCT
Albert E. Chrow, Chagrin Falls, Ohio, assignor to Samuel Moore and Company, Mantua, Ohio, a corporation of Ohio
Filed July 1, 1964, Ser. No. 379,638
3 Claims. (Cl. 219—301)



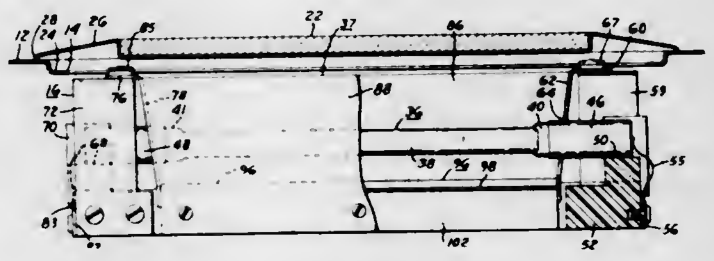
1. A composite tubing product of uniform construction throughout its length adapted for use as sampling tubing or the like comprising, a flexible sampling line means, electrical heating line means disposed exteriorly of and along such sampling line means throughout its length in heat transferring relation to said sampling line means, said heating line means being spirally wound about said sampling line means and strand means encircling said electrical heating line means and holding the latter in predetermined oriented relationship with respect to said sampling line means, a lightweight, flexible thermo-barrier layer of insulating material encompassing said line means throughout their length and providing a cushion therefor, said thermo-barrier layer comprising a pre-formed cylinder of flexible expanded polyurethane foam material having a pre-formed lengthwise extending passageway therethrough with the cylinder of foam material being slit lengthwise along one complete side thereof, a film of impervious polymeric tape wrapped about said thermo-barrier layer in underlying relation to an outer sheath, said tape comprising polyethylene terephthalate film being disposed in spirally overlapped condition about said thermo-barrier layer, and a flexible plastic sheath contiguous to and covering said thermo-barrier layer, said means, thermo-barrier layer and sheath embodying a deformable tubing.

3,355,573
COMBINATION OVEN
Robert G. Wilson, 643 E. Faris Road, Greenville, S.C. 29605
Filed Aug. 6, 1965, Ser. No. 477,856
5 Claims. (Cl. 219—396)



1. A combination oven for baking pastry and for barbecuing meat and the like including, an insulated substantially enclosed housing having a substantially vertical oven wall portion, first electrical heating means for cooking mounted within an upper portion of the housing, a driven rotary supporting assembly for eatables carried for rotation about a horizontal axis within the housing below said electrical heating means, a recess defined within said wall portion opposite and adjacent said rotary eatable supporting assembly, said recess opening into the oven, second electrical heating means for cooking carried within said recess for emitting heat directly into the oven while being protected from drippings from the eatables, and switch means controlling operation of said first and second electrical heating means selectively, whereby said second heating means may be used for baking pastry and said first and second heating means may be used for barbecuing meat.

3,355,574
ELECTRICAL SURFACE HEATER WITH PLURAL LAMPS
Arthur T. Bassett, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 1, 1965, Ser. No. 492,059
3 Claims. (Cl. 219—464)

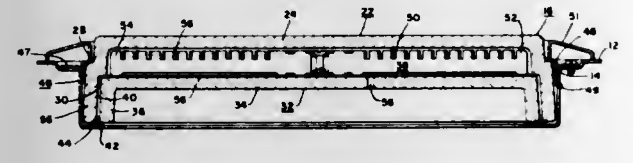


1. In a surface heating unit, the combination of, an infrared transmissive utensil supporting plate, a plurality of infrared heater units disposed in spaced relationship below said utensil supporting plate, each of said plurality of infrared heaters each including an elongated outer envelope having a high temperature electrical resistance element supported therein energizable into a temperature range for producing infrared radiation therefrom, each of said envelopes having an electrically conductive terminal connected on the opposite ends thereof, said resistance element being electrically connected to said terminals, said plurality of infrared surface heaters being located in spaced relationship with one another to underlie substantially the full planar extent of said utensil supporting plate, an infrared reflective surface located in spaced relationship to said infrared surface heaters for reflecting infrared radiation therefrom through said upper utensil supporting plate, said reflective surface including a plurality of elongated portions directed through substantially the full length of said infrared heaters, each of said portions being aligned with one of said infrared heaters for reflecting infrared radiation therefrom through said upper utensil supporting plate for uniformly distributing radiation therefrom throughout the planar extent of said utensil supporting plate, and fins on said elongated portions for cooling said infrared reflective surface.

3,355,575
STACKED DISH INFRARED SURFACE HEATING UNIT
Arthur T. Bassett, Jr., and Donald C. Siegla, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 12, 1965, Ser. No. 495,056
14 Claims. (Cl. 219—464)

1. In an infrared surface heating unit, the combination of, a first dished member having a planar extent forming a utensil supporting surface, said first dished member

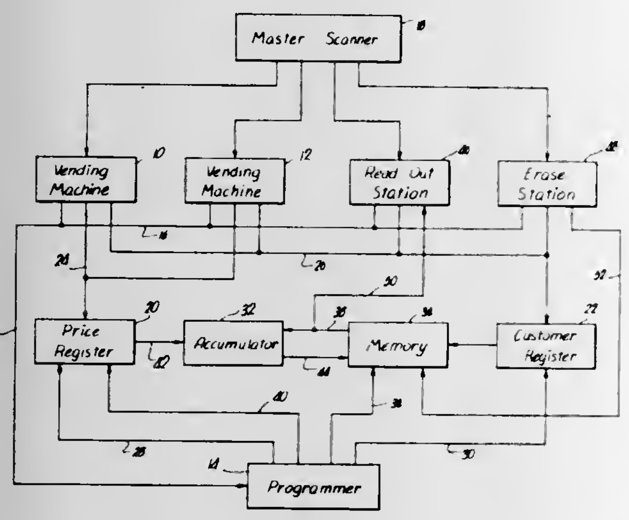
having a peripheral flange formed continuously around said planar extent in depending relationship therewith and including a lower edge formed continuously around the base of said flange, a second dished member nested within said first dished member having a planar extent located in spaced relationship with said planar extent of said first member, an infrared reflective surface on said planar extent of said second member, said second member having a peripheral flange surrounding said planar extent of said second member in depending relationship therewith and including an edge on the base thereof continuously around said flange, said peripheral flange in said second dished member being located inwardly of said peripheral flange on said first member, said first and second flanges forming an annular space extending downwardy from said planar extent of said second dished member, means for supporting said first and second dished members including a seal ring located between said flanges and in contact with the continuously formed edges on the base of said flanges for preventing the entrance of foreign matter interiorly of the space between said depending flanges of said nested dish-shaped members.



3,355,576
APPARATUS FOR AUTOMATIC SALES TOTALIZATION

Spencer L. Childers and Jerry W. Howard, Kansas City, Mo., and Wilburn O. Clark, Lawrence, Kans., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri

Filed Nov. 19, 1962, Ser. No. 238,650
9 Claims. (Cl. 235—61.7)



4. In a credit vending system:

a plurality of vending machines, each of said machines including structure for receiving a customer-identifying device, switching means operable by said device when received by said structure, and electrically responsive vending means coupled with said switching means for initiating the vending of a selected item of merchandise;

electrically responsive price register means operably coupled with the switching means of each of said machines for receiving the price of vending items;

electrically responsive customer register means operably coupled with the switching means and device receiving structure of each of said machines for receiving customer identification information from said device;

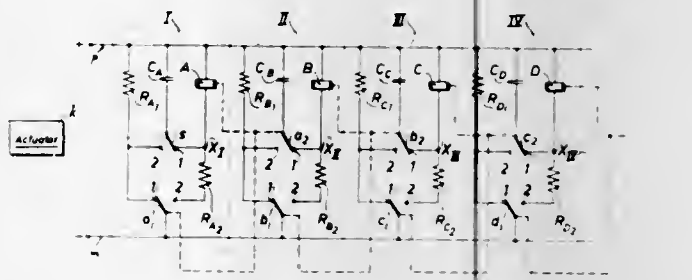
scanner means operably coupled with the switching means of each of said machines for sequentially applying an electrical signal thereto whereby, when the switching means of one of said machines is operated by said device and said electrical signal is applied to the switching means of said one machine, the electrically responsive vending means of said one machine initiates the vending of the selected item, said price register means receives the price thereof and said customer register means receives the customer identification information; and

means operably coupled with said price register and said customer register including memory means for storing the balances of the customer accounts, accumulator means for adding the price received by the price register to the corresponding customer balance in the memory means, and means for transferring the total from the accumulator to the memory means.

3,355,577
ELECTROMECHANICAL COUNTING CHAIN ARRANGEMENT

Hans Heuer, Wilhelmshaven, Germany, assignor to Olympia Werke A.G., Wilhelmshaven, Germany

Filed Sept. 24, 1963, Ser. No. 311,027
Claims priority, application Germany, Oct. 26, 1962, O 9,042
4 Claims. (Cl. 235—92)



1. An electromechanical counting chain arrangement, comprising, in combination,

a source of direct current;

a series of consecutive bistable frequency dividing switching stages, each stage comprising:

a first change-over switch changeable between a normal first position and a second position and operable at a first predetermined frequency characteristic of the particular stage,

a second change-over switch changeable between a normal first position and a second position and operable at a predetermined second frequency twice that which is characteristic of the particular stage,

capacitor means connected between the terminals of said source through said first and second change-over switches in such a manner that said capacitor means is charged when said first change-over switch is in its normal first position and said second change-over switch is in its second position, resistor means connected in series with said first change-over switch when in said normal first position and serving as a discharge resistor for said capacitor means when said second change-over switch is in the second position,

a single relay including a single relay coil for moving when energized said first change-over switch from said normal first position to its second position, said relay coil being connected between one terminal of said source and said first and second change-over switches in such a manner that it is energizable by

discharge of said capacitor means when said second change-over switch means is in its normal first position and is held in energized condition when said first and second change-over switches are in their second positions, respectively; and

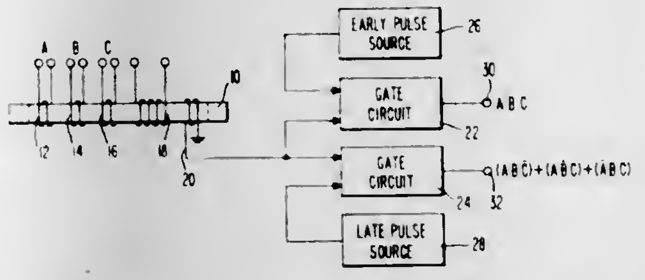
actuating means for operating in said stages the respective second change-over switches at said predetermined second frequency twice that which is characteristic of the particular stage,

whereby in each stage said relay means is periodically energized at a first predetermined frequency characteristic of the particular stage when said second change-over switch of this particular stage is operated at said predetermined second frequency twice said first frequency.

3,355,578
INFORMATION PROCESSING SYSTEM UTILIZING A SATURABLE REACTOR FOR ADDING THREE VOLTAGE PULSES

Douglas C. Wendell, Jr., Malvern, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed July 7, 1964, Ser. No. 380,762
12 Claims. (Cl. 235—175)



1. A method of translating a code which constitutes a new use of a saturable reactor in which each character has one of two possible values indicated by an electrical voltage into a code in which each character has more than two values as indicated by electrical voltages, comprising the steps of:

applying voltage pulses representing each character of a word of said first code concurrently to separate inputs of a saturable reactor, none of which is itself capable of causing saturation of the reactor, two of which will cause the reactor to saturate, and more than two of which will saturate the saturable reactor at a faster rate;

detecting the voltage output from said saturable reactor which corresponds in magnitude to the rate at which said saturable reactor is saturated by said voltage pulses of said first code, the waveform of said output voltage indicating the number of coincident input pulses representing the characters of said word of said first code and discriminating between the different output voltage waveforms for determining the number of coincident input pulses representing the characters of said word of said first code.

3,355,579
CORRELATION APPARATUS

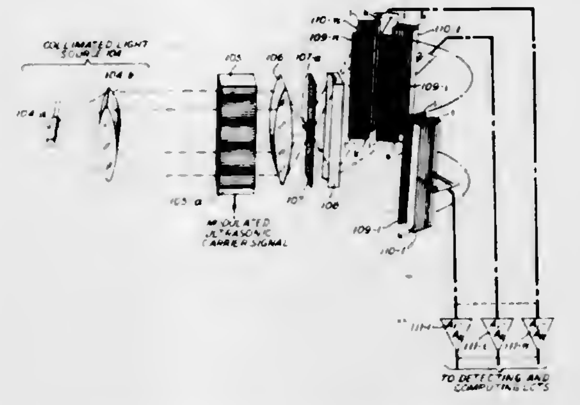
George H. Robertson, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 20, 1965, Ser. No. 498,709
10 Claims. (Cl. 235—181)

1. Apparatus for recognizing in an incoming signal both one of a plurality of information bearing signals which has been subjected to Doppler distortion, and the amount of Doppler distortion of this signal, which comprises

means for presenting said incoming signal as an optical signal,

a plurality of masks corresponding on a one-to-one basis with said plurality of information bearing signals, wherein each mask possesses a plurality of transparent regions, and wherein the transmissivity of each of said transparent regions correlates with a corresponding Doppler distorted version of said information bearing signal corresponding to said mask,



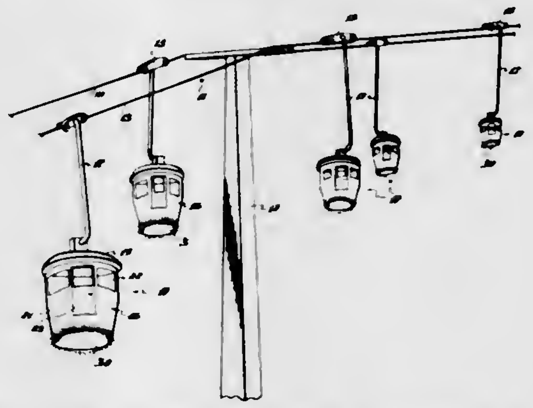
means for simultaneously directing said optical signal through all regions of said plurality of masks, so that a maximum of optical signal energy is transmitted through the region of the mask which best correlates with said incoming signal, and

means for determining both the particular information bearing signal transmitted, and the amount of Doppler distortion of this signal, by detecting the region of the mask which passes maximum signal energy.

3,355,580
SKY RIDE

Gary S. Wachs, Cincinnati, Ohio, assignor to Coney Island Inc., Cincinnati, Ohio, a corporation of Ohio

Filed Oct. 13, 1965, Ser. No. 495,428
7 Claims. (Cl. 240—3)



1. A sky ride for transporting passengers between spaced stations comprising:

an endless cable extending between at least two spaced towers,

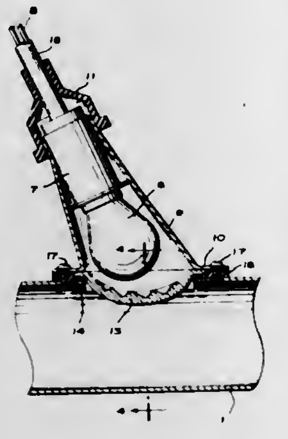
a plurality of cable cars, each of said cars including a suspension bar secured at its upper end to said cable by a cable clamp, each of said cars having a body which includes a roof, a floor, and side walls, said side walls having at least one door through which passengers may enter and leave said cars, said side walls and said bottom wall of said body being opaque,

the improvement which comprises a translucent light diffuser covering approximately the complete bottom wall of each of said cars,

a light source mounted between each of said translucent diffusers and said bottom walls, and

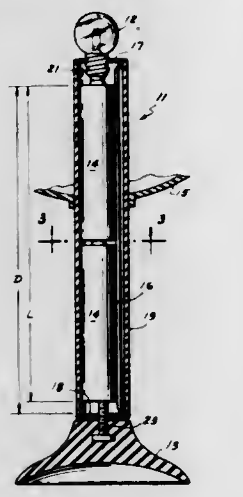
electric means for lighting said light sources.

3,355,581
TAIL PIPE ILLUMINATOR
Jerry A. Fleming, Box 116, Oroville, Wash. 98844
Filed Aug. 5, 1965, Ser. No. 477,428
7 Claims. (Cl. 240—8.3)



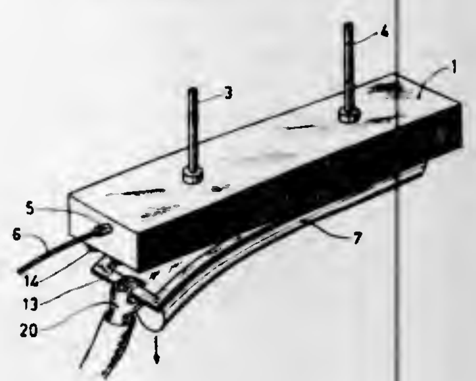
1. In combination with an exhaust gas pipe carrying a moving stream of exhaust gases and having a terminal outlet for expelling the gases, said pipe having an opening in the wall thereof closely adjacent said outlet, an illuminator device comprising in combination; a lens mounted in said opening, a light source, and means to mount said light source adjacent said lens to direct light rays therethrough into the exhaust gas stream, whereby light rays are diffused by the exhaust gas particles as they are expelled.

3,355,582
BATTERY POWERED LIGHTING DEVICE
Eugene A. Swee, Bronx, N.Y., assignor to Miner Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 484,829
3 Claims. (Cl. 240—10)



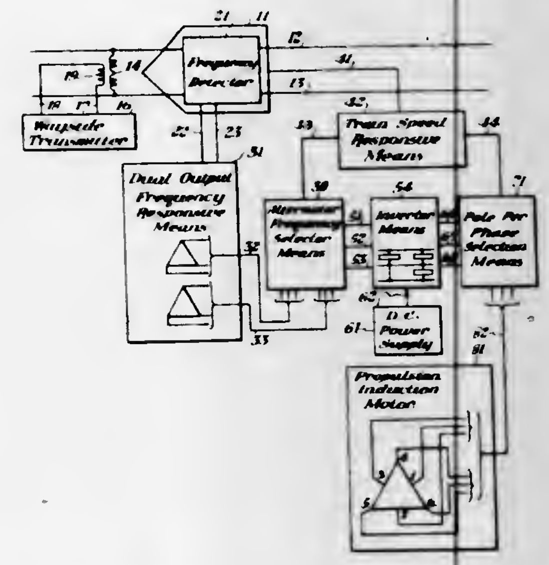
1. A battery powered lighting device comprising an elongated frame member having electrically connected, apertured ears projecting laterally toward one side at the opposite ends of the frame member, a light bulb having a base secured in one of said apertured ears, electric storage battery means disposed at said one side of the frame member between said ears, the distance between said base of the light bulb and the other of said ears being greater than the length of said battery means, an open ended sleeve slidably telescoping over said frame member and being substantially longitudinally coextensive with the latter to retain said battery means between said ears, and a conducting screw member threaded through said other apertured ear so that returning of said frame member relative to said screw member varies the projection of the latter through said other ear for making and breaking an energizing circuit for the light bulb.

3,355,583
LIGHTING FITTING
Christoffel Sellenraad and Gerhardus Johannus Berns, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 20, 1965, Ser. No. 449,550
Claims priority, application Netherlands, May 5, 1964, 64—4,943
2 Claims. (Cl. 240—128)



1. An electric light fixture comprising a housing, a light-transparent diffuser, both said housing and diffuser having opposed fitting rims, and flexible magnetic means permanently fixed on said rim of the diffuser, said flexible magnetic means being adapted to flex in order to separate said opposed fitting rims and permit access to the interior of said light fixture, said diffuser being constituted of a synthetic substance of a thickness of not more than 1 mm.

3,355,584
TRAIN SPEED CONTROL SYSTEM
George W. Baughman, Swissvale, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Oct. 1, 1965, Ser. No. 492,134
31 Claims. (Cl. 246—187)

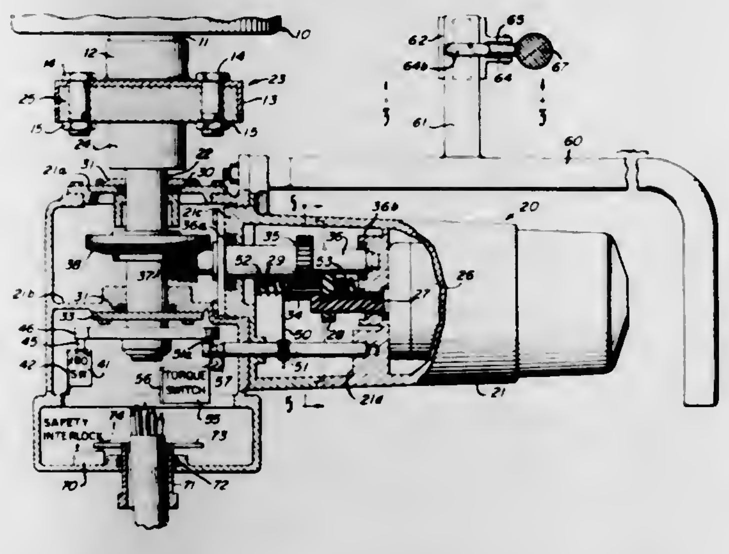

Frequency Detector
Wayside Transmitter
Train Speed Responsive Means
Dual Output Frequency Responsive Means
Inverter Means
Pole Per Phase Selection Means
D.C. Power Supply
Propulsion Induction Motor

1. A train propulsion motor speed control system having a direct current power supply for said propulsion motor comprising:

(a) a train-carried command signal detector means,
(b) a source of distinctive command signals to control the speed of said train electrically coupled to said command signal detector means,
(c) a command signal responsive means electrically connected to and controlled by said train-carried command signal detector means,
(d) a frequency selector means electrically connected to said command signal responsive means,

(e) a speed indication control means having a first and second output, said first output controlling said frequency selector means,
(f) a multiphase propulsion induction motor having a number of connections to provide a multiple of different pole per phase connections,
(g) an inverter means and a pole per phase selection means,
(h) said pole per phase selection means being controlled by said speed indication control means to connect said inverter means with its related direct current power supply to a selected pole per phase connection of said propulsion motor to thereby establish a propulsion speed control for said train propulsion motor which speed control is mutually dependent upon said distinctive command signal source and said pole per phase selection controlled by said speed indication control means.

3,355,585
RAILROAD SWITCHING DEVICE
Charles J. Schwab, Fox River Grove, Ill., assignor to Brock Equipment Company, a corporation of Illinois
Filed Aug. 30, 1965, Ser. No. 483,482
11 Claims. (Cl. 246—393)

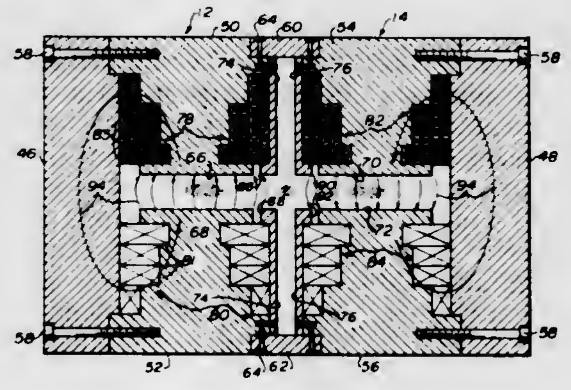


1. A switching device, comprising: motor means including a rotary shaft; an output member movable between first and second operative positions; means drivingly coupling said shaft and said output member; means for energizing said motor means to initiate movement of said output member from one position to another; means responsive to movement of said output member to said another position for deenergizing said motor means; and means responsive to increases of torque on said output member for reversing said motor means to return said output member to one of said operative positions.

3,355,586
MODIFIED MAGNETIC MOMENTUM SLIT INCLUDING A PAIR OF C-TYPE MAGNETS
Habib Brechna, Palo Alto, Calif., and Bengt Hedin, Geneva, Switzerland, assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 23, 1964, Ser. No. 420,835
6 Claims. (Cl. 250—41.9)

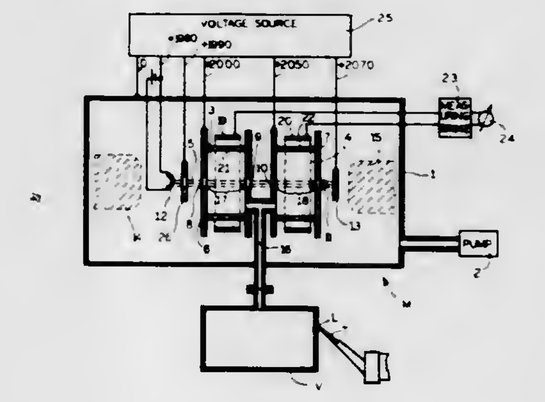
1. A magnetic momentum analyzing slit for selectively segregating particles of a desired momentum range from a particle beam comprising;

(a) magnetic field generating means disposed in the path of said beam including a pair of C-type magnets having magnetic poles of substantially rectangular cross-section, said magnet poles defining pairs of facing pole tips having substantially parallel opposing surfaces, said magnets being spaced in circumjacent relation about a centrally extending axis and aligned to form a main gap having boundaries lying in opposing parallel planes defined by the opposing surfaces of said pole tips, said magnets being spaced apart to form a slit opening therebetween intersecting said main gap;
(b) said pole tips having pairs of slots formed along their length and recessed within the surfaces thereof, and forming slot openings between said surfaces and slots, wherein the slot openings are of relatively smaller cross-section than the cross-section of the slots;



(c) annular coils disposed within each pair of slots and substantially in register beneath said slot openings, said coils lying in a plane parallel with the surfaces of said pole tips;
(d) and current source means for energizing said annular coils.

3,355,587
GAS ANALYSIS APPARATUS COMPRISING PLURAL IONIZATION CHAMBERS WITH DIFFERENT IONIZING ELECTRON BEAM ENERGY LEVELS IN THE CHAMBERS
Ludolf Jenckel, Muhlental 15, Bremen-St. Magnus, Germany
Filed Mar. 3, 1966, Ser. No. 531,397
8 Claims. (Cl. 250—41.9)



1. Apparatus for detecting components of a gas mixture by ionization and measurement of the ion current comprising,

means for providing an electron beam of first energy level and an electron beam of second energy level different from said first energy level,
means for passing said gas mixture through said first energy level electron beam to ionize said mixture and produce a first ionization signal and through said

second energy level electron beam to ionize said mixture and produce a second ionization signal.

first collector means responsive to ionization of said mixture by said first energy level electron beam for collecting ions to provide said first ionization signal,

second collector means responsive to ionization of said mixture by said second energy level electron beam for collecting ions to provide said second ionization signal,

first ionization chamber means including said first energy level electron beam,

second ionization chamber means including said second energy level electron beam,

means for establishing a first ion-transporting field for attracting ions from said first ionization chamber means to said first collector means,

means for establishing a second ion-transporting field for attracting ions from said second ionization chamber means to said second collector means,

each of said ionization chamber means being formed with apertures for allowing at least entry of the associated energy level electron beam,

and means defining a common container enclosing said means for providing an electron beam of first energy level and an electron beam of second energy level different from said first energy level, said first collector means, said second collector means, said first ionization chamber means, said second ionization chamber means, said means for establishing a first ion-transporting field and said means for establishing a second ion-tranporting field,

said first ionization chamber means and said second ionization chamber means being formed with said apertures along a common axis,

said means for providing an electron beam comprising a single electron source emitting a beam along said axis through both said ionization chamber means,

said apparatus including means to accelerate the electrons to the second energy level as the beam passes between said first and second ionization chambers.

3,355,588

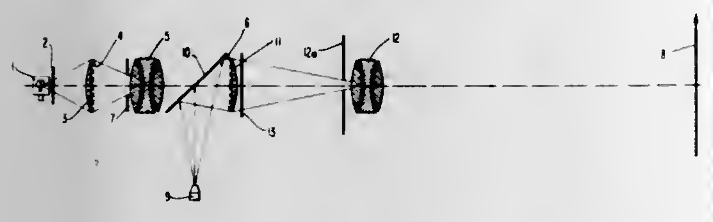
PROJECTION OF NEGATIVES AS POSITIVES BY EMPLOYING A PHOTOTROPIC SCREEN AND AN AUXILIARY VISIBLE LIGHT SOURCE

Paul H. Acloque, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France

Filed Mar. 26, 1964, Ser. No. 355,007

Claims priority, application France, Mar. 26, 1963, 929,234

13 Claims. (Cl. 250—71)



1. A projector having a first source of invisible rays, a support for a negative, and an optical system including optical means focussing rays from said first source, onto a negative carried by said support, an objective in position to receive rays traversing a negative carried by said support, a phototropic screen in position to receive the rays from said objective, a second source of visible light, a partial reflector interposed at an angle across the path of rays from said first source, between said objective and said phototropic screen to reflect light from said second source through said phototropic screen, a viewing screen, and optical means to direct the light traversing said phototropic screen onto said viewing screen.

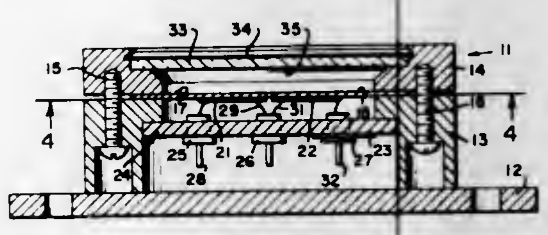
3,355,589

CONSTANT SENSITIVITY DIFFERENTIAL RADIOMETER

Richard P. Clifford, Tarzana, Calif., assignor to TRW Inc., a corporation of Ohio

Filed July 7, 1964, Ser. No. 380,860

2 Claims. (Cl. 250—83.3)



1. A differential radiometer comprising:

(A) a cylindrical body having an axial opening in one end thereof for admitting radiation;

(B) a pair of thin metallic sensors positioned across said opening with their peripheral edges contacting said body, each of said sensors being coated with a material having high absorptance and high emissivity;

(C) separate means for resistively sensing the temperature positioned adjacent the center of said opening on each of said sensors;

(D) a window positioned in said opening before said sensors,

a portion of said window in front of one of said sensors having a highly reflective coating and a high emissivity coating facing said one sensor;

(E) electric circuit means connected to said temperature sensing means for providing an output signal proportional to the incident radiation;

said circuit means including a third means for resistively sensing the temperature attached to said body to compensate for variations in the body temperature.

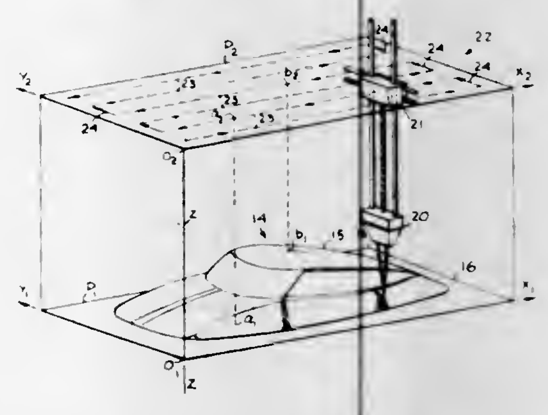
3,355,590

THREE DIMENSIONAL SURFACE PROFILING SYSTEM USING PHOTOCELL WHICH REMAINS A FIXED DISTANCE ABOVE THE SURFACE

Sidney Bertram, Woodland Hills, Calif., assignor to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware

Filed Oct. 8, 1964, Ser. No. 402,511

14 Claims. (Cl. 250—202)



1. An automatic profiling system for deriving three-coordinate data for a point on a surface of a three-dimensional object comprising:

sensing means;

means for automatically positioning said sensing means at a position along a profiling pattern so as to be substantially aligned with said point on said surface;

means for determining two coordinate data for said point as a function of said position of said sensing means along said profiling pattern;

means for automatically controlling the distance between said sensing means and said point on said surface to be substantially equal to a predetermined distance; and

means for determining third coordinate data for said point as a function of the position of said sensing means when positioned at a distance from said point substantially equal to said predetermined distance.

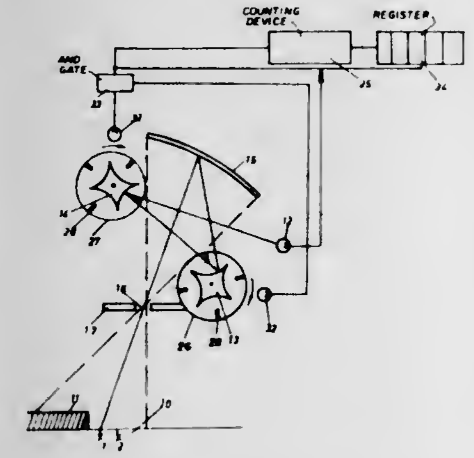
3,355,591

PHOTOELECTRIC DEVICE FOR DETERMINING THE LENGTH OR POSITION OF A SAMPLE USING SCANNER AND ROTATING BEAM-CHOPPER

Marcel Charles Pfister, 123 Ave. du General de Gaulle, Eckbolsheim, near Strasbourg, France

Filed Oct. 16, 1964, Ser. No. 407,611

11 Claims. (Cl. 250—219)



1. In an apparatus for determining the position or length of a radiant energy emitting object wherein a field of view, including a part of the object, is scanned by a moving scanning means driven by power means at a given rate with the radiant energy beam received by the scanning means traversing a path to a radiant energy detector, the improvement comprising: power driven beam chopping means interposed in said path to periodically break the beam, said beam chopping means being connected to said power means to break the beam at a rate which is a function of said given rate and in predetermined phase relationship with respect thereto, whereby the detector produces electrical impulses to the extent that said object is in said field; and actuated means connected to the detector.

3,355,592

MONITORING DEVICES INDICATING SPACING BETWEEN ARTICLES MOVING IN A STREAM

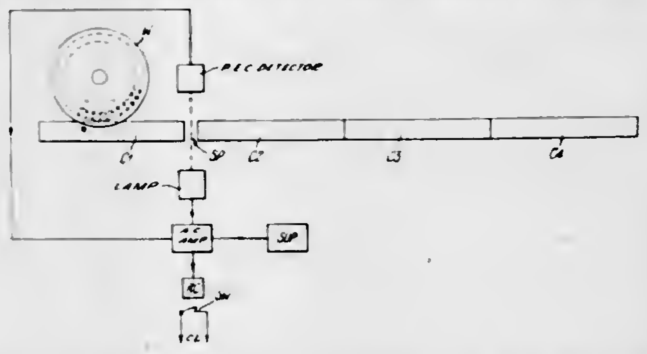
Douglas William Ballantyne Muir, London, England, assignor to The Molins Organisation Limited, a corporation of Great Britain

Filed May 22, 1964, Ser. No. 369,445

Claims priority, application Great Britain, May 23, 1963, 20,644/63

5 Claims. (Cl. 250—224)

1. A monitoring device for use in checking spacing between successive articles in a continuous stream along a defined path, comprising, in combination, means located on one side of said path for projecting a beam of radiation across said path, radiation-sensitive detector means arranged on the other side of said path to receive said beam, and A.C. circuit means connected to receive an electrical output from said detector means, said beam and said detector means being placed at a single station along said stream so that the beam is interrupted by articles passing in said stream thereby to deliver an electrical output pulse whenever said beam is received at a gap between two successive passing articles, so as to produce a succession of electrical pulses of uniform amplitude but of duration dependent upon the lengths of gaps between successive articles, and said A.C. circuit means comprises



direct current blocking means sensitive to the average amplitude value over a period of time of said succession of output pulses for limiting transmission of a control signal to such times as the average amplitude value is within a preselected range.

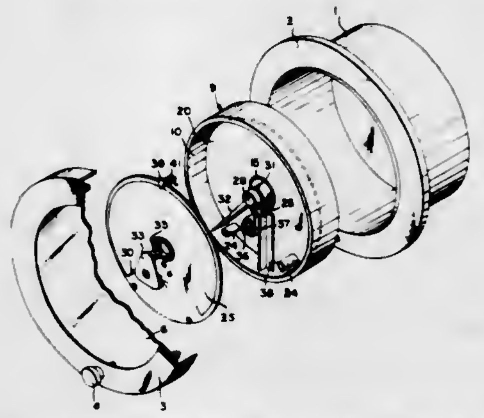
3,355,593

CONTACTLESS SWITCHING DEVICE

James J. Gately, Edmonds, and Helmuth Siemer, Jr., Bothel, Wash., assignors to The Instrument Laboratory Inc., Seattle, Wash., a corporation of Washington

Filed Dec. 2, 1964, Ser. No. 415,295

9 Claims. (Cl. 250—231)



1. A switching device for signaling the position of a rotatable dial pointer comprising: a hollow rotatable hub for mounting said pointer, a dial plate surrounding said hub adjacent said pointer, a second plate spaced from said dial plate on the side thereof remote from said pointer, a light source located in said hub, said hub being provided with an extensive arcuate slot for directing light rays from said light source between said plates, a flag carried by said hub coinciding in position with said pointer and located between said plates, a flexible tape fixed to said hub and to a point on one of said plates with slack being provided to allow said tape to wrap about said hub when it rotates, and light sensitive signal devices adjustably positioned about the periphery of said dial plate and located between said dial plate and said circular plate, whereby the application of light rays from said source to said signal devices may be controlled by the rotation of said hub.

3,355,594

SEMICONDUCTOR ELECTRONIC TIMING CIRCUIT UTILIZING MAGNETIC COUNT CORE

Balthasar H. Pinckaers, Edina, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

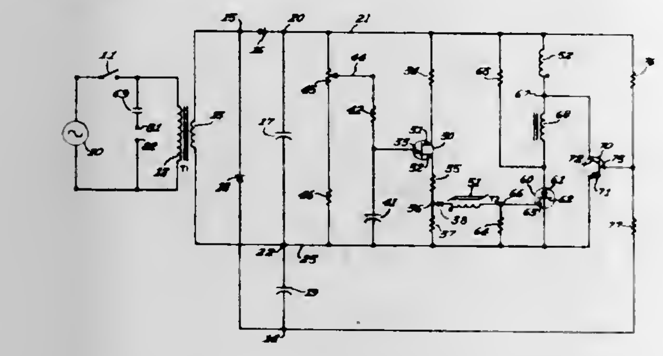
Filed June 15, 1964, Ser. No. 374,923

7 Claims. (Cl. 307—88)

1. A control circuit comprising:

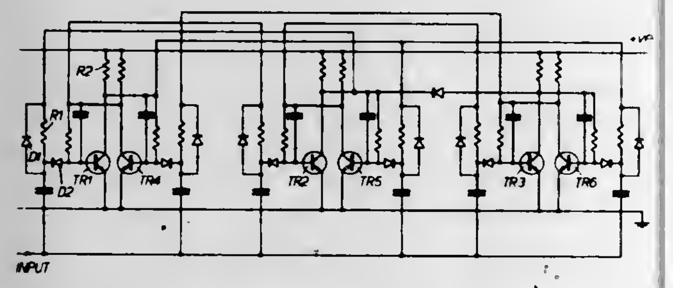
a source of bi-directional potential;

half-wave rectifier means including energy storage means;
means connecting said rectifier means across said source of potential;
oscillator means having an input and an output circuit;
means connecting said input circuit across said energy storage means;
a counter having input and output terminals, said counter including counter reset means;
means connecting said output circuit to said input terminal;



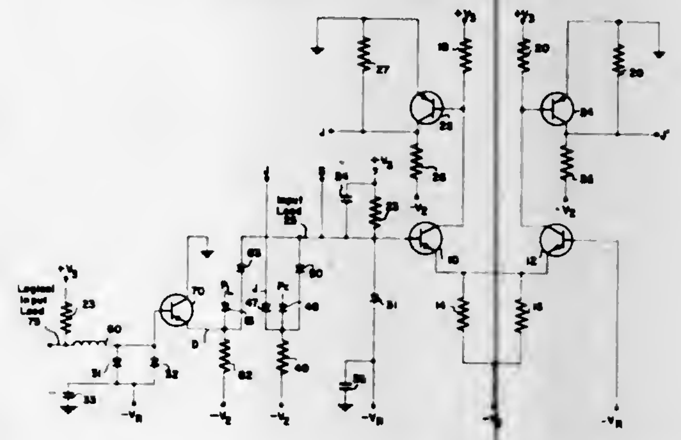
a semiconductor switching device having input, output, and control electrodes;
means connecting said output terminal to said control electrode;
control means; and
means connecting said counter reset means, said control means, said input electrode, and said output electrode serially across said energy storage means.

3,355,595
ODD-NUMBER COUNTER
Gilbert Francis Penver, Clayhall, England, assignor to Advance Electronics Limited (formerly Advance Components Limited)
Filed Oct. 9, 1964, Ser. No. 402,700
Claims priority, application Great Britain, Oct. 29, 1963, 42,605/63
6 Claims. (Cl. 307—88.5)



1. An odd-number counter comprising:
an even number of active circuit elements having electrodes;
circuit means for coupling said circuit elements in bistable pairs, each of said bistable pairs developing differing bias potentials in the two conditions thereof;
bias responsive diode steering means associated with each said element, each said steering means having an unbiased condition for permitting applied signals to pass to said element to change the state of a said bistable pair and having a biased condition for diverting said signals from said element;
a source of spaced input signals;
circuit means for coupling input signals from said source simultaneously to each of said steering means;
circuit means for coupling each of said steering means to receive a bias potential from one of said bistable pairs; and
further circuit means for coupling one of said steering means to receive also a bias potential from another of said bistable pairs, whereby a cycle of unique conditions of said bistable pairs is completed in response to an odd number of said input signals.

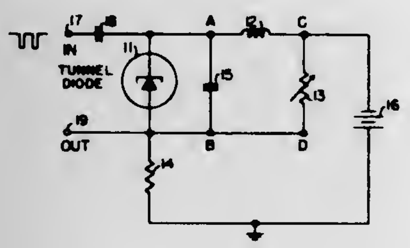
3,355,596
DIGITAL CIRCUITRY INCLUDING DIFFERENTIAL AMPLIFIER AND OPPOSITE CONDUCTIVITY TRANSISTORS IN LATCHING AND "EXCLUSIVE-OR" CONFIGURATIONS OBVIATING STORAGE DELAYS
Robert O. Gunderson and Martin H. Jurick, Torrance, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Nov. 2, 1964, Ser. No. 408,014
21 Claims. (Cl. 307—88.5)



1. Digital circuit means comprising: first and second transistors each having a base, an emitter and a collector, means coupling the base of one of said first and second transistors to a reference signal, means coupling a binary input signal to the other base, means including collector resistor means and common emitter resistor means for connecting said transistors for differential amplifier operation, said collector resistor means and said common emitter resistor means being chosen so that said first and second transistors in responding to said binary input signal remain in their active region of operation, third and fourth transistors each having a base, an emitter and a collector, said third and fourth transistors being of opposite polarity type with respect to said first and second transistors, means coupling the base of each of said third and fourth transistors to a respective one of the collectors of said first and second transistors so as to be switchable between saturated and cut off states in response thereto, and first and second means respectively coupling the collectors of said third and fourth transistors so as to provide oppositely opposed binary signal outputs in response to said binary input signal each having substantially the same magnitudes as said binary input signal.

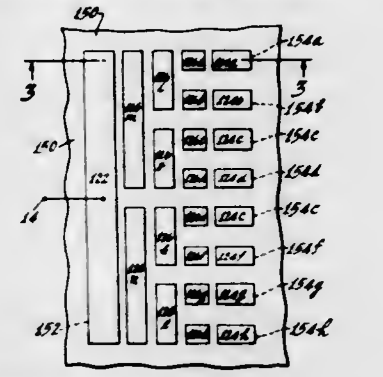
17. An "exclusive or" circuit comprising: first and second transistors each having a base, an emitter and a collector, means coupling the base of said first transistor to the emitter of said second transistor and the base of said second transistor to the emitter of said first transistor, first collector impedance means, means coupling the collectors of said first and second transistors in parallel with respect to said first collector impedance means, third and fourth transistors each having a base, an emitter and a collector, means applying a first binary input signal to the base of said third transistor and a second binary input signal to the base of said fourth transistor, second collector impedance means, means coupling the collectors of said third and fourth transistors in parallel with respect to said second collector impedance means, first emitter impedance means coupling the emitters of said first and third transistors and second emitter impedance means coupling the emitters of said second and fourth transistors, said first and second collector impedance means and said first and second emitter impedance means being chosen so that each of said first, second, third and fourth transistors remain in their active region of operation in response to said first and second binary input signals with only one of said first and third transistors and only one of said second and fourth transistors conducting a significant amount of collector current while the other remains just barely conducting, first output means including an output transistor coupled to said first collector impedance means so as to be switchable between saturated and cutoff states in response to the states of said first and second transistors for providing a first binary output signal which has one logical level when at least one of said first and second transistors is conducting a significant amount of current and the other logical level otherwise, and second output means including an output transistor coupled to said second impedance means so as to be switchable between saturated and cutoff states in response to the states of said third and fourth transistors for providing a second binary output signal oppositely phased with respect to said first binary output signal which has said one logical level only when both of said third and fourth transistors are conducting a significant amount of current and the other logical level otherwise, said output transistors being of opposite polarity type with respect to said first, second, third and fourth transistors, and said first and second output means each including voltage divider means cooperating with its respective output transistor for producing logical levels for said first and second binary output signals having substantially the same magnitudes as said first and second binary input signals.

3,355,597
SINGLE NEGATIVE RESISTANCE TRISTABLE OPERATION
George Abraham, 3107 Westover Drive SE., Washington, D.C. 20020
Filed Nov. 19, 1964, Ser. No. 412,578
7 Claims. (Cl. 307—88.5)



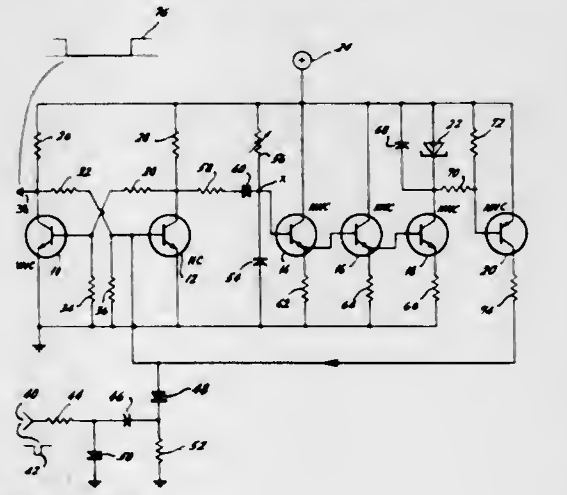
1. A multistable switching circuit having at least three stable states and receiving trigger pulses for selecting any desired stable state of said circuit, comprising:
a negative resistance device;
an input circuit connected to said negative resistance device for receiving said trigger pulses;
a first resistor shunting said negative resistance device and having a resistance low compared to the negative resistance of said negative resistance device;
a second resistor in series connection with said negative resistance device selected to have a resistance greater than the negative resistance of said negative resistance device;
a load circuit coupled to said negative resistance device causing said negative resistance device to oscillate when in at least one of said stable states;
and bias means coupled to said negative resistance device by said second resistor to bias said negative resistance device in the negative resistance portion of its characteristic curve.

3,355,598
INTEGRATED LOGIC ARRAYS EMPLOYING INSULATED-GATE FIELD-EFFECT DEVICES HAVING A COMMON SOURCE REGION AND SHARED GATES
James W. Tuska, Hopewell Township, Mercer County, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 25, 1964, Ser. No. 413,780
8 Claims. (Cl. 307—88.5)



4. The combination comprising:
a body of semiconductive material;
a common source and 2^n drains contacting said body, where *n* is an integer greater than one, each drain defining one end of a different, mutually exclusive conduction path in said body and said common source defining the other end of each said conduction path;
n pairs of input lines;
means for applying to one line of each of the *n* pairs signals representing a binary "one" and for applying to the other line of each of the *n* pairs signals representing a binary "zero";
2^n sets of *n* gate electrodes each, each different set of gate electrodes overlying and being insulated from a different conduction path;
means coupling each of the *n* gate electrodes of a set to a different one of the input lines, where each of the latter lines belongs to a different one of the *n* pairs of lines, and with the gate electrodes of each different set being coupled to a different combination of input lines; and
n—1 of the gate electrodes of each set each being integral respectively with at least one other gate electrode of another set.

3,355,599
LONG TIME CONSTANT MONOSTABLE MULTIVIBRATOR
Joseph F. Springer, Jr., Philadelphia, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware
Filed Dec. 2, 1964, Ser. No. 415,313
12 Claims. (Cl. 307—88.5)

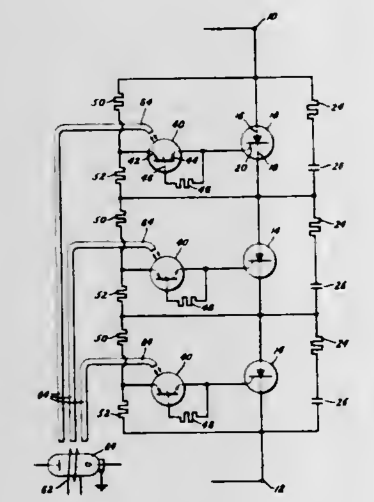


1. In combination:
(a) a bistable circuit,
(b) a capacitor,

(c) a tunnel diode,
(d) means coupled to said bistable circuit and said capacitor for gradually charging said capacitor when said bistable circuit is in one of its stable states and for rapidly discharging said capacitor when said bistable circuit is in the other of its stable states,
(e) means coupled to said capacitor and said tunnel diode for maintaining said tunnel diode in one of its voltage states when the charge on said capacitor is below a predetermined level and in the other of its voltage states when the charge on said capacitor is above a predetermined level, and
(f) means coupling said tunnel diode to said bistable circuit for changing the state of said bistable circuit when said tunnel diode switches from one of its voltage states to the other.

3,355,600
TRIGGERING MEANS FOR CONTROLLED RECTIFIERS

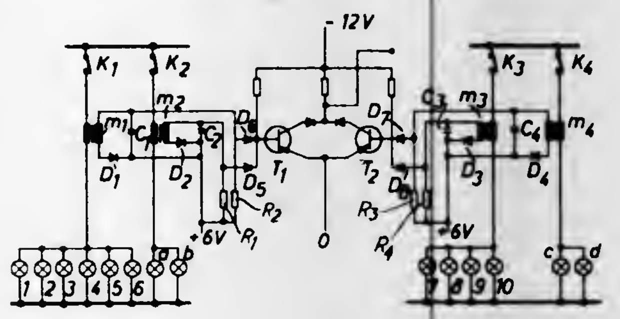
Neville W. Mapham, Jordan, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 16, 1965, Ser. No. 440,261
11 Claims. (Cl. 307—88.5)



1. In combination,
(a) a pair of terminals adapted to be connected to a source of voltage,
(b) a plurality of main controlled rectifiers connected in series relationship across said terminals and each having an anode, a cathode, and a gate,
(c) triggering means for substantially simultaneously applying gating current signal pulses to the respective gates of said main controlled rectifiers to initiate conduction between the anode and cathode of each main controlled rectifier,
(d) said triggering means comprising a plurality of light-activated controlled rectifiers respectively associated with said main controlled rectifiers,
(e) each of said light-activated controlled rectifiers having an anode and a cathode connected in series with the gate of its associated main controlled rectifier and means for initiating conduction between its anode and cathode in response to the reception of a predetermined light signal,
(f) and means including a light source common to all of said light-activated controlled rectifiers for developing and transmitting light energy that simultaneously reaches all of said light-activated controlled rectifiers in the form of light signals of sufficient irradiance to initiate conduction between the anode and cathode of each light-activated controlled rectifier.

3,355,601
SUPERVISORY CONTROL SYSTEM USING A FERRITE TRANSFORMER AND A TRANSISTOR

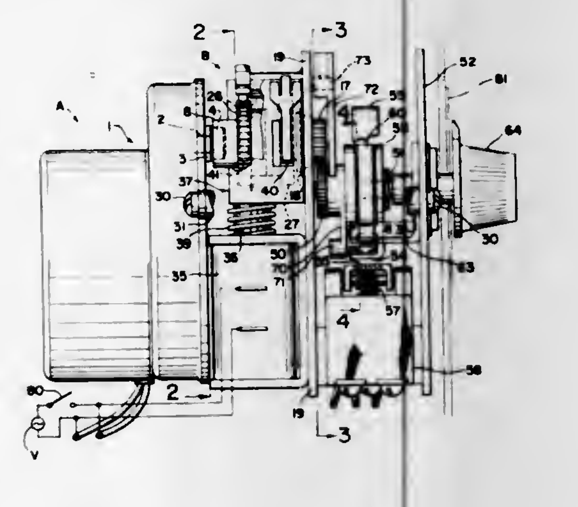
Johann Klein, Cologne-Riehl, Germany, assignor to Franz Baumgartner, Fabrik Elektrischer Apparate, Cologne-Riehl, Germany
Filed Oct. 22, 1965, Ser. No. 500,616
2 Claims. (Cl. 307—88.5)



1. A supervisory signalling system for detecting the failure of one of a plurality of compatible light groups wherein each group may include an unequal number of parallel connected lights, comprising:
(a) a separate feed conductor for each light group,
(b) a ferrite core transformer for each feed conductor having its primary winding connected in series in the feed conductor,
(c) a diode-capacitor filter network for each transformer connected to the secondary winding of the transformer,
(d) a transistor,
(e) a diode gate for each filter network connected between the filter network and the base terminal of the transistor, and
(f) a source of biasing voltage connected to each diode gate, whereby the interruption of current flow in any feed conductor unblocks its associated diode gate and the biasing voltage renders the transistor non-conductive.

3,355,602
CLUTCH MECHANISM

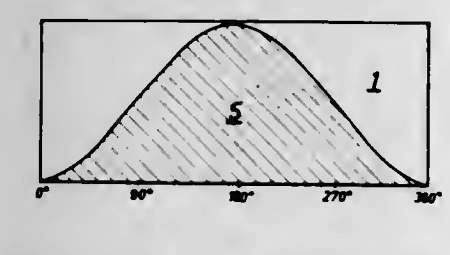
Frederick Edwin Erickson, Port Byron, Ill., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 618,781
15 Claims. (Cl. 307—141.4)



9. In combination, a clutch comprising an input drum and an output drum, both having a common axis of rotation, a coil spring concentrically disposed around said drums and biased to gripping engagement therewith, and means for radially expanding said coil spring to release said clutch; and a timing and reset mechanism operatively connected to said output drum and having an initial condition, said mechanism comprising a switch actuator adapted to actuate a switch after a predetermined time interval of clutch engagement, means for reversing said mechanism to its initial position following said predetermined time interval, and an input drum release means operable following actuation of said switch actuator to stop rotation of the end of said coil spring adjacent said input drum and radially expand the portion of said coil spring disposed around said input drum to allow free rotation of said input drum while said coil spring and said output drum are held stationary, whereby said switch actuator continues to actuate said switch and said means for reversing said timing and reset mechanism will not operate until said clutch is fully released.

3,355,603
HOLLOW BODIES OF ELECTROSTRICTIVE MATERIAL

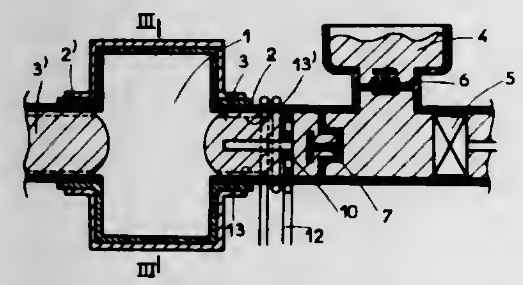
Gerhard Hesse and Wieland Dietel, Jena, Germany, assignor to VEB Carl Zeiss Jena, Jena, Germany
Filed Apr. 13, 1965, Ser. No. 447,920
11 Claims. (Cl. 310—9.7)



1. A hollow body of electrostrictive material having two apertures and comprising at least one plate fast with the hollow body and closing one of said apertures, an electrically conductive layer on its exterior side, an electrically conductive layer on its interior side, each of said two layers extending over the circumference of said hollow body, at least one of said layers having a maximum and a minimum extension parallel to the stright line interconnecting the centers of said apertures.

3,355,604
CONTINUOUS ELECTRODES FOR MAGNETOHYDRODYNAMIC GENERATORS

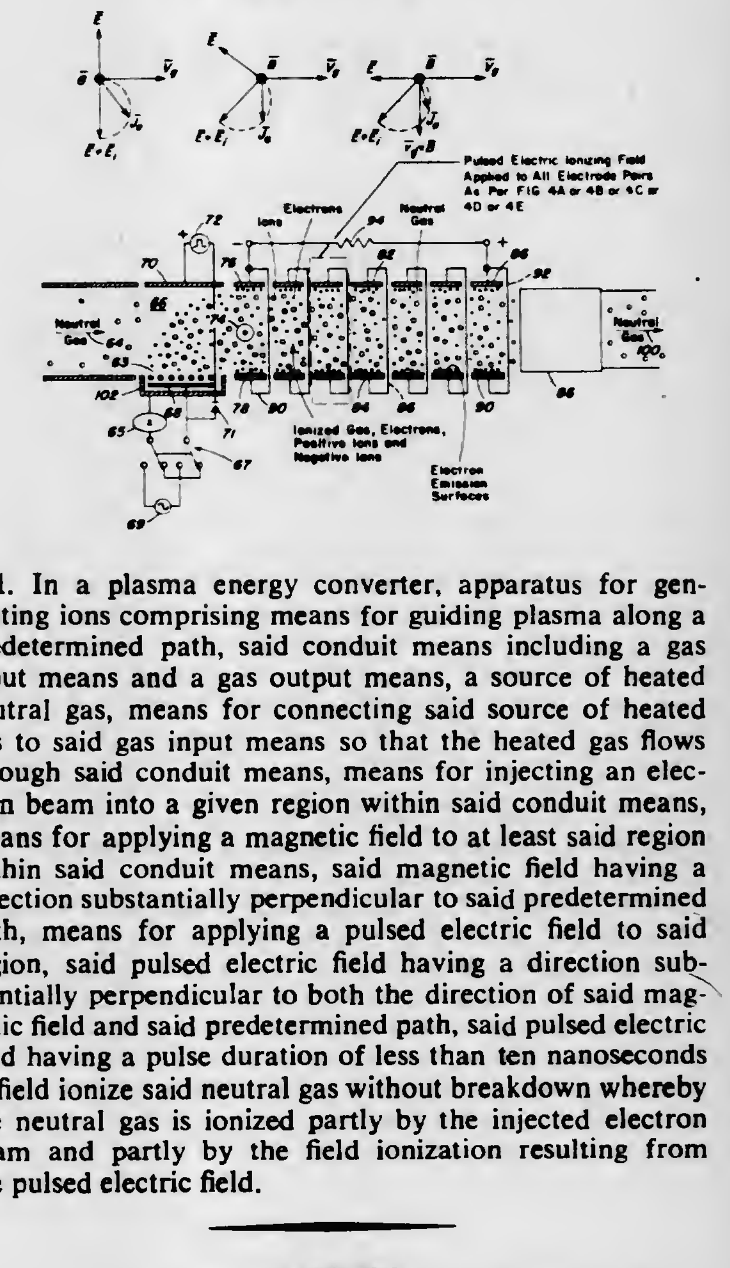
Georges Klein, Paris, and André Dubois, Orsay, France, assignors to Compagnie Generale d'Electricite, Paris, France
Filed May 16, 1963, Ser. No. 280,808
Claims priority, application France, May 18, 1962, 898,041
7 Claims. (Cl. 310—11)



1. In a magnetohydrodynamic generator having a combustion chamber and a continuous electrode element comprising a casing operative to receive an electrode composition composed of graphite and an oil binding and lubricating agent, said electrode composition being introduced into said casing as said electrode element is consumed, the improvement essentially consisting of, means to regulate the introduction of said electrode composition into said casing such that as said electrode is consumed the position of the consumed portion is fixed relative to the entrance of the magnetohydrodynamic combustion chamber, said means also serving to insulate said electrode composition from said casing, and means to detect and monitor the position of the consumable portion of said electrode composition in the magnetohydrodynamic chamber by measuring the electrical resistance of said electrode composition.

3,355,605
CROSSED FIELD PLASMA DEVICE

Ernest C. Okress, Elizabeth, N.J., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 23, 1963, Ser. No. 310,608
18 Claims. (Cl. 310—11)

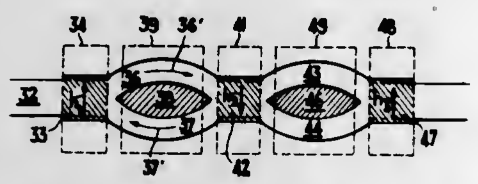

E
B
Vg
J0
E+Ei
Pulsed Electric Ionizing Field Applied to All Electrode Pairs As Per FIG 4A or 4B or 4C or 4D or 4E
Electrons
Ions
Neutral Gas
Neutral Gas
Ionized Gas, Electrons, Positive Ions and Negative Ions
Electron Emission Surfaces
70
72
76
78
80
82
84
86
90
92
94
96
100
102

1. In a plasma energy converter, apparatus for generating ions comprising means for guiding plasma along a predetermined path, said conduit means including a gas input means and a gas output means, a source of heated neutral gas, means for connecting said source of heated gas to said gas input means so that the heated gas flows through said conduit means, means for injecting an electron beam into a given region within said conduit means, means for applying a magnetic field to at least said region within said conduit means, said magnetic field having a direction substantially perpendicular to said predetermined path, means for applying a pulsed electric field to said region, said pulsed electric field having a direction substantially perpendicular to both the direction of said magnetic field and said predetermined path, said pulsed electric field having a pulse duration of less than ten nanoseconds to field ionize said neutral gas without breakdown whereby the neutral gas is ionized partly by the injected electron beam and partly by the field ionization resulting from the pulsed electric field.

3,355,606
MAGNETO-HYDRODYNAMIC GENERATOR

Pierre Lerond, Epinay-sur-Orge, France, assignor to Commissariat à l'Energie Atomique, Paris, France
Filed Feb. 3, 1964, Ser. No. 341,936
Claims priority, application France, Feb. 14, 1963, 924,818
1 Claim. (Cl. 310—11)

A magneto-hydrodynamic generator employing a high temperature highly conductive fluid passing through a magnetic circuit and subjected to an alternating energising magnetic field, comprising at least two successive conduits in which said fluid circulates, poles for the same number of electro-magnets supplied with alternating current, said succesive conduits being located between said poles, the input currents of successive ones of said electro-magnets being of opposite phase; each of said conduits but the last of said conduits, dividing upon leaving the air gap of the respective one of said electro-magnets into two tubes, said two tubes passing on either side of a magnetic core and then recombining to form the following one of said conduits and power take off means connected to each of said cores.



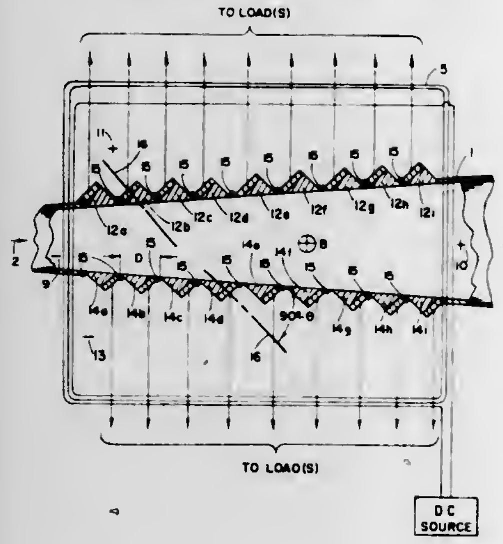
3,355,607

MEANS FOR AND METHOD OF PREVENTING FLOW OF HALL CURRENTS IN ELECTRICAL EQUIPMENT

Richard J. Rosa, Reading, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Aug. 27, 1964, Ser. No. 392,497

19 Claims. (Cl. 310—11)



1. In an MHD device having a duct for conveying an electrically-conductive gas through a magnetic field, the combination comprising:

(a) a plurality of oppositely disposed electrode means exposed to said gas, electrically insulated from and carried by said duct, said electrode means being substantially aligned substantially perpendicularly to the magnetic flux of said magnetic field and the direction of flow of said gas; and

(b) an output lead electrically coupled respectively to each said electrode means, each said electrode means comprising a plurality of resistive portions electrically coupled to a single one of said output leads and having different values of resistance, the resistance of said portions varying substantially progressively to provide at each said electrode means a substantially uniform current flow pattern between said oppositely disposed electrodes and said gas.

3,355,608

MAGNETOHYDRODYNAMIC GENERATOR

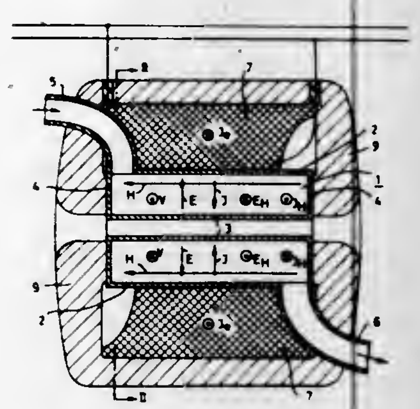
Rudolf Gebel, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed July 31, 1964, Ser. No. 386,652

Claims priority, application Germany, Aug. 2, 1963, S 86,509

6 Claims. (Cl. 310—11)

1. A magnetohydrodynamic generator, comprising a flow channel for the passage of ionized gaseous medium on a helical path, a magnet winding mounted in coaxial relation to said channel for producing therein a magnetic field in the axial direction of the flow path, electrodes spaced from each other transversely of said path along said channel and being conductively connected with each other, and an alternating-current supply line connected to said winding.



3,355,609

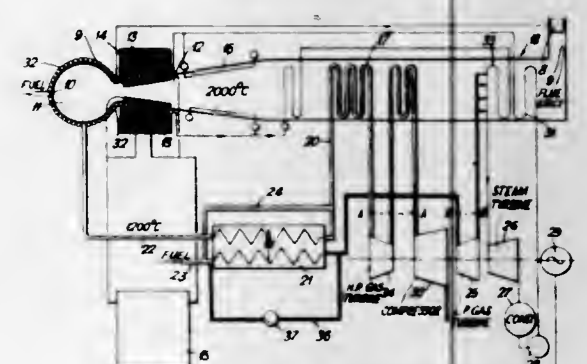
MAGNETOHYDRODYNAMIC ELECTRICAL GENERATORS

George Horn, Milford-on-Sea, and Boguslaw Chojnowski, Romsey, England, assignors to Central Electricity Generating Board, London, England, a British body corporate

Filed Apr. 19, 1965, Ser. No. 449,016

Claims priority, application Great Britain, Apr. 28, 1964, 17,609/64

7 Claims. (Cl. 310—11)



1. In a magnetohydrodynamic electrical generator operating on an open cycle with fuel burnt in combustion air to provide combustion gases which are passed through a magnetohydrodynamic duct; the combination of a compressor for compressing air, a first stage pre-heater comprising a heat exchanger in the outlet from said magnetohydrodynamic duct arranged to heat said compressed air and an independently fired pre-heater for further preheating the air from said first stage pre-heater to provide said combustion air, said independently fired pre-heater comprising means for burning fuel in part of the air taken from said compressor to heat the remaining part of the air so that the pressure on the combustion side and of the air to be heated in said independently fired pre-heater are substantially equal.

3,355,610

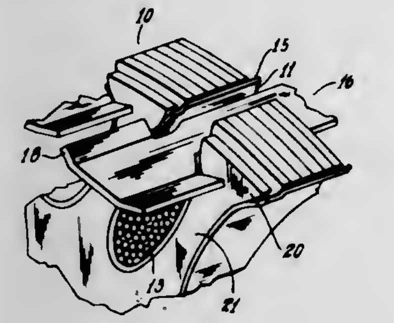
SLOT WEDGE FOR ROTATABLE ELECTRICAL DEVICES

Jack W. Staff, Elyria, Ohio, assignor, by mesne assignments, to The G. I. Company, Elyria, Ohio, a corporation of Ohio

Filed Aug. 29, 1963, Ser. No. 305,470

4 Claims. (Cl. 310—214)

1. A slot wedge for use in a winding slot in a dynamoelectric rotatable member, said slot wedge adapted to be arranged over a winding in said slot, said slot wedge consisting of a rectangular stick member having a pair of laterally extending wing portions adapted to project beyond said slot, each said wing portion being provided with a notch therein, an end insulator member having a plurality of teeth extending radially and outwardly thereof, said end insulator member being positioned flush with an end of said rotatable member, the notches in said slot wedge wing portions receiving teeth of said end insulator member, locking the wedge in said slot.



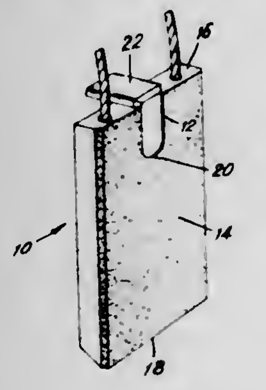
3,355,611

BRUSH CLIP ASSEMBLY

Herbert H. Meyer, Bay Village, Ohio, and Archie R. Kingsbury, Keystone, S. Dak., assignors to Union Carbide Corporation, a corporation of New York

Filed June 11, 1965, Ser. No. 463,275

8 Claims. (Cl. 310—248)



1. A brush clip assembly comprising at least one brush, said brush having a contact surface, a top surface opposite said contact surface, and a side surface between said contact surface and said top surface, said brush having a groove with an opening at said top surface and extending solely along said side surface; and a nonmetallic clip having a coefficient of thermal expansion greater than that of said brush residing in said groove, said clip being so formed such that one segment thereof is inserted into and extends along said groove, and one segment thereof extends across said top surface, said groove and said clip being structured such that said clip is interlockingly secured to said brush.

3,355,612

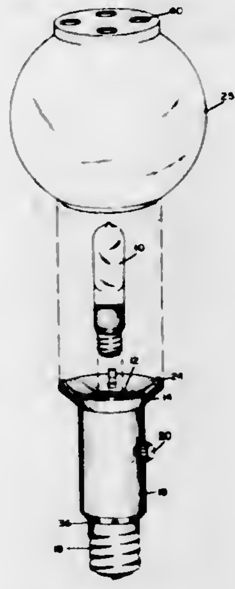
INCANDESCENT LAMP

Sandford C. Peek, Jr., Ipswich, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed July 13, 1965, Ser. No. 471,608

2 Claims. (Cl. 313—35)

1. An incandescent dimming lamp assembly comprising: a high intensity light source including a substantially tubular envelope having a base on one end only; a dimming control apparatus; and a hollow cannister having a socket at one end and a base at the other end thereof, and provided with air circulation ports, said dimming control apparatus located within said hollow cannister and said socket being adapted to receive said base on said envelope and said base of said cannister being adapted to be received by a conventional receptacle, whereby operation of said dimming control will vary the light level of said high intensity lamp; said circulation ports in said cannister providing heat dissipating means to protect said dimming apparatus located in said cannister.



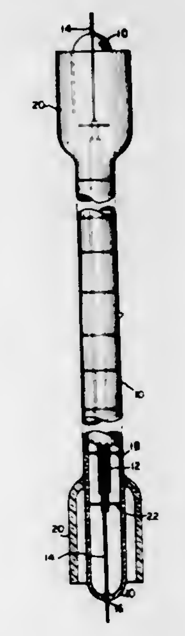
3,355,613

HIGH ENERGY TUBULAR INCANDESCENT LAMP HAVING HEAT DISSIPATIVE SLEEVES

David R. Dayton, Beverly, and Paul E. Gates, Danvers, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Aug. 4, 1965, Ser. No. 477,155

5 Claims. (Cl. 313—40)

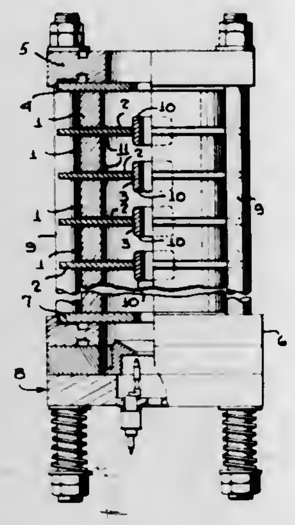


1. A tubular incandescent lamp comprising, a sealed gas-filled tubular envelope of vitreous material, a lead-in wire extending through each end of said envelope and in sealing engagement therewith, a coiled filament extending substantially coaxially within said envelope and connected at each end to respective lead-in wires, and external collars of vitreous material each fused at one end to said envelope near respective ends of said filament, surrounding said envelope but spaced therefrom and extending toward respective ends of said envelope.

3,355,614
HIGH VOLTAGE BEAM TUBE HAVING SPARK INHIBITING CONTACTING SURFACES

Richard L. Geiger, Summit, N.J., and Marshall R. Cleland, Huntington Station, N.Y., assignors to Radiation Dynamics, Inc., Westbury, N.Y., a corporation of New York

Filed Oct. 4, 1963, Ser. No. 313,868
7 Claims. (Cl. 313—63)

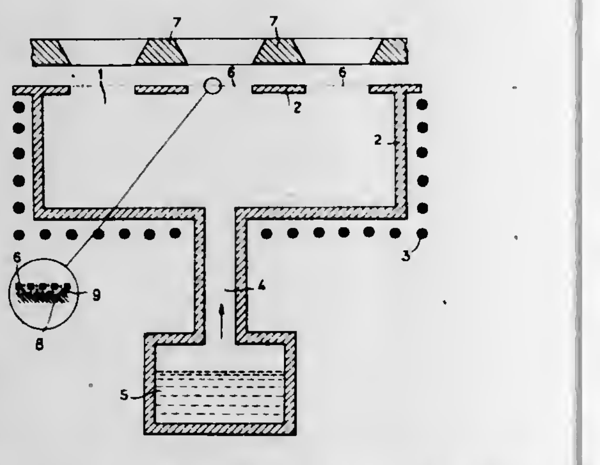


1. A high-voltage tube structure for accelerating ion and electron beams comprising a plurality of centrally apertured, thin, metallic discs, a plurality of hollow glass cylinders having annular end surfaces, said discs and cylinders being arranged in interleaved and abutting relationship along a common axis to provide a columnar structure, a conductive coating disposed on the end surfaces of each of said cylinders, and a bonding agent for sealing said metal discs to said conductive coatings.

3,355,615
ION SOURCE HAVING CRITICALLY DIMENSIONED EXTRACTION MEANS

Raymond Le Bihan and Daniel Maugis, both of 79 Blvd. Haussmann, Paris VIIIe, France

Filed Apr. 13, 1965, Ser. No. 447,792
Claims priority, application France, Apr. 27, 1964, 972,401
4 Claims. (Cl. 313—63)



3. An ion source including an enclosure, means for producing a plasma in said enclosure by ionization of a gaseous substance, and means for extracting the ions from said enclosure, said extracting means including at least one grid provided with extraction holes having a width at most equal, in meters, to 2R where

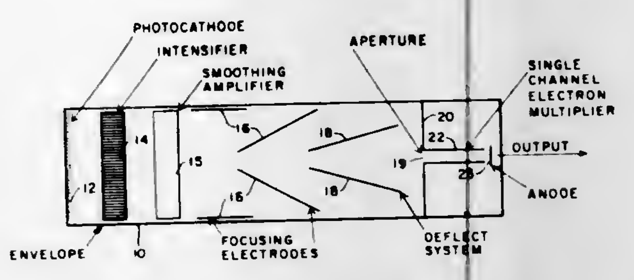
$$R=195\left(\frac{T}{n_p}\right)^{1/2}$$

T being the temperature in degrees Kelvin of the enclosure, and n_p the number of ions or electrons per m.^{3} of the plasma.

3,355,616
SCANNING TYPE IMAGE TRANSDUCER TELEVISION TUBE

Klaus J. Hecker, Oberursel, Germany, and Marvin P. Nordseth, Corona, and Horace M. Joseph, Riverside, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed June 2, 1965, Ser. No. 460,606
4 Claims. (Cl. 313—65)

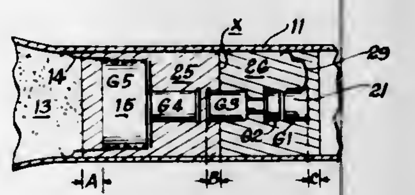


1. A low-light-level scanned imaging tube for converting a two-dimensional image into a time varying electrical signal by scanning a succession of individual image elements, comprising:
- (a) a tube housing having transparent input and electrical readouts,
- (b) a photocathode means mounted at the input end of said tube, said photocathode emitting electrons from each small element of area thereof in proportion to the number of photons impinging upon the area,
- (c) an image intensifier means positioned following said photocathode means for multiplying the number of electrons emitted from the photocathode means,
- (d) a smoothing amplifier means for continuous reception, storage and smoothing of groups of impinging electrons from said image intensifier means and which provides diminishing storage that continuously emits electrons over a period of time without dependence upon external cycling voltages,
- (e) readout means,
- (f) focusing means for focusing electrons emitted from said smoothing amplifier and projecting them upon said readout means,
- (g) deflection means for moving the focused electron image across said readout means for sampling various portions thereof,
- (h) an output anode to which is fed electron energy from the readout means for being applied to an output video circuit.

3,355,617
REDUCTION OF ARCING BETWEEN ELECTRODES IN A CATHODE RAY TUBE BY CONDUCTING COATING OF RESISTANCE MATERIAL ON INNER WALL OF TUBE NECK

James W. Schwartz, Western Springs, and Bertrand W. Squier, Hinsdale, Ill., assignors, by mesne assignments, to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed July 30, 1964, Ser. No. 386,228
5 Claims. (Cl. 313—82)

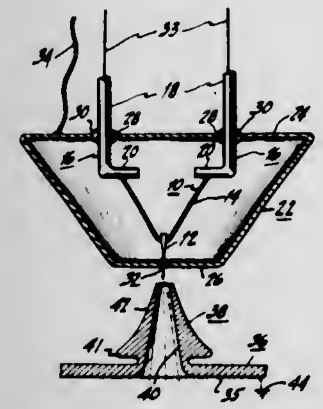


1. In combination with an evacuated tube including an envelope having a neck portion and an electron gun positioned in the neck portion to provide a beam of electrons for impingement on a target forming part of the tube, the gun comprising a plurality of electrodes, one of which operates at some lower potential, the neck portion including an interior surface portion adjacent the electrodes, the spacing between the electrodes and the surface portion and at least one of the potentials both being such that incipient arc discharge between a first point of one electrode and a second point of another electrode may occur, the improvement comprising means to neutralize arcing including: an electrically conductive film having a relatively high resistance applied to the surface portion of the neck substantially adjacent the electrode of higher potential, a conductive coating having a resistance lower than said film, said coating applied to the surface portion of the neck substantially adjacent the electrode of lower potential, said film and said coating contacting each other and being substantially coextensive with the electron gun, said film being electrically connected to the higher potential electrode and said coating being electrically connected to the lower potential electrode, whereby the voltage drop between said film and coating and the electron gun is essentially zero.

3,355,618
ELECTRON GUN FOR USE IN A CATHODE RAY TUBE EXHIBITING ENHANCED ELECTRON EMISSION

John W. Coleman, Willingboro, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,573
8 Claims. (Cl. 313—85)



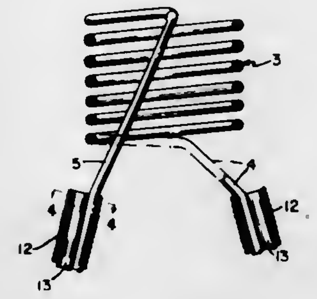
1. An arrangement for increasing the electron emission from a thermionic electron source while maintaining the beam shape of the electrons produced by said source comprising:
- an electron emissive cathode means of pin shape and having an axis for providing an electron beam,
- an anode having a generally conically shaped boss portion having an axis, there being a hole through said boss portion to provide a passage for electrons from said cathode, the axis of said cathode means and of said boss portions being coincident,
- a portion of the exterior of said boss portion being shaped to cause the maximum voltage gradient between said cathode and said anode, when energized, to be along said axis, and also to provide a lens action to collimate said beam.

3,355,619
INCANDESCENT LAMP

Robert F. Reed, Sr., Salem, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Sept. 11, 1964, Ser. No. 395,850
8 Claims. (Cl. 313—272)

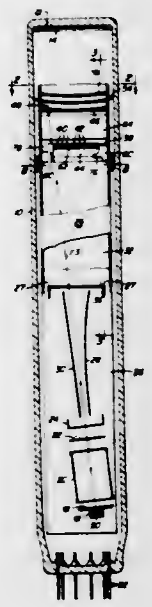
1. An incandescent lamp comprising: a quartz envelope; a single wire tungsten filament disposed within said envelope; said filament having a coiled body and substantially straight legs; at least one support leg disposed alongside of said filament legs; a minor coil wrapped about said support leg and said filament leg to tie the two together; a fill including iodine.



3,355,620
PULSE COUNTER TUBE EMPLOYING VOLTAGE FEEDBACK FROM TARGET TO BEAM DEFLECTION ELECTRODES ISOLATED FROM ANY D.C. REFERENCE VOLTAGE

Richard Lincoln Ropiequet, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Dec. 2, 1963, Ser. No. 327,460
9 Claims. (Cl. 315—8.5)



1. An electron discharge device, comprising:
- a target electrode having a plurality of openings therein;
- means for producing an electron beam and for bombarding said target electrode with said electron beam to emit secondary electrons from such target electrode;
- a pair of deflection means positioned on the opposite sides of said electron beam for deflecting said electron beam along said target electrode from one to another of said openings;
- a collector electrode mounted in position adjacent said target electrode to collect the secondary electrons emitted by said target electrode to cause said target electrode to be driven to a more positive voltage by said electron beam;
- feedback means connected between said target electrode and one of said deflection means for transmitting a feedback signal from said target electrode to said one deflection means; and

means for effectively isolating said target electrode and said one deflection means from any external source of D.C. referencce potential so that the emission of secondary electrons from said target electrode causes the potential of said target electrode to change to a more positive voltage and causes said one deflection means to deflect said beam in a direction tending to move said beam off said target electrode.

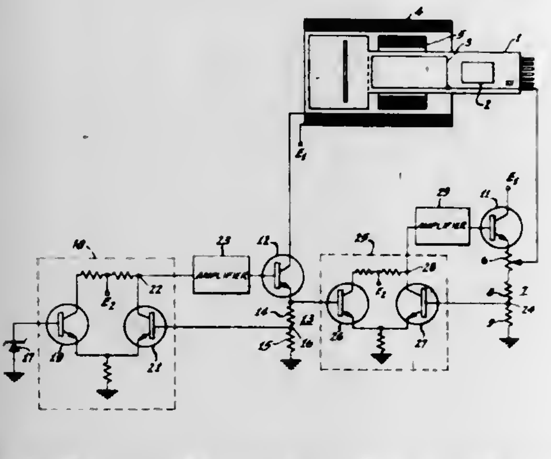
3,355,621

SYSTEM FOR REGULATING FOCUS CURRENT AND VOLTAGE IN A TELEVISION CAMERA

William J. Cosgrove, Linwood, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 19, 1965, Ser. No. 441,186

7 Claims. (Cl. 315—31)



1. A system for regulating current in one circuit and voltage in a related circuit, comprising:

means including a current regulating device for supplying current to said one circuit;

means coupled to said current regulating device to produce a first sample voltage representative of the current supplied to said one circuit;

means responsive to said first sample voltage and to a fixed reference voltage to produce a first error signal representative of any difference between said first sample and said reference voltages;

means responsive to said first error signal to so control said current regulating device as to maintain the current in said one circuit and said first sample voltage substantially constant;

means including a voltage regulating device for supplying voltage to said related circuit;

means coupled to said voltage regulating device to produce a second sample voltage representative of the voltage supplied to said related circuit;

means responsive to said second sample voltage and to a voltage representative of the current supplied to said one circuit to produce a second error signal representative of any difference between said second sample and said current representative voltages; and

means responsive to said second error signal to so control said voltage regulating device as to maintain the voltage in said related circuit substantially constant and in fixed relation to the current in said one circuit.

3,355,622

ELECTRON BEAM FOCUSING APPARATUS

Charles E. Bradford, Wyomissing, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 5, 1964, Ser. No. 387,646

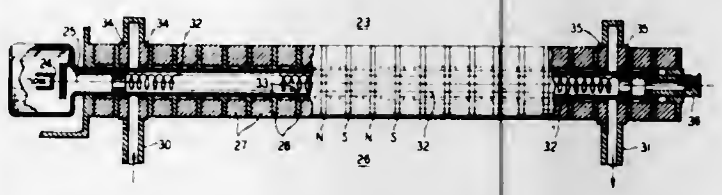
9 Claims. (Cl. 315—3.5)

1. An electron beam focusing device comprising:

means including an array of permanent magnets for producing a spatially periodic magnetic focusing field along a central axis;

a discontinuity within the array of magnets; and

means for maintaining a substantially uniform periodic magnetic intensity along the central axis despite the discontinuity comprising an array of pole pieces each being located between successive magnets of the array and each having a hub portion parallel with the central axis;



a constant predetermined axial separation between successive hub portions;

each hub portion and each pole piece having a center plane that is perpendicular to the central axis;

the center plane of each hub portion being displaced from the center plane of its associated pole piece in the direction of the discontinuity.

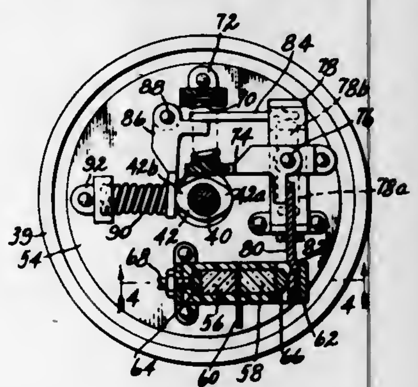
3,355,623

PIEZOELECTRIC IGNITION APPARATUS

Richard L. Konopa, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 13, 1964. Ser. No. 337,276

2 Claims. (Cl. 315—55)



1. An ignition system for an internal combustion engine comprising, a plurality of spark plugs for said engine, first and second piezoelectric elements, a rotatable shaft, means driven by said internal combustion engine to rotate said rotatable shaft, first and second spring means for respectively applying a compressive stress to said piezoelectric elements, cam means driven by said rotatable shaft for sequentially compressing said spring means and unstressing said piezoelectric elements, a rotor driven by said rotatable shaft and first and second electrical conductor means carried by said rotor, one of said conductor means being operative to connect one of said piezoelectric elements with one of said spark plugs when said piezoelectric element is being stressed, the other of said conductor means being operative to simultaneously connect the other of said piezoelectric elements to ground whereby said other of said piezoelectric elements is electrically discharged.

3,355,624

TRANSISTOR HEADLAMP BEAM CONTROL

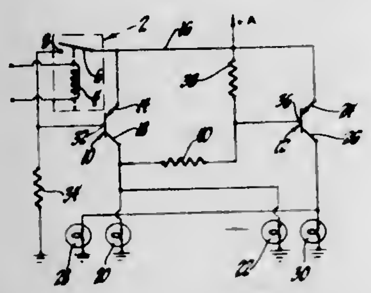
James H. Guyton and Richard L. Jenkins, Kokomo, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 4, 1965, Ser. No. 461,272

6 Claims. (Cl. 315—83)

1. In circuit control means, first and second sets of light filaments producing different amounts of illumination, which sets it is desired to energize alternately, a source

of electrical power, first and second transistors each having a pair of output electrodes and a control electrode, the output electrodes of the first and second transistors being connected between the source of electrical power and the first and second sets, respectively, to control the flow of current thereto, biasing means interconnecting the source of electrical power and the control electrodes of the transistors so that the latter will be alternately conductive and the sets connected thereto alternately energized, and switching means connected to the biasing means to change the latter so that the conducting transistor will become non-conducting upon operation thereof and the non-conducting transistor conducting to alternately energize the sets.



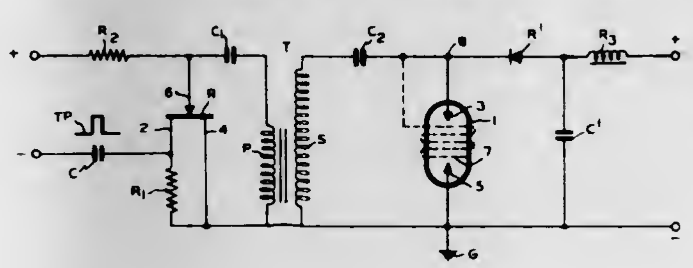
3,355,625

RECURRENT PULSING SYSTEM WITH SEMICONDUCTOR JUNCTION RECTIFIER IN CAPACITOR DISCHARGE PATH

William A. Ward, Norwood, Mass., assignor to United States Scientific Instruments, Inc., Watertown, Mass., a corporation of Massachusetts

Continuation of application Ser. No. 343,735, Feb. 10, 1964. This application May 17, 1966, Ser. No. 550,871

4 Claims. (Cl. 315—200)



1. In a high current stroboscopic system and the like, the combination which comprises a normally non-conductive load of blocking impedance including a pair of terminals, said load having impedance break-down means between said terminals adapted to pass a peak current of at least substantially 1000 amperes upon the application of a predetermined voltage across said terminals for rendering said load conductive and reducing the impedance thereof to a low value, means connected between said terminals including voltage-storage and current-supplying means for providing a first voltage less than said predetermined voltage and for supplying to said load a pulse of current each time said load becomes conductive, means for recurrently applying between said terminals, at a stroboscopic repetition rate, a second voltage of a value at least equal to said predetermined voltage for rendering said load conductive recurrently to pass said pulses at said rate, the first-voltage-providing means having means including a PN junction semiconductor rectifier connecting said voltage-storage and current-supplying means substantially directly across said terminals for passing said pulses of current through the PN junction thereof to said load recurrently at said rate, said rectifier being poled to isolate the first and second voltages when the second voltage is applied to said load, said current-supplying means having means for supplying said pulses with a value of the order of 1000 amperes for up to 10 microseconds duration and at least four times the peak current rating of said PN junction rectifier, and said PN junction rectifier having means for producing substantially reduced effective resistance to said pulses and readily passing said pulses recurrently at said rate through the PN junction thereof to said load.

3,355,626

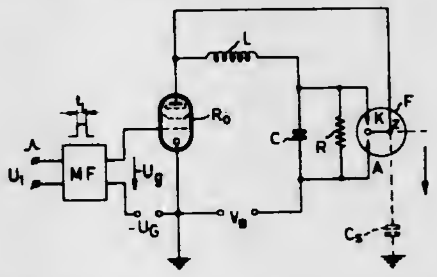
CIRCUIT ARRANGEMENT FOR THE TRIGGERED DISCHARGE OF A CAPACITOR

Seigfried Schmidt, Hamburg, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 1, 1965, Ser. No. 444,521

Claims priority, application Germany, Apr. 11, 1964, P 34,032

5 Claims. (Cl. 315—241)



1. A circuit arrangement for the triggered discharge of a capacitor through a gaseous discharge device, said device including first and second main electrodes, and an ignition electrode, said capacitor being connected across said first and second electrodes, comprising, switching means, a choke coil series connected with said switching means, said coil and said switching means connected in parallel with said capacitor, means coupling said ignition electrode to said choke coil, said switching means including means for charging said capacitor, and means for interrupting the flow of charge current to said capacitor a short period of time before said capacitor reaches its maximum charge.

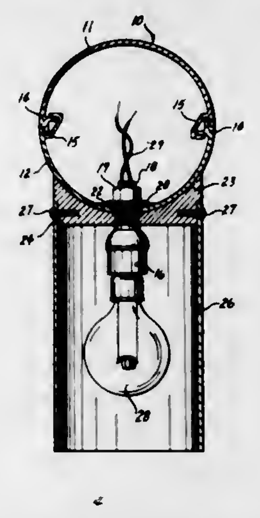
3,355,627

SEQUENTIALLY ENERGIZED ELECTRIC SIGN APPARATUS

Clyde H. Clement, Phoenix, Ariz., assignor of one-half to Lester E. Kron, Phoenix, Ariz.

Filed July 6, 1965, Ser. No. 469,463

1 Claim. (Cl. 315—323)

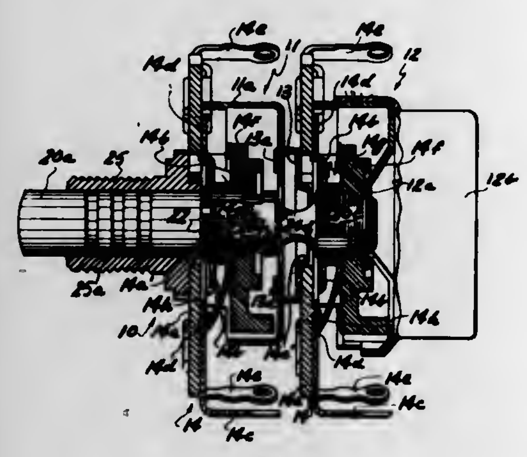


A sequentially energized electric sign apparatus comprising

(a) a support tube comprising a pair of elongated extrusions having semi-circular cross sections, said

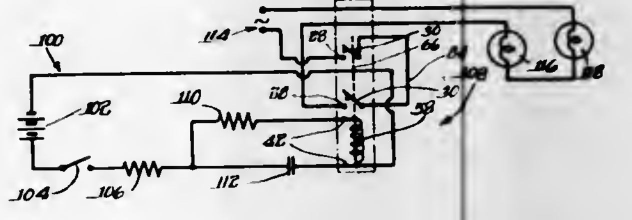
extrusions having male and female locking members longitudinally disposed thereon, said male and female locking members being slidingly secured in locking engagement to form said support tube;
(b) a plurality of apertures disposed along one of said mating sections;
(c) a plurality of blocks, each of said blocks defining a bore and having a concave surface to fit said support tube, said bores in said blocks in registry with said apertures in said support tube, each said block having a substantially circular cross section when viewed along the axis of its bore, each said block having a reduced diameter portion at its outward end;
(d) a plurality of electric light bulb sockets, each said socket having a threaded butt portion extending through the bore in a block and an aperture in said support tube;
(e) securing means threadedly engaging said butt portion of said socket members to secure said blocks and socket members to said support tube;
(f) a plurality of non-opaque hood members in the form of open-ended cylinders engaging over and secured to the reduced diameter portion of said blocks;
(g) a sequencer secured to said support tube, said sequencer comprising motor-driven, cam-actuated, circuit opening and closing means; and
(h) electric wires communicating between said sequencer and said electric socket members and between a source of electric power and said sequencer, whereby light bulbs held by electric socket members are energized and de-energized in accordance with a predetermined sequence.

3,355,628
MULTIPLE CONTROL SYSTEM AND METHOD OF MANUFACTURE THEREOF
Edward George Tronca, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed Aug. 26, 1965, Ser. No. 482,859
11 Claims. (Cl. 317—99)



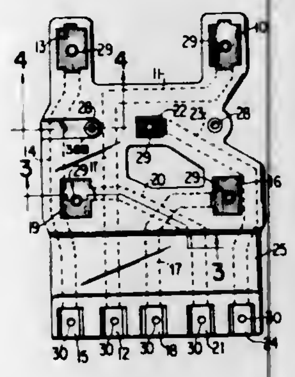
3. In a multiple control system, the combination which comprises a pair of electrical control devices mounted in tandem and having rotatable control elements, the control devices having aligned apertures extending therethrough which define keyed apertures in the control elements, and a shaft extending through the apertures which is formed with a pair of control portions for controllably engaging the control elements so that the control elements are rotated concurrently with the shaft, said shaft including a portion between said control portions which is yieldable in torsion, means for angularly adjusting one portion of the shaft with respect to another portion, including portions at which said shaft may be engaged to enable said control portions to be rotated to permanently distor said yieldable portion.

3,355,629
ELECTROMAGNETIC SWITCH WITH NON-SNAP-ACTING CONTACTS
William W. Schapira, Skokie, Ill., assignor to Consolidated Electronics Industries Corp., Skokie, Ill., a corporation of Delaware
Filed June 15, 1965, Ser. No. 464,015
2 Claims. (Cl. 317—11)



1. In an electromagnetic switch arrangement, the combination comprising: support means; electromagnetic coil means fixed to said support means; magnetically attractable armature means connected to said support means for reversible movements relative thereto; a sationary contact mounted on said support means in fixed position; a movable contact mounted on said armature means for engaging and separating movements with respect to said stationary contact; spring means acting between said support means and said armature means to provide a gradually changing mechanical resistance to the movement of said armature means relative to said electromagnetic coil means as the magnetic attractive force of said coil means and the gap between said armature means and said coil means are varied, the plot of the mechanical resistance of said spring means versus the armature gap being free of regions of substantially constant mechanical resistance; and energizing circuit means connected electrically to said coil means and arranged to deliver a gradually changing current thereto on energization thereof.

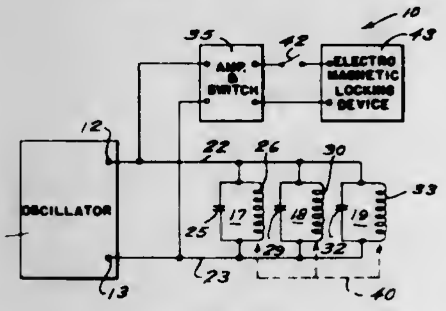
3,355,630
METER STRUCTURE WITH IMBEDDED BUS BARS AND JAW MOUNTING STRUCTURE
Harley J. Orr, Bedford, N.H., assignor to Basic Products Corporation, Milwaukee. Wis., a corporation of Wisconsin
Filed Sept. 30, 1965, Ser. No. 491,695
4 Claims. (Cl. 317—104)



1. In a meter box, a housing having a back plate surrounded by a wall; parallel spaced walls extending outwardly from the wall surrounding the back plate and forming an auxiliary housing, there being a communicating passage in the wall surrounding said back plate leading to said auxiliary housing; a plurality of electrically separated bus bars each having a raised portion at one end providing jaw mounting platforms and a neutral platform and each having a terminal connector at its other end, said bus bars being encapsulated in a block of insulating material with the upper surfaces of said platforms being exposed at an outer surface of said block and with said terminal connectors exposed at one end of said block;

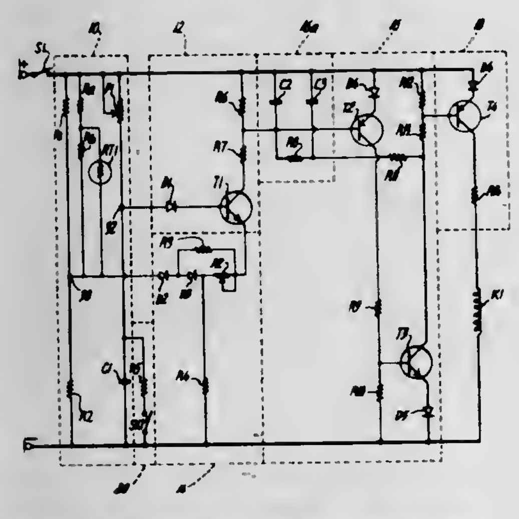
and means for connecting said block to said back plate, with said exposed terminal connectors extending through said passage and into said auxiliary housing.

3,355,631
REMOVABLE KEY ACTUATED CONTROL CIRCUIT
Carl H. Christiansen, Chicago, Ill., assignor of fifty percent to Raymond E. Dolac, Niles, Ill.
Filed May 6, 1964, Ser. No. 365,463
11 Claims. (Cl. 317—134)



11. An electronic locking system comprising:
oscillatory means having output terminals for developing a signal of predetermined frequency;
a plurality of circuits connected in parallel with said output terminals, each circuit including capacitor means and inductor means connected together to form resonance circuits at a frequency different than said predetermined frequency, said inductor means of each of said circuits being in a predetermined spaced relation with respect to each other inductor means;
a key having a plurality of slugs in predetermined spaced relation to be placed in proximity to said inductor means for effecting a change in their respective inductance;
and means coupled to said output terminals for energization by the oscillatory means when said key is in proximity to said inductor means.

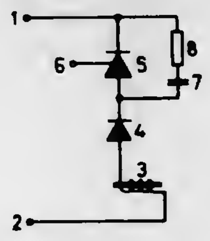
3,355,632
ELECTRONIC TIMER CIRCUIT
Klaus Wallentowitz, Torrington, Conn., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 21, 1964, Ser. No. 405,503
18 Claims. (Cl. 317—142)



3. An electronic timing circuit comprising:
means for providing a source voltage;
a bridge circuit including means connected to said source means to provide a reference voltage which is a predetermined fraction of said source voltage and a capacitive charging circuit connected to said source means to charge within a predetermined time to a predetermined fraction of said source voltage;
an output circuit including an electronic sensing device connected across said reference voltage, a latching means turning on in response to said electronic sensing device, and a relay connected to be operated by said latching means when the latter is turned on;
and a switch operated by said relay and arranged to discharge said capacitive charging circuit when and only when said relay is so operated;
said electronic sensing device turning off upon discharge of said capacitive charging circuit;
said latching means remaining on after turning off of said electronic sensing device to keep said relay operated;
said latching means comprising:
  first and second transistor switching stages;
  means for applying a signal to initially turn on said first stage;
  said second stage being connected to be driven on when said first stage is on;
  a path connected from the output of said second stage to the input of said first stage for the output of said second stage to cause the flow of additional emitter-base current in said first stage;
  said circuit being arranged so that said additional emitter-base current drives said first stage into self-sustaining operation.

17. A voltage crossing detector circuit, comprising:
a reference source providing a reference voltage with respect to a point of reference potential;
a signal source providing a signal voltage having a value which increases from a value lower than to a value greater than said reference voltage;
a transistor having base, emitter, and collector electrodes;
a collector impedance connected between said collector electrode and a power supply;
a semiconductor decoupling diode connecting said signal source to the base electrode of said transistor with the same polarity as the base-emitter junction thereof, said diode and said base-emitter junction having inherent threshold voltages;
a resistor connected between said emitter electrode and said point of reference potential; and
cancelling means connected between said reference source and said emitter electrode, said cancelling means producing a compensating voltage drop of the same polarity as and slightly greater than the sum of threshold voltages of said diode and said base-emitter junction, whereby said transistor conducts just before said signal voltage equals said reference voltage.

3,355,633
CONTROLLABLE SUPPLY CIRCUIT FOR ELECTROMAGNETIC VIBRATORS
Uwe Klix, Rottweil, Germany, assignor to Entwicklungsanstalt für Industrie-Elektronik, a corporation of Liechtenstein
Filed Dec. 28, 1964, Ser. No. 421,521
Claims priority, application Switzerland, Jan. 8, 1964, 180/64
10 Claims. (Cl. 317—148.5)

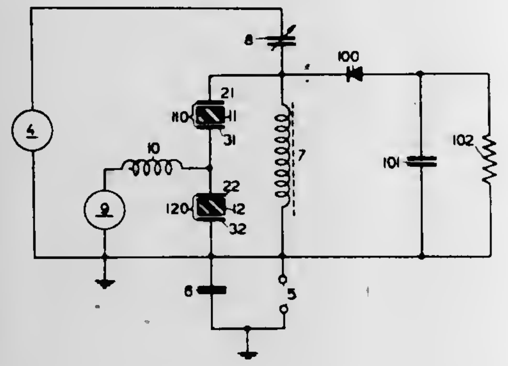


1. Controllable supply circuit for electromagnetic vibrators comprising a vibrator coil, a controlled semiconductor rectifier connected in series with said vibrator

coil, a current branch circuit including a capacitor connected in parallel with said controlled semiconductor rectifier, a semiconductor diode having the same conducting direction as said controlled semiconductor rectifier connected between the latter and said vibrator coil.

3,355,634
ELECTRIC CIRCUIT WITH A NON-LINEAR DIELECTRIC ELEMENT

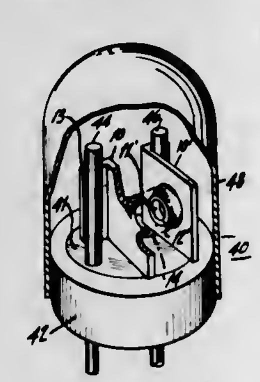
Antonín Glanc, Libochovice, Czechoslovakia, assignor to Ceskoslovenska akademie ved, Prague, Czechoslovakia, a corporation of Czechoslovakia
Filed Oct. 23, 1963, Ser. No. 318,302
Claims priority, application Czechoslovakia, Nov. 3, 1962, 6,228/62; Dec. 18, 1962, 7,115/62; Mar. 15, 1963, 1,473/63
3 Claims. (Cl. 317—231)



1. An electric circuit comprising at least one capacitor having a pair of electrodes and a ferroelectric dielectric, said dielectric made of a material including means for producing a characteristic non-linear ratio of decreasing permittivity with increasing temperature over a range above the Curie point of said material, a source of alternating heating current connected to said electrodes, said dielectric including means responsive to said heating current for maintaining said dielectric in an equilibrium state of dielectric losses with heat dissipation at a temperature autostabilized state, said dielectric having a region of maximum non-linearities of permittivity in a range of temperature above said Curie point, and means for adjustment of said heating current for maintaining said dielectric within said region.

3,355,635
SEMICONDUCTOR DEVICE ASSEMBLAGE HAVING TWO CONVEX TABS

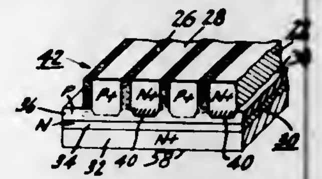
Philip C. Baumann, Findlay, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 28, 1964, Ser. No. 371,009
3 Claims. (Cl. 317—234)



1. A semiconductor device assemblage comprising:
two spaced cambered metallic tabs,
each said tab having a central perforation,
said tabs being spaced so that their convex sides face each other; and,
a semiconductive die having two opposing major faces positioned centrally between said convex sides of said tabs,
each said die face being larger in area than each said perforation but smaller in area than each said tab,
each said major die face being bonded to a different one of said tabs around the perimeters of said perforations, said semiconductive die being the only rigid connection between said two tabs.

3,355,636
HIGH POWER, HIGH FREQUENCY TRANSISTOR

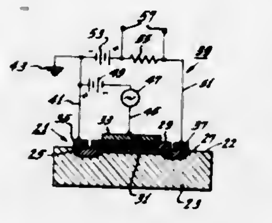
Hans Becke, Morristown, and Eric F. Cave, Somerville, N.J., and Daniel Stolnitz, New York, N.Y., assignors to Radio Corporation of America, a corporation of Delaware
Filed June 29, 1965, Ser. No. 467,885
8 Claims. (Cl. 317—234)

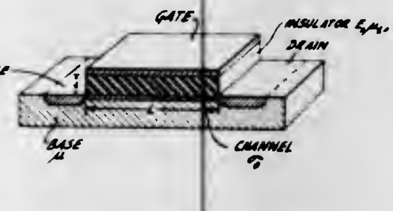


1. A semiconductor device comprising:
a body of semiconductor material which includes two layers of mutually opposite conductivity types, a surface of one of said layers being substantially planar and constituting a major surface of said body,
a region of conductivity type opposite to that of said one layer disposed at said surface and occupying only a limited portion thereof,
first electrode means comprising a first strip of highly conductive semiconductor material of the same conductivity type as that of said region fused to said surface only within said region and extending transversely to said surface, and
second electrode means comprising another strip of highly conductive semiconductor material of conductivity type opposite to that of said region, laminated to said first strip with an insulating material and fused to said surface only outside of said region.

3,355,637
INSULATED-GATE FIELD EFFECT TRIODE WITH AN INSULATOR HAVING THE SAME ATOMIC SPACING AS THE CHANNEL

Harwick Johnson, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 15, 1965, Ser. No. 448,506
5 Claims. (Cl. 317—235)

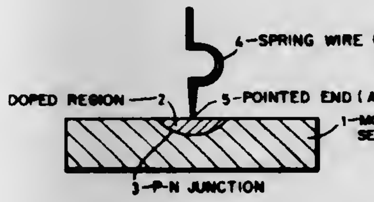




1. An insulated-gate field effect device comprising a single crystal body of bandgap material having a surface, a source and a drain in spaced positions along said surface and defining the ends of a current path in said body, and a gate spaced from said current path by an insulator, said insulator having a conductance less than 10^{-3} times that of said body material, an atomic spacing between 0.9 and 1.1 times that of said body material, and a bandgap of at least 1.1 electron volts and at least 0.6 electron volt greater than that of said body material.

3,355,638
POINT-CONTACT DIODE WITH Au-Pt POINT

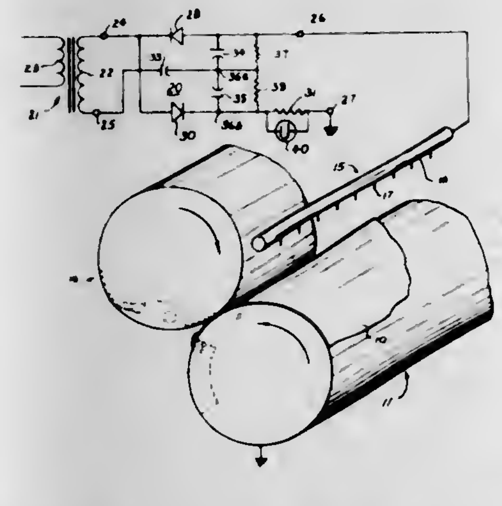
Arthur Gaudlitz, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Aug. 24, 1964, Ser. No. 391,425
Claims priority, application Germany, Aug. 28, 1963, S 86,953
4 Claims. (Cl. 317—236)



1. A point-contact diode comprising a monocrystalline body of semiconductor material, a spring wire having a pointed end contacting said body and joined therewith, said wire being of metal from the group consisting of molybdenum and tungsten and having at least on said pointed end a coating formed of a gold-platinum alloy containing 3 to 10% by weight of platinum, the remainder being substantially all of gold.

3,355,639
SHEET HANDLING APPARATUS

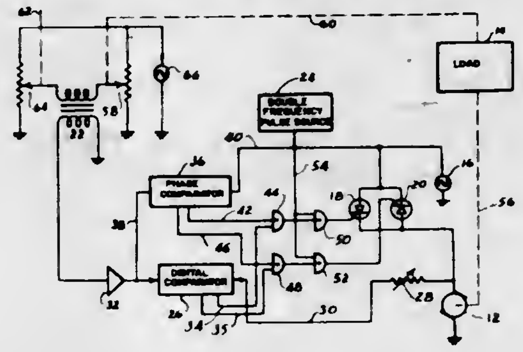
Michael H. Semenbuk, Lyndhurst, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Apr. 5, 1965, Ser. No. 445,608
3 Claims. (Cl. 317—262)



1. An apparatus of the character described comprising first and second conductive members which are to have a high voltage therebetween, and means for applying a direct current potential between said members comprising a source of alternating current having a pair of A.C. terminals, first and second condensers, first circuit means connecting one side of said first condenser to one of said A.C. terminals, second circuit means connecting one side of said second condenser and said one of said A.C. terminals, each of said circuit means comprising a rectifier with said rectifiers poled to conduct on different half-cycles of the voltage across said A.C. terminals, the other sides of said first and second condensers being connected to a common junction, a connection from the other of said A.C. terminals to said junction, and additional circuit means connecting said condensers in series across said first and second conductive members, said common connection having impedance means therein effectively limiting current to a safe value on a short-circuit between said members.

3,355,640
BI-DIRECTIONAL ELECTRICAL SERVO SYSTEM

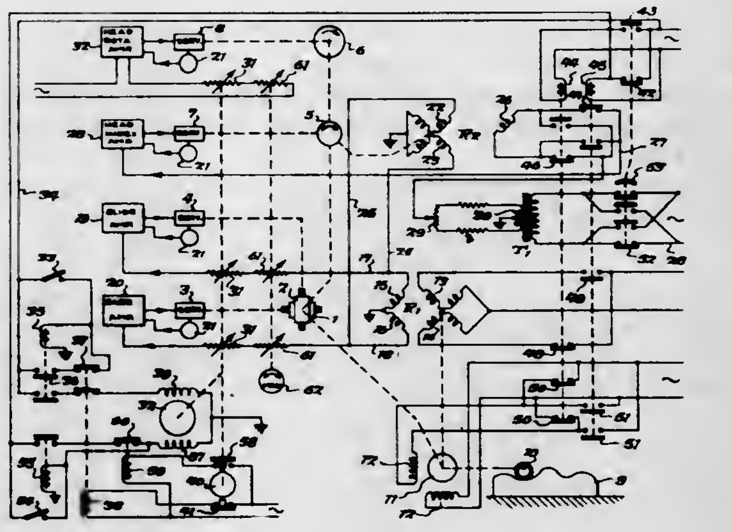
Clarence A. Lewis, Kinnelon, and James F. O'Brien, Sussex, N.J., assignors to Champlain Company, Inc., Roseland, N.J., a corporation of New York
Filed Jan. 16, 1964, Ser. No. 338,204
11 Claims. (Cl. 318—18)



1. A servo system comprising a DC servo motor to move a load, an AC power source connected through either of two oppositely polarized silicon controlled rectifiers to the armature of said motor, a synchronous pulse source having a frequency which is double that of the AC power source, means to supply an error signal, said motor armature being used to supply an output rate feedback, means to receive and to compare the error signal and the feedback, and means responsive to an excess of error signal over feedback to supply the double frequency pulse to the gate lead of one silicon controlled rectifier or the other in order to supply a train of substantially full width alternate and therefore unidirectional half waves which turns the motor in that direction which lessens the error signal.

3,355,641
MACHINE CONTROL SYSTEM INCLUDING MEANS COMPARING A SUPPORT POSITION ALONG ONE AXIS AND ABOUT ANOTHER AXIS

Robert H. Eisengrein, Skaneateles, and Francis O. Blackwell III, Seneca Falls, N.Y., assignors to Seneca Falls Machine Company, Seneca Falls, N.Y.
Filed June 12, 1964, Ser. No. 374,759
10 Claims. (Cl. 318—18)



1. A machine control system comprising a support movable along one axis and about another axis, means including first resolver means generating a signal corresponding to the displacement of said support from a desired position thereof along said one axis, second resolver means coupled to said support for positioning in accordance with the position of said support about said other axis, means comparing said first and second resolver

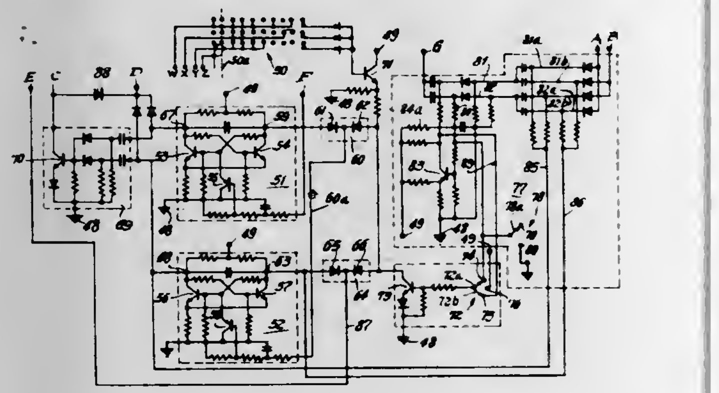
means and generating another signal corresponding to the displacement of said support from a desired position thereof about said other axis, and support drive means responsive to said signals.

3,355,642
PLURAL CHANNEL ELECTRIC PULSE SUPPLYING DEVICE

Albert C. Leenhouts, Granby, Conn., assignor to The Superior Electric Company, Hartford, Conn., a corporation of Connecticut

Filed June 26, 1964, Ser. No. 378,109

12 Claims. (Cl. 318—28)



1. An electric pulse supplying device having two independent output channels on which electrical pulses may appear comprising a first output channel means, a second output channel means, oscillating means for producing electrical pulses, means interconnecting the oscillating means with said output channel means, settable means for selecting a desired number of pulses to be produced on one channel means and producing a signal indicative of the completion of production of the desired number of pulses, second means connected to receive the signal and operative to produce a determined number of pulses on the other channel means, said second means producing a second signal indicative of the completion of production of the determined number of pulses and third means receiving said second signal and operative to prevent further pulses from appearing on either channel means.

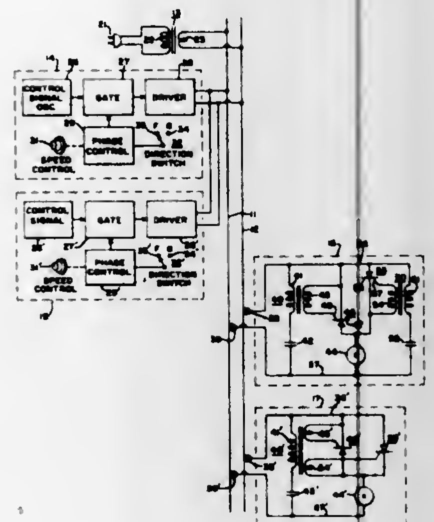
3,355,643
PLURAL REMOTE CONTROLLERS FOR PLURAL MOTORS USING A COMMON POWER CONNECTION

Kenneth L. Benson, Decatur, Ill., assignor to General Electric Company, a corporation of New York

Filed Jan. 28, 1964, Ser. No. 340,673

2 Claims. (Cl. 318—55)

1. A motor control system for use in a system having electrical distribution means for applying alternating current of given frequency to at least one electric motor operable on unidirectional current, said motor control system comprising transmitter means adapted to produce repetitive control pulses of alternative voltage at a selected frequency greater than said given frequency and occurring during at least a portion of alternate half-cycles of said alternating current, means to vary the phase of the occurrence of said control pulses within said alternate half-cycles of alternating current to vary the speed of rotation of said motor, means for shifting the occurrence of the control pulses from times during one set of alternate half-cycles of the power current of times during the other set of alternate half-cycles to control the direction of rotation of said motor, means to apply said repetitive control pulses to said electrical distribution means, and receiver means comprising a pair of electrically controlled rectifier devices connected in parallel with unlike current terminals connected together and each having a control electrode, said pair of rectifier devices being connected to selectively apply said alternating current to said motor, and filter means responsive to said selected frequency of the alternating voltage of the control pulses and connected to each of said control electrodes to cause periodic actuation of said electrically controlled rectifier means only in response to control pulses having said selected frequency of alternating voltage, thereby to apply unidirectional current to said motor from said alternating current, whereby said means in the transmitter to vary the phase of the control pulses will selectively control said motor.



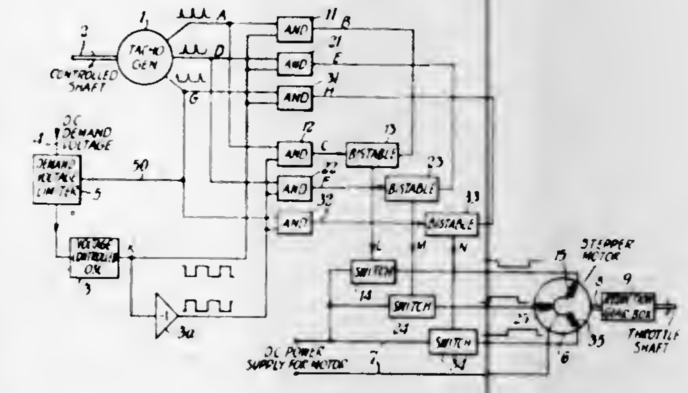
3,355,644
FREQUENCY COMPARISON DEVICES INCLUDED IN STEP MOTOR CONTROL CIRCUITRY

Geoffrey W. Goslin, Knebworth, and Charles T. Marwood, Welwyn Garden City, England, assignors to The De Havilland Aircraft Company Limited, Hatfield, England, a company of Great Britain

Filed Nov. 12, 1963, Ser. No. 322,921

Claims priority, application Great Britain Nov. 12, 1962, 42,657/62

11 Claims. (Cl. 318—138)



1. In a control system, means for generating at least one first repetitive electric signal of which the frequency represents the magnitude of a first quantity associated with the system, means for generating at least one second repetitive electric signal of which the frequency represents the magnitude of a second quantity associated with the system, frequency comparison means supplied with said first and second repetitive electric signals and arranged in response to generate an error signal which represents the difference between the magnitudes of said first and second quantities, said error signal comprising a set of at least two further repetitive electric signals of which the frequency is a function of the magnitude of, and of which the mutual relative phase-displacement represents the

sense of, the difference between the frequencies of said first and second repetitive electric signals, and an electric motor of the synchronous type arranged to be driven by said further repetitive electric signals, whereby the position of the rotor of said electric motor is a function of the integral, with respect to time, of the difference between the magnitudes of said first and second quantities.

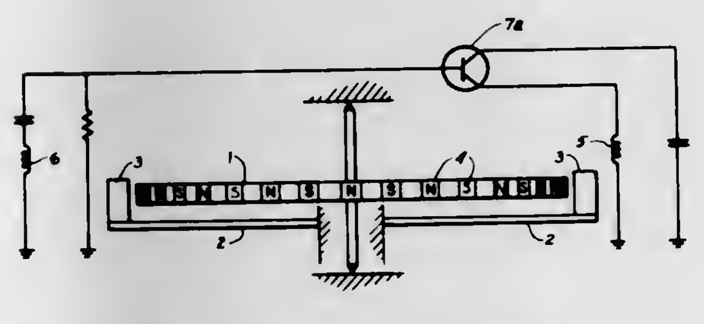
3,355,645
CONSTANT SPEED ELECTRIC MOTORS INCLUDING A VIBRATING MAGNETIC DRIVE

Masamitsu Kawakami, Setagaya-ku, Tokyo-to, and Masayoshi Mochimaru, Kita-ku, Tokyo-to, Japan, assignors to Hisao Maeda and Masamitsu Kawakami, both of Tokyo-to, Japan

Filed July 16, 1964, Ser. No. 383,017

Claims priority, application Japan, July 18, 1963, 38/38,832

3 Claims. (Cl. 318—138)



1. A constant speed motor comprising a rotor having a plurality of bar magnets secured at equal space intervals flush with and around the periphery of said rotor, alternate bar magnets being magnetized oppositely in axial direction of said rotor; a stator consisting of a vibrating member disposed radially to said rotor, a magnet mounted on the free end of said vibrating member to confront said bar magnets; and means to vibrate said magnet of said vibrating member in the axial direction of said rotor thereby to rotate said rotor at constant speed by the attractive and repulsive forces between said magnets of the rotor and the magnet of said stator; each pair of said bar magnets being inclined in opposite directions relative to the axis of said rotor.

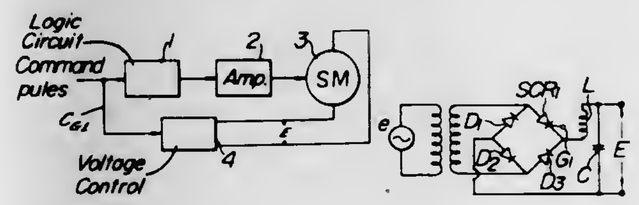
3,355,646
OPTIMUM DRIVING METHOD FOR STEP MOTORS

Tatsuo Goto, Hachioji-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan

Filed Apr. 7, 1965, Ser. No. 446,245

Claims priority, application Japan, Apr. 10, 1964, 39/20,029

5 Claims. (Cl. 318—138)



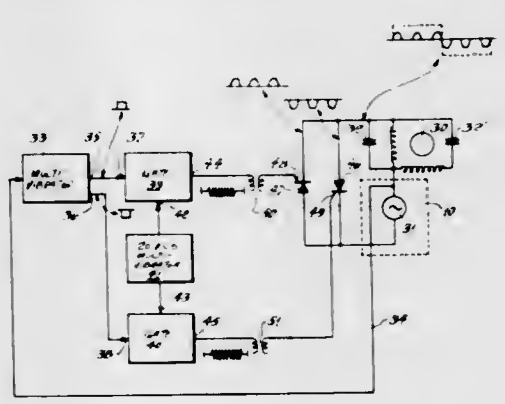
1. An optimum driving system for a step motor comprising an electric power source for producing a driving voltage to be applied to said step motor for each phase thereof, means for producing command pulses to drive said step motor, means for sequentially changing the excitation of said step motor from one phase to another corresponding to said command pulses, and means responsive to the command pulses for raising the voltage applied from the electric power source to the step motor in the high frequency range of said command pulses and lowering the voltage in the low frequency range of said command pulses and in the stop condition of said step motor.

3,355,647
SUBMULTIPLE LINE FREQUENCY CONVERTER

Harold Braus, Norwalk, Conn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed May 21, 1965, Ser. No. 457,882

7 Claims. (Cl. 318—171)



1. A submultiple frequency converter which comprises:
- a source of frequency F,
- a multivibrator having a pair of outputs for alternately providing a gate pulse of a period N/F, where said N is an integer, at said outputs,
- a pair of gate circuits each having control input, and a signal input and an output, said signal input being connected thereby to said output only when a pulse is applied to the control input,
- a source of high frequency energy,
- said source of high frequency energy connected to the said signal inputs of said gates,
- said outputs of said multivibrator each connected to one of said control inputs of said gates,
- a pair of rectifiers each having an anode, a cathode and a trigger electrode, said rectifiers connected in parallel with the anodes connected to the cathodes, said trigger electrodes connected to said gate outputs,
- a pair of load terminals,
- a series path including therein said rectifiers connected in parallel, said source of frequency F and said load terminals.

3,355,648
SLOW SPEED ELECTRIC MOTOR

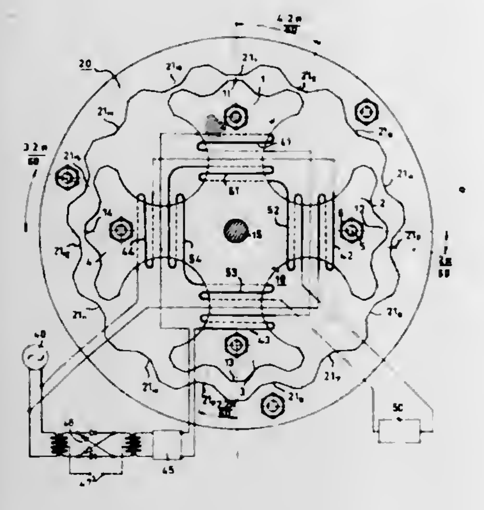
Georges Robert Pierre Marie, 16 Rue de Varize, Paris, France

Filed Sept. 9, 1965, Ser. No. 486,050

5 Claims. (Cl. 318—222)

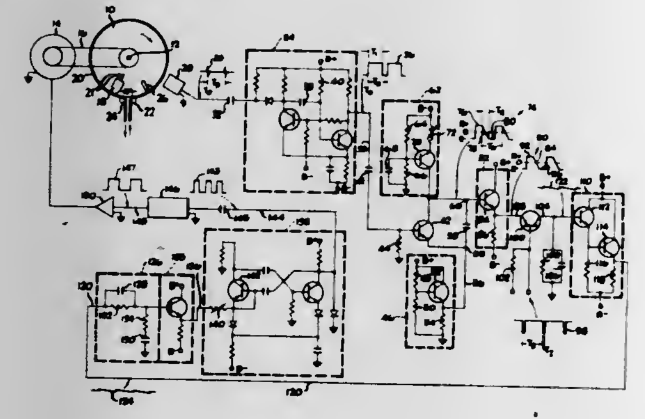
1. Slow speed electric motor comprising a completely unwound rotor provided with N equiangularly spaced teeth, a stator having M spatial electric periods around its circumference and P poles per spatial period, each pole of which being provided with teeth having substantially the same angular spacing as the rotor teeth, the numbers M, N and P being interrelated by the relationship: $N/M=kP\pm 1$ (k being an integer), field windings around said poles, means for energizing said windings with an alternating current and a between-poles phase-shift increment of φ_1, induced voltage windings around said poles. means for having this induced voltage windings induced

by said field windings with a between-poles phase-shift increment of φ_2 wherein $P\varphi_1$ is a first multiple of 2π and



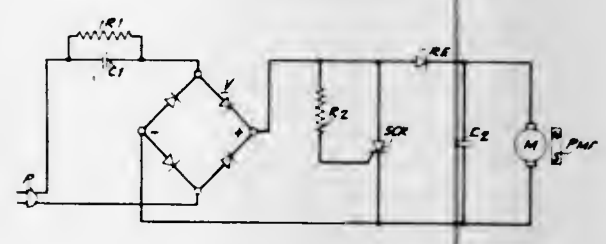
$P\varphi_2$ is a second multiple of 2π differing from the first multiple by one and terminating impedances for said induced voltage windings.

3,355,649
SYNCHRONIZING CIRCUIT
William F. Boylan, Morton Grove, and Leonard Kowal, Chicago, Ill., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed June 23, 1965, Ser. No. 466,296
11 Claims. (Cl. 318—314)



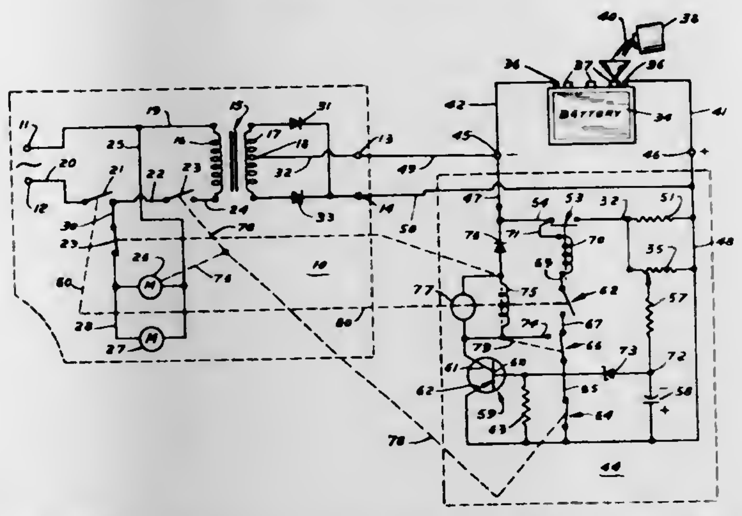
1. A speed regulating circuit for a tape recorder to phase-lock a rotating transducer head assembly in a predetermined time relationship to synchronizing pulses, the transducer head assembly including a transducer head mounted for rotation on a tape recorder and driven by a variable speed motor, said circuit comprising a head phase detector coupled to said transducer head assembly to produce in each cycle of rotation a head position pulse indicative of the position of the head at the time said pulse is produced, a source of first reference potential of one polarity, capacitance means having first and second terminals, said first terminal being connected to said source of first reference potential thereby placing said first terminal at said first reference potential, a switch connected between said first and second terminals, said switch being open in a first position and closed in a second position, said switch having operating means coupled ot said head phase detector and responsive to each of said head position pulses to switch said switch from one of said first and second positions to the other for a first predetermined time interval, a source of second reference potential of polarity opposite to said one polarity, current limiting means coupled between said source of second reference potential and said second terminal and effective upon opening of said switch to charge said capacitance means to drive said second terminal substantially to said second reference potential in a second predetermined time interval, storage means, a normally closed gate circuit coupled between said second terminal and said storage means and opening momentarily in response to one of said synchronizing pulses to pass to said storage means a signal indicative of the potential on said second terminal at the time of closure of said gate circuit, said storage means operating substantially to store said signal at least until the normal time of arrival of a succeeding signal thereto, and motor control means coupled to said storage means and responsive to the signal stored therein to control the speed of said motor, whereby said head drum assembly is driven in synchronism with said synchronizing pulses with said head rotating in said predetermined time relationship to said synchronizing pulses.

3,355,650
ELECTRICAL POWER AND CONTROL MECHANISM FOR ELECTRICAL APPLIANCES
Robert J. Tolmie, Fairfield, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 26, 1963, Ser. No. 333,477
17 Claims. (Cl. 318—342)



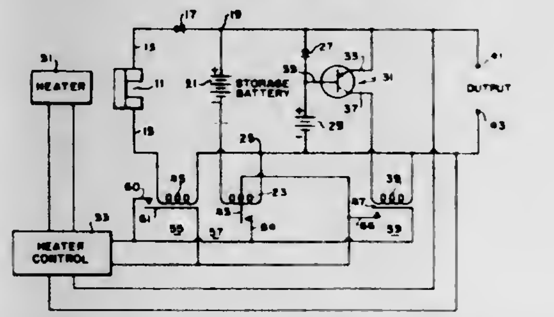
1. In combination, operating means for an electrical appliance; electrical energy storage means electrically connected to said operating means and including a capacitor in parallel with said operating means; power converting means for converting alternating power applied thereto to to unidirectional power; electronic switching means electrically interconnected to said power converting means and consisting of a silicon controlled rectifier and its associated gating circuit connected at the output of said power converting means, said rectifier selected to conduct and apply a low impedance substantially short-circuit path across the output of said power converting means under conditions where the rectified power voltage from said power converting means exceeds a predetermined voltage magnitude to interrupt unidirectional power applied by said converting means to said operating means and said capacitor; and said combination further including unidirectional current conducting means electrically interposed between said capacitor and said silicon controlled rectifier, said capacitor operable upon said conduction of said silicon controlled rectifier to supply stored power received from said power converting means to said operating means for maintaining energy thereto in the conducting state of said rectifier with said unidirectional current conducting means preventing the discharge of said capacitor through said silicon controlled rectifier.

3,355,651
BATTERY ACTIVATOR
Ellis W. Olson, Mankato, Minn., assignor, by mesne assignments, to Introl Corporation, a corporation of Minnesota
Filed Mar. 11, 1964, Ser. No. 351,034
4 Claims. (Cl. 320—31)



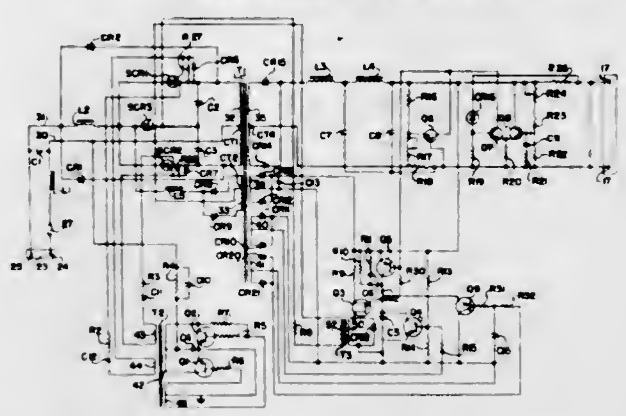
1. Apparatus for conditioning storage batteries of the class above described comprising in combination; a source of unidirectional electrical energy; a pair of output terminals adapted to be connected to a storage battery to be conditioned for operation; battery condition determining means, including load means, potential responsive switching means and circuit means, including time delay means, connecting said load means to said potential responsive switching means; timing means operative to alternately and successively connect said source of energy and said battery condition determining means to said output terminals; and means connecting the potential responsive switching means in said battery condition determining means in current controlling relationship with said source of energy and said timing means whereby said timing means and said source of energy are de-energized when the potential of a battery exceeds a predetermined value.

3,355,652
COMBINED THERMOELECTRIC OPERATOR AND STORAGE BATTERY OPERATION
Nils E. Lindenblad, Princeton, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 14, 1965, Ser. No. 472,069
13 Claims. (Cl. 320—39)



1. A system for maintaining the charge on a storage battery and for delivering current to a load comprising:
- a thermoelectric generating means;
- a battery, said battery being connected to said thermoelectric generating means;
- means for keeping said thermoelectric generator on as long as a load demands current in excess of what said battery can normally supply; and
- means for controlling said thermoelectric generating means in response to the state of charge of said battery whereby said thermoelectric generator replenishes the charge on said battery.

3,355,653
VARIABLE PULSE WIDTH REGULATED POWER SUPPLY
Pantelis P. Paradissis, Lorain, Ohio, assignor to Lorain Products Corporation, a corporation of Ohio
Filed Feb. 4, 1964, Ser. No. 342,434
10 Claims. (Cl. 321—2)

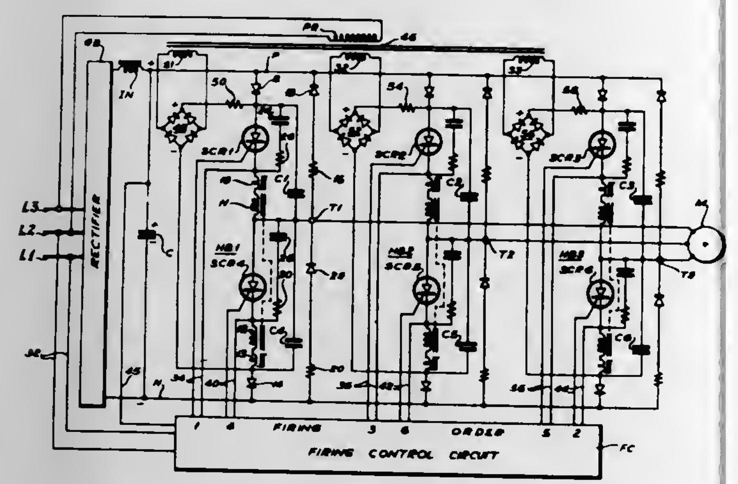


1. A regulated power supply comprising:
- direct current input means;
- quasi-squarewave generator means including a pair of semi-conductor switches connected to receive current from said direct current input means for generating a quasi-squarewave therefrom, a pair of commutating capacitors serially connected between said switches and a commutating switch connected to said pair of switches and intermediate said capacitors;
- current control means connected to the output of said quasi-squarewave generator means;
- pulse generator means connected between said current control means and said commutating switch to receive a signal from said current control means indicative of the current flowing therethrough and for regulating the duration of conduction of said switches by actuating said commutating switch;
- oscillator means connected to said switches for alternately rendering said switches conducting thereby causing said quasi-squarewave generator to generate alternate spaced positive and negative pulses;
- frequency regulator means connected to said oscillator means for regulating the frequency thereof; and
- alternating current output means coupled to said quasi-squarewave generator.

3,355,654
ELECTRONIC INVERTERS WITH SEPARATE SOURCE FOR PRECHARGING COMMUTATING CAPACITORS
Robert L. Risberg, Milwaukee, Wis., assignor to Cutler, Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed July 13, 1964, Ser. No. 381,969
14 Claims. (Cl. 321—44)

12. In a bridge type inverter comprising at least one half-bridge having two legs connected at their junction to an output terminal and the two legs being connected in series across a direct voltage source, each said leg comprising a diode, a controlled rectifier and an inductor;
- means connecting the diode and the controlled rectifier and the inductor in that order from the positive side of the source to the output terminal;
- means connecting the controlled rectifier and the inductor and the diode in that order from the output terminal to the negative side of the source;
- a commutating capacitor connection across the controlled rectifier and associated inductor in each said leg;
- a unidirectional feedback circuit connected reversely across each said leg for conducting current in response to the voltage induced in the associated inductor during commutation;

and (a) an independent direct voltage precharging source connected across the two commutating capacitors of the half-bridge in series whereby each



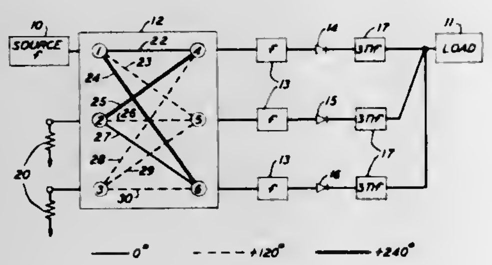
controlled rectifier when conducting conducts current to the commutating capacitor in the other leg of the same half-bridge.

3,355,655
FREQUENCY TRIPLER APPARATUS WITH ISOLATION

Christoph B. Burckhardt, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 17, 1965, Ser. No. 480,280

7 Claims. (Cl. 321—69)



3. In combination:

a source of signal frequency energy;

a coupler network having a first input port connected to the source, second and third terminated ports, and fourth, fifth, and sixth output ports;

said coupler network providing nine transmission channels which interconnect the first, second, and third ports, respectively, with each of the fourth, fifth, and sixth ports;

the fourth, fifth, and sixth ports each being respectively connected to a separate frequency tripler means;

the frequency tripler means being connected to a load, whereby three distinct transmission paths are established from each of the first, second, and third ports, through the fourth, fifth, and sixth ports, the frequency tripler means, and hence to the load;

the three transmission paths from the first port providing respectively phase shifts such that electrical energy which is reflected back to the first port arrives at the first port from the load at relative phase angles of zero degrees, 120 degress, and 240 degrees, respectively, whereby such reflected energy is mutually destructive at the first port;

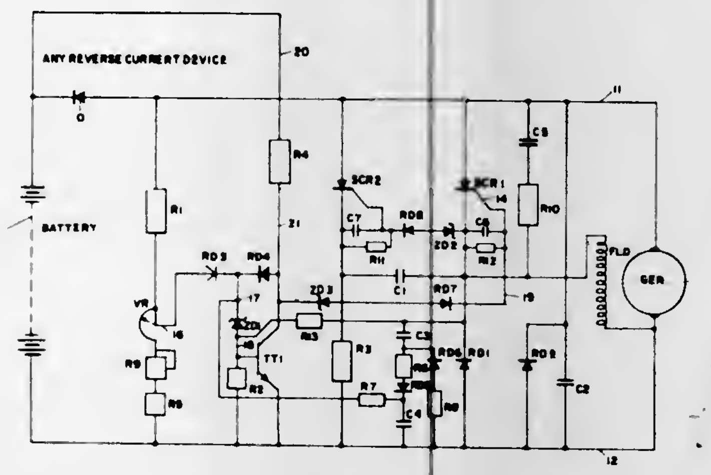
the other transmission paths providing respective phase shifts such that the wave energy reflected from the load to the second and third ports is either in phase or mutually destructive.

3,355,656
CONTROLLED RECTIFIER SYSTEMS UTILIZING ENERGY LOGIC TO EFFECT COMMUTATION

William B. Zellna and James L. Buchanan, Erie, Pa., assignors to General Systems, Inc., a corporation of Pennsylvania

Continuation of application Ser. No. 302,133, Aug. 14, 1963. This application Dec. 1, 1966, Ser. No. 598,382

33 Claims. (Cl. 322—28)



1. A regulator for controlling the field of a dynamoelectric machine comprising

a machine having an armature and a field,

a first electric valve having a first and a second power terminal,

said first valve and said field being connected in series,

the series circuit made up of said field and first valve being connected in parallel with said machine armature,

a second electric valve having a first and a second power terminal and a control terminal,

said second valve having said first power terminal connected to said first power terminal of said first valve,

said second power terminal of said second valve being connected through a capacitor to said second power terminal of said first valve,

a first resistor connected in series with said first valve and said capacitor,

said first resistor, said capacitor, and said first valve being connected in parallel with said armature,

threshold sensing means conductive when said capacitor is charged to a predetermined value to excite the control terminal of said second valve, rendering said second valve conductive when said threshold sensing means becomes conductive whereby the potential of said power terminals of said first valve approach said predetermined potential of said capacitor, rendering said first valve non-conductive.

3,355,657
DEVICE FOR ADJUSTING THE CONSUMPTION OF AND PROTECTING AN APPARATUS SUPPLIED WITH ALTERNATING CURRENT

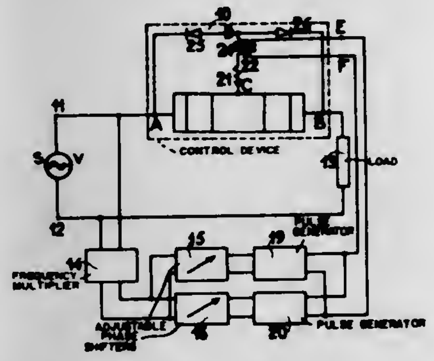
Jean-Pierre Biet, Saulx-les-Chartreux, and Jean Chaupit, Fontenay-aux-Roses, France, assignors to Compagnie Generale d'Electricite, Paris, France, a corporation of France

Filed July 29, 1964, Ser. No. 385,858

Claims priority, application France, July 30, 1963, 943,125

7 Claims. (Cl. 323—22)

1. A control circuit for adjusting the power supplied to a load apparatus by an alternating-current source by means of an assembly having a set of control terminals and comprising a symmetrical semiconductor component having a control electrode and two supply terminals connected in circuit relationship with said source and said load apparatus and adapted to be gated on and off by application of a voltage to the control electrode, a transformer including a primary winding whose terminals comprise the control terminals of the assembly and a secondary winding having one terminal connected to the control electrode of the said semiconductor component, said assembly further comprising a pair of series connected diodes having like terminals thereof connected respectively to the two supply terminals of the said semiconductor component and the common juncture thereof connected to the remaining terminal of the secondary winding, the said control circuit being characterized by the fact that it further comprises a frequency multiplier having its input connected to the alternating-current source, at least one adjustable phase shifter connected to the output of the said frequency multiplier and at least one pulse generator synchronized by the output voltage of the adjustable phase shifter and having its output connected to said control terminals of the aforesaid assembly.

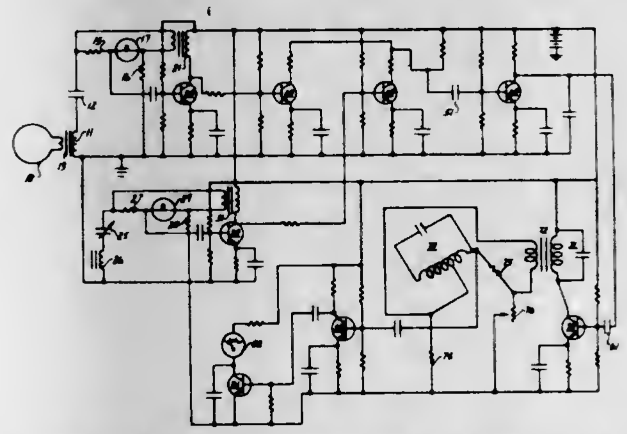


3,355,658
DIFFERENTIATING METAL DETECTOR FOR DETECTING METAL OBJECTS AND DISTINGUISHING BETWEEN DETECTED DIAMAGNETIC AND NON-DIAMAGNETIC OBJECTS

Robert F. Gardiner, 4729 N. 7th Ave., Phoenix, Ariz. 85013

Filed Dec. 6, 1965, Ser. No. 512,595

4 Claims. (Cl. 324—3)



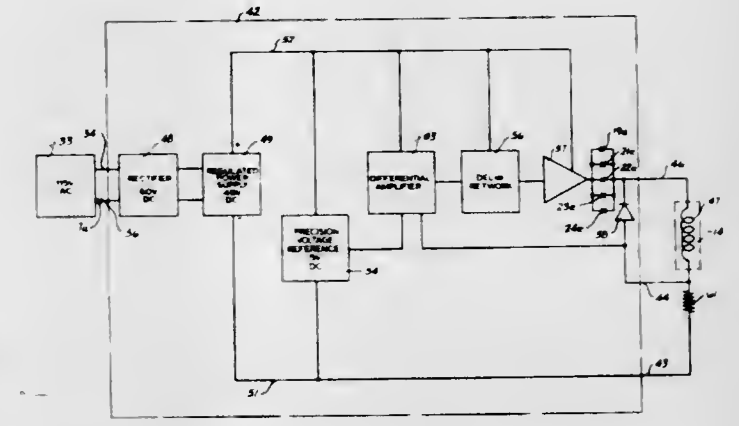
1. A metal detector comprising: a first and a second oscillator, each having a series resonant tank circuit tuned to oscillate at less than 15,000 cycles per second and at a frequency different from each other; a mixer connected to said oscillators for deriving a difference frequency equal to the difference between the frequencies of oscillation of said oscillators; a tuned amplifier connected to said mixer, said tuned amplifier including a tank circuit tuned to a predetermined difference frequency for providing an output signal having an amplitude proportional to the deviation of said difference frequency from said predetermined difference frequency; indicating means connected to said tuned amplifier for indicating the amplitude of said output signal; and a search coil coupled to the series resonant tank circuit of said first oscillator.

3,355,659
PROGRAMMABLE TEST APPARATUS FOR SUPPLYING SELECTED CURRENT LEVELS TO THE COIL OF A RELAY TO BE ADJUSTED

Laurance D. Burgess, Galloway, Ohio, assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 26, 1964, Ser. No. 354,922

4 Claims. (Cl. 324—28)



1. Apparatus for selectively supplying various required levels of current to a coil, which comprises:

a program module having a plurality of circuits for supplying coded information indicative of the required levels of current,

means responsive to the information of and connected to the circuits of the program module for indicating which of a plurality of available levels of current are to be serially and separately supplied to the coil,

means for supplying the various levels of current to the coil,

switching means associated with the indicating means for disconnecting the program module from a circuit including the indicating means and connecting the program module in a circuit including the coil and the current supply means so that a current is supplied to the program module and the coil, and

means responsive to the supply of current to the program module and the coil when the value of the supplied current is other than the required level for developing and feeding a signal to the current supply means, whereby the output of the supply means is modified to supply the required level of current in accordance with the information of the program module.

3,355,660
RELAY CONTACT CHATTER DETECTOR HAVING CHATTER RESPONSIVE FLIP-FLOPS

Miles Drazic, Pierrefonds, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Feb. 18, 1965, Ser. No. 433,683

3 Claims. (Cl. 324—28)

1. An apparatus for testing for chattering the contacts of a relay comprising:

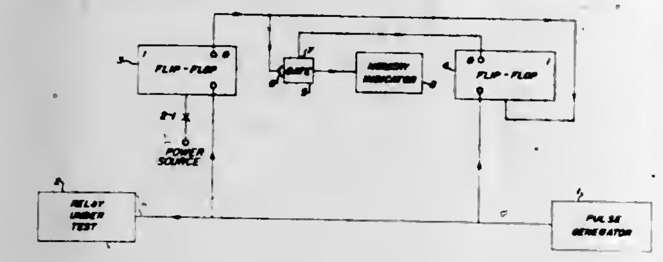
(a) a first flip flop;

(b) energizing means connected to the input of the first flip flop through the relay contacts, said first flip flop being responsive to a first operation of the relay contacts for changing from a first conductive state to a second conductive state, and being responsive to a second operation of the relay contacts when chattering occurs for changing back to its first conductive state;

(c) a second flip flop responsive to the output of the first flip flop, while in its second conductive state, for changing from a first conductive state to a second conductive state;

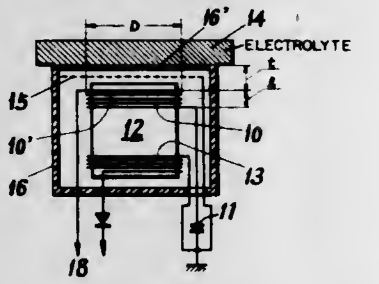
(d) a normally closed gate connected to the output of each flip flop and adapted to become conductive upon operation of the first flip flop back to its first conductive state while the second flip flop remains in its second state; and

(e) means connected to said gate and responsive to conduction of the gate for indicating chattering of the contacts.



3,355,661
APPARATUS FOR MEASURING THE CONDUCTIVITY OF ELECTROLYTE

Kinzo Nonaka, Hamamatsu-shi, Japan, assignor to Seizo Kuwabara, Tajimi-shi, Japan
Filed Mar. 31, 1964, Ser. No. 356,157
3 Claims. (Cl. 324—30)

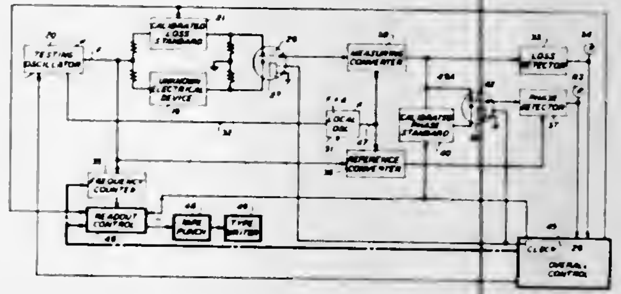


1. An apparatus for measuring the electrical conductivity of an electrolyte comprising a tuning circuit having an inductance coil and a condenser, said inductance coil having one end grounded and being placed with an end turn thereof near the electrolyte, a source of electric energy comprising an oscillator of constant high frequency and amplitude, means electrically connecting the inductance coil to said source of energy for setting up an alternating magnetic flux within the electrolyte, an electric field-shielding means interposed between said coil end and the electrolyte for nulling the capacitive coupling therebetween, said field-shielding means comprising a plurality of spaced conductors each having one end grounded and the other end open, said conductors being at right angles to the axis of the coil, and means electrically and operatively connecting said tuning circuit with an ampere meter for indicating the value of tuning current as a measure of the conductivity of the electrolyte.

3,355,662
AUTOMATED TRANSMISSION MEASURING SET

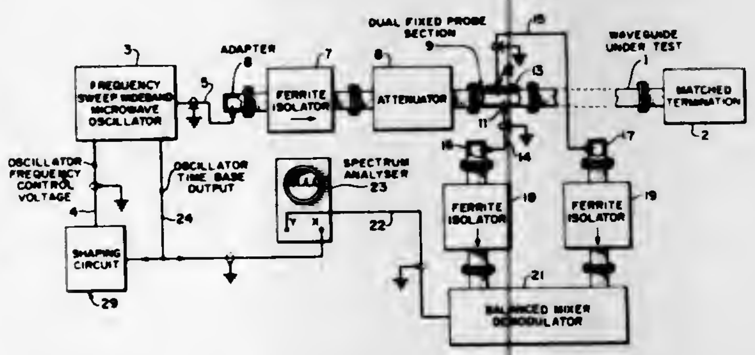
Gerald D. Haynle and Peter E. Rosenfeld, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 30, 1963, Ser. No. 320,115
19 Claims. (Cl. 324—57)

1. In an electrical system for automatically measuring the unknown magnitude of a quantity of an electrical device in one frequency band of a predetermined frequency range, means for providing a testing voltage over a predetermined frequency range, means for dividing said range into a plurality of different subdivision bands including said one band, means for preselecting a parameter representing a numerical value of an increment of said quantity in said one band, means to automatically sweep said one band of the frequency of said testing voltage in an increasing sense from the lowermost frequency of said one band toward the uppermost frequency for transmitting said testing voltage through said device, means for indicating the numerical value of the frequency of said testing voltage transmitted through said device, means connected to the output of said device for continuously measuring the output thereof which is indicative of the unknown magnitudes of a quantity of said device over the swept frequency band, means for comparing said output with a preselected quantity, means for automatically stopping the sweep of the testing voltage frequency on the occurrence of equality between said output and preselected quantity, means for recording the measured numerical magnitude of said device quantity at the numerical value of the lowermost testing frequency and at each stopping of the testing voltage frequency sweep together with the counted numerical value of the testing voltage frequency at the previous numerical value thereof and at each stopping of the testing voltage frequency sweep in said one band, and means for starting the testing voltage frequency sweep after each said stopping of the same.



3,355,663
WAVEGUIDE ECHO MEASUREMENT SYSTEM

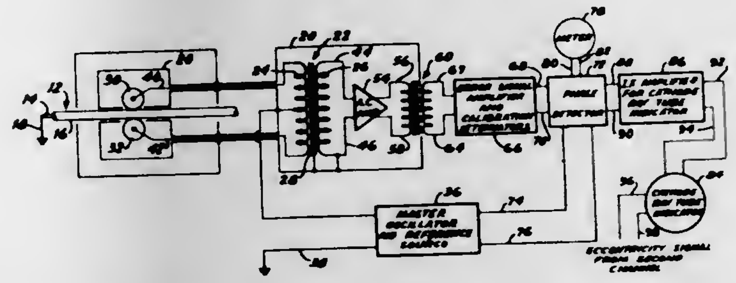
Ethan Aronoff, Jackson Heights, N.Y., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Filed July 20, 1964, Ser. No. 383,868
6 Claims. (Cl. 324—58)



3. A microwave measurement device for wave conduits comprising a microwave oscillator having an internal linear frequency sweep, an input connection for modulation thereof and an output connection for the linear sweep voltage thereof, probe means comprising a section of waveguide and a pair of electrostatic probes adjustably mounted therein and longitudinally separated a quarter wavelength, interconnecting said oscillator and said wave conduit, indicator means for determining the frequency and amplitude of a beat note, balanced demodulator means interconnecting said probe means and said indicator means, and a network comprising a series capacitor followed by a variable shunt resistor connected from said output connection to said input connection of said oscillator whereby the frequency of said beat note is rendered substantially invariant.

3,355,664
APPARATUS FOR MEASURING INSULATION THICKNESS OF COATED CONDUCTORS

John A. Pranke, Rome, N.Y., assignor to Rome Cable Corporation, Rome, N.Y., a corporation of Delaware
Filed June 12, 1964, Ser. No. 374,763
1 Claim. (Cl. 324—61)


METER
MASTER OSCILLATOR AND REFERENCE SOURCE
PHASE DETECTOR
ECCENTRICITY SIGNAL FROM SECOND CHANNEL

An electrical system for measuring the eccentricity of an insulating sheath on an electrical conductor with the latter disposed at substantially ground potential, comprising a pair of electrodes mounted to engage diametrically opposed portions of the sheath, a bridge transformer having a center tapped primary, a secondary and a common core, means for generating an alternating signal having an output terminal and a second terminal connected to ground, means for electrically connecting the center tap of said transformer primary to the output terminal of said signal generator, means electrically connecting said electrodes respectively to opposite ends of said primary to incorporate halves of said primary as integral current balancing elements in the resultant bridge circuit comprising said primary and the said opposed portions of the sheath and to produce in said secondary a net electromotive force indicative of unequal thickness of said opposed sheath portions when such condition exists, indicating meter means displaceably responsive to the magnitude of current flow in said secondary winding for providing a visual indication thereof, means for selectively connecting said electrode elements in parallel to one end of said primary winding, gain attenuating means connected in circuit intermediate said transformer secondary and said indicating means for biasing the displacement of said indicating means to a predetermined value when said electrode elements are connected in parallel to one end of said primary winding whereby said meter means visually indicates percentage eccentricity when said electrodes are reconnected respectively to the opposite ends of said primary.

3,355,665
MOISTURE MEASURING PROBE HAVING AN INSULATING MATERIAL COVERING LESS THAN ONE-HALF OF THE PERIMETER OF THE PROBE

Lloyd V. Fegan, Jr., Lebanon, Pa., assignor, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware
Continuation of application Ser. No. 249,814, Jan. 7, 1963. This application Jan. 3, 1967, Ser. No. 607,075
5 Claims. (Cl. 324—65)

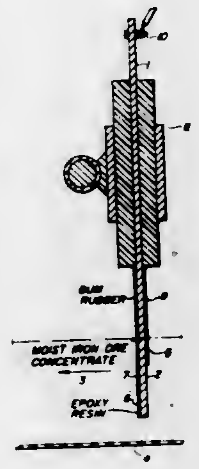
1. A probe adapted for measuring the electric characteristics of a bed of flowing moist granular material comprising:

(a) an elongated solid metallic electrode having a body portion and an end portion,

(b) an electrically insulating abrasion resistant sleeve encasing the body portion of the electrode,

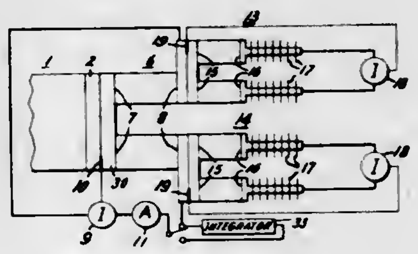
(c) an electrically conducting abrasion resistant sleeve encasing the end portion of the electrode,

(d) an electrically insulating material on the sleeve (c) extending the entire length thereof and covering a substantially uninterrupted portion less than one-half of the perimeter and on the downstream surface thereof, the remainder of the perimeter being free of such insulating material.



3,355,666
R.F. MEASURING DEVICE USING A SOLID STATE HEAT PUMP CALORIMETER

Robert H. Vought, Schenectady, and Howard Kasch, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 28, 1964, Ser. No. 421,413
20 Claims. (Cl. 324—106)



1. A device for measuring power being supplied to a load in which the power to be measured is converted into heat comprising

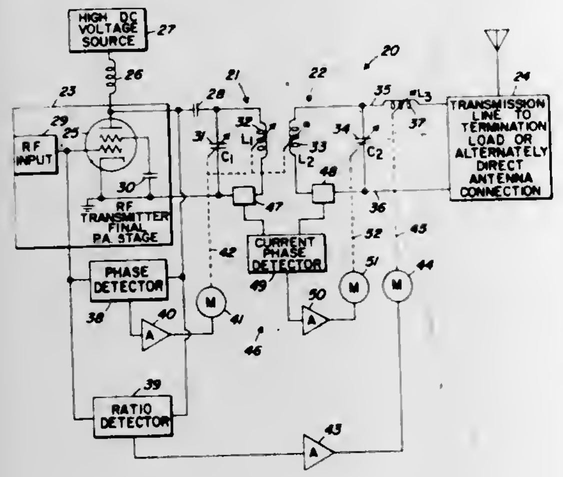
a heat pump having a heat-absorbing junction and a heat-evolving junction, said heat-absorbing junction being in heat-exchanging relationship with the load,

means responsive to the temperature of the load to control the amount of heat being pumped by said heat pump to maintain the load at a predetermined constant temperature,

means for maintaining said heat-absorbing junction and said heat-evolving junction at predetermined constant temperatures, and

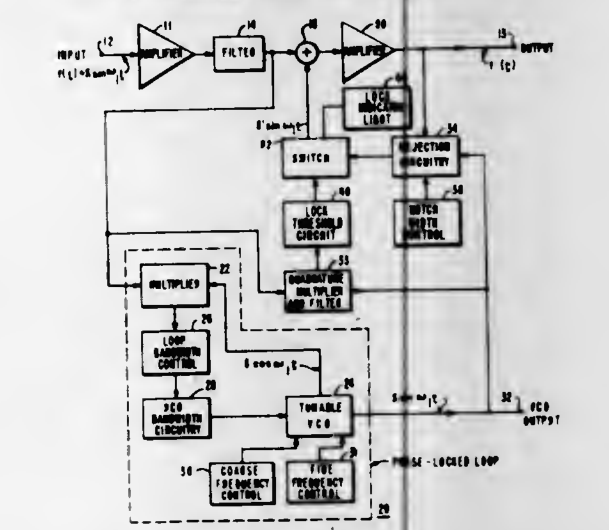
means for measuring the heat pumped by said heat pump whereby a measurement of the power converted into heat by the load is obtained.

3,355,667
AUTOMATICALLY TUNED COUPLED RESONANT CIRCUITS
Warren B. Bruene, Richardson, Tex., assignor to Collins Radio Company, a corporation of Iowa
Filed Dec. 16, 1965, Ser. No. 514,288
11 Claims. (Cl. 325—174)



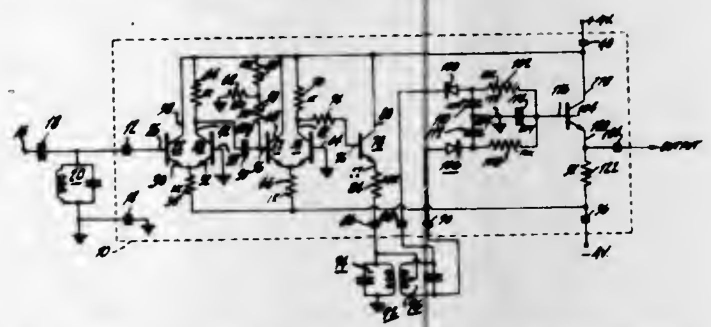
1. In an RF power output network interconnecting an RF signal power amplifying final output stage and terminating means reflecting a load to the RF power output network: a resonant primary L–C circuit including capacitive means and coil means; said resonant primary L–C circuit being connected to said output stage for receiving an RF power output signal from the output stage; a resonant secondary L–C circuit including capacitive means and coil means; said resonant secondary L–C circuit being connected to said terminating means reflecting a load to the RF power output network; and RF signal coupling means positioned for passing RF signals from said resonant primary L–C circuit to said resonant secondary L–C circuit; wherein the capacitive means of said resonant secondary L–C circuit includes a tunable capacitor; first RF signal sensing means connected to said resonant primary L–C circuit; second RF signal sensing means connected to said resonant secondary L–C circuit; at least two-input RF signal phase detecting means having a connection to said first RF signal sensing means as one input, and having a connection to said second RF signal sensing means as the other input; said phase detecting means having output signal connective means to a servo means having connection with said tunable capacitor for servo tuning said tunable capacitor in response to various off phase relations from the predetermined desired phase relation between the resonant primary and resonant secondary circuits when the resonant secondary L–C circuit is properly tuned; the capacitive means of said resonant primary L–C circuit includes a tunable capacitor; a tuning servo loop is connected to the tunable capacitor of said resonant primary L–C circuit and includes a second RF phase detector having a first input connection to an RF signal input element of said RF signal power amplifying final output stage, and having a second input connection to the RF signal output element of said RF signal power amplifying final output stage; said second RF phase detector has output signal connective means to servo means having connection with the tunable capacitor of said resonant primary L–C circuit; the connection between said resonant secondary L–C circuit and said terminating means includes an L-network matching section adjustable loading coil; a loading servo loop is connected to the tunable loading coil and includes an RF signal voltage ratio detector having two input connections from the same two elements of the RF signal power amplifying final output stage as said tuning servo loop; and said RF signal voltage ratio detector has output signal connective means to servo means having connections with the adjustable loading coil.

3,355,668
TUNABLE NOTCH FILTER
Donald W. Boensel, La Canada, and Arnold C. Knudsen, San Fernando, Calif., assignors, by mesne assignments, to The Bendix Corporation, a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,706
16 Claims. (Cl. 328—167)



1. A tunable notch filter comprising means for receiving input signals having an unwanted component, signal generating means and a multiplier connected in a phase-locked loop and coupled to receive said unwanted component for phase comparison, and means for combining a signal generated by the signal generating means with the received input signal in order to effect a cancellation of the unwanted component thereof.

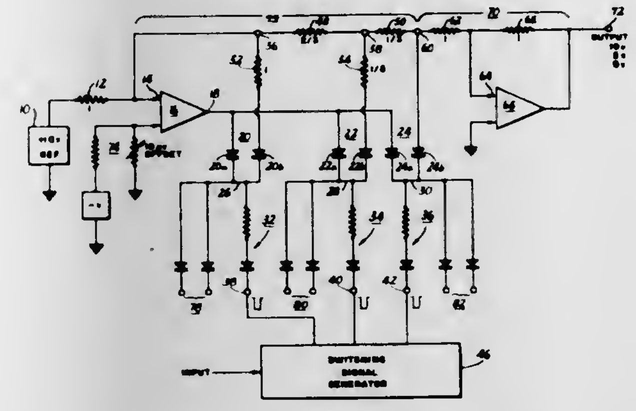
3,355,669
FM DETECTOR SYSTEM SUITABLE FOR INTEGRATION IN A MONOLITHIC SEMICONDUCTOR BODY
Jack Avins, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 14, 1964, Ser. No. 396,206
10 Claims. (Cl. 329—103)



1. A signal translating and demodulating system for angle modulated carrier waves to be incorporated as an integrated circuit on a wafer of semiconductor material comprising:

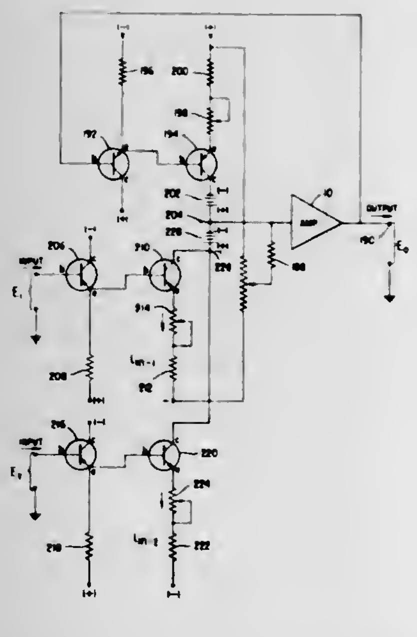
- a wide band amplifier-limiter circuit including first and second emitter coupled transistors for connection to a source of angle modulated carrier waves;
- a balanced discriminator circuit including a discriminator transformer coupled to receive and demodulate the amplitude limited angle modulated waves from said amplifier limiter circuit; and
- a low frequency amplifier circuit direct current conductively connected to said discriminator circuit; all of said circuits except for said discriminator transformer being incorporated in a single semiconductor wafer.

3,355,670
HIGH-SPEED SWITCHING APPARATUS
James J. Pastoriza, Old Farm Road, Lincoln, Mass. 01773
Filed Mar. 10, 1964, Ser. No. 350,734
7 Claims. (Cl. 330—9)



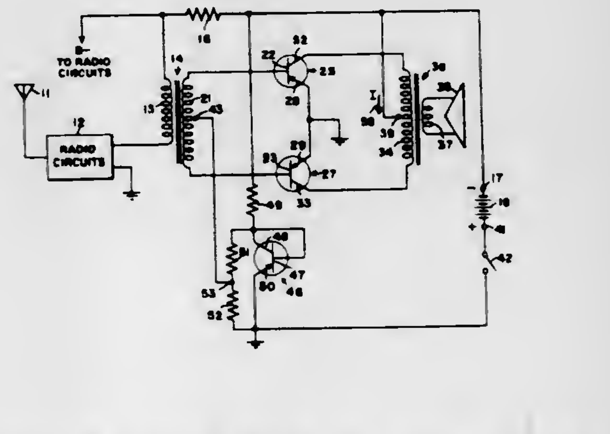
1. High-speed multi-level signal-generating apparatus comprising: an operational amplifier having input and output circuits; D-C reference signal supply means coupled to the input circuit of said amplifier to apply a fixed magnitude signal thereto; a negative feedback circuit including a network consisting of a group of series resistors, one end of said group being connected to said amplifier input circuit and the other end serving as an output terminal; a plurality of electronic switches having respective control terminals, said switches being independently operable from off to on in response to control signals applied to the control terminals respectively, means connecting one side of each switch to the output circuit of said amplifier; and a plurality of circuit means connecting the other sides of said switches to respective terminals of said series resistors, whereby the particular combination of resistors connected in the feedback path of said amplifier is determined by the selective activation of said switch control terminals.

3,355,671
SOLID STATE FUNCTION GENERATOR
Jerome B. Brewster, Cleveland Heights, Ohio, assignor to Bailey Meter Company, a corporation of Delaware
Filed Sept. 22, 1964, Ser. No. 398,311
9 Claims. (Cl. 330—30)



9. A function generator comprising an amplifier having an input terminal and an output terminal, a feedback circuit connected to said input terminal and to a source of D.C. potential, means coupled to said output terminal varying the impedance of said feedback circuit in functional relationship to the output signal of said amplifier, a first input circuit connected to said input terminal and to a second source of D.C. potential, means varying the impedance of said first input circuit in functional relationship to a first input signal, a second input circuit connected to said input terminal and to said second source of D.C. potential and means varying the impedance of said second input circuit in functional relationship to a second input signal.

3,355,672
VOLTAGE REGULATOR CIRCUIT FOR EXTENDING BATTERY LIFE IN RADIOS AND THE LIKE
Siegfried J. Zuerker, Utica, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 15, 1965, Ser. No. 432,575
1 Claim. (Cl. 330—40)

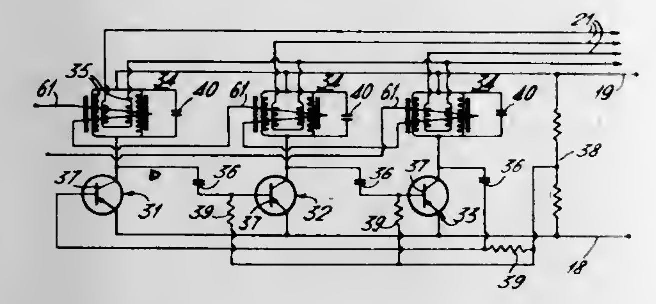


In an electrical circuit having an amplifier means adapted to draw current from a voltage source and having current-controlling electrode means, said voltage source being subject to voltage variation and said amplifier means drawing decreased current from the voltage source when the voltage thereof decreases, said amplifier means being characterized by a lower current limit for satisfactory functioning, an improved voltage regulator for extending useful operation of the amplifier means to lower values of voltage of said voltage source, said improved voltage regulator comprising a transistor having base, collector, and emitter electrodes, means connecting said base electrode directly to said collector electrode, resistance means connected to one of said collector and emitter electrodes to form a series combination with said transistor, said series combination being adapted to be connected across said voltage source, a pair of resistors connected in series across said collector and emitter electrodes, and means connecting the junction of said pair of resistors to said current-controlling electrode means thereby to apply a regulated bias voltage to said current-controlling electrode means.

3,355,673
MULTIPHASE OSCILLATOR WITH FREQUENCY VARIABLE BY SATURABLE MAGNETIC COMPONENTS
John Llewellyn Williams, Chester, and Philip John Stokes, Liverpool, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Feb. 1, 1966, Ser. No. 524,209
Claims priority, application Great Britain, Feb. 5, 1965, 5,089/65
3 Claims. (Cl. 331—45)

1. A multiphase oscillator comprising a number of substantially identical variably tuned semiconductor circuit stages coupled together by a phase shifting network, the improvement residing in that for each phase there are two

saturable magnetic components serving as the variable tuning means and each having a primary winding and a control winding so arranged that if the currents in the primary winding and control winding of one magnetic component instantaneously reinforce each other then at that instant the currents in the primary winding and the control winding of the other of the two components oppose each other.



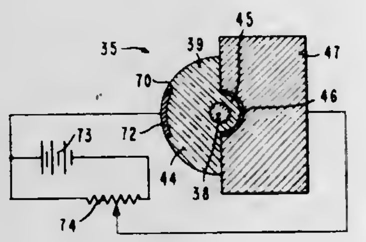
3,355,674

OPTICAL FIBER LASER DEVICE

Wilton A. Hardy, Ossining, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 27, 1962, Ser. No. 205,639

2 Claims. (Cl. 331—94.5)



1. A device for producing highly directional, coherent and monochromatic electromagnetic radiation comprising:

an element having an elongated fiber core of a material susceptible of producing electromagnetic radiation by stimulated emission;

a layer of cladding material surrounding at least a portion of said elongated fiber core;

a source of stimulating radiation disposed in spaced relation with respect to said element for stimulating emission in said fiber core;

means for concentrating the radiation emanating from said source on said fiber core;

means to subject said fiber core to an electrical field comprising a pair of electrodes disposed on opposite sides of said fiber core;

one of said electrodes being formed by an electromagnetic radiation transmitting current conductive coating overlying at least a portion of said cladding material; and

means to apply an adjustable voltage across said electrodes.

3,355,675

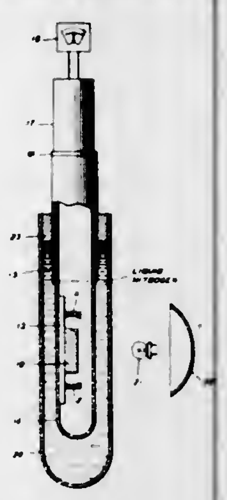
LASER DEVICE USING Nd:PrCl$_3$

Frank L. Varsanyi, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 16, 1963, Ser. No. 331,049

1 Claim. (Cl. 331—94.5)

A laser device comprising an active crystal of anhydrous praseodymium chloride containing 0.05 percent to 0.5 percent of neodymium, means for sealing the crystal from the atmosphere, and pumping means emitting over the wavelength band including 1μ and 2.5μ for creating an inverted electron population in the active crystal.



3,355,676

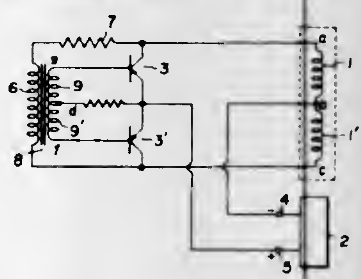
ELECTRODYNAMICAL OSCILLATING DEVICE

Morikazu Omura and Yukio Okuda, Tokyo, Japan, assignors to Sawafuji Electric Co., Ltd., and Western Trading Co., Ltd.

Filed Mar. 18, 1966, Ser. No. 535,437

Claims priority, application Japan, Mar. 27, 1965, 40/17,722

5 Claims. (Cl. 331—113)



1. An electrodynamical oscillating device, wherein the natural frequency of the mechanical vibration is completely resonant with the frequency of oscillation of the electrical system, comprising:

a mechanical vibration system including a pair of serially connected oppositely wound moving coils situated between a pair of resonance springs so as to oscillate, alternately compressing and stretching the springs, and

an electrical vibration system including a pair of symmetrically connected transistors alternately driven between saturation and cut off by the electromotive forces generated by the displacement of said moving coils, thereby creating the alternating current which causes the moving coils to oscillate.

3,355,677

PHASE COHERENT OSCILLATOR

William F. Egan, Cupertino, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Mar. 15, 1965, Ser. No. 439,747

1 Claim. (Cl. 331—173)

A coherent oscillator comprising

a power source,

a resonant circuit comprising

an inductor having a first terminal connected to said power source and having a second terminal,

a capacitor having a first terminal connected to the second terminal of said inductor to form a junction and having a second terminal, and

capacitive coupling means,

an amplifier comprising

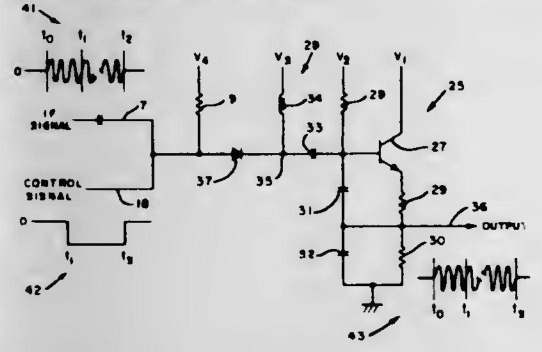
a first load impedance, and

an active element having a first electrode connected through said first load impedance to a reference potential and having a second electrode connected to the second terminal of said capacitor and having a third electrode connected to said power source, said active element operating in its active region at all times, said amplifier output being coupled from said first load impedance,

said capacitive coupling means being connected to said first load impedance and to the second terminal of said active element for feeding a portion of the amplifier output back to the amplifier input,

a second load impedance having a first terminal connected to said power source and having a second terminal,

a diode having a first terminal connected to the junction of said inductor and capacitor and having a second terminal connected to the second terminal of said second load impedance,



means for applying an input signal to the second terminal of said diode,

said diode connecting said second load impedance in shunt with said inductor and passing the input signal to said resonant circuit and to the amplifier input when said diode conducts and disconnecting said second load impedance from said resonant circuit and blocking the input signal from said resonant circuit and the amplifier input when said diode is cut off,

means responsive to the input signal for generating a control signal, and

means for applying the control signal to the second electrode of said diode for selectively reverse biasing and cutting off said diode to disconnect said second load impedance from said resonant circuit and to block the input signal from said amplifier and said resonant circuit.

3,355,678

MODULATOR CONNECTION WITH COMBINED CURRENT AND VOLTAGE FEED-BACK

Friedrich Karl Peter Echarti, Enskede, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Nov. 13, 1964, Ser. No. 410,967

Claims priority, application Sweden, Nov. 27, 1963, 13,109/63

1 Claim. (Cl. 332—43)

A modulator circuit comprising in combination:

a first transformer having a primary winding adapted to receive a modulating signal and first and second center-tapped secondary windings;

a second transformer having a primary winding adapted to receive a carrier signal and a center-tapped secondary winding, the center taps of the first and second secondary windings of said first transformer being connected to the legs of the secondary winding of said second transformer, respectively;

first, second, third and fourth transistors, each of said transistors having base, collector and emitter electrodes;

means for connecting the base electrodes of said first and second transistors to the legs of the first secondary winding of said first transformer, respectively;

means for connecting the base electrodes of said third and fourth transistors to the legs of the second secondary winding of said first transformer, respectively;

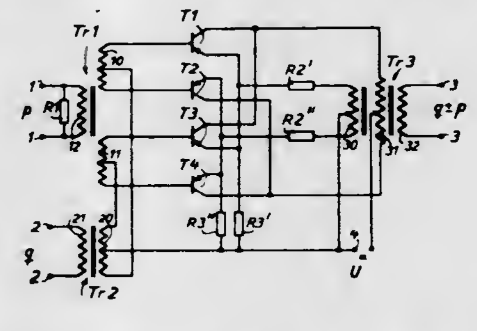
a third transformer having first and second center-tapped primary windings and a secondary winding adapted to transmit a modulated carrier signal;

a source of operating voltage having first and second terminals;

means for connecting the center taps of the secondary winding of said second transformer and of the first primary winding of said third transformer to the first terminal of said source of operating voltage;

means for connecting the center tap of the second primary winding of said third transformer to the second terminal of said source of operating voltage;

means for interconnecting the collector electrodes of said first and third transistors and one leg of the second primary winding of said third transformer;



means for interconnecting the collector electrodes of said second and fourth transistors and the other leg of the second primary winding of said third transformer, means for interconnecting the emitter electrodes of said first and third transistors;

means for interconnecting the emitter electrodes of said second and fourth transistors;

first impedance means connecting the interconnected emitter electrodes of said first and third transistors to one leg of the first primary winding of said third transformer;

second impedance means connecting the interconnected emitter electrodes of said second and fourth transistors to the other leg of said first primary winding of said third transformer;

third impedance means connecting the interconnected emitter electrodes of said first and third transistors to the first terminal of said source of operating voltage; and

fourth impedance means connecting the interconnected emitter electrodes of said second and fourth transistors to the first terminal of said source of operating voltage.

3,355,679

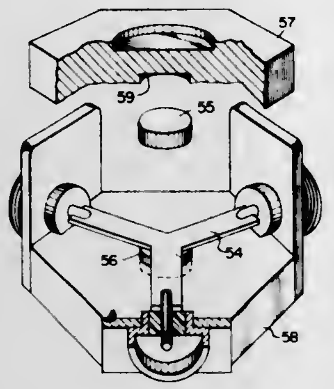
IMPEDANCE MATCHED STRIPLINE FERRITE Y CIRCULATOR HAVING INCREASED GROUND PLANE SPACING AT THE JUNCTION OF THE CENTER CONDUCTORS

Kenneth L. Carr, Bedford, Mass., assignor to Ferrotec, Inc., Newton, Mass., a corporation of Massachusetts

Filed Mar. 20, 1964, Ser. No. 353,357

1 Claim. (Cl. 333—1.1)

In a Y circulator of the strip transmission line type having the junction of the center conductors disposed between a pair of ferrite members which, in turn, are disposed between a pair of ground plane plates, the improvement of matching the characteristic impedance of the



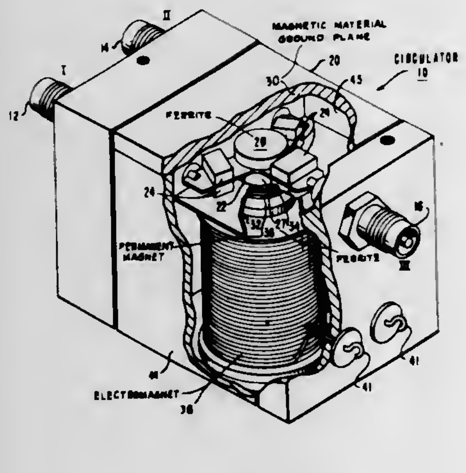
ferrite loaded junction to the characteristic impedance of the strip lines contiguous to the junction, the improvement comprising an increase at the junction in the spacing of the ground plane plates.

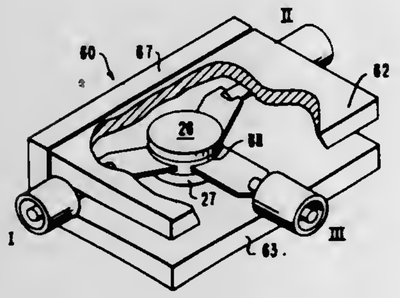
3,355,680
MICROWAVE FERRITE DEVICES HAVING PARTICULAR ARRANGEMENTS FOR THE MAGNETIZING SOURCE

Harold Saltzman, Woodland Hills, and Thomas F. Vallar, Burbank, Calif., assignors to E & M Laboratories, North Hollywood, Calif.

Filed Mar. 29, 1965, Ser. No. 443,250

13 Claims. (Cl. 333—1,1)





8. A switchable microwave circulator comprising a symmetrical multi-port junction having a central axis, ferrite means disposed within the junction at the central axis, permanent magnet means positioned adjacent a first end of the ferrite means and at the central axis, electromagnet means positioned adjacent the permanent magnet means at the central axis, and means providing a magnetic return path from the electromagnet means to the end of the ferrite means opposite said first end.

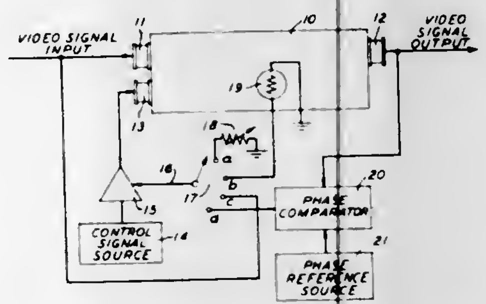
10. A microwave ferrite device for strip transmission lines comprising the combination of a strip transmission line unit including a center conductor and a pair of ground planes, at least one of which is of magnetic material, ferrite means disposed between the ground planes along an axis normal to the ground planes, a single disk-shaped permanent magnet positioned along the axis of the ferrite means and adjacent the ferrite means, and magnetic means magnetically coupled to said magnetic ground plane and completing a magnetic circuit path about the strip transmission line unit to spaced apart regions along the axis of the said ferrite means, whereby said ferrite means is magnetized in a direction along the axis.

3,355,681
ELASTIC WAVE SYSTEM TEMPERATURE CONTROL FOR CONTROLLING DELAY TIME

Henry R. Beurrier, Chester Township, Morris County, and Arthur H. Fitch, Mountain Lakes, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y.. a corporation of New York

Filed Mar. 22, 1965, Ser. No. 441,622

7 Claims. (Cl. 333—16)



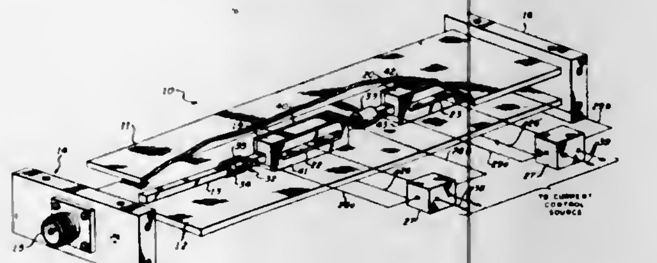
1. In combination, an elastic wave transmission medium having a delay time which varies as a function of the temperature thereof, means for varying the delay time of an intelligence bearing elastic wave signal upon said medium in a predetermined direction by control of the temperature of said medium including means for varying the net level of elastic wave energy within said medium in accordance with said predetermined direction to vary said temperature.

3,355,682
LATCHING-TYPE DIGITAL PHASE SHIFTER EMPLOYING TOROIDS OF GYROMAGNETIC MATERIAL

Donald R. Taft, Dunedin, Fla., assignor to Sperry Rand Corporation, a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,868

9 Claims. (Cl. 333—31)



1. In an electromagnetic wave device employing a member of gyromagnetic material and operating to have the magnetization state of said member switched between two different magnetization states to effect differential interaction with linearly polarized electromagnetic waves when in the two different magnetization states, the combination comprising:

electromagnetic wave propagating means for propagating electromagnetic waves along a given direction in

a mode in which the magnetic field component is linearly polarized in a given region,

a member of gyromagnetic material that exhibits gyromagnetic effects to said waves,

said member being positioned in said given region such that an axis of symmetry of said member is transverse to said given direction and substantially coincident with the axis of an aperture in said member,

first means for magnetizing said member in a first direction around said axis, whereby said member presents a first value of permeability to said waves, and

second means for magnetizing said member in a second direction orthogonal to said first direction so that said member presents a second value of permeability to said waves,

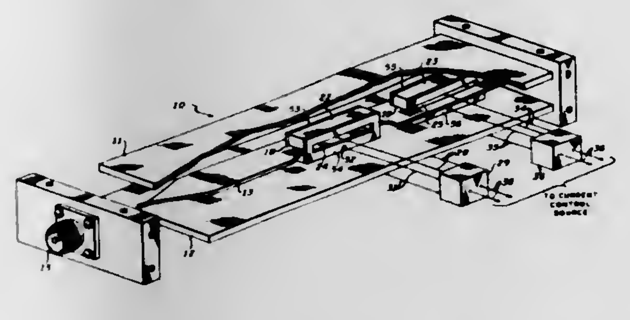
said first and second means being actuated alternately to switch the magnetization of said member between said first and second directions.

3,355,683
LATCHING-TYPE DIGITAL PHASE SHIFTER EMPLOYING TOROIDS OF GYROMAGNETIC MATERIAL

Julian Brown, Jr., Clearwater, and Donald R. Taft, Dunedin, Fla., assignors to Sperry Rand Corporation, a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,944

8 Claims. (Cl. 333—31)



1. In an electromagnetic wave device employing a member of gyromagnetic material and operating to have the magnetization state of said member switched between two different magnetization states to effect differential interaction with linearly polarized electromagnetic waves when in the two different magnetization states, the combination comprising,

means for propagating electromagnetic waves along a given direction in a propagating mode in which the magnetic field components of the waves are linearly polarized in a given region,

a member of gyromagnetic material having an aperture, said member being disposed entirely within said region and oriented so that an axis of symmetry through the aperture is transverse to said given direction and said aperture being an elongated slot extending in the direction of wave propagation so that the lines of flux established around said axis of symmetry are substantially everywhere orthogonal to said linearly polarized magnetic field contained within said gyromagnetic member,

means for driving said member to a first magnetization state by establishing lines of flux around said axis of symmetry, whereby said member presents a first value of permeability to said waves, and

means for changing the magnetization of said member to a second magnetization state, so that said member presents a different value of permeability to said waves,

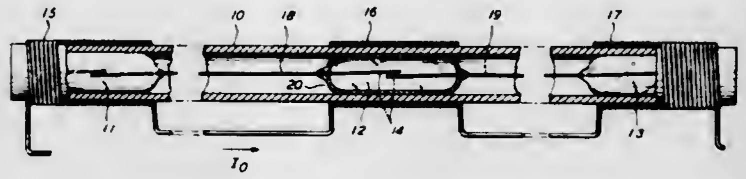
said member being alternately switched between said first and second magnetization states.

3,355,684
COAXIAL CABLE SWITCH

Donald S. Church, Westerville, and Ronald W. Kordos, Columbus, Ohio, assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Oct. 31, 1966, Ser. No. 590,897

3 Claims. (Cl. 335—5)



1. A coaxial cable switch comprising

an annular sheath of nonmagnetic electrically-conductive material,

a plurality of at least three switches mounted in said sheath with the contacts of each switch not in excess of one-quarter of a wavelength from the contacts of an adjacent switch,

a plurality of electrically-conductive members connected between said switches, respectively, to form a series combination, and

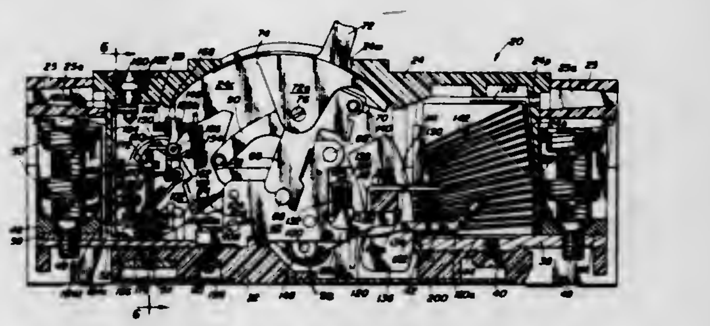
means for simultaneously operating all of said switches.

3,355,685
ELECTRIC CIRCUIT BREAKER HAVING IMPROVED OPERATING MEANS

James H. Leonard, Cedar Rapids, Iowa, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Sept. 30, 1966, Ser. No. 583,193

9 Claims. (Cl. 335—8)



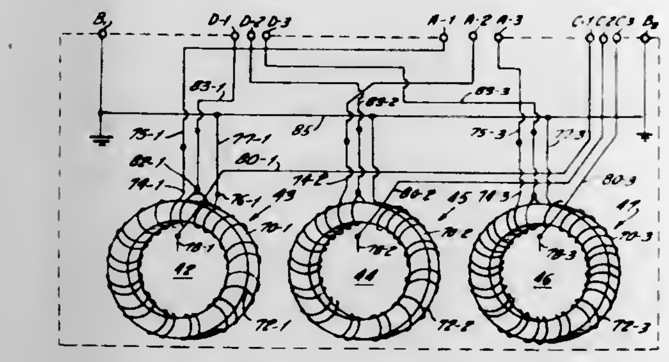
3. An electric circuit breaker comprising a case, a stationary contact in said case, a contact arm carrier pivotally mounted in said case, a bracket secured to said carrier, a mounting screw adjustably mounted in said carrier and bracket, said mounting screw having a rounded head portion, an elongated movable contact arm having a pair of studs extending from one side thereof and spaced longitudinally therealong, each of said studs having a nut adjustably threaded on a free end portion thereof, one of said studs extending through said carrier and having a coil spring disposed thereon between its associated nut and said carrier, the other of said studs extending through said bracket and having a coil spring disposed thereon between said bracket and the contact arm, said contact arm having a portion between said studs on said one side in seating engagement with the head of said mounting screw and having a movable contact secured to the other side thereof and movable into and out of engagement with said stationary contact upon pivotal movement of said carrier respectively in opposite directions.

3,355,686
MOLDED CIRCUIT TRANSFORMER ASSEMBLY WITH INTERNALLY ROUTED SECONDARY CURRENT AND POTENTIAL LEADS

Howard E. Strock, Charlotte, N.C., assignor to Associated Engineering Company, Matthews, N.C., a corporation of North Carolina

Filed Mar. 22, 1965, Ser. No. 441,474

4 Claims. (Cl. 336—5)



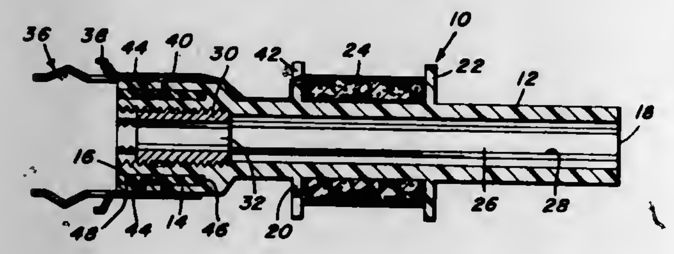
1. In a current transformer assembly having a molded insulating housing, the combination of at least one current transformer integrally molded within said housing, said current transformer including a magnetic core having a central opening for receiving a primary conductor, a secondary winding carried on said magnetic core and including at least first and second current leads, a potential tap receiving means located at said central opening for receiving a potential lead tapped into the primary conductor, a common terminal region of said assembly including a plurality of terminal means adapted for connection to an external circuit, said common terminal region including current terminal means circuit connected to said current leads and a potential terminal means circuit connected to said potential lead, first circuit connecting means integrally molded within said housing for circuit connecting said current terminal means to the respective ones of their secondary winding leads, and second circuit connecting means integrally molded within said housing, and routed between said central opening and common terminal region, for circuit connecting said potential tap receiving means to said potential terminal means, whereby said terminal means provide a common region of external circuit access to both the current and potential leads for measuring power consumption.

3,355,687
VARIABLE INDUCTOR WITH A REINFORCED COIL FORM

Stanley A. Adams, South Haven, Mich., assignor to Adams Electronics, Inc., a corporation of Michigan

Filed Apr. 8, 1966, Ser. No. 541,350

8 Claims. (Cl. 336—136)



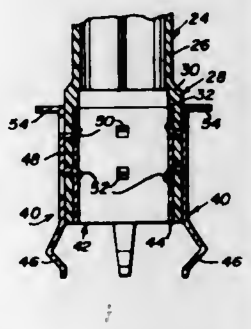
1. A coil form for a coil winding comprising, an axially elongated tubular body made of thermoplastic material including an end portion having an annular cavity formed therein, a heat resistant sleeve with said cavity remaining substantially rigid at the flow point temperature of said thermoplastic material, and at least one terminal element mounted externally on said end portion of the tubular body and projecting axially therefrom, said terminal element having fastener means projecting into the annular cavity and embedded in said sleeve for preventing migration of the terminal element when soldering the coil winding thereto at soldering temperatures exceeding said flow point temperature of the thermoplastic material.

3,355,688
INDUCTOR WITH A REINFORCED PLASTIC FORM

Stanley A. Adams, South Haven, Mich., assignor to Adams Electronics, Inc., a corporation of Michigan

Filed Jan. 26, 1966, Ser. No. 523,150

8 Claims. (Cl. 336—192)



1. In combination, a tubular body member of thermoplastic insulative material having a thermal flow temperature lower than soldering temperature, a plurality of lugs mounted on said body member, an electrically conductive device mounted on said body member having leads soldered to said lugs, and thermo-setting holding means mounted in said body member for preventing movement of said lugs relative to the electrically conductive device.

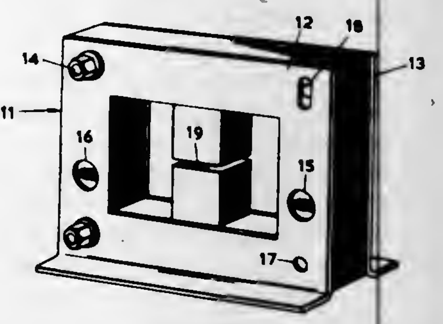
3,355,689
FERROMAGNETIC CORE WITH AN ADJUSTABLE AIR GAP

Eric Paddison and Gordon John Lally, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company

Filed June 28, 1965, Ser. No. 467,263

Claims priority, application Great Britain, July 3, 1964, 27,512/64

8 Claims. (Cl. 336—234)



1. A ferro-magnetic core of stacked laminations in combination with an elongated tool, said stacked laminations being movable relatively to one another by said elongated tool which is rotatable about its longitudinal axis and has an offset portion for effecting relative movement between the laminations, said core comprising

first laminations each defining an aperture and all being identical in shape and size, and

second laminations, interleaved with the first laminations, each defining an aperture, and all being identical in shape and size, the first laminations cooperating with the second laminations to define an air gap for the core,

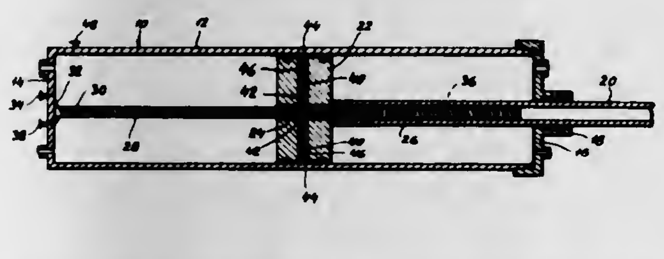
locating means for disposing the first laminations such that all of its apertures are in alignment and for disposing the second laminations such that all of its apertures are in alignment, the apertures of the first laminations partially overlapping the apertures of the second laminations to define a through hole in the stack for receiving said tool to enable the first laminations to be moved relative to the second laminations to adjust the width of said air gap.

3,355,690
HYDRAULIC PISTON DEVICES COOPERATING WITH SLIDING POTENTIOMETERS

Leif Erik Sörensen, 131 Ryesgade, Copenhagen, Denmark, and Svend Djernäs, Nykobing Falster, Denmark; said Djernäs assignor to said Sörensen

Filed Nov. 23, 1965, Ser. No. 509,297

4 Claims. (Cl. 338—39)



4. An hydraulic piston device cooperating with a sliding potentiometer, comprising a metallic cylinder provided with a cylinder bottom and a cylinder top, a piston slidably disposed within said cylinder, a piston rod attached to said piston and extending out from said cylinder through said cylinder top, said piston being provided with an axially extending center opening, said piston rod being provided with an axially extending bore open at one end into said center opening, closed at the other end and having an inner wall, a potentiometer coil comprising a core and an outer coil winding, said core being attached to said cylinder bottom at the center thereof and extending axially of said cylinder through said center opening into said axial bore in spaced relationship to said inner wall, said piston having a circumferential side face, said piston being provided with a transverse bore extending from said side face to said center opening, a first contact member being slidably arranged in said transverse bore at the end thereof open into said center opening, a second contact member being slidably arranged in said transverse bore at the end thereof open at said side face, a compression spring being inserted between said two contact members thereby pressing said first contact member against said coil and said second contact member against the inner face of said cylinder.

3,355,691
RESISTOR COMPONENT AND RESISTOR COMPRISING SEVERAL SUCH RESISTOR COMPONENTS

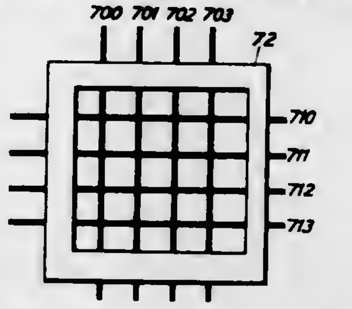
Sven Viktor Alexandersson, Enskede, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed June 24, 1965, Ser. No. 466,577

Claims priority, application Sweden, July 29, 1964, 9,178/64

10 Claims. (Cl. 338—47)

1. A switching component switchable between states of low and high resistance, said component comprising first and second wirelike elements of electrically conductive material, and means for supporting said elements in intersecting abutting relationship, whereby said elements rest against each other under pressure, at least one of said wirelike elements having a layer of semi-conducting material which changes state in response to the waveform of electrical energy applied thereto, at least one end of each of said wirelike elements being adapted to be connected to an electrical circuit.

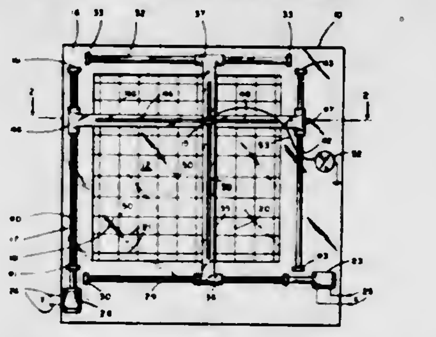


3,355,692
FUNCTION GENERATORS

William L. Poland, Bethel, Conn., assignor, by mesne assignments, to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Apr. 27, 1955, Ser. No. 504,260

4 Claims. (Cl. 338—89)



1. An electrical function-generating device comprising, in combination: a member having upper and lower opposed faces, said member being fabricated from a material having uniform resistive characteristics; a plurality of field-establishing means spaced from each other and in contact with the lower of said opposed faces, the spacing and arrangement of said field-establishing means being in accordance with a predetermined plan for establishing a desired electric field pattern along the surface of the upper of said opposed faces, said resistive member acting as a smoothing means for reducing the abruptness of the variations in potential between said field-establishing means so that the field appearing on said upper face varies in a smoother manner than the field appearing on said lower face; potential-deriving means in contact with the surface of said upper face, said potential-deriving means being movable along a predetermined path whereby a specific function of electric potential may be derived; and means for moving said potential-deriving means along said predetermined path.

3,355,693
VARIABLE RESISTANCE CONTROL

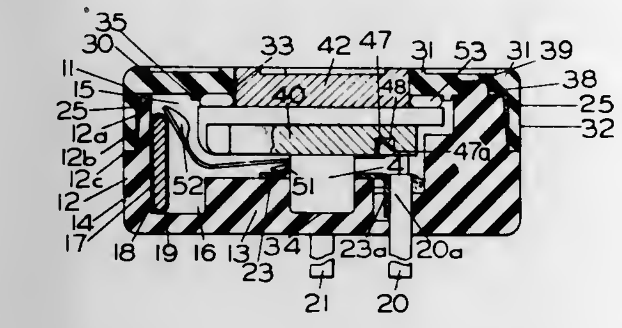
John D. Van Benthuysen and Mervin B. Arisman, Elkhart, Ind., assignors to CTS Corporation, Elkhart, Ind., a corporation of Indiana

Filed July 27, 1964, Ser. No. 385,113

3 Claims. (Cl. 338—184)

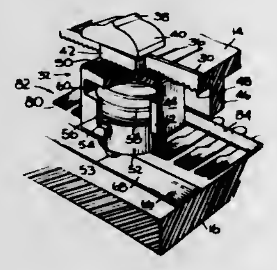
1. In a variable resistance control having a resistance element, and a contactor for wiping the resistance element intermediate the ends thereof, the improvement comprising a split housing comprising a first housing means provided with an upstanding side wall open at one end and closed at the other end to define a lower housing half supporting the resistance element and the contactor, a recess extending around the periphery of the upstanding side wall adjacent to the one end of the first housing means and terminating at a shoulder disposed between

the one end and the other end of the first housing means, one wall of the recess being tapered toward the one end of the first housing means, a second housing means closing the one end of the first housing means and having a depending skirt in overlapping relationship with a portion of the upstanding side wall of the first housing means to define an upper housing half, the skirt of the second housing means abutting against the shoulder of the first housing means and cooperating with the recess to define a reservoir having a V-shaped cross section, the reservoir having a greater dimension at the one end of the upstanding side wall than at the shoulder, and bonding means securing the second means to the first means, the reservoir being of sufficient volume for retaining the bonding material thereby preventing exudation of the bonding means into the interior of the split housing of the control.



3,355,694
PARALLEL GANGED MULTIPLE POTENTIOMETER

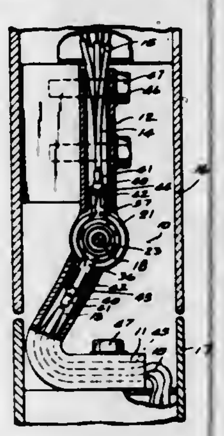
Frederick M. Wolff, Montclair, N.J., assignor to Century Lighting, Inc., Clifton, N.J., a corporation of New Jersey
Original application Aug. 16, 1963, Ser. No. 302,595, now Patent No. 3,307,133, dated Feb. 28, 1967. Divided and this application Sept. 8, 1966, Ser. No. 577,995
4 Claims. (Cl. 338—202)



1. For use with an electrical unit comprising a casing having a first wall including a narrow elongated slot and a second wall, said second wall being parallel to the first wall, and circuit means carried by the second wall of the casing, said circuit means including a first conductive strip parallel to the length of the slot and a row of short parallel conducting mutually spaced segments, each segment being elongated, the length of each segment being transverse to the length of the row, the length of the row being parallel to the first conductive strip and to the slot, said row being adjacent to but spaced from the first conductive strip: a bridge contact mounted for sliding movement along the slot, said bridge contact having a head disposed on the side of the first wall remote from the second wall, a body disposed on the other side of said first wall so as to be between said walls, a neck passing through the slot and joining the head to the body, the body of the contact being non-conductive and hollow, an electrically conductive button carried by the body, said button having portions projecting from the body toward the second wall, one portion being disposed in continuous contact with the first elongated strip and the other portion being disposed to successively contact different segments of said row as the bridge contact is moved along the slot, said bridge contact thus bridging and electrically connecting the first conductive strip to any pre-selected bridging contact, being progressively movable along the slot in a direction parallel to the first conductive strip and transversing to the breadths of the parallel segments, means mounting the button for sliding movement in the body along a linear path toward and away from the circuit means, spring means carried by the body urging the button toward the circuit means, and means prohibiting rotation of the button within the contact whereby one button portion remains in contact with the first conductive strip in all positions of the bridge contact and the other button portion remains in contact with different segments in different positions of the bridging contact.

3,355,695
HINGE FOR CARRYING ELECTRIC CIRCUITS

Joseph E. Overesch, 1391 Dunning St., Menasha, Wis. 54952
Filed May 25, 1965, Ser. No. 458,599
9 Claims. (Cl. 339—4)

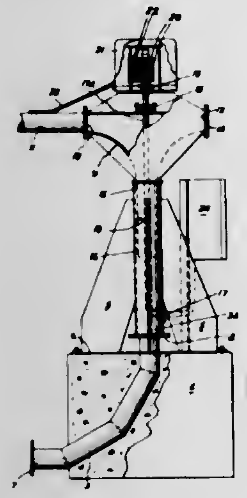


1. In combination, a hinge comprising a pair of hinge leaves having margins, a pin having an axis, said leaves and electrical conductor comprising a pair of members substantially encircling the axis of said pin, said members being composed of conductive material and being adapted to contact each other in all positions of oscillation, one of said pair of conductive members being adapted to oscillate only with one said hinge leaf and the other said conductive member being adapted to oscillate only with the other said hinge leaf, whereby said pair of conductive members provides a conductive path past the axis of said hinge pin in all positions of oscillation of said hinge leaves, said pair of conductive members being placed between a pair of insulating discs, each said insulating disc comprising a body adapted to be rotated, said body being provided with a channel within which a conductor of said pair of members is received, a relief in the rim of said channel, and conductive extensions on each of said pair of members of said electrical conductor, each said extension being engaged with said relief and extending generally radially outwardly from said channel.

3,355,696
STAND PIPE STRUCTURE

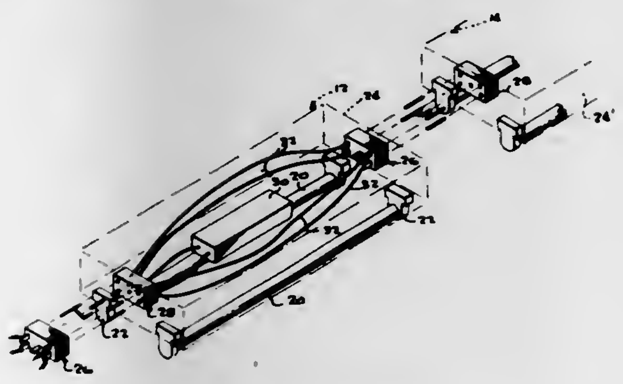
John Allwood, Parramatta, New South Wales, Australia, assignor to Machinery Specialties Pty. Limited, Villawood, near Sydney, New South Wales, Australia, a corporation of New South Wales
Filed Nov. 16, 1965, Ser. No. 508,089
Claims priority, application Australia, Jan. 21, 1965, 54,206/65
4 Claims. (Cl. 339—5)

1. A stand-pipe structure comprising a fixed water supply pipe including an upwardly directed pipe end-portion, a rotatable hollow delivery head integral with or adapted to be liquid tightly secured to at least one radially extending water delivery pipe and having a downwardly directed spigot adapted to be sleeved within or about said pipe end-portion, liquid sealing means between said pipe end-portion and said spigot, a fixed, tubular conduit for electricity supply conductors including an upwardly conduit end-portion extending coaxially through said spigot and protruding from the top of said head, a gland adapted to prevent liquid leaking from the head where it is pierced by said conduit, a thrust bearing for said head preventing upward movement thereof, a plurality of slip-rings on but insulated from said conduit above said head and adapted to be connected to the said supply conductors respectively and a plurality of wiper contacts mounted on said head and making contact with said slip-rings respectively and adapted for connection to electricity delivery conductors extending from them.



3,355,697
UNIVERSAL PLUG CONNECTOR

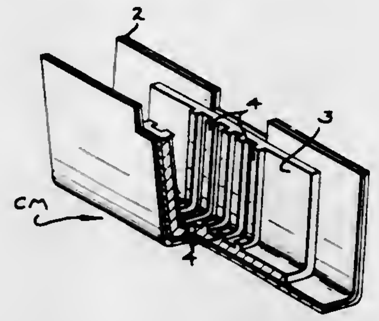
Eugene Baranowski, Forestville, Conn., assignor to Integrated Systems, Inc., Hartford, Conn., a corporation of Connecticut
Filed Oct. 19, 1965, Ser. No. 497,637
6 Claims. (Cl. 339—31)



1. A universal plug connector for selectively connecting a series of abutting, prewired, electrical fixtures carrying multiple sources of electrical current internally thereof comprising: dielectric connector blocks carried at opposed ends of each fixture, a central, common, electrical terminal carried by at least one block of each fixture, a plurality of electrical terminals carried by each block, surrounding said common terminal and spaced at an equal radial distance therefrom, means connecting said multiple sources of current within each fixture between selected ones of said radially positioned terminals, means connecting a load to said common terminal, bus connecting means for electrically bridging selected radially positioned terminals to effect multiple current source distribution throughout said series of fixtures, and source selection means for bridging selected terminals of adjacent blocks to effect distribution of one of said current sources between any two fixtures while simultaneously supplying said selected current source to said common terminal.

3,355,698
ELECTRICAL CONNECTOR

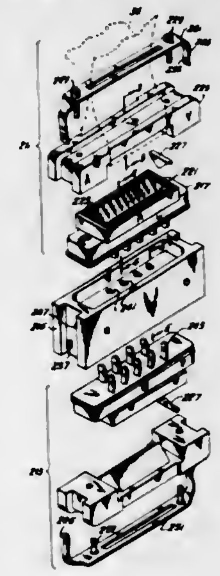
Joseph Richard Keller, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 28, 1965, Ser. No. 451,394
13 Claims. (Cl. 339—97)



1. An electrical connector comprising an open-barrel ferrule member having an interior surface extending generally throughout the ferrule member, a series of rib members extending outwardly from said interior surface of said ferrule member and extending transversely with respect to the longitudinal axis thereof, said rib members being disposed along an area of said ferrule member, said area being spaced inwardly from each end of said ferrule member extending along about one-half the length thereof, and insulation means on an exterior surface of said ferrule member and extending entirely thereover.

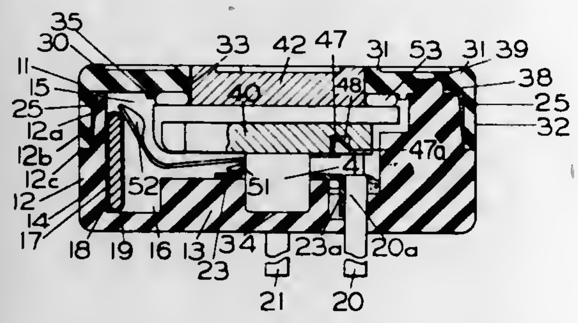
3,355,699
RIBBON CABLE CONNECTOR

Eugene Oshva, New York, N.Y., assignor to Burndy Corporation, a corporation of New York
Original application June 5, 1961, Ser. No. 114,984, now Patent No. 3,214,723, dated Oct. 26, 1965. Divided and this application Aug. 13, 1964, Ser. No. 389,394
7 Claims. (Cl. 339—99)



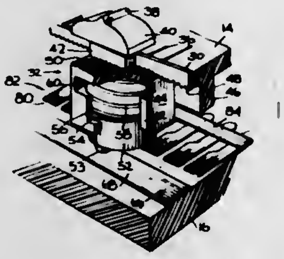
1. A strip cable connector comprising a strip cable composed of a plurality of parallel, spaced electrical conductor ribbons enclosed within a rupturable material; a wedge of material located between the ends of said strip cable and about which said strip cable is wrapped to render said strip cable more rigid and properly positioned; an insulator body having a compartment therein;

the one end and the other end of the first housing means, one wall of the recess being tapered toward the one end of the first housing means, a second housing means closing the one end of the first housing means and having a depending skirt in overlapping relationship with a portion of the upstanding side wall of the first housing means to define an upper housing half, the skirt of the second housing means abutting against the shoulder of the first housing means and cooperating with the recess to define a reservoir having a V-shaped cross section, the reservoir having a greater dimension at the one end of the upstanding side wall than at the shoulder, and bonding means securing the second means to the first means, the reservoir being of sufficient volume for retaining the bonding material thereby preventing exudation of the bonding means into the interior of the split housing of the control.



3,355,694
PARALLEL GANGED MULTIPLE POTENTIOMETER

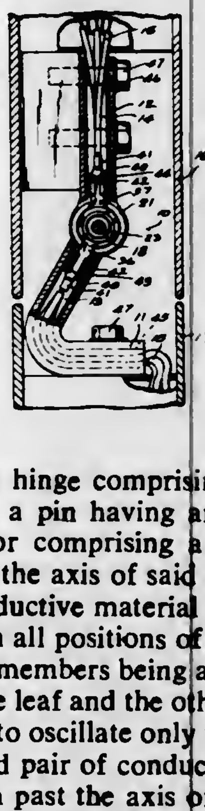
Frederick M. Wolff, Montclair, N.J., assignor to Century Lighting, Inc., Clifton, N.J., a corporation of New Jersey
Original application Aug. 16, 1963, Ser. No. 302,595, now Patent No. 3,307,133, dated Feb. 28, 1967. Divided and this application Sept. 8, 1966, Ser. No. 577,995
4 Claims. (Cl. 338—202)



1. For use with an electrical unit comprising a casing having a first wall including a narrow elongated slot and a second wall, said second wall being parallel to the first wall, and circuit means carried by the second wall of the casing, said circuit means including a first conductive strip parallel to the length of the slot and a row of short parallel conducting mutually spaced segments, each segment being elongated, the length of each segment being transverse to the length of the row, the length of the row being parallel to the first conductive strip and to the slot, said row being adjacent to but spaced from the first conductive strip: a bridge contact mounted for sliding movement along the slot, said bridge contact having a head disposed on the side of the first wall remote from the second wall, a body disposed on the other side of said first wall so as to be between said walls, a neck passing through the slot and joining the head to the body, the body of the contact being non-conductive and hollow, an electrically conductive button carried by the body, said button having portions projecting from the body toward the second wall, one portion being disposed in continuous contact with the first elongated strip and the other portion being disposed to successively contact different segments of said row as the bridge contact is moved along the slot, said bridge contact thus bridging and electrically connecting the first conductive strip to any pre-selected bridging contact, being progressively movable along the slot in a direction parallel to the first conductive strip and transversing to the breadths of the parallel segments, means mounting the button for sliding movement in the body along a linear path toward and away from the circuit means, spring means carried by the body urging the button toward the circuit means, and means prohibiting rotation of the button within the contact whereby one button portion remains in contact with the first conductive strip in all positions of the bridge contact and the other button portion remains in contact with different segments in different positions of the bridging contact.

3,355,695
HINGE FOR CARRYING ELECTRIC CIRCUITS

Joseph E. Overesch, 1391 Dunning St., Menasha, Wis. 54952
Filed May 25, 1965, Ser. No. 458,599
9 Claims. (Cl. 339—4)



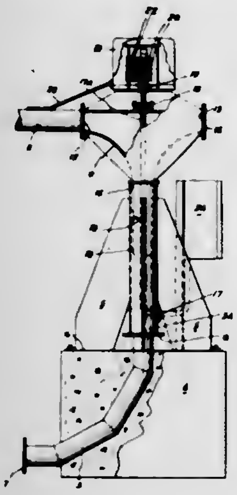
1. In combination, a hinge comprising a pair of hinge leaves having margins, a pin having an axis, said leaves and electrical conductor comprising a pair of members substantially encircling the axis of said pin, said members being composed of conductive material and being adapted to contact each other in all positions of oscillation, one of said pair of conductive members being adapted to oscillate only with one said hinge leaf and the other said conductive member being adapted to oscillate only with the other said hinge leaf, whereby said pair of conductive members provides a conductive path past the axis of said hinge pin in all positions of oscillation of said hinge leaves, said pair of conductive members being placed between a pair of insulating discs, each said insulating disc comprising a body adapted to be rotated, said body being provided with a channel within which a conductor of said pair of members is received, a relief in the rim of said channel, and conductive extensions on each of said pair of members of said electrical conductor, each said extension being engaged with said relief and extending generally radially outwardly from said channel.

3,355,696
STAND PIPE STRUCTURE

John Allwood, Parramatta, New South Wales, Australia, assignor to Machinery Specialties Pty. Limited, Villawood, near Sydney, New South Wales, Australia, a corporation of New South Wales
Filed Nov. 16, 1965, Ser. No. 508,089
Claims priority, application Australia, Jan. 21, 1965, 54,206/65
4 Claims. (Cl. 339—5)

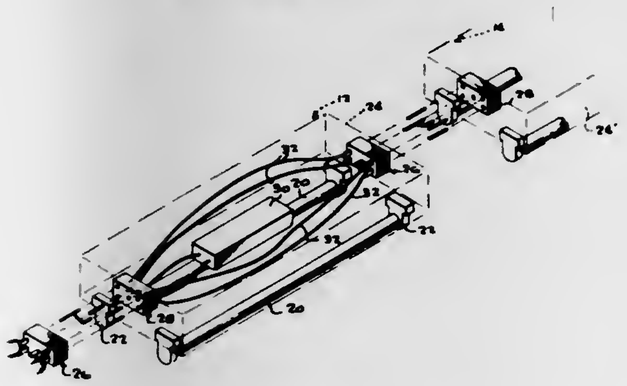
1. A stand-pipe structure comprising a fixed water supply pipe including an upwardly directed pipe end-portion, a rotatable hollow delivery head integral with or adapted

to be liquid tightly secured to at least one radially extending water delivery pipe and having a downwardly directed spigot adapted to be sleeved within or about said pipe end-portion, liquid sealing means between said pipe end-portion and said spigot, a fixed, tubular conduit for electricity supply conductors including an upwardly conduit end-portion extending coaxially through said spigot and protruding from the top of said head, a gland adapted to prevent liquid leaking from the head where it is pierced by said conduit, a thrust bearing for said head preventing upward movement thereof, a plurality of slip-rings on but insulated from said conduit above said head and adapted to be connected to the said supply conductors respectively and a plurality of wiper contacts mounted on said head and making contact with said slip-rings respectively and adapted for connection to electricity delivery conductors extending from them.



3,355,697
UNIVERSAL PLUG CONNECTOR

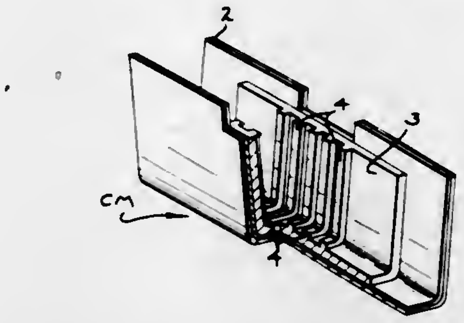
Eugene Baranowski, Forestville, Conn., assignor to Integrated Systems, Inc., Hartford, Conn., a corporation of Connecticut
Filed Oct. 19, 1965, Ser. No. 497,637
6 Claims. (Cl. 339—31)



1. A universal plug connector for selectively connecting a series of abutting, prewired, electrical fixtures carrying multiple sources of electrical current internally thereof comprising: dielectric connector blocks carried at opposed ends of each fixture, a central, common, electrical terminal carried by at least one block of each fixture, a plurality of electrical terminals carried by each block, surrounding said common terminal and spaced at an equal radial distance therefrom, means connecting said multiple sources of current within each fixture between selected ones of said radially positioned terminals, means connecting a load to said common terminal, bus connecting means for electrically bridging selected radially positioned terminals to effect multiple current source distribution throughout said series of fixtures, and source selection means for bridging selected terminals of adjacent blocks to effect distribution of one of said current sources between any two fixtures while simultaneously supplying said selected current source to said common terminal.

3,355,698
ELECTRICAL CONNECTOR

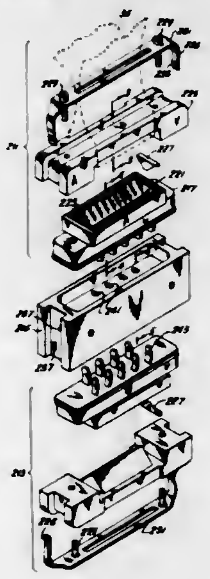
Joseph Richard Keller, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 28, 1965, Ser. No. 451,394
13 Claims. (Cl. 339—97)



1. An electrical connector comprising an open-barrel ferrule member having an interior surface extending generally throughout the ferrule member, a series of rib members extending outwardly from said interior surface of said ferrule member and extending transversely with respect to the longitudinal axis thereof, said rib members being disposed along an area of said ferrule member, said area being spaced inwardly from each end of said ferrule member extending along about one-half the length thereof, and insulation means on an exterior surface of said ferrule member and extending entirely thereover.

3,355,699
RIBBON CABLE CONNECTOR

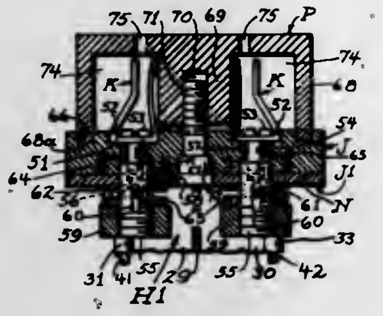
Eugene Oshva, New York, N.Y., assignor to Burndy Corporation, a corporation of New York
Original application June 5, 1961, Ser. No. 114,984, now Patent No. 3,214,723, dated Oct. 26, 1965. Divided and this application Aug. 13, 1964, Ser. No. 389,394
7 Claims. (Cl. 339—99)



1. A strip cable connector comprising a strip cable composed of a plurality of parallel, spaced electrical conductor ribbons enclosed within a rupturable material; a wedge of material located between the ends of said strip cable and about which said strip cable is wrapped to render said strip cable more rigid and properly positioned; an insulator body having a compartment therein;

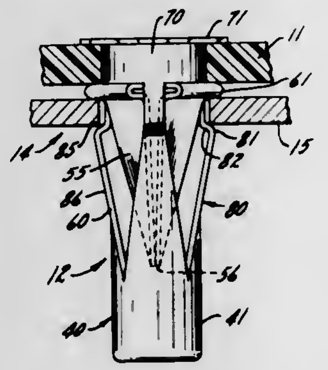
a plurality of electrical contact means disposed within said compartment in corresponding relationship to said conductor ribbon, each of said contact means having terminal means thereon; said contact means each having a slot therein the entrance of which has corners thereon that locally rupture and strip the material of said strip cable to expose the conductor ribbons to an intimate electrical contact with said contact means when the stabilized strip cable is inserted into said slots.

3,355,700
ELECTRIC SOCKETS MOUNTED IN AN OUTLET BOX
Hop Lee, 779 Commercial St.,
San Francisco, Calif. 94108
Filed Aug. 9, 1965, Ser. No. 478,040
4 Claims. (Cl. 339—119)



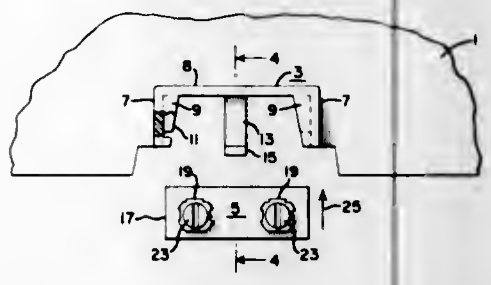
2. In a device of the type described:
- (a) a main base;
- (b) a pair of legs cross-shaped in cross section having notches at predetermined points and being connected to and extending from said main base;
- (c) a socket-carrying base adapted to be supported by said cross-shaped legs and having pins receivable in said notches only when said socket base is in a predetermined position with respect to said cross-shaped legs; and
- (d) means for securing said socket base to said legs.

3,355,701
TERMINAL
Edward A. Biba, Cicero, Ill., assignor to Malco Manufacturing Company, Chicago, Ill., a partnership
Filed July 13, 1965, Ser. No. 471,622
16 Claims. (Cl. 339—126)



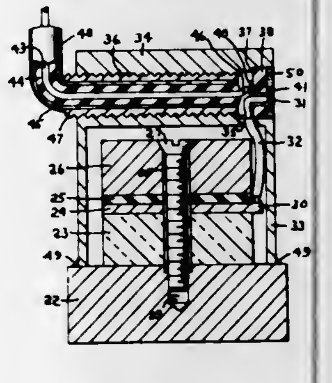
1. In a solder well terminal connector including an elongated hollow body having a side wall, a closed bottom, an open top, and a plurality of wire lead gripping fingers formed inwardly from the wall leaving cutouts in the wall separated by wall segments, the improvement comprising: a fastener arrangement for retaining the connector in a mounting aperture, said fastener arrangement including at least one of said wall segments formed outwardly of the normal transverse dimensions of the body, whereby said at least one segment serves to retain the connector in the aperture when the connector body is pressed through the aperture and the connector.

3,355,702
TERMINAL MOUNTING DEVICE
Glenn R. Mundschenk, Utica, N.Y., and William B. Scott, Jr., New Hartford, Conn., assignors to General Electric Company, a corporation of New York
Filed June 9, 1966, Ser. No. 556,327
4 Claims. (Cl. 339—126)



1. In a radio receiver including a cabinet and terminal board, apparatus for mounting the terminal board comprising:
- (a) a mounting bracket integrally formed with the cabinet and having first and second side wall portions and an end wall portion,
- (b) each of said side wall portions being provided with a pair of spaced track members receiving an associated side edge of the terminal board therebetween, and
- (c) a resilient finger extending from the end wall portion of said bracket between said side wall portions and including a transverse portion lockedly engaging the terminal board intermediate the side edges thereof.

3,355,703
COMPONENT INTEGRAL ELECTRICAL CABLE CONNECTOR
Vernon F. Alibert, Chester Heights, and Thomas H. Carey, Jr., Swarthmore, Pa., assignors to Columbia Research Laboratories, Inc., Woodlyn, Pa., a corporation of Pennsylvania
Filed June 29, 1965, Ser. No. 467,996
6 Claims. (Cl. 339—177)

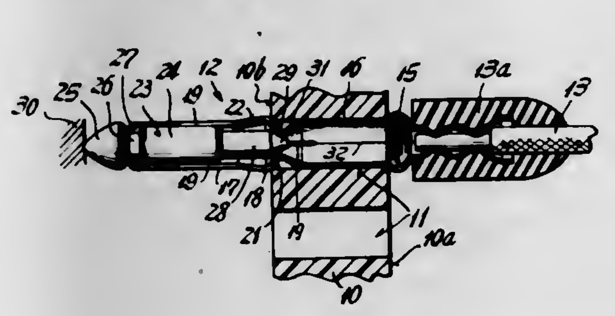


1. A coaxial cable connector comprising in combination,
- (a) a first part having wall portions defining a bore therein, at least some of the bore wall-defining portions of said first part being electrically conductive and provided with screw threads for a distance extending inward from an open end of the bore,
- (b) an electrical insulator part and an electrically conductive contact carried thereby, said insulator part being disposed within said first part bore in engagement with the bore walls so that the conductive contact is insulated from the conductive portion of the bore wall and disposed in axial alignment with and extending radially of the bore axis,
- (c) means for introducing an electrical signal conductor into said first part for electrical connection to said conductive contact,

- (d) means for connecting an electrical conductor to the electrically conductive portion of said first part bore wall, and
- (e) a conductive sleeve second part having an outside surface and an inside surface, said outside surface being provided along at least a portion of its length from one end thereof with external threads complemental to those formed in the bore of said first part, the outer diameter of said threaded sleeve being such that the sleeve is close fittingly and axially projected into said first part bore by threaded engagement with said bore wall, the open internal cross section of said conductive sleeve being just sufficient to permit passage therethrough of a coaxial cable of desired size with an outer conductive shield braid of the cable in electrical contact with the inside surface of said sleeve, the threaded length portion of the bore in said first part being less than the length of the said conductive sleeve second part so that an end portion of said sleeve extends out of said first part when said sleeve is completely threaded into said first part bore,

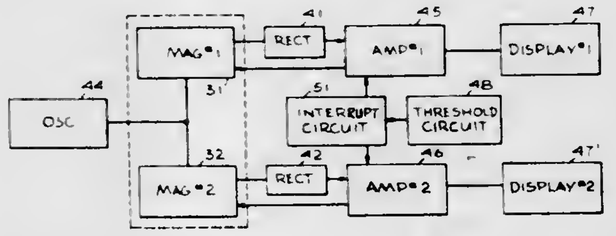
whereby, a coaxial cable may be projected through said conductive sleeve with the cable outer shield braid electrically and mechanically secured to said sleeve and with a free end portion of the cable center conductor exposed by removal of the surrounding dielectric material and shielding and extending beyond the end of the threaded conductive sleeve so that threading of the sleeve into the bore of the said connector first part axially advances the cable center conductor into engagement with the aforesaid conductive contact carried by the electrical insulator part disposed within the bore and electrically connects the cable shield braid to the electrically conductive portion of said bore wall, such a cable and said conductive sleeve being thereby nonintegrally fixedly securable to said connector first part and removable therefrom for replacement of a cable as desired by unthreading said conductive sleeve from the bore in said connector first part.

3,355,704
CONTACT PIN
Joseph John Puskas, Fairfield, Conn., assignor to The Bead Chain Manufacturing Company, Bridgeport, Conn., a corporation of Connecticut
Filed Aug. 18, 1965, Ser. No. 480,581
3 Claims. (Cl. 339—217)



1. A tubular electrical contact pin for insertion in and removal from holes in a programing board comprising a barrel portion snugly fitting the aperture and having an inner end portion extending beyond the inside surface of the board, an outer portion of the pin extending beyond the outside surface of the board for connection to an electrical conductor and having a shoulder to limit the movement of the pin inwardly of the board, the barrel including a portion extending beyond the inside surface of the board having an open end and also a plurality of longitudinal slots forming between them inwardly flexible and outwardly resiliently biased strips each integral at both ends with the barrel, said strips being formed intermediate their ends with an outwardly extending portion forming a protrusion adapted to engage the inside surface of the board when the pin is inserted therein to prevent casual axial movement of the pin therefrom, said strips being capable of yielding to permit said protrusions to pass through the hole when pushed in and pulled out of a hole in the board, said strip being formed to have an inwardly extending portion forming an inner protrusion, and a plug slidably carried by, and projecting from the open inner end of, the barrel and having a blocking surface adapted to be moved to position to engage said inner protrusion and prevent movement of the outer protrusion which would permit it to enter the hole in the board and thereby prevent the removal of the contact pin from the board when the plug is moved inwardly of the barrel in response to axial pressure applied to the end of the plug.

3,355,705
ELECTRONIC DIRECTIONAL ERROR INDICATING SYSTEM
Ralph J. Koerner, Canoga Park, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Apr. 23, 1963, Ser. No. 275,117
25 Claims. (Cl. 340—27)



1. A system for detecting direction deviations of navigable means from a predetermined direction of travel comprising:

first and second magnetic field sensing means carried by said navigable means for detecting components of the earth's ambient horizontal magnetic field, the amplitudes of detected components being a function of the degree of directional deviation of said navigable means from said predetermined direction of travel, said first and second magnetic field sensing means respectively providing first and second output signals whose amplitudes are substantially proportional to the amplitudes of said detected components of the earth's ambient horizontal magnetic field;

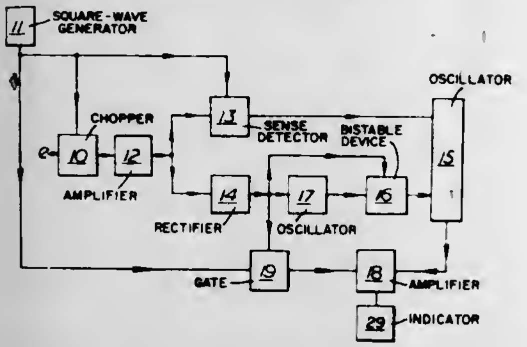
first and second amplifying means respectively coupled to said first and second magnetic field sensing means for amplifying said first and second output signals to provide first and second amplified signals, respectively;

means connected to said first and second amplifying means for feeding back at least a portion of said first and second amplified signals to said first and second magnetic field sensing means, respectively, for causing said first magnetic field sensing means and said first amplifying means to become regenerative when the directional deviation of said navigable means from said predetermined direction of travel is in one direction and for causing said second magnetic field sensing means and said second amplifying means to become regenerative when said directional deviation is in a direct opposite to said one direction; and

utilization means connected to receive said first and second amplified signals for responding to directional deviations of said navigable means from said predetermined direction of travel.

3,355,706
APPARATUS FOR INDICATING THE DEPARTURE OF A VARIABLE QUANTITY FROM A DATUM VALUE

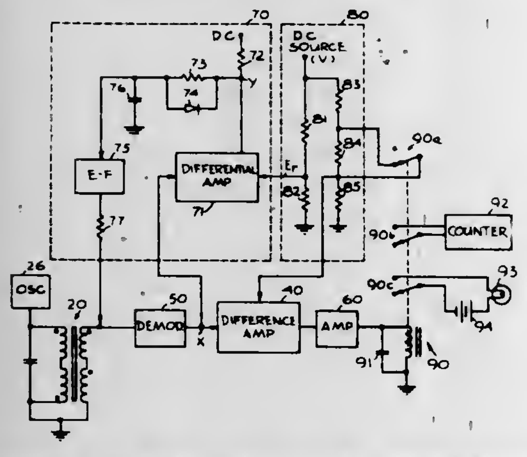
Brian Edward Pitches, Colinton, Edinburgh, Scotland, assignor to Ferranti Limited, Hollinwood, Lancashire, England, a company of Great Britain and Northern Ireland
Filed Oct. 28, 1964, Ser. No. 407,184
Claims priority, application Great Britain, Nov. 2, 1963, 43,341/63
5 Claims. (Cl. 340—27)



1. Apparatus for indicating a departure of a variable quantity from a datum value to an extent in excess of either of permissible limits respectively above and below said datum value, comprising means for deriving an electrical error signal indicative by its sense and magnitude of said departure, a sense detector connected to receive said signal and being operable to determine the sense of said error signal, a first audio-frequency oscillator operable to deliver a steady audible tone, a second audio-frequency oscillator operable to deliver a first or a second error tone in dependence upon the output of said sense detector, said steady audible tone and said first and second error tones all being of different frequency, a bistable circuit operable when the magnitude of said error signal exceeds one or other of two predetermined values corresponding to said permissible limits to cause said second audio-frequency oscillator to deliver said first or said second error tone, and a variable-frequency oscillator the frequency of which is dependent upon the magnitude of said error signal, said variable-frequency oscillator having its output operably connected to trigger said bistable circuit such that the delivery of said first or said second error tone is interrupted at a rate proportional to the magnitude of said error signal.

3,355,707
APPARATUS FOR VEHICLE DETECTION

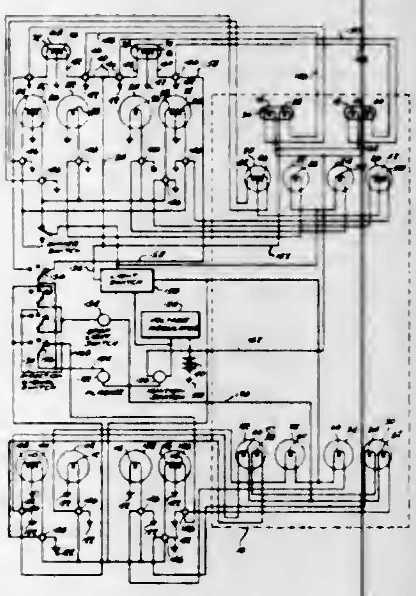
Ralph J. Koerner, Los Angeles, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed May 11, 1964, Ser. No. 366,425
6 Claims. (Cl. 340—38)



1. A system for detecting vehicles comprising:
sensing means having an output winding providing an output signal whose amplitude is substantially proportional to magnetic field intensity through a defined sampling area;
means for supporting said sensing means for locating said sampling area adjacent to a path on which vehicles are to be detected;
demodulator means providing a direct voltage signal in response to said output signal;
a source providing a reference signal of predetermined amplitude;
difference means responsive to an amplitude difference between said reference and direct voltage signals for providing a negative feedback signal;
capacitive delay means coupling said feedback signal to said output winding for controlling said output signal after a predetermined time interval;
utilization means; and
control means responsive to said direct voltage signal for energizing said utilization means.

3,355,708
SAFETY LIGHT DEVICE FOR VEHICLE INTERIORS TO INDICATE VISUALLY THE CONDITION OF THE EXTERIOR LIGHTS

Charles C. Perry, 9725 Waters Road,
Ann Arbor, Mich. 48103
Filed Mar. 15, 1965, Ser. No. 439,886
4 Claims. (Cl. 340—80)



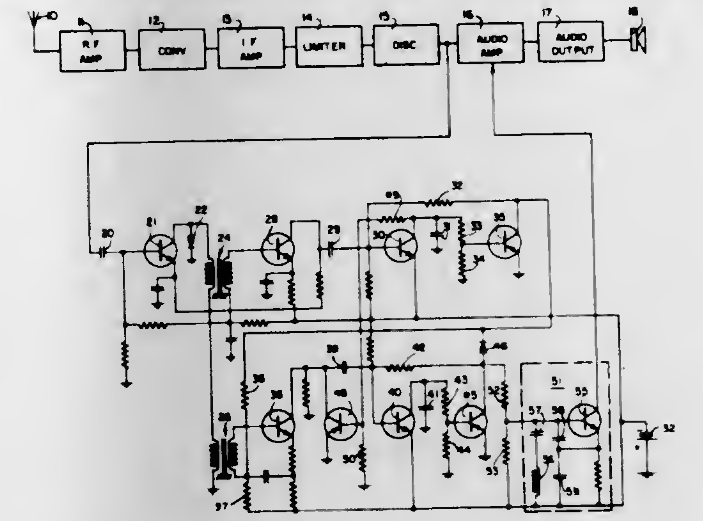
1. An indicator device for indicating visually the condition of running lamps of a vehicle comprising a panel having indicia simulating the outline of said vehicle as viewed from above, a plurality of indicator lamps positioned in said indicia corresponding in numbers and locations to the running lamps of said vehicle, and electric circuits between said running lamps and said indicator lamps for passing electric current continuously through filaments of indicator lamps when electric current is passing through filaments of corresponding running lamps.

3,355,709
CODE RECEIVER RESPONSIVE TO PLURAL TONES IN SEQUENCE

George M. Hanus, Norridge, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Jan. 14, 1965, Ser. No. 425,593
14 Claims. (Cl. 340—164)

1. A decoder circuit for responding to first and second tone signals of different frequencies applied in sequence including in combination, first and second tone frequency selecting and detecting circuits, means for applying tone signals to said circuits, said first tone circuit providing first and second output signals in response to a first tone

signal selected thereby, said first and second output signals continuing after said first tone signal ceases with said first output signal continuing for a time period after said second output signal terminates, said second tone selecting and detecting circuit providing an output signal in response to a second tone signal selected thereby, said second circuit being coupled to said first circuit and being enabled by said first output signal and disabled by said second output signal, whereby said second tone circuit produces an output signal only in response to said second tone signal applied after said first tone signal and in the time period during which said first output signal continues after termination of said second output signal.

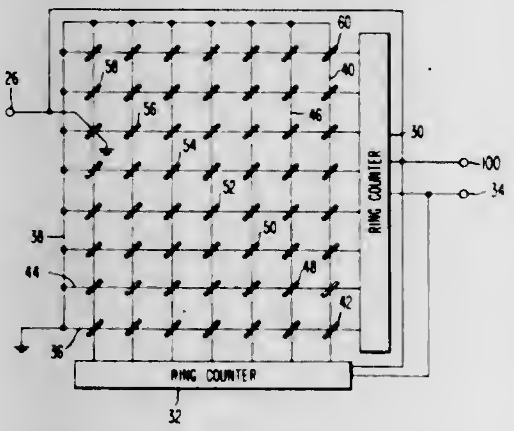


3,355,710
MATRIX DRIVER CONTROL CIRCUITS

Ernst J. Schubert, Hacienda Heights, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Jan. 7, 1964, Ser. No. 336,242

7 Claims. (Cl. 340—166)



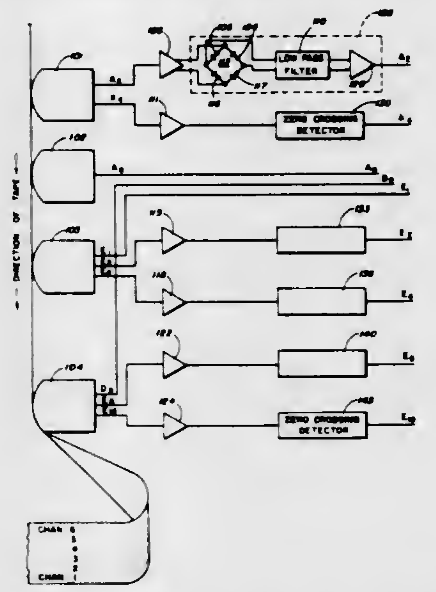
1. The combination comprising:
a ring counter including a plurality of ring counter stages;
a shift pulse terminal, electrically connected to said ring counter, adapted to receive shift pulses so as to cause said ring counter to cyclically provide output pulses at each of its stages in response to said shift pulses;
a start terminal, electrically connected to said ring counter, adapted to receive a start pulse so as to initiate counting by said ring counter at a predetermined stage of said ring counter; and
disabling means, electrically connected to each of said ring counter stages, for disabling said stages from providing output pulses between the time that an output pulse from a predetermined one of said stages of said ring counter coincides with a second predetermined event and the time that a start pulse is applied to said start pulse terminal, and for enabling said stages when said start pulse is applied to said start pulse terminal.

3,355,711
MAGNETIC TAPE PLAYBACK SYSTEM

James W. Brooks and George J. Moss, Jr., Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Jan. 26, 1965, Ser. No. 428,268

12 Claims. (Cl. 340—172.5)



1. A playback system for readout of random pulse event information from a magnetic tape being moved at a predetermined rate having a plurality of data channels and a control channel, comprising,
scanning means for detecting pulse events registered on said data channels and initiating an event present signal,
recording means spaced apart from said scanning means in the direction of the movement of said tape for registering an event present signal in said control channel of said tape,
pulse forming means connected to said scanning means and responsive to a signal from said scanning means to control the registering of said event present signal in said control channel a predetermined distance ahead of event information in the data tape channels,
data readout means spaced apart from said recorder means in the direction of the movement of said tape, said readout means having a plurality of data channels and a printer control channel for reading data and control information from said moving tape,
printer means having a recording chart and a chart control mechanism, said mechanism responsive to a signal from the printer control readout portion of said readout means for initiating the movement of said chart a predetermined time in advance of the readout of information by said data readout means, whereby said chart is advanced only when event information is present to be printed.

3,355,712
MAGNETIC SHAFT-TO DIGITAL ENCODER READOUT BUFFER

Donald H. Lackowski, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Sept. 11, 1964, Ser. No. 395,966

5 Claims. (Cl. 340—172.5)

1. A digital encoder readout buffer for use in conjunction a magnetic shaft-to-digital encoder and a data processor;

said data processor providing outputs corresponding to a data command signal F and a data acknowledge signal A_1;

said signal F corresponding to an order to the buffer to provide a data sample;

said signal A_1 corresponding to an acknowledgment that data has been received by said processor;

said buffer providing outputs corresponding to a command acknowledgment signal R_1 and an enabling output for encoder use;

said signal R_1 corresponding to a reply to the data processor that the encoder has been sampled and is being held static;

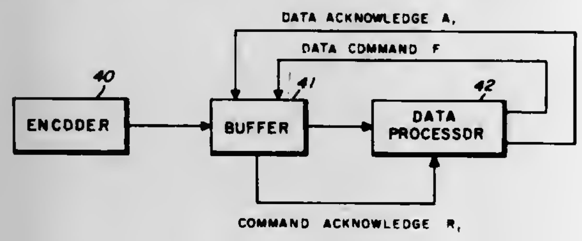
the buffer having couple-and-hold characteristics; and

a flip-flop having inputs and outputs;

signal F being connected to one of said inputs;

signal A_1 being connected to another of said inputs;

coincidence means operatively receiving an output from said flip-flop;



said flip-flop providing an inhibit pulse to said coincidence means when signal F is present and an enabling pulse when signal A_1 is present;

said coincidence means operatively receiving an input from the encoder;

said coincidence means being operative to produce said enabling output for encoder use when the input from the encoder and the enabling output from the flip-flop are present;

another flip-flop having inputs and outputs;

signal F being operatively coupled to one of said inputs on said another flip-flop;

an output from said another flip-flop corresponding to signal R_1 when signal F is present at one of said inputs to said another flip-flop.

3,355,713
ELECTRONIC MACHINE SIMULATING A LEARNING SCHEME

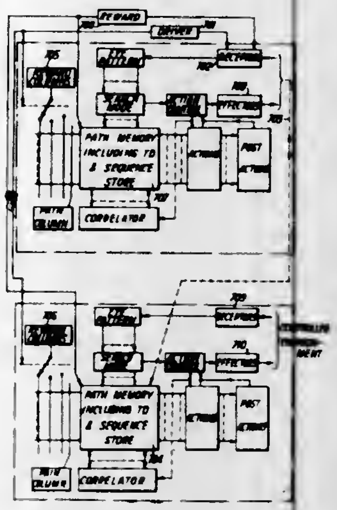
John Hugh Andreae and Peter Lawrence Joyce, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 3, 1963, Ser. No. 292,541

Claims priority, application Great Britain, July 12, 1962, 26,835/62

19 Claims. (Cl. 340—172.5)

18. An electrical learning machine which comprises input means for collecting electrical signals representative of an environment in which the machine exists or of the relation of the machine to that environment, output means for generating output conditions each of which can influence the nature of said environment or the relation of the machine thereto, first control means for causing the machine to search the environment to acquire data representative of the nature thereof or of the relation between the machine and its environment, storage means in which such data may be retained, said storage means being capable of containing both data words representing the nature of said environment or the relation of the machine thereto and signals (hereinafter called reward signals) indicating that the operations of or due to said machine's output conditions are satisfactory, and second control means for causing the machine to follow paths of action indicated by the data in said storage means as being satisfactory, the machine switching from operation under control of said first control means when sufficient data therefor has been collected and switching from operation under control of said second control means to operation under control of said first control means when the operation under control of said first control means fails to lead to an expected result.

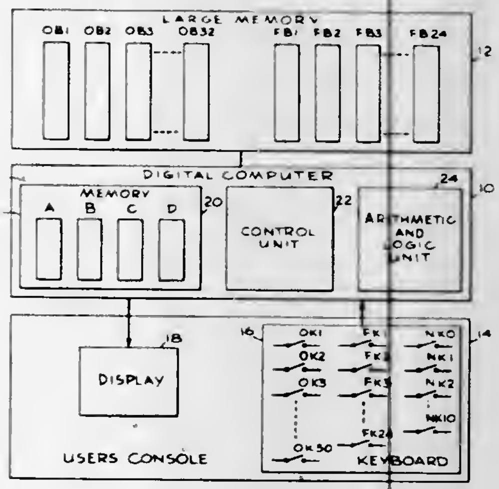


3,355,714
ON-LINE COMPUTING SYSTEM FOR PROCESSING MATHEMATICAL FUNCTIONS

Glen J. Culler, Santa Barbara, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Oct. 21, 1963, Ser. No. 317,598

23 Claims. (Cl. 340—172.5)



1. A digital computer system comprising:

a digital computer capable of performing a plurality of different operations;

a digital memory coupled to said digital computer;

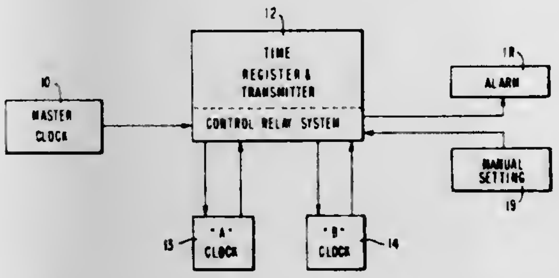
means for storing representations of one or more mathematical functions in said memory including means for storing lists comprised of digital representations of abscissa and ordinate values of a plurality of different coordinates in each of said mathematical functions;

control means for identifying one of said plurality of operations and one of said mathematical functions; and

means responsive to said control means for causing said digital computer to perform the same identified operation on the entire list of said digital representations of all of said ordinate values of said identified mathematical function.

3,355,715
TIME SYNCHRONIZING SYSTEM

Ben Harris, Rochester, N.Y., assignor to Frieden, Inc., a corporation of Delaware
Filed Jan. 27, 1965, Ser. No. 428,492
25 Claims. (Cl. 340—172.5)



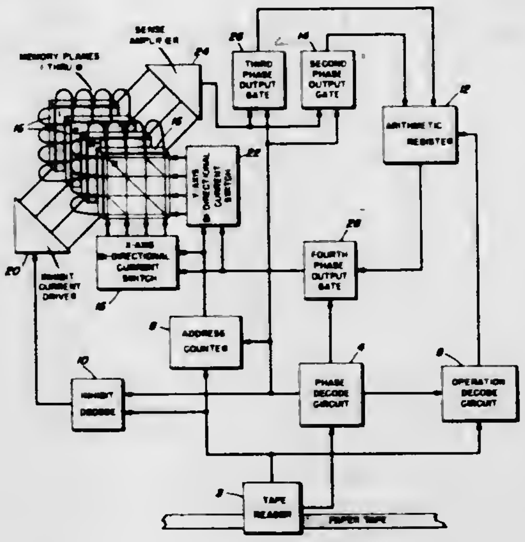
1. A time synchronizing system comprising a time register and operational time reference means therein for controlling the register operations to register prevailing values of time, said register including indicating means for providing periodic indications of a preselected value of prevailing time registered by said register, a secondary time reference means, means including an input circuit adapted to receive at the period of said indications primary-time-indicative electrical synchronizing signals provided by a primary time reference means and responsive to each said signal for initiating operation of said secondary time reference means to transfer a primary time reference thereto and for transferring control over the operations of said time register from said operational time reference means to said secondary time reference means, means controlled by said secondary time reference means for utilizing the indications of said indicating means to compare the prevailing value of time registered by said register with the primary time reference transferred to said secondary time reference means and to provide corrective change of register time setting to eliminate time deviations found by said comparison to prevail, and means controlled by said secondary time reference means for transferring control over the operations of said time register from said secondary time reference means to said operational time reference means at the end of a preselected interval following said time indication comparison.

3,355,716
MEMORY CONTROL AND ACCESS SYSTEM

Leo C. Miller, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 2, 1965, Ser. No. 445,275
27 Claims. (Cl. 340—172.5)

1. In combination with a plurality of interconnected memory planes, a memory control and access system comprising:

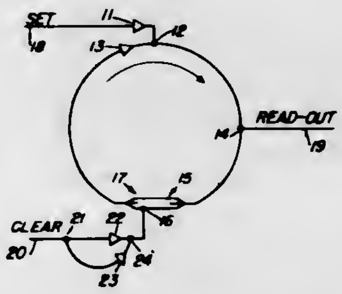
- a source of control and instruction signals contained on a prepunched paper tape,
- a tape reader,
- a phase decode circuit connected to the tape reader,
- an operation decode circuit connected to said phase decode circuit,
- an address counter circuit connected to said tape reader,
- an inhibit decode circuit in parallel connection with said address counter, said address counter circuit and said inhibit decode circuit being connected in parallel with said phase decode circuit,
- a second phase output circuit,
- a third phase output circuit,
- a fourth phase output circuit connected to said phase decode circuit,
- a pair of bi-directional current steering switches connected to said fourth phase output circuit and to said address counter, one of said steering switches being connected to one axis of the first of said memory planes and the other of said steering switches being connected to the other axis of the first of said memory planes,
- an inhibit current driver connected in series relationship between each of the memory planes and the inhibit decode circuit,



- a sense amplifier connected in series relationship between each of the memory planes, said second phase output circuit and said third phase output circuit, and
- an arithmetic register connected to said third phase output circuit, said second phase output circuit, said fourth phase output circuit and said operation decode circuit.

3,355,717
NEURISTOR STORAGE RING EMPLOYING TRIGGER-COUPLED JUNCTIONS

Alfred J. Cote, Jr., Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 27, 1965, Ser. No. 459,482
6 Claims. (Cl. 340—172.5)



1. A pulse storage and generating system comprising

(a) a neuristor storage ring having a T_u neuristor junction and a pair of T_b neuristor junctions serially connected therein, said pair of T_b neuristor junctions connected together via a pair of neuristor paths at the bifurcated sections thereof and connected respectively to opposite ends of said T_u neuristor junction via said storage ring,

(b) pulse train initiating means connected between said T_u junction and one of said pair of T_b neuristor junctions for providing a circulating pulse on said storage ring, and

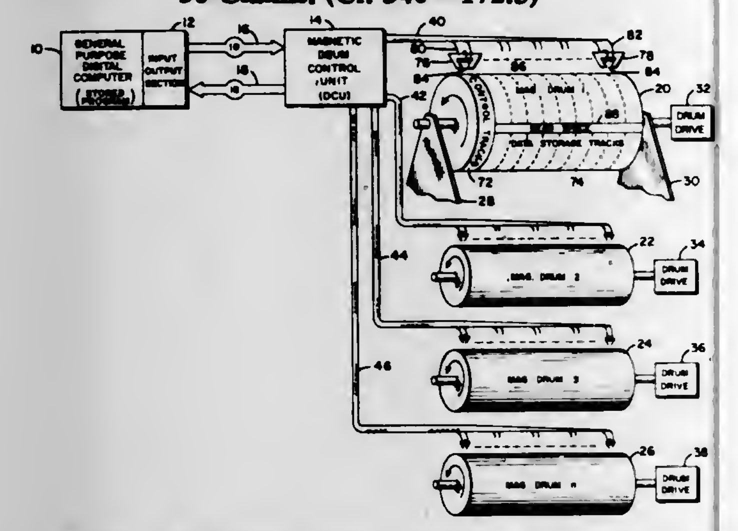
(c) means connected to one of said pair of neuristor paths between said T_b neuristor junctions for annihilating a pulse on said one path and inhibiting pulse circulation on said storage ring.

3,355,718

DATA PROCESSING SYSTEM HAVING PROGRAMMABLY VARIABLE SELECTION FOR READING AND RECORDING INTERLACED DATA ON A MAGNETIC DRUM

Anthony R. Talarczyk, Bloomington, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 11, 1965, Ser. No. 478,885
30 Claims. (Cl. 340—172.5)



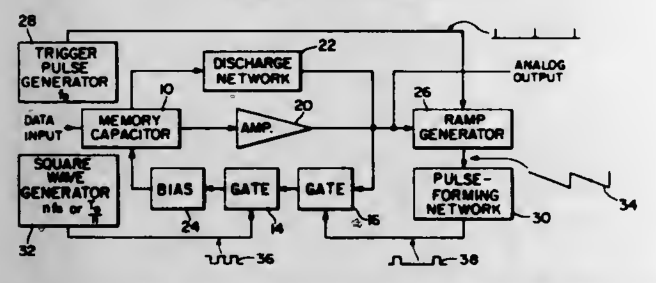
1. A data processing system including in combination:
- at least one rotatable magnetic record member, including means for recording data words magnetically on the surface of said record member and for magnetically reading signals stored on the surface of said record member, said record member having control signals pre-recorded on the surface thereof;
- a programmable computer capable of operating pursuant to a program of instruction, and including means for providing programmable alterable function words, said function words having at least a coded portion indicative of the desired time-relationship of sequentially addressable storage location on said record member; and
- control means responsively coupled to said computer for selectively altering the time-relationship of sequentially addressable storage locations on said record member in response to said coded portion of said function word.

3,355,719

ANALOG VOLTAGE MEMORY CIRCUIT

Stephen Richard Fox, Los Angeles, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Oct. 8, 1963, Ser. No. 314,823
5 Claims. (Cl. 340—173)



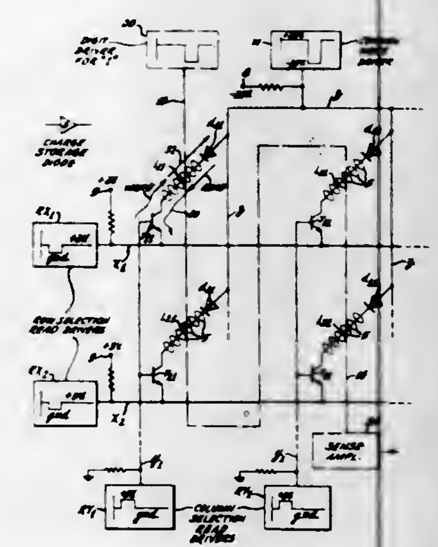
5. In a computer incorporating an energy-storage device of the capacitance type which is adapted to receive energy representative of data to be remembered, and which energy is subject to gradual diminution over a period of time subsequent to its reception by said device so that after such period of time said energy is no longer representative of the data supplied thereto, the improvement which comprises a circuit for maintaining a predetermined energy level on said capacitor which is determined by the magnitude of the stored energy at any given instant of time, said circuit comprising:
- a capacitor adapted to receive energy representative of data to be remembered;
- a current amplifier in series with said capacitor and to which the output of said capacitor is applied;
- a first gate;
- a second gate;
- a source of replenishment energy for said capacitor;
- means for electrically connecting said two gates and said source of replenishment energy in series with one another, the resulting series combination being connected to said capacitor and in parallel with said current amplifier;
- a discharge network connected in parallel with the series combination of said two gates and said source of replenishment energy, said discharge network acting to diminish the charge on said capacitor at an essentially constant rate;
- a sawtooth wave generator receiving the output of said current amplifier;
- means for triggering said sawtooth wave generator at a predetermined frequency;
- a pulse generator connected to said sawtooth wave generator and acting to produce a pulse whenever the amplitude of said sawtooth wave reaches a predetermined reference level;
- means for applying the output of said pulse generator to control the operation of said second gate;
- a source of square-wave voltage of a constant frequency higher than that at which said sawtooth wave generator is triggered; and
- means for applying a square wave voltage from said source to control the operation of said first gate;
- whereby, when both said gates are concurrently closed, current will flow into said capacitor from said source of replenishment energy to compensate for a diminution thereof and a restoration of such energy to a level where it will be representative of the data to be remembered.

3,355,720

MEMORY USING CHARGE STORAGE DIODES

Melvin M. Kaufman, Levittown, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 5, 1964, Ser. No. 349,715
5 Claims. (Cl. 340—173)



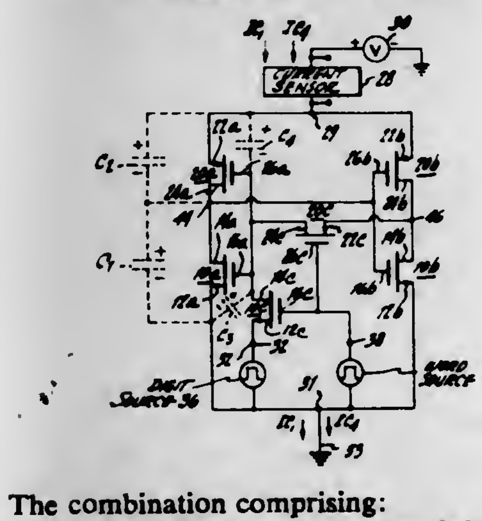
1. In a memory array,
- a plurality of word lines,
- a common bus,
- a plurality of charge storage diodes each connected from a first end of a respective one of said word lines to said common bus,
- a plurality of transistors each having an output electrode connected to a second end of a respective one of said word lines, and having input electrodes,
- read means connected to the input electrodes of said transistors to render solely one of said transistors conductive, whereby a read current pulse flows in one direction through the corresponding one of said word lines and the associated charge storage diode and stores a charge in said diode, and
- a write driver connected through said common bus to all of said charge storage diodes to subsequently send an opposite-direction write current pulse through solely the diode having a stored charge and the associated word line.

3,355,721

INFORMATION STORAGE

Joseph R. Burns, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Aug. 25, 1964, Ser. No. 391,980
26 Claims. (Cl. 340—173)



18. The combination comprising:
- first, second and third insulated-gate field-effect transistors each having a source, a drain and a gate;
- first and second circuit branches connected in parallel, the first branch including the source-drain path of the first transistor and the second branch including the source-drain path of the second transistor;
- means cross-coupling the drains of the first and second transistors to the gates of the second and first transistors, respectively;
- an input terminal;
- means connecting the source-drain path of the third transistor between said input terminal and the gate of the first transistor;
- means for connecting said input terminal to a source of input signals; and
- means for connecting the gate of the third transistor to a source of control voltage.

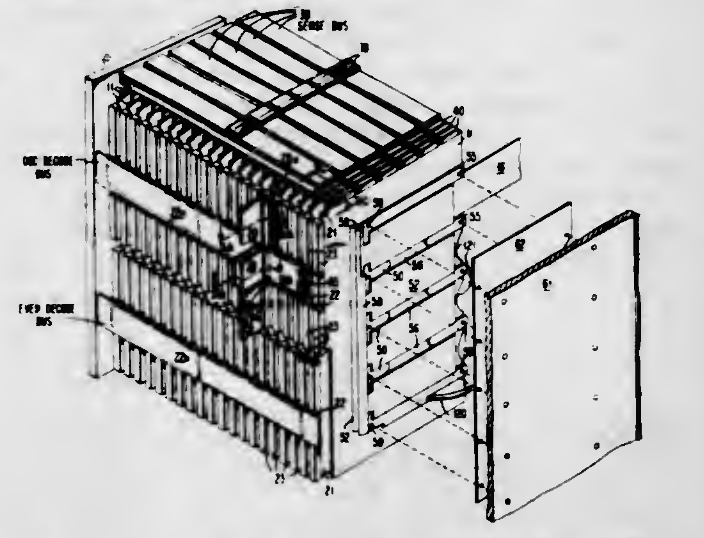
3,355,722

COMPACT SEMI-PERMANENT INFORMATION STORAGE UNIT

Harold R. Grubb, Owego, John W. Haskell, Endwell, Philip A. Lord, Vestal, and Edward F. Rent, Endicott, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Apr. 20, 1965, Ser. No. 449,500
12 Claims. (Cl. 340—173)

9. A compact information storage unit, comprising, in combination:
- a plurality of first elements of generally similar configuration bearing preselected unique coded information,
- a plurality of second elements to which input signals are applied and from which output signals are taken, and which second elements cooperate with corresponding first elements to cause the output signals to correspond to such preselected information in the areas of the associated first elements interrogated by the input signals,
- said second elements being of substantially identical configuration, with projecting portions provided in at least one part thereof and arranged in a staggered pattern to cause the projecting portions of adjacent ones of said second elements to be oriented in different relative positions, and



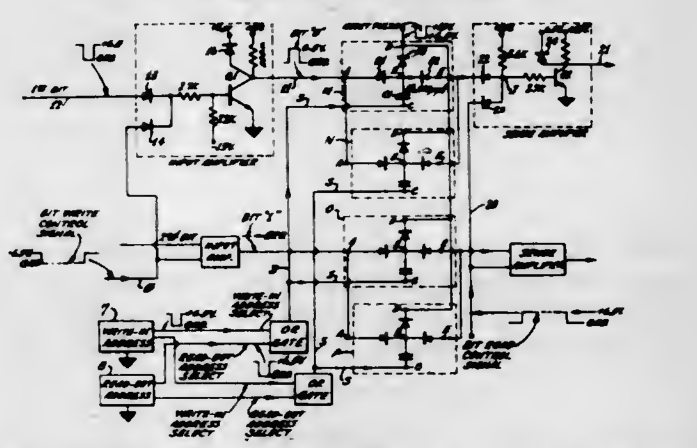
- a plurality of signal-conveying members, at least some of which have a width greater than the spacing between adjacent second elements and are edge-mounted to the projecting portions according to said pattern such that adjacent second elements are compactly spaced at distances less than the widths of said some members.

3,355,723

DIODE-CAPACITOR BIT STORAGE CIRCUIT

Robert John Clark, Dorion, Quebec, Canada, assignor to Radio Corporation of America, a corporation of Delaware

Filed May 10, 1965, Ser. No. 454,562
9 Claims. (Cl. 340—173)



8. A bit storage circuit comprising a storage capacitor having a bit store terminal connected to one side of said capacitor and an address select terminal connected to the other side of said capacitor, a first diode connected between said bit store terminal and a bit input terminal, a second diode connected between said bit store terminal and a bit output terminal, and a third diode connected between said bit store terminal and a reset terminal, means for holding said bit input terminal normally at a reference potential and said bit output terminal at a certain other potential having a polarity tending to make said second diode conduct, means for holding said address select terminal normally at said certain other potential, and means for holding said reset terminal normally at a potential at least twice that of said certain other voltage and of a polarity tending to make said third diode non-conducting, means for storing a bit on said capacitor, said last means comprising means for momentarily changing the potential of said bit input terminal to substantially said certain other potential and means for simultaneously

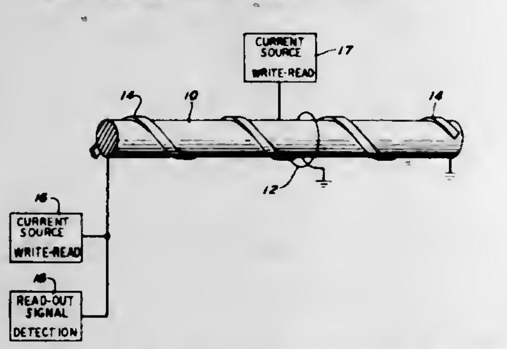
changing the potential of said address select terminal substantially to said reference potential whereby current flows through said first diode and said capacitor receives a charge, and whereby said bit store terminal is at substantially twice said certain other potential when said bit input terminal and said address select terminal are returned to their normal potentials, means for holding said bit output terminal at said reference potential during bit write-in, and means for reading out said stored bit, said last-named means comprising means for momentarily lowering the potential of said address select terminal substantially to said reference potential whereby said bit store terminal drops substantially to said certain other potential resulting in no potential change at said bit output terminal, this being the generation of a bit output.

3,355,724
MAGNETIC MATERIAL AND DEVICES UTILIZING SAME

Richard M. Brownell, Bethlehem, Pa., Harold L. B. Gould, Kinnelon Borough, and Daniel H. Wenny, Jr., Morris Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 20, 1964, Ser. No. 405,203

6 Claims. (Cl. 340—174)



1. Device comprising an element defining at least one magnetically remanent flux path including a material consisting essentially of from 85 to 95 weight percent cobalt, remainder iron, produced by cold-drawing as round wire, such drawing resulting in an area reduction of at least 95 percent as determined by the ratio

$$\frac{A_1-A_2}{A_1}$$

where A_1 and A_2 are the cross-sectional area of the wire before and after drawing, in which the said wire is utilized substantially in its as-worked state, such path having associated therewith at least two electrical paths.

3,355,725
INFORMATION STORAGE MATRIX

Alexander McKeon, Los Gatos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 14, 1963, Ser. No. 323,735

6 Claims. (Cl. 340—174)

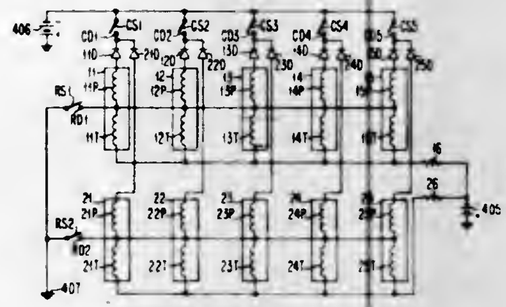
6. An information storage system comprising:

a plurality of relays arranged in rows and columns,

each of said relays having a set of bi-stable contact points, said contact points having a stable first position and a stable second position, first input means operative when activated to generate a magnetomotive force to move said contact points to said first position, and second input means operative when activated to generate a magnetomotive force to move said contact points to said second position, said second means being adapted to generate more magnetomotive force than said first means whereby said points are moved to said second position when both said first input means and said second input means are simultaneously activated,

separate row drive means associated with each row and separate column drive means associated with each column,

means associated with each relay for activating said first input means whenever the associated row drive means is activated and means associated with each relay for activating said second input means whenever both the associated row drive means and the associated column drive means are activated,



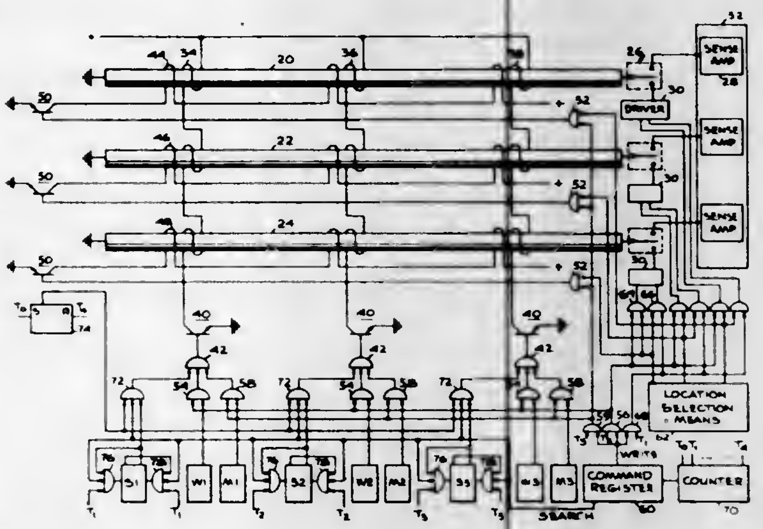
whereby when a row drive means and one or more column drive means are activated in order to store a new array of bits in a particular row of said relays, the only relays which change state are those relays which need change state in order to represent the new data.

3,355,726
THREE STATE STORAGE DEVICE

Ralph J. Koerner, Los Angeles, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Dec. 30, 1963, Ser. No. 334,310

12 Claims. (Cl. 340—174)



1. A three state storage device comprising:

a magnetic film having a magnetic field domain with a preferred anisotropic axis;

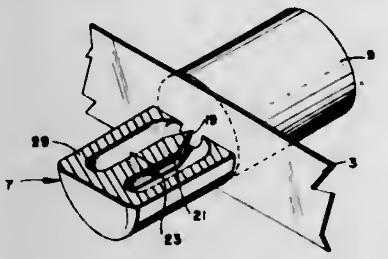
means for selectively developing a magnetic field extending in a first direction parallel to said anisotropic axis for orienting the magnetic field in said domain in a first direction parallel to said axis;

means for selectively developing a magnetic field extending in a second direction parallel to said anisotropic axis for orienting the magnetic field in said domain in a second direction parallel to said axis; and

means for selectively developing a magnetic field above a predetermined amplitude extending transverse to said anisotropic axis for shattering said domain to thereby develop a plurality of independent mutually cancelling domains.

3,355,727
SHIELD UTILIZED AS FLUX PATH FOR MAGNETIC HEAD

Donald C. Gaubatz, Santa Clara, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 24, 1963, Ser. No. 297,470
1 Claim. (Cl. 340—174.1)



Apparatus for translating a signal recorded on magnetic medium into an electrical output, said apparatus comprising:

(a) a magnetic core perpendicularly disposed adjacent and contiguous with one side of the medium and tapered inwardly to form a tip of reduced cross-section adjacent the medium;

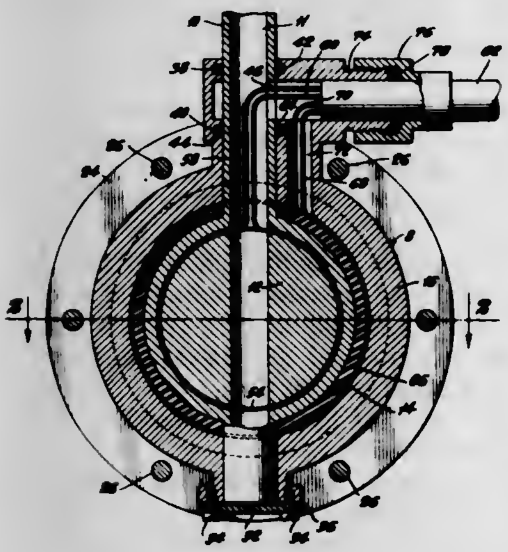
(b) a thin element of material exhibiting the Hall effect disposed in series with the core;

(c) a concentric magnetic shield which is magnetically coupled to the outer end of the core, which encloses the entire core and Hall element structure and which terminates adjacent and contiguous with an annular portion of the medium about the tip;

(d) and a magnetic anvil disposed in substantial alignment with the shield adjacent and contiguous with the opposite side of the medium so as to provide a low reluctance return path to the tip of the magnetic core.

3,355,728
VALVE STRUCTURE AND FIRE PROTECTION SPRINKLER SYSTEM INCLUDING SAME

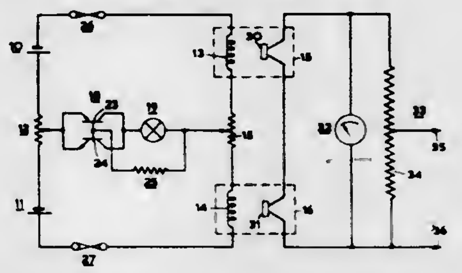
James B. Smith, Wellesley Farms, Mass., assignor to Factory Mutual Research Corporation, Norwood, Mass., a corporation of Massachusetts
Filed June 23, 1964, Ser. No. 377,252
17 Claims. (Cl. 340—196)



7. A valve structure comprising a valve member, a first coil arranged on said valve member, a valve seat, a second coil arranged on said valve seat adjacent to said valve member, said valve member being movable with respect to said valve seat so as to vary the extent of coupling therebetween, and means to vary the coupling between said coils by moving said valve member in relation to said valve seat.

3,355,729
POTENTIAL DIFFERENCE DETECTING ARRANGEMENTS

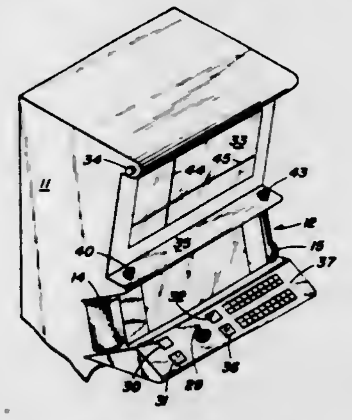
Ronald Cyril Dayson, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Oct. 19, 1964, Ser. No. 404,629
Claims priority, application Great Britain, Oct. 22, 1963, 41,585/63
9 Claims. (Cl. 340—248)



1. A potential difference detecting arrangement for detecting the presence, between first and second terminals, of a potential difference of at least a predetermined magnitude regardless of polarity, comprising: first and second transistors of opposite conductivity types, each having a base electrode, an emitter electrode, and a collector electrode, corresponding electrodes of the two transistors being connected directly together; a series circuit connected between said terminals and including connection means connecting the emitter electrodes of the transistors to the first terminal and the collector electrodes of the transistors to the second terminal; indicator means included in said connection means; and base circuit means for connecting the bases of the transistors to a point in said series circuit between the collectors of the transistors and said second terminal.

3,355,730
DUAL CURSOR PLOTTER

Robert S. Neasham, 1910 W. Surry Ave., Phoenix, Ariz. 85029
Filed Mar. 31, 1965, Ser. No. 444,474
1 Claim. (Cl. 340—286)



A dual cursor plotter for processing data obtained from photographically recorded image intelligence comprising the combination of a map of the area of the photographic intelligence, and means for producing in analog form the value of X and Y coordinates of any desired position on the map together with second means for obtaining, for correlation purposes an ordinal position on said photographic image intelligence, said second means comprising:

a rectangular framework of known linear extent for housing and framing that portion of the photographic intelligence corresponding to the area of the map;

spools carrying known lengths of wire mounted tangent to corners of said framework and at opposite inner ends of the upper linear edge of the framework, said linear edge indicating the length of the photographic intelligence corresponding to the area of the map; and a cursor indicator attached to the free ends of known lengths of wire so that when at rest the lengths of wire between the spools and the cursor will be equal and when positioned over a spot on the photographic intelligence, be measurable by the rotation of the spools;

whereby manual manipulation of the cursor above the photographic intelligence to a position corresponding to the position on the map being measured will provide a triangle of known sides, consisting in the linear length of the framework and the lengths of wire attached to the cursor and passing through the corners of the framework, to provide coordinates of a position on the photographic intelligence corresponding to the measured position on the map for purposes of comparison.

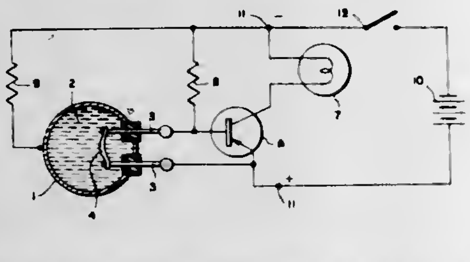
3,355,731

ELECTRONIC TIMER UTILIZING CURRENT FLOW THROUGH AN ELECTROLYTIC SOLUTION

John Paul Jones, Jr., 1401 Medford Road, Wynnewood, Pa. 19096

Filed Jan. 27, 1965, Ser. No. 428,425

6 Claims. (Cl. 340—309.1)



1. Apparatus for accurately timing a period of energization of an electric circuit by electrolysis comprising in combination, an electrical conductor member having an accurately calibrated cross section, an electrolytic bath, a plating surface, a sealed case enclosing said bath and immersing therein said conductor and said surface, means establishing a constant current flow through said conductor on said plating surface, means limiting the potential across said conductor within said case to prevent electrolysis within said bath when continuity of said conductor is broken, and means determining the expiration of a predetermined time period by sensing the lack of continuity of said conductor member when it is eroded away and broken through by the plating action.

3,355,732

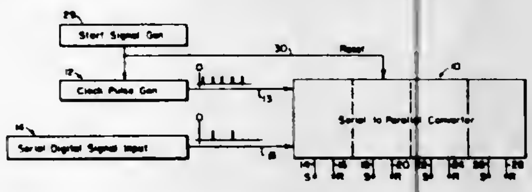
SELF-PROGRAMMED SERIAL TO PARALLEL CONVERTER

Paul G. Lucas, Magnolia, Mass., assignor to Adage, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Oct. 17, 1963, Ser. No. 316,808

6 Claims. (Cl. 340—347)

1. A serial to parallel converter for converting the pulses of a pulse train serially spaced in time to parallel form, the pulses of said pulse train being synchronized with a train of clock pulses, comprising, in combination, a plurality of flip-flops, each of said flip-flops having a pair of pulse input terminals and a pair of output terminals, logical input circuitry associated with said pulse input terminals, said logical input circuitry including for each flip-flop a pair of inhibit gates of the energy storage type having a plurality of input terminals and a single output terminal, means connecting the output terminal of a different first of said gates to a first input terminal of each of said flip-flops and means connecting the output terminal of a different second of said gates to a second input terminal of each of said flip-flops, a clock pulse input terminal, a digital signal input terminal, means connecting the clock pulse input terminal to one input terminal of each of the first of said inhibit gates, means connecting the digital signal input terminal to one input terminal of each of the second of said inhibit gates, means controlled by said flip-flops for controlling said first inhibit gates to open the first inhibit gate for each flip-flop when the flip-flop next preceding it in the sequence is operated from a first to a second state and all subsequent flip-flops in said sequence are in said first state, and means controlled by said flip-flop for controlling said second inhibit gates to open the second gate for each flip-flop when the flip-flop is in said second state and all subsequent flip-flops in said sequence are in said first state.



3,355,733

DESIGNATED AREA INSTRUMENT LANDING SYSTEM

Harry W. Mitchell, Hurst, and Milford R. Murphy, Arlington, Tex., assignors to Bell Aerospace Corporation, Wheatfield, N.Y., a corporation of Delaware

Filed Oct. 19, 1964, Ser. No. 404,728

11 Claims. (Cl. 343—7.9)

1. In an aircraft navigational system to permit instrument landing to touchdown at a desired spot on a landing site, wherein a beacon located at the desired landing site transmits a locating signal, the aircraft borne apparatus comprising:

(a) a radar transceiver responsive to said locating signal transmitted by said beacon to provide a slant distance to beacon signal, an antenna azimuth signal, and an antenna depression angle signal,

(b) first means responsive to said slant distance to beacon signal and to said antenna depression angle signal to provide a height to beacon signal and a horizontal distance to beacon signal,

(c) glide slope selector means to provide a desired glide slope angle signal,

(d) second means for comparing said horizontal distance to beacon and height to beacon signals with said desired glide slope angle signal to provide a vertical flight path position error signal,

(e) third means responsive to said horizontal distance to beacon signal and to said antenna azimuth signal to provide longitudinal and lateral distance to beacon signals in aircraft coordinates,

(f) compass means to provide a heading information signal,

(g) fourth means responsive to said heading information signal and to said longitudinal and lateral distance to beacon signals in aircraft coordinates to provide longitudinal and lateral distance to beacon signals in earth coordinates,

(h) course selector means to provide a desired course to the beacon signal,

(i) fifth means for comparing said desired course to beacon signal with said lateral and longitudinal distance to beacon signals in earth coordinates to provide a lateral flight path position error signal,

(j) sixth means for comparing said desired course to beacon signal with said heading information signal to provide a selected heading reference error signal,

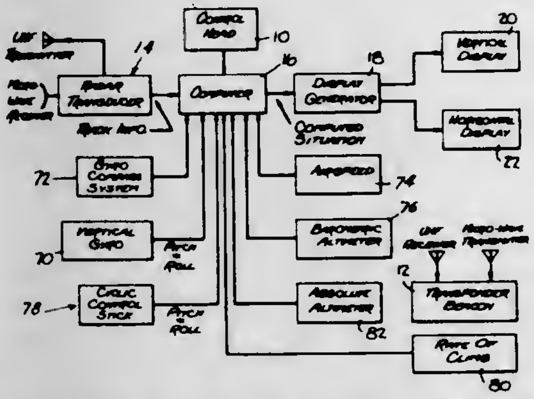
(k) seventh means responsive to said lateral and longitudinal distance to beacon signals in earth coordinates and to changes in said heading information signal to provide lateral and longitudinal ground speed signals in aircraft coordinates,

(l) air speed sensor means to provide a measured air speed signal,

(m) air speed selector means to provide a desired air speed signal,

(n) eighth means for comparing said desired air speed signal with said horizontal distance to beacon signal to initiate programmed air speed deceleration at a predetermined relationship between said compared signals,

(o) ninth means for comparing said measured air speed signal with said longitudinal ground speed signal in aircraft coordinates to initiate programmed ground speed deceleration at a predetermined relationship between measured air speed and longitudinal ground speed,

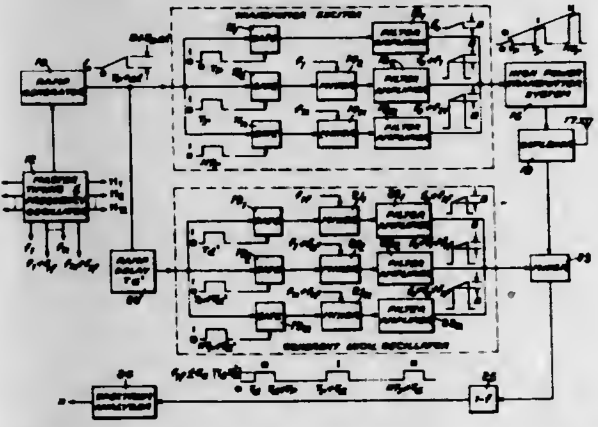


(p) tenth means for successively (*i*) comparing said desired air speed signal with said measured air speed signal to provide a first air speed error signal, (*ii*) comparing said measured air speed signal with said horizontal distance to beacon signal to provide a second air speed error signal after said eighth means has initiated said programmed air speed deceleration, and (*iii*) comparing said longitudinal ground speed in aircraft coordinates signal with said horizontal distance to beacon signal to provide a longitudinal ground speed error signal after said ninth means has initiated said programmed ground speed deceleration, and

(q) eleventh means for comparing said lateral flight path position error signal with said lateral ground speed signal to provide a lateral ground speed error signal after said ninth means has initiated said programmed ground speed deceleration.

3,355,734
COHERENT FM RAMP RANGING SYSTEM

Damian F. Albanese, Chatsworth, Calif., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Apr. 18, 1966, Ser. No. 543,356
9 Claims. (Cl. 343—14)



1. A coherent FM ramp ranging system, comprising:

means for generating a first plurality of short frequency ramps equivalent to portions of a long frequency ramp;

means for transmitting said first plurality of short frequency ramps;

means for receiving an echo of said transmitted first plurality of ramps;

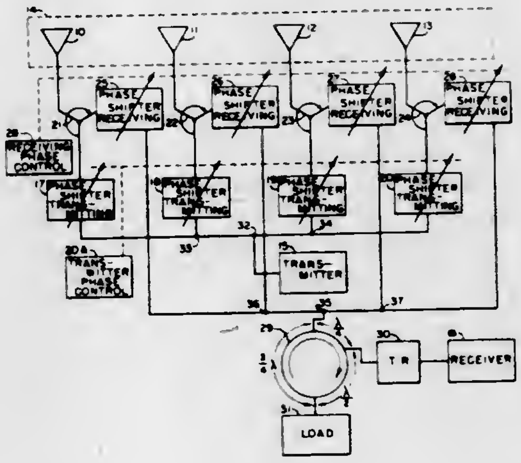
means for generating a second plurality of short frequency ramps equivalent to portions of a long frequency ramp;

means for heterodyning said received echo of said first plurality of ramps with said second plurality of ramps to produce a coherent pulsed sinewave; and

means for determining the frequency of said coherent pulsed sinewave, said frequency being a measure of the relative positions of said first and second pluralities of ramps and being proportional to target range.

3,355,735
RADAR SYSTEM WITH INDEPENDENT CONTROL OF TRANSMIT AND RECEIVE ANTENNA PATTERNS

Herman N. Chait, 5318 Bothwell Road, Tarzana, Calif. 91356
Filed Mar. 23, 1960, Ser. No. 17,230
3 Claims. (Cl. 343—16)



1. In combination, a transmitter for producing recurrent pulses of energy, a receiver, an antenna array for said transmitter and receiver having a plurality of elements, a plurality of directive couplers for the elements connected to the transmitter and receiver whereby transmitter energy is delivered to the elements and energy intercepted by the elements is delivered to the receiver, first control means for varying the relationship of energy delivered to the individual elements, second control means for varying the relationship of coupling of the individual elements to the receiver, and a transmit-receive switch unit connected between the second control means and the receiver for blocking the delivery of energy to the receiver during the production of each pulse of energy by the transmitter.

3,355,736
CROSS CORRELATION DIRECTION FINDER

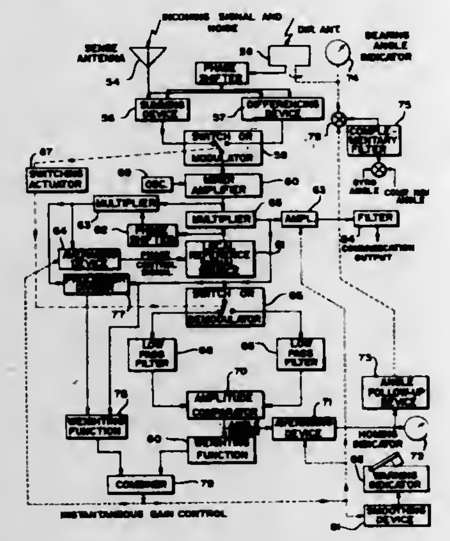
Lloyd J. Perper, 3725 Ironwood Hill Drive, Pima, Ariz. 85543
Filed June 23, 1965, Ser. No. 466,250
21 Claims. (Cl. 343—113)

13. In a direction finding system for detecting angle of arrival of incoming electromagnetic waves of at least partially known form in the presence of noise, the combination comprising

first and second sensing means having distinct and different direction responses to said incoming waves for deriving therefrom respective signals representative thereof;

means for generating local reference signal of said known form;

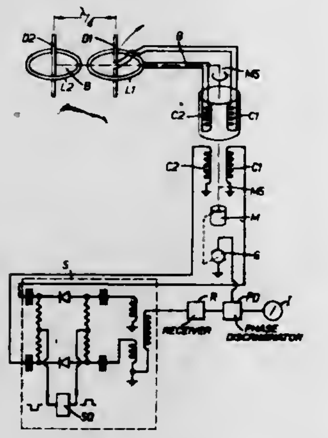
means responsive to said local reference signal and to signal deriving from at least one of said sensing means for synchronizing the phase thereof, including
time averaging means responsive to phase difference between said signals to which said phase synchronizing means is responsive to cancel accompanying noise and thereby prevent loss of synchronization;



means responsive to the phase-synchronized reference signal and to signal deriving from at least one of said sensing means for cross-correlation thereof to develop a signal proportional to instantaneous error between actual angle of arrival of said incoming waves and angle of arrival thereof as detected by said system; and
time averaging means responsive to said error signal for cancelling effects of noise therefrom to produce a signal suitable for driving said error signal to a predetermined reference condition.

3,355,737
RADIO DIRECTION FINDERS

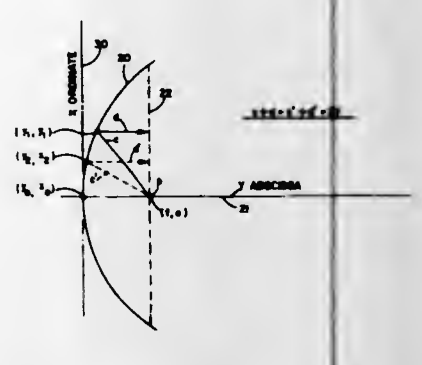
Dennis William George Byatt, Great Baddow, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Feb. 14, 1966, Ser. No. 527,225
Claims priority, application Great Britain, Mar. 2, 1965, 8,944/65
11 Claims. (Cl. 343—118)



1. A radio direction finder comprising at least one composite aerial system including a directional aerial adapted to receive substantially only vertically polarised incoming waves and a directional aerial adapted to receive substantially only horizontally polarised incoming waves; rotational driving means for said aerial system to cause the aerials thereof to swing their directions in azimuth with a common instantaneous direction; a receiver; switch means for supplying signals from the aerials of said system alternately to said receiver at a frequency of alteration which is high in relation to the rotational speed of the system; and means for utilising the output of the receiver to ascertain the direction of incoming waves.

3,355,738
MICROWAVE ANTENNA HAVING A CONTROLLED PHASE DISTRIBUTION

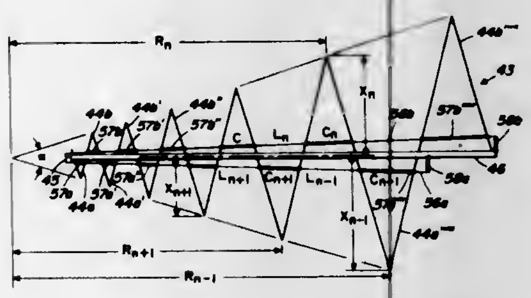
Jerry A. Algeo, Buena Park, Calif., assignor to North American Aviation, Inc.
Filed Nov. 9, 1964, Ser. No. 409,912
7 Claims. (Cl. 343—779)



1. In a monopulse receiving antenna for producing first and second monopulse microwave signals in response to received microwave signals of a selected carrier frequency, means for providing a selected aperture phase distribution in said monopulse receiving antenna comprising
a continuous curved reflecting surface defining a central axis originating at a point in said curved surface and oriented perpendicularly to said surface at said point of origin, a feed point on said central axis and spaced apart from said curved surface; and
an array of at least two feedhorns monuted at said feed point for illuminating said curved surface; and
the curvature of said curved surface cooperating with said feedhorns to provide an aperture phase distribution which varies from a planar phase front as a continuous even valued function of a power greater than unity of the aperture dimension.

3,355,739
SHUNT EXCITED LOG PERIODIC ANTENNA WITH COAX FEED

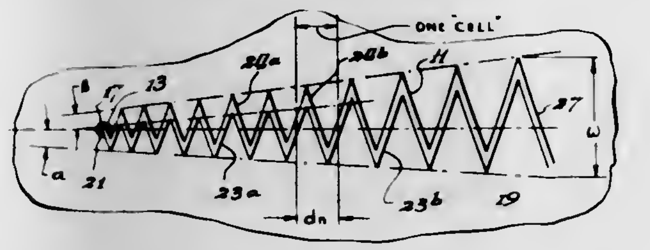
Ross L. Bell, Dallas, and Robert L. Carrel, Richardson, Tex., and Orville L. McClelland, Canoga Park, Calif., assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Nov. 4, 1964, Ser. No. 408,781
8 Claims. (Cl. 343—792.5)



1. A broadband antenna planar array structure having a common longitudinally extended center portion, a forward apex feed end, and an enlarged back end; monopole elements longitudinally spaced along said center portion and extending outwardly therefrom in planar relation and in opposite directions alternately from the forward apex feed end to the enlarged end of the antenna planar array structure, and with substantially coplanar dimensions and spacings of the monopole elements increasing uniformly and proportionally with increase in distance from the apex feed end of the antenna planar array structure; said antenna planar array structure being provided with a connection to a coaxial transmission line having an outer sheath and an inner conductor line; two feeder network lines for feeding the monopole elements of each side of said planar array structure; said connection to a coaxial transmission line including common connective means for the two feeder network lines and the inner conductor of the coaxial transmission line at the forward apex feed end of the antenna planar array structure; and capacitive means connected between the respective feeder lines of the feeder networks and the respective monopoles of the planar array structure wherein said monopole elements are fat monopole elements with substantially coplanar dimensions of the monopole elements increasing uniformly and proportionally with an increase in distance from the forward apex feed end of the antenna planar array structure; the capacitive means connected between the respective feeder lines of the feeder networks and the respective fat monopole elements of the planar array structure includes respective portions of conductor length and coax shield formed shunt capacitors; each of said fat monopole elements has a forward portion and a rear portion; with the respective shunt capacitive coax shields structurally mounted on and in electrical contact with the respective fat monopoles; and wherein the coax shield of the capacitive means connected to each respective fat monopole element spans the fat monopole from said forward portion to said rearward portion and is in direct electrical contact with both said forward and rear portions of the respective fat monopole element.

3,355,740
LOG-PERIODIC ZIG ZAG ANTENNA

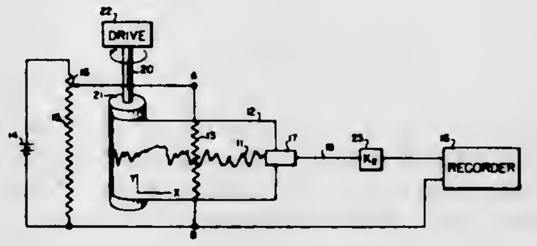
Paul E. Mayes, Champaign, Ill., assignor to University of Illinois Foundation, a non-profit corporation of Illinois
Filed Apr. 4, 1966, Ser. No. 549,084
4 Claims. (Cl. 343—792.5)



4. A log periodic zig-zag antenna for television reception of signals in the UHF band, 470–890 mc., operating in the backfire mode and having a substantially unidirectional radiation pattern, said antenna comprising:
a pair of conducting members having respective feed points, said conducting members adjacently disposed at said feed points and extending outwardly at a selected angle to each other;
each of said members including a conducting element continuously extending outwardly from the respective feed point in substantially a zig-zag manner wherein the zig-zag pattern is formed from a plurality of generally reversing V-shaped sections electrically coupled solely in and end to end manner, said conducting elements being turned relative to each other to provide a single lobe backfire radiation pattern from the feed point;
each of said V-shaped sections having sides disposed and electrically coupled solely in an end to end manner to define a series of open V-shaped sections with substantially parallel respective sides; and
wherein each of said conducting elements includes a taper angle α substantially equal to 7.5°, an angle of increase in conductor width, β substantially equal to 2.5°, and a scale factor, τ relating to the lengths of each adjacent V-shaped section, substantially equal to 0.9, such that the input impedance of said antenna is suitably matched to 300 ohms and is substantially independent of frequency over said UHF band.

3,355,741
DATA CURVE AMPLITUDE RECORDER

Herbert Rabin, 2935 Kanawha St., Washington, D.C. 20015
Filed Nov. 29, 1965, Ser. No. 510,479
11 Claims. (Cl. 346—33)



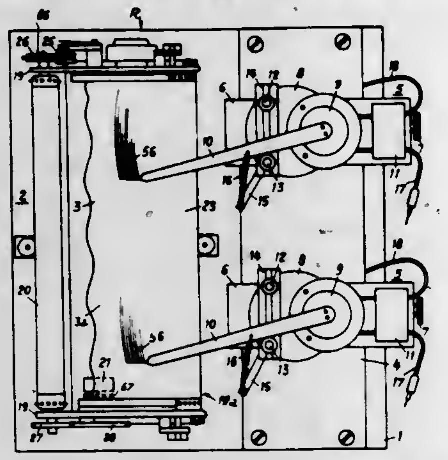
1. In combination:
linearly movable conductive means having amplitude variations representing information expressible in terms of time along the x-axis and in terms of voltage along the y-axis of an orthogonal coordinate system;
a substantially lineal conductive element disposed transversely to the linear path of said conductive means and in electrical engagement therewith at a first point;
supply means connected to impress a voltage across said conductive element;
a second point of reference potential electrically connected to said conductive means and in physical contact with said conductive element to enable a voltage to appear between said first and second points correlative to the amplitude of said conductive means; and
indicia producing means connected to receive the voltage appearing across said conductive element between said conductive means and said point of reference potential at any instant for producing an output indicia representative thereof.

3,355,742
RECORDING APPARATUS FOR THE GRAPHIC REPRESENTATION OF TIME-SEQUENCE CURVES

Rudolf Stäubli, Frohburgstrasse 88, Zurich, Switzerland
Filed Aug. 23, 1965, Ser. No. 481,495
Claims priority, application Switzerland, Aug. 25, 1964, 11,118/64
17 Claims. (Cl. 346—49)

1. Recording apparatus for the graphic representation of time-sequence curves comprising a record carrier, transport means for continuously conveying said record carrier with substantially uniform feed movement in a given direction, at least one writing mechanism capable of being actuated by electric signals for plotting upon said record carrier time-sequence curves composed of line markings in dependency of the electric signals, said writing mechanism incorporating a writing instrument cooperating with said record carrier for applying said line markings thereto,

a drive motor for displacing said writing instrument, an electric coupling actuated by the electric signals for the transmission of power from said drive motor to said writing instrument, means for returning said writing instrument into its starting position, said writing instrument bearing upon said record carrier in a manner that when said electric coupling operably connects said drive motor with said writing instrument the deflection and return movements of said writing instrument form relatively closely arranged line markings upon said record carrier, the length of which is proportional to time and the end points of which define a time-sequence curve, said recording apparatus further including a shaft member driven by said drive motor, said electric coupling being an electromagnetic coupling incorporating at least two movable coupling portions, one coupling portion being fixedly connected with said shaft member, the other coupling portion being carried with play upon said shaft member, and means for generating a load upon said shaft member when said coupling portions are in their rest position.

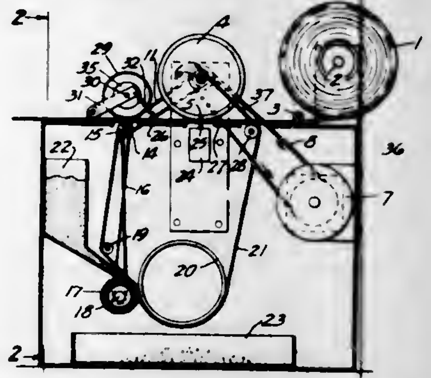


3,355,743
ELECTROGRAPHIC RECORDING APPARATUS HAVING A POROUS CARRIER WEB FOR ELECTROSCOPIC PRINT POWDER

John P. Capps, Newport News, Va., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Continuation of application Ser. No. 4,258, Jan. 25, 1960. This application Nov. 29, 1963, Ser. No. 328,777

5 Claims. (Cl. 346—74)



3. In a facsimile recording apparatus having point scanning electrodes forming a print gap therebetween, the improvement which comprises, in combination, a thin, porous continuous carrier web positioned in said print gap adjacent one of said electrodes, said carrier web having interstices and being capable of loosely bearing an electroscopic powder in said interstices, means for driving said carrier web through said print gap, means for feeding sheet material through said print gap in juxtaposition with said carrier web, means for applying print powder to said carrier web, before passing through said print gap and means for continuously impressing high voltage facsimile signals directly across said scanning electrodes.

DESIGNS

NOVEMBER 28, 1967

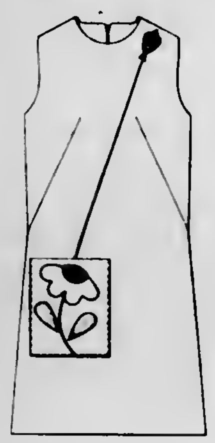
209,383
DRESS

Lawrence J. Nachman, Greenville, S.C., assignor to Swirl, Inc., Easley, S.C., a corporation of South Carolina

Filed Dec. 27, 1966, Ser. No. 5,195

Term of patent 14 years

(Cl. D2—80)



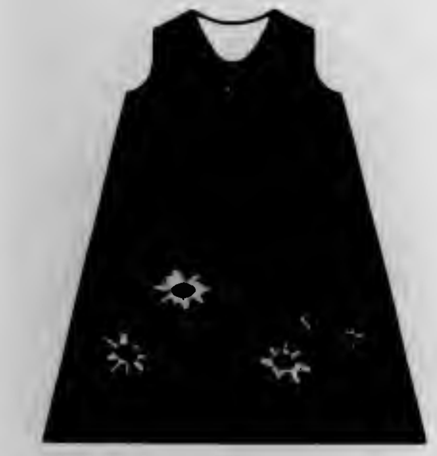
209,384
DRESS

Lawrence J. Nachman, Greenville, S.C., assignor to Swirl, Inc., Easley, S.C., a corporation of South Carolina

Filed Dec. 27, 1966, Ser. No. 5,197

Term of patent 14 years

(Cl. D2—80)



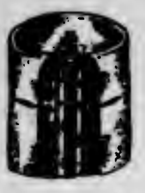
209,385
SHIRT CUFF

Robert V. Kay, 1635 N. 44th Ave., Stone Park, Ill. 60165

Design application Apr. 1, 1965, Ser. No. 84,682, now Patent No. 207,090, dated Mar. 7, 1967, which is a division of application Ser. No. 82,559, Apr. 12, 1964. Divided and this application Oct. 10, 1966, Ser. No. 5,011

Term of patent 3½ years

(Cl. D2—379)



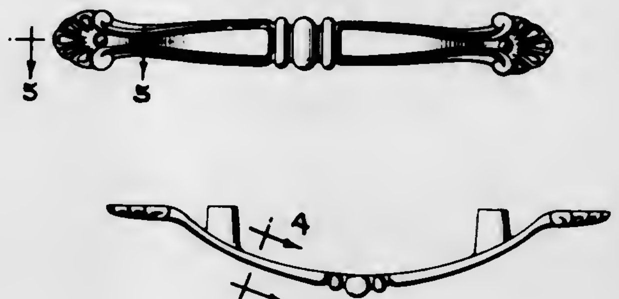
209,386
PULL

John R. Morgan, Wheeling, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut

Filed Feb. 9, 1967, Ser. No. 5,738

Term of patent 14 years

(Cl. D10—8)



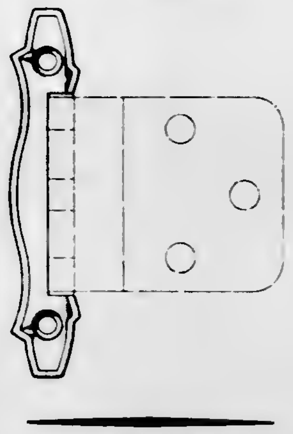
209,387
HINGE

James W. Maize, Fullerton, Calif., assignor to Hyer Hardware Mfg. Co., Anaheim, Calif., a corporation of California

Filed July 12, 1967, Ser. No. 7,780

Term of patent 14 years

(Cl. D10—9)



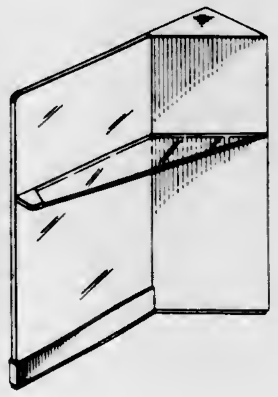
209,388
LOW SILHOUETTE PUBLIC TELEPHONE BOOTH

Henry Dreyfuss, South Pasadena, Calif., and Donald M. Genaro, Fort Lee, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 13, 1966, Ser. No. 1,866

Term of patent 14 years

(Cl. D13—1)

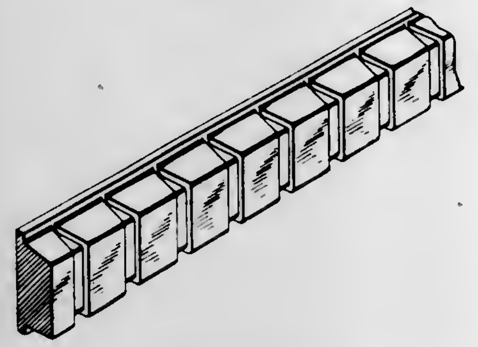


209,389

DECORATIVE MOLDING STRIP

John R. Morgan, Wheeling, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut

Filed Jan. 30, 1967, Ser. No. 5,600
Term of patent 14 years
(Cl. D13—6)

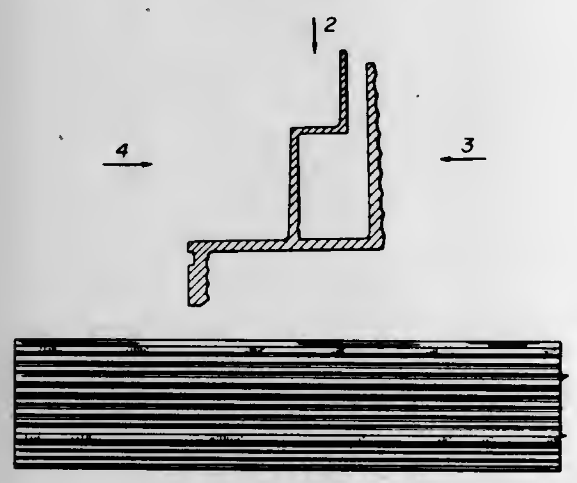


209,390

EXTRUDED FORM FOR HOLDING A NARROW PANEL EDGE

Donald R. Marsh, Kansas City, Mo., assignor to The Carter-Waters Corp., Kansas City, Mo., a corporation of Missouri

Filed May 22, 1967, Ser. No. 7,207
Term of patent 14 years
(Cl. D13—6)

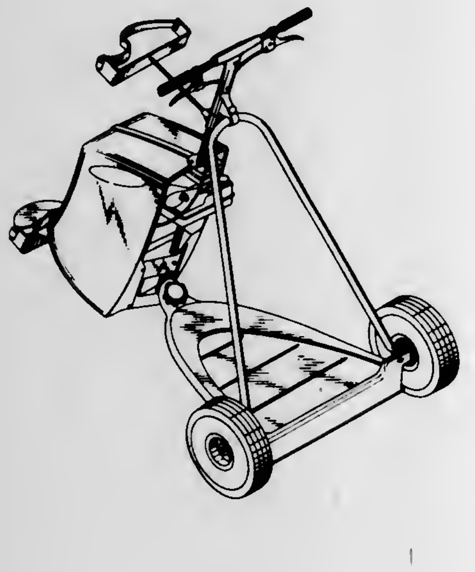


209,391

SELF-PROPELLED CART

John F. Allen, % Alon, Inc., Municipal Airport, McPherson, Kans. 67460

Filed Oct. 19, 1966, Ser. No. 4,329
Term of patent 7 years
(Cl. D14—3)

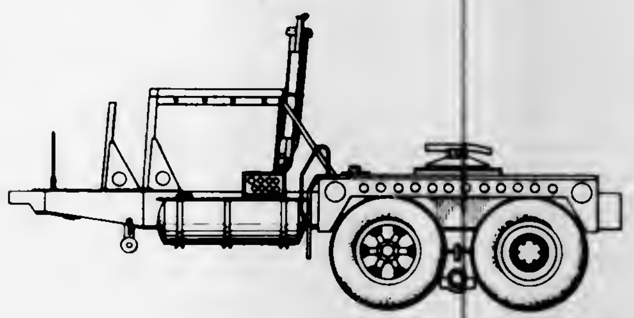


209,392

MOTORIZED CONVERTER DOLLY

Evan S. Prichard, Newport Beach, Calif., assignor to Challenge-Cook Bros., Incorporated, Industry, Calif., a corporation of California

Filed Mar. 16, 1967, Ser. No. 6,250
Term of patent 14 years
(Cl. D14—3)

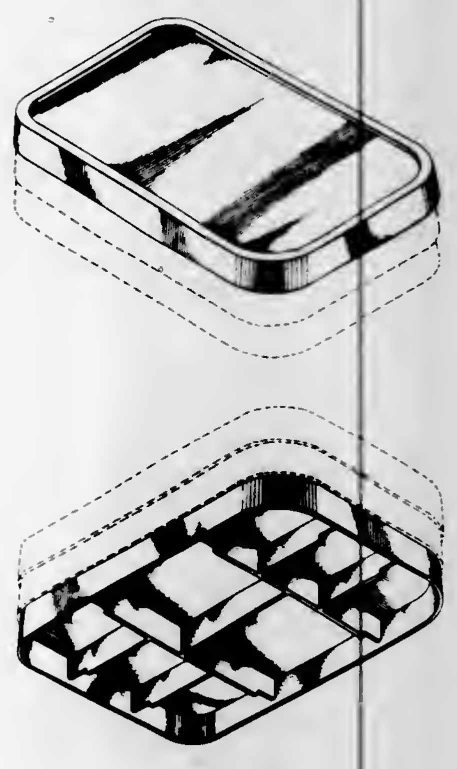


209,393

NESTABLE TRAY FOR LABORATORY INSTRUMENTS

Lydia E. Engel, 7844 Glencoe, Huntington Beach, Calif. 92647

Filed Nov. 21, 1966, Ser. No. 4,759
Term of patent 14 years
(Cl. D16—1)

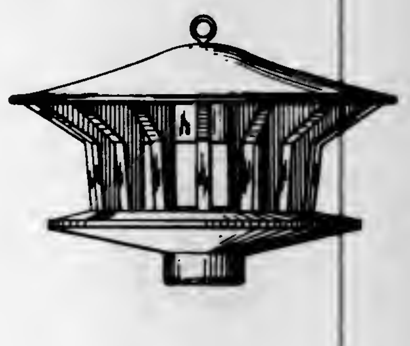


209,394

INSECT BAIT HOLDER

Heiko T. de Man, Moraga, Calif., assignor to Alan C. Richardson, Nevada City, Calif.

Filed Jan. 20, 1967, Ser. No. 5,508
Term of patent 14 years
(Cl. D22—19)

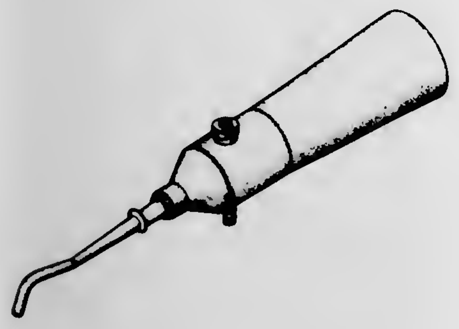


209,395

ORAL SYRINGE

Samuel Gilbert, Los Angeles, Calif.
(16661 Ventura Blvd., Encino, Calif. 91316)

Filed Feb. 15, 1967, Ser. No. 5,833
Term of patent 14 years
(Cl. D24—1)

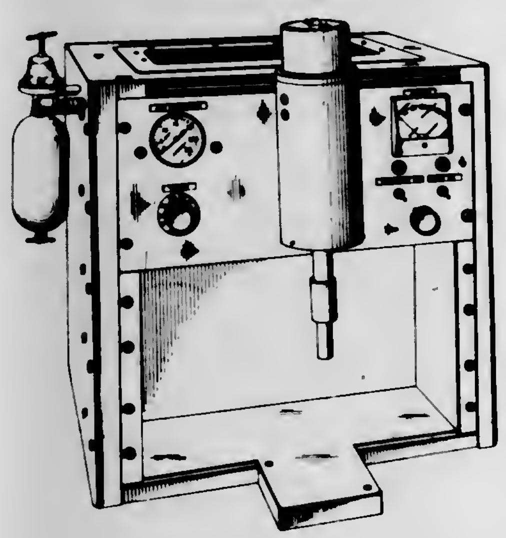


209,396

ULTRASONIC PLASTICS WELDER

Thomas J. Scarpa, Metuchen, N.J., assignor to Edison Instruments, Inc., Rahway, N.J., a corporation of New Jersey

Filed Jan. 3, 1966, Ser. No. 425
Term of patent 14 years
(Cl. D26—1)

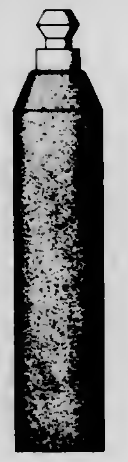


209,397

FILTER ATTACHMENT FOR SPARK PLUGS

Myron J. Weiner, Los Angeles, Calif., assignor to Hallett Manufacturing Company, Los Angeles, Calif., a corporation of California

Filed May 24, 1966, Ser. No. 2,417
Term of patent 14 years
(Cl. D26—1)

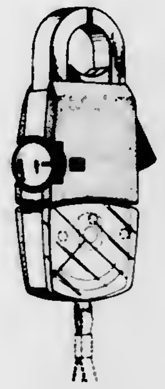


209,398

PORTABLE VOLT-AMMETER OR THE LIKE

Takeo Kuramoto, 14–18 Higashigaoka 2-chome, Tokyo, Japan

Filed Oct. 11, 1966, Ser. No. 4,232
Term of patent 14 years
(Cl. D26—1)

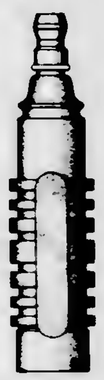


209,399

FILTER ATTACHMENT FOR SPARK PLUGS

Myron J. Weiner, Los Angeles, Calif., assignor to Hallett Manufacturing Company, Los Angeles, Calif., a corporation of California

Filed Dec. 6, 1966, Ser. No. 4,943
Term of patent 14 years
(Cl. D26—1)

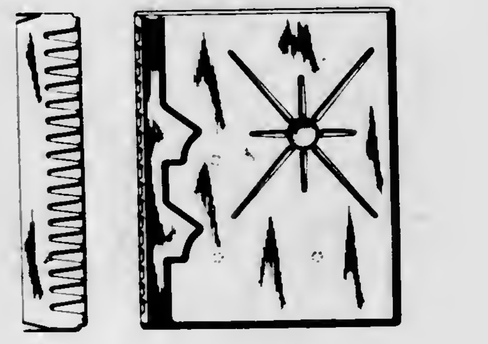


209,400

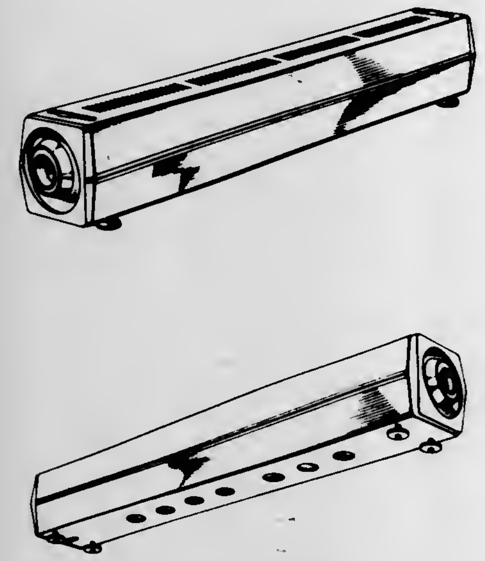
CASING FOR ELECTRONIC EXERCISING APPARATUS AND THE LIKE

John D. McDonald, 6801 Snider Plaza, Dallas, Tex. 75205

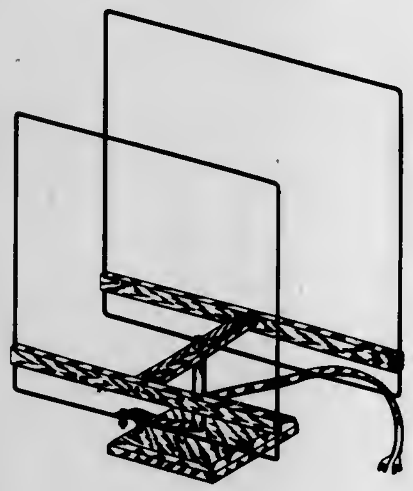
Filed Aug. 29, 1966, Ser. No. 3,621
Term of patent 14 years
(Cl. D26—5)



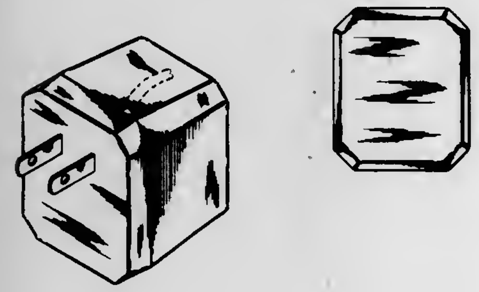
209,401
GAS LASER
Carl J. Clement, Palo Alto, Calif., assignor to Spectra-Physics, Inc., Mountain View, Calif., a corporation of California
Filed Oct. 11, 1966, Ser. No. 4,234
Term of patent 14 years
(Cl. D26—14)



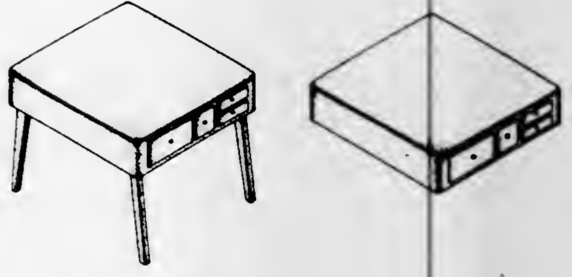
209,402
ANTENNA FOR AN INDOOR RADIO OR TELEVISION SET
Bernard Burlingame, 6487 Kingsdale Road, Parma, Ohio 44129
Filed Nov. 14, 1966, Ser. No. 4,654
Term of patent 14 years
(Cl. D26—14)



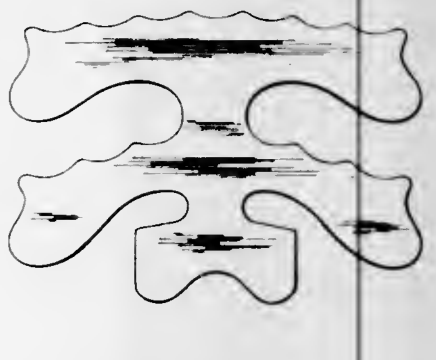
209,403
DC POWER PACK ELIMINATOR
Yoshiyuki Watanabe, 30 Futabacho, Itabashi-ku, Tokyo, Japan
Filed Feb. 1, 1966, Ser. No. 877
Term of patent 14 years
(Cl. D26—15)



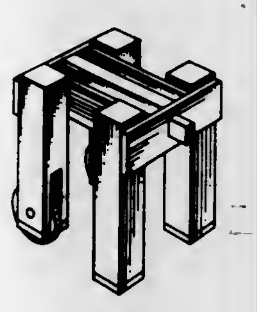
209,404
COMBINED PORTABLE TABLE AND COMPARTMENTED STORAGE UNIT
Edwin Pearlman, Los Angeles County, Calif.
(19720 Ventura Blvd., Woodland Hills, Calif. 91364)
Filed Sept. 28, 1966, Ser. No. 4,068
Term of patent 14 years
(Cl. D33—14)



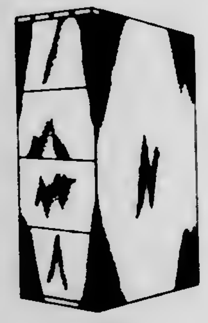
209,405
CONFERENCE TABLE
Bernard F. Barcio, 7802 N. College Ave., Indianapolis, Ind. 46240
Filed Oct. 26, 1966, Ser. No. 4,435
Term of patent 14 years
(Cl. D33—14)



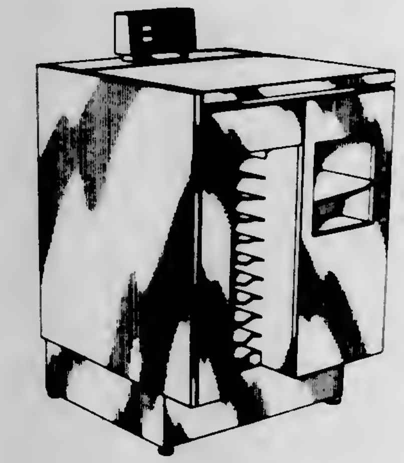
209,406
FRAME FOR A TABLE
Thomas C. Vaughan, 1044 3rd St., Santa Monica, Calif. 90403
Filed Jan. 19, 1967, Ser. No. 5,479
Term of patent 3½ years
(Cl. D33—14)



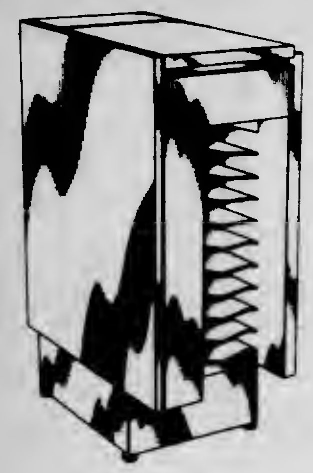
209,407
CABINET
Andrew L. Gilmour, New York, N.Y., assignor to Steelcase, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Jan. 19, 1966, Ser. No. 682
Term of patent 14 years
(Cl. D33—19)



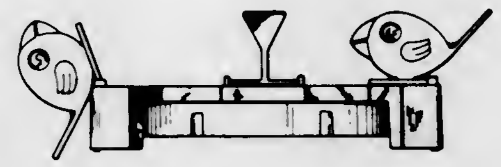
209,408
CABINET FOR SORTING AND HOLDING SHEETS OF PRINTED MATERIAL
James Edward Britt, Penfield, George D. Del Vecchio, North Rose, and Martin C. Stessel, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Aug. 25, 1966, Ser. No. 3,581
Term of patent 14 years
(Cl. D33—19)



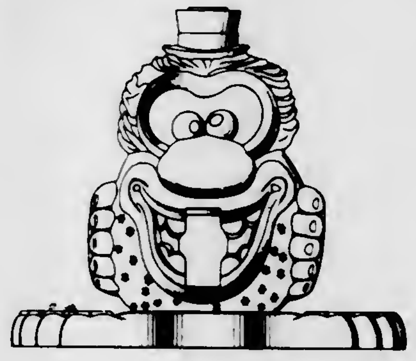
209,409
MODULAR CABINET FOR SORTING AND HOLDING SHEETS OF PRINTED MATERIAL
James Edward Britt, Penfield, George Dominick Del Vecchio, North Rose, and Martin C. Stessel, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Aug. 25, 1966, Ser. No. 3,596
Term of patent 14 years
(Cl. D33—19)



209,410
GAME SELECTOR WHEEL
Perry J. Grant, Pacific Palisades, Calif., assignor to The Toy Development Center, Inc., a corporation of California
Filed Feb. 6, 1967, Ser. No. 5,702
Term of patent 14 years
(Cl. D34—5)

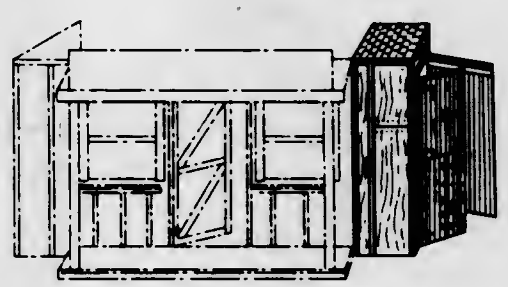


209,411
FIGURE TOY
Perry J. Grant, Pacific Palisades, Calif., assignor to The Toy Development Center, Inc., a corporation of California
Filed Feb. 14, 1967, Ser. No. 5,844
Term of patent 14 years
(Cl. D34—4)



209,412
DESIGN FOR A COMBINED TOY BUILDING AND CONTAINER BOX
John Lane, Kirtland, and Alfred C. Schneider, Westlake, Ohio, assignors to Keeler & Dunkel, Inc., Cleveland, Ohio, a corporation of Ohio
Original design application Apr. 15, 1966, Ser. No. 1,907. Divided and this application Jan. 18, 1967, Ser. No. 5,464

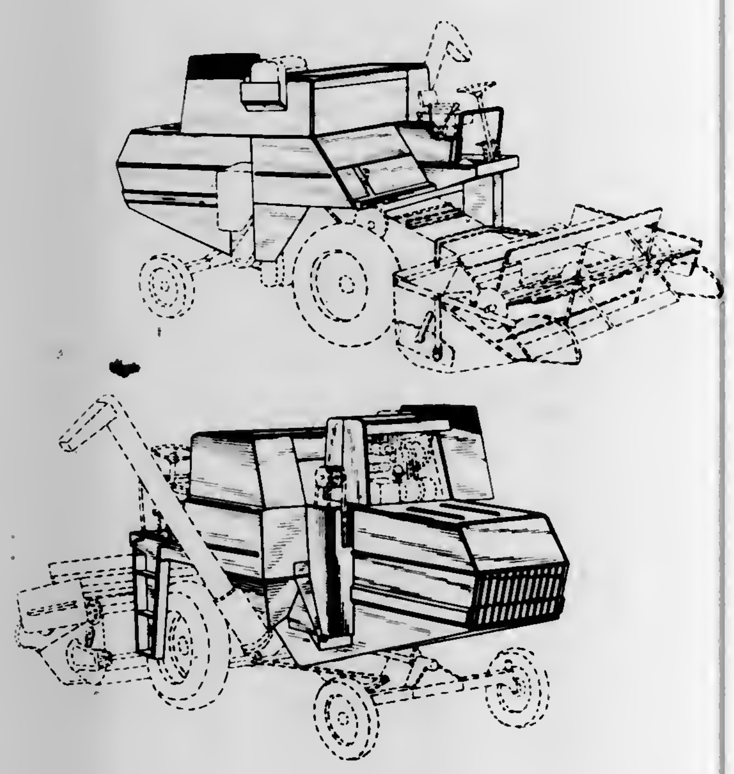
Term of patent 14 years
(Cl. D34—15)



209,413

SELF-PROPELLED COMBINE

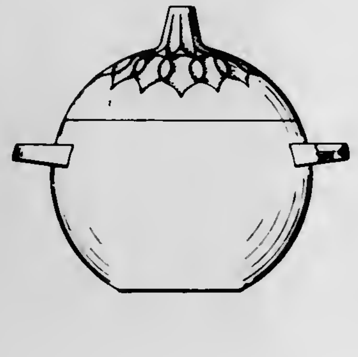
Theodore H. Koeber, Barrington, and Robert A. Skyer, Chicago, Ill., and Donald A. McCallum, Burlington, Ontario, Canada, assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 13, 1967, Ser. No. 5,780
Term of patent 14 years
(Cl. D40—1)



209,414

VEGETABLE DISH

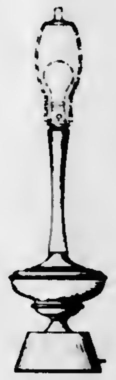
Bjørn Wiinblad, Kongens Lyngby, Denmark, assignor to Rosenthal Aktiengesellschaft, Selb, Bavaria, Germany
Filed Nov. 9, 1966, Ser. No. 4,601
Claims priority, application Germany July 2, 1966
Term of patent 14 years
(Cl. D44—15)



209,415

COMBINED LAMP BASE AND TIMER OR SIMILAR ARTICLE

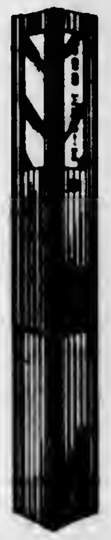
Sidney B. Wertheimer, 7403 Woodmar Ave., Hammond, Ind. 46323
Filed Oct. 25, 1966, Ser. No. 4,420
Term of patent 14 years
(Cl. D48—20)



209,416

ILLUMINATED POST

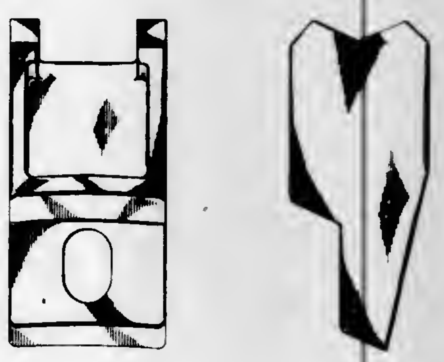
Harold P. Smith, % Plains Aluminum Industries, Box 38, Panhandle, Tex. 79068
Filed Nov. 16, 1966, Ser. No. 4,692
Term of patent 14 years
(Cl. D48—31)



209,417

WHEEL MOUNTING LUG

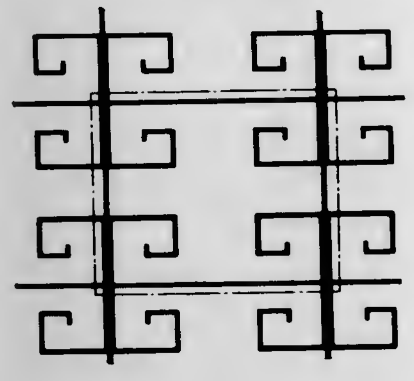
Leon A. Theissen, St. Peter, and Bernard E. Hogan, Jr., North Mankato, Minn., assignors to Miller Motors, Inc., Mankato, Minn., a corporation of Minnesota
Filed June 7, 1967, Ser. No. 7,386
Term of patent 14 years
(Cl. D54—1)



209,418

GRILLE OR SIMILAR ARTICLE

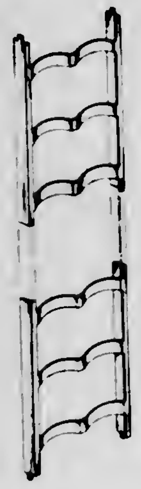
Norman Cutler, 400 Salisbury Road, Wyncote, Pa. 19095
Filed Jan. 27, 1967, Ser. No. 5,582
Term of patent 14 years
(Cl. D54—2)



209,419

DECORATIVE GRILL FOR A SCREEN DOOR

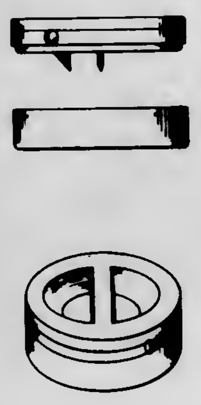
Harry M. Riegelman, Rolling Hills, Calif., assignor to Ador Corporation, Fullerton, Calif., a corporation of California
Filed May 11, 1967, Ser. No. 7,079
Term of patent 14 years
(Cl. D54—2)



209,420

COMBINED CIRCLE CUTTING TOOL AND PROTECTIVE COVER

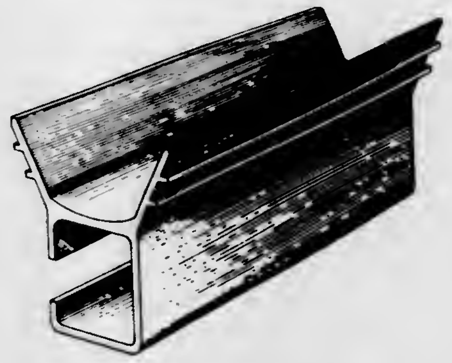
John M. Snyder, New York, N.Y., assignor to Commercial Carpet Corporation, New York, N.Y., a corporation of New York
Filed Oct. 20, 1966, Ser. No. 4,356
Term of patent 14 years
(Cl. D54—13)



209,421

GUIDE CHANNEL FOR CONVEYER BELTS

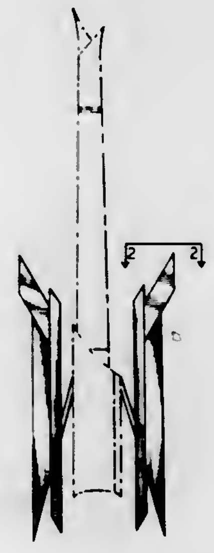
Thomas R. Fabian, Hubbard, Ohio, assignor, by mesne assignments, to Dynamic Systems, Inc., Girard, Ohio, a corporation
Filed Dec. 21, 1966, Ser. No. 5,143
Term of patent 14 years
(Cl. D55—1)



209,422

BODY OF A STRINGED MUSICAL INSTRUMENT

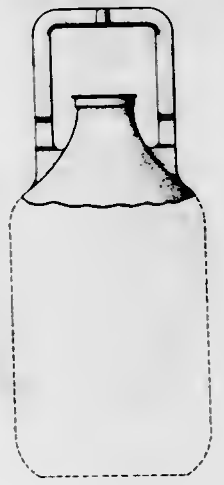
Charles A. Gauvin, 805 S. Water St., Silverton, Oreg. 97381
Filed Nov. 15, 1965, Ser. No. 88,091
Term of patent 14 years
(Cl. D56—1)



209,423

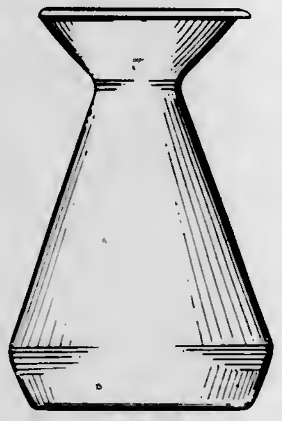
JUG

Robert L. Bailey, Spokane, Wash., assignor to National Distillers and Chemical Corp., New York, N.Y., a corporation of Virginia
Filed June 10, 1966, Ser. No. 2,640
Term of patent 14 years
(Cl. D58—5)



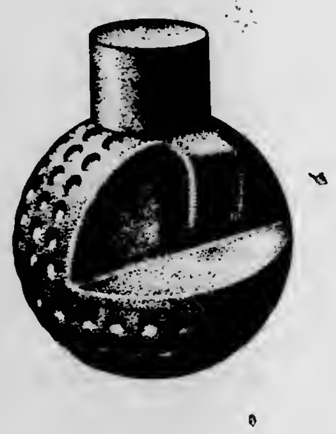
209,424
BOTTLE

Martin Schnur, West Orange, Ohio, and Mel Appel, Livingston, N.J., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 30, 1965, Ser. No. 374
Term of patent 14 years
(Cl. D58—6)



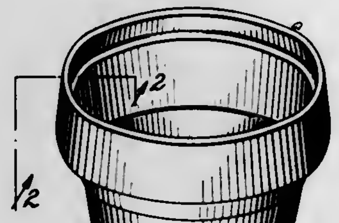
209,425
INSULATED BOTTLE OR THE LIKE

Robert B. Wells, 11 Woodland Circle,
Carmel, Ind. 46032
Filed Nov. 25, 1966, Ser. No. 4,810
Term of patent 3½ years
(Cl. D58—8)



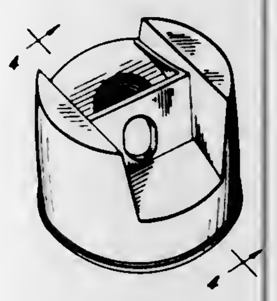
209,426
CUP OR SIMILAR ARTICLE

Charles Lewis Metzler, Alpine, N.J., and Henry Albert Holzwarth, Bayside, N.Y., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 12, 1966, Ser. No. 5,361
Term of patent 14 years
(Cl. D58—17)



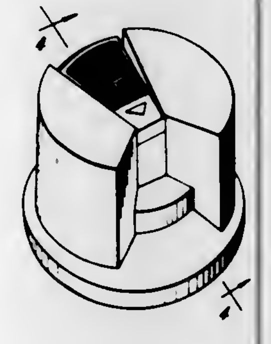
209,427
DISPENSER TOP FOR A PRESSURIZED CONTAINER

Geoffrey Russell Stafford Charles, Marlow-on-Thames, England, assignor to Chelton (Electrostatics) Limited, Marlow-on-Thames, England, a British company
Filed Nov. 18, 1966, Ser. No. 4,740
Claims priority, application Great Britain Sept. 20, 1966
Term of patent 14 years
(Cl. D58—26)



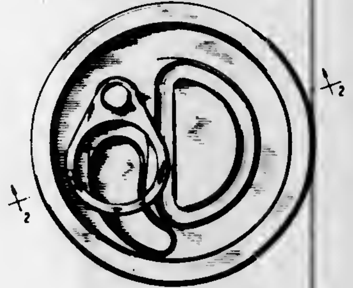
209,428
DISPENSER TOP FOR A PRESSURIZED CAN

Geoffrey Russell Stafford Charles, Marlow-on-Thames, England, assignor to Chelton (Electrostatics) Limited, Marlow-on-Thames, Buckinghamshire, England, a British company
Filed Nov. 18, 1966, Ser. No. 4,742
Term of patent 14 years
(Cl. D58—26)



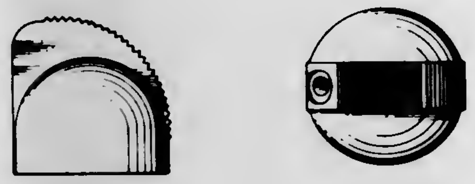
209,429
END CLOSURE FOR A CONTAINER

William T. Saunders, Weirton, W. Va., assignor to National Steel Corporation, a corporation of Delaware
Filed Mar. 7, 1967, Ser. No. 6,109
Term of patent 14 years
(Cl. D58—26)



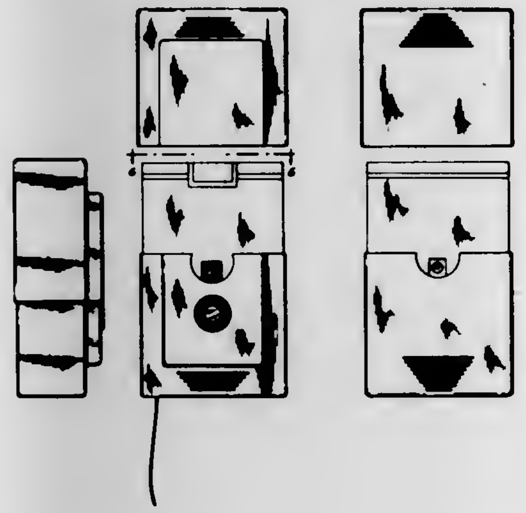
209,430
COMBINED VALVE ACTUATOR AND DISPENSER FOR AEROSOL CONTAINERS

Pasquale R. Riccio, Salem, N.H., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Mar. 14, 1967, Ser. No. 6,213
Term of patent 14 years
(Cl. D58—26)



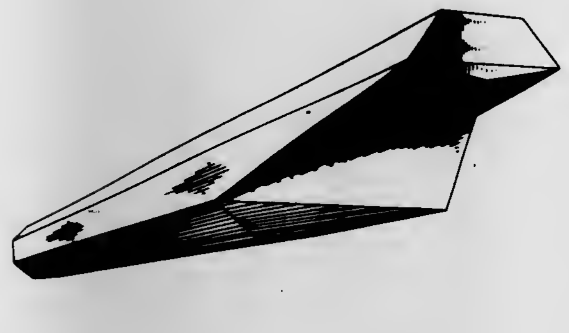
209,431
COMBINED CAMERA AND CASE THEREFOR OR SIMILAR ARTICLE

Nora Lee Glass, 196 E. 75th St.,
New York, N.Y. 10021
Filed Feb. 9, 1966, Ser. No. 967
Term of patent 14 years
(Cl. D61—1)



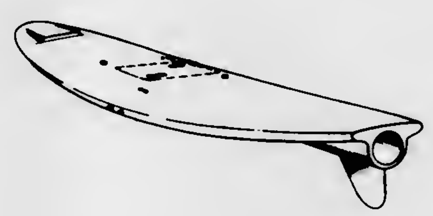
209,432
PONTOON FOR BOATS

George W. Gregory, 355 M St.,
Fresno, Calif. 93721
Filed Oct. 10, 1966, Ser. No. 4,217
Term of patent 14 years
(Cl. D71—1)



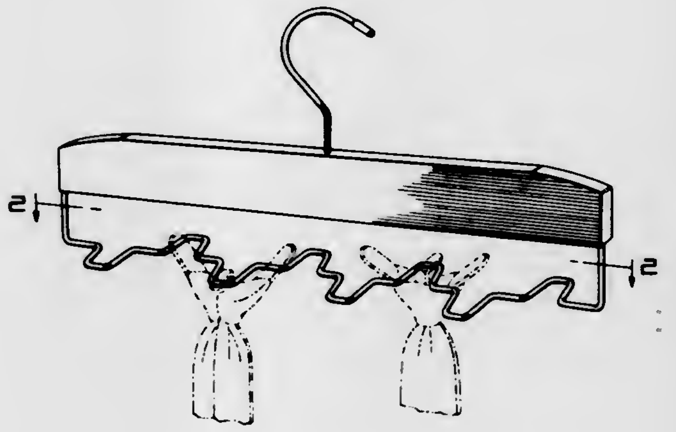
209,433
MOTORIZED SURFBOARD OR SIMILAR ARTICLE

Alfred S. Bloomingdale, 131 Delfern Drive, Los Angeles, Calif. 90024, and James G. Moran, 122 N. Rose, Burbank, Calif. 91505
Filed Oct. 31, 1966, Ser. No. 4,489
Term of patent 14 years
(Cl. D71—1)



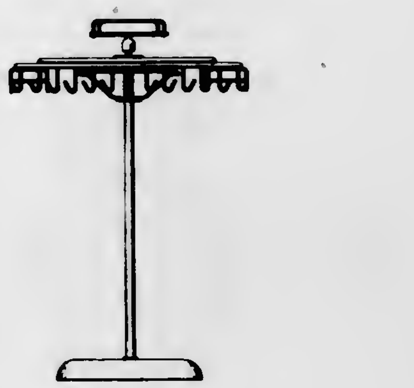
209,434
TIE HANGER

James Austin Jamison, 6208 Winifred Drive,
Fort Worth, Tex. 76133
Filed Mar. 29, 1967, Ser. No. 6,422
Term of patent 14 years
(Cl. D80—8)



209,435
DISPLAY STAND

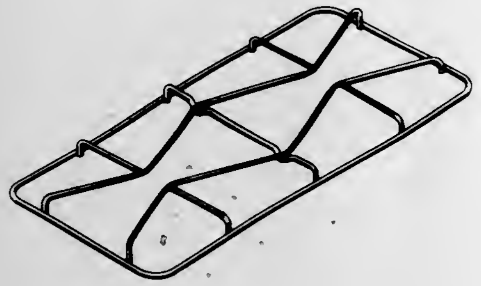
Daniel E. Gelles, Kerhonkson, N.Y.
(1140 Broadway, New York, N.Y. 10001)
Filed Nov. 4, 1966, Ser. No. 4,553
Term of patent 14 years
(Cl. D80—10)



209,436

DOUBLE BURNER GRATE

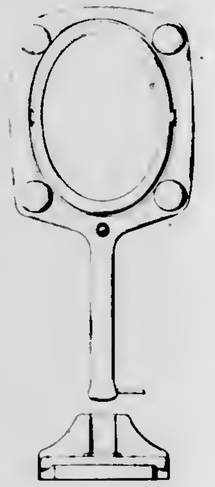
George W. Myler, Emmaus, Pa.
(Washington and Heffner Sts., Topton, Pa. 19562)
Filed Mar. 2, 1967, Ser. No. 6,025
Term of patent 14 years
(Cl. D81—25)



209,437

COMBINED ILLUMINABLE HAND MIRROR AND STAND THEREFOR

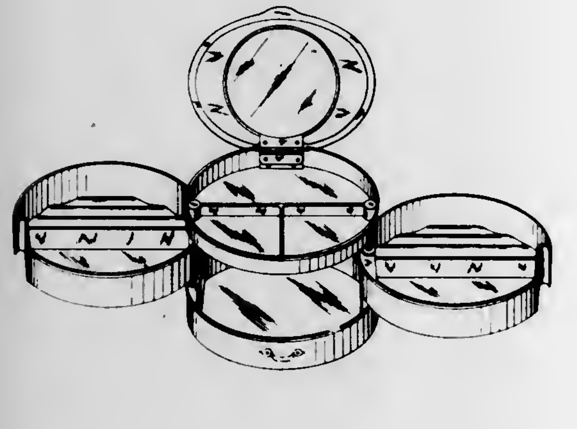
Matthew J. Rothman, 21 Schenk Ave.,
Great Neck, N.Y. 11021
Filed Dec. 1, 1965, Ser. No. 13
Term of patent 3½ years
(Cl. D86—10)



209,438

COMBINED COSMETIC AND MAKE-UP CASE

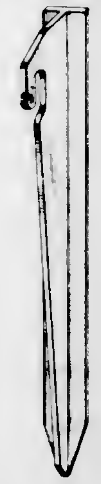
Matthew J. Rothman, New York, N.Y.
(140—35 Beech Ave., Flushing, N.Y. 11355)
Filed Apr. 3, 1967, Ser. No. 6,524
Term of patent 7 years
(Cl. D86—10)



209,439

TENT PEG

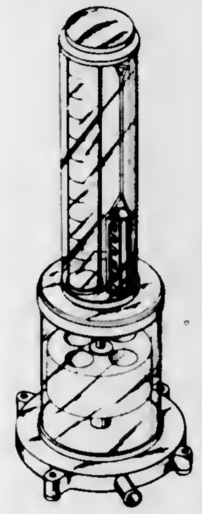
Norman J. Diederich, New Haven, Mo., assignor to Kellwood Company, St. Louis, Mo., a corporation of Delaware
Filed Mar. 27, 1967, Ser. No. 6,395
Term of patent 7 years
(Cl. D88—3)



209,440

CHEMICAL FEEDING UNIT FOR SWIMMING POOLS

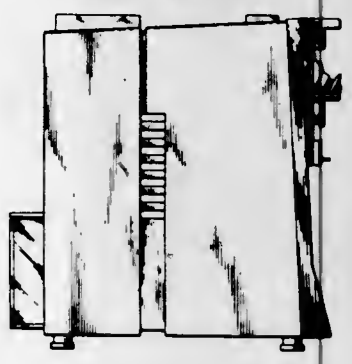
Thomas E. Schneider, Jr., Atlanta, Ga., assignor to Tesco Chemicals, Inc., Atlanta, Ga., a corporation of Georgia
Filed Nov. 17, 1966, Ser. No. 4,727
Term of patent 14 years
(Cl. D91—1)



209,441

COMBINED ELECTRIC CAN OPENER AND ICE CRUSHER

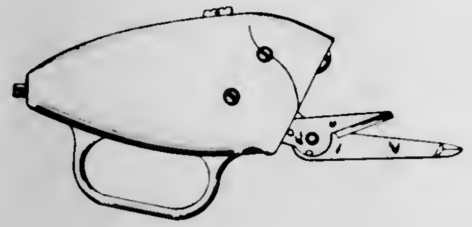
Donald L. McFarland, Long Beach, and Daniel E. McCue, Huntington Beach, Calif., assignor to Rival Manufacturing Company, a corporation of Missouri
Filed Nov. 28, 1966, Ser. No. 4,823
Term of patent 14 years
(Cl. D95—2)



209,442

ILLUMINABLE ELECTRIC SCISSORS

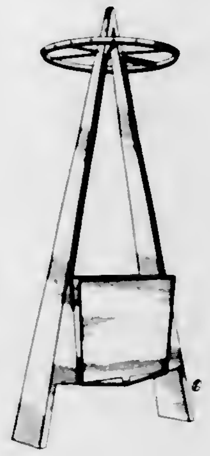
Oscar Greene, New York, N.Y., assignor to Name-Maker Corporation, New York, N.Y., a corporation of New York
Filed Apr. 19, 1967, Ser. No. 6,753
Term of patent 14 years
(Cl. D95—5)



209,443

SCOREBOARD

Robert J. Roston, William O. Boss, and Arnold R. Holt, New York, N.Y., assignors to City of Anaheim, a municipal corporation of California
Filed Oct. 3, 1966, Ser. No. 4,128
Term of patent 14 years
(Cl. D96—12)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 28TH DAY OF NOVEMBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Bell Telephone Laboratories, Inc. : *See—*
  - Schwenzfeger, Edward E. Re. 26,313.
- Cleland, Charles E., and R. L. Crane, to Continental Machines, Inc. Cold working process for stress relieving metal stock. Re. 26,308, 11–28–67, Cl. 72—181.
- Continental Machines, Inc. : *See—*
  - Cleland, Charles E., and Crane. Re. 26,308.
- Costopoulos, Nick. Wound filament reinforcement for solid cored structure. Re. 26, 314, 11–28–67, Cl. 273—82.
- Crane, Robert L. : *See—*
  - Cleland, Charles E., and Crane. Re. 26,308.
- Evans Products Co. : *See—*
  - Heard, Robert E. Re. 26,309.
- Gulf Research & Development Co. : *See—*
  - Saraceno, Anthony J. Re. 26,312.
- Heard, Robert E., to Evans Products Co. Freight bracing apparatus. Re. 26,309, 11–28–67, Cl. 105—369.
- Holman, Merle R. : *See—*
  - Moodie, Ernest W., Holman, and Stanback. Re. 26,310.
- Moodie, Ernest W., M. R. Holman, and H. I. Stanback, to Square D Co. Bus duct with particular housing, insulation, and bus bars. Re. 26,310, 11–28–67, Cl. 174—68.
- Saraceno, Anthony J., to Gulf Research & Development Co. Determination of vanadium content of hydrocarbon oils by election paramagnetic resonance spectiometry. Re. 26,312, 11–28–67, Cl. 208—251.
- Schwenzfeger, Edward E., to Bell Telephone Laboratories, Inc. Matrix switch utilizing magnetic structures as crosspoints. Re. 26,313, 11–28–67, Cl. 307—88.
- Square D Co. : *See—*
  - Moodie, Ernest W., Holman, and Stanback. Re. 26,310.
- Stanback, Harris I. : *See—*
  - Moodie, Ernest W., Holman, and Stanback. Re. 26,310.
- Warmerdam, William J. Stalk remover for cotton gleaner. Re. 26,311, 11–28–67, Cl. 56—28.

LIST OF PLANT PATENTEES

- Boerner, Eugene S., to Jackson & Perkins Co. Rose plant. 2,779, 11–28–67, Cl. 11.
- Jackson & Perkins Co. : *See—*
  - Boerner, Eugene S. 2,779.
  - Zombory, William and S. B. 2,780.
- Zombory, Sophia B. : *See—*
  - Zombory, William and S. B. 2,780.
- Zombory, William and S. B., to Jackson & Perkins Co. Dianthus plant. 2,780, 11–28–67, Cl. 70.

LIST OF DESIGN PATENTEES

- Ador Corp. : *See—*
  - Riegelman, Harry M. 209,419.
- Allen, John F. Self-propelled cart. 209,391, 11–28–67, Cl. D14—3.
- American Can Co. : *See—*
  - Metzler, Charles L., and Holzwarth. 209,426.
  - Schnur, Martin, and Appel. 209,424.
- Amerock Corp. : *See—*
  - Morgan, John R. 209,386.
  - Morgan, John R. 209,389.
- Appel. Mel : *See—*
  - Schnur, Martin, and Appel. 209,424.
- Bailey, Robert L., to National Distillers and Chemical Corp. Jug. 209,423, 11–28–67, Cl. D58—5.
- Barcio, Bernard F. Conference table. 209,405, 11–28–67, Cl. D33—14.
- Bell Telephone Laboratories, Inc. : *See—*
  - Dreyfuss, Henry, and Genaro. 209,388.
- Bloomingdale, Alfred S., and J. G. Moran. Motorized surfboard or similar article. 209,433, 11–28–67, Cl. D71—1.
- Boss, William O. : *See—*
  - Roston, Robert J., Boss, and Holt. 209,443.
- Britt, James E., G. D. Del Vecchio, and M. C. Stessel, to Xerox Corp. Cabinet for sorting and holding sheets of printed material. 209,408, 11–28–67, Cl. D33—19.
- Britt, James E., G. D. Del Vecchio, and M. C. Stessel, to Xerox Corp. Modular cabinet for sorting and holding sheets of printed material. 209,409, 11–28–67, Cl. D33—19.
- Burlingame, Bernard. Antenna for indoor radio or television set. 209,402, 11–28–67, Cl. D26—14.
- Carter-Waters Corp., The : *See—*
  - Marsh, Donald R. 209,390.
- Challenge-Cook Bros., Inc. : *See—*
  - Prichard, Evan S. 209,392.
- Charles, Geoffrey R. S., to Chelton (Electrostatics) Ltd. Dispenser top for a pressurized container. 209,427, 11–28–67, Cl. D58—26.
- Charles, Geoffrey R. S., to Chelton (Electrostatics) Ltd. Dispenser top for a pressurized can. 209,428, 11–28–67, Cl. D58—26.
- Chelton (Electrostatics) Ltd. : *See—*
  - Charles, Geoffrey R. S. 209,427.
  - Charles, Geoffrey R. S. 209,428.
- City of Anaheim : *See—*
  - Roston, Robert J., Boss, and Holt. 209,443.
- Clement, Carl J., to Spectra-Physics, Inc. Gas laser. 209,401, 11–28–67, Cl. D26—14.
- Commercial Carpet Corp. : *See—*
  - Snyder, John M. 209,420.
- Cutler, Norman. Grille or similar article. 209,418, 11–28–67, Cl. D54—2.
- Del Vecchio, George D. : *See—*
  - Britt, James E., Del Vecchio, and Stessel. 209,408.
  - Britt, James E., Del Vecchio, and Stessel. 209,409.
- De Man, Heiko T., to A. C. Richardson. Insect bait holder. 209,394, 11–28–67, Cl. D22—19.
- Diederich, Norman J., to Kellwood Co. Tent peg. 209,439, 11–28–67, Cl. D88—3.
- Dreyfuss, Henry, and D. M. Genaro, to Bell Telephone Laboratories, Inc. Low silhouette public telephone booth. 209,388, 11–28–67, Cl. D13—1.
- Dynamic Systems, Inc. : *See—*
  - Fabian, Thomas R. 209,421.
- Edison Instruments, Inc. : *See—*
  - Scarpa, Thomas J. 209,396.
- Engel, Lydia E. Nestable tray for laboratory instruments. 209,393, 11–28–67, Cl. D16—1.
- Fabian, Thomas R., to Dynamic Systems, Inc. Guide channel for conveyer belts. 209,421, 11–28–67, Cl. D55—1.
- Gauvin, Charles A. Body of a stringed musical instrument. 209,422, 11–28–67, Cl. D56—1.
- Gelles, Daniel E. Display stand. 209,435, 11–28–67, Cl. D80—10.
- Genaro, Donald M. : *See—*
  - Dreyfuss, Henry. and Genaro. 209,388.
- Gilbert, Samuel. Oral syringe. 209,395, 11–28–67, Cl. D24—1.
- Gilmour, Andrew L., to Steelcase, Inc. Cabinet. 209,407, 11–28–67, Cl. D33—19.
- Glass, Nora L. Combined camera and case therefor or similar article. 209,431, 11–28–67, Cl. D61—1.
- Grant, Perry J., to The Toy Development Center, Inc. Game selector wheel. 209 410, 11–28–67, Cl. D34—5.
- Grant, Perry J., to The Toy Development Center, Inc. Figure toy. 209,411, 11–28–67, Cl. D34—4.
- Greene, Oscar, to Name-Maker Corp. Illuminable electric scissors. 209,442 11–28–67, Cl. D95—5.
- Gregory, George W. Pontoon for boats. 209,432, 11–28–67, Cl. D71—1.
- Hallett Mfg. Co. : *See—*
  - Weiner, Myron J. 209,397.
  - Weiner, Myron J. 209.399.
- Hogan, Bernard E., Jr. : *See—*
  - Theissen, Leon A., and Hogan. 209,417.
- Holt, Arnold R. : *See—*
  - Roston, Robert J., Boss, and Holt. 209,443.
- Holzwarth, Henry A. : *See—*
  - Metzler, Charles L., and Holzwarth. 209,426.
- Hyer Hardware Mfg. Co. : *See—*
  - Maize, James W. 209,387.
- International Harvester Co. : *See—*
  - Koeber, Theodore H., Skyer, and McCallum. 209,413.
- Jamison, James A. Tie hanger. 209,434, 11–28–67, Cl. D80—8.
- Kay, Robert V. Shirt cuff. 209,385, 11–28–67, Cl. D2—379.
- Keeler & Dunkel, Inc. : *See—*
  - Lane, John, and Schneider. 209,412.
- Kellwood Co. : *See—*
  - Diederich, Norman J. 209,439.

- Koeber, Theodore H., R. A. Skyer, and D. A. McCallum, to International Harvester Co. Self-propelled combine. 209,413, 11–28–67, Cl. D40—1.
- Kuramoto, Takeo. Portable volt-ammeter or the like. 209,398, 11–28–67, Cl. D26—1.
- Lane, John, and A. C. Schneider, to Keeler & Dunkel, Inc. Design for combined toy building and container box. 209,412, 11–28–67, Cl. D34—15.
- Maize, James W., to Hyer Hardware Mfg. Co. Hinge. 209,387, 11–28–67, Cl. D10—9.
- Marsh, Donald R., to The Carter-Waters Corp. Extruded form for holding a narrow panel edge. 209,390, 11–28–67, Cl. D13—6.
- McCallum, Donald A.: *See*—
  - Koeber, Theodore H., Skyer, and McCallum. 209,413.
- McCue, Daniel E.: *See*—
  - McFarland, Donald L., and McCue. 209,441.
- McDonald, John D. Casing for electronic exercising apparatus and the like. 209,400, 11–28–67, Cl. D26—5.
- McFarland, Donald L., and D. E. McCue, to Rival Mfg. Co. Combined electric can opener and ice crusher. 209,441, 11–28–67, Cl. D95—2.
- Metzler, Charles L., and H. A. Holzwarth, to American Can Co. Cup or similar article. 209,426, 11–28–67, Cl. D58—17.
- Miller Motors, Inc.: *See*—
  - Theissen, Leon A., and Hogan. 209,417.
- Moran, James G.: *See*—
  - Bloomingdale, Alfred S., and Moran. 209,433.
- Morgan, John R., to Amerock Corp. Pull. 209,386, 11–28–67, Cl. D10—8.
- Morgan, John R., to Amerock Corp. Decorative molding strip. 209,389, 11–28–67, Cl. D13—6.
- Myler, George W. Double burner grate. 209,436, 11–28–67, Cl. D81—25.
- Nachman, Lawrence J., to Swirl, Inc. Dress. 209,383, 11–28–67, Cl. D2—80.
- Nachman, Lawrence J., to Swirl, Inc. Dress. 209,384, 11–28–67, Cl. D2—80.
- Name-Maker Corp.: *See*—
  - Greene, Oscar. 209,442.
- National Distillers and Chemical Corp.: *See*—
  - Bailey, Robert L. 209,423.
- National Steel Corp.: *See*—
  - Saunders, William T. 209,429.
- Pearlman, Edwin. Combined portable table and compartmented storage unit. 209,404, 11–28–67, Cl. D33—14.
- Prichard, Evan S., to Challenge-Cook Bros., Inc. Motorized converter dolly. 209,392, 11–28–67, Cl. D14—3.
- Riccio, Pasquale R., to Scovill Mfg. Co. Combined valve actuator and dispenser for aerosol containers. 209,430, 11–28–67, Cl. D58—26.
- Richardson, Alan C.: *See*—
  - De Man, Heiko T. 209,394.
- Riegelman, Harry M., to Ador Corp. Decorative grill for screen door. 209,419, 11–28–67, Cl. D54—2.
- Rival Mfg. Co.: *See*—
  - McFarland, Donald L., and McCue. 209,441.
- Rosenthal Aktiengesellschaft: *See*—
  - Wiinblad, Bjorn. 209,414.
- Roston, Robert J., W. O. Boss, and A. R. Holt, to City of Anaheim. Scoreboard. 209,443, 11–28–67, Cl. D96—12.
- Rothman, Matthew J. Combined illuminable hand mirror and stand therefor. 209,437, 11–28–67, Cl. D86—10.
- Rothman, Matthew J. Combined cosmetic and make-up case. 209,438, 11–28–67, Cl. D86—10.
- Saunders, William T., to National Steel Corp. End closure for a container. 209,429, 11–28–67, Cl. D58—26.
- Scarpa, Thomas J., to Edison Instruments, Inc. Ultrasonic plastics welder. 209,396, 11–28–67, Cl. D26—1.
- Schneider, Alfred C.: *See*—
  - Lane, John, and Schneider. 209,412.
- Schneider, Thomas E., Jr., to Tesco Chemicals, Inc. Chemical feeding unit for swimming pools. 209,440, 11–28–67, Cl. D91—1.
- Schnur, Martin, and M. Appel, to American Can Co. Bottle. 209,424, 11–28–67, Cl. D58—6.
- Scovill Mfg. Co.: *See*—
  - Riccio, Pasquale R. 209,430.
- Skyer, Robert A.: *See*—
  - Koeber, Theodore H., Skyer, and McCallum. 209,413.
- Smith, Harold P. Illuminated post. 209,416, 11–28–67, Cl. D48—31.
- Snyder, John M., to Commercial Carpet Corp. Combined circle cutting tool and protective cover. 209,420, 11–28–67, Cl. D54—13.
- Spectra-Physics, Inc.: *See*—
  - Clement, Carl J. 209,401.
- Steelcase, Inc.: *See*—
  - Gilmour, Andrew L. 209,407.
- Stessel, Martin C.: *See*—
  - Britt, James E., Del Vecchio, and Stessel. 209,408.
  - Britt, James E., Del Vecchio, and Stessel. 209,409.
- Swirl, Inc.: *See*—
  - Nachman, Lawrence J. 209,383.
  - Nachman, Lawrence J. 209,384.
- Tesco Chemicals, Inc.: *See*—
  - Schneider, Thomas E., Jr. 209,440.
- Theissen, Leon A., and B. E. Hogan, Jr., to Miller Motors, Inc. Wheel mounting lug. 209,417, 11–28–67, Cl. D54—1.
- Toy Development Center, Inc., The: *See*—
  - Grant, Perry J. 209,410.
  - Grant, Perry J. 209,411.
- Vaughan, Thomas C. Frame for a table. 209,406, 11–28–67, Cl. D33—14.
- Watanabe, Yoshiyuki. DC power pack eliminator. 209,403, 11–28–67, Cl. D26—15.
- Weiner, Myron J., to Hallett Mfg. Co. Filter attachment for spark plugs. 209,397, 11–28–67, Cl. D26—1.
- Weiner, Myron J., to Hallett Mfg. Co. Filter attachment for spark plugs. 209,399, 11–28–67, Cl. D26—1.
- Wells, Robert B. Insulated bottle or the like. 209,425, 11–28–67, Cl. D58—8.
- Wertheimer, Sidney B. Combined lamp base and timer or similar article. 209,415, 11–28–67, Cl. D48—20.
- Wiinblad, Bjorn, to Rosenthal Aktiengesellschaft. Vegetable dish. 209,414, 11–28–67, Cl. D44—15.
- Xerox Corp.: *See*—
  - Britt, James E., Del Vecchio, and Stessel. 209,408.
  - Britt, James E., Del Vecchio, and Stessel. 209,409.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 28TH DAY OF NOVEMBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- AB Platmanufaktur: *See*—
  - Jacobsen, Finn. 3,354,680.
- ACF Industries, Inc.: *See*—
  - Mowatt, Larssen E. 3,354,838.
  - Zub, Albert W., and Crawford. 3,354,877.
- A.G. fur industrielle Elektronik AGIE: *See*—
  - Chaperon, Remy, and Ullmann. 3,355,369.
- AMP Inc.: *See*—
  - Keller, Joseph R. 3,355,698.
  - Shannon, Suel G. 3,355,202.
- Abbey, Henry. Free-sliding guide device for a container cover. 3,355,055, 11–28–67, Cl. 220—38.
- Abbott Laboratories: *See*—
  - Shah, Vipin D. 3,355,485.
  - Van Munster, Frederik H. 3,355,490.
  - Woroch, Eugene L. 3,355,450.
- Abciuk, M., & Co., Ltd.: *See*—
  - Abciuk, Pinhas. 3,354,595.
- Abciuk, Pinhas, to M. Abciuk & Co., Ltd. Acoustic panels and ceilings. 3,354,595, 11–28–67, Cl. 52—485.
- Abraham, George. Single negative resistance tristable operation. 3,355,597, 11–28–67, Cl. 307—88.5.
- Abrams, John R., L. G. Blomquist, and J. Fine, to Interchemical Corp. Linting test. 3,354,712, 11–28–67, Cl. 73—150.
- Abramson, Andrew E., and A. F. Kitchar, to Research Instruments & Controls, Inc. Apparatus for strip trimming preparatory to lap joinder. 3,354,769, 11–28–67, Cl. 83—455.
- Acker, Richard C., and E. Bahniuk, to The Weatherhead Co. Piston diaphragm pump. 3,354,831, 11–28–67, Cl. 103—44.
- Acloque, Paul H., to Compagnie de Saint-Gobain. Projection of negatives as positives by employing a phototropic screen and an auxiliary visible light source. 3,355,588, 11–28–67, Cl. 250—71.
- Adage, Inc.: *See*—
  - Lucas, Paul G. 3,355,732.
- Adamkova, Helena: *See*—
  - Elias, Jiri, Adamkova, Boucek, Kolar, Samek, and Vlcek. 3,354,631.
- Adams, Chauncey, Jr. Constant heat control system. 3,355,104, 11–28–67, Cl. 236—77.
- Adams Electronics, Inc.: *See*—
  - Adams, Stanley A. 3,355,687.
  - Adams, Stanley A. 3,355,688.
- Adams, Stanley A., to Adams Electronics, Inc. Variable inductor with a reinforced coil form. 3,355,687, 11–28–67, Cl. 336—136.
- Adams, Stanley A., to Adams Electronics, Inc. Inductor with a reinforced plastic form. 3,355,688, 11–28–67, Cl. 336—192.
- Addressograph Multigraph Corp.: *See*—
  - Howe, Warren B., and Kyle. 3,354,821.
  - Lake, Francis K. 3,354,823.
- Advance Electronics Ltd.: *See*—
  - Penver, Gilbert F. 3,355,595.
- Agfa Aktiengesellschaft: *See*—
  - Winkler, Alfred, Engelsmann, Landbrecht, and Bammesberger. 3 354,803.
- Ahlich, Harold G.: *See*—
  - Barnhart, Charles C., and Ahlich. 3,355,531.
- Air Reduction Co., Inc.: *See*—
  - Tedeschi, Robert J. 3,355,505.
- Aktiebolaget Electrolux: *See*—
  - Bilde, Tord E. D. 3,354,488.
  - Jonsson, Kurt A. 3,354,496.
  - Wallgren, H. A. Ake. 3,354,909.
- Aktiebolaget Gotaverken: *See*—
  - Bengtsson, Bengt G. 3,355,135.
- Aktiebolaget Svenska Flaktfabriken: *See*—
  - Grudeborn, Lars-Owe. 3,354,945.
- Aktieselskabet de Danske Sukkerfabrikker: *See*—
  - Bruniche-Olsen, Henning A. 3,355,260.
- Aladdin Industries Inc.: *See*—
  - Hall, Roy W. 3,354,674.
- Albanese, Damian F., to International Telephone and Telegraph Corp. Coherent F.M. ramp ranging system. 3,355,734, 11–28–67, Cl. 343—14.
- Albert, Walter: *See*—
  - Mullner, Stefan, and Albert. 3,355,517.
- Albrecht, George J., to Almar Industries, Inc. Marking device. 3,355,239, 11–28–67. Cl. 401—148.
- Alexander, Jack F., and P. E. Morris, to Ortronix, Inc. Universal repeater. 3,355,549, 11–28–67, Cl. 178—70.
- Alexandersson, Sven V., to Telefonaktiebolaget L. M. Ericsson. Resistor component and resistor comprising several such resistor components. 3,355,691, 11–28–67, Cl. 338—47.
- Algeo, Jerry A., to North American Aviation, Inc. Microwave antenna having a controlled phase distribution. 3,355,738, 11–28–67, Cl. 343—779.
- Allbert, Vernon F., and T. H. Carey, Jr., to Columbia Research Laboratories, Inc. Component integral electrical cable connector. 3,355,703, 11–28–67, Cl. 339—177.
- Allcock, Alastair W. R., to Power Jets (Research and Development) Ltd. Flap system for aircraft. 3,355,125, 11–28–67, Cl. 244—42.
- Allen, Edward L., to Ingersoll-Rand Co. Wire cutting and connecting tool. 3,354,478, 11–28–67, Cl. 7—5.5.
- Allen, John, and D. Taylor, to United Kingdom Atomic Energy Authority. Heat exchangers. 3,354,869, 11–28–67, Cl. 122—32.
- Allen, Robert E. Shooting garment with freely suspended belt and pockets. 3,354,470, 11–28–67, Cl. 2—94.
- Allwood, John, to Machinery Specialties Pty. Ltd. Stand pipe structure. 3,355,696, 11–28–67, Cl. 339—5.
- Almar Industries, Inc.: *See*—
  - Albrecht, George J. 3,355,239.
- Allen, Christopher M.: *See*—
  - Stokes, Neville B., and Allen. 3,355,411.
- Allied Chemical Corp.: *See*—
  - Anelli, Louis G., and Sweeney. 3,355,493.
  - Farah, Basil S., Gilbert, and Otto. 3,355,500.
  - Habermann, Kenneth R. 3,355,347.
- Allis-Chalmers Mfg. Co.: *See*—
  - Reynolds, George E. 3,355,350.
- Amagasaki Iron & Steel Mfg. Co., Ltd.: *See*—
  - Takayanagi, Umekichi, and Kuwahara. 3,355,195.
- Amberg, Ralph G.: *See*—
  - Amberg, S. W. and R. G., Porter, and Phillips. 3,354,605.
- Amberg, Stephen W.: *See*—
  - St. Clair, David L., Amberg, Doherty, and Phillips. 3,354,614.
- Amberg, Stephen W., K. J. Vickary, and D. L. St. Clair, to Lily-Tulip Cup Corp. Receptacle capping machine and method. 3,354,604, 11–28–67, Cl. 53—42.
- Amberg, Stephen W., R. G. Amberg, H. Porter, Jr., and J. Phillips, to Lily-Tulip Cup Corp. Shrink-film closures. 3,354,605, 11–28–67, Cl. 53—42.
- American Air Filter Co., Inc.: *See*—
  - Keller, Joseph R. 3,354,623.
  - Murphy, David J., Jr. 3,354,622.
  - Scholl, Howard O., and Hyatt. 3,354,620.
- American Can Co.: *See*—
  - Balocca, Alfred E., and Joosten. 3,355,059.
  - Meyers, George L. 3,355,303.
- American Cyanamid Co.: *See*—
  - Feldman, Louis Israel, Holmlund, and Sax. 3,355,360.
  - Giddings, Sydney A. 3,355,294.
  - Oldsberg, Lars O. 3,355,418.
  - Remley, Kenneth H., and Anghinetti. 3,355,430.
  - Wright, William Blythe, Jr., and Brabander. 3,355,457.
  - Wystrach, Vernon P., Rauhut, and Freyberger. 3,355,017.
- American Filtrona Corp.: *See*—
  - Berger, Richard M., and Sproull. 3,354,886.
- American Flange & Mfg. Co., Inc.: *See*—
  - Greck, Eugene. 3,355,002.
- American Machines and Foundry Co.: *See*—
  - Ferrary, Ferdinand F., Feldstein, Dziekonski, Markowicz, and Dombroski. 3,354,846.
  - Friedman, Bernard H. 3,354,814.
  - Hineline, Robert E. 3,355,339.
  - Meyer, Werner H., and Curry. 3,354,813.
- American Metal Climax, Inc.: *See*—
  - Ernst, Runyon G. 3,355,245.
- American Optical Co.: *See*—
  - Carignan, Donald A., and Canterbury. 3,354,938.
  - Muller, Robert M. 3,355,234.
- American Radiator & Standard Sanitary Corp.: *See*—
  - Okress, Ernest C. 3,355,605.
- American Standard Inc.: *See*—
  - Hoisington, Edward C., and Martzolff. 3,354,617.
- American Telephone and Telegraph Co.: *See*—
  - Chaney, Ralph A. 3,355,556.
- Ametek, Inc.: *See*—
  - Harland, Philip W., and Mollick. 3,355,068.
  - Waite, Ralph D., and Johnson. 3,354,722.
- Amick, James W., and R. A. Hunt, Jr., to Standard Oil Co. Metal chelate combustion improver for fuel oil. 3,355,270, 11–28–67, Cl. 44—68.
- Ammondson, Clayton J., to Diversified Products Corp. Barbell mold. 3,354,509, 11–28–67, Cl. 18—35.
- Amon, Maurice E. Means for preventing dropping of saxophones and like musical instruments. 3,354,522, 11–28–67, Cl. 24—236.
- Amortegui, Carlos. Plant stake and centering means therefor. 3,354,580, 11–28–67, Cl. 47—47.
- Ampex Corp.: *See*—
  - Boylan, William F., and Kowal. 3,355,649.
  - Cheney, Walter J. and Frick. 3,355,076.
  - Johnson, Delmar R., and Hathaway. 3,355,119.
- Amtsberg, Lester A., and W. K. Wallace, to Chicago Pneumatic Tool Co. Nut-runner with reverse rotation brake. 3,354,754, 11–28–67, Cl. 81—52.4.
- Anaconda American Brass Co.: *See*—
  - Atkin, Oliver R. 3,354,936.
- Anaconda Wire and Cable Co.: *See*—
  - O'Mara, Joseph B., and D'Ascoli. 3,355,543.

- Anchor Hocking Glass Corp.: *See—*
  - Hart, Alexander W., and Foss. 3,354,608.
  - Rowe, Edward L. 3,355,241.
- Andersen, Obel F. E., to Eric Schaumburg. Magnetically operated fluid control valve. 3,355,140, 11–28–67, Cl. 251—65.
- Anderson, Donald J., to Kimberly-Clark Corp. Oil collector and projecting magnetic retention means therefor. 3,354,989, 11–28–67, Cl. 184—106.
- Anderson, Earl E.: *See—*
  - McLaughlin, Richard L., and Anderson. 3,355,299.
- Anderson, Evert V., to Westinghouse Air Brake Co. Method and apparatus for simultaneously performing multiple forming operations. 3,354,482, 11–28–67, Cl. 10—92.
- Anderson, George W., J. R. Harder, and R. A. Mahaffy, to Mahaffy & Harder Engineering Co. Packaging apparatus with improved product loader. 3,354,613, 11–28–67, Cl. 53—251.
- Anderson, Henry H.: *See—*
  - Calvert, William L., and Anderson. 3,355,340.
- Anderson, Ralph F., to National Lock Co. Counterbalancing hinge support. 3,354,499, 11–28–67, Cl. 16—180.
- Andreae, John H., and P. L. Joyce, to International Standard Electric Corp. Electronic machine simulating a learning scheme. 3,355,713, 11–28–67, Cl. 340—172.5.
- Andres, Rudolf: *See—*
  - Fiala, Ernst J. H., Andres, and Jurowski. 3,354,906.
- Anelli, Louis G., and R. F. Sweeney, to Allied Chemical Corp. Process for pyrolysis of 2,2-dichloroperfluorocycloalkanones. 3,355,493, 11–28–67, Cl. 260—586.
- Anghinetti, Joseph R.: *See—*
  - Remley, Kenneth H., and Anghinetti. 3,355,430.
- Annibale, Joseph R., to United States of America, Navy. Submerged object lifting device. 3,354,856, 11–28–67, Cl. 114—51.
- Anstalt Europaische Handelsgesellschaft: *See—*
  - Sturzinger, Oskar, and Gemperle. 3,354,819.
- Appleby, Henry H., to Neway Sales, Inc. Valve seat cutter. 3,354,528, 11–28–67, Cl. 29—105.
- Araki, Hitoshi: *See—*
  - Goto, Tetsurkazu, Mishio, Kojima, Kawano, Hayakawa, and Araki. 3,355,359.
- Aratani, Shozo, and T. Morita, to Matsushita Electric Industrial Co., Ltd. Open loop servo system for magnetic tape recording and reproducing apparatus. 3,355,547, 11–28–67, Cl. 178—6.6.
- Arbee Corp., The: *See—*
  - Creswell, Clifford A. 3,354,632.
- Argabright, Perry A., and R. J. Leary, to Esso Research and Engineering Co. High-energy organic compounds ozonized. 3,355,460, 11–28–67, Cl. 260—339.
- Arisman, Mervin B.: *See—*
  - Van Benthuysen, John D., and Arisman. 3,355,693.
- Armco Steel Corp.: *See—*
  - Knapp, Earle L. 3,354,864.
- Armento, Fred, to Republic Industries, Inc. Panic release door arm. 3,354,497, 11–28–67, Cl. 16—55.
- Armond, Charles V. Automatically operated door for water control. 3,354,655, 11–28–67, Cl. 61—28.
- Armorlite Lens Co., Inc.: *See—*
  - Lanman, Robert K. 3,355,342.
- Armstrong Cork Co.: *See—*
  - Hager, Nathaniel E. Jr. 3,354,720.
- Arnold, David B., to E. I. du Pont de Nemours and Co. Thermal fatigue-resistant airfoil shapes from dispersion-modified metals. 3,354,683, 11–28–67, Cl. 72—206.
- Aronoff, Ethan, to Western Union Telegraph Co. Waveguide echo measurement system. 3,355,663, 11–28–67, Cl. 324—58.
- Asahi Kasei Kogyo Kabushikikaisha: *See—*
  - Goto, Tetsukazu, Nishio, Kojima, Kawano, Hayakawa, and Araki. 3,355,359.
  - Matsuoka, Shigeru, Masai, and Kawakami. 3,354,612.
- Asahina, Jiro. Water-jet engine. 3,354,648, 11–28–67, Cl. 60—221.
- Asari, Akira, to Kobe Steel Works, Ltd. High energy rate forming machine. 3,354,693, 11–28–67, Cl. 72—453.
- Ashbury, Charles T. Push-in can lid. 3,355,058, 11–28–67, Cl. 220—48.
- Ashworth, James E., to United States Steel Corp. Post pulling apparatus. 3,355,146, 11–28–67, Cl. 254—29.
- Associated Electrical Industries Ltd.: *See—*
  - Vecht, Aron. 3,355,321.
- Associated Engineering Co.: *See—*
  - Strock, Howard E. 3,355,686.
- Atkin, Oliver B., to Anaconda American Brass Co. Continuous casting process. 3,354,936, 11–28–67, Cl. 164—82.
- Atlantic Richfield Co.: *See—*
  - Hendrix, Lloyd T. 3,354,663.
- Atlas Chemical Industries, Inc.: *See—*
  - McGirr, Robert. 3,354,634.
  - Nelson, Richard G. 3,354,827.
- Atteberry, George C.: *See—*
  - Otremba, Robert R., and Atteberry. 3,355,396.
- Aukens, Adrian E. Word game. 3,355,172, 11–28–67, Cl. 273—1.
- Avco Corp.: *See—*
  - Rosa, Richard J. 3,355,607.
- Avedikian, Araxia B. and S. Z. Dry ice cream mix composition and a method for producing same. 3,355,300, 11–28–67, Cl. 99—136.
- Avedikian, Souren Z.: *See—*
  - Avedikian, Araxia B. and S. Z. 3,355,300.
- Avins, Jack, to Radio Corp. of America. FM detector system suitable for integration in a monolithic semiconductor body. 3,355,609, 11–28–67, Cl. 329—103.
- Avoset Co.: *See—*
  - Jordan, Mahlon K. 3,355,071.
- Awakowicz, Erwin: *See—*
  - Geese, Albert, and Awakowicz. 3,355,558.
- Awe, Richard W., D. R. Pall, and G. L. Axon, to Dow Corning Corp. Antifoam composition and method of reducing and preventing foaming in aqueous systems. 3,355,395, 11–28–67, Cl. 252—321.
- Axelson, Carl A., E. Y. McGann, and J. H. Smith, to United States of America, Navy. Multiple explosive, line charge, package. 3,354,826, 11–28–67, Cl. 102—22.
- Axon, Gordon L.: *See—*
  - Awe, Richard W., Pall, and Axon. 3,355,395.
- Aycock, William C., to Thiokol Chemical Corp. Method for initiating or quenching the combustion in a solid propellant rocket motor. 3,354,647, 11–28–67, Cl. 60—220.
- Ayers, Peter, to The British Aluminum Co. Ltd. Apparatus for continuous heat treatment of sheet or strip material. 3,355,159, 11–28–67, Cl. 266—3.
- Babcock & Wilcox Co., The: *See—*
  - Darlinger, Edward P. 3,354,870.
- Bachman, William S., L. K. Kosowsky, and J. W. Deaso, to Columbia Broadcasting System, Inc. Plasticizing apparatus with automatic temperature controlling means. 3,354,501, 11–28–67, Cl. 18—2.
- Bader, John. Seaplane docking system. 3,354,855, 11–28–67, 114—43.5.
- Badgley, Durward B., to Swift & Co. Apparatus for electrophoretic fractionation of ampholytes. 3,355,375, 11–28–67, Cl. 204—299.
- Bahniuk, Eugene: *See—*
  - Acker, Richard C., and Bahniuk. 3,354,831.
- Bailey Meter Co.: *See—*
  - Brewster, Jerome B. 3,355,671.
- Baird, Stephen S., and J. A. Cunningham, to Texas Instruments Inc. Application of glass to semiconductor devices. 3,355,291, 11–28–67, Cl. 96—27.
- Baker, Hugh M., Jr. Cathodic protection method and apparatus. 3,355,370, 11–28–67, Cl. 204—147.
- Baker Oil Tools, Inc.: *See—*
  - Kammerer, Archer W., Jr., and Castro. 3,355,142.
- Baldwin, D. H., Co.: *See—*
  - Munch, Walter, Jr., and Scheide. 3,355,539.
- Balint, Andrew: *See—*
  - Smitzer, Louis A., Gawin, Balint, Porazinski, and Bielik. 3,354,774.
- Ball Bros. Co. Inc.: *See—*
  - Pickard, John E. 3,354,825.
- Balls, Edmond. Portable ranges. 3,354,878, 11–28–67, Cl. 126—275.
- Balocca, Alfred E., and R. L. Joosten, to American Can Co. Laminate with severable portion. 3,355,059, 11–28–67, Cl. 220—53.
- Bammesberger, Karl: *See—*
  - Winkler, Alfred, Engelsmann, Landbrecht, and Bammesberger. 3,354,803.
- Bancroft, George H., to The Bendix Corp. Diffusion pump. 3,355,093, 11–28–67, Cl. 230—101.
- Baney, Ronald H., to Dow Corning Corp. Iodine as a polymerization catalyst for certain silazanes and siloxanes. 3,355,475, 11–28–67, Cl. 260—448.2.
- Banner Metals, Inc.: *See—*
  - Wilson, James D. 3,355,054.
- Baranowski, Eugene, to Integrated Systems, Inc. Universal plug connector. 3,355,697, 11–28–67, Cl. 339—31.
- Barchfeld, George F. Bracket arrangement. 3,355,133, 11–28–67, Cl. 248—236.
- Bard Pharmaceuticals, Inc.: *See—*
  - Broh-Kahn, Robert H., and Galat. 3,355,356.
- Barnes, John A., and H. C. Nora, to The Pillsbury Co. Two-stage cooking and dehydrating process for potatoes and like vegetables. 3,355,304, 11–28–67, Cl. 99—207.
- Barnes, William I., to Standard Screw Co. Crankcase ventilating valve having rotatable metering plunger. 3,354,898, 11–28–67, Cl. 137—331.
- Barnhart, Charles C., and H. G. Ahlich, to The Dow Chemical Co. Method and apparatus for the preparation of thermoplastic resinous film. 3,355,531, 11–28–67, Cl. 264—95.
- Barnstead, John W., to General Electric Co. Dishwasher power unit housing and mounting means. 3,355,111, 11–28–67, Cl. 239—251.
- Barnstead Still and Sterilizer Co.: *See—*
  - Smith, Verity C. 3,355,018.
- Barr, Peter J. Apparatus for drying finely divided particles. 3,354,555, 11–28–67, Cl. 34—57.
- Barragan, Jacques. Program-controlled machine-tool system. 3,354,760, 11–28–67, Cl. 82—2.
- Barrett-Kegel Corp.: *See—*
  - Kegel, Francis C. 3,355,231.
- Barry, James S., ½ to International Paper Co. and ½ to The Stanley Works. Railway car door gasket. 3,354,841, 11–28–67, Cl. 105—424.
- Bartl, Herbert: *See—*
  - Hardt, Dietrich, Bartl, and Wust. 3,355,516.
- Bartoletti, Louis F. Fishing rod guide. 3,354,574, 11–28–67, Cl. 43—24.
- Bartz, Fred H. Mattress construction. 3,354,477, 11–28–67, Cl. 5—352.
- Barwick, LeRoy E., to McGraw-Edison Co. Attachment fittings for tubular member. 3,355,201, 11–28–67, Cl. 287—119.
- Basic Products Corp.: *See—*
  - Orr, Harley J. 3,355,630.
- Bass, Andrew L., Jr.: *See—*
  - Glassman, Joel, Jonas, Bass, and Pate. 3,354,487.
- Bassett, Arthur T., Jr., to General Motors Corp. Electrical surface heater with plural lamps. 3,355,574, 11–28–67, Cl. 219—464.
- Bassett, Arthur T., Jr., and D. C. Siegla, to General Motors Corp. Stacked dish infrared surface heating unit. 3,355,575, 11–28–67, Cl. 219—464.
- Batchelder, Charles F., and J. A. Rubico, to Batchelder Rubico, Inc. Shoe cradle. 3,354,484, 11–28–67, Cl. 12—123.

- Batchelder Rubico, Inc.: *See—*
  - Batchelder, Charles F., and Rubico. 3,354,484.
- Bates, Martin R.: *See—*
  - Russell, Roger B., Jr., and Bates. 3,354,703.
- Bates, William W., Jr.: *See—*
  - Keith, Charles H., II, Norman, and Bates. 3,355,317.
- Battele Memorial Institute: *See—*
  - Semones, Donald E., and Chase. 3,355,326.
- Baubles, Richard C.: *See—*
  - Grimm, David W., and Baubles. 3,354,757.
- Bauer, Hans F.: *See—*
  - Maya, Walter, and Bauer. 3,354,646.
- Baughman, George W., to Westinghouse Air Brake Co. Train speed control system. 3,355,584, 11–28–67, Cl. 246—187.
- Baumann, Philip C., to Radio Corp. of America. Semiconductor device assemblage having two convex tabs. 3,355,635, 11–28–67, Cl. 317—234.
- Baumgartner, Franz, Fabrik Elektrischa Apparate: *See—*
  - Klein, Johann. 3,355,601.
- Baumgartner, John G. Surgeon's fingernail and hand cleaning brush. 3,354,492, 11–28–67, Cl. 15—167.
- Bead Chain Mfg. Co., The: *See—*
  - Kosha, Andrew J. 3,354,854.
  - Puskas, Joseph J. 3,355,704.
- Beaird, Francis M., Jr., and P. Kovetz, to Ethyl Corp. Chemical process. 3,355,262, 11–28–67, Cl. 23—365.
- Beard, William Q., to Ethyl Corp. Process for inhibiting foaming of hexachlorobutadiene-1,3 by addition of diatomaceous earth. 3,355,366, 11–28–67, Cl. 203—20.
- Beck, Bernard O. Ballistic pendulum. 3,354,559, 11–28–67, Cl. 35—19.
- Beck, Howard G., to The General Tire & Rubber Co. Method and apparatus for butt splicing coated fabric. 3,355,343, 11–28–67, Cl. 156—304.
- Becke, Hans, E. F. Cave, and D. Stolnitz, to Radio Corp. of America. High power, high frequency transistor. 3,355,636, 11–28–67, Cl. 317—234.
- Becker, Wilhelm: *See—*
  - Muller, Erwin, A., Hoehne, and Becker. 3,355,519.
- Beckman Instruments, Inc.: *See—*
  - Cannon, Raymond E. 3,354,740.
- Beckwell, George F., to Pines Engineering Co., Inc. Machine for shaping tubular stock. 3,354,690, 11–28–67, Cl. 72—352.
- Bedford, John F., to Chamberlain Industries Ltd. Hydraulic motors. 3,354,780, 11–28–67, Cl. 91—180.
- Behrens, Edwin L., to The Procter & Gamble Co. Method for preparing homogeneous detergent slurry. 3,355,390, 11–28–67, Cl. 252—137.
- Beig, Willy, to Zahnradfabrik Friedrichshafen, Aktiengesellschaft. Dual generators for electrically operated gear transmissions. 3,354,751, 11–28–67, Cl. 74—752.
- Bekker, Mieczyslaw G.: *See—*
  - Wilcox, Howard A., and Bekker. 3,354,861.
- Bell Aerospace Corp.: *See—*
  - Mitchell, Harry W., and Murphy. 3,355,733.
- Bell & Howell Co.: *See—*
  - Normandy, Robert H., and Fitzgerald. 3,354,777.
  - Smitzer, Louis A., Gawin, Balint, Porazinski, and Bielik. 3,354,774.
  - Smitzer, Louis A., Yohanam, and Call. 3,354,776.
- Bell, Ross L., R. L. Carrel, and O. L. McClelland, to Collins Radio Co. Shunt excited log periodic antenna with coax feed. 3,355,739, 11–28–67, Cl. 343—792.5.
- Bell Telephone Laboratories, Inc.: *See—*
  - Berreman, Dwight W. 3,355,235.
  - Beurrier, Henry R., and Fitch. 3,355,681.
  - Bradford, Charles E. 3,355,622.
  - Brownell, Richard M., Gould, and Wenny. 3,355,724.
  - Burckhardt, Christoph B. 3,355,655.
  - Church, Donald S., and Kordos. 3,355,684.
  - Eisner, Edward. 3,354,702.
  - Fuss, Peter S. 3,355,554.
  - Haynie, Gerald D., and Rosenfeld. 3,355,662.
  - McHenry, Edwin J. 3,355,325.
  - Prestigiacomo, Anthony J. 3,355,551.
  - Robertson, George H. 3,355,579.
  - Thelemaque, Louis E. 3,355,555.
  - Varsanyi, Frank L. 3,355,675.
- Bender, Norman A., and R. O. Kerr, to General Electric Co. Method and apparatus for applying coatings onto articles of manufacture. 3,355,309, 11–28–67, Cl. 117—18.
- Bendix Corp., The: *See—*
  - Bancroft, George H. 3,355,093.
  - Boensell, Donald W., and Knudsen. 3,355,668.
  - Gleasman, Hollis K. 3,354,750.
- Bengtsson, Bengt G., to Aktiebolaget Gotaverken. Cargo tank support. 3,355,135, 11–28–67, Cl. 248—350.
- Bennett, Jeffrey A. Portable tank loader. 3,355,035, 11–28–67, Cl. 214—1.
- Benson, Kenneth L., to General Electric Co. Plural remote controllers for plural motors using a common power connection. 3,355,643, 11–28–67, Cl. 318—55.
- Benz, William G. Jr.: *See—*
  - Round, Byron J., and Benz. 3,354,948.
- Berezin, Gilbert H., G. H. Harris, and B. C. Fischback, to The Dow Chemical Co. Polyhalophenylthioaliphatic acids and their esters and salts. 3,355,383, 11–28–67, Cl. 252—38.6.
- Berg Mfg. & Sales Co.: *See—*
  - Klimek, Boleslaw. 3,355,223.
- Berger, Richard M., and R. C. Sproull, to American Filtrona Corp. Bonded silica gel products. 3,354,886, 11–28–67, Cl. 131—10.9.
- Bergere, Emric W. Screw slot. 3,354,481, 11–28–67, Cl. 10—10.
- Berkowitz, Sidney, M. Meadow, and D. S. Bunin, to FMC Corp. Continuous process of synthesizing amino iminomethanesulfinic acid. 3,355,486, 11–28–67, Cl. 260—513.7.
- Berns, Gerhardus J.: *See—*
  - Sellenraad, Christoffel, and Berns. 3,355,583.
- Berreman, Dwight W., to Bell Telephone Laboratories, Inc. Gaseous lens employing refrigerant effect. 3,355,235, 11–28–67, Cl. 350—180.
- Berry, William B. Method and apparatus for closing and sealing openings in a well casing. 3,354,955, 11–28–67, Cl. 166—14.
- Bertram, Sidney, to The Bunker-Ramo Corp. Three dimensional surface profiling system using photocell which remains a fixed distance above the surface. 3,355,590, 11–28–67, Cl. 250—202.
- Bertsche, Joseph V., to Gleason Corp. Method of permanently joining mating plastic reflector discs. 3,355,341, 11–28–67, Cl. 156—295.
- Best, James D.: *See—*
  - Lipps, Delbert A., Best, and Rubero. 3,355,259.
- Bethlehem Steel Corp.: *See—*
  - Fegan, Lloyd V. Jr. 3,355,665.
- Beurrier, Henry R., and A. H. Fitch, to Bell Telephone Laboratories, Inc. Elastic wave system temperature control for controlling delay time. 3,355,681, 11–28–67, Cl. 333—16.
- Beusch, Christian, and F. Tinner. Auger type ice maker. 3,354,666, 11–28–67, Cl 62—354.
- Bey, Alvin E., and D. R. Weyenberg, to Dow Corning Corp. Organosilicon compounds made from styrenes. 3,355,476, 11–28–67, Cl. 260—448.2.
- Beyers, Marvin E., M. P. Brown, J. W. Carter, J. A. Junck, J. F. Lauterbach, and F. H. Winters, to Caterpillar Tractor Co. Hydraulic blade control. 3,354,563, 11–28–67, Cl. 37—156.
- Bhatia, Gul P.: *See—*
  - Janis, Vincent, Jr., and Bhatia. 3,354,587.
- Biba, Edward A., to Malco Mfg. Co. Terminal. 3,355,701, 11–28–67, Cl. 339—126.
- Bick, Kenneth L.: *See—*
  - Whippo, Walter B., Bick, and Brown. 3,355,099.
- Bickel, Hans: *See—*
  - Urech, Jakob, Fechtig, Bosshardt, Bickel, Schenker, and Wilhelm. 3,355,452.
- Bielik, Paul G.: *See—*
  - Smitzer, Louis A., Gawin, Balint, Porazinski, and Bielik 3,354,774.
- Biet, Jean-Pierre, and J. Chaupit, to Compagnie Generale d'Electricite. Device for adjusting the consumption of and protecting an apparatus supplied with alternating current. 3,355,657, 11–28–67, Cl. 323—22.
- Bigelow-Sanford, Inc.: *See—*
  - Carrigan, Raymond J., and Harrison. 3,354,914.
- Biggar, Allan M.: *See—*
  - Kilduff, Timothy J., and Biggar. 3,355,545.
- Bilde, Tord E. D., to Aktiebolaget Electrolux. Surface treating apparatus. 3,354,488, 11–28–67, Cl. 15—49.
- Biller, Ehm, G. Nettesheim, and G. Stern, to Union Rheinische Braunkohlen Kraftstoff Aktiengesellschaft. Process for the product of hydrated olefins. 3,355,501, 11–28–67, Cl. 260—614.
- Bindler, Jakob, and E. Durr, to J. R. Geigy A.G. Process for the dyeing of polyacrylonitrile fibers. 3,355,243, 11–28–67, Cl. 8—55.
- Bioconsultants, Inc.: *See—*
  - Farr, Andrew F. 3,355,098.
- Birdsboro Corp.: *See—*
  - Metzger, Wilford E., Jr. 3,354,684.
- Birrell, Stewart H., and R. M. Fey, to Owens-Illinois, Inc. Collapsible container. 3,354,924, 11–28–67, Cl. 150—.5.
- Bissot, Thomas C., to E. I. du Pont de Nemours and Co. Preparation of stable film forming aqueous polyamide dispersions. 3,355,409, 11–28–67, Cl. 260—29.6.
- Bitko, Sheldon, ½ to Harry E. Rubens. Glass-metal seal. 3,355,332, 11–28–67, Cl. 148—13.
- Black and Decker Mfg. Co., The: *See—*
  - Wickham John L. 3,354,732.
- Black, Sheppard A., and J. D. Heide, to Uniroyal, Inc. Automatic tire building apparatus. 3,355,346, 11–28–67, Cl. 156—396.
- Blackwell, Francis O., III: *See—*
  - Eisengrein, Robert H., and Blackwell. 3,355,641.
- Blake, Jack W., to F. L. Jacobs Co. Ash receptacle for automobiles. 3,355,232, 11–28–67, Cl. 312—242.
- Blaw-Knox Co.: *See—*
  - Hesler, Warren E., and Eckstrom. 3,354,932.
- Bliss, Arthur D., M. J. Gruber, and R. F. W. Ratz, to Olin Mathieson Chemical Corp. Hydrozine derivatives of pentaerythritol phosphates. 3,355,521, 11–28–67, Cl. 260—923.
- Bliss, Arthur D., and R. F. W. Ratz, to Olin Mathieson Chemical Corp. Bis-carbamoyl spirophosphonothioates. 3,355,523, 11–28–67, Cl. 260—927.
- Bliss, E. W. Co.: *See—*
  - Erickson, Frederick E. 3,355,602.
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- Blomquist, Leif G.: *See—*
  - Abrams, John R., Blomquist, and Fine. 3,354,712.
- Bobinski, Jack: *See—*
  - Grafstein, Daniel, and Bobinski. 3,355,489.
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  - Hasspacher, Klaus: 3,355,453.
- Boensell, Donald W., and A. C. Knudsen, to The Bendix Corp. Tunable notch filter. 3,355,668, 11–28–67, Cl. 328—167.
- Boettinger, William K.: *See—*
  - Eby, Robert E., and Boettinger. 3,355,561.
- Bogdany, John: *See—*
  - Hellman, Carl, and Bogdany. 3,355,316.
- Boissier, Jacques R., and C. E. Malen, to Societe Anonyme dite: Societe Industrielle Pour. Derivatives of thiachromanes and process for preparation. 3,355,459, 11–28–67, Cl. 260—327.
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  - Kennedy, Alan M., and Wood. 3,354,852.
- Born, Raymond W. Vehicle diagnostic and servicing facility. 3,354,707, 11–28–67, Cl. 73—117.
- Bosshardt, Rolf: *See—*
  - Urech, Jakob, Fechtig, Bosshardt, Bickel, Schenker, and Wilhelm. 3,355,452.
- Botello, Gilber, R. E. Johnson, and E. A. Stockton, said Johnson and said Stockton assors. to said Botello. Fish cable tool. 3,355,148, 11–28–67, Cl. 254—134.3.
- Boucek, Miroslav: *See—*
  - Elias, Jiri, Adamkova, Boucek, Kolar, Samek, and Vleek. 3,354,631.
- Boutillon, Henri, to Etablissements Boutillon S.A. Liquid meter. 3,354,718, 11–28–67, Cl. 73—230.
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- Bowera, Charles E., Jr., to The Fibre-Metal Products Co. Nape strap. 3,354,468, 11–28–67, Cl. 2—3.
- Bowles Engineering Corp.: *See—*
  - Minnick, Pasco A. 3,354,717.
- Bowser, Inc.: *See—*
  - Topol, George J. 3,354,772.
- Boyd, Wilton E., to General Electric Co. Vacuum cleaner operating switch construction. 3,355,562, 11–28–67, Cl. 200—86.5.
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- Boylan, William F., and L. Kowal, to Ampex Corp. Synchronizing circuit. 3,355,649, 11–28–67, Cl. 318—314.
- Brabander, Herbert J.: *See—*
  - Wright, William B., Jr., and Brabander. 3,355,457.
- Braca, Giuseppe: *See—*
  - Pino, Piero, Braca, and Sbrana. 3,355,503.
- Bracht, Lloyd J., K. L. Devall, and H. J. Krause, to LTV Electrosystems, Inc. Molded resistor and method of fabricating same. 3,355,532, 11–28–67, Cl. 264—234.
- Bradbury, Robert E., Jr.: *See—*
  - Savage, George M., and Bradbury. 3,354,951.
- Bradford, Charles E., to Bell Telephone Laboratories, Inc. Electron beam focusing apparatus. 3,355,622, 11–28–67, Cl. 315—3.5.
- Bradley, Victor E. Rescue toboggan. 3,355,186, 11–28–67, Cl. 280—19.
- Bradshaw, Arthur, K. Lee, N. Swales, and P. W. Voyle, to United Shoe Machinery Corp. Mulling process. 3,354,486, 11–28–67, Cl. 12—142.
- Brault, Michel: *See—*
  - Van de Walle, Therese, and Brault. 3,355,514.
- Braun, B.: *See—*
  - Koelle, Otto. 3,354,944.
- Braun, Ernest J., to Union Carbide Corp. Die for dielectric heat sealing. 3,355,345, 11–28–67, Cl. 156—380.
- Braunlich, Frank H., Jr., and C. L. Lunsford, to The Dow Chemical Co. Method of conserving energy in the treatment of wells. 3,354,960, 11–28–67, Cl. 166—42.
- Braus, Harold, to United States of America, Navy. Submultiple line frequency converter. 3,355,647, 11–28–67, Cl. 318—171.
- Brautigam, Rudolf G.: *See—*
  - Hain, Elias W. R., Cosner, and Brautigam. 3,355,535.
- Braxton, James L., Jr., to Honeywell Inc. Print hammer supporting spring assembly and method of making same. 3,354,820, 11–28–67, Cl. 101—93.
- Brechna, Habib, and B. Hedin, to United States of America, Atomic Energy Commission. Modified magnetic momentum slit including a pair of C-type magnets. 3,355,586, 11–28–67, Cl. 250—41.9.
- Brefka, Paul E.: *See—*
  - Latham, Peter A., and Brefka. 3,355,063.
- Brewer, George E. F., and G. L. Burnside, to Ford Motor Co. Method for adjusting the bath composition in a continuous electrodeposition process. 3,355,373, 11–28–67, Cl. 204—181.
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- Brewin, Grant H., and H. P. Scott, to Proctor Hydro-Set Co. System for removing stockings from forms. 3,355,074, 11–28–67, Cl. 223—112.
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- Briggs, Odis B. Knee, hip and back flexer. 3,354,879, 11–28–67, Cl. 128—71.
- Brindell, Gordon D., to United States Rubber Co. Stabilized polyester-based polyurethane composition. 3,355,422, 11–28–67, Cl. 260—45.85.
- Brindle, Melbourne. Leaf handling device. 3,355,187, 11–28–67, Cl. 280—19.
- British Aluminium Co. Ltd., The: *See—*
  - Ayers, Peter. 3,355,159.
- British Petroleum Co., Ltd., The: *See—*
  - Gardner, John Francis, Lawrence, and Turnbull. 3,355,381.
- British Ropes Ltd.: *See—*
  - Pennycuick, Kenneth. 3,355,228.
- Brock Equipment Co.: *See—*
  - Schwab, Charles J. 3,355,585.
- Brock, Walter B. Motor actuated bumper. 3,355,208, 11–28–67, Cl. 293—9.
- Brockton Contract Packaging Sales Corp.: *See—*
  - Katzew, Charles J., and Frost. 3,354,603.
- Bro-Dart Industries: *See—*
  - Brody, Arthur Sroka, and Ozimek. 3,355,344.
- Brody, Arthur, R. Sroka, and E. J. Ozimek, to Bro-Dart Industries. Apparatus for handling book-borrowing transactions. 3,355,344, 11–28–67, Cl. 156—355.
- Broh-Kahn, Robert H., and A. Gaiat, to Bard Pharmaceuticals, Inc. Therapeutic compositions containing nitrate esters. 3,355,356, 11–28–67, Cl. 167—65.
- Brooks, James W., and G. J. Moss, Jr., to United States of America, Navy. Magnetic tape playback system. 3,355,711, 11–28–67, Cl. 340—172.5.
- Brooks, William R.: *See—*
  - Wilke, Milton E., and Brooks. 3,355,329.
- Brouwer, Gerrit P.: *See—*
  - De Lang, Hendrik, and Brouwer. 3,354,806.
- Brown, Chester: *See—*
  - Whippo, Walter B., Bick, and Brown. 3,355,099.
- Brown, Frank E. Portable camper of fabric adapted for mounting to a box of a pickup truck. 3,354,891, 11–28–67, Cl. 135—1.
- Brown, Jesse H.: *See—*
  - Rieke, Robert C., and Brown. 3,355,448.
- Brown, Julian, Jr., and D. R. Taft, to Sperry Rand Corp. Latching-type digital phase shifter employing toroids of gyromagnetic material. 3,355,683, 11–28–67, Cl. 333—31.
- Brown, Lawrence H., to Dow Corning Corp. Method for the preparation of aminoalkylsiloxane copolymers. 3,355,424, 11–28–67, Cl. 260—46.5.
- Brown, Mackenzie P.: *See—*
  - Beyers, Marvin E., Brown, Carter, Junck, Lauterbach, and Winters. 3,354,563.
- Brown, Robert N., to Eltra Corp. Apparatus for photographically composing advertisements in column format from advertisements on individual cards. 3,354,779, 11–28–67, Cl. 88—24.
- Brown & Sharpe Mfg. Co.: *See—*
  - Levesque, George N. 3,354,908.
- Brown, Warren D. Concrete valve structure. 3,355,220, 11–28–67, Cl. 302—36.
- Brownell, Richard M., H. L. B. Gould, and D. H. Wenny, Jr., to Bell Telephone Laboratories, Inc. Magnetic material and devices utilizing same. 3,355,724, 11–28–67, Cl. 340—174.
- Bruene, Warren B., to Collins Radio Co. Automatically tuned coupled resonant circuits. 3,355,667, 11–28–67, Cl. 325—174.
- Brumfield, John H. Wheel cover retaining means. 3,355,219, 11–28–67, Cl. 301—37.
- Bruniche-Olsen, Henning A., to Aktieselskabet de Danske Sukkerfabrikker. Countercurrent lixiviation of disintegrated material with subsequent multiple pressing and recycle of expressed liquid. 3,355,260, 11–28–67, Cl. 23—310.
- Bryant, George M.: *See—*
  - Zutty, Nathan L., Welch, Sullivan, Bryant, and Walter. 3,355,440.
- Bucalo, Louis, to Kinemotive Corp. Embossing implement with tape advanced by latched die members. 3,354,999, 11–28–67, Cl. 197—6.7.
- Buchanan, James L.: *See—*
  - Zelina, William B., and Buchanan. 3,355,656.
- Buchanan, William C. Unitary multiple off-wall drains. 3,354,899, 11–28–67, Cl. 137—360.
- Buchanan, William G., and G. H. Howing, to The Gleason Works. Tooth cutting machine with work handling mechanism. 3,354,782, 11–28–67, Cl. 90—1.
- Budd Co., The: *See—*
  - Dyer, Daniel P., Jr. 3,354,705.
  - Winnai, Henry F., and Whitsel. 3,354,535.
- Budd, Richard E.: *See—*
  - Ferris, Thomas G., Budd, and Easterling. 3,355,372.
- Budnick, Edward G., to Plains Chemical Development Co. Manufacture of 4,4′-dichlorodiphenyl sulfone. 3,354,497, 11–28–67, Cl. 260—607.
- Budzich, Tadeusz. Speed responsive hydrostatic device. 3,354,978, 11–28–67, Cl. 180—44.
- Buehler Corp., The: *See—*
  - Cummins, Clessie L., Jr. 3,355,108.
- Bühler, Gebrüder: *See—*
  - Schultz, Richard. 3,354,845.
- Bunin, Donald S.: *See—*
  - Berkowitz, Sidney, Meadow, and Bunin. 3,354,486.
- Bunker-Ramo Corp., The: *See—*
  - Bertram, Sidney. 3,355,590.
  - Culler, Glen J. 3,355,714.
  - Koerner, Ralph J. 3,355,705.
  - Koerner, Ralph J. 3,355,707.
  - Koerner, Ralph J. 3,355,726.
  - Lawrence, Robert, Leonard, and Williams. 3,354,543.
  - Smith, Charles W. 3,355,078.
- Burckhardt, Christoph B., to Bell Telephone Laboratories, Inc. Frequency tripler apparatus with isolation. 3,355,655, 11–28–67, Cl. 321—69.
- Burgess, Laurance D., to Western Electric Co., Inc. Programmable test apparatus for supplying selected current levels to the coil of a relay to be adjusted. 3,355,659, 11–28–67, Cl. 324—28.
- Burkhardt, Kenneth J.: *See—*
  - Kryzer, Benjamin H., Schoenecker, and Burkhardt. 3,354,907.
- Burndy Corp.: *See—*
  - Oshva, Eugene. 3,355,699.

- Burnell, John B., to General Motors Corp. Constant speed control system. 3,354,873, 11–28–67, Cl. 123—103.
- Burns, Joseph R., to Radio Corp. of America. Information storage. 3,355,721, 11–28–67, Cl. 340—173.
- Burnside, Gilbert L.: *See—*
  - Brewer, George E. F., and Burnside. 3,355,373.
  - Brewer, George E. F., Burnside, and Turner. 3,355,374.
- Burroughs Corp.: *See—*
  - Sakurai, Richard S., adn Trimbur. 3,354,817.
  - Schubert, Ernst J. 3,355,710.
  - Wendell, Douglas C., Jr. 3,355,578.
- Bury, George J., to Illinois Tool Works Inc. Lighted push button switch assembly. 3,355,566, 11–28–67, Cl. 200—167.
- Butler, James H., D. A. Chance, and S. S. Im, to International Business Machines Corp. Method of forming tunneling junctions for intermetallic semiconductor devices. 3,355,335, 11–28–67, Cl. 148—177.
- Butler, Roger M., and I. S. Pasternak, to Esso Research and Engineering Co. Horizontal distillation analyzer with plural distillate receivers. 3,355,365, 11–28–67, Cl. 202—197.
- Buttrick, George W.: *See—*
  - Smith, Keith L., Eldred, Buttrick, and Winslow. 3,355,400.
- Buxton, Thomas S., to Pan American Petroleum Corp. Steam injection process for recovery of petroleum. 3,354,954, 11–28–67, Cl. 166—11.
- Byatt, Dennis W. G., to The Marconi Co. Ltd. Radio direction finders. 3,355,737, 11–28–67, Cl. 343—118.
- CTS Corp.: *See—*
  - Van Benthuysen, John D., and Arisman. 3,355,693.
- Gadden, Jerry L., and D. H. Friar, to United States of America, Atomic Energy Commission. Beryllium foil fabrication. 3,354,538, 11–28–67, Cl. 29—423.
- Cairns, Charles G., and W. Rokitenetz, to Crane Co. Selfriming plumbing fixture. 3,354,474, 11–28–67, Cl. 4—187.
- Calark, Inc.: *See—*
  - Gregory, Lester, Jr. 3,355,102.
- Calderon, Albert, to Calderon Automation, Inc. Apparatus for handling molten metal. 3,354,939, 11–28–67, Cl. 164—254.
- Calderon Automation, Inc.: *See—*
  - Calderno, Albert. 3,354,939.
- Caldwell, John R., and W. J. Jackson, Jr., to Eastman Kodak Co. Thermosetting polyesters. 3,355,414, 11–28–67, Cl. 260—33.8.
- Caldwell, John R.: *See—*
  - Dannelly, Clarence C., and Caldwell. 3,355,410.
- Call, Daniel D.: *See—*
  - Smitzer, Louis A., Yohanam, and Call. 3,354,776.
- Callery Chemical Co.: *See—*
  - Krol, Anthony J. 3,355,306.
- Calvert, William J., and H. H. Anderson, to Union Carbide Corp. Method and apparatus for securing spouts to film. 3,355,340, 11–28–67, Cl. 156—256.
- Cameron, Bruce M. Athletic shoe having rotatable cleat means. 3,354,561, 11–28–67, Cl. 36—2.5.
- Cameron Iron Works, Inc.: *See—*
  - Pennington, John V. 3,354,961.
- Campbell, William W., C. E. Rossi, and W. R. Good, to Harbison-Walker Refractories Co. Shaft kiln. 3,355,158, 11–28–67, Cl. 263—29.
- Canada Iron Foundaries Ltd.: *See—*
  - Kempe, Philip C. 3,355,264.
- Canale, Joseph A.: *See—*
  - Coughlin, Harry T., and Canale. 3,354,880.
- Canfield, Eugene B., to General Electric Co. Accelerometer. 3 354,725, 11–28–67, Cl. 73—516.
- Cannell, Lawrence G., and E. F. Magoon, to Shell Oil Co. Olefin dimerization process. 3,355,510, 11–28–67, Cl. 260—683.15.
- Cannon, Raymond E., to Beckman Instruments, Inc. Conveyor drive and indexing mechanism for liquid scintillation spectrometers. 3,354,740, 11–28–67, Cl. 74—436.
- Canterbury, Bradford: *See—*
  - Carignan, Donald A., and Canterbury. 3,354,938.
- Cantor, Abraham, W. Schmidt, and M. W. Winicov, to West Laboratories, Inc. Alkaline germicidal cleaner with color indicator. 3,355,392, 11–28–67, Cl. 252—99.
- Cantor, Abraham, and M. W. Winicov, to West Laboratories, Inc. Germicidal nonionic-detergent iodine compositions. 3,355,386, 11–28–67, Cl. 252—106.
- Cape, Arthur T., to Coast Metals, Inc. Brazing alloy. 3,355,283, 11–28–67, Cl. 75—151.
- Cape, Arthur T., to Coast Metals, Inc. Cobalt-base alloys. 3,355,287, 11–28–67, Cl. 75—170.
- Capps, John P., to Minnesota Mining and Mfg. Co. Electrographic recording apparatus having a porous carrier web for electroscopic print powder. 3,355,743, 11–28–67, Cl. 346—74.
- Carel, Alfred B., to Continental Oil Co. Vapor phase chromatography system. 3,354,619, 11–28–67, Cl. 55—197.
- Carey, Thomas H., Jr.: *See—*
  - Albert, Vernon F., and Carey. 3,355,703.
- Carignan, Donald A., and B. Canterbury, to American Optical Co. Apparatus for blocking lenses. 3,354,938, 11–28–67, Cl. 164—150.
- Carlstedt, Ragnar L., and J. F. McCreery, to Kennametal, Inc. Clamp member. 3,354,527, 11–28–67, Cl. 29—96.
- Carnevale, Edmund H., and L. C. Lynnworth, to Parametrics, Inc. Ultrasonic measurement apparatus employing a cooled cylindrical transducer. 3,354,699, 11–28–67, Cl. 73—67.5.
- Caron Spinning Co.: *See—*
  - Potts, Robert C. 3,355,115.
- Carr, Kenneth L., to Ferrotec, Inc. Impedance matched stripline ferrite Y circulator having increased ground plane spacing at the junction of the center conductors. 3,355,679, 11–28–67, Cl. 333—1.1.
- Carrel, Robert L.: *See—*
  - Bell, Ross L., Carrel, and McClelland. 3,355,739.
- Carrigan, Raymond J., and W. T. Harrison, to Bigelow-Sanford, Inc. Axminster pile fabric and method for making the same. 3,354,914, 11–28–67, Cl. 139—399.
- Carroll, Terry M., and R. Hofstetter. Tabletop simulated golf game apparatus with distance and error indicating device. 3,355,175, 11–28–67, Cl. 273—134.
- Carroll, William L. Pattern determining device. 3,354,671, 11–28–67, Cl. 66—50.
- Carter, George D. Ball skate device. 3,355,185, 11–28–67, Cl. 280—11.23.
- Carter, George H., to Redland Tiles Ltd. Article propelling apparatus. 3,355,009, 11–28–67, Cl. 198—221.
- Carter, James L., P. J. Lucchesi, and E. R. Nightingale, Jr., to Esso Research and Engineering Co. Olefin separation with strontium and cadmium molecular lieves. 3,355,509, 11–28–67, Cl. 260—677.
- Carter, John W.: *See—*
  - Beyers, Marvin E., Brown, Carter, Junck, Lauterbach, and Winters. 3,354,563.
- Carter, Thomas R., F. Fahnoe, and E. P. Supinski, to National Distillers and Chemical Corp. Production of vanadium oxytrichloride. 3,355,244, 11–28–67, Cl. 23—17.
- Cartier, Roger J., to Controls Co. of America. Process timers. 3,354,733, 11–28–67, Cl. 74—125.
- Caruso, John T., to Scott Aviation Corp. Disc valve. 3,354,903, 11–28–67, Cl. 137—512.15.
- Castle, Alfred B., Sr.: *See—*
  - Jones, Frank E., and Castle. 3,354,544.
- Castro, Luis F.: *See—*
  - Kammerer, Archer W., Jr., and Castro. 3,355,142.
- Caterpillar Tractor Co.: *See—*
  - Beyers, Marvin E., Brown, Carter, Junck, Lauterbach, and Winters. 3,354,563.
  - Sieving, Alfred W., and Rosenberger. 3,354,994.
- Cathcart, Norman E. Door supported adjustable towel rack. 3,355,030, 11–28–67, Cl. 211—87.
- Catzen, Robert W., to Covington Mfg. Corp. Method of cleaning ink from rubber dies. 3,355,324, 11–28–67, Cl. 134—29.
- Causey, Stanley R. Weather vane fixture. 3,354,715, 11–28–67, Cl. 73—188.
- Cave, Eric F.: *See—*
  - Becke, Hans, Cave, and Stolnitz. 3,355,636.
- Cease, Robert R.: *See—*
  - Lich, Richard L., and Cease. 3,354,839.
- Cekada, Joseph, Jr., to Dow Corning Corp. Reinforcement of organic latex polymers with silsesquioxanes. 3,355,399, 11–28–67, Cl. 260—3.
- Cekada, Joseph, Jr., to Dow Corning Corp. Silicone rubber latexes reinforced with silsesquioxanes. 3,355,406, 11–28–67, Cl. 260—29.2.
- Celanese Corp.: *See—*
  - Conrad, Peter. 3,355,116.
- Central Electricits Generating Board: *See—*
  - Horn, George, and Chojnowski. 3,355,609.
- Centre National de la Recherche Scientifique, Ministere de l'Education Nationale: *See—*
  - Sadron, Charles, Finaz, and Skoulios. 3,355,513.
- Century Lighting, Inc.: *See—*
  - Wolff, Frederick M. 3,355,694.
- Cervin, Curtis M. Control apparatus for grading objects. 3,355,015, 11–28–67, Cl. 209—73.
- Ceskoslovenska Akademie ved: *See—*
  - Glanc, Antonin. 3,355,634.
  - Novak, Josef, and Janak. 3,354,696.
  - Opolsky, Vaclav. 3,355,094.
- Chait, Herman N. Radar system with independent control of transmit and receive antenna patterns. 3,355,735, 11–28–67, Cl. 343—16.
- Chamberlain Industries Ltd.: *See—*
  - Bedford, John F. 3,354,786.
- Champlain Co., Inc.: *See—*
  - Lewis, Clarence A., and O'Brien. 3,355,640.
- Champlin, Charles L., to Packaging Corp. of America. Box construction. 3,355,089, 11–28–67, Cl. 229—51.
- Chance, Dudley A.: *See—*
  - Butler, James H., Chance, and Im. 3,355,335.
- Chandler & Price Co., The: *See—*
  - Thatcher, Robert B. 3,355,122.
- Chaney, Ralph A., to American Telephone and Telegraph Co. Automatic mobile radio telephone switching system. 3,355,556, 11–28–67, Cl. 179—41.
- Chaperon, Remy, and W. Ullmann, to A.G. fur industrielle Elektronik AGIE. Process using a fluoride electrolyte for the electrolytic and electro-chemical working of metals. 3,355,369, 11–28–67, Cl. 204—143.
- Chapman, Gale C. Variable speed drive. 3,354,748, 11–28–67, Cl. 74—689.
- Chase, Walter E.: *See—*
  - Semones, Donald E., and Chase. 3,355,326.
- Chaupit, Jean: *See—*
  - Biet, Jean-Pierre, and Chaupit. 3,355,657.
- Cheema, Inder, and H. N. Weinberg, to Esso Research and Engineering Co. Amylose in the reduction of pour point. 3,355,378, 11–28–67, Cl. 208—28.
- Chemical Construction Corp.: *See—*
  - Korwin, Paul. 3,355,362.
- Cheney, Walter J., and F. A. Frick, to Ampex Corp. Tape driving apparatus. 3,355,076, 11–28–67, Cl. 226—11.
- Cherry, Jesse T.: *See—*
  - Erickson, Everett L., and Cherry. 3,354,983.
- Cherubin, Peter: *See—*
  - Wiegelmann, Hans, Germann, and Cherubin. 3,355,149.
- Chesley Industries, Inc.: *See—*
  - Chesley, Robert G. 3,355,134.
- Chesley, Robert G., to Chesley Industries, Inc. Shelf support. 3,355,134, 11–28–67, Cl. 248—250.

- Chevron Research Co.: *See—*
  - Marquis, David M. 3,355,389.
  - Moulden, Howard N. 3,355,508.
- Chicago Bridge & Iron Co.: *See—*
  - Kaups, Taavi. 3,355,052.
- Chicago Pneumatic Tool Co.: *See—*
  - Amtsberg, Lester A., and Wallace. 3,354,754.
- Childers, Spencer L., J. W. Howard, and W. O. Clark, to The Vendo Co. Apparatus for automatic sales totalization. 3,355,576, 11–28–67, Cl. 235—61.7.
- Chilpan, Kurt C., to Maremont Corp. Spinning and twisting ring. 3,354,628, 11–28–67, Cl. 57—119.
- Chojnowski, Boguslaw: *See—*
  - Horn, George, and Chojnowski. 3,355,609.
- Christiansen, Carl H., 50% to R. E. Dolac. Removable key actuated control circuit. 3,355,631, 11–28–67, Cl. 317—134.
- Christmann, John L., to Merrick Scale Mfg. Co. Mass measuring system. 3,354,698, 11–28–67, Cl. 73—67.2.
- Chromographic Press, Inc.: *See—*
  - Heilbrunn, Alfred. 3,355,006.
- Chrow, Albert E., to Samuel Moore and Co. Composite electrically heated tubing product. 3,355,572, 11–28–67, Cl. 219—301.
- Chrysler Corp.: *See—*
  - Orr, Ladd J., and Jessee. 3,354,809.
- Church, Donald S., and R. W. Kordos, to Bell Telephone Laboratories, Inc. Coaxial cable switch. 3,355,684, 11–28–67, Cl. 335—5.
- Ciba Corp.: *See—*
  - Urech, Jakob, Fechtig, Bosshardt, Bickel, Schenker, and Wilhelm. 3,355,452.
- Ciliuffo, Francis A., to Continental Can Co., Inc. Electric light bulb carton. 3,355,011, 11–28–67, Cl. 206—46.
- Cimera, Richard F.: *See—*
  - Krupick, Walter J., and Cimera. 3,354,726.
- Citko, Raymond P.: *See—*
  - Schoenberger, John J., and Citko. 3,355,307.
- Cizek, Leopold, Z. Svar, J. Varga, and M. Zoubele. Method and apparatus for stopping and starting a spinning machine. 3,354,626, 11–28–67, Cl. 57—78.
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  - Schenkelberger, Frank J. 3,354,789.
- Clark, Harold A., and H. A. Haluska, to Dow Corning Corp. Hydroxyorganosilanes. 3,355,473, 11–28–67, Cl. 260—448.2.
- Clark, Milton B.: *See—*
  - Schumacher, Erwin A., Clark, Uline, and Trull. 3,355,327.
- Clark, Robert J., to Radio Corp. of America. Diode-capacitor bit storage circuit. 3,355,723, 11–28–67, Cl. 340—173.
- Clark, Wilburn O.: *See—*
  - Childers, Spencer L., Howard, and Clark. 3,355,576.
- Clausen, Victor H., and A. Zweig, to Simpson Timber Co. Sheet material handling device. 3,355,168, 11–28–67, Cl. 271—68.
- Cleland, Marshall R.: *See—*
  - Geiger, Richard L., and Cleland. 3,355,614.
- Clement, Clyde H., ½ to L. E. Kron. Sequentially energised electric sign apparatus. 3,355,627, 11–28–67, Cl. 315—323.
- Clement, Roland E., and E. T. Knox, said Clement assor. to said Knox. Incinerator. 3,354,847, 11–28–67, Cl. 110—7.
- Clevite Corp.: *See—*
  - Wilke, Milton E., and Brooks. 3,355,329.
- Clifford, Richard P., to TRW Inc. Constant sensitivity differential radiometer. 3,355,589, 11–28–67, Cl. 250—83.3.
- Cluett, Peabody & Co., Inc.: *See—*
  - Coughlin, Harry T., and Canale. 3,354,880.
- Coanda, George, to Pharmaseal Laboratories. Hypodermic syringe. 3,354,882, 11–28–67, Cl. 128—218.
- Coast Metals, Inc.: *See—*
  - Cape, Arthur T. 3,355,283.
  - Cape, Arthur T. 3,355,287.
- Cobbs, James H.: *See—*
  - Critz, Robert G., and Cobbs. 3,354,956.
- Coe, Jack H.: *See—*
  - Copeland, Jesse J., and Coe. 3,354,928.
- Coe Laboratories Inc.: *See—*
  - Molnar, Eugene. 3,355,526.
- Coffield, Thomas H., G. G. Knapp, and J. P. Napolitano, to Ethyl Corp. Preparation of 2,6-dialkyl phenols. 3,355,504, 11–28–67, Cl. 260—624
- Cohen, Alfred G, and Weiss, Paul: *See—*
  - Small, Samuel N. 3,354,516.
- Coin Acceptors, Inc.: *See—*
  - Hansard, Richard L. 3,354,997.
- Cole, Henry B.: *See—*
  - Siegmund, Walter P., and Cole. 3,355,273.
- Coleman, Clarence B. Bin and unloading stand. 3,354,918, 11–28–67, Cl. 141—363.
- Coleman, John W., to Radio Corp. of America. Electron gun for use in a cathode ray tube exhibiting enhanced electron emission. 3,355,618, 11–28–67, Cl. 313—85.
- Colgate-Palmolive Co.: *See—*
  - Miles, Gilbert D. 3,355,069.
- Collet, J. M., & Co. Ltd.: *See—*
  - Stowell, Keith C. 3,355,297.
- Colleuille, Yves, and P. Perras, to Rhone-Poulenc S.A. Norbornene lactones and their preparation. 3,355,462, 11–28–67, Cl. 260—343.3.
- Collins Radio Co.: *See—*
  - Bell, Ross L., Carrel, and McClelland. 3,355,739.
  - Bruene, Warren B. 3,355,667.
  - Hodge, Richard M. 3,355,548.
  - Oppedahl, Charles A. 3,355,126.
- Collison, Curtis L. Magnetic comb assembly for use with a hair composition having magnetizable particles. 3,354,890, 11–28–67, Cl. 132—136.
- Colorado Oil and Gas Corp.: *See—*
  - Tirone, Anthony R. 3,354,689.
- Columbia Broadcasting System, Inc.: *See—*
  - Bachman, William S., Kosowsky, and Deaso. 3,354,501.
- Columbia Research Laboratories, Inc.: *See—*
  - Alibert, Vernon F., and Carey. 3,355,703.
- Columbian Carbon Co.: *See—*
  - Olechowski, Jerome R. 3,355,481.
- Combustion Engineering, Inc.: *See—*
  - Round, Byron J., and Benz. 3,354,948.
- Commissariat al'Energie Atomique: *See—*
  - Lerond, Pierre. 3,355,606.
- Compagnie de Saint-Gobain: *See—*
  - Acloque, Paul H. 3,355,588.
- Compagnie Generale d'Electricite: *See—*
  - Biet, Jean-Pierre, and Chaupit. 3,355,657.
  - Klein, Georges, and Dubois. 3,355,604.
  - Kloeckner, Edmond A., and Royet. 3,355,051.
- Compagnie Industrielle Francaise Des Tubes Electroniques: *See—*
  - Patriarche, Pierre, and Letournier. 3,355,274.
- Condon, Richard D., H. A. Gill, and M. W. Redmond, Jr., to Raytheon Co. Marine speedometer. 3,354,714, 11–28–67, Cl. 73—186.
- Coney, Charles H., to Eastman Kodak Co. Multicolor coating process and coated article. 3,355,312, 11–28–67, Cl. 117—41.
- Coney Island Inc.: *See—*
  - Wachs, Gary S. 3,355,580.
- Conrad, Peter, to Celanese Corp. Yarn takeup. 3,355,116, 11–28–67, Cl. 242—18.
- Consolazio, George A.: *See—*
  - Kalafatas, Nicholas J., and Consolazio. 3,355,444.
  - Kalafaatas, Nicholas J., and Consolazio. 3,355,445.
- Consolidated Electrodynamics Corp.: *See—*
  - Marsh, Roger F. 3,355,367.
- Consolidated Electronics, Industries Corp.: *See—*
  - Schapira, William W. 3,355,629.
- Consolidated Engineering Co., Inc.: *See—*
  - Reuter, Brian R. 3,355,221.
- Consolidation Coal Co.: *See—*
  - Gorin, Everett, Struck, and Zielke. 3,355,376.
- Continental Can Co., Inc.: *See—*
  - Ciliuffo, Francis A. 3,355,011.
  - Weiss, Arthur J. 3,355,012.
- Continental Oil Co.: *See—*
  - Boyer, Lyndon D., and Sorenson. 3,355,428.
  - Carel, Alfred B. 3,354,619.
  - Erickson, Everett L., and Cherry. 3,354,983.
  - Every, Richard L., and Shock. 3,354,957.
  - Scott, William P. 3,355,384.
- Controls Co. of America: *See—*
  - Cartier, Roger J. 3,354,733.
- Cook, Albert W., and J. W. Runner, to The Goodyear Tire & Rubber Co. Spot-type disc brake with dust cover. 3,354,992, 11–28–67, Cl. 188—73.
- Cook, Arnold M., to Norton Co. Apparatus for molding a bearing surface on a grinding wheel. 3,354,510, 11–28–67, Cl. 18—36.
- Cook, Thomas L. Vise grip pliers. 3,354,759, 11–28–67, Cl. 81—379.
- Cook, Wendell S., to The Firestone Tire & Rubber Co. Stabilized cis 1,4 polybutadiene. 3,355,419, 11–28–67, Cl. 260—45.9.
- Cook, Wendell S., to The Firestone Tire & Rubber Co. Cis 1,4-polybutadiene stabilized with a combination. 3,355,421, 11–28–67, Cl. 260—45.85.
- Cooper, Robert K., to The Hale Co. Valve handles. 3,355,141, 11–28–7, Cl. 251—101.
- Coover, Harry W., Jr., and T. H. Wicker, Jr., to Eastman Kodak Co. Stabilized cyanoacrylate adhesives. 3,355,482, 11–28–67, Cl. 260—464.
- Copeland, Jesse J., and J. H. Coe, to Hitchcock Transportation Co. Tire demounting machine. 3,354,928, 11–28–67, Cl. 157—1.2.
- Corbett, Herbert O.: *See—*
  - Quackenbush, John J., and Corbett. 3,354,865.
- Corella, Arthur P.: *See—*
  - Schneider, William S., and Corella. 3,354,601.
- Corn Products Co.: *See—*
  - Schoenberger, John J., and Citko. 3,355,307.
- Cornell-Hoskinson Mfg. Corp.: *See—*
  - Hoskinson, Gordon H. 3,355,254.
- Cosgrove, William J., to Radio Corp. of America. System for regulating focus current and voltage in a television camera. 3,355,621, 11–28–67, Cl. 315—31.
- Cosner, Robert R.: *See—*
  - Hain, Elias W. R., Cosner, and Brautigam. 3,355,535.
- Costley, Vivian G., and J. E. Cottrell, to United States of America, Navy. Small diameter high tensile strength coaxial electrical cable. 3,355,544, 11–28–67, Cl. 174—106.
- Cote, Alfred J., to United States of America, Navy. Neuristor storage ring employing trigger-coupled junctions. 3,355,717, 11–28–67, Cl. 340—172.5.
- Cottrell, James E.: *See—*
  - Costley, Vivian G., and Cottrell. 3,355,544.
- Coughlin, Harry T., and J. A. Canale, to Cluette, Peabody & Co., Inc. Men's undergarment. 3,354,880.
- Covert, John N., to Union Special Machine Co. Looper mechanism for sewing machines. 3,354,851, 11–28–67, Cl. 112—200.
- Covington Mfg. Corp.: *See—*
  - Catzen, Robert W. 3,355,324.
- Cox, John M.: *See—*
  - Todd, Marx E., and Cox. 3,354,942.

- Cozzolino, Alfred R.: *See—*
  - Fleming, Robert J., and Cozzolino. 3,354,512.
- Crafford, Thomas J., to Crafford Tool & Die Co. Automatic linking machine. 3,354,633, 11–28–67, Cl. 59—24.
- Crafford Tool & Die Co.: *See—*
  - Crafford, Thomas J. 3,354,633.
- Craggs, Joseph, and K. McCann, to Goodman Mfg. Co. Loading device and method for transfer points. 3,355,005, 11–28–67, Cl. 198—103.
- Craig, Robert W., M. G. Spitzer, and J. E. Yonker, to Mueller Co. Service connection clamp. 3,355,193, 11–28–67, Cl. 285—197.
- Crane & Breed Casket Co., The: *See*
  - Slaughter, William L. 3,354,524.
- Crane Co.: *See—*
  - Cairns, Charles G., and Rokitenetz. 3,354,474.
- Craston, John L., and S. F. Pugh, to United Kingdom Atomic Energy Authority. Nuclear fuel element having sheath of anicastic form. 3,355,358, 11–28–67, Cl. 176—67.
- Craven, James M., to E. I. du Pont de Nemours and Co. Thiazole polymers. 3,355,426, 11–28–67, Cl. 260—47.
- Crawford, Edward N.: *See—*
  - Zub, Albert W., and Crawford. 3,354,877.
- Creswell, Clifford A., to The Arbee Corp. Automatic belt making machine. 3,354,632, 11–28–67, Cl. 59—3.
- Crews, Sam T.: *See—*
  - Kloesel, Joseph A., Jr., and Crews. 3,355,192.
- Cripe, Alan R., to United Aircraft Corp. Baggage rack assembly. 3,355,210, 11–28–67, Cl. 296—28.
- Critz, Robert G., and J. H. Cobbs, to Fenix & Scisson, Inc. Bottom supported casing. 3,354,956, 11–28–67, Cl. 166—29.
- Crompton & Knowles-Malimo, Inc.: *See—*
  - Klaeui, Hans J. 3,354,672.
- Croswhite, Howard L., to Ford Motor Co. Hydrostatic power transmission system. 3,354,637, 11–28–67, Cl. 60—53.
- Cserny, Fred P. Portable drink dispenser. 3,354,668, 11–28–67, Cl. 62—449.
- Csicsatka, Antal, to General Electric Co. Biasing arrangement for automatic stereophonic radio receiver. 3,355,552, 11–28–67, Cl. 179—15.
- Culler, Glen J., to The Bunker-Ramo Corp. On-line computing system for processing mathematical functions. 3,355,714, 11–28–67, Cl. 340—172.5.
- Cummins, Clessie L., Jr., to The Buehler Corp. Check valve cartridge assembly. 3,355,108, 11–28–67, Cl. 239—90.
- Cunningham, James A.: *See—*
  - Baird, Stephen S., and Cunningham. 3,355,291.
- Curci, William A. Frangible masonry unit. 3,354,592, 11–28–67, Cl. 52—98.
- Curello, Charles, and B. S. Nickerson, to Mite Corp. Sewing machine attachment for sewing buttons. 3,354,849, 11–28–67, Cl. 112—115.
- Curry, James J.: *See—*
  - Meyer, Werner H., and Curry. 3,354,813.
- Cutler-Hammer, Inc.: *See—*
  - Kinter, Paul M., and Tolan. 3,354,974.
  - Risberg, Robert L. 3,355,654.
- Cvacho, Daniel S.: *See—*
  - Reynolds, William G., Maeder, Kraus, and Cvacho. 3,355,060.
- Da Silva Frias, Jose: *See—*
  - Velazquez, Carlos, and da Silva Frias. 3,354,843.
- Daalderop, Johanna J. M.: *See—*
  - Daalderop, Wilhelmus H. J. D. 3,354,766.
- Daalderop, Wilhelmina G. J. M.: *See—*
  - Daalderop, Wilhelmus H. J. D. 3,354,766.
- Daalderop, Wilhelmus H. J. D., deceased (by M. J. W. E. Daalderop-van Oppenraaij, heir and guardian of minors, M. W. H. M. Wakkerman-Daalderop, M. W. J. G. P. Junior-Daalderop, and W. G. J. M., E. W. M. and J. J. M. Daalderop, heirs), to N. V. Koninklijke Metaalwarenfabrieken voorheen J. N. Daalderop & Zonen. Tool carrying device for an eccentric press. 3,354,766, 11–28–67, Cl. 83—133.
- Daalderop-van Oppenraaij, Maria J. W. E.: *See—*
  - Daalderop, Wilhelmus H. J. D. 3,354,766.
- Dailey, Vacell D. Piston structure. 3,354,794, 11–28–67, Cl. 92—243.
- Daimler-Benz Aktiengesellschaft: *See—*
  - Fiala, Ernst J. H., Andres, and Jurowski. 3,354,906.
  - Kolle, Erwin. 3.355,211.
- Dale, John R., and H. R. Menzel, to United States of America, Navy. Mechanical isolation of hydrophones by hydroplanes. 3.354,860, 11–28–67, Cl. 114—235.
- D'Alessandro, William J., to Union Carbide Corp. Abrasive compositions and structures thereof comprising a thermosetting resin and a thermoplastic polyarylene polyether. 3,355,272, 11–28–67, Cl. 51—298.
- Dallas, Michael S., and J. Hilton, to Lever Brothers Co. Preparation of ketonic oxidation products from olefinically unsaturated compounds. 3.355,465, 11–28–67, Cl. 260—406.
- Damon Engineering Inc.: *See—*
  - Vash, Arthur M., and Perry. 3,354,971.
- Dangauthier, Marcel, to La Publicite Francaise. Device for regulating a fuel injection pump for an internal combustion engine as a function of the depression prevailing in the induction pipe. 3,354,874, 11–28–67, Cl. 123—139.
- Dannelly, Clarence C., and J. R. Caldwell, to Eastman Kodak Co. Solution polymerization of acrylonitrile using a catalyst system comprising an oxidizing agent and silver, vanadium or rhodium and salts thereof. 3,355,410, 11–28–67, Cl. 260—30.4.
- Darlinger, Edward P., to The Babcock & Wilcox Co. Tube fitting arrangement for furnace bottom. 3,354,870, 11–28–67, Cl. 122—235.
- Darrow, Turner H. Minnow dipper. 3,354,575, 11–28–67, Cl. 43—56.
- Dart Mfg. Co.: *See—*
  - Dart, William A. 3,355,530.
- Dart, William A., to Dart Mfg. Co. Method for forming foamed plastic article. 3,355,530, 11–28–67, Cl. 264—51.
- D'Ascoli, Ralph G.: *See—*
  - O'Mara, Joseph B., and D'Ascoli. 3,355,543.
- Daul, Robert M., to Stackpole Carbon Co. Slide switch indexing device including spring detent means. 3,355,565, 11–28–67, Cl. 200—166.
- Daunt, John G., to Malaker Laboratories, Inc. Dynamic flash production of hydrogen slush. 3,354,662, 11–28–67, Cl. 62—10.
- Davco Mfg. Corp.: *See—*
  - Mitchell, Ryan D. 3,355,019.
- Day, Robert W., to Reynolds Metals Co. Solution mining of carnallite. 3,355,212, 11–28–67, Cl. 299—5.
- Dayson, Ronald C., to The English Electric Co. Ltd. Potential difference detecting arrangements. 3,355,729, 11–28–67, Cl. 340—248.
- Dayton, David R., and P. E. Gates, to Sylvania Electric Products, Inc. High energy tubular incandescent lamp having heat dissipating sleeves. 3,355,613, 11–28–67, Cl. 313—40.
- De Acetis, William B., and H. A. Newey, to Shell Oil Co. Process for curing polyepoxides with the reaction product of H_2S and tri- or polyfunctional polyepoxides. 3,355,512, 11–28–67, Cl. 260—830.
- Dean, Frank J., Jr., to Tempmaster Corp. Air conditioning system. 3,354,946, 11–28–67, Cl. 165—48.
- Dean, Hollie T. Fluid pressure actuated extensible spear gun. 3,354,572, 11–28–67, Cl. 43—6.
- Dean, William H. Pack frame. 3.355,075, 11–28–67, Cl. 224—25.
- Deaso, Jeremiah W.: *See—*
  - Bachman, William S., Kosowsky, and Deaso. 3,354,501.
- De Blick, John A., to The Dow Chemical Co. Liquid sample combustion apparatus. 3,355,252, 11–28–67, Cl. 23—253.
- De Coye De Castelet, Gaetan, to Regie Nationale des Usines Renault. Transmission gear-boxes of vehicles for transmission on one or more axles, with special reduction for running on varied ground. 3,354,745, 11–28–67, Cl. 74—665.
- De Coye De Castelet, Gaetan, to Regie Nationale des Usines Renault. Tubular radiator with fins. 3,354,949, 11–28–67, Cl. 165—181.
- De Coye De Castelet, Gaetan, to Regie Nationale des Usines Renault. Electrically operated valves. 3,355,145, 11–28–67, Cl. 251—141.
- Deere & Co.: *See—*
  - Jackson, William W. 3,354,966.
  - Marquart, Gordon L. 3,354,729.
  - Roll, Walter M., Forth, and Harrington. 3,354,844.
- De Havilland Aircraft Co., Ltd., The: *See—*
  - Goslin, Geoffrey W., and Marwood. 3,355,644.
- Deibel, Raymond A., to Trico Products Corp. Transmission linkage assembly. 3,355,198, 11–28–67, Cl. 287—87.
- Deinet, Adolph J.: *See—*
  - Di Bella, Eugene P., and Deinet. 3,355,506.
- De Jean, Milton V., and D. E. Shaffer, to General Electric Co. Method of forming layers of insulating material in slots of magnetic cores. 3,355,310 11–28–67, Cl. 117—18.
- De Kerivily, Henry. Device for the production of aerosols. 3,355,371, 11–28–67, Cl. 219—214.
- De Lang, Hendrik, and G. P. Brouwer, to North American Philips Co., Inc. Arrangement by means of which a member displaceable in a flat plane may repeatedly be adjusted in a reproducible manner to a plurality of points with pre-determined pairs of co-ordinates. 3,354,806, 11–28–67, Cl. 95—73.
- Delius, Hermann, to Reichhold Chemicals, Inc. Process for the production of monohydroxy diethers of trihydric alcohols. 3,355,502, 11–28–67, Cl. 260—615.
- Dell, Vernon C., to United States of America, Navy. Anti-squeeze mode control surface mechanism. 3,355,130, 11–28–67, Cl. 244—3.21.
- Den Besten, Henrikus, to Stamicarbon N.V. Door or window frame. 3,354,586, 11–28–67, Cl. 49—504.
- De Penti, Kenneth L.: *See—*
  - Willison, Donald, De Penti, and Weber. 3,354,836.
- De Sole, Daniel E. Press equalization means for baby bottle. 3.355,047, 11–28–67, Cl. 215—11.
- Dethmers, Robert. Field applicator with metering orifice and adjustable distributing means. 3,355,070, 11–28–67, Cl. 222—177.
- Deurell, Christopher G.: *See—*
  - McDowell, Glenn S., and Deurell. 3,355,225.
- Devall, Kenneth L.: *See—*
  - Bracht, Lloyd J., Devall, and Krause. 3,355,532.
- Devlin, Andrew G. Apparatus for conveying lead strip from driers to calenders in paper-making. 3,355,349, 11–28–67, Cl. 162—286.
- Dhaka, Vir A., and E. S. Wajda, to International Business Machines Corp. Method of shaping P-N junction profiles. 3,355,334, 11–28–67, Cl. 148—186.
- Diamond Alkali Co.: *See—*
  - Kiss, Kornel D. 3,355,432.
- Diassi, Patrick A., to E. R. Squibb & Sons, Inc. Steroidal lactones and their preparation. 3,355,461, 11–28–67, Cl. 260—343.2.
- Di Bella, Eugene P., to Tenneco Chemicals, Inc. Zirconyl nitrophenates and their preparation. 3,355,467, 11–28–67, Cl. 260—429.3.
- Di Bella, Eugene P., and A. J. Deinet, to Tenneco Chemicals, Inc. Process for the preparation of polychlorocyclohexadienes. 3,355,506, 11–28–67, Cl. 260—648.
- Dickey, Joseph B., and E. B. Towne, to Eastman Kodak Co. Alkyl substituted difunctional hexanes. 3,355,483, 11–28–67, Cl. 260—488.
- Dickson, Alexander F.: *See—*
  - Koppenol, Pieter, Dickson, Rutten, and Kruisman. 3,354,479.

Dietel, Wieland: *See—*
Hesse, Gerhard, and Dietel. 3,355,603.
Dietiker, Paul, K. T. Krueger, and H. M. Morgan, to Honeywell Inc. Control apparatus. 3,354,901, 11–28–67, Cl. 137—495.
Dijkstra, Rinse, to North American Philips Co., Inc. Method of producing aqueous emulsions of resins of the phenolformaldehyde type including a softener for impregnating fibrous materials. 3,355,407, 11–28–67, Cl. 260—29.3.
Dike-O-Seal, Inc.: *See—*
Olson, Richard L. 3,355,181.
Dimmitt, Robert E., and C. Kessner, to Dor-West, Inc. Automatic entrance having sliding door. 3,354,581, 11–28–67, Cl. 49—141.
Di Paola, Joel F., to General Electric Co. Room temperature vulcanizing silicone rubber compositions. 3,355,480, 11–28–67, Cl. 260—46.5.
Diversified Products Corp.: *See—*
Ammondson, Clayton J. 3,354,509.
Djernas, Svend: *See—*
Sorensen, Leif E., and Djernas. 3,355,690.
Dobson, Robert D.: *See—*
Purves, Edward R., Going, and Dobson. 3,355,302.
Dodd, Fred L., to Premium Corp. of America, Inc. Cargo unloading device. 3,355,037, 11–28–67, Cl. 214—44.
Doets, Cornelis A., to N.V. Vereenigde Glasfabrieken (United Glassworks). Method for packing for bottles and the like. 3,354,602, 11–28–67, Cl. 53—30.
Doherty, Thomas E.: *See—*
St. Clair, David L., Amberg, Doherty, and Phillips. 3,354,614.
Dokes, George E.: *See—*
Schwarz, Julius D., and Dokes. 3,354,473.
Dolac, Raymond E.: *See—*
Christiansen, Carl H. 3,355,631.
Dole Valve Co., The: *See—*
Obermaier, Frank E. 3,354,902.
Dollot, Yves C., to Societe Industrielle Bull-General Electric (Societe Anonyme). Arrangements relating to the printing ribbon in printing machines. 3,354,822, 11–28–67, Cl. 101—336.
Dombroski, Stanley M.: *See—*
Ferrary, Ferdinand F., Feldstein, Dziekonski, Markowicz, and Dombroski. 3,354,846.
Domovs, Kelvin B.: *See—*
Tesoro, Giuliana C., and Domovs. 3,355,437.
Dondzila, Frank A.: *See—*
Restivo, Albert R., and Dondzila. 3,355,488.
Donovan, Donald W., to Monsanto Co. Containers. 3,355,084, 11–28–67, Cl. 229—28.
Doorley, Richard B.: *See—*
Wiebe, Donald, and Doorley. 3,354,716.
Doppelt, Charles. Lady's purse. 3,354,925, 11–28–67, Cl. 150—33.
Dor-West, Inc.: *See—*
Dimmitt, Robert E., and Kessner. 3,354,581.
Doucette, Edward I., and W. J. Grubbs, to Savin Business Machines Corp. Toner monitoring system for electrostatic copier. 3,354,802, 11–28–67, Cl. 95—1.7.
Douglas, David. Insulated beverage server. 3,355,045, 11–28–67, Cl. 215—13.
Douglas Motors Corp.: *See—*
Simi, Edward A. 3,354,736.
Dounoucos, Angelo, to General Electric Co. Gas exchanger. 3,354,618, 11–28–67, Cl. 55—158.
Dow Chemical Co., The: *See—*
Barnhart, Charles C., and Ahlich. 3,355,531.
Berezin, Gilbert H., Harris, and Fischback. 3,355,383.
Braunlich, Frank H., Jr., and Lunsford. 3,354,960.
De Bliek, John A. 3,355,252.
Niles, Earl T., Nosser, and Oja. 3,355,491.
Reynolds, Jack B. 3,354,863.
Ruffing, Norman R., Nagle, and Haynes. 3,355,404.
Sexton, Arthur R. 3,355,456.
Dow Corning Corp.: *See—*
Awe, Richard W., Pail, and Axon. 3,355,395.
Baney, Ronald H. 3,355,475.
Bey, Alvin E., and Weyenberg. 3,355,476.
Brown, Lawrence H. 3,355,424.
Cekada, Joseph, Jr. 3,355,399.
Cekada, Joseph, Jr. 3,355,406.
Clark, Harold A., and Haluska. 3,355,473.
Frye, Cecil L. 3,355,477.
Haluska, Loren A. 3,355,425.
Haluska, Loren A. 3,355,455.
Krol, Arthur J. 3,354,547.
Pierce, Ogden R. 3,355,507.
Draben, Elmer E., to Hoedra, Inc. Charging fitting for plastic molding apparatus. 3,354,508, 11–28–67, Cl. 18—30.
Drazic, Miles, to Northern Electric Co., Ltd. Relay contact chatter detector having chatter responsive flip-flops. 3,355,660, 11–28–67, Cl. 324—28.
Dresser Industries, Inc.: *See—*
Ferrill, Homer E. 3,354,900.
Ferrill, Homer E. 3,354,896.
Drilco Oil Tools, Inc.: *See—*
Kloesel, Joseph A., Jr., and Crews. 3,355,192.
Dubois, Andre: *See—*
Klein, Georges, and Dubois. 3,355,604.
Duinker, Simon, to North American Philips Co., Inc. Method of manufacturing reliable magnetic heads having accurately predetermined dimensions. 3,354,540, 11–28–67, Cl. 29—603.
Dunn, Frank R.: *See—*
Novotny, Raymond J., and Dunn. 3,354,652.
Dunnebier, Kurt: *See—*
Winkler, Richard, and Dunnebier. 3,354,798.
Dunning, Edwin T.: *See—*
Griffith, Robert C., and Dunning. 3,354,824.
Duplan Corp., The: *See—*
Segal, Harry. 3,354,630.
Du Pont de Nemours, E. I., and Co.: *See—*
Arnold, David B. 3,354,683.
Bissot, Thomas C. 3,355,409.
Craven, James M. 3,355,426.
Eiseman, Bernhardt J., Jr. 3,355,391.
Lamar, Stanley T. 3,355,348.
Lyerly, William M. 3,355,336.
Maloney, Daniel E., and Rees. 3,355,[illegible]20.
Martin, Kenneth V. 3,355,417.
Miller, Henry C, and Muetterties. 3,355,261.
Pascal, Ivan, and Ward. 3,355,498.
Raasch, Maynard S. 3,355,446.
Rees, Richard W. 3,355,319.
Seney, John S. 3,354,711.
Stewart, Clare A., Jr. 3,355,431.
Tyran, Leo W. 3,355,405.
Warnell, Joseph L. 3,355,397.
Dupuy, Antoine. Apparatus for forming metal tubes to the shape of a frustum of a pyramid. 3,354,682, 11–28–67, Cl. 72—192.
Durham, Roger O. Fuel injection system. 3,354,876, 11–28–67, Cl. 123—140.
Du Rose, Arthur H., and W. J. Pierce, to Kewanee Oil Co. Three-layer nickel laminate. 3,355,263, 11–28–67, Cl. 29—183.5.
Du Rose, Arthur H., to Kewanee Oil Co. Corrosion resistant coated articles and processes of production thereof. 3,355,267, 11–28–67, Cl. 29—194.
Du Rose, Arthur H., and K. S. Willson, to Kewanee Oil Co. Corrosive protected composite having triplated nickel deposits and method of making. 3,355,268, 11–28–67, Cl. 29—196.6.
Durr, Emanuel: *See—*
Bindler, Jakob, and Durr. 3,355,243.
Dyar, Robert L. Method of cleaning vegetables. 3,355,323, 11–28–67, Cl. 134—25.
Dyer, Daniel P., Jr., to The Budd Co. Torque-tension testing apparatus and method for nut-bolt assemblies. 3,354,705, 11–28–67, Cl. 73—95.
Dziekonski, Zygmunt: *See—*
Ferrary, Ferdinand F., Feldstein, Dziekonski, Markowicz, and Dombroski. 3,354,846.
E & M Laboratories: *See—*
Saltzman, Harold, and Vallar. 3,355,680.
EZ Paintr Corp.: *See—*
Pharris, John A. 3,354,493.
Easterday, Joan L.: *See—*
Easterday, Robert E. 3,355,529.
Easterday, Robert E., and J. L. Easterday, executrix. Method of forming post tensioned concrete liners in conduits. 3,355,529, 1–28–68, Cl. 264—32.
Easterling, Robert E.: *See—*
Ferris, Thomas G., Budd, and Easterling. 3,355,372.
Eastes, Frank E., to W. R. Grace & Co. Method of rendering thermoplastic material antifogging and resultant article. 3,355,313, 11–28–67, Cl. 117—47.
Eastman Kodak Co.: *See—*
Caldwell, John R., and Jackson. 3,355,414.
Coney, Charles H. 3,355,312.
Coover, Harry W., Jr., and Wicker. 3,355,482.
Dannelly, Clarence C., and Caldwell. 3,355,410.
Dickey, Joseph B., and Towne. 3,355,483.
Kiefer, John E. 3,355,413.
Priest, William J. 3,355,295.
Ebeling, Wolfgang. Self-propelled drilling machine. 3,354,969, 11–28–67, Cl. 175—94.
Eby, Robert E., and W. K. Boettinger, to United States of America, Navy. Ambient pressure responsive switch. 3,355,561, 11–28–67, Cl. 200—83.
Echarti, Friedrich K. P., to Telefonaktiebolaget L M Ericsson. Modulator connection with combined current- and voltage feed-back. 3,355,678, 11–28–67, Cl. 332—43.
Eckrich, Peter, & Sons, Inc.: *See—*
Stelzer, James S. 3,354,610.
Eckstrom, Albert W.: *See—*
Hesler, Warren E., and Eckstrom. 3,354,932.
Edmunds, Robert T.: *See—*
Pannick, Robert A., and Edmunds. 3,354,835.
Egan, William F., to Sylvania Electric Products, Inc. Phase coherent oscillator. 3,355,677, 11–28–67, Cl. 331—173.
Ehrlich, Stanley V., to Stanley-Western Corp. Sweeper attachment for lift trucks. 3,354,489, 11–28–67, Cl. 15—83.
Eichweber, Kurt. Gyroscopic apparatus. 3,354,727, 11–28–67, Cl. 74—5.6.
Ellenberg, Hanns: *See—*
Nerge, Wilhelm, and Ellenberg. 3,354,609.
Elseman, Bernhardt J., Jr., to E. I. du Pont de Nemours and Co. Trichlorotrifluoroethane water emulsion system. 3,355,391, 11–28–67, Cl. 252—153.
Elsengrein, Robert H., and F. O. Blackwell III, to Seneca Falls Machine Co. Machine control system including means comparing a support position along one axis and about another axis. 3,355,641, 11–28–67, Cl. 318—18.
Elsner, Edward, to Bell Telephone Laboratories, Inc. Interferometric strain analysis. 3,354,702, 11–28–67, Cl. 73—88.
Elastic Stop Nut Corp. of America: *See—*
Grimm, David W., and Baubles. 3,354,757.
Eldred, Nelson R.: *See—*
Smith, Keith L., Eldred, Buttrick, and Winslow. 3,355,400.
Electro-Optical Systems, Inc.: *See—*
Moore, Robert D., Jr. 3,354,644.
Elias, Jiri, H. Adamkova, M. Boucek, J. Kolar, M. Samek, and P. Vlcek, to Vyzkumny ustav bavlnarski. Method and apparatus for preventing interruption of a spinning process during breakage of the spun thread. 3,354,631, 11–28–67, Cl. 57—58.95.

Elkin, Harold L., to Thiokol Chemical Corp. Complexes of heavy metal halides and N,N,N′,N′-tetrakis (hydroxyalkyl) alkylene diamines. 3,355,466, 11–28–67, Cl. 260—429.
Ellis, Robert S., to The Taylor-Winfield Corp. Apparatus for aligning strip in strip joining equipment. 3,355,079, 11–28–67, Cl. 228—47.
Elsner, Uwe, to Hauni-Werke Korber & Co. K.G. Apparatus for cutting tobacco. 3,354,921, 11–28–67, Cl. 146—120.
Elton Industries, Inc.: *See—*
Nolte, Albert C., Jr. 3,355,153.
Eltra Corp.: *See—*
Brown, Robert N. 3,354,779.
Emhart Corp.: *See—*
Miller, Joseph P. 3,355,277.
Emmons, Stephen P., W. T. Matzen, Jr., and H. W. Spence, to Texas Instruments Inc. Passive information displays. 3,354,565, 11–28–67, Cl. 40—28.
Engelsmann, Dieter: *See—*
Winkler, Alfred, Engelsmann, Landbrecht, and Bammesberger. 3,354,803.
Engle, Charles J., to Phillips Petroleum Co. Oil recovery by waterflooding. 3,354,952, 11–28–67, Cl. 166—7.
English Electric Co. Ltd., The: *See—*
Dayson, Ronald C. 3,355,729.
Francis, Alan E. 3,355,190.
Paddison, Eric, and Lally. 3,355,689.
Entwicklungsanstalt fur Industrie-Elektronik: *See—*
Klix, Uwe. 3,355,633.
Erban, Richard T. Microprint viewer. 3,354,775, 11–28–67, Cl. 88—24.
Erickson, Everett L., and J. T. Cherry, to Continental Oil Co. Method and apparatus for obtaining shear wave velocities. 3,354,983, 11–28–67, Cl. 181—.5.
Erickson, Frederick E., to E. W. Bliss Co. Clutch mechanism. 3,355,602, 11–28–67, Cl. 307—141.4.
Erkfritz, Donald S., to Futurmill, Inc. Milling tool. 3,354,526, 11–28–67, Cl. 29—96.
Ernst, Runyon G., to American Metal Climax, Inc. Process for producing copper telluride. 3,355,245, 11–28–67, Cl. 23—50.
Espinal, Martin. Recording pill dispenser. 3,355,067, 11–28–67, Cl. 222—23.
Esso Research and Engineering Co.: *See—*
Argabright, Perry A., and Leary. 3,355,460.
Butler, Roger M., and Pasternak. 3,355,365.
Carter, James L., Lucchesi, and Nightingale. 3,355,509.
Cheema, Inder, and Weinberg. 3,355,378.
King, Laurence F. 3,355,377.
Luckenbach, Edward C. 3,355,380.
Passannante, Anthony J. 3,355,441.
Perkins, Michael B., and Furlong. 3,355,296.
Etablissements Boutillon S.A.: *See—*
Boutillon, Henri. 3,354,718.
Etablissements Clin-Byla: *See—*
Schmitt, Josef. 3,355,463.
Ethyl Corp.: *See—*
Bealrd, Francis M., Jr., and Kovetz. 3,355,262.
Beard, William Q. 3,355,366.
Cofield, Thomas H., Knapp, and Napolitano. 3,355,504.
Eurey, Charles W., to Excel, Inc. Beam holding means. 3,355,029, 11–28–67, Cl. 211—44.
Evans, David B. and J. C., to Gold Medal Products Co. Machine for cooking food chip materials. 3,354,815, 11–28–67, Cl. 99—407.
Evans, John C.: *See—*
Evans, David B. and J. C. 3,354,815.
Every, Richard L., and D'A. A. Shock, to Continental Oil Co. Method of acid treating wells. 3,354,957, 11–28–67, Cl. 166—39.
Excel, Inc.: *See—*
Eurey, Charles W. 3,355,029.
FMC Corp.: *See—*
Berkowitz, Sidney, Meadow, and Bunin. 3,355,486.
Lutz, Martin R., Nowlin, and Stange. 3,355,436.
Factory Mutual Research Corp.: *See—*
Smith, James B. 3,355,728.
Fahnestock, Frank C., to Mobil Oil Corp. Method of forming an underground storage chamber. 3,354,656, 11–28–67, Cl. 61—36.
Fahnoe, Frederick: *See—*
Carter, Thomas R., Fahnoe, and Supinski. 3,355,244.
Falcone, Anthony, Jr.: *See—*
Falcone, Joseph R., and A. Falcone, Jr. 3,354,564.
Falcone, Joseph R., and A. Falcone, Jr. Marker device. 3,354,564, 11–28–67, Cl. 40—11.
Fall, Don R., to Ross Operating Valve Co. Seal retainer and spacer. 3,354,911, 11–28–67, Cl. 137—625.69.
Farah, Basil S., E. E. Gilbert, and J. A. Otto, to Allied Chemical Corp. 4,4′-bis(1,1,3,3-tetrafluoro-1,3-dichloro-2-hydroxy-2-propyl)-diphenylether. 3,355,500, 11–28–67, Cl. 260—613.
Farbenfabriken Bayer Aktiengesellschaft: *See—*
Hardt, Dietrich, Bartl, and Wust. 3,355,516.
Klauke, Erich, and Kuhle. 3,355,454.
Muller, Erwin A., Hoehne, and Becker. 3,355,519.
Rudolph, Hans, and Raichle. 3,355,515.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See—*
Korbanka, Helmut, and Soldan. 3,355,394.
Mullner, Stefan, and Albert. 3,355,517.
Weissermel, Klaus, and Rehn. 3,355,429.
Farquhar, John C. Platform mount for weighing machines. 3,354,973, 11–28–67, Cl. 177—208.
Farr, Andrew F., to Bioconsultants, Inc. Serum separation apparatus and method. 3,355,098, 11–28–67, Cl. 233—26.
Fast, Clarence R., G. C. Howard, and F. H. Rixe, to Pan American Petroleum Corp. Hydraulic fracturing with spaced props. 3,354,959, 11–28–67, Cl. 166—42.
Fawick Corp.: *See—*
Fawick, Thomas L. 3,354,670.
Fawick, Thomas L., to Fawick Corp. Flexible coupling. 3,354,670, 11–28–67, Cl. 64—11.
Fechtig, Bruno: *See—*
Urech, Jakob, Fechtig, Bosshardt, Bickel, Schenker, and Wilhelm. 3,355,452.
Federal Screw Works: *See—*
Storch, Harold A. 3,355,200.
Federle, Carl, E. Guldener, to Georg Fischer Aktiengesellschaft. Metering faucet. 3,354,904, 11–28–67, Cl. 137—556.6.
Fegan, Lloyd V., Jr., to Bethlehem Steel Corp. Moisture measuring probe having an insulating material covering less than one-half of the perimeter of the probe. 3,355,665, 11–28–67, Cl. 324—65.
Fein, Marvin M., J. Green, and E. L. O'Brien, to Thiokol Chemical Corp. Carborane-substituted silicones. 3,355,478, 11–28–67, Cl. 260—46.5.
Fein, Marvin M.: *See—*
Schoenfelder, Carl W., and Fein. 3,355,496.
Feldman, Louis I., C. E. Holmlund, and K. J. Sax, to American Cyanamid Co. Method of preparing 1,2-dihydroxy steroids and derivatives thereof. 3,355,360, 11–28–67, Cl. 195—51.
Feldstein, George: *See—*
Ferrary, Ferdinand F., Feldstein, Dziekonski, Markowicz, and Dombroski. 3,354,846.
Fenix & Scisson, Inc.: *See—*
Critz, Robert G., and Cobbs. 3,354,956.
Ferdinand, Irwin J., and D. R. Lopatka, to S. A. Hirsh Mfg. Co. Knockdown steel shelving unit and corner fastening means therefor. 3,355,033, 11–28–67, Cl. 211—148.
Ferranti Ltd.: *See—*
Pitches, Brian E. 3,355,706.
Ferrary, Ferdinand F., G. Feldstein, Z. Dziekonski, M. Markowicz, and S. M. Dombroski, to American Machines and Foundry Co. Molding apparatus. 3,354,846, 11–28–67, Cl. 107—15.
Ferrill, Homer E., to Dresser Industries, Inc. Safety valve. 3,354,896, 11–28–67, Cl. 137—219.
Ferrill, Homer E., to Dresser Industries, Inc. Safety valve having variable area secondary orifice. 3,354,900, 11–28–67, Cl. 137—477.
Ferris, Thomas G., R. E. Budd, and R. E. Easterling. System, apparatus, and method for the removal of background stain by means of electric current from an electrophoresis supporting medium. 3,355,372, 11–28–67, Cl. 204—180.
Ferrotec, Inc.: *See—*
Carr, Kenneth L. 3,355,679.
Fey, Robert M.: *See—*
Birrell, Stewart H., and Fey. 3,354,924.
Fiala, Ernst J. H., R. Andres, and W. Jurowski, to Daimler-Benz Aktiengesellschaft. Control mechanism. 3,354,906, 11–28–67, Cl. 137—596.2.
Fibre-Metal Products Co., The: *See—*
Bowers, Charles E., Jr. 3,354,468.
Fijn Mechanische Industrie "Becker's Sons" N.V.: *See—*
Hammerschlag, Alfred. 3,354,972.
Filtrine Mfg. Co.: *See—*
Hansel, John P. 3,355,107.
Finaz, Gilles: *See—*
Sadron, Charles, Finaz, and Skoulios. 3,355,513.
Fine, Jerome: *See—*
Abrams, John R., Blomquist, and Fine. 3,354,712.
Finelli, Anthony F., to The Goodyear Tire & Rubber Co. Polyurethane casting compositions crosslinked by bis(aminoarylene) sulfones. 3,355,435, 11–28–67, Cl. 260—75.
Finn, Thomas J., to Preformed Line Products Co. Preformed helical appliance for linear bodies. 3,355,542, 11–28–67, Cl. 174—79.
Firestone Tire & Rubber Co., The: *See—*
Cook, Wendell S. 3,355,419.
Cook, Wendell S. 3,355,421.
Firma Werner Moll: *See—*
Moll, Werner. 3,354,500.
Firth Cleveland Fastenings Ltd.: *See—*
Mattick, James L. 3,354,926.
Fisch, Jacob J., to Hobbyfish Inc. Live fish container. 3,355,056, 11–28–67, Cl. 220—42.
Fischback, Bryant C.: *See—*
Berezin, Gilbert H., Harris, and Fischback. 3,355,383.
Fischer & Porter Co.: *See—*
Wiseman, Joseph H., Jr. 3,354,895.
Fisher & Ludlow Ltd.: *See—*
Orwin, Olaf J. B. 3,354,834.
Fisher, William J., ½ to Gerson Electric Construction Co. Apparatus for transferring a mark from one horizontal plane to another. 3,354,549, 11–28–67, Cl. 33—74.
Fiske, Augustus H. Pressure gaging systems of apparatus. 3,354,721, 11–28–67, Cl. 73—398.
Fitch, Arthur H.: *See—*
Beurrier, Henry R., and Fitch. 3,355,681.
Fitch, Frederick T.: *See—*
Smith, Jean G., and Fitch. 3,355,525.
Fitzgerald, Timothy P.: *See—*
Normandy, Robert H., and Fitzgerald. 3,354,777.
Fleming, Jerry A. Tail pipe illuminator. 3,355,581, 11–28–67, Cl. 240—8.3.
Fleming, Robert J., and A. R. Cozzolino, to Swabettes, Inc. Swab making machine. 3,354,512, 11–28–67, Cl. 19—145.3.
Fletcher, Arthur F.: *See—*
Scullin, James P., and Fletcher. 3,355,423.
Flittner, Peter: *See—*
Rothkegel, Josef, Flittner, and Koch. 3,355,330.
Foll, Gerhard: *See—*
Spohn, Karl, and Foll. 3,354,763.
Forbush, Lothrop M., to General Motors Corp. Wheel assembly. 3,355,218, 11–28–67, Cl. 301—6.

Fordeck, William A., and C. R. Hart, to The Magnavox Co. Hold-down for record changer. 3,355,131, 11-28-67, Cl. 248—20.
Ford Motor Co.: *See*—
Brewer, George E. F., and Burnside. 3,355,373.
Brewer, George E. F., Burnside, and Turner. 3,355,374.
Croswhite, Howard L. 3,354,637.
General, Norman T., Smalinskas, and Zundel. 3,354,752.
Ivanchich, Peter G. 3,354,738.
Ivanchich, Peter G. 3,354,739.
James, David W. 3,354,529.
Paredes, Andrew. 3,354,643.
Paredes, Andrew. 3,354,746.
Foris, Peter L., to The National Cash Register Co. Conversion of benzo-indolinospiropyran image to fixed red image. 3,355,293, 11-28-67, Cl. 96—48.
Fornes, Gaston G., to Institute of Textile Technology. Doffing apparatus. 3,354,513, 11-28-67, Cl. 19—159.
Forney, Albert J.: *See*—
Gasior, Stanley J., and Forney. 3,355,363.
Forth, Murray W.: *See*—
Roll, Walter M., Forth, and Harrington. 3,354,844.
Fortuna-Werke Spezialmaschinenfabrik Aktiengesellschaft: *See*—
Heldmaier, Wolfgang. 3,354,553.
Foss, George J.: *See*—
Hart, Alexander W., and Foss. 3,354,608.
Foster, Joseph W., to Union Tank Car Co. Sewage treatment system. 3,355,023, 11-28-67, Cl. 210—195.
Fowler, Norman W., to The Gleason Works. Gear machine or the like. 3,354,783, 11-28-67, Cl. 90—9.4.
Fox, Stephen R., to United States of America, Navy. Analog voltage memory circuit. 3,355,719, 11-28-67, Cl. 340—173.
Foxboro Co., The: *See*—
Newell, Richard B. 3,355,540.
Francis, Alan E., to The English Electric Co. Ltd. Pipe connectors. 3,355,190, 11-28-67, Cl. 285—50.
Franz, William F., to United States Steel Corp. Means for marking objects. 3,354,862, 11-28-67, Cl. 118—6.
Freeman, Arthur, and H. Kaplan, to General Aniline & Film Corp. Process for preparing phenol mono-ethers of mono- and polyethylene glycols. 3,355,499, 11-28-67, Cl. 260—613.
Freeport Sulphur Co.: *See*—
Lipps, Delbert A., Best, and Rubero. 3,355,259.
Frei, Arthur J., Sr., and F. E. Merica, to General Motors Corp. Freezing tray. 3,355,138, 11-28-67, Cl. 249—71.
Frei, Josef, to Vaud Tesa S.A. Inside micrometer. 3,354,552, 11-28-67, Cl. 33—164.
Frei, Walter: *See*—
Kuhnle, Willi, and Frei. 3,354,744.
French, Elby E., to O. K. Tire and Rubber Co. Tire truing machines. 3,354,929, 11-28-67, Cl. 157—13.
Frey, Walter C., and N. E. Reinhart, to The B. F. Goodrich, Co. Automatic cutting device. 3,354,765, 11-28-67, Cl. 83—71.
Freyberger, Wilfred L.: *See*—
Wystrach, Vernon P., Rauhut, and Freyberger. 3,355,017.
Friar, Dan H.: *See*—
Cadden, Jerry L., and Friar. 3,354,538.
Frick, Fritz A.: *See*—
Cheney, Walter J., and Frick. 3,355,076.
Frieder, Leonard P., to Gentex Corp. Boat canopy. 3,354,892, 11-28-67, Cl. 135—6.
Friedman, Bernard H., to American Machine and Foundry Co. Selective heating apparatus. 3,354,814, 11-28-67, Cl. 99—353.
Friedmann, Hans, E. Katscher, and N. Schredl, to Loba Chemie Dr. Paul Low-Beer & Co. Halogenated resins stabilized with dibasic lead phosphite and dibasic lead sulfite. 3,355,420, 11-28-67, Cl. 260—45.75.
Friden, Inc.: *See*—
Blodgett, Edwin O. 3,355,000.
Harris, Ben. 3,355,715.
Frost, Eugene F.: *See*—
Katzew, Charles J., and Frost. 3,354,603.
Frye, Cecil L., to Dow Corning Corp. Hexacoordinate silicon complexes. 3,355,477, 11-28-67, Cl. 260—448.8.
Fuchs, Francis J., Jr., to Western Electric Co., Inc. Pressure actuated seal. 3,354,792, 11-28-67, Cl. 92—174.
Fuchs Otto: *See*—
Mann, Karl E. 3,354,935.
Fujimoto, Keimei: *See*—
Kuramoto, Saichiro, Fujimoto, Okuno, Sakamoto, Nakagawa, and Mizutani. 3,355,524.
Fukasaku, Eiichi: *See*—
Kudo, Shiro, Yada, Yamauchi, and Fukesaku. 3,355,282.
Fuller, Richard B. Octahedral building truss. 3,354,591, 11-28-67, Cl. 52—81.
Funakubo, Shinnosuke. Band sawing machine. 3,354,767, 11-28-67, Cl. 83—201.14.
Furlong, Louis E.: *See*—
Perkins, Michael B., and Furlong. 3,355,296.
Furukawa, Masaaki: *See*—
Muta, Akinori, Furukawa, and Koyama. 3,355,527.
Fuss, Peter S., to Bell Telephone Laboratories, Inc. High speed split channel time compressor. 3,355,554, 11-28-67, Cl. 179—15.55.
Futurmill, Inc.: *See*—
Erkfritz, Donald S. 3,354,526.
G.I. Co.: *See*—
Staff, Jack W. 3,355,610.
G.Q. Parachute Co. Ltd.: *See*—
Mitchell, John R. 3,355,128.
Gagnon, John G.: *See*—
Rebertus, Robert L., and Gagnon. 3,355,492.
Gagnon, Roland K., and F. J. Lachut, to Owens-Corning Fiberglas Corp. Coating method for glass fabric and product thereof. 3,355,314, 11-28-67, Cl. 117—72.
Galat, Alexander: *See*—
Broh-Kahn, Robert H., and Galat. 3,355,356.
Galey, William F.: *See*—
Sensi, John E., and Galey. 3,355,275.
Galloway, Reginald J.: *See*—
Jervis, Thomas W. V., and Galloway. 3,354,667.
Garber, John D.: *See*—
Meigs, Frederick M., Micchelli, Wasserman, and Garber. 3,355,458.
Gardiner, Robert F. Differentiating metal detector for detecting metal objects and distinguishing between detected diamagnetic and non-diamagnetic objects. 3,355,658, 11-28-67, Cl. 324—3.
Gardner, John F., P. A. Lawrence, and J. N. Turnbull, to The British Petroleum Co., Ltd. Removing olefins from molecular sieve desorption gas. 3,355,381, 11-28-67, Cl. 208—310.
Garland Mfg. Co.: *See*—
Stansberry, Robert F. 3,354,934.
Garrison, Robert A., and C. F. Schoelm; said Schoelm assor. to said Garrison. Fluid operated booster. 3,354,788, 11-28-67, Cl. 91—373.
Gasior, Stanley J., and A. J. Forney, to United States of America, Interior. Method of producing a nonagglomerating char from a strongly caking coal. 3,355,363, 11-28-67, Cl. 201—9.
Gates, Paul E.: *See*—
Dayton, David R., and Gates. 3,355,613.
Gately, James J., and H. Siemer, Jr., to The Instrument Laboratory Inc. Contactless switching device. 3,355,593, 11-28-67, Cl. 250—231.
Gaubatz, Donald C., to United States of America, Navy. Shield utilized as flux path for magnetic head. 3,355,727, 11-28-67, Cl. 340—174.1.
Gaudlitz, Arthur, to Siemens Aktiengesellschaft. Point-contact diode with Au-Pt point. 3,355,638, 11-28-67, Cl. 317—236.
Gawin, Adolph J.: *See*—
Smitzer, Louis A., Gawin, Balint, Porazinski, and Bielik. 3,354.774.
Gebel, Rudolf, to Siemens-Schuckertwerke Aktiengesellschaft. Magnetohydrodynamic generator. 3,355,608, 11-28-67, Cl. 310—11.
Gebroeders Stork & Co's Apparatenfabriek N.V.: *See*—
Jansen, Lodewijk. 3,354,519.
Geese, Albert, and E. Awakowicz, to Siemens & Halske Aktiengesellschaft. Push-button actuated switches for dial telephone stations. 3,355,558, 11-28-67, Cl. 200—5.
Geiger, Richard L., and M. R. Cleland, to Radiation Dynamics, Inc. High voltage beam tube having spark inhibiting contacting surfaces. 3,355,614, 11-28-67, Cl. 313—63.
Geigy Chemical Corp.: *See*—
Hook, Wilfred H., and Green. 3,355,451.
Geigy, J. R., A.G.: *See*—
Bindler, Jakob, and Durr. 3,355,243.
Gemperle, Bruno: *See*—
Sturzinger, Oskar, and Gemperle. 3,354,819.
General Aniline & Film Corp.: *See*—
Freeman, Arthur, and Kaplan. 3,355,499.
Ritter, Ernst G. 3,355,061.
General Corrugated Machinery Co., Inc.: *See*—
Miller, Joseph A., and Kruglinski. 3,354,606.
General Dynamics Corp.: *See*—
Hobaica, Edward C. 3,355,227.
Sneed, Richard J., and Kronenberg. 3,354,713.
General Dynamics Corp. (Convair Division): *See*—
Morris, James E. 3,354,692.
General Electric Co.: *See*—
Barnstead, John W. 3,355,111.
Bender, Norman A., and Kerr. 3,355,309.
Benson, Kenneth L. 3,355,643.
Boyd, Wilton E. 3,355,562.
Canfield, Eugene B. 3 354,725.
Csicsatka, Antal. 3,355,552.
De Jean, Milton V., and Shaffer. 3,355,310.
Di Paola, Joel F. 3,355,480.
Dounoucos, Angelo. 3,354,618.
Loncrini, Donald F. 3,355,427.
Mapham, Neville W. 3,355.600.
McGrew. John M., Jr. 3,355,179.
Mundschenk, Glenn R., and Scott. 3,355,702.
Sours, William A., and Hoag. 3,354,734.
Sullivan, Gerald L. 3,354,728.
Vought, Robert H., and Kasch. 3,355,666.
Zuerker, Siegfried J. 3,355,672.
General Foam Corp.: *See*—
Hellman, Carl, and Bogdany. 3,355,816.
Winkler, Joseph. 3,355,269.
General Foods Corp.: *See*—
Kalafatas, Nicholas J., and Consolazio. 3,355,444.
Kalafatas, Nicholas J., and Consolazio. 3,355,445.
General Motors Corp.: *See*—
Bassett, Arthur T., Jr. 3,355,574.
Bassett, Arthur T., Jr., and Siegla. 3,355,575.
Burnell, John B. 3,354,873.
Forbush, Lothrop M. 3,355,218.
Frei, Arthur J., Sr., and Merica. 3,355,138.
Gosma, John W. 3,354,541.
Guyton, James H., and Jenkins. 3,355,624.
Harvey, Douglas J. 3,355,284.
Harvey, Douglas J. 3,355,285.
Helvern, James O. 3,354,641.
Hile, John W., and McKinnon. 3,355,371.
Hornaday, James R. 3,355,178.
Konopa, Richard L. 3,355,623.

General Motors Corp.: *See*—Continued
Leonard, Thomas R. 3,354,988.
Lystad, Leonard A. 3,354,582.
Moorman, Karl J., and Moody. 3,354,583.
Parsons, Peter P. 3,354,584.
Soder, Karl G. 3,354,642.
Todd, Max E., and Cox. 3,354,942.
Wilcox, Howard A., and Bekker. 3,354,861.
Yost, Frederick R. 3,354,639.
General, Norman T., S. Smalinskas, and R. P. Zundel, to Ford Motor Co. Multiple speed power transmission mechanism with non-synchronous ratio shift controllers. 3,354,752. 11-28-67, Cl. 74—763.
General Precision, Inc.: *See*—
Krupick, Walter J., and Cimera. 3,354,726.
General Steel Industries, Inc.: *See*—
Lich, Richard L., and Cease. 3,354,839.
Travilla, James C., and Vogel. 3,354,840.
General Systems, Inc.: *See*—
Zelina, William B., and Buchanan. 3,355,656.
General Time Corp.: *See*—
Wallentowitz, Klaus. 3,355,632.
General Tire & Rubber Co., The: *See*—
Beck, Howard G. 3,355,343.
Joseph, Richard D., and Mitten. 3,354,503.
Philbin, John J., and Rallis. 3,354,567.
Genesco, Inc.: *See*—
Glassman, Joel, Jonas, Bass, and Pate. 3,354,487.
Gentex Corp.: *See*—
Frieder, Leonard P. 3,354,892.
Georg Fischer Aktiengesellschaft: *See*—
Federle, Carl, and Guldener. 3,354,904.
Gerhardt, Wolfgang W., F. J. Kunze, and W. E. Pfaff, to Institut für Textilmaschinen. Yarn-winding apparatus. 3,355,117, 11-28-67, Cl. 242—18.
Germann, Helmut: *See*—
Wiegelmann, Hans, Germann, and Cherubin. 3,355,149.
Gerson Electric Construction Co.: *See*—
Fisher, William J. 3,354,549.
Giannuzzi, George A., to International Business Machines Corp. Line printer with proportional spacing control means. 3,354,816, 11-28-67, Cl. 101—93.
Gibbons, Roger A., to Romac, Inc. Portable combination carrier and rack for basketballs and the like. 3,355,027, 11-28-67, Cl. 211—14.
Gibson, George M.: *See*—
Skrob, Frank J. 3,354,871.
Giddings, Sydney A., to American Cyanamid Co. Photochromic compositions containing bleaching rate accelerators. 3,355,294, 11-28-67, Cl. 96—90.
Gilbert, Everett E.: *See*—
Farah, Basil S., Gilbert, and Otto. 3,355,500.
Gill, Harry A.: *See*—
Condon, Richard D., Gill, and Redmond. 3,354,714.
Gilroy, Norman T. Building frame structure. 3,354,590, 11-28-67, Cl. 52—73.
Given, John B., to Harbison-Walker Refractories Co. Crucible melting furnace. 3,355,160, 11-28-67, Cl. 266—33.
Glanc, Antonin, to Ceskoslovenska akademie ved. Electric circuit with a non-linear dielectric element. 3,355,634, 11-28-67, Cl. 317—231.
Glass, Marvin I., and B. C. Meyer, to Marvin Glass & Associates. Motor operated simulated soldier and gun toy. 3,354,577, 11-28-67, Cl. 46—118.
Glassman, Joel, G. F. Jonas, A. L. Bass, Jr., and S. H. Pate, to Genesco, Inc. Wrapped sole shoe. 3,354,487, 11-28-67, Cl. 12—142.
Glaverbel: *See*—
Javaux, Gustave. 3,355,276.
Gleasman, Hollis K., to The Bendix Corp. Two speed hub gearing for velocipedes. 3,354,750, 11-28-67, Cl. 74—750.
Gleason Corp.: *See*—
Bertsche, Joseph V. 3,355,341.
Gleason Works, The: *See*—
Buchanan, William G., and Howing. 3,354,782.
Fowler, Norman W. 3,354,783.
Ryan, Arthur B. 3,354,525.
Globe-Union, Inc.: *See*—
Tronca, Edward G. 3,355,628.
Gloor, Wilbur T., to The Warner & Swasey Co. Tensile, compression, and flexure testing machine. 3,354,704, 11-28-67, Cl. 73—93.
Glorioso, Paul A., to Gregory Industries, Inc. Safety circuit for drawn-arc, stud welding apparatus. 3,355,570, 11-28-67, Cl. 219—98.
Going, Louis H.: *See*—
Purves, Edward R., Going, and Dobson. 3,355,302.
Gold Medal Products Co.: *See*—
Evans, David B. and J. C. 3,354,815.
Goldstein, Herman B., and M. A. Silvestri, to Sun Chemical Corp. Reactive dyes and methylolated-4,5-dihydroxy-imidazolidone-2, in coloring cellulosic textiles. 3,355,242, 11-28-67, Cl. 8—17.
Goodman Mfg. Co.: *See*—
Craggs, Joseph, and McCann. 3,355,005.
Goodrich, B. F., Co., The: *See*—
Cook, Albert W., and Runner. 3,354,992.
Finelli, Anthony F. 3,355,435.
Frey, Walter C., and Reinhart. 3,354,765.
Okuzumi, Yuzi. 3,355,438.
Pile, William D. 3,354,927.
Gordon, Carroll G., and W. F. Stoesser. Sectional hydraulic valve structure. 3,354,912, 11-28-67, Cl. 137—625.69.
Gorin, Everett, R. T. Struck, and C. W. Zeilke, ½ to Consolidation Coal Co., and ½ to United States of America, Interior. Hydrocracking of polynuclear hydrocarbons. 3,355,376, 11-28-67, Cl. 208—10.
Gormley, John B. Lifting and supporting device. 3,355,147, 11-28-67, Cl. 254—93.
Gornowitz, Kurt: *See*—
Leschinger, Franz, and Gornowitz. 3,354,550.
Gorring, Robert L., to Universal Oil Products Co. Method and apparatus for determining the diffusivity of porous solids. 3,355,250, 11-28-67, Cl. 23—232.
Gorton, Thomas S., Jr. Infusing device. 3,354,812, 11-28-67, Cl. 99—323.
Goslin, Geoffrey W., and C. T. Marwood, to The de Havilland Aircraft Co., Ltd. Frequency comparison devices included in step motor control circuitry. 3,355,644, 11-28-67, Cl. 318—138.
Gosma, John W., to General Motors Corp. Loudspeaker magnet structure and method of assembling same. 3,354,541, 11-28-67, Cl. 29—607.
Gosselink, Karl R., to Pittsburgh Plate Glass Co. Reflective coatings. 3,355,311, 11-28-67, Cl. 117—33.
Goto, Asahiko, to Kobe Steel Works, Ltd. High anticorrosion metal lining structure. 3,354,913, 11-28-67, Cl. 138—147.
Goto, Tatsuo, to Hitachi, Ltd. Optimum driving method for step motors. 3,355,646, 11-28-67, Cl. 318—138.
Goto, Tetsukazu, S. Nishio, H. Kojima, T. Kawano, S. Hayakawa, and H. Araki, to Asahi Kasei Kogyo Kabushikikaisha. Process for producing L-glutamic acid by using corynebacterium melassecola. 3,355,359, 11-28-67, Cl. 195—29.
Gould, Harold L. B.: *See*—
Brownell, Richard M., Gould, and Wenny. 3,355,724.
Graber Mfg. Co. Inc.: *See*—
Salzmann, Ferdinand F. 3,354,498.
Grace, W. R., & Co.: *See*—
Eastes, Frank E. 3,355,313.
Harrison, John W. 3,355,010.
Smith, Jean G., and Fitch. 3,355,525.
Graf, George: *See*—
McClure, Ellis G. 3,355,214.
Grafstein, Daniel, and J. Bobinski, to Thiokol Chemical Corp. Di-acid chloride monomers of bis-carboxyalkyl carboanylalkyl ethers. 3,35,489, 11-28-67, Cl. 260—544.
Graham, John V., J. B. Keeking, and L. L. Robinett. Well pump. 3,354,832, 11-28-67, Cl. 103—46.
Graham, Ward A., to Stratford Engineering Corp. Mixing atomising rotor. 3,355,106, 11-28-67, Cl. 239—9.
Gralnick, Edna. Toy rocket for packaging and storing of night clothes. 3,354,576, 11-28-67, Cl. 46—11.
Grant, Orland W.: *See*—
Pomper, Anthony W., and Grant. 3,354,867.
Gratzmuller, Jean L. Fuel supply system for an internal combustion engine. 3,354,872, 11-28-67, Cl. 123—30.
Gray Tool Co.: *See*—
Pierce, Elwood K., Jr. 3,354,962.
Greck, Eugene, to American Flange & Mfg. Co., Inc. Method and apparatus for dividing the flow of articles. 3,355,002, 11-28-67, Cl. 198—31.
Green, Derek, to United Kingdom Atomic Energy Authority. Hydrosatic extrusion apparatus. 3,354,685, 11-28-67, Cl. 72—253.
Green, Clark L. Door control system. 3,354,677, 11-28-67, Cl. 70—279.
Green, Jack R.: *See*—
Hook, Wilfred H., and Green. 3,355,451.
Green, Jim L. Roller skates. 3,355,184, 11-28-67, Cl. 280—11.19.
Green, Joseph: *See*—
Fein, Marvin M., Green, and O'Brien. 3,355,478.
Greger, Paul: *See*—
Hahn, Johann, Greger, and Weidner. 3,355,559.
Gregory Industries, Inc.: *See*—
Glorioso, Paul A. 3,355,570.
Jenkins, John C. 3,355,132.
Gregory, Lester, Jr., to Calark, Inc. Seed planter feeding indicator and counting mechanism and circuit control device. 3,355,102, 11-28-67, Cl. 235—98.
Griffin, Rose E.: *See*—
Moss, William A., Griffin. 3,354,986.
Griffith. Robert C., and E. T. Dunning, to Interchemical Corp. Lithographic fountain solutions and method of use. 3,354,824, 11-28-67, Cl. 101—451.
Griffiths, Eric C.: *See*—
Stanley, Robert M., and Griffiths. 3,355,127.
Grimm, David W., and R. C. Baubles, to Elastic Stop Nut Corp. of America. Spline wrenching configurations. 3,354,757, 11-28-67, Cl. 81—90.
Groff, Emory L., to Poor & Co. Method of preparing a synthetic railway tie. 3,355,534, 11-28-67, Cl. 264—273.
Gross, William L. C., and O. H. Stone. System for the prevention of frost damage. 3,354,579, 11-28-67, Cl. 47—2.
Grubb, Harold R., J. W. Haskell, P. A. Lord, and E. F. Rent, to International Business Machines Corp. Compact semi-permanent information storage unit. 3,355,722, 11-28-67, Cl. 340—173.
Grubbs, William J.: *See*—
Doucette, Edward I., and Grubbs. 3,354,802.
Gruber, Miriam J.: *See*—
Bliss, Arthur D., Gruber, and Ratz. 3,355,521.
Grudeborn, Lars-Owe, to Aktiebolaget Svenska Flaktfabriken.
Tube heat exchanger with anti-freeze thermostat. 3,354,945, 11-28-67, Cl. 165—40.
Guadalupi, Mario, to SNAM S.p.A. Process for the separation of ammonia produced in medium and low pressure synthesizing lants. 3,354,615, 11-28-67, Cl. 55—40.
Guaranaschelli, Vincent, to Mutual Industries, Inc. Means for burning the exhaust gases of internal combustion engines. 3,354,635, 11-28-67, Cl. 60—29.
Guldener, Erich: *See*—
Federle, Carl, and Guldener. 3,354,904.
Gulf Oil Corp.: *See*—
Lyons, Harold D. 3,355,438.

Gullick Ltd.: *See—*
Seddon, Jeffrey W. 3,355,213.

Gundeson, Robert O., and M. H. Jurick, to The National Cash Register Co. Digital circuitry including differential amplifier and opposite conductivity translators in latching "exclusive-or" configurations obviating storage delays. 3,355,596, 11-28-67, Cl. 307—88.5.

Gutshall, Charles E.: *See—*
Wagner, David P., and Gutshall. 3,355,205.

Guttridge, Henry F. Pipe transporter and handler. 3,355,040, 11-28-67, Cl. 214—75.

Guyton, James H., and R. L. Jenkins, to General Motors Corp. Transistor headlamp beam control. 3,355,624, 11-28-67, Cl. 315—83.

Haarhuis, Gerardus J.: *See—*
Van der Ster, Johannes, Haarhuis, and Tuin. 3,354,664.

Haas, Gerhard, to North American Philips Co. Inc. Electromechanical serial printers. 3,354,818, 11-28-67, Cl. 101—93.

Habermann, Kenneth R., to Allied Chemical Corp. Laminated film and process for preparing it. 3,355,347, 11-28-67, Cl. 161—189.

Hach, Frank, Jr., to Harris Calorific Co. Valve control mechanism for gas torches. 3,354,930, 11-28-67, Cl. 158—27.4.

Hager, Nathaniel E., Jr., to Armstrong Cork Co. Temperature sensing probe. 3,354,720, 11-28-67, Cl. 73—355.

Hahn, Frank J., to Monsanto Co. Solvent solution of water-insoluble salts of alpha, beta-ethylenically unsaturated carboxylic adducts with fatty acid esters of allyl alcohol-vinyl aromatic copolymers. 3,355,403, 11-28-67, Cl. 260—23.

Hahn, Johann, P. Greger, and H. Weidner, to Zeiss Ikon Aktiengesellschaft. Connector switch in a viewfinder socket on a photographic camera for an electronic flash gun. 3,355,559, 11-28-67, Cl. 200—52.

Hain, Elias W. R., R. R. Cosner, and R. G. Brautigam, to Union Carbide Corp. Process for producing a shoe-upper. 3,355,535, 11-28-67, Cl. 264—321.

Hale Co., The: *See—*
Cooper, Robert K. 3,355,141.

Hall, Floyd V., to Liggett & Myers Tobacco Co. Apparatus for compacting cigarette filter tip assemblies containing granular material. 3,354 887, 11-28-67, Cl. 131—94.

Hall, Harold H., Jr., to Sylvania Electric Products Inc. Process of fabricating refractory metal forms. 3,354,691, 11-28-67, Cl. 72—371.

Hall, Mitchell A. Coin chute construction. 3,354,998, 11-28-67, Cl. 194—57.

Hall, Richard H., and M. Levy, to Xerox Corp. Cyclical zerographic process utilizing a selenium-tellurium zerographic plate. 3,355,289, 11-28-67, Cl. 96—1.4.

Hall, Roy W., to Aladdin Industries Inc. Mantle with improved mounting. 3,354,674, 11-28-67, Cl. 67—101.

Halliburton Co.: *See—*
Hyde, Walter E. 3,354,950.

Halstead, Fred E., to Halstead Metal Products, Inc. Continuous direct chill-type casting unit. 3,354,941, 11-28-67, Cl. 164—283.

Halstead Metal Products, Inc.: *See—*
Halstead, Fred E. 3,354,941.

Haluska, Loren A. Organopolysiloxanes. 3,355,425, 11-28-67, Cl. 260—46.5.

Haluska, Loren A., to Dow Corning Corp. Organopolysiloxanes. 3,355,425, 11-28-67, Cl. 260—46.5.

Haluska, Loren A., to Dow Corning Corp. Certain pyridyl silane derivatives. 3,355,455, 11-28-67, Cl. 260—297.

Haluska, Loren A.: *See—*
Clark, Harold A., and Haluska. 3,355,473.

Hamm, Douglas W., to Muskegon Piston Ring Co. Narrow groove piston ring. 3,355,180, 11-28-67, Cl. 277—139.

Hammerschlag, Alfred, to Fijn Mechanische Industrie "Becker's Sons" N.V. Weigh scale with beam acting as piston in pneumatic dampener. 3,354,972, 11-28-67, Cl. 177—188.

Hammond, Roland P., to United States of America, Atomic Energy Commission. Plural conduit flash film evaporator for distilling and condensing sea water. 3,355,364, 11-28-67, Cl. 202—172.

Hanna, Ralph, to Midland-Ross Corp. Control system. 3,355,156, 11-28-67, Cl. 263—3.

Hans-Ulrich Sohr: *See—*
Haussmann, Wilhelm. 3,354,853.

Hansard, Richard L., to Coin Acceptors, Inc. Coin changers. 3,354,997, 11-28-67, Cl. 194—10.

Hansel, John P., to Filtrine Mfg. Co. Drinking fountain. 3,355,107, 11-28-67, Cl. 239—29.

Hansel, William B., to Sun Oil Co. Adjustable port ring construction. 3,355,256, 11-28-67, Cl. 23—284.

Hansen, William S., d.b.a. A. Stucki Co.: *See—*
Wiebe Donald, and Doorley. 3,354,716.

Hansley, Virgil L., and F. K. Morgan, to National Distillers and Chemical Corp. Method for modifying the physical properties of aluminum casting alloys. 3,355,281, 11-28-67, Cl. 75—138.

Hanson, Raymond A. Highway slipform. 3,354,801, 11-28-67, Cl. 94—46.

Hanus, George M., to Motorola, Inc. Code receiver responsive to plural tones in sequence. 3,355,709, 11-28-67, Cl. 340—164.

Harbison-Walker Refractories Co.: *See—*
Campbell, William W., Rossi, and Good. 3,355,158.
Given, John B. 3,355,160.
Henry, George R. 3,355,528.
Walther, Frank H., Jr., and Ryan. 3,354,940.

Harbison-Walker Co.: *See—*
Troell, Peter T., and Renkey. 3,355,537.

Harder, John R.: *See—*
Anderson, George W., Harder, and Mahaffy. 3,354,613.

Harding, Jonathan, J. J. Mellon, Jr., and W. T. Schrandt, to United States of America, Navy. Flotation attachment (mark 5 lift preserver). 3,354,480, 11-28-67, Cl. 9—316.

Hardt, Dietrich, H. Bartl, and R. Wust, to Farbenfabriken Bayer Aktiengesellschaft. Graft copolymer of vinyl chloride and comonomer onto a partially hydrolyzed ethylene-vinyl ester backbone polymer. 3,355,516, 11-28-67, Cl. 260—878.

Hardy, Ernest. Shoe jack device. 3,354,485, 11-28-67, Cl. 12—123.

Hardy, Wilton A., to International Business Machines Corp. Optical fiber laser device. 3,355,674, 11-28-67, Cl. 331—94.5.

Harland, Philip W., and M. Mollick, to Ametek, Inc. Dispenser having means to pour main and supplemental quantities of liquids. 3,355,068, 11-28-67, Cl. 222—30.

Harrier, Jack L.: *See—*
Mayer, James F., and Harrier. 3,355,408.

Harrington, Roy E.: *See—*
Roll, Walter M., Forth, and Harrington. 3,354,844.

Harris, Ben, to Friden, Inc. Time synchronizing system. 3,355,715, 11-28-67, Cl. 340—172.5.

Harris Calorific Co.: *See—*
Hach, Frank, Jr. 3,354,930.

Harris, Guy H.: *See—*
Berezin, Gilbert H., Harris, and Fischback. 3,355,383.

Harris-Intertype Corp.: *See—*
Semenhuk, Michael H. 3,355,639.

Harrison, George C., to Minnesota Mining and Mfg. Co. Smooth joint for structural sheets and members. 3,355,196, 11-28-67, Cl. 287—20.92.

Harrison, Harry W. Packaging apparatus. 3,354,799, 11-28-67, Cl. 93—82.

Harrison, John W., to W. R. Grace & Co. Heat shrinkable package. 3,355,010, 11-28-67, Cl. 206—46.

Harrison, Wayne T.: *See—*
Carrigan, Raymond J., and Harrison. 3,354,914.

Hart, Alexander W., and J. G. Foss, to Anchor Hocking Glass Corp. Purging mechanism. 3,354,608, 11-28-67, Cl. 53—87.

Hart, Carl R.: *See—*
Fordeck, William A., and Hart. 3,355,131.

Hart, Donald P., and J. E. Plasynski, to Pittsburgh Plate Glass Co. Resinous compositions. 3,355,412, 11-28-67, Cl. 260—31.2.

Harvey, Douglas J., to General Motors Corp. Heat-treatable creep-resistant solder. 3,355,284, 11-28-67, Cl. 75—166.

Harvey, Douglas J., to General Motors Corp. Creep resistant solder alloy. 3,355,285, 11-28-67, Cl. 75—166.

Hasha, Malvern M. Safety joint. 3,355,189, 11-28-67, Cl. 285—36.

Hasimoto, Eiichi: *See—*
Kajikawa, Ryuzo, Hasimoto, and Tahara. 3,354,875.

Haskell, John W.: *See—*
Grubb, Harold R., Haskell, Lord, and Rent. 3,355,722.

Haspert, John C., and R. A. Wallers, to Smith Industries International, Inc. Oscillating tunneling machine. 3,355,215, 11-28-67, Cl. 299—60.

Hasspacher, Klaus, to Boehringer Ingelheim G.m.b.H. N-substituted benzo-1,3-oxazine-dione-(2,4). 3,355,453, 11-28-67, Cl. 260—244.

Hathaway, Richard A.: *See—*
Johnson, Delmar R., and Hathaway. 3,355,119.

Hattori, Junnosuke, T. Ozaki, S. Koike, K. Yoshioka, and H. Sugiyama, to Sumitomo Chemical Co., Ltd. Fungicidal composition. 3,355,352, 11-28-67, Cl. 167—33.

Haubert, Harold W., and M. R. Rudy, to The Singer Co. Children's bouncing apparatus. 3,355,170, 11-28-67, Cl. 272—57.

Haug, Leonard H. Baton structure. 3,354,770, 11-28-67, Cl. 84—477.

Hauni-Werke Korber & Co. K.G.: *See—*
Elsner, Uwe. 3,354,921.

Haussmann, Wilhelm, to H.-U. Sohr. Process of manufacturing sliding clamp fasteners. 3,354,853, 11-28-67, Cl. 112—265.

Hawthorne, Arthur L.: *See—*
Meger, Alfred F., and Hawthorne. 3,355,113.

Hayakawa, Shiro: *See—*
Goto, Tetsurkazu, Nishio, Kojima, Kawano, Hayakawa, and Araki. 3,355,359.

Hayes, John C., to Universal Oil Products Co. Process for producing hydrogen and carbon with an essentially iron-free catalyst. 3,355,248, 11-28-67, Cl. 23—209.5.

Haynes, Alan G., and G. Mayer, to The International Nickel Co., Inc. Selective hardening of age-hardenable alloys and articles produced thereby. 3,355,383, 11-28-67, Cl. 148—142.

Haynes, Winfield S., Jr.: *See—*
Ruffing, Norman R., Nagle, and Haynes. 3,355,404.

Haynie, Gerald D., and P. E. Rosenfeld, to Bell Telephone Laboratories, Inc. Automated transmission measuring set. 3,355,662, 11-28-67, Cl. 324—57.

Hecker, Klaus J., M. P. Nordseth, and H. M. Joseph, to United States of America, Navy. Scanning type image transducer television tube. 3,355,616, 11-28-67, Cl. 313—65.

Hedin, Bengt: *See—*
Brechna, Habib, and Hedin. 3,355,586.

Heeley, Roland, to United Shoe Machinery Corp. Methods and machines for mounting fastener inserts in an elastomer. 3,355,338, 11-28-67, Cl. 156—92.

Heide, John D.: *See—*
Black, Sheppard A., and Heide. 3,355,346.

Heilbrunn, Alfred, to Chromographic Press, Inc. Article conveyor device. 3,355,006, 11-28-67, Cl. 198—105.

Heinicke Instruments Co.: *See—*
Lawrence, Robert, III. 3,354,495.

Heldmaier, Wolfgang, to Fortuna-Werke Spezialmaschinenfabrik, Aktiengesellschaft. Measuring apparatus for machine tools. 3,354 553, 11-28-67, Cl. 33—178.

Hellman, Carl, and J. Bogdany, to General Foam Corp. Foam product and process. 3,355,316, 11-28-67, Cl. 117—98.

Heltzen, John H., and R. W. McCahon. Humidifier for air conditioning systems. 3,355,155, 11-28-67, Cl. 261—130.

Helvern, James O., to General Motors Corp. Pedal lift mechanism. 3,354,641, 11-28-67, Cl. 60—54.6.

Hendon Construction Co.: *See—*
Schwarz, Julius D., and Dokes. 3,354,473.

Hendrix, Lloyd T., to Atlantic Richfield Co. Hydrate removal from wet natural gas. 3,354,563, 11-28-67, Cl. 62—12.

Hendrix, Lloyd T., to Atlantic Richfield Co. Hydrate removal from wet natural gas. 3,354,663, 11-28-67, Cl. 62—12.

Henry, George R., to Harbison-Walker Refractories Co. Refractory gunning mix. 3,355,528, 11-28-67, Cl. 264—30.

Henry Valve Co.: *See—*
Jones, Evan. 3,355,021.

Herbstman, Sheldon, to Stauffer Chemical Co. Alkylamido(dialkyl)tin carboxylates and the method of preparing them. 3,355,469, 11-28-67, Cl. 260—429.7.

Hercules Inc.: *See—*
Jamison, Joel D. 3,355,353.

Hertwig, Henry F., to Swift & Co. Bacon slicing apparatus. 3,354 920, 11-28-67, Cl. 146—95.

Hesler, Warren E., and A. W. Eckstrom, to Blaw-Knox Co. Multiple effect evaporator structure. 3,354,932, 11-28-67, Cl. 159—17.

Hesse, Gerhard, and W. Dietel, to VEB Carl Zeiss Jena. Hollow bodies of electrostrictive material. 3,355,603, 11-28-67, Cl. 310—9.7.

Heuer, Hans, to Olympia Werke AG. Electromechanical counting chain arrangement. 3,355,577, 11-28-67, Cl. 235—92.

Hibbard, Orlo K. Method and apparatus for blind-side supported stapling. 3,354,539, 11-28-67, Cl. 29—432.1.

Hickin, Robert J., to Packaging Corp. of America. Methods and machines for forming cartons. 3,354,797, 11-28-67, Cl. 93—49.

Hile, John W., and M. C. McKinnon, to General Motors Corp. Method of anodizing a metal in a plasma including connecting said metal in a separate electrical circuit. 3,355,371, 11-28-67, Cl. 204—164.

Hilton, Jack: *See—*
Dallas, Michael S., and Hilton. 3,355.465.

Hineline, Robert E., to American Machine & Foundry Co. Method and apparatus for making solid tires. 3,355,339, 11-28-67, Cl. 156—112.

Hinkel, Emil T., Jr., to Sterling Drug Inc. Cleansing composition. 8,855,387, 11-28-67, Cl. 252—106.

Hirai, Tadamasa, H. Ueda, C. Munakata, and H. Watanabe, to Kabushiki Kaisha Hitachi Seisakusho. Electron-beam machining of specimens and its control by X-ray radiation measurements. 3,355,568, 11-28-67, Cl. 219—69.

Hirsh, S. A., Mfg. Co.: *See—*
Ferdinand, Irwin J., and Lopatka. 3,355,033.

Hirshman, Justin L., and J. G. Natoli, to M & T Chemicals Inc. Process for preparing tricyclohexytin chloride. 3,355,468, 11-28-67, Cl. 260—429.7.

Hitachi, Ltd.: *See—*
Goto, Tatsuo. 3,355,646.

Hitchcock Transportation Co.: *See—*
Copeland, Jesse J., and Coe. 3,354,928.

Hitzemann, Gerhard: *See—*
Tillmann, Peter, Kulling, and Hitzemann. 3,355,253.

Hoag, Yates M.: *See—*
Sours, William A., and Hoag. 3,354,734.

Hobaica, Edward C., to General Dynamics Corp. Fabrication of large flat bearings. 3,355,227, 11-28-67, Cl. 308—5.

Hobbs, Howard F. Power transmission apparatus. 3,354,747, 11-28-67, Cl. 74—688.

Hobbyfish Inc.: *See—*
Fisch, Jacob J. 3,355,056.

Hobday, Stephen W. Hydrofoil craft. 3,354,857, 11-28-67, Cl. 114—66.5.

Hoch, Manfried L., to International Harvester Co. Forage cutting and depositing apparatus. 3,354,624, 11-28-67, Cl. 56—24.

Hodge, Allen W.: *See—*
Williams, Dean N., Ogden, Hodge, and Schmidt. 3,355,286.

Hodge, Richard M., to Collis Radio Co. Data transmitting system with data represented by combinations of different pulse and D.C. signals. 3,355,548, 11-28-67, Cl. 178—68.

Hoe, R., & Co., Inc.: *See—*
Horner, Ellwood J. 3,354,807.

Hoedra, Inc.: *See—*
Draben, Elmer E. 3,354,508.

Hoehne, Klaus: *See—*
Muller, Erwin A., Hoehne, and Becker. 3,355,519.

Hoerner-Waldorf Corp.: *See—*
Ingle, Robert B. 3,355,086.

Hoerter, Heinz: *See—*
Knickelmann, Franz-Josef, and Hoerter. 3,355,188.

Hoffmann, Wolfgang, to International Paper Co. Bundling machine. 3,354,600, 11-28-67, Cl. 53—24.

Hofstetter, Rudy: *See—*
Carroll, Terry M., and Hofstetter. 3,355,175.

Hohl Machine & Conveyor Co., Inc.: *See—*
Milazzo, Carl J. 3,355,008.

Hohwart, George, and P. Toth, to N. A. Woodworth Co. Internal diaphragm chuck. 3,355,182, 11-28-67, Cl. 279—2.

Hoisington, Edward C., and C. L. Martzolff, to American Standard Inc. Corona shield for ioniser wires. 3,354,617, 11-28-67, Cl. 55—147.

Holan, James H., and C. W. Verrell, to The Ohio Brass Co. Extensible boom with load compensating means. 3,355,034, 11-28-67, Cl. 212—55.

Holden, Kenneth C., to Smith Kline & French Laboratories. 2-substituted B-norandrostenes and estrenes. 3,355,495, 11-28-67, Cl. 260—586.

Holding Intercito SA.: *See—*
Poll, Willy. 3,355,036.

Hollenberg, Joel W., to The Singer Co. Combined casing and noise muffler for a vortex fan. 3,355,095, 11-28-67, Cl. 230—125.

Holm, Myron J.: *See—*
Zienty, Ferdinand B., and Holm. 3,355,464.

Holmlund, Chester E.: *See—*
Feldman, Louis I., Holmlund, and Sax. 3,355,360.

Holub Industries, Inc.: *See—*
Schinske, William G. 3,355,123.

Holz, William G. Traction-face arrangement for drum-type pulleys. 3,354,735, 11-28-67, Cl. 74—230.7.

Honeywell Inc.: *See—*
Braxton, James L., Jr. 3,354,820.
Dietiker, Paul, Krueger, and Morgan. 3,354,901.
Meyers, William F., and Klopp. 3,355,328.
Pinckaers, Balthasar H. 3,355,594.

Hook, Wilfred H., and J. R. Green, to Geigy Chemical Corp. New semicarbazones and processes for their preparation. 3,355,451, 11-28-67, Cl. 260—240.

Hooker Chemical Corp.: *See—*
Kimball, Richard H. 3,355,487.
Rothkegel, Josef, Flittner, and Koch. 3,355,330.
Weil, Edward D., and Linder. 3,355,278.

Hoover, D. Eugene, ½ to G. E. Mickel, Jr. Adjustable cable clamp. 3,354,518, 11-28-67, Cl. 24—134.

Horn, George, and B. Chojnowski, to Central Electricits Generating Board. Magnetohydrodynamic electrical generators. 3,355,609, 11-28-67, Cl. 310—11.

Hornaday, James R., to General Motors Corp. Seal assembly. 3,355,178, 11-28-67, Cl. 277—87.

Hornberger, Walter, to Joslyn Mfg. and Supply Co. Electric cable terminal assembly with restrained resilient member. 3,355,541, 11-28-67, Cl. 174—73.

Horner, Ellwood J., to R. Hoe & Co., Inc. Plate processing machine. 3,354,807, 11-28-67, Cl. 95—94.

Hornschuch, Hanns, to Ingersoll-Rand Co. Multi-stage intercooled compressor. 3,355,096, 11-28-67, Cl. 230—209.

Hornschuch, Hanns, to Ingersoll-Rand Co. Fluid machine. 3,355,097, 11-28-67, Cl. 230—209.

Hoskinson, Gordon H., to Cornell Hoskinson Mfg. Corp. Waste product combustion apparatus. 3,355,254, 11-28-67, Cl. 23—277.

Houilleres du Bassin du Nord et du Pas-de Calais: *See—*
Van De Walle, Therese, and Brault. 3,355,514.

Hovercraft Development Ltd.: *See—*
Boutland, John A., and Jelly. 3,354,858.

Howard, George C.: *See—*
Fast, Clarence R., Howard, and Rixe. 3,354,959.

Howard, Jerry W.: *See—*
Childers, Spencer L., Howard, and Clark. 3,355,576.

Howard, Murl B.: *See—*
Krejci, Joseph C., and Howard. 3,355,247.

Howe, Warren B., and W. Kyle, to Addressograph Multigraph Corp. Tandem printer control. 3,354,821, 11-28-67, Cl. 101—142.

Howing, George H.: *See—*
Buchanan, William G., and Howing. 3,354,782.

Howles, Daniel J., to TRW Inc. Automatic surface flaw detector. 3,355,014, 11-28-67, Cl. 209—73.

Hsia, Henry T., to United Aircraft Corp. Method and apparatus for producing a non-axial thrust vector. 3,354,645, 11-28-67, Cl. 60—204.

Huang, Hsing T., and G. M. Shull, to Chas. Pfizer & Co., Inc. Flavor improvement for foodstuffs comprising treating foodstuffs with a compound of the group of 5(4)-amino-4(5)-imidazolecarboxamide riboside-5′-phosphoric acid and non-toxic salts thereof. 3,355,301, 11-28-67, Cl. 99—140.

Huck, William F. Web-roll driving apparatus for automatic splicing rollstand. 3,355,120, 11-28-67, Cl. 242—58.3.

Hudson, Robert M., and A. Lesney, to United States Steel Corp. Method of producing ductile coated steel and novel product. 3,355,265, 11-28-67, Cl. 29—183.5.

Hunt, Russell A., Jr.: *See—*
Amick, James W., and Hunt. 3,355,270.

Huntington, Morgan G., to Waterdrink, Inc. Centripetal acceleration method and apparatus. 3,355,382, 11-28-67, Cl. 210—22.

Hurth, Carl, Maschinen- und Zahnradfabrik: *See—*
Kriegl, Max. 3,354,781.

Huskey, Eugene D.: *See—*
Taylor, Leta S., Johnson, and Huskey. 3,354,719.

Hutson, Lawrence W., to Hutson and Sons, Inc. Portable target stand. 3,355,174, 11-28-67, Cl. 273—102.

Hutson and Sons, Inc.: *See—*
Hutson, Lawrence W. 3,355,174.

Hyatt, Philip L.: *See—*
Scholl, Howard O., and Hyatt. 3,354,620.

Hyde, Walter E., to Halliburton Co. Method and apparatus for accommodating telescoping action. 3,354,950, 11-28-67, Cl. 166—.5.

Hydraulik G.m.b.H.: *See—*
Petsch, Ernst. 3,354,686.

Ichikawa, Akira: *See—*
Sasaki, Minoru, Yamamoto, Ichikawa, Ohzeki, Senda, and Masunaka. 3,355,402.

Ichinokawa, Hideo: *See—*
Oga, Taijiro, Ichinokawa, and Ito. 3,355,479.

Ignell, Rolf L.: *See—*
Rausing, Anders R., and Ignell. 3,355,080.

Illinois Tool Works Inc.: *See—*
Bury, George J. 3,355,566.
Poupitch, Ougljesa J. 3,355,013.
Wagner, David P., and Gutshall. 3,355,205.

Im, Samuel S.: *See—*
Butler, James H., Chance, and Im. 3,355,335.

Imperial Chemical Industries Ltd.: *See—*
Taylor, John H. 3,355,442.

- Index-Werke K.G, Hahn & Tessky : *See*—
  - Spohn, Karl, and Foll. 3,354,763.
- Ingersoll-Rand Co. : *See*—
  - Allen, Edward L. 3,354,478.
  - Hornschuch, Hanns. 3,355,096.
  - Hornschuch, Hanns. 3,355,097.
  - Race, Hugh A. 3,354,790.
- Ingle, Robert B., to Hoerner-Waldorf Corp. Carton. 3,355,086, 11–28–67, Cl. 229—31.
- Inoshita, Kagenobu, and T. Morikawa, to Toyo Spinning Co., Ltd. Water soluble cellulose ethers and their production. 3,355,449, 11–28–67, Cl. 260—231.
- Institut fur Textilmaschinen : *See*—
  - Gerhardt, Wolfgang W., Kunze, and Pfaff. 3,355,117.
- Institute of Textile Technology : *See*—
  - Fornes, Gaston G. 3,354,513.
- Instrument Laboratory Inc., The : *See*—
  - Gately, James J., and Siemer. 3,355,593.
- Integrated Systems, Inc. : *See*—
  - Baranowski, Eugene. 3,355,697.
- Interchemical Corp. : *See*—
  - Abrams, John R., Blomquist, and Fine. 3,354,712.
  - Griffith, Robert C., and Dunning. 3,354,824.
- International Business Machines Corp. : *See*—
  - Butler, James H., Chance, and Im. 3,355,335.
  - Dhaka, Vir A., and Wajda. 3,355,334.
  - Giannuzzi, George A. 3,354,816.
  - Grubb, Harold R., Haskell, Lord, and Rent. 3,355,722.
  - Hardy, Wilton A. 3,355,674.
  - Lemière, Jean, and Melas. 3,355,550.
  - McKeon, Alexander. 3,355,725.
  - Reed, David W., Simpson, and Zolnosky. 3,355,001.
- International Harvester Co. : *See*—
  - Hoch, Manfried L. 3,354,624.
  - Johnston, Lawrence M., Jr., and Schroeder. 3,354,741.
  - Middlesworth, Tommy A. 3,355,007.
  - Skanes, Frederick A., and Logue. 3,355,224.
  - Swanson, William C., Lam, and Moyer. 3,354,981.
  - Swift, John F. 3,354,977.
  - Talbert, Virgil O. 3,355,043.
- International Nickel Co., Inc., The : *See*—
  - Haynes, Alan G., and Mayer. 3,355,333.
  - Tuffnell, Glenn W., Schaller, and Yeo. 3,355,280.
- International Paper Co. : *See*—.
  - Barry, James S. 3,354,841.
  - Hoffmann, Wolfgang. 3,354,600.
- International Standard Electric Corp. : *See*—
  - Andreae, John H., and Joyce. 3,355,713.
  - Joron, Louis. 3,354,708.
- International Telephone and Telegraph Corp. : *See*—
  - Albanese, Damian F. 3,355,734.
- International Wool Development Co. : *See*—
  - Ross, Donald A. 3,354,511.
- Interstate United Corp. : *See*—
  - King, Alan M. 3,354,811.
- Introl Corp. : *See*—
  - Olson, Ellis W. 3,355,651.
- Ishibashi, Wataru, to Iwatani & Co., Ltd. Method and apparatus for manufacturing microfine metallic powder. 3,355,279, 11–28–67, Cl. 75—.5.
- Ito, Masatomo : *See*—
  - Oga, Taijiro, Ichinokawa, and Ito. 3,355,479.
- Itoi, Kazuo, to Kurashiki Rayon Co., Ltd. Method of polymerizing ethylene. 3,355,443, 11–28–67, Cl. 260—94.9.
- Ivanchich, Peter G., to Ford Motor Co. Multiple speed ratio power transmission mechanism. 3,354,738, 11–28–67, Cl. 74—330.
- Ivanchich, Peter G., to Ford Motor Co. Multiple speed ratio power transmission mechanism with synchronous speed ratio shifts. 3,354,739, 11–28–67, Cl. 74—339.
- Iwatani & Co., Ltd. : *See*—
  - Ishibashi, Wataru. 3,355,279.
- J.M.J. Industries, Inc. : *See*—
  - Meger, Alfred F., and Hawthorne. 3,355,113.
- Jackson, Auzville, Jr. Process and apparatus for continuous casting. 3,354,937, 11–28–67, Cl. 164—87.
- Jackson, William W., to Deere & Co. Outrigger type chisel plow. 3,354,966, 11–28–67, Cl. 172—311.
- Jackson, Winston J., Jr. : *See*—
  - Caldwell, John R., and Jackson. 3,355,414.
- Jacobs, F. L., Co. : *See*—
  - Blake, Jack W. 3,355,232.
- Jacobsen, Finn, to A B Platmanufaktur. Method of producing a conical pail and machine for carrying out the method. 3,354,680, 11–28–67, Cl. 72—126.
- Jagenburg & Medin AB : *See*—
  - Lindstrom, Wictor C. O. 3,355,085.
- Jamco, Inc. : *See*—
  - Melton, James O., and Wilkinson. 3,355,199.
- James, David W., to Ford Motor Co. Impeller making. 3,354,529, 11–28–67, Cl. 29—156.8.
- James, Wilbert. Fumeproof, transparent enclosure for preparing onions. 3,354,922, 11–28–67, Cl. 146—215.
- Jamison, Joel D., to Hercules Inc. O,o-dialkyl S-[2-halo-1-(N-phthalimido)ethyl] phosphorodithioates and phosphorothioates as insecticides. 3,355,353, 11–28–67, Cl. 167—33.
- Janak, Jaroslav : *See*—
  - Novak, Josef, and Janak. 3,354,696.
- Janis, Vincent, Jr., and G. P. Bhatia, to Pettibone Mulliken Corp. Grinding machine control system. 3,354,587, 11–28–67, Cl. 51—35.
- Jank, Carl R. : *See*—
  - Midgley, Eric L., and Jank. 3,355,536.
- Jansen, Lodewijk, to Gebroeders Stork & Co's Apparatenfabriek N.V. Method of manufacturing a screen cylinder. 3,354,519, 11–28–67, Cl. 29—148.4.
- Javaux, Gustave, to Glaverbel. Bending chamber for the manufacture of sheet glass by drawing. 3,355,276, 11–28–67, Cl. 65—194.
- Jefferson Chemical Co., Inc. : *See*—
  - Milligan, John G., and Waddill. 3,355,434.
- Jelly, Sidney T. : *See*—
  - Boutland, John A., and Jelly. 3,354,858.
- Jemal, Emile J., to Mine and Smelter Supply Co. Apparatus for recovery of tallow. 3,355,255, 11–28–67, Cl. 23—280.
- Jenckel, Ludolf. Gas analysis apparatus comprising plural ionization chambers with different ionizing electron beam energy levels in the chambers. 3,355,587, 11–28–67, Cl. 250—41.9.
- Jenkin, William C., to Union Carbide Corp. Gas plating metal deposits comprising boron. 3,355,318, 11–28–67, Cl. 117—107.2.
- Jenkins, John C., to Gregory Industries, Inc. Stud welding. 3,355,132, 11–28–67, Cl. 248—59.
- Jenkins, Richard L. : *See*—
  - Guyton, James H., and Jenkins. 3,355,624.
- Jerchower, Lewis A., to Pioneer Industries, Inc. Door or window frame. 3,354,585, 11–28–67, Cl. 49—504.
- Jervis, Thomas W. V., and R. J. Galloway, to Mickleover Transport Ltd. Transport containers provided with cooling means. 3,354,667, 11–28–67, Cl. 62—372.
- Jessee, Joseph S., Jr. : *See*—
  - Orr, Ladd J., and Jessee. 3,354,809.
- Johansson, Kjell O. Ice fishing tackle for shelter use. 3,354,573, 11–28–67, Cl. 43—21.2.
- Johnson, Clarence. Force measuring instrument. 3,354,710, 11–28–67, Cl. 73—141.
- Johnson, Delmar R., and R. A. Hathaway, to Ampex Corp. Capstan and wind drive and activation mechanism therefor. 3,355,119, 11–28–67, Cl. 242—55.12.
- Johnson, Harwick, to Radio Corp. of America. Insulated-gate field effect triode with an insulator having the same atomic spacing as the channel. 3,355,637, 11–28–67, Cl. 317—235.
- Johnson, John R., and R. W. Taylor, to Royal Industries, Inc. Tying apparatus. 3,354,915, 11–28–67, Cl. 140—93.
- Johnson, Leon D. : *See*—
  - Waite, Ralph D., and Johnson. 3,354,722.
- Johnson, Marvin M., to Phillips Petroleum Co. Polymerization-inhibited butadiene as a welding and cutting torch fuel. 3,355,331, 11–28–67, Cl. 148—9.
- Johnson, Paul B. : *See*—
  - Taylor, Leta S., Johnson, and Huskey. 3,354,719.
- Johnson, Robert E. : *See*—
  - Botello, Gilber, Johnson, and Stockton. 3,355,148.
- Johnston, Lawrence M., Jr., and R. C. Schroeder, to International Harvester Co. Single lever control for dual rail transmission. 3,354,741, 11–28–67, Cl. 74—477.
- Jolly, Ross T. Insulating tumbler. 3,355,046, 11–28–67, Cl. 215—13.
- Jomi Industri A/S : *See*—
  - Rasmussen, Benny A. 3,355,194.
- Jonas, Gilbert F. : *See*—
  - Glassman, Joel, Jonas, Bass, and Pate. 3,354,487.
- Jones, Derrick A., to Minnesota Mining and Mfg. Co. Developing camera. 3,354,804, 11–28–67, Cl. 95—14.
- Jones, Evan, to Henry Valve Co. Inline refrigerant filter assembly having a bypass valve therein. 3,355,021, 11–28–67, Cl. 210—130.
- Jones, Frank E., and A. B. Castle, Sr., to United States of America, Navy. Method and apparatus for making electrical elements. 3,354,544, 11–28–67, Cl. 29—620.
- Jones, Jarman M. L. : *See*—
  - Sheppard, William G., and Jones. 3,355,072.
- Jones, John P., Jr. Electronic timer utilizing current flow through an electrolytic solution. 3,355,731, 11–28–67, Cl. 340—309.1.
- Jones & Laughlin Steel Corp. : *See*—
  - Smith, William F. 3,354,723.
- Jonsson, Kurt A., to Aktiebolaget Electrolux. Suction cleaner nozzle of the agitator type. 3,354,496, 11–28–67, Cl. 15—377.
- Joosten, Richard L. : *See*—
  - Balocca, Alfred E., and Joosten. 3,355,059.
- Jorda, Robert M., T. J. Robichaux, and N. D. Smith, Jr., to Shell Oil Co. Process for treating oily surfaces with polyepoxide compositions. 3,355,315, 11–28–67, Cl. 117—97.
- Jordan, Mahlon K., to Avoset Co. Color imparting dispenser for aerosol products. 3,355,071, 11–28–67, Cl. 222—190.
- Jordan, Russell E. : *See*—
  - Taylor, Clyde L., and Jordan. 3,354,625.
- Joron, Louis, to International Standard Electric Corp. Testing machine for wrapped connections. 3,354,708, 11–28–67, Cl. 73—133.
- Joseph, Horace M. : *See*—
  - Hecker, Klaus J., Nordseth, and Joseph. 3,355,616.
- Joseph, Richard D., and R. W. Mitten, to The General Tire & Rubber Co. Urethane foaming apparatus. 3,354,503, 11–28–67, Cl. 18—4.
- Joslyn Mfg. and Supply Co. : *See*—
  - Hornberger, Walter. 3,355,541.
- Joy Mfg. Co. : *See*—
  - McDowell, Glenn S., and Deurell. 3,355,225.
- Joyce, Peter L. : *See*—
  - Andreae, John H., and Joyce. 3,355,713.
- Junck, John A. : *See*—
  - Beyers, Marvin E., Brown, Carter, Junck, Lauterbach, and Winters. 3,354,563.
- Junior-Daalderop, Maria W. J. G. P. : *See*—
  - Daalderop, Wilhelmus H. J. D. 3,354,766.
- Jurick, Martin H. : *See*—
  - Gunderson, Robert O., and Jurick. 3,355,596.
- Jurowki Willi : *See*—
  - Fiala, Ernst J. H., Andres, and Jurowski. 3,354,906.
- Kabalan, Jimmy H., and J. F. McGurn, to North American Aviation, Inc. Stable reference apparatus. 3,354,724, 11–28–67, Cl. 73—505.

- Kabushiki Kaisha Hitachi Seisakusho : *See*—
  - Hirai, Tadamasa, Ueua, Munakata, and Watanabe. 3,355,568.
- Kabushiki Kaisha Hitachi Seisakusho and Hitachi Kasei Kogyo Kabushiki Kaisha : *See*—
  - Muta, Akinori, Furukawa, and Koyama. 3,355,527.
- Kabushiki Kaisha Honda Gijutsu Kenkyusho : *See*—
  - Kajikawa, Ryuzo, Hasimoto, and Tahara. 3,354,875.
- Kachurchak, Joseph. Plastic liner for cardboard box. 3,355,081, 11–28–67, Cl. 229—14.
- Kajikawa, Ryuzo, E. Hasimoto, and E. Tahara, to Kabushiki Kaisha Honda Gijutsu Kenkyusho. Apparatus for adjustment of fuel injection amount in internal combustion engines. 3,354,875, 11–28–67, Cl. 123—140.
- Kalafatas, Nicholas J., and G. A. Consolazio, to General Foods Corp. Process of fining gelatin using phosphates and water-soluble carbonates. 3,355,444, 11–28–67, Cl. 260—118.
- Kalafatas, Nicholas J., and G. A. Consolazio, to General Foods Corp. Process of fining gelatin by means of carbonate precipitation. 3.355,445. 11–28–67, Cl. 260—118.
- Kammerer, Archer W., Jr., and L. F. Castro, to Baker Oil Tools, Inc. Sleeve or piston type valve device. 3,355,142, 11–28–67. Cl. 251—175.
- Kane, David. Mobile irrigation devices with swivelly adjustable wheels. 3,355,109, 11–28–67, Cl. 239—213.
- Kaplan, Harry : *See*—
  - Freeman, Arthur, and Kaplan. 3,355,499.
- Karkoska, Frank D. Coating apparatus including means to rotate and translate a rod-substrate. 3,354,866, 11–28–67, Cl. 118—409.
- Karsten, Kenneth S., to R. T. Vanderbilt Co., Inc. Cleansing compositions adapted to inhibit the formation of body odor. 3,355,388, 11–28–67, Cl. 252—107.
- Kasch, Howard : *See*—
  - Vought, Robert H., and Kasch. 3,355,666.
- Kass, Robert E., to The National Cash Register Co. Cellular polyurethanes prepared utilizing sodium borohydride as a blowing agent. 3,355,398, 11–28–67, Cl. 260—2.5.
- Kassabian, William T. Gun bore protector. 3,354,569, 11–28–67, Cl. 42—1.
- Katscher, Ernst : *See*—
  - Friedmann, Hans, Katscher, and Schredl. 3,355,420.
- Katzew, Charles J., and E. F. Frost, to Brockton Contract Packaging Sales Corp. Method of manufacturing a plastic container. 3,354 603, 11–28–67. Cl. 53—30.
- Kaufman, Melvin M., to Radio Corp. of America. Memory using charge storage diodes. 3,355,720, 11–28–67, Cl. 340—173.
- Kaups, Taavi, to Chicago Bridge & Iron Co. Adjustable roof-supporting column for tanks. 3,355,052, 11–28–67, Cl. 220—18.
- Kawakami, Masamitsu, and M. Mochimaru, to Hisao Maeda, and Mosamitsu Kowakami. Constant speed electric motors including a vibrating magnet drive. 3,355,645, 11–28–67, Cl. 318—138.
- Kawakami, Shigemitsu : *See*—
  - Matsuoka, Shigeru, Masai, and Kawakami. 3,354,612.
- Kawano, Takatsugu : *See*—
  - Goto, Tetsurkazu, Nishio, Kojima, Kawano, Hayakawa, and Araki. 3,355,359.
- Kawasaki Jukogyo Kabushiki Kaisha : *See*—
  - Sagawa, Ryuichi. 3 354,785.
- Kawecki, Ralph E., to Southington Foundry Co., Inc. Method and apparatus for accurately proportioning foundry sand ingredients. 3,355,154, 11–28–67, Cl. 259—149.
- Kay-El Sales Corp. : *See*—
  - Schlegel, Karl F., Jr. 3,354 491.
- Kehrich, Leonard M., and E. L. White, to National Lead Co. Tribasic lead isophthalates and preparation therefor. 3,354,471. 11–28–67. Cl. 260—435.
- Keeking, John B. : *See*—
  - Graham, John V., Keeking, and Robinett. 3,354,832.
- Kegel, Francis C., to Barrett-Kegel Corp. Drawer. 3,355,231, 11–28–67 Cl. 312—45.
- Keith, Charles H., II. V. Norman, and W. W. Bates, Jr., to Liggett & Myers Tobacco Co. Process of impregnating adsorbent materials with metal oxides. 3,355,317, 11–28–67, Cl. 117—100.
- Kelco Co. : *See*—
  - O'Connell, John J. 3,355,447.
- Kelek Co. : *See*—
  - Kussmaul, Edwin E. 3,354,731.
- Keller, Joseph R., to American Air Filter Co., Inc. Unit filter assembly. 3,354,623. 11–28–67, Cl. 55—484.
- Keller, Joseph R., to AMP Inc. Electrical connector. 3,355,698 11–28–67. Cl. 339—97.
- Kelsey, Cadwallader W., Skycar, Inc. Circular wing structure. 3,355,124, 11–28–67, Cl. 244—35.
- Kelsey-Hayes Co. : *See*—
  - Nolan, Terence M., and Trevarrow. 3,355,049.
- Kempe, Philip C., to Canada Iron Foundries Ltd. Composite impact and abrasion resistant material. 3,355,264, 11–28–67, Cl. 29—183.5.
- Kennametal, Inc. : *See*—
  - Carlstedt, Ragnar L., and McCreery. 3,354,527.
- Kennedy, Alan M., and K. S. Wood, to Bond's Wear Pty. Ltd. Double lock stitch sewing machines. 3,354,852, 11–28–67, Cl. 112—252.
- Kennemore, Paul H. Saw chain sharpener. 3,354,753, 11–28–67, Cl. 76—37.
- Kenworthy, Grant F., to Rex Chainbelt Inc. Shock absorber. 3,354,991, 11–28–67, Cl. 188—67.
- Kerr, John : *See*—
  - Scales, John T., and Kerr. 3,354,476.
- Kerr, Robert M. Repair stand. 3,355,162, 11–28–67, Cl. 269—71.
- Kerr, Robert O. : *See*—
  - Bender, Norman A., and Kerr. 3,355,309.
- Kersting, Raymond J., to Wagner Electric Corp. Control valve. 3,354,638, 11–28–67, Cl. 60—54.5.
- Kessner, Charles : *See*—
  - Dimmitt, Robert E., and Kessner. 3,354,581.
- Kewanee Oil Co. : *See*—
  - Du Rose, Arthur H. 3,355,267.
  - Du Rose, Arthur H., and Pierce. 3,355,263.
  - Du Rose, Arthur H., and Willson. 3,355,268.
- Kiefer, John E., to Eastman Kodak Co. Polyester fibers resistant to resoiling during laundering. 3,355,413, 11–28–67, Cl. 260—31.4.
- Kilcher, Frederick S. Building structure having an elastic bearing member in at least one course joint, method for making the structure and intermediate ply for carrying. 3,354,594, 11–28–67, Cl. 52—251.
- Kilduff, Timothy J., and A. M. Biggar. Electrically conductive pressure sensitive adhesive tapes. 3,355,545, 11–28–67, Cl. 174—119.
- Kimball, Richard H., to Hooker Chemical Corp. Preparation and purification of chlorendic acid from hexachlorocyclopentadiene and maleic anhydride in a diels-alder condensation. 3,355,487, 11–28–67, Cl. 260—514.
- Kimberly-Clark Corp. : *See*—
  - Anderson, Donald J. 3,354,989.
- Kinemotive Corp. : *See*—
  - Bucalo, Louis. 3,354,999.
- King, Alan M., to Interstate United Corp. Beverage brewing apparatus. 3,354,811, 11–28–67, Cl. 99—282.
- King, Karl G., Sr. Record cleaning device. 3,355,177, 11–28–67, Cl. 274—47.
- King, Laurence F., to Esso Research and Engineering Co. Activated carbon in the preparation of binder pitch. 3,355,377, 11–28–67, Cl. 208—22.
- King, Leonard H. Pay sound system for closed circuit television in which the audio component is conveyed via carrier current transmission. 3,355,546, 11–28–67, Cl. 178—5.6.
- Kingsbury, Archie R. : *See*—
  - Meyer, Herbert H., and Kingsbury. 3,355,611.
- Kina Developments Ltd. : *See*—
  - Soan, Brian S., and Waller. 3,355,271.
- Kinsey, Ernest V. Kite control assembly. 3,355,129, 11–28–67, Cl. 244—155.
- Kintner, Paul M., and P. J. Tolan, to Cutler-Hammer, Inc. Weighing scale utilizing flexure plate pivots and horizontal damping. 3,354,974, 11–28–67, Cl. 177—229.
- Kiss, Kornel D., to Diamond Alkali Co. Polymerisation of trioxane and norbornadiene. 3,355,432, 11–28–67, Cl. 260—78.
- Kitchar, Andrew F. : *See*—
  - Abramson, Andrew E., and Kitchar. 3,354,769.
- Kittredge, Stephen F. Solenoid controlled valve mechanism. 3,355,139, 11–28–67, Cl. 251—30.
- Klaeui, Hans J., to Crompton & Knowles-Malimo, Inc. Connecting means. 3,354,572, 11–28–67, Cl. 66—84.
- Klaeui, Hans J., to Crompton & Knowles-Malimo, Inc. Connecting means. 3,354,672, 11–28–67, Cl. 66—84.
- Klauke, Erich, and E. Kuhle, to Farbenfabriken Bayer Aktiengesellschaft. N-trifluoromethylamines and process for their production. 3,355,454, 11–28–67, Cl. 260—249.5.
- Kleehammer, Raymond A. Car clothes rack. 3,355,031, 11–28–67, Cl. 211—123.
- Klein, Georges, and A. Dubois, to Compagnie Generale d'Electricite. Continuous electrodes for magnetohydrodynamic generators. 3,355,604, 11–28–67, Cl. 310—11.
- Klein, Johann, to Frans Baumgartner, Fabrik Elektrischa Apparate. Supervisory control system using a ferrite transformer and a transistor. 3,355,601, 11–28–67, Cl. 307–88.5.
- Klimek, Boleslaw, to Berg Mfg. & Sales Co. Dual application valve. 3,355.223, 11–28–67, Cl. 303—52.
- Klix, Uwe, to Entwicklungsanstalt fur Industrie-Elektronik. Controllable supply circuit for electromagnetic vibrators. 3.355,633. 11–28–67, Cl. 317–148.5.
- Kloeckner, Edmond A., and J. M. Royet, to Compagnie Generale d'Electricite. Low thermal conductivity attachment. 3,355,051, 11–28–67, Cl. 220—15.
- Kloesel, Joseph A., Jr., and S. T. Crews, to Drilco Oil Tools, Inc. Threaded connections. 3,355,192, 11–28–67, Cl. 285—94.
- Klopman, Gradus : *See*—
  - Schulcink, Lubertus, and Klopman. 3,355,157.
- Klopp, Donald W : *See*—
  - Meyers, William F., and Klopp. 3,355,328.
- Knapp, Earle L., to Armco Steel Corp. Apparatus for coating metallic strands. 3,354,864, 11–28–67, Cl. 118—63.
- Knapp, Gordon G. : *See*—
  - Coffeid, Thomas H., Knapp, and Napolitano. 3,355,504.
- Kneissl, Franz, to Franz Kneissl Skifabrik Kufstein. Ski having protective edge strips on its upper edge. 3,355,183, 11–28–67, Cl. 280—11.13.
- Kneissl, Franz Skifabrik Kufstein : *See*—
  - Kneissl, Franz. 3,355,183.
- Knickelmann, Franz-Josef, and H. Hoerter. Joint for well drilling apparatus. 3,355,188, 11–28–67, Cl. 285—13.
- Knox, Edward T. : *See*—
  - Clement, Roland E., and Knox. 3,354,847.
- Knudsen, Arnold C. : *See*—
  - Boensell, Donald W., and Knudsen. 3,355,668.
- Knudtson, Stanley B. Valve. 3,355,144, 11–28–67, Cl. 251—322.
- Kobe Steel Works, Ltd : *See*—
  - Asari, Akira 3,354,693.
  - Goto, Asahiko, 3,354,913.
- Koch, Gerhard : *See*—
  - Rothkegel, Josef, Flittner, and Koch. 3,355,330.

Koch, Ulrich H., and G. A. Soderlund, to Whitey Research Tool Co. Diaphragm valve with venting apertures in body. 3,354,897. 11-28-67, Cl. 137—312.

Kocina, Lawrence A.: *See*—
  Werner, Richard L., and Kocina. 3,354,987.

Koelle, Otto, to B. Braun. Temperature control unit for maintaining the temperature of a liquid bath at a determined magnitude. 3,354,944, 11-28-67, Cl. 165—26.

Koerner, Ralph J., to The Bunker-Ramo Corp. Electronic directional error indicating system. 3,355,705, 11-28-67, Cl. 340—27.

Koerner, Ralph J., to The Bunker-Ramo Corp. Apparatus for vehicle detection. 3,355,707, 11-28-67, Cl. 340—38.

Koerner, Ralph J., to The Bunker-Ramo Corp. Three state storage device. 3,355,726, 11-28-67, Cl. 340—174.

Kohl, Eberhard: *See*—
  Meier, Alfred, Kohl, and Rossmann. 3,354,793.

Kohn, Harold B.: *See*—
  Lewis, John D., Sze, and Kohn. 3,354,905.

Koike, Seiji: *See*—
  Hattori, Junnosuke, Ozaki, Koike, Yoshioka, and Sugiyama. 3,355,352.

Kojima, Hiroshige: *See*—
  Goto, Tetsurkazu, Nishio, Kojima, Kawano, Hayakawa, and Araki. 3,355,359.

Kolar, Jaroslav: *See*—
  Elias, Jiri, Adamkova, Boucek, Kolar, Samek, and Vlcek. 3,354,631.

Kolle, Erwin, to Daimler-Benz Aktiengesellschaft. Adjustable seat construction for motor vehicles. 3,355,211, 11-28-67, Cl. 296—65.

Koller, August, to Wenczler & Heidenhain. Device for the alignment and reading of distances and angles. 3,354,778. 11-28-67, Cl. 88—24.

Konopa, Richard L., to General Motors Corp. Piezoelectric ignition apparatus. 3,355,623, 11-28-67, Cl. 315—55.

Koppenol, Pieter, A. F. Dickson, H. S. Rutten, and G. Kruisman, to Shell Oil Co. Loading buoy having loading arms. 3,354,479, 11-28-67, Cl. 9—8.

Korbanka, Helmut, and F. Soldan, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Stable water-in-oil dispersions and process for their manufacture. 3,355,394, 11-28-67, Cl. 252—309.

Kordos, Ronald W.: *See*—
  Church, Donald S., and Kordos. 3,355,684.

Korwin, Paul, to Chemical Construction Corp. Hydrocarbon catalytic reactor with thermally insulated expansion transfer conduit. 3,355,362, 11-28-67, Cl. 196—136.

Koschier, Willi. Record card with film insert. 3,354,568, 11-28-67, Cl. 40—158.

Kosha, Andrew J., to Bead Chain Mfg. Co. Method and apparatus for making electric contact pins. 3,354,854, 11-28-67, Cl. 113—119.

Kosowsky, Leo K.: *See*—
  Bachman, William S., Kosowsky, and Deaso. 3,354,501.

Kovetz, Paul: *See*—
  Beaird, Francis M., Jr., and Kovetz. 3,355,262.

Kowakami, Mosamitsu: *See*—
  Kawakami, Masamitsu, and Mochimaru. 3,355,645.

Kowal, Leonard: *See*—
  Boylan, William F., and Kowal. 3,355,649.

Koyama, Kinichi: *See*—
  Muta, Akinori, Furukawa, and Koyama. 3,355,527.

Kraus, Guido: *See*—
  Reynolds, William G., Maeder, Kraus, and Cvacho. 3,355,060.

Krause, Herbert J.: *See*—
  Bracht, Lloyd J., Devall, and Krause. 3,355,532.

Krejci, Joseph C., and M. B. Howard, to Phillips Petroleum Co. Production of high structure furnace carbon black. 3,355,247, 11-28-67, Cl. 23—209.4.

Kriegl, Max, to Carl Hurth Maschinen- und Zahnradfabrik. Apparatus for clamping gears and the like. 3,354,781, 11-28-67, Cl. 90—1.

Kroener, Calvin: *See*—
  MacKenzie, Alan P., and Kroener. 3,355,057.

Krol, Anthony J., to Callery Chemical Co. Epoxy foams prepared by the reaction of a polyepoxide with a boroxine and an amine borane. 3,355,306, 11-28-67, Cl. 106—122.

Krol, Arthur J., to Dow Corning Corp. Denture retainer. 3,354,547, 11-28-67, Cl. 32—3.

Kron, Lester E.: *See*—
  Clement, Clyde H. 3,355,627.

Kronenberg, Klaus J.: *See*—
  Sneed, Richard J., and Kronenberg. 3,354,713.

Krueger, Keith T.: *See*—
  Dietiker, Paul, Krueger, and Morgan. 3,354,901.

Kruglinski, Frank A.: *See*—
  Miller, Joseph A., and Kruglinski. 3,354,606.

Krupick, Walter J., and R. F. Cimera, to General Precision, Inc. Two-axis gyro. 3,354,726, 11-28-67, Cl. 74—5.

Kryzer, Benjamin H., T. J. Schoenecker, and K. J. Burkhardt, to Union Tank Car Co. Water conditioning system. 3,354,907, 11-28-67, Cl. 137—599.1.

Kubickova, Jarmila: *See*—
  Cizek, Leopold, Silar, Zoubele, and Kubickova. 3,354,627.

Kudlaty, Walter J., to Marvel Engineering Co. Filter manifold. 3,355,025, 11-28-67, Cl. 210—249.

Kudo, Shiro, S. Yada, T. Yamauchi, and E. Fukasaku, to Kyowa Hakko Kogyo Co., Ltd. Alloys of aluminum-cadmium-copper. 3,355,282, 11-28-67, Cl. 75—139.

Kuehl, Guenter H., to Mobil Oil Corp. Crystalline zeolite ZK-21. 3,355,246, 11-28-67, Cl. 23—113.

Kuenzel, Robert L. Card construction. 3,354,560, 11-28-67, Cl. 35—26.

Kugler, Emanuel M. Method and apparatus for making bags. 3,354,795, 11-28-67, Cl. 93—8.

Kuhle, Engelbert: *See*—
  Klauke, Erich, and Kuhle. 3,355,454.

Kuhule, Willi, and W. Frei, to Zahnradfabrik Friedrichshafen, Aktiengesellschaft. Shifting device for motor vehicle transmissions. 3,354,744, 11-28-67, Cl. 74—645.

Kulling, Achim: *See*—
  Tillmann, Peter, Kulling, and Hitzemann. 3,355,253.

Kunze, Fritz J.: *See*—
  Gerhardt, Wolfgang W., Kunze, and Pfaff. 3,355,117.

Küpper, Wilhelm, to W. Reiners. Device for removing a foot bunch of yarn from a cop. 3,355,118, 11-28-67, Cl. 242—35.6.

Kuramoto, Saichiro, K. Fujimoto, Y. Okuno, H. Sakamoto, M. Nakagawa, and T. Mizutani, to Sumitomo Chemical Co. O,O - dimethyl - O-(3-chloro-4-alkylsulfamoylphenyl)phosphorothioates. 3,355,524, 11-28-67, Cl. 260—944.

Kurashiki Rayon Co., Ltd.: *See*—
  Itoi, Kazuo. 3,355,443.

Kurt Stoll K.G. Maschinen u Apparatebau: *See*—
  Stoll, Kurt. 3,354,894.

Kussmaul, Edwin E., to Kelek Co. Plunger actuated switch. 3,354,731, 11-28-67, Cl. 74—55.

Kuwahara, Sakuro: *See*—
  Takayanagi, Umekichi, and Kuwahara. 3,355,195.

Kyle, William: *See*—
  Howe, Warren B., and Kyle. 3,354,821.

Kyowa Hakko Kogyo Co., Ltd.: *See*—
  Kudo, Shiro, S. Yada, T. Yamauchi, and E. Fukasaku. 3,355,282.

L & L Mfg., Inc.: *See*—
  Southwell, Wyndham F., and Wehrmann. 3,355,165.

LTV Electrosystems, Inc.: *See*—
  Bracht, Lloyd J., Devall, and Krause. 3,355,532.

Laa, Friedrich, and K. Rupp, to North American Philips Co. Inc. Automatic uncoupling apparatus for a recorder/reproducer. 3,355,557, 11-28-67, Cl. 179—100.2.

Lachut, Frank J.: *See*—
  Gagnon, Roland K., and Lachut. 3,355,314.

Lackowski, Donald H., to United States of America, Navy. Magnetic shaft-to-digital encoder readout buffer. 3,355,712, 11-28-67, Cl. 340—172.

Laing, Nikolaus. Device for the magnetic transmission of torque. 3,354,833, 11-28-67, Cl. 103—87.

Lake, Francis K., to Addressograph-Multigraph Corp. Ink fountain for dispensing packaged ink. 3,354,823, 11-28-67, Cl. 101—350.

Lakso, Eino E. Slat type counting and filling machine. 3,354,607, 11-28-67, Cl. 53—78.

Lally, Gordon J.: *See*—
  Paddison, Eric, and Lally. 3,355,689.

Lam, John S.: *See*—
  Swanson, William C., Lam, and Moyer. 3,354,981.

Lamar, Stanley T., to E. I. du Pont de Nemours and Co. Heat sealable-aluminum foil paper laminate. 3,355,348, 11-28-67, Cl. 161—213.

Lamb-Weston, Inc.: *See*—
  McLaughlin, Richard L., and Anderson. 3,355,299.

Lambert, James H., to Peterson Machine Tool, Inc. Device for checking seat loading spring pressure of valves in internal combustion engines. 3,354,556, 11-28-67, Cl. 73—118.

Landbrecht, Franz: *See*—
  Winkler, Alfred, Engelsmann, Landbrecht, and Bammesberger. 3,354,803.

Lanman, Robert K., to Armorlite Lens Co., Inc. Method of supporting lens blanks for grinding and polishing. 3,355,342, 11-28-67, Cl. 156—295.

Lannerd, Paul U., deceased (by R. P. Lannerd). Reversing mechanism for digital counters. 3,355,103, 11-28-67, Cl. 235—103.

Lannerd, Robert P.: *See*—
  Lannerd, Paul U. 3,355,103.

La Pine Scientific Co.: *See*—
  MacKenzie, Alan P., and Kroener. 3,355,057.

La Publicite Francaise: *See*—
  Dangauthier, Marcel. 3,354,874.

Latham, Peter A., and P. E. Brefka, to Mobil Oil Corp. Nestable bodies for rigid containers. 3,355,063, 11-28-67, Cl. 220—97.

Lauterbach, Jerre F.: *See*—
  Beyers, Marvin E., Brown, Carter, Junck, Lauterbach, and Winters. 3,354,563.

Lawrence, Paul A.: *See*—
  Gardner, John F., Lawrence, and Turnbull. 3,355,381.

Lawrence, Robert, J. N. Leonard, and R. C. Williams, to The Bunker-Ramo Corp. Method of forming holes through circuit boards. 3,354,543, 11-28-67, Cl. 29—625.

Lawrence, Robert, III, to Hienicke Instruments Co. Pass-through cleaning apparatus. 3,354,495, 11-28-67, Cl. 15—302.

Learn, Arthur J.: *See*—
  Spriggs, Rueben S., and Learn. 3,355,320.

Leary, Ralph J.: *See*—
  Argabright, Perry A., and Leary. 3,355,460.

Le Bihan, Raymond, and D. Maugis. Ion source having critically dimensioned extraction means. 3,355,615, 11-28-67, Cl. 313—63.

Lee, Hop. Electric sockets mounted in an outlet box. 3,355,700, 11-28-67, Cl. 339—119.

Lee, Kenneth: *See*—
  Bradshaw, Arthur, Lee, Swales, and Voyle. 3,354,486.

Leeds & Northrup Co.: *See*—
  Shreve, Warren T. 3,354,773.

Leenhouts, Albert C., to The Superior Electric Co. Plural channel electric pulse supplying device. 3,355,642, 11-28-67, Cl. 318—28.

Le Fave, James E. Key holder. 3,354,679, 11-28-67, Cl. 70—456.

Legrande, John. Adjustable wrench. 3,354,755, 11-28-67, Cl. 81—314.

Lehmann, Guenther W. Deep-submergence foundation vehicle. 3,354,659, 11-28-67, Cl. 61—69.

Lehner, Karl, to Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen. Apparatus for melting plastic granules. 3,354,504, 11-28-67, Cl. 18—8.

Leinassar, Jorma M. Adjustable stirrup for physician's examining table. 3,355,163, 11-28-67, Cl. 269—328.

Lemière, Jean, and C. M. Meiss, to International Business Machines Corp. Synchronized clock generator. 3,355,550, 11-28-67, Cl. 178—88.

Leonard, James H., to Square D Co. Electric circuit breaker having improved operating means. 3,355,685, 11-28-67, Cl. 335—8.

Leonard, John N.: *See*—
  Lawrence, Robert, Leonard, and Williams. 3,354,543.

Leonard, Joseph J., to Shell Oil Co. Poly-alpha-olefin dewaxing aid. 3,355,379, 11-28-67, Cl. 208—33.

Leonard, Thomas R., to General Motors Corp. Engine with baffled oil pan. 3,354,988, 11-28-67, Cl. 184—6.

Leonardi, Sam. Apparatus for performing underwater operations. 3,354,658, 11-28-67, Cl. 61—69.

Le Pain, Ellery J., to Plumbing Research and Development Co. Self-wrapping gift box. 3,355,092, 11-28-67, Cl. 229—87.

Lerond, Pierre, to Commissariat al'Energie Atomique. Magneto-hydrodynamic generator. 3,355,606, 11-28-67, Cl. 310—11.

Leschinger, Franz, and K. Gornowitz, to Albert Nestler A.G. Drawing apparatus including a running carriage. 3,354,550, 11-28-67, Cl. 33—79.

Lesney, Andrew: *See*—
  Hudson, Robert M., and Lesney. 3,355,265.

Lesuk, Alex, to Sterling Drug, Inc. Recovery and purification of urokinase. 3,355,361, 11-28-67, Cl. 195—62.

Letournier, Roger: *See*—
  Patriarche, Pierre, and Letournier. 3,355,274.

Lever Brothers Co.: *See*—
  Dallas, Michael S., and Hilton. 3,355,465.

Levesque, George N., to Brown & Sharpe Mfg. Co. Pressure fluid control valve. 3,354,908, 11-28-67, Cl. 137—610.

Levinsky, Paul F., to The Thomas and Betts Co., Inc. Compressible connector. 3,354,517, 11-28-67, Cl. 24—123.

Levinson, Allen. Odometer for golf cart. 3,355,101, 11-28-67, Cl. 235—95.

Levy, Mortimer: *See*—
  Hall, Richard H., and Levy. 3,355,289.

Lewis, Carl M., to The Trane Co. Condenser fan speed control. 3,354,665, 11-28-67, Cl. 62—184.

Lewis, Clarence A., and J. F. O'Brien, to Champlain Co., Inc. Bi-directional electrical servo system. 3,355,640, 11-28-67, Cl. 318—18.

Lewis, Jess A. Method and apparatus for automatic transmission repair. 3,354,534, 11-28-67, Cl. 29—402.

Lewis, Jess A. Apparatus and method for clutch repair. 3,354,996, 11-28-67, Cl. 192—85.

Lewis, John D., M. C. Sze, and H. B. Kohn, to Veboc Corp. Fluid distributor. 3,354,905, 11-28-67, Cl. 137—590.

Leybold-Anlagen Holding A.G.: *See*—
  Nerge, Wilhelm, and Eilenberg. 3,354,609.

Lich, Richard L., and R. R. Cease, to General Steel Industries, Inc. Detachable bulkhead post. 3,354,839, 11-28-67, Cl. 105—376.

Liggett & Myers Tobacco Co.: *See*—
  Hall, Floyd V. 3,354,887.
  Keith, Charles H., II., Norman, and Bates. 3,355,317.

Liick, Leonard P. Rotary cutters for sheet material. 3,354,768, 11-28-67, Cl. 83—345.

Lily-Tulip Cup Corp.: *See*—
  Amberg, Stephen W., Vickary, and St. Clair. 3,354,604.
  Amberg, Stephen W. and R. G., Porter, and Phillips. 3,354,605.
  St. Clair, David L., Amberg, Doherty, and Phillips. 3,354,614.

Lindenblad, Nils E., to United States of America, Navy. Combined thermoelectric operator and storage battery operation. 3,355,632, 11-28-67, Cl. 320—39.

Linder, Jerome: *See*—
  Weil, Edward D., and Linder. 3,355,278.

Lindstrom, Victor C. O., to Jagenburg & Medin AB. Sealed cartons. 3,355,085, 11-28-67, Cl. 229—31.

Lipps, Delbert A., J. D. Best, and P. A. Rubero, to Freeport Sulphur Co. Process for melting sulfur. 3,355,259, 11-28-67, Cl. 23—293.

Little, Steven M.: *See*—
  Shefler, Sydney, and Little. 3,354,828.

Loba Chemie Dr. Paul Low-Beer & Co.: *See*—
  Friedmann, Hans, Katscher, and Schredl. 3,355,420.

Lockheed Aircraft Corp.: *See*—
  Newman, Ronald B. 3,355,207.
  Nielsen, Niels H. 3,354,980.
  Rischman, Robert L. 3,354,494.

Loebeck, Gordon J.: *See*—
  Vercellotti, Dale J. 3,355,032.

Logue, Robert W.: *See*—
  Skanes, Frederick A., and Logue. 3,355,224.

Lombard Corp.: *See*—
  Lombard, Daniel L. 3,354,681.

Lombard, Daniel L., to Lombard Corp. Tube forming means and method. 3,354,681, 11-28-67, Cl. 72—166.

Loncrini, Donald F., to General Electric Co. Polyimides of a bis-(trimellitate) dianhydride and a diamine. 3,355,427, 11-28-67, Cl. 260—47.

Longo, Margaret E. Ear guards. 3,354,471, 11-28-67, Cl. 2—174.

Lonza, Ltd.: *See*—
  Pino, Piero, Braca, and Sbrana. 3,355,503.

Loomis Hydraulic Testing Co., Inc.: *See*—
  Wilkerson, John P. 3,354,697.

Lopatka, Dale R.: *See*—
  Ferdinand, Irwin J., and Lopatka. 3,355,033.

Lopes, John, to Universal Corrugated Box Machinery Corp. Squaring equipment for folded box blanks. 3,354,796, 11-28-67, Cl. 93—36.

Lopez, Socorro. Broomcorn separating device. 3,355,217, 11-28-67, Cl. 300—18.

Lorain Products Corp.: *See*—
  Paradissis, Pantelis P. 3,355,653.

Lorang, Walter R. Simplified coffee making machine. 3,354,810, 11-28-67, Cl. 99—282.

Lord, Philip A.: *See*—
  Grubb, Harold R., Haskell, Lord, and Rent. 3,355,722.

Loter, Ira, to Nopco Chemical Co. Process of making chemically acidified sour cream type products. 3,355,298, 11-28-67, Cl. 99—54.

Loukopoulos, Loukas. Clasp envelope. 3,355,091, 11-28-67, Cl. 229—78.

Lounsberry, Stephen M., Jr.: *See*—
  Steele, James R., and Lounsberry. 3,355,105.

Lucas, Jean C., to Saint-Gobain Nucleaire. Method and apparatus for loading and unloading a filter for radioactive gases. 3,354,616, 11-28-67, Cl. 55—96.

Lucas, Paul G., to Adage, Inc. Self-programmed serial to parallel converter. 3,355,732, 11-28-67, Cl. 340—347.

Lucchesi, Peter J.: *See*—
  Carter, James L., Lucchesi, and Nightingale. 3,355,509.

Luckenbach, Edward C., to Esso Research and Engineering Co. Controlling catalyst holdup in conversion of hydrocarbons. 3,355,380, 11-28-67, Cl. 208—153.

Ludwig, Wilhelm. Card support. 3,354,885, 11-28-67, Cl. 129—16.1.

Lummus, James L., to Pan American Petroleum Corp. Controlling high-pressure wells while drilling. 3,354,970, 11-28-67, Cl. 175—218.

Lunsford, Charles L.: *See*—
  Braunlich, Frank H., Jr., and Lunsford. 3,354,960.

Lutz, Martin R., G. Nowlin, and H. Stange, to FMC Corp. Novel phosphorylated polyols and polyurethanes produced therefrom. 3,355,436, 11-28-67, Cl. 260—75.

Lyerly, William M., to E. I. du Pont de Nemours and Co. thickened water-bearing inorganic oxidizer salt explosive containing cross-linked galactomannan and polyacrylamide. 3,355,336, 11-28-67, Cl. 149—60.

Lyness, Warren I., and D. E. O'Connor, to The Procter & Gamble Co. Preparation of ketosulfoxides. 3,355,494, 11-28-67, Cl. 260—586.

Lynnworth, Lawrence C.: *See*—
  Carnevale, Edmund H., and Lynnworth. 3,354,699.

Lyons, Harold D., to Gulf Oil Corp. Preparation of ethylene and itaconic anhydride copolymers. 3,355,438, 11-28-67, Cl. 260—78.5.

Lystad, Leonard A., to General Motors Corp. Window regulator mechanism. 3,354 582, 11-28-67, Cl. 49—227.

M&T Chemicals Inc.: *See*—
  Hirshman, Justin L., and Natoli. 3,355,468.
  Natoli, Joseph G. 3,355,470.
  Remes, Nathaniel L., and Ventura. 3,355,472.

Machinery Center, Inc.: *See*—
  O'Leary, Paul C. 3,355,041.

Machinery Specialties Pty. Ltd.: *See*—
  Allwood, John. 3,355,696.

MacKenzie, Alan P., and C. Kroener, to La Pine Scientific Co. Desiccator seal. 3,355,057, 11-28-67, Cl. 220—46.

Mackley, Charles J., to Pennsalt Chemicals Corp. Process for removing organic coatings. 3,355,385, 11-28-67, Cl. 252—104.

Mackles, Leonard: *See*—
  Puetzer, Bruno, Mackles, and Perl. 3,355,354.

Macrow, Lawrence. Air distribution device. 3,354,808, 11-28-67, Cl. 98—40.

Madden, William M., to United Aircraft Corp. Pressure actuated fluid seal. 3,354,649, 11-28-67, Cl. 60—271.

Maeda, Hisao: *See*—
  Kawakami, Masamitsu, and Mochimaru. 3,355,645.

Maeder, Edward G.: *See*—
  Reynolds, William G., Maeder, Kraus, and Cvacho. 3,355,060.

Magnavox Co., The: *See*—
  Fordeck, William A., and Hart. 3,355,131.

Magnetic Devices, Inc.: *See*—
  Richards, Chester L., Jr., and Smith. 3,355,209.

Magoon, Eugene F.: *See*—
  Cannell, Lawrence G., and Magoon. 3,355,510.

Mahaffy & Harder Engineering Co.: *See*—
  Anderson, George W., Harder, and Mahaffy. 3,354,613.

Mahaffy, Reid A.: *See*—
  Anderson, George W., Harder, and Mahaffy. 3,354,613.

Mahle Komm.-Ges.: *See*—
  Meier, Alfred, Kohl, and Rossmann. 3,354,793.

Maier, William. Junction boxes for electrical conduits. 3,355,048, 11-28-67, Cl. 220—3.94.

Malaker Laboratories, Inc.: *See*—
  Daunt, John G. 3,354,662.

Malco Mfg. Co.: *See*—
  Biba, Edward A. 3,355,701.

Malen, Charles E.: *See*—
  Boissier, Jacques R., and Malen. 3,355,459.

Mallia, Joseph C., to Western Electric Co. Inc. Enclosing a metal support with a printed circuit containing envelope. 3,354,542, 11-28-67, Cl. 29—625.

Maloney, Daniel E., and R. W. Rees, to E. I. du Pont de Nemours and Co. Polyolefin blends containing free-radical ethylene polymers and minor amounts of isotactic polypropylene. 3,355,520, 11-28-67, Cl. 260—897.

Malroux, Rene, to Pulse Jet Corp. Pulse-jet engines of the valveless type. 3,354,650, 11-28-67, Cl. 60—249.
Mann, Karl E., to Otto Fuchs K.G. Manufacture of light-metal castings. 3,354,935, 11-28-67, Cl. 164—48.
Manson, Walter J., to National-Standard Co. Combination wire treating and drawing apparatus and process. 3,354,687, 11-28-67, Cl. 72—280.
Manspeaker, Robert O., 25% to R. Woods and 50% to M. Woods. Crimping and forming means for pie making machines. 3,354,842, 11-28-67, Cl. 107—1.
Mapham, Neville W., to General Electric Co. Triggering means for controlled rectifiers. 3,355,600, 11-28-67, Cl. 307—88.5.
Marconi Co. Ltd., The: *See*—
  Byatt, Dennis W. G. 3,355,737.
Maremont Corp.: *See*—
  Chilpan, Kurt C. 3,354,628.
Marie, Georges R. P. Slow speed electric motor. 3,355,648, 11-28-67, Cl. 318—222.
Markowicz, Marian: *See*—
  Ferrary, Ferdinand F., Feldstein, Dziekonski, Markowicz, and Dombroski. 3,354,846.
Marquart, Gordon L. R., to Deere & Co. Vehicle planetary transmission and PTO. 3,354,729, 11-28-67, Cl. 74—15.84.
Marquis, David M., to Cheveron Research Co. Detergent bars having lime soap dispersing characteristics. 3,355,389, 11-28-67, Cl. 252—121.
Martin, Chester T. Structural connection for beds and the like. 3,354,475, 11-28-67, Cl. 5—93.
Martin, Derek J., to D. Wickman & Co. Ltd. Method of erecting a mast. 3,354,599, 11-28-67, Cl. 52—741.
Martin, Kenneth V., to E. I. du Pont de Nemours and Co. Sulfur-cured mineral-loaded-alpha-olefins with reduced surface bloom. 3,355,417, 11-28-67, Cl. 260—41.
Marsh, Roger F., to Consolidated Electrodynamics Corp. Method and apparatus for chromato-graphic moisture analysis. 3,355,367, 11-28-67, Cl. 204—1.
Martzolff, Clement L.: *See*—
  Hoistington, Edward C., and Martzolff. 3,354,617.
Marvel Engineering Co.: *See*—
  Kudlaty, Walter J. 3,355,025.
Marvin Glass & Associates: *See*—
  Glass, Marvin I., and Meyer. 3,354,577.
Marwood, Charles T.: *See*—
  Goslin, Geoffrey W., and Marwood. 3,355,644.
Masai, Shohachi: *See*—
  Matsuoka, Shigeru, and Masai. 3,354,612.
Masters, Don G., and W. C. Worstell, to Power Tube, Inc. Boiler tube cleaning apparatus. 3,354,490, 11-28-67, Cl. 15—104.1.
Masunaka, Shingenobu: *See*—
  Sasaki, Minoru, Yamamoto, Ichikawa, Ohzeki, Senda, Masunaka. 3,355,402.
Matkan, Josef, to Research Laboratories of Australia Pty. Ltd. Electrostatic printing method and apparatus. 3,355,288, 11-28-67, Cl. 96—1.
Matsuoka, Shigeru, S. Masai, and S. Kawakami, to Asahi Kasei Kogya Kabushiki Kaisha. Apparatus for wrapping rayon cakes. 3,354,612, 11-28-67, Cl. 53—204.
Matsushita Electric Industrial Co., Ltd.: *See*—
  Aratani, Shozo, and Morita. 3,355,547.
Mattel, Inc.: *See*—
  Ryan, John W. 3,354,578.
Mattick, James L., to Firth Cleveland Fastenings Ltd. Self-locking nut and method of manufacturing the same. 3,354,926, 11-28-67, Cl. 151—21.
Matzen, Walter T., Jr.: *See*—
  Emmons, Stephen P., Matzen, and Spence. 3,354,565.
Maugis, Daniel: *See*—
  Le Bihan, Raymond, and Maugis. 3,355,615.
Maya, Walter, and H. F. Bauer, to North American Aviation, Inc. Chlorine pentafluoride and method. 3,354,646, 11-28-67, Cl. 60—211.
Mayer, George: *See*—
  Haynes, Alan G., and Mayer. 3,355,333.
Mayer, James F., and J. L. Harrier, to Standard Oil Co. Process and composition of matter. 3,355,408, 11-28-67, Cl. 260—29.6.
Mayes, Paul E., to University of Illinois Foundation. Log-periodic zig zag antenna. 3,355,740, 11-28-67, Cl. 343—792.5.
McCahon, Richard W.: *See*—
  Heltzen John H., and McCahon. 3,355,155.
McCann, Keith: *See*—
  Craggs, Joseph, and McCann. 3,355,005.
McClelland, Orville, L.: *See*—
  Bell, Ross L., Carrel, and McClelland. 3,355,739.
McClure, Ellis G., ½ to G. Graf. Vehicle mounted asphalt cutter. 3,355,214, 11-28-67, Cl. 299—40.
McConnaughey, Paul W., to Mine Safety Appliances Co. Determination of chlorine dioxide. 3,355,251, 11-28-67, Cl. 23—232.
McCreery, James F.: *See*—
  Carlstedt, Ragnar L., and McCreery. 3,354,527.
McDowell, Glenn S., and C. G. Deurell, to Joy Mfg. Co. Grouser configuration for track tread links. 3,355,225, 11-28-67, Cl. 305—53.
McFarlan, Alden I. Air conditioning system. 3,354,943, 11-28-67, Cl. 165—2.
McGann Elton Y.: *See*—
  Axelson, Carl A., McGann, and Smith. 3,354,826.
McGirr, Robert, to Atlas Chemical Industries, Inc. Retractable piston actuator. 3,354,634, 11-28-67, Cl. 60—26.1.
McGraw-Edison Co.: *See*—
  Barwick LeRoy E. 3,355,201.
  Whitlock, Bruce N. 3,354,557.
McGraw, Leslie D.: *See*—
  Smith, Edwin J., and McGraw. 3,355,368.
McGrew, John M., Jr., to General Electric Co. Gas buffered screw seal. 3,355,179, 11-28-67, Cl. 277—134.
McGurn, James F.: *See*—
  Kabalan, Jimmy H., and McGurn. 3,354,724.
McHenry, Edwin J., to Bell Telephone Laboratories, Inc. Battery plate manufacture. 3,355,326, 11-28-67, Cl. 136—24.
McKeon, Alexander, to International Business Machines Corp. Information storage matrix. 3,355,725, 11-28-67, Cl. 340—174.
McKinnon, Matthew C.: *See*—
  Hile, John W., and McKinnon. 3 355,371.
McKinnon, Phillip R. Air-conditioning system for a mobile home. 3,354,947, 11-28-67, Cl. 165—50.
McLaughlin, Richard L., and E. E. Anderson, to Lamb-Weston, Inc. Method of preparing deep fat fried French and string potatoes. 3,355,299, 11-28-67, Cl. 99—100.
McLees, Raymond A., Jr. Ring guard having pivoted locking link. 3,354,669, 11-28-67, Cl. 63—15.6.
Meadow, Morton: *See*—
  Berkowitz, Sidney, Meadow, and Bunin. 3,355,486.
Mebius, Jacobus E.: *See*—
  Meijer, Hermanus, and Mebius. 3,354,653.
Meger, Alfred F., and A. L. Hawthorne, to J. M. J. Industries, Inc. Striking plate for disintegrating mill. 3,355,113, 11-28-67. Cl. 241—191.
Meier, Alfred, E. Kohl, and E. Rossmann, to Mahle Komm.-Ges. Piston for internal combustion engines. 3,354,793, 11-28-67, Cl. 92—231.
Meigs, Frederick M., A. L. Micchelli, D. Wasserman, and J. D. Garber, to Merck & Co., Inc. N-alkenyl pyroglutamic acid amides, salts and 1,1′ methylene bis-(allyl pyroglutamates) thereof. 3,355,458, 11-28-67, Cl. 260—326.3.
Meijer, Hermanus, and J. E. Mebius, to Shell Oil Co. Method for applying bituminized mineral aggregate to an underwater surface. 3,354,653, 11-28-67, Cl. 61—1.
Melas Constantin M.: *See*—
  Lemière, Jean, and Melas. 3,355,550.
Mellon, John J., Jr.: *See*—
  Harding, Jonathan, Mellon, and Schmandt. 3,354,480.
Mellott, Hayes R.: *See*—
  Mellott, John S. and H. R. 3.355,042.
Mellott, John S., and H. R. Live deck and loader assembly. 3,355,042, 11-28-6, Cl. 214—91.
Melton, James O., and T. B. Wilkinson, to Jamco, Inc. Ball and socket joint. 3,355,199, 11-28-67, Cl. 287—90.
Mentzer, Ralph J.: *See*—
  Roche, Thomas J., and Mentzer. 3,354,523.
Menzel Conrad T., to John Oster Mfg. Co. Lather generator. 3,355,151, 11-28-67, Cl. 259—10.
Menzel, Harry R.: *See*—
  Dale, John R., and Menzel. 3,354,860.
Merck & Co., Inc.: *See*—
  Meigs, Frederick M., Micchelli, Wasserman, and Garber. 3,355,458.
Merica, Franklin E.: *See*—
  Frei, Arthur J., Sr., and Merica. 3,355,138.
Merrick Scale Mfg. Co.: *See*—
  Christmann, John L. 3,354,698.
Merten, Robert L.: *See*—
  Thomas, David E., and Merten. 3,355,538.
Metzger, Wilford E., Jr., to Birdsboro Corp. Rolling mill handling mechanism. 3,354,684, 11-28-67, Cl. 72—222.
Meyer, Burton C.: *See*—
  Glass, Marvin I., and Meyer. 3,354,577.
Meyer, Engelbert A., to Warren Fastener Corp. Adapter. 3 354,597, 11-28-67, Cl. 52—718.
Meyer, Herbert H., and A. R. Kingsbury, to Union Carbide Corp. Brush clip assembly. 3,355,611, 11-28-67, Cl. 310—248.
Meyer, Werner H., and J. J. Curry, to American Machine & Foundry Co. Dispensing apparatus. 3,354,813, 11-28-67, Cl. 99—336.
Meyers, George L., to American Can Co. Bread package. 3,355,303, 11-28-67, Cl. 99—173.
Meyers, William F., and D. W. Klopp, to Honeywell, Inc. Electric current-producing cell with buffer zone. 3,355,328, 11-28-67. Cl. 136—93.
Micchelli, Albert L.: *See*—
  Meigs, Frederick M., Micchelli, Wasserman, and Garber. 3,355,458.
Mickel, George E., Jr.: *See*—
  Hoover, D. Eugene. 3,354,518.
Mickleover Transport Ltd.: *See*—
  Jervis, Thomas W. V., and Galloway. 3,354,667.
Middlesworth, Tommy A., to International Harvester Co. Variable length conveyor. 3,355,007, 11-28-67, Cl. 198—139.
Middleton, Verne L., to Olin Mathieson Chemical Corp. Method for preparing expanded pressure passageway products. 3,354,530, 11-28-67, Cl. 29—157.3.
Midgley, Eric L., and C. R. Jank. to Sweetheart Plastics, Inc. Rim rolling machine and method. 3,355,536, 11-28-67, Cl. 264—322.
Midland-Ross Corp.: *See*—
  Hanna. Ralph. 3,355,156.
  Pomper, Anthony W., and Grant. 3.354,867.
  Willison, Donald, De Penti, and Weber. 3,354,836.
Milazzo, Carl J., to Hohl Machine & Conveyor Co., Inc. Accumulating transfer conveyor. 3,355,008, 11-28-67, Cl. 198—219.
Miles, Gilbert D., to Colgate-Palmolive Co. Dispensing container. 3 355,069, 11-28-67, Cl. 222—83.
Miller, Henry C., and E. L. Muetterties, to E. I. du Pont de Nemours and Co. Chemical process. 3,355,261, 11-28-67, Cl. 23—362.
Miller, Frank E: *See*—
  Shaffer, William R., and Miller. 3,355,112.

Miller, Joseph A., and F. A. Kruglinski, to General Corrugated Machinery Co., Inc. Apparatus for automatically sealing cartons. 3,354,606, 11-28-67, Cl. 53—76.
Miller, Joseph P., to Emhart Corp. Mold cooling control apparatus for a glassware forming machine. 3,355,277, 11-28-67, Cl. 65—355.
Miller, Leo C., to United States of America, Navy. Memory control and access system. 3,355,716, 11-28-67, Cl. 340—172.5.
Milligan, John G., and H. G. Waddill, to Jefferson Chemical Co., Inc. Method for preparing polyester resins. 3,355,434, 11-28-67, Cl. 260—75.
Milne, John S., to Monsanto Co. Container closure seam. 3,355,062, 11-28-67, Cl. 220—67.
Mine Safety Appliances Co.: *See—*
  McConnaughey, Paul W. 3,355,251.
Mine and Smelter Supply Co.: *See—*
  Jemal, Emile J. 3,355,255.
Miner Industries, Inc.: *See—*
  Swee, Eugene A. 3,355,582.
Minnesota Mining and Mfg. Co.: *See—*
  Capps, John P. 3,355,743.
  Harrison, George C. 3,355,196.
  Jones, Derrick A. 3,354,804.
  Rebertus, Robert L., and Gagnon. 3,355,492.
  Swanson, Roger E. 3,355,393.
Minnick, Pasco A., to Bowles Engineering Corp. Hot wire anemometers. 3,354,717, 11-28-67, Cl. 73—204.
Mistic, George, to Motorola, Inc. Method of lining internal spiral grooves of a tube with resilient material. 3,355,533, 11-28-67, Cl. 264—267.
Mitchell, Harry W., and M. R. Murphy, to Bell Aerospace Corp. Designated area instrument landing system. 3,355,733, 11-28-67, Cl. 343—7.9.
Mitchell, John R., to G.Q. Parachute Co. Ltd. Harness. 3,355,128, 11-28-67, Cl. 244—151.
Mitchell, Ryan D., to Davco Mfg. Corp. Eductor control in sewage treatment plant. 3,355,019, 11-28-67, Cl. 210—104.
Mite Corp.: *See—*
  Curello, Charles, and Nickerson. 3,354,849.
Mitsubishi Rayon Co., Ltd.: *See—*
  Sasaki, Minoru, Yamamoto, Ichikawa, Ohzeki, Senda, and Masunaka. 3,355,402.
Mitten, Robert W.: *See—*
  Joseph, Richard D., and Mitten. 3,354,503.
Miyagi, Masahisa, to Nippon Electric Co. Ltd. Synchronizing system for multifrequency carrier transmission. 3,355,553, 11-28-67, Cl. 179—15.
Mobil Oil Corp.: *See—*
  Fahnestock, Frank C. 3,354,656.
  Kuehl, Guenter H. 3,355,246.
  Latham, Peter A., and Brefka. 3,353,063.
  Stevenson, Robert W. 3,355,416.
Mochimaru, Masayoshi: *See—*
  Kawakami, Masamitsu, and Mochimaru. 3,355,645.
Moe, James A. Dispensing apparatus. 3,355,065, 11-28-67, Cl. 221—90.
Moen, Alfred M. Mixing valve. 3,354,910, 11-28-67, Cl. 137—625.17.
Molins Organisation Ltd., The: *See—*
  Muir, Douglas W. B. 3,855.592.
Moll, Werner, to Firma Werner Moll. Apparatus for the production of negatives by mechanical means. 3,354,500, 11-28-67, Cl. 18—1.
Mollick, Milton: *See—*
  Harland, Philip W., and Mollick. 3,355,068.
Molnar, Eugene, to Coe Laboratories Inc. Method of molding urethane. 8 355,526, 11-28-67, Cl. 264—16.
Monsanto Chemicals Ltd.: *See—*
  Worrall, Roy, and Shepherd. 3,355,322.
  Worrall, Roy. 3,355,415.
Monsanto Co.: *See—*
  Donovan, Donald W. 3 355,084.
  Hahn, Frank J. 3.855,403.
  Milne, John S. 3.855.062.
  Ratts Kenneth W. 3,855.351.
  Zienty, Ferdinand B., and Holm. 3,355,464.
Moody, Floyd O.: *See—*
  Moorman, Earl J., and Moody. 3 854.583.
Moore, Jack L. and J. A. Roming. Methods of and apparatus for producing shaped products. 3,355,073, 11-28-67, Cl. 223—12.
Moore, Robert D., Jr., to Electro-Optical Systems, Inc. Liquid protection of electrodes. 3,354,644, 11-28-67, Cl. 60—202.
Moore, Samuel, and Co.: *See—*
  Chrow, Albert E. 3.355,572.
Moore & Steele Corp.: *See—*
  Steele, James R., and Lounsberry. 3,355,105.
Moorman, Earl J., and F. O. Moody, to General Motors Corp. Refrigerator door opener. 3,354,583, 11-28-67, Cl. 49—276.
Morgan, Fred K.: *See—*
  Hansley, Virgil L., and Morgan. 3,355,281.
Morgan, Hugh M.: *See—*
  Dietiker, Paul, Krueger, and Morgan. 3,354,901.
Morgen, Herman J. Device for closing and opening zippers. 3,354,520, 11-28-67, Cl. 24—205.15.
Morikawa, Tadamasa: *See—*
  Inoshita, Kagenobu, and Morikawa. 8,355,449.
Morita, Toshio: *See—*
  Aratani, Shozo, and Morita. 3,355,547.
Mork, Raymond O. Portable bicycle stand. 3,355,028, 11-28-67, Cl. 211—21.
Morris, James E., to General Dynamics Corp. (Convair Division). Electrical connector contact crimping tool. 3,354,692, 11-28-67, Cl. 72—402.
Morris, John C., to Sperry Rand Corp. Clutch arrangement. 3,354,995, 11-28-67, Cl. 192—3.5.
Morris, Paul E.: *See—*
  Alexander, Jack F., and Morris. 3,355,549.
Morse, Richard A., to Pan American Petroleum Corp. Recovery of oil from reservoirs. 3,354,953, 11-28-67, Cl. 166—9.
Mortara, Holy S., to Rock-Ola Mfg. Corp. Pump means. 3,354,830, 11-28-67, Cl. 103—38.
Moss, George J., Jr.: *See—*
  Brooks, James W., and Moss. 3,355,711.
Moss, William A., and R. E. Griffin, 50% to said Moss, 25% to J. D. Parkerson, and 25% to J. A. Roy. Muffler with frusto-conical baffle members spaced along central tube. 3,354,980, 11-28-67, Cl. 181—57.
Motorola, Inc.: *See—*
  Hanus, George M. 3,355,709.
  Mistic, George. 3,355,533.
  Schwartz, James W., and Squier. 3,355,617.
Motz, Jerome C., to Nordberg Mfg. Co. Mantle lifting means. 3,355,114, 11-28-67, Cl. 241—293.
Moulsh, Albina J.: *See—*
  Vercellotti, Dale J., and Loebeck. 3,355,032.
Moulden, Howard N., to Chevron Research Co. Continuous process for alkylating an aromatic hydrocarbon. 3,355,508, 11-28-67, Cl. 260—671.
Mowatt, Larssen E., to ACF Industries, Inc. Container support for railway flat cars. 3,354,838, 11-28-67, Cl. 105—-366.
Moyer, Donald W.: *See—*
  Swanson, William C., Lam, and Moyer. 3,354,981.
Muccillo, Vincent. Coat vent construction. 3,354,469, 11-28-67, Cl. 2—93.
Muccino, Frederick R., to United States of America, Navy. Pressure stabilized welding apparatus. 3,355,569, 11-28-67, Cl. 219—86.
Mueller Co.: *See—*
  Craig, Robert W., Spitzer, and Yonker. 3,355,193.
Mueller, Oscar G., to Waldorf Paper Products Co. Plastic valves. 3,355,143, 11-28-67, Cl. 251—321.
Muir, Douglas W. B., to The Molins Organisation Ltd. Monitoring devices indicating spacing between articles moving in a stream. 3,355,592, 11-28-67, Cl. 250—224.
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Muller, Robert M., to American Optical Co. Four component microscope objective. 3,355,234, 11-28-67, Cl. 350—176.
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Munakata, Chusuke: *See—*
  Hirai, Tadamasa, Ueda, Munakata, and Watanabe. 3,355,568.
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Murphy, Frank W., Jr.: *See—*
  Murphy, Frank W., and F. W. Murphy, Jr. 3,355,560.
Murphy, Milford R.: *See—*
  Mitchell, Harry W., and Murphy. 3,355,733.
Muskegon Piston Ring Co.: *See—*
  Hamm, Douglas W. 3,355,180.
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Mutual Industries, Inc.: *See—*
  Guarnaschelli, Vincent. 3,354,635.
N.V. Koninklijke Metaalwarenfabrieken voorheen J. N. Daalderop & Zonen: *See—*
  Daalderop, Wilhelmus H. J. D. 3,354,766.
N.V. Vereenigde Glasfabrieken (United Glassworks): *See—*
  Doets, Cornelis A. 3,354,602.
Nagle, Floyd B.: *See—*
  Ruffing, Norman R., Nagle, and Haynes. 3,355,404.
Nalco Chemical Co.: *See—*
  Otremba, Robert R., and Atteberry. 3,355,396.
Napolitano, John P.: *See—*
  Coffield, Thomas H., Knapp, and Napolitano. 3,355,504.
Naradi, narodni podnik: *See—*
  Tisnovsky, Imiroslav. 3,354,640.
National Cash Register Co., The: *See—*
  Foris, Peter L. 3,355,293.
  Gunderson, Robert O., and Jurick. 3,355,596.
  Kass, Robert E. 3,355,398.
National Dairy Products Corp.: *See—*
  Wayne, Clyde D., and Tabernacki. 3,355,003.
National Distillers and Chemical Corp.: *See—*
  Carter, Thomas R., Fahnoe, and Supinski. 3,355,244.
  Hansley, Virgil L., and Morgan. 3,355,281.
  Quackenbush, John J., and Corbett. 3,354,865.
National Lead Co.: *See—*
  Kebrich, Leonard M., and White. 3,355,471.
National Lock Co.: *See—*
  Anderson, Ralph F. 3,354,499.
  Wilson, William B. 3,354,676.

- National Research Development Corp.: *See*—
  - Scales, John T., and Kerr. 3,354,476.
- National-Standard Co.: *See*—
  - Manson, Walter J. 3,354,687.
- National Steel Corp.: *See*—
  - Smith, Edwin J., and McGraw. 3,355,368.
- Natoli, Joseph G.: *See*—
  - Hirshman, Justin L., and Natoli. 3,355,468.
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- Neely, James R., to United States of America, Navy. Gyratory fluidized solids feeder. 3,355,222, 11–28–67, Cl. 302—56.
- Nelson, Arthur W. Refuse truck. 3,355,044, 11–28–67, Cl. 214—518.
- Nelson Muffler Corp.: *See*—
  - Thomas, Dean G. 3,355,258.
- Nelson, Richard G., to Atlas Chemical Industries, Inc. Waterproof primer cartridge. 3,354,827, 11–28–67, Cl. 102—24.
- Nerge, Wilhelm, and H. Eilenberg, to Leybold-Anlagen Holding A.G. Freeze drying method and apparatus. 3,354,609, 11–28–67, Cl. 53—112.
- Nestler, Albert A.G.: *See*—
  - Leschinger, Franz, and Gornowitz. 3,354,550.
- Nettesheim, Gottfried: *See*—
  - Biller, Efim, Nettesheim, and Stern. 3,355,501.
- Neway Sales, Inc.: *See*—
  - Appleby, Henry H. 3,354,528.
- Newell, Richard B., to The Foxboro Co. Electrical component heat sink coupling. 3,355,540, 11–28–67, Cl. 174—15.
- Newey, Herbert A.: *See*—
  - De Acetis, William B., and Newey. 3,355,512.
- Newman, Ronald B., to Lockheed Aircraft Corp. Locking mechanism. 3,355,207, 11–28–67, Cl. 292—78.
- Nichols, Frank M. Smoke signal. 3,354,829, 11–28–67, Cl. 102—90.
- Nicholson, Merle A., to Wood Conversion Co. Ventilating ceiling and suspension grid therefor. 3,354,598, 11–28–67, Cl. 52—732.
- Nickels, Frank J., Jr., to Sun Shipbuilding & Dry Dock Co. Ship stabilization systems. 3,354,859, 11–28–67, Cl. 114—125.
- Nickerson, Basil S.: *See*—
  - Curello, Charles, and Nickerson. 3,354,849.
- Nielsen, Niels H., to Lockheed Aircraft Corp. Theft prevention device for motor vehicles. 3,354,980, 11–28–67, Cl. 180—114.
- Nightingale, Eugene R., Jr.: *See*—
  - Carter, James L., Lucchesi, and Nightingale. 3,355,509.
- Niles, Earl T., E. G. Nosser, and P. D. Oja, to The Dow Chemical Co. 1,2-ethylenebis (aminoguanidines). 3,355,491, 11–28–67, Cl. 260—564.
- Nippon Electric Co. Ltd.: *See*—
  - Miyagi, Masahisa. 3,355,553.
- Nishio, Shuichi: *See*—
  - Goto, Tetsukazu, Nishio, Kojima, Kawano, Hayakawa, and Araki. 3,355,359.
- Nolan, Terence M., and D. J. Trevarrow, Jr., to Kelsey-Hayes Co. Barrel. 3,355,049, 11–28–67, Cl. 220—5.
- Nolte, Albert C., Jr., to Elton Industries, Inc. Stirring device. 3,355,153, 11–28–67, Cl. 259—111.
- Nonaka, Kinzo, to Seizo Kurwahara. Apparatus for measuring the conductivity of electrolyte. 3,355,661, 11–28–67, Cl. 324—30.
- Nopco Chemical Co.: *See*—
  - Loter, Ira. 3,355,298.
- Nora, Harry C.: *See*—
  - Barnes, John A., and Nora. 3,355,304.
- Nordberg Mfg. Co.: *See*—
  - Motz, Jerome C. 3,355,114.
- Nordell, Carl H. Filtering apparatus. 3,355,022, 11–28–67, Cl. 210—162.
- Nordseth, Marvin P.: *See*—
  - Hecker, Klaus J., Nordseth, and Joseph. 3,355,616.
- Norman, Vello: *See*—
  - Keith, Charles H., II, Norman, and Bates. 3,355,317.
- Normandy, Robert H., and T. P. Fitzgerald, to Bell & Howell Co. Document feeding apparatus for microfilming machine. 3,354,777, 11–28–67, Cl. 88—24.
- North American Aviation, Inc.: *See*—
  - Algeo, Jerry A. 3,355,738.
  - Kabaian, Jimmy H., and McGurn. 3,354,724.
  - Maya, Walter, and Bauer. 3,354,646.
- North American Philips Co., Inc.: *See*—
  - De Lang, Hendrik, and Brouwer, 3,354,806.
  - Dijkstra, Rinse. 3,355,407.
  - Duinker, Simon. 3,354,540.
  - Haas, Gerhard. 3,354,818.
  - Laa, Friedrich, and Rupp. 3,355,557.
  - Schmidt Seigfried. 3,355,626.
  - Schultink, Lubertus, and Klopman. 3,355,157.
  - Sellenraad, Christoffel, and Berns. 3,355,583.
  - Skoyles, Derek R., and Tyrrell. 3,355,024.
  - Van der Lely, Piet. 3,354,993.
  - Van der Ster, Johannes, Haarhuis, and Tuin, 3,354,664.
- Northern Electric Co., Ltd.: *See*—
  - Drazic, Miles. 3,355,660.
- Norton Co.: *See*—
  - Cook, Arnold M. 3,354,510.
- Nosser, Erma G.: *See*—
  - Niles, Earl T., Nosser, and Oja. 3,355,491.
- Novak, Josef, and J. Janak, to Ceskoslovenska Akademie ved. Pneumatic detector of chromatographic fractions. 3,354,696, 11–28–67, Cl. 73—23.1.
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- Nowlin, Gene: *See*—
  - Lutz, Martin R, Nowlin, and Stange. 3,355,436.
- O. K. Tire and Rubber Co.: *See*—
  - French, Elby E. 3,354,929.
- Obermaier, Frank E., to The Dole Valve Co. Plastic vacuum storage tank. 3,354,902, 11–28–67, Cl. 137—496.
- O'Brien, Eugene L.: *See*—
  - Fein, Marvin M., Green, and O'Brien. 3,355,478.
- O'Brien, James F.: *See*—
  - Lewis, Clarence A., and O'Brien. 3,355,640.
- O'Brien, Paul R., to Reynolds Metals Co. Blanks for vehicle bumpers. 3,355,266, 11–28–67, Cl. 29—190.
- O'Connell, John J., to Kelco Co. Treatment of Xanthomonas hydrophilic colloid and resulting product. 3,355,447, 11–28–67, Cl. 260—200.
- O'Connor, David E.: *See*—
  - Lyness, Warren I., and O'Connor. 3,355,494.
- O'Connor, Walter J. Renewable Moineau-type pumping mechanism. 3,354,537, 11–28–67, Cl. 29—401.
- Oerlikon-Buhrle Holding AG.: *See*—
  - Schmid, Karl. 3,354,629.
- Oesau, Robert J. Isometric exerciser with elongated nonelastic tension members. 3,355,171, 11–28–67, Cl. 272—82.
- Offshore Company, The: *See*—
  - Savage, George M., and Bradbury. 3,354,951.
- Oga, Taijiro, H. Ichinokawa, and M. Ito, to Showa Denko Kabushiki Kaisha. Process for producing aromatic nitriles. 3,355,479, 11–28–67, Cl. 260—465.
- Ogden, Horace R.: *See*—
  - Williams, Dean N., Ogden, Hodge, and Schmidt. 3,355,286.
- Ohio Brass Co., The: *See*—
  - Holan, James H., and Verrell. 3,355,034.
- Ohzeki, Takao: *See*—
  - Sasaki, Minoru, Yamamoto, Ichikawa, Ohzeki, Senda, and Masunaka. 3,355,402.
- Oja, Phyllis D.: *See*—
  - Niles, Earl T., Nosser, and Oja. 3,355,491.
- Okress, Ernest C., to American Radiator & Standard Sanitary Corp. Crossed field plasma device. 3,355,605, 11–28–67, Cl. 310—11.
- Okuda, Yukio: *See*—
  - Omura, Morikazu, and Okuda. 3,355,676.
- Okuzumi, Yuzi, to The Goodyear Tire & Rubber Co. Manganese pentacarbonyl compounds as catalysts in the preparation of polyesters. 3,355,433, 11–28–67, Cl. 260—75.
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- Olechowski, Jerome R., to Columbian Carbon Co. Cyclopropane derivatives of 1,7-octadiene. 3,355,481, 11–28–67, Cl. 260—468.
- Olin Mathieson Chemical Corp.: *See*—
  - Bliss, Arthur D., Gruber, and Ratz. 3,355,521.
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  - Middleton, Verne L. 3,354,530.
  - Pauls, Theron F. 3,354,532.
  - Pauls, Theron F. 3,354,533.
  - Pryor, Michael J. 3,354,531.
  - Ramsay, Marcus. 3,354,780.
  - Ratz, Rudi F. W. 3,355,522.
- Olson, Buford W., to Charles Olson & Sons, Inc. Extensible retaining device. 3,355 233, 11–28–67, Cl. 312—325.
- Olson, Charles & Sons, Inc.: *See*—
  - Olson, Buford W. 3,355,233.
- Olson, Ellis W., to Introl Corp. Battery activator. 3,355,651, 11–28–67, Cl. 320—31.
- Olson, Ralph A.: *See*—
  - Parks, John W., Olson, and Wood. 3,355,020.
- Olson, Richard L., to Dike-O-Seal, Inc. Sealing structures embodying closed cell elastomeric material. 3,355,181, 11–28–67, Cl. 277—180.
- Olympia Werke AG: *See*—
  - Heuer, Hans. 3,355,577.
- O'Mara, Joseph B., and R. G. D'Ascoli, to Anaconda Wire and Cable Co. Hollow-core cable. 3,355,543, 11–28–67, Cl. 174—84.
- Omura, Morikazu, and Y. Okuda, to Sawafuji Electric Co., Ltd., and Western Trading Co., Ltd. Electrodynamic oscillating device. 3,355,676, 11–28–67, Cl. 331—113.
- Opolsky, Vaclav, to Ceskoslovenska akademie ved. Diffusion vacuum pump. 3,355,094, 11–28–67, Cl. 230—101.
- Oppedahl, Charles A., deceased (by R. A. Oppedahl, administrator), to Collins Radio Co. Radio beam capture circuit for aircraft guidance. 3,355,126, 11–28–67, Cl. 244—77.
- Oppedahl, Roberta A.: *See*—
  - Oppedahl, Charles A. 3,355,126.
- Orr, Harley J., to Basic Products Corp. Meter structure with imbedded bus bars and jaw mounting structure. 3,355,630, 11–28–67, Cl. 317—104.
- Orr, Ladd J., and J. S. Jessee, Jr., to Chrysler Corp. Movable cover means for room air conditioner. 3,354,809, 11–28–67, Cl. 98—94.
- Orrevad, Eric O. Injection moulding nozzles for plastics. 3,354,507, 11–28–67, Cl. 18—30.
- Orwin, Olaf J. B., to Fisher & Ludlow Ltd. Conveyors for conveying goods. 3,354,834, 11–28–67, Cl. 104—172.

- Ortronix, Inc.: *See*—
  - Alexander, Jack F., and Morris. 3,355,549.
- Oshva, Eugene, to Burndy Corp. Ribbon cable connector. 3,355,699, 11–28–67, Cl. 339—99.
- Oster, John, Mfg. Co.: *See*—
  - Menzel, Conrad T. 3,355,151.
- Otremba, Robert R., and G. C. Atteberry, to Nalco Chemical Co. Production of silica-alumina hydrogel-alumina hydrogel cracking catalysts. 3,355,396, 11–28–67, Cl. 252—440.
- Otto, Fritz. Kneading apparatus. 3,355,152, 11–28–67, Cl. 259—107.
- Otto, Julian A.: *See*—
  - Farah, Basil S., Gilbert, and Otto. 3,355,500.
- Overby, Theodore A. Land measuring device. 3,354,551, 11–28–67, Cl. 33—148.
- Overesch, Joseph E. Hinge for carrying electric circuits. 3,355,695, 11–28–67, Cl. 339—4.
- Owens-Corning Fiberglas Corp.: *See*—
  - Cagnon, Roland K., and Lachut. 3,355,314.
- Owens-Illinois, Inc.: *See*—
  - Birrell, Stewart H., and Fey. 3,354,924.
- Ozaki, Toshiaki: *See*—
  - Hattori, Junnosuke, Ozaki, Koike, Yoshioka, and Sugiyama. 3,355,352.
- Ozimek, Emil J.: *See*—
  - Brody, Arthur, Sroka, and Ozimek. 3,355,344.
- Packaging Corp. of America: *See*—
  - Champlin, Charles L. 3,355,089.
  - Hickin, Robert J. 3,354,797.
- Paddison, Eric, and G. J. Lally, to The English Electric Co. Ltd. Ferromagnetic core with an adjustable air gap. 3,355,689, 11–28–67, Cl. 336—234.
- Pagliuca, Frederick E. Machine for cutting cheese into small wedge-shaped slices. 3,354,546, 11–28–67, Cl. 31—23.
- Pall, Daniel R.: *See*—
  - Awe, Richard W., Pall, and Axon. 3,355,395.
- Pan American Petroleum Corp.: *See*—
  - Buxton, Thomas S. 3,354,954.
  - Fast, Clarence R., Howard, and Rixe. 3,354,959.
  - Lummus, James L. 3,354,970.
  - Morse, Richard A. 3,354,953.
  - Sparks, Neil R. 3,354,985.
- Panerai, Giuseppe: *See*—
  - Panerai, Maria and G. 3,354,554.
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- Paradissis, Pantelis P., to Lorain Products Corp. Variable pulse width regulated power supply. 3,355,653, 11–28–67, Cl. 321—2.
- Parametrics, Inc.: *See*—
  - Carnevale, Edmund H., and Lynnworth. 3,354,699.
- Paredes, Andrew, to Ford Motor Co. Hydrokinetic torque converter mechanism with variable geometry stator blading. 3,354,643, 11–28–67, Cl. 60—54.
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- Parker, Harry W., to Phillips Petroleum Co. Oil recovery using steam. 3,354,958, 11–28–67, Cl. 166—40.
- Parker, Robert W. Blank cartridge gun and cartridge therefor. 3,354,571, 11–28–67, Cl. 42—1.
- Parkerson, James D.: *See*—
  - Moss, William A., and Griffin. 3,354,986.
- Parks, John W., R. A. Olson, and M. E. Wood, to Union Tank Car Co. Sewage treatment system. 3,355,020, 11–28–67, Cl. 210—121.
- Parrigin, Frank S. Cigarette holder with smoke stream spiralling core. 3,354,888, 11–28–67, Cl. 131—202.
- Parsons, Peter P., to General Motors Corp. Vehicle body trim attachment. 3,354,584, 11–28–67, Cl. 49—377.
- Pascal, Ivan, and R. B. Ward, to E. I. du Pont de Nemours and Co. Bis-perfluoroalkane-sulfones. 3,355,498, 11–28–67, Cl. 260—607.
- Passannante, Anthony J., to Esso Research and Engineering Co. Preparation of reaction products of tetrafluorohydrazine with polyvinylfuroate, useful as energetic binders for propellants. 3,355,441, 11–28–67, Cl. 260—88.5.
- Pasternak, Israel S.: *See*—
  - Butler, Roger M., and Pasternak. 3,355,365.
- Pastoriza, James J. High-speed switching apparatus. 3,355,670, 11–28–67, Cl. 330—9.
- Pate, Stephen H.: *See*—
  - Glassman, Joel, Jonas, Bass, and Pate. 3,354,487.
- Patriarche, Pierre, and R. Letournier, to Compagnie Industrielle Francaise des Tubes Electroniques. Method of and means for manufacturing electron tube sockets. 3,355,274, 11–28–67, Cl. 65—23.
- Patterson, Donald C Shoe straightening device. 3,354,483, 11–28–67, Cl. 12—120.5.
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- Pauls, Theron F., to Olin Mathieson Chemical Corp. Method of fabricating a heat exchange device. 3,354,533, 11–28–67, Cl. 29—157.3.
- Pavey, George M., Jr., to Whitehall Electronics Corp. Depth controlled marine seismic detection cable. 3,354,984, 11–28–67, Cl. 181—.5.
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- Paxton, Herbert J., Jr.: *See*—
  - Welch, Frank J., and Paxton. 3,355,439.
- Peek, Sanford C., Jr., to Sylvania Electric Products Inc. Incandescent lamp. 3,355,612, 11–28–67, Cl. 313—35.
- Pennington, John V., to Cameron Iron Works, Inc. Apparatus for guiding a well tool being pumped out of a well into a laterally branching flow line. 3,354,961, 11–28–67, Cl. 166—75.
- Pennington, William, P. Price, and Y.-N. Yu. Propulsor measurement system. 3,354,706, 11–28–67, Cl. 73—116.
- Pennsalt Chemicals Corp.: *See*—
  - Mackley, Charles J. 3,355,385.
- Pennycuick, Kenneth, to British Ropes Ltd. Rod mills. 3,355,228, 11–28–67, Cl. 308—9.
- Penver, Gilbert F., to Advance Electronics Ltd. Odd-number counter. 3,355,595, 11–28–67, Cl. 307—88.5.
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- Perl, Martin M.: *See*—
  - Puetzer, Bruno, Mackles, and Perl. 3,355,354.
- Perper, Lloyd J. Cross correlation direction finder. 3,355,736, 11–28–67, Cl. 343—113.
- Perras, Philippe: *See*—
  - Colleuille, Yves, and Perras. 3,355,462.
- Perry, Charles C. Safety light device for vehicle interiors to indicate visually the condition of the exterior lights. 3,355,708, 11–28–67, Cl. 340—80.
- Perry, Wesley G.: *See*—
  - Vash, Arthur M., and Perry. 3,354,971.
- Peterson, Bernice E.: *See*—
  - Peterson, Walter G. and B. E. 3,354,558.
- Peterson Machine Tool, Inc.: *See*—
  - Lambert, James H. 3,354,556.
- Peterson, Walter G. and B. E., to Polarknown, Inc. Teaching and self-teaching device. 3,354,558, 11–28–67, Cl. 35—9.
- Petsch, Ernst, to Hydraulik G.m.b.H. Device. 3,354,686, 11–28–67, Cl. 72—263.
- Pettibone Mulliken Corp.: *See*—
  - Jania, Vincent, Jr., and Bhatia. 3,354,587.
- Pfaff, Wolfgang: *See*—
  - Gerhardt, Wolfgang, Kunze, and Pfaff. 3,355,117.
- Pfister, Marcel C. Photoelectric device for determining the length or position of a sample using scanner and rotating beam-chopper. 3,355,591, 11–28–67, Cl. 250—219.
- Pfizer, Chas., & Co., Inc.: *See*—
  - Huang, Hsing T., and Shull. 3,355,301.
- Pharmaseal Laboratories: *See*—
  - Coanda, George. 3,354,882.
- Pharris, John A., to EZ Paintr Corp. Paint roller end cap. 3,354,493, 11–28–67, Cl. 15—230.11.
- Philbin, John J., and J. Rallis, to The General Tire & Rubber Co. Indicia-bearing device. 3,354,567, 11–28–67, Cl. 40—125.
- Philco Ford Corp.: *See*—
  - Springer, Joseph F., Jr. 3,355,599.
- Phillips, Julius: *See*—
  - Amberg, Stephen W. and R. G., Porter, and Phillips. 3,354,605.
- Phillips Petroleum Co.: *See*—
  - Engle, Charles J. 3,354,952.
  - Johnson, Marvin M. 3,355,331.
  - Krejci, Joseph C., and Howard. 3,355,247.
  - Parker, Harry W. 3,354,958.
  - Vignovich, Barney. 3,354,654.
  - Wilcox, Isaac L. 3,355,083.
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- Pierce, Ogden R., to Dow Corning Corp. Preparation of 1,2-dichloro-3,3,4,4-tetrafluorocyclobutene. 3,355,507, 11–28–67, Cl. 260—648.
- Pierce, William J.: *See*—
  - Du Rose, Arthur H., and Pierce. 3,355,263.
- Pile, William D., to The Goodyear Tire & Rubber Co. Rim structure. 3,354,927, 11–28–67, Cl. 152—410.
- Pillsbury Co., The: *See*—
  - Barnes, John A., and Nora. 3,355,304.
- Pinchin, Johnson & Associates, Ltd.: *See*—
  - Tanner, Edward B. 3,355,401.
- Pinckaers, Balthasar H., to Honeywell Inc. Semiconductor electronic timing circuit utilizing magnetic count core. 3,355,594, 11–28–67, Cl. 307—88.
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  - Beckwell, George F. 3,354,690.
- Pino, Piero, G. Braca, and G. Sbrana, to Lonza, Ltd. Preparation of hydroquinone. 3,355,503, 11–28–67, Cl. 260—621.
- Pioneer Industries, Inc.: *See*—
  - Jerchower, Lewis A. 3,354,585.
- Pitches, Brian E., to Ferranti Ltd. Apparatus for indicating the departure of a variable quantity from a datum value. 3,355,706, 11–28–67, Cl. 340—27.
- Pittsburgh Plate Glass Co.: *See*—
  - Gosselink, Karl R. 3,355,311.
  - Hart, Donald P., and Plasynski. 3,355,412.
  - Sensi, John E., and Galey. 3,355,275.
- Plains Chemical Development Co.: *See*—
  - Budnick, Edward G. 3,355,497.
- Plasynski, Joseph E.: *See*—
  - Hart, Donald P., and Plasynski. 3,355,412.
- Plett, A. D., Enterprises Ltd.: *See*—
  - Plett, Abraham D. 3,354,521.
- Plett, Abraham D., to A. D. Plett Enterprises Ltd. Attachment hook for chains. 3,354,521, 11–28–67, Cl. 24—230.5.

Plumb, William W., to St. Regis Paper Co. Automatic wrapping machine including a suction stop plate. 3,355,166, 11–28–67, Cl. 271—45.
Plumbing Research and Development Co.: *See*—
Le Pain, Ellery J. 3,355,092.
Poland, William L., to Schlumberger Well Surveying Corp. Function generators. 3,355,692, 11–28–67, Cl. 338—89.
Polarknown, Inc.: *See*—
Peterson, Walter G. and B. E. 3,354,558.
Poll, Willy, to Holding Intercito SA. Apparatus for jarring rods. 3,355,036, 11–28–67, Cl. 214—1.
Poor & Co.: *See*—
Groff, Emory L. 3,355,534.
Pomper, Anthony W., and O. W. Grant, to Midland-Ross Corp. Means to vary effective width of projected coating material. 3,354,867, 11–28–67, Cl. 118—603.
Porazinski, Robert F.: *See*—
Smitzer, Louis A., Gawin, Balint, Porazinski, and Bielik. 3,354,774.
Porter, Harold, Jr.: *See*—
Amberg, Stephen W. and R. G., Porter, and Phillips. 3,354,605.
Portz, William E., to True Temper Corp. Striking implements. 3,355,226, 11–28–67, Cl. 306—32.
Postula, Louis J. and V. A. Portable jointer sharpener. 3,354,589, 11–28–67, Cl. 51—249.
Postula, Victor A.: *See*—
Postula, Louis J. and V. A. 3,354,589.
Potts, Robert C., to Caron Spinning Co. Apparatus for slimping pull skeins of yarn and for containing the loose ends thereof. 3,355,115, 11–28–67, Cl. 242—1.
Poupitch, Ougljesa J., to Illinois Tool Works Inc. Container carrier package having protective top covers. 3,355,013, 11–28–67, Cl. 206—65.
Powell, Alvin M. Packaging. 3,354,611, 11–28–67, Cl. 53—184.
Powell, Fred H., to Reynolds Metals Co. Metal rolling system. 3,354,502, 11–28–67, Cl. 18—2.
Power Jets (Research and Development) Ltd.: *See*—
Allcock, Alastair W. R. 3,355,125.
Power Tube, Inc.: *See*—
Masters, Don G., and Worstell. 3,354,490.
Pranke, John A., to Rome Cable Corp. Apparatus for measuring insulation thickness of coated conductors. 3,355,664, 11–28–67, Cl. 324—61.
Preformed Line Products Co.: *See*—
Finn, Thomas J. 3,355,542.
Prestigiacomo, Anthony J., to Bell Telephone Laboratories, Inc. Analysis and representation of complex waves. 3,355,551, 11–28–67, Cl. 179—1.
Price, Peter: *See*—
Pennington, William, Price, and Yu. 3,354,706.
Priest, William J., to Eastman Kodak Co. Nucleated vesicular film. 3,355,295, 11–28–67, Cl. 96—91.
Prince, David C. Sorting device for code bearing articles. 3,355,016, 11–28–67, Cl. 209—74.
Prochnow, Claus, to Rollei-Werke Franke & Heidecke. Focusing knob for photographic cameras. 3,354,805, 11–28–67, Cl. 95—45.
Procter & Gamble Co., The: *See*—
Behrens, Edwin L. 3,355,390.
Lyness, Warren I., and O'Connor. 3,355,494.
Purves, Edward R., Going, and Dodson. 3,355,302.
Proctor Hydro-Set Co.: *See*—
Brewin, Grant H., and Scott. 3,355,074.
Pryor, Michael J., to Olin Mathieson Chemical Corp. Process for making hollow articles by differential heat treatment. 3,354,531, 11–28–67, Cl. 29—157.3.
Puetzer, Bruno, L. Mackles, and M. M. Perl, to Tintex Corp. Methods and compositions for relief or gas caused gastrointestinal distress in warm-blooded animals. 3,355,354. 11–28–67, Cl. 167—55.
Pugh, Stanley F.: *See*—
Craston, John L., and Pugh. 3,355,358.
Pulse Jet Corp.: *See*—
Malroux, Rene. 3,354,650.
Purves, Edward R., L. H. Going, and R. D. Dodson, to The Procter & Gamble Co. Anti spattering plastic shortening. 3,355,302, 11–28–67, Cl. 99—163.
Puskas, Joseph J., to The Bead Chain Mfg. Co. Contact pin. 3,355,704, 11–28–67, Cl. 339—217.
Quackenbush, John J., and H. O. Corbett, to National Distillers and Chemical Corp. Cloud dispersion of fine plastic powder. 3,354,865, 11–28–67, Cl. 118—309.
Quigg, Joanne M. Ski pole lock. 3,354,675, 11–28–67, Cl. 70—58.
Raasch, Maynard S., to E. I. du Pont de Nemours and Co. Selected 2 - arylimino-4-hexafluoroisopropylidene-1.3-dithietanes and their preparation. 3,355,446, 11–28–67, Cl. 260—152.
Rabin, Herbert. Data curve amplitude recorder. 3,355,741, 11–28–67, Cl. 346—33.
Race, Hugh A., to Ingersoll-Rand Co. Volume adjusting apparatus for compressor cylinder clearance pockets. 3,354,790, 11–28–67, Cl. 92—59.
Radiation Dynamics, Inc.: *See*—
Geiger, Richard L., and Cleland. 3,355,614.
Radio Corp., of America: *See*—
Avins, Jack. 3,355,669.
Baumann, Philip C. 3,355,635.
Becke, Hans, Cave, and Stolnitz. 3,355,636.
Burns, Joseph R. 3 355 721.
Clark, Robert J. 3,355,723.
Coleman, John W. 3,355,618.
Cosgrove, William J. 3,355,621.
Johnson, Harwick. 3,355,637.
Kaufman, Melvin M. 3,355,720.
Tuska, James W. 3,355,598.
Raichle, Karl: *See*—
Rudolph, Hans, and Raichle. 3,355,515.
Raley, Garland E., to Union Carbide Corp. Apparatus for melt extrusion of multi-wall plastic tubing. 3,354,506, 11–28–67, Cl. 18—14.
Rallis, John: *See*—
Philbin, John J., and Rallis. 3,354,567.
Ramsay, Marcus, to Olin Mathieson Chemical Corp. Breech seal for firearms utilizing caseless ammunition. 3,354,780, 11–28–67, Cl. 89—26.
Ranheim, John W. Vacuum-type circuit interrupter. 3,355,564, 11–28–67, Cl. 200—144.
Rasmussen, Benny A., to Jomi Industri A/S. Locking device for telescopic tubes. 3,355,194, 11–28–67, Cl. 285—302.
Ratts, Kenneth W., to Monsanto Co. Insecticidal and fungicidal useage of *β*-arylamino cinnamoyl compounds. 3,355,351, 11–28–67, Cl. 167—30.
Ratz, Rudi F. W., to Olin Mathieson Chemical Corp. Bicyclic thiophosphate esters of O,O-dialkyl carboxymethyl phosphates. 3,355,522, 11–28–67, Cl. 260—927.
Ratz, Rudi F. W.: *See*—
Bliss, Arthur D., and Ratz. 3,355,523.
Rauhut, Michael McK.: *See*—
Wystrach, Vernon P., Rauhut, and Freyberger. 3,355,017.
Rausing, Anders R., and R. L. Ignell, to Tetra Pak Rausing & Co. K.G. Container. 3,355,080, 11–28–67, Cl. 229—14.
Raytheon Co.: *See*—
Condon, Richard D., Gill, and Redmond. 3,354,714.
Rebertus, Robert L., and J. G. Gagnon, to Minnesota Mining and Mfg. Co. Dichlorolis (difluoramino) methane. 3,355,492, 11–28–67, Cl. 260—583.
Redland Tiles Ltd.: *See*—
Carter, George H. 3,355,009.
Redmond, Melvin W., Jr.: *See*—
Condon, Richard D., Gill, and Redmond. 3,354,714.
Reed, David W., V. R. Simpson, and L. D. Zolnosky, to International Business Machines Corp. Serial on-the-fly printer using a pair of sequential type member guides. 3,355,001, 11–28–67, Cl. 197—18.
Reed, Robert F., Sr., to Sylvania Electric Products, Inc. Incandescent lamp. 3,355,619, 11–28–67, Cl. 313—272.
Rees, Richard W., to E. I. du Pont de Nemours and Co. Self-supporting film with a heat-sealable coating of an ionic copolymer of an olefin and carboxylic acid with metal ions distributed throughout. 3,355,319, 11–28–67, Cl. 117—122.
Rees, Richard W.: *See*—
Maloney, Daniel E., and Rees. 3,355,320.
Reeves, Hudson D. Leveling platform with lift elements and dividers. 3,355,167, 11–28–67, Cl. 271—61.
Regie Nationale des Usines Renault: *See*—
De Coye de Castelet, Gaetan. 3,354,745.
De Coye de Castelet, Gaetan. 3 354,949.
De Coye de Castelet, Gaetan. 3,355,145.
Rehn, Karl: *See*—
Weissermel, Klaus, and Rehn. 3,355,429.
Reichhold Chemicals, Inc.: *See*—
Delius, Hermann. 3,355,502.
Reimers, Fritz. Changeable-pitch propeller. 3,354,965, 11–28–67, Cl. 170—160.29.
Reiners, Walter: *See*—
Küpper, Wilhelm. 3,355,118.
Reiners & Wiggermann Maschinenfabrik: *See*—
Wiggermann, Georg. 3,354,709.
Reinhart, Norman E.: *See*—
Frey, Walter C., and Reinhart. 3,354,765.
Remes, Nathaniel L., and J. J. Ventura, to M & T Chemicals Inc. Diorgano antimony (III) dithiocarbamates and the preparation thereof. 3.355,472. 11–28–67, Cl. 260—446.
Remley, Kenneth H., and J. R. Anghinetti, to American Cyanamid Co. Aminoplast textile finish prepared by co-reacting formaldehyde, urea and aminoethanol. 3,355,430, 11–28–67, Cl. 260—70.
Renkey, Albert L.: *See*—
Troell, Peter T., and Renkey. 3,355,537.
Rent, Edward F.: *See*—
Grubb, Harold R., Haskell, Lord, and Rent. 3,355,722.
Republic Industries, Inc.: *See*—
Armento, Fred. 3,354,497.
Research Instruments & Controls, Inc.: *See*—
Abramson, Andrew E., and Kitchar. 3,354.769.
Research Laboratories of Australia Pty. Ltd.: *See*—
Matkan, Josef. 3,355 288.
Restivo, Albert R., and F. A. Dondzila, to E. R. Squibb & Sons, Inc. Calcium chloride salt of penicillamine. 3,355,488, 11–28–67, Cl. 260—534.
Reuter, Brian R., to Consolidated Engineering Co., Inc. Self-purging, pnuematic conveying apparatus. 3,355,221, 11–28–67, Cl. 302—53.
Rex Chainbelt Inc.: *See*—
Kenworthy, Grant F. 3 354.991.
Reynolds, George E., to Allis-Chalmers Mfg. Co. Paper machine. 3,355.350, 11–28–67, Cl. 162—358.
Reynolds, Jack B., to The Dow Chemical Co. Apparatus for coating particulate materials. 3,354,863, 11–28–67, Cl. 118—62.
Reynolds Metals Co.: *See*—
Day, Robert W. 3 355,212.
O'Brien, Paul R. 3,355,266.
Powell, Fred H. 3,354 502.
Reynolds, William G., Maeder, Kraus, and Cvacho. 3,355,060.
Reynolds, William G., E. G. Maeder, G. Kraus, and D. S. Cvacho, to Reynolds Metals Co. Container with improved lift-off end closure. 3,355,060, 11–28–67, Cl. 220—54.
Rhone-Poulenc S.A.: *See*—
Colleuille, Yves, and Perras. 3,355,462.
Richards, Chester L., Jr., and S. S. Smith, to Magnetic Devices, Inc. Material handling device. 3,355,209, 11–28–67, Cl. 294—65.5.

Riddell Products Ltd.: *See*—
Sheppard, William G., and Jones. 3,355,072.
Rieke, Robert C., and J. H. Brown, to Weyerhaeuser Co. Method of improving viscose filtration by the addition of a surface active agent. 3,355,448, 11–28–67, Cl. 260—217.
Risberg, Robert L., to Cutler-Hammer, Inc. Electronic inverters with separate source for percharging commutating capacitors. 3,355,654, 11–28–67, Cl. 321—44.
Rischman, Robert L., to Lockheed Aircraft Corp. Window wiper mechanism. 3,354,494, 11–28–67, Cl. 15—250.24.
Risse, Roger, to Societe Lyonnaise des Applications Catalytiques. Carbon dioxide detecting safety device for apparatus operating through catalysis of gaseous hydrocarbons. 3,354,931, 11–28–67, Cl. 158—139.
Ritter, Ernst G., to General Aniline & Film Corp. Plastic container. 3,355,061, 11–28–67, Cl. 220—60.
Rixe, Frederick H.: *See*—
Fast, Clarence R., Howard, and Rixe. 3,354,959.
Rizzo, Angelo J., Jr. Concealed weapon. 3,354,570, 11–28–67, Cl. 42—1.
Roberts, Ralph R.: *See*—
Yerzley, Felix L., and Roberts. 3,354,701.
Robertson, George H., to Bell Telephone Laboratories, Inc. Correlation apparatus. 3,355,579, 11–28–67, Cl. 235—181.
Robichaux, Thomas J.: *See*—
Jorda, Robert M., Robichaux, and Smith. 3,355,315.
Robillard, Jean J. Electro-catalytic photography. 3,355,290, 11–28–67, Cl. 96—1.5.
Robinett, Leonard L.: *See*—
Grahm, John V., Keeking, and Robinett. 3,354,832.
Robinson, William R. Ice cream container stabilizing clamp. 3,354,515, 11–28–67, Cl. 24—81.
Roche, Thomas J., and R. J. Mentzer. Detachable fastener. 3,354,523, 11–28–67, Cl. 24—238.
Rock-Ola Mfg. Corp.: *See*—
Mortara, Holy S. 3,354,830.
Rockwell Mfg. Co.: *See*—
Sundblom, Leif. 3,355,100.
Rockwell-Standard Corp.: *See*—
Pawlikowski, Edward. 3,355,161.
Rodgers, Wayne V.: *See*—
Schneider, William S., and Corella. 3,354,601.
Roehrig, Phillip J., to Solem Machine Co. Wide belt abrasive machine. 3,354,588, 11–28–67, Cl. 51—141.
Rohm & Haas G.m.b.H.: *See*—
Simon, Wilhelm. 3,354,505.
Rokitenetz, Walter: *See*—
Cairns, Charles G., and Rokitenetz. 3,354,474.
Roll, Walter M., M. W. Forth, and R. E. Harrington; said Roll, and said Forth, assors. to Deere & Co. Wafering machine die and rotor structure. 3,354,844, 11–28–67, Cl. 107—14.
Rollei-Werke Franke & Heidecke: *See*—
Prochnow, Claus. 3,354,805.
Romac, Inc.: *See*—
Gibbons, Roger A. 3,355,027.
Rome Cable Corp.: *See*—
Pranke, John A. 3,355,664.
Ropiequet, Richard L., to Tektronix, Inc. Pulse counter tube employing voltage feedback from target to beam deflection electrodes isolated from any D.C. reference voltage. 3,355,620, 11–28–67, Cl. 315—8.5.
Rosa, Richard J., to Avco Corp. Means for and method of preventing flow of hall currents in electrical equipment. 3,355,607, 11–28–67, Cl. 310—11.
Rosenberger, Paul C.: *See*—
Sieving, Alfred W., and Rosenberger. 3,354,994.
Rosenfeld, Peter E.: *See*—
Haynie, Gerald D., and Rosenfeld. 3,355,662.
Ross, Donald A., to International Wool Development Co. Textile crimping. 3,354,511, 11–28–67, Cl. 19—66.
Ross Operating Valve Co.: *See*—
Fall, Don R. 3,354,911.
Rossi, Carl E.: *See*—
Campbell, William W., Rossi, and Good. 3,355,158.
Rossmann, Eberhard: *See*—
Meier, Alfred, Kohl, and Rossmann. 3,354,793.
Rothkegel, Josef, P. Flittner, and G. Koch, to Hooker Chemical Corp. Metal treating processes. 3,355,330, 11–28–67, Cl. 148—6.15.
Round, Byron J., and W. G. Benz, Jr., to Combustion Engineering, Inc. Fluid cooled tube support and method of making same. 3,354,948, 11–28–67, Cl. 165—67.
Rowe, Edward L., to Anchor Hocking Glass Corp. Applicator package. 3.355,241, 11–28–67, Cl. 401—213.
Roy, J. Arthur: *See*—
M. W. A., Griffin, Moss, Parkerson, and Roy. 3,354,986.
Royal Industries, Inc.: *See*—
Johnson, John R., and Taylor. 3,354,915.
Royet, Jean M.: *See*—
Kloeckner, Edmond A., and Royet. 3,355,051.
Rubens, Harry E.: *See*—
Bitko, Sheldon. 3,355,332.
Rubero, Paul A.: *See*—
Lipps, Delbert A., Best, and Rubero. 3,355,259.
Rubico, Jerome A.: *See*—
Batchelder, Charles F., and Rubico. 3,354,484.
Ruckriegel, Raymond J., to Texas Instruments Inc. Lost motion thermostatic electrical switch. 3,355,563, 11–28–67, Cl. 200—138.
Rudo, Ann. Cosmetic face mask. 3,354,884, 11–28–67, Cl. 128—260.
Rudolph, Hans, and K. Raichle, to Farbenfabriken Bayer Aktiengesellschaft. Storage secondary aromatic amines as stabilizers for unsaturated polyesters containing hydroperoxides. 3,355,515, 11–28–67, Cl. 260—864.
Rudy, Morris R.: *See*—
Haubert, Harold W., and Rudy. 3,355,170.
Ruffing, Norman R., F. B. Nagle, and W. S. Haynes, Jr., to The Dow Chemical Co. Styrene polymers containing behenic acid as a lubricant. 3,355,404, 11–28–67, Cl. 260—23.
Runner, John W.: *See*—
Cook, Albert W., and Runner. 3,354,992.
Rupert, John P., to Tobacco Research & Development Institute (Propriet) Ltd. Storage bins. 3,355,004, 11–28–67, Cl. 198—44.
Rupp, Karl: *See*—
Laä, Friedrich, and Rupp. 3,355,557.
Ruscitti, Tommaso. Head for clawing the valve on an aerosol bomb and for the simultaneous filling thereof with a metered amount of propellant. 3,354,916, 11–28–67, Cl. 141—20.
Rusk, Gerald R. Wrench having a plurality of work engaging means. 3,354,756, 11–28–67, Cl. 81—90.
Russell, James C. Pipe laying apparatus. 3,354,661, 11–28–67, Cl. 61—72.5.
Russell, Roger B., Jr., and M. R. Bates, to United States of America, Navy. Ships strain measuring system. 3,354,703, 11–28–67, Cl. 73—88.5.
Ruzic, Neil P. Lunar cryostat. 3,355,050, 11–28–67, Cl. 220—9.
Ryan, Arthur B., to The Gleason Works. Gear cutting tools and method of sharpening same. 3,354,525, 11–28–67, Cl. 29—95.
Ryan, John W., to Mattel, Inc. Figure toy having compressed elastomeric stuffing and bonded cover. 3,354,578, 11–28–67, Cl. 46—158.
Ryan, Joseph R.: *See*—
Walther, Frank H., Jr., and Ryan. 3,354,940.
SAAB Aktiebolag: *See*—
Stahl. Malte L. 3,354,990.
SNAM S.P.A.: *See*—
Guadalupi, Mario. 3,354,615.
Sadier, Jacques R. Multiratio drive. 3,354,749, 11–28–67, Cl. 74—745.
Sadier, Jacques R. Machine-tool embodying automatic tool changing means. 3,354,761, 11–28–67, Cl. 82—2.
Sadler, James E. Cotton picker bar pivot lubricating means. 3,355,229, 11–28–67, Cl. 308—78.
Sadron, Charles, G. Finaz, and A. Skoulios, to Centre National de la Recherche Scientifique, Ministere de l, Education Nationale. Mesomorphic phase polymers. 3,355,513, 11–28–67, Cl. 260—857.
Sagawa, Ryuichi, to Kawasaki Jukogyo Kabushiki Kaisha. Mechanism for mutual change between different types of displacement and an amplifier of force or torque. 3,354,785, 11–28–67, Cl. 91—49.
Sage, Frederick, to United Kingdom Atomic Energy Authority. Prestressed concrete pressure vessels for use in nuclear installations. 3,355,357, 11–28–67, Cl. 176—40.
Saint-Gobain Nucleaire: *See*—
Lucas, Jean C. 3,354,616.
Sakurai, Richard S., and E. E. Trimbur, II, to Burroughs Corp. High speed thermal matrix printer. 3,354,817, 11–28–67. Cl. 101—93.
Saltzman, Harold, and T. F. Vallar, to E & M Laboratories. Microwave ferrite devices having particular arrangements for the magnetizing source. 3,355,680, 11–28–67, Cl. 333—1.1.
Salzmann, Ferdinand F., to Graber Mfg. Co., Inc. Traverse rod master carrier. 3,354,498, 11–28–67, Cl. 16—87.4.
Samek, Miroslav: *See*—
Elias, Jiri, Adamkova, Boucek, Kolar, Samek, and Vlcek. 3,354,631.
Sanglas, Camps. Motor cycles. 3,354,976, 11–28–67, Cl. 180—32.
Santoni, Vinicio. Sinker cover mechanism for circular knitting machines. 3,354,673. 11–28–67, Cl. 66—107.
Sasaki, Minoru, T. Yamamoto, A. Ichikawa, T. Ohzeki, K. Senda, and S. Masunaka, to Mitsubishi Rayon Co., Ltd. Dyeable polypropylene fibers containing aluminum salts. 3,355,402. 11–28–67, Cl. 260—23.
Sato, Isao. Method of manufacturing paper pipe. 3,354,800, 11–28–67, Cl. 93—94.
Savage, George M., and R. E. Bradbury, Jr., to The Offshore Co. Marine drilling apparatus. 3,354,951, 11–28–67, Cl. 166—.6.
Savin Business Machines Corp.: *See*—
Doucette, Edward I., and Grubbs. 3,354,802.
Sawafuji Electric Co., Ltd., and Western Trading Co. Ltd.: *See*—
Omura, Morikazu, and Okuda. 3,355,676.
Sax, Karl J.: *See*—
Feldman, Louis L., Holmlund, and Sax. 3,355,360.
Sbrana, Glauco: *See*—
Pino, Piero, Braca, and Sbrana. 3,355,503.
Scales, John T., and J. Kerr, to National Research Development Corp. Apparatus for supporting bodies. 3,354,476, 11–28–67, Cl. 5—348.
Schafer, George F. Collapsible scaffolding. 3,354,596, 11–28–67, Cl. 52—646.
Schaller, Frank W.: *See*—
Tuffnell, Glenn W., Schaller, and Yeo. 3,355,280.
Schapira, William W., to Consolidated Electronics Industries Corp. Electromagnetic switch with non-snap-acting contacts. 3,355,629, 11–28–67, Cl. 317—11.
Schaumburg, Eric: *See*—
Andersen, Obel F. E. 3,355,140.
Scheide, Alfred W.: *See*—
Munch, Walter, Jr., and Scheide. 3,355,539.
Schenkelberger, Frank J., to Clark Equipment Co. Control system. 3,354,789, 11–28–67, Cl. 91—413.
Schenker, Karl: *See*—
Urech, Jakob, Fechtig, Bosshardt, Bickel, Schenker, and Wilhelm. 3,355,452.
Schindler, Donald G., to United States Steel Corp. Apparatus for measuring thickness of materials by sound-wave reflection. 3,354,700, 11–28–67, Cl. 73—67.9.

- Schinske, William G., to Holub Industries, Inc. Fish tape winder. 3,355,123, 11-28-67, Cl. 242—84.8.
- Schlaf, Stanley O. Merchadise dispensing machine module including a helical article discharge means. 3,355,064, 11-28-67, Cl. 221—14.
- Schlegel, Karl F., Jr., to Kay-El Sales Corp. Toothbrush. 3,354,491, 11-28-67, Cl. 15—167.
- Schlichting, Gilbert H. Marking and carrying container for data processing cards. 3,355,066, 11-28-67, Cl. 221—259.
- Schlumberger Technology Corp.: *See—*
  - Young, David E. 3,354,963.
  - Young, David E. 3,354,964.
- Schlumberger Well Surveying Corp.: *See—*
  - Poland, William L. 3,355,692.
- Schmerl, Egon F. Walker. 3,354,893, 11-28-67, Cl. 135—45.
- Schmid, Karl, to Oerlikon-Buhrle Holding AG. Spindle for spinning and twisting machine. 3,354,629, 11-28-67, Cl. 57—135.
- Schmidt, Frank F.: *See—*
  - Williams, Dean N., Ogden, Hodge, and Schmidt. 3,355,286.
- Schmidt, Seigfried, to North American Philips Co., Inc. Circuit arrangement for the triggered discharge of a capacitor. 3,355,626, 11-28-67, Cl. 315—241.
- Schmidt, William: *See—*
  - Cantor, Abraham, Schmidt, and Winicov. 3,355,392.
- Schmitt, Josef, to Etablissements Clin-Byla. 5-(2-oxo-2,5-dihydro-4-furyl)-benzo(b)-furans and intermediates therefor. 3,355,463, 11-28-67, Cl. 260—343.6.
- Schneider, William S., and A. P. Corella, 10% to Wayne V. Rodgers. Method of making stand-up package. 3,354,601, 11-28-67, Cl. 53—28.
- Schoenberger, John J., and R. P. Citko, to Corn Products Co. Single mix starch adhesive. 3,355,307, 11-28-67, Cl. 106—213.
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- Schoelm, Charles F.: *See—*
  - Garrison, Robert A., and Schoelm. 3,354,788.
- Schoenecker, Thomas J.: *See—*
  - Kryzer, Benjamin H., Schoenecker, and Burkhardt. 3,354,907.
- Scholl, Howard O., and P. L. Hyatt, to American Air Filter Co., Inc. Dust collector apparatus. 3,354,620, 11-28-67, Cl. 55—304.
- Schramm, Arthur G. Steerable trailer wheel mechanism. 3,354,982, 11-28-67, Cl. 180—79.2.
- Schrandt, William T.: *See—*
  - Harding, Jonathan, Mellon, and Schrandt. 3,354,480.
- Schredl, Nikolaua: *See—*
  - Friedmann, Hans, Katscher, Schredl. 3,355,420.
- Schroeder, Ronald C.: *See—*
  - Johnston, Lawrence M., Jr., and Schroeder. 3,354,741.
- Schubert, Ernest J., to Burroughs Corp. Matrix driver control circuits. 3,355,710, 11-28-67, Cl. 340—166.
- Schultink, Lubertus, and G. Klopman, to North American Philips Co., Inc. Tunnel furance. 3,355,157, 11-28-67, Cl. 263—6.
- Schultz, Richard, to Bühler, Gebrüder. Pellet mill having adjustably mounted rollers. 3,354,845, 11-28-67. Cl. 107—14.
- Schumacher, Erwin A., M. B. Clark, L. J. Uline, and H. A. Trull, to Union Carbide Corp. Electrode for a flowing film of liquid material. 3,355,327, 11-28-67, Cl. 136—86.
- Schut, Richard J. Portable filter. 3,355,026, 11-28-67, Cl. 210—416.
- Schwab, Charles J., to Brock Equipment Co. Railroad switching device. 3,355,585, 11-28-67, Cl. 246—393.
- Schwartz, James W., and B. W. Squier, to Motorola, Inc. Reduction of arcing between electrodes in a cathode ray tube by conducting coating of resistance material on inner wall of tube neck. 3,355,617, 11-28-67, Cl. 313—82.
- Schwartz, William H. Transportable swaging press. 3,354,694, 11-28-67, Cl. 72—453.
- Schwartzman, Gilbert. Mixing assembly for brush-headed applicator. 3,355,238, 11-28-67, Cl. 401—41.
- Schwartzman, Gilbert. Applicator with bonded or snap fitted cover. 3,355,240, 11-28-67, Cl. 401—205.
- Schwartz, Julius D., and G. E. Dokes, to Hendon Construction Co. Locking strip for a liner of a swimming pool. 3,354,473, 11-28-67, Cl. 4—172.
- Schwarzer, Carl G., to Shell Oil Co. Flame retardant epoxy compositions containing polyglycidyl ethers of hexhalo bicycloheptadiene bisphenols. 3,355,511, 11-28-67, Cl. 260—830.
- Scott Aviation Corp.: *See—*
  - Caruso, John T. 3,354,903.
- Scott, Herbert P.: *See—*
  - Brewin, Grant H., and Scott. 3,355,074.
- Scott, William B., Jr.: *See—*
  - Mundschenk, Glenn R., and Scott. 3,355,702.
- Scott, William P., to Continental Oil Co. Lithium soap greases containing a rust inhibitor. 3,355,384, 11-28-67, Cl. 252—36.
- Scullin, James P., and A. F. Fletcher, to Tenneco Chemicals, Inc. Stabilization of halogenated polyolefin compositions. 3,355,423, 11-28-68, Cl. 260—45.95.
- Seddon, Jeffrey W., to Gullick Ltd. Mine roof supports and conveyors for use in conjunction therewith. 3,355,213, 11-28-67, Cl. 299—31.
- Segal, Errol H. Apparatus for making dental crowns and bridges. 3,354,548, 11-28-67, Cl. 32—32.
- Segal, Harry, to The Duplan Corp. Composite yarn structure and method for producing same. 3,354,630, 11-28-67, Cl. 57—151.
- Seizo Kurwabara: *See—*
  - Nonaka, Kinzo. 3,355,661.
- Selker, Eugene I. Baseball gameboard. 3,355,173, 11-28-67, Cl. 273—89.
- Selienraad, Christoffel, and G. J. Berna, to North American Philips Co. Lighting fitting. 3,355,583, 11-28-67, Cl. 240—128.
- Semenhuk, Michael H., to Harris Intertype Corp. Sheet handling apparatus. 3,355,639, 11-28-67, Cl. 317—262.
- Semones, Donald E., and W. E. Chase, to Battele Memorial Institute. Method of preparing electrodes. 3,355,326, 11-28-67, Cl. 136—86.
- Senda, Kazuo: *See—*
  - Sasadi, Minoru, Yamamoto, Ichikawa, Ohzeki, Senda, and Masunaka. 3,355,402.
- Seney, John S., to E. I. du Pont de Nemours and Co. Continuous thread tension indicating drive roller. 3,354,711, 11-28-67, Cl. 73—143.
- Seneca Falls Machine Co.: *See—*
  - Eisengrein, Robert H., and Blackwell. 3,355,641.
- Sensi, John E., and W. F. Galey, to Pittshburgh Plate Glass Co. Method of forming a glass ribbon on a gas support bed. 3,355,275, 11-28-67, Cl. 65—99.
- Sexton, Arthur R., to The Dow Chemical Co. Production of monohalopyridinols. 3,355,456, 11-28-67, Cl. 260—297.
- Sexton Can Co., Inc.: *See—*
  - Sexton, Edward W. 3,355,053.
- Sexton, Edward W., to Sexton Can Co., Inc. Metal can and closure therefor. 3,355,053, 11-28-67, Cl. 220—23.
- Seyl, Peter, to R. Winkler and K. Dunnebier. Device for distributing work pieces. 3,355,169, 11-28-67, Cl. 271—71.
- Shaffer, Dean E.: *See—*
  - De Jean, Milton V., and Shaffer. 3,355,310.
- Shaffer, William R., and F. E. Miller, to Wald Industries, Inc. Bead dispenser for use with apparatus for marking road surfaces. 3 355,112, 11-28-67, Cl. 239—380.
- Shan, Vipin D., to Abbott Laboratories. Preparation of sodium cyclohexyl sulfamate free of sulfate ions. 3,355,485, 11-28-67, Cl. 260—513.6.
- Shannon, Suel G., to AMP Inc. Terminating device for linear bodies. 3,355,202, 11-28-67, Cl. 287—119.
- Shefler, Sydney, and S. M. Little, to United States of America, Navy. Emergency light unit. 3,354,828, 11-28-67, Cl. 102—37.8.
- Shell Oil Co.: *See—*
  - Cannell, Lawrence G., and Magoon. 3,355,510.
  - De Acetis, William B., and Newey. 3,355,512.
  - Jorda Robert M., Robicihaux, and Smith. 3,355,315.
  - Koppenol, Pieter, Dickson, Rutten, and Kruisman. 3,354,479.
  - Leonard, Joseph J. 3,355,379.
  - Meijer, Hermanus, and Mebius. 3,354,653.
  - Schwarzer, Carl G. 3,355,511.
- Shepherd, Eric J.: *See—*
  - Worrall, Roy, and Shepherd. 3,355,322.
- Sheppard, William G., and J. M. L. Jones, to Riddell Products Ltd. Spray dispensing apparatus. 3,355,072, 11-28-67, Cl. 222—211.
- Shimkus, John P.: *See—*
  - Worden, Donald P., and Shimkus. 3,355,567.
- Shock, D'Arcy A.: *See—*
  - Every, Richard L., and Shock. 3,354,957.
- Showa Denko Kabushiki Kaisha: *See—*
  - Oga, Taijiro, and Ichinokawa, and Ito. 3,355,479.
- Shrader, Charles D. Safety razor disassemblable into a compact unit. 3,354,545, 11-28-67, Cl. 30—47.
- Shreve, Warren T., to Leeds & Northrup Co. Automatic optical pyrometer system with automatic gain control. 3,354,773, 11-28-67, Cl. 88—22.5.
- Shull, Gilbert M.: *See—*
  - Huang, Hsing T., and Shull. 3,355,301.
- Siegla, Donald C.: *See—*
  - Bassett, Arthur T., Jr., and Siegla. 3,355,575.
- Siegmund, Walter P., and H. B. Cole, to Warner-Lambert Pharmaceutical Co. Method for making bubble free fiber optical image-transfer devices. 3,355,273, 11-28-67, Cl. 65—4.
- Siemens Aktiengesellschaft: *See—*
  - Gaudlitz, Arthur. 3,355,638.
- Siemens & Halske Aktiengesellschaft: *See—*
  - Geese, Albert, and Awakowicz. 3,355,658.
- Siemens-Schuckertwerke Aktiengesellschaft: *See—*
  - Gebel, Rudolf. 3,355,608.
- Siemer, Helmuth, Jr.: *See—*
  - Gately, James J., and Siemer. 3,355,593.
- Sieving, Alfred W., and P. C. Rosenberger, to Caterpillar Tractor Co. Transmission locking means. 3,354,994, 11-28-67, Cl. 192—4.
- Silar, Zdenek: *See—*
  - Cizek, Leopold, Silar, Zoubele, and Kubickova. 3,354,627.
- Silvestri, Michael A.: *See—*
  - Goldstein, Herman B., and Silvestri. 3,355,242.
- Siml, Edward A., to Douglas Motors Corp. Belt slip pulley drive system. 3,354,736, 11-28-67, Cl. 74—242.13.
- Simon, Wilhelm, to Rohm & Haas G.m.b.H. Extrusion die. 3,354,505, 11-28-67, Cl. 18—12.
- Simpson Timber Co.: *See—*
  - Clausen, Victor H., and Zweig. 3,355,168.
- Simpson, Victor R.: *See—*
  - Reed, David W., Simpson, and Zolnosky. 3,355,001.
- Simpson, Winea J. Visual acuity testing apparatus with test characters representing stylized human hand. 3,355,237, 11-28-67, Cl. 351—37.
- Siden, Alfred D., to Stephens-Adamson Mfg. Co. Dump truck piler. 3,355,038, 11-28-67, Cl. 214—45.
- Singer Co., The: *See—*
  - Haubert, Harold W., and Rudy. 3,355,170.
  - Hollenberg, Joel W. 3,355,095.

- Skanes, Frederick A., and R. W. Logue, to International Harvester Co. Endless track drive shoe. 3,355,224, 11-28-67, Cl. 305—53.
- Skendrovic, Lawrence. Mobile furnace delining machine. 3,354,967, 11-28-67, Cl. 173—43.
- Skoulios, Antoine: *See—*
  - Sadron, Charles, Finaz, and Skoulios. 3,355,513.
- Skoyles, Derek R., and A. J. Tyrell, to North American Philips Co., Inc. Magnetic filter. 3,355,024, 11-28-67, Cl. 210—222.
- Skrob, Frank J.; deceased, by G. M. Gibson, executor. Rotary internal combustion engine. 3,354,871, 11-28-67, Cl. 123—13.
- Skycar, Inc.: *See—*
  - Kelsey, Cadwallader W. 3,355,124.
- Slaughter, William L., to The Crane & Breed Casket Co. Casket top and method of manufacture. 3,354,524, 11-28-67, Cl. 27—17.
- Slayton, Wayland F. Self-adjusting and locking wrench. 3 354,758, 11-28-67, Cl. 81—126.
- Smalinskas, Stepas: *See—*
  - General, Norman T., Smalinskas, and Zundel. 3,354,752.
- Small, Samuel N., to A. G. Cohen, and P. Weiss. Umbrella rib clip. 3,354,516, 11-28-67, Cl. 24—81.
- Smith, Charles W., to The Bunker-Ramo Corp. Apparatus for assembling electrical components. 3,355,078, 11-28-67, Cl. 228—44.
- Smith, Edwin J., and L. D. McGraw, to National Steel Corp. Electrodeposition of metals. 3,355,368, 11-28-67, Cl. 204—14.
- Smith Industries International, Inc.: *See—*
  - Haspert, John C., and Wallers. 3,355,215.
- Smith, James B., to Factory Mutual Research Corp. Valve structure and fire protection sprinkler system including same. 3,355,728, 11-28-67, Cl. 340—196.
- Smith, Jean G., and F. T. Fitch, to W. R. Grace & Co. Process for preparing uranium dioxideyttrium oxide-zirconium dioxide microspheres. 3,355,525, 11-28-67, Cl. 264—.5.
- Smith, John H.: *See—*
  - Axelson, Carl A., McGann, and Smith. 3,354,826.
- Smith, Keith L., N. R. Eldred, G. W. Buttrick, and A. E. Winslow, to Union Carbide Corp. Polyether-lignin compositions. 3,355,400, 11-28-67, Cl. 260—17.5.
- Smith Kline & French Laboratories: *See—*
  - Holden, Kenneth C. 3,355,495.
  - Stedman, Robert J. 3,355,355.
- Smith, Noyes, Jr.: *See—*
  - Jorda, Robert M., Robichaux, and Smith. 3,355,315.
- Smith, Sherman S.: *See—*
  - Richards, Chester L., Jr., and Smith. 3,355,209.
- Smith, Verity C., to Barnstead Still and Sterilizer Co. Demineralization of water. 3,355,018, 11-28-67, Cl. 210—94.
- Smith, William F., to Jones & Laughlin Steel Corp. Molten metal sampler. 3,354,723, 11-28-67, Cl. 73—425.6.
- Smitzer, Louis A., A. J. Gawin, A. Balint, R. F. Porazinski, and P. G. Bielik, to Bell & Howell Co. Data abstract recording machines. 3,354,774, 11-28-67, Cl. 88—24.
- Smitzer, Louis A., A. I. Yohanam, and D. D. Call, to Bell & Howell Co. Microfilm reader. 3,354,776, 11-28-67, Cl. 88—24.
- Sneed, Richard J., and K. J. Kronenberg, to General Dynamics Corp. Acousto-optical probing system. 3,354,713, 11-28-67, Cl. 73—170.
- Snyder Mfg. Co., Inc.: *See—*
  - Trexler, Philip C. 3,355,230.
- Soan, Brian S., and R. A. Waller, to Kins Developments Ltd. Gas holder. 3,355,271, 11-28-67, Cl. 48—174.
- Societe Anonyme dite: Societe Industrielle Pour: *See—*
  - Boissier, Jacques R., and Malen. 3,355,459.
- Societe Des Forges et Ateliers du Creusot: *See—*
  - Nectoux, Andre. 3,355,039.
- Societe Industrielle Bull-General Electric (Societe Anonyme): *See—*
  - Dollot, Yves C. 3,354,822.
- Societe Lyonnaise Des Applications Catalytiques: *See—*
  - Risse, Roger. 3,354,931.
- Soder, Karl G., to General Motors Corp. Turbomagnetic pump. 3,354,642, 11-28-67, Cl. 60—59.
- Soderlund, Garv A.: *See—*
  - Koch, Ulrich H., and Soderlund. 3,354,897.
- Soldan, Fritz: *See—*
  - Korbanka, Helmut, and Soldan. 3,355,394.
- Solem Machine Co.: *See—*
  - Roehrig, Phillip J. 3,354,588.
- Sonoco Products Co.: *See—*
  - Wright, Leon C. 3,355,121.
- Sorensen, Harold W. Anhydrous ammonia converter. 3,355,257, 11-28-67, Cl. 23—285.
- Sorensen, Leif E., and S. Djernas, said Djernas, assor. to said Sorensen. Hydraulic piston devices cooperating with sliding potentiometers. 3,355,690, 11-28-67, Cl. 338—39.
- Sorensen, Wayne R.: *See—*
  - Boyer, Lyndon D., and Sorenson. 3,355,428.
- Sours, William A., Y. M. Hoag, to General Electric Co. Speed changer for tape recorders. 3,354,734, 11-28-67, Cl. 74—190.
- Southerland, Elizabeth L.: *See—*
  - Southerland, James E. and E. L. 3,354,883.
- Southerland, James E., deceased (by E. L. Southerland, Executrix). Disposable syringe having frangible means for mixing plural medicaments. 3,354,883, 11-28-67, Cl. 128—232.
- Southington Foundry Co., Inc.: *See—*
  - Kawecki, Ralph E. 3,355,154.
- Southwell, Wyndham F., and N. Wehrmann, to L & L Mfg., Inc. Fabric stretching and/or alternately-reversing mechanism for separating fabric pieces from a stack thereof. 3,355,165, 11-28-67, Cl. 271—12.
- Sparks, Neil R., to Pan American Petroleum Corp. Seismic prospecting method of locating a suspected fault. 3,354,985, 11-28-67, Cl. 181—.5.
- Spence, Hilton W.: *See—*
  - Emmons, Stephen P., Matzen, and Spence. 3,354,565.
- Sperry Rand Corp.: *See—*
  - Brown, Julian, Jr., and Taft. 3,355,683.
  - Morris, John C. 3,354,995.
  - Taft, Donald R. 3,355,682.
  - Talarczyk, Anthony R. 3,355,718.
  - Tolmie, Robert J. 3,355,650.
- Spitzer, Marvin G.: *See—*
  - Craig, Robert W., Spitzer, and Yonker. 3,355,193.
- Spohn, Karl, and G. Foll, Index-Werke K.G. Hahn & Tessky. Machine tool. 3,354,763, 11-28-67, Cl. 82—21.
- Spriggs, Rueben S., and A. J. Learn, to TRW Inc. Method of forming mesh-like structure. 3,355,320, 11-28-67, Cl. 117—210.
- Springer, Joseph F., Jr., to Philco Ford Corp. Long time constant monostable multivibrator. 3,355,599, 11-28-67, Cl. 307—88.5.
- Sproull, Reavis C.: *See—*
  - Berger, Richard M., and Sproull. 3,354,886.
- Square D Co.: *See—*
  - Leonard, James H. 3,355,685.
- Squibb, E. R., & Sons, Inc.: *See—*
  - Diassi, Patrick A. 3,355,461.
  - Restivo, Albert R., and Dondzila. 3,355,488.
- Squier, Bertrand W.: *See—*
  - Schwartz, James W., and Squier. 3,355,617.
- Squires, Arthur M. Producing hydrogen and power. 3,355,249, 11-28-67, Cl. 23—213.
- Sroka, Richard: *See—*
  - Brody, Arthur, Sroka, and Ozimek. 3,355,344.
- Stackpole Carbon Co.: *See—*
  - Daul, Robert M. 3,355,565.
- Staff, Jack W., to G.I. Co. Slot wedge for rotatable electrical devices. 3,355,610, 11-28-67, Cl. 310—214.
- Stahl, Malte L., to SAAB Aktiebolag. Impact absorbing device. 3,354,990, 11-28-67, Cl. 188—1.
- Stamicarbon N.V.: *See—*
  - Den Besten, Henrikus. 3,354,586.
- Standard Car Truck Co.: *See—*
  - William, Ray C. 3,354,837.
- Standard Oil Co., Indisna: *See—*
  - Amick, James W., and Hunt. 3,355,270.
  - Mayer James F., and Harrier. 3,355,408.
- Standard Screw Co.: *See—*
  - Barnes, William I. 3,354,898.
- Stange, Hugo: *See—*
  - Lutz, Martin R., Nowlin, and Stange. 3,355,436.
- Stanley Aviation Corp.: *See—*
  - Stanley, Robert M., and Griffiths. 3,355,127.
- Stanley, Robert M., and E. C. Griffiths, to Stanley Aviation Corp. Occupant escape apparatus for an aircraft or the like. 3.355,127, 11-28-67, Cl. 244—122.
- Stanley-Western Corp.: *See—*
  - Ehrlich, Stanley V. 3,354,489.
- Stanley Works, The: *See—*
  - Barry, James S. 3,354,841.
- Stansberry, Robert F., to Garland Mfg. Co. Garage door. 3,354,934, 11-28-67, Cl. 160—209.
- Stanles, Henry C. Adjustable support device for a vehicle. 3.355.136, 11-28-67, Cl. 248—352.
- Stark, Seymour A. J. Apparatus for the charging of blast holes. 3.354.771, 11-28-67, Cl. 86—20.
- Staubli, Rudolf. Recording apparatus for the graphic representation of time-sequence curves. 3,355,742, 11-28-67, Cl. 346—49.
- Stauffer, Barton A. Insulation retainer. 3,355,203, 11-28-67, Cl. 287—189.35.
- Stauffer Chemical Co.: *See—*
  - Herbstman, Sheldon. 3,355,469.
- St. Clair, David L.: *See—*
  - Amberg, Stephen W., Vicary, and St. Clair. 3,354,604.
- St. Clair, David L., S. W. Amberg, T. E. Doherty, and J. Phillips, to Lily-Tulip Cup Corp. Dispensing, filling and capping of portion containers. 3,354,614, 11-28-67, Cl. 53—282.
- Stedman, Robert J., to Smith Kline & French Laboratories. Antiviral cycloalkylamine compositions and method. 3,355,355, 11-28-67, Cl. 167—65.
- Steele, James R., and S. M. Lounsberry, Jr., to Moore & Steele Corp. Rail anchor. 3.355,105, 11-28-67, Cl. 238—330.
- Steinbeck, Wayne H. W. Swimming pool covers. 3,354,472, 11-28-67, Cl. 4—172.
- Stelzer, James S., to Peter Eckrich & Sons, Inc. Backing board handling system. 3,354,610, 11-28-67, Cl. 53—128.
- Stephens-Adamson Mfg. Co.: *See—*
  - Sinden, Alfred D. 3,355,038.
- Sterling Drug Inc.: *See—*
  - Hinkel, Emil T., Jr. 3,355,387.
  - Leauk, Alex. 3,355,361.
- Stern, Gerhard: *See—*
  - Biller, Efim, Nettesheim, and Stern. 3,355,501.
- Steucke, Paul T. Slide and transparency viewer attachment for lamp fixtures. 3,354,566, 11-28-67, Cl. 40—106.1.
- Stevenson, Robert W., to Mobil Oil Corp. Dyeable polypropylene. 3,355,416, 11-28-67, Cl. 260—41.
- Stewart, Clare A., Jr., to E. I. du Pont de Nemours and Co. Reaction product of an isocyanate-terminated polyurethane and an ammonia formaldehyde condensate and process of preparing same. 3,355,431, 11-28-67, Cl. 260—72.
- Stifelman, Jack. Key case. 3,354,678, 11-28-67, Cl. 70—456.
- Stockton, Elmer A.: *See—*
  - Botello, Gilber, Johnson, and Stockton. 3,355,148.

- Stoesser, William F.: *See—*
  - Gordon, Carroll G., and Stoesser. 3,354,912.
- Stokes, Neville B., and C. M. Allen, to United Shoe Machinery Corp. Coating composition for priming PVC surfaces. 3,355,411, 11–28–67, Cl. 260—304.
- Stokes, Philip J.: *See—*
  - Williams, John L., and Stokes. 3,355,673.
- Stoll, Kurt, to Kurt Stoll K.G. Maschinen u Apparatebau. Valve mechanism. 3,354,894, 11–28–67, Cl. 137—1.
- Stolnitz, Daniel: *See—*
  - Becke, Hans, Cave, and Stolnitz. 3.355,636.
- Stone, Oscar H.: *See—*
  - Gross, William L. C., and Stone. 3,354,579.
- Storch, Harold A., to Federal Screw Works. Fastener assembly for angular joint. 3,355,200, 11–28–67, Cl. 287—101.
- Story, Wayne G. Feed control mechanism for quilting machine arrangement. 3,354,850, 11–28–67, Cl. 112—118.
- Stowell, Keith C., to J. M. Collet & Co. Ltd. Processes for treating wort. 3,355,297, 11–28–67, Cl. 99—52.
- Stratford Engineering Corp.: *See—*
  - Graham, Ward A. 3,355,106.
- Strauss, Raymond C. Vehicle driving controls. 3,354,743. 11–28–67, Cl. 74—560.
- St. Regis Paper Co.: *See—*
  - Plumb, William W. 3,355,166.
- Strock, Howard E., to Associated Engineering Co. Molded circuit transformer assembly with internally routed secondary current and potential leads. 3,355,686. 11–28–67, Cl. 336—5.
- Struck, Robert T.: *See—*
  - Gorin, Everett, Struck, and Zielke. 3,355,376.
- Stuart, Robert W. Foldable vehicle. 3,354,975, 11–28–67, Cl. 180—31.
- Stulman, Jonas. Reciprocating zig-zag folder. 3,355,164, 11–28–67, Cl. 270—79.
- Sturzinger, Oskar, and B. Gemperle, to Anstalt Europaische Handelsgesellschaft. Apparatus for storing information and triggering printing operations and the like. 3,354,819, 11–28–67, Cl. 101—93.
- Sugaya, Masao. Screwdriver with screw holding means. 3,354,919, 11–28–67, Cl. 145—50.
- Sugiyama, Hiroshi: *See—*
  - Hattori, Junnosuke, Ozaki, Koike, Yoshioka, and Sugiyama. 3,355,352.
- Sullivan, Edward M.: *See—*
  - Zutty, Nathan L., Welch, Sullivan, Bryant, and Walter. 3,355,440.
- Sullivan, Edward M., and N. L. Zutty, to Union Carbide Corp. Copolymers. 3,355,518, 11–28–67, Cl. 260—895.
- Sullivan, Gerald L., to General Electric Co. Semiconductor transfer circuit. 3,354,728, 11–28–67, Cl. 74—5.47.
- Sumitomo Chemical Co., Ltd.: *See—*
  - Hattori, Junnosuke, Ozaki, Koike, Yoshioka, and Sugiyama. 3,355,352.
- Sumitomo Chemical Co.: *See—*
  - Kuramoto, Saichiro, Fujimoto, Okuno, Sakamoto, Nakagawa, and Mizutani. 3,355,524.
- Sun Chemical Corp.: *See—*
  - Goldstein, Herman B., and Silvestri. 3,355,242.
- Sundblom, Leif, to Rockwell Mfg. Co. Computing mechanism for counters. 3,355,100, 11–28–67, Cl. 235—61.
- Sun-Maid Raisin Growers of California: *See—*
  - Voller, James P. 3,354,923.
- Sun Oil Co.: *See—*
  - Hansel, William B. 3.355,256.
- Sun Shipbuilding & Dry Dock Co.: *See—*
  - Nickels, Frank J., Jr. 3,354,859.
- Superior Electric Co., The: *See—*
  - Leenhouts, Albert C. 3,355,642.
- Supinski, Eugene P.: *See—*
  - Carter, Thomas R., Fahnoe, and Supinski. 3,355,244.
- Svar, Zdenek: *See—*
  - Cizek, Leopald, Svar, Varga, and Zoubele. 3,354,626.
- Swabettes, Inc.: *See—*
  - Fleming, Robert J., and Cozzolino. 3,354,512.
- Swales, Norman: *See—*
  - Bradshaw, Arthur, Lee, Swales, and Voyle. 3,354,486.
- Swanson, Edward C., to Union Carbide Corp. Constant volume, vacuum-air, liquid impregnating dispenser. 3,354,917, 11–28–67, Cl. 141—54.
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- Sweeney, Richard F.: *See—*
  - Anelli, Louis G., and Sweeney. 3,355,493.
- Sweetheart Plastics, Inc.: *See—*
  - Midgley, Eric L., and Jank. 3,355,536.
- Swift & Co.: *See—*
  - Badgley, Durward B. 3,355,375.
  - Hertwig, Henry F. 3,354,920.
- Swift, John F., to International Harvester Co. Vehicle with selective hydraulic drive means. 3,354,977, 11–28–67, Cl. 180—44.
- Sylvania Electric Products, Inc.: *See—*
  - Dayton, David R., and Gates. 3,355,613.
  - Egan, William F. 3,355,677.
  - Hall, Harold H., Jr. 3,354,691.
  - Peck, Sandford C., Jr. 3,355,612.
  - Reed, Robert F., Sr. 3,355,619.
- Sze, Morgan C.: *See—*
  - Lewis, John D., Sze, and Kohn. 3,354,905.
- Szente, Pedro A., to United States of America, Atomic Energy Commission. Uniformly tapered transition mandrel. 3,354,695, 11–28–67, Cl. 72—476.
- TRW Inc.: *See—*
  - Clifford, Richard P. 3,355,589.
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  - Spriggs, Rueben S., and Learn. 3,355,320.
- Tabernacki, Harry A.: *See—*
  - Wayne, Clyde D., and Tabernacki. 3,355,003.
- Taft, Donald R., to Sperry Rand Corp. Latching-type digital phase shifter employing toroids of gyromagnetic material. 3,355,682, 11–28–67, Cl. 333—31.
- Taft, Donald R.: *See—*
  - Brown, Julian, Jr., and Taft. 3,355,683.
- Tahara, Eiji: *See—*
  - Kajikawa, Ryuzo, Hasimoto, and Tahara. 3,354,875.
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- Taylor, Derek: *See—*
  - Allen, John, and Taylor. 3,354,869.
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  - Taylor, Leta S., Johnson, and Huskey. 3,354,719.
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- Taylor, Robert W.: *See—*
  - Johnson, John R., and Taylor. 3,354,915.
- Taylor, William H. Slat for chain-link fence. 3,355,150, 11–28–67, Cl. 256—34.
- Taylor-Winfield Corp., The: *See—*
  - Ellis, Robert S. 3,355,079.
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- Tektronix, Inc.: *See—*
  - Ropiequet, Richard L. 3,355,620.
- Teleflex Inc.: *See—*
  - Tschanz, August E., and Wilkey. 3,354,742.
- Telefonaktiebolaget L M Ericsson: *See—*
  - Alexandersson, Sven V. 3,355,691.
  - Echartl, Friedrich K. P. 3,355,678.
- Tempmaster Corp.: *See—*
  - Dean, Frank J., Jr. 3,354,946.
- Tenneco Chemicals, Inc.: *See—*
  - Di Bella, Eugene P. 3,355,467.
  - Di Bella, Eugene P., and Deinet. 3,355.506.
  - Scullin, James P., and Fletcher. 3,355,423.
- Tesa S.A., Vaud: *See—*
  - Frei, Josef. 3,354,552.
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- Tetra Pak Rausing & Co. K.G.: *See—*
  - Rausing, Anders R., and Ignell. 3,355,080.
- Texas Instruments Inc.: *See—*
  - Baird, Stephen S., and Cunningham. 3,355,291.
  - Emmons, Stephen P., Matzen, and Spence. 3,354,565.
  - Ruckriegel, Raymond J. 3,355,563.
- Thatcher, Robert B., to The Chandler & Price Co. Web roll stand. 3,355,122, 11–28–67, Cl. 242—75.43.
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- Thiokol Chemical Corp.: *See—*
  - Aycock, William C. 3.354,647.
  - Elkin, Harold L. 3,355,466.
  - Fein, Marvin M., Green, and O'Brien. 3,355,478.
  - Grafstein, Daniel, and Bobinski. 3,355,489.
  - Novotny, Raymond J. 3,354,651.
  - Novotny, Raymond J., and Dunn. 3,354,652.
- Thomas and Betts Co. Inc., The: *See—*
  - Levinsky, Paul F. 3,354,517.
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- Thompson, Seth W. Adjustable linkage mechanism. 3,354,730, 11–28–67, Cl. 74—42.

- Tillmann, Margarete: *See—*
  - Tillmann, Peter, Kulling, and Hitzemann. 3,355,253.
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- Tilly, Ralph R.: *See—*
  - Taillie, Gordon P., and Tilly. 3,355,236.
- Tinner, Friedrich: *See—*
  - Beusch, Christian, and Tinner. 3,354,666.
- Tintex Corp.: *See—*
  - Puetzer, Bruno, Mackles, and Perl. 3,355,354.
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  - Tillmann, Peter, Kulling, and Hitzemann. 3,355,253.
- Tobacco Research & Development Institute (Propriet) Ltd.: *See—*
  - Rupert, John P. 3,355,004.
- Todd, Max E., and J. M. Cox, to General Motors Corp. Sprue extractor for molding machines. 3,354,942, 11–28–67, Cl. 164—344.
- Tolan, Peter J.: *See—*
  - Kintner, Paul M., and Tolan. 3,354,974.
- Tolmie, Robert J., to Sperry Rand Corp. Electrical power and control mechanism for electrical appliances. 3,355,650, 11–28–67, Cl. 318—345.
- Tolston, Charles C. Combined trash burner and barbecue pit. 3,354,848, 11–28–67, Cl. 110—18.
- Topol, George J., to Bowser, Inc. Instrument and process for testing contamination in liquid materials. 3,354,772, 11–28–67, Cl. 88—14.
- Toth, Paul: *See—*
  - Hohwart, George, and Toth. 3,355,182.
- Towne, Edmund B.: *See—*
  - Dickey, Joseph B., and Towne. 3,355,483.
- Toyo Spinning Co., Ltd.: *See—*
  - Inoshita, Kagenobu, and Morikawa. 3,355,449.
- Trane Co., The: *See—*
  - Lewis, Carl M. 3,354,665.
- Travilla, James C., and J. R. Vogel, to General Steel Industries, Inc. Underframe stress relief means. 3,354,840, 11–28–67, Cl. 105—420.
- Trevarrow, David J., Jr.: *See—*
  - Nolan, Terence M., and Trevarrow. 3,355,049.
- Trexler, Philip C., to Snyder Mfg. Co., Inc. Method and apparatus for entering a sealed enclosure. 3,355,230, 11–28–67, Cl. 312—1.
- Trico Products Corp.: *See—*
  - Deibel, Raymond A. 3,355,198.
- Trimbur, Ernest E., II: *See—*
  - Sakurai, Richard S., and Trimbur. 3,354,817.
- Troell, Peter T., and A. L. Renkey, to Harbison-Walker Co. Aluminum induction furnace lining construction using zircon and calcium aluminate. 3,355,537, 11–28–67, Cl. 13—35.
- Tronca, Edward G., to Globe-Union, Inc. Multiple control system and method of manufacture thereof. 3,355,628, 11–28–67, Cl. 317—99.
- True Temper Corp.: *See—*
  - Portz, William E. 3,355,226.
- Trull, Helio A.: *See—*
  - Schumacher, Erwin A., Clark, Uline, and Trull. 3,355,327.
- Tschanz, August E., and T. E. Wilkey, to Teleflex Inc. Remote control assembly construction. 3,354,742, 11–28–67, Cl. 74—501.
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- Tuin, Harm J.: *See—*
  - Van der Ster, Haarhuis, and Tuin. 3,354,664.
- Turnbull, John N.: *See—*
  - Gardner, John F., Lawrence, and Turnbull. 3,355,381.
- Turnbull, Thomas, IV. Containers. 3,355,087, 11–28–67, Cl. 229—40.
- Turner, Allen H.: *See—*
  - Brewer, George E. F., Burnside, and Turner. 3,355,374.
- Turzillo, Lee A. Method for installing anchoring or supporting columns in situ. 3,354,657, 11–28–67, Cl. 61—53.5.
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- Tyrrell, Arthur J.: *See—*
  - Skoyles, Derek R., and Tyrrell. 3,355,024.
- Tzschirntsch, Paul, to Veb Kabelwerk Oberspree (KWO). Insulating joint. 3,355,191, 11–28–67, Cl. 285—52.
- Ueda, Hiroshi: *See—*
  - Hirai, Tadamasa, Ueda, Munakata, and Watanabe. 3,355,568.
- Uhde, Friedrich G.m.b.H.: *See—*
  - Wengeler, Wilhelm. 3,354,933.
- Uline, Lawrence J.: *See—*
  - Schumacher, Erwin A., Clark, Uline, and Trull. 3,355,327.
- Ullmann, Werner: *See—*
  - Chaperon, Remy, and Ullmann. 3,355,369.
- Union Carbide Corp.: *See—*
  - Braun, Ernest J. 3,355,345.
  - Calvert, William L., and Anderson. 3,355,340.
  - D'Alessandro, William J. 3,355,272.
  - Hain, Elias W. R., Cosner, and Brautigam. 3,355,535.
  - Jenkin, William C. 3,355,318.
  - Meyer, Herbert H., and Kingsbury. 3,355,611.
  - Raley, Garland E. 3,354,506.
  - Schumacher, Erwin A., Clark, Uline, and Trull. 3,355,327.
  - Smith, Keith L., Eldred, Buttrick, and Winslow. 3,355,400.
  - Sullivan, Edward M., and Zutty. 3,355,518.
  - Swanson, Edward C. 3,354,917.
  - Welch, Frank J., and Paxton. 3,355,439.
  - Westfall, Paul M. 3,355,305.
  - Wheeler, Marshall L., Jr. 3,355,474.
  - Zutty, Nathan L., Welch, Sullivan, Bryant, and Walter. 3,355,440.
- Union Rheinische Braunkohlen Kraftstoff Aktiengesellschaft: *See—*
  - Biller, Efim, Nettesheim, and Stern. 3,355,501.
- Union Special Machine Co.: *See—*
  - Covert, John N. 3,354,851.
- Union Tank Car Co.: *See—*
  - Foster, Joseph W. 3,355,023.
  - Kryzer, Benjamin H., Schoenecker, and Burkhardt. 3,354,907.
  - Parks, John W., Olson, and Wood. 3,355,020.
- Uniroyal, Inc.: *See—*
  - Black, Sheppard A., and Heide. 3,355,346.
- United Aircraft Corp.: *See—*
  - Cripe, Alan R. 3,355,210.
  - Hala, Henry T. 3,354,645.
  - Madden, William M. 3,354,649.
- United Kingdom Atomic Energy Authority: *See—*
  - Allen, John, and Taylor. 3,354,869.
  - Craston, John L., and Pugh. 3,355,358.
  - Green, Derek. 3,354,685.
  - Sage, Frederick. 3,355,357.
  - Williams, John L., and Stokes. 3,355,673.
- United Shoe Machinery Corp.: *See—*
  - Bradshaw, Arthur, Lee, Swales, and Voyle. 3,354,486.
  - Heeley, Roland. 3,355,338.
  - Stokes, Neville B., and Allen. 3,355,411.
- United States of America
  - Atomic Energy Commission: *See—*
    - Brechna, Habib, and Hedin. 3,355,586.
    - Cadden, Jerry L., and Friar. 3,354,538.
    - Hammond, Roland P. 3,355,364.
    - Schoenfelder, Carl W., and Fein. 3,355,496.
    - Szente, Pedro A. 3,354,695.
  - Interior: *See—*
    - Gasior, Stanley J., and Forney. 3,355,363.
    - Gorin, Everett, Struck, and Zielke. 3,355,376.
  - Navy: *See—*
    - Annibale, Joseph R. 3,354,856.
    - Axelson, Carl A., McGann, and Smith. 3,354,826.
    - Braus, Harold. 3,355,647.
    - Brooks, James W., and Moss. 3,355,711.
    - Coatley, Vivian G., and Cottrell. 3,355,544.
    - Cote, Alfred J. 3,355,717.
    - Dale, John R., and Menzel. 3,354,860.
    - Dell, Vernon C. 3,355,130.
    - Eby, Robert E., and Boettinger. 3,355,561.
    - Fox, Stephen R. 3,355,719.
    - Gaubatz, Donald C. 3,355,727.
    - Harding, Jonathan, Mellon, and Schrandt. 3,354,480.
    - Hecker, Klaus J., Nordseth, and Joseph. 3,355,616.
    - Jones, Frank E., and Castle. 3,354,544.
    - Lackowski, Donald H. 3,355,712.
    - Lindenblad, Nils E. 3,355,652.
    - Miller, Leo C. 3,355,716.
    - Muccino, Frederick R. 3,355,569.
    - Neely, James R. 3,355,222.
    - Russell, Roger B., Jr., and Bates. 3,354,703.
    - Shefler, Sydney, and Little. 3,354,828.
    - Thomas, David E., and Merten. 3,355,538.
    - Williams, Dean N., Ogden, Hodge, and Schmidt. 3,355,286.
- United States Rubber Co.: *See—*
  - Brindell, Gordon D. 3,355,422.
- United States Scientific Instruments, Inc.: *See—*
  - Ward, William A. 3,355,625.
- United States Steel Corp.: *See—*
  - Ashworth, James E. 3,355,146.
  - Franz, William F. 3,354,862.
  - Hudson, Robert M., and Lesney. 3,355,265.
  - Schindler, Donald G. 3,354,700.
  - Zemberry, William L. 3,354,784.
- Universal Corrugated Box Machinery Corp.: *See—*
  - Lopez, John. 3,354,796.
- Universal Oil Products Co.: *See—*
  - Bloch, Herman S. 3,354,881.
  - Bloch, Herman S. 3,355,484.
  - Gorring, Robert L. 3,355,250.
  - Hayes, John C. 3,355,248.
- University of Illinois Foundation: *See—*
  - Mayes, Paul E. 3,355,740.
- Urech, Jakob, B. Fechtig, R. Bosshardt, H. Bickel, K. Schenker, and M. Wilhelm, to Ciba Corp. Derivatives of 7-aminocephalosporanic acid. 3,355,452, 11–28–67, Cl. 260—243.
- Utrup, Kathryn M.: *See—*
  - Utrup, Orville H. and K. M. 3,354,636.
- Utrup, Orville H. and K. M. Circle jet engine. 3,354,636, 11–28–67, Cl. 60—39.35.
- VEB Kabelwerk Oberspree (KWO): *See—*
  - Tzschirntsch, Paul. 3,355,191.

- Vallar, Thomas F.: *See—*
  - Saltzman, Harold, and Vallar. 3,355,680.
- Valsvik, Donald J., to Wood Conversion Co. Suspension grid for ceilings. 3,355,206, 11–28–67, Cl. 287—189.36.
- Van Benthuysen, John D., and M. B. Arisman, to CTS Corp. Variable resistance control. 3,355,693, 11–28–67, Cl. 338—184.
- Vanderbilt, R. T., Co., Inc.: *See—*
  - Karsten, Kenneth S. 3,355,388.
- Van der Lely, Piet, to North American Philips Co., Inc. One way brake for a self-starting synchronous motor. 3,354,993, 11–28–67, Cl. 188—82.77.
- Van der Ster, Johannes, G. J. Haarhuis, and H. J. Tuin, to North American Philips Co., Inc. Transferring condensed liquids to a storage container. 3,354,664, 11–28–67, Cl. 62—37.
- Van De Walle, Therese, and M. Brault, to Houilleres du Bassin du Nord et du Pas-de Calais. Stabilization of polyoxymethylene with a polyesteramide and a phenolic antioxidant. 3,355,514, 11–28–67, Cl. 260—857.
- Van Munster, Frederik H., to Abbott Laboratories. Process of manufacturing cyclohexylamines. 3,355,490, 11–28–67, Cl. 260—563.
- Varga, Julius: *See—*
  - Cizek, Leopold, Svar, Varga, and Zoubele. 3,354,626.
- Varsanyi, Frank L., to Bell Telephone Laboratories, Inc. Laser device using Nd : $PrCl_3$. 3,355,675, 11–28–67, Cl. 331—94.5.
- Vash, Arthur M., and W. G. Perry, to Damon Engineering Inc. Equal arm balance with improved sheet metal beam. 3,354,971, 11–28–67, Cl. 177—126.
- Vaughan, Donald R., to Woodland Mfg. Co. Cable layer. 3,354,660, 11–28–67, Cl. 61—72.2.
- Vazzano, Philip: *See—*
  - Tatter, Ernest O. P., and Vazzano. 3,355,176.
- Veb Carl Zeiss Jena: *See—*
  - Hesse, Gerhard, and Dietel. 3,355,603.
- Vecht, Aron, to Associated Electrical Industries Ltd. Recrystallization of sulphides of cadmium and zinc in thin films. 3,355,321, 11–28–67, Cl. 117—62.
- Vehoc Corp.: *See—*
  - Lewis, John D., Sze, and Kohn. 3,354,905.
- Velazquez, Carlos, and J. da Silva Frias. Dough forming machine. 3,354,843, 11–28–67, Cl. 107—9.
- Vendo Co., The: *See—*
  - Childers, Spencer L., Howard, and Clark. 3,355,576.
- Ventura, John J.: *See—*
  - Remes, Nathaniel L., and Ventura. 3,355,472.
- Vercellotti, Dale J., ⅓ each to G. J. Loebeck and A. J. Moulsh. Storage device. 3,355,032, 11–28–67, Cl. 211—134.
- Verrell, Curtis W.: *See—*
  - Holan, James H., and Verrell. 3,355,034.
- Vickary, Klyde J.: *See—*
  - Amberg, Stephen W., Vickary, and St. Clair. 3,354,604.
- Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen: *See—*
  - Lehner, Karl. 3,354,504.
- Victor Comptometer Corp.: *See—*
  - Whippo, Walter B., Bick, and Brown. 3,355,099.
- Vignovich, Barney, to Phillips Petroleum Co. Reservoir and method of forming the same. 3,354,654, 11–28–67, Cl. 61—.5.
- Vlcek, Pavel: *See—*
  - Elias, Jiri, Adankova, Boucek, Kolar, Samek, and Vlcek. 3,354,631.
- Vogel, John R.: *See—*
  - Travilla, James C., and Vogel. 3,354,840.
- Voller, James P., to Sun-Maid Raisin Growers of California. Method and apparatus for stemming, capping and cleaning raisins. 3,354,923, 11–28–67, Cl. 146—222.
- Vought, Robert H., and H. Kasch, to General Electric Co. R.F. measuring device using a solid state heat pump calorimeter. 3,355,666, 11–28–67, Cl. 324—106.
- Voyle, Peter W.: *See—*
  - Bradshaw, Arthur, Lee, Swales, and Voyle. 3,354,486.
- Vyzkumny Ustav Bavlnarsky: *See—*
  - Cizek, Leopold, Silar, Zoubele, and Kubickova. 3,354,627.
  - Elias, Jiri, Adamkova, Boucek, Kolar, Samek, and Vlcek. 3,354,631.
- Wachs, Gary S., to Coney Island Inc. Sky ride. 3,355,580, 11–28–67, Cl. 240—3.
- Waddill, Harold G.: *See—*
  - Milligan, John G., and Waddill. 3,355,434.
- Wagner, David P., and C. E. Gutshall, to Illinois Tool Works Inc. Functional coating of drill screws. 3,355,205, 11–28–67, Cl. 287—189.36.
- Wagner Electric Corp.: *See—*
  - Kersting, Raymond J. 3,354,638.
- Wahlmark, Gunnar A. Piston. 3,354,791, 11–28–67, Cl. 92—109
- Waite, Ralph D, and L. D. Johnson, to Ametek, Inc. Dual manifold pressure gauge. 3,354,722, 11–28–67, Cl. 73—407.
- Wajda, Edward S.: *See—*
  - Dhaka, Vir A., and Wajda. 3,355,334.
- Wakkerman-Daalderop, Mathilde W. H. M.: *See—*
  - Daalderop, Wilhelmus H. J. D. 3,354,766.
- Wald Industries, Inc.: *See—*
  - Shaffer, William R., and Miller. 3,355,112.
- Waldorf Paper Products Co.: *See—*
  - Mueller, Oscar G. 3,355,143.
- Walker, Brooks. Fuel feeding system for vehicles. 3,354,979, 11–28–67, Cl. 180—77.
- Walker Mfg. Co.: *See—*
  - Worden, Donald P., and Shimkus. 3,355,567.
- Walkup, Lewis E., to Xerox Corp. Projection transparency having a transparent powder image. 3,355,308, 11–28–67, Cl. 117—9.
- Wallace, William K.: *See—*
  - Amtsberg, Lester A., and Wallace. 3,354,754.
- Wallentowitz, Klaus, to General Time Corp. Electronic timer circuit. 3,355,632, 11–28–67, Cl. 317—142.
- Waller, Roy A.: *See—*
  - Soan, Brian S., and Waller. 3,355,271.
- Wallers, Richard A.: *See—*
  - Haspert, John C., and Wallers. 3,355,215.
- Wallgren, H. A. Ake, to Aktiebolaget Electrolux. Valve structure. 3,354,909, 11–28–67, Cl. 137—612.1.
- Walter, Andrew T.: *See—*
  - Zutty, Nathan L., Welch, Sullivan, Bryant, and Walter. 3,355,440.
- Walther, Frank H., Jr., and J. R. Ryan, to Harbison-Walker Refractories Co. Continuous casting apparatus with improved nozzle composition. 3,354,940, 11–28–67, Cl. 164—281.
- Ward, Richard B.: *See—*
  - Pascal, Ivan, and Ward. 3,355,498.
- Ward, William A., to United States Scientific Instruments, Inc. Recurrent pulsing system with semiconductor junction rectifier in capacitor discharge path. 3,355,625, 11–28–67, Cl. 315—200.
- Warnell, Joseph L., to E. I. du Pont de Nemours and Co. Tetrafluoroethylene epoxide polyethers. 3,355,397, 11–28–67, Cl. 260—2.
- Warner-Lambert Pharmaceutical Co.: *See—*
  - Siegmund, Walter P., and Cole. 3,355,273.
- Warner & Swasey Co., The: *See—*
  - Gloor, Wilbur T. 3,354,704.
  - Papp, Michael W. 3,354,764.
- Warren Fastener Corp.: *See—*
  - Meyer, Engelbert A. 3,354,597.
- Warwick Electronics Inc.: *See—*
  - Tatter, Ernest O. P., and Vazzano. 3,355,176.
- Wasserman, David: *See—*
  - Meigs, Frederick M., Micchelli, Wasserman, and Garber. 3,355,458.
- Watanabe, Hiroshi: *See—*
  - Hirai, Tadamasa, Ueda, Munakata, and Watanabe. 3,355,568.
- Waterdrink, Inc.: *See—*
  - Huntington, Morgan G. 3,355,382.
- Wayne, Clyde D., and H. A. Tabernacki, to National Dairy Products Corp. Food handling apparatus. 3,355,003, 11–28–67, Cl. 198—32.
- Weatherhead Co., The: *See—*
  - Acker, Richard C., and Bahnluk. 3,354,831.
- Weber, Hans B.: *See—*
  - Willison, Donald De Penti, and Weber. 3,354,836.
- Wehrmann, Nicholas: *See—*
  - Southwell, Wyndham F., and Wehrmann. 3,355,165.
- Weidner, Herbert: *See—*
  - Hahn, Johann, Greger, and Weidner. 3,355,559.
- Weil, Edward D., and J. Linder, to Hooker Chemical Corp. Herbicidal composition and method. 3,355,278, 11–28–67, Cl. 71—94.
- Weinberg, Harold N.: *See—*
  - Cheema, Inder, and Weinberg. 3,355,378.
- Weiss, Arthur J., to Continental Can Co., Inc. Double wall separator for bottle carriers. 3,355,012, 11–28–67, Cl. 206—65.
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- Welch, Frank J., Jr.: *See—*
  - Zutty, Nathan L., Welch, Sullivan, Bryant, and Walter. 3,355,440.
- Weldotron Corp.: *See—*
  - Zelnick, Seymour. 3,355,337.
- Wenczler & Heidenbain: *See—*
  - Koller, August. 3,354,778.
- Wendell, Douglas C., Jr., to Burroughs Corp. Information processing system utilizing a saturable reactor for adding three voltage pulses. 3,355,578, 11–28–67, Cl. 235—175.
- Wengeler, Wilhelm, to Friedrich Uhde G.m.b.H. Spray drying process for producing granulates. 3,354,933, 11–28–67, Cl. 159—48.
- Wenny, Daniel H., Jr.: *See—*
  - Brownell, Richard M., Gould, and Wenny. 3,355,724.
- Werby, Richard A. Envelope strip. 3,355,090, 11–28–67, Cl. 229—69.
- Werner, R. D., Co., Inc.: *See—*
  - Werner, Richard L., and Kocina. 3,354,987.
- Werner, Richard L., and L. A. Kocina, to R. D. Werner Co., Inc. Ladders. 3,354,987, 11–28–67, Cl. 182—228.
- West Laboratories, Inc.: *See—*
  - Cantor, Abraham, Schmidt, and Winicov. 3,355,392.
  - Cantor, Abraham, and Winicov. 3,355,386.
- Western Electric Co., Inc.: *See—*
  - Burgess, Laurance D. 3,355,659.
  - Fuchs, Francis J., Jr. 3,354,792.
  - Mallia, Joseph C. 3,354,542.
- Western Union Telegraph Co.: *See—*
  - Aronoff, Ethan. 3,355,663.
- Westfall, Paul M., to Union Carbide Corp. Insolubilization of proteins with sulfolanes. 3,355,305, 11–28–67, Cl. 106—146.
- Westinghouse Air Brake Co.: *See—*
  - Anderson, Evert V. 3,354,482.
  - Baughman, George W. 3,355,584.
- Weyenberg, Donald R.: *See—*
  - Bey, Alvin E., and Weyenberg. 3,355,467.
- Weyerhaeuser Co.: *See—*
  - Rieke, Robert C., and Brown. 3,355,448.

- Wheeler, Marshall L., Jr., to Union Carbide Corp. Process for production of hydroxy-endblocked siloxane fluids. 3,355,474, 11–28–67, Cl. 260—448.8.
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- White, Edward L.: *See—*
  - Kebrich, Leonard M., and White. 3,355,471.
- White, Floyd E., Jr. Cinematographic process. 3,355,292, 11–28–67, Cl. 96—39.
- Whitehall Electronics Corp.: *See—*
  - Pavey, George M., Jr. 3,354,984.
- Whitey Research Tool Co.: *See—*
  - Koch, Ulrich H., and G. A. Soderlund. 3,354,897.
- Whitlock, Bruce N., to McGraw-Edison Co. Encode and audio record-reproduce equipment. 3,354,557, 11–28–67, Cl. 35—6.
- Whitsel, Jay F.: *See—*
  - Winnai, Henry F., and Whitsel. 3,354,535.
- Wicker, Thomas H., Jr.: *See—*
  - Coover, Harry W., Jr., and Wicker. 3,355,482.
- Wickham, John L., to The Black and Decker Mfg. Co. Regulator for valve of pneumatic tool. 3,354,732, 11–28–67, Cl. 74—99.
- Wickman, D., & Co., Ltd.: *See—*
  - Martin, Derek J. 3,354,599.
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- Wilcox, Howard A., and M. G. Bekker, to General Motors Corp. Screw driven amphibious vehicle. 3,354,861, 11–28–67, Cl. 115—1.
- Wilcox, Isaac L., to Phillips Petroleum Co. Container. 3,355,083, 11–28–67, Cl. 229—17.
- Wilhelm, Mex: *See—*
  - Urech, Jakob, Fechtig, Bosshardt, Bickel, Schenker, and Wilhelm. 3,355,452.
- Wilke, Milton E., and W. R. Brooks, to Clevite Corp. Cell having integral valve, terminal, and contact member assembly. 3,355,329, 11–28–67, Cl. 136—134.
- Wilkerson, John P., to Loomis Hydraulic Testing Co., Inc. Pipe testing apparatus. 3,354,697, 11–28–67, Cl. 73—40.5.
- Wilkey, Thomas E.: *See—*
  - Tschanz, August E., and Wilkey. 3,354,742.
- Wilkinson, Thomas B.: *See—*
  - Melton, James O., and Wilkinson. 3,355,199.
- Williams, Dean N., H. R. Ogden, A. W. Hodge, and F. F. Schmidt, to United States of America, Navy. Nickel base alloy. 3,355,286, 11–28–67, Cl. 75—170.
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- Williams, Robert C.: *See—*
  - Lawrence, Robert, Leonard, and Williams. 3,354,543.
- Willison, Donald, K. L. De Penti, and H B. Weber, to Midland-Ross Corp. Articulated railway vehicle. 3,354,836, 11–28–67, Cl. 105—3.
- Willson, Karl S.: *See—*
  - De Rose, Arthur H., and Willson. 3 355,268.
- Wilson, Elias W. Air cleaner. 3,354,621, 11–28–67, Cl. 55—337.
- Wilson, James D., Banner Metals, Inc. Stackable-nestable container. 3,355 054, 11–28–67, Cl. 220—23.6.
- Wilson, Robert G. Combination oven. 3,355,573, 11–28–67, Cl. 219—396
- Wilson, William B., to National Lock Co. Heavy duty door lock set. 3,354,676, 11–28–67, Cl. 70—146.
- Winicov, Murray W.: *See—*
  - Cantor, Abraham, and Winicov. 3,355,386.
- Winicov, Murray W.: *See—*
  - Cantor, Abraham, Schmidt, and Winicov. 3,355,392.
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- Winkler, Richard and K Dunnebier Method of making envelopes. 3,354,798, 11–28–67, Cl. 93—63.
- Winkler, Richard and Dunnebier, Kurt: *See—*
  - Seyl, Peter. 3,355,169.
- Winnai, Henry F., and J. F. Whitsel, to The Budd Co. Composite cylindrical structure and method of making it. 3,354,535, 11–28–67, Cl. 29—447.
- Winslow, Alfred E.: *See—*
  - Smith, Keith L., Eldred, Buttrick, and Winslow. 3,355,400.
- Winters, Frank H.: *See—*
  - Beyers, Marvin E., Brown, Carter, Junck, Lauterbach, and Winters. 3,354,563.
- Wiseman, Joseph H., Jr., to Fischer & Porter Co. Pneumatic controller. 3,354,895, 11–28–67, Cl. 137—86.
- Wolff, Frederick M., to Century Lighting, Inc. Parallel ganged multiple potentiometer. 3,355,694, 11–28–67, Cl. 338—202.
- Wolff, George D. Hose cover stripping tool. 3,354,762, 11–28–67, Cl. 82—4.
- Wood, Arthur B Finger-grip food-product containers. 3,355,082, 11–28–67, Cl 229—16.
- Wood Conversion Co.: *See—*
  - Nicholson, Merle A. 3,354,598.
  - Valsvik, Donald J. 3,355,206.
- Wood, Keith S.: *See—*
  - Kennedy, Alan M. and Wood. 3,354,852.
- Wood, Marvin E.: *See—*
  - Parks, John W., Olson, and Wood. 3,355,020.
- Woodland Mfg. Co.: *See—*
  - Vaughan, Donald R. 3,354,660.
- Woodling, George V. Combination packaged container and bird seed feeder means. 3,354,868, 11–28–67, Cl. 119—52.
- Woods, Margaret: *See—*
  - Manspeaker, Robert O., and Woods. 3,354,842.
- Woods, Roy: *See—*
  - Manspeaker, Robert O., and Woods, 3,354,842.
- Woodward, Foster R., to The Taylor-Winfield Corp. Apparatus for aligning strip in strip joining equipment. 3,355,077, 11–28–67, Cl. 228—5.
- Woodworth, N. A. Co.: *See—*
  - Hohwart, George, and Toth. 3,355,182.
- Worden, Donald P., and J. P. Shimkus, to Walker Mfg. Co. Slanted coupler for tube welding. 3,355,567, 11–28–67, Cl. 219—8.5.
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  - Masters, Don G., and Worstell. 3,354,490.
- Wright, Jesse F. Chain saw drive sprocket. 3,354,737, 11–28–67, Cl. 74—243.
- Wright, Leon C., to Sonoco Products Co. Expansible chuck for tubular core. 3,355,121, 11–28–67, Cl. 242—68.2.
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- Wust, Rudolf: *See—*
  - Hardt, Dietrich, Bartl, and Wust. 3,355,516.
- Wystrach, Vernon P., M. M. Rauhut, and W. L. Freyberger, to American Cyanamid Co. Method for effecting ore flotation. 3,355,017, 11–28–67, Cl. 209—166.
- Xerox Corp.: *See—*
  - Hall, Richard H., and Levy. 3,355,289.
  - Taillie, Gordon P., and Tilly. 3,355,236.
  - Walkup, Lewis E. 3,355,308.
- Yada, Seiichi: *See—*
  - Kudo, Shiro, Yada, Yamauchi, and Fukasaku. 3,355,282.
- Yamamoto, Tsuzuku: *See—*
  - Sasaki, Minoru, Yamamoto, Ichikawa, Ohzeki, Senda, and Masunaka. 3,355,402.
- Yamauchi, Takayuki: *See—*
  - Kudo, Shiro, Yada, Yamauchi, and Fukasaku. 3,355,282.
- Yeo, Ralph B. G.: *See—*
  - Tuffnell, Glenn W., Schaller, and Yeo. 3,355,280.
- Yerzley, Felix L., and R. R. Roberts. Mechanical oscillographs. 3,354,701, 11–28–67, Cl. 73—88.
- Yohanam, Andrew I.: *See—*
  - Smitzer, Louis A., Yohanam, and Call. 3,354,776.
- Yonker, Joe E.: *See—*
  - Craig, Robert W., Spitzer, and Yonker. 3,355,193.
- Yoshioka, Kosuke: *See—*
  - Hattori, Junnosuke, Ozaki, Koike, Yoshioka, and Sugiyama. 3,355,352.
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- Young, David E., to Schlumberger Technology Corp. Well bore packing apparatus. 3,354,964, 11–28–67, Cl. 166—120.
- Young, Douglas, Inc.: *See—*
  - Young, Lewis D. 3,355,088.
- Young, Lewis D., to Douglas Young, Inc. Box with sections of contrasting material hinged together. 3,355,088, 11–28–67, Cl. 229—44.
- Younger, Gil W. Method of repairing splined couplings. 3,354,536, 11–28–67, Cl. 29—401.
- Yu, Ying-Nien: *See—*
  - Pennington, William, Price, and Yu. 3,354,706.
- Zahnradfabrik Friedrichshafen, Aktiengesellschaft: *See—*
  - Beig, Willy. 3,354,751.
  - Kuhnle, Willi, and Frei. 3,354,744.
- Zahoransky, Anton: *See—*
  - Zahoransky, Heinz. 3,355,216.
- Zahoransky, Heinz, to A. Zahoransky. Brush making machine. 3,355,216, 11–28–67, Cl. 300—3.
- Zeiss Ikon Aktiengesellschaft: *See—*
  - Hahn, Johann, Greger, and Weidner. 3,355,359.
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- Zielke, Clyde W.: *See—*
  - Gorin, Everett, Struck, and Zielke. 3,355,376.
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- Zolnosky, Larry D.: *See—*
  - Reed, David W., Simpson, and Zolnosky. 3,355,001.

Zoubele, Miroslav: *See*—
Cizek, Leopold, Svar, Varga, and Zoubele. 3,354,626.
Cizek, Leopold, Silar, Zoubele, and Kubickova. 3,354,627.

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Zundel, Robert P.: *See*—
General, Norman T., Smalinskas, and Zundel. 3,354,752.

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Zutty, Nathan L.: *See*—
Sullivan, Edward M., and Zutty. 3,355,518.

Zweig, Arnold: *See*—
Clausen, Victor H., and Zweig. 3,355,168.

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174 : 3,354,471
4–172 : 3,354,472
3,354,473
187 : 3,354,474
5– 93 : 3,354,475
348 : 3,354,476
352 : 3,354,477
7– 5.5 : 3,354,478
8– 17 : 3,355,242
55 : 3,355,243
9– 8 : 3,354,479
316 : 3,354,480
10– 10 : 3,354,481
92 : 3,354,482
12–120.5 : 3,354,483
123 : 3,354,484
3,354,485
142 : 3,354,486
3,354,487
13– 35 : 3,355,537
15– 49 : 3,354,488
83 : 3,354,489
104.1 : 3,354,490
167 : 3,354,491
3,354,492
230.11: 3,354,493
250.24: 3,354,494
302 : 3,354,495
377 : 3,354,496
16– 55 : 3,354,497
87.4 : 3,354,498
180 : 3,354,499
18– 1 : 3,354,500
2 : 3,354,501
3,354,502
4 : 3,354,503
8 : 3,354,504
12 : 3,354,505
14 : 3,354,506
30 : 3,354,507
3,354,508
35 : 3,354,509
36 : 3,354,510
19– 66 : 3,354,511
145.3 : 3,354,512
159 : 3,354,513
23– 17 : 3,355,244
50 : 3,355,245
113 : 3,355,246
209.4 : 3,355,247
209.5 : 3,355,248
213 : 3,355,249
232 : 3,355,250
3,355,251
253 : 3,355,252
277 : 3,355,253
3,355,254
280 : 3,355,255
284 : 3,355,256
285 : 3,355,257
288 : 3,355,258
293 : 3,355,259
310 : 3,355,260
362 : 3,355,261
365 : 3,355,262
24– 70 : 3,354,514
81 : 3,354,515
3,354,516
123 : 3,354,517
134 : 3,354,518
205.15: 3,354,520
230.5 : 3,354,521
236 : 3,354,522
238 : 3,354,523
27– 17 : 3,354,524
29– 95 : 3,354,525
96 : 3,354,526
3,354,527
105 : 3,354,528
148.4 : 3,354,519
156.8 : 3,354,529
157.3 : 3,354,530
3,354,531
3,354,532
3,354,533
183.5 : 3,355,263
3,355,264

29–183.5 : 3,355,265
190 : 3,355,266
194 : 3,355,267
196.6 : 3,355,268
401 : 3,354,536
3,354,537
402 : 3,354,534
423 : 3,354,538
432.1 : 3,354,539
447 : 3,354,535
603 : 3,354,540
607 : 3,354,541
620 : 3,354,544
625 : 3,354,542
3,354,543
30– 47 : 3,354,545
31– 23 : 3,354,546
32– 3 : 3,354,547
32 : 3,354,548
33– 74 : 3,354,549
79 : 3,354,550
148 : 3,354,551
164 : 3,354,552
178 : 3,354,553
206 : 3,354,554
34– 57 : 3,354,555
35– 6 : 3,354,557
9 : 3,354,558
10.4 : 3,355,538
19 : 3,354,559
26 : 3,354,560
36– 2.5 : 3,354,561
3,354,562
37–156 : 3,354,563
40– 11 : 3,354,564
28 : 3,354,565
106.1 : 3,354,566
125 : 3,354,567
158 : 3,354,568
42– 1 : 3,354,569
3,354,570
3,354,571
43– 6 : 3,354,572
21.2 : 3,354,573
24 : 3,354,574
56 : 3,354,575
44– 7 : 3,355,269
68 : 3,355,270
46– 11 : 3,354,576
118 : 3,354,577
158 : 3,354,578
47– 2 : 3,354,579
47 : 3,354,580
48–174 : 3,355,271
49–141 : 3,354,581
227 : 3,354,582
276 : 3,354,583
377 : 3,354,584
504 : 3,354,585
3,354,586
51– 35 : 3,354,587
141 : 3,354,588
249 : 3,354,589
298 : 3,355,272
52– 73 : 3,354,590
81 : 3,354,591
98 : 3,354,592
251 : 3,354,593
3,354,594
485 : 3,354,595
646 : 3,354,596
718 : 3,354,597
732 : 3,354,598
741 : 3,354,599
53– 24 : 3,354,600
28 : 3,354,601
30 : 3,354,602
3,354,603
42 : 3,354,604
3,354,605
76 : 3,354,606
78 : 3,354,607
87 : 3,354,608
112 : 3,354,609
128 : 3,354,610
184 : 3,354,611
204 : 3,354,612
251 : 3,354,613
282 : 3,354,614
55– 40 : 3,354,615

55– 96 : 3,354,616
147 : 3,354,617
158 : 3,354,618
197 : 3,354,619
304 : 3,354,620
337 : 3,354,621
484 : 3,354,622
3,354,623
56– 24 : 3,354,624
28 : Re.26,311
44 : 3,354,625
57– 58.95: 3,354,631
78 : 3,354,626
81 : 3,354,627
119 : 3,354,628
135 : 3,354,629
151 : 3,354,630
59– 3 : 3,354,632
24 : 3,354,633
60– 26.1 : 3,354,634
29 : 3,354,635
39.35: 3,354,636
53 : 3,354,637
54 : 3,354,643
54.5 : 3,354,638
3,354,639
3,354,640
54.6 : 3,354,641
59 : 3,354,642
202 : 3,354,644
204 : 3,354,645
211 : 3,354,646
220 : 3,354,647
221 : 3,354,648
249 : 3,354,650
258 : 3,354,651
260 : 3,354,652
271 : 3,354,649
61– .5 : 3,354,654
1 : 3,354,653
28 : 3,354,655
36 : 3,354,656
53.5 : 3,354,657
69 : 3,354,658
3,354,659
72.2 : 3,354,660
72.5 : 3,354,661
62– 10 : 3,354,662
12 : 3,354,663
37 : 3,354,664
184 : 3,354,665
354 : 3,354,666
372 : 3,354,667
449 : 3,354,668
63– 15.6 : 3,354,669
64– 11 : 3,354,670
65– 4 : 3,355,273
23 : 3,355,274
99 : 3,355,275
194 : 3,355,276
355 : 3,355,277
66– 50 : 3,354,671
84 : 3,354,672
107 : 3,354,673
67–101 : 3,354,674
70– 58 : 3,354,675
146 : 3,354,676
279 : 3,354,677
456 : 3,354,678
3,354,679
71– 94 : 3,355,278
72–126 : 3,354,680
166 : 3,354,681
181 : Re.26,308
192 : 3,354,682
206 : 3,354,683
222 : 3,354,684
253 : 3,354,685
263 : 3,354,686
280 : 3,354,687
297 : 3,354,688
334 : 3,354,689
352 : 3,354,690
371 : 3,354,691
402 : 3,354,692
453 : 3,354,693
3,354,694
476 : 3,354,695
73– 23.1 : 3,354,696
40.5 : 3,354,697

73– 67.2 : 3,354,698
67.5 : 3,354,699
67.9 : 3,354,700
88 : 3,354,701
3,354,702
88.5 : 3,354,703
93 : 3,354,704
95 : 3,354,705
116 : 3,354,706
117 : 3,354,707
118 : 3,354,556
133 : 3,354,708
136 : 3,354,709
141 : 3,354,710
143 : 3,354,711
150 : 3,354,712
170 : 3,354,713
186 : 3,354,714
188 : 3,354,715
198 : 3,354,716
204 : 3,354,717
230 : 3,354,718
322.5 : 3,354,719
355 : 3,354,720
398 : 3,354,721
407 : 3,354,722
425.6 : 3,354,723
505 : 3,354,724
516 : 3,354,725
74– 5 : 3,354,726
5.47: 3,354,728
5.6 : 3,354,727
15.84: 3,354,729
42 : 3,354,730
55 : 3,354,731
99 : 3,354,732
125 : 3,354,733
190 : 3,354,734
230.7 : 3,354,735
242.13: 3,354,736
243 : 3,354,737
330 : 3,354,738
339 : 3,354,739
436 : 3,354,740
477 : 3,354,741
501 : 3,354,742
560 : 3,354,743
645 : 3,354,744
665 : 3,354,745
688 : 3,354,746
3,354,747
689 : 3,354,748
745 : 3,354,749
750 : 3,354,750
752 : 3,354,751
763 : 3,354,752
75– .5 : 3,355,279
128 : 3,355,280
138 : 3,355,281
139 : 3,355,282
151 : 3,355,283
166 : 3,355,284
3,355,285
170 : 3,355,286
3,355,287
76– 37 : 3,354,753
81– 52.4 : 3,354,754
90 : 3,354,756
3,354,757
126 : 3,354,758
314 : 3,354,755
379 : 3,354,759
82– 2 : 3,354,760
3,354,761
4 : 3,354,762
21 : 3,354,763
24 : 3,354,764
83– 71 : 3,354,765
133 : 3,354,766
201.14: 3,354,767
345 : 3,354,768
455 : 3,354,769
84– 1.23: 3,355,539
477 : 3,354,770
86– 20 : 3,354,771
88– 14 : 3,354,772
22.5 : 3,354,773
24 : 3,354,774
3,354,775
3,354,776

88– 24 : 3,354,777
3,354,778
3,354,779
89– 26 : 3,354,780
90– 1 : 3,354,781
3,354,782
9.4 : 3,354,783
12 : 3,354,784
91– 49 : 3,354,785
180 : 3,354,786
222 : 3,354,787
373 : 3,354,788
413 : 3,354,789
92– 59 : 3,354,790
109 : 3,354,791
174 : 3,354,792
231 : 3,354,793
243 : 3,354,794
93– 8 : 3,354,795
36 : 3,354,796
49 : 3,354,797
63 : 3,354,798
82 : 3,354,799
94 : 3,354,800
94– 46 : 3,354,801
95– 1.7 : 3,354,802
11 : 3,354,803
14 : 3,354,804
45 : 3,354,805
73 : 3,354,806
94 : 3,354,807
96– 1 : 3,355,288
1.4 : 3,355,289
1.5 : 3,355,290
27 : 3,355,291
39 : 3,355,292
48 : 3,355,293
90 : 3,355,294
91 : 3,355,295
98– 40 : 3,354,808
94 : 3,354,809
99– 14 : 3,355,296
52 : 3,355,297
54 : 3,355,298
100 : 3,355,299
136 : 3,355,300
140 : 3,355,301
163 : 3,355,302
173 : 3,355,303
207 : 3,355,304
282 : 3,354,810
3,354,811
323 : 3,354,812
336 : 3,354,813
353 : 3,354,814
407 : 3,354,815
101– 93 : 3,354,816
3,354,817
3,354,818
3,354,819
3,354,820
142 : 3,354,821
336 : 3,354,822
350 : 3,354,823
451 : 3,354,824
455 : 3,354,825
102– 22 : 3,354,826
24 : 3,354,827
37.8 : 3,354,828
90 : 3,354,829
103– 38 : 3,354,830
44 : 3,354,831
46 : 3,354,832
87 : 3,354,833
104–172 : 3,354,834
173 : 3,354,835
105– 3 : 3,354,836
197 : 3,354,837
366 : 3,354,838
369 : Re.26,309
376 : 3,354,839
420 : 3,354,840
424 : 3,354,841
106–122 : 3,355,306
146 : 3,355,305
213 : 3,355,307
107– 1 : 3,354,842
9 : 3,354,843
14 : 3,354,844
3,354,845

107– 15 : 3,354,846
110– 7 : 3,354,847
18 : 3,354,848
112–115 : 3,354,849
118 : 3,354,850
200 : 3,354,851
252 : 3,354,852
265 : 3,354,853
113–119 : 3,354,854
114– 43.5 : 3,354,855
51 : 3,354,856
66.5 : 3,354,857
67 : 3,354,858
125 : 3,354,859
235 : 3,354,860
115– 1 : 3,354,861
117– 9* : 3,355,308
18 : 3,355,309
3,355,310
33 : 3,355,311
41 : 3,355,312
47 : 3,355,313
62 : 3,355,321
72 : 3,355,314
97 : 3,355,315
98 : 3,355,316
100 : 3,355,317
107.2 : 3,355,318
122 : 3,355,319
126 : 3,355,322
210 : 3,355,320
118– 8 : 3,354,862
62 : 3,354,863
63 : 3,354,864
309 : 3,354,865
409 : 3,354,866
603 : 3,354,867
119– 52 : 3,354,868
122– 32 : 3,354,869
235 : 3,354,870
123– 13 : 3,354,871
30 : 3,354,872
103 : 3,354,873
139 : 3,354,874
140 : 3,354,875
3,354,876
198 : 3,354,877
126–275 : 3,354,878
128– 71 : 3,354,879
159 : 3,354,880
215 : 3,354,881
218 : 3,354,882
232 : 3,354,883
260 : 3,354,884
129– 16.1 : 3,354,885
131– 10.9 : 3,354,886
94 : 3,354,887
202 : 3,354,888
132– 41 : 3,354,889
136 : 3,354,890
134– 25 : 3,355,323
29 : 3,355,324
135– 1 : 3,354,891
6 : 3,354,892
45 : 3,354,893
136– 24 : 3,355,325
86 : 3,355,326
3,355,327
93 : 3,355,328
134 : 3,355,329
137– 1 : 3,354,894
86 : 3,354,895
219 : 3,354,896
312 : 3,354,897
331 : 3,354,898
360 : 3,354,899
477 : 3,354,900
495 : 3,354,901
496 : 3,354,902
512.15: 3,354,903
556.6 : 3,354,904
590 : 3,354,905
596.2 : 3,354,906
599.1 : 3,354,907
610 : 3,354,908
612.1 : 3,354,909
625.17: 3,354,910
625.69: 3,354,911
3,354,912
138–147 : 3,354,913

139–399 : 3,354,914
140– 93 : 3,354,915
141– 20 : 3,354,916
54 : 3,354,917
363 : 3,354,918
145– 50 : 3,354,919
146– 95 : 3,354,920
120 : 3,354,921
215 : 3,354,922
222 : 3,354,923
148– 6.15: 3,355,330
9 : 3,355,331
13 : 3,355,332
142 : 3,355,333
177 : 3,355,335
186 : 3,355,334
149– 60 : 3,355,336
150– .5 : 3,354,924
33 : 3,354,925
151– 21 : 3,354,926
152–410 : 3,354,927
156– 85 : 3,355,337
92 : 3,355,338
112 : 3,355,339
256 : 3,355,340
295 : 3,355,341
3,355,342
304 : 3,355,343
355 : 3,355,344
380 : 3,355,345
396 : 3,355,346
157– 1.2 : 3,354,928
13 : 3,354,929
158– 27.4 : 3,354,930
139 : 3,354,931
159– 17 : 3,354,932
48 : 3,354,933
160–209 : 3,354,934
161–189 : 3,355,347
213 : 3,355,348
162–286 : 3,355,349
358 : 3,355,350
164– 48 : 3,354,935
82 : 3,354,936
87 : 3,354,937
150 : 3,354,938
254 : 3,354,939
281 : 3,354,940
283 : 3,354,941
344 : 3,354,942
165– 2 : 3,354,943
26 : 3,354,944
40 : 3,354,945
48 : 3,354,946
50 : 3,354,947
67 : 3,354,948
181 : 3,354,949
166– .5 : 3,354,950
.6 : 3,354,951
7 : 3,354,952
9 : 3,354,953
11 : 3,354,954
14 : 3,354,955
29 : 3,354,956
39 : 3,354,957
40 : 3,354,958
42 : 3,354,959
3,354,960
75 : 3,354,961
89 : 3,354,962
120 : 3,354,963
3,354,964
167– 30 : 3,355,351
33 : 3,355,352
3,355,353
55 : 3,355,354
65 : 3,355,355
3,355,356
170–160.29: 3,354,965
172–311 : 3,354,966
173– 43 : 3,354,967
174– 15 : 3,355,540
68 : Re.26,310
73 : 3,355,541
79 : 3,355,542
84 : 3,355,543
106 : 3,355,544
119 : 3,355,545
175– 56 : 3,354,968
94 : 3,354,969
218 : 3,354,970
176– 40 : 3,355,357
67 : 3,355,358
177–126 : 3,354,971
188 : 3,354,972
208 : 3,354,973
229 : 3,354,974
178– 5.6 : 3,355,546
6.6 : 3,355,547
68 : 3,355,548
70 : 3,355,549

178– 88 : 3,355,550
179– 1 : 3,355,551
15 : 3,355,552
3,355,553
15.55: 3,355,554
18 : 3,355,555
41 : 3,355,556
100.2 : 3,355,557
180– 31 : 3,354,975
32 : 3,354,976
44 : 3,354,977
3,354,978
77 : 3,354,979
3,354,981
79.2 : 3,354,982
114 : 3,354,980
181– .5 : 3,354,983
3,354,984
3,354,985
57 : 3,354,986
182–228 : 3,354,987
184– 6 : 3,354,988
106 : 3,354,989
188– 1 : 3,354,990
67 : 3,354,991
73 : 3,354,992
82.77: 3,354,993
192– 3.5 : 3,354,995
4 : 3,354,994
85 : 3,354,996
194– 10 : 3,354,997
57 : 3,354,998
195– 29 : 3,355,359
51 : 3,355,360
62 : 3,355,361
196–136 : 3,355,362
197– 6.7 : 3,354,999
17 : 3,355,000
18 : 3,355,001
198– 31 : 3,355,002
32 : 3,355,003
44 : 3,355,004
103 : 3,355,005
105 : 3,355,006
139 : 3,355,007
219 : 3,355,008
221 : 3,355,009
200– 5 : 3,355,558
52 : 3,355,559
81.9 : 3,355,560
83 : 3,355,561
86.5 : 3,355,562
138 : 3,355,563
144 : 3,355,564
166 : 3,355,565
167 : 3,355,566
201– 9 : 3,355,363
202–172 : 3,355,364
197 : 3,355,365
203– 20 : 3,355,366
204– 1 : 3,355,367
14 : 3,355,368
143 : 3,355,369
147 : 3,355,370
164 : 3,355,371
180 : 3,355,372
181 : 3,355,373
3,355,374
299 : 3,355,375
206– 46 : 3,355,010
3,355,011
65 : 3,355,012
3,355,013
208– 10 : 3,355,376
22 : 3,355,377
28 : 3,355,378
33 : 3,355,379
153 : 3,355,380
251 : Re.26,312
310 : 3,355,381
209– 73 : 3,355,014
3,355,015
74 : 3,355,016
166 : 3,355,017
210– 22 : 3,355,382
94 : 3,355,018
104 : 3,355,019
121 : 3,355,020
130 : 3,355,021
162 : 3,355,022
195 : 3,355,023
222 : 3,355,024
249 : 3,355,025
416 : 3,355,026
211– 14 : 3,355,027
21 : 3,355,028
44 : 3,355,029
87 : 3,355,030
123 : 3,355,031
134 : 3,355,032
148 : 3,355,033

212– 55 : 3,355,034
214– 1 : 3,355,035
3,355,036
44 : 3,355,037
45 : 3,355,038
62 : 3,355,039
75 : 3,355,040
83.3 : 3,355,041
91 : 3,355,042
501 : 3,355,043
518 : 3,355,044
215– 11 : 3,355,047
13 : 3,355,045
3,355,046
219– 8.5 : 3,355,567
69 : 3,355,568
86 : 3,355,569
98 : 3,355,570
214 : 3,355,571
301 : 3,355,572
396 : 3,355,573
464 : 3,355,574
3,355,575
220– 3.94: 3,355,048
5 : 3,355,049
9 : 3,355,050
15 : 3,355,051
18 : 3,355,052
23 : 3,355,053
23.6 : 3,355,054
38 : 3,355,055
42 : 3,355,056
46 : 3,355,057
48 : 3,355,058
53 : 3,355,059
54 : 3,355,060
60 : 3,355,061
67 : 3,355,062
97 : 3,355,063
221– 14 : 3,355,064
90 : 3,355,065
259 : 3,355,066
222– 23 : 3,355,067
30 : 3,355,068
83 : 3,355,069
177 : 3,355,070
190 : 3,355,071
211 : 3,355,072
223– 12 : 3,355,073
112 : 3,355,074
224– 25 : 3,355,075
226– 11 : 3,355,076
228– 5 : 3,355,077
44 : 3,355,078
47 : 3,355,079
229– 14 : 3,355,080
3,355,081
16 : 3,355,082
17 : 3,355,083
28 : 3,355,084
31 : 3,355,085
3,355,086
40 : 3,355,087
44 : 3,355,088
51 : 3,355,089
69 : 3,355,090
78 : 3,355,091
87 : 3,355,092
230–101 : 3,355,093
3,355,094
125 : 3,355,095
209 : 3,355,096
3,355,097
233– 26 : 3,355,098
235– 60 : 3,355,099
61 : 3,355,100
61.7 : 3,355,576
92 : 3,355,577
95 : 3,355,101
98 : 3,355,102
103 : 3,355,103
175 : 3,355,578
181 : 3,355,579
236– 77 : 3,355,104
238–330 : 3,355,105
239– 9 : 3,355,106
29 : 3,355,107
90 : 3,355,108
213 : 3,355,109
242 : 3,355,110
251 : 3,355,111
380 : 3,355,112
240– 3 : 3,355,580
8.3 : 3,355,581
10 : 3,355,582
128 : 3,355,583
241–191 : 3,355,113
293 : 3,355,114
242– 1 : 3,355,115
18 : 3,355,116
3,355,117

242– 35.6 : 3,355,118
55.12: 3,355,119
58.3 : 3,355,120
68.2 : 3,355,121
75.43: 3,355,122
84.8 : 3,355,123
244– 3.21: 3,355,130
35 : 3,355,124
42 : 3,355,125
77 : 3,355,126
122 : 3,355,127
151 : 3,355,128
155 : 3,355,129
246–187 : 3,355,584
393 : 3,355,585
248– 20 : 3,355,131
59 : 3,355,132
236 : 3,355,133
250 : 3,355,134
350 : 3,355,135
352 : 3,355,136
249– 48 : 3,355,137
71 : 3,355,138
250– 41.9 : 3,355,586
3,355,587
71 : 3,355,588
83.3 : 3,355,589
202 : 3,355,590
219 : 3,355,591
224 : 3,355,592
231 : 3,355,593
251– 30 : 3,355,139
65 : 3,355,140
101 : 3,355,141
141 : 3,355,145
175 : 3,355,142
321 : 3,355,143
322 : 3,355,144
252– 33.6 : 3,355,383
36 : 3,355,384
99 : 3,355,392
104 : 3,355,385
106 : 3,355,386
3,355,387
107 : 3,355,388
121 : 3,355,389
137 : 3,355,390
153 : 3,355,391
301.1 : 3,355,393
309 : 3,355,394
321 : 3,355,395
440 : 3,355,396
254– 29 : 3,355,146
93 : 3,355,147
134.3 : 3,355,148
173 : 3,355,149
256– 34 : 3,355,150
259– 10 : 3,355,151
107 : 3,355,152
111 : 3,355,153
149 : 3,355,154
260– 2 : 3,355,397
2.5 : 3,355,398
3 : 3,355,399
17.5 : 3,355,400
18 : 3,355,401
23 : 3,355,402
3,355,403
3,355,404
28.5 : 3,355,405
29.2 : 3,355,406
29.3 : 3,355,407
29.6 : 3,355,408
3,355,409
30.4 : 3,355,410
3,355,411
31.2 : 3,355,412
31.4 : 3,355,413
33.8 : 3,355,414
41 : 3,355,415
3,355,416
3,355,417
45.7 : 3,355,418
45.75: 3,355,420
45.85: 3,355,421
3,355,422
45.9 : 3,355,419
45.95: 3,355,423
46.5 : 3,355,424
3,355,425
3,355,480
47 : 3,355,426
3,355,427
67 : 3,355,428
3,355,429
70 : 3,355,430
72 : 3,355,431
73 : 3,355,432
75 : 3,355,433
3,355,434
3,355,435

260– 75 : 3,355,436
77.5 : 3,355,437
78.5 : 3,355,438
80 : 3,355,439
88.1 : 3,355,440
88.5 : 3,355,441
92.8 : 3,355,442
94.9 : 3,355,443
118 : 3,355,444
3,355,445
152 : 3,355,446
209 : 3,355,447
217 : 3,355,448
231 : 3,355,449
239.55: 3,355,450
240 : 3,355,451
243 : 3,355,452
244 : 3,355,453
249.5 : 3,355,454
297 : 3,355,455
3,355,456
309.6 : 3,355,457
326.3 : 3,355,458
327 : 3,355,459
339 : 3,355,460
343.2 : 3,355,461
343.3 : 3,355,462
343.6 : 3,355,463
347.3 : 3,355,464
406 : 3,355,465
429 : 3,355,466
429.3 : 3,355,467
429.7 : 3,355,468
3,355,469
3,355,470
435 : 3,355,471
446 : 3,355,472
448.2 : 3,355,473
3,355,475
3,355,476
448.8 : 3,355,474
3,355,477
464 : 3,355,482
465 : 3,355,478
3,355,479
468 : 3,355,481
488 : 3,355,483
505 : 3,355,484
513.6 : 3,355,485
513.7 : 3,355,486
514 : 3,355,487
534 : 3,355,488
544 : 3,355,489
563 : 3,355,490
564 : 3,355,491
583 : 3,355,492
586 : 3,355,493
3,355,494
3,355,495
606.5 : 3,355,496
607 : 3,355,497
3,355,498
613 : 3,355,499
3,355,500
614 : 3,355,501
615 : 3,355,502
621 : 3,355,503
624 : 3,355,504
642 : 3,355,505
648 : 3,355,506
3,355,507
671 : 3,355,508
677 : 3,355,509
683.15: 3,355,510
830 : 3,355,511
3,355,512
857 : 3,355,513
3,355,514
864 : 3,355,515
878 : 3,355,516
3,355,517
895 : 3,355,518
897 : 3,355,519
3,355,520
923 : 3,355,521
927 : 3,355,522
3,355,523
944 : 3,355,524
261–130 : 3,355,155
263– 3 : 3,355,156
6 : 3,355,157
29 : 3,355,158
264– .5 : 3,355,525
16 : 3,355,526
29 : 3,355,527
30 : 3,355,528
32 : 3,355,529
51 : 3,355,530
95 : 3,355,531
234 : 3,355,532
267 : 3,355,533

264–273 : 3,355,534
321 : 3,355,535
322 : 3,355,536
266– 3 : 3,355,159
33 : 3,355,160
267–100 : 3,355,161
269– 71 : 3,355,162
328 : 3,355,163
270– 79 : 3,355,164
271– 12 : 3,355,165
45 : 3,355,166
61 : 3,355,167
68 : 3,355,168
71 : 3,355,169
272– 57 : 3,355,170
82 : 3,355,171
273– 1 : 3,355,172
82 : Re.26,314
89 : 3,355,173
102 : 3,355,174
134 : 3,355,175
274– 10 : 3,355,176
47 : 3,355,177
277– 87 : 3,355,178
134 : 3,355,179
139 : 3,355,180
180 : 3,355,181
279– 2 : 3,355,182
280– 11.13: 3,355,183
11.19: 3,355,184
11.23: 3,355,185
19 : 3,355,186
3,355,187
285– 13 : 3,355,188
36 : 3,355,189
50 : 3,355,190
52 : 3,355,191
94 : 3,355,192
197 : 3,355,193
302 : 3,355,194
287– 20.92: 3,355,195
3,355,196
52.05: 3,355,197
87 : 3,355,198
90 : 3,355,199
101 : 3,355,200
119 : 3,355,201
3,355,202
189.35: 3,355,203
189.36: 3,355,204
3,355,205
3,355,206
292– 78 : 3,355,207
293– 9 : 3,355,208
294– 65.5 : 3,355,209
296– 28 : 3,355,210
65 : 3,355,211
299– 5 : 3,355,212
31 : 3,355,213
40 : 3,355,214
60 : 3,355,215
300– 3 : 3,355,216
18 : 3,355,217
301– 6 : 3,355,218
37 : 3,355,219
302– 36 : 3,355,220
53 : 3,355,221
56 : 3,355,222
303– 52 : 3,355,223
305– 53 : 3,355,224
3,355,225
306– 32 : 3,355,226
307– 88 : Re.26,313
3,355,594
88.5 : 3,355,595
3,355,596
3,355,597
3,355,598
3,355,599
3,355,600
3,355,601
141.4 : 3,355,602
308– 5 : 3,355,227
9 : 3,355,228
78 : 3,355,229
310– 9.7 : 3,355,603
11 : 3,355,604
3,355,605
3,355,606
3,355,607
3,355,608
3,355,609
214 : 3,355,610
248 : 3,355,611
312– 1 : 3,355,230
45 : 3,355,231
242 : 3,355,232
325 : 3,355,233
313– 35 : 3,355,612
40 : 3,355,613
63 : 3,355,614

313– 63 : 3,355,615
65 : 3,355,616
82 : 3,355,617
85 : 3,355,618
272 : 3,355,619
315– 3.5 : 3,355,622
8.5 : 3,355,620
31 : 3,355,621
55 : 3,355,623
83 : 3,355,624
200 : 3,355,625
241 : 3,355,626
323 : 3,355,627
317– 11 : 3,355,629
99 : 3,355,628
104 : 3,355,630
134 : 3,355,631
142 : 3,355,632
148.5 : 3,355,633
231 : 3,355,634
234 : 3,355,635
3,355,636
235 : 3,355,637

317–236 : 3,355,638
262 : 3,355,639
318– 18 : 3,355,640
3,355,641
28 : 3,355,642
55 : 3,355,643
138 : 3,355,644
3,355,645
3,355,646
171 : 3,355,647
222 : 3,355,648
314 : 3,355,649
342 : 3,355,650
320– 31 : 3,355,651
39 : 3,355,652
321– 2 : 3,355,653
44 : 3,355,654
69 : 3,355,655
322– 28 : 3,355,656
323– 22 : 3,355,657
324– 3 : 3,355,658
28 : 3,355,659
3,355,660

324– 30 : 3,355,661
57 : 3,355,662
58 : 3,355,663
61 : 3,355,664
65 : 3,355,665
106 : 3,355,666
325–174 : 3,355,667
328–167 : 3,355,668
329–103 : 3,355,669
330– 9 : 3,355,670
30 : 3,355,671
40 : 3,355,672
331– 45 : 3,355,673
94.5 : 3,355,674
3,355,675
113 : 3,355,676
173 : 3,355,677
332– 43 : 3,355,678
333– 1.1 : 3,355,679
3,355,680
16 : 3,355,681
31 : 3,355,682
3,355,683

335– 5 : 3,355,684
8 : 3,355,685
336– 5 : 3,355,686
136 : 3,355,687
192 : 3,355,688
234 : 3,355,689
338– 39 : 3,355,690
47 : 3,355,691
89 : 3,355,692
184 : 3,355,693
202 : 3,355,694
339– 4 : 3,355,695
5 : 3,355,696
31 : 3,355,697
97 : 3,355,698
99 : 3,355,699
119 : 3,355,700
126 : 3,355,701
3,355,702
177 : 3,355,703
217 : 3,355,704
340– 27 : 3,355,705
3,355,706

340– 38 : 3,355,707
80 : 3,355,708
164 : 3,355,709
166 : 3,355,710
172 : 3,355,712
172.5 : 3,355,711
3,355,713
3,355,714
3,355,715
3,355,716
3,355,717
3,355,718
173 : 3,355,719
3,355,720
3,355,721
3,355,722
3,355,723
174 : 3,355,724
3,355,725
3,355,726
174.1 : 3,355,727
196 : 3,355,728
248 : 3,355,729

340–286 : 3,355,730
309.1 : 3,355,731
347 : 3,355,732
343– 7.9 : 3,355,733
14 : 3,355,734
16 : 3,355,735
113 : 3,355,736
118 : 3,355,737
779 : 3,355,738
792.5 : 3,355,739
3,355,740
346– 33 : 3,355,741
49 : 3,355,742
74 : 3,355,743
350–176 : 3,355,234
180 : 3,355,235
187 : 3,355,236
351– 37 : 3,355,237
401– 41 : 3,355,238
148 : 3,355,239
205 : 3,355,240
213 : 3,355,241

CLASSIFICATION OF DESIGNS

D 2– 80 : 209,383
209,384
379 : 209,385
D10– 8 : 209,386
9 : 209,387
D13– 1 : 209,388
6 : 209,389
209,390
D14– 3 : 209,391
209,392
D16– 1 : 209,393

D22– 19 : 209,394
D24– 1 : 209,395
D26– 1 : 209,396
209,397
209,398
209,399
5 : 209,400
14 : 209,401
209,402
15 : 209,403

D33– 14 : 209,404
209,405
209,406
19 : 209,407
209,408
209,409
D34– 4 : 209,411
5 : 209,410
15 : 209,412
D40– 1 : 209,413

D44– 15 : 209,414
D48– 20 : 209,415
31 : 209,416
D54– 1 : 209,417
2 : 209,418
209,419
13 : 209,420
D55– 1 : 209,421
D56– 1 : 209,422
D58– 5 : 209,423

D58– 6 : 209,424
8 : 209,425
17 : 209,426
26 : 209,427
209,428
209,429
209,430
D61– 1 : 209,431
D71– 1 : 209,432
209,433

D80– 8 : 209,434
10 : 209,435
D81– 25 : 209,436
D86– 10 : 209,437
209,438
D88– 3 : 209,439
D91– 1 : 209,440
D95– 2 : 209,441
5 : 209,442
D96– 12 : 209,443

CLASSIFICATION OF PLANTS

P. – 11 : 2,779
P. – 70 : 2,780

GEOGRAPHICAL INDEX
OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,354,647
3,355,087
4 : 3,354,982
3,355,075
3,355,217
3,355,627
3,355,658
3,355,730
3,355,736
5 : 3,355,102
6 : Re.26,311
3,354,471
3,354,481
3,354,508
3,354,536
3,354,543
3,354,545
3,354,547
3,354,548
3,354,567
3,354,571
3,354,578
3,354,590
3,354,596
3,354,601
3,354,625
3,354,644
3,354,645
3,354,646
3,354,655
3,354,660
3,354,663
3,354,671
3,354,676
3,354,688
3,354,694
3,354,706
3,354,707
3,354,713
3,354,724
3,354,735
3,354,740
3,354,759
3,354,788
3,354,828
3,354,843
3,354,861
3,354,876
3,354,882
3,354,889

6 : 3,354,891
3,354,893
3,354,897
3,354,901
3,354,912
3,354,915
3,354,918
3,354,923
3,354,928
3,354,968
3,354,979
3,355,026
3,355,046
3,355,054
3,355,067
3,355,071
3,355,076
3,355,078
3,355,098
3,355,100
3,355,101
3,355,130
3,355,142
3,355,146
3,355,147
3,355,150
3,355,155
3,355,167
3,355,207
3,355,215
3,355,237
3,355,283
3,355,287
3,355,292
3,355,32[illegible]
3,355,339
3,355,342
3,355,367
3,355,383
3,355,389
3,355,447
3,355,496
3,355,508
3,355,510
3,355,511
3,355,512
3,355,586
3,355,589
3,355,590
3,355,596

6 : 3,355,616
3,355,668
3,355,677
3,355,680
3,355,700
3,355,705
3,355,707
3,355,710
3,355,712
3,355,714
3,355,719
3,355,725
3,355,726
3,355,727
3,355,734
3,355,735
3,355,738
8 : 3,354,555
3,354,929
3,355,127
3,355,129
3,355,219
9 : 3,354,501
3,354,531
3,354,659
3,354,678
3,354,714
3,354,721
3,354,780
3,354,846
3,354,849
3,354,854
3,354,865
3,354,914
3,354,936
3,354,948
3,354,995
3,355,017
3,355,048
3,355,084
3,355,107
3,355,124
3,355,154
3,355,187
3,355,227
3,355,239
3,355,273
3,355,277
3,355,294
3,355,301

9 : 3,355,332
3,355,388
3,355,521
3,355,522
3,355,523
3,355,632
3,355,642
3,355,647
3,355,650
3,355,692
3,355,697
3,355,704
10 : 3,354,711
3,355,261
3,355,319
3,355,348
3,355,353
3,355,391
3,355,397
3,355,417
3,355,426
3,355,431
3,355,446
3,355,498
3,355,520
11 : 3,354,855
3,354,878
3,355,370
3,355,597
3,355,741
12 : 3,354,495
3,354,579
3,354,580
3,354,649
3,354,658
3,354,925
3,355,016
3,355,056
3,355,058
3,355,136
3,355,162
3,355,175
3,355,177
3,355,549
3,355,682
3,355,683
13 : 3,354,494
3,354,980
3,355,019
3,355,042

13 : 3,355,214
16 : 3,355,299
3,355,534
17 : 3,354,482
3,354,492
3,354,499
3,354,530
3,354,532
3,354,533
3,354,549
3,354,560
3,354,563
3,354,577
3,354,587
3,354,588
3,354,591
3,354,610
3,354,624
3,354,674
3,354,679
3,354,690
3,354,774
3,354,776
3,354,777
3,354,791
3,354,811
3,354,824
3,354,830
3,354,837
3,354,838
3,354,844
3,354,850
3,354,851
3,354,866
3,354,881
3,354,902
3,354,920
3,354,977
3,354,981
3,354,991
3,354,994
3,355,003
3,355,005
3,355,007
3,355,013
3,355,021
3,355,025
3,355,032
3,355,033
3,355,038

17 : 3,355,043
3,355,059
3,355,062
3,355,079
3,355,082
3,355,099
3,355,115
3,355,119
3,355,123
3,355,161
3,355,176
3,355,181
3,355,193
3,355,205
3,355,223
3,355,248
3,355,307
3,355,329
3,355,345
3,355,375
3,355,396
3,355,408
3,355,450
3,355,484
3,355,485
3,355,490
3,355,526
3,355,533
3,355,541
3,355,565
3,355,566
3,355,585
3,355,602
3,355,617
3,355,629
3,355,631
3,355,643
3,355,649
3,355,701
3,355,709
3,355,740
18 : 3,354,503
3,354,534
3,354,541
3,354,642
3,354,677
3,354,741
3,354,748
3,354,779
3,354,825

18 : 3,354,942
3,354,996
3,355,050
3,355,103
3,355,108
3,355,111
3,355,131
3,355,209
3,355,270
3,355,309
3,355,310
3,355,532
3,355,623
3,355,624
3,355,693
19 : 3,354,470
3,354,518
3,354,729
3,354,966
3,355,070
3,355,126
3,355,548
3,355,685
20 : 3,354,848
3,355,020
3,355,040
3,355,438
21 : 3,354,620
3,354,622
3,354,623
3,354,888
3,354,998
3,355,539
3,355,563
22 : 3,354,896
3,354,900
3,354,951
3,354,986
3,355,259
3,355,262
3,355,366
3,355,481
23 : 3,354,485
3,355,139
24 : 3,354,544
3,354,572
3,354,683
3,354,732
3,355,222
3,355,241
3,355,324
3,355,336
3,355,382
3,355,525
3,355,544
3,355,545
3,355,561
3,355,569
3,355,678
3,355,711
3,355,716
3,355,717
25 : 3,354,484
3,354,510
3,354,511
3,354,546
3,354,603
3,354,607
3,354,672
3,354,691
3,354,699
3,354,725
3,354,728
3,354,731
3,354,812
3,354,826
3,354,938
3,354,971
3,355,010
3,355,018
3,355,053
3,355,063
3,355,090
3,355,230
3,355,338
3,355,403
3,355,444
3,355,445
3,355,536
3,355,540
3,355,607
3,355,612
3,355,613
3,355,619
3,355,625
3,355,670
3,355,679
3,355,728
3,355,732
26 : Re.26,309
3,354,526

26 : 3,354,528
3,354,529
3,354,539
3,354,582
3,354,584
3,354,589
3,354,597
3,354,617
3,354,621
3,354,637
3,354,643
3,354,687
3,354,705
3,354,738
3,354,739
3,354,743
3,354,746
3,354,752
3,354,789
3,354,794
3,354,810
3,354,863
3,354,898
3,354,911
3,354,934
3,354,988
3,355,030
3,355,031
3,355,091
3,355,092
3,355,134
3,355,158
3,355,180
3,355,182
3,355,197
3,355,200
3,355,218
3,355,220
3,355,232
3,355,252
3,355,284
3,355,285
3,355,371
3,355,373
3,355,374
3,355,395
3,355,399
3,355,404
3,355,406
3,355,425
3,355,455
3,355,456
3,355,473
3,355,475
3,355,477
3,355,491
3,355,504
3,355,507
3,355,530
3,355,687
3,355,688
3,355,708
27 : Re.26,308
3,354,573
3,354,598
3,354,769
3,354,907
3,355,015
3,355,028
3,355,037
3,355,065
3,355,196
3,355,206
3,355,233
3,355,257
3,355,304
3,355,393
3,355,492
3,355,594
3,355,651
3,355,718
29 : 3,354,483
3,354,638
3,354,715
3,354,839
3,354,840
3,354,864
3,354,877
3,354,997
3,355,023
3,355,064
3,355,106
3,355,351
3,355,464
3,355,529
3,355,576
30 : 3,354,946
31 : 3,354,841
3,355,143
32 : 3,355,022
3,355,066

32 : 3,355,184
33 : 3,355,225
3,355,630
34 : Re.26,313
3,354,473
3,354,480
3,354,497
3,354,506
3,354,512
3,354,515
3,354,517
3,354,542
3,354,557
3,354,570
3,354,585
3,354,606
3,354,611
3,354,613
3,354,635
3,354,651
3,354,652
3,354,698
3,354,701
3,354,702
3,354,712
3,354,726
3,354,730
3,354,755
3,354,757
3,354,768
3,354,792
3,354,796
3,354,802
3,354,813
3,354,820
3,354,829
3,354,867
3,354,880
3,354,890
3,354,905
3,354,943
3,355,002
3,355,012
3,355,095
3,355,110
3,355,133
3,355,164
3,355,235
3,355,245
3,355,250
3,355,272
3,355,280
3,355,296
3,355,298
3,355,300
3,355,316
3,355,325
3,355,337
3,355,340
3,355,344
3,355,346
3,355,347
3,355,378
3,355,380
3,355,416
3,355,422
3,355,423
3,355,430
3,355,436
3,355,441
3,355,457
3,355,458
3,355,460
3,355,461
3,355,467
3,355,468
3,355,470
3,355,472
3,355,478
3,355,486
3,355,488
3,355,489
3,355,493
3,355,495
3,355,497
3,355,499
3,355,505
3,355,506
3,355,509
3,355,551
3,355,554
3,355,556
3,355,579
3,355,598
3,355,605
3,355,614
3,355,618
3,355,635
3,355,636
3,355,637
3,355,640

34 : 3,355,652
3,355,655
3,355,662
3,355,663
3,355,669
3,355,675
3,355,681
3,355,694
3,355,720
3,355,721
35 : 3,354,636
3,354,832
3,355,171
3,355,174
36 : 3,354,491
3,354,516
3,354,525
3,354,564
3,354,574
3,354,576
3,354,604
3,354,605
3,354,614
3,354,618
3,354,630
3,354,656
3,354,703
3,354,734
3,354,750
3,354,754
3,354,775
3,354,782
3,354,783
3,354,790
3,354,795
3,354,807
3,354,808
3,354,814
3,354,816
3,354,835
3,354,856
3,354,884
3,354,903
3,354,922
3,354,932
3,354,974
3,354,999
3,355,000
3,355,001
3,355,008
3,355,011
3,355,014
3,355,035
3,355,044
3,355,047
3,355,055
3,355,061
3,355,069
3,355,083
3,355,093
3,355,105
3,355,120
3,355,153
3,355,179
3,355,198
3,355,208
3,355,231
3,355,234
3,355,236
3,355,238
3,355,240
3,355,249
3,355,254
3,355,255
3,355,278
3,355,289
3,355,295
3,355,334
3,355,335
3,355,354
3,355,356
3,355,360
3,355,361
3,355,362
3,355,387
3,355,405
3,355,409
3,355,427
3,355,437
3,355,469
3,355,471
3,355,474
3,355,480
3,355,487
3,355,543
3,355,546
3,355,552
3,355,555
3,355,582
3,355,600
3,355,641

36 : 3,355,664
3,355,666
3,355,672
3,355,674
3,355,699
3,355,702
3,355,715
3,355,722
37 : 3,354,509
3,354,887
3,354,947
3,355,029
3,355,116
3,355,165
3,355,317
3,355,686
39 : 3,354,469
3,354,522
3,354,523
3,354,524
3,354,583
3,354,592
3,354,608
3,354,639
3,354,641
3,354,657
3,354,662
3,354,670
3,354,681
3,354,689
3,354,710
3,354,756
3,354,764
3,354,765
3,354,797
3,354,809
3,354,815
3,354,821
3,354,823
3,354,831
3,354,836
3,354,868
3,354,870
3,354,910
3,354,917
3,354,924
3,354,927
3,354,930
3,354,939
3,354,975
3,354,978
3,354,992
3,355,034
3,355,077
3,355,081
3,355,089
3,355,132
3,355,138
3,355,156
3,355,160
3,355,172
3,355,173
3,355,178
3,355,226
3,355,244
3,355,263
3,355,267
3,355,268
3,355,281
3,355,286
3,355,293
3,355,302
3,355,308
3,355,311
3,355,318
3,355,326
3,355,327
3,355,343
3,355,368
3,355,390
3,355,398
3,355,412
3,355,419
3,355,421
3,355,432
3,355,433
3,355,435
3,355,494
3,355,531
3,355,538
3,355,542
3,355,562
3,355,570
3,355,572
3,355,574
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DESIGN PATENTS

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PLANT PATENTS

26 : 2,780

36 : 2,779

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 28, 1967 Volume 844 Number 4

TRADEMARKS

NOTICES

Examination

Pursuant to the provisions of Rule 341(c), an examination for persons seeking registration before the United States Patent Office as patent attorneys or agents will be held on Tuesday, February 13, 1968.

With the exception of those former patent examiners for whom the examination is waived, all persons recognized for practice before the Patent Office in patent cases must, pursuant to the noted rule, pass the examination. Those passing the examination do not thereby qualify for recognition for practice before the Patent Office in trademark cases. Recognition for practice in trademark cases is governed by Rule 2.12 of the Trademark Rules of Practice, which does not require the passing of an examination.

This examination will be given under the supervision of the Civil Service Commission, and may be taken in any of the cities in which the Civil Service Commission regularly conducts examinations. Applications to take the examination must be filed in the Patent Office together with a $15 fee not later than January 12, 1968.

Application blanks may be obtained from the Clerk of the Patent Office Committee on Enrollment, Bldg. 3, 11th Floor, Room C16, Crystal Plaza or by mail directed to the attention of the Clerk of the Committee on Enrollment, U.S. Patent Office, Washington, D.C., 20231.

EDWIN L. REYNOLDS,
Oct. 31, 1967. *Chairman, Committee on Enrollment.*

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 424,892 (MICRO-THREAD PULSATOR), Rite-Way Products Company, Pulsators for milking machines; **Reg. No. 524,217** (ACME), The Schatz Manufacturing Company, Ball bearing casters for furniture and trunks, **filed** Sept. 1, 1967, D.C. Tex. (Pecos), Doc. C–67–89–P, *Robert A. Cottrell, doing business as Spartan Engineering Co.* v. *Halliburton Company.*

Reg. No. 507,856 (TROJAN), Contractors Machinery Company, Inc., Road construction and maintenance machinery and earth moving machinery—namely, graders, bulldozers, angledozers, and snow plows, **filed** Aug. 30, 1967, D.C., N.D.N.Y. (Utica), Doc. 67–CV–284, *Eaton Yale & Towne Inc.* v. *Watco Machine Products, Inc.*

CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17, 337
Date of oldest new application	Oct. 7, 1966
Date of oldest amended application (filing date)	Oct. 30, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) **L. J. BETTENDORF**, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	10-7-66	10-5-65
(II) **F. H. WETHERBEE**, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	12-14-66	9-29-65
(III) **P. S. BALL**, Classes 19, 21, 23, 26, 31, 34, 35, 36	11-22-66	10-18-65
(IV) **M. E. ABRAMSON**, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	12-6-66	10-30-64
Renewals (All Classes)	9-1-67	....
Sec. 12(c) Publications (All Classes)	9-5-67	....

Applications filed during the month of September 1967—2,140

Registrations Issued	412—No. 839,366 to No. 839,777
Renewals Issued	70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Reg. No. 524,217. (See Reg. No. 424,892.)

Reg. No. 546,058 (GILT EDGE), Blue Bell, Inc., Work shirts, work trousers, men's and boys' overalls, men's and boys' dungarees, and lined and unlined work coats, **filed** Nov. 10, 1966, D.C., M.D. Tenn. (Nashville), Doc. 4590, *Blue Bell, Inc.* v. *Washington Manufacturing Company.* Judgment granted for plaintiff; trademark owned by plaintiff; defendant permanently enjoined, July 13, 1967.

Reg. No. 680,671. (See Reg. No. 681,037.)

Reg. No. 680,672. (See Reg. No. 681,037.)

Reg. No. 681,037 (ZEP), Zep Manufacturing Corporation, Dressings for plastic and rubber mats, rubber tires, car door inside panels, and the like; **Reg. No. 686,052**, same, Sweeping, scouring, cleansing, degreasing and washing compounds, wax removing preparations for floors, and dishwashing detergent preparation; **Reg. No. 686,796**, same, Polishes for metal, wood and painted surfaces, self-polishing liquid floor waxes, and waxless floor finishing and polishing preparations; **Reg. No. 696,197** (ZEP ENCLOSED IN OVAL), same, Cleaning compounds—namely, cleansers, detergents, and degreasers; **Reg. No. 686,797** (ZEP AND DESIGN), same, Polishes for wood, metal and painted surfaces, self-polishing liquid floor waxes, and waxless floor finishing and polishing preparations; **Reg. No. 688,947** (ZEP), same, Insecticides, disinfectants, chain belt lubricants and dressings, sanitizing and deodorizing preparations, disinfectant preparations having incidental germicidal, bactericidal and deodorizing properties, disinfectant preparations having incidental sanitizing and deodorizing properties, sanitizing rinse preparations having incidental germicidal properties, and deodorants and room air fresheners; **Reg. No. 680,671** (ZEP-RENEW), same, Dressings for rubber and plastic mats and rubber tires; **Reg. No. 680,672** (ZEP-O-GLEAM), same, Dressings for automobile mats, rubber tires, inside panels on car doors, and the like; **Reg. No. 683,549** (ZEPLUBE), same, Chain belt lubricants and dressings; **Reg. No. 683,791** (ZEPCOREX), same, Cleaning preparations having incidental deodorizing properties; **Reg. No. 683,792** (ZEPOMIST), same, Liquid sweeping compounds; **Reg. No. 683,793** (ZEPOLENE), same, Cleaning and wax removing preparations for floors; **Reg. No. 683,794** (ZEP-O-WIZ), same, Abrasive type paste cleaners for cleaning bath tubs, kitchenware, refrigerators, machinery, soda fountains and the like; **Reg. No. 683,795** (ZEPTEEN), same, Cleaning and degreasing compounds; **Reg. No. 683,830** (ZEPROTEX), same, Waxless floor finishing and polishing preparations; **Reg. No. 683,831** (ZEPREME), same, Liquid self-polishing floor waxes; **Reg. No. 683,858** (ZEPORIZER), same, Sanitizing and deodorizing preparations; **Reg. No. 684,548** (ZEPOMATIC), same, Cleaning compounds for use in dishwashing machines; **Reg. No. 684,549** (ZEPONITE), same, Cleaning compounds for use in dishwashing machines; **Reg. No. 684,550** (ZEP-O-SUDS), same, Powdered detergent for use in washing dishes by hand; **Reg. No. 686,053** (ZEP-O-WHITE), same, Cleaning composition for white sidewall tires; **Reg. No. 686,054** (ZEP-D-LUXE), same, Liquid hand soap; **Reg. No. 686,055** (ZEPOLAN), same, Lanolated hand cleansing preparation; **Reg. No. 686,056** (ZEP-I-DINE 30), same, Cleaning preparations having incidental sanitizing properties; **Reg. No. 686,057** (ZEP-O-BRITE), same, Scouring cleansers; **Reg. No. 686,058** (ZEP-O-KREME), same, Liquifying hand cleansing preparation; **Reg. No. 686,059** (ZEP-O-SAM), same, Toilet bowl and urinal cleaning preparation having incidental deodorizing and disinfecting properties; **Reg. No. 686,563** (ZEP-O-SEAL), same, Quick drying penetrating composition for application as a coating to floors of wood, concrete, or cement; **Reg. No. 688,139** (ZEPOLISH), same, Polishes for wood, metal, and painted surfaces; **Reg. No. 688,948** (ZEP-O-KILL), same, Insecticide; **Reg. No. 688,949** (ZEP-O-MINT), same, Disinfectant having incidental germicidal, bactericidal, and deodorizing properties; **Reg. No. 688,950** (ZEPOPINE 8), same, Disinfectant; **Reg. No. 688,951** (ZEP-AMINE), same, Disinfectant, sanitizing and deodorant preparation; **Reg. No. 688,952** (ZEP-I-DINE 20), same, Sanitizing and germicidal rinse; **Reg. No. 688,953** (ZEPOSECTOR), same, Insecticide; **Reg. No. 689,244** (ZEPOFOAM), same, Carpet and upholstery cleaning preparation; **Reg. No. 694,067** (ZEP-O-FRESH), same, Air deodorizer for industrial use; **Reg. No. 696,196** (ZEP-BLITZ), same, Floor cleaning compound for institutional use as a janitor supplies product, **filed** Aug. 10, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1168–R, *National Service Industries, Inc.* v. *Albert B. Selleck, doing business as Selleck Enterprises.*

Reg. No. 683,549. (See Reg. No. 681,037.)

Reg. No. 683,791. (See Reg. No. 681,037.)

Reg. No. 683,792. (See Reg. No. 681,037.)

Reg. No. 683,793. (See Reg. No. 681,037.)

Reg. No. 683,794. (See Reg. No. 681,037.)

Reg. No. 683,795. (See Reg. No. 681,037.)

Reg. No. 683,830. (See Reg. No. 681,037.)

Reg. No. 683,831. (See Reg. No. 681,037.)

Reg. No. 683,858. (See Reg. No. 681,037.)

Reg. No. 684,548. (See Reg. No. 681,037.)

Reg. No. 684,549. (See Reg. No. 681,037.)

Reg. No. 684,550. (See Reg. No. 681,037.)

Reg. No. 686,052. (See Reg. No. 681,037.)

Reg. No. 686,053. (See Reg. No. 681,037.)

Reg. No. 686,054. (See Reg. No. 681,037.)

Reg. No. 686,055. (See Reg. No. 681,037.)

Reg. No. 686,056. (See Reg. No. 681,037.)

Reg. No. 686,057. (See Reg. No. 681,037.)

Reg. No. 686,058. (See Reg. No. 681,037.)

Reg. No. 686,059. (See Reg. No. 681,037.)

Reg. No. 686,563. (See Reg. No. 681,037.)

Reg. No. 686,796. (See Reg. No. 681,037.)

Reg. No. 686,797. (See Reg. No. 681,037.)

Reg. No. 688,139. (See Reg. No. 681,037.)

Reg. No. 688,947. (See Reg. No. 681,037.)

Reg. No. 688,948. (See Reg. No. 681,037.)

Reg. No. 688,949. (See Reg. No. 681,037.)

Reg. No. 688,950. (See Reg. No. 681,037.)

Reg. No. 688,951. (See Reg. No. 681,037.)

Reg. No. 688,952. (See Reg. No. 681,037.)

Reg. No. 688,953. (See Reg. No. 681,037.)

Reg. No. 689,244. (See Reg. No. 681,037.)

Reg. No. 694,067. (See Reg. No. 681,037.)

Reg. No. 696,196. (See Reg. No. 681,037.)

Reg. No. 696,197. (See Reg. No. 681,037.)

Reg. No. 737,300 (PREFERRED DRIVER PLAN), California Compensation and Fire Company, Underwriting automobile insurance, **filed** July 24, 1967, D.C., N.D. Calif. (San Francisco), Doc. 47497, *California Compensation and Fire Company* v. *Reserve Insurance Company.*

Reg. No. 774,288 (THRIFTY RENT-A-CAR SYSTEM AND DESIGN), Stemmons, Inc., Automobile rental, **filed** Aug. 23, 1967, D.C., S.D. Fla. (Miami), Doc. 67–863–Civ–TC, *Stemmons, Inc.* v. *Thrifty Rent-A-Car, Inc., and Lewis Adler, doing business as Thrifty Rent-A-Car, Inc.*

Reg. No. 784,412 (CHROMAFLEX), Kontes Glass Company, Chromatographic columns, **filed** Sept. 24, 1965, D.C.N.J. (Camden), Doc. 1048–65, *Kontes Glass Co.* v. *Lab Glass, Inc. et al.* Stipulation and order of dismissal with prejudice, Aug. 25, 1967.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 208,115. S.I.P.A.L. Arexons Societa Italiana Prodotti Auto e Locomozione S.p.A., Milan, Italy. Filed Dec. 14, 1964.

AREXONS

Priority claimed under Sec. 44(d) on Italian application filed June 16, 1964; Reg. No. 166,773, dated Oct. 12, 1964.

Class 4—Abrasives and Polishing Materials

For Automotive Preparations—Namely, Abrasive Paste, Abrasive Compound, Grinding Compositions, Polishing Compounds, and Metal Polish.

Class 6—Chemicals and Chemical Compositions

For Automotive Preparations—Namely, Automotive Radiator Antifreeze, Antioxidants, Rust Inhibitors, and Hydrocarbonaceous and Nonhydrocarbonaceous Hydraulic Fluids.

Class 52—Detergents and Soaps

For Automotive Preparations—Namely, Degreasing and Scraping Preparations, Descaling Compositions, Plastic and Fabric Cleaner, and Cleaning Preparation for Use on Automobiles.

SN 208,116. S.I.P.A.L. Arexons Societa Italiana Prodotti Auto e Locomozione S.p.A., Milan, Italy. Filed Dec. 14, 1964.

PIK

Priority claimed under Sec. 44(d) on Italian application filed June 16, 1964; Reg. No. 166,772, dated Oct. 12, 1964.

Class 4—Abrasives and Polishing Materials

For Automotive Preparations—Namely, Abrasive Paste, Abrasive Compound, Grinding Compositions, Polishing Compounds, and Metal Polish.

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For Automotive Preparations—Namely, Automotive Radiator Antifreeze, Antioxidants, Rust Inhibitors, Solvents, and Hydrocarbonaceous and Non-Hydrocarbonaceous Hydraulic Fluids.

Class 12—Construction Materials

For Automotive Preparations—Namely, Putty, Plaster, Plugging and Sealing Compounds, and Sound Insulating Compounds.

SN 223,655. F.D.G.M. Fabrication et Diffusion des Grandes Marques, Paris, France. Filed July 19, 1965.

Patrys

Class 2—Receptacles

For Compacts, Lipstick Cases and Pillboxes Specifically Designed To Hold Cosmetic and Medicinal Preparations, Sold Empty in the Trade.

First use 1955; in commerce 1956.

Class 32—Furniture and Upholstery

For Pocket Mirrors.

First use 1955; in commerce 1957.

Class 40—Fancy Goods, Furnishings, and Notions

For Pocket Combs and Combination Pocket Mirrors and Pocket Combs Sold as a Set.

First use 1955; in commerce 1957.

Class 44—Dental, Medical, and Surgical Appliances

For Atomizers for Toilet Use.

First use 1955; in commerce 1956.

SN 234,861. Heino Wuhrmann, d.b.a. Vitakraft-Werk, Bremen-Mahndorf, Germany. Filed Dec. 20, 1965.

Vitakraft

Class 6—Chemicals and Chemical Compositions

For Water Clarifier, Water Purifier, and Chlorine Neutralizer for Aquarium Use.

Class 18—Medicines and Pharmaceutical Preparations

For Pharmaceutical Preparations for Treatment and Prevention of External Diseases of Fish and Birds.

Class 46—Foods and Ingredients of Foods

For Foods for Pets—Namely, for Fish, Birds, Dogs, Cats, Hamsters, and Turtles.

First use Jan. 15, 1933; in commerce Mar. 1, 1955.

SN 238,458. The Sterling Manufacturing Company, Cleveland, Ohio. Filed Feb. 9, 1966.

STERLING

Owner of Reg. Nos. 196,956, 518,922, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

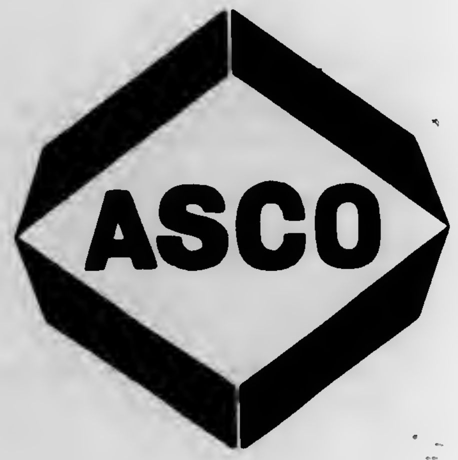
For Electrical Apparatus—Namely, Radio Sets, Including Automobile Radios, and Parts Therefor; and Associated Equipment, Namely, Antennas, Including Automobile Radio Antennas, Alternating-Current Rectifiers and Rheostats, Radio-Frequency Transformers and Condensers, Power Units, Amplifiers, and Loud Speakers.

Class 26—Measuring and Scientific Appliances

For Electronic and Electrical Test Instruments, Including Voltmeters, Ammeters, Ohmmeters, Battery Testers, Magneto Testers, Polarity Indicators, Cam Dwell Testers, and Tachometers.

First use 1906.

SN 242,095. Aisin Seiki Co., Ltd., Kariya, Aichi, Japan. Filed Mar. 29, 1966.



Class 19—Vehicles

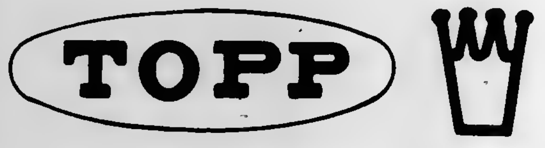
For Parts for Motor Vehicles—Namely, Radiators, Brake Master Cylinders and Boosters, Hand Brake Levers and Plungers, Wheel Cylinders, Shock Absorbers, Front Axles and Trailer Axles, Brake Drums and Shoes, Door Locks, Handles and Hinges, Window Assemblies, Window Frames, Radiator Grill Moldings, Side Moldings, Roof Drip and Windshield Moldings, Instrument Panels, Excluding Switches Therefor, Mirror Mountings and Stays, Steering Assemblies, Brake Assemblies, Heaters and Covers Therefor.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Cylinder Blocks, Water Pumps, Pistons, Oil Pumps, Manual and Automatic Transmissions, Clutches and Clutch Assemblies, Fly Wheels, Clutch Release Cylinders, Excluding Bearing Hubs, Automatic Drive Trains Comprising Automatic Transmissions, Clutch Components, Fluid Couplings, Drive Shafts and Differentials, Drive Axles and Jacks.

First use Aug. 1, 1965; in commerce Jan. 29, 1966.

SN 251,667. Topp Import & Export, Inc., Miami, Fla. Filed Aug. 3, 1966.



Class 31—Filters and Refrigerators

For Refrigerators and Freezers.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Gas and Electric Stoves.

First use Apr. 21, 1966.

SN 252,307. Rosemount Engineering Company, Minneapolis, Minn. Filed Aug. 15, 1966.

ROSEMOUNT

Class 22—Games, Toys, and Sporting Goods

For Ski Boots.
First use on or about Mar. 24, 1965.

Class 39—Clothing

For Insoles for Shoes and Boots.
First use on or about June 30, 1965.

SN 252,509. Rec-Chek, Inc., Nevada, Iowa. Filed Aug. 17, 1966.

REC-CHEK

Class 37—Paper and Stationery

For Printed Business Forms Used for Keeping Records of Income and Expenses of Personal and Business Transactions.

Class 101—Advertising and Business

For Recording, Categorizing, Tabulating, and Analyzing Records of Personal and Business Transactions and Rendering Periodic Reports Thereon Showing a Variety of Total Accumulated Data.

First use October 1965.

SN 253,226. Charles Martin, Neuilly (Seine), France. Filed Aug. 26, 1966.

JACQUES ESTEREL

"Jacques Esterel" is not the name of any living person. Owner of French Reg. No. 502,517, dated Feb. 13, 1962 (Seine); Natl. Inst. No. 179,414.

Class 51—Cosmetics and Toilet Preparations

For Perfume, Toilet Water and Cologne, Bath Oils and Salts, Hair Rinses, Conditioners and Lotions, Rouge, Face Powder, Makeup and Makeup Bases, Lipstick, Toothpaste, Face Creams, Cleansing Creams, Mascara, Eye Shadow and Liner, and Eyebrow Pencils.

Class 52—Detergents and Soaps

For Hand and Facial Soap and Hair Shampoos.

SN 259,034. Sileps, Inc., Charlotte, N.C. Filed Nov. 18, 1966.

FIX-ANCHORS

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

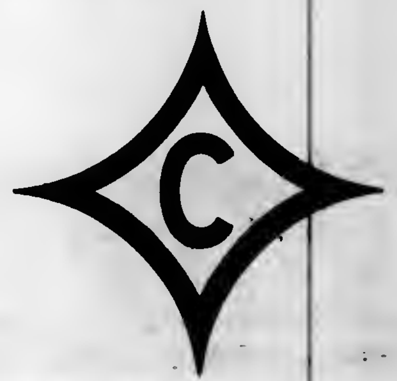
For Fasteners for Predrilled Holes in Masonry—Namely, Masonry Anchors, Stud Anchors, Machine-Screw Caulking Anchors, Hammer Driven Anchors, Plastic Anchors, Plastic Sleeves, Expander Plugs, Lag and Lead Shields, and Spring Wing Toggle Bolts.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Carbide Tipped Masonry Drills.

First use Dec. 18, 1961.

SN 259,717. The Celveland Twist Drill Company, Cleveland, Ohio. Filed Nov. 30, 1966.



Owner of Reg. Nos. 373,888, 815,784, and 826,024.

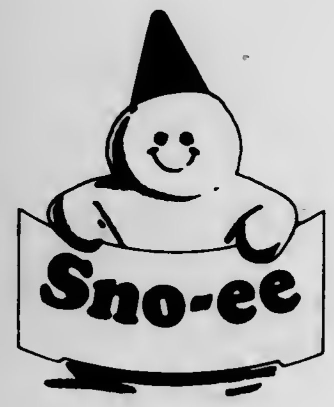
Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Small Tools, and Tool Sets—Namely, Screw Plates, Die Stocks, Dies, Die Parts, Chasers, Taps, Tap Holders, Tap Drivers, Tap Wrenches, Screw Wrenches, Adjusting Wrenches, Lathe Die Holders, Lathe Centers, Pilots, Drill and Reamer Drivers, End Mill Adapters, Shell Mill Adapters, Drill Drifts, Tool Inserts, Cut-Off Blades, Drill Blanks, Slitters, Slotters, Seat Cutters, and Spot Facers.
First use 1898.

Class 26—Measuring and Scientific Appliances

For Measuring Devices—Namely, Plug Gages, Ring Gages, Thread Gages, Roll Gages, Snap Gages, Gage Sets, Thread Measuring Wires, and Hole Sizing Blanks.
First use at least as early as 1952.

SN 262,539. BDP-Vending Company, d.b.a. Sno-Co., Shreveport, La. Filed Jan. 16, 1967.



Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

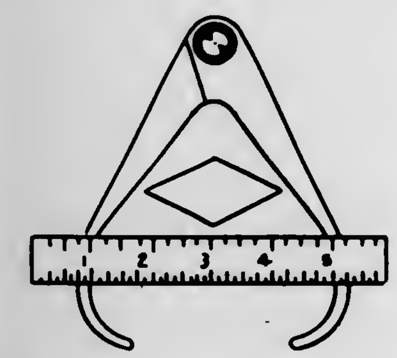
For Dispensing Machine Which Mixes, Freezes, Carbonates and Dispenses Flavored, Frozen Soft Drinks.

Class 45—Soft Drinks and Carbonated Waters

For Flavored, Frozen Soft Drinks Sold in Dispensing Machines.

First use Dec. 5, 1966.

SN 264,470. Garlock, Inc., Palmyra, N.Y. Filed Feb. 13, 1967.



Owner of Reg. Nos. 647,488, 806,599, and others.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Throttling Valves.

Class 16—Protective and Decorative Coatings

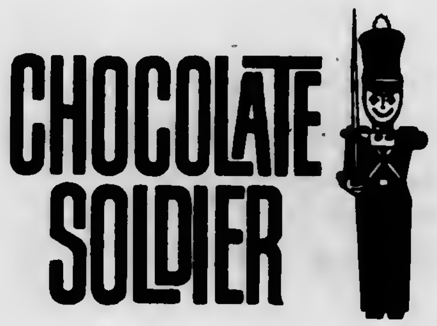
For Paint and Enamel, and Thinner or Reducer for the Same.

Class 26—Measuring and Scientific Appliances

For Apparatus for Testing Rubber or Thermal-Setting Plastic Compounds.

First use on or about Feb. 15, 1901.

SN 265,007. Monarch Citrus Products Company, Doraville, Ga. Filed Feb. 20, 1967.



Applicant disclaims the word "Chocolate" apart from the mark as shown. Owner of Reg. Nos. 210,242, 563,079, and 576,655.

Class 45—Soft Drinks and Carbonated Waters

For Chocolate-Flavored Soft Drink.

Class 46—Foods and Ingredients of Foods

For Chocolate Beverage Base Containing Dry Milk, Cocoa, Vanillin, Salt Stabilizer, and Malt.

First use Mar. 12, 1965.

SN 269,610. Overseas Housewares Company, Yonkers, N.Y. Filed Apr. 20, 1967.

Owner of Reg. No. 595,901.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

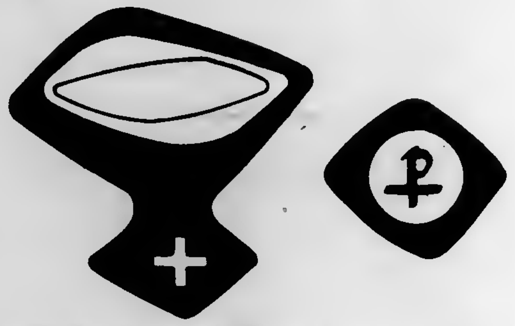
For Hardware—Namely, Steam Baskets, One-Cup Coffee Makers, Spring Forms, Egg Separators and Egg Whips.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Kitchen Tools—Namely, Apple Dividers, Steak Pounders, Ice Cream Scoops, Ice Crushers, Melon Ballers, Egg Shears, Cheese Cutters, Kitchen Shears, Ice Cream Spades, Orange Peelers, Fondue Forks, Meat Basters, Nut Crackers, Butter Cutters, Garlic Presses, Ice Cube Tongs, and Cork Screws.

First use July 1, 1953.

SN 271,400. F.E.L. Church Publications, Ltd., Chicago, Ill. Filed May 15, 1967.



The representation of the symbol consisting of the Greek letters Chi and Rho representing "Christ" in the adjoining circular figure is disclaimed apart from the mark as shown.

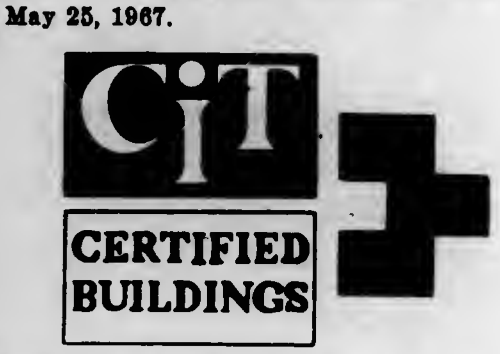
Class 36—Musical Instruments and Supplies

For Phonograph Records.
First use in or about January 1966.

Class 38—Prints and Publications

For Books and Other Compilations of Religious Music.
First use in or about 1963.

SN 272,336. C.I.T. Financial Corporation, New York, N.Y. Filed May 25, 1967.



The words "Certified Buildings" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 535,824, 734,707, and others.

Class 100—Miscellaneous

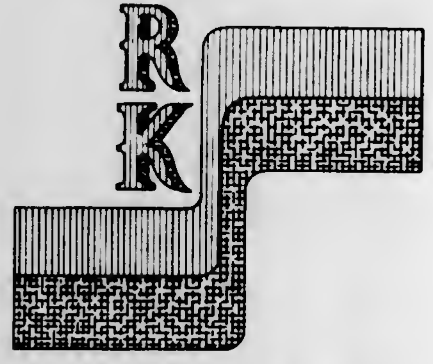
For Leasing of Relocatable Structures.

Class 103—Construction and Repair

For Erection of Relocatable Structures.

First use on or about Mar. 31, 1967; Feb. 13, 1925, as to "CIT."

SN 276,064. Redken Laboratories, Inc., Van Nuys, Calif. Filed July 17, 1967.



The drawing is colored for red and gold, however, applicant makes no claim to those colors as a feature of the mark.

Class 51—Cosmetics and Toilet Preparations

For Men's Hair Reconditioner, Grooming Aid, Hair Spray, and Hair Setting Gel.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Jan. 17, 1967.

SN 276,274. Alberto-Culver Company, Melrose Park, Ill. Filed July 19, 1967.

PRETTY LIGHT

Class 51—Cosmetics and Toilet Preparations

For Hair Color Preparation.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Apr. 5, 1967.

SN 276,277. Alberto-Culver Company, Melrose Park, Ill. Filed July 19, 1967.

EASY DOES IT

Class 51—Cosmetics and Toilet Preparations

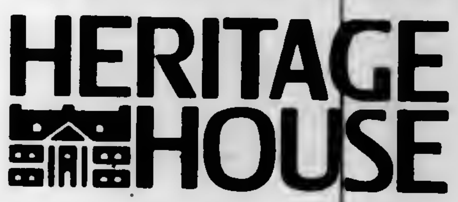
For Hair Color Preparation.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Apr. 5, 1967.

SN 279,249. Diamond Alkali Company, Cleveland, Ohio. Filed Aug. 29, 1967.



Class 2—Receptacles

For Plastic Utility Bags.
First use Nov. 7, 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Tie Down for Plastic Sheeting.
First use Dec. 12, 1966.

Class 20—Linoleum and Oiled Cloth

For Vinyl Floor Coverings.
First use Nov. 7, 1966.

Class 50—Merchandise Not Otherwise Classified

For Tarpaulins.
First use Nov. 7, 1966.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

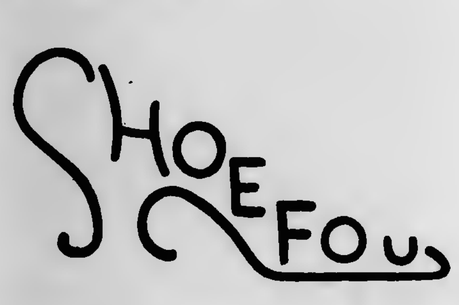
Class 1—Raw or Partly Prepared Materials

SN 252,066. Andersons Seeds Limited, Sydney, New South Wales, Australia. Filed Aug. 10, 1966.

TERRANOVA

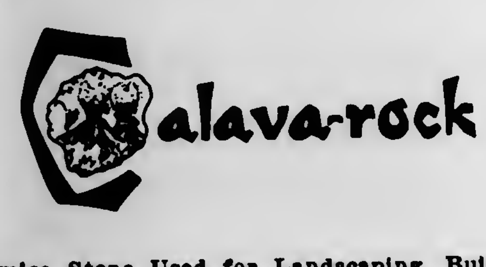
Owner of Australian Reg. No. 183,469, dated Oct. 10, 1963.
For Tropical Pasture Seeds.

SN 254,225. Belle Fabric Division Corporation, New York, N.Y. Filed Sept. 12, 1966.



For Synthetic/Plastics Sheet Material for Use in Making Footwear, as Shoes, Slippers, etc.
First use May 24, 1966.

SN 256,202. Dealers Stone Supply Corporation, Knoxville, Tenn. Filed Oct. 11, 1966.



For Pumice Stone Used for Landscaping, Buildings, and as a Soil Conditioner.
First use on or about Aug. 17, 1966.

SN 258,183. H. W. Walcott & Co., Inc., San Mateo, Calif. Filed Nov. 7, 1966.

FD-100

For Alfalfa Seed.
First use on or about Sept. 15, 1959.

SN 259,098. Germain's, Inc., Los Angeles, Calif. Filed Nov. 21, 1966.

GOLDEN WEST

Owner of Reg. No. 425,543.
For Grass and Field Seed.
First use Jan. 16, 1947.

Class 2—Receptacles

SN 236,593. Keyes Fibre Company, Waterville, Maine, assignee of Great Northwest Fibre Company, Wenatchee, Wash. Filed Jan. 17, 1966.

FRIDAY PACK

Applicant disclaims the term "Pack" apart from the mark as shown. Owner of Reg. No. 718,758.
For Fiberboard Packing Cases, Paperboard Packing Cases, Wooden Packing Cases, and Packing Trays.
First use May 11, 1942.

SN 247,223. Globe Rubber Products Corp., Philadelphia, Pa. Filed June 3, 1966.

ACTIMIZED

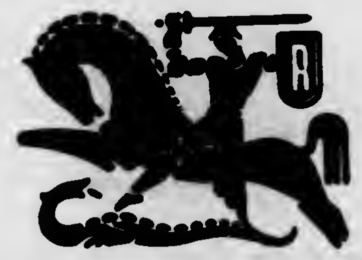
For Plastic Housewares—Namely, Wastebaskets, Clothes Hampers, Refuse Baskets, Laundry Baskets, Utility Tubs, Basins, Utility Pails, and Stacking Vegetable Bins.
First use July 12, 1965.

SN 249,459. Weed-Master (Western) Ltd., Calgary, Alberta, Canada. Filed July 1, 1966.

CHEMIX

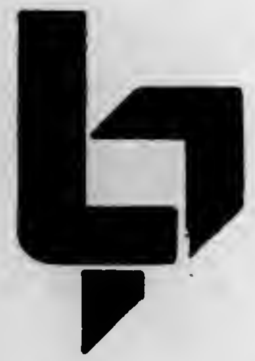
Owner of Canadian Reg. No. 143,652, dated Jan. 28, 1966.
For Chemical Spray Bags Made of Plastic.

SN 255,818. Reynolds Metals Company, Richmond, Va. Filed Oct. 5, 1966.



Owner of Reg. Nos. 654,671 and 704,185.
For Pressurizable Keg-Like Containers, Metallic Cans, Plastic Film Bags, Nestable Bulk Containers, and Containers of Aluminous Metal Foil Either Unsupported or Laminated to Paper or Plastic.
First use at least as early as February 1956.

SN 256,749. International Paper Company, New York, N.Y., assignee of The Lord Baltimore Press, Incorporated, Baltimore, Md. Filed Oct. 19, 1966.



For Receptacles—Namely, Folding Cartons, Carriers, and Boxes.
First use Sept. 23, 1966.

SN 257,277. Inland Container Corporation, Indianapolis, Ind. Filed Oct. 26, 1966.

POLYMATIC

For Single Service Dispensing Liquid Containers.
First use Oct. 3, 1966.

SN 258,691. The General Tire & Rubber Company, Akron, Ohio. Filed Nov. 15, 1966.

GEN-WAY

For Rubber Containers for the Transportation and Storage of Goods in Bulk.
First use Oct. 24, 1966.

SN 270,789. David N. Jones, Granite City, Ill. Filed May 5, 1967.

Cushion Ride

For Steel Barrels.
First use Mar. 14, 1967.

SN 270,817. Sentinel Plastics, Inc., Bronx, N.Y. Filed May 5, 1967.

SEN-GLAS

For Plastic Bottles.
First use Mar. 22, 1967.

SN 270,818. Sentinel Plastics, Inc., Bronx, N.Y. Filed May 5, 1967.

SEN-PLAS

For Plastic Bottles.
First use Mar. 22, 1967.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 254,375. College Hall, Inc., Middletown, N.J. Filed Sept. 13, 1966.

SHE-NANIGANS

For Tote Bags and Folding Suitcases.
First use July 1, 1966.

SN 259,998. Jack C. Abert, d.b.a. Mechanical Products Company, Phoenix, Ariz. Filed Dec. 5, 1966.

CAMP TRAILS

For Back Pack Frames.
First use Apr. 15, 1964.

Class 4 — Abrasives and Polishing Materials

SN 252,416. Red Top Maintenance Service, Inc., Denver, Colo. Filed Aug. 15, 1966.

RED TOP

Owner of Reg. No. 805,777.
For Industrial Polishes—Namely, Floor Wax, Furniture Polish, and Abrasive Cleaners.
First use May 29, 1965.

SN 262,646. United States Pumice Company, Los Angeles, Calif. Filed Jan. 16, 1967.

Pumie

For Natural Pumice Cleaning and Scouring Blocks.
First use on or about May 11, 1945.

SN 264,901. Bristol-Myers Company, New York, N.Y. Filed Feb. 17, 1967.

CURTAIL

For Wax or Wax-Like Floor/Furniture Polish.
First use Jan. 23, 1967.

SN 267,511. Epic Chemicals, Inc., Brooklyn, N.Y. Filed Mar. 24, 1967.

ON-GUARD

For Floor Polish for Heavy Traffic Floors.
First use Oct. 1, 1966.

SN 268,990. Pathfinder Industries, Inc., Cold Spring, N.Y. Filed Apr. 12, 1967.

SIR BUTLER

For Shoe Shining Kit.
First use Apr. 4, 1967.

SN 269,987. W. R. Grace & Co., New York, N.Y. Filed Apr. 25, 1967.

KRSTL PLATE

For Self-Polishing Floor Finish.
First use June 25, 1965.

SN 279,514. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Sept. 1, 1967.

TETRAFORM

For Barrel Finishing Media.
First use Aug. 28, 1967.

Class 5 — Adhesives

SN 251,754. Sun Chemical Corporation, New York, N.Y. Filed Aug. 4, 1966.

SUNKEM

For Adhesive for Bonding Films, Foils, Paper, Board, Fabrics, Rubber, Cork, Leather and Metal, Tissue and Other Laminates, and Hot Metal Adhesive.
First use June 1, 1963.

SN 268,143. B & P Distributors, Inc., Philadelphia, Pa. Filed Apr. 3, 1967.

PRO-PERFECT

For Flooring Adhesives.
First use on or about Mar. 2, 1967.

SN 268,408. Hampton Manufacturing Company, Inc., New Rochelle, N.Y. Filed Apr. 5, 1967.

PRO-TECT-ALL

For Removable Adhesive Tape Applicable to Sheets Having Polished Surfaces.
First use Mar. 3, 1967.

Class 6 — Chemicals and Chemical Compositions

SN 225,051. Mitsubishi Rayon Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Aug. 5, 1965.

COLCOAT

Priority claimed under Sec. 44(d) on Japanese application filed Mar. 5, 1965; Reg. No. 746,689, dated June 30, 1967.
For Anti-Static Coating Agents Used by Manufacturers of Acrylic Products for the Coating and Protection of Acrylic Surfaces To Prevent Generation of Surface Static Electricity on Such Products as Lighting Fixtures, Outdoor Signs, Nameplates, Displays, Skylights, Screens, Doors, Cases and Covers of Instruments and Communication Equipment, etc., and Not for Use on Floors.

SN 249,231. Geigy Chemical Corporation (New York corporation), Ardsley, N.Y., by merger from Geigy Chemical Corporation (Delaware corporation), Ardsley, N.Y. Filed June 29, 1966.

APRIL AIR

Applicant disclaims any rights to the exclusive use of the word "Air" separate and apart from this trademark.
For Room Deodorant.
First use May 17, 1966.

SN 249,232. Geigy Chemical Corporation (New York corporation), Ardsley, N.Y., by merger from Geigy Chemical Corporation (Delaware corporation), Ardsley, N.Y. Filed June 29, 1966.

POLAR

Owner of Reg. No. 304,961.
For Room Deodorant.
First use May 17, 1966.

SN 250,866. A. E. Staley Manufacturing Company, Decatur, Ill. Filed July 22, 1966.

FPG

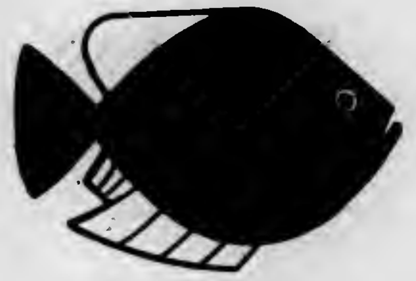
For Chemical Leveling Agents Used in the Manufacture of Floor Polish.
First use June 1, 1966.

SN 256,971. Rayonier Incorporated, New York, N.Y. Filed Oct. 21, 1966.

RAYVAN

For Organic Chemicals—Namely, Polyphenolic Compounds Derived From the Lignin of Wood and the Bark of Trees, Used in Dispersants, Adhesives, Drilling Muds, and Tanning Agents.
First use Oct. 3, 1966.

SN 257,525. Sternco Industries, Inc., Allendale, N.J. Filed Oct. 28, 1966.



For Aquarium Tank Accessories—Namely, Preparations for Removing Chlorine From Aquarium Water and for Preventing Fish Diseases; and Mineral Additive Water Conditioners.
First use Sept. 4, 1962.

SN 262,222. Universal Oil Products Company, Des Plaines, Ill. Filed Jan. 9, 1967.

REVERT

For Drilling Fluid Additive.
First use Oct. 1, 1965.

SN 263,249. Big 'D' Chemical Company, Oklahoma City, Okla. Filed Jan. 25, 1967.

D

Owner of Reg. No. 587,875.
For Liquid Deodorant for Diaper Pails, and Wick-Type Space Deodorant for Nurseries, Bathrooms, Kitchens, and Other Problem Areas.
First use Jan. 4, 1967.

SN 263,820. Denver Fireclay Company, Denver, Colo. Filed Feb. 2, 1967.

CYLCAP

For Capping Compounds for Concrete Cylinders.
First use in or before January 1934.

SN 264,251. L. M. Scofield Company, Los Angeles, Calif. Filed Feb. 8, 1967.

CHROMIX

Owner of Reg. Nos. 246,880 and 523,910.
For Admixtures for Color Conditioning Concrete Consisting of Pigments, Surfactants, Inert Mineral Carriers, Air Entraining Agents, Water-Reducing Agents, and Cement Dispersing Agents, and Various Combinations of Two or More of Such Components.
First use Aug. 12, 1958.

SN 266,029. General Electric Company, Schenectady, N.Y. Filed Mar. 6, 1967.

IMIDEX

For Polyimide-Containing Composition Used for Coating, Impregnating, Electrical Insulating, and Various Other Applications in the Industrial Arts.
First use Feb. 24, 1967.

SN 267,507. Daly-Herring Company, Kinston, N.C. Filed Mar. 24, 1967.

WEED-BAN

For Herbicide.
First use Mar. 7, 1967.

SN 268,669. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

AMACHEM

Owner of Reg. Nos. 334,940, 782,644, and others.
For Anionic Textile Dyeing Assistant.
First use Dec. 17, 1964.

SN 268,670. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

AMABOND

Owner of Reg. Nos. 334,940, 782,644, and others.
For Textile Dyeing Assistant—Namely, a Carbohydrate Ether Finishing Agent.
First use Jan. 20, 1965.

SN 268,671. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

AMACRYL

Owner of Reg. Nos. 334,940, 782,644, and others.
For Dyestuffs for Acrylic Fibers.
First use Sept. 6, 1966.

SN 268,685. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

AMASOFT

Owner of Reg. Nos. 334,940, 782,644, and others.
For Fabric Softener.
First use Sept. 18, 1964.

SN 268,686. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

AMAPEN

Owner of Reg. Nos. 334,940, 782,644, and others.
For Textile Dyeing Assistant—Namely, a Non-Rewetting Penetrant.
First use Apr. 6, 1965.

SN 274,565. Ortho Pharmaceutical Corporation, d.b.a. Ortho Diagnostics, Raritan, N.J. Filed June 23, 1967.

MONOSPOT

For Diagnostic Reagents for Infectious Mononucleosis for Laboratory Use.
First use May 2, 1967.

SN 280,912. Diamond Alkali Company, Cleveland, Ohio. Filed Sept. 22, 1967.

DURAMIR BK

Owner of Reg. No. 713,346.
For Chemicals Used in the Electro-Deposition of Chromium-Containing Coatings on Metal Substrates.
First use Nov. 1, 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 267,407. Edward J. Desimone, Jr., d.b.a. Magna-Mount, Brooklyn, N.Y. Filed Mar. 23, 1967.

MAGNA-MOUNT

For Mounts for Telescopes for Use With Rifles.
First use Feb. 21, 1967.

Class 10 — Fertilizers

SN 245,059. Blackstone Industries, Inc. (California corporation), Providence, R.I., by merger and change of name from Blackstone Industries, Inc. (Delaware corporation), Providence, R.I. Filed May 6, 1966.

AGREG

For Agricultural Mulch.
First use Mar. 24, 1966.

SN 251,866. Agway, Inc., Syracuse, N.Y. Filed Aug. 8, 1966.
For Fertilizer.

FERTI FLOW

First use June 2, 1965.

SN 280,510. International Minerals & Chemical Corporation, Skokie, Ill. Filed Sept. 18, 1967.

DUET

For Combination Lawn Feed and Weed Controlling Agent.
First use Oct. 22, 1959.

Class 11 — Inks and Inking Materials

SN 264,679. Phillips Process Co., Inc., Rochester, N.Y. Filed Feb. 14, 1967.

ACTINIC

For Typewriter Ribbons, Ink for Stamp Pads, Chart Recorders, Writing and Numbering Machines, and Ink Concentrate.
First use at least as early as June 17, 1957.

SN 264,680. Phillips Process Co., Inc., Rochester, N.Y. Filed Feb. 14, 1967.

MERRITONE

For Ink Solvent and Thinner.
First use at least as early as Jan. 22, 1947.

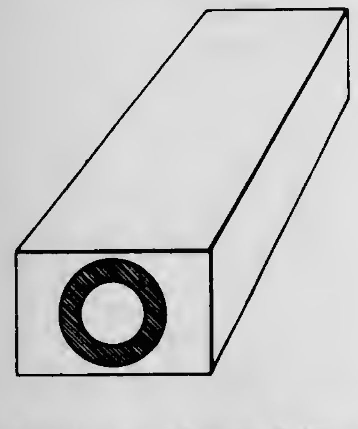
SN 265,799. Colorcon, Inc., West Point, Pa. Filed Mar. 2, 1967.

OPACODE

For Monogramming Ink.
First use Dec. 8, 1966.

Class 12 — Construction Materials

SN 257,387. Harbison-Walker Refractories Company, Pittsburgh, Pa. Filed Oct. 27, 1966.



The drawing is lined for the color green, but this color is not claimed as a feature of the mark. The brick representation is disclaimed apart from the mark as shown.
For Refractory Brick.
First use on or about May 23, 1966.

SN 257,744. Adanlock Jamestown Corporation, Jamestown, N.Y. Filed Nov. 2, 1966.

THINWALL

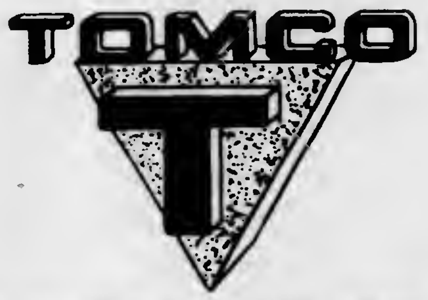
Owner of Reg. No. 722,420.
For Portable Partition Structures and Work Station Fixtures.
First use Mar. 27, 1959.

SN 259,146. Pascagoula Veneer Company, Pascagoula, Miss. Filed Nov. 21, 1966.

BAYOU

For Prefinished Panels and Moldings Having Birch Antique, Oak, Oak Antique, Hickory, Walnut, and Pecan Finishes.
First use in or about September 1965.

SN 259,984. Tomkins Brothers, Newark, N.J. Filed Dec. 2, 1966.



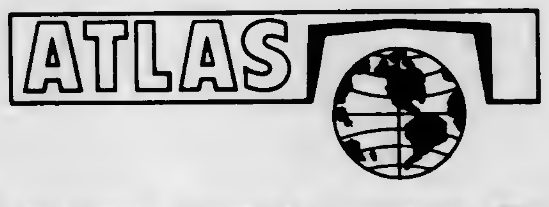
For Construction Materials—Namely, Plaster, Floor Patch, Wall Ties, Aggregates, Fire Clay, Building Paper, Insulation, Jalousie Windows, Louvers Combined With Windows and Doors, Louvers Fabricated for Insertions in Eaves of Buildings, Black Foundation Coating, Lintels, Anti-Spalling Compound, Vinyl Concrete Patching Compound, Arch Supports, Metal Arches, Corrugated Areawalls, Asphalt Expansion Joint, Asphaltic Driveway Compound, Metallic and Non-Shrink Grout, Barn Board, Basement Windows, Galvanized Corner Beads, Bell Traps for Buildings, Fiber, Vitrified Clay, Ceramic, Clay and Concrete Pipe, Wall Boards, Gypsum, Stucco, Camel Back Wall Coping, Castable Refractories, Doors, Caulking Compound, Wood Fencing Around a Building, Suspended Ceiling Systems, Cellar Posts, Circulating Fireplace Units, Columns, Concrete Filled Columns, Vitrified Clay Coping, Cork Board, Corner Bead, Crack Filler, Cross Bridging, Grouting Mortar, Dampproof Coating for Building Walls, Deformed Reinforcing Bar, Drain Plates, Flagstone, Expansion Joint, Fiber Joints, Finishing Building Lime, Fire Clay and Flue Rings, Flashing, Flue Cap and Damper, Flue Lining, Foundation Ventilators, Granulated Lime, Grooved Vertical Siding, Gypsum Bonding Agent, Hearth Tile, High Magnesium Lime, Coping, Black Slate Flooring, Metal Lath, Metal Bridging, Metal Wall Ties and Nailing Plugs, Palletized Drain Tile and Flue Lining, Primer Sealer for Building Walls, Reinforcing Bars, Roof Decking, Roof Trusses, Basement Sash, Siding, Silicone Transparent Sealer, Silo Construction, Stair-Guide, Stair Stringer, Steel Bridging, Fabricated Storage Sheds, Trusses, Veneer Stone, and Wallboard.
First use Nov. 21, 1966.

SN 260,002. The Alumiline Corporation, Pawtucket, R.I. Filed Dec. 5, 1966.

BLACK LITE

Applicant disclaims the word "Black" apart from the mark as shown. Owner of Reg. Nos. 707,687 and 804,978.
For Finish Applied to Architectural Products Made of Metal—Namely, Store Front Moldings, Doors and Door Frames, Curtain Walls, Sliding Doors, and Entrance Constructions.
First use in or about January 1959.

SN 261,868. McCulley-Cook, Inc., Oswego, Kans. Filed Jan. 3, 1967.



For Preengineered, Industrial, Commercial, Educational, and Farm Steel Buildings.
First use Oct. 22, 1966.

SN 265,152. Associated Pipe & Fitting Corp., Clifton, N.J. Filed Feb. 21, 1967.

SPIRAL-UNI-SEAM

For Prefabricated Metal Shells or Forms for Use in the Construction of Concrete Columns and/or Piling.
First use Jan. 27, 1967.

SN 265,548. National Gypsum Company, Buffalo, N.Y. Filed Feb. 27, 1967.

CUSH-N-CLIP

For Resilient Metal Clip for Wallboard Ceilings.
First use Sept. 1, 1958.

SN 265,636. Johns-Manville Corporation, New York, N.Y. Filed Feb. 28, 1967.

TOGANY

For Shingles.
First use Apr. 1, 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 257,784. Kenlin Enterprises, Inc., Highland Park, Ill. Filed Nov. 2, 1966.

AERO RIB

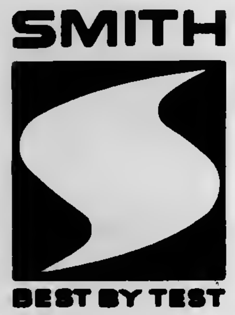
For Drawer Slide Fitting.
First use Sept. 30, 1966.

SN 258,585. Researched Products, Inc., Beverly Hills, Calif. Filed Nov. 14, 1966.

J/G

For Bread Racks and Bread Pans.
First use Oct. 18, 1965.

SN 261,687. Jay R. Smith Mfg. Co., Piscataway, N.J. Filed Dec. 29, 1966.



Owner of Reg. No. 823,894.

For Plumbing Supplies—Namely, Device for Control of Water Hammer or Knock in Pipe Lines; Fixture Supports for Wall Hung Toilets, Lavatories, Urinals, Sinks, Drinking Fountains, etc.; Drains for Roofs, Showers, Floors, Scuppers, Swimming Pools, etc.; and Interceptors for Oil, Grease, Plaster, Sediment, etc.

First use Nov. 1, 1966.

SN 262,816. Sumitomo Metal Industries, Ltd., Higashi-ku, Osaka, Japan. Filed Jan. 18, 1967.

BEVEL-GARD

For Caps for Protection of End of Metal Pipes and Tubes Under Transportation.

First use at least as early as Jan. 31, 1964; in commerce at least as early as Jan. 31, 1964.

SN 263,740. Lawrence W. Burgess, d.b.a. Strandwound Burgess Fiberglass Pipe & Products, Minden, Nebr. Filed Feb. 1, 1967.

EON

For Pipe.
First use Aug. 3, 1966.

SN 264,160. Products Diversification Corporation of America, Pasadena, Calif. Filed Feb. 7, 1967.

PRE-TYE
WIRE TIES

Applicant disclaims the words "Wire Ties" apart from the mark as shown.

For Staple-Like Wire Ties for Tying Structural Steel Reinforcing Bars.

First use Nov. 23, 1965.

SN 264,161. Products Diversification Corporation of America, Pasadena, Calif. Filed Feb. 7, 1967.

READY-TYE
WIRE TIES

Applicant disclaims the words "Wire Ties" apart from the mark as shown.

For Staple-Like Wire Ties for Tying Structural Steel Reinforcing Bars.

First use Nov. 23, 1965.

SN 264,641. Associated Piping & Engineering Corp., Compton, Calif. Filed Feb. 14, 1967.

TEMP FLEX

For Tubular Metal Expansion-Joints Used in Pipe Lines.
First use October 1957.

SN 264,643. Associated Piping & Engineering Corp., Compton, Calif. Filed Feb. 14, 1967.

UNI-FLEX

For Vacuum Jacketed Piping and Valves for Handling Liquid Gases.

First use October 1961.

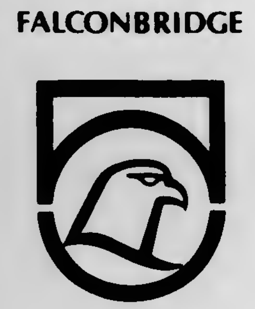
SN 266,102. Schoeller Werk K.G., Hellenthal, Eifel, Germany. Filed Mar. 6, 1967.

SINOX

Owner of German Reg. No. 806,552, dated Apr. 23, 1964.
For Steel Pipes.

Class 14—Metals and Metal Castings and Forgings

SN 244,579. Falconbridge Nickel Mines Limited, Toronto, Ontario, Canada. Filed Apr. 29, 1966.



Priority claimed under Sec. 44(d) on Canadian application filed Nov. 5, 1965; Reg. No. 149,426, dated Feb. 17, 1967.

For Nickel; Copper; Cobalt; Gold; Silver; Platinum; Ruthenium; Rhodium; Palladium; Iridium; and Selenium.

SN 245,804. American Smelting and Refining Company, New York, N.Y. Filed May 17, 1966.

SELBY

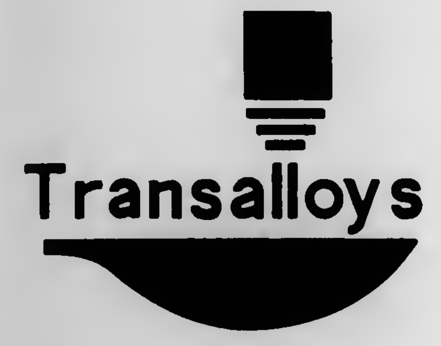
Owner of Reg. Nos. 52,629 and 231,208.
For Lead and Lead Alloys.
First use 1865.

SN 248,426. Compagnie Metallurgique de la Campine, Brussels, Belgium. Filed June 20, 1966.

MARINE

Owner of Belgian Reg. No. 108,194, dated May 11, 1966.
For Metal Antimony.

SN 250,414. Transalloys (Proprietary) Limited, Johannesburg, Republic of South Africa. Filed July 15, 1966.



Owner of South African Reg. No. 65/0099, dated Jan. 8, 1965.

For Metal Alloys.

SN 258,540. Hoeganaes Corporation, New York, N.Y., by change of name from Hoeganaes Sponge Iron Corporation, New York, N.Y. Filed Nov. 14, 1966.

ANCORMET

Owner of Reg. No. 674,432.
For Iron Powders.
First use Nov. 2, 1966.

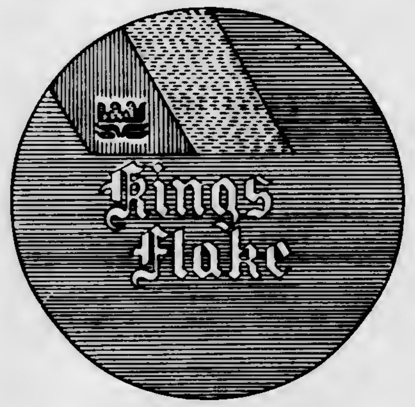
SN 265,706. Dana Corporation, Toledo, Ohio. Filed Mar. 1, 1967.

ATLAS

For Metal Forgings.
First use on or about Jan. 15, 1924.

Class 17—Tobacco Products

SN 257,850. Gallaher Limited, Belfast, Northern Ireland. Filed Nov. 3, 1966.



The drawing is lined for the colors blue, red, and silver.
For Smoking Tobacco.
First use Apr. 27, 1966; in commerce June 30, 1966.

SN 259,316. Havatampa Cigar Corporation, Tampa, Fla. Filed Nov. 23, 1966.

COMPANION

For Cigars.
First use Oct. 15, 1966.

SN 259,317. Havatampa Cigar Corporation, Tampa, Fla. Filed Nov. 23, 1966.

TROPHY

For Cigars.
First use Oct. 15, 1966.

Class 18—Medicines and Pharmaceutical Preparations

SN 254,951. Sylvachem (Proprietary) Limited, Pietermaritzburg, Natal, Republic of South Africa. Filed Sept. 22, 1966.

SYLVASUN

Owner of South African Reg. No. 62/4298, dated Dec. 6, 1962.

For Preparation in Tablet Form for the Prevention of and Relief of Sunburn.

SN 262,762. Bristol-Myers Company, New York, N.Y. Filed Jan. 18, 1967.

GIATIN

For Analgesic.
First use Sept. 21, 1966.

SN 263,767. Mundo Products, Inc., New York, N.Y. Filed Feb. 1, 1967.

DERMA·5

For Medicated Cream.
First use Nov. 9, 1966.

SN 265,446. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Feb. 24, 1967.

AARANE

For Steroid Hormones.
First use at least since Jan. 11, 1967.

SN 265,693. Ciba Corporation, d.b.a. The Gland-O-Lac Company, New York, N.Y. Filed Mar. 1, 1967.

HYDROCELL

For Preparation for Preventing or Treating Dehydration and Electrolyte Depletion or Imbalance in Animals.
First use September 1964.

SN 265,973. Bristol-Myers Company, New York, N.Y. Filed Mar. 6, 1967.

DYNAPEN

For Antibiotic.
First use Dec. 28, 1965.

SN 265,974. Bristol-Myers Company, New York, N.Y. Filed Mar. 6, 1967.

STAPHCILLIN

Owner of Reg. No. 710,170.
For Antibiotic.
First use at least as early as October 1960.

SN 266,051. Laboratorio Mauricio Villela S.A., Rio de Janeiro, Brazil. Filed Mar. 6, 1967.

BRONCOBAR

Owner of Brazilian Reg. No. 300,871, dated July 1, 1964.
For Preparation for the Purpose of Serving as an X-Ray Contrast Medium, for Bronchography.

SN 266,069. Palmedico, Inc., Columbia, S.C. Filed Mar. 6, 1967.

PALOCILLIN

For Penicillin G and Control for Infection.
First use April 1960.

SN 266,072. Palmedico, Inc., Columbia, S.C. Filed Mar. 6, 1967.

G-2

For Analgesic, Antipyretic, Sedative.
First use Nov. 3, 1964.

SN 266,609. Vylactos Laboratories, Inc., Des Moines, Iowa. Filed Mar. 13, 1967.

**KANDY
KOAT**

The drawing is lined for the color red, but no claim is made to the use of a particular color as part of the mark.
For Feed Supplement Containing Vitamins and Minerals for Horses.
First use Aug. 18, 1966.

SN 280,521. The Norwich Pharmacal Company, Norwich, N.Y. Filed Sept. 18, 1967.

MACRODANTIN

Owner of Reg. Nos. 569,968 and 707,729.
For Pharmaceutical Preparation Containing Nitrofurantoin.
First use July 20, 1967.

Class 19—Vehicles

SN 237,113. Halmatic Limited, London, England. Filed Jan. 24, 1966.

HALMATIC

Owner of British Reg. Nos. 726,664, dated Feb. 9, 1954, and 827,193, dated Nov. 7, 1961.
For Boats.

SN 243,795. Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan. Filed Apr. 19, 1966.

JUPITER

Owner of Japanese Reg. No. 389,547, dated Aug. 15, 1950.
For Passenger Cars, Vans, Trucks, Buses; and Special Purpose Vehicles—Namely, Dump Trucks, Garbage Trucks, Tank Lorries, Truck Tractors, Wreckers, and Crane Trucks.
First use Oct. 26, 1949; in commerce March 1963.

SN 243,796. Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan. Filed Apr. 19, 1966.

CANTER

Owner of Japanese Reg. No. 630,738, dated Dec. 4, 1963.
For Passenger Cars, Vans, Trucks, Buses; and Special Purpose Vehicles—Namely, Dump Trucks, Garbage Trucks, Tank Lorries, Truck Tractors, Wreckers, and Crane Trucks.
First use October 1962; in commerce March 1963.

SN 243,797. Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan. Filed Apr. 19, 1966.

FUSO

Owner of Japanese Reg. No. 412,416, dated June 10, 1952.
For Passenger Cars, Vans, Trucks, Buses; and Special Purpose Vehicles—Namely, Dump Trucks, Garbage Trucks, Tank Lorries, Truck Tractors, Wreckers, and Crane Trucks.
First use Apr. 8, 1958; in commerce June 1965.

SN 262,286. Pullman Incorporated, Chicago, Ill. Filed Jan. 10, 1967.

HELLO DOLLY

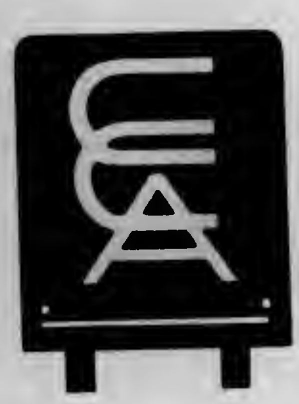
For Railway Freight Cars.
First use Mar. 7, 1966.

SN 262,507. Raybestos-Manhattan, Inc., Passaic, N.J. Filed Jan. 13, 1967.

**RAYMOLD
BONDED**

Applicant disclaims the word "Bonded," apart from the mark. Owner of Reg. No. 652,058.
For Lining That Is Sold as a Component of Lined Brake Shoes.
First use Dec. 14, 1966.

SN 276,794. Camper Corporation of America, Indianapolis, Ind. Filed July 26, 1967.



For Mobile Home Equipment—Namely, Truck Campers and Travel Trailers.
First use Sept. 16, 1966.

SN 276,795. Camper Corporation of America, Indianapolis, Ind. Filed July 26, 1967.

KEENLINE

For Mobile Home Equipment—Namely, Truck Campers and Travel Trailers.
First use July 15, 1965.

SN 278,853. D. P. Harris Hardware & Manufacturing Co., Inc., New York, N.Y. Filed Aug. 23, 1967.

STROKER

For Bicycles.
First use Sept. 29, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 243,148. The Magnavox Company, Fort Wayne, Ind. Filed Apr. 11, 1966.

ASTRO-SONIC

Owner of Reg. No. 779,469.
For Combination Radio and Phonograph Sets, Radios, Television Sets, and Television-Radio-Phonograph Combinations.
First use in or about June 1962.

SN 253,530. Hi-G Incorporated, Windsor Locks, Conn. Filed Aug. 31, 1966.

**PHASE
Ø
CHEK**

For Power Control Devices—Namely, Phase Sensing Relays.
First use on or about June 30, 1966.

SN 261,900. The W. L. Jenkins Company, Canton, Ohio. Filed Jan. 3, 1967.

SUPERING

Owner of Reg. No. 753,961.
For Alternating Current and Direct Current Electric Bells.
First use Oct. 28, 1966.

SN 262,027. Dr.-Ing. Hans Ritz Messwandlerwerk GmbH, Hamburg, Germany. Filed Jan. 6, 1967.

RITZ

Owner of German Reg. No. 645,376, dated Oct. 2, 1953.
For Instrument Transformers.
First use 1949; in commerce May 24, 1966.

SN 262,177. LTV Ling Altec, Inc., d.b.a. University Sound, Anaheim, Calif. Filed Jan. 9, 1967.

CANTADA

For Loudspeakers and Loudspeaker Systems, and Parts Therefor.
First use Aug. 1, 1966.

SN 262,581. General Instrument Corporation, Newark, N.J. Filed Jan. 16, 1967.

TELAN

For Thermoelectric Generators.
First use Jan. 8, 1966.

SN 264,732. Fedtro, Inc., Rockville Centre, N.Y. Filed Feb. 15, 1967.

PLUG-O-MATIC

For Automobile Battery Chargers.
First use Jan. 19, 1967.

SN 265,192. International Telephone and Telegraph Corporation, New York, N.Y. Filed Feb. 21, 1967.

ORATOR

For Telephone Loudspeakers and Parts Therefor.
First use on or before Dec. 21, 1966.

SN 265,544. McGraw-Edison Company, d.b.a. Bussmann Manufacturing Division, St. Louis, Mo. Filed Feb. 27, 1967.

TRON

For Fuse Holders, Clip Clamps, and Fuse Clips.
First use May 15, 1965.

SN 265,651. Piezo Technology, Inc., Orlando, Fla. Filed Feb. 28, 1967.

IXF

For Electrical Devices, Particularly Resonators, and Parts Therefor.
First use Jan. 23, 1967.

SN 265,746. Sunbeam Lighting Company, Los Angeles, Calif. Filed Mar. 1, 1967.

NORLIGHT

For Swivel-Type Incandescent Light Fixtures.
First use on or about Dec. 1, 1966.
Subj. to Intf. with SN 278,307.

SN 265,782. Amphenol Corporation, Broadview, Ill. Filed Mar. 2, 1967.

DYNAFORM

For Electrical Switches.
First use December 1965.

SN 265,842. George A. Philbrick Researches, Inc., Dedham, Mass. Filed Mar. 2, 1967.

ISOLITHIC

For Electrical Amplifiers—Namely, Integrated Operational Amplifiers.
First use October 1966.

SN 272,664. Lehigh Valley Industries, Inc., New York, N.Y. Filed May 31, 1967.

TRANS-FLASH

For Automotive Signal Flashers.
First use January 1967.

SN 276,400. Teledyne, Inc., Hawthorne, Calif. Filed July 20, 1967.

MICROEYE

For Television/Closed Circuit Camera-Transmitter.
First use Sept. 14, 1962.

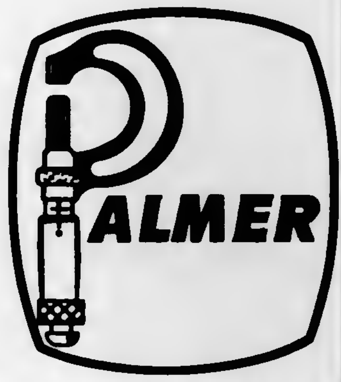
SN 280,671. Continental Machines, Inc., Savage, Minn. Filed Sept. 19, 1967.

Chuck-Mate

For Combination Rectifier and Magnetizer and Demagnetizer for Magnetic Chucks.
First use June 8, 1967.

Class 22 — Games, Toys, and Sporting Goods

SN 259,145. Palmer Plastics, Inc., Brooklyn, N.Y. Filed Nov. 21, 1966.



For Plastic Toys and Plastic Hobby Kits for Such Items as Cars, Animals, Water Guns, and Dart Guns.
First use 1955.

SN 260,436. Kent Sporting Goods Co., Ashland, Ohio. Filed Dec. 9, 1966.

*CONTROLLED ACTION

For Golf Balls.
First use Oct. 12, 1966.

SN 261,462. Cindico Products Limited, Driffield, England. Filed Dec. 27, 1966.

CINDICO

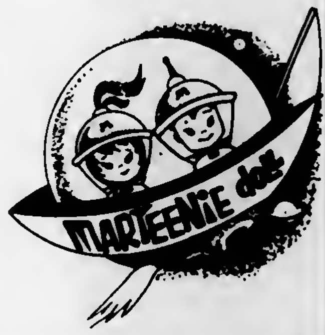
For Baby Exercisers and Parts and Fittings for Baby Exercisers.
First use Sept. 1, 1966; in commerce Nov. 7, 1966.

SN 262,850. Brookfield Athletic Shoe Company, Inc., East Brookfield, Mass. Filed Jan. 19, 1967.

CANADIAN ACE

No claim is made to the word "Canadian" apart from the mark. Owner of Reg. No. 683,611.
For Ice Skating Shoes.
First use Sept. 27, 1957.

SN 264,770. J. Swedlin, Inc., d.b.a. Gund Manufacturing Company, Brooklyn, N.Y. Filed Feb. 15, 1967.



No claim of exclusive right is made to the word "Doll."
For Dolls.
First use Jan. 13, 1967.

SN 264,772. Weber Tackle Company, Stevens Point, Wis. Filed Feb. 15, 1967.

HOOCHY

For Artificial Fishing Lures.
First use Aug. 1, 1966.

SN 265,450. True Temper Corporation, Cleveland, Ohio. Filed Feb. 24, 1967.

TRUE TEMPER

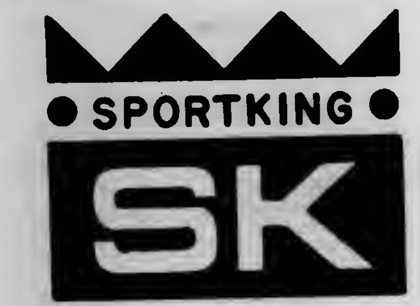
Owner of Reg. Nos. 239,511 and 258,244.
For Sleds for Amusement and Sports Purposes, Skis, Ski Poles, Ski Pole Baskets, Ski Bindings, and Parts Therefor.
First use Jan. 5, 1967.

SN 266,270. Wilson Sporting Goods Co., River Grove, Ill., assignee of Wilson Sporting Goods Co., River Grove, Ill. Filed Mar. 8, 1967.

X-31

Owner of Reg. No. 759,581.
For Golf Balls.
First use Jan. 5, 1967.

SN 269,490. A.M.S. Distributing Co., d.b.a. American Sport Company, Oakland, Calif. Filed Apr. 19, 1967.



For Fishing Line, Fishing Rods and Reels.
First use Mar. 27, 1967.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 243,180. Seibert & Sons, Inc., Chenoa, Ill. Filed Apr. 11, 1966.

SEIBERT

For Multiple Drilling and Tapping Spindles, Production Tool Holders, Tool Control Systems, and Parts Therefor.
First use December 1947 on drilling spindle.

SN 243,181. Seibert & Sons, Inc., Chenoa, Ill. Filed Apr. 11, 1966.

SEIBERT

For Multiple Drilling and Tapping Spindles, Production Tool Holders, Tool Control Systems, and Parts Therefor.
First use December 1947 on drilling spindle.

SN 246,895. Gannon Manufacturing Co., Inc., Buena Park, Calif., by change of name from Earthcavator Company, Inc., Buena Park, Calif. Filed May 31, 1966.

Earthcavator

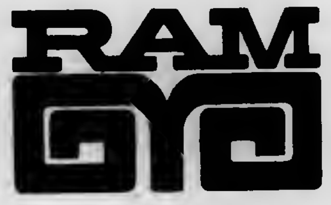
For Tractor Mounted Accessory Tools for Use in Earth Scarifying, Scraping, Leveling, and Back Filling.
First use in or about June 1955.

SN 251,968. The Timberland Ellicott Limited, Woodstock, Ontario, Canada. Filed Aug. 8, 1966.

STEEPLE JENNY

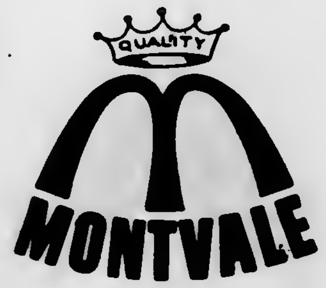
Priority claimed under Sec. 44(d) on Canadian application filed June 3, 1966; Reg. No. 149,011, dated Jan. 20, 1967.
For Powered Hoists.

SN 254,942. Ram Tool Corporation, Chicago, Ill. Filed Sept. 22, 1966.



Owner of Reg. No. 737,473.
For Portable Hand-Operated Electrical Apparatus, Machines and Supplies—Namely, Carpenters' Saws, Chain Saws, Sabre Saws, Bench Grinders, Portable Drills, Hedge Trimmers, Grass Trimmers, Saw Tables, Socket Sets, Sanders, Routers, Polishers, and Parts Thereof.
First use Oct. 1, 1964; July 1952 as to "Ram."

SN 255,742. Zayre Corp., Natick, Mass. Filed Oct. 4, 1966.



The word "Quality" is disclaimed apart from the mark as shown. Owner of Reg. No. 822,294.
For Electric Can Openers and Electric Knives.
First use in or about November 1965.

SN 259,031. Sileps, Inc., Charlotte, N.C. Filed Nov. 18, 1966.

FIX-RAMMER

For Powder Actuated Stud or Pin Drivers.
First use Oct. 8, 1953.

SN 259,032. Sileps, Inc., Charlotte, N.C. Filed Nov. 18, 1966.

FIX-HIT

For Hammer Activated Stud Drivers.
First use Aug. 5, 1958.

SN 260,250. Griffon Cutlery Corp., New York, N.Y. Filed Dec. 7, 1966.

TUDOR

Owner of Reg. Nos. 424,559 and 589,920.
For Household Scissors, Sewing Scissors, Pocket Scissors, Embroidery Scissors, and Tweezers, for All Purposes Except Manicure, Dental and Surgical Use.
First use July 13, 1945.

SN 260,551. Hurricane Car Wash Systems, Inc., Phoenix, Ariz. Filed Dec. 12, 1966.

HURRICANE

For Automatic Car Washing Apparatus.
First use June 13, 1966.

SN 261,192. Borg-Warner Corporation, Chicago, Ill. Filed Dec. 21, 1966.

BLUE DIAMOND

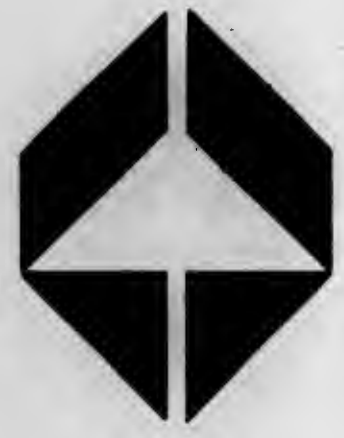
For Tong Dies for Use in Oil Well Equipment.
First use on or prior to June 3, 1966.

SN 261,369. General Appliance Manufacturing Co., Omaha, Nebr. Filed Dec. 23, 1966.

BONANZA

For Lawnmowers.
First use Mar. 17, 1966.

SN 261,653. Fibreboard Corporation, San Francisco, Calif. Filed Dec. 29, 1966.



Owner of Reg. No. 773,415 and others.
For Machinery for Forming, Filling, Sealing, and Handling Paperboard Cartons.
First use June 24, 1963.

SN 261,970. Bobst Champlain, Inc., Roseland, N.J. Filed Jan. 5, 1967.

BOBST

Owner of Reg. No. 560,685.
For Machines for the Paper and Cardboard Box Industry—Namely, Machines for Creasing, Scoring, Bending, Punching, Cutting, Printing, and Glueing Paper, Cardboard, and Corrugated Board for Forming Same Into Boxes, Cartons and Similar Containers, and Structural and Repair Parts Thereof.
First use February 1919.

SN 261,983. FMC Corporation, San Jose, Calif. Filed Jan. 5, 1967.

ROTO-VAC

For Pecan Nut Harvesting Machinery.
First use Sept. 22, 1966.

SN 262,058. Powers & Eaton Industries, Inc., South Hackensack, N.J. Filed Jan. 6, 1967.

STAR PARTS

No claim is made to the word "Parts," apart from the mark as shown, without waiver to any common law rights.
For Type Setting and Type Casting Machines, and Parts Thereof.
First use during December 1955.

SN 262,504. Powers & Eaton Industries, Inc., South Hackensack, N.J. Filed Jan. 13, 1967.

Linecasting STAR ★ PARTS Automation

No claim is made to the words "Linecasting," "Automation," and "Parts" apart from the mark as shown, without waiver of any common law rights.
For Type Setting and Type Casting Machines, and Parts Thereof.
First use on or about Nov. 25, 1966.

SN 262,711. Reed Rolled Thread Die Co., Holden, Mass. Filed Jan. 17, 1967.

SCO

For Thread Rolling Dies.
First use July 8, 1966.

SN 262,721. Thomson Industries, Inc., Manhasset, N.Y. Filed Jan. 17, 1967.

T/C

For Manually Powered, Template Controlled Transfer Tables for Drilling and Milling.
First use Dec. 30, 1966.

SN 262,975. Sier-Bath Gear Co., Inc., North Bergen, N.J. Filed Jan. 20, 1967.

VARI-CROWN

For Gear Teeth.
First use on or about Jan. 13, 1967.

SN 263,407. Shuckmaster, Inc., Tangipahoa Parish, La. Filed Jan. 26, 1967.

SHUCKMASTER

For Oyster Opening Machines.
First use Dec. 1, 1965.

SN 264,228. Plane Bearings, Incorporated, Ashtabula, Ohio. Filed Feb. 8, 1967.

PBI

For Machine Bearings.
First use on or about Aug. 31, 1966.

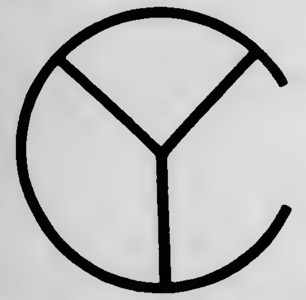
SN 264,854. Roto-Finish Company, Kalamazoo, Mich. Filed Feb. 16, 1967.

ROTO-FINISH

Owner of Reg. Nos. 397,895, 647,055, and others.
For Deburring, Cleaning, Descaling, Burnishing, Finishing, and Polishing Apparatus.
First use 1942.

Class 26—Measuring and Scientific Appliances

SN 233,432. Les Fabriques d'Assortiments Réunies, Le Locle, Switzerland. Filed Nov. 29, 1965.



The mark consists of a fanciful design of the letters "CY."
Owner of U.S. Reg. No. 400,882.
For Instruments and Apparatus for Measuring Lengths, Thicknesses and/or Angles; Instruments and Apparatus for Measuring Lengths, Thicknesses and/or Angles and Having as a Part Thereof Mechanical, Optical, and Electronic Amplification Means; Gauges, Master Gauges, Gauge Blocks for Measuring Dimensions of Outer or Inner Sections and Thicknesses Respectively.
First use in or about March 1942; in commerce 1945.

SN 245,465. Empire Level Manufacturing Co., Milwaukee, Wis. Filed May 12, 1966.

MONOVIAL

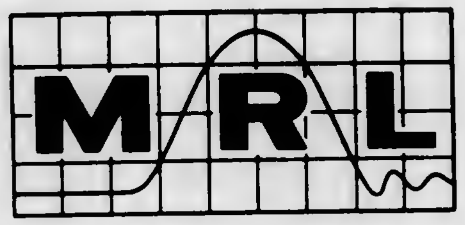
For Level Instruments.
First use Jan. 14, 1966.

SN 248,734. Picker X-Ray Corporation, White Plains, N.Y. Filed June 22, 1966.

SCINTI/FLOW

For Instruments for Detecting, Measuring, and Recording Radiation Particles in Streams.
First use Apr. 6, 1966.

SN 249,172. Monterey Research Laboratory, Inc., Monterey, Calif. Filed June 28, 1966.



For Shock Testing Machines, Automotive Safety Testing Machines, and Other Specialized Testing Machines for Testing Shock and Impact at Free Flow Velocity, High Velocity and Accelerations.
First use May 28, 1964.

SN 258,972. Bailey Meter Company, Wickliffe, Ohio. Filed Nov. 18, 1966.

SIGNAFLEX

For Measuring, Controlling, and Regulating Instruments, Systems, and Apparatus—Namely, Controllers, Indicators, Recorders, Integrators, Manual Control Stations, Hand-Automatic Transfer Stations; Combinations Thereof and Parts Therefor.
First use Nov. 11, 1966.

SN 259,803. Canon Camera Kabushiki Kaisha, Ohta-ku, Tokyo, Japan. Filed Dec. 1, 1966.

Canon

Owner of U.S. Reg. Nos. 603,299 and 603,300.
For Electronic Computers, Calculators, Including Parts and Components Therefor—Namely, Storage, Retrieval, Reading, and Recording Units.
First use May 26, 1964; in commerce Dec. 29, 1964.

SN 264,181. Aircraft Owners and Pilots Association, Bethesda, Md. Filed Feb. 8, 1967.

AOPA

NAVAID

For Aircraft Pilots' Computer-Plotter.
First use Jan. 26, 1967.

SN 266,148. F. W. Dwyer Mfg. Co., Inc., Michigan City, Ind. Filed Mar. 7, 1967.

PHOTOHELIC

For Fluid Gages.
First use Feb. 16, 1967.

SN 268,856. Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany. Filed Apr. 11, 1967.

ISITAR

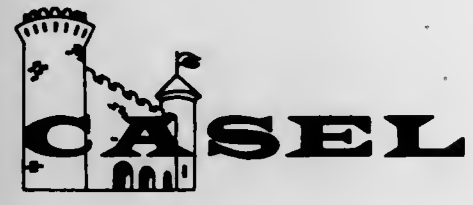
Owner of German Reg. No. 812,731, dated Nov. 24, 1965.
For Camera Lenses.

SN 273,559. Ametek, Inc., Sellersville, Pa. Filed June 12, 1967.

SUPER-RECEIVER

Owner of Reg. Nos. 299,298, 299,299, and 751,242.
For Pressure Gauges.
First use Mar. 27, 1967.

SN 275,722. Rozinsky's Incorporated, Hartford, Conn. Filed July 11, 1967.



For Optical Magnification Appliances—Namely, Binoculars, Telescopes, Microscopes, Magnifying Glasses, and Non-Prescription Magnification Lenses.
First use at least as early as November 1963.

SN 277,002. Clack Corporation, Madison, Wis. Filed July 28, 1967.

RESIMETER

For Ohmmeter for Measuring Electrical Resistance of Water.
First use October 1966.

SN 278,307. Macbeth Corporation, Newburgh, N.Y. Filed Aug. 15, 1967.

NORLITE

For Scientific Electric Lighting Equipment Used in Industry as a Light Source for Color Sorting, Grading, and Shading, and for Visual Color Uniformity Evaluation of Production.
First use Oct. 28, 1966.
Subj. to Intf. with SN 265,746.

SN 280,744. Bellco Glass, Inc., Vineland, N.J. Filed Sept. 20, 1967.

WATER WATCHER

For Laboratory Still.
First use Nov. 23, 1966.

SN 280,750. Litton Business Systems, Inc., New York, N.Y. Filed Sept. 20, 1967.

ROYAL

Owner of Reg. Nos. 61,674, 807,382, and others.
For Adding Machines.
First use on or about Aug. 22, 1966.

Class 27 — Horological Instruments

SN 255,914. Movado Watch Agency, Inc., New York, N.Y. Filed Oct. 6, 1966.

SCIENTIST

For Watches.
First use Sept. 23, 1966.

Class 28 — Jewelry and Precious-Metal Ware

SN 253,720. Bowles Watch Band Co., Denver, Colo. Filed Sept. 2, 1966.

BOWLES

For Watch Bands.
First use Feb. 5, 1963; Jan. 1, 1961, as to the mark "Bowles."

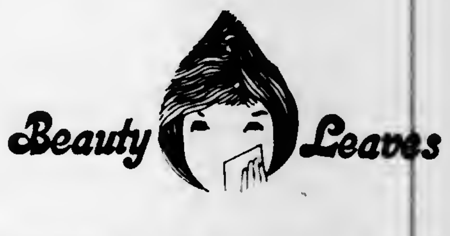
Class 29 — Brooms, Brushes, and Dusters

SN 249,984. Gulf & West Indies Company, Inc., New York, N.Y. Filed July 11, 1966.

COPAL

For Sponges.
First use Apr. 1, 1958.

SN 257,280. Richard A. Kaskey, d.b.a. Jenard Company, Narberth, Pa. Filed Oct. 26, 1966.



Applicant disclaims the word "Leaves" apart from the mark as shown.
For Thin Linen Facial Tissue.
First use June 7, 1966.

SN 263,925. The Las-Stik Manufacturing Company, Hamilton, Ohio. Filed Feb. 3, 1967.

LUSTER CARE

For Dust Cloths.
First use Sept. 5, 1966.

Class 31 — Filters and Refrigerators

SN 251,516. Chemap AG, Mannedorf, Zurich, Switzerland. Filed Aug. 2, 1966.

FUNDA

For Experimental, Pilot and Permanent Filtration Plants.
First use June 1957; in commerce March 1959.

SN 262,188. Nefco Filter Corporation, Stoughton, Wis. Filed Jan. 9, 1967.

GRAD-DUAL

For Oil and Liquid Fuel Filter Elements.
First use Oct. 3, 1966.

SN 262,494. Millipore Corporation, Bedford, Mass., by change of name from Millipore Filter Corporation, Bedford, Mass. Filed Jan. 13, 1967.

AQUAPEL

For Membrane Filters.
First use Dec. 5, 1966.

SN 262,495. Millipore Corporation, Bedford, Mass., by change of name from Millipore Filter Corporation, Bedford, Mass. Filed Jan. 13, 1967.

SOLVINERT

For Membrane Filters.
First use Nov. 14, 1966.

SN 262,496. Millipore Corporation, Bedford, Mass., by change of name from Millipore Filter Corporation, Bedford, Mass. Filed Jan. 13, 1967.

PHOROSLIDE

For Membrane Filters.
First use Dec. 19, 1966.

Class 32 — Furniture and Upholstery

SN 239,169. Novel Products Manufacturers, Inc., Grand Rapids, Mich. Filed Feb. 18, 1966.

Applicant disclaims the exclusive right to use the word "Stool" apart from the mark.
For Stools and the Like.
First use Oct. 18, 1963.

SN 255,021. Restronics, Inc., Jersey City, N.J. Filed Sept. 23, 1966.

RESTRON

For Pillows and Cushions.
First use October 1961.

SN 264,488. Acme Visible Records, Inc., Crozet, Va. Filed Feb. 13, 1967.

astromatic

For Record Files.
First use in or about October 1966.

SN 268,866. Congoleum-Nairn Inc., Kearny, N.J. Filed Apr. 11, 1967.

AGENA

For Tables.
First use Jan. 17, 1967.

SN 269,401. Congoleum-Nairn Inc., Kearny, N.J. Filed Apr. 18, 1967.

ROMANTIQUE

For Tables.
First use Mar. 1, 1967.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 235,666. Hafstrom-Thompson Associates, d.b.a. Hafstrom Technical Products, Inc., San Diego, Calif. Filed Jan. 3, 1966.

For Control Environment Apparatus for Maintaining a Precise Temperature.
First use Jan. 4, 1963.

SN 248,615. Gray Company, Inc., Minneapolis, Minn. Filed June 21, 1966.

VIS-CON

For Paint Heaters.
First use Feb. 25, 1964.

SN 250,514. Alfred G. B. Prather, Lanham, Md. Filed July 18, 1966.

REAL-PIT

For Outdoor Barbeque Fireplaces.
First use Apr. 12, 1966.

SN 252,438. Westinghouse Electric Corporation, Pittsburgh, Pa. Filed Aug. 15, 1966.

AXIFLEX

For Industrial Type Adjustable Pitch Fans.
First use on or about June 30, 1966.

SN 252,742. McCulloch Corporation, Los Angeles, Calif. Filed Aug. 19, 1966.

McCULLOCH

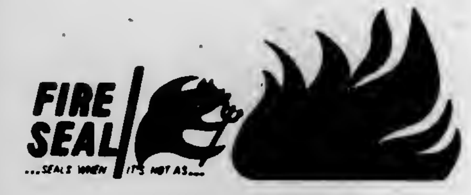
Owner of Reg. Nos. 546,637 and 756,262.
For Arc Welders.
First use June 18, 1962.

SN 257,695. Crane Co., New York, N.Y. Filed Nov. 1, 1966.

Sunnyflo

Owner of Reg. Nos. 651,743, 656,831, and others.
For Oil Fired Water Heaters and Parts Therefor.
First use July 20, 1966.

SN 258,656. Air Balance Inc., Philadelphia, Pa. Filed Nov. 15, 1966.


FIRE SEAL
...SEALS WHEN IT'S HOT AS....

Owner of Reg. No. 788,163.
For Fire Dampers.
First use Oct. 25, 1966.

SN 258,786. Crane Co., New York, N.Y. Filed Nov. 16, 1966.

Solar Flame

The word "Flame" is disclaimed apart from the mark shown.
For Gas and Oil Fired Conversion Type Burners.
First use Jan. 14, 1949.

SN 260,091. Sola Basic Industries, Chicago, Ill. Filed Dec. 5, 1966.

DIFFUSITRON

For Heat Treating Furnaces.
First use Dec. 31, 1965.

SN 260,898. Bernhard Vihl, d.b.a. Industrial Copper & Metal Works, Clifton, N.J. Filed Dec. 15, 1966.

BEE VEE

For Rapid-Flow Circulation Jackets for Pressure Heating and Cooling of Metal Tanks.
First use on or about Aug. 28, 1964.

SN 262,610. Oglevee Floral Co., Inc., Connellsville, Pa. Filed Jan. 16, 1967.

THERMO-DUSTER

For Subliming Heaters for Volatilizing and Dispersing Fungicides in Greenhouses and Other Confined Areas.
First use Jan. 12, 1967.

SN 280,367. Glaser Products Corporation, St. Louis, Mo. Filed Sept. 15, 1967.

Buddy L

Owner of Reg. Nos. 826,380, 665,344, and 615,274.
For Stoves Used Primarily for Outdoor Cooking.
First use Nov. 17, 1966.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 251,628. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Aug. 3, 1966.

THE SAFETY MINDED COMPANY

For Inner Tubes for Pneumatic Tires.
First use Apr. 14, 1966.

SN 278,195. Dayco Corporation, Dayton, Ohio. Filed Aug. 14, 1967.

VEE-BAND

For Power Transmission Belts.
First use on or about July 31, 1967.

Class 36 — Musical Instruments and Supplies

SN 223,563. Magnetic Products, Sherman Oaks, Calif. Filed July 16, 1965.

VERSATONE

For Foot Pedal Components for Use on Organs.
First use on or before Nov. 1, 1959.

SN 232,199. Emenee Industries, Inc., New York, N.Y. Filed Nov. 5, 1965.

POLYCHORD

For Organs.
First use April 1959.

SN 238,018. Martin Tolchin Music, Inc., Lynbrook, N.Y. Filed Feb. 3, 1966.

MATHIAS THOMA MT

For Violins, Violas, Violincellos, String Basses; Violin Bows, Viola Bows, Violincello Bows, String Bass Bows; Violin Pegs, Viola Pegs, Violincello Pegs; Violin Bridges, Viola Bridges, Violincello Bridges, String Bass Bridges; Violin Strings, Viola Strings, Violincello Strings, String Bass Strings; Violin Rosin, Violincello Rosin, String Bass Rosin; Violin Tailpieces, Viola Tailpieces, Violincello Tailpieces, String Bass Tailpieces; Violin Cases, Viola Cases, Violincello Cases, String Bass Cases; Violin Covers, Viola Covers, Violincello Covers, and String Bass Covers.
First use Sept. 25, 1964.

SN 241,604. Synthetic Plastics Company, Newark, N.J. Filed Mar. 22, 1966.

EL GLOBO

The term "El Globo" is the Spanish equivalent of the English term "the globe."
For Phonograph Records of the Circular Disc Type.
First use Jan. 12, 1966.

SN 242,081. The Wurlitzer Company, Chicago, Ill. Filed Mar. 28, 1966.

TOTAL TONE

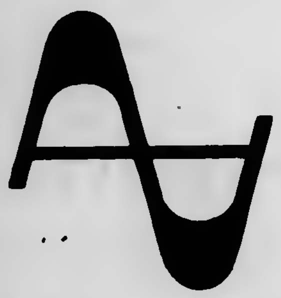
The word "Tone" is disclaimed apart from the mark as shown.
For Organs.
First use in or about June 1964.

SN 247,256. Ross, Inc., Chanute, Kans. Filed June 3, 1966.

Kustom

For Musical Sound Equipment, Specifically Amplifiers and Loudspeaker Equipment for Electric Guitars, and Electric Guitars and Electric Organs.
First use on or about July 16, 1964.

SN 249,826. Armstrong Audio Limited, London, England. Filed July 8, 1966.



Owner of British Reg. No. 862,364, dated Apr. 2, 1964.
For Sound Recording and/or Reproducing Apparatus and Instruments.

SN 253,725. Broadcast Electronics, Inc., Silver Spring, Md. Filed Sept. 2, 1966.

FIVE SPOT

For Electronic Multiple Cartridge Tape Reproducing Units.
First use March 1966.

SN 253,726. Broadcast Electronics, Inc., Silver Spring, Md. Filed Sept. 2, 1966.

TEN SPOT

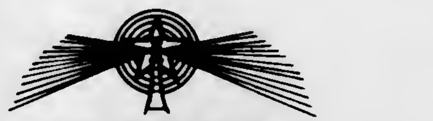
For Electronic Multiple Cartridge Tape Reproducing Units.
First use March 1965.

SN 255,514. Chicago Musical Instrument Co., Chicago, Ill. Filed Sept. 30, 1966.

Fuzz-Tone

For Apparatus for Modifying the Electrical Tone Signals of Electrical Musical Instruments, Electrified String Instruments Having Such Apparatus, and Electronic Amplifiers for Musical Instruments Wherein the Amplifiers Have Such Apparatus.
First use Feb. 15, 1962.

SN 258,136. National Gramophon Works Corporation, Mount Kisco, N.Y. Filed Nov. 7, 1966.



мелодия

Applicant disclaims the Russian word, of which the English translation is "melody," apart from the mark as shown. The trademark consists of the Russian word, of which the English translation is "Melody," and the design consisting of the light-tower and star.
For Phonograph Records and Albums.
First use Nov. 2, 1966.

SN 270,185. Columbia Broadcasting System, Inc., New York, N.Y. Filed Apr. 28, 1967.

ROGERS

Owner of Reg. Nos. 616,564 and 801,340.
For Drums.
First use in or about 1965.

SN 270,191. Columbia Broadcasting System, Inc., New York, N.Y. Filed Apr. 28, 1967.

JAZZMASTER

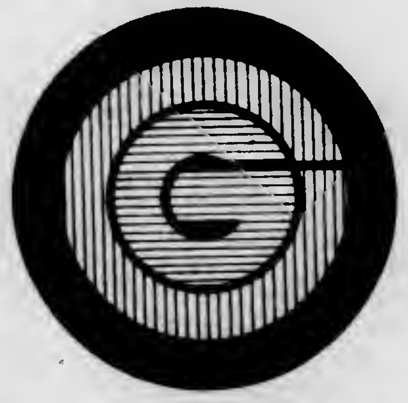
For Electric Guitars.
First use in or about 1958.

SN 278,058. Buena Vista Distribution Co., Inc., Glendale, Calif. Filed Aug. 11, 1967.

BUENA Vista RECORDS FantaSound

No claim is made to the words "Records" and "Sound" apart from the mark as shown. Owner of Reg. No. 685,573.
For Phonograph Records.
First use June 14, 1967.

SN 278,448. Colgems Records, Inc., New York, N.Y. Filed Aug. 17, 1967.



The drawing is lined for blue and red, but no claim is made to color as an essential feature of the mark. The trademark consists of the letters "CG" within a design.
For Phonograph Records and Tape Recordings.
First use May 16, 1967, on phonograph records.

Class 37 — Paper and Stationery

SN 249,028. Med-Dent Publishing Co., San Francisco, Calif. Filed June 27, 1966.

BIBBERO SYSTEMS

The word "Systems" is disclaimed apart from the mark as shown.

For Paper and Stationery Items—Namely, Photocopy Paper, Patient Registration Forms Used by Physicians and Dentists, Ledger Cards Used by Physicians and Dentists, Daily Journals Used by Physicians and Dentists, Control Boards for Mounting Daily Journal Forms, Filing Trays for Ledger Cards, Billing Envelopes, and Insurance Billing Forms.

First use Oct. 15, 1965, on photocopy paper.

SN 249,348. Monadnock Paper Mills, Inc., Bennington, N.H. Filed June 30, 1966.

MONAPOINT

Owner of Reg. Nos. 734,549, 535,439, and 783,227.

For Printing Paper.

First use Feb. 15, 1966.

SN 249,879. Scott Paper Company, Delaware County, Pa. Filed July 8, 1966.

SCOTT

Owner of Reg. Nos. 559,929, 747,765, and others.

For Printing Papers.

First use May 21, 1962.

SN 254,438. Duro Pen Co., Inc., Brooklyn, N.Y. Filed Sept. 14, 1966.

BRONCO

For Fiber Point Pens.

First use Aug. 8, 1966.

SN 256,572. Med-Dent Publishing Co., San Francisco, Calif. Filed Oct. 17, 1966.

DENT-A-COUNTING

For Paper and Stationery Items—Namely, Photocopy Paper, Patient Registration Forms Used by Dentists, Ledger Cards Used by Dentists, Daily Journals Used by Dentists, Control Boards for Mounting Daily Journal Forms, Ledger Trays for Filing Ledger Cards, Billing Envelopes, and Insurance Billing Forms.

First use June 1966.

SN 258,265. Staff Supermarket Associates, Inc., Jericho, N.Y. Filed Nov. 8, 1966.

STAFF

For Paper Towels, Paper Napkins, Waxed Paper, Bathroom Tissue, and Wrapping Film, All for Household Use.

First use January 1959.

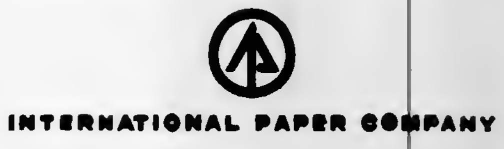
SN 258,545. International Paper Company, New York, N.Y. Filed Nov. 14, 1966.

RAP-A-WAY

For Shipping Case Wrappers Made of Paper or Paperboard.

First use Oct. 21, 1966.

SN 259,430. International Paper Company, New York, N.Y. Filed Nov. 25, 1966.



Owner of Reg. Nos. 744,083, 771,492, and 798,719.

For Paper and Stationery.

First use October 1966.

SN 266,238. Kimberly-Clark Corporation, Neenah, Wis. Filed Mar. 8, 1967.

QUARTET

For Table Napkins, Coasters, and Placemats Made of Paper.

First use Mar. 1, 1967.

SN 266,268. Union Carbide Corporation, New York, N.Y. Filed Mar. 8, 1967.

UCAR

For Plastic Sheet for Use as a Paper Substitute for Printing, Writing, Duplicating, Board Mounting, and the Like.

First use on or about Dec. 31, 1966.

SN 266,320. The C. R. Gibson Company, Norwalk, Conn. Filed Mar. 9, 1967.

PRIMAVERA

For Albums, Scrapbooks, and Snapshot Books.

First use on or about Jan. 15, 1967.

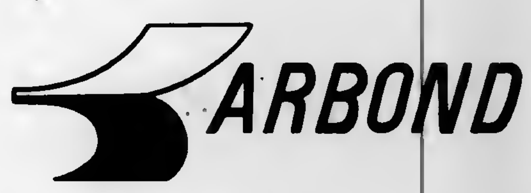
SN 266,350. The Northwest Paper Company, Cloquet, Minn. Filed Mar. 9, 1967.

FERN

For Paper—Namely, Manifold Paper.

First use at least prior to December 1952.

SN 266,719. Arnold Cellophane Corporation, Miami, Fla. Filed Mar. 15, 1967.



Owner of Reg. No. 750,584.

For Flexible Plastic Film Wrappers of Polyethylene, Cellophane, Polypropylene, or the Like Having Printed Material Disposed Between a Heat-Sealed Laminate Thereof.

First use Mar. 3, 1967.

SN 266,984. A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. Filed Mar. 17, 1967.

CASTELL MICROLETTE

Owner of Reg. Nos. 76,110, 83,824, 244,177, and others.

For Drawing Leads for Drawing Pencils.

First use Sept. 28, 1966.

SN 267,034. Graphic Controls Corporation, Buffalo, N.Y. Filed Mar. 17, 1967.

CURRENCY

For Tracing Paper.

First use prior to 1957.

SN 267,036. Graphic Controls Corporation, Buffalo, N.Y. Filed Mar. 17, 1967.

BONDTEX

For Tracing Paper.

First use prior to 1946.

SN 271,413. Mattel, Inc., Hawthorne, Calif. Filed May 15, 1967.

RINGEROOS

For Loose Leaf Binders.

First use Feb. 24, 1967.

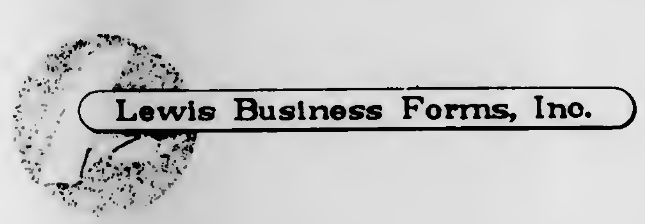
SN 280,133. Lewis Business Forms, Inc., Jacksonville, Fla. Filed Sept. 12, 1967.

LEWIS

For Tabulating Cards and Business Forms.

First use September 1934.

SN 280,134. Lewis Business Forms, Inc., Jacksonville, Fla. Filed Sept. 12, 1967.



For Tabulating Cards and Business Forms.

First use January 1961.

SN 280,375. The Parker Pen Company, Janesville, Wis. Filed Sept. 15, 1967.

TIARA

For Ball Point Pens, Fountain Pens, and Mechanical Pencils.

First use Aug. 13, 1959.

SN 280,376. The Parker Pen Company, Janesville, Wis. Filed Sept. 15, 1967.

CORONET

For Fountain Pens and Parts and Accessories Therefor, Ball Point Pens, and Mechanical Pencils.

First use June 14, 1966.

SN 280,752. Polaroid Corporation, Cambridge, Mass. Filed Sept. 20, 1967.

SWINGER

Owner of Reg. No. 828,518.

For Photographic Albums.

First use May 10, 1966.

Class 38 — Prints and Publications

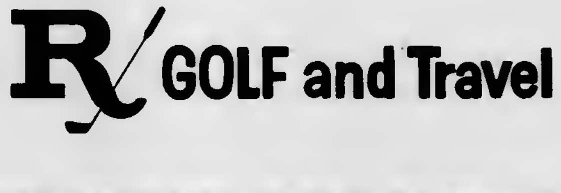
SN 235,130. General Signal Corporation, Rochester, N.Y. Filed Dec. 22, 1965.

TRANSIT-WIZE

For News Sheets and Clippings Containing News and Information With Regard to Urban Transit Developments, Which Can Be Used in Newspapers, Magazines, and Books.

First use Nov. 9, 1965, on news sheet.

SN 242,662. Rx Golf and Travel Co., Inc., Hillsboro, Ill. Filed Apr. 4, 1966.



Applicant disclaims any rights to the words "Golf and Travel," when used apart from the mark as shown.

For Magazine for the Medical Profession.

First use Feb. 2, 1966.

SN 244,634. Washington Report on the Medical Sciences, Inc., New York, N.Y. Filed Apr. 29, 1966.

WASHINGTON REPORT ON THE MEDICAL SCIENCES

For Periodic Newsletter Relating to Topics of Interest to the Medical and Related Professions.

First use July 15, 1947.

SN 245,795. Abram Samuels, d.b.a. College-Rater, Allentown, Pa. Filed May 16, 1966.

COLLEGE-RATER

For Printed Reports—Namely, Brochures Published at Intervals Containing Information About Colleges.

First use Apr. 26, 1966.

SN 246,606. The Reader's Digest Association, Inc., New Castle, N.Y. Filed May 25, 1966.

WILFRED FUNK

For Publications, in Particular Books.

First use Aug. 1, 1940.

SN 248,347. Sydney Levitt, d.b.a. Embassy Greetings, Van Nuys, Calif. Filed June 17, 1966.

EMBASSY

For Greeting Cards, and String Tags.

First use on or about June 7, 1963.

SN 248,924. A. Verner Nelson, d.b.a. A. Verner Nelson Associates, Chicago, Ill. Filed June 24, 1966.

E E
evaluation engineering

Owner of Reg. No. 750,320.
For Bimonthly Magazine.
First use November 1963; January 1962 for the words "Evaluation Engineering."

SN 249,116. Pierre Bugnion, Lille, Nord, France. Filed June 28, 1966.

BUGNION

For Periodic Journals Relating to Industrial Property.
First use July 1964; in commerce August 1964.

SN 253,408. Ag Aviation Academy, Minden, Nev. Filed Aug. 30, 1966.

AIR-AGE NEWS

For Newspaper.
First use Jan. 31, 1966.

SN 254,958. E. W. Williams Publications, Inc., New York, N.Y. Filed Sept. 22, 1966.

QUICK FROZEN FOODS

For Magazine Published Monthly.
First use 1938.

SN 255,002. Parents' Magazine Enterprises, Inc., New York, N.Y., assignee of Home Library Press, Inc., New York, N.Y. Filed Sept. 23, 1966.

YOUNG YEARS LIBRARY

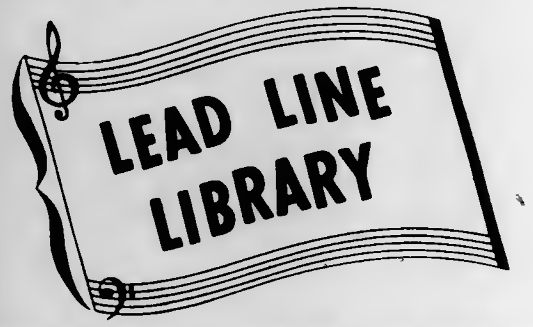
For Books.
First use December 1963.

SN 255,687. Anderson & Thompson Ski Co., Inc., Seattle, Wash. Filed Oct. 4, 1966.

SKI WORLD

For Publication—Namely, a Magazine.
First use June 24, 1964.

SN 257,597. Elsmo, Inc., d.b.a. Elsmo Bros. Publishers, Racine, Wis. Filed Oct. 31, 1966.



For Looseleaf Booklets Containing Printed Music for Education and Entertainment.
First use Aug. 16, 1966.

SN 262,185. Modern School Supply Co. Inc., Goshen, Ind. Filed Jan. 9, 1967.

MOD-O-LITE

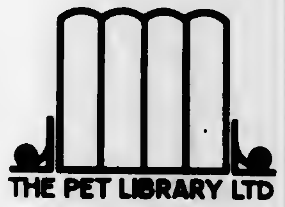
For Transparencies.
First use Aug. 1, 1963.

SN 264,113. Technical Publishing Company, Barrington, Ill. Filed Feb. 6, 1967.

INDUSTRIAL CONSUMER

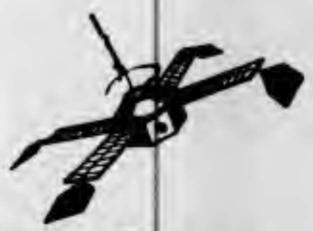
For Newsletter.
First use Jan. 24, 1967.

SN 266,356. Pet Needs, Inc., New York, N.Y. Filed Mar. 9, 1967.



The words "The Pet Library Ltd." are disclaimed apart from the mark.
For Pet Books.
First use Feb. 28, 1967.

SN 272,676. Research Institute of America, Inc., New York, N.Y. Filed May 31, 1967.



TOMORROW

For Magazine-Type Periodical Intended as a Skills Development Program for Salesmen and Supervisors.
First use May 3, 1965.

Class 39—Clothing

SN 243,767. Bard-Parker Company, Inc., Danbury, Conn. Filed Apr. 19, 1966.

GAMMA-GARD

For Radiation Barrier Material—Namely, Gloves.
First use on or about Dec. 10, 1965.

SN 254,329. Troll Inc., St. Louis, Mo. Filed Sept. 12, 1966.

SIDEWINDER

For Ladies' Beachwear—Namely, Jackets, Shirts, and Robes.
First use Oct. 19, 1965.

SN 257,344. American Dune-Deck Sportswear Corporation, Farmingdale, N.Y. Filed Oct. 27, 1966.

Dune-Deck

For Swim and Beach Wear.
First use at least as early as June 1964.

SN 258,802. Joe Frank, Inc., Houston, Tex. Filed Nov. 16, 1966.

Joe Frank
OF HOUSTON

Applicant disclaims exclusive right to use of the words "Of Houston" apart from the mark as shown.
For Ladies' Dresses, Suits, Blouses, Slacks, Skirts, and Jackets.
First use March 1947.

SN 263,768. Munsingwear, Inc., Minneapolis, Minn. Filed Feb. 1, 1967.

LOOK-MAKERS

For Bras, Girdles, and Lingerie.
First use Dec. 5, 1966.

SN 263,769. Munsingwear, Inc., Minneapolis, Minn. Filed Feb. 1, 1967.

HIPNIPPERS

For Girdles and Panty Girdles.
First use Dec. 5, 1966.

SN 263,778. Rapid-American Corporation, New York, N.Y. Filed Feb. 1, 1967.

JHC

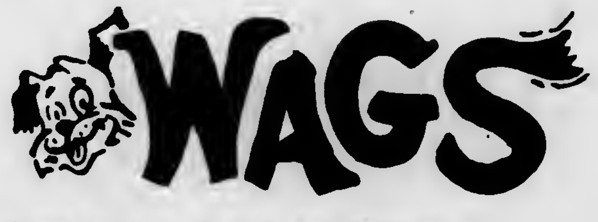
For Men's and Boys' Outer Garments—Namely, Coats, Suits, Sport Coats, Jackets, Top Coats, Overcoats, Slacks, Trousers, and Vests.
First use January 1957.

SN 264,063. The Juvenile Shoe Corporation of America, Aurora, Mo. Filed Feb. 6, 1967.

MISTER LAZY-BONES

Owner of Reg. Nos. 333,127 and 812,211.
For Shoes for Boys and Youths.
First use May 19, 1966.

SN 264,252. Shoe Corporation of America, Columbus, Ohio. Filed Feb. 8, 1967.



For Shoes for Men, Women, and Children.
First use Jan. 25, 1967.

SN 264,268. The Williams Manufacturing Company, Portsmouth, Ohio. Filed Feb. 8, 1967.

MIGHTY MATES

For Shoes.
First use Feb. 1, 1967.

SN 264,658. Dudley Casuals Incorporated, New York, N.Y. Filed Feb. 14, 1967.

SLIPCOVERS

For Women's Dresses.
First use Dec. 7, 1966.

SN 265,213. Russ Togs, Inc., New York, N.Y. Filed Feb. 21, 1967.

FLYING POINT

For Women's, Teens', and Children's Wearing Apparel—Namely, Pants, Slacks, Pant Tops, Blouses, Jackets, Skirts, and Sweaters.
First use Jan. 30, 1967.

SN 269,242. Virginia Maid Hosiery Mills, Inc., Pulaski, Va. Filed Apr. 14, 1967.

LADY OF PARIS

For Ladies' Hosiery.
First use Mar. 31, 1967.

SN 269,682. William F. Niemi Company, Seattle, Wash. Filed Apr. 20, 1967.

DOWNTOWNER

For Men's and Women's Coats.
First use Mar. 30, 1967.

SN 269,804. Stephens Brothers Limited, London, England. Filed Apr. 21, 1967.

CLANMOOR

Owner of British Reg. No. 839,176, dated Sept. 12, 1962.
For Pajamas, Shirts, and Robes for Men and Boys.
First use from at least 1959; in commerce from at least August 1963.

SN 277,247. Fairfield Knitwear, Inc., New York, N.Y. Filed Aug. 1, 1967.

Pantouché

For Ladies' Stretch Pants.
First use July 14, 1967.

Class 40—Fancy Goods, Furnishings, and Notions

SN 264,738. Hair Fashions, Inc., Philadelphia, Pa. Filed Feb. 15, 1967.

SWINGER

For Men's Wigs.
First use Jan. 24, 1967.

SN 278,632. Cosmetically Yours, Inc., Yonkers, N.Y. Filed Aug. 21, 1967.

MARIE ANTOINETTE

"Marie Antoinette" is the name of the historical character who was Queen of France from 1774 to 1793.
For Hair Pieces Including Wigs, Falls, and Wiglets.
First use Aug. 11, 1967.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 240,254. Mobay Chemical Company, Pittsburgh, Pa., assignee of Califoam Corporation of America, Compton, Calif. Filed Mar. 7, 1966.

For Carpet Underlay.
First use Feb. 10, 1966.

SN 242,781. Ack-Ti-Lining, Inc., New York, N.Y., assignee of Ackerman Associates, Inc., New York, N.Y. Filed Apr. 6, 1966.

PURR-FECT

For Fabrics, Both Cut and in the Piece, for Tie Interlinings.
First use Feb. 1, 1966.

SN 256,468. Niedieck AG, Lobberich, near Krefeld, Germany. Filed Oct. 14, 1966.

The mark consists of a line or band of silver color woven into the cloth along the selvage thereof.
For Fabrics in the Piece for Making Into Wearing Apparel, Hats, Draperies, Upholstery, and the Like.
First use September 1964; in commerce Nov. 17, 1964.

SN 261,562. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 28, 1966.

TYPAR

For Fabrics of Man-Made Fibers and Filaments Suitable for Making Into Household Furnishings and Apparel, and for Industrial Uses.
First use Dec. 13, 1966.

SN 262,847. Blends, Inc., New York, N.Y. Filed Jan. 19, 1967.

Juttah

For Piece Goods for Use in the Manufacture of Dresses, Skirts, Pants, Jackets, Suits, Bathing Suits, Blouses, and Coats.
First use June 23, 1965.

SN 264,806. Collins & Aikman Corporation, New York, N.Y. Filed Feb. 16, 1967.

BIT O' GRASS

No claim is made to the word "Grass" apart from the mark as shown.
For Synthetic Grass Rugs.
First use Jan. 30, 1967.

SN 265,321. Moss Rose Manufacturing Company, Philadelphia, Pa. Filed Feb. 23, 1967.

MOSS ROSE

Owner of Reg. No. 62,523.
For Tapestry Chenille, Tapestry, Velour and Upholstering Fabrics.
First use 1894.

SN 265,936. M. Lowenstein & Sons, Inc., New York, N.Y. Filed Mar. 3, 1967.

THE CLASSIC TOUCH

For Bed Sheets and Pillow Cases Made of Cotton and/or Synthetic Fibres.
First use Feb. 15, 1967.

SN 266,205. Eagle-Picher Industries, Inc., Cincinnati, Ohio. Filed Mar. 8, 1967.

ORCOTUFT

For Tufted Fabric for Use as Floor Coverings, Upholstery Purposes, and the Like.
First use Dec. 5, 1966.

SN 266,697. J. P. Stevens & Co., Inc., New York, N.Y. Filed Mar. 14, 1967.

QUEEN-MARIE

Owner of Reg. No. 227,638.
For Towels, Bath Rugs, Blankets, Sheets, and Pillow Cases.
First use May 10, 1927.

SN 268,032. Crompton Company, New York, N.Y. Filed Mar. 31, 1967.

RICHPRESS

For Textile Fabrics in the Piece Composed of Cotton, Synthetic Fibers, and Blends Thereof.
First use Nov. 11, 1964.

SN 268,300. Fieldcrest Mills, Inc., Spray, N.C. Filed Apr. 4, 1967.

Chandeau

For Textile Rugs and Carpeting.
First use Jan. 20, 1967.

SN 268,301. Fieldcrest Mills, Inc., Spray, N.C. Filed Apr. 4, 1967.

COQUILLE

For Textile Rugs and Carpeting.
First use Jan. 6, 1967.

SN 268,302. Fieldcrest Mills, Inc., Spray, N.C. Filed Apr. 4, 1967.

MAJOREAU

For Textile Rugs and Carpeting.
First use Jan. 18, 1967.

SN 268,304. Fieldcrest Mills, Inc., Spray, N.C. Filed Apr. 4, 1967.

Europa

For Textile Rugs and Carpeting.
First use Feb. 9, 1967.

SN 273,720. Ernst, Inc., San Francisco, Calif. Filed June 13, 1967.

ERNST

For Placemats and Table Runners.
First use 1953.

Class 44—Dental, Medical, and Surgical Appliances

SN 239,879. Anton F. Burkardt, d.b.a. Burkardt Electronics, New York, N.Y. Filed Mar. 1, 1966.

CORET

For Electric Massaging Devices for Skin Conditioning.
First use Jan. 16, 1961.

SN 250,177. S.R.L. G. B. Venturino, Forno Canavese, Turin, Italy. Filed July 13, 1966.
Priority claimed under Sec. 44(d) on Italian application

BAL◇ZAC

filed Jan. 28, 1966; Reg. No. 178,039, dated May 9, 1966.
For Veterinary Instruments—Namely, Emasculators.

SN 260,325. Faichney Instrument Corporation, Watertown, N.Y. Filed Dec. 8, 1966.

FAICHNEY

For Clinical Thermometers.
First use 1888.

SN 262,953. Medical Supply Company, Rockford, Ill. Filed Jan. 20, 1967.

MEDI/FLEX

For Hospital Supplies—Namely, a Sterile, Moist, Disposable Culture Appliance Including a Swab and a Liquid-Containing Ampule Contained in a Protective Tube; and for a Sterile Antiseptic-Applying Swab Contained in a Tube With an Ampule of Antiseptic.
First use May 6, 1966; Aug. 15, 1965, on related goods.

SN 263,073. Jobst Institute, Inc., Toledo, Ohio. Filed Jan. 23, 1967.

ANTI-EM

For Elastic Stockings Designed as an Aid in the Prevention of Pulmonary Embolism.
First use Dec. 1, 1966.

SN 264,230. Popper & Sons, Inc., New York, N.Y. Filed Feb. 8, 1967.

SELECTED

For Fever Thermometers and Microscope Slides.
First use June 1952.

SN 264,231. Popper & Sons, Inc., New York, N.Y. Filed Feb. 8, 1967.

DEFENDER

For Fever Thermometers.
First use November 1952.

SN 264,232. Popper & Sons, Inc., New York, N.Y. Filed Feb. 8, 1967.

RECORDER

For Fever Thermometers.
First use January 1948.

SN 264,233. Popper & Sons, Inc., New York, N.Y. Filed Feb. 8, 1967.

BLUE DOT

For Fever Thermometers.
First use October 1958.

Class 45—Soft Drinks and Carbonated Waters

SN 258,152. Robinson Extract Company, Inc., New Orleans, La. Filed Nov. 7, 1966.

MARCH

For Flavoring Compounds and Extracts for Use in Making Soft Drinks.
First use Nov. 21, 1965.
Subj. to Intf. with SN 268,919.

SN 259,864. Suburban Club Carbonated Beverage Company, Inc., Baltimore, Md. Filed Dec. 1, 1966.

SUBURBAN

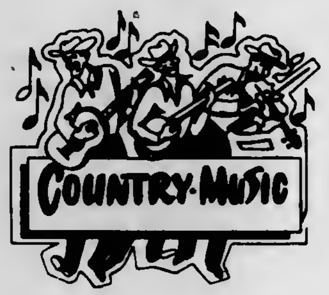
Owner of Reg. No. 503,653.
For Carbonated Soft Drinks.
First use Nov. 16, 1966.

SN 260,447. Ocean Spray Cranberries, Inc., Hanson, Mass. Filed Dec. 9, 1966.

CRANICOT

Owner of Reg. Nos. 773,286, 777,956, and 833,457.
For Food Beverage Consisting of Apricot Juice, Cranberry Juice, Water, and Lesser Ingredients, Sold in Bottles.
First use Nov. 8, 1966.

SN 261,666. Robert L. McCree, d.b.a. Country Music Beverage Co., Jackson, Miss. Filed Dec. 29, 1966.



For Soft Drinks.
First use Nov. 8, 1966.

SN 267,823. Feigenson, Incorporated, d.b.a. Faygo Beverage Company, Detroit, Mich. Filed Mar. 29, 1967.

FROSH

For Soft Drinks.
First use Mar. 21, 1967.

SN 278,528. PepsiCo, Inc., New York, N.Y. Filed Aug. 17, 1967.

MIRINDA DRY

Applicant disclaims the exclusive right to use the word "Dry" apart from the mark as shown. Owner of Reg. No. 811,787.
For Soft Drinks, and Syrups and Concentrates for the Preparation of Such Soft Drinks.
First use July 27, 1967.

Class 46—Foods and Ingredients of Foods

SN 226,224. Dean Foods Company, Franklin Park, Ill. Filed Aug. 23, 1965.

MRS. WEAVER'S SALADS

The word "Salads" is disclaimed apart from the mark as shown.
For Salads—Namely, Ham Salad, Potato Salad, Macaroni Salad, Various Gelatin Salads, Prepared Cole Slaw, and Dry Cole Slaw.
First use August 1954.

SN 227,088. Weidner Canning Company, Inc., d.b.a. R-Way Canning Co., Plymouth, Ind. Filed Sept. 2, 1965.

HOOSIER PRIDE

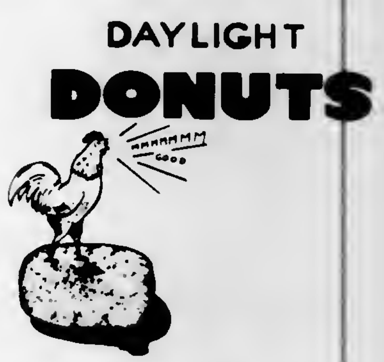
For Pickle Products, Consisting of Kosher Dills and Sweet Pickles.
First use on or about Jan. 1, 1965.

SN 231,666. Bread Franchising, Inc., Fort Lauderdale, Fla., assignee of Bread Marketing, Inc., Fort Lauderdale, Fla. Filed Oct. 27, 1965.

PONDEROSA RANCH BREAD

The word "Bread" is disclaimed.
For Bread.
First use Oct. 9, 1965.

SN 239,604. William T. Day, d.b.a. Daylight Donut Flour Company, Tulsa, Okla. Filed Feb. 25, 1966.



The words "Donuts" and "Goods" and the representation of the doughnut are disclaimed apart from the mark as shown.
For Doughnuts.
First use Jan. 15, 1952.

SN 246,280. Crown Food Products, Inc., Atlanta, Ga. Filed May 23, 1966.

CROWN'S

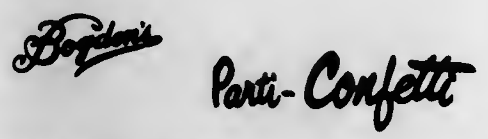
For Mayonnaise, Salad Dressing, Sandwich Spread, Mustard, Barbecue Sauce, Distilled Vinegar, Tartar Sauce, Preserves and Jelly, and Cole Slaw Dressing.
First use October 1947.

SN 246,775. General Mills, Inc., Minneapolis, Minn. Filed May 27, 1966.

CORNY COBS

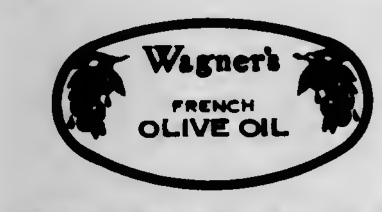
The word "Corny" is disclaimed apart from the mark as shown.
For Cereal Derived Ready To Eat Snacks.
First use Apr. 25, 1966.

SN 252,536. Bogdon Candies, Inc., Shawnee Mission, Kans. Filed Aug. 17, 1966.



Owner of Reg. No. 558,388.
For Candy.
First use Aug. 10, 1966; April 1962 as to "Confetti."

SN 252,606. John Wagner & Sons Inc., Ivyland, Pa. Filed Aug. 17, 1966.



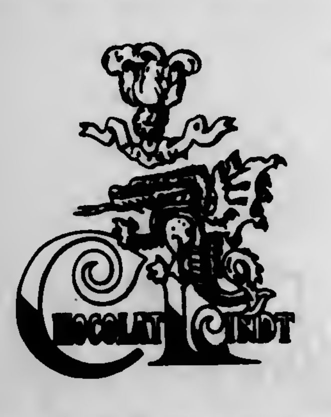
The words "French Olive Oil" and the representation of olives are disclaimed apart from the mark as shown. Owner of Reg. Nos. 605,922, 762,826, and others.
For French Olive Oil.
First use Apr. 6, 1966.

SN 256,775. Staff Supermarket Associates, Inc., Jericho, N.Y. Filed Oct. 19, 1966.

STAFF

For Canned and Frozen Vegetables, Canned Fruit, Canned and Frozen Fruit Juices, Ice Cream, Coffee, Tea, Spaghetti, Macaroni, Cookies, Candy, Table Salt, Potato Chips, Frozen Waffles, Raisins, Canned Fish, Bird Food, Frozen Shrimp, Canned Soup, Canned Fish, Frozen Fish Sticks; Chicken and Turkey Pies Consisting of Prepared Chicken or Turkey With Vegetables and Seasonings in a Sauce and Covered With a Pie Crust; Cheese, Evaporated Milk, Salad Dressing, Mayonnaise; Food Seasonings—Namely, Oregano and Onion Salt; Sparerib Sauce, Chicken Gravy, Vanilla Extract, Peanut Butter, Canned Cooked Spaghetti in Sauce; Condiments—Namely, Vinegar, Catsup, Mustard, Chili Sauce, Relish, Capers, and Sweet Pickles; Table Syrup, Pretzels, Popcorn, Saccharin, Liquid Sweetener Comprised of a Combination of Non-Nutritive Artificial Sweeteners, Powdered Sweetened Cocoa Used To Make Hot or Cold Chocolate Flavored Drinks, Fruit Jelly, Chocolate Flavored Syrup, Vegetable Oil Used for Cooking and Salad Making, Vegetable Shortening, Honey, and Lemon Extract.
First use Jan. 18, 1959.

SN 258,044. Chocoladefabriken Lindt & Sprungli AG, Kilchberg, Switzerland. Filed Nov. 7, 1966.



Applicant makes no claim to the exclusive right to the word "Chocolat" apart from the mark as shown. Owner of Reg. Nos. 87,306 and 556,667.
For Chocolate Candy.
First use Dec. 19, 1899; in commerce July 1, 1906.

SN 259,182. Strohmeyer & Arpe Company, d.b.a. United Pure Food Company, New York, N.Y. Filed Nov. 21, 1966.

ME

For Canned Fish, Specifically Sardines in Oil.
First use December 1904.

SN 260,883. Ralston Purina Company, St. Louis, Mo. Filed Dec. 15, 1966.

CHOWS

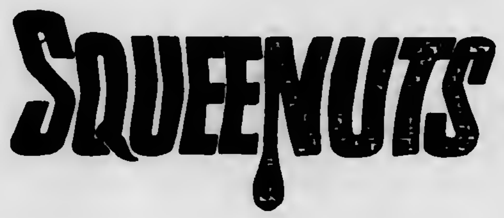
Owner of Reg. Nos. 102,843, 731,826, and others.
For Livestock, Horse, and Poultry Feeds.
First use December 1954.

SN 261,939. National Dairy Products Corporation, Chicago, Ill. Filed Jan. 4, 1967.

KRAFTEEN

Owner of Reg. Nos. 554,187, 670,330, and 801,424.
For Dried Whey.
First use Dec. 6, 1966.

SN 262,347. Products Distributing Corporation, Orlando, Fla. Filed Jan. 11, 1967.



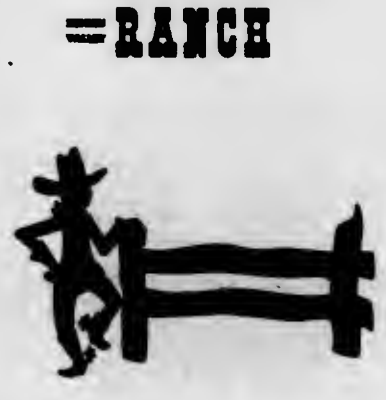
The drawing is lined for gold.
For Partially Defatted Nuts.
First use Oct. 20, 1966.

SN 265,532. K & K Manufacturing, Inc., Rogers, Minn. Filed Feb. 27, 1967.

NURS-ETTE

Owner of Reg. No. 672,463.
For Formula Feed for Calves and Other Suckling Animals.
First use 1958.

SN 265,628. Kenneth B. Hensen, d.b.a. Hidden Valley Ranch, Santa Barbara, Calif. Filed Feb. 28, 1967.



For Dressing Mix for Salads.
First use Jan. 3, 1967.

SN 265,704. Consolidated Foods Corporation, Chicago, Ill. Filed Mar. 1, 1967.

THE BIG 'O'

For Orange Juice.
First use Jan. 18, 1962.

SN 265,853. Taterstate Frozen Foods, Washburn, Maine. Filed Mar. 2, 1967.

CONEY ISLAND

For Frozen French Fried Potatoes.
First use June 15, 1960.

SN 266,026. Florasynth, Inc., Bronx, N.Y. Filed Mar. 6, 1967.

SUPERBASE

For Imitation Food Flavorings.
First use Sept. 27, 1966.

SN 266,263. Specialty Bakers' Services, Inc., Birmingham, Mich. Filed Mar. 8, 1967.

BEAUTY

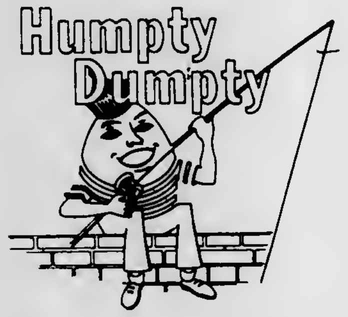
For Bread.
First use on or about Jan. 22, 1967.

SN 266,301. Breaker Confections, Inc., Elk Grove Village, Ill. Filed Mar. 9, 1967.

GOLIATH

For Candy.
First use Feb. 20, 1967.

SN 266,573. Pacific Alaska Fisheries, Inc., Seattle, Wash. Filed Mar. 13, 1967.



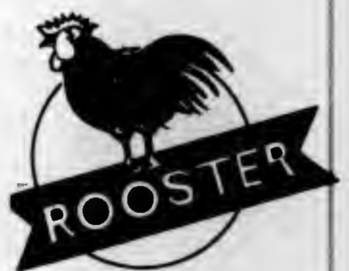
Owner of Reg. Nos. 78,948, 226,487, and 438,559.
For Canned Seafoods.
First use on or about July 19, 1934; on or about July 7, 1904, as to "Humpty Dumpty."

SN 267,209. The Wickes Corporation, d.b.a. Michigan Bean Company, Saginaw, Mich. Filed Mar. 20, 1967.

SPRUCE

For Edible, Dry Beans Sold in Large Bags to Processors.
First use December 1940.

SN 267,210. The Wickes Corporation, d.b.a. Michigan Bean Company, Saginaw, Mich. Filed Mar. 20, 1967.



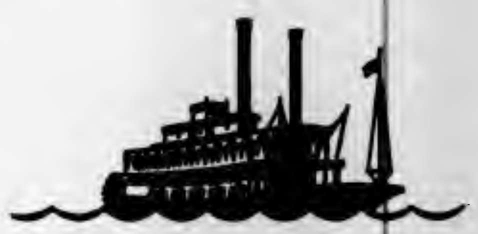
For Edible, Dry Beans Sold in Large Bags to Processors.
First use December 1940.

SN 267,344. Mount Olive Pickle Company, Inc., Mount Olive, N.C. Filed Mar. 22, 1967.

BARONESS

For Pickles and Pickle Relishes.
First use in or about 1945.

SN 272,407. Riviana Foods Inc., Houston, Tex. Filed May 25, 1967.



Owner of Reg. No. 561,035.
For Rice.
First use at least as early as November 1947.

SN 272,495. Keebler Company, Elmhurst, Ill. Filed May 26, 1967.

CANDICE

For Candy.
First use Jan. 10, 1966.

SN 272,888. Deutsche Lebensmittelwerke, G.m.b.H., Hamburg, Germany. Filed June 2, 1967.

NORICA

Owner of German Reg. Nos. 805,591, dated Dec. 17, 1963 and 766,610, dated Sept. 5, 1962.

For Bakers' and Confectioners' Goods—Namely, Puddings, Pies, Pastries, and Cakes; Ready Meals Made From Meat, Fish, Potatoes, Vegetables, Food Pastes and Spices, Both in Dried and Preserved Form; and Rice.

SN 275,356. Valley Packing Company of California, Salinas, Calif. Filed July 5, 1967.

BANG-UP

Owner of Reg. Nos. 369,755 and 640,103.
For Fresh Vegetables.
First use 1926.

SN 275,357. Valley Packing Company of California, d.b.a. Valley Packing Co., Salinas, Calif. Filed July 5, 1967.

Salad Bowl

For Fresh Vegetables.
First use at least as early as 1961.

SN 277,107. Oceans of the World, Inc., Los Angeles, Calif. Filed July 31, 1967.

KITCHEN READY

The word "Ready" is disclaimed apart from the mark as shown.
For Frozen Seafoods.
First use at least as early as 1957.

SN 278,167. Toru Kitahara, Thermal, Calif. Filed Aug. 14, 1967.

FRUIT OF GOLD

No claim is made to the word "Fruit" which is the name of the goods.
For Fresh Grapes.
First use June 20, 1967.

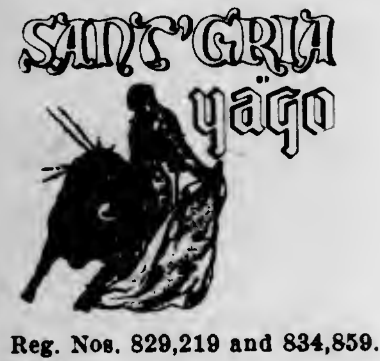
SN 278,634. The Harlee Company, Chicago, Ill. Filed Aug. 21, 1967.

NICE-ICE

For Flavored Frozen Water Which Has Been Crushed and Is Sold Through Dispensing Machines as a Frozen Confection.
First use in or about February 1967.

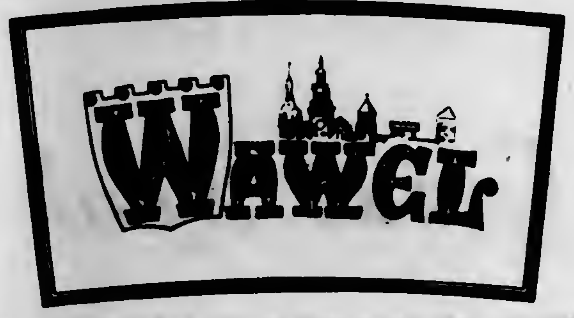
Class 47 — Wines

SN 264,795. Bodegas Rioja Santiago, S.A., d.b.a. Rioja Santiago S.A., Haro, Logrono, Spain. Filed Feb. 16, 1967.



Owner of U.S. Reg. Nos. 829,219 and 834,859.
For Wine Specialty.
First use Feb. 2, 1966; in commerce Apr. 12, 1966.

SN 266,173. Przedsiebiorstwo Handlu Zagranicznego "Agros," Warsaw, Poland. Filed Mar. 7, 1967.



Owner of Polish Reg. No. 45,506, dated Dec. 15, 1965.
For Mead (Honey Wine).

SN 270,913. Franzia Brothers Winery, d.b.a. Old Chateau Wine Co., Ripon, Calif. Filed May 8, 1967.

Louis the Eighth

Owner of Reg. No. 718,655.
For Sparkling Wines and Champagnes.
First use Sept. 27, 1966.

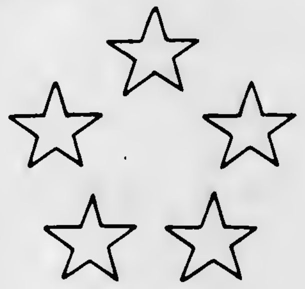
Class 50 — Merchandise Not Otherwise Classified

SN 256,509. American Garment Hanger Company, Incorporated, Silver Spring, Md. Filed Oct. 17, 1966.

KANTSLIP

For Coat Hangers.
First use October 1965.

SN 271,983. General Felt Industries, Inc., Los Angeles, Calif. Filed May 22, 1967.



For Sponge Rubber Carpet Underpadding.
First use Jan. 16, 1967.

Class 51 — Cosmetics and Toilet Preparations

SN 241,045. Jean Eymond, Inc., Miami, Fla. Filed Mar. 15, 1966.

TAMBOUR DE JUNGLE

The English translation of the words "Tambour de Jungle" are "jungle drums."
For Perfume.
First use Nov. 8, 1965.

SN 244,762. Sterling International Trading Co., Limited, Akron, Ohio. Filed May 2, 1966.

Owner of Reg. No. 733,919.
For Perfume.
First use on or about Nov. 15, 1963.

SN 246,009. Margarete Astor AG, Mainz, Germany. Filed May 11, 1966.

MARGARETE ASTOR

"Margarete Astor" is the name of a deceased person. Owner of German Reg. No. 736,955, dated July 2, 1959.

For Cosmetic Preparations—Namely, Lipstick, Nail Polish, Eye Make-Up, Face Powder, Rouge, Suntan Lotion, Hand Lotion, Face Lotion, Skin Cleanser, Vitamin Cream, and Perfume.

SN 248,706. House of Zizaco, Ltd., New York, N.Y. Filed June 22, 1966.

PARAPHERNALIA

For Toiletries and Cosmetics, Specifically, Perfumes, Lipsticks, Eye Makeup, Face Powder, Liquid Facial Makeup, Nail Enamel, Eye Shadow, and Mascara.

First use Mar. 28, 1966.

SN 249,518. Ellen of Hollywood, Inc., Denver, Colo. Filed July 5, 1966.

ELLEN OF HOLLYWOOD

The term "Hollywood" is disclaimed apart from the mark as shown.

For Lipstick, Eye Shadow, Mascara, Liquid Make-Up, Face Powder, Cleansing Cream, Freshener, Bath Oil, Hand and Body Lotion, Eyebrow Pencils, Eye and Throat Lotion, and Moisturizer.

First use Dec. 1, 1964.

SN 250,300. Helena Rubinstein, Inc., New York, N.Y. Filed July 14, 1966.

TURN BLONDE

Owner of Reg. No. 621,944.

For Hair Lightener Consisting of a Liquid and Cream Which Are Mixed Together To Form a Foam Which Lightens the Hair.

First use Mar. 16, 1954.

SN 251,304. Hoffman Barber & Beauty Supply Co., Los Angeles, Calif. Filed July 29, 1966.

HOFFMAN

For Men's Hair Grooming and After Shave Preparations.

First use Mar. 14, 1963.

SN 254,244. Clairol Incorporated, New York, N.Y. Filed Sept. 12, 1966.

JUMP

For Hair Tinting, Dyeing and Coloring Preparation, and Hairdressing.

First use July 8, 1966.

SN 261,334. Sybil Ives Incorporated, White Plains, N.Y. Filed Dec. 22, 1966.

AVOCADOL

For Cold Permanent Waving Lotion.

First use Aug. 11, 1966.

SN 262,307. Armour and Company, Chicago, Ill. Filed Jan. 11, 1967.

SANCTUARY

For Bubble Bath.

First use on or prior to Dec. 6, 1966.

SN 262,869. Bishop Industries Inc., Union, N.J., by change of name from Hazel Bishop Inc., Union, N.J. Filed Jan. 19, 1967.

AMAZING

For Shaving Lotion.

First use Sept. 26, 1966.

SN 263,310. Yardley of London, Inc., Totowa, N.J. Filed Jan. 25, 1967.

THE ENGLISH INFLUENCE

For Bath Emollient, Skin Freshener and Liquid Foundation.

First use Jan. 3, 1967.

SN 263,443. Samuel Bonat & Bro., Inc., West Paterson, N.J. Filed Jan. 27, 1967.

VSP

For Hair Bleach.

First use Nov. 1, 1966.

SN 264,789. Associated Luxuries, Inc., New York, N.Y. Filed Feb. 16, 1967.

MASKIT

For Mouth Spray for Freshening the Breath.

First use Feb. 6, 1967.

SN 265,078. Victor Mamak, Santa Monica, Calif. Filed Feb. 20, 1967.

SEVEN STARS OF HOLLYWOOD

☆ ☆ ☆ ☆ ☆ ☆ ☆

For Beauty and Makeup Products—Namely, Lipsticks, Liquid Makeup, and Face Creams.

First use Jan. 15, 1967.

SN 266,883. Helena Rubinstein, Inc., New York, N.Y. Filed Mar. 16, 1967.

PAT-A-BLUSH

For Liquid Makeup.

First use Oct. 10, 1966.

SN 272,453. The House of Danilov, Inc., New York, N.Y. Filed May 26, 1967.

THE HOUSE OF DANILOV

For Colognes and After Shave Lotions.

First use Jan. 2, 1966.

SN 273,368. Charmaceuticals, Inc., Los Angeles, Calif. Filed June 8, 1967.

Great Look

For Face Cream.

First use Mar. 1, 1967.

SN 279,625. Chesebrough-Pond's Inc., New York, N.Y. Filed Sept. 5, 1967.

ENDLESS SUMMER

For Hair Dressing.

First use Aug. 17, 1967.

SN 280,669. Charmaceuticals, Inc., Los Angeles, Calif. Filed Sept. 19, 1967.

Beauty Maker

For Face and Body Lotion.

First use Nov. 1, 1966.

SN 280,670. Charmaceuticals, Inc., Los Angeles, Calif. Filed Sept. 19, 1967.

Beauty Surgeon

For Body Lotion.

First use June 12, 1967.

SN 280,747. Gem, Incorporated, Byhalia, Miss. Filed Sept. 20, 1967.

F-T

For Liquid Hair Conditioner.

First use Aug. 22, 1960.

Class 52—Detergents and Soaps

SN 235,349. Speedrite Products, Inc., Wichita, Kans. Filed Dec. 27, 1965.

Speed-e-clean

For Liquid Detergent for Cleaning the Hands, Sold in Jars and Cans to Businesses in the Merchandising of Instant Dry Ink Sign Making Materials.

First use on or about Nov. 1, 1965.

SN 252,419. Red Top Maintenance Service Inc., Denver, Colo. Filed Aug. 15, 1966.

RED TOP

Owner of Reg. No. 805,777.

For Industrial Cleaning Compounds—Namely, Germicidal Floor and Wall Cleaners, Floor Finish Removers, Rug and Upholstery Shampoo, Liquid Surgical Soap, Bathroom Fixture Cleaner, and Window Cleaner.

First use May 29, 1965.

SN 261,236. Standard International Corporation, Andover, Mass. Filed Dec. 21, 1966.

EVERYDAY

For General Purpose Liquid Spray Cleaner.

First use Nov. 30, 1966.

SN 263,201. Ranco Industrial Products Corporation, Cleveland, Ohio. Filed Jan. 24, 1967.

SPUNK

For Waterless Hand Cleaning Lotion.

First use on or about Dec. 15, 1966.

SN 264,273. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Jan. 27, 1967.

HYDROPEL

For General Maintenance and Steam Cleaning Composition.

First use Mar. 31, 1951.

SN 264,422. Johnson Industries, Inc., Menlo Park, N.J. Filed Feb. 10, 1967.

VEDRA

Owner of Reg. Nos. 810,391 and 810,539.

For Face, Hand and Bath Soaps, Soap Powders for the Hands, and Hair Shampoo.

First use Oct. 5, 1965.

SN 265,485. B & L Sales Associates, Boston, Mass. Filed Feb. 27, 1967.

COME ON STRONG

For All Purpose Cleaner, Soaps for Personal and Garment Cleaning, Hand Soap, Powder Soap for Dishes, Detergent Floor Cleaner for Garage Floors, Laundry Detergent, and Detergents for Home and Industrial Use.

First use at least as early as April 1965.

SN 270,058. W. R. Grace & Co., New York, N.Y. Filed Apr. 26, 1967.

SERVE

For Dishwashing Compound, Laundry Detergent, and All Purpose Cleaner.

First use Mar. 23, 1967.

SN 271,745. American Home Products Corporation, New York, N.Y. Filed May 18, 1967.

HI-SPOT

For Laundry Detergent.

First use Apr. 17, 1967.

SN 272,454. The House of Danilov, Inc., New York, N.Y. Filed May 26, 1967.

THE HOUSE OF DANILOV

For Bath, Face, and Hand Soaps.

First use Jan. 2, 1966.

SN 276,279. Alberto-Culver Company, Melrose Park, Ill. Filed July 19, 1967.

MR. DUCK

For Dishwashing Detergent.
First use Mar. 24, 1967.

SN 279,146. London Chemical Company, Inc., Melrose Park, Ill. Filed Aug. 28, 1967.

LONCOTERGE

Owner of Reg. No. 716,611.
For Cleaning Compound for Solder Plated Printed Circuits.
First use 1948.

SERVICE MARKS

Class 100 — Miscellaneous

SN 243,352. Sheraton Corporation of America, Boston, Mass. Filed Apr. 13, 1966.

TUDOR ROOM

The word "Room" is disclaimed apart from the mark as shown.
For Restaurant Services.
First use Aug. 5, 1960.

SN 249,550. H. E. Moore, Redondo Beach, Calif. Filed July 5, 1966.

PYROMATICS

For Consulting Service on Explosives, Especially Electro-Explosive Mechanisms.
First use June 16, 1966.

SN 252,603. Unimark International Corporation for Design and Marketing, Chicago, Ill. Filed Aug. 17, 1966.

UNIMARK INTERNATIONAL

No claim is made to the word "International" apart from the mark as shown.
For Designing Packages and Products for Others.
First use Jan. 28, 1965.

SN 255,313. S. & H. Grossinger, Inc., Grossinger, N.Y. Filed Sept. 28, 1966.

GROSSINGER'S

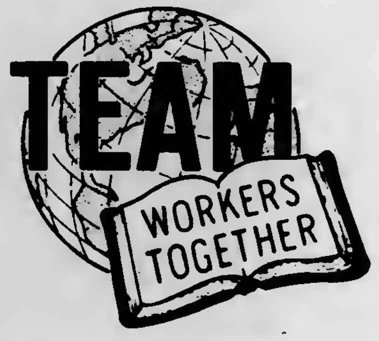
Owner of Reg. No. 708,803.
For Hotel Services.
First use at least as early as 1915.

SN 260,540. The Evangelical Alliance Mission, Wheaton, Ill. Filed Dec. 12, 1966.

TEAM

For Religious Missionary Services.
First use July 1950.

SN 260,541. The Evangelical Alliance Mission, Wheaton, Ill. Filed Dec. 12, 1966.



For Religious Missionary Services.
First use July 1949.

SN 263,898. Design Consultants Engineering Corp., Pittsburgh, Pa. Filed Feb. 3, 1967.

DESCON

For General Engineering Services—Namely, Reports, Studies, Design, Drawings, Details, Calculations, Field Engineering, and Specifications in the Field of Heavy Industry, Public Works, Missile/Defense, Machinery, Buildings, and Product Development.
First use June 15, 1966.

SN 265,467. Buffalo Bill's Steak Village, Inc., Los Angeles, Calif. Filed Feb. 27, 1967.

A FAMILY ADVENTURE IN EATIN' OUT!

For Restaurant Services.
First use Sept. 8, 1966.

SN 274,123. Sterling Equipment Corporation, Philadelphia, Pa. Filed Dec. 27, 1966.

KLEEN-ALL CENTER

Applicant disclaims "Center" apart from the mark as shown.
For Consulting Services for Dry Cleaning and Laundering Stores.
First use Feb. 19, 1965.

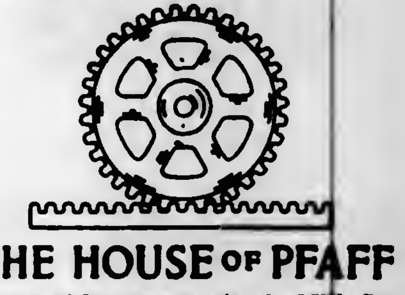
Class 101 — Advertising and Business

SN 243,092. Cambridge Research Institute, Cambridge, Mass. Filed Apr. 11, 1966.

CAMBRIDGE RESEARCH INSTITUTE

The wording "Research Institute" is disclaimed apart from the mark as shown.
For Management Consulting Services.
First use Jan. 30, 1961.

SN 248,927. George Pfaff, Incorporated, Long Island City, N.Y. Filed June 24, 1966.



For Manufacturers' Representative in Mill, Stone, and Glass Carving, and Sandblasting Supplies, Including Rock Drills, Nozzles, and Abrasives; and Dust Arresters.
First use on or about June 1, 1929.

SN 254,285. House of Fabrics, Inc., North Hollywood, Calif. Filed Sept. 12, 1966.

SO-FRO

For Retail Fabric Store Services.
First use in or about August 1966.

SN 255,413. Bradfute Corporation, Eastchester, N.Y. Filed Sept. 29, 1966.

ALPHA-BUCKS

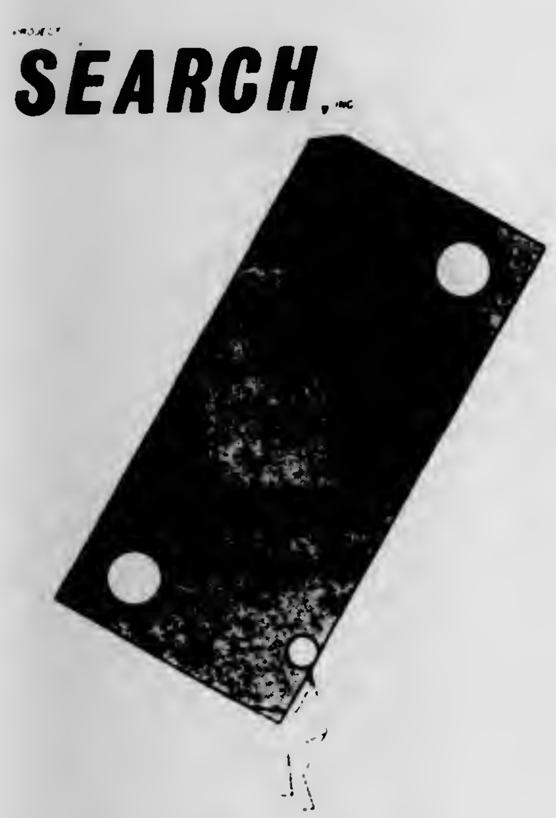
For Promoting the Sale of Goods and Services of Others by Means of a Game.
First use Aug. 2, 1966.

SN 255,559. University of Miami, Coral Gables, Fla. Filed Sept. 30, 1966.

COBAN

For Developing Computer Programs for Others To Use in Accounting and Statistical Analyses, and the Programming of Computers With the Developed Programs.
First use June 1965.

SN 258,582. Project Search, Inc., Flushing, N.Y. Filed Nov. 14, 1966.



For Dating Agency Services—Namely, Providing Opportunities for Men and Women To Meet Persons of Compatible Interests, Backgrounds, and Personalities.
First use Oct. 11, 1966.

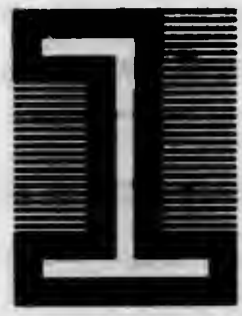
SN 268,451. The Hertz Corporation, New York, N.Y., by assignment and change of name from The Hertz Corporation, New York, N.Y. Filed Apr. 6, 1967.

SKYCENTER

For Airport Management Consultant Services.
First use Mar. 8, 1967.

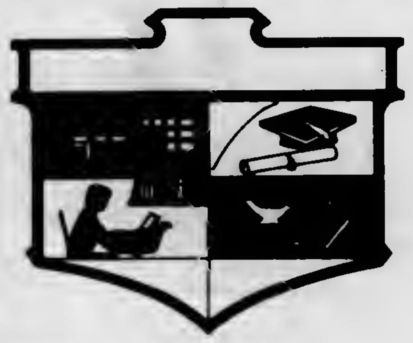
Class 102 — Insurance and Financial

SN 247,212. First national Bank of Oregon, Portland, Oreg. Filed June 3, 1966.



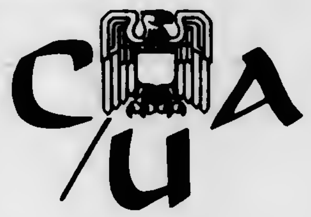
The lining on the drawing is a feature of the mark and is not symbolic of color. Applicant disclaims the numeral "1" apart from the mark as shown.
For Banking and Trust Services.
First use Oct. 5, 1961.

SN 276,285. The Educators Company for Insurance on Lives and Granting Annuities, Denver, Colo. Filed July 19, 1967.



For Underwriting of Life Insurance.
First use Dec. 17, 1963.

SN 279,983. The College/University Insurance Company of America, Indianapolis, Ind. Filed Sept. 11, 1967.



Owner of Reg. No. 827,688.
For Underwriting Automobile, Fire and Casualty, and Related Insurance, Excluding Life Insurance.
First use Dec. 7, 1966.

Class 103 — Construction and Repair

SN 255,621. Hayes International Corporation, Birmingham, Ala. Filed Oct. 3, 1966.

For Maintenance and Modification of Aircraft Owned by Others, and Building Prototypes of Space Vehicles and Missile Guidance Systems and Controls and Mechanisms Therefor, Military Weapons and Target Systems.
First use on or about Jan. 29, 1962; on or about June 1 1951, as to "Hayes."

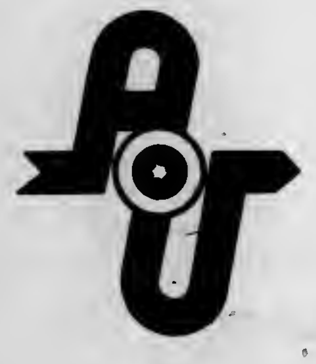
SN 261,517. Ranney Water Systems, Inc., Columbus, Ohio. Filed Dec. 27, 1966.

RANNEY SELECTOR

For Installation and Maintenance of Water Supply Systems for Governmental and Industrial Plants.
First use on or about Dec. 15, 1965.

Class 105 — Transportation and Storage

SN 243,291. Advance United Expressways, Inc., Minneapolis, Minn. Filed Apr. 13, 1966.



For Freight Transporting Services by Truck.
First use in or before June 1962.

SN 249,800. Rotel-Internationale Begegnungsfahrten Anhanger- und Omnibustentwicklungen Georg Holtl OHG., Tittling, near Passau, Bavaria, Germany. Filed July 7, 1966.

ROTEL

For Operating Tour Services by Which a Group Is Provided Transportation in a Bus Which Is in the Nature of a Mobile Home Inasmuch as It Includes Eating and Sleeping Accommodations for All Passengers.
First use Apr. 27, 1966; in commerce Apr. 27, 1966.

SN 255,030. Trans World Airlines, Inc., New York, N.Y. Filed Sept. 23, 1966.

WELCOME TO THE WORLD OF TRANS WORLD AIRLINES

Applicant disclaims the word "Airlines" apart from the mark as shown. Owner of Reg. No. 541,582.
For Transportation of Persons, Property, and Mail.
First use Aug. 2, 1966.

Class 106 — Material Treatment

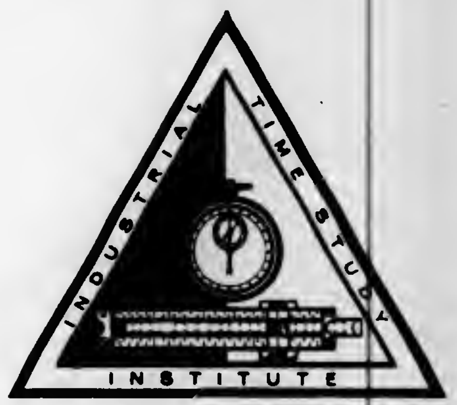
SN 251,217. Hyman-Michaels Company, Chicago, Ill. Filed July 28, 1966.

CAR-BE-QUE

For Scrap Metal Preparation Services.
First use Mar. 25, 1966.

Class 107 — Education and Entertainment

SN 244,438. Technological Management, Inc., d.b.a. Industrial Timestudy Institute, Akron, Ohio. Filed Apr. 27, 1966.



For Conducting Training Courses in Timestudy and Methods Engineering.
First use June 6, 1962.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

839,366. DRAGO AND DESIGN. Drago Operating Corp. SN 246,666. Pub. 9–12–67. Filed 5–26–66.

839,367. KITTY-KARTON. Scientific Pet Products Co. SN 249,448. Pub. 9–12–67. Filed 7–1–66.

839,368. CADET. Armour and Company. SN 253,110. Pub. 9–12–67. Filed 8–25–66.

839,369. KEYSTONE AND DESIGN. Cornell Seed Company. SN 253,851. Pub. 9–12–67. Filed 9–6–66.

839,370. MISTER CHIPS. Fusecolor Corporation. SN 254,145. Pub. 9–12–67. Filed 9–9–66.

839,371. JAGRA AND DESIGN. Oregon Bulb Farms, Inc. SN 255,998. Pub. 9–12–67. Filed 10–7–66.

839,372. KITTY PLEASE. Hi-Life Packing Company. SN 256,556. Pub. 9–12–67. Filed 10–17–66.

839,373. KITTI-TISSU. Gus Dettelbach, d.b.a. Georgia-Tennessee Mining & Chemical Co. SN 257,373. Pub. 9–12–67. Filed 10–27–66.

839,374. SPINCELL. International Paper Company. SN 260,159. Pub. 9–12–67. Filed 12–6–66.

839,375. THUNDA-LITE. The Goodyear Tire & Rubber Company. SN 260,248. Pub. 9–12–67. Filed 12–7–66.

839,376. PLIOFORM. The Goodyear Tire & Rubber Company. SN 260,742. Pub. 9–12–67. Filed 12–14–66.

839,377. GENDRIV. General Mills, Inc. SN 268,928. Pub. 9–12–67. Filed 4–12–67.

Class 2 — Receptacles

839,378. JIFFY TRAY. Geo. J. Ball, Inc., d.b.a. Jiffy-Pot Company of America. SN 241,022. Pub. 7–18–67. Filed 3–15–66.

839,379. VAL-PAK. Val-Pak Manufacturing Corporation. MULTIPLE CLASS (Classes 2, 19, and 23). SN 244,441. Pub. 9–12–67. Filed 4–27–66.

839,380. VISION-WRAP. Vision Wrap Industries, Inc. SN 258,008. Pub. 9–12–67. Filed 11–4–66.

839,381. LITE-PAC. Master-Craft Corporation. SN 259,131. Pub. 9–12–67. Filed 11–21–66.

839,382. CERTIPAK. Certipak Corporation. SN 259,221. Pub. 9–12–67. Filed 11–22–66.

839,383. GPF. Geuder, Paeschke & Frey Co. SN 259,240 Pub. 9–12–67. Filed 11–22–66.

839,384. THE SCATTERBIRD AND DESIGN. Floyd D. Juday. SN 259,324. Pub. 9–12–67. Filed 11–23–66.

839,385. VISTRON. The Standard Oil Company. SN 260,283. Pub. 9–12–67. Filed 12–7–66.

839,386. VISTRON. The Standard Oil Company. SN 260,369. Pub. 9–12–67. Filed 12–8–66.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

839,387. SPIDERWEB. Beach Precision Parts Company. SN 238,335. Pub. 9–12–67. Filed 2–8–66.

839,388 BLUE RIBBON. Blue Ribbon Leather Company, Inc. SN 246,033. Pub. 9–12–67. Filed 5–19–66.

Class 4 — Abrasives and Polishing Materials

839,389 REVIVE. Alberto-Culver Company. MULTIPLE CLASS (Classes 4 and 6). SN 234,616. Pub. 9–12–67. Filed 12–15–65.

839,390. WHITE GLOVE. Alberto-Culver Company. MULTIPLE CLASS (Classes 4 and 6). SN 234,617. Pub. 9–12–67. Filed 12–15–65.

839,391. ENCHANT. The Drackett Company. SN 247,785. Pub. 9–12–67. Filed 6–10–66.

839,392. SS SHEILA SHINE. Sheila Shine, Inc. SN 252,286. Pub. 9–12–67. Filed 8–12–66.

839,393. MUNNING & MUNNING. Kurts & Wolfe Chemical Co., Inc. SN 259,005. Pub. 9–12–67. Filed 11–18–66.

Class 5 — Adhesives

839,394. CARLON. Continental Oil Company. SN 239,734. Pub. 9–12–67. Filed 2–28–66.

839,395. UDS AND DESIGN. United Distributors Service, Inc. SN 253,365. Pub. 9–12–67. Filed 8–29-66.

839,396 STIXSO 100. Philadelphia Quartz Company. SN 263,288. Pub. 9–12–67. Filed 1–25–67.

839,397. THERM-O-LOK. Imperial Adhesives Inc. SN 275,017. Pub. 9–12–67. Filed 6–29–67.

Class 6 — Chemicals and Chemical Compositions

839,389. (See Class 4 for this trademark.)

839,390. (See Class 4 for this trademark.)

839,398. CONVOY. U.S. Plywood-Champion Papers Inc., by merger and change of name from United States Plywood Corporation. SN 234,487. Pub. 9–12–67. Filed 12–13–65.

839,399. UGENSTIX. Miles Laboratories, Inc. SN 241,493. Pub. 9–12–67. Filed 3–21–66.

839,400. HIOTROL BOTTOMSIDE. The Ottawa Chemical Company. SN 246,936. Pub. 9–12–67. Filed 5–31–66.

839,401. HIOTROL TOPSIDE. The Ottawa Chemical Company. SN 246,937. Pub. 9–12–67. Filed 5–31–66.

839,402. IFCA. The Walpamur Company Limited. CONSOLIDATED CERTIFICATE. SN 247,426, pub. 9–12–67, filed 6–6–66, Cl. 6; SN 248,271, pub. 9–12–67, filed 6–16–66, Cl. 16.

839,403. STAUFFER CHEMICALS AND DESIGN. Stauffer Chemical Company. SN 249,907. Pub. 9–12–67. Filed 7–11–66.

839,404. SPERLOX. Dawson Chemical Company. SN 250,458. Pub. 9–12–67. Filed 7–18–66.

839,405. WE SELL RESULTS. Ferguson Fumigants, Inc. SN 251,410. Pub. 9–12–67. Filed 8–1–66.

839,406. SAVE. Standard International Corporation. SN 252,291. Pub. 9–12–67. Filed 8–12–66.

839,407. SOLAZONE. Standard International Corporation. SN 252,292. Pub. 9–12–67. Filed 8–12–66.

839,408. ACHOLEST. Osterreichische Stickstoffwerke AG. SN 252,747. Pub. 9–12–67. Filed 8–19–66.

839,409. SYSTEM A-09. Minnesota Mining and Manufacturing Company. SN 255,172. Pub. 9–12–67. Filed 9–27–66.

839,410. ROYAL BLUE. Johnson Chemical Industries, Inc. SN 255,985. Pub. 9–12–67. Filed 10–7–66.

839,411. ICE BITE. Lyon Chemicals, Inc. SN 257,788. Pub. 9–12–67. Filed 11–2–66.

839,412. SKIFF. Stiles-Kem Sales Corporation. SN 261,113. Pub. 9–12–67. Filed 12–19–66.

839,413. PERGAPRINT. Ciba Limited. SN 261,196. Pub. 9–12–67. Filed 12–21–66.

839,414. TEGOBETAINE. Goldschmidt Chemical Corporation. SN 261,296. Pub. 9–12–67. Filed 12–22–66.

839,415. LDIO. Merck & Co., Inc. SN 262,601. Pub. 9–12–67. Filed 1–16–67.

839,416. LIFEBOND. Sterling Drug Inc. SN 262,635. Pub. 9–12–67. Filed 1–16–67.

839,417. HEMOMATIC OPTISTAIN. Devco, Inc. SN 262,771. Pub. 9–12–67. Filed 1–18–67.

839,418. SHOO FLY. Halo Sales Corporation, d.b.a. The Party People. SN 265,022. Pub. 9–12–67. Filed 2–20–67.

839,419. HYPOGAM. Ortho Pharmaceutical Corporation, d.b.a. Ortho Diagnostics. SN 266,129. Pub. 9–12–67. Filed 3–7–67.

839,420. HEMACLEAR. Organon Inc. SN 270,644. Pub. 9–12–67. Filed 5–4–67.

839,421. VAIRGO. Virginia Chemicals Inc. SN 275,091. Pub. 9–12–67. Filed 6–29–67.

Class 7 — Cordage

839,422. VISTRON. The Standard Oil Company. SN 260,467. Pub. 9–12–67. Filed 12–9–66.

Class 8 — Smokers' Articles, Not Including Tobacco Products

839,423. DIPLOMAT. Metallwaren AG Birrwil. SN 237,010. Pub. 9–12–67. Filed 1–21–66.

839,424. OLD VIC. Mastercraft Pipes, Inc. SN 243,565. Pub. 1–3–67. Filed 4–15–66.

Class 10 — Fertilizers

839,425. VISTRON. The Standard Oil Company. SN 260,466. Pub. 9–12–67. Filed 12–9–66.

839,426. VERDA-MULCH. Combined Paper Mills, Inc. SN 262,477. Pub. 9–12–67. Filed 1–13–67.

839,427. TATERBEST. Agway, Inc. SN 263,435. Pub. 9–12–67. Filed 1–27–67.

839,428. MATCHMATE. International Minerals & Chemical Corporation. SN 275,199. Pub. 9–12–67. Filed 7–3–67.

Class 12 — Construction Materials

839,429. FILIWOOD. Robert T. Bogan, Jr., d.b.a. Customwood Manufacturing Company. SN 232,276. Pub. 9–12–67. Filed 11–8–65.

839,430. CRYO-MASTIC. Birma Products Corporation. SN 247,888. Pub. 9–12–67. Filed 6–13–66.

839,431. K-THANE-15. Kerry-Fab Inc. SN 255,446. Pub. 9–12–67. Filed 9–29–66.

839,432. ARTISAN. U.S. Plywood-Champion Papers Inc. SN 275,016. Pub. 9–12–67. Filed 6–29–67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

839,433. RAMCO AND DESIGN. Ramco Manufacturing Company, Inc. SN 217,563. Pub. 7–18–67. Filed 4–28–65.

839,434. ZENITH AND DESIGN. S.A.S. Balma, Capoduri & Co. MULTIPLE CLASS (Classes 13 and 23). SN 242,290. Pub. 9–12–67. Filed 3–30–66.

839,435. TYCLEEN. W. S. Tyler, Incorporated. SN 250,787. Pub. 9–12–67. Filed 7–21–66.

839,436. NACCO. Copco, Inc. SN 251,392. Pub. 9–12–67. Filed 8–1–66.

839,437. PRESTONE. Union Carbide Corporation. SN 254,953. Pub. 9–12–67. Filed 9–22–66.

839,438. LO-LOK. Waldes Kohinoor, Inc. SN 259,253. Pub. 9–12–67. Filed 11–22–66.

839,439. FASTALL. Illinois Tool Works Inc. SN 259,427. Pub. 9–12–67. Filed 11–25–66.

839,440. VARI-TEMP. Ken-Ray Brass Products, Inc. SN 260,053. Pub. 9–12–67. Filed 12–5–66.

839,441. COSMOPOLITAN. Speakman Company. SN 260,092. Pub. 9–12–67. Filed 12–5–66.

839,442. HERCULOC. Herculoc Corporation. SN 275,205. Pub. 9–12–67. Filed 7–3–67.

Class 14 — Metals and Metal Castings and Forgings

839,443. RESISTVAR. Hamilton Watch Company. SN 240,735. Pub. 7–4–67. Filed 3–11–66.

839,444. PLUS FINISH. Cyclops Corporation. SN 253,020. Pub. 9–12–67. Filed 8–24–66.

Class 15 — Oils and Greases

839,445. POWAX. Foseco International Limited. SN 250,470. Pub. 9–12–67. Filed 7–18–66.

839,446. PISTON SEAL. Fleet-Wing Corporation. SN 253,137. Pub. 9–12–67. Filed 8–25–66.

Class 16 — Protective and Decorative Coatings

839,447. SPRA-GLO. Home-Craft Products Co., d.b.a. Home-Craft Products. SN 246,690. Pub. 9–12–67. Filed 5–26–66.

839,448. GALATONE. MacNaughton-Brooks Limited. SN 246,699. Pub. 9–12–67. Filed 5–26–66.

839,449. GALATEX. MacNaughton-Brooks Limited. SN 246,700. Pub. 9–12–67. Filed 5–26–66.

839,450. KELMAR. MacNaughton-Brooks Limited. SN 246,702. Pub. 9–12–67. Filed 5–26–66.

839,451. VOCO AND DESIGN. D. V. Lavasseur, Inc., d.b.a. Holmes-Hemphill Company. SN 247,037. Pub. 9–12–67. Filed 6–1–66.

839,452. DOW CORNING AND DESIGN. Dow Corning Corporation. SN 261,366. Pub. 9–12–67. Filed 12–23–66.

839,453. MAGIC-VAR. The Martin-Senour Company. SN 262,949. Pub. 9–12–67. Filed 1–20–67.

839,454. POLY-SATIN. The Martin-Senour Company. SN 264,221. Pub. 9–12–67. Filed 2–8–67.

839.455. HOPPE'S. Frank A. Hoppe, Inc. SN 268,853. Pub. 9–12–67. Filed 4–11–67.

839,456. MAGNOGUARD. Scientific Advances, Incorporated. SN 274,838. Pub. 9–12–67. Filed 6–27–67.

Class 18 — Medicines and Pharmaceutical Preparations

839,457. FEBRIDYNE. Landry Pharmaceuticals, Inc. SN 235,109. Pub. 9–12–67. Filed 12–22–65.

839,458. WINTHROCAINE. Sterling Drug Inc. SN 259,349. Pub. 9–12–67. Filed 11–23–66.

839,459. NUTRI-MADE. Nutri-Manna Company. SN 259,570. Pub. 9–12–67. Filed 11–28–66.

839,460. ULTRALANUM. Schering Aktiengesellschaft. SN 259,969. Pub. 9–12–67. Filed 12–2–66.

839,461. METHAHIST. Snyder's Drug Stores, Inc. SN 259,977. Pub. 9–12–67. Filed 12–2–66.

839,462. SKOURSTOP. United Co-Operatives, Inc. SN 260,289. Pub. 9–12–67. Filed 12–7–66.

839,463. VERCYTE. Abbott Laboratories. SN 260,707. Pub. 9–12–67. Filed 12–14–66.

839,464. BURN-EZE. Charles P. Coleman, d.b.a. Coleman Enterprises. SN 260,727. Pub. 9–12–67. Filed 12–14–66.

839,465. THROBBIN' NOGGIN' STOPPIN'. Meryl L. Stoddard. SN 260,784. Pub. 9–12–67. Filed 12–14–66.

839,466. GERIMED. The Fielding Pharmaceutical Company, d.b.a. The Fielding Company. SN 260,837. Pub. 9–12–67. Filed 12–15–66.

Class 19 — Vehicles

839,379. (See Class 2 for this trademark.)

839,467. POSI-FORCE. Suzuki Motor Co., Ltd. SN 237,759. Pub. 9–12–67. Filed 2–1–66.

839,468. FLAG AND RIVER BRAND (DESIGN). Kawasaki Aircraft Co., Ltd. SN 246,694. Pub. 9–12–67. Filed 5–26–66.

839,469. BARCAP. Barcap Incorporated. SN 248,011. Pnb. 9–12–67. Filed 6–14–1966.

839,470. CAMPUS 60. Yamaha International Corporation. SN 252,047. Pnb. 9–12–67. Filed 8–8–66.

839,471. BEARCAT. Stutz Industries. SN 252,905. Pub. 9–12–67. Filed 8–22–66.

839,472. BARCRAFT. Barcraft Homes, Inc. SN 256,424. Pub. 9–12–67. Filed 10–14–66.

839,473. ROGUE. American Motors Corporation. SN 256,635. Pub. 9–12–67. 10–18–66.

Class 20 — Linoleum and Oiled Cloth

839,474. MISCELLANEOUS DESIGN. The Orchard Corporation of America. MULTIPLE CLASS (Classes 20 and 37). SN 253,236. Pub. 9–12–67. Filed 8–26–66.

Class 21 — Electrical Apparatus, Machines, and Supplies

839,475. ASTROTONE. The Magnavox Company, assignee of Golden Shield Corporation. MULTIPLE CLASS (Classes 21 and 36). SN 194,485. Pub. 2–2–65. Filed 5–28–64.

839,476. ETCO. Marvin Birnbom, d.b.a. Etco Electronics Reg'd. MULTIPLE CLASS (Classes 21, 26, 36). SN 222,893. Pub. 7–4–67. Filed 6–23–65.

839,477. REDDI LITE AND DESIGN. Airdesign Corporation. SN 228,503. Pub. 1–31–67. Filed 9–24–65.

839,478. PACEMAKER AND DESIGN. The Louis Allis Company. SN 228,791. Pub. 4–18–67. Filed 9–27–65.

839,479. HARCO. Harco Corporation. SN 229,849. Pub. 2–21–67. Filed 10–5–65.

839,480. SEATRON. Charles R. Browning, d.b.a. Browning Communication Associates. SN 239,121. Pub. 7–11–67. Filed 2–18–66.

839,481. HUGGINS. Microwave Associates (West) Inc., assignee of Huggins Laboratories, Inc. SN 248,140. Pub. 9–12–67. Filed 6–15–66.

839,482. VACAP. Vacap Corporation. SN 248,933. Pub. 9–12–67. Filed 5–23–67.

839,483. SAV-A-CHANNEL. Telemation, Incorporated. SN 251,341. Pub. 9–12–67. Filed 7–29–66.

839,484. CHROMA-CHANNEL. Telemation, Incorporated. SN 251,342. Pub. 9–12–67. Filed 7–29–66.

839,485. THOMAS. Thomas Industries Inc. MULTIPLE CLASS (Classes 21 and 34). SN 254,009. Pub. 9–12–67. Filed 9–8–66.

839,486. SUPER MAGNUM. Anzac Industries, Inc. SN 257,755. Pub. 9–12–67. Filed 11–2–66.

839,487. MAGNUM. Anzac Industries, Inc. SN 257,757. Pub. 9–12–67. Filed 11–2–66.

Class 22 — Games, Toys, and Sporting Goods

839,488. SOAKY. Colgate-Palmolive Company. SN 164,602. Pub. 9–12–67. Filed 3–14–63.

839,489. CLASSIC. American Machine & Foundry Company. SN 198,521. Pub. 9–12–67. Filed 7–27–64.

839,490. HOBIE AND DESIGN. Hobart L. Alter, d.b.a. Hobie-Surfboard Shop. SN 216,123. Pub. 9–12–67. Filed 4–9–65.

839,491. CONSHELF VI. U.S. Divers Co., Inc. SN 226,310. Pub. 9–12–67. Filed 8–23–65.

839,492. TWIRL-A-ROPE. Products, Services, and Sales Inc. SN 242,772. Pub. 9–12–67. Filed 3–24–66.

839,493. SAMPAN TWIRL-A-ROPE. Products, Services, and Sales Inc. SN 242,773. Pub. 9–12–67. Filed 3–24–66.

839,494. HULA-HOOPLE. Fred Arbogast Company, Inc. SN 255,080. Pub. 8–15–67. Filed 9–26–66.

839,495. DOLT AND DESIGN. William A. Feuerer. SN 255,607. Pub. 9–12–67. Filed 10–3–66.

839,496. PA-KA. N.S. Mfg. Company. SN 255,638. Pub. 9–12–67. Filed 10–3–66.

839,497. REEL-LECTRIC. Old Pal, Inc. SN 256,126. Pub. 9–12–67. Filed 10–10–66.

839,498. GALAXIE. Viscount Products, Inc. SN 259,780. Pub. 9–12–67. Filed 11–30–66.

839,499. DOG 'B' GONE. Schaper Manufacturing Company, Inc. SN 267,789. Pub. 9–12–67. Filed 3–29–67.

839,500. SHIRLEY. Mattel, Inc. SN 274,145. Pub. 9–12–67. Filed 6–19–67.

839,501. TELLY VIDDLE. Mattel, Inc. SN 274,146. Pub. 9–12–67. Filed 6–19–67.

839,502. SWINGY SWIDDLE. Mattel, Inc. SN 274,147. Pub. 9–12–67. Filed 6–19–67.

839,503. CLEO. Mattel, Inc. SN 274,151. Pub. 9–12–67. Filed 6–19–67.

839,504. CARMEN. Mattel, Inc. SN 274,152. Pub. 9–12–67. Filed 6–19–67.

839,505. LAFFY. Mattel, Inc. SN 274,153. Pub. 9–12–67. Filed 6–19–67.

839,506. OLIVIA. Mattel, Inc. SN 274,155. Pub. 9–12–67. Filed 6–19–67.

839,507. PETSY PLIDDLE. Mattel, Inc. SN 274,156. Pub. 9–12–67. Filed 6–19–67.

839,508. HIRSCH-WEIS. White Stag Manufacturing Co. SN 275,112. Pub. 9–12–67. Filed 6–30–67.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

839,379. (See Class 2 for this trademark.)

839,434. (See Class 13 for this trademark.)

839,509. SNABB. Ab Arjon, assignee of Gustaf Carlström, d.b.a. Hofors Plat- & Smidesverkstad. SN 207,884. Pub. 12–21–65. Filed 12–10–64.

839,510. GEORG GANSS AND DESIGN. Georg Ganss, Werkzeug- und Maschinenbau GmbH. SN 227,025. Pub. 9–12–67. Filed 9–2–65.

839,511. WRIGHT SAFEWAY. American Chain & Cable Company, Inc. SN 238,991. Pub. 9–12–67. Filed 2–17–66.

839,512. ROTASPA. Landbouwwerktuigen en Machine-Fabriek H. Vissers N.V. SN 240,100. Pub. 9–12–67. Filed 3–3–66.

839,513. LECTRAN. Air Reduction Company, Inc. SN 240,568. Pub. 9–12–67. Filed 3–10–66.

839,514. BARTCURE. Barton Corporation. SN 242,547. Pub. 9–12–67. Filed 4–4–66.

839,515. BARTCUT. Barton Corporation. SN 242,548. Pub. 9–12–67. Filed 4–4–66.

839,516. BARTPULL. Barton Corporation. SN 242,549. Pub. 9–12–67. Filed 4–4–66.

839,517. SELECTO - TUBE. Diebold, Incorporated. SN 243,103. Pub. 9–12–67. Filed 4–11–66.

839,518. ID MICRO SLICER AND DESIGN. DoAll Company. SN 243,549. Pub. 9–12–67. Filed 4–15–66.

839,519. RPI AND DESIGN. Retreading Products, Inc. SN 244,031. Pub. 9–12–67. Filed 4–21–66.

839,520. HYDROCHRON. Rowe A. Plunk, d.b.a. Aeromotive Service Co. SN 245,099. Pub. 9–12–67. Filed 5–6–66.

839,521. SPLICE-O-MATIC. Misceramic Tile, Inc. SN 246,707. Pub. 11–8–66. Filed 5–26–66.

839,522. COOL-FLO. United-Greenfield Corporation. SN 250,193. Pub. 9–12–67. Filed 7–13–66.

839,523. WASCON. Wascon Systems, Incorporated. SN 250,318. Pub. 9–12–67. Filed 7–14–66.

839,524. SYNCRO-COIL. General Kinematics Corporation. SN 250,840. Pub. 9–12–67. Filed 7–22–66.

839,525. HEALTH CROSS AND DESIGN. White Cross Stores, Inc. SN 250,885. Pub. 9–12–67. Filed 7–22–66.

839,526. OSTERONIC. John Oster Manufacturing Co. SN 250,975. Pub. 9–12–67. Filed 7–25–66.

839,527. DRI-VEYOR. Newaygo Engineering Company. SN 252,120. Pub. 9–12–67. Filed 8–10–66.

839,528. ZIPWELDER. Guild Metal Joining Equipment Company. SN 253,310. Pub. 9–12–67. Filed 8–29–66.

839,529. SEAHORSE IN AN OIL-DROP (DESIGN). The Paul-Munroe Company. SN 253,904. Pub. 9–12–67. Filed 9–6–66.

839,530. RUB-A-DUB. Daniel C. Hanna, d.b.a. Hanna Construction Company. SN 254,280. Pub. 9–12–67. Filed 9–12–66.

839,531. HO-RAM. Allied Steel & Tractor Products, Inc. SN 254,365. Pub. 9–12–67. Filed 9–13–66.

839,532. DUOTWIST. Turbo Machine Company. SN 254,479. Pub. 9–12–67. Filed 9–14–66.

839,533. KENSOL. Kensol-Olsenmark, Inc. SN 254,543. Pub. 9–12–67. Filed 9–15–66.

839,534. SHELLEYMATIC. Shelley Manufacturing Company. SN 254,573. Pub. 9–12–67. Filed 9–16–66.

839,535. BARRIERMATIC. Fibreboard Corporation. SN 255,524. Pub. 9–12–67. Filed 9–30–66.

839,536. APPLI-GATOR. Hurd Custom Machinery Co. SN 255,706. Pub. 9–12–67. Filed 10–4–66.

839,537. ROSEGAY. Stanley Home Products, Inc. SN 257,101. Pub. 9–12–67. Filed 10–24–66.

839,538. DUOWRAP. Lamb-Grays Harbor Co., Inc. SN 258,193. Pub. 9–12–67. Filed 11–7–66.

839,539. 3 TEE IN TRIANGULAR SHIELD WITH WORDS TRIANGLE TANDEM TRAVELERS. Keystone Services, Inc. SN 258,556. Pub. 9–12–67. Filed 11–14–66.

839,540. PORTA-BOOM. Jos. Dyson & Sons, Inc. SN 258,677. Pub. 9–12–67. Filed 11–15–66.

839,541. PORTA-DUMP. Loyd R. Fulton. SN 258,688. Pub. 9–12–67. Filed 11–15–66.

839,542. ROTO-GRIP AND DESIGN. Product Development Laboratories, Inc. SN 259,018. Pub. 9–12–67. Filed 11–18–66.

839,543. PD (DESIGN). Product Development Laboratories, Inc. SN 259,020. Pub. 9–12–67. Filed 11–18–66.

839,544. WESTOAK. Westoak Machine Corporation. SN 259,193. Pub. 9–12–67. Filed 11–21–66.

839,545. VISAMATIC. Gallmeyer & Livingston Company. SN 259,417. Pub. 9–12–67. Filed 11–25–66.

839,546. STEAM WAY. Sani-Clean Products, Inc. SN 265,770. Pub. 9–12–67. Filed 3–2–67.

839,547. LO-TOW. SI Handling Systems, Inc. SN 270,735. Pub. 9–12–67. Filed 5–5–67.

839,548. MULTIPAX. Multifax Company. SN 273,556. Pub. 9–12–67. Filed 6–12–67.

Class 26 — Measuring and Scientific Appliances

839,476. (See Class 21 for this trademark.)

839,549. LOAD-A-MATIC. Keystone Mfg. Corp., assignee of Keystone Camera Company, Inc. SN 186,366. Pub. 8–11–64. Filed 2–10–64.

839,550. NUTRIM. Newport Instrument Corporation. SN 204,585. Pub. 5–25–65. Filed 10–22–64.

839,551. HARCO AND DESIGN. Harco Laboratories, Incorporated. SN 229,005. Pub. 2–21–67. Filed 9–30–65.

839,552. DIMPLAR. Hitco, assignee of Kierulff Electronics, Inc. SN 241,905. Pub. 6–20–67. Filed 3–25–66.

839,553. LECTROGUARD. Fuch Electrical Industries (Proprietary) Limited, by change of name from FW Electrical Industries (Proprietary) Limited. SN 244,816. Pub. 8–8–67. Filed 5–3–66.

839,554. SLIDE-STIK. American Rule & Block Company. SN 244,959. Pub. 9–12–67. Filed 5–5–66.

839,555. ACOUSTISCORE. Del Mar Engineering Laboratories. SN 246,284. Pub. 9–12–67. Filed 5–23–66.

839,556. MAGNETAC. General Time Corporation, assignee of Astrosonics, Incorporated. SN 246,850. Pub. 9–12–67. Filed 5–31–66.

839,557. SYSTEM A–09. Minnesota Mining and Manufacturing Company. SN 248,504. Pub. 9–12–67. Filed 6–20–66.

839,558. MACROAID AND DESIGN. Neefe Optical Lab. SN 248,729. Pub. 9–12–67. Filed 6–23–66.

839,559. CENTAUR. Textron Inc. SN 251,343. Pub. 9–12–67. Filed 7–29–66.

839,560. CLASS-RITE. Da-Lite Screen Company, Inc. SN 254,377. Pub. 9–12–67. Filed 9–13–66.

839,561. BATMAN. National Periodical Publications, Inc. MULTIPLE CLASS (Classes 26, 37, and 38). SN 256,580. Pub. 9–12–67. Filed 10–17–66.

839,562. PRICE RITE. Toledo Scale Corporation. SN 262,521. Pub. 9–12–67. Filed 1–13–67.

Class 28 — Jewelry and Precious-Metal Ware

839,563. SAMART CREATIONS. McGrath-Hamin, Inc. SN 258,565. Pub. 9–12–67. Filed 11–14–66.

839,564. UNICITE. Uncas Manufacturing Company. SN 273,573. Pub. 9–12–67. Filed 6–12–67.

839,565. LUVBUGS. Royal of Pittsburgh, Inc. SN 274,690. Pub. 9–12–67. Filed 6–26–67.

Class 29 — Brooms, Brushes, and Dusters

839,566. STATE PRIDE AND DESIGN. Belk Stores Services, Inc. SN 259,394. Pub. 9–12–67. Filed 11–25–66.

839,567. DUST-A-GO GO. Communication Mfg. Co. SN 260,022. Pub. 9–12–67. Filed 12–5–66.

839,568. GOODPOINT. Art & Sign Brush Manufacturing Corporation. SN 274,692. Pub. 9–12–67. Filed 6–26–67.

Class 30 — Crockery, Earthenware, and Porcelain

839,569. 'RED DRAGON' AND DESIGN. Lau Sum, d.b.a. The Ying Company. SN 273,578. Pub. 9–12–67. Filed 6–12–67.

Class 31 — Filters and Refrigerators

839,570. PERRY. R. M. Hollingshead Corporation. SN 258,229. Pub. 9–12–67. Filed 11–8–66.

839,571. PERRY AND DESIGN. R. M. Hollingshead Corporation. SN 258,379. Pub. 9–12–67. Filed 11–10–66.

Class 32 — Furniture and Upholstery

839,572. PERM-A-PEDIC. Maynard M. Schlager, d.b.a. Schlager Wood & Metal Products. SN 235,459. Pub. 12–20–66. Filed 12–23–65.

839,573. HOLD-EVERYTHING. Modern Clock Advertising Co. Inc. SN 237,012. Pub. 9–12–67. Filed 1–21–66.

839,574. MOUSE (DESIGN). Robert Thompson's Craftsmen Limited. SN 251,565. Pub. 9–12–67. Filed 8–2–66.

839,575. COMFORTLINE. Comfort Lines, Inc. SN 257,831. Pub. 9–12–67. Filed 11–3–66.

839,576. DRAW-TILT. The General Fireproofing Company. SN 260,331. Pub. 9–12–67. Filed 12–8–66.

839,577. SIMFLEX. Simmons Company. SN 260,775. Pub. 9–12–67. Filed 12–14–66.

839,578. VINO VENDOR. Penland Distributors, Inc. SN 269,602. Pub. 9–12–67. Filed 4–20–67.

Class 33 — Glassware

839,579. SORRENTO. Anchor Hocking Glass Corporation. SN 231,974. Pub. 9–12–67. Filed 11–2–65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

839,485. (See Class 21 for this trademark.)

839,580. CHAMP JUNIOR JOB-MAKER HEATER AND DESIGN. Champion Heater Company, Inc. SN 247,771. Pub. 9–12–67. Filed 6–10–66.

839,581. NEW ENGLANDER. Arthur J. Tickell. SN 250,699. Pub. 9–12–67. Filed 7–20–66.

839,582. COMFORT COMMAND AND DESIGN. Temco, Inc. SN 253,361. Pub. 9–12–67. Filed 8–29–66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

839,583. FLEXIGO. The Goodyear Tire & Rubber Company. SN 239,767. Pub. 4–4–67. Filed 2–28–66.

839,584. TOYO. The Toyo Rubber Industry Company Limited. SN 251,252. Pub. 9–12–67. Filed 7–28–66.

839,585. IGS AND DESIGN. Industrial Gasket & Shim Company, Inc. SN 254,290. Pub. 9–12–67. Filed 9–12–66.

839,586. CORPLAST. Dodge Cork Company, Incorporated. SN 258,297. Pub. 9–12–67. Filed 11–9–66.

Class 36 — Musical Instruments and Supplies

839,475. (See Class 21 for this trademark.)

839,476. (See Class 21 for this trademark.)

839,587. POW AND DESIGN. Gerard James O'Brien, d.b.a. Jerry O'Brien. SN 241,074. Pub. 9–6–66. Filed 3–15–66.

839,588. DECCA RECORDS AND DESIGN. MCA Inc. SN 245,407. Pub. 9–12–67. Filed 5–11–66.

839,589. INTONATOR. Universal Records, Inc. SN 250,609. Pub. 9–12–67. Filed 7–19–66.

839,590. TOTE'M POLE. Gordon H. Halverson, d.b.a. Milwaukee Suburban Sales Co. SN 254,050. Pub. 9–12–67. Filed 9–8–66.

839,591. WORLD SERIES AND DESIGN. Mercury Record Productions, Inc. SN 255,809. Pub. 9–12–67. Filed 10–5–66.

839,592. SUNBURST. Grammy, Inc. SN 258,225. Pub. 9–12–67. Filed 11–8–66.

839,593. STATE PRIDE. Belk Stores Services, Inc. SN 259,393. Pub. 9–12–67. Filed 11–25–66.

839,594. RA AND DESIGN. Restaurant Associates, Inc. SN 271,889. Pub. 9–12–67. Filed 5–19–67.

839,595. DICTAMITE. Dictaphone Corporation. SN 271,891. Pub. 9–12–67. Filed 5–19–67.

839,596. DU PONT AND DESIGN. E. I. du Pont de Nemours and Company. SN 272,240. Pub. 9–12–67. Filed 5–24–67.

839,597. BREAKTHROUGH. Paul Von Beroldingen. SN 272,333. Pub. 9–12–67. Filed 5–25–67.

839,598. BRADFORD AND DESIGN. W. T. Grant Company. SN 274,685. Pub. 9–12–67. Filed 6–26–67.

Class 37 — Paper and Stationery

839,474. (See Class 20 for this trademark.)

839,561. (See Class 26 for this trademark.)

839,599. REPRESENTATION OF BOX. Kimberly-Clark Corporation. SN 222,849. Pub. 9–12–67. Filed 7–7–65.

839,600. HI-TEAR. Paper Converting Corporation. SN 251,740. Pub. 9–12–67. Filed 8–4–66.

839,601. SYSTEM A–09. Minnesota Mining and Manufacturing Company. SN 255,173. Pub. 9–12–67. Filed 9–27–66.

839,602. PLASTITRIM. Millen Industries, Inc. SN 255,811. Pub. 9–12–67. Filed 10–5–66.

839,603. GLIDERITER. Wallace Pencil Company. SN 258,627. Pub. 9–12–67. Filed 11–14–66.

Class 38 — Prints and Publications

839,561. (See Class 26 for this trademark.)

839,604. ARCHWAY PLAN BOOKS AND DESIGN. Archway Press, Inc. SN 237,797. Pub. 9–12–67. Filed 2–2–66.

839,605. MOBILE HOME JOURNAL AND MOBILE LIFE. Davis Publications, Inc. SN 253,019. Pub. 9-12-67. Filed 8-24-66.

839,606. RED DEVIL'S ADVOCATE. Red Devil Inc. SN 254,803. Pub. 9-12-67. Filed 9-20-66.

839,607. HERCULAC. Universal Decalcomania Corp. SN 254,820. Pub. 9-12-67. Filed 9-20-66.

839,608. THE HOT LINER FARM MARKET NEWS LETTER AND DESIGN. Farmers Market Service, Inc. SN 255,306. Pub. 9-12-67. Filed 9-28-66.

839,609. EGGINK. EG & G, Inc. SN 256,437. Pub. 9-12-67. Filed 10-14-66.

839,610. CRAFTMAKER "HOW-TO" IDEAS BY ALEENE AND DESIGN. Aleene's Fibre & Floral Supply Company, d.b.a. Aleene's Inc. SN 262,379. Pub. 9-12-67. Filed 1-12-67.

839,611. TC AND DESIGN. Twin Circle Publishing Co., Inc. SN 265,775. Pub. 9-12-67. Filed 3-2-67.

839,612. TWIN CIRCLE. Twin Circle Publishing Co., Inc. SN 265,776. Pub. 9-12-67. Filed 3-2-67.

Class 39 — Clothing

839,613. INTERNATIONAL EDITION. Slack Fashions Incorporated. SN 229,033. Pub. 3-1-66. Filed 9-30-65.

839,614. ROUTE ONE. Kay Windsor, Inc. SN 240,043. Pub. 9-12-67. Filed 3-2-66.

839,615. VELICREN. Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p.A. MULTIPLE CLASS (Classes 39 and 42). SN 244,145. Pub. 9-12-67. Filed 4-22-66.

839,616. KORKERS. Mary Louise Smith, d.b.a. Korkers. SN 245,025. Pub. 9-12-67. Filed 5-5-66.

839,617. ZELI AND DESIGN. Nina Footwear Co., Inc. SN 248,246. Pub. 9-12-67. Filed 6-16-66.

839,618. MISS HELEN. Helen of Memphis, Inc. SN 250,843. Pub. 9-12-67. Filed 7-22-66.

839,619. SILVER KEY. Neiman-Marcus Company. SN 251,738. Pub. 9-12-67. Filed 8-4-66.

839,620. THE CAMPER AND DESIGN. The Status Shoe Corp. SN 252,691. Pub. 9-12-67. Filed 8-18-66.

839,621. WASTE BASKET BOUTIQUE. Mars Manufacturing Company, Inc. of Asheville, N.C. SN 254,300. Pub. 9-12-67. Filed 9-12-66.

839,622. BA (DESIGN). Gun Club Sportswear. SN 255,203. Pub. 9-12-67. Filed 9-27-66.

839,623. BABYSCOTT AND DESIGN. Scott Paper Company. SN 258,744. Pub. 9-12-67. Filed 11-16-66.

839,624. LISSY. Stewart Sportswear Inc., d.b.a. Elisabeth Stewart Swimwear. SN 259,272. Pub. 9-12-67. Filed 11-22-66.

839,625. WHEELS. Louis Walter & Company, Inc. SN 260,790. Pub. 9-12-67. Filed 12-14-66.

839,626. SHELLIBLE. Ship 'N Shore, Inc. SN 260,968. Pub. 9-12-67. Filed 12-16-66.

839,627. HMC. Griffin-Jaco Mills, Inc. SN 261,073. Pub. 9-12-67. Filed 12-19-66.

839,628. MENDPROOF. Ragan Knitting Company, Inc. SN 262,289. Pub. 9-12-67. Filed 1-10-67.

839,629. MARVELIFT. Sears, Roebuck and Co. SN 262,629. Pub. 9-12-67. Filed 1-16-67.

839,630. 747. Byer-Rolnick Corporation. SN 262,921. Pub. 9-12-67. Filed 1-20-67.

839,631. URBANTRY. Macshore Classics, Inc. SN 262,947. Pub. 9-12-67. Filed 1-20-67.

839,632. THE URBAN TREE. Macshore Classics, Inc. SN 262,948. Pub. 9-12-67. Filed 1-20-67.

839,633. CROWN JEWEL. Julius Schmid, Inc. SN 263,404. Pub. 9-12-67. Filed 1-26-67.

839,634. FEATHERKNITS. Electronic Crystals Corporation. SN 263,989. Pub. 9-12-67. Filed 2-6-67.

Class 40 — Fancy Goods, Furnishings, and Notions

839,635. CROWN JEWELS. Fashion Tress, Inc. SN 233,259. Pub. 9-12-67. Filed 11-24-65.

839,636. BACAROLA MINUTE SET. Baca Industries Inc. SN 257,574. Pub. 9-12-67. Filed 10-31-66.

839,637. SIMPLICITY. Burlington Industries, Inc., assignee of James Lees and Sons Company. SN 218,661. Pub. 11-2-65. Filed 5-12-65.

839,638. STRETCHMAID. Maiden Knitting Mills, Inc. SN 232,470. Pub. 8-9-66. Filed 11-10-65.

839,639. SEENA. Dan River Mills, Incorporated. SN 252,470. Pub. 3-28-67. Filed 8-16-66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

839,615. (See Class 39 for this trademark.)

839,640. HY-PER-NIT. Deering Milliken, Inc. SN 272,335. Pub. 9-12-67. Filed 5-25-67.

839,641. LOOMSKILL AND DESIGN. Loomskill, Inc. SN 272,791. Pub. 9-12-67. Filed 6-1-67.

839,642. POLYSPORT. Cone Mills Corporation. SN 272,885. Pub. 9-12-67. Filed 6-2-67.

839,643. POLYFORE. Cone Mills Corporation. SN 272,886. Pub. 9-12-67. Filed 6-2-67.

839,644. MILLICOTT. Deering Milliken, Inc. SN 275,206. Pub. 9-12-67. Filed 7-3-67.

Class 43 — Thread and Yarn

839,645. MILLIPACA. Deering Milliken, Inc. SN 272,993. Pub. 9-12-67. Filed 6-5-67.

Class 44 — Dental, Medical, and Surgical Appliances

839,646. MICROHONE. Richard-Allan Company, Inc. SN 225,533. Pub. 9-13-66. Filed 8-12-65.

839,647. UNI-CELL. Spincraft, Inc. SN 271,676. Pub. 9-12-67. Filed 5-17-67.

839,648. DELAKINS. E. I. du Pont de Nemours and Company. SN 272,784. Pub. 9-5-67. Filed 6-1-67.

839,649. PACS. Warner-Lambert Pharmaceutical Company. SN 274,570. Pub. 9-12-67. Filed 6-23-67.

Class 45 — Soft Drinks and Carbonated Waters

839,650. CHOCOLAT ROYALE. The Glacier Company. SN 237,834. Pub. 9-12-67. Filed 2-2-66.

839,651. STARCO. Mil-Star, Inc. MULTIPLE CLASS (Classes 45 and 46). SN 240,821. Pub. 9-12-67. Filed 3-14-66.

839,652. DOLE AND DESIGN. Castle & Cooke, Inc., d.b.a. Dole Company. SN 243,774. Pub. 9-12-67. Filed 4-19-66.

839,653. STAFF. Staff Supermarket Associates, Inc. SN 258,260. Pub. 9-12-67. Filed 11-8-66.

839,654. OZARKA EUREKA SPRINGS AND DESIGN. Ozarka Water Company. SN 268,651. Pub. 9-12-67. Filed 4-10-67.

839,655. HARVEST DAY. Lucky Stores, Inc. SN 270,742. Pub. 9-12-67. Filed 5-5-67.

Class 46 — Foods and Ingredients of Foods

839,651. (See Class 45 for this trademark.)

839,656. STAR'S. Manhattan Coffee Company, assignee, by mesne assignment, of Star Coffee Company. SN 215,658. Pub. 9-12-67. Filed 4-2-65.

839,657. CORNETS. General Mills, Inc. SN 216,290. Pub. 9-12-67. Filed 4-12-65.

839,658. KENTUCKY PLANTATION AND DESIGN. Kentucky Fried Chicken Corporation. SN 240,445. Pub. 9-12-67. Filed 3-8-66.

839,659. SEA SAUSAGE. Mutual Foods, Inc. SN 245,335. Pub. 9-12-67. Filed 5-10-66.

839,660. BONGOS. General Mills, Inc. SN 246,774. Pub. 9-12-67. Filed 5-27-66.

839,661. BANJOS. General Mills, Inc. SN 246,776. Pub. 9-12-67. Filed 5-27-66.

839,662. LYDIA DARRAH. Nordica Candy Company, Inc. SN 247,392. Pub. 9-12-67. Filed 6-6-66.

839,663. HAMBURGER SUPREME. McCormick & Company, Incorporated. SN 247,825. Pub. 9-12-67. Filed 6-10-66.

839,664. GOLDEN KRUST BREAD AND DESIGN. Li'l General Stores, Inc. SN 248,239. Pub. 9-12-67. Filed 6-16-66.

839,665. GLITTER. Trebor Limited. SN 249,362. Pub. 9-12-67. Filed 6-30-66.

839,666. OLD JUDGE. Old Judge Coffee Company. SN 249,439. Pub. 9-12-67. Filed 7-1-66.

839,667. GINO'S. The Dob Corporation. SN 253,857. Pub. 9-12-67. Filed 9-6-66.

839,668. HOME OF THE Z5A. Driscoll Strawberry Associates, Inc. SN 253,961. Pub. 9-12-67. Filed 9-7-66.

839,669. PIZZIOLA. G.C.R. Bakery Corporation. SN 254,532. Pub. 9-12-67. Filed 9-15-66.

839,670. ICE CUBES. R. L. Albert & Son, Inc. SN 254,977. Pub. 9-12-67. Filed 9-23-66.

839,671. ZEVO AND DESIGN. Zevo, Inc. SN 255,491. Pub. 9-12-67. Filed 9-29-66.

839,672. CANARY CHARM. Hartz Mountain Products Corp. SN 257,185. Pub. 9-12-67. Filed 10-25-66.

839,673. RUBYETTE. Duffy-Mott Company, Inc. SN 258,676. Pub. 9-12-67. Filed 11-15-66.

839,674. LIBRA. Fisher Flouring Mills Co. SN 258,684. Pub. 9-12-67. Filed 11-15-66.

839,675. HARVEST RIPE. G. W. Hume Company. SN 258,958. Pub. 9-12-67. Filed 11-18-66.

839,676. COUNTRY DINNER. Ralston Purina Company. SN 259,022. Pub. 9-12-67. Filed 11-18-66.

839,677. ELL VEE DEE. Ell Vee Dee Inc. SN 259,308. Pub. 9-12-67. Filed 11-23-66.

839,678. POST EXTRA. General Foods Corporation. SN 259,419. Pub. 9-12-67. Filed 11-25-66.

839,679. AMERICAN FALLS AND DESIGN. Lamb-Weston, Inc. SN 259,438. Pub. 9-12-67. Filed 11-25-66.

839,680. SSK. Shimizu Shokuhin Kabushiki Kaisha, d.b.a. Shimizu Shokuhin Kaisha, Ltd. SN 259,475. Pub. 9-12-67. Filed 11-25-66.

839,681. SALADA. Salada Foods Ltd. SN 259,584. Pub. 9-12-67. Filed 11-28-66.

839,682. JOY AND DESIGN. L. M. Becker & Co. SN 261,036. Pub. 9-12-67. Filed 12-19-66.

839,683. BIRD-IN-HAND. Bird-In-Hand Poultry Co. SN 266,488. Pub. 9-12-67. Filed 3-13-67.

839,684. BIRD-IN-HAND AND DESIGN. Bird-In-Hand Poultry Co. SN 266,490. Pub. 9-12-67. Filed 3-13-67.

839,685. IN. Kellogg Company. SN 274,683. Pub. 9-12-67. Filed 6-26-67.

Class 47 — Wines

839,686. CHALET SUISSE. Heinz P. Hofer, assignee of Provins Federation de Producteurs de Vins du Valais, d.b.a. Provins. SN 232,856. Pub. 9-12-67. Filed 11-17-65.

839,687. SCAMPI. Sociedade Dos Vinhos Borges & Irmao, Lda., assignee of Thallon Wines & Spirits Imports, Inc. SN 236,206. Pub. 9-12-67. Filed 1-11-66.

839,688. TROVADOR. Sociedade Dos Vinhos Borges & Irmao, Lda., assignee of Thallon Wines & Spirits Imports, Inc. SN 236,207. Pub. 9-12-67. Filed 1-11-66.

839,689. TOSTI. Tosti Giuseppe di Bosca Fratelli e Torlasco S.n.c. SN 264,885. Pub. 9-12-67. Filed 2-17-67.

839,690. FLAMBEAU. E. & J. Gallo Winery, d.b.a. Gallo Vineyards. SN 275,108. Pub. 9-12-67. Filed 6-30-67.

Class 49 — Distilled Alcoholic Liquors

839,691. OLD KINDERHOOK. John Brown Distilling Company, Inc., d.b.a. John Brown Distilling Company. SN 232,281. Pub. 9-12-67. Filed 11-8-65.

839,692. UNDERBERG ETC. AND DESIGN. H. Underberg-Albrecht. SN 233,963. Pub. 9-12-67. Filed 12-3-65.

839,693. PUSCHKIN AND DESIGN. Distillerie Konig G.m.b.H. SN 248,901. Pub. 9-12-67. Filed S.R. 6-24-66; Am. P.R. 7-21-67.

839,694. GOLD 69. William Sanderson & Son Limited. SN 254,190. Pub. 9-12-67. Filed 9-9-66.

839,695. ANGOSTURA. Angostura Bitters (Dr. J. G. B. Siegert & Sons) Limited. SN 254,908. Pub. 9-12-67. Filed 9-22-66.

839,696. MULE ETC. AND DESIGN. Stewart-Reynolds Co., Inc. SN 257,661. Pub. 9-12-67. Filed 10-31-66.

839,697. ISLANDIA. Simon Levi Company, Ltd. SN 273,002. Pub. 9-12-67. Filed 6-5-67.

Class 50 — Merchandise Not Otherwise Classified

839,698. CHRISTINE LYNCH. Christine Lynch Pty. Limited. SN 244,333. Pub. 9-12-67. Filed 4-26-66.

839,699. FISH (DESIGN). Sternco Industries, Inc. SN 257,534. Pub. 9-12-67. Filed 10-28-66.

Class 51 — Cosmetics and Toilet Preparations

839,700. WEATHER GUARD. The Gillette Company. SN 206,715. Pub. 2-8-66. Filed 11-23-64.

839,701. TOUCH OF MAGIC. Gabrieleen Company, Inc. SN 214,759. Pub. 5-24-66. Filed 3-23-65.

839,702. MISCELLANEOUS DESIGN. Caron Corporation. SN 227,924. Pub. 9-12-67. Filed 9-16-65.

839,703. HERBESSENCE. Helena Rubinstein, Inc. SN 250,269. Pub. 9-12-67. Filed 7-14-66.

839,704. SHAMPALE. John H. Breck, Inc. SN 252,342. Pub. 9-5-67. Filed 8-15-66.

839,705. NOW BROW. Yardley of London, Inc. SN 255,250. Pub. 9-12-67. Filed 9-27-66.

839,706. SHEER SUCCESS. Noxell Corporation. SN 255,339. Pub. 9-12-67. Filed 9-28-66.

839,707. RIBBONS 'N' THINGS. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 258,743. Pub. 9-12-67. Filed 11-16-66.

839,708. A. SULKA & COMPANY. A. Sulka & Company. SN 259,511. Pub. 9-12-67. Filed 11-28-66.

839,709. LITTLE GIRL BLONDE. Clairol Incorporated. SN 261,363. Pub. 9-12-67. Filed 12-23-66.

839,710. ZEFF. Chesebrough-Pond's Inc. SN 261,973. Pub. 9-12-67. Filed 1-5-67.

839,711. SATINESSENCE. Clairol Incorporated. SN 262,316. Pub. 9-12-67. Filed 1-11-67

839,712. MOUSSEL. Legrain. SN 262,661. Pub. 9-12-67. Filed 1-17-67.

839,713. THE VILLAGER. The Villager, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 266,275. Pub. 9-12-67. Filed 3-9-67.

839,714. SUPER DEP. Dep Corporation. SN 269,018. Pub. 9-12-67. Filed 4-13-67.

839,715. DEP FOR MEN. Dep Corporation. SN 269,019. Pub. 9-12-67. Filed 4-13-67.

839,716. SILVERBLU DEP. Dep Corporation. SN 269,020. Pub. 9-12-67. Filed 4-13-67.

839,717. CRYSTALPINK DEP. Dep Corporation. SN 269,021. Pub. 9-12-67. Filed 4-13-67.

Class 52 — Detergents and Soaps

839,713. (See Class 51 for this trademark.)

839,718. DURA SANI. Merlite Industries, Inc. SN 220,779. Pub. 11-23-65. Filed 6-9-65.

839,719. GONE GNE. M.J.M. International, Inc., assignee of J. Hershkowitz, Inc. SN 243,987. Pub. 9-12-67. Filed 4-21-66.

839,720. BASIC-I. Shaklee Products. SN 247,261. Pub. 9-12-67. Filed 6-3-66.

839,721. A ALMO AND CIRCLE (DESIGN). Almo Laboratories Co. Inc. SN 249,291. Pub. 9-12-67. Filed 6-30-66.

839,722. SPRA-CON. The New England Industries, Inc., assignee of Plasti-Kote, Inc. SN 251,328. Pub. 9-12-67. Filed 7-29-66.

839,723. TOUCH O' SUN. Clairol Incorporated. SN 254,127. Pub. 9-12-67. Filed 9-9-66.

839,724. FAIRWAY. Fairway Foods, Inc. SN 257,263. Pub. 9-12-67. Filed 10-26-66.

839,725. VERSADET. Oakite Products, Inc. SN 257,303. Pub. 9-12-67. Filed 10-26-66.

839,726. PIPE DREME. Pennsalt Chemicals Corporation. SN 258,244. Pub. 9-12-67. Filed 11-8-66.

839,727. TORPEDO. Stiles-Kem Sales Corporation. SN 258,609. Pub. 9-12-67. Filed 11-14-66.

839,728. LETS AND DESIGN. Wasatch Chemical Company. SN 261,174. Pub. 9-12-67. Filed 12-20-66.

839,729. M-2. Universal Oil Products Company. SN 262,227. Pub. 9-12-67. Filed 1-9-67.

839,730. CARON. Caron Corporation. SN 268,287. Pub. 9-12-67. Filed 4-4-67.

839,731. HI-PINE. Laco Corp., assignee of The Solarine Company. SN 271,415. Pub. 9-12-67. Filed 5-15-67.

839,732. SKACETROL. Skasol Incorporated. SN 272,329. Pub. 9-12-67. Filed 5-25-67.

Service Marks

Class 100 — Miscellaneous

839,733. TACO LITA. Howard E. Unrue, Jr., d.b.a. Taco Lita. SN 233,543. Pub. 9-12-67. Filed 11-29-65.

839,734. ULI AND DESIGN. Urban Land Institute. SN 245,359. Pub. 9-12-67. Filed 5-10-66.

839,735. MAI-KAI. Mai-Kai, Inc., d.b.a. Mai-Kai Restaurant. SN 249,546. Pub. 9-12-67. Filed 7-5-66.

839,736. AMERICAN PRINTED FABRICS COUNCIL, INC. MEMBER 1966 AND DESIGN. American Printed Fabrics Council, Inc. SN 260,225. Pub. 9-12-67. Filed 12-7-66.

Class 101 — Advertising and Business

839,737. GRANT CITY. W. T. Grant Company. SN 244,323. Pub. 9-12-67. Filed 4-26-66.

839,738. ARCS. A-Rock Copy Service Ltd. SN 248,762. Pub. 9-12-67. Filed 6-23-66.

839,739. FP. Fleming-Potter Company, Incorporated. SN 252,838. Pub. 9-12-67. Filed 8-22-66.

839,740. EZ FOOD SHOPS AND DESIGN. Atlantic Company. SN 253,833. Pub. 9-12-67. Filed 9-6-66.

389,741. LOOK FOR THE GREEN OVAL. Income Tax Service Company. SN 255,094. Pub. 9-12-67. Filed 9-26-66.

839,742. CHECK-R-BOARD. Ralston Purina Company. SN 258,146 Pub. 9-12-67. Filed 11-7-66.

839,743. JOB-LINE. Job-Line, Inc. SN 270,389. Pub. 9-12-67. Filed 5-1-67.

Class 102 — Insurance and Financial

839,744. BLUE, WHITE AND GOLD BAND (DESIGN). Bankamerica Service Corporation, assignee of Bank of America National Trust and Savings Association. SN 238,600. Pub. 9-12-67. Filed 2-11-66.

839,745. CREDITWAY OF AMERICA. Credithrift Financial Management Corporation, by change of name from Interstate Management Corporation. SN 255,097. Pub. 9-12-67. Filed 9-26-66.

839,746. IDS AND DESIGN. Investors Diversified Services, Inc. SN 267,527. Pub. 9-12-67. Filed 3-24-67.

Class 103 — Construction and Repair

839,747. BAGPIPE. Lee Turzillo Contracting Company. SN 211,323. Pub. 9-12-67. Filed 2-3-65.

839,748. ZONELOCK. The Dow Chemical Company. SN 252,553. Pub. 9-12-67. Filed 8-17-66.

839,749. CUSTOMATIC. Simoniz Company. SN 267,781. Pub. 9-12-67. Filed 3-29-67.

Class 104 — Communication

839,750. TELSTOCK. Newsday, Inc. SN 258,833. Pub. 9-12-67. Filed 11-16-66.

Class 105 — Transportation and Storage

839,751. AMERICAN ADVENTURE TOURS. Allstate Bus Corp., by change of name from A-1 Coach Tours, Inc. SN 213,640. Pub. 8-22-67. Filed 3-9-65.

839,752. GTI AND DESIGN. Global Travel, Inc. SN 244,484. Pub. 9-12-67. Filed 4-28-66.

839,753. PARTY RICO. Gogo Corp. SN 255,796. Pub. 9-12-67. Filed 10-5-66.

839,754. DINE-A-RICO. Gogo Corp. SN 255,797. Pub. 9-12-67. Filed 10-5-66.

839,755. GREYHOUND AND IMAGE OF RUNNING DOG. The Greyhound Corporation. SN 260,744. Pub. 9-12-67. Filed 12-14-66.

Class 107 — Education and Entertainment

839,756. THE TRAVELER. George Carlson, d.b.a. George Carlson and Associates. SN 265,010. Pub. 9-12-67. Filed 2-20-67.

Collective Membership Marks

Class 200

839,757. NATIONAL ASSOCIATION OF DEALERS IN ANTIQUES, INC. ETC. AND DESIGN. National Association of Dealers in Antiques, Inc. SN 257,070. Pub. 9-12-67. Filed 10-24-66.

839,758. SME ETC. AND DESIGN. Sales and Marketing Executives-International, Inc. SN 257,094. Pub. 9-12-67. Filed 10-24-66.

839,759. BOCA AND DESIGN. Boating Industry Association. SN 260,644. Pub. 9-12-67. Filed 12-13-66.

Certification Mark

Class A — Goods

839,760. SMOOTH SEAL. The Maryland Asphalt Association, Inc. SN 259,948. Pub. 9-12-67. Filed 12-2-66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates.)

839,767. The Murdock Corporation, Chelsea, Mass. SN 254,831. Filed P.R. 9-21-66; Am. S.R. 9-1-67.

Class 21—Electrical Apparatus, Machines, and Supplies

KELTON

For Loud Speakers, Loud Speaker Enclosures, Amplifiers and tuners.

Class 36—Musical Instruments and Supplies

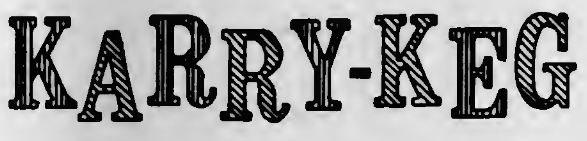
For Phonographs.

First use Sept. 24, 1954.

SECTION 2

Class 2 — Receptacles

839,761. King-Seeley Thermos Co., Ann Arbor, Mich. SN 225,164. Filed P.R. 8-6-65; Am. S.R. 10-11-67.



The drawing is lined for the colors red and green.

For Thermally Insulated Containers.

First use on or about May 13, 1965.

Class 12 — Construction Materials

839,762. Owens-Corning Fiberglas Corporation, Toledo, Ohio. SN 250,763. Filed P.R. 7-21-66; Am. S.R. 10-2-67.

NOISE STOP BOARD

For Fibrous Glass Board Employed as Vibration Absorbing Underlayment in Wall and Floor Constructions.

First use June 20, 1963.

839,763. U.S. Plywood-Champion Papers Inc., New York, N.Y., by merger and change of name from United States Plywood Corporation, New York, N.Y. SN 256,390. Filed P.R. 10-12-66; Am. S.R. 10-5-67.

CEDRO

For Lumber and Wood Products, i.e., Plywood.

First use Sept. 23, 1966.

839,764. U.S. Plywood-Champion Papers Inc., New York, N.Y., by merger and change of name from United States Plywood Corporation, New York, N.Y. SN 256,393. Filed P.R. 10-12-66; Am. S.R. 10-5-67.

NOGAL

For Lumber and Wood Products, i.e., Plywood.

First use Sept. 23, 1966.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

839,765. Amsted Industries Incorporated, Chicago, Ill. SN 247,304. Filed P.R. 6-6-66; Am. S.R. 10-2-67.

GRIP-TITE

For Cast Metal Pipe.

First use May 11, 1966.

Class 19—Vehicles

839,766. Alfred S. Bloomingdale, Los Angeles, Calif. SN 250,348. Filed P.R. 7–15–66; Am. S.R. 8–1–67.

JET BOARD

For Motorized Surfboards, Paddleboards, and the Like, and Their Component Parts.

First use on or about Oct. 1, 1965.

Class 26—Measuring and Scientific Appliances

839,768. The Meriam Instrument Company, Cleveland, Ohio. SN 236,193. Filed P.R. 1–11–66; Am. S.R. 9–18–67.

TANG PLATE

For Fluid Flow Metering Orifice Plate for a Fluid Flow Meter.

First use Dec. 2, 1965.

Class 29—Brooms, Brushes, and Dusters

839,769. Precision Papers Inc., Brooklyn, N.Y. SN 242,657. Filed P.R. 4–4–66; Am. S.R. 10–10–67.

ROL-A-WAY

For Adhesive Roller Type Device for Removing Lint From Fabric.

First use Nov. 18, 1959.

Class 34—Heating, Lighting, and Ventilating Apparatus

839,770. Bernhard Kirsch, Biewer, Germany. SN 245,722. Filed P.R. 5–16–66; Am. S.R. 8–14–67.

KIRSCH

Owner of German Reg. No. 814,198, dated Dec. 30, 1965.

For Electric Welding Equipment and Power Supplies for Such Equipment.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

839,771. Westminster Tire Corporation, New York, N.Y. SN 222,528. Filed P.R. 7–1–65; Am. S.R. 9–19–67.

NE PLUS ULTRA

"Ne Plus Ultra" is an idiomatic Latin expression meaning in English, "the ultimate achievement."

For Nonmetallic Tires.

First use June 10, 1965.

839,772. The Goodyear Tire & Rubber Company, Akron, Ohio. SN 255,890. Filed P.R. 10–6–66; Am. S.R. 9–28–67.

SAFETY SPIKE

For Metal Studs Used in the Tread of Pneumatic Tires To Impart Extra Traction.

First use Aug. 4, 1966.

839,773. The General Tire & Rubber Company, Akron, Ohio. SN 256,356. Filed P.R. 10–13–66; Am. S.R. 10–6–67.

COE

For Tires.

First use January 1966.

Class 36—Musical Instruments and Supplies

839,767. See Section 1 (Combined Certificate).

Class 38—Prints and Publications

839,774. Lebhar-Friedman Publications, Inc., New York, N.Y. SN 248,875. Filed P.R. 6–24–66; Am. S.R. 9–27–67.

NATIONAL RESTAURANT NEWS

For Magazine for the Food Service Industry.

First use June 14, 1966.

839,775. Golf Digest, Inc., South Norwalk, Conn. SN 249,324. Filed P.R. 6–30–66; Am. S.R. 9–28–67.

YOUR JOB FUTURE

For Magazine.

First use during May 1966.

Class 46—Foods and Ingredients of Foods

839,776. Carnation Company, Los Angeles, Calif., assignee of Hill Packing Company, Topeka, Kans. SN 218,993. Filed P.R. 5–17–65; Am. S.R. 8–29–67.

GROUND ROUNDS

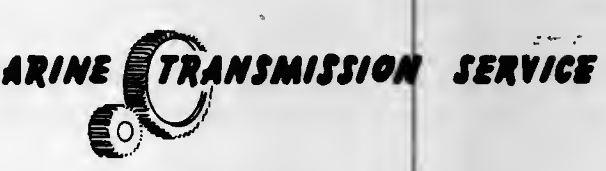
For Dog Food.

First use Mar. 11, 1965.

Service Mark

Class 103—Construction and Repair

839,777. Roger Lehman, d.b.a. Lehman Manufacturing Company, Linden, N.J. SN 210,445. Filed P.R. 1–22–65; Am. S.R. 9–29–67.



For Repairing, Rehabilitating and Rebuilding Marine Transmissions.

First use Jan. 4, 1962.

TRADEMARK REGISTRATIONS RENEWED

65,482. POLICY BOND. Cl. 37. 10–8–07.
65,626. SCHERING. Cl. 18. 10–15–07.
66,168. "V. DEL GAIZO" ETC. AND DESIGN. Cl. 46. 11–12–07.
67,598. ROYAL BLUE. Cl. 32. 2–11–08.
67,891. SAMARIN. Cl. 18. 2–25–08.
152,639. "WHITE ROCK" ETC. AND LABEL DESIGN. Cl. 45. 2–28–22.
228,411. REPRESENTATION OF A BLUE RIBBON. Cl. 48. 5–31–27.
229,733. LA PYRAMIDE. Cl. 51. 7–5–27.
232,522. BAYBAC. Cl. 39. 9–13–27.
232,993. DAIRY MAID AND DESIGN. Cl. 46. 9–20–27.
233,320. CRACKLES. Cl. 46. 9–27–27.
233,671. CELAWOL. Cl. 43. 10–4–27.
233,676. CELAWOL. Cl. 42. 10–4–27.
233,765. HANDY-ANDY AND DESIGN. Cl. 46. 10–11–27.
233,868. "BLUE BIRD" ETC. REPRESENTATION OF A BIRD AND DESIGN. Cl. 39. 10–11–27.
234,022. DOUBLE CORDON AND DESIGN. Cl. 47. 10–18–27.
234,051. DESIGN PORTRAIT OF HOHNER. Cl. 36. 10–18–27.
234,131. DIAGONAL STRIPES (DESIGN). Cl. 46. 10–18–27.
234,438. KEZAR'S MAGIC SALVE. Cl. 18. 10–25–27.
235,672. HOHNERPHONE. Cl. 36. 11–22–27.
235,841. LONE STAR. Cl. 36. 11–29–27.
236,392. REJA. Cl. 42. 12–13–27.
236,393. FERRA. Cl. 42. 12–13–27.
236,471. BASKET BALL. Cl. 46. 12–13–27.
236,662. COLLEGE HEIGHTS. Cl. 46. 12–20–27.
236,726. GENCO. Cl. 1. 12–20–27.
236,950. SHADOW. Cl. 39. 12–27–27.
237,087. MIN-OX. Cl. 14. 1–3–28.
237,133. FOUR ROSES. Cl. 46. 1–3–28.
237,134. "BLUE BIRD BLOTTING" AND DESIGN. Cl. 37. 1–3–28.
237,280. "THE PULSE OF THE JOB" AND CIRCLE DESIGN. Cl. 23. 1–3–28.
237,507. IDEAL. Cl. 46. 1–10–28.
237,829. EXCELWEAR. Cl. 39. 1–17–28.
238,610. BRAMEENA. Cl. 42. 2–14–28.
239,233. "GRUENDLER HERCULES" ETC. AND FANCIFUL DESIGN. Cl. 23. 2–28–28.
239,526. TOSCA. Cl. 52. 3–6–28.
430,914. OMNISOL. Cl. 18. 7–1–47.
430,986. SHASTA. Cl. 52. 7–1–47.
432,122. MAGIMMICK. Cl. 21. 8–19–47.
433,131. TWO BABIES SLEEPING ON A CRIB SHEET (DESIGN). Cl. 42. 9–23–47.
433,221. DEENAX. Cl. 6. 9–30–47.
433,307. SEALY REST AND DESIGN. Cl. 32. 10–7–47.
433,331. CRADLE REST. Cl. 32. 10–7–47.
433,332. LITTLE DARLING. Cl. 32. 10–7–47.
433,407. PURITAN KNITTING MILLS CO. AND DESIGN. Cl. 39. 10–14–47.
433,553. HARVEST QUEEN. Cl. 23. 10–21–47.
433,565. BALMUNG. Cl. 23. 10–21–47.
433,566. JOYEUSE. Cl. 23. 10–21–47.
433,604. CASCADE. Cl. 23. 10–21–47.
433,979. SYNFORMON. Cl. 18. 11–4–47.
434,026. DRIZONE. Cl. 1. 11–4–47.
434,049. KEY VALET. Cl. 3. 11–4–47.
434,109. DALVA. Cl. 49. 11–11–47.
434,154. MELTONIAN. Cl. 4. 11–11–47.
434,694. INJACOM. Cl. 18. 12–2–47.
434,960. NITEE NITE. Cl. 32. 12–9–47.
434,999. U & I. Cl. 46. 12–9–47.
435,152. TRIPLE-SEAL. Cl. 16. 12–9–47.
435,295. SHG. Cl. 39. 12–16–47.
435,437. WELDCO. Cl. 23. 12–30–47.
435,562. POND'S. Cl. 51. 12–30–47.
435,683. ROYAL BEAUTY. Cl. 32. 1–6–48.
435,721. RED CHAIN AND DESIGN. Cl. 46. 1–6–48.
435,742. CASCOREZ. Cl. 5. 1–6–48.
435,863. JACQUIN. Cl. 49. 1–13–48.
435,884. LIN-X. Cl. 16. 1–13–48.
436,069. PLACO. Cl. 40. 1–20–48.
436,316. FMC STERICOOLER AND DESIGN. Cl. 23. 2–3–48.
436,381. DELTASEAL. Cl. 23. 2–3–48.
437,620. INTERTOX. Cl. 6. 3–30–48.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

384,991. SILVER LABEL STYLES. Cl. 39. 2–11–41.
757,396. SILVER LABEL. Cl. 39. 9–24–63.
775,595. PHOS-CHEK. Cl. 6. 8–25–64.
799,920. BLACK KNIGHT AND DESIGN. Cl. 39. 12–7–65.
834,524. HOSS! BARBEQUE WOOD AND DESIGN. Cl. 1. 9–5–67.

Section 8

722,425. SUPERTONE. Cl. 21. 10–3–61.

The following registrations issued Oct. 10, 1961

722,435. AMCOLITE. Cl. 1.
722,441. EKRASKIN. Cl. 1.
722,442. ANGLE BAR. Cl. 2.
722,443. "MINI-SERV" ETC. AND DESIGN. Cl. 2.
722,444. "MINI-SERV." Cl. 2.
722,445. PROTECT-O-GLASS. Cl. 2.
722,446. CRYSTAGLAZE. Cl. 2.
722,453. PLASTI-LOK. Cl. 2.
722,455. MEDLEY. Cl. 2.
722,457. PILLOW-SOFT. Cl. 3.
722,459. PHOTORAMA. Cl. 3.
722,464. E-DAY. Cl. 6.
722,466. OUTLINE OF RETORT AND FACE OF METER. Cl. 6.
722,468. FLOWER KING. Cl. 6.
722,470. HC–64–BD. Cl. 6.
722,471. HC–64–UN. Cl. 6.
722,472. HC–64–VP. Cl. 6.
722,474. EXECUTIVE. Cl. 8.
722,478. SOILUCK. Cl. 10.
722,482. K-HEET. Cl. 11.
722,484. JAL-MASTER. Cl. 12.
722,491. CASTELAIN. Cl. 13.
722,502. CORSITE. Cl. 16.
722,503. SPECTAKOLOR. Cl. 16.
722,506. COLOR CREST. Cl. 16.
722,511. HI-BUOY. Cl. 19.
722,514. SUPER K AND DESIGN. Cl. 19.
722,515. K JUNIOR AND DESIGN. Cl. 19.
722,520. ELCOPAN AND DESIGN. Cl. 21.
722,522. AQUANAUT. Cl. 21.
722,524. VARILINE. Cl. 21.
722,527. ASSISTENT. Cl. 21.
722,530. GENERAL STONEWALL JACKSON. Cl. 21.
722,531. PIN POINT. Cl. 22.
722,532. K LINE WITHIN A CIRCLE. Cl. 22.
722,533. SPACE CHECKERS AND DESIGN. Cl. 22.
722,535. RIDE–A–CYCLE. Cl. 22.
722,538. BASEBALL EDUCATION AND DESIGN. Cl. 22.
722,541. HYDROID AND DESIGN. Cl. 23.
722,543. CAFE SHOPPE. Cl. 23.
722,544. SERVOMASTER. Cl. 23.
722,545. WEHRBEST. Cl. 23.
722,549. FARQUHAR. Cl. 23.
722,551. WES-CRAFT. Cl. 23.

722,554. ELECTROMATIC. Cl. 23.
722,560. MILLI-DYNE. Cl. 31.
722,564. PRIDE OF KENTUCKY. Cl. 32.
722,565. PRIDE OF LOUISVILLE. Cl. 32.
722,567. GENUINE MARSHALL. Cl. 32.
722,568. TWIN FOAM. Cl. 32.
722,580. E-Z-ON. Cl. 34.
722,582. JET-HEET. Cl. 34.
722,586. CORVIC. Cl. 35.
722,591. INSUROGRAM. Cl. 37.
722,595. CHALLENGE. Cl. 37.
722,598. TARGET. Cl. 37.
722,599. CRAY-O-BALL. Cl. 37.
722,600. CRAY-Z-BALL. Cl. 37.
722,603. THE SOYBEAN BLUEBOOK. Cl. 38.
722,608. OKT AND DESIGN. Cl. 38.
722,609. CHRISTOPHER NOTES. Cl. 38.
722,610. THE LIVELY ARTS. Cl. 38.
722,611. CEDARBURG NEWS. Cl. 38.
722,612. FAMILY SLANTS. Cl. 38.
722,615. DESIGN OF FLAME IN CUPPED HAND. Cl. 38.
722,617. GEM LON. Cl. 39.
722,619. BELLCIANO. Cl. 39.
722,621. CUMMERBELT. Cl. 39.
722,623. THUNDERBIRD FASHIONS AND DESIGN. Cl. 39.
722,624. PENALJO LIVING SHOES. Cl. 39.
722,625. ARMANDINE. Cl. 39.
722,627. ADASOL. Cl. 39.
722,631. JOHNNY REB. Cl. 39.
722,633. LOLITAS. Cl. 40.
722,638. KEENTORR. Cl. 44.
722,640. SPRIG AND DESIGN. Cl. 45.
722,641. SALLY SPRIG AND DESIGN. Cl. 45.
722,649. THE GOLDEN POINT. Cl. 46.
722,663. KNOTT'S BERRY FARM AND SIGN DESIGN. Cl. 46.
722,666. LITTLE MILL. Cl. 49.
722,667. SLAINTHEVA AND DESIGN. Cl. 49.
722,671. SALITE. Cl. 50.
722,673. DOTT TONE AND DESIGN. Cl. 50.
722,675. HANDI-BORD. Cl. 50.
722,676. FEATHER FINISH. Cl. 51.
722,677. SULFRIN. Cl. 51.
722,681. OILNOCK. Cl. 52.
722,682. PRETTY BABY. Cl. 52.
722,683. OUTLINE OF RETORT AND FACE OF METER. Cl. 52.
722,685. CALMAL. Cl. 52.
722,690. FEATURED PRODUCTS PHARMONY AND DESIGN. Cl. 101.
722,691. PHARMONY. Cl. 101.
722,697. TITANS OF NEW YORK AND DESIGN. Cl. 107.
722,700. OUR BUSINESS IS BLOOMING. Cl. 1.
722,702. FIRE-LITE. Cl. 1.
722,704. INSTANTLY. Cl. 18.
722,705. SUNBURN COMFORT AND DESIGN. Cl. 18.
722,708. STEINEMANN WITHIN A RECTANGLE DESIGN. Cl. 23.
722,711. COLLECTORS CARDS. Cl. 38.
722,713. FREEZE-N-SQUEEZE. Cl. 46.

Section 18

768,534. SELF-CONTAINED. Cl. 37. 4–21–64.
777,394. KISS'IN STOOL AND DESIGN. Cl. 32. 9–22–64.
788,800. UNCLE BERT'S CARTOON POPCORN AND DESIGN. Cl. 46. 4–27–65.
818,466. TASTY TATERS. Cl. 46. 11–8–66.
826,110. OMMNI-CHAIR. Cl. 32. 3–21–67.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

232,387. SHUR-BAKE AND DESIGN. Cl. 46. 9–6–27. The Red Star Milling Company. General Mills, Inc., Minneapolis, Minn. Amended to appear:

SHURBAKE

598,161. LETTERA 22. Cl. 23. 11–16–54. Ing. C. Olivetti & C. S.p.A., Ivrea, Italy. Amended to appear:

lettera

694,035. NML AND DESIGN. Cl. 102. 3–1–60. The Northwestern Mutual Life Insurance Company, Milwaukee, Wis. Amended to appear:

NML

718,437. MORNING STAR ETC. AND DESIGN. Cl. 6. 7–18–61. Morningstar-Paisley, Inc. A. E. Staley Manufacturing Company, Decatur, Ill. Amended: In the statement, column 2, lines 4 and 5, "polyvinyl acetate emulsions, and polyvinyl chloride plastisols" is deleted.

719,545. FERAJECT 80. Cl. 18. 8–8–61. Iowa Cooperative Association, doing business as Diamond Laboratories. Diamond Laboratories, Des Moines, Iowa. Amended to appear:

feraject

736,588. TWO DIAMETER RIBBED FERRULE. Cl. 37. 8–21–62. Joseph Dixon Crucible Company, Jersey City, N.J. Corrected: In the statement, column 1, line 1, before "Joseph" *The* should be inserted.

767,641. JOBST. Cl. 44. 3–31–64. Jobst Institute, Inc., Toledo, Ohio. Amended: In the statement, column 2, lines 1 and 7, "venous pressure gradient" is deleted and in lines 2 and 8, after "supports" *for circulatory ailments* is inserted.

829,002. DOUBLE STAR (DESIGN). Cls. 13 and 23. 5–23–67. Borneo Sumatra Trading Company, Inc., East Rutherford, N.J. Amended: In the statement, column 2, line 5, "hacksaws," is deleted and in line 6, "files," is deleted.

831,228. A NATIONWIDE SERVICE AND DESIGN. Cl. 102. 6–27–67. American Title Insurance Company, Miami, Fla. Corrected: In the statement, column 1, line 1, "America" should be deleted and *American* should be inserted and lined 2 should be deleted.

834,423. TENDEX. Cl. 51. 8–29–67. Viobin Corporation, Monticello, Ill. Corrected: In the statement, column 2, line 2, "in" should be deleted and *an* should be inserted.

835,081. AUTO-SPENSER. Cl. 26. 9–12–67. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Corrected: In the statement, column 2, line 1, "pipeletter" should be deleted and *pipetter* should be inserted.

835,311. DUNWOODY'S POTSOIL. Cl. 1. 9–19–67. EZL. Dunwoody Co., Philadelphia, Pa. Corrected: In the statement, column 1, line 1, "Ezl. Dunwood" should be deleted and *EZL. Dunwoody* should be inserted.

835,469. DATA PUMP. Cl. 26. 9–19–67. Ultronic Systems Corp., Moorestown, N.J. Corrected: In the statement, column 1, line 1, "Ultrasonic" should be deleted and *Ultronic* should be inserted.

836,699. ECI AND DESIGN. Cl. 26. 10–10–67. Electronic Communications, Inc., St. Petersburg, Fla. Corrected: In the statement, column 2, line 6, after "plexing" *equipment* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

560,507. REXOLITE. Cl. 21. The Rex Corporation. 6–24–52. New Cert. Sec. 7(c) to American Enka Corporation, Enka, N.C.

571,549. NEET. Cl. 52. Service Industries. 3–10–53. New Cert. Sec. 7(c) to American Home Products Corporation, New York, N.Y.

583,680. VITRAGLAS. Cl. 34. Pennsylvania Range Boiler Co. 12–15–53. New Cert. Sec. 7(c) to Frick Company, Waynesboro, Pa.

740,144. COMPUTECH. Cl. 101. Computech, Inc. 10–30–62. New Cert. Sec. 7(c) to Computech, Inc., New York, N.Y.

765,920. DESILU. Cl. 38. Desilu Productions Inc. 3–3–64. New Cert. Sec. 7(c) to Paramount Pictures Corporation, New York, N.Y.

779,206. LABELOFF. Cl. 6. Ramon A. Farris, doing business as Labeloff Distributing Co. 10–27–64. New Cert. Sec. 7(c) to Labeloff, Inc., Charleston, W. Va.

806,530. DESILU. Cl. 107. Desilu Productions Inc. 3–29–66. New Cert. Sec. 7(c) to Paramount Pictures Corporation, New York, N.Y.

812,823. THE DOODLER. Cl. 8. William John Mincer. 8–16–66. New Cert. Sec. 7(c) to National Briar Pipe Co., Inc., Jersey City, N.J.

833,204. RINK-GRIP. Cl. 15. The American Asbestos Products Company. 8–8–67. New Cert. Sec. 7(c) to Acorn Chemical Company, Cleveland, Ohio.

INDEX OF REGISTRANTS

NOVEMBER 28, 1967

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

AB Arjon, Malung, from G. Carlstrom, d.b.a. Hofors Plat- & Smidesverkstad, Hofors, Sweden. 839,509, pub. 12–21–65. Cl. 23.
Abbott Laboratories, North Chicago, Ill. 839,463, pub. 9–12–67. Cl. 18.
Aeromotive Service Co. : *See—*
    Plunk, Rowe A.
Aetna Mfg. Co., Inc., Burlingame, Calif. 722,435, canc. Cl. 1.
Agway, Inc., De Witt, N.Y. 839,427, pub. 9–12–67. Cl. 10.
Air Reduction Co., Inc., New York, N.Y. 839,513, pub. 9–12–67. Cl. 23.
Airdesign Corp., Philadelphia, Pa. 839,477, pub. 1–31–67. Cl. 21.
Aktiebolaget Electrolux, Stockholm, Sweden. 722,527, canc. Cl. 21.
Aktiebolaget Formosa, Stockholm, Sweden. 722,681, canc. Cl. 52.
Albert, R. L., & Son, Inc., Bronx, N.Y. 839,670, pub. 9–12–67. Cl. 46.
Alberto-Culver Co., Melrose Park, Ill. 839,389–90, pub. 9–12–67. Multiple Class (Classes 4 and 6).
Aleene's Fibre & Floral Supply Co., d.b.a. Aleene's, Inc., Temple City, Calif. 839,610, pub. 9–12–67. Cl. 38.
Aleene's, Inc. : *See—*
    Aleene's Fibre & Floral Supply Co.
Allied Steel & Tractor Products, Inc., Cleveland, Ohio. 839,531, pub. 9–12–67. Cl. 23.
Alligator Co., The, St. Louis, Mo. 757,396. canc. Cl. 39.
Allis, Louis, Co., The, Milwaukee, Wis. 839,478, pub. 4–18–67. Cl. 21.
Allstate Bus Corp., from A-1 Coach Tours, Inc., Brooklyn, N.Y. 839,751, pub. 8–22–67. Cl. 105.
Almo Laboratories Co., Inc., Cedar Grove, N.J. 839,721, pub. 9–12–67. Cl. 52.
Alter, Hobart L., d.b.a. Hobie-Surfboard Chop, Dana Point, Calif. 839,490, pub. 9–12–67. Cl. 22.
American Asbestos Products Co., The, to Acorn Chemical Co., Cleveland, Ohio. 833,204, new cert. Cl. 16.
American Calmal Corp., Hialeah, Fla. 722,685, canc. Cl. 52.
American Chain & Cable Co., Inc., New York, N.Y. 839,511, pub. 9–12–67. Cl. 23.
American Eezcraft Inc., Rockville Centre, N.Y. 722,591, canc. Cl. 37.
American Machine & Foundry Co., New York, N.Y. 839,489, pub. 9–12–67. Cl. 22.
American Machine and Metals, Inc., East Moline, Ill. 722,560, canc. Cl. 31.
American Motors Corp., Kenosha, Wis. 839,473, pub. 9–12–67. Cl. 19.
American Printed Fabrics Council, Inc., New York, N.Y. 839,736, pub. 9–12–67. Cl. 100.
American Rule & Block Co., Menominee, Mich. 839,554, pub. 9–12–67. Cl. 26.
American Soybean Association, The, Hudson, Iowa. 722,603, canc. Cl. 38.
American Title Insurance Co., Miami, Fla. 831,228, cor. Cl. 102.
Ampruf Paint Co., Inc., El Monte, Calif. 722,506. canc. Cl. 16.
Amsted Industries, Inc., Chicago, Ill. 839,705. Cl. 13.
Anchor Hocking Glass Corp., Lancaster, Ohio. 839,579, pub. 9–12–67. Cl. 33.
Angostura Bitters (Dr. J. G. B. Siegert & Sons), Ltd., Port-of-Spain, Trinidad. 839,695 pub. 9–12–67. Cl. 49.
Anzac Industries, Inc., Cleveland, Ohio. 839,486–7, pub. 9–12–67. Cl. 21.
A-1 Coach Tours, Inc. : *See—*
    Allstate Bus Corp.
Apco, Inc., New York, N.Y. 722,543, canc. Cl. 23.
Arbogast, Fred, Co., Inc., Akron, Ohio. 839,494, pub. 8–15–67. Cl. 22.
Archway Press, Inc., New York, N.Y. 839,604, pub. 9–12–67. Cl. 38.
Armour & Co., d.b.a. Winslow Bros. & Smith, Chicago, Ill. 722,441, canc. Cl. 1.
Armour & Co., Chicago, Ill. 839,368, pub. 9–12–67. Cl. 1.
A-Rock Copy Service, Ltd., Melrose Park, Ill. 839,738, pub. 9–12–67. Cl. 101.
Art & Sign Brush Mfg. Corp., Long Island City, N.Y. 839,568, pub. 9–12–67. Cl. 29.
Astron Chemicals and Pharmaceuticals, Inc., New York, N.Y. 722,704, canc. Cl. 18.
Astrosonics, Inc. : *See—*
    General Time Corp.
Atlantic Co., Atlanta, Ga. 839,740, pub. 9–12–67. Cl. 101.
Attapulgus Clay Co., Wilmington, Del., and Philadelphia, Pa., to Minerals & Chemicals Philipp Corp., Menlo Park, N.J. 434,026, ren. 11–28–67. Cl. 1.
Baca Industries, Inc., New York, N.Y. 839,636, pub. 9–12–67. Cl. 40.
Ball, Geo. J., Inc., d.b.a. Jiffy-Pot Co. of America, West Chicago. Ill. 839,378, pub. 7–18–67. Cl. 2.
Bank of America National Trust & Savings Association : *See—*
    Bankamerica Service Corp.
Bankamerica Service Corp., from Bank of America National Trust & Savings Association, San Francisco, Calif. 839,744, pub. 9–12–67. Cl. 102.
Barcap, Inc., Cleveland, Ohio. 839,469, pub. 9–12–67. Cl. 19.
Barcraft Homes, Inc., Laurens, S.C. 839,472, pub. 9–12–67. Cl. 19.
Barnes Publishing Co., Inc., Cedar Rapids, Iowa. 722,612, canc. Cl. 38.
Barton Corp., Towanda, Ill. 839,514–16, pub. 9–12–67. Cl. 23.
Barton Distilling Co., Chicago, Ill. 722,666, canc. Cl. 49.
Beach Precision Parts Co., Glen Rock, Pa. 839,387, pub. 9–12–67. Cl. 3.
Beacon Plastic & Metal Products, Inc., New York, N.Y. 722,491, canc. Cl. 13.
Bear Brand Hosiery Co., Chicago, Ill. 237,829, ren. 11–28–67. Cl. 39.
Becker, L. M., & Co., Appleton, Wis. 839,682, pub. 9–12–67. Cl. 46.
Belk Stores Services, Inc., Charlotte, N.C. 839,566, pub. 9–12–67. Cl. 29.
Belk Stores Services, Inc., Charlotte, N.C. 839,593, pub. 9–12–67. Cl. 36.
Bellsey, Dave, Co., Inc., New York, N.Y. 722,619, canc. Cl. 39.
Bemis Bro. Bag Co., to Bemis Co., Inc., Minneapolis, Minn. 436,381, ren. 11–28–67. Cl. 23.
Bemis Co., Inc. : *See—*
    Bemis Bro. Bag Co.
Binney Castings Co., The, Toledo, Ohio. 237,087, ren. 11–28–67. Cl. 14.
Bird-In-Hand Poultry Co., Bird-In-Hand, Pa. 839,683–4, pub. 9–12–67. Cl. 46.
Birma Products Corp., Sayreville, N.J. 839,430, pub. 9–12–67. Cl. 12.
Birnbom, Marvin, d.b.a. Etco Electronics Reg'd, Montreal, Quebec, Canada. 839,476, pub. 7–4–67. Multiple Class (Classes 21, 26, and 36).
Bloomingdale, Alfred S., Los Angeles, Calif. 839,766. Cl. 19.
Blue Ribbon Leather Co., Inc., Shelbyville, Tenn. 839,388, pub. 9–12–67. Cl. 3.
Boating Industry Assn., Chicago, Ill. 839,759, pub. 9–12–67. Cl. 200.
Bogan, Robert T., Jr., d.b.a. Customwood Mfg. Co., Albuquerque, N. Mex. 839,429. pub. 9–12–67. Cl. 12.
Borden Co., The, New York, N.Y. 435,742, ren. 11–28–67. Cl. 5.
Borneo Sumatra Trading Co., Inc., East Rutherford, N.J. 829,002. Am. 7(d). Multiple Class (Classes 13 and 23).
Breck, John H., Inc., Springfield, Mass. 839,704, pub. 9–5–67. Cl. 51.
Brewster Sons Co., to Brewster-Ideal Chocolate Co., Newark, N.J. 232,993, ren. 11–28–67. Cl. 46.
Brewster-Ideal Chocolate Co. : *See—*
    Brewster Sons Co.
Brookpark, Inc., Cleveland, Ohio. 722,446, canc. Cl. 2.
Brown, John, Distilling Co. : *See—*
    Brown, John, Distilling Co., Inc.
Brown, John, Distilling Co., Inc., d.b.a. John Brown Distilling Co., Harpers Ferry, W. Va. 839,691, pub. 9–12–67. Cl. 49.
Browning, Charles R., d.b.a. Browning Communication Associates, Raleigh, N.C. 839,480, pub. 7–11–67. Cl. 21.
Browning Communication Associates : *See—*
    Browning, Charles R.
Burlington Industries, Inc., Greensboro, N.C., from James Lees & Sons Co., Bridgeport, Pa. 839,637, pub. 11–2–65. Cl. 42.
Butler, J. W., Paper Co., Chicago, Ill., to Butler Paper Co., Port Edwards, Wis. 65,482, ren. 11–28–67. Cl. 37.
Butler Paper Co. : *See—*
    Butler, J. W., Paper Co.
Byer-Rolnick Corp., Garland, Tex. 839,630, pub. 9–12–67. Cl. 39.
Calpac, Inc., Yonkers, N.Y. 722,522, canc. Cl. 21.
Campion Heater Co., Inc., St. Louis, Mo. 839,580, pub. 9–12–67. Cl. 34.
Carlson, George, d.b.a. George Carlson & Associates, Seattle, Wash. 839,756, pub. 9–12–67. Cl. 107.
Carlson, George, & Associates : *See—*
    Carlson, George.
Carlstrom, Gustaf : *See—*
    AB Arjon.
Carnation Co., Los Angeles, Calif., from Hill Packing Co., Topeka, Kans. 839,776. Cl. 46.
Caron Corp., New York, N.Y. 839,702, pub. 9–12–67. Cl. 51.
Caron Corp., New York, N.Y. 839,730, pub. 9–12–67. Cl. 52.
Cascade Corp. : *See—*
    Cascade Mfg. Co.
Cascade Mfg. Co., to Cascade Corp., Portland, Oreg. 433,604, ren. 11–28–67. Cl. 23.
Castle & Cooke, Inc., d.b.a. Dole Co., Honolulu, Hawaii. 839,652, pub. 9–12–67. Cl. 45.
Cederroth, Christian, Gefle, to Christian Sten Sture Cederroth, Stockholm, Sweden. 67,891, ren. 11–28–67. Cl. 18.

Cederroth, Christian Sten Sture: *See*—
  Cederroth, Christian.
Celanese Corp.: *See*—
  Celanese Corp. of America.
Celanese Corp. of America, to Celanese Corp., New York, N.Y. 233,671, ren. 11–28–67. Cl. 43.
Celanese Corp. of America, to Celanese Corp., New York, N.Y. 233,676, ren. 11–28–67. Cl. 42.
Certipak Corp., New York, N.Y. 839,382, pub. 9–12–67. Cl. 2.
Chemical & Electronic Research Corp., Baltimore, Md. 722,682, canc. Cl. 52.
Chemische Fabrik Auf Actien (Vorm. E. Schering), Berlin, Germany, to Schering Corp., Bloomfield, N.J. 65,626, ren. 11–28–67. Cl. 18.
Chesebrough-Pond's Inc.: *See*—
  Pond's Extract Co.
Chesebrough-Ponds, Inc., New York, N.Y. 839,710, pub. 9–12–67. Cl. 51.
Christophers, Inc., The, New York, N.Y. 722,609, canc. Cl. 38.
Ciba, Ltd., Basel, Switzerland. 839,413, pub. 9–12–67. Cl. 6.
Clairol, Inc., New York, N.Y. 839,709–11, pub. 9–12–67. Cl. 51.
Clairol, Inc., New York, N.Y. 839,723, pub. 9–12–67. Cl. 52.
Claremont Pigment Dispersion Corp., Roslyn Heights, N.Y. 722,482, canc. Cl. 11.
Cluett, Peabody & Co., Inc.: *See*—
  Schoeneman, J., Inc.
Coleman, Charles P., d.b.a. Coleman Enterprises, Buffalo, N.Y. 839,464, pub. 9–12–67. Cl. 18.
Coleman Enterprises: *See*—
  Coleman, Charles P.
Colgate-Palmolive Co., New York, N.Y. 839,488, pub. 9–12–67. Cl. 22.
College Heights Orange & Lemon Assn., to Corona-College Heights Orange & Lemon Assn., Claremont, Calif. 236,471, ren. 11–28–67. Cl. 46.
College Heights Orange & Lemon Association, to Corona-College Heights Orange & Lemon Association, Claremont, Calif. 236,662, ren. 11–28–67. Cl. 46.
Columbia Technical Corp., Woodside, N.Y. 722,524, canc. Cl. 21.
Combined Paper Mills, Inc., Combined Locks, Wis. 839,426, pub. 9–12–67. Cl. 10.
Comfort Lines, Inc., Chicago, Ill. 839,575, pub. 9–12–67. Cl. 32.
Communication Mfg. Co., Huntington Park, Calif. 839,567, pub. 9–12–67. Cl. 29.
Computech, Inc., to Computech, Inc., New York, N.Y. 740,144, new cert. Cl. 101.
Cone Mills Corp., Greensboro, N.C. 839,642–3, pub. 9–12–67. Cl. 42.
Continental Oil Co., Ponca City, Okla. 839,394, pub. 9–12–67. Cl. 5.
Cornell Seed Co., St. Louis, Mo. 839,369, pub. 9–12–67. Cl. 1.
Corona-College Heights Orange & Lemon Association: *See*—
  College Heights Orange & Lemon Association.
Copco, Inc., New York, N.Y. 839,436, pub. 9–12–67. Cl. 13.
Credithrift Financial Management Corp., from Interstate Management Corp., Evansville, Ind. 839,745, pub. 9–12–67. Cl. 102.
Customwood Mfg. Co.: *See*—
  Bogan, Robert T., Jr.
Cyclops Corp., Bridgeville, Pa. 839,444, pub. 9–12–67. Cl. 14.
Da-Lite Screen Co., Inc., Warsaw, Ind. 839,560, pub. 9–12–67. Cl. 26.
Dalva's, Ltd.: *See*—
  Da Silva, Clemente.
Dan River Mills, Inc., Danville, Va. 839,639, pub. 3–28–67. Cl. 42.
Da Silva, C.: *See*—
  Da Silva, Clemente.
Da Silva, C., (Vinhos) S.A.R.L.: *See*—
  Da Silva, Clemente.
Da Silva, Clemente, d.b.a. Dalva's, Ltd., and C. Da Silva, to C. Da Silva (Vinhos) S.A.R.L., Vila Nova de Gaia, Portugal. 434,109, ren. 11–28–67. Cl. 49.
Davis, Levin V., Odessa, Tex. 834,524, canc. Cl. 1.
Davis Publications, Inc., New York, N.Y. 839,605, pub. 9–12–67. Cl. 38.
Dawson Chemical Co., Houston, Tex. 839,404, pub. 9–12–67. Cl. 6.
Deering Milliken, Inc., New York, N.Y. 839,640, pub. 9–12–67. Cl. 42.
Deering Milliken, Inc., New York, N.Y. 839,644–5, pub. 9–12–67. Cl. 42.
Del Gaizo, S.p.A. Industria Delle Conserve Alimentari: *See*—
  Del Gaizo, Vincenzo.
Del Gaizo, Vincenzo, to Del Gaizo, S.p.A. Industria Delle Conserve Alimentari, Naples, Italy. 66,168, ren. 11–28–67. Cl. 46.
Del Mar Engineering Laboratories, Los Angeles, Calif. 839,555, pub. 9–12–67. Cl. 26.
Dep Corp., Los Angeles, Calif. 839,714–17, pub. 9–12–67. Cl. 51.
Desilu Productions Inc., to Paramount Pictures Corp., New York, N.Y. 765,920, new cert. Cl. 38.
Desilu Productions Inc., to Paramount Pictures Corp., New York, N.Y. 806,530, new cert. Cl. 107.
Dettelbach, Gus, d.b.a. Georgia-Tennessee Mining & Chemical Co., Atlanta, Ga. 839,373, pub. 9–12–67. Cl. 1.
Devco, Inc., Detroit, Mich. 839,417, pub. 9–12–67. Cl. 6.
Dictaphone Corp., Rye, N.Y. 839,595, pub. 9–12–67. Cl. 36.
Diebold, Inc., Canton, Ohio. 839 517, pub. 9–12–67. Cl. 23.
Directional Industries, Inc., New York, N.Y. 826,110, canc. Cl. 32.
Distillerie Konig G.m.b.H., Zug, Switzerland. 839,693, pub. 9–12–67. Cl. 49.
Dixon, Joseph, Crucible Co., Jersey City, N.J. 736,588, cor. Cl. 37.
DoAll Co., Des Plaines, Ill. 839,518, pub. 9–12–67. Cl. 23.
Dob Corp., The, Los Angeles, Calif. 839,667, pub. 9–12–67. Cl. 46.
Dodge Cork Co., Inc., Lancaster, Pa. 839,586, pub. 9–12–67. Cl. 35.
Dole Co.: *See*—
  Castle & Cooke, Inc.
Dow Chemical Co., The, Midland, Mich. 839,748, pub. 9–12–67. Cl. 103.
Dow Corning Corp., Midland, Mich. 839,452, pub. 9–12–67. Cl. 16.
Drackett Co., The, Cincinnati, Ohio. 839,391, pub. 9–12–67. Cl. 4.
Drago Operating Corp., New York, N.Y. 839,366, pub. 9–12–67. Cl. 1.
Dralle, Georg, Hamburg-Altona, Germany. 722,677, canc. Cl. 51.
Driscoll Strawberry Associates, Inc., Salinas, Calif. 839,668, pub. 9–12–67. Cl. 46.
Duffy-Mott Co., Inc., New York, N.Y. 839,673, pub. 9–12–67. Cl. 46.
Dunn, Ainsley, & Co., Ltd., London, England. 722,667, canc. Cl. 49.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 839,596, pub. 9–12–67. Cl. 36.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 839,648, pub. 9–5–67. Cl. 44.
Duray Co., Inc., The, Brooklyn, N.Y. 722,457, canc. Cl. 3.
Dyson, Jos., & Sons, Inc., Eastlake, Ohio. 839,540, pub. 9–12–67. Cl. 23.
EG & G, Inc., Bedford, Mass. 839,609, pub. 9–12–67. Cl. 38.
EZL. Dunwoody Co., Philadelphia, Pa. 835,311, cor. Cl. 1.
Ehrat Cheese Co., Inc., to The Quaker Oats Co., Chicago, Ill. 233,320, ren. 11–28–67. Cl. 46.
Eldridge, R. W., Co., Charlotte, N.C., to H. Fendrich, Inc., Evansville, Ind. 233,868, ren. 11–28–67. Cl. 39.
Electronic Communications, Inc., St. Petersburg, Fla. 836,699, cor. Cl. 26.
Electronic Crystals Corp., New York, N.Y. 839,634, pub. 9–12–67. Cl. 39.
Ell Vee Dee Inc., New Bedford, Mass. 839,577, pub. 9–12–67. Cl. 46.
Englander Co., Inc., The, Chicago, Ill. 722,564–5, canc. Cl. 32.
Etco Electronics Reg'd.: *See*—
  Birnbom, Marvin.
FMC Corp.: *See*—
  Food Machinery Corp.
FW Electrical Industries (Proprietary) Ltd.: *See*—
  Fuchs Electrical Industries (Proprietary), Ltd.
Fairway Foods, Inc., St. Paul, Minn. 839,724, pub. 9–12–67. Cl. 52.
Farmers Market Service, Inc., Indianola, Iowa. 839,608, pub. 9–12–67. Cl. 38.
Farris, Ramon A., d.b.a. Labeloff Distributing Co., to Labeloff, Inc., Charleston, W. Va. 779,206, new cert. Cl. 6.
Fashion Tress, Inc., Miami Beach, Fla. 839,635, pub. 9–12–67. Cl. 40.
Fendrich, H., Inc.: *See*—
  Eldridge, R. W., Co.
Ferguson Fumigants, Inc., Hazelwood, Mo. 839,405, pub. 9–12–67. Cl. 6.
Ferracute Machine Co., Bridgeton, N.J. 722,549, canc. Cl. 23.
Feuerer, William A., Santa Monica, Calif. 839,495, pub. 9–12–67. Cl. 22.
Fibreboard Corp., San Francisco, Calif. 839,535, pub. 9–12–67. Cl. 23.
Fielding Co., The: *See*—
  Fielding Pharmaceutical Co., The.
Fielding Pharmaceutical Co., The, d.b.a. The Fielding Co., Webster Groves, Mo. 839,466, pub. 9–12–67. Cl. 18.
Fisher Bros. Co., The, to Fisher Foods, Inc., Cleveland, Ohio. 237,133, ren. 11–28–67. Cl. 46.
Fisher Flouring Mills Co., Seattle, Wash. 839,674, pub. 9–12–67. Cl. 46.
Fisher Foods, Inc.: *See*—
  Fisher Bros. Co., The.
Fleet-Wing Corp., Cleveland, Ohio. 839,446, pub. 9–12–67. Cl. 15.
Fleming-Potter Co., Inc., Peoria, Ill. 839,739, pub. 9–12–67. Cl. 101.
Food Machinery Corp., to FMC Corp., San Jose, Calif. 436,316, ren. 11–28–67. Cl. 23.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 236,392–3, ren. 11–28–67. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 238,610, ren. 11–28–67. Cl. 42.
Foseco International, Ltd., Birmingham, England. 839,445, pub. 9–12–67. Cl. 15.
Fried, Armand, Brooklyn, N.Y. 722,625, canc. Cl. 39.
Fuchs Electrical Industries (Proprietary) Ltd., from FW Electrical Industries (Proprietary) Ltd., Republic of South Africa. 839,553, pub. 8–8–67. Cl. 26.
Fulton, Loyd R., Seattle, Wash. 839,541, pub. 9–12–67. Cl. 23.
Fusecolor Corp., Middlesex, N.J. 839,370, pub. 9–12–67. Cl. 1.
G.C.R. Bakery Corp., Astoria, N.Y. 839,669, pub. 9–12–67. Cl. 46.
Gabrieleen Co., Inc., Chicago, Ill. 839,701, pub. 5–24–66. Cl. 51.
Gallmeyer & Livingston Co., Grand Rapids, Mich. 839,545, pub. 9–12–67. Cl. 23.
Gallo, E. & J., Winery, d.b.a. Gallo Vineyards, Modesto, Calif. 839,690, pub. 9–12–67. Cl. 47.
Gallo Vineyards: *See*—
  Gallo, E. & J., Winery.
Geier Industries, Inc.: *See*—
  Geier Mattress Co., The.
  Hunt, M. A., & Co.

Geier Mattress Co., The, to Geier Industries, Inc., Rosamoyne, Ohio. 435,683, ren. 11–28–67. Cl. 32.
General Coal Co., Philadelphia, Pa. 236,726, ren. 11–28–67. Cl. 1.
General Fireproofing Co., The, Youngstown, Ohio. 839,576, pub. 9–12–67. Cl. 32.
General Foods Corp., White Plains, N.Y. 839,678, pub. 9–12–67. Cl. 46.
General Kinematics Corp., Barrington, Ill. 839,524, pub. 9–12–67. Cl. 23.
General Mills, Inc., Minneapolis, Minn. 839,377, pub. 9–12–67. Cl. 1.
General Mills, Inc., Minneapolis, Minn. 839,657, pub. 9–12–67. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 839,660–1, pub. 9–12–67. Cl. 46.
General Precision, Inc., Little Falls, N.J. 722,520, canc. Cl. 21.
General Time Corp., Stamford, Conn., from Astrosonics, Inc., Syosset, N.Y. 839,556, pub. 9–12–67. Cl. 26.
General Tire & Rubber Co., The, Akron, Ohio. 839,773. Cl. 35.
Georg Ganss, Werkzeug- und Machinenbau G.m.b.H., Leinfelden-Stuttgart, Germany. 839,510, pub. 9–12–67. Cl. 23.
Georgia-Tennessee Mining & Chemical Co.: *See*—
  Dettelbach, Gus.
Gerber, Joseph R., assor. to Gerber Legendary Blades, to Gerber Legendary Blades, Portland, Oreg. 433,565–6, ren. 11–28–67. Cl. 23.
Gerber Legendary Blades: *See*—
  Gerber, Joseph R.
Gerett, M. A., Inc., Milwaukee, Wis. 722,580, canc. Cl. 34.
Geuder, Paeschke & Fry Co., Milwaukee, Wis. 839,383, pub. 9–12–67. Cl. 2.
Gillette Co., The, Boston, Mass. 839,700. pub. 2–8–66. Cl. 51.
Glacier Co., The, Cincinnati, Ohio. 839,650, pub. 9–12–67. Cl. 45.
Global Travel, Inc., Rosslyn, Va. 839,752, pub. 9–12–67. Cl. 105.
Gogo Corp., New York, N.Y. 839,753–4, pub. 9–12–67. Cl. 105.
Golden Hamburger Drive-In Corp., The, d.b.a. The Golden Point Drive-In System, Chicago, Ill. 722,649, canc. Cl. 46.
Golden Point Drive-In System, The: *See*—
  Golden Hamburger Drive-In Corp., The.
Golden Shield Corp.: *See*—
  Magnavox Co., The.
Goldschmidt Chemical Corp., New York, N.Y. 839,414, pub. 9–12–67. Cl. 6.
Golf Digest, Inc., South Norwalk, Conn. 839,775. Cl. 38.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 839,375–6, pub. 9–12–67. Cl. 1.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 839,583, pub. 9–12–67. Cl. 35.
Goodyear Tire & Rubber Co., The. Akron, Ohio. 839,772. Cl. 35.
Gordes, Sam H., New York, N.Y. 435,295, ren. 11–28–67. Cl. 39.
Governor Fastener Co., The, New York, N.Y. 722,633, canc. Cl. 40.
Grammy, Inc., Los Angeles, Calif. 839,592, pub. 9–12–67. Cl. 36.
Grant, W. T., Co., New York, N.Y. 839,598, pub. 9–12–67. Cl. 36.
Grant, W. T., Co., New York, N.Y. 839,737, pub. 9–12–67. Cl. 101.
Greyhound Corp., The, Chicago, Ill. 839,755, pub. 9–12–67. Cl. 105.
Griffin-Jaco Mills, Inc., Griffin, Ga. 839,627, pub. 9–12–67. Cl. 39.
Gruendler Crusher & Pulverizer Co.: *See*—
  Gruendler Patent Crusher & Pulverizer Co.
Gruendler Patent Crusher & Pulverizer Co., to Gruendler Crusher & Pulverizer Co., St. Louis, Mo. 239,233, ren. 11–28–67. Cl. 23.
Guild Metal Joining Equipment Co., Bedford, Ohio. 839,528, pub. 9–12–67. Cl. 23.
Gun Club Sportswear, Des Moines, Iowa. 839,622, pub. 9–12–67. Cl. 39.
Hagan Chemicals & Controls, Inc., Pittsburgh, Pa. 722,466, canc. Cl. 6.
Hagan Chemicals & Controls, Inc., Pittsburgh, Pa. 722,683, canc. Cl. 52.
Hallmark Cards, Inc., Kansas City. Mo. 722,711, canc. Cl. 38.
Halo Sales Corp., d.b.a. The Party People, San Francisco, Calif. 839,418, pub. 9–12–67. Cl. 6.
Halverson, Gordon H., d.b.a. Milwaukee Suburban Sales Co., New Berlin Wis. 839,590, pub. 9–12–67. Cl. 36.
Hamilton Shoe Co., St. Louis. Mo. 722 624, canc. Cl. 39.
Hamilton Watch Co., Lancaster, Pa. 839,443, pub. 7–4–67. Cl. 14.
Handy Andy Community Stores, Inc. of Texas, Miami, Fla., to Handy-Andy, Inc., d.b.a. Handy-Andy Supermarkets, San Antonio, Tex. 233,765, ren. 11–28–67. Cl. 46.
Handy-Andy, Inc.: *See*—
  Handy Andy Community Stores, Inc. of Texas.
Handy-Andy Supermarkets: *See*—
  Handy Andy Community Stores, Inc. of Texas.
Hanna Construction Co.: *See*—
  Hanna, Daniel C.
Hanna, Daniel C., d.b.a. Hanna Construction Co., Portland, Oreg. 839,530. pub. 9–12–67. Cl. 23.
Harco Corp., Cleveland, Ohio. 839,479, pub. 2–21–67. Cl. 21.
Harco Laboratories, Inc., Stamford, Conn. 889,551, pub. 2–21–67. Cl. 26.
Hartung, Tom P.: *See*—
  Kezar, Hiram L.
Hartz Mountain Products Corp., New York, N.Y. 839,672, pub. 9–12–67. Cl. 46.
Helen of Memphis, Inc., Memphis, Tenn. 839,618. pub. 9–12–67. Cl. 39.
Herculoc Corp., Brooklyn, N.Y. 839,442, pub. 9–12–67. Cl. 13.
Hershkowitz, J., Inc.: *See*—
  M.J.M. International, Inc.
Hi-Life Packing Co., Chicago, Ill. 839,372, pub. 9–12–67. Cl. 1.
Hill Packing Co.: *See*—
  Carnation Co.
HITCO, Gardena, from Kierulff Electronics, Inc., Los Angeles, Calif. 839,552, pub. 6–20–67. Cl. 26.
Hobie-Surfboard Shop: *See*—
  Alter, Hobart L.
Hoepfl, Victor G., Philadelphia, Pa. 722,627, canc. Cl. 39.
Hofer, Heinz P., Upper Grand View, N.Y., from Provins Federation de Producteurs de Vins du Valais, d.b.a. Provins, Valais, Switzerland. 839,686, pub. 9–12–67. Cl. 47.
Hoffmann-La Roche, Inc., Nutley, N.J. 434,694, ren. 11–28–67. Cl. 18.
Hofors Plat- & Smidesverkstad: *See*—
  AB Arjon.
Hohner, M., Inc., Hicksville, N.Y. 234,051, ren. 11–28–67. Cl. 36.
Hohner, M., Inc., Hicksville, N.Y. 235,672, ren. 11–28–67. Cl. 36.
Hollingshead, R. M., Corp., Camden, N.J. 839,570, pub. 9–12–67. Cl. 31.
Holmes-Hemphill Co.: *See*—
  Lavasseur, D. V., Inc.
Home-Craft Products: *See*—
  Home-Craft Products Co.
Home-Craft Products Co., d.b.a. Home-Craft Products, Tampa, Fla. 839,447, pub. 9–12–67. Cl. 16.
Hoppe, Frank A., Inc., Philadelphia, Pa. 839,455, pub. 9–12–67. Cl. 16.
Hubbard-Hall Chemical Co., The, Waterbury, Conn. 722,702, canc. Cl. 1.
Hudnut, Richard, Morris Plains, N.J. 229,733, ren. 11–28–67. Cl. 51.
Huffman Mfg. Co., The, Dayton, Ohio. 722,554, canc. Cl. 23.
Huggins Laboratories, Inc.: *See*—
  Microwave Associates (West), Inc.
Humble Oil & Refining Co.: *See*—
  Standard Oil Co. of New Jersey.
Hume, G. W., Co., Trulock, Calif. 839,675, pub. 9–12–67. Cl. 46.
Hunt, M. A., & Co., Cincinnati, Ohio, Chattanooga, Tenn., Louisville, Ky., and Evansville, Ind., to Geier Industries, Inc., Rossmoyne, Ohio. 67,598, ren. 11–28–67. Cl. 32.
Hupp Corp., Cleveland, Ohio. 722,541, canc. Cl. 23.
Hurd Custom Machinery Co., Harrisburg, Oreg. 839,536, pub. 9–12–67. Cl. 23.
Ideal Toy Corp., Hollis, N.Y. 722,535, canc. Cl. 22.
Igo, Robert V., Sacramento, Calif. 777,394, canc. Cl. 32.
Illinois Glove Co., Skokie, Ill. 722,631, canc. Cl. 39.
Illinois Tool Works, Inc., Chicago, Ill. 839,439, pub. 9–12–67. Cl. 13.
Imperial Adhesives, Inc., Cincinnati, Ohio. 839,397, pub. 9–12–67. Cl. 5.
Imperial Knife Associated Companies, Inc., Providence, R.I. 722,551, canc. Cl. 23.
Income Tax Service Co., Flint, Mich. 839,741, pub. 9–12–67. Cl. 101.
Industrial Gasket & Shim Co., Inc., Meadowlands, Pa. 839,585, pub. 9–12–67. Cl. 35.
International Latex Corp., to International Playtex Corp., Dover, Del. 433,131, ren. 11–28–67. Cl. 42.
International Minerals & Chemical Corp., Skokie, Ill. 839,428, pub. 9–12–67. Cl. 10.
International Paint Co., Inc., New York, N.Y. 437,620, ren. 11–28–67. Cl. 6.
International Paper Co., New York, N.Y. 839,374, pub. 9–12–67. Cl. 1.
International Playtex Corp.: *See*—
  International Latex Corp.
Interstate Management Corp.: *See*—
  Credithrift Financial Management Corp.
Investors Diversified Services, Inc., Minneapolis, Minn. 839,746, pub. 9–12–67. Cl. 102.
Iowa Cooperative Association, d.b.a. Diamond Laboratories, Des Moines, Iowa. 719,545. Am. 7(d). Cl. 18.
Jacquin, Charles, et Cie., Inc., Philadelphia, Pa. 435,863, ren. 11–28–67. Cl. 49.
Jet-Heet, Inc., Englewood, N.J. 722,582, canc. Cl. 34.
Jiffy-Pot Co. of America: *See*—
  Ball, Geo. J., Inc.
Job-Line, Inc., Boston, Mass. 839,743, pub. 9–12–67. Cl. 101.
Jobst Institute, Inc., Toleo, Ohio. 767,641. Am. 7(d). Cl. 44.
Johnson Chemical Industries, Inc., Baltimore, Md. 839,410, pub. 9–12–67. Cl. 6.
Johnson & Lanman, Inc., New York, N.Y. 722,690–1, canc. Cl. 101.
Johnson, Raymond T., d.b.a. Johnson's Flower Center, Washington, D.C. 722,700, canc. Cl. 1.
Johnson's Flower Center: *See*—
  Johnson, Raymond T.
Josey-Miller Co., to Josey-Miller Co., Inc., Beaumont, Tex. 237,507, ren. 11–28–67. Cl. 46.
Josey-Miller Co., Inc.: *See*—
  Josey-Miller Co.
Juday, Floyd D., Whittier, Calif. 839,384, pub. 9–12–67. Cl. 2.
KVP Sutherland Paper Co., Kalamazoo, Mich. 722,455, canc. Cl. 2.
Kawasaki Aircraft Co., Ltd., Ikuta-Ku, Kobe, Japan. 839,468, pub. 9–12–67. Cl. 19.
Kellogg Co., Battle Creek, Mich. 839,685, pub. 9–12–67. Cl. 46.
Ken-Ray Brass Products, Inc., Vermont, Ill. 839,440, pub. 9–12–67. Cl. 13.
Kensol-Olsenmark, Inc., Melville, N.Y. 839,533, pub. 9–12–67. Cl. 23.
Kentucky Fried Chicken Corp., Nashville, Tenn. 839,658, pub. 9–12–67. Cl. 46.

Kerry-Fab, Inc., Pittsburgh, Pa. 839,431, pub. 9–12–67. Cl. 12.
Kestral Corp., Springfield, Mass. 722,532, canc. Cl. 22.
Kezar, Hiram L., assor. to Fred A. Brown and Henry William Randall, Durand, to Tom P. Hartung, Arkansaw, Wis. 234,438, ren. 11–28–67. Cl. 18.
Keystone Camera Co., Inc.: *See*—
  Keystone Mfg. Corp.
Keystone Mfg. Corp., from Keystone Camera Co., Inc., Boston, Mass. 839,549, pub. 8–11–64. Cl. 26.
Keystone Services, Inc., Arvada, Colo. 839,539, pub. 9–12–67. Cl. 23.
Kierulff Electronics, Inc.: *See*—
  HITCO.
Kimbell Candy Co., Chicago, Ill. 722,713, canc. Cl. 46.
Kimberly-Clark Corp., Neenah, Wis. 839,599, pub. 9–12–67. Cl. 37.
King-Seeley Thermos Co., Ann Arbor, Mich. 839,761. Cl. 2.
Kirsch, Bernhard, Biewer, Germany. 839,770. Cl. 34.
Knott's Berry Farm, Buena Park, Calif. 722,663, canc. Cl. 46.
Korkers: *See*—
  Smith, Mary L.
Krauth & Benninghofen, to Krauth & Benninghofen, Inc., Hamilton, Ohio. 235,841, ren. 11–28–67. Cl. 36.
Krauth & Benninghofen, Inc.: *See*—
  Krauth & Benninghofen.
Kurta & Wolfe Chemical Co., Inc., Bronx, N.Y. 839,393, pub. 9–12–67. Cl. 4.
Laco Corp., from The Solarine Co., Baltimore, Md. 839,781, pub. 9–12–67. Cl. 52.
Lamb-Grays Harbor Co., Inc., Hoquiam, Wash. 839,538, pub. 9–12–67. Cl. 23.
Lamb-Weston, Inc., Portland, Oreg. 839,679, pub. 9–12–67. Cl. 46.
Landbouwwerktuigen en Machinefabriek H. Vissers N.V., Nieuw-Vennep, Netherlands. 839,512, pub. 9–12–67. Cl. 23.
Landry Pharmaceuticals, Inc., Houston, Tex. 839,457, pub. 9–12–67. Cl. 18.
Larson, Edward A., d.b.a. Ed Larson Enterprises, Sun Valley, Calif. 722,531, canc. Cl. 22.
Lavasseur, D. V., Inc., d.b.a. Holmes-Hemphill Co., Minneapolis, Minn. 839,451, pub. 9–12–67. Cl. 16.
Lebhar-Friedman Publications, Inc., New York, N.Y. 839,774. Cl. 38.
Lees, James, & Sons Co.: *See*—
  Burlington Industries, Inc.
Legrain, Paris, France. 839,712, pub. 9–12–67. Cl. 51.
Lehman Mfg. Co.: *See*—
  Lehman, Roger.
Lehman, Roger, d.b.a. Lehman Mfg. Co., Linden, N.J. 839,777. Cl. 103.
Levi, Simon, Co., Ltd., Los Angeles, Calif. 839,697, pub. 9–12–67. Cl. 49.
Li'l General Stores, Inc., Tampa, Fla. 839,664, pub. 9–12–67. Cl. 46.
Loomskill, Inc., New York, N.Y. 839,641, pub. 9–12–67. Cl. 42.
Lucas, John, & Co., Inc., Philadelphia, Pa., to The Sherwin-Williams Co., Cleveland, Ohio. 435,152, ren. 11–28–67. Cl. 16.
Lucky Stores, Inc., San Leandro, Calif. 839,655, pub. 9–12–67. Cl. 45.
Lynch, Christine, Pty, Ltd., New South Wales, Australia. 839,698, pub. 9–12–67. Cl. 50.
Lyon Chemicals, Inc., St. Paul, Minn. 839,411, pub. 9–12–67. Cl. 6.
MCA Inc., Universal City, Calif. 839,588, pub. 9–12–67. Cl. 36.
M.J.M. International, Inc., from J. Hershkowitz, Inc., Brooklyn, N.Y. 839,719, pub. 9–12–67. Cl. 52.
MacNaughton-Brooks, Ltd., Weston, Toronto, Ontario, Canada. 839,448–50, pub. 9–12–67. Cl. 16.
Macshore Classics, Inc., New York, N.Y. 839,631–2, pub. 9–12–67. Cl. 39.
Magna-Matic Mooring Co., Inc., Bayside, N.Y. 722,511, canc. Cl. 19.
Magnavox Co., The, Fort Wayne, Ind., from Golden Shield Corp., Batavia, N.Y. 839,475, pub. 2–2–65. Multiple Class (Classes 21 and 36).
Maiden Knitting Mills, Inc., Maiden, N.C. 839,638, pub. 8–9–66. Cl. 42.
Mai-Kai, Inc., d.b.a. Mai-Kai Restaurant, Fort Lauderdale, Fla. 839,735, pub. 9–12–67. Cl. 100.
Mai-Kai Restaurant: *See*—
  Mai-Kai, Inc.
Malecki, Michael, d.b.a. Michael Malecki Co., Brooklyn, N.Y. 722,705, canc. Cl. 18.
Malecki, Michael, Co.: *See*—
  Malecki, Michael.
Manhattan Coffee Co., from Star Coffee Co., St. Louis, Mo. 839,656, pub. 9–12–67. Cl. 46.
Mars Mfg Co., Inc. of Asheville, N.C., Asheville, N.C. 839,621, published 9–12–67. Cl. 39.
Martin-Senour Co., The, Chicago, Ill. 839,453–4, pub. 9–12–67. Cl. 16.
Maryland Asphalt Association, Inc., The, Baltimore, Md. 839,760, pub. 9–12–67. Cl. A.
Master-Craft Corp., Kalamazoo, Mich. 839,381, pub. 9–12–67. Cl. 2.
Mastercraft Pipes, Inc., New York, N.Y. 839,424, pub. 1–3–67. Cl. 8.
Mattel, Inc., Hawthorne, Calif. 839,500–7, pub. 9–12–67. Cl. 22.
McCormick & Co., Inc., Baltimore, Md. 839,663, pub. 9–12–67. Cl. 46.
McGrath-Hamin, Inc., Providence, R.I. 839,563, pub. 9–12–67. Cl. 28.
Meltonian (E. Brown & Son), Ltd., to Meltonian Wren, Ltd., London, England. 434,154, ren. 11–28–67. Cl. 4.
Meltonian Wren, Ltd.: *See*—
  Meltonian (E. Brown & Son), Ltd.

Merck & Co., Inc., Rahway, N.J. 839,415, pub. 9–12–67. Cl. 6.
Mercury Record Productions, Inc., Chicago, Ill. 839,591, pub. 9–12–67. Cl. 36.
Meriam Instrument Co., The, Cleveland, Ohio. 839,768. Cl. 26.
Merlite Industries, Inc., New York, N.Y. 839,718, pub. 11–23–65. Cl. 52.
Metallwaren AG Birrwil, Birrwil, Aargau, Switzerland. 839,423, pub. 9–12–67. Cl. 8.
Microwave Associates (West), Inc., from Huggins Laboratories, Inc., Sunnyvale, Calif. 839,481, pub. 9–12–67. Cl. 21.
Miles Laboratories, Inc., Elkhart, Ind. 839,399, pub. 9–12–67. Cl. 6.
Millen Industries, Inc., New York, N.Y. 839,602, pub. 9–12–67. Cl. 37.
Mil-Star, Inc., Pittsburgh, Pa. 839,651, pub. 9–12–67. Cl. 46.
Milwaukee Suburban Sales Co.: *See*—
  Halverson, Gordon H.
Mincer, William J., to National Briar Pipe Co., Inc., Jersey City, N.J. 812,823, new cert. Cl. 8.
Minerals & Chemicals Philipp Corp.: *See*—
  Attapulgus Clay Co.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 839,409, pub. 9–12–67. Cl. 6.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 839,557, pub. 9–12–67. Cl. 26.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 839,601, pub. 9–12–67. Cl. 37.
Misceramic Tile, Inc., Cleveland, Miss. 839,521, pub. 11–8–66. Cl. 23.
Modern Clock Advertising Co. Inc., Brooklyn, N.Y. 839,573, pub. 9–12–67. Cl. 32.
Monsanto Co., from Monsanto Chemical Co., St. Louis, Mo. 775,595, canc. Cl. 6.
Morningstar-Paisley, Inc. A. E. Staley Mfg. Co., Decatur, Ill. 718,437. Am. 7(d). Cl. 6.
Morse Sewing Machine & Supply Corp., New York, N.Y. 722,425, canc. Cl. 21.
Mulhens, Ferdinand: *See*—
  Naamlooze Vennootschap International Perfumery Co.
Multifac Co., Easton, Md. 839,548, pub. 9–12–67. Cl. 23.
Mumm, G. H., & Cie Societe Vinicole De Champagne Succr. of New York, Inc.: *See*—
  Societe Vinicole De Champagne.
Murdock Corp., The, Chelsea, Mass. 839,767. Multiple Class (Classes 21 and 36).
Mutual Foods, Inc., Renton, Wash. 839,659, pub. 9–12–67. Cl. 46.
N.S. Mfg. Co., Fresh Meadows, N.Y. 839,496, pub. 9–12–67. Cl. 22.
N.V. Plasticlining, Odoorn, Netherlands. 722,502, canc. Cl. 16.
Naamlooze Vennootschap International Perfumery Co., Amsterdam, Netherlands, to Ferdinand Mulhens, Cologne, Germany. 239,526, ren. 11–28–67. Cl. 52.
Nachman Corp., Chicago, Ill. 722,567, canc. Cl. 32.
National Assn. of Dealers in Antiques, Inc., Whitewater, Wis. 839,757, pub. 9–12–67. Cl. 200.
National Cash Register Co., Dayton, Ohio. 768,534, canc. Cl. 37.
National Periodical Publications, Inc., New York, N.Y. 839,561, pub. 9–12–67. Multiple Class (Classes 26, 36, and 38).
Neefe Optical Lab., Big Spring, Tex. 839,558, pub. 9–12–67. Cl. 26.
Neiman-Marcus Co., Dallas, Tex. 839,619, pub. 9–12–67. Cl. 39.
New England Industries, Inc., The, from Plasti-Kote, Inc., Medina, Ohio. 839,722, pub. 9–12–67. Cl. 52.
New York Herald Tribune, Inc., New York, N.Y. 722,610, canc. Cl. 38.
Newaygo Engineering Co., Newaygo, Mich. 839,527, pub. 9–12–67. Cl. 23.
Newport Instrument Corp., Newport Beach, Calif. 839,550, pub. 5–25–65. Cl. 26.
Newsday, Inc., Garden City, N.Y. 839,750, pub. 9–12–67. Cl. 104.
News-Graphic, Inc., Cedarburg, Wis. 722,611, canc. Cl. 38.
Nina Footwear Co., Inc., Long Island City, N.Y. 839,617, pub. 9–12–67. Cl. 39.
Nordica Candy Co., Inc., Jackson, Minn. 839,662, pub. 9–12–67. Cl. 46.
Northwestern Mutual Life Insurance Co., Milwaukee, Wis. 694 035. Am. 7(d). Cl. 102.
Noxell Corp., Baltimore, Md. 839,706, pub. 9–12–67. Cl. 51.
Nutri-Manna Co., Mountain View, Calif. 839,459, pub. 9–12–67. Cl. 18.
Oakite Products, Inc., New York, N.Y. 839,725, pub. 9–12–67. Cl. 52.
O'Brien, Gerard J., d.b.a. Jerry O'Brien, Jersey City, N.J. 839,587, pub. 9–6–66. Cl. 36.
O'Brien, Jerry: *See*—
  O'Brien, Gerard J.
Odin Press, Inc., New York, N.Y. 722,615, canc. Cl. 38.
Old Judge Coffee Co., St. Louis, Mo. 839,666, pub. 9–12–67. Cl. 46.
Old Pal, Inc., Lititz, Pa. 839,497, pub. 9–12–67. Cl. 22.
Olivetti & C. S p.A., Ivrea, Italy. 598,161. Am. 7(d). Cl. 23.
Orchard Corp. of America, The, St. Louis, Mo. 839,474, pub. 9–12–67. Multiple Class (Classes 20 and 37).
Oregon Bulb Farms, Inc., Gresham, Ore. 839,371, pub. 9–12–67. Cl. 1.
Organon, Inc.: *See*—
  Roche-Organon, Inc.
Organon, Inc., West Orange, N.J. 839,420, pub. 9–12–67. Cl. 6.
Ortho Diagnostics: *See*—
  Ortho Pharmaceutical Corp.
Ortho Pharmaceutical Corp., d.b.a. Ortho Diagnostics, Raritan, N.J. 839,419, pub. 9–12–67. Cl. 6.
Osborne-Kemper-Thomas, Inc., Cincinnati, Ohio. 722,608, canc. Cl. 38.

Oster, John, Mfg. Co., Milwaukee, Wis. 839,526, pub. 9–12–67. Cl. 23.
Osterreichische Stickstoffwerke AG, Linz, Austria. 839,408, pub. 9–12–67. Cl. 6.
Ottawa Chemical Co., The, Toledo, Ohio. 839,400–1, pub. 9–12–67. Cl. 6.
Owens-Corning Fiberglas Corp., Toledo, Ohio. 839,762. Cl. 12.
Ozarka Water Co., Los Angeles, Calif. 839,654, pub. 9–12–67. Cl. 45.
Pabst Brewing Co.: *See*—
  Pabst Corp.
Pabst Corp., to Pabst Brewing Co., Milwaukee, Wis. 228,411, ren. 11–28–67. Cl. 48.
Palmer, Charles E., d.b.a. Charles E. Palmer & Associates, Somers, Conn. 722,453, canc. Cl. 2.
Palmer, Charles E., & Associates: *See*—
  Palmer, Charles E.
Paper Converting Corp., Chicago, Ill. 839,600, pub. 9–12–67. Cl. 37.
Party People, The: *See*—
  Halo Sales Corp.
Paul-Munroe Co., The, Pico Rivera, Calif. 839,529, pub. 9–12–67. Cl. 28.
Pennland Distributors, Inc., Dallas, Tex. 839,578, pub. 9–12–67. Cl. 32.
Pennsalt Chemicals Corp., Philadelphia, Pa. 839,726, pub. 9–12–67. Cl. 52.
Pennsylvania Range Boiler Co., to Frick Co., Waynesboro, Pa. 583,680. new cert. Cl. 34.
Perkins, George J., Barrington, Ill. 722,443–4, canc. Cl. 2.
Philadelphia Quartz Co., Philadelphia, Pa. 839,396, pub. 9–12–67. Cl. 5.
Pioneer Industries, Inc., Darby, Pa. 722,621, canc. Cl. 39.
Plastic Fabricating & Engineering Co., Waco, Tex. 722,445, canc. Cl. 2.
Plasti-Kote, Inc.: *See*—
  New England Industries, Inc., The.
Plattner Co., Inc., Kansas City, by Plattner Industries, Inc., North Kansas City, Mo. 436,069, ren. 11–28–67. Cl. 40.
Plattner Industries, Inc.: *See*—
  Plattner Co., Inc.
Plunk, Rowe A., d.b.a. Aeromotive Service Co., Midland, Tex. 839,520, pub. 9–12–67. Cl. 23.
Pond's Extract Co., to Chesebrough-Pond's Inc., New York, N.Y. 435,502, ren. 11–28–67. Cl. 51.
Precision Papers, Inc., Brooklyn, N.Y. 839,769. Cl. 29.
Procter & Gamble Co., The, Cincinnati, Ohio. 430,986, ren. 11–28–67. Cl. 52.
Products Development Laboratories, Inc., West Hartford, Conn. 839,542–3, pub. 9–12–67. Cl. 23.
Products, Services, and Sales, Inc., Tulsa, Okla. 839,492–3, pub. 9–12–67. Cl. 22.
Provins: *See*—
  Hofer, Heinz P.
Provins Federation de Producteurs de Vins du Valais: *See*—
  Hofer, Heinz P.
Puritan Knitting Mills Co., The, to The Puritan Sportswear Corp., Altoona, Pa. 433,407, ren. 11–28–67. Cl. 39.
Puritan Sportswear Corp., The: *See*—
  Puritan Knitting Mills Co., The.
Quaker Oats Co., The: *See*—
  Ehrat Cheese Co., Inc.
Quaker Oats Co., The, Chicago, Ill. 234,131, ren. 11–28–67. Cl. 46.
Ragan Knitting Co., Inc., Thomasville, N.C. 839,628, pub. 9–12–67. Cl. 39.
Ralston Purina Co., St. Louis, Mo. 839,676, pub. 9–12–67. Cl. 46.
Ralston Purina Co., St. Louis, Mo. 839,742, pub. 9–12–67. Cl. 101.
Ramco Mfg. Co., Inc., Roselle Park, N.J. 839,433, pub. 7–18–67. Cl. 13.
Ramsey, L. W., Advertising Agency, d.b.a. L. W. Ramsey Co., Davenport, Iowa. 722,538, canc. Cl. 22.
Ramsey, L. W., Co.: *See*—
  Ramsey, L. W., Advertising Agency.
Rand, Morton, Corp., Zanesville, Ohio. 722,075, canc. Cl. 50.
Red Devil, Inc., Union, N.J. 839,606, pub. 9–12–67. Cl. 38.
Red Star Milling Co. General Mills, Inc., Minneapolis, Minn. 232,387. Am. 7(d). Cl. 46.
Restaurant Associates, Inc., New York, N.Y. 839,594, pub. 9–12–67. Cl. 36.
Retreading Products, Inc., Lodi, Calif. 839,519, pub. 9–12–67. Cl. 23.
Rex Corp., The, to American Enka Corp., Enka, N.C. 560,507, new cert. Cl. 21.
Rexall Drug & Chemical Co., d.b.a. Vanda Cosmetics Co., Los Angeles, Calif. 839,707, pub. 9–12–67. Cl. 51.
Richard-Allan Co., Inc., Evanston, Ill. 839,646, pub. 9–13–66. Cl. 44.
Richardson, Sid, Carbon Co., Fort Worth, Tex. 722,470–2, canc. Cl. 6.
Robbins, Alfred, Organization, Inc., New York, N.Y. 722,474, canc. Cl. 8.
Roche-Organon, Inc., Nutley, to Organon, Inc., West Orange, N.J. 433,979, ren. 11–28–67. Cl. 18.
Rogers Industries, Inc., from Winter Seal Corp., Detroit, Mich. 722,484, canc. Cl. 12.
Rosenfield, H. Irving, d.b.a. Effective Sales Promotion, Austin, Tex. 384,991, canc. Cl. 39.
Royal of Pittsburgh, Inc., Pittsburgh, Pa. 839,565, pub. 9–12–67. Cl. 28.
Rubinstein, Helena, Inc., New York, N.Y. 839,703, pub. 9–12–67. Cl. 51.
Rupp Mfg. Inc., Mansfield, Ohio. 722,514–15, canc. Cl. 19.
S.A.S. Balma, Capoduri & Co., Voghera, Italy. 839,434, pub. 9–12–67. Multiple Class (Classes 13 and 23).

St. Thomas, Inc.: *See*—
  Wilkins, E. J., Co.
Sakai Knitting Co., Ltd., Tokyo, Japan. 722,617, canc. Cl. 39.
Salada Foods Ltd., Don Mills, Ontario, Canada. 839,681, pub. 9–12–67. Cl. 46.
Salem Plastics, Inc., Salem, Ohio. 722,671, canc. Cl. 50.
Sales & Marketing Executives-International, Inc., New York, N.Y. 839,758, pub. 9–12–67. Cl. 200.
Sanderson, William, & Son, Ltd., Edinburgh, Scotland. 839,694, pub. 9–12–67. Cl. 49.
Sani-Clean Products, Inc., Denver, Colo. 839,546, pub. 9–12–67. Cl. 23.
Schaper Mfg. Co., Inc., Minneapolis, Minn. 839,499, pub. 9–12–67. Cl. 22.
Schering Aktiengesellschaft, Berlin, Germany. 839,460, pub. 9–12–67. Cl. 18.
Schering Corp.: *See*—
  Chemische Fabrik auf Actien (Vorm. E. Schering).
Schlager, Maynard M., d.b.a. Schlager Wood & Metal Products, Revere, Mass. 839,572, pub. 12–20–66. Cl. 32.
Schlager Wood & Metal Products: *See*—
  Schlager, Maynard M.
Schmid, Julius, Inc., New York, N.Y. 839,633, pub. 9–12–67. Cl. 39.
Schnadig Corp., Chicago, Ill. 722,568, canc. Cl. 32.
Schoeneman, J., Inc., Baltimore, Md., to Cluett, Peabody & Co., Inc., Troy, N.Y. 232,522, ren. 11–28–67. Cl. 39.
Scientific Advances, Inc., Columbus, Ohio. 839,456, pub. 9–12–67. Cl. 16.
Scientific Pet Products Co., Rocky River, Ohio. 839,367, pub. 9–12–67. Cl. 1.
Scott Paper Co., Delaware County, Pa. 839,623, pub. 9–12–67. Cl. 39.
Sealy, Inc., Chicago, Ill. 433,307, ren. 11–28–67. Cl. 32.
Sealy, Inc., Chicago, Ill. 433,331–2, ren. 11–28–67. Cl. 32.
Sealy, Inc., Chicago, Ill. 434,960, ren. 11–28–67. Cl. 32.
Sears, Roebuck and Co., Chicago, Ill. 722,595, canc. Cl. 37.
Sears, Roebuck and Co., Chicago, Ill. 839,629, pub. 9–12–67. Cl. 39.
Service Industries, to American Home Products Corp., New York, N.Y. 571,549, new cert. Cl. 52.
Servo Corp. of America, Hicksville, from Underwood Corp., New York, N.Y. 722,544, canc. Cl. 23.
Shaklee Products, Hayward, Calif. 839,720, pub. 9–12–67. Cl. 52.
Sheaffer, W. A., Pen Co., Fort Madison, Iowa. 722,598, canc. Cl. 37.
Sheila Shine, Inc., Miami, Fla. 839,392, pub. 9–12–67. Cl. 4.
Shelley Mfg. Co., Miami, Fla. 839,534, pub. 9–12–67. Cl. 23.
Sherwin-Williams Co., The: *See*—
  Lucas, John, & Co., Inc.
Sherwin-Williams Co., The, Cleveland, Ohio. 435,884, ren. 11–28–67. Cl. 16.
Shimizu Shokuhin Kabushiki Kaisha, d.b.a. Shimizu Shokuhin Kaisha, Ltd., Shizuoka-Ken, Japan. 839,680, pub. 9–12–67. Cl. 46.
Shimizu Shokuhin Kaisha, Ltd.: *See*—
  Shimizu Shokuhin Kabushiki Kaisha.
Shin-Etsu Chemical Industrial Co., Ltd.: *See*—
  Shin-Etsu Kagaku Kogyo Kabushiki Kaisha.
Shin-Etsu Kagaku Kogyo Kabushiki Kaisha, d.b.a. Shin-Etsu Chemical Industrial Co., Ltd., Tokyo-To, Japan. 722,478, canc. Cl. 10.
Ship 'N Shore, Inc., Upland, Pa. 839,626, pub. 9–12–67. Cl. 39.
SI Handling Systems, Inc., Easton, Pa. 839,547, pub. 9–12–67. Cl. 23.
Simmons Co., New York, N.Y. 839,577, pub. 9–12–67. Cl. 32.
Simoniz Co., Chicago, Ill. 839,749, pub. 9–12–67. Cl. 103.
Siris, A. J., Products Corp., New York, N.Y. 722,459, canc. Cl. 3.
Siris, A. J., Products Corp., New York, N.Y. 722,599–600, canc. Cl. 37.
Skasol, Inc., San Francisco, Calif. 839,732, pub. 9–12–67. Cl. 52.
Slack Fashions, Inc., New York, N.Y. 839,613, pub. 3–1–66. Cl. 39.
Smidesverkstad: *See*—
  AB Arjon.
Smith, Mary L., d.b.a. Korkers, Grant Pass, Oreg. 839,616, pub. 9–12–67. Cl. 39.
Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p A., Milan, Italy. 839,615, pub. 9–12–67. Multiple Class (Classes 39 and 42).
Snow-Kist Frozen Foods Corp., Jersey City, N.J. 818,466, canc. Cl. 46.
Snyder's Drug Stores, Inc., Hopkins, Minn. 839,461, pub. 9–12–67. Cl. 18.
Sociedade Dos Vinhos Borges & Irmao, LDA., Villa Nova De Gaya, Portugal, from Thallon Wines & Spirits Imports, Inc., New York, N.Y. 839,687–8, pub. 9–12–67. Cl. 47.
Societe Vinicole De Champagne, Paris, France, to G. H. Mumm & Cie Societe Vinicole De Champagne Succr. of New York, Inc., New York, N.Y. 234,022, ren. 11–28–67. Cl. 47.
Solarine Co., The: *See*—
  Laco Corp.
Sorg Paper Co., The: *See*—
  Wrenn Paper Co., The.
Speakman Co., Wilmington, Del. 839,441, pub. 9–12–67. Cl. 13.
Spincraft, Inc., Milwaukee, Wis. 839,647, pub. 9–12–67. Cl. 44.
Sprig Sales Co., Inc., Los Angeles, Calif. 722,640–1, canc. Cl. 45.
Staff Supermarket Associates, Inc., Jericho, N.Y. 839,653, pub. 9–12–67. Cl. 45.
Standard International Corp., Andover, Mass. 839,406–7, pub. 9–12–67. Cl. 6.

Standard Oil Co. of New Jersey, Wilmington, Del., to Humble Oil & Refining Co., Houston, Tex. 433,221, ren. 11–28–67. Cl. 6.
Standard Oil Co., The, Cleveland, Ohio. 839,385–6, pub. 9–12–67. Cl. 2.
Standard Oil Co., The, Cleveland, Ohio. 839,422, pub. 9–12–67. Cl. 7.
Standard Oil Co., The, Cleveland, Ohio. 839,425, pub. 9–12–67. Cl. 10.
Stanley Home Products, Inc., Westfield, Mass. 839,537, pub. 9–12–67. Cl. 23.
Star Coffee Co.: *See*—
  Manhattan Coffee Co.
Status Shoe Corp., The, New York, N.Y. 839,620, pub. 9–12–67. Cl. 39.
Stauffer Chemical Co., New York, N.Y. 839,403, pub. 9–12–67. Cl. 6.
Sterling Drug, Inc., New York, N.Y. 839,416, pub. 9–12–67. Cl. 6.
Sterling Drug, Inc., New York, N.Y. 839,458, pub. 9–12–67. Cl. 18.
Sternco Industries, Inc., Allendale, N.J. 839,699, pub. 9–12–67. Cl. 50.
Stevens, J. P., & Co., Inc.: *See*—
  Forstmann & Huffmann Co.
Stewart, Elisabeth, Swimwear: *See*—
  Stewart Sportswear, Inc.
Stewart Sportswear, Inc., d.b.a. Elisabeth Stewart Swimwear, Bell Gardens, Calif. 839,624, pub. 9–12–67. Cl. 39.
Stewart-Reynolds Co., Inc., El Segundo, Calif. 839,696, pub. 9–12–67. Cl. 49.
Stiles-Kem Sales Corp., Waukegan, Ill. 839,412, pub. 9–12–67. Cl. 6.
Stiles-Kem Sales Corp., Waukegan, Ill. 839,727, pub. 9–12–67. Cl. 52.
Stoddard, Meryl L., Flint, Mich. 839,465, pub. 9–12–67. Cl. 18.
Stutz Industries, Elkhart, Ind. 839,471, pub. 9–12–67. Cl. 19.
Sulka, A., & Co., New York, N.Y. 839,708, pub. 9–12–67. Cl. 51.
Sum, Lau, d.b.a. Ying Co., The, San Francisco, Calif. 839,569, pub. 9–12–67. Cl. 30.
Sunbeam Corp., Chicago, Ill. 722,530, canc. Cl. 21.
Suzuki Motor Co., Ltd., Shizuoka-Ken, Japan. 839,467, pub. 9–12–67. Cl. 19.
Taco Lita: *See*—
  Unrue, Howard E., Jr.
Telemation, Inc., Salt Lake City, Utah. 839,483–4, pub. 9–12–67. Cl. 21.
Temco, Inc., Nashville, Tenn. 839,582, pub. 9–12–67. Cl. 34.
Textron Inc., Rochester, N.Y. 839,559, pub. 9–12–67. Cl. 26.
Tex-Sun Glove Co., Corsicana, Tex. 799,920, canc. Cl. 39.
Thallon Wines & Spirits Imports, Inc.: *See*—
  Sociedade Dos Vinhos Borges & Irmao, LDA.
Thermwell Products Co., Inc., New York, N.Y. 722,468, canc. Cl. 6.
Thomas Industries, Inc., Louisville, Ky. 839,485, pub. 9–12–67. Multiple Class (Classes 21 and 34).
Thompson's, Robert, Craftsmen Ltd., Kilburn, York, England. 839,574, pub. 9–12–67. Cl. 32.
Thunderbird Mfg. Inc., Prescott, Ariz. 722,623, canc. Cl. 39.
Tickell, Arthur J., Woodbridge, Conn. 839,581, pub. 9–12–67. Cl. 34.
Titans of New York, Inc., New York, N.Y. 722,697, canc. Cl. 107.
Toledo Scale Corp., Toledo, Ohio. 839,562, pub. 9–12–67. Cl. 26.
Torrington Co., The, Torrington, Conn. 722,638, canc. Cl. 44.
Tosti Guiseppe de Bosca Fratelli e Torlasco, S.N.C., Canelli, Asti, Italy. 839,689, pub. 9–12–67. Cl. 47.
Toyo Rubber Industry Co., Ltd., The, Nishi-ku, Osaka, Japan. 839,584, pub. 9–12–67. Cl. 35.
Trebor Ltd., Woodford Green, Essex, England. 839,665, pub. 9–12–67. Cl. 46.
Turbo Machine Co., Lansdale, Pa. 839,532, pub. 9–12–67. Cl. 23.
Turzillo, Lee, Contracting Co., Brecksville, Ohio. 839,747, pub. 9–12–67. Cl. 103.
Twin Circle Publishing Co., Inc., New York, N.Y. 839,611–12, pub. 9–12–67. Cl. 38.
Tyler, W. S., Inc., Mentor, Ohio. 839,435, pub. 9–12–67. Cl. 13.
Ullman Devices Corp.: *See*—
  Ullman Products Corp.
Ullman Products Corp., Brooklyn, N.Y., to Ullman Devices Corp., Ridgefield, Conn. 432,122, ren. 11–28–67. Cl. 21.
Ultronic Systems Corp., Moorestown, N.J. 835,469, cor. Cl. 26.
Uncas Mfg. Co., Providence, R.I. 839,564, pub. 9–12–67. Cl. 28.
Uncle Bert's Snacks, Inc., Oceanside, N.Y. 788,800, canc. Cl. 46.
Underberg-Albrecht, H., Rheinberg, Germany. 839,692, pub. 9–12–67. Cl. 49.
Union Carbide Corp., New York, N.Y. 839,437, pub. 9–12–67. Cl. 13.
Union Fork & Hoe Co., The, Columbus, Ohio. 433,553, ren. 11–28–67. Cl. 23.
Union Tank Car Co., Chicago, Ill. 722,442, canc. Cl. 2.
United Co-Operatives, Inc., Alliance, Ohio. 839,462, pub. 9–12–67. Cl. 18.
United Distributors Service, Inc., Roanoke, Va. 839,395, pub. 9–12–67. Cl. 5.
United-Greenfield Corp., Northbrook, Ill. 839,522, pub. 9–12–67. Cl. 23.
United Hoisting Co., Inc., New York, N.Y., to United Hoisting Co., Inc., Englewood, N.J. 237,280, ren. 11–28–67. Cl. 23.
United Lacquer Mfg. Corp., Linden, N.J. 722,503, canc. Cl. 16.
U.S. Divers Co., Inc., Santa Ana, Calif. 839,491, pub. 9–12–67. Cl. 22.
U.S. Plywood-Champion Papers, Inc., from United States Plywood Corp., New York, N.Y. 839,398, pub. 9–12–67. Cl. 6.
U.S. Plywood-Champion Papers, Inc., New York, N.Y. 839,432, pub. 9–12–67. Cl. 12.
U.S. Plywood-Champion Papers, Inc., from United States Plywood Corp., New York, N.Y. 839,763–4. Cl. 12.
United States Plywood Corp.: *See*—
  U.S. Plywood-Champion Papers, Inc.
Universal Decalcomania Corp., Chicago, Ill. 839,607, pub. 9–12–67. Cl. 38.
Universal Oil Products Co., Des Plaines, Ill. 839,729, pub. 9–12–67. Cl. 52.
Universal Records, Inc., Chicago, Ill. 839,589, pub. 9–12–67. Cl. 36.
Unrue, Howard E., Jr., d.b.a. Taco Lita, Pomona, Calif. 839,733, pub. 9–12–67. Cl. 100.
Urban Land Institute, Washington, D.C. 839,734, pub. 9–12–67. Cl. 100.
Utah-Idaho Sugar Co., Salt Lake City, Utah. 434,999, ren. 11–28–67. Cl. 46.
Vacap Corp., Union City, N.J. 839,482, pub. 9–12–67. Cl. 21.
Valdes Associates, Inc., Westbury, N.Y. 722,673, canc. Cl. 50.
Val-Pak Mfg. Corp., St. Louis, Mo. 839,379, pub. 9–12–67. Multiple Class (Classes 2, 19, and 23).
Vanda Cosmetics Co.: *See*—
  Rexall Drug & Chemical Co.
Victor Mfg. & Gasket Co., Chicago, Ill. 722,586, canc. Cl. 35.
Villager, Inc., The, Philadelphia, Pa. 839,713, pub. 9–12–67. Multiple Class (Classes 51 and 52).
Viobin Corp., Monticello, Ill. 834,423, cor. Cl. 51.
Virginia Chemicals, Inc., West Norfolk, Va. 839,421, pub. 9–12–67. Cl. 6.
Viscount Products, Inc., New York, N.Y. 839,498, pub. 9–12–67. Cl. 22.
Vision Wrap Industries, Inc., Schiller Park, Ill. 839,380, pub. 9–12–67. Cl. 2.
Von Beroldingen, Paul, San Francisco, Calif. 839,597, pub. 9–12–67. Cl. 36.
Waldes Kohinoor, Inc., Long Island City, N.Y. 839,438, pub. 9–12–67. Cl. 13.
Wallace Pencil Co., Maplewood, Mo. 839,603, pub. 9–12–67. Cl. 37.
Walpamur Co., Ltd., The, Darwen, England. 839,402, pub. 9–12–67. (Consolidated certificate, Classes 6 and 16.)
Walter, Louis, & Co., Inc., Kansas City, Mo. 839,625, pub. 9–12–67. Cl. 39.
Warner Bros. Co., The, Bridgeport, Conn. 236,950, ren. 11–28–67. Cl. 39.
Warner, William R., & Co., Inc., New York, N.Y., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 430,914, ren. 11–28–67. Cl. 18.
Warner-Lambert Pharmaceutical Co.: *See*—
  Warner, William R., & Co., Inc.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 835,081, cor. Cl. 26.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 839,649, pub. 9–12–67. Cl. 44.
Wasatch Chemical Co., Salt Lake City, Utah. 839,728, pub. 9–12–67. Cl. 52.
Wascon Systems, Inc., Hatboro, Pa. 839,523, pub. 9–12–67. Cl. 23.
Wehr Steel Co., Milwaukee, Wis. 722,545, canc. Cl. 23.
Westminster Tire Corp., New York, N.Y. 839,771. Cl. 35.
Westoak Machine Corp., Oakland, Calif. 839,544, pub. 9–12–67. Cl. 23.
White Cross Stores, Inc., Monroeville, Pa. 839,525, pub. 9–12–67. Cl. 23.
White Rock Corp.: *See*—
  White Rock Mineral Springs Co.
White Rock Mineral Springs Co., Waukesha, Wis., to White Rock Corp., Brooklyn, N.Y. 152,639, ren. 11–28–67. Cl. 45.
White Stag Mfg. Co., Portland, Oreg. 839,508, pub. 9–12–67. Cl. 22.
Wilco Machine Works, Inc., Memphis, Tenn. 722,708, canc. Cl. 23.
Wilkins, E. J., Co., to St. Thomas, Inc., Gloversville, N.Y. 434,049, ren. 11–28–67. Cl. 3.
Williams, William O., Jr., Gastonia, N.C. 722,533, canc. Cl. 22.
Windsor, Kay, Inc., New Bedford, Mass. 839,614, pub. 9–12–67. Cl. 39.
Winslow Bros. & Smith: *See*—
  Armour & Co.
Winston Sales Co., Inc., Chicago, Ill. 722,464, canc. Cl. 6.
Winter Seal Corp.: *See*—
  Rogers Industries, Inc.
Wood, E. B., d.b.a. Wood Fruit Co., Atwater, Calif. 435,721, ren. 11–28–67. Cl. 46.
Wood Fruit Co.: *See*—
  Wood, E. B.
Wrenn Paper Co., The, to The Sorg Paper Co., Middletown, Ohio. 237,134, ren. 11–28–67. Cl. 37.
Yahama International Corp., Montebello, Calif. 839,470, pub. 9–12–67. Cl. 19.
Yardley & Co., Ltd., London, England. 722,676, canc. Cl. 51.
Yardley of London, Inc., Totowa, N.J. 839,705, pub. 9–12–67. Cl. 51.
Ying Co., The: *See*—
  Sum, Lau.
Youngstown Welding & Engineering Co., The, Youngstown, Ohio. 435,437, ren. 11–28–67. Cl. 23.
Zevo, Inc., Los Angeles, Calif. 839,671, pub. 9–12–67. Cl. 46.

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